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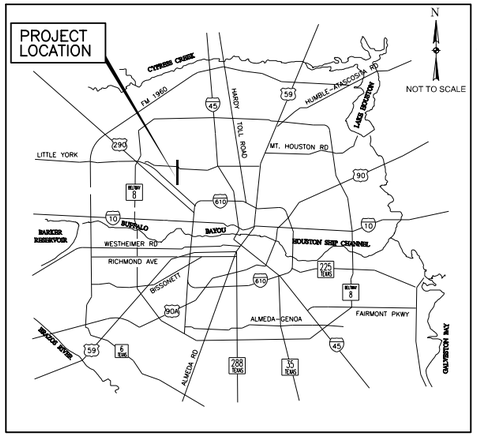
CITY OF HOUSTON

HOUSTON PUBLIC WORKS
CAPITAL PROJECTS



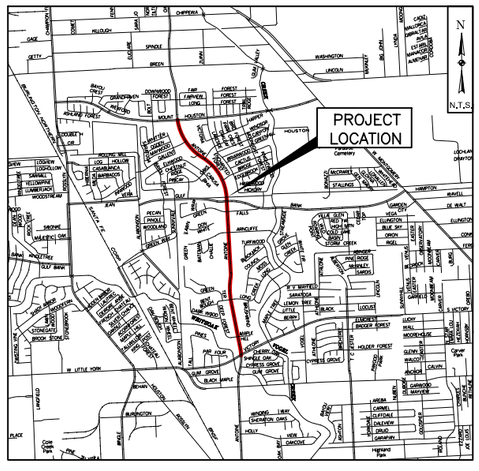
VICINITY MAP

ANTOINE DRIVE PAVING AND DRAINAGE IMPROVEMENTS PROJECT - SEGMENT I

FROM VICTORY DR TO W MOUNT HOUSTON ROAD

WBS NO. N-100030-0GEC-3
CSJ NO. 0912-72-687

95% SUBMITTAL



LOCATION MAP
KEY MAP NO. 411K, 411L, 411P, 411Q, 411T, 411U
GIMS MAP NO. 5162A, 5162C, 5163C

TDLR EABPR #TABS2024025119

CITY OF HOUSTON TEXAS

MAYOR
JOHN WHITMIRE

CONTROLLER
CHRIS HOLLINS

DISTRICT COUNCIL MEMBERS

AMY PECK, DISTRICT A
TARSHA JACKSON, DISTRICT B
ABBIE KAMIN, DISTRICT C
CAROLYN EVANS-SHABAZZ, DISTRICT D
FRED FLICKINGER, DISTRICT E
TIFFANY D. THOMAS, DISTRICT F
MARY NAN HUFFMAN, DISTRICT G
MARIO CASTILLO, DISTRICT H
JOAQUIN MARTINEZ, DISTRICT I
EDWARD POLLARD, DISTRICT J
MARTHA CASTEX-TATUM, DISTRICT K

COUNCIL MEMBERS AT-LARGE

JULIAN RAMIREZ, POSITION 1
WILLIE DAVIS, POSITION 2
TWILA CARTER, POSITION 3
LETITIA PLUMMER, POSITION 4
SALLIE ALCORN, POSITION 5

Gauge ENGINEERING
11750 KATY FREEWAY, SUITE 400
Houston, TX 77079
www. GaugeEngineering.com
Texas PE Firm Reg. #20017

DOCUMENT INCOMPLETE: NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION

ENGINEER: KARAM QADDO
P.E. SERIAL No.: 125611
FIRM.: GAUGE ENGINEERING LLC
FIRM No.: F-20017
DATE: 10/30/2025

SURVEYED BY: KUO & ASSOCIATES
FB NO. F-4578

PARKS-FORESTRY DEPT.

METRO

HOUSTON WATER

TRANSPORTATION & DRAINAGE OPERATIONS

CAPITAL PROJECTS

SURVEY

CITY ENGINEER DATE

DIRECTOR OF HOUSTON PUBLIC WORKS DATE

FOR CITY OF HOUSTON USE ONLY

STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

FEDERAL AID PROJECT NO.			
F 2025(160)			
CONT	SECT	JOB	HIGHWAY
0912	72	687	ANTOINE
DIST	COUNTY		SHEET NO.
HOU	HARRIS		

DESIGN SPEED = 30 MPH
ANTOINE ADT (2028)= 21,050 VPD
ANTOINE ADT (2048)= 29.900 VPD

PLANS OF PROPOSED
ANTOINE DRIVE PAVING & DRAINAGE IMPROVEMENTS

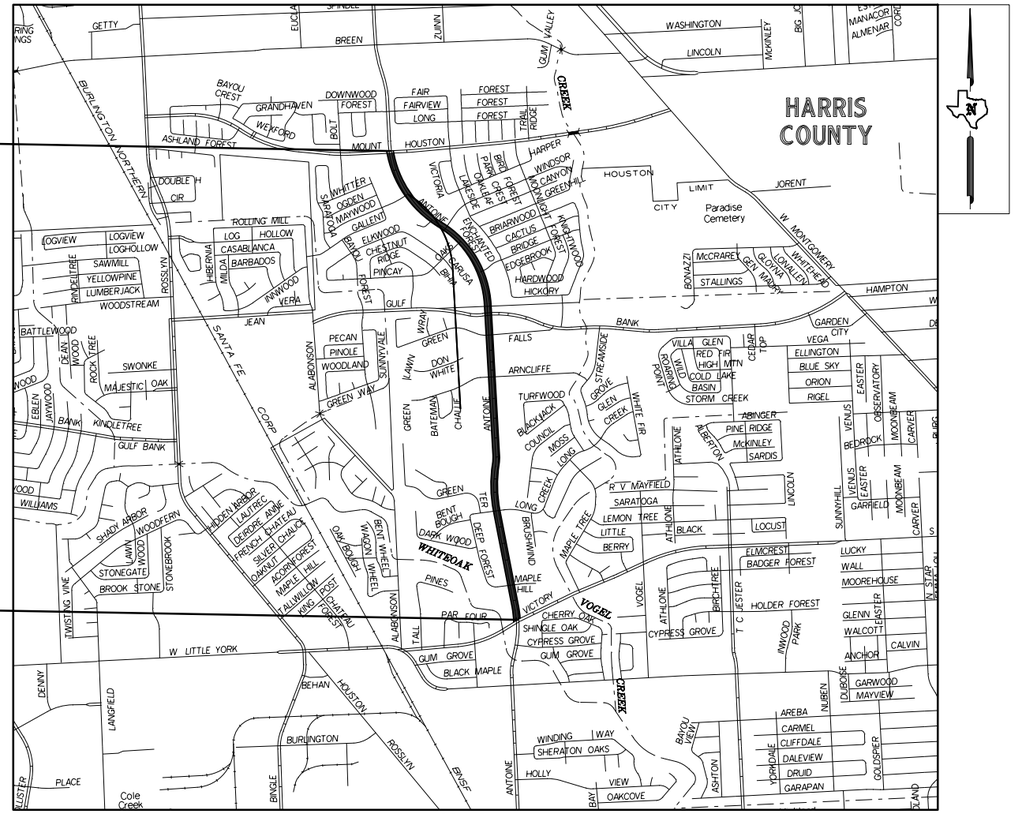
WBS No. N-100030-0GEC-3
CSJ : No. 0912-72-687

NET LENGTH OF ROADWAY = 10,913.74 FEET = 2.06 MILES
NET LENGTH OF BRIDGES = 0.00 FEET = 0.00 MILES
NET LENGTH OF PROJECT = 10,913.74 FEET = 2.06 MILES

FROM VICTORY DRIVE TO WEST MOUNT HOUSTON

TYPE OF WORK: SAFETY INPROVEMENT PROJECT
CONSISTING OF: ROADWAY RECONSTRUCTION, INTERSECTION IMPROVEMENTS, DRAINAGE IMPROVEMENTS, WATER AND WASTEWATER IMPROVMENTS, SIDEWALKS, SHARE-USE-PATH, TRAFFIC SIGNAL AND PAVEMENT MARKINGS

END PROJECT
CSJ:0912-72-687
STA: 268+30.15
N: 13891482.4964
E: 3084052.6268



BEGIN PROJECT
CSJ: 0912-72-687
STA: 159+16.41
N: 13881365.9118
E: 3086667.8162

LOCATION MAP
NOT TO SCALE
KEY MAP NO. 411K, 411L, 411P, 411Q, 411T, 411U
GIMS MAP NO. 5162A, 5162C, 5163C

EXCEPTIONS: NONE
EQUATIONS: NONE
RAILROAD CROSSINGS: BNSF

NOTE:

1. ALL BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NORTH AMERICAN DATUM OF 1983, (NAD 83), 2011 ADJUSTMENT, EPOCH 2010.00.

2. ALL DISTANCES AND COORDINATES SHOWN ARE SURFACE AND MAY BE CONVERTED TO GRID BY DIVIDING BY A COMBINED ADJUSTMENT FACTOR OF 1.00013. ALL ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVID88), (GEOID '12A).

3. THE RIGHT OF WAY SHOWN HEREON IS BASED ON THE BEST AVAILABLE EVIDENCE FOUND IN THE FIELD AT THE TIME OF SURVEY COUPLED WITH THE DOCUMENTS OF RECORD IN THE COUNTY CLERK'S OFFICE PROVIDED BY COURTHOUSE SPECIALIST.

4. THE ELEVATION DIFFERENCE IN BETWEEN TXDOT MONUMENTS (N1020080) PUBLISHED DATUM NAVID 1988, 1991 ADJUSMENT AND CITY OF HOUSTON MONUMENT'S (5162-0610) DATUM NAVID 1988, GEOID '12A ID IS 0.19'. NAVID 1988, 1991 ADJUSTMENT (TXDOT MONUMENT) ELEVATION = NAVID 1988, GEOID '12A (CITY OF HOUSTON MONUMENT) ELEVATION +0.19 FT.

REGISTERD ACCESSIBILITY SPECIALIST (RAS) INSPECTION REQUIRED TDLR NO. TABS2024025119

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KARAM QADDO
P.E. 125611

95% SUBMITTAL
10/30/2025

Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY, SUITE 400
HOUSTON, TX 77079

CONCURRENCE FOR LETTING

SIGNATURE DATE
NAME
POSITION
CITY OF HOUSTON

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SUBMITTED FOR LETTING: DATE

PROJECT MANAGER

APPROVED FOR LETTING: DATE

DISTRICT ENGINEER

DATE: 10/30/2025 10:43:17 AM
FILE: P:\City of Houston\1100-Antoine-Dr4-0-Production-Working\4-1-CADGeneral\W GULF BANK\0001-TxDOT_COVER SHEET.dgn

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549	TEMPORARY SIGNAL LAYOUT - ANTOINE DR AT WEST GULF BANK PHASE 7 STEP 5
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717	COH CONSTRUCTION SIGN
718	HCED PRECINCT 1 PROJECT SIGN

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

SURVEYED BY:
KUO & ASSOCIATES, INC.

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95% SUBMITTAL
GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

INDEX OF SHEETS

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 3 OF 718	

Pen Table: ANTOINE DR.tbl
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Plotted on: $DATE$ $TIME$ $USER$

Pen Table: $PENTBL$$
Plot Driver: $PLTDRVL$$

Design Filename: $FILE$$

EXISTING PLAN VIEW

- WATER METER
- WATER VALVE (GATE)
- WATER VALVE (BUTTERFLY)
- FIRE HYDRANT/FLUSHING VALVE
- TAPPING SLEEVE & VALVE
- REDUCER (8" 6")
- ROUND CONNECTION
- SANITARY SEWER CLEANOUT & MANHOLE (CO, SAN MH)
- STORM SEWER MANHOLE (STM MH)
- STORM SEWER INLETS ('B' 'B-B' 'C' 'C-1' 'C-2' 'C-2A' 'GRATE')
- CULVERT PIPE AND HEADWALL
- TOP OF CURB ELEVATION (TC=XX.XX)
- GUTTER ELEVATION (G=XX.XX)
- TOP OF PAVEMENT ELEVATION (TP=XX.XX)
- CONTOUR LINE (XX.X')
- ROW LINE
- PROPERTY LINE
- LOT LINES
- EASEMENT LINE
- CENTER LINE OF ROW
- TRANSIT LINE
- EDGE OF DITCHES
- CENTER LINE OF DITCHES
- EDGE OF DITCHES
- FENCE LINE, WOOD
- FENCE LINE, CHAIN LINK
- FENCE LINE, BARBED WIRE
- FENCE LINE, HOG WIRE
- EDGE OF CONCRETE
- CURB LINE
- CONCRETE WALK
- EDGE OF ASPHALT
- EDGE OF SHELL OR GRAVEL
- DIMENSION LINE (28" 3-17)
- AERIAL POWER LINE (P P)
- UNDERGROUND POWER LINE
- GAS LINE
- UNKNOWN UNDERGROUND LINE (MISC)
- OIL PIPELINE (IDENTIFY CONDUIT) OGP
- UNDERGROUND TELECOMM LINE W/VAULT
- AERIAL TELECOMM LINE
- RAILROAD LINE
- WATER LINE (20" (AND SMALLER) WATER; 24" (LARGER THAN 20") WATER LDWL)
- SANITARY SEWER LINE (24" (AND SMALLER) SANITARY SEWER; 30" (LARGER THAN 24") SANITARY SEWER LDWL)
- STORM SEWER LINE (24" (AND SMALLER) STORM SEWER; 30" (LARGER THAN 24") STORM SEWER LDWL)
- SANITARY SEWER FORCE MAIN
- RECLAIMED WATER LINE (RWL RWL)
- NON-POTABLE WATER LINE (NPW NPW)
- GAS METER
- GAS VALVE
- PROPANE LINE (PROPANE)
- STEAM LINE (STEAM)
- MISC UNDERGROUND PIPELINE LABLE (A2)

PROPOSED PLAN VIEW

- WATER METER (WM)
- WATER VALVE (GATE) (WV)
- WATER VALVE (BUTTERFLY) (BFWV)
- FIRE HYDRANT/FLUSHING VALVE (FH, WV)
- TAPPING SLEEVE & VALVE (TS&V)
- REDUCER (12" 8")
- ROUND CONNECTION
- SANITARY SEWER CLEANOUT & MANHOLE (CO, SAN MH)
- STORM SEWER MANHOLE (STM MH)
- STORM SEWER INLETS ('B' 'B-B' 'C' 'C-1' 'C-2' 'C-2A' 'GRATE')
- CULVERT PIPE AND HEADWALL
- TOP OF CURB ELEVATION (TC=XX.XX)
- GUTTER ELEVATION (G=XX.XX)
- TOP OF PAVEMENT ELEVATION (TP=XX.XX)
- CONTOUR LINE (XX.X')
- ROW LINE
- PROPERTY LINE
- LOT LINES
- EASEMENT LINE
- CENTER LINE OF ROW
- TRANSIT LINE
- EDGE OF DITCHES
- CENTER LINE OF DITCHES
- EDGE OF DITCHES
- FENCE LINE, WOOD
- FENCE LINE, CHAIN LINK
- FENCE LINE, BARBED WIRE
- FENCE LINE, HOG WIRE
- EDGE OF CONCRETE
- CURB LINE
- CONCRETE WALK
- EDGE OF ASPHALT
- EDGE OF SHELL OR GRAVEL
- DIMENSION LINE (28" 3-17)
- AERIAL POWER LINE (P P)
- UNDERGROUND POWER LINE
- GAS LINE
- UNKNOWN UNDERGROUND LINE (MISC)
- OIL PIPELINE (IDENTIFY CONDUIT) OGP
- UNDERGROUND TELCOMM LINE W/ VAULT
- AERIAL TELECOMM LINE
- RAILROAD LINE
- WATER LINE (20" (AND SMALLER) WATER; 24" (LARGER THAN 20") WATER LDWL)
- SANITARY SEWER LINE (24" (AND SMALLER) SANITARY SEWER; 30" (LARGER THAN 24") SANITARY SEWER LDWL)
- STORM SEWER LINE (24" (AND SMALLER) STORM SEWER; 30" (LARGER THAN 24") STORM SEWER LDWL)
- SANITARY SEWER FORCE MAIN
- RECLAIMED WATER LINE (RWL RWL)
- NON-POTABLE WATER LINE (NPW NPW)
- GAS METER
- GAS VALVE
- PROPANE LINE (PROPANE)
- STEAM LINE (STEAM)
- MISC UNDERGROUND PIPELINE LABLE (A2)
- MATCH LINE

EXISTING PLAN VIEW

- PAVING HEADER
- BUILDING, RESIDENTIAL (RES. 1-STORY BR BLDG.)
- BUILDING, COMMERCIAL (COMM. 1-STORY BR BLDG.)
- TREE
- HEDGE
- IRON PIPE OR IRON ROD MONUMENT (3/4" IP)
- POINT OF INTERSECTION (PI)
- POINT OF CURVE (PC)
- POINT OF TANGENCY (PT)
- **POWER POLE** (P P)
- **POWER POLE W/DOWN GUY** (P P)

EXISTING PROFILE VIEW

- NORTH OR EAST PROPERTY LINE
- SOUTH OR WEST PROPERTY LINE
- NORTH OR EAST CURB
- SOUTH OR WEST CURB
- NORTH OR EAST DITCH
- SOUTH OR WEST DITCH
- NORTH OR EAST NATURAL GROUND
- SOUTH OR WEST NATURAL GROUND
- **NORTH OR EAST CULVERT** (CULVERT)
- **SOUTH OR WEST CULVERT** (CULVERT)
- **CENTERLINE OF ROW**
- **CENTERPOINT ENERGY CONDUIT** (CENTERPOINT ENERGY CONDUIT)
- **GAS LINE** (GAS LINE)
- **WESTERN UNION** (WESTERN UNION OGP)
- **AT&T CONDUIT** (AT&T CONDUIT)
- **WATER LINE** (20" (AND SMALLER) WATER LINE; 24" (LARGER THAN 20") WATER)
- **SANITARY SEWER LINE** (24" (AND SMALLER) SANITARY SEWER; 30" (LARGER THAN 24") SANITARY SEWER)
- **STORM SEWER LINE** (24" (AND SMALLER) STORM SEWER; 30" (LARGER THAN 24") STORM SEWER)
- **SANITARY SEWER FORCE MAIN**
- **RECLAIMED WATER LINE** (RWL RWL)
- **NON-POTABLE WATER LINE** (NPW NPW)
- **CENTERPOINT ENERGY MANHOLE**
- **AT&T MANHOLE**
- **WATER LINE MANHOLE**
- **SANITARY SEWER MANHOLE & CLEANOUT**
- **STORM SEWER MANHOLE**
- **STORM SEWER INLET**

PROPOSED PLAN VIEW

- PAVING HEADER
- BUILDING, RESIDENTIAL (RES. 1-STORY BR BLDG.)
- BUILDING, COMMERCIAL (COMM. 1-STORY BR BLDG.)
- TREE
- HEDGE
- IRON PIPE OR IRON ROD MONUMENT (3/4" IP)
- POINT OF INTERSECTION (PI)
- POINT OF CURVE (PC)
- POINT OF TANGENCY (PT)
- POWER POLE (P P)
- POWER POLE W/DOWN GUY (P P)

PROPOSED PROFILE VIEW

- NORTH OR EAST PROPERTY LINE
- SOUTH OR WEST PROPERTY LINE
- NORTH OR EAST CURB
- SOUTH OR WEST CURB
- NORTH OR EAST DITCH
- SOUTH OR WEST DITCH
- NORTH OR EAST NATURAL GROUND
- SOUTH OR WEST NATURAL GROUND
- NORTH OR EAST CULVERT (CULVERT)
- SOUTH OR WEST CULVERT (CULVERT)
- CENTERLINE OF ROW
- CENTERPOINT ENERGY CONDUIT
- GAS LINE
- WESTERN UNION (WESTERN UNION OGP)
- AT&T CONDUIT
- WATER LINE (20" (AND SMALLER) WATER LINE; 24" (LARGER THAN 20") WATER)
- SANITARY SEWER LINE (24" (AND SMALLER) SANITARY SEWER; 30" (LARGER THAN 24") SANITARY SEWER)
- STORM SEWER LINE (24" (AND SMALLER) STORM SEWER; 30" (LARGER THAN 24") STORM SEWER)
- SANITARY SEWER FORCE MAIN
- RECLAIMED WATER LINE (RWL RWL)
- NON-POTABLE WATER LINE (NPW NPW)
- CENTERPOINT ENERGY MANHOLE
- AT&T MANHOLE
- WATER LINE MANHOLE
- SANITARY SEWER MANHOLE & CLEANOUT
- STORM SEWER MANHOLE
- STORM SEWER INLET

MISC STANDARD ELEMENTS

- COH NORTH ARROW (N, Z)
- COH BAR SCALE (0' 10' 20' 40'; SCALE: 1"=20')
- REVISION CLOUD/DELTA (1)
- VIEW TITLE (1 VIEW TITLE; SCALE: 1:1) — DETAIL/SECTION TITLE
- SECTION CALLOUT (1/XX, 1/XX)
- DETAIL CALLOUT (1/XX)

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Gauge ENGINEERING
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

SYMBOLS

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 4 OF 718	

Plotted on: 10/24/2025 3:05:10 PM michael.guthrie
Pen Table: ANTOINE DR.tbl
Plot Driver: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Resource\Plot files\ANTOINE DR.pltcfg
Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\General\W GULF BANK\002-GENERAL NOTES 01.dgn

GENERAL CONSTRUCTION NOTES (WITHIN CITY OF HOUSTON ROW)

1. UNLESS OTHERWISE NOTED AND APPROVED ON DRAWINGS, CONSTRUCT CIVIL INFRASTRUCTURE IN ACCORDANCE WITH THE EFFECTIVE EDITION OF THE HOUSTON PUBLIC WORKS STANDARD CONSTRUCTION SPECIFICATIONS, STANDARD CONSTRUCTION DETAILS, AND SUPPLEMENTS, ADDENDA AND AMENDMENTS THERETO. THE LATEST EDITION OF THE ABOVE PUBLICATIONS CAN BE FOUND AT: HTTP://WWW.HOUSTONPERMITTINGCENTER.ORG/OFFICE-CITY-ENGINEER/DESIGN-AND-CONSTRUCTION-STANDARDS.
2. THE DESIGN MUST BE CONSISTENT WITH THE EFFECTIVE EDITION OF HOUSTON PUBLIC WORKS INFRASTRUCTURE DESIGN MANUAL AND TCEQ (TEXAS COMMISSION ON ENVIRONMENTAL QUALITY) REQUIREMENTS.
3. THE GEOTECHNICAL INVESTIGATION FOR THIS PROJECT WAS CONDUCTED IN ACCORDANCE WITH CHAPTER 11 OF THE LATEST EDITION OF THE PUBLICATION INFRASTRUCTURE DESIGN MANUAL, PUBLISHED BY HOUSTON PUBLIC WORKS. SOILS REPORT WAS PREPARED BY AVILES ENGINEERING CORPOATION REPORT NO. g152-21a, DATED JULY 2023.
4. UTILITIES PRESENTED ON THESE DRAWINGS ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION. CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS IN THE FIELD PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR SHALL NOTIFY TEXAS ONE CALL AT 713-223-4567/811 OR 800-344-8377 AND LONE STAR NOTIFICATION CENTER AT 800-669-8344 AT LEAST 48 HOURS BEFORE PROCEEDING WITH ANY EXCAVATION. UTILITIES MARKED WITHIN THE PUBLIC RIGHT OF WAY OR IN EASEMENTS SHALL COMPLY WITH TAC TITLE 16, PART 1, CHAPTER 18, RULE §¾ 18.6 AND THE AMERICAN PUBLIC WORKS ADMINISTRATION (APWA) UNIFORM COLOR CODE.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO EXISTING WATER, WASTEWATER, STORM WATER LINES AND TRAFFIC CONTROL DEVICES. DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH THE EFFECTIVE EDITION OF HOUSTON PUBLIC WORKS, STANDARD CONSTRUCTION SPECIFICATIONS FOR WASTEWATER COLLECTION SYSTEM, WATER LINES, STORM DRAINAGE, STREET PAVING, AND TRAFFIC AND STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE, STREET PAVING, AND TRAFFIC, REFERENCED ABOVE AND SUPPLEMENTS, ADDENDA AND AMENDMENTS THERETO, AT NO ADDITIONAL COST TO THE CITY OF HOUSTON.
6. CONTRACTOR SHALL NOTIFY THE OFFICE OF THE CITY ENGINEER, HOUSTON PUBLIC WORKS @ 832-394-9098 OR VIA FAX AT 832-395-4424 FOR INSPECTION AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.
7. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO EXISTING CONDITIONS OR BETTER AND TO THE SATISFACTION OF THE OWNING AUTHORITY.
8. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT ROOT SYSTEMS OF SHRUBS, PLANTS AND TREES ALONG THE AREA OF EXCAVATION.
9. CONTRACTOR SHALL COMPLY WITH LATEST EDITION OF OSHA REGULATIONS AND THE STATE OF TEXAS LAWS CONCERNING EXCAVATION.
10. CONTRACTOR SHALL MAINTAIN A SET OF REDLINE DRAWINGS AND RECORD AS-BUILT CONDITIONS DURING CONSTRUCTION. THESE AS-BUILT DRAWINGS WILL BE SUBMITTED TO THE DESIGN CONSULTANT WHO WILL MAKE THE CHANGES ON THE ORIGINAL TRACINGS, LABEL EACH SHEET IN THE SET AS "RECORD DRAWINGS", AND RETURN IT TO THE OFFICE OF THE CITY ENGINEER.

SANITARY SEWER NOTES

1. ALL SEWERS SHALL BE SUBJECT TO A STANDARD EXFILTRATION TEST. TESTS ARE TO BE PERFORMED ON THE TOTAL FOOTAGE OF SEWER LINE INCLUDED IN THE PROJECT. REQUIREMENTS OF TEXAS ADMINISTRATIVE CODE, TITLE 30 CHAPTER 217, "DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEMS" SHALL GOVERN WHERE CONFLICTS EXIST EXCEPT WHERE CITY REQUIREMENTS ARE MORE STRINGENT.
2. ALL MANHOLES ARE TO BE PER CITY OF HOUSTON STANDARD DETAILS DRAWING NUMBERS 02082-01, 02082-02, 02082N-02, 02082-03, AND 02082N-03 UNLESS OTHERWISE NOTED. USE THE LATEST VERSION AS APPLICABLE.
3. SANITARY SEWER MANHOLES WILL HAVE BEDDING AND BACKFILL PER CITY OF HOUSTON STANDARD DETAILS DRAWING NO. 02317-08 UNLESS OTHERWISE NOTED.
4. THE SANITARY SEWER PVC PIPE SHALL BE ASTM D 3034 TYPE PSM SDR 26 GRAVITY SEWER PIPE, ASTM D2241 SDR 26 PRESSURE RATED SEWER PIPE OR AWWA C-900 DR-18 GREEN PVC PRESSURE RATED SEWER PIPE BASED ON CONSTRUCTION CONDITION REQUIREMENT AND CONFORMING TO ASTM D1784 AND CITY OF HOUSTON STANDARD SPECIFICATION SECTION 02506 POLYVINYL CHLORIDE PIPE.
5. WHEN SS PRESSURE RATED PVC PIPE IS USED ON WATERLINE (WL) CROSSING UNDER CONDITION 1 OF COH IDM TABLE 7.3, THE SAME TYPE OF D2241 SDR 26 PVC PIPE OR C-900 GREEN DR-18 PVC GREEN PRESSURED TO BE UTILIZING IN-BETWEEN TWO SS MH'S. OR TO UTILIZE A DI TRANSITION ADAPTER FOR THE CONNECTING OF ASTM D-3034 PVC GRAVITY PIPE TO DI-OD AWWA C-900 PVC PIPE CENTERED AT WL WHEN CONNECTING TWO DIFFERENT TYPES OF PVC PIPES FOR SEWER CONSTRUCTION.
6. AWWA C-900 DR-18 PVC PIPE USES EITHER AWWA C900 DR-18 PVC FITTINGS OR DIP FITTINGS.
7. ALL SANITARY SEWER LINES UNDER PROPOSED OR FUTURE PAVEMENT AND TO A POINT ONE (1) FOOT BACK OF ALL PROPOSED OR FUTURE CURBS SHALL HAVE BEDDING PER CITY OF HOUSTON STANDARD DETAILS DRAWING NUMBERS 02317-01, 02317-02, OR 02317-03 AS APPLICABLE, WITH 1 1#2SACK CEMENT/CY STABILIZED SAND BACKFILL UP TO THE BOTTOM OF THE PAVEMENT SUBGRADE. 100 PSI PERFORMANCE RESULTS ARE STILL REQUIRED.
8. ALL NEW SANITARY SEWERS CROSSING WATER LINES WITH A CLEARANCE BETWEEN 12 INCHES AND 9 FEET SHALL HAVE A MINIMUM OF ONE 18" JOINT OF DUCTILE IRON OR (GREEN) C900 PVC PIPE MEETING ASTM SPECIFICATION D2241 CENTERED ON WATER LINE. WHEN WATER LINE IS BELOW SANITARY SEWER, PROVIDE MINIMUM 2 FOOT SEPARATION.
9. CONTRACTOR SHALL PROVIDE A MINIMUM HORIZONTAL CLEARANCE OF 9' FEET BETWEEN WATER LINES AND SANITARY SEWER MANHOLES AND LINES.
10. SANITARY SEWER MANHOLE RIMS OUTSIDE OF PROPOSED PAVING WILL BE SET 3" - 6" ABOVE THE SURROUNDING LEVEL FINISHED GRADE AFTER PAVING WITH SLOPED BACKFILL ADDED FOR STORM WATER TO DRAIN AWAY FROM MANHOLE RIM.
11. IN WET STABLE TRENCH AREAS USE BEDDING PER CITY OF HOUSTON STANDARD DETAILS DRAWING NUMBER 02317-02.
12. DEFLECTION TEST: DEFLECTION TESTS SHALL BE PERFORMED ON ALL FLEXIBLE AND SEMI-RIGID SEWER PIPE. THE TEST SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS. NO PIPE SHALL EXCEED A DEFLECTION OF 5% IF THE DEFLECTION TEST IS TO BE RUN USING A RIGID MANDREL, IT SHALL HAVE A DIAMETER EQUAL TO 95% OF THE INSIDE DIAMETER OF THE PIPE. THE TEST SHALL BE PERFORMED AS PER 30 TAC 217.57 LATEST AMENDMENT AND WITHOUT MECHANICAL PULLING DEVICES. NO BALL-TYPE MANDREL IS ALLOWED.
13. INFILTRATION, EXFILTRATION OR LOW-PRESSURE AIR TEST: EITHER OF THE FOLLOWING TESTS SHALL BE PERFORMED AS PER TAC, TITLE 30 217.57 WITHIN THE SPECIFIED TOLERANCES ON ALL GRAVITY SEWERS.

A. INFILTRATION OR EXFILTRATION TEST: TOTAL LEAKAGE AS DETERMINED BY A HYDROSTATIC HEAD TEST SHALL NOT EXCEED 50 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF TWO (2) FEET.

B. LOW-PRESSURE AIR TEST: PERFORM TEST ACCORDING TO UNI-B-6-90 OR OTHER APPROPRIATE PROCEDURES. FOR SECTIONS OF PIPE LESS THAN 36" (INCH) AVERAGE INSIDE DIAMETER, THE MINIMUM ALLOWABLE TIME FOR PRESSURE DROP FROM 3.5 P.S.I.G. TO 2.5 P.S.I.G. SHALL BE AS FOLLOWS:

6" 340 SECONDS OR 0.855(L) FOR TEST LENGTHS GREATER THAN 398'
8" 454 SECONDS OR 1.520(L) FOR TEST LENGTHS GREATER THAN 298'
10" 567 SECONDS OR 2.374(L) FOR TEST LENGTHS GREATER THAN 239'
12" 680 SECONDS OR 3.419(L) FOR TEST LENGTHS GREATER THAN 199'
15" 850 SECONDS OR 5.342(L) FOR TEST LENGTHS GREATER THAN 159'
18" 1020 SECONDS OR 7.693(L) FOR TEST LENGTHS GREATER THAN 133'

WHERE L = LENGTH OF LINE OF SAME PIPE SIZE IN FEET.

14. "SAN. S. E." INDICATES "SANITARY SEWER EASEMENT"
15. FOR SANITARY MANHOLE (MH) RIMS SET INSIDE OF OR @ CURB & GUTTER PAVEMENT AND/OR BELOW T.C., MH RIMS WILL BE SET FLUSHED WITH AN ABUTTING PAVED SURFACE. THE (VALCUN, NEENAH OR EQUAL) HEAVY DUTY BOLTED SOLID MH COVER SHALL BE PROPERLY (AND SECURELY) ATTACHED AND SEALED TO ITS COMPATIBLE GASKETED FRAME BY USING BOTH A NEOPRENE GASKET AND (AT LEAST) 4 COUNTER-SUNK HEXHEAD COARSE THREADED 1#2"-13 UNC STAINLESS STEEL BOLTS. THE HEAVY DUTY FRAME MH COVER SHALL BE SOLID (NO AIR HOLES). SAID FRAME SHALL BE BOTH EMBEDDED INTO THE MH'S TOP ALSO SECURELY ANCHORED TO THE UNDERLYING MH STRUCTURE WITH EITHER SECURELY ATTACHED EMBEDDED ANCHOR BOLTS OR THE CONCRETE MH'S EXPOSED REBARS WELDED TO THE FRAME OR OTHER EQUALLY SECURED METHODS TO PREVENT MH COVER/FRAME BLOW-OFFS/EJECTIONS.

STORM NOTES

1. STORM SEWER SHALL BE REINFORCED CONCRETE PIPE (C-76, CLASS III), AND SHALL BE INSTALLED, BEDDED, AND BACK FILLED IN ACCORDANCE WITH THE CITY OF HOUSTON DRAWING NOS. 2317-02, 02317-3, 02317-05, 02317-06, AND 02317-07 (JULY 2019) AS APPLICABLE UNLESS OTHERWISW SHOWN ON THE DRAWINGS.
2. ALL STORM SEWER CONSTRUCTED IN SIDELOT EASMENT SHALL BE R.C.P (C-76, CLASSIII) AND SHALL BE EMBEDDED IN ACCORDANCE WITH THE CITY OF HOUSTON DRAWING NOS. 02317-02, 02317-03, 02317-05, 02317-06, AND 02317-07 AS APPLICABLE.
3. ALL SEWER UNDER PROPOSED OR FUTURE PAVEMENT AND TO A POINT ONE (1) FOOT BACK OF ALL PROPOSED OR FUTURE CURBS SHALL BE BACKFILLED WITH 1-1/2 SACK CEMENT/C.Y. STABLIZED SAND TO WITHIN ONE (1) FOOT OF SUBGRADE. THE REMAINING DEPTH OF TRENCH SHALL BE BACKFILLED WITH SUITABLE EARTH MATERIAL.
4. ALL TRENCH BACKFILL SHALL BE IN 8" LIFTS, WITH TESTS TAKEN AT 100 FOOT INTERVALS IN EACH LIFT, AND MECHNICALLY COMPACTED TO A DENSITY OF NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR COMACTION TEST (ASTM D-698/AASHTO T99).
5. CIRCULAR AND ELLIPTICAL REINFORCED CONCRETE PIPE SHALL BE INSTALLED USING RUBBER GASKET JOINT CONFORMING TO ASTM C443 AND ASTM C877 RESPECTIVELY.
6. ALL STORM SEWER PIPES AND INLET LEADS SHALL BE 24" AND LARGER R.C.P. (C-76, CLASSIII).
7. ALL PRPOSED PIPE STUB-OUTS FROM MANHOLES AND INLET LEADS ARE TO BE PLUGGED WITH 8" BRICK WALLS UNLESS OTHERWISE NOTED.
8. MINIMUM HORIZONTAL CLEARANCE BETWEEN ANY STORM PIPE AND BOX SHALL BE AT LEAST 48-INCHES FROM EXTERIOR OF THE STORM PIPE OR BOX TO THE EXTERIOR OF THE EXISTING OR PROPOSED PUBLIC OR PRIVATE UTILITY AND OTHER APPURTENANCES. MINIMUM VERTICAL CLEARANCE BETWEEN ANY STORM PIPE AND BOX SHALL BE AT LEAST 24-INCHES FROM EXTERIOR OF THE STORM PIPE OR BOX TO THE EXTERIOR OF THE EXISTING OR PROPOSED PUBLIC OR PRIVATE UTILITY AND OTHER APPURTENANCES.
9. ADJUST MANHOLE COVERS TO GRADE CONFORMING TO REQUIREMENTS OF SECTION 02086-ADJUSTING MANHOLES, INLETS, AND VALAVE BOXES TO GRADE.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING, MAINTAINING, AND RESTORING ANY BACK SLOPE DRAINAGE SYSTEM DISTURBED AS A RESULT OF THIS WORK.
11. ALL DITCHES SHALL BE GRADED TO PROPOSED ELEVATIONS TO INSURE PROPER DRAINAGE. ALL OUTFALLS SHALL BE PROPERLY BACKFILLED AND COMPACTED. ALL DISTURBED AREA SHALL BE REGRADED, SEEDED, AND FERTILIZED.
12. ALL DRIVEWAYS WILL BE LOCATED TO AVOID EXISTING CURB INLET STRUCTURES.

STREET AND BRIDGE NOTES

1. FILL AREAS ON PLANS SHALL BE FILLED IN LAYERS NOT EXCEEDING 8" IN DEPTH AND EACH COMPACTED TO NOT LESS THAN 95% STANDARD PROCTOR DENSITY PRIOR TO INSTALLATION OF WATER LINE AND FILL AREA SHALL BE SEEDED AND FERTILIZED WITHIN 10 WORKING DAYS.
2. UTILITY CONTRACTOR SHALL PROVIDE TEMPORARY SILT BARRIER FENCE ON ALL NON-CURBED INLETS WHICH WILL REMAIN IN PLACE AFTER UNDERGROUND CONTRACT IS COMPLETE.
3. CONTRACTOR SHALL PROVIDE SILT BARRIER FENCE ON ALL STAGE 1 CURB INLETS.
4. EXISTING PAVEMENTS, CURBS, DRIVEWAYS, AND SIDEWALKS DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED TO CITY OF HOUSTON STANDARDS, WITH LATEST ADDENDA AND AMENDMENTS THERETO.
5. CONDITION OF THE ROAD AND/OR RIGHT-OF-WAY UPON COMPLETION OF JOB SHALL BE AS GOOD AS OR BETTER THAN PRIOR TO STARTING WORK.
6. EXPOSED 15"OF REINFORCING STEEL AT PROPOSED SAWED JOINT IF NO REINFORCING STEEL EXISTS, USE HORIZONTAL DOWELS. HORIZONTAL DOWELS SHALL BE #6 BARS 24"LONG 24"C-C DRILLED AND EMBEDDED 8"INTO THE CENTER OF THE EXISTING SLAB WITH "PO ROC" OR EQUAL.
7. WHEELCHAIR RAMPS SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF HOUSTON STANDARDS AT ALL INTERSECTIONS WHERE SIDEWALKS EXIST AND THE EXISTING CURB OR SIDEWALK IS DAMAGED OR REMOVED DURING CONSTRUCTION.
8. PRIOR TO STREET CONSTRUCTION, THE CONTRACTOR SHALL CONTACT HOUSTON PUBLIC WORKS AT (PHONE) 832-394-9578 AND COMPLY WITH ALL REQUIREMENTS FOR THE ISSUANCE OF NECESSARY PERMITS/WORK ORDERS FOR STREET CONSTRUCTION.
9. DOUBLE REFLECTORIZED BLUE TRAFFIC MARKERS SHALL BE PLACED 6-INCHES OFFSET OF THE CENTERLINE OF ALL FIRE HYDRANT LOCATIONS BY THE PAVING CONTRACTOR. HYDRANTS LOCATED AT INTERSECTIONS SHALL HAVE A BUTTON PLACED ON EACH STREET.

SWPPP CONSTRUCTION NOTES

1. CONTRACTOR SHALL IMPLEMENT INLET PROTECTION DEVICES AND REINFORCED FILTER FABRIC BARRIER ALONG ROAD AND SIDE DITCHES AT LOCATIONS SHOWN ON THE TYPICAL STORM WATER POLLUTION PREVENTION (SWPP) PLANS TO KEEP SILT AND OR EXCAVATED MATERIALS FROM ENTERING INTO THE STORM WATER INLETS AND DITCHES EVENTUALLY POLLUTING THE RECEIVING STORM.
2. DURING THE EXCAVATION PHASE OF THE PROJECT, CONTRACTOR SHALL SCHEDULE THE WORK IN SHORT SEGMENTS SO THAT EXCAVATION MATERIAL CAN BE QUICKLY HAULED AWAY FROM THE SITE AND TO PREVENT IT FROM STAYING UNCOLLECTED ON THE EXISTING PAVEMENT. ANY LOOSE EXCAVATED MATERIAL WHICH FALLS ON PAVEMENTS OR DRIVEWAYS SHALL BE SWEPT BACK INTO THE EXCAVATED AREA.
3. CONTRACTOR SHALL CLEAN UP THE EXISTING STREET INTERSECTIONS AND DRIVEWAYS DAILY, AS NECESSARY, TO REMOVE ANY EXCESS MUD, SILT OR ROCK TRACKED FORM THE EXCAVATED AREA.
4. CONTRACTOR SHALL FOLLOW GOOD HOUSEKEEPING PRACTICES DURING THE CONSTRUCTION OF THE PROJECT, ALWAYS CLEANING UP DIRT AND LOOSE MATERIAL AS CONSTRUCTION PROGRESSES.
5. CONTRACTOR TO INSPECT AND MAINTAIN THE AREAS LISTED BELOW AT LEAST ONCE EVERY FOURTEEN (14) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM EVENT OF 0.5 INCHES OR GREATER.

- DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN FINALLY STABILIZED.
- AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION.
- STRUCTURAL CONTROL MEASURES.
- LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE.

6. CONTRACTOR TO BE RESPONSIBLE TO MAINTAIN EXISTING DITCHES AND OR CULVERTS FOR UNOBSTRUCTED DRAINAGE AT ALL TIMES. WHERE SODDING IS DISTURBED BY EXCAVATION ON BACKFILLING OPERATIONS, SUCH AREAS SHALL BE REPLACED BY SEEDING OR SODDING. SLOPES 4:1 OR STEEPER SHALL BE REPLACED BY BLOCK SODDING.

TRAFFIC NOTES

CONTRACTOR OR OWNER SHALL SUBMIT TRAFFIC CONTROL PLANS WITH THE MOBILITY PERMIT APPLICATION. THE PLANS SHALL BE DRAWN TO SCALE AND SEALED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF TEXAS.

THE GENERAL NOTES THAT SHALL BE INCLUDED ON THE TRAFFIC CONTROL PLAN CAN BE FOUND IN CHAPTER 15 (15.12 TRAFFIC CONTROL PLAN) OF THE CITY OF HOUSTON'S (CITY) INFRASTRUCTURE DESIGN MANUAL (IDM). BELOW ARE SEVERAL KEY NOTES FROM THE IDM TO BE AWARE OF:

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH PART VI OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) LATEST EDITION WITH REVISIONS DURING THE ENTIRE CONSTRUCTION PERIOD.
2. NO WORK SHALL BE PERFORMED IN RESIDENTIAL AREAS FROM 7:00PM TO 7:00AM.
3. CONTRACTOR SHALL MAINTAIN APPROVED NUMBER OF LANES OF TRAFFIC IN EACH DIRECTION DURING CONSTRUCTION WORKING HOURS. TRAFFIC CONTROL PLANS SHALL INCLUDE ONE-WAY AND/OR DETOUR PLANS. CONTRACTOR SHALL MAINTAIN ADA COMPLAINT PEDESTRIAN ACCESS TO BUS STOPS AND ADEQUATE BUS ACCESS TO THE BUS STOP.
4. CONTRACTOR SHALL COVER OPEN PAVEMENT EXCAVATIONS FOR MINOR UTILITY WORK WITH ANCHORED STEEL PLATES DURING NON-WORKING HOURS, OPEN LANES FOR NORMAL TRAFFIC FLOW WHEN FEASIBLE.
5. CONTRACTOR SHALL SECURE ROADWAY/SIDEWALK/STREET/BICYCLE FACILITY PERMITS AS DESCRIBED IN CITY OF HOUSTON ORDINANCE, CHAPTER 40 STREETS & SIDEWALKS, SECTION 40-361 FROM HOUSTON PERMITTING CENTER (MOBILITY PERMIT SECTION AT HTTPS://GEOHUB.HOUSTONTX.GOV) BEFORE IMPLEMENTING THE TRAFFIC CONTROL PLAN. THE APPLICATION MUST BE SUBMITTED AT LEAST TEN BUSINESS DAYS PRIOR TO THE IMPLEMENTATION OF THE TRAFFIC CONTROL PLAN AND/OR BEGINNING CONSTRUCTION WORK. THE CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL PLANS, CONSTRUCTION SEQUENCING, AND CONSTRUCTION SCHEDULE WITH THE APPLICATION.
6. CONTRACTOR SHALL HAVE APPROVED TRAFFIC CONTROL PLAN AND PERMIT AT THE JOB SITE FOR INSPECTION AT ALL TIMES.

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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

ANTOINE DRIVE

GENERAL CONSTRUCTION NOTES

SHEET 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 5 OF 718	

TRAFFIC NOTES (CONTINUED)

7. ACCESS TO DRIVEWAYS ADJACENT TO THE CONSTRUCTION WORK ZONE SHALL BE MAINTAINED AT ALL TIMES AS MUCH AS POSSIBLE. ADDITIONAL CONES AND/OR DELINEATORS MAY BE REQUIRED TO DELINEATE THE DRIVEWAY ACCESS ROUTE THROUGH THE CONSTRUCTION WORK ZONE. A MINIMUM OF ONE TRAVEL LANE SHALL BE MAINTAINED ACROSS THE DRIVEWAY, UNLESS PRIOR WRITTEN APPROVAL IS OBTAINED FROM THE CITY OF HOUSTON.

8. ADDITIONAL OFF DUTY POLICE OFFICERS/FLAGGERS MAY BE REQUESTED TO DIRECT TRAFFIC WHEN LANES ARE BLOCKED AT THE DIRECTION OF THE CITY EVEN IF THEY ARE NOT SPECIFICALLY IDENTIFIED ON THE PROJECT PLANS.

TRAFFIC SIGNAL NOTES

1. ALL EQUIPMENT / MATERIALS AND CONSTRUCTION SHALL MEET OR EXCEED THE REQUIREMENTS CONTAINED IN THE CURRENT CITY OF HOUSTON STANDARD SPECIFICATIONS AND STANDARD DRAWINGS, THE PROJECT SPECIFIC SPECIFICATIONS AND THE PLANS.

2. ALL ELECTRICAL WORK SHALL BE IN CONFORMANCE WITH THE PROVISIONS AND REQUIREMENTS OF THE CITY ELECTRICAL CODE.

3. ALL SIGNS SHALL BE MANUFACTURED IN ACCORDANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

4. THE CONTRACTOR SHALL ARRANGE THE INSTALLATION OF SIGNALS, POLES AND CONDUIT SO AS TO PERMIT THE CONTINUOUS MOVEMENT OF TRAFFIC IN ALL DIRECTIONS AT ALL TIMES. THE CONTRACTOR SHALL NOT CLOSE MORE THAN ONE LANE OF A ROADWAY AT ONE TIME WITHOUT PRIOR APPROVAL OF THE CITY.

5. THE CONTRACTOR SHALL CLEAN UP AND REMOVE FROM THE WORK AREA ALL LOOSE MATERIAL RESULTING FROM CONTRACT OPERATIONS EACH DAY PRIOR TO WORK BEING SUSPENDED FOR THAT DAY.

6. THE CONTRACTOR SHALL CONTACT THE ENGINEER AND/OR THE APPROVED CITY OF HOUSTON REPRESENTATIVE TO ARRANGE FOR METER AND ELECTRICAL SERVICE CONNECTION FROM THE POWER COMPANY.

7. ALL PEDESTRIAN PUSH BUTTON ASSEMBLIES SHALL MEET ADA REQUIREMENTS. THE SIGNS THAT SHALL BE USED ARE IDENTIFIED IN THE TMUTCD AS R10-3E. CITY OF HOUSTON STANDARDS FOR PEDESTRIAN FACILITIES SHALL BE MET IN ADDITION TO ANY TEXAS ACCESSIBILITY STANDARDS BY THE TEXAS DEPARTMENT OF LICENSING AND REGULATION (TDLR).

8. PEDESTRIANS PUSH BUTTONS SHALL BE SEPARATED BY A MINIMUM OF 10 FEET. EXCEPTIONS ONLY AS SPECIFIED BY THE ENGINEER WITH AUTHORIZATION FROM THE APPROVED CITY OF HOUSTON REPRESENTATIVE.

9. OVERHEAD STREET NAME SIGNS SHALL BE INSTALLED SUCH THAT THE BOTTOM OF THE SIGN IS NO LESS THAN 17 FEET ABOVE THE ROADWAY PAVEMENT OR NO LESS THAN 16 FEET ABOVE THE FINISHED GRADE BEYOND THE SHOULDER.

10. THE LOCATION OF EACH NEW POLE FOUNDATION, PULL BOX, CONTROLLER CABINET FOUNDATION, UPS CABINET FOUNDATION AND ELECTRIC SERVICE PEDESTAL FOUNDATION SHALL BE MARKED IN THE FIELD AS SHOWN ON THE PLANS. THE EXACT LOCATION SHALL BE APPROVED BY THE ENGINEER AND/OR THE APPROVED CITY OF HOUSTON REPRESENTATIVE PRIOR TO BEGINNING INSTALLATION OF THE FOUNDATION.

11. NO POLES SHALL BE LOCATED IN WHEELCHAIR RAMPS OR SUCH THAT THEY ARE AN OBSTRUCTION TO PEDESTRIANS OR WHEELCHAIRS.

12. THE TOP OF THE POLE FOUNDATION SHALL BE LEVELED WITH THE FINISHED GRADE. IF THE SLOPE OR SHOULDER DROPS OFF FROM FINISHED GRADE, THE CONTRACTOR SHALL GRADE AROUND POLE FOUNDATION. THE TOP OF THE FOUNDATION SHALL EXTEND NO MORE THAN 4 INCHES ABOVE SURROUNDING GRADE. GROUTING SHALL BE USED TO FILL ANY GAP BETWEEN THE POLE BASE AND FOUNDATION.

13. POLES SHALL BE LOCATED SUCH THAT ALL PORTIONS OF THE POLES AND ATTACHED EQUIPMENT HAVE CLEARANCES FROM OVERHEAD UTILITIES IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL UTILITY AND THE NATIONAL ELECTRICAL SAFETY CODE (NESC).

14. ALL CONCRETE USED FOR TRAFFIC SIGNAL POLE AND CABINET FOUNDATIONS SHALL BE CLASS 7#32A9#32(REFER TO THE CITY OF HOUSTON SPECIFICATION FOR CONCRETE).

15. MAST ARM AND STRAIN POLES SHALL NOT BE INSTALLED ON THE FOUNDATIONS LESS THAN SEVEN DAYS AFTER THE PLACEMENT OF THE CONCRETE FOR THE FOUNDATION.

16. ANCHOR BOLTS FOR SIGNAL POLES SHALL BE SET SO THAT TWO ARE IN COMPRESSION AND TWO ARE IN TENSION. PRIOR TO THE INSTALLATION OF THE NUT, THE THREADS OF THE ANCHOR BOLT SHALL BE COATED WITH PIPE JOINT COMPOUND.

17. ALL UNDERGROUND CONSTRUCTION (CONDUIT, FOUNDATIONS AND PULL BOXES) FOR THE INTERSECTION SHALL BE COMPLETED PRIOR TO THE INSTALLATION OF POLES, SIGNALS AND CABINETS. THE CONTRACTOR SHALL NOT PROCEED TO ABOVE GROUND WORK UNTIL THE ENGINEER AND/OR APPROVED CITY OF HOUSTON REPRESENTATIVE HAD CONFIRMED THAT THE MATERIALS FOR A COMPLETE INSTALLATION ARE AVAILABLE.

18. UNDERGROUND CONDUIT FOR SIGNAL CABLE SHALL BE EITHER RIGID STEEL, HOT-DIPPED GALVANIZED CONDUIT OR SCHEDULE 80 ELECTRICAL PVC CONDUIT OF THE DIAMETER SHOWN ON THE PLANS, UNLESS OTHERWISE NOTED. ALL COUPLINGS AND CONNECTIONS SHALL BE TIGHT AND WATERPROOF.

19. ALL ABOVE GROUND CONDUIT FOR SIGNAL CABLE AND INTERCONNECT MEDIA SHALL BE HOT DIPPED GALVANIZED STEEL RIGID METAL CONDUIT OF THE DIAMETERS SHOWN ON THE PLANS, UNLESS OTHERWISE NOTED. ALL COUPLINGS AND CONNECTIONS SHALL BE TIGHT AND WATERPROOF.

20. ONLY NEW CONDUIT AND CABLE SHALL BE INSTALLED.

21. CONDUIT INSTALLED UNDER EXISTING PAVED DRIVEWAYS, ROADWAYS OR SIDEWALKS, WHICH ARE NOT SCHEDULED TO BE RECONSTRUCTED AS PART OF THIS PROJECT, SHALL BE INSTALLED BY MEANS OF BORING. THE CONTRACTOR SHALL NOT CUT OPEN ANY STREET OR DRIVEWAY FOR CONDUIT INSTALLATION WITHOUT THE PRIOR APPROVAL OF THE ENGINEER AND/OR THE APPROVED CITY OF HOUSTON REPRESENTATIVE.

22. CONDUIT NOT PLACED UNDER PAVED DRIVEWAYS, ROADWAY PAVEMENT OR SIDEWALK MAY BE PLACED BY CUTTING A TRENCH, INSTALLING THE CONDUIT AND BACKFILLING. ANY TRENCHING FOR CONDUIT WIDER THAN THREE (3) INCHES SHALL BE RESODDED.

23. PULL BOXES SHALL NOT BE INSTALLED WITHIN CONCRETE CURB ACCESS RAMPS. IN ADDITION, ANY PULL BOXES INSTALLED BEHIND CURBS SHALL BE INSTALLED BETWEEN THE CURB AND THE PROPOSED / FUTURE SIDEWALK OR BEYOND THE PROPOSED / FUTURE SIDEWALK. AN EXCEPTION TO THIS NOTE WOULD BE PULL BOXES INSTALLED IN A MEDIAN. ANY PULL BOXES INSTALLED ALONG AN UNCURBED ROADWAY SHALL BE INSTALLED ADJACENT TO, BUT NOT WITHIN, THE SHOULDER. DRAINAGE AREAS SHOULD BE AVOIDED WHEN PLACING JUNCTION BOXES.

24. A 5/8 IN. X 10 FT. GROUND ROD SHALL BE INSTALLED IN ALL PULL BOXES. A GROUND ROD CLAMP SHALL BE FURNISHED FOR GROUNDING THE GROUND WIRE.

25. ALL CONDUITS SHALL BE CLEANED BY COMPRESSED AIR AND A PROPERLY SIZED CONDUIT PISTON OR MANDREL SHALL BE PULLED THROUGH THE CONDUIT PRIOR TO CABLE INSTALLATION.

26. WHEN PULLING TRAFFIC SIGNAL SYSTEM CABLES THROUGH CONDUIT, THE CABLES SHALL BE LUBRICATED WITH A LUBRICANT NORMALLY USED FOR THIS PURPOSE. ANY ABRASION TO ANY CONDUCTOR INSULATION WHICH OCCURS WHILE PULLING CABLE FOR THE TRAFFIC SIGNAL SYSTEM WILL BE CAUSE FOR THE IMMEDIATE REJECTION OF THE CABLE. IF THIS OCCURS, THE CONTRACTOR SHALL REMOVE AND REPLACE THE ENTIRE CABLE RUN AT THEIR EXPENSE.

27. A MINIMUM OF THREE (3) FEET OF EACH WIRE AND CABLE MEASURED FROM THE TOP OF THE PULL BOX SHALL BE LEFT IN EACH PULL BOX AND AT EACH POLE BASE.

28. ALL CABLES SHALL BE STRIPPED, FORMED AND TERMINATED IN A NEAT AND UNIFORM MANNER WHETHER IN THE SIGNAL HEAD OR CONTROLLER CABINET. ALL CABLE SHALL BE BROUGHT INTO THE TERMINAL HOUSING OF SIGNALS AND/OR CONTROLLER CABINETS AND A SUFFICIENT LENGTH OF CABLE SHALL BE LEFT SO THAT ALL TERMINAL CONNECTIONS MAY BE MADE WITHOUT THE NECESSITY OF SPLICING THE CABLE.

29. THE HIGH VOLTAGE CABLES SHOULD BE SEPARATED FROM THE LOW VOLTAGE CABLES EXCEPT IN ENCLOSURES.

30. NO LOOP DETECTOR SHALL BE CUT IN A PARALLEL EXPANSION JOINT. LOOPS CUT ACROSS EXPANSION JOINTS SHALL HAVE A SLACK IN THE CABLE FOR EXPANSION.

31. ALL VEHICLE ROADWAY DETECTION LOOP CABLES SHALL BE #14 AWG IMSA 51-5-1985 CABLE. LEAD-IN CABLES SHALL BE #16 AWG IMSA 50-2-1984 CABLE. NO SPLICES SHALL BE ALLOWED IN THE ROADWAY DETECTION LOOP CABLE EXCEPT AT THE PULL BOX ADJACENT TO LOOP. THE DETECTOR LEAD-IN CABLE SHALL NOT BE SPLICED.

32. DETECTION LOOP SAW CUTS SHALL BE FLUSHED WITH WATER UNDER PRESSURE AND THEN DRIED WITH AIR UNDER PRESSURE.

33. THERE SHALL BE NO SPLICING IN CONDUCTORS EXCEPT FOR THE NECESSARY SPLICE BETWEEN ROADWAY LOOP WIRE AND DETECTOR LEAD-IN CABLE IN THE PULL BOX ADJACENT TO THE DETECTOR. THESE SPLICES SHALL BE WATERPROOF AND SHALL BE IN COMPLIANCE WITH THE CITY OF HOUSTON STANDARD DRAWINGS FOR TRAFFIC SIGNAL CONSTRUCTION. THESE SPLICES SHALL BE MADE BY THE CONTRACTOR. DO NOT GROUND THE CABLE SHIELD AT THE PULL BOX.

34. TWO #10 AWG-XHHW CONDUCTORS SHALL BE INSTALLED FROM EACH LUMINAIRE TO THE SERVICE PEDESTAL, LEAVING THREE FEET OF SLACK FOR EACH CONDUCTOR (MEASURED FROM THE TOP OF THE PULL BOX) IN EACH PULL BOX. ROUTE FOUR CONDUCTORS TO THE LUMINAIRE WITH THE PHOTOELECTRIC CELL. AN IN-LINE FUSE SHALL BE INSTALLED FOR EACH LUMINAIRE IN THE ASSOCIATED PULL BOX.

35. THE EMERGENCY VEHICLE PRE-EMPTION SENSOR CABLE SHALL BE OPTICOM DETECTOR CABLE MODEL NO. 138. THE CABLE SHALL NOT BE SPLICED.

36. ALL VEHICLE AND PEDESTRIAN INDICATIONS SHALL BE LED.

37. THE CONTRACTOR SHALL BAG ALL NEWLY INSTALLED VEHICULAR AND/OR PEDESTRIAN TRAFFIC SIGNAL HEADS WITH BURLAP OR OTHER APPROVED MATERIAL UNTIL THE FINAL INSPECTION AND ACCEPTANCE BY THE CITY TRAFFIC ENGINEER AND/OR APPROVED CITY OF HOUSTON REPRESENTATIVE. THE BURLAP OR OTHER APPROVED MATERIAL/DEVICE SHALL COMPLETELY COVER THE TRAFFIC SIGNAL HEAD AND SHALL OBSCURE THE VIEW OF THE TRAFFIC SIGNAL INDICATIONS SO THAT THEY CANNOT BE SEEN UNTIL THE TRAFFIC SIGNAL IS PLACED IN OPERATION. DURING CONSTRUCTION, THE TRAFFIC SIGNAL WILL BE DE-ENERGIZED WHILE NOT IN USE FOR TESTING.

38. THE TRAFFIC SIGNAL OPERATION AT EXISTING SIGNALIZED INTERSECTIONS SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE DURATION OF THE PROJECT.

39. ALL STRIPING AND PAVEMENT MARKINGS ARE TO BE DONE UNDER THIS CONTRACT AND SHALL BE IN PLACE PRIOR TO THE ACTIVATION OF THE TRAFFIC SIGNAL. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL STOP LINES PRIOR TO THE INSTALLATION OF LOOP DETECTORS.

40. ALL CROSSWALK MARKINGS SHALL BE 10-FT. WIDE, FROM INSIDE OF MARKINGS, FOLLOWING CITY OF HOUSTON STANDARD DETAILS

41. ALL CONSTRUCTION SIGNING AND CONSTRUCTION TRAFFIC CONTROL DEVICES SHALL BE IN CONFORMANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

WATER CONSTRUCTION NOTES

1. ALL 4" THROUGH 12" WATER LINE TO BE AWWA C-900 PVC DR-18 BLUE PRESSURE RATED WATER MAIN WITH 2" AND SMALLER WATER SERVICE LINE TO BE CONTINUOUS TYPE K COPPER TUBING PER COH STANDARD SPECIFICATION SECTION 02503. ALL 4" THRU 54" DI PIPE WATER LINES SHALL BE AWWA C151 WITH INSIDE LINING WITH AWWA C104 AND DOUBLE WRAPPED WITH 8-MIL POLYETHYLENE SHEETS.

2. CONCRETE THRUST BLOCKS SHALL BE PROVIDED AS NECESSARY TO PREVENT PIPE MOVEMENT. USE RESTRAINED JOINTS WHERE PREVENTING PIPE MOVEMENT IS NECESSARY DUE TO THRUST.

3. ALL WATER LINES UNDER PROPOSED OR FUTURE PAVING AND TO A POINT OF ONE (1) FOOT BACK OF ALL PROPOSED OR FUTURE CURBS SHALL BE ENCASED IN BANK SAND TO 12" OVER PIPE AND BACKFILLED WITH CEMENT STABILIZED SAND TO WITHIN ONE (1) FOOT OF SUBGRADE.

4. ALL WATER LINE AND SEWER LINE CROSSINGS SHALL BE CONSTRUCTED PER CITY OF HOUSTON AND TCEQ REGULATIONS.

5. ALL WATER VALVES SHALL BE SUPPLIED AND INS TALLED IN ACCORDANCE WITH THE LATEST EDITION OF AWWA C-500 AND SHALL BE OF THE RESILIENT SEAT TYPE.

6. ALL WATER LINES TO BE DISINFECTED IN CONFORMANCE WITH AWWA C-651 AND THE TEXAS STATE DEPARTMENT OF HEALTH. AT LEAST ONE BACTERIOLOGICAL SAMPLE SHALL BE COLLECTED FOR EVERY 1,000 LINEAR FEET OF WATER LINE AND SHALL BE REPEATED IF CONTMINATION PERSISTS.

7. ALL BELOW GRADE VALVES SHALL BE GASKETED, HUB-END GATE VALVES WITH A CAST IRON BOX, EXCEPT WHERE FLANGES ARE CALLED OUT ON THE PLANS.

8. 4" THRU 12" FITTINGS SHALL BE CEMENT MORTAR LINED COMPACT DUCTILE IRON PRESSURE FITTINGS PER ANSI A21.53, OR PUSH ON FITTINGS PER ANSI A21.10 PRESSURE RATED AT 250 PSIG.

9. HYDROSTATIC TESTING: ALL WATER PIPE SHALL BE TESTED FOR LEAKAGE IN ACCORDANCE WITH THE LATEST CITY OF HOUSTON STANDARD CONSTRUCTION SPECIFICATIONS. TESTS ARE TO BE PERFORMED ON THE ENTIRE FOOTAGE OF WATER PIPE INCLUDED IN THE PROJECT.

10. ALL WATER LINES TO HAVE 4' MINIMUM COVER TO FINISHED GRADE AND MINIMUM 12" CLEARANCE TO OTHER UTILITIES AT CROSSING UNLESS OTHERWISE NOTED ON PLANS. ALL WATER LINE INSTALLED OVER 8' DEEP SHALL UTILIZE RESTRAINED JOINT FITTINGS.

11. CONTRACTOR SHALL KEEP WATER PIPE CLEAN AND CAPPED (OR OTHERWISE EFFECTIVELY COVERED) OPEN PIPE ENDS TO EXCLUDE INSECTS, ANIMALS OR OTHER SOURCES OF CONTAMINATION FROM UNFINISHED LINES AT TIMES WHEN CONSTRUCTION IS NOT IN PROGRESS.

GRADING NOTES

1. GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE STARTING CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.

2. BEFORE STARTING CONSTRUCTION, CONTRACTOR SHALL VERIFY BENCHMARK ELEVATION AND NOTIFY ENGINEER IF ANY DISCREPANCY AND/OR CONFLICT IS FOUND.

3. CONTRACTOR SHALL ENSURE THERE IS POSITIVE DRAINAGE FROM THE PROPOSED BUILDINGS AND NO PONDING IN PAVED AREAS, AND SHALL NOTIFY ENGINEER IF ANY GRADING DISCREPANCIES ARE FOUND IN THE EXISTING AND PROPOSED GRADES PRIOR TO PLACEMENT OF PAVEMENT OR UTILITIES.

4. CONTRACTOR SHALL PROTECT ALL MANHOLE COVERS, VALVE COVERS, VAULT LIDS, FIRE HYDRANTS, POWER POLES, GUY WIRES, AND TELEPHONE BOXES THAT ARE TO REMAIN IN PLACE AND UNDISTURBED DURING CONSTRUCTION.

5. ALL EXISTING CONCRETE PAVING, SIDEWALK, AND CURB DEMOLITION SHALL BE REMOVED AND DISPOSED OF BY CONTRACTOR. DISPOSAL SHALL BE AT AN APPROVED OFF-SITE, LAWFUL LOCATION, UNLESS DIRECTED OTHERWISE BY THE OWNER.

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

SURVEYED BY:
KUO & ASSOCIATES, INC.

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95% SUBMITTAL
GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

GENERAL CONSTRUCTION NOTES

SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
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SHEET NO. 6 OF 718	

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PRIVATE UTILITY NOTES:

AT&T TEXAS/SWBT FACILITIES:

1. THE LOCATIONS OF AT&T TEXAS/SWBT FACILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.
2. THE CONTRACTOR SHALL CALL 1-800-344-8377 (TEXAS 811) A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE UNDERGROUND LINES FIELD LOCATED.
3. WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF AT&T TEXAS/SWBT FACILITIES, ALL EXCAVATIONS MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES. WHEN BORING, THE CONTRACTOR SHALL EXPOSE THE AT&T TEXAS/SWBT FACILITIES.
4. WHEN AT&T TEXAS/SWBT FACILITIES ARE EXPOSED, THE CONTRACTOR WILL PROVIDE SUPPORT TO PREVENT DAMAGE TO THE CONDUIT DUCTS OR CABLES. WHEN EXCAVATING NEAR TELEPHONE POLES THE CONTRACTOR SHALL BRACE THE POLE FOR SUPPORT.
5. THE PRESENCE OR ABSENCE OF AT&T TEXAS/SWBT UNDERGROUND CONDUIT FACILITIES OR BURIED CABLE FACILITIES SHOWN ON THESE PLANS DOES NOT MEAN THAT THERE ARE NO DIRECT BURIED CABLES OR OTHER CABLES IN CONDUIT IN THE AREA.
6. PLEASE CONTACT THE AT&T TEXAS DAMAGE PREVENTION MANAGER ROOSEVELT LEE JR. AT (713) 567-4552 OR EMAIL HIM AT RL7259@ATT.COM IF CABLE LOCATE REQUESTS ARE NOT COMPLETED FOR OUR AT&T TEXAS/SWBT FACILITIES.

CENTERPOINT ENERGY NOTES:

CAUTION: UNDERGROUND GAS FACILITIES

1. THE CONTRACTOR SHALL CONTACT THE UTILITY COORDINATING COMMITTEE AT 1-800-545-6005 OR 811 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE MAIN AND SERVICE LINES FIELD LOCATED.
   - -WHEN CENTERPOINT ENERGY PIPE LINE MARKINGS ARE NOT VISIBLE, CALL 713-207-5463 OR 713-945-8037 (7:00 AM TO 4:30 PM) FOR STATUS OF LINE LOCATION REQUEST BEFORE EXCAVATION BEGINS.
   - -WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF CENTERPOINT ENERGY FACILITIES, ALL EXCAVATION MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES.
   - -WHEN CENTERPOINT ENERGY FACILITIES ARE EXPOSED, SUFFICIENT SUPPORT MUST BE PROVIDED TO THE FACILITIES TO PREVENT EXCESSIVE STRESS ON THE PIPING.
   - -FOR EMERGENCIES REGARDING GAS LINES CALL 713-659-3552 OR 713-207-4200
2. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND FACILITIES.

WARNING: OVERHEAD ELECTRICAL LINES:

1. OVERHEAD LINES MAY EXIST ON THE PROPERTY. THE LOCATION OF OVERHEAD LINES HAS NOT BEEN SHOWN ON THESE DRAWINGS AS THE LINES ARE CLEARLY VISIBLE, BUT YOU SHOULD LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTION. TEXAS LAW, SECTION 752, HEALTH & SAFETY CODE FORBIDS ACTIVITIES THAT OCCUR IN CLOSE PROXIMITY TO HIGH VOLTAGE LINES, SPECIFICALLY:
   - -ANY ACTIVITY WHERE PERSONS OR THINGS MAY COME WITHIN SIX (6) FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES; AND
   - -OPERATING A CRANE, DERRICK, POWER SHOVEL, DRILLING RIG, PILE DRIVER, HOISTING EQUIPMENT, OR SIMILAR APPARATUS WITHIN 10 FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES.
2. PARTIES RESPONSIBLE FOR THE WORK, INCLUDING CONTRACTORS, ARE LEGALLY RESPONSIBLE FOR THE SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS LAW CARRIES BOTH CRIMINAL AND CIVIL LIABILITY. TO ARRANGE FOR LINES TO BE TURNED OFF OR REMOVED CALL CENTERPOINT ENERGY AT 713-207-2222.

ACTIVITIES ON/OR ACROSS CENTERPOINT ENERGY FEE OR EASEMENT PROPERTY

1. NO APPROVAL TO USE, CROSS, OR OCCUPY NO CENTERPOINT FEE OR EASEMENT PROPERTY IS GIVEN. IF YOU NEED TO USE CENTERPOINT PROPERTY, PLEASE CONTACT OUR SURVEYING AND RIGHT OF WAY DIVISION AT (713) 207-6348 OR (713) 207-5769

WARNING: UNDERGROUND ELECTRICAL UTILITIES

THE CONTRACTOR SHALL CONTACT THE UTILITY COORDINATING COMMITTEE AT 1-800-545-6005 OR 811 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE MAIN AND SERVICE LINES FIELD LOCATED.

- ALL INFORMATION CONCERNING TYPE AND LOCATION UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTORS ARE RESPONSIBLE MAKING THEIR OWN DETERMINATIONS AS TO TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. THE CONTRACTOR SHALL VERIFY LOCATION OF UNDERGROUND PIPELINES, CONDUITS, AND STRUCTURES BY CONTACTING OWNERS OF UNDERGROUND UTILITIES OR BY EXCAVATING IN ADVANCE OF CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES WHEN AND WHERE THEY FALL IN THE PATH OF CONSTRUCTION.
- THE CONTRACTOR IS ALSO RESPONSIBLE FOR CONTACTING THE UTILITY COORDINATING COMMITTEE AT (713) 223-4567 AND TEXAS ONE CALL AT 1-800-245-4545, FORTY- EIGHT (48) HOURS PRIOR TO ANY CONSTRUCTION.
- THE LOCATION OF ANY CENTERPOINT ENERGY UTILITIES ARE SHOWN IN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. THEY AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.
- ALL PROPOSED FACILITIES SHALL MAINTAIN 12" CLEAR FROM ALL EXISTING UTILITIES.

STANDARD NOTES FOR CONSTRUCTION DRAWINGS(HCFCD)

1. OBTAIN AND COMPLY WITH ALL APPLICABLE CITY, COUNTY, STATE AND FEDERAL PERMITS AND APPROVALS, WITH ASSISTANCE FROM ENGINEER, IF NECESSARY. OBTAIN PERMIT(CERTIFICATION) FROM HARRIS COUNTY ENGINEER TO ENTER HARRIS COUNTY FLOOD CONTROL DISTRICT RIGHT-OF-WAY.
2. NOTIFY THE HARRIS COUNTY FLOOD CONTROL DISTRICT'S PROPERTY MANAGEMENT DEPARTMENT IN WRITING AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. SUBMIT THE HCFCD 48 HOUR PRE-CONSTRUCTION NOTIFICATION FORM, A COPY OF THE APPROVED CONSTRUCTION DRAWINGS, AND A COPY OF THE CORPS OF ENGINEERS INDIVIDUAL SECTION 404 PERMIT, IF APPLICABLE TO HCFCD. 9900 NORTHWEST FREEWAY, HOUSTON, TEXAS 77092, ATTN: PROPERTY MANAGEMENT DEPT. BY HAND DELIVERY, OR FAX TO 713-684-4129(FAX NUMBER)
3. ENGINEER SHALL SUBMIT CERTIFICATION LETTER AND RECORD DRAWINGS TO THE HARRIS COUNTY FLOOR CONTROL DISTRICT'S PROPERTY MANAGEMENT DEPARTMENT REQUESTING INSPECTION OF ITEMS CONSTRUCTED IN HARRIS COUNTY FLOOD CONTROL DISTRICT RIGHT-OF-WAY. PRIOR TO REQUESTING INSPECTION, THE DRAINAGE RIGHT-OF-WAY AND/OR EASEMENTS SHALL BE STAKED AND FLAGGED.
4. PROTECT, MAINTAIN, AND RESTORE EXISTING BACKSLOPE DRIANAGE SYSTEMS.
5. BACKSLOPE SWALE AND INTERCEPTOR STRUCTURE ELEVATIONS AND LOCATIONS SHOWN ON PLANS ARE APPROXIMATE. FINAL ELEVATIONS AND LOCATIONS SHALL BE FIELD VERIGIED BY THE ENGINEER PRIOR TO INSTALLATION.
6. ESTABLISH TURF GRASS ON ALL DISTURBED AREAS WITHIN THE CHANNEL OR DETENTION RIGHT-OF-WAY, EXCEPT THE CHANNEL BOTTOM WHERE STRUCTURAL EROSION MEASURES ARE USED. MINIMUM ACCEPTANCE CRITERIA ARE 75% COVERAGE OF LIVE BERMUDA GRASS AND NO EROSION OR RILLS DEEPER THAN 4".
7. BACKFILL IN ACCORDANCE WITH THE HARRIS COUNTY FLOOD CONTROL DISTRICT STANDARD SPECIFICATION, SECTION 02314 - EXCAVATING AND BACKFILLING, OR EQUIVALENT.
8. EXCAVATE CHANNEL FLOWLINE TO DESIGN ELEVATION AS SHOWN ON PLANS AND DOWNSTREAM, AS NECESSARY, TO ENSURE NO WATER REMAINS IN THE FACILITY(STORM SEWER, LATERAL CHANNEL, OR DRY BOTTOM DETENTION BASIN) DURING NORMAL WATER SURFACE CONDITIONS IN THE CHANNEL, SO THE FACILITY WILL FUNCTION AS INTENDED. FOR WET BOTTOM DETENTION BASINS, ENSURE NO WATER IS ABOVE THE DESIGN LEVEL IN THE WET BOTTOM DURING NORMAL WATER SURFACE CONDITIONS IN THE CHANNEL.
9. MAINTAIN FLOW IN CHANNEL DURING CONSTRUCTION AND RESTORE CHANNEL TO ORIGINAL CONDITION.
10. REMOVE ALL EXCAVATED MATERIAL FROM THE HARRIS COUNTY FLOOD CONTROL DISTRICT OR DRAINAGE RIGHT-OF-WAY. NO FILL IS TO BE PLACED WITHIN A DESIGNATED FLOOD PLAIN AREA WITHOUT FIRST OBTAINING A FILL PERMIT FROM THE APPROPRIATE JURISDICTIONAL AUTHORITY.

GENERAL NOTES - METRO

1. CONTRACTOR SHALL NOTIFY METRO AT 713-615-6195 TWO WEEKS PRIOR TO DISTURBING EXISTING BUS STOPS.
2. CONTRACTOR SHALL COORDINATE WITH METRO TO REMOVE EXISTING AMENITIES.
3. BUS STOPS SHALL BE CONSTRUCTED PER CITY OF HOUSTON INFRASTRUCTURE DESIGN MANUAL AND MEET CURRENT ADA REQUIREMENT.

METRO's Notes for Work Adjacent to Bus Stops

1. The Contractor shall be responsible for repairs to any METRO facilities damaged during construction. If the Contractor cannot immediately make the repairs to METRO's satisfaction, METRO will make the repairs and bill the cost to the Contractor.
2. Prior to construction the Contractor shall verify in the field that there are no conflicts with our electrical power, fiber optics, communication, signaling, high voltage cables or any other METRO infrastructure.
3. The Contractor shall "hand excavate" in the vicinity of communication and power lines feeding the METRO system.
4. The Contractor shall contact the Director of Universal Accessibility, Tim Mills by email at TM14@ridemetro.org or by phone 713-739-6861 one week prior to construction. METRO may assign an inspector to assure no damages are made to METRO's facilities. Universal Accessibility will coordinate any permanent or temporary impact on bus stops, shelters and sidewalk to maintain accessibility.
5. The Contractor shall contact METRO Bus Operations a minimum of ten (10) working days prior to construction impacting bus stops and bus routes. The contact information is Carl Taylor, Carl.Taylor@ridemetro.org 713-615-7219 or Shirley Mitchell, Shirley.Mitchell@ridemetro.org 713-615-7212.
6. The Contractor shall provide any temporary bus stop facilities needed, except for bus stop signs, at no cost to METRO and shall restore any affected bus stops per COH IDM and meet current American Disability Act (ADA) requirements as required by local, state and federal code and requirements. No bus stop shall be permanently removed without approval from METRO.

No.	DATE	REVISIONS	APP.

NOTICE:

FOR YOUR SAFETY,YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED.THIS SIGNATURE DOES NOT FULFILL YOUR OBLIGATION TO CALL 811

VERIFICATION OF PRIVATE UTILITY LINES

Date

CenterPoint Energy natural gas utilities shown.(Gas service lines are not shown).This signature not be used for conflict verification.

Signature valid for six months.

Date

CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY. (This signature verifies existing underground facilities - not to be used for conflict verification)

Signature valid for six months.

Approved for AT&T underground conduit facilities only. Signature Date valid for one year.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PRIVATE UTILITY, HCFCD AND METRO NOTES

SHEET 1 OF 1

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SPECIFICATION

FOR

INSTALLATION OF CONDUIT SYSTEM FOR THOROUGHFARE STREET LIGHTING

CenterPoint Energy
Distribution Engineering
P.O. Box 1700
Houston, Texas 77251

REFERENCE DRAWINGS:
004-237-16 Revision 4

REFERENCE STANDARDS:

CITY OF HOUSTON STREET LIGHT APPROVAL

By signing below, I acknowledge that I am the City of Houston's (COH)'s authorized representative of this project and that I have read and understand all statements, notes, detail drawings, and all attendant contracts and agreements (collectively the "materials") furnished to COH regarding street light construction indicated on conduit layout.

Signature _____ Title _____

Printed Name _____ Date _____

NO.	DATE	ITEMS REVISED	BY	CH	APP
5	7-25-07	Revised for practical application	KTN	JCD	MMG
4	2-23-99	Added conduit run for high density area	KTN	JCD	LHH

CenterPoint Energy
HOUSTON, TEXAS

WRITTEN	9-13-90	N.T. Khanh
CHECKED	9-13-90	JCD / RKM
APPROVED	9-14-90	Robert Boucher

Sheet 1 of 16

SPEC ID.		007	371	08

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CONDUIT SPECIFICATIONS

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1.0 SCOPE

This Specification covers CenterPoint Energy (CNP) requirements concerning the installation of pull-boxes and conduits for underground electrical service to street lights. Number, size and direction of conduits to be specified on layout at CNP's discretion. Where there is a conflict between this specification and the CNP project drawing, the drawing will take precedence.

2.0 GENERAL

The following sub-articles state the general procedures to be followed for coordination of conduit system installation:

2.1 For City/County Contractor installed conduit: City/County Street Light Division shall approve proposed street light locations. City/County shall forward proposed locations to CNP. CNP shall design the conduit system and return design to City/County for contracting.

2.2 For Metro Contractor installed conduit: Metro shall forward construction drawings to COH Street Light Division for proposed street light locations. COH shall submit their approved locations to CNP. CNP shall design the conduit system and return design to COH. (For conduit to be located in utility or side lot easements, CNP will perform the work in conjunction with street light installation, with reimbursement from Metro).

2.3 CNP shall require, and note on drawings, when pull-boxes are required at the beginning and ending of each continuous conduit run, in addition to those areas where pull-boxes are currently required for crossings or distance.

2.4 CNP Street Light Engineering shall attend City/County/Metro utility coordinating meeting prior to the start of construction. The proposed conduit installation (as well as potential conflicts with existing CNP facilities) will be reviewed at that time.

2.5 In conjunction with the utility coordinating meeting, Contractor, CNP representative, Metro (if applicable) and City/County or other municipal representative shall review proposed light locations in the field.

2.6 Contractor will notify CNP Street Light Engineering, at least 2 (two) working days in advance, of Contractor's schedule for conduit installation. CNP Street Light Engineering will perform final inspections with Contractor present when all conduits had been installed.

2.7 Contractor shall attempt to determine if existing underground utilities or any other obstructions would prohibit CNP's installation of proposed new street lights. If such obstructions exist, Contractor may revise the proposed location of the light up to 5 feet in any direction within street right-of-way in order to avoid obstructions. For revised street light locations greater than 5 feet in any direction, Contractor must obtain prior approval as follows:

For projects being performed for City/County, Contractor shall notify the City Inspector, who will notify the City/County 's Public Works Department. Public Works will review the problem with the City's Street Light Division and CNP for approval of any changes. (In the case of municipalities other than City/County, Contractor shall notify City Inspector who shall notify appropriate Department of City. City shall consult with CNP for approval of any changes)

For projects being performed for Metro, Contractor must notify the Metro Inspector, who will in turn contact Metro's Utility Coordination Section. The Utility Coordination Section will review the problem with the COH's Street Light Division (or other municipality if applicable) and CNP for approval of any changes.

2.8 For any contractor-proposed changes to CNP's conduit system design, Contractor must obtain prior approval from CNP. Contractor shall first notify City/County or Metro Inspector of requested changes, who will in turn notify City/County Public Works, other municipality or Metro's Utility Coordination Section. City/County Public Works, other municipality or Metro Utility Coordination will review the requested changes with CNP for approval.

2.9 For proposed street lights on bridges or elevated roads, Contractor shall design and install foundations that meet the loading requirements of CNP Specification for Galvanized Street Light Standards 007-371-04. For information on pull-boxes and conduit, see Article 8.0.

3.0 MATERIAL FURNISHED BY CNP

CNP shall only furnish the pull-boxes (see Article 4.0) and the warning tape (see Article 5.0). Pull-boxes will not be furnished for installation on bridges or elevated roads.

3.1 The Customer's Contractor shall notify CNP Street Light Engineering when pull-boxes and warning tape are required, seven working days in advance of planned pick-up. Pull-boxes and tape can be obtained Tuesday through Friday, excluding holidays, from the South Houston Complex-Building D, located at 4500 South Shaver, Houston, Texas, 77034.

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CONDUIT SPECIFICATIONS

SHEET 2 OF 9

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3.2 After Contractor's notification, CNP will provide Contractor with a work order number for reference when picking up materials at the South Houston Complex-Building D.

4.0 PULL-BOX

The following sub-articles state the general requirements for pull-boxes:

4.1 The pull-boxes shall be furnished by CNP and shall be installed by the Customer's Contractor as a part of the conduit system.

4.2 Pull-boxes shall be installed in accordance with sheet 9 & 10 of this specification. The conduit layout will specify the type of pull-box to be installed.

4.3 At the point of entrance to the pull-box, the conduits shall always have a minimum ground cover as noted on pull-box drawing. Conduit shall run up a maximum of 5 inches into the pull-box. The bends to be used with the pull-box shall have a minimum radius as shown on pull-box drawing.

5.0 WARNING TAPE

5.1 Warning tape shall be furnished by CNP and installed by the Customer's Contractor (see sheet 11).

5.2 Warning tape shall be installed approximately 12 inches above the street light conduit.

6.0 MATERIAL FURNISHED BY THE CUSTOMER

The Customer or Customer's Contractor shall furnish the conduits (see Article 7.0), the conduits and pull-boxes installed in bridges or elevated roadways (see Artical 8.0), the conduit plugs (see Article 9.0), and all other materials not furnished by CNP.

7.0 CONDUIT

The following sub-articles state the general requirements, unless specifically stated otherwise on the layout, for the number, size and installation of the conduit system from the pull-box to the street light or terminal pole.

7.1 Conduit shall be PVC Nema Tc2 Schedule 40 or Schedule 80, U.L. label, US trade size, and meet the standards of the National Electrical Code (NEC). Size to be determined by layout.

7.2 A No. 14 Aluminum or Copper wire, and a fiber pulling cord of at least 1200 pounds breaking strength shall be installed in the conduit.
Pulling cord shall be installed in such a manner as to provide adequate access and be free to pull without hindrance. Pulling cord shall not be glued or permanently attached to conduit in any manner. The pulling cord and wire shall beviewable from outside the end of conduit run.

7.3 The conduit runs shall be made "continuous" with all sections connected from beginning to end, including the conduit crossing the street. Stub-out will be required at all conduit end and street light locations (see drawing #004-237-16).

7.4 The conduit shall be placed 3 feet behind curb unless sidewalk is to be installed. Where sidewalks exist, conduit shall be placed up to 6 inches behind the sidewalk (or in grassy area between the curb and the start of sidewalk, where 12 inches or more of grassy area exists) (see sheet 12). Even though sidewalks exist, CNP will install street light approximately 3 feet back of curb. City/County/Metro Contractor shall design a block-out area for the street light installation in concrete area (see sheet 16).

7.5 The conduit shall have a minimum cover of 36 inches from final grade except as noted on pull-box and manhole drawing, or where city, county or state regulators require a greater depth, and shall consist of PVC conduit.

7.6 For the burial of street light conduits crossing under driveways or sidewalks, schedule 40 PVC or better is required. When crossing under streets, the conduit shall be PVC conduit schedule 80.

7.7 For terminal pole source locations specified on the layout, the bend of the conduits at the terminal pole shall be 90 degrees, 24 inch radius bend, schedule 40 PVC conduit. This bend shall be brought to the face of the pole and stubbed out approximately 12 inches above the final grade (see sheet 14).

7.8 For pad mounted transformer source locations specified on the layout, conduit shall be brought to within 1 foot of transformer pad, opposite the small notch "V" on the pad, stubbed out approximately 12 inches above the final grade.

7.9 For secondary pedestal source locations specified on the layout, conduit shall be brought to within 1 foot of pedestal and stubbed out approximately 12 inches above the final grade.

7.10 For manhole source location, the conduit shall enter the manhole a minimum of 12 inches from the inside ceiling or as specified on the layout. A ductbell terminator will be installed in the manhole wall for conduit termination. CNP shall be notified 48 hours prior to the actual coring of the manhole wall so that CNP can verify the location in each manhole to be penetrated. CNP will stand-by only during the actual coring. The contractor shall do the coring and installation of the ductbell terminator. The contractor shall seal around the ductbell terminator with packaged, dry, rapid hardening cementitious material conforming to ASTM C928-80 specifications, to ensure a water

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CONDUIT SPECIFICATIONS

SHEET 3 OF 9

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8.0 CONDUIT INSTALLED IN BRIDGE OR ELEVATED ROADWAY

Customer or Customer's Contractor shall be responsible for designing, furnishing and installing the conduits and pull-boxes. The pull-boxes should be located to provide CNP personnel safe and reasonable access, without using ladders or other special equipment, for cable installation, inspection and maintenance. Where there are junction-boxes in addition to the pull-boxes, reasonable access shall also be provided.

8.1 The conduit shall be at least 2 inches, in diameter and meet all requirements of the latest National Electrical Code (NEC) and National Electrical Safety Code (NESC).

8.2 The conduits shall run to each street light location. The conduits shall be arranged to allow the source conductor to be pulled in and out of each street light location or Contractor shall provide junction-boxes on main conduit run at each street light location and run tap conduit to the street light location (see sheet 15 for examples of conduit runs).

8.3 A #14 Aluminium or Copper wire, and a fiber pulling cord of at least 1200 pound breaking strength shall be installed in the conduit.

A toning wire and pulling cord shall be installed in such a manner as to provide adequate access and be free to pull without hindrance. Pulling cord shall not be glued or permanently attached to conduit in any manner. The wire and pulling cord shall be attached and viewable outside the end of conduit run.

8.4 The pull-boxes used to pull the main circuit cable through the conduit system shall have a minimum opening of 15" x 15" x 12".

8.5 Junction boxes used as tap location shall meet all requirements of the latest NEC.

9.0 CONDUIT PLUGS

Plugs shall be installed on all conduit terminator points at the time the conduits are installed, to prevent blockage, until the cable is installed.

10.0 LIABILITY

10.1 Upon completion of the conduit installation, the Customer (or Customer's Contractor) shall forward to CNP Street Light Engineering notification in writing from a City or County Inspector that the installation meets CNP Specifications. In addition, Customer shall provide CNP with as-built drawings (showing conduits, pull-box, blockout, etc.).

10.2 The Customer shall be responsible for either: (1) correcting any violations of said Specifications and clearing any blockage or repairing any breaks within the street light conduits prior to street lights and circuit installation by CNP, or (2) reimbursing CNP for correcting violation.

10.3 Upon installation of street lights, with the exception of street lights on bridges or elevated roadways, CNP shall furnish, install, own, and at all times have complete control over said street light service conduit system and shall be responsible for the location and maintenance thereof. Maintenance of conduit systems on bridges or elevated roadways will be the Customer's responsibility.

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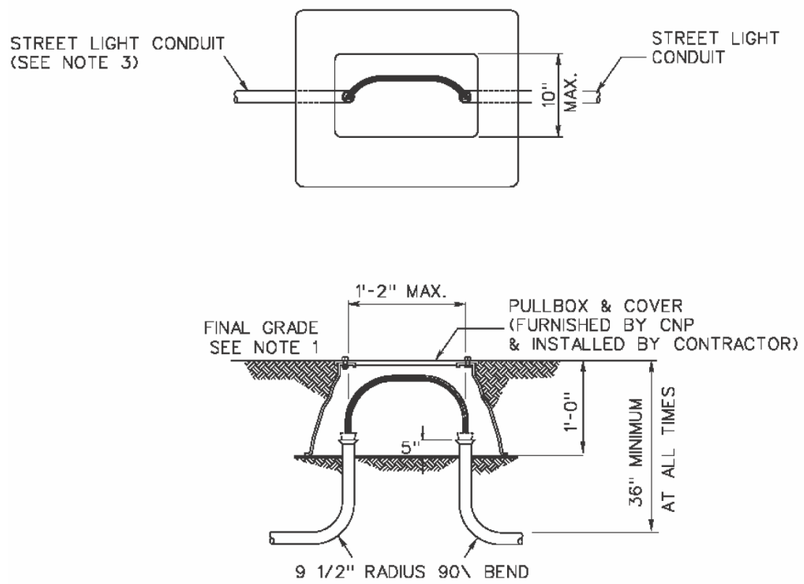
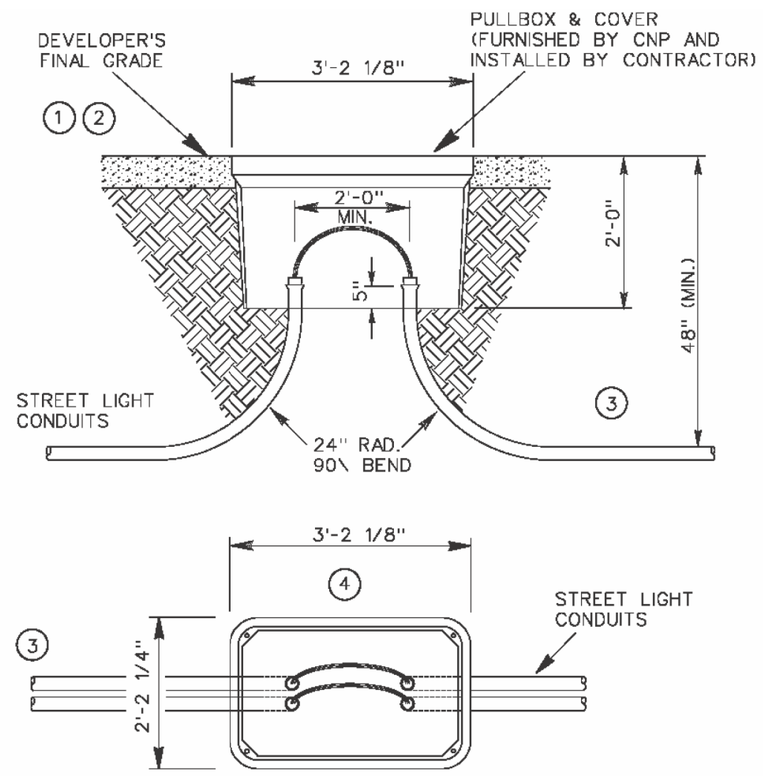


SMALL PULL BOX

NOTES:

1. GRADE AT TIME OF INSTALLATION SHALL BE CONSIDERD DEVELOPER'S FINAL GRADE.
2. THE SMALL CONCRETE PULL-BOX CAN BE INSTALLED IN DRIVEWAYS AND PARKING LOTS BUT NOT IN STREET.
3. THE NUMBER, SIZE AND DIRECTION OF CONDUITS TO BE SPECIFIED ON CNP CONDUIT LAYOUT.

REV. NO. #5	SPEC. ID.		007	371	08	Sheet 9 of 16



LARGE PULL BOX

1. GRADE AT TIME OF INSTALLATION SHALL BE CONSIDERED DEVELOPER'S FINAL GRADE.
2. WHEN INSTALLING PULL BOXES IN INCIDENTAL TRAFFIC LOADING AREA, DEVELOPER'S FINAL GRADE REFERS TO THE SURFACE OF THE PAVEMENT.
3. THE NUMBER, SIZE AND DIRECTION OF CONDUITS TO BE SPECIFIED ON CNP CONDUIT LAYOUT.
4. THIS PULL-BOX CAN BE INSTALLED IN DRIVEWAYS AND PARKING LOTS BUT NOT IN STREET.

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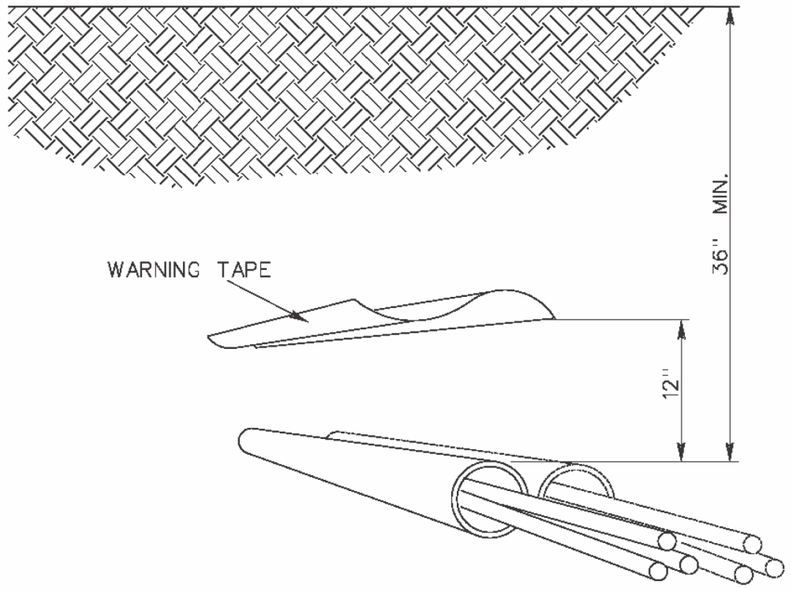

TYPICAL STREET LIGHT CONDUIT LAYOUT

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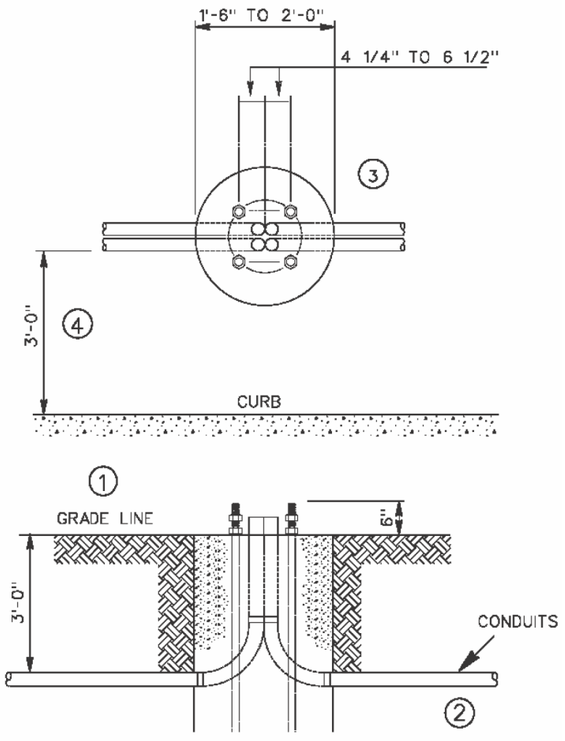

MULTIPLE CONDUIT RUN
IN STREET LIGHT FOUNDATION

1. GRADE AT TIME OF INSTALLATION SHALL BE CONSIDERED DEVELOPER'S FINAL GRADE.
2. THE QUANTITY, SIZE AND DIRECTION OF CONDUITS TO BE SPECIFIED BY ENGINEERING DEPARTMENT.
3. SEE ACCOMPANING CNP STANDARDS FOUNDATION FOR ACTUAL SIZE AND ANCHOR BOLT POSITION.
4. CNP STANDARD LOCATION OF STREET LIGHT IS 3' BEHIND THE 6" CURB, UNLESS SPECIFIED DIFFERENTLY BY CITY / COUNTY / METRO.

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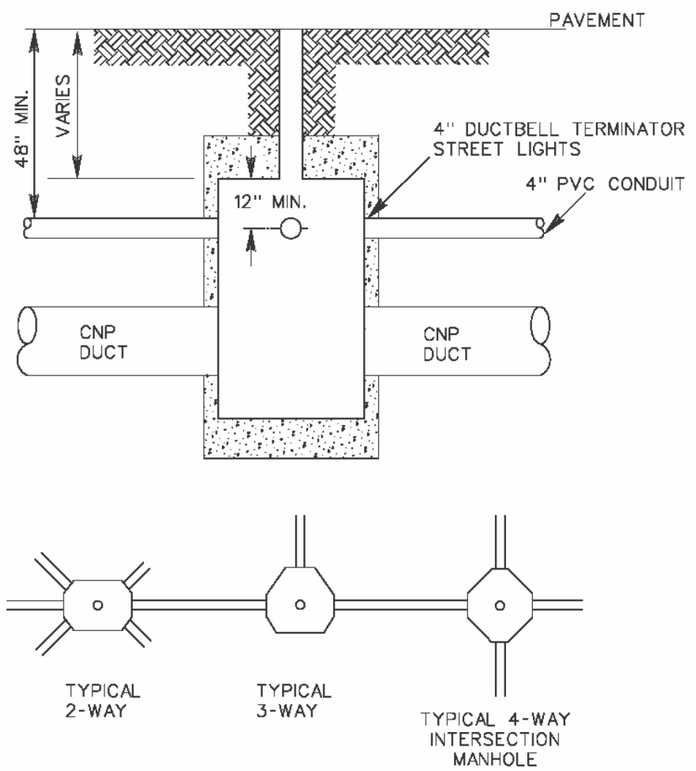

STREET LIGHT CONDUIT RUN FROM MANHOLE

① CONDUITS SHALL TYPICALLY ENTER THE MANHOLE THROUGH THE SHORT WALLS. CNP MUST APPROVE ENTRY THROUGH OTHER WALLS.

② THE NUMBER, SIZE AND DIRECTION OF CONDUITS TO BE SPECIFIED BY ENGINEERING DEPARTMENT.

③ CNP TO BE NOTIFIED 48 HOURS PRIOR TO THE ACTUAL CORING TO THE MANHOLE WALL.

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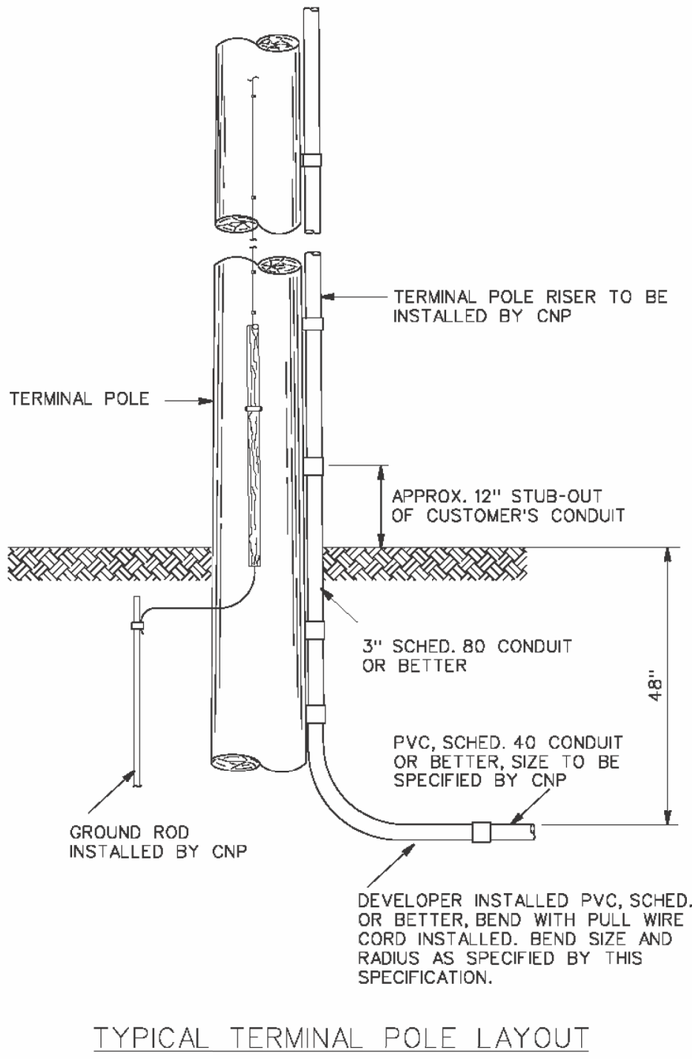

TYPICAL TERMINAL POLE LAYOUT

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TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

SURVEYED BY:
KUO & ASSOCIATES, INC.

INTERIM REVIEW ONLY
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Date: 10/24/2025
95% SUBMITTAL
GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

CENTERPOINT CONDUIT SPECIFICATIONS

SHEET 7 OF 9

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 14 OF 718	

Plotted on: 10/24/2025 3:05:31 PM michael.guthrie
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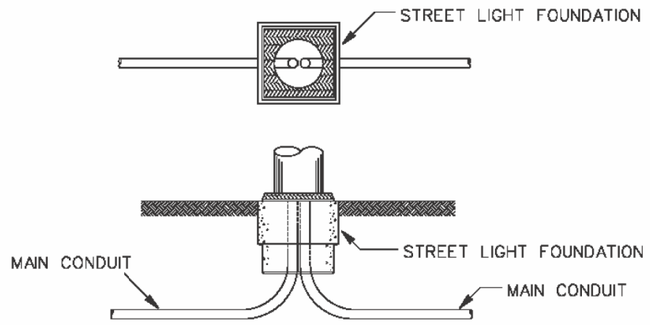
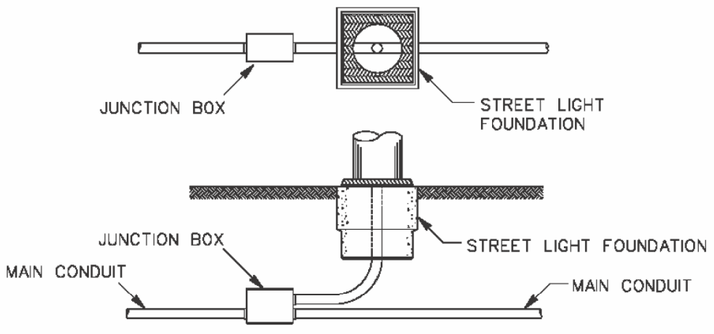


MAIN CONDUIT INSTALLED TO EACH STREET LIGHT
(SOURCE WIRE PULLED TO EACH LOCATION)



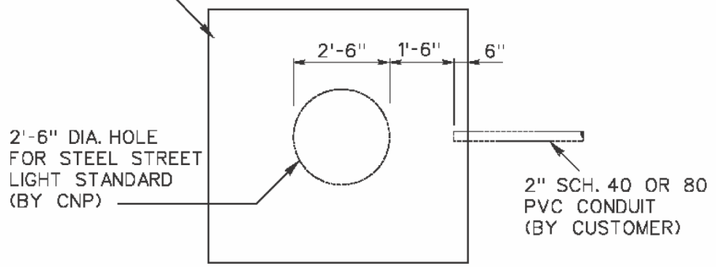
MAIN CONDUIT WITH TAPS FEEDING EACH LOCATION

NOTE:
ALL MATERIAL INSTALLED IN BRIDGE OR
ELEVATED ROADWAY CONSTRUCTION SHALL
BE FURNISHED BY CUSTOMER.

CONDUIT INSTALLED IN BRIDGE OR ELEVATED ROADWAY

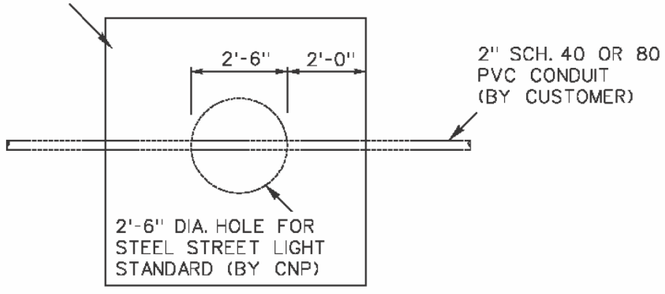
REV. NO. #5	SPEC. ID.		007	371	08	Sheet 15 of 16

6'-6" X 6'-6" CONCRETE BLOCK-OUT
REQUIRED FOR STREET LIGHT INSTALLATION
(BLOCK-OUT TO BE CENTERED ON PROPOSED
STREET LIGHT LOCATION (BY CUSTOMER).



STREET LIGHT @ END OF CIRCUIT

6'-6" X 6'-6" CONCRETE BLOCK-OUT
REQUIRED FOR STREET LIGHT INSTALLATION
(BLOCK-OUT TO BE CENTERED ON PROPOSED
STREET LIGHT LOCATION (BY CUSTOMER).



STREET LIGHT @ CONTINUOUS CIRCUIT

BLOCK-OUT DETAIL FOR STREET LIGHTS LOCATED IN CONCRETE AREAS

REV. NO. #5	SPEC. ID.		007	371	08	Sheet 16 of 16

No.	DATE	REVISIONS	APP.

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HOUSTON PUBLIC WORKS

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CENTERPOINT
CONDUIT SPECIFICATIONS

SHEET 8 OF 9

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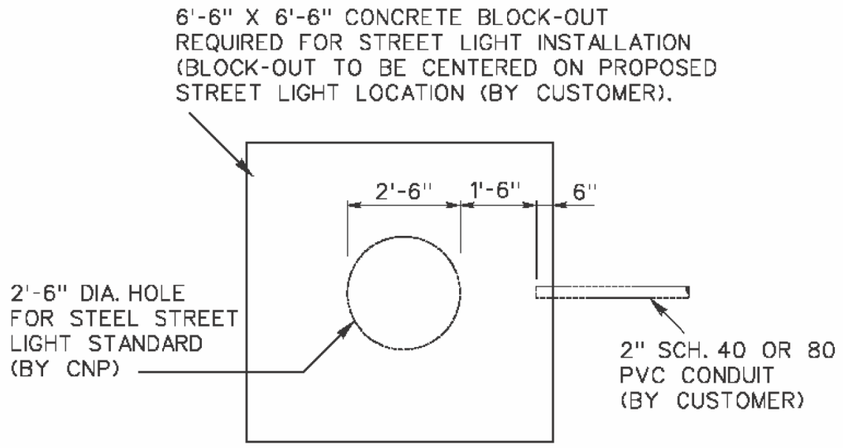
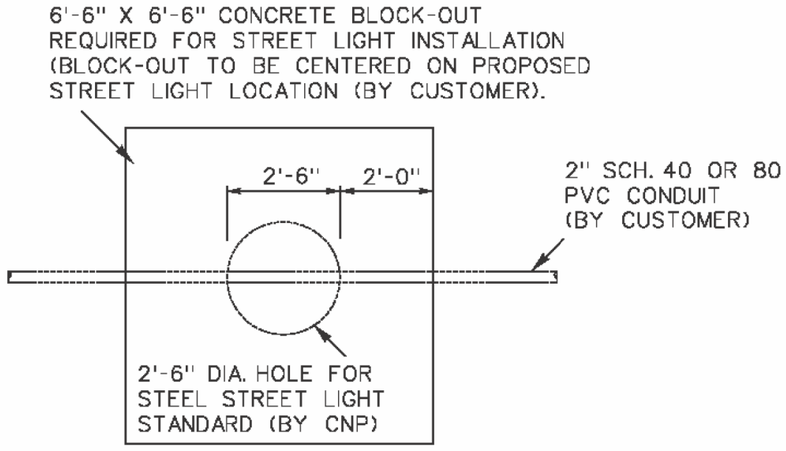


STREET LIGHT @ END OF CIRCUIT



STREET LIGHT @ CONTINUOUS CIRCUIT

BLOCK-OUT DETAIL FOR STREET LIGHTS LOCATED IN CONCRETE AREAS

REV. NO. #5	SPEC. ID.		007	371	08	Sheet 16 of 16

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HOUSTON PUBLIC WORKS

ANTOINE DRIVE

CENTERPOINT
CONDUIT SPECIFICATIONS

SHEET 9 OF 9

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1. PAVING

(FOR H.C. PUBLIC R.O.W. ONLY)

DESIGN THICKNESS OF PAVING	STABILIZED SUBGRADE DEPTH	DESIGN STRENGTH OF CONCRETE	STEEL SPACING LONG.	STEEL SPACING TRANS.	REINFORCE STEEL SIZE
(IN.)	(IN.)	(PSI)	(IN.)	(IN.)	(#4 MIN.)
12"	6"	3000 PSI	9"	36"	#5

ASPHALT

DESIGN SURFACE COURSE THICKNESS	DESIGN SURFACE COURSE TYPE	DESIGN BASE COURSE THICKNESS	DESIGN BASE COURSE TYPE	STABILIZED SUBGRADE THICKNESS	STABILIZED SUBGRADE TYPE
(IN.)	(MATERIAL)	(IN.)	(MATERIAL)	(IN.)	(MATERIAL)
__	__	__	__	__	__
__	__	__	__	__	__
__	__	__	__	__	__

DRIVEWAYS (in H.C. ROW only)

I. NUMBER OF DRIVEWAY APPROACHES PROPOSED INCLUDE WIDENING OR REPAVING EXISTING DRIVEWAYS AS WELL AS NEW DRIVEWAYS

DRWY	WIDTH	MATERIAL	CULVERT?	CULVERT LENGTH	NEAREST X-STREET	DIST. TO X-STREET
1	SEE DRIVEWAY SUMMARY					
2	__	__	__	__	__	__
3	__	__	__	__	__	__
4	__	__	__	__	__	__
5	__	__	__	__	__	__

II. HARRIS COUNTY STANDARD DRIVEWAY DETAIL APPEARS ON SHEET ___

FIRE APPARATUS ACCESS ROAD

☐ REQUIRED AND SHOWN ON SHEET(S) ___
☐ NOT REQUIRED DUE TO ___

CURBING

I. ISLANDS, MEDIANS AND ALL AREAS NOT TAKING DIRECT DRIVEWAY ACCESS REQUIRES STANDARD 6" CURBING

II. ☒ STANDARD 6" CURBING PROPOSED
☐ 4" x 12" CURBING PROPOSED EXCEPT AT MEDIANS AND ISLANDS

TRAFFIC CONSIDERATIONS

I. MEDIAN CUTS
☐ NO MEDIAN CUT OR RELOCATION IS PROPOSED
☒ MEDIAN MODIFICATIONS ARE SHOWN ON SHEET 171 ROADWAY SHEET 31

II. LEFT / RIGHT TURN LANE
☐ NO LEFT / RIGHT TURN LANE IS PROPOSED
☒ LEFT / RIGHT TURN LANE IS SHOWN ON SHEET 157 ROADWAY SHEET 17,183 ROADWAY SHEET 23 & 165 ROADWAY SHEET 25

III. TRAFFIC CONTROL PLAN
☐ NO WORK IN THE RIGHT OF WAY IS PROPOSED THAT WOULD INTERFERE WITH TRAFFIC FLOW
☒ TRAFFIC CONTROL SHOWN ON SHEET 27-99

IV. TRAFFIC SIGNAL
☐ NO TRAFFIC SIGNAL IS EXISTING / PROPOSED
☐ EXISTING TRAFFIC SIGNAL DEVICES (T.C. BOXES AND LOOPS) SHOWN ON SHEET __
☒ PROPOSED TRAFFIC SIGNAL (BY OTHERS)

V. TRAFFIC IMPACT ANALYSIS
☐ NO TRAFFIC IMPACT ANALYSIS IS REQUIRED
☐ TRAFFIC IMPACT ANALYSIS HAS BEEN APPROVED ON DATE 01/09/2022
PLAN TITLE: ANTOINE DRIVE TRAFFIC ENGINEERING STUDY SEGMENT 2A WEST GULF BANK TO WEST MOUNT HOUSTON ROAD
HCPID PROJECT NO.: ___-___-___

2. RESIDENTIAL / SUBDIVISION DRAINAGE

I. PROPOSED DRAINAGE SYSTEM TYPE
☒ STORM SEWER
☐ ROADSIDE DITCH
☐ LOW IMPACT DEVELOPMENT (LID)

II. DESIGN METHOD USED
☐ CITY OF HOUSTON ___ YEAR FREQUENCY
☐ OTHER: ___

III. DRAINAGE SYSTEM OUTFALLS DIRECTLY TO EXISTING
☐ DETENTION POND (APPROVED H.C. PRJ NO.): ___
DETENTION POND MAINTAINED BY: ___
☐ HCFCD DRAINAGE DITCH UNIT NO.: ___
☐ H.C. ROADSIDE DITCH (ROAD NAME): ___
☒ H.C. STORM SEWER (APPROVED H.C. PRJ NO.): ___

IV. H.C. OUTFALL CALCULATIONS
☐ ROADSIDE DITCH OUTFALL:
ALLOWABLE OUTFALL RATE: 0.0027 x __.__ LF Frontage = __.__ (CFS)
PROPOSED OUTFALL RATE: __.__ (CFS), CALCULATIONS PROVIDED ON SHEET __
☐ STORM SEWER OUTFALL
CAPACITY ALLOCATED TO TRACT FROM D. A. MAP: __.__ (CFS)
FROM DRAINAGE AREA MAP DATED: ___
PREPARED BY: ___
APPROVED H.C. PROJECT NO.: ___
ACTUAL OUTFALL RATE: __.__ (CFS), CALCULATIONS PROVIDED ON SHEET __

V. DETENTION PROVIDED BY
☐ DETENTION BASIN IS PART THIS PLAN SEE SERVICE AREA MAP IS ON SHEET __
☐ REGIONAL DETENTION BASIN SYSTEM (APPROVED H.C. PRJ NO.): ___

PROPOSED STORM SEWER IS SUBMERGED (AGREEMENT MUST BE PROVIDED).
STATIC W.S.E. @ OUTFALL IS ___.

OFFSITE SHEET FLOW: (100 YEAR)

OFFSITE SHEET FLOW MAPPING, TOTAL DISCHARGE CALCULATIONS, AND DESIGN ACCOMODATIONS ARE SHOWN ON SHEET __, OR, AS PRESENTED IN THE APPROVED DRAINAGE STUDY ENTITLED ___.

TOTAL ACREAGE = __
TOTAL DISCHARGE = __

NOTE: ALL OFFSITE SHEET FLOW FROM ADJACENT PROPERTIES MUST BE IDENTIFIED AND PROPERLY ACCOUNTED FOR IN THE PROJECT. THE SIGNING ENGINEER HEREBY CERTIFIES THAT THESE AREAS HAVE BEEN ADDRESSED.

3. COMMERCIAL / OTHER SITE DRAINAGE

I. PROPOSED DRAINAGE AREA
☐ NEW DEVELOPMENT AREA: ___
☐ RE-DEVELOPMENT AREA (NET NEW DEVELOPED AREA): ___
☐ LOW IMPACT DEVELOPMENT (LID)

II. DETENTION VOLUME
NEW AREA ___ X ___ * = ___ ACRE FEET
DETENTION REQUIRED
* ☐ .65 (CHANNEL)
* ☐ .75 (STM SWR)
* ☐ 1.00 (RD. DITCH)
* ☐ OTHER: ___
PROPOSED DETENTION VOLUME = ___ ACRE FEET
PROPOSED DETENTION VOLUME CALCULATIONS ARE SHOWN ON SHEET ___

DETENTION VOLUME PROVIDED BY EXISTING DETENTION POND
APPROVED H.C. PROJECT NO.: ___
DETENTION POND SERVICE AREA MAP IS PROVIDED ON SHEET ___

III. OUTFALL
OUTFALL TO ☐ H.C. ROADSIDE DITCH
☒ EXISTING H.C. STORM SEWER
☐ OTHER ___
☐ ROADSIDE DITCH OUTFALL:
ALLOWABLE OUTFALL RATE: 0.0027 x __.__ LF Frontage = __.__ (CFS)
PROPOSED OUTFALL RATE: __.__ (CFS), CALCULATIONS PROVIDED ON SHEET __
☐ STORM SEWER OUTFALL
CAPACITY ALLOCATED TO TRACT FROM D. A. MAP: __.__ (CFS)
FROM DRAINAGE AREA MAP DATED: ___
PREPARED BY: ___
APPROVED H.C. PROJECT NO.: ___
ACTUAL OUTFALL RATE: __.__ (CFS), CALCULATIONS PROVIDED ON SHEET __

IV. PUMPED DETENTION FACILITIES
VOLUME THAT GRAVITY FLOWS: ___ ACRE FEET
VOLUME THAT IS PUMPED: ___ ACRE FEET
ENTRANCE VELOCITY INTO ROADSIDE DITCH OR STORM SEWER: ___
PUMP SPECIFICATIONS AND AUTOMATIC SHUTOFF PLAN FOR ROADSIDE DITCH & STORM SEWER OUTFALLS APPEAR ON SHEET ___

V. FLOW RESTRICTOR SIZE
OUTFALL PIPE SIZE: ___
RESTRICTOR PIPE SIZE: ___

NOTE: ALL ROADSIDE DITCH OUTFALLS REQUIRE EROSION CONTROL MEASURES. RIPRAP IS NOT ALLOWED AS AN EROSION CONTROL MEASURE IN HARRIS COUNTY ROW. ALL PUMPED DETENTION OUTFALLS TO ROADSIDE DITCHES REQUIRE MANHOLE W/ LEADS.

4. WATER AND WASTEWATER

I. COMMERCIAL PROJECTS

DOES PROPERTY HAVE EXISTING AND/OR PROPOSED UTILITIES?
☐ YES ☐ NO

IF YES, CHECK THE BOX THAT APPLIES TO THIS PROJECT
☐ PUBLIC WATER & SANITARY
☐ PRIVATE WATER WELL & SEPTIC SYSTEM
☐ PUBLIC WATER & PRIVATE SEPTIC SYSTEM
☐ PRIVATE WATER WELL & PUBLIC SANITARY

NOTE: PUBLIC UTILITIES REQUIRE A LETTER FROM THE DISTRICT/ MUNICIPALITY AUTHORIZING SERVICE & CONNECTION. THIS IS REQUIRED FOR PLAN APPROVAL.

UTILITY DISTRICT/MUNICIPALITY NAME: ___

NOTE: SEPTIC SYSTEMS REQUIRE H.C. WASTE WATER REVIEW

H.C. SEPTIC PERMIT/REQUEST NO. ___

NOTE: ALL EXISTING AND PROPOSED UTILITIES MUST BE ACCURATELY SHOWN & LABELED ON THE SITE PLANS.

II. SUBDIVISION PROJECTS

☐ UTILITY DISTRICT/MUNICIPALITY NAME: ___
☐ PRIVATE WATER & WASTE WATER SYSTEMS
☐ PRIVATE WATER & INDIVIDUAL OSSF
☐ INDIVIDUAL WATER WELL & OSSF

NOTE: A COPY OF TCEQ APPROVAL FOR PRIVATE WATER & WASTE WATER SYSTEMS REQUIRED FOR PLAN APPROVAL.

NOTE: DEDICATED UNDERGROUND FIRE LINES MUST BE SUBMITTED TO THE HARRIS COUNTY FIRE PROTECTION GROUP FOR REVIEW AND PERMITTING BY THE UNDERGROUND FIRE LINE CONTRACTOR. CIVIL REVIEW DOES NOT REVIEW OR APPROVE UNDERGROUND FIRE LINES FOR THE FIRE PROTECTION SYSTEMS.

WASTEWATER TREATMENT PLANTS

H.C. WWTP REVIEW:

IS THE PROPOSED PROJECT A NEW WWTP SITE OR A REHAB/EXPANSION OF AN EXISTING WWTP SITE? YES ☐ NO ☐

IF YES, IS A HARRIS COUNTY DOMESTIC WASTEWATER TREATMENT PLANT EXPRES REVIEW SHEET ATTACHED AND COMPLETED ACCORDING TO INSTRUCTIONS? YES ☐ NO ☐

REFER TO: WWW.ENG.HCTX.NET/PERMITS/WASTEWATER/REGULATIONS-STANDARDS-DETAILS FOR DOMESTIC WWTP ERS FORM

5. DESCRIPTION OF PROPERTY

I. LEGAL DESCRIPTION
A. ACREAGE: ___
B. ☐ SUBDIVISION: ___
☐ SURVEY & ABSTRACT: ___
C. ADJACENT ROADS: ANTOINE DRIVE,WEST GULF BANK RD., WEST MOUNT HOUSTON RD.

II. PLATTING
A. SUBDIVISION PLAT
☐ PROPOSED PLAT / REPLAT
☐ RECORDED PLAT / REPLAT
PLAT NAME: ___
B. STREETS PROPOSED
☐ PUBLIC
☐ PRIVATE
☐ PUBLIC & PRIVATE
☐ NONE

III. JURISDICTIONS
☒ CITY OF HOUSTON
☒ ETJ, CITY OF HOUSTON
☐ ETJ, CITY OF ___
☐ NO ETJ

IV. HCAD ACCOUNT NOS. (ALL) KEY MAP PAGE ___

V. UNOBSTRUCTED VISIBILITY EASEMENT (U.V.E.)
☐ REQUIRED AND SHOWN ON SHEET(S) ___
☒ NOT REQUIRED

NOTE: ALL APPROVED, FINAL PLATS AND ASSOCIATED CPC101 FORMS MUST BE INCLUDED WITH PLAN SUBMITTAL.

☐ CONFORMING SUBDIVISION
☐ NON-CONFORMING SUBDIVISION
☐ PARTIALLY NON-CONFORMING SUBDIVISION

6. STORMWATER QUALITY

I. SWPPP: CONSTRUCTION MEASURES. (Complete for ALL projects)
☒ DISTURBS >1AC. SITE PLAN & DETAILS ON SHEET(S) 478-493
☐ DISTURBS <1AC. N/A

II. APPLICABILITY FOR PERMANENT FEATURES. (must be completed on all projects)
EXEMPT NEW DEVELOPMENT:
☐ PROJECT IS ON A PARCEL (A COMMON PLAN OF DEVELOPMENT) LESS THAN 5 ACRES. (must be verified with plat)
EXEMPT REDEVELOPMENT:
☐ PROJECT DOES NOT MEET THE DEFINITION OF SIGNIFICANT REDEVELOPMENT (Part A, Sec. 2.39 of Regulations of Harris County, Texas for Stormwater Quality Management)
EXEMPT GRANDFATHERED:
☐ PROJECT'S DRAINAGE TIES DIRECTLY INTO AN EXISTING DRAINAGE SYSTEM PRIOR TO OCTOBER 1, 2001.
(FOR VERIFICATION: PROVIDE ORIGINAL DRAINAGE AREA MAP INCLUDING CALCULATIONS)
GENERAL:
☐ PROJECT'S SWQ REQUIREMENTS FALL WITHIN THE JURISDICTION OF: ___
☐ STORMWATER QUALITY PERMIT REQUIREMENT IS COVERED BY AN EXISTING SWQMP WITHIN PROJECT TITLE: ___
HARRIS COUNTY PROJECT NO. ___ & SWQ PERMIT NO. ___
STORMWATER QUALITY MANAGEMENT PLAN:
☐ SITE PLAN ON SHEET(S) ___

III. PERMANENT SWQ FEATURES. (COMPLETE IF NOT EXEMPT)
☐ VEGETATIVE CONTROLS USED: (FILTER STRIP, GRASSY SWALE, URBAN FORESTRY) DETAILS AND CALCULATIONS APPEAR ON SHEET(S) ___
☐ POND STRUCTURE USED (WET, DRY, WETLANDS) DETAILS AND CALCULATIONS APPEAR ON SHEET(S) ___
☐ HYDRODYNAMIC TYPE SEPARATOR MODEL: ___
☐ OTHER(S): ___

7. FLOOD PLAIN STATUS

I. GENERAL INFORMATION
FIRM PANEL(S) FOR PROPERTY: 482BICB465M
FIRM PANEL(S) DATE: JUNE 9, 2814
STATUS OF PROPERTY ON MAP
☐ ENTIRELY LOCATED IN UNSHADED ZONE "X"
☒ LOCATED PARTIALLY OR ENTIRELY IN ANY "A" ZONE OR SHADED ZONE "X", DELINEATE FLOODPLAIN BOUNDARY ON CONSTRUCTION DRAWINGS (DRAINAGE LAYOUT PG. NO.___) (1% BASE FLOOD LEVEL___) (0.2% BASE FLOOD LEVEL___)
☐ SITE REMOVED FROM FLOODPLAIN BY LOMR, LOMR-F, LOMA CASE NO.___ REVISED FLOODPLAIN IS SHOWN ON SHEET___

ELEVATION INFORMATION
BENCHMARK USED
☒ HARRIS COUNTY FLOODPLAIN REFERENCE MARK
☐ HARRIS-GALVESTON COASTAL SUBSIDENCE DISTRICT BENCHMARK (FOR COASTAL AREAS)
DESCRIPTION OF BENCHMARK INCLUDING ELEVATION, DATUM AND YEAR OF ADJUSTMENT (2001 ADJ.)
CITY OF HOUSTON MONUMENT 5162-0618,A BRASS DISK IN CONCRETE,LOCATED NEAR THE NORTH MEDIAN NOSE OF THE INTERSECTION OF ANTOINE DRIVE AND ARNCLIFFE DRIVE. ELEV=77.36' NAVD 1988 (GEOID '12A)

II. FLOOD PLAIN DETERMINATION BASED ON GROUND ELEVATION
☐ PROPERTY LIES ENTIRELY ABOVE THE BASE FLOOD LEVEL AND IN SHADED ZONE "X"
☒ PROPERTY LIES PARTIALLY OR ENTIRELY BELOW THE BASE FLOOD LEVEL

III. FLOODPLAIN STORAGE SUMMARY (APPLIES ONLY TO PORTION OF LAND LOCATED WITHIN FLOODPLAIN AS DELINEATED BY FIRM PANEL).
A. TOTAL VOLUME OF MATERIAL PROPOSED TO BE MOVED OR PLACED WITHIN THE FIRM DELINEATED FLOODPLAIN (FILL, BASE, CONCRETE, ASPHALT, ETC.):
BELOW 0.2% BASE FLOOD ELEVATION ___ (2001 ADJ.) ___ CUBIC YARDS
B. TOTAL VOLUME OF MATERIAL PROPOSED TO BE REMOVED FROM THE FIRM DELINEATED FLOODPLAIN:
BELOW 0.2% BASE FLOOD ELEVATION ___ (2001 ADJ.) ___ CUBIC YARDS
C. FILL AREA & VOLUME CALCULATIONS ARE SHOWN ON SHEET ___

IV. ☐LOMR REQUIRED ☐CLOMR REQUIRED VERIFIED BY: ___

8. CURB RAMPS

A. ARE CURB RAMPS THAT CONNECT TO PUBLIC STREETS PROPOSED IN THIS SET OF PLANS? [X] YES [_] NO

9. LANDSCAPING

☒ REQUIRED AND SHOWN ON SHEET(S) ___
☐ NOT REQUIRED

10. PERMITS REQUIRED

DOES THE PROPERTY HAVE ANY VIOLATIONS? IF SO PLEASE PROVIDE ALL VIOLATION NUMBERS. ___

☒ STORM WATER QUALITY
☐ SEPTIC (EXISTING) ☐ SEPTIC (PROPOSED)
☐ CIVIL SITE WORK (PHASE II PERMIT CLASS I (non-floodplain))
☐ CIVIL SITE WORK (PHASE II PERMIT CLASS II (floodplain))
☐ DRIVEWAY WITH CULVERT ___ CURB AND GUTTER ___
☐ BUILDING PERMITS (NO. OF BUILDINGS = ___) ☐ CRITICAL FACILITY
☐ SUBDIVISION INFRASTRUCTURE PHASE II (NO. OF LOTS = ___)
☐ NOTICE OF DETENTION AFFIDAVIT REQUIRED
☐ MUD MAINTENANCE AGREEMENT REQUIRED
NOTES: ___

WORK IN HARRIS COUNTY R.O.W.

☐ UTILITY WORK ___
☒ LEFT TURN LANE ___
☒ OTHER CONSTRUCTION ___

NOTES:
A PERMIT IS REQUIRED FOR EACH SCOPE OF WORK ON SITE.
A NOTIFICATION IS REQUIRED FOR EACH SCOPE OF WORK IN HC OR HCFCD ROW.
REFER TO www.eng.hctx.net/permits FOR EACH SCOPE OF WORK IN HC OR IN HCFCD ROW.

BENCHMARK REQUIREMENTS FOR PROPOSED BRIDGES AND OR NEW RESIDENTIAL SUBDIVISIONS

When the County Engineer has determined that a new benchmark will be required to be established for the proposed project, the developer shall be required to install a benchmark per section 8.0, part 2 of the Harris County Infrastructure Regulations.

Is a new Benchmark required for this project? (*to be determined by Harris County*) [__] yes [__] no

If a new Benchmark is required, the proposed benchmark information is shown on sheets ___

FOR PROJECTS LOCATED IN ANY FLOODPLAIN

Development constructed or placed in accordance with these plans will comply with all provisions of the Regulations of Harris County, Texas for Floodplain Management.
No net fill is allowed in the flood plain and no fill is allowed in the floodway.
FOUNDATION NOTES: (Applies to only buildings or building additions requiring a class II permit)
All water heaters, furnaces, air conditioning units, electrical distribution panels, and any other mechanical or electrical equipment must be elevated in accordance with Section 4.05 of Harris County Floodplain regulations.
Any electrical circuit serving a light switch or outlet located below the base (100-year) flood elevation shall be dropped from above and be on a separate breaker.
All materials used below the (100-year) base flood elevation are on approved FEMA Technical Bulletin 2-08 as Class 5 water-resistant, and approved in accordance with FEMA Technical Bulletin 1-08 for foundation openings.
Critical facilities located in the 0.2% or 500yr floodplain or 1% or 100yr floodplain shall have the lowest floor elevated to 3 feet or more above the 0.2% flood elevation, or 24 inches above the crown of the adjacent road, which ever results in a higher elevation.
Floodproofing and sealing measures must be taken to ensure that toxic substances will not be displaced by or released into floodwaters.
Access routes elevated to or above the level of the base flood shall be provided to all critical facilities to the extent possible.
A completed as-built certificate must be submitted after the structure is complete and before it is occupied.
The County Engineer's Office will post a final inspection notice on the structure once all requirements have been met.
No fill may be used to elevate structures in the 1% or 100yr flood plain. Structures may be constructed on an open foundation, such as piers, or on continuous foundation walls with properly sized and located openings. All foundations are required to be designed by a registered professional engineer.
All structures shall be designed to withstand a three second gust basic wind speed of 120mph.
*Completed **Elevation Certificates** to be submitted: one at permitting, a second after the slab is poured or sub-floor is installed and before the framing starts, and a third is required once construction is finished. *(PER CURRENT FIRM PANEL) to the Harris County Engineering Department, 10555 Northwest Freeway, Suite 120, Houston, TX 77092*

HARRIS COUNTY ENGINEERING DEPARTMENT - PERMIT OFFICE NOTE:

THE PERMIT MANAGER SIGNATURE REPRESENTS THE FOLLOWING:
- THE COMPLETION OF REVIEW OF THESE PLANS
- ENTERPOSE NO OBJECTION TO THE PROPOSED DESIGN ON PRIVATE PROPERTY
- APPROVAL OF WORK IN HARRIS COUNTY MAINTAINED RIGHT OF WAY
- APPROVAL OF WORK IN PROPOSED HARRIS COUNTY RIGHT OF WAY THAT IS TO BE ACCEPTED BY THE COUNTY

HCED SIGNATURE BLOCK:

THE PROJECT WAS REVIEWED, HOWEVER, THIS DOES NOT MEAN THE ENTIRE PROJECT, INCLUDING ALL SUPPORTING DATA AND CALCULATIONS HAVE BEEN COMPLETELY CHECKED AND VERIFIED. THESE DRAWINGS ARE SIGNED, DATED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF TEXAS, WHICH THEREFORE CONVEYS THE ENGINEER'S RESPONSIBILITY AND ACCOUNTABILITY. THIS DOES NOT RELIEVE ANY PARTY FROM COMPLYING WITH APPROPRIATE FEDERAL, STATE AND LOCAL ENVIRONMENTAL RULES, LAWS, AND REGULATIONS AND ANY OTHER LEGALLY ADOPTED REGULATION OR ORDINANCE RELATED TO LAND DEVELOPMENT. IF THE CITY SIGNATURES ARE REQUIRED BY ORDINANCE, COUNTY PERMITS WILL NOT BE ISSUED UNTIL SUCH SIGNATURES ARE OBTAINED. PLAN APPROVAL EXPIRATION TO BE IN ACCORDANCE WITH LOCAL GOVERNEMENT CODE CH. 245.

ENGINEER'S CERTIFICATION

I, ___, A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF TEXAS, DO HEREBY CERTIFY THAT THE INFORMATION PRESENTED ON THIS SHEET IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND THAT I AM NOT VIOLATING ANY PROVISION OF THE CURRENT TEXAS ENGINEERING PRACTICE ACT AND RULES CONCERNING THE PRACTICE OF ENGINEERING AND PROFESSIONAL ENGINEERING LICENSURE. I CERTIFY TO THE BEST OF MY KNOWLEDGE THAT THE PLANS IN THEIR ENTIRETY ARE DESIGNED PER THE HARRIS COUNTY ENGINEERING STANDARDS, REGULATIONS, AND GUIDELINES UNLESS PROVIDED A VARIANCE BY THE COUNTY ENGINEER OR HIS DESIGNEE. SHOULD IT BE DEEMED BY HCED STAFF, THAT THE PLANS DO NOT MEET THE COUNTY'S STANDARDS, REGULATIONS AND GUIDELINES AND DID NOT RECEIVE AN APPROVED VARIANCE, THE APPROVAL OF SAID PLANS BECOMES NULL AND VOID AND THE DESIGN PLANS MUST BE CORRECTED AT NO CHARGE TO THE COUNTY.

THE COMPLETED PROJECT CONSISTS OF DRAWING SHEETS ___ THRU ___.

SIGNATURE ___ DATE ___

SEAL

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JOEL OLSHEFSKI
TEXAS
131531
10/21/2025
DATE
95% SUBMITTAL
VOGLER & SPENCER ENGINEERING
Texas Registered Engineering Firm F-148

REVISIONS
NOTE: REVISION BLOCK IS TO BE USED ONLY FOR CHANGES MADE AFTER PLANS HAVE BEEN APPROVED BY HARRIS COUNTY.

DATE	SHEET NO.	DESCRIPTION	P.E. INITIAL	H.C. APPROVED DATE

HC PROJECT NO. ___ HCFCD PROJECT NO. ___ SHEET NUMBER 17 OF 718

VERSION 20.0 MAY 18, 2020

HARRIS COUNTY ENGINEERING DEPARTMENT
REVIEW SHEET

VOGLER & SPENCER ENGINEERING
777 North Eldridge Parkway, Suite 500
Houston, Texas 77079
713-782-0042
www.vs-eng.com
Texas P. E. Firm Registration No. F148

Design Filename: F:\03339 Antoine Drive\802-1\CAD\Plan Production_Details\XX-HCED Review Sheet.dgn

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Pen Table:ANTOINE DR.tbl
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1. PROPERTY DESCRIPTION

I. LOCATION INFORMATION

A. HARRIS COUNTY COMMISSIONER'S PRECINCT:
[X] 1 [ ] 2 [ ] 3 [ ] 4

B. KEY MAP: 411K,411L,411P,411Q,411T,411U

C. ADDRESS: ____

II. LEGAL DESCRIPTION

A. ACREAGE: __

B. [ ] SUBDIVISION: __

[ ] SURVEY & ABSTRACT: __

C. ADJACENT ROADS: ANTOINE DR., WEST MOUNT HOUSTON RD., WEST GULF BANK HOUSTON RD

III. PLATTING

A. SUBDIVISION PLAT
[ ] PROPOSED PLAT / REPLAT
[ ] RECORDED PLAT / REPLAT

B. STREETS PROPOSED
[ ] PUBLIC
[ ] PRIVATE
[ ] PUBLIC & PRIVATE
[ ] NONE

PLAT NAME: ____

IV. JURISDICTIONS

[X] CITY OF HOUSTON
[X] ETJ, CITY OF HOUSTON
[ ] ETJ, CITY OF __
[ ] NO ETJ
[ ] UTILITY DISTRICT (NAME) __

V. HCAD ACCOUNT NOS. (ALL)

____

5. WORK IN HCFCD RIGHT-OF-WAY

I. TYPE OF WORK TO BE PERFORMED IN HCFCD HCFCD ROW

A. BOND/NOTIFICATION INFORMATION
[X] HCFCD WATERSHED WHITE OAK BAYOU
[ ] HCFCD UNIT No. ____
[ ] NUMBER OF OUTFALLS ____
[ ] UTILITY CROSSING
[ ] ROADWAY BRIDGE/CULVERT CROSSING
[ ] FILL ACTIVITY
[ ] REHABILITATION OF CHANNEL
[ ] MAINTENANCE
[ ] TEMPORARY CROSSING
[ ] TRAIL (LENGTH) ____
[ ] OTHER ____
COST OF WORK IN HCFCD ROW ____

II. USACE ENVIRONMENTAL PERMIT

[ ] US ARMY CORPS OF ENGINEERS NATIONWIDE PERMIT NUMBER(S) __
[ ] US ARMY CORPS OF ENGINEERS INDIVIDUAL PERMITS
[ ] OTHER
[ ] NO PERMITS REQUIRED
EXPLAIN: ____

III. REFERENCE / BASIS OF DETERMINATION

[ ] ENVIRONMENTAL CONSULTANT REPORT
BY __
REPORT TITLE __
REPORT DATE __
[ ] OTHER __

NOTES:
I. – III. REQUIRED ON PROJECTS WITH WORK IN A HCFCD CHANNEL. PLEASE REFERENCE SECTION 17 OF THE FLOOD CONTROL DISTRICT POLICY, CRITERIA, AND PROCEDURE MANUAL FOR MORE INFORMATION.

IV. HCFCD STANDARD NOTES: SEE SHEET __ OF THESE PLANS.

V. HCFCD STANDARD DETAILS: SEE SHEET __ OF THESE PLANS.

VI. HCFCD ACCESS PLAN: SEE SHEET __ OF THESE PLANS.

VII. REFER TO THE FOLLOWING PLAN SHEETS: ____
FOR EXISTING AND PROPOSED RIGHT(S) OF WAY INCLUDING DELINEATION AND RECORDING INFORMATION PER HCFCD POLICY, CRITERIA, & PROCEDURE MANUAL (i.e., DRAINAGE EASEMENT, FEE STRIP, ETC.) AND GRANTEE (e.g. COH, HCFCD, PUBLIC, TXDOT, ETC.)

2. SITE DETENTION DRAINAGE

I. PROPOSED DRAINAGE AREA

[ ] NEW DEVELOPMENT AREA: __
[X] RE-DEVELOPMENT AREA (AMOUNT INCREASED IMPERVIOUS AREA): __
[ ] LOW IMPACT DEVELOPMENT (LID)
METHOD/DESCRIPTION ____

II. METHODOLOGY

HCFCD PCPM DETENTION METHOD USED:
[ ] METHOD 1 (LESS THAN 20 ACRES)
[ ] METHOD 2 (20 ACRES TO 640 ACRES)
[ ] METHOD 3 (GREATER THAN 640 ACRES)
[ ] OTHER ____

III. DETENTION VOLUME & OUTFALL

OUTFALL TO:
[ ] .65, H.C.F.C.D. CHANNEL, (H.C.F.C.D. UNIT NO.) ____
[ ] .75, EXISTING STORM SEWER (OWNER & OPERATOR) ____
[ ] 1.00, ROADSIDE DITCH, (OWNER & ROAD NAME) ____
[ ] OTHER (OWNER & OPERATOR) ____

IV. STORMWATER DETENTION BASIN INFORMATION

A. HCFCD PCPM SUMMARY TABLE SEE SHEET __ OF THESE PLANS.

DETENTION BASIN SERVICE AREA		acres	
STORM EVENT	50% EXCEEDANCE (2-YEAR)	10% EXCEEDANCE (10-YEAR)	1% EXCEEDANCE (100-YEAR)
MAXIMUM ALLOWABLE OUTFLOW (PRE-DEVELOPMENT PEAK FLOW)	__	__	__
MAXIMUM OUTFLOW PROVIDED (PEAK FLOW FROM BASIN)	__	__	__
LOWEST NATURAL/FINISHED GROUND OR FINISHED FLOOR ELEVATION ESTIMATE	__		
DESIGN WATER SURFACE ELEVATION	__	__	__
MINIMUM STORAGE REQUIRED (ac-ft)	__	__	__
DETENTION STORAGE PROVIDED (ac-ft)	__	__	__
STORAGE RATE PROVIDED (ac-ft/ac)	__	__	__
OUTFLOW VELOCITY INTO CHANNEL (ft/sec)	__	__	__
DRAIN TIME – 1% ONLY (hours)	__		
EMERGENCY OVERFLOW (TYPE, SIZE, ELEVATION, ETC.)	__		

B. DETENTION BASIN TO BE MAINTAINED BY __

C. DETENTION SERVICE AREA MAP ON SHEET __

D. ADDITIONAL CRITERIA FOR PUMPED DETENTION BASINS
VOLUME OF PUMPED 1% EXCEEDANCE STORAGE VOLUME = __ ACFT __ % OF TOTAL VOLUME
MAXIMUM DESIGN OUTFLOW VELOCITY INTO HCFCD CHANNEL = __ FT/SEC
DRAIN TIME FOR BASIN = __ HOURS BASED ON __ HEAD CONDITIONS

V. DETENTION PROVIDED IN OTHER PLANS:

HCFCD PROJECT No. __ DATE SIGNED BY HCFCD: __
PLAN TITLE __
DETENTION POND SERVICE AREA MAP IS PROVIDED ON SHEET __
ENGINEERING FIRM __
DETENTION BASIN MAINTAINED BY: __

VI. FLOW RESTRICTOR SIZE

OUTFALL PIPE SIZE: __
RESTRICTOR PIPE SIZE: __
RESTRICTOR PLATE DIMENSION: __

VII. DETENTION PROVIDED BY

[ ] REGIONAL DETENTION BASIN SYSTEM (APPROVED H.C. PRJ NO.): __

FOR PROJECTS LOCATED IN ANY FLOODPLAIN
Development constructed or placed in accordance with these plans will comply with all provisions of the designated Floodplain Administrator.
No net fill is allowed in the flood plain and no fill is allowed in the floodway.

OFFSITE SHEET FLOW: (100 YEAR)

OFFSITE SHEET FLOW MAPPING, TOTAL DISCHARGE CALCULATIONS, AND DESIGN ACCOMODATIONS ARE SHOWN ON SHEET __ OR, AS PRESENTED IN THE APPROVED DRAINAGE STUDY ENTITLED __.

TOTAL ACREAGE = __
TOTAL DISCHARGE = __

NOTE: ALL OFFSITE SHEET FLOW FROM ADJACENT PROPERTIES MUST BE IDENTIFIED AND PROPERLY ACCOUNTED FOR IN THE PROJECT. THE SIGNING ENGINEER HEREBY CERTIFIES THAT THESE AREAS HAVE BEEN ADDRESSED.

3. SWQ DISCHARGE INTO FCD FACILITY

I. SWPPP: CONSTRUCTION MEASURES. (Must complete)

[X] DISTURBS >1AC. SITE PLAN & DETAILS ON SHEET(S) __
[ ] DISTURBS <1AC. N/A

*II. APPLICABILITY FOR PERMANENT FEATURES. (Must complete)

EXEMPT NEW DEVELOPMENT:
[ ] PROJECT IS ON A PARCEL (A COMMON PLAN OF DEVELOPMENT) LESS THAN 5 ACRES. (Must be verified with plat)

EXEMPT REDEVELOPMENT:
[X] PROJECT DOES NOT MEET THE DEFINITION OF SIGNIFICANT REDEVELOPMENT (Part A,Sec. 2.39 of Regulations of Harris County, Texas for Stormwater Quality Management)

EXEMPT GRANDFATHERED:
[ ] PROJECT'S DRAINAGE TIES DIRECTLY INTO AN EXISTING DRAINAGE SYSTEM PRIOR TO OCTOBER 1, 2001.
(FOR VERIFICATION: PROVIDE ORIGINAL DRAINAGE AREA MAP INCLUDING CALCULATIONS)

GENERAL:
[ ] PROJECT'S SWQ REQUIREMENTS FALL WITHIN THE JURISDICTION OF: __
[ ] STORMWATER QUALITY PERMIT REQUIREMENT IS COVERED BY AN EXISTING SWQMP WITHIN PROJECT TITLE: __
HARRIS COUNTY PROJECT No __ & SWQ PERMIT No.

STORMWATER QUALITY MANAGEMENT PLAN:
[ ] SITE PLAN ON SHEET(S)

III. PERMANENT SWQ FEATURES. (COMPLETE IF NOT EXEMPT)

[ ] VEGETATIVE CONTROLS USED: (FILTER STRIP, GRASSY SWALE, URBAN FORESTRY DETAILS AND CALCULATIONS APPEAR ON SHEET(S) __
[ ] POND STRUCTURE USED (WET, DRY, WETLANDS) DETAILS AND CALCULATIONSAPPEAR ON SHEET(S) __
[ ] HYDRODYNAMIC TYPE SEPARATOR MODEL: __
[ ] OTHER(S): __

6. REPORTS/AGREEMENTS

I. HCFCD ACCEPTED REPORTS (ALL)

STORMWATER DRAINAGE DESIGN REPORT
REPORT TITLE ANTOINE DRIVE (SEGMENT 1A) DRAINAGE IMPACT STUDY
HCFCD PROJECT # __
ENGINEERING FIRM GAUGE ENGINEERING, LLC
REPORT ACCEPTANCE DATE __

GEOTECHNICAL INVESTIGATION REPORT
REPORT TITLE GEOTECHNICAL STUDY ANTOINE DRIVE PAVING IMPROVEMENTS FROM WEST GULF BANK ROAD TO WEST MOUNT HOUSTON ROAD PRECINCT 1(UPIN:16101MF0H101)
HCFCD PROJECT # __
ENGINEERING FIRM GET GEOTECH ENGINEERING AND TESTING
REPORT ACCEPTANCE DATE __

HCFCD APPROVED VARIANCE
DESCRIPTION OF VARIANCE __
DOCUMENT ID # __
VARIANCE ACCEPTANCE DATE __

II. AGREEMENT TYPE & No.;

[ ] INTERLOCAL (ILA): __
[ ] HCFCD MAINTENANCE __
[ ] TURF ESTABLISHMENT __
[ ] OTHER __

4. FLOOD PLAIN STATUS

I. GENERAL INFORMATION

FIRM PANEL(S) FOR PROPERTY: 48201C0465M
FIRM PANEL(S) DATE: JUNE 9, 2014
STATUS OF PROPERTY ON MAP
[ ] ENTIRELY LOCATED IN UNSHADED ZONE "X"
[X] LOCATED PARTIALLY OR ENTIRELY IN ANY "A" ZONE OR SHADED ZONE "X", DELINEATE FLOODPLAIN BOUNDARY ON CONSTRUCTION DRAWINGS (DRAINAGE LAYOUT PG. NO.__) (1% BASE FLOOD LEVEL__)
(0.2% BASE FLOOD LEVEL__)
[ ] SITE REMOVED FROM FLOODPLAIN BY LOMR, LOMR-F, LOMA CASE NO.__ REVISED FLOODPLAIN IS SHOWN ON SHEET__

ELEVATION INFORMATION
BENCHMARK USED
[X] HARRIS COUNTY FLOODPLAIN REFERENCE MARK
[ ] HARRIS-GALVESTON COASTAL SUBSIDENCE DISTRICT BENCHMARK (FOR COASTAL AREAS)
DESCRIPTION OF BENCHMARK INCLUDING ELEVATION, DATUM AND YEAR OF ADJUSTMENT **(2001 ADJ.)**
CITY OF HOUSTON MONUMENT 5162-0610, A BRASS DISK IN CONCRETE, LOCATED NEAR THE NORTH MEDIAN NOSE OF THE INTERSECTION OF ANTOINE DRIVE AND ARNCLIFFE DRIVE.
ELEV=77.36' NAVD 1988 (GEOID '12A)•

II. FLOOD PLAIN DETERMINATION BASED ON GROUND ELEVATION

[ ] PROPERTY LIES ENTIRELY ABOVE THE BASE FLOOD LEVEL AND IN SHADED ZONE "X"
[ ] PROPERTY LIES PARTIALLY OR ENTIRELY BELOW THE BASE FLOOD LEVEL

III. FLOODPLAIN STORAGE SUMMARY

(APPLIES ONLY TO PORTION OF LAND LOCATED WITHIN FEMA REGULATORY FLOODPLAIN).

A. TOTAL VOLUME OF MATERIAL PROPOSED TO BE MOVED OR PLACED WITHIN THE FIRM DELINEATED FLOODPLAIN (FILL, BASE, CONCRETE, ASPHALT, ETC.):
BELOW 0.2% BASE FLOOD ELEVATION (2001 ADJ.) __ CUBIC YARDS __

B. TOTAL VOLUME OF MATERIAL PROPOSED TO BE REMOVED FROM THE FIRM DELINEATED FLOODPLAIN:
BELOW 0.2% BASE FLOOD ELEVATION (2001 ADJ.) __ CUBIC YARDS __ INCLUDING CALCULATIONS)

C. FILL AREA & VOLUME CALCULATIONS ARE SHOWN ON SHEET __

HCFCD SIGNATURE BLOCK

PROJECT NAME: ANTOINE DRIVE PAVING AND DRAINAGE IMPROVEMENTS PROJECT-SEGMENT I

ADDRESS: ____

WAS ACCEPTED BY HARRIS COUNTY FLOOD CONTROL DISTRICT FOR THE PURPOSES LISTED BELOW:

HARRIS COUNTY FLOOD CONTROL DISTRICT

INTERPOSE NO OBJECTION
BY____
FOR ITEMS LOCATED OUTSIDE OF HCFCD RIGHT-OF-WAY

APPROVED:
BY____
FOR ITEMS LOCATED WITHIN EXISTING HCFCD RIGHT-OF-WAY

APPROVED:
BY____
FOR ITEMS LOCATED WITHIN PROPOSED HCFCD RIGHT-OF-WAY

NO REVIEW REQUIRED:
BY____
FINAL PERMITTING BY OTHERS

ADDITIONAL COMMENTS:

THE PROJECT WAS REVIEWED, HOWEVER, THIS DOES NOT MEAN THE ENTIRE PROJECT, INCLUDING ALL SUPPORTING DATA AND CALCULATIONS HAVE BEEN COMPLETELY CHECKED AND VERIFIED. THESE DRAWINGS ARE SIGNED, DATED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF TEXAS, WHICH THEREFORE CONVEYS THE ENGINEER'S RESPONSIBILITY AND ACCOUNTABILITY. THIS DOES NOT RELIEVE ANY PARTY FROM COMPLYING WITH APPROPRIATE FEDERAL, STATE AND LOCAL ENVIRONMENTAL RULES, LAWS, AND REGULATIONS AND ANY OTHER LEGALLY ADOPTED REGULATION OR ORDINANCE RELATED TO LAND DEVELOPMENT. IF THE CITY SIGNATURES ARE REQUIRED BY ORDINANCE, COUNTY PERMITS WILL NOT BE ISSUED UNTIL SUCH SIGNATURES ARE OBTAINED. PLAN APPROVAL EXPIRATION TO BE IN ACCORDANCE WITH LOCAL GOVERNEMENT CODE CH. 245.

ENGINEER'S CERTIFICATION

I, __, A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF TEXAS, DO HEREBY CERTIFY THAT THE INFORMATION PRESENTED ON THIS SHEET IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND THAT I AM NOT VIOLATING ANY PROVISION OF THE CURRENT TEXAS ENGINEERING PRACTICE ACT AND RULES CONCERNING THE PRACTICE OF ENGINEERING AND PROFESSIONAL ENGINEERING LICENSURE.

ANY VIOLATIONS WILL BE FORWARDED TO THE HARRIS COUNTY DISTRICT ATTORNEY'S OFFICE FOR PROSECUTION.

THE COMPLETED PROJECT CONSISTS OF DRAWING SHEETS 1 THRU ____.

SIGNATURE ____ DATE ____

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JOEL OLSHEFSKI
Engineer
131531
10/21/2025
Date
95% SUBMITTAL
VOGLER & SPENCER ENGINEERING
Texas Registered Engineering Firm F-148

R E V I S I O N S

NOTE: REVISION BLOCK IS TO BE USED ONLY FOR CHANGES MADE AFTER PLANS HAVE BEEN APPROVED BY HARRIS COUNTY FLOOD CONTROL.

DATE	SHEET NO.	DESCRIPTION	P.E. INITIAL	H.C.F.C.D APPROVED DATE

HARRIS COUNTY
FLOOD CONTROL DISTRICT
REVIEW SHEET

VSE
VOGLER & SPENCER ENGINEERING
777 North Eldridge Parkway, Suite 500
Houston, Texas 77079
713-782-0042
www.vs-eng.com
Texas P. E. Firm Registration No. F148

HARRIS COUNTY FLOOD CONTROL PROJECT NO.

VERSION 1.0 OCTOBER 2019
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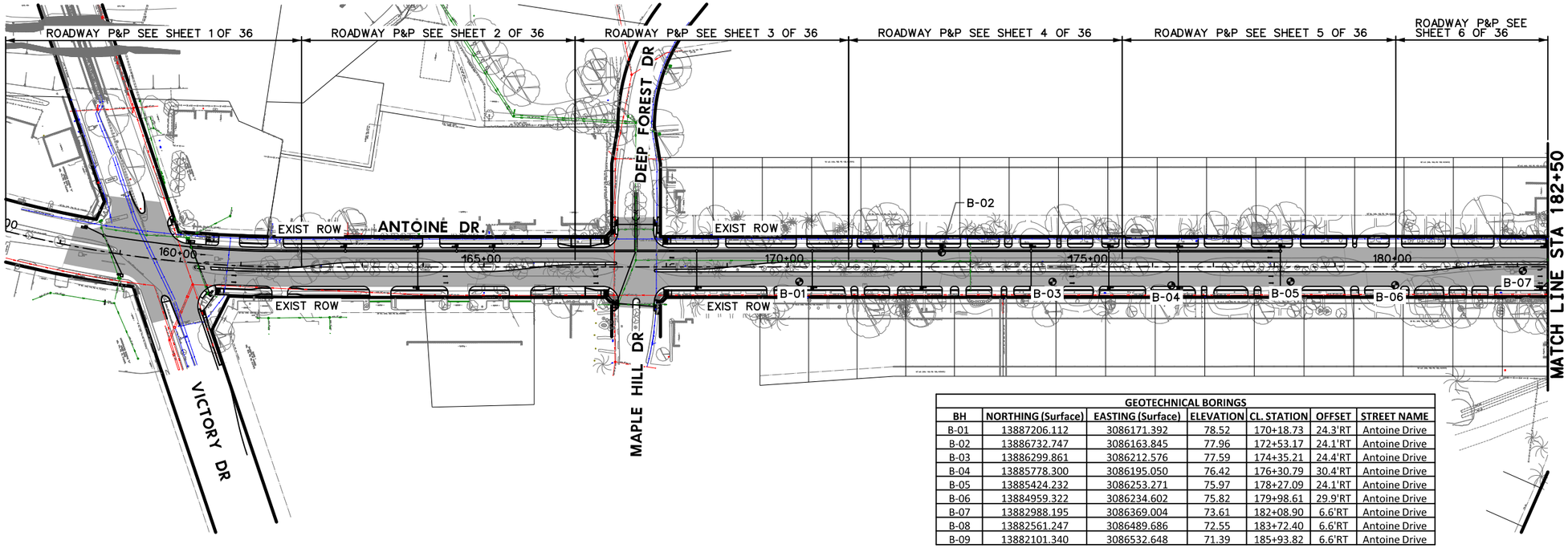
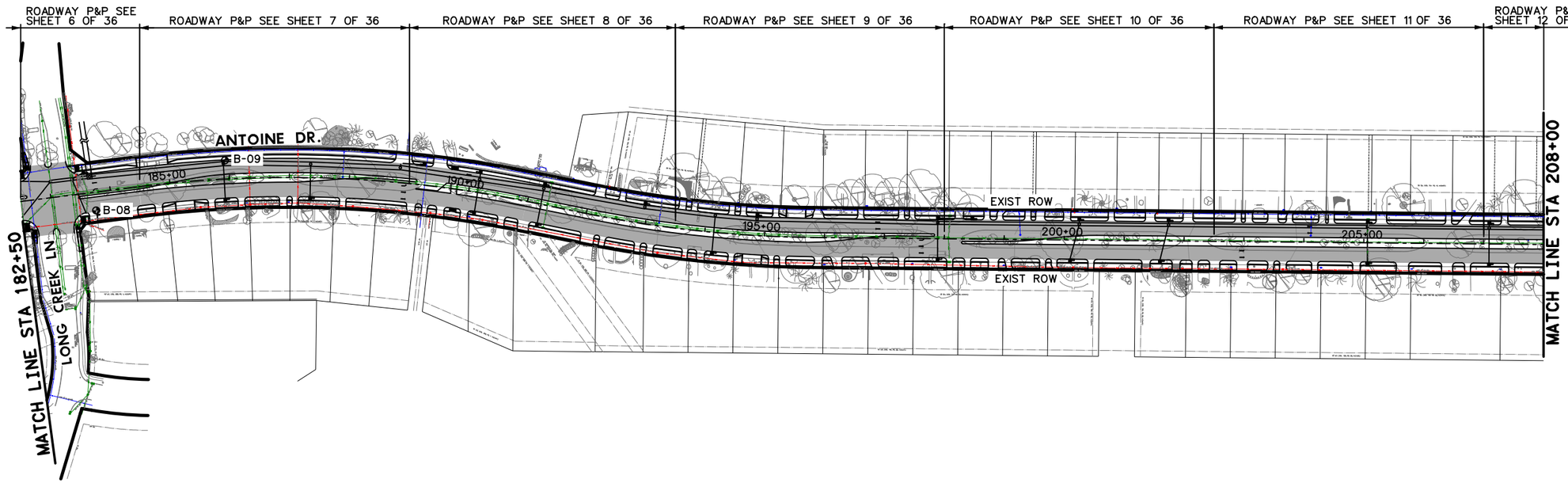


GEOTECHNICAL BORINGS						
BH	NORTHING (Surface)	EASTING (Surface)	ELEVATION	CL. STATION	OFFSET	STREET NAME
B-01	13887206.112	3086171.392	78.52	170+18.73	24.3'RT	Antoine Drive
B-02	13886732.747	3086163.845	77.96	172+53.17	24.1'RT	Antoine Drive
B-03	13886299.861	3086212.576	77.59	174+35.21	24.4'RT	Antoine Drive
B-04	13885778.300	3086195.050	76.42	176+30.79	30.4'RT	Antoine Drive
B-05	13885424.232	3086253.271	75.97	178+27.09	24.1'RT	Antoine Drive
B-06	13884959.322	3086234.602	75.82	179+98.61	29.9'RT	Antoine Drive
B-07	13882988.195	3086369.004	73.61	182+08.90	6.6'RT	Antoine Drive
B-08	13882561.247	3086489.686	72.55	183+72.40	6.6'RT	Antoine Drive
B-09	13882101.340	3086532.648	71.39	185+93.82	6.6'RT	Antoine Drive



LEGEND

PROP PAVEMENT

SOIL BORING

0' 100' 200'

SCALE IN FEET

No.	DATE	REVISIONS	APP.

Texas Department of Transportation

Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

SURVEYED BY:
KUO & ASSOCIATES, INC.

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KARAM QADDO
License
125611
10/24/2025
Date
GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROJECT LAYOUT

SHEET 1 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 19 OF 718	

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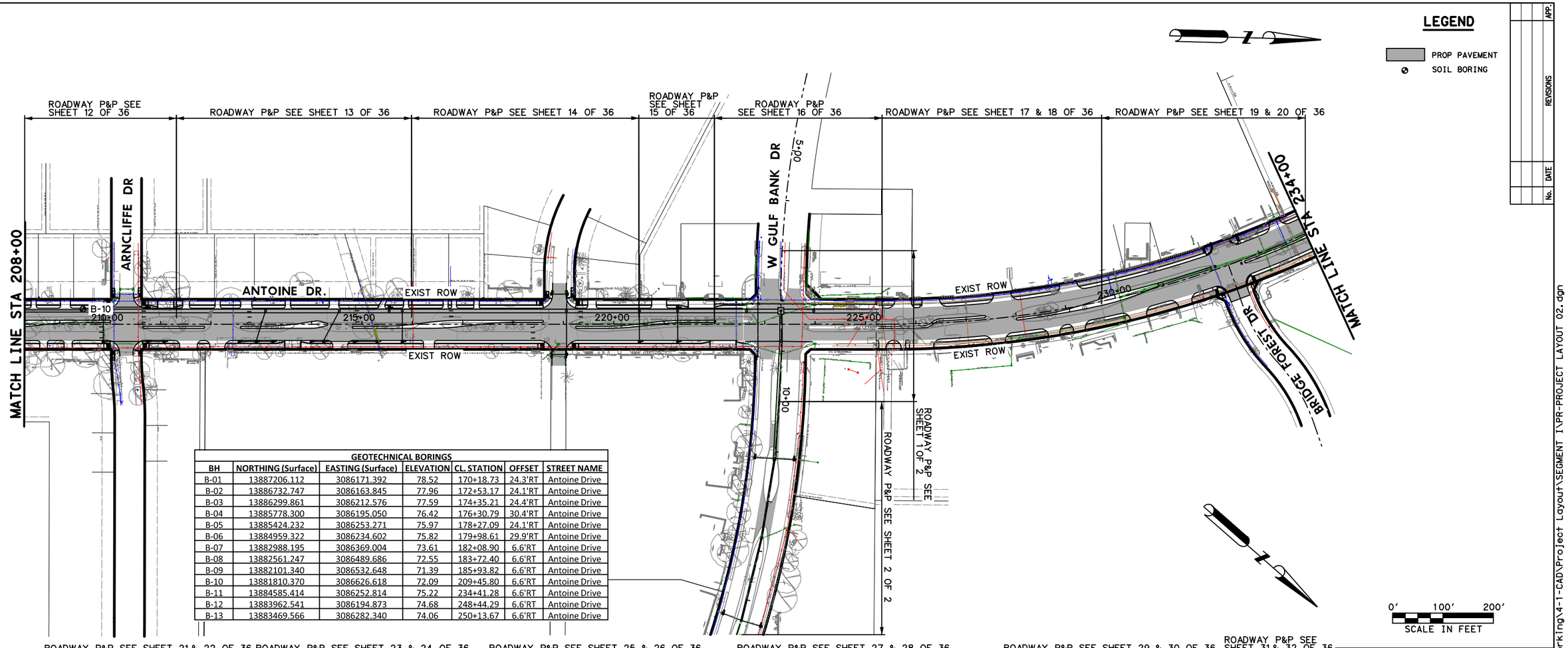

GEOTECHNICAL BORINGS

BH	NORTHING (Surface)	EASTING (Surface)	ELEVATION	CL. STATION	OFFSET	STREET NAME
B-01	13887206.112	3086171.392	78.52	170+18.73	24.3'RT	Antoine Drive
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B-04	13885778.300	3086195.050	76.42	176+30.79	30.4'RT	Antoine Drive
B-05	13885424.232	3086253.271	75.97	178+27.09	24.1'RT	Antoine Drive
B-06	13884959.322	3086234.602	75.82	179+98.61	29.9'RT	Antoine Drive
B-07	13882988.195	3086369.004	73.61	182+08.90	6.6'RT	Antoine Drive
B-08	13882561.247	3086489.686	72.55	183+72.40	6.6'RT	Antoine Drive
B-09	13882101.340	3086532.648	71.39	185+93.82	6.6'RT	Antoine Drive
B-10	13881810.370	3086626.618	72.09	209+45.80	6.6'RT	Antoine Drive
B-11	13884585.414	3086252.814	75.22	234+41.28	6.6'RT	Antoine Drive
B-12	13883962.541	3086194.873	74.68	248+44.29	6.6'RT	Antoine Drive
B-13	13883469.566	3086282.340	74.06	250+13.67	6.6'RT	Antoine Drive

No.	DATE	REVISIONS	APP.

Texas Department of Transportation

Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

SURVEYED BY:
KUO & ASSOCIATES, INC.

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GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROJECT LAYOUT

SHEET 2 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 20 OF 718	

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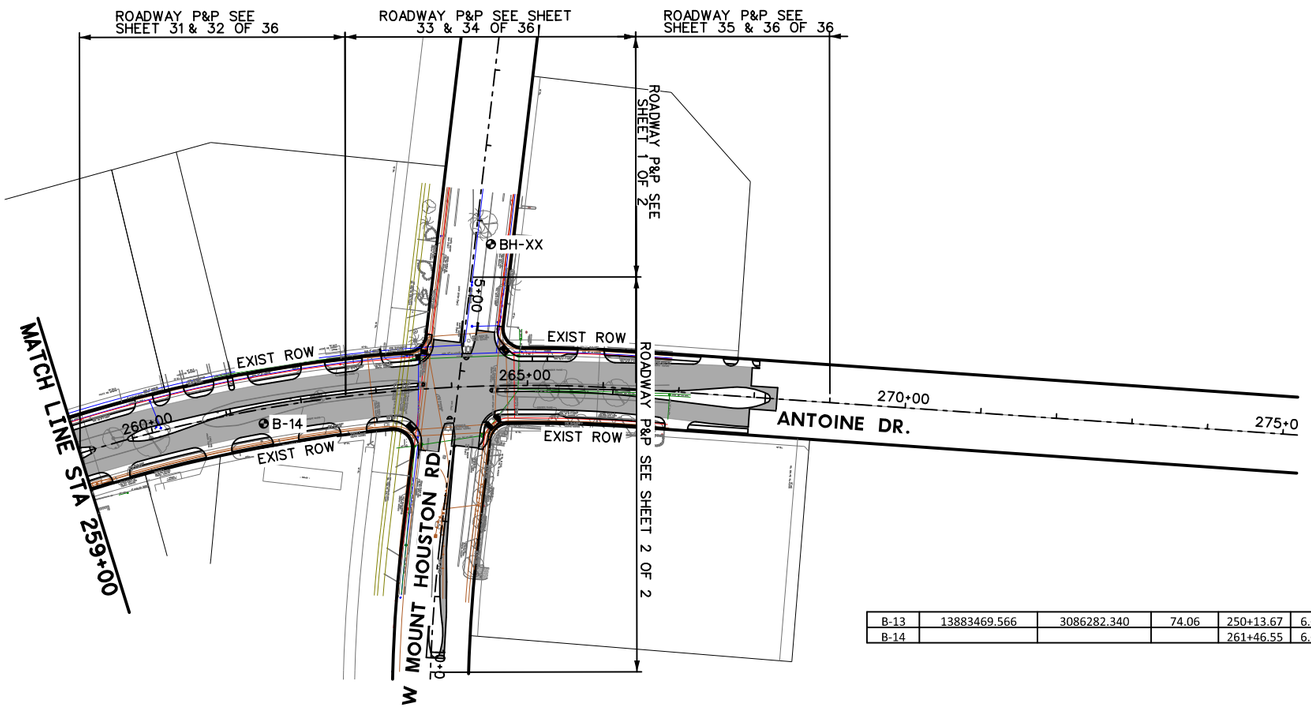
LEGEND

PROP PAVEMENT

SOIL BORING

No.	DATE	REVISIONS	APP.



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B-14				261+46.55	6.6'RT	Antoine Drive

0' 100' 200'

SCALE IN FEET

Texas Department of Transportation

Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

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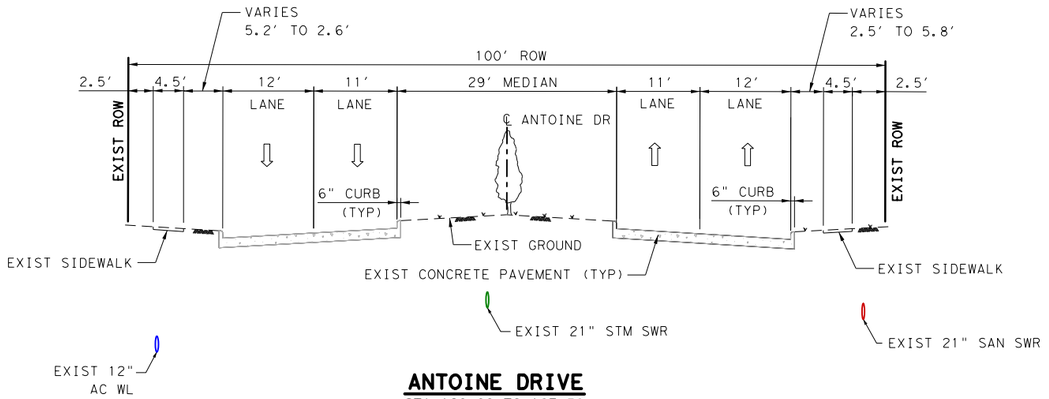
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROJECT LAYOUT

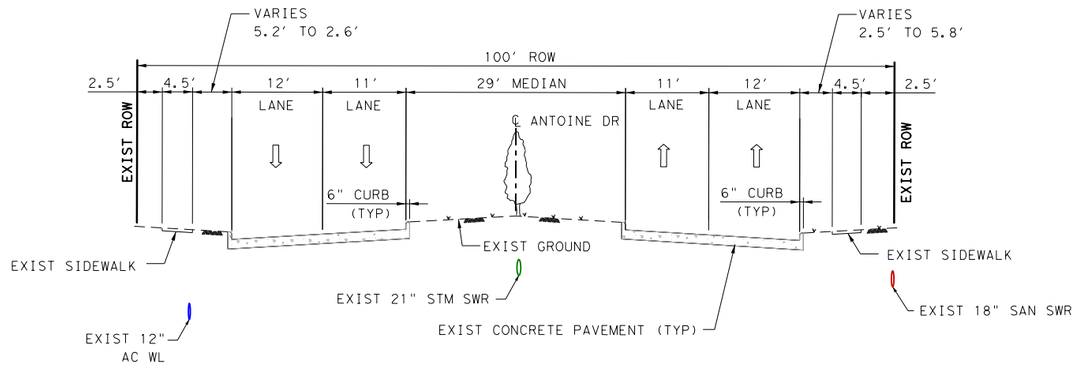
SHEET 3 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 21 OF 718	



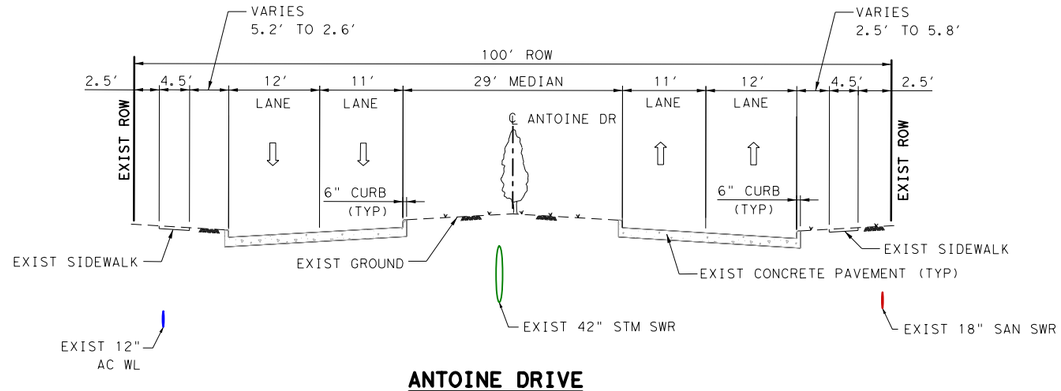
ANTOINE DRIVE

STA 160+00 TO 167+50
N. T. S.



ANTOINE DRIVE

STA 167+50 TO STA 183+00
N. T. S.



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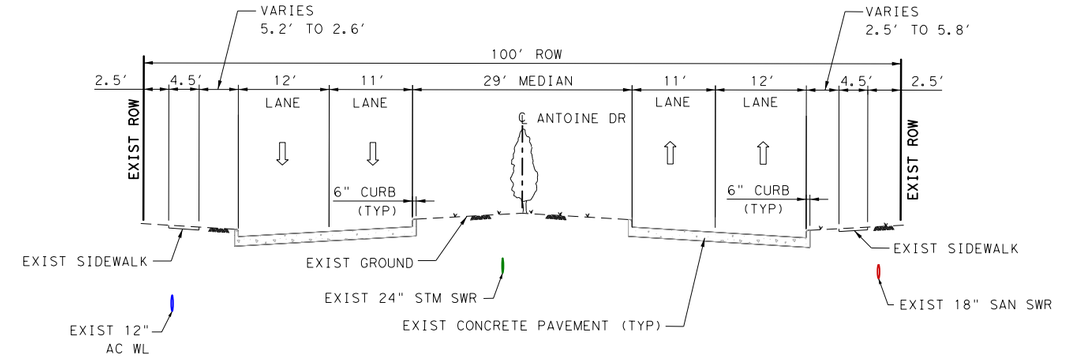

ANTOINE DRIVE

STA 210+00 TO STA 222+00
N. T. S.

NOTE:
SUBSURFACE UTILITES
ARE NOT SHOWN IN TYPICAL SECTION

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ADDRESS:
3300 S. Gessner Rd.
TEL.No.: 713-706-4412

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

EXISTING
TYPICAL SECTION

SHEET 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
N. T. S.	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 22 718	

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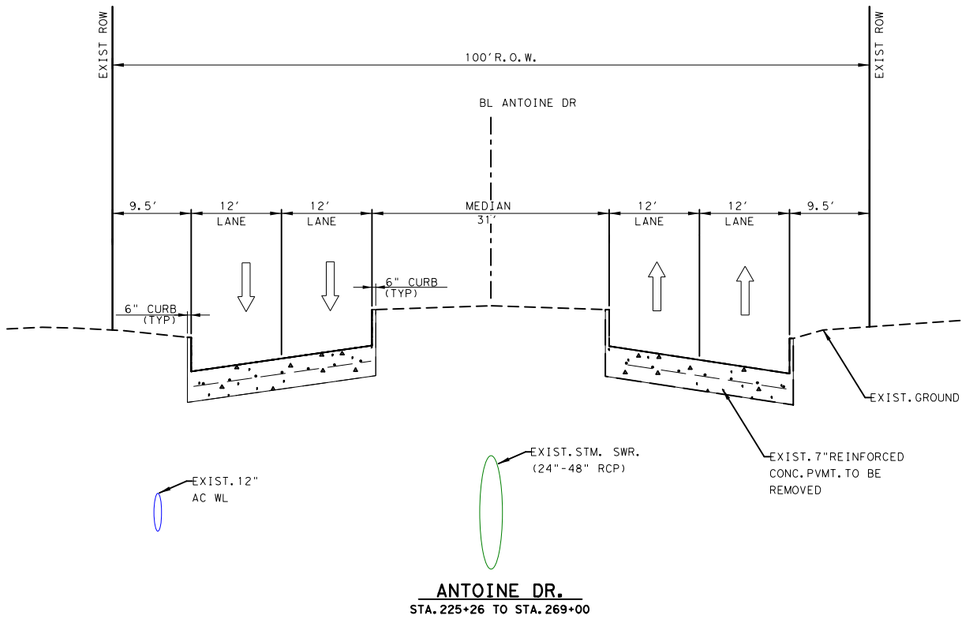
NOTES:

1. SUBSURFCE UTILITIES ARE NOT SHOWN IN TYPICAL SECTIONS.



ANTOINE DR.
STA. 225+26 TO STA. 269+00

No.	DATE	REVISIONS	APP.

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777 North Eldridge Parkway, Suite 500
Houston, Texas 77079
713-782-0042
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

EXISTING TYPICAL SECTIONS

SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
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CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 23 OF 718	

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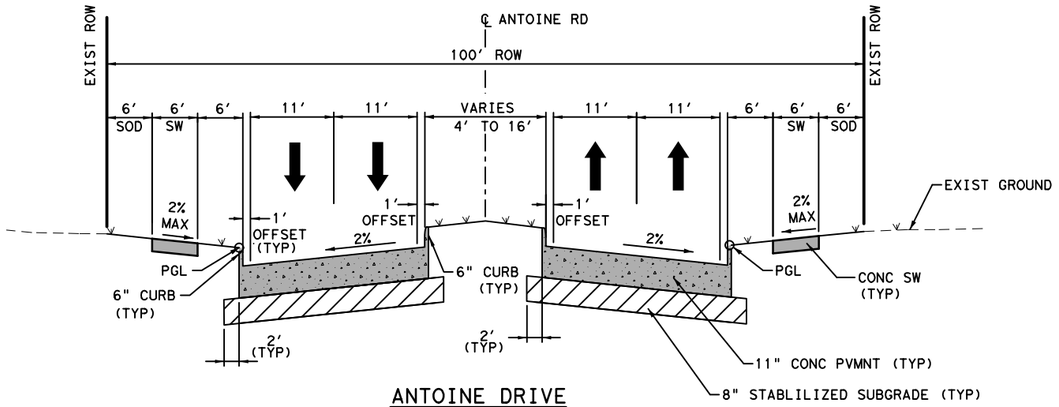
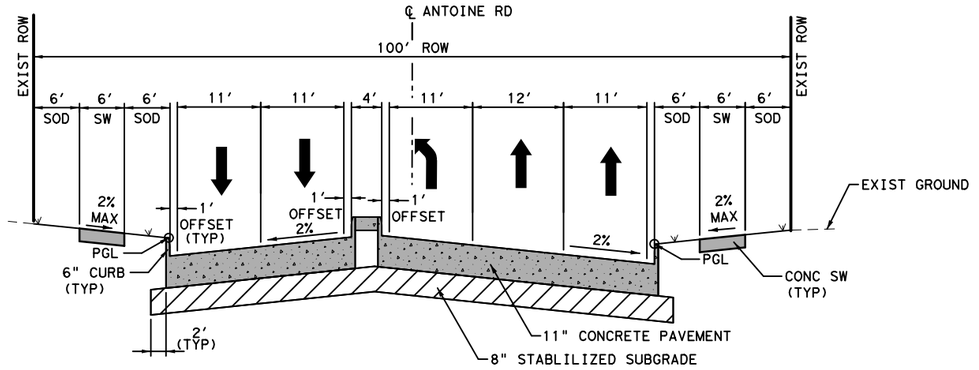


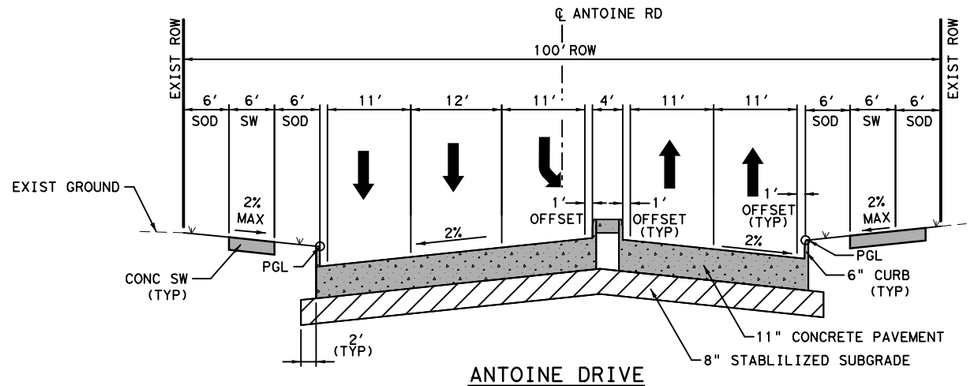
ANTOINE DRIVE

PROPOSED TYPICAL SECTION
VICTORY DRIVE TO WEST GULF BANK
STA 158+00 TO STA 222+00



ANTOINE DRIVE

PROPOSED TYPICAL SECTION
VICTORY DRIVE TO WEST GULF BANK
STA 158+00 TO STA 222+00



ANTOINE DRIVE

PROPOSED TYPICAL SECTION
VICTORY DRIVE TO WEST GULF BANK
STA 158+00 TO STA 222+00

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ANTOINE DRIVE

PROPOSED TYPICAL SECTION

SHEET 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
AS NOTED	
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ROWAIDAH AYOUB	
SHEET NO. 24 OF 718	

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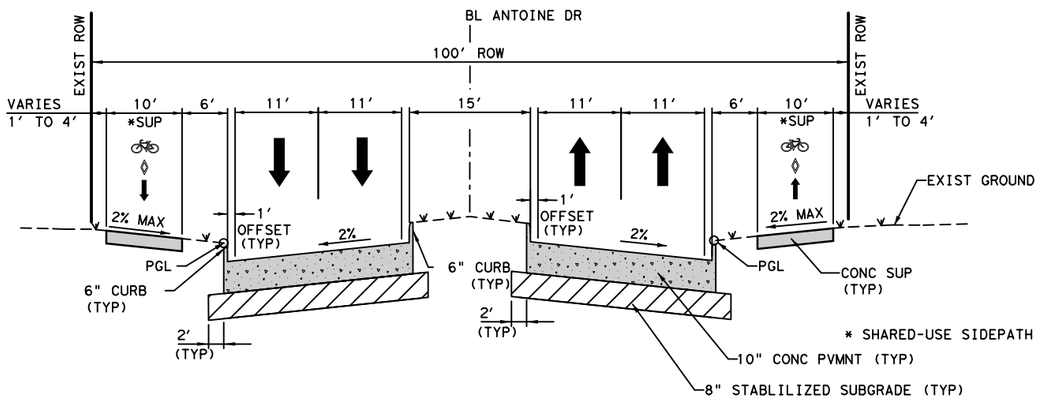
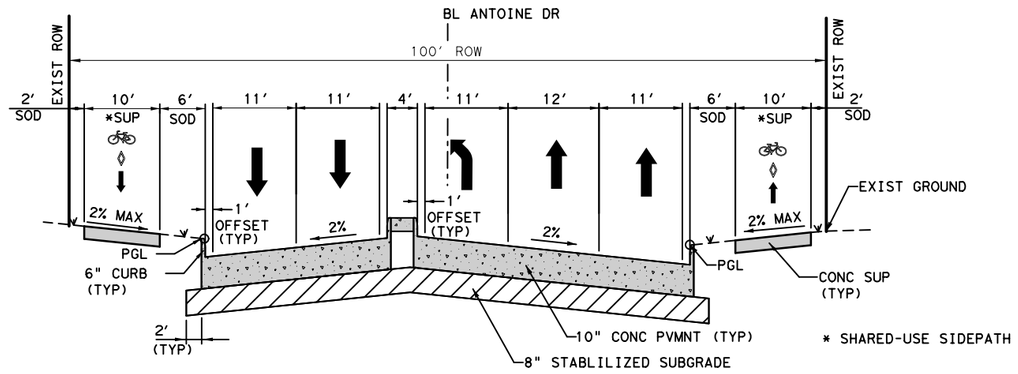
NOTES:

1. SUBSURFCE UTILITIES ARE NOT SHOWN IN TYPICAL SECTIONS.



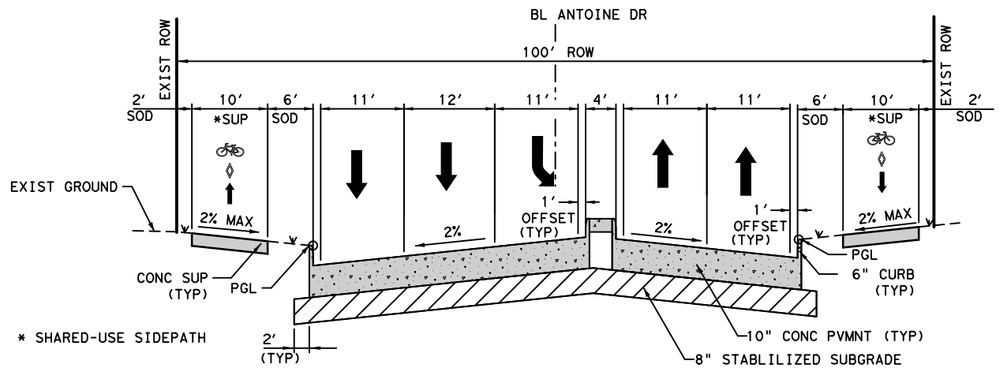
ANTOINE DRIVE

STA. 235+34 TO STA. 236+49
STA. 240+45 TO STA. 243+41
STA. 247+87 TO STA. 249+92
STA. 250+99 TO STA. 251+77
STA. 255+30 TO STA. 259+98
N. T. S.



ANTOINE DRIVE

STA. 228+01 TO STA. 229+07
STA. 232+69 TO STA. 233+70
STA. 244+28 TO STA. 245+66
N. T. S.



ANTOINE DRIVE

STA. 228+01 TO STA. 229+07
STA. 232+69 TO STA. 233+70
STA. 244+28 TO STA. 245+66
N. T. S.

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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED TYPICAL SECTIONS

SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 25 OF 718	

Design Filename: F:\03339 Antoine Drive\802-1\CAD\Plan Production_Roadway\XX-Proposed Sections.dgn

SEQUENCE OF CONSTRUCTION

PHASE 1 NORTH OF W GULF BANK:

STEP 1: USE TYPICAL ONE-LANE CLOSURE TO INSTALL PROPOSED STORM SEWER ON THE WEST SIDE OF ANTOINE DRIVE TO CONNECT TO THE EXISTING STORM SEWER AT PINCAY OAKS DRIVE AND MAYWOOD FOREST DRIVE, RESTORE PAVEMENT FOR OUTER LANE WITH TEMPORARY ASPHALT TO REOPEN TO TRAFFIC. MAINTAIN POSITIVE DRAINAGE AT ALL TIMES. WORK IS INCIDENTAL TO TRAFFIC CONTROL PLAN AND WILL NOT BE PAID SEPARATELY.
STEP 2 & 3: CLOSE THE INNER LANES AND SHIFT TRAFFIC TO OUTER LANES, INSTALL PROPOSED STORM SEWERS, MEDIANS AND PAVEMENT FOR INNER LANES. USE TEMPORARY ASPHALT AS NEEDED TO REOPEN THE ROADS TO TRAFFIC AFTER WORK IN THIS PHASE IS COMPLETED. MEDIAN OPENINGS SHALL REMAIN OPEN TO TRAFFIC IF NO WORK IS BEING PERFORMED. USE DRUMS TO MAINTAIN THE TRAVEL LANES WIDTH OF 12-FT WIDE UNTIL PHASE 4, THE MEDIAN OPENING IS TO BE REOPENED WITH A TEMPORARY ASPHALT IF NEEDED ONCE STORM SEWER INSTALLATION IS COMPLETED. DO NOT CLOSE TWO CONSECUTIVE MEDIAN OPENINGS SIMULTANEOUSLY

STEP 4-10: SEE W MOUNT INTERSECTION TRAFFIC CONTROL & DETOUR SHEETS FOR MORE DETAILS.

PHASE 2 SOUTH OF W GULF BANK:

USING TYPICAL ONE-LANE CLOSURE, CLOSE INNER LANES AND SHIFT TRAFFIC TO OUTER LANES, INSTALL PROPOSED SANITARY SEWER (SAN SWR AT THE INTER SECTION CAN BE INSTALLED BY CLOSING ONE LANE AT THE TIME TO MAINTAIN THE TRAFFIC IN ALL DIRECTIONS), LATERALS STORM SEWERS, MEDIANS, AND PAVEMENT FOR INNER LANES. MEDIAN OPENINGS SHALL REMAIN OPEN TO TRAFFIC IF NO WORK IS BEING PERFORMED. USE DRUMS TO KEEP THE TRAVEL LANES LIMITS TO THE EXISTING ONE TILL THE BEGINNING OF PHASE 4, THE MEDIAN OPENING IS TO BE REOPENED WITH A TEMPORARY ASPHALT IF NEEDED ONCE STORM SEWER INSTALLATION IS COMPLETED. DO NOT CLOSE TWO CONSECUTIVE MEDIAN OPENINGS SIMULTANEOUSLY

PHASE 3 WEST SIDE OF ANTOINE DRIVE FROM BEGINNING PROJECT TO WEST GULF BANK INTERSECTION

SHIFT SOUTHBOUND TRAFFIC TO THE NEWLY CONSTRUCTED SOUTHBOUND INNER LANE. OPEN NORTHBOUND TWO LANES TO TRAFFIC. INSTALL PROPOSED STORM SEWER, LATERALS AND INLETS, WATER LINE, CURB LANE PAVEMENT, AND BACK OF CURB IMPROVEMENTS.

PHASE 4 W GULF BANK:

* REMOVE MEDIANS AS SHOWN IN PLANS, USE TEMPORARY ASPHALT AS NEEDED TO MAINTAIN TRAVEL LANES SHOWN IN PLANS.

STEP 1: FROM STA 223+04.74 TO STA 222+55.51 ALONG W GULF BANK EASTBOUND SHIFT THE TRAFFIC TO THE INNER LANE, MAINTAIN TWO TRAVEL LANES WESTBOUND/EASTBOUND, ALONG ANTOINE DR SOUTHBOUND MERGE THE TRAFFIC TO INNER LANE, INSTALL PROPOSED STORM SEWERS. USE TEMPORARY ASPHALT AS NEEDED TO REOPEN THE ROADS TO TRAFFIC AFTER THE STORM SEWER BEING CONSTRUCTED.

STEP 2: FROM STA 223+38.82 TO STA 223+04.74 ALONG W GULF BANK EASTBOUND SHIFT THE TRAFFIC TO THE OUTER LANE, MAINTAIN TWO TRAVEL LANES WESTBOUND AND ONE LANE EASTBOUND, ALONG ANTOINE DR SOUTHBOUND MERGE THE TRAFFIC TO INNER LANE, INSTALL PROPOSED STORM SEWERS. USE TEMPORARY ASPHALT AS NEEDED TO REOPEN THE ROADS TO TRAFFIC AFTER THE STORM SEWER BEING CONSTRUCTED.

STEP 3: FROM STA 8+48.5 TO STA 8+28.45 USE TYPICAL ONE-LANE CLOSURE ALONG W GULF BANK TO CLOSE THE LEFT TURN, MAINTAIN 2 TRAVEL LANES ALONG W GULF BANK WESTBOUND/EASTBOUND, ALONG ANTOINE DR SOUTHBOUND MERGE THE TRAFFIC TO OUTER LANES, AND SHIFT THE LEFT TURN LANE TO THE MEDIAN, AND CLOSE THE LEFT TURN LANE ALONG THE NORTHBOUND INSTALL PROPOSED STORM SEWERS. USE TEMPORARY ASPHALT AS NEEDED TO REOPEN THE ROADS TO TRAFFIC AFTER THE STORM SEWER BEING CONSTRUCTED.

STEP 4: FROM STA 8+67.6 TO STA 8+48.5 USE TYPICAL ONE-LANE CLOSURE ALONG W GULF BANK TO CLOSE THE LEFT TURN, MAINTAIN 2 TRAVEL LANES ALONG W GULF BANK WESTBOUND/EASTBOUND, ALONG ANTOINE DR NORTHBOUND MERGE THE TRAFFIC TO OUTER LANE, AND CLOSE THE LEFT TURN LANE ALONG THE SOUTHBOUND. INSTALL PROPOSED STORM SEWERS. USE TEMPORARY ASPHALT AS NEEDED TO REOPEN THE ROADS TO TRAFFIC AFTER THE STORM SEWER BEING CONSTRUCTED.

STEP 5: FROM STA 9+16.56 TO STA 8+67.6 USE TYPICAL ONE-LANE CLOSURE ALONG W GULF BANK TO CLOSE THE LEFT TURN, MAINTAIN 2 TRAVEL LANES ALONG W GULF BANK WESTBOUND/EASTBOUND, ALONG ANTOINE DR NORTHBOUND MERGE THE TRAFFIC TO INNER LANE, INSTALL PROPOSED STORM SEWERS. USE TEMPORARY ASPHALT AS NEEDED TO REOPEN THE ROADS TO TRAFFIC AFTER THE STORM SEWER BEING CONSTRUCTED.

STEP 6: FROM STA 14+42.44 TO STA 9+16.56 USE TYPICAL ONE-LANE CLOSURE, CLOSE INNER LANES AND MERGE TRAFFIC TO OUTER LANES, INSTALL PROPOSED STORM SEWERS, AND PAVEMENT RESTORATION. USE TEMPORARY ASPHALT AS NEEDED TO REOPEN THE ROADS TO TRAFFIC AFTER THE STORM SEWER BEING CONSTRUCTED.

STEP 7: ALONG W GULF BANK MAINTAIN THE WESTBOUND OUTER LANE AND ONE LEFT TURN LANE, ALONG ANTOINE DR SHIFT THE TRAFFIC TO THE INNER LANE AND MAINTAIN THE OUTLANE FOR RIGHT TURN ONLY, INSTALL PROPOSED STORM SEWERS. USE TEMPORARY ASPHALT AS NEEDED TO REOPEN THE ROADS TO TRAFFIC AFTER THE STORM SEWER BEING CONSTRUCTED.

STEP 8: ALONG ANTOINE DR CLOSE THE OUTER LANE AND SHIFT THE TRAFFIC TO THE INNER LANE, ALONG W GULF BANK MAINTAIN THE OUTER LANE FOR RIGHT TURN ONLY AND USE THE INNER LANE FOR WESTBOUND TRAFFIC TO INSTALL PROPOSED STORM SEWERS. USE TEMPORARY ASPHALT AS NEEDED TO REOPEN THE ROADS TO TRAFFIC AFTER THE STORM SEWER BEING CONSTRUCTED.

PHASE 5 WEST SIDE OF ANTOINE DRIVE FROM W GULF BANK INTERSECTION TO END OF PROJECT.
SHIFT SOUTHBOUND TRAFFIC TO THE NEWLY CONSTRUCTED SOUTHBOUND INNER LANE. OPEN NORTHBOUND TWO LANES TO TRAFFIC. INSTALL PROPOSED STORM SEWER, LATERALS AND INLETS, WATER LINE, CURB LANE PAVEMENT, AND BACK OF CURB IMPROVEMENTS.

- WORK CAN BE DONE IN MULTIPLE STEPS.
- CONTRACTOR MUST MAINTAIN POSITIVE DRAINAGE AT ALL TIMES. WORK IS INCIDENTAL AND WILL NOT BE PAID SEPARATELY.

PHASE 6 EAST SIDE OF ANTOINE DRIVE FROM BEGINNING OF THE PROJECT TO W GULF BANK INTERSECTION.
SHIFT NORTHBOUND TRAFFIC TO THE NEWLY CONSTRUCTED NORTHBOUND INNER LANE. OPEN SOUTHBOUND TWO LANES TO TRAFFIC. INSTALL PROPOSED STORM SEWER LATERALS AND INLETS, CURB LANE PAVEMENT, AND BACK OF CURB IMPROVEMENTS.

PHASE 7 W GULF BANK-ANTOINE DRIVE INTERSECTION:

STEP 1
REDUCE WEST GULF BANK ROAD WESTBOUND TRAFFIC TO THE OUTER LANE,MAINTAIN MINIMUM 11-FT WIDE TRAVEL LANES. REDUCE ANTOINE DR NORTHBOUND TO THE INNER LANE, MAINTAIN MINIMUM 11-FT WIDE TRAVEL LANES TO INSTALL PROPOSED PAVEMENT AS SHOWN IN THE PLANS.

STEP 2
SHIFT WEST GULF BANK ROAD WESTBOUND TRAFFIC TO THE EASTBOUND LANE, MAINTAIN MINIMUM 11-FT WIDE LANE. REDUCE ANTOINE DR NORTHBOUND TO THE INNER LANE, MAINTAIN MINIMUM 11-FT WIDE TRAVEL LANES TO INSTALL PROPOSED PAVEMENT IN THE NORTHEAST QUADRANT.

STEP 3 NORTH INNER LANES
SHIFT WEST GULF BANK ROAD WESTBOUND TRAFFIC TO THE EASTBOUND LANE, MAINTAIN MINIMUM 11-FT WIDE LANE 2-WAY TRAVEL LANES. REDUCE ANTOINE DR NORTHBOUND/SOUTHBOUND TO THE OUTER LANES, MAINTAIN MINIMUM 11-FT WIDE TRAVEL LANES TO INSTALL PROPOSED PAVEMENT IN THE NORTH INNER.

STEP 4 NORTHWEST QUADRANT

SHIFT WEST GULF BANK ROAD WESTBOUND TRAFFIC TO THE EASTBOUND LANE, MAINTAIN MINIMUM 11-FT WIDE LANE 2-WAY TRAVEL LANES. REDUCE ANTOINE DR SOUTHBOUND TO THE INNER LANE, MAINTAIN MINIMUM 11-FT WIDE TRAVEL LANES TO INSTALL PROPOSED PAVEMENT IN THE NORTHWEST QUADRANT PAVEMENT.

STEP 5
REDUCE WEST GULF BANK ROAD EASTBOUND TRAFFIC TO THE OUTER LANE, MAINTAIN MINIMUM 11-FT WIDE TRAVEL LANES. REDUCE ANTOINE DR SOUTHBOUND TO THE INNER LANE, MAINTAIN MINIMUM 11-FT WIDE LANE TRAVEL LANE TO INSTALL PROPOSED PAVEMENT AS SHOWN IN THE PLANS.

STEP 6
SHIFT WEST GULF BANK ROAD EASTBOUND TRAFFIC TO THE WESTBOUND LANE, MAINTAIN MINIMUM 11-FT WIDE LANE 2-WAY TRAVEL LANES. REDUCE ANTOINE DR SOUTHBOUND TO THE INNER LANE, MAINTAIN MINIMUM 11-FT WIDE LANE TRAVEL LANE TO INSTALL PROPOSED PAVEMENT IN THE SOUTHWEST QUADRANT.

STEP 7 SOUTH INNER LANES
SHIFT WEST GULF BANK ROAD EASTBOUND TRAFFIC TO THE WESTBOUND LANE, MAINTAIN MINIMUM 11-FT WIDE LANE 2-WAY TRAVEL LANES. REDUCE ANTOINE DR NORTHBOUND/SOUTHBOUND TO THE OUTER LANES, MAINTAIN MINIMUM 11-FT WIDE TRAVEL LANES TO INSTALL PROPOSED PAVEMENT IN THE SOUTH INNER.

STEP 8 SOUTHEAST QUADRANT
SHIFT WEST GULF BANK ROAD EASTBOUND TRAFFIC TO THE WESTBOUND LANE, MAINTAIN MINIMUM 11-FT WIDE LANE 2-WAY TRAVEL LANES. AND REDUCE ANTOINE DR NORTHBOUND TRAFFIC TO THE INNER LANE, MAINTAIN MINIMUM 11-FT WIDE LANE 2-WAY TRAFFIC LANES TO INSTALL PROPOSED PAVEMENT IN THE SOUTHEAST QUADRANT.

STEP 9
USE TYPICAL ONE-LANE CLOSURE TO INSTALL MEDIANS ALONG W GULF BANK.

PHASE 8 EAST SIDE OF ANTOINE DRIVE FROM W GULF BANK INTERSECTION TO END OF PROJECT.
SHIFT NORTHBOUND TRAFFIC TO THE NEWLY CONSTRUCTED NORTHBOUND INNER LANE. OPEN SOUTHBOUND TWO LANES TO TRAFFIC. INSTALL PROPOSED STORM SEWER LATERALS AND INLETS, CURB LANE PAVEMENT, AND BACK OF CURB IMPROVEMENTS.

NOTE:

ANTOINE DR. CURRENT SPEED LIMITS 30 MPH
W GULF BANK CURRENT SPEED LIMITS 40 MPH
W GULF BANK TEMPORARY CONSTRUCTION
SPEED LIMITS 30 MPH

No.	DATE	REVISIONS	APP:

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CITY OF HOUSTON
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ANTOINE DRIVE

SEQUENCE OF CONSTRUCTION

SHEET 1 OF 7

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
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SHEET NO. 26 OF 718	

Pen Table: ANTOINE DR.tbl
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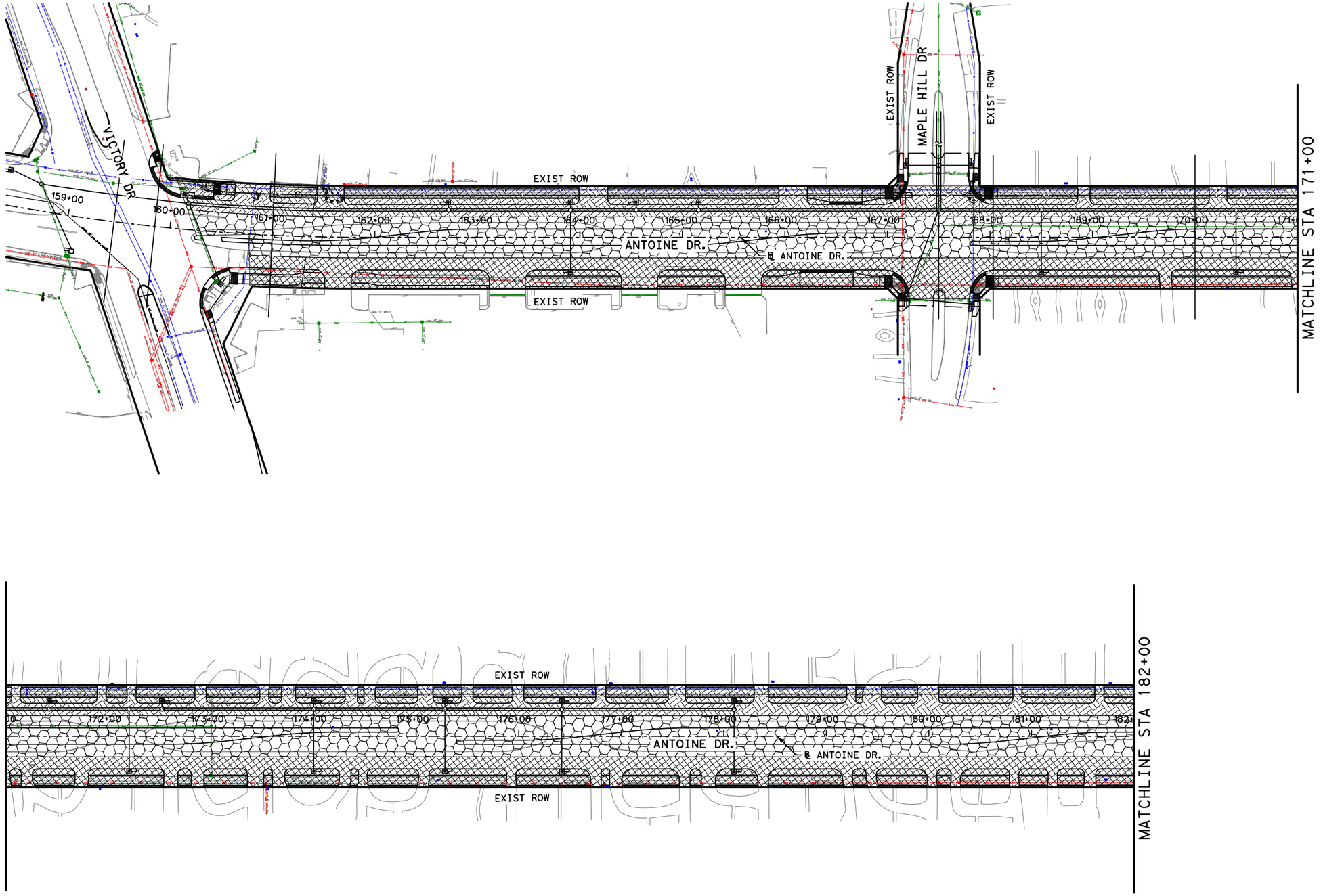

LEGEND

- TCP PHASE 1
- TCP PHASE 2
- TCP PHASE 3
- TCP PHASE 4
- TCP PHASE 5
- TCP PHASE 6
- TCP PHASE 7
- TCP PHASE 8

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0′ 50′ 100′
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

SEQUENCE OF CONSTRUCTION

SHEET 2 OF 7

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 27 OF 718	

Pen Table: ANTOINE DR.tbl
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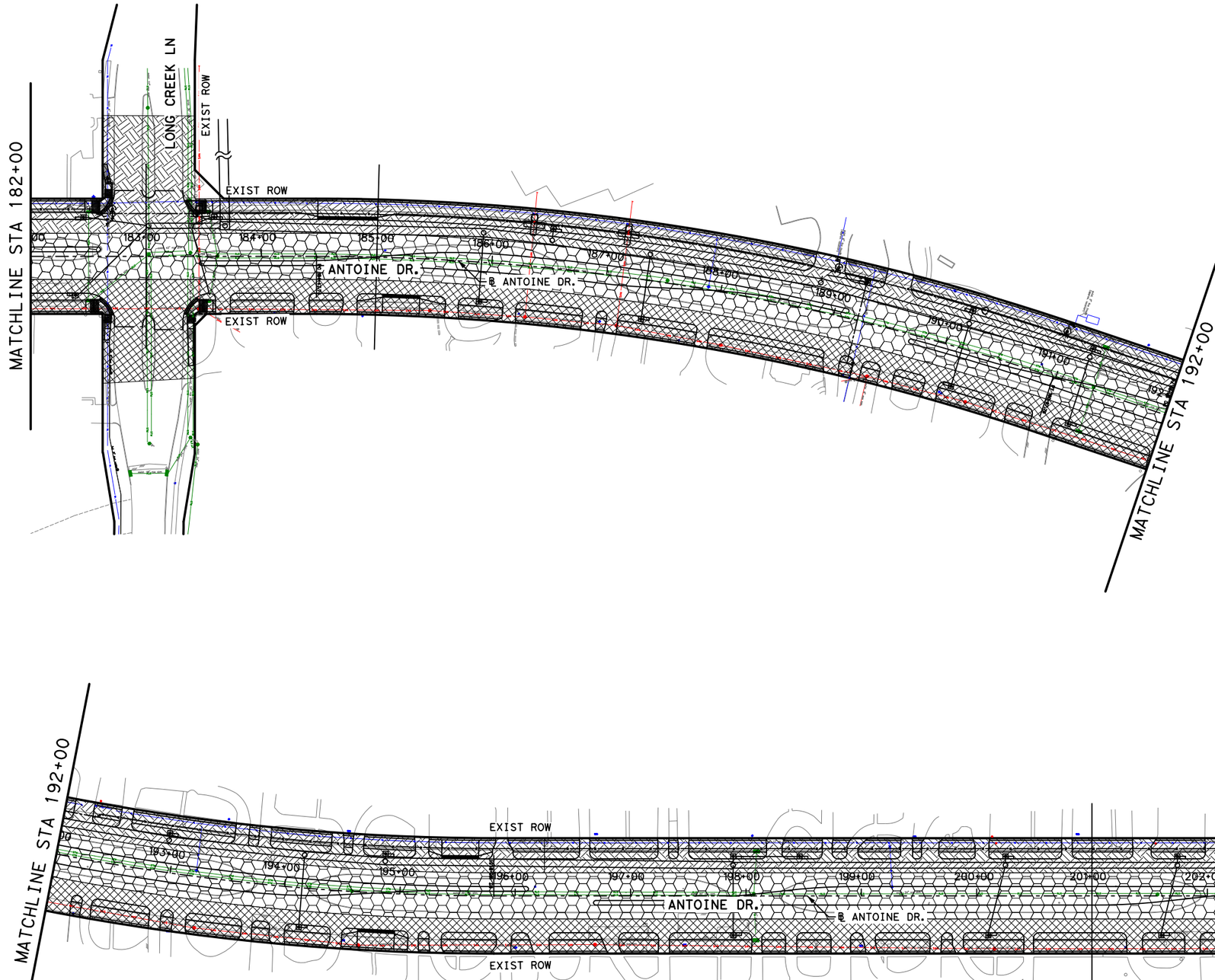

LEGEND

- TCP PHASE 1
- TCP PHASE 2
- TCP PHASE 3
- TCP PHASE 4
- TCP PHASE 5
- TCP PHASE 6
- TCP PHASE 7
- TCP PHASE 8

No.	DATE	REVISIONS	APP.

N

0′ 50′ 100′
SCALE IN FEET

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

SEQUENCE OF CONSTRUCTION

SHEET 3 OF 7

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 28 OF 718	

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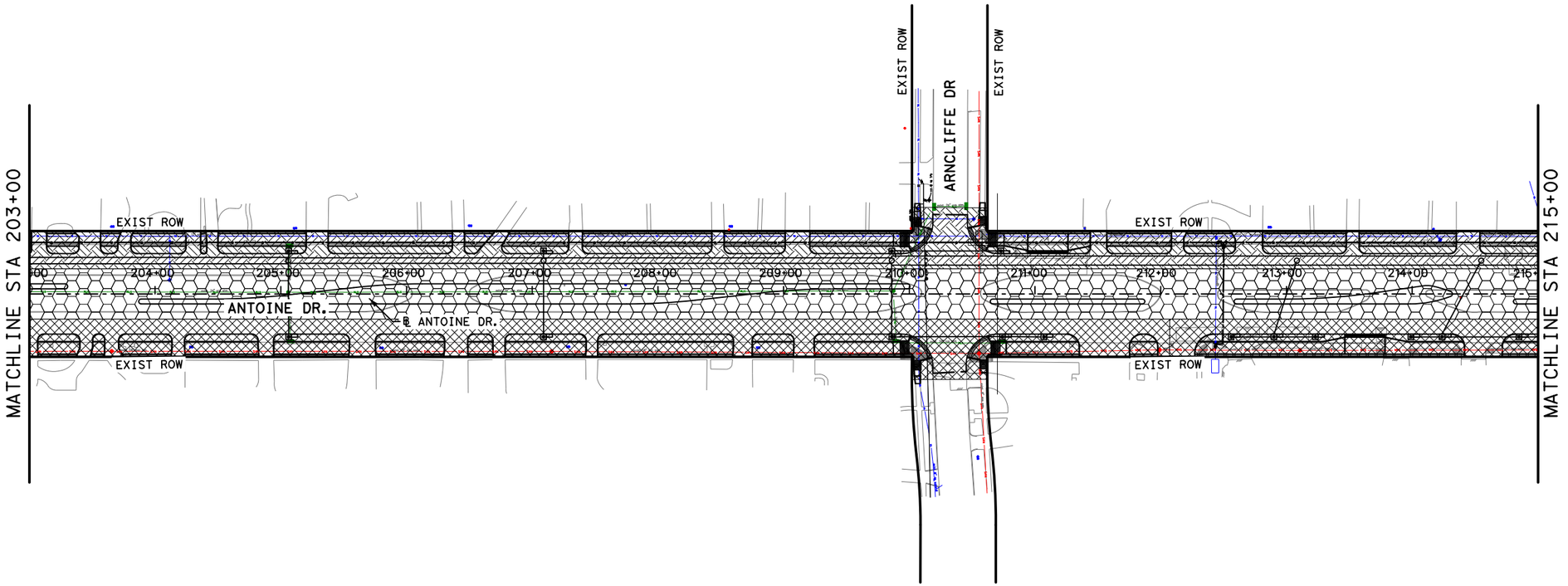

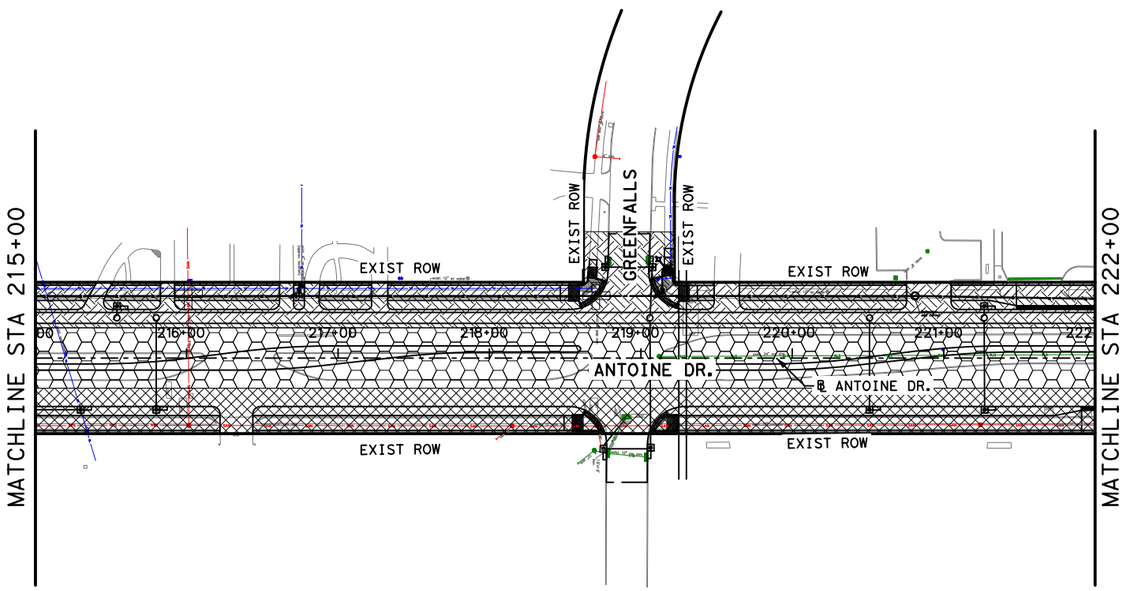

LEGEND

- TCP PHASE 1
- TCP PHASE 2
- TCP PHASE 3
- TCP PHASE 4
- TCP PHASE 5
- TCP PHASE 6
- TCP PHASE 7
- TCP PHASE 8

No.	DATE	REVISIONS	APP.

N

0′ 50′ 100′
SCALE IN FEET

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TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY, #400
HOUSTON, TX 77079

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

SEQUENCE OF CONSTRUCTION

SHEET 4 OF 7

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 29 OF 718	

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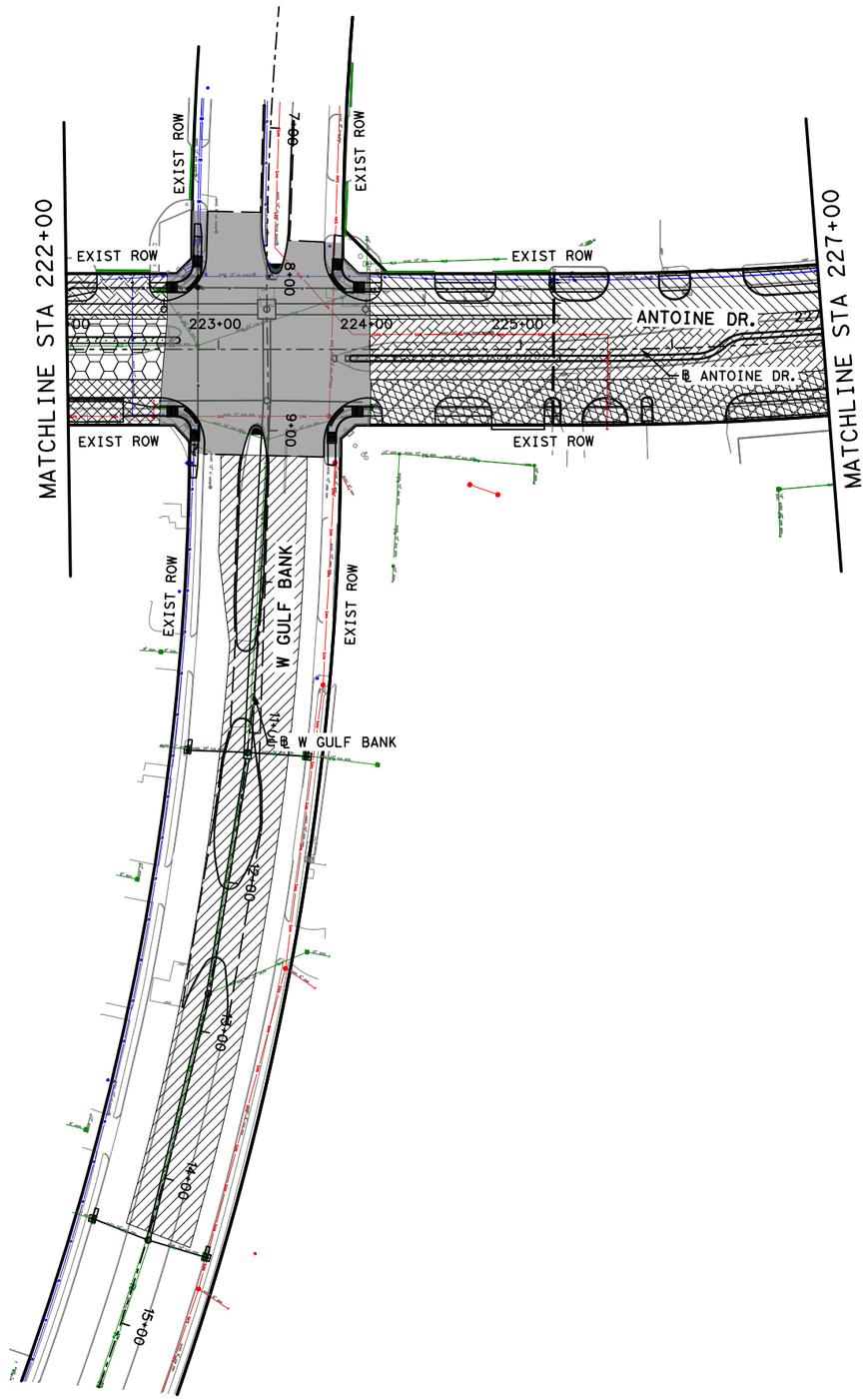

LEGEND

- TCP PHASE 1
- TCP PHASE 2
- TCP PHASE 3
- TCP PHASE 4
- TCP PHASE 5
- TCP PHASE 6
- TCP PHASE 7
- TCP PHASE 8

No.	DATE	REVISIONS	APP.

N

0′ 50′ 100′
SCALE IN FEET

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11750 KATY FREEWAY, #400
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

SEQUENCE OF CONSTRUCTION

SHEET 5 OF 7

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 30 OF 718	

Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Traffic Control\W GULF BANK\SEG 1_SEQUENCE OF CONSTRUCTION 05.dgn

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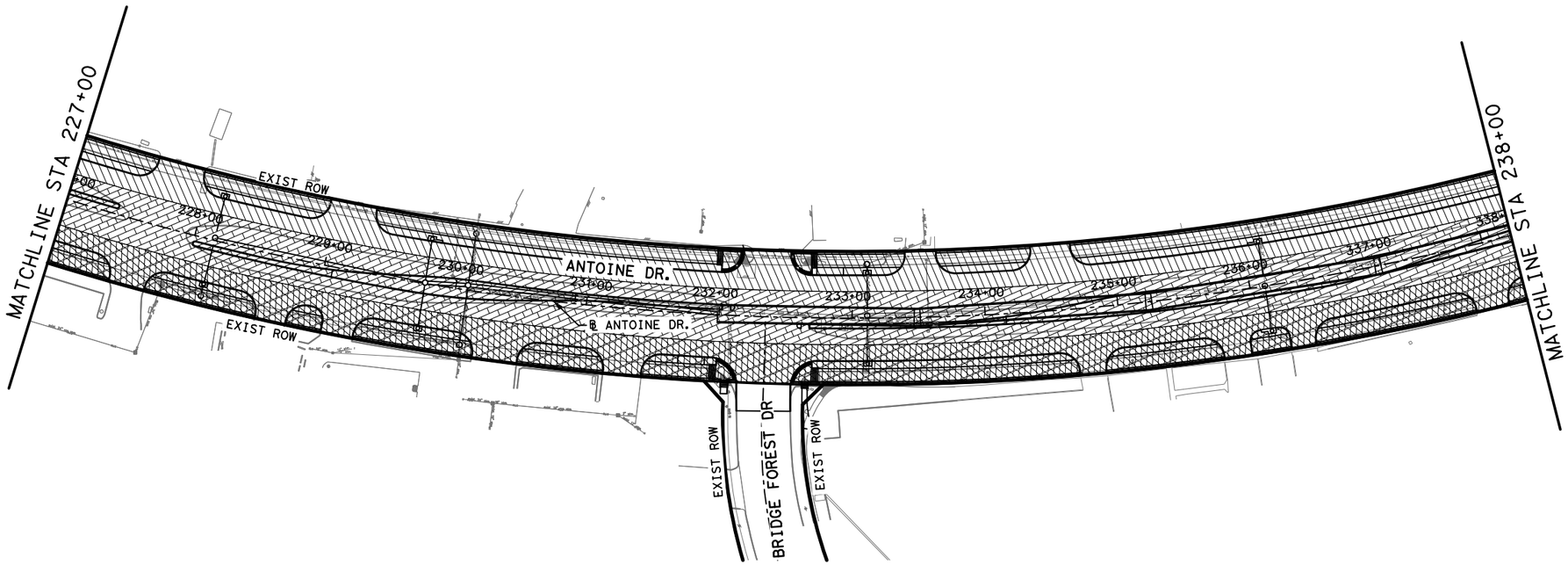

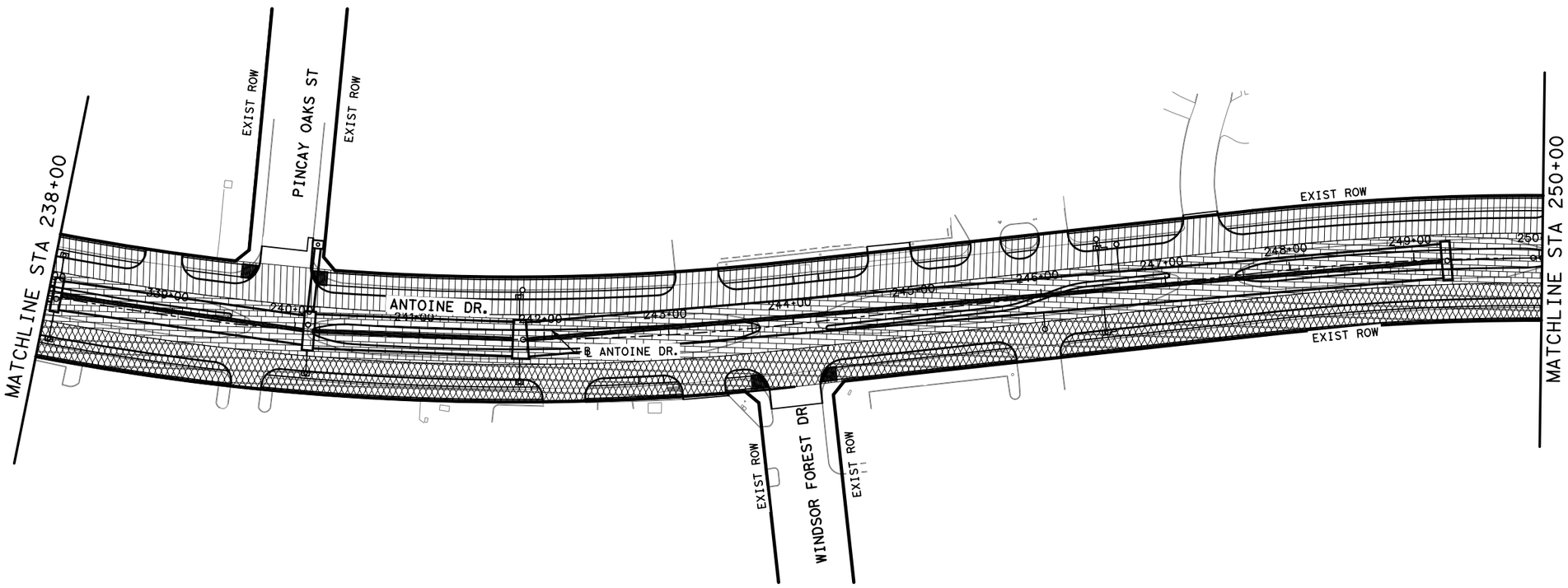

LEGEND

- TCP PHASE 1
- TCP PHASE 2
- TCP PHASE 3
- TCP PHASE 4
- TCP PHASE 5
- TCP PHASE 6
- TCP PHASE 7
- TCP PHASE 8

No.	DATE	REVISIONS	APP:

N

0′ 50′ 100′
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

SEQUENCE OF CONSTRUCTION

SHEET 6 OF 7

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 31 OF 718	

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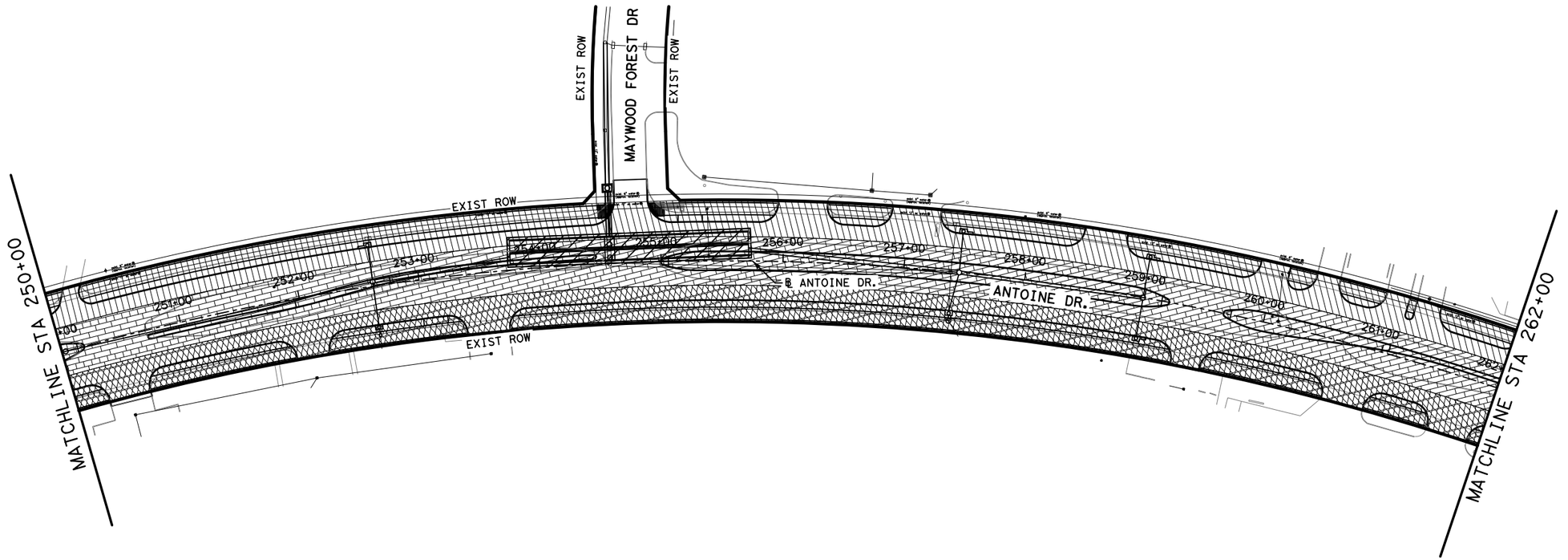

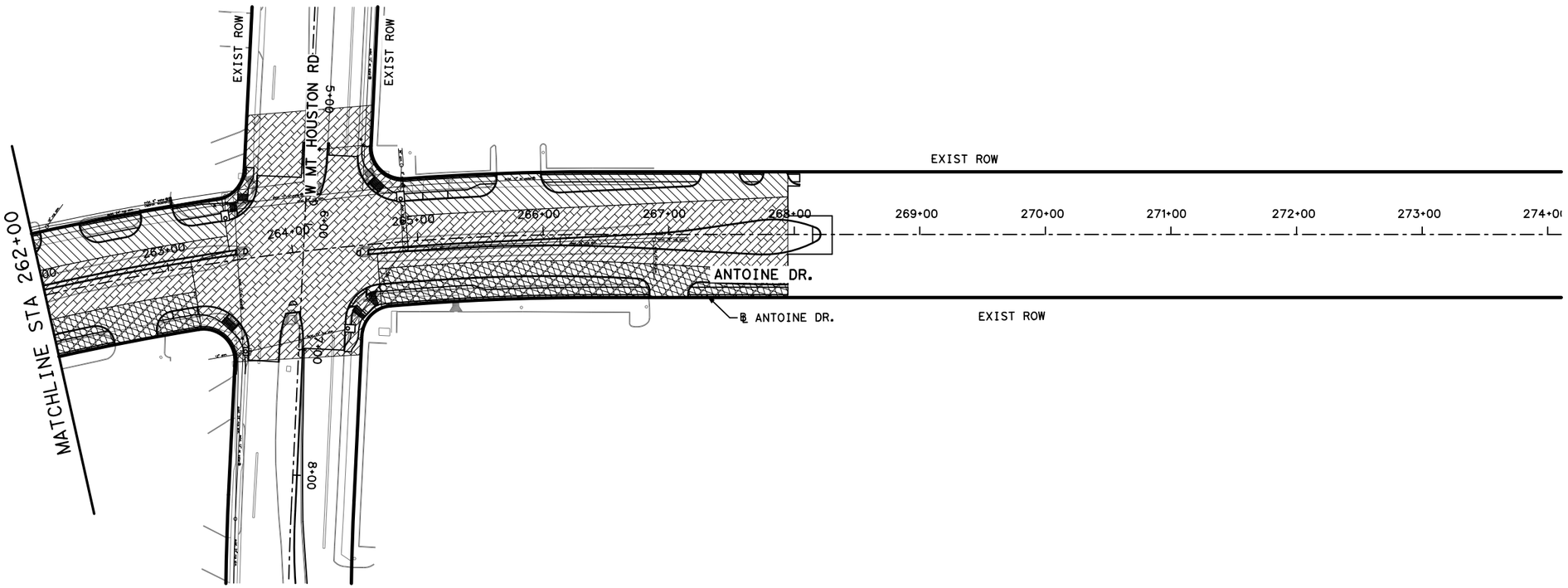

LEGEND

- TCP PHASE 1
- TCP PHASE 2
- TCP PHASE 3
- TCP PHASE 4
- TCP PHASE 5
- TCP PHASE 6
- TCP PHASE 7
- TCP PHASE 8

No.	DATE	REVISIONS	APP.

N

0′ 50′ 100′
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

SEQUENCE OF CONSTRUCTION

SHEET 7 OF 7

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 32 OF 718	

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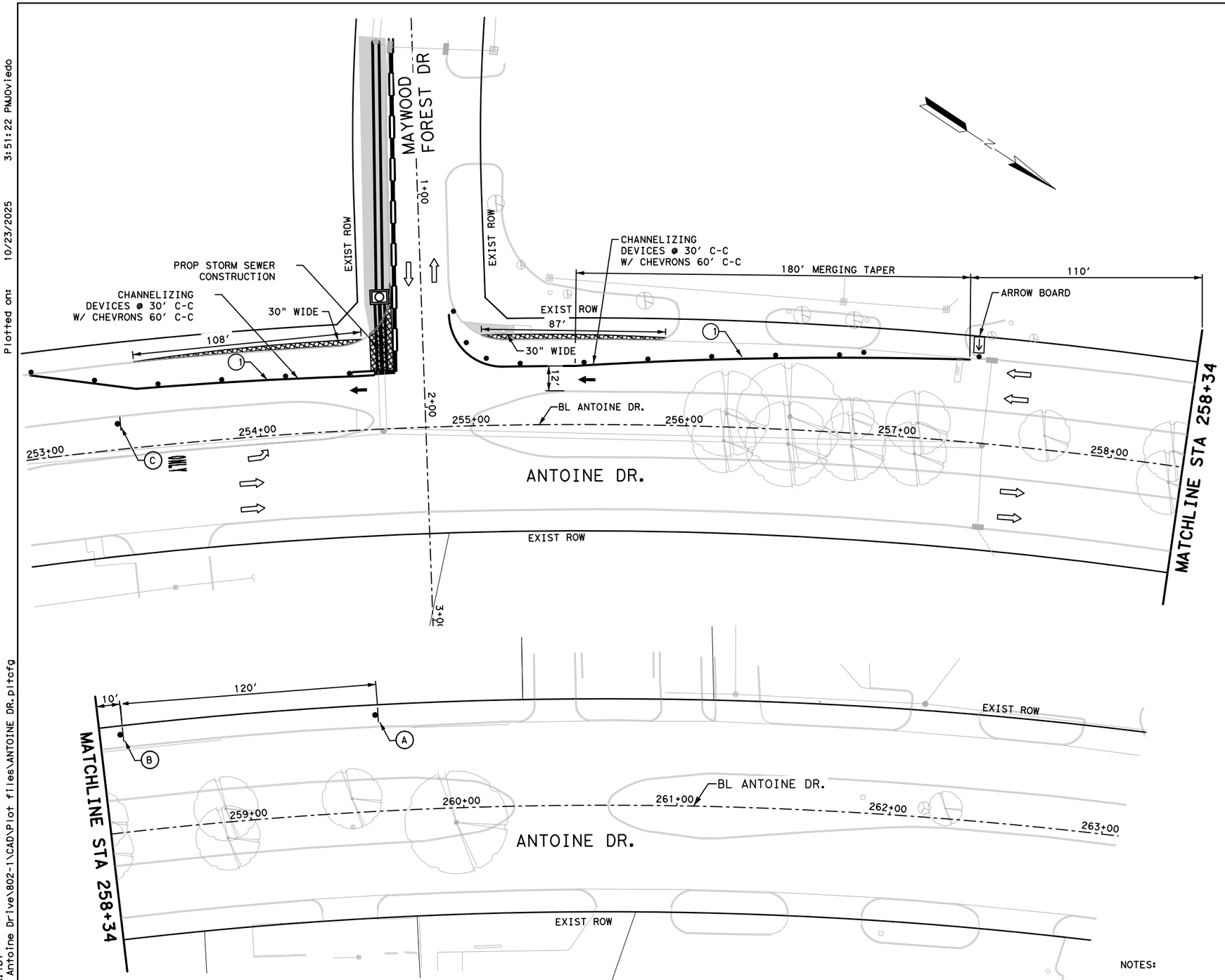

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS
- TD TEMPORARY DRAINAGE: CONTRACTOR TO TIE EXISTING TO PROPOSED AS NECESSARY
- 1 REMOVABLE PAV MRK 4" SOL W
- 2 REMOVABLE PAV MRK 4" SOL Y
- 3 REMOVABLE PAV MRK 4" CATTRAC W
- 4 REMOVABLE PAV MRK 4" DBL SOL Y
- 5 REMOVABLE PAV MRK 8" SOL W
- 6 REMOVABLE PAV MRK 24" W STOP BAR
- 7 REMOVABLE PAV MRK (REFLECTOR) TY II A-A
- 8 REMOVABLE PAV MRK ARROW
- 9 REMOVABLE PAV MRK LT ARROW
- 10 REMOVABLE PAV MRK "ONLY"

0' 25' 50'
SCALE IN FEET

A	B	C
ROAD WORK AHEAD	RIGHT LANE CLOSED	END ROAD WORK
CW20-1D	CW20-5TR	G20-2

NOTES:

1. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY, COORDINATE WITH CM. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES.
2. MAINTAIN MINIMUM 11-FOOT LANE WIDTH AT ALL TIMES.
3. COORDINATE WITH METRO FOR TEMPORARY SIGNS IF NEEDED, METRO TEMP STOPS TO BE RELOCATED WITH THE TRAFFIC CONTROL SO THAT ACCESS TO METRO IS ALWAYS MAINTAINED.
4. REFER TO TCP STANDARD DETAILS FOR MORE INFORMATION.

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Houston, Texas 77079
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL
PHASE 1 STEP 1A

SHEET 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 33 OF 718	

No.	DATE	REVISIONS	APP.

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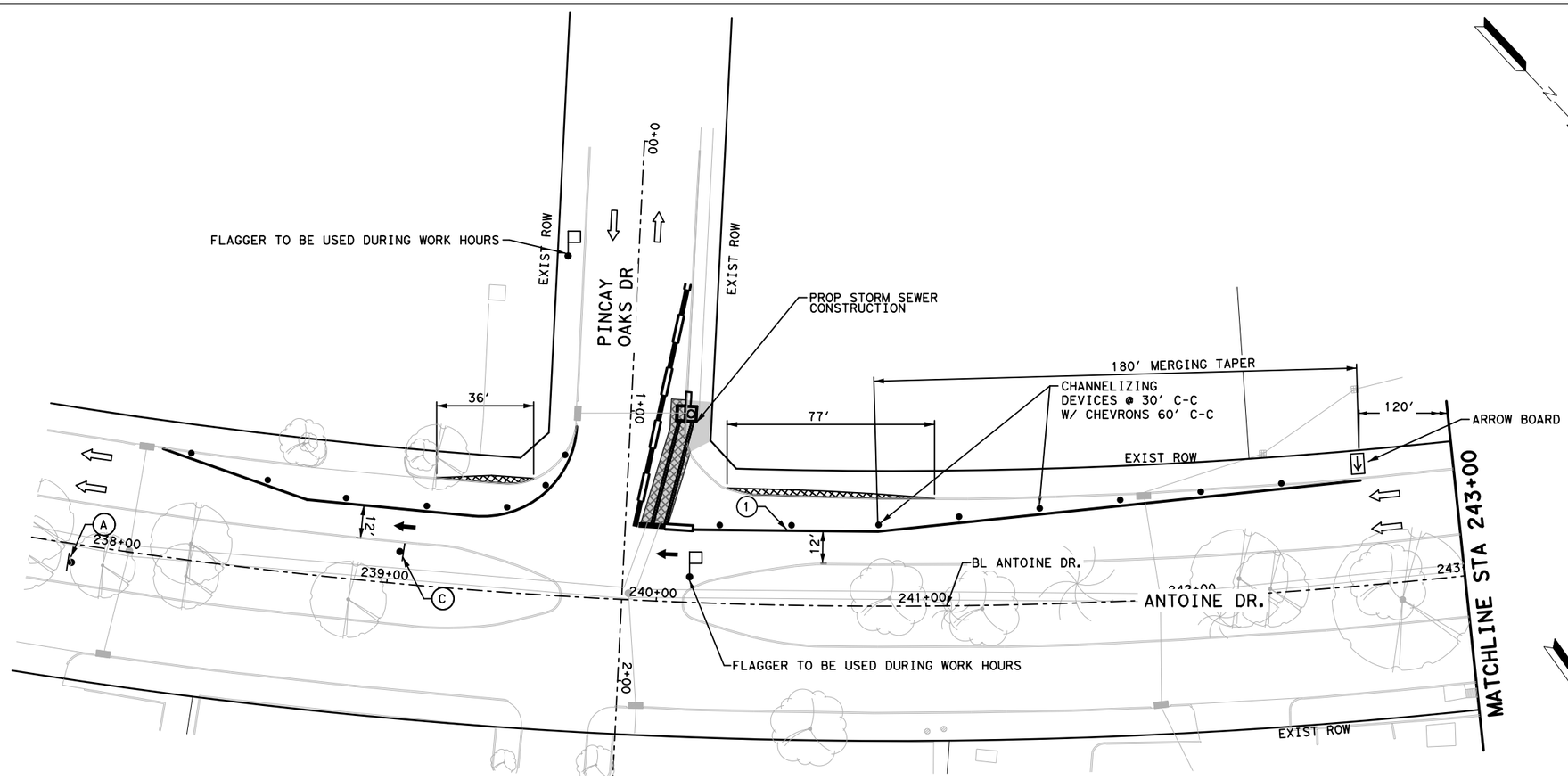

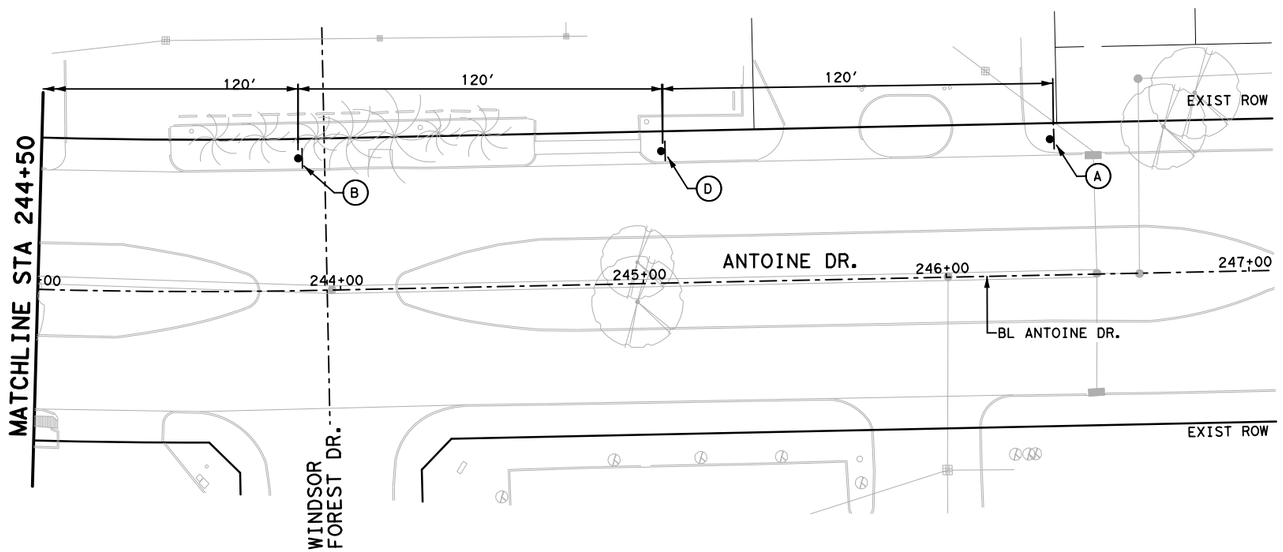

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS
- TD — TEMPORARY DRAINAGE: CONTRACTOR TO TIE EXISTING TO PROPOSED AS NECESSARY

1. REMOVABLE PAV MRK 4" SOL W
2. REMOVABLE PAV MRK 4" SOL Y
3. REMOVABLE PAV MRK 4" CATTRAC W
4. REMOVABLE PAV MRK 4" DBL SOL Y
5. REMOVABLE PAV MRK 8" SOL W
6. REMOVABLE PAV MRK 24" W STOP BAR
7. REMOVABLE PAV MRK (REFLECTOR) TY II A-A
8. REMOVABLE PAV MRK ARROW
9. REMOVABLE PAV MRK LT ARROW
10. REMOVABLE PAV MRK "ONLY"

No.	DATE	REVISIONS	APP.

0' 25' 50'
SCALE IN FEET

A	B	C	D
ROAD WORK AHEAD	RIGHT LANE CLOSED	END ROAD WORK	RIGHT LANE CLOSED AHEAD
CW20-1D	CW20-5TR	G20-2	W9-3R

NOTES:

1. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY, COORDINATE WITH CM. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES.
2. MAINTAIN MINIMUM 11-FOOT LANE WIDTH AT ALL TIMES.
3. COORDINATE WITH METRO FOR TEMPORARY SIGNS IF NEEDED, METRO TEMP STOPS TO BE RELOCATED WITH THE TRAFFIC CONTROL SO THAT ACCESS TO METRO IS ALWAYS MAINTAINED.
4. REFER TO TCP STANDARD DETAILS FOR MORE INFORMATION.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PHASE 1 STEP 1A

SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 34 OF 718	

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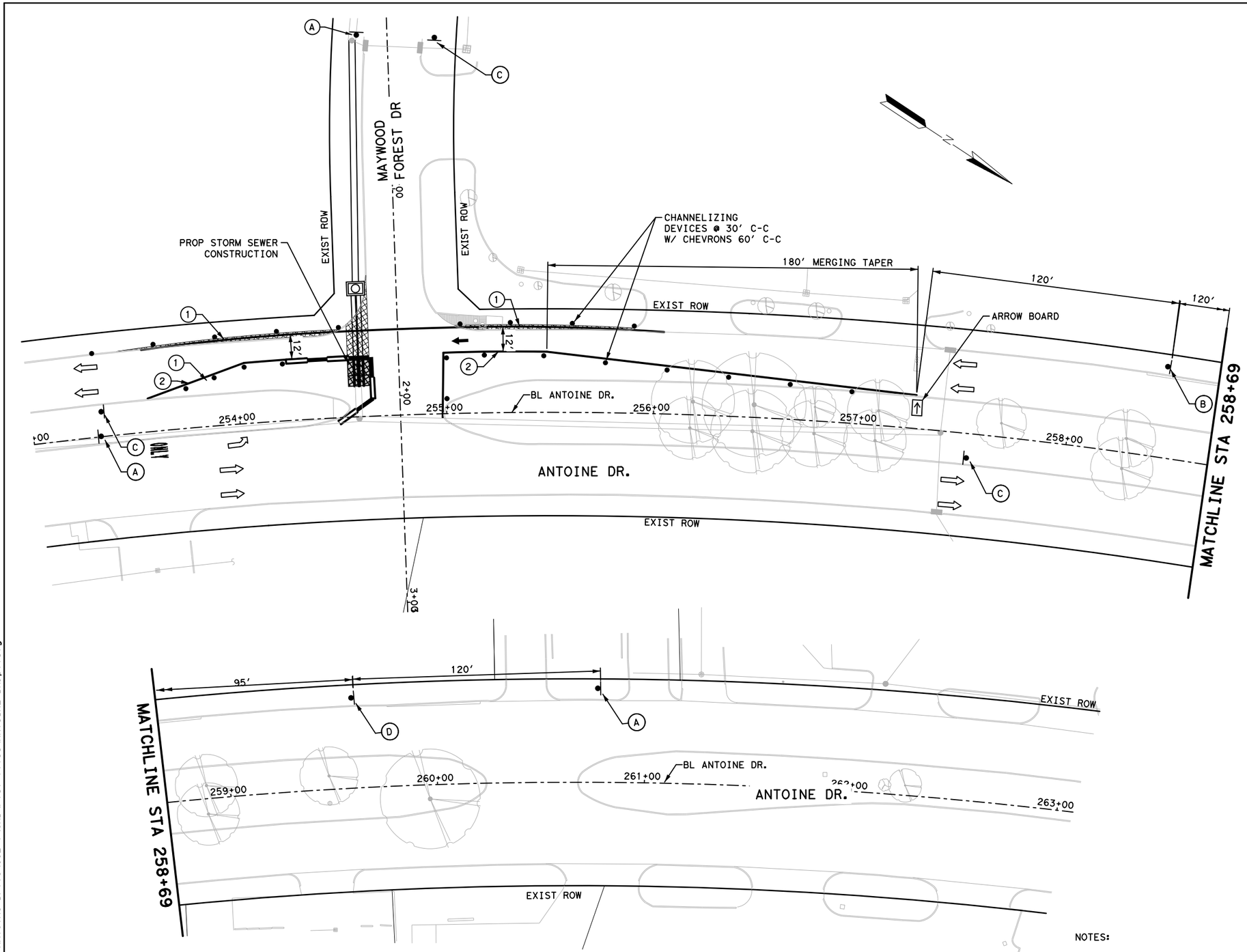

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS
- TD — TEMPORARY DRAINAGE: CONTRACTOR TO TIE EXISTING TO PROPOSED AS NECESSARY

1. REMOVABLE PAV MRK 4" SOL W
2. REMOVABLE PAV MRK 4" SOL Y
3. REMOVABLE PAV MRK 4" CATTRAC W
4. REMOVABLE PAV MRK 4" DBL SOL Y
5. REMOVABLE PAV MRK 8" SOL W
6. REMOVABLE PAV MRK 24" W STOP BAR
7. REMOVABLE PAV MRK (REFLECTOR) TY II A-A
8. REMOVABLE PAV MRK ARROW
9. REMOVABLE PAV MRK LT ARROW
10. REMOVABLE PAV MRK "ONLY"

APP.	No.	DATE	REVISIONS

0' 25' 50'
SCALE IN FEET

A	B	C	D
ROAD WORK AHEAD	LEFT LANE CLOSED	END ROAD WORK	LEFT LANE CLOSED AHEAD
CW20-1D	CW20-5TL	G20-2	W9-3L

NOTES:

1. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY, COORDINATE WITH CM. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES.
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3. COORDINATE WITH METRO FOR TEMPORARY SIGNS IF NEEDED, METRO TEMP STOPS TO BE RELOCATED WITH THE TRAFFIC CONTROL SO THAT ACCESS TO METRO IS ALWAYS MAINTAINED.
4. REFER TO TCP STANDARD DETAILS FOR MORE INFORMATION.

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Texas Registered Engineering Firm F-148

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL
PHASE 1 STEP 1B

SHEET 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 35 OF 718	

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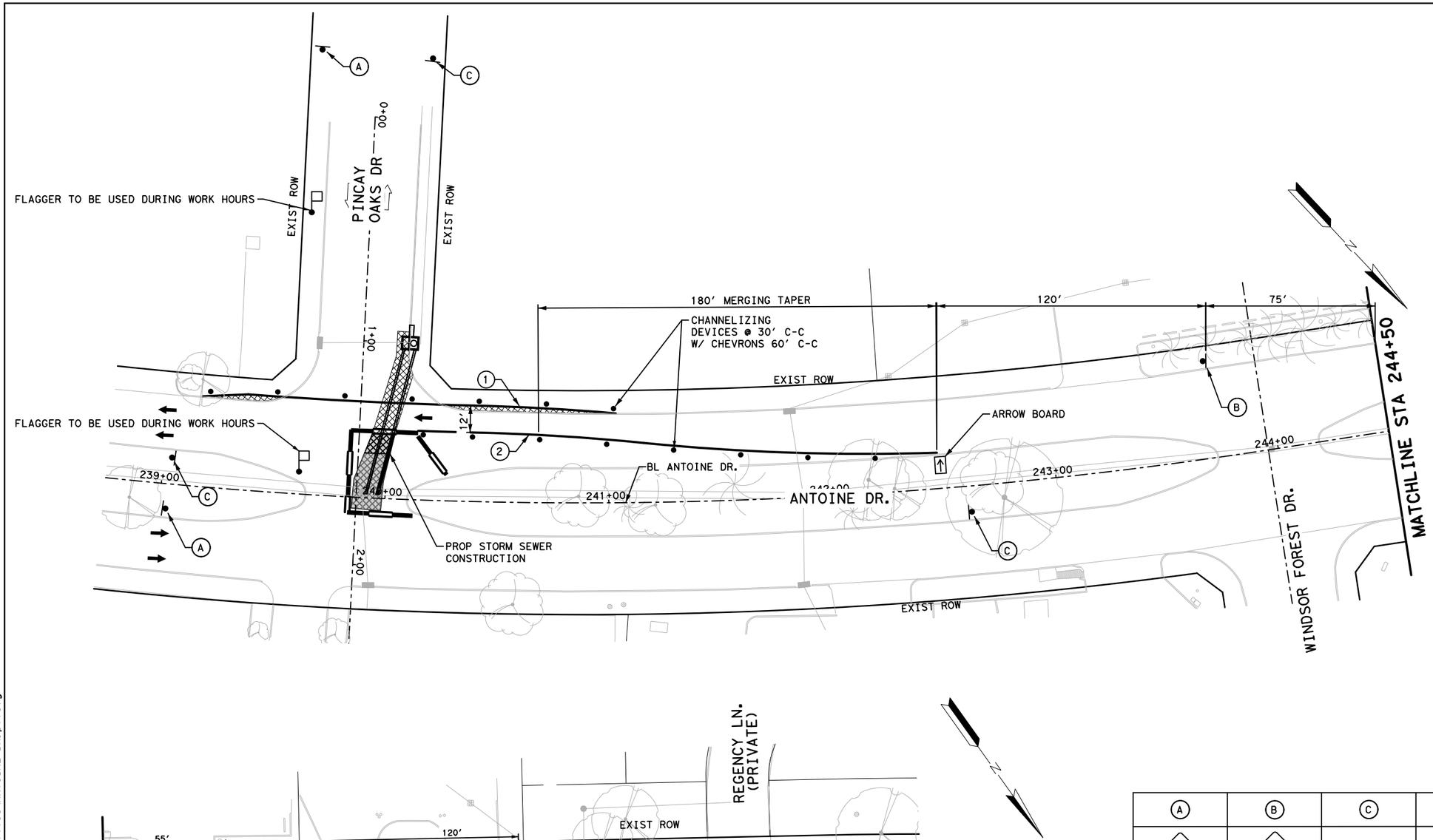

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS
- TD — TEMPORARY DRAINAGE: CONTRACTOR TO TIE EXISTING TO PROPOSED AS NECESSARY

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8. REMOVABLE PAV MRK ARROW
9. REMOVABLE PAV MRK LT ARROW
10. REMOVABLE PAV MRK "ONLY"

No.	DATE	REVISIONS	APP.

0' 25' 50'
SCALE IN FEET

A	B	C	D
ROAD WORK AHEAD	LEFT LANE CLOSED	END ROAD WORK	LEFT LANE CLOSED AHEAD
CW20-1D	CW20-5TL	G20-2	W9-3L

NOTES:

1. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY, COORDINATE WITH CM. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES.
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Date
131531
10/23/2025
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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PHASE 1 STEP 1B

SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 36 OF 718	

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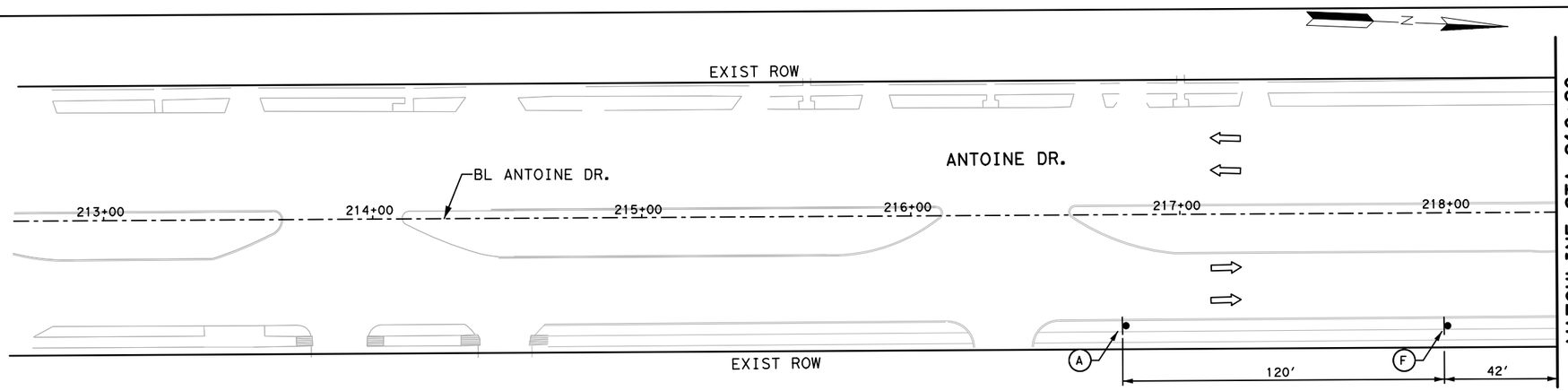

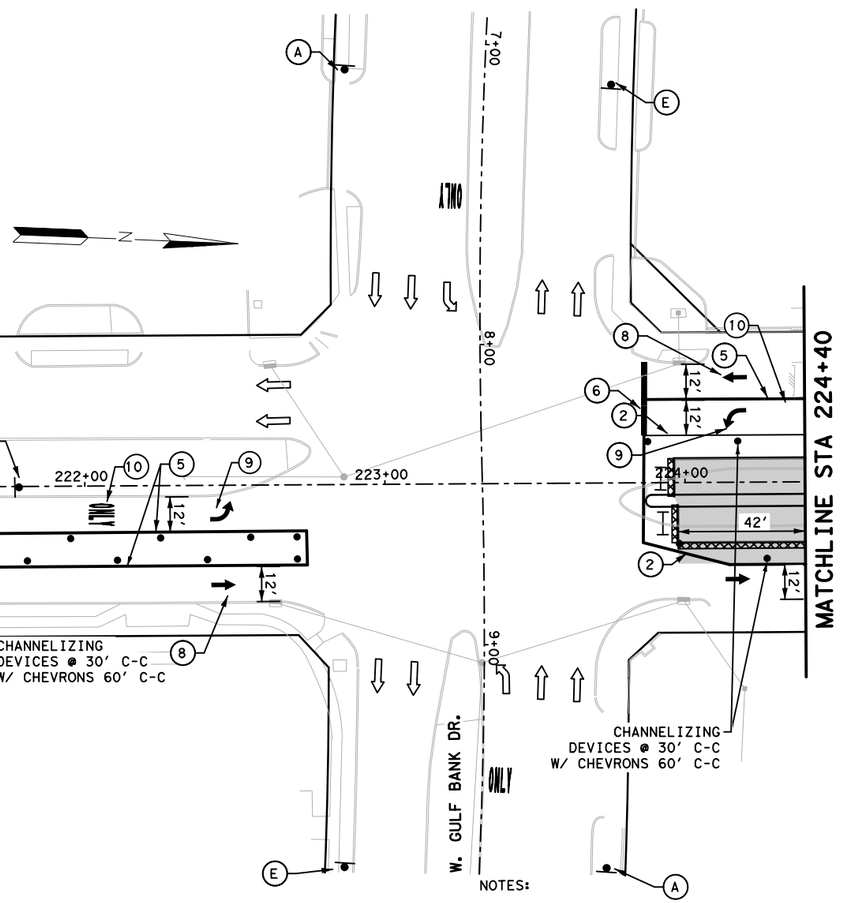

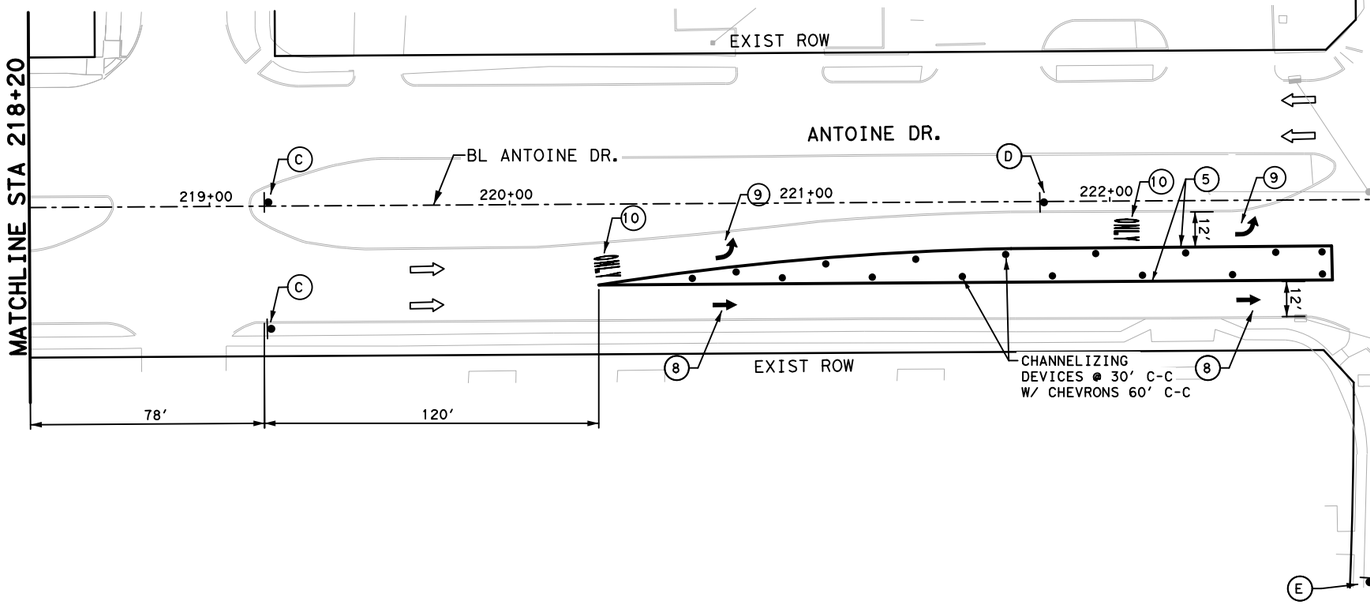

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS
- TD — TEMPORARY DRAINAGE: CONTRACTOR TO TIE EXISTING TO PROPOSED AS NECESSARY

1. REMOVABLE PAV MRK 4" SOL W
2. REMOVABLE PAV MRK 4" SOL Y
3. REMOVABLE PAV MRK 4" CATTRAC W
4. REMOVABLE PAV MRK 4" DBL SOL Y
5. REMOVABLE PAV MRK 8" SOL W
6. REMOVABLE PAV MRK 24" W STOP BAR
7. REMOVABLE PAV MRK (REFLECTOR) TY II A-A
8. REMOVABLE PAV MRK ARROW
9. REMOVABLE PAV MRK LT ARROW
10. REMOVABLE PAV MRK "ONLY"

No.	DATE	REVISIONS	APP.

0' 25' 50'
SCALE IN FEET

A	B	C	D	E	F
ROAD WORK AHEAD	LEFT LANE CLOSED	LEFT LANE MUST TURN LEFT	ONLY	END ROAD WORK	THRU TRAFFIC MERGE RIGHT
CW20-1D	CW20-5TL	R3-7L	R3-5L	G20-2	CW4-1A

NOTES:

1. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY, COORDINATE WITH CM. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES.
2. MAINTAIN MINIMUM 11-FOOT LANE WIDTH AT ALL TIMES.
3. COORDINATE WITH METRO FOR TEMPORARY SIGNS IF NEEDED, METRO TEMP STOPS TO BE RELOCATED WITH THE TRAFFIC CONTROL SO THAT ACCESS TO METRO IS ALWAYS MAINTAINED.
4. REFER TO TCP STANDARD DETAILS FOR MORE INFORMATION.

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Texas Registered Engineering Firm F-148

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL
PHASE 1 STEP 2
STA 213+00 TO STA 224+40

SHEET 1 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 37 OF 718	

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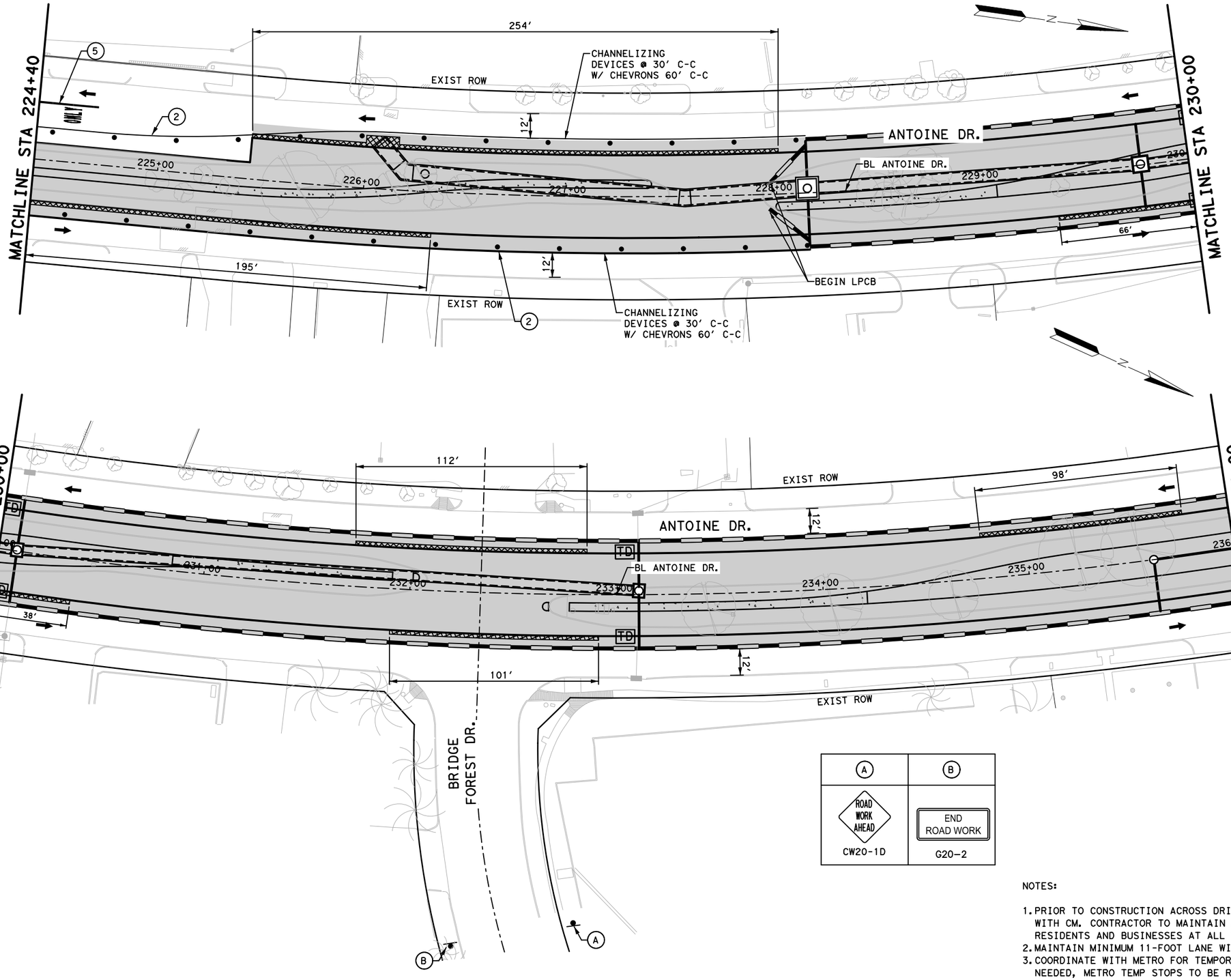

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
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8. REMOVABLE PAV MRK ARROW
9. REMOVABLE PAV MRK LT ARROW
10. REMOVABLE PAV MRK "ONLY"

No.	DATE	REVISIONS	APP.

0′ 25′ 50′
SCALE IN FEET

A	B
ROAD WORK AHEAD CW20-1D	END ROAD WORK G20-2

NOTES:

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL
PHASE 1 STEP 2
STA 224+40 TO STA 236+00

SHEET 2 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 38 OF 718	

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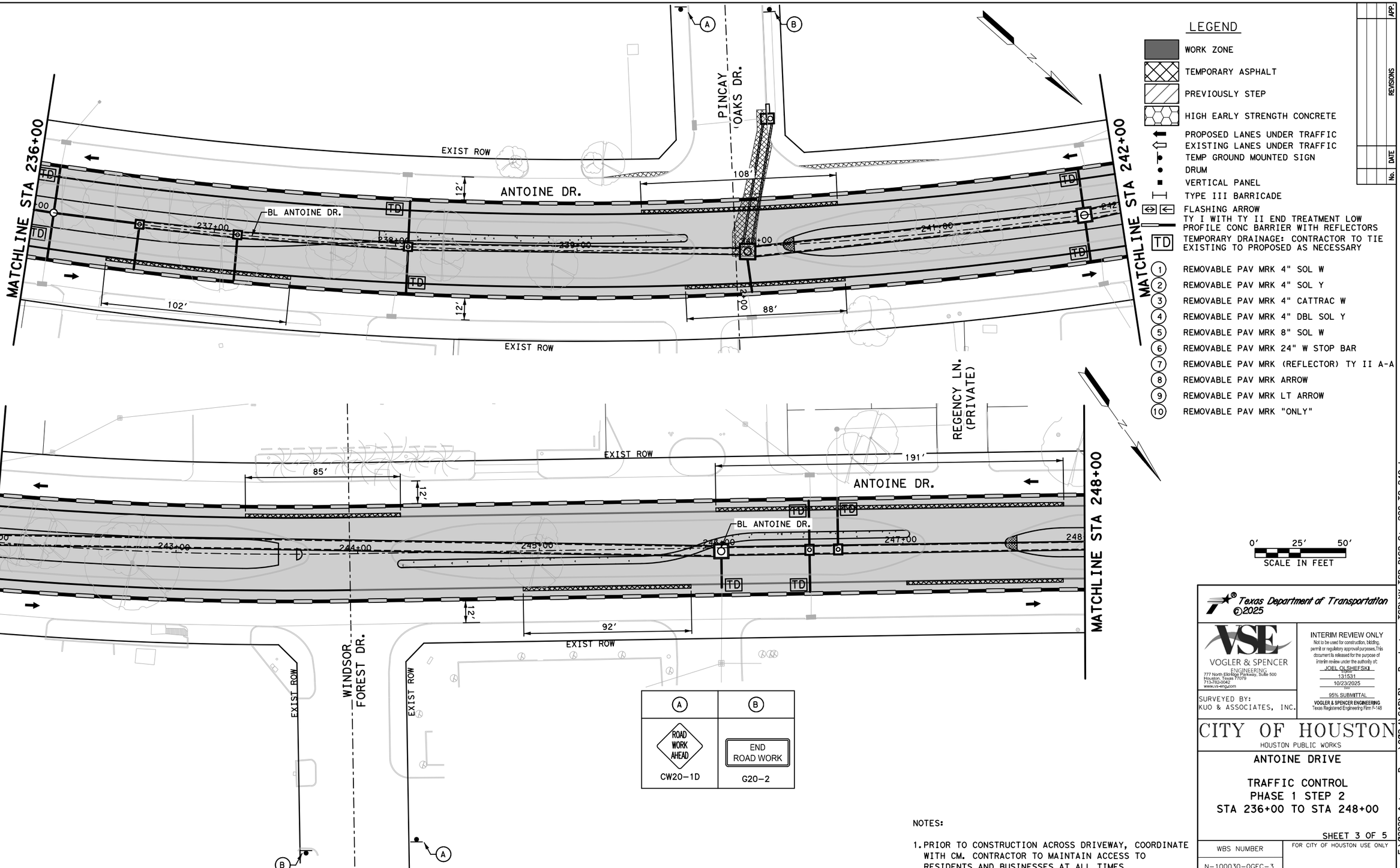

A	B
ROAD WORK AHEAD	END ROAD WORK
CW20-1D	G20-2

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No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL
PHASE 1 STEP 2
STA 236+00 TO STA 248+00

SHEET 3 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 39 OF 718	

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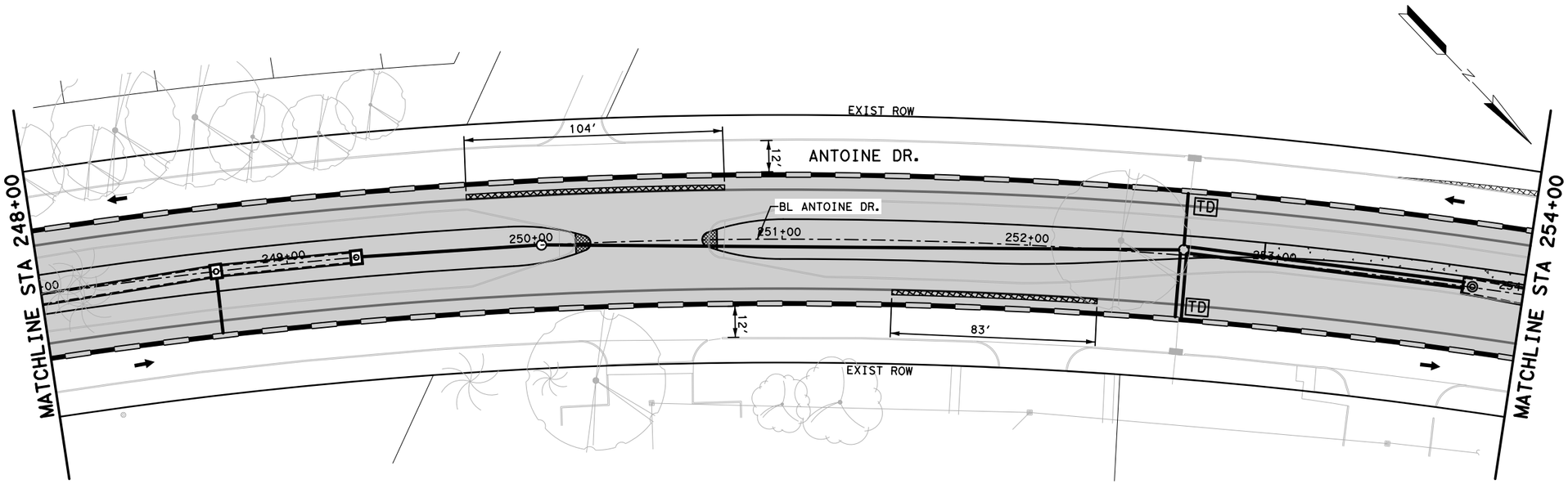

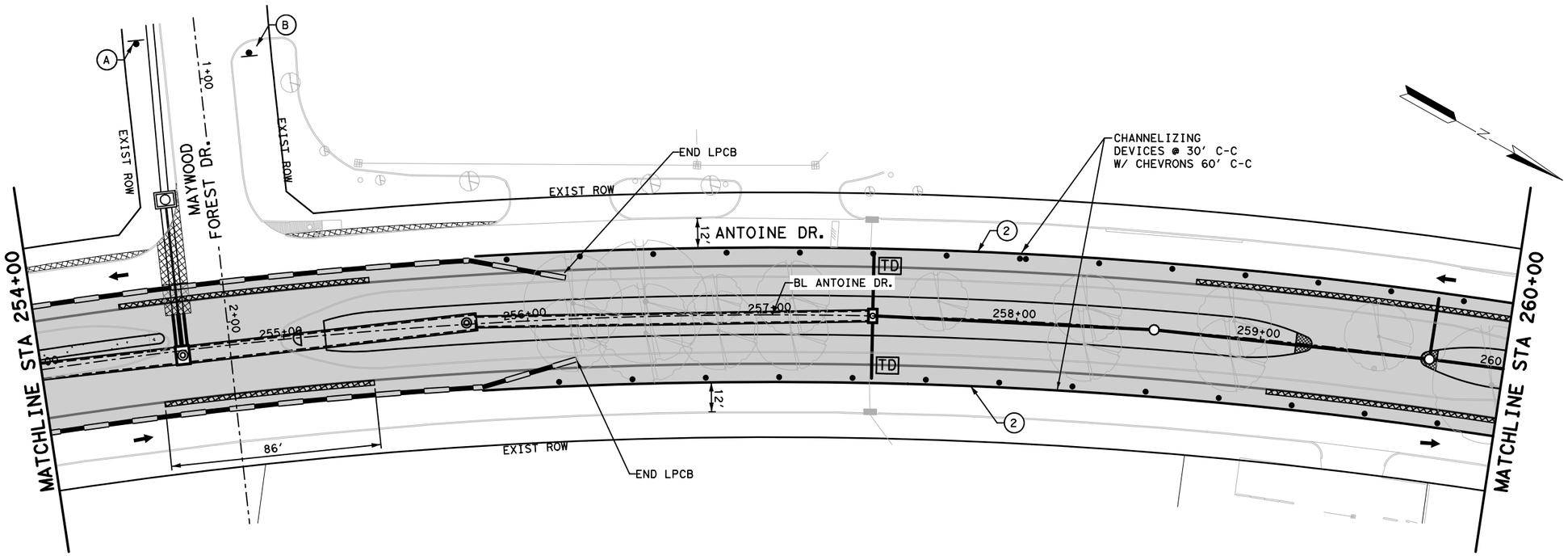

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS
- TD — TEMPORARY DRAINAGE: CONTRACTOR TO TIE EXISTING TO PROPOSED AS NECESSARY

1. REMOVABLE PAV MRK 4" SOL W
2. REMOVABLE PAV MRK 4" SOL Y
3. REMOVABLE PAV MRK 4" CATTRAC W
4. REMOVABLE PAV MRK 4" DBL SOL Y
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8. REMOVABLE PAV MRK ARROW
9. REMOVABLE PAV MRK LT ARROW
10. REMOVABLE PAV MRK "ONLY"

APP:		
REVISIONS	DATE	No.

0' 25' 50'
SCALE IN FEET

A	B
ROAD WORK AHEAD	END ROAD WORK
CW20-1D	G20-2

NOTES:

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL
PHASE 1 STEP 2
STA 248+00 TO STA 260+00

SHEET 4 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 40 OF 718	

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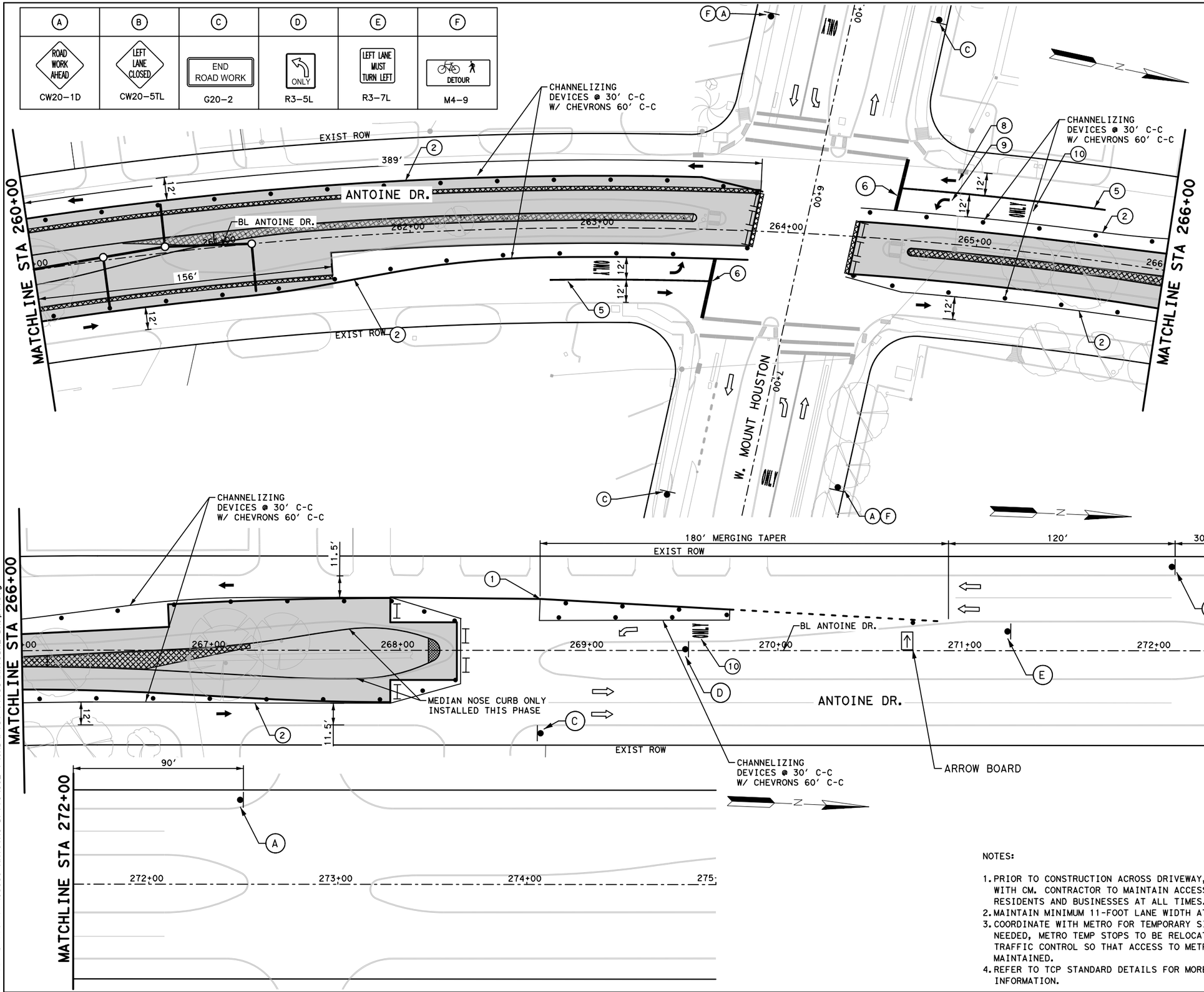
A	B	C	D	E	F
ROAD WORK AHEAD	LEFT LANE CLOSED	END ROAD WORK	ONLY	LEFT LANE MUST TURN LEFT	DETOUR
CW20-1D	CW20-5TL	G20-2	R3-5L	R3-7L	M4-9



LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
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10. REMOVABLE PAV MRK "ONLY"

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PHASE 1 STEP 2 STA 260+00 TO END PROJECT

SHEET 5 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 41 OF 718	

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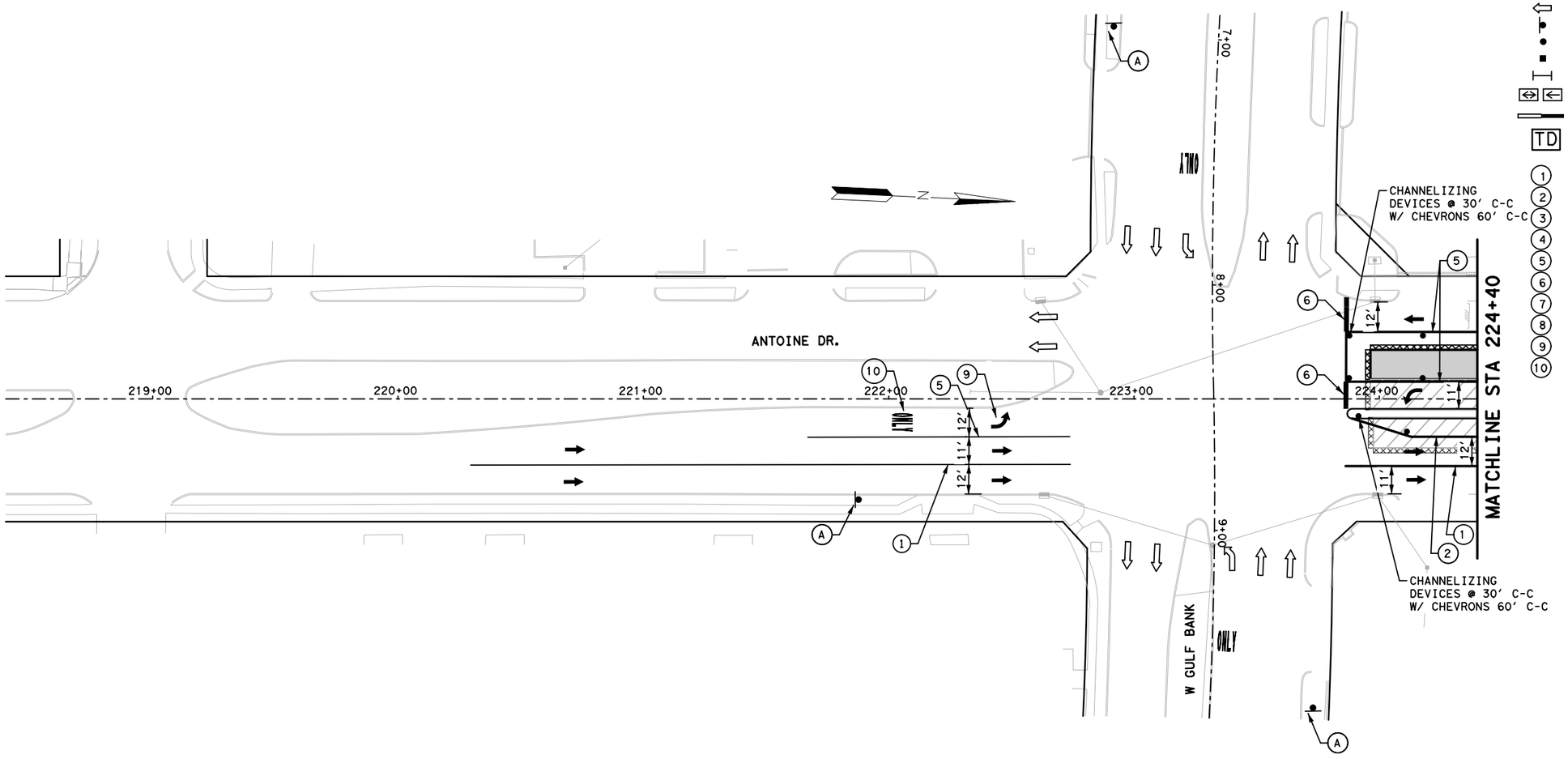

LEGEND

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10. REMOVABLE PAV MRK "ONLY"

No.	DATE	REVISIONS	APP.

0' 25' 50'
SCALE IN FEET

(A)
ROAD WORK AHEAD
CW20-1D

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL
PHASE 1 STEP 3
STA 213+00 TO STA 224+40

SHEET 1 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 42 OF 718	

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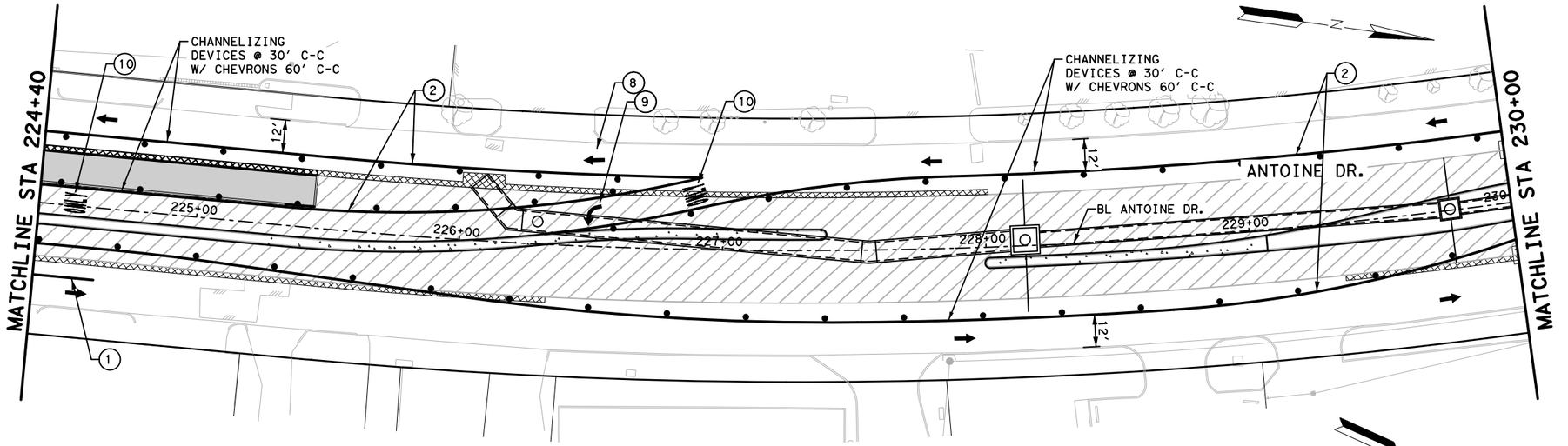

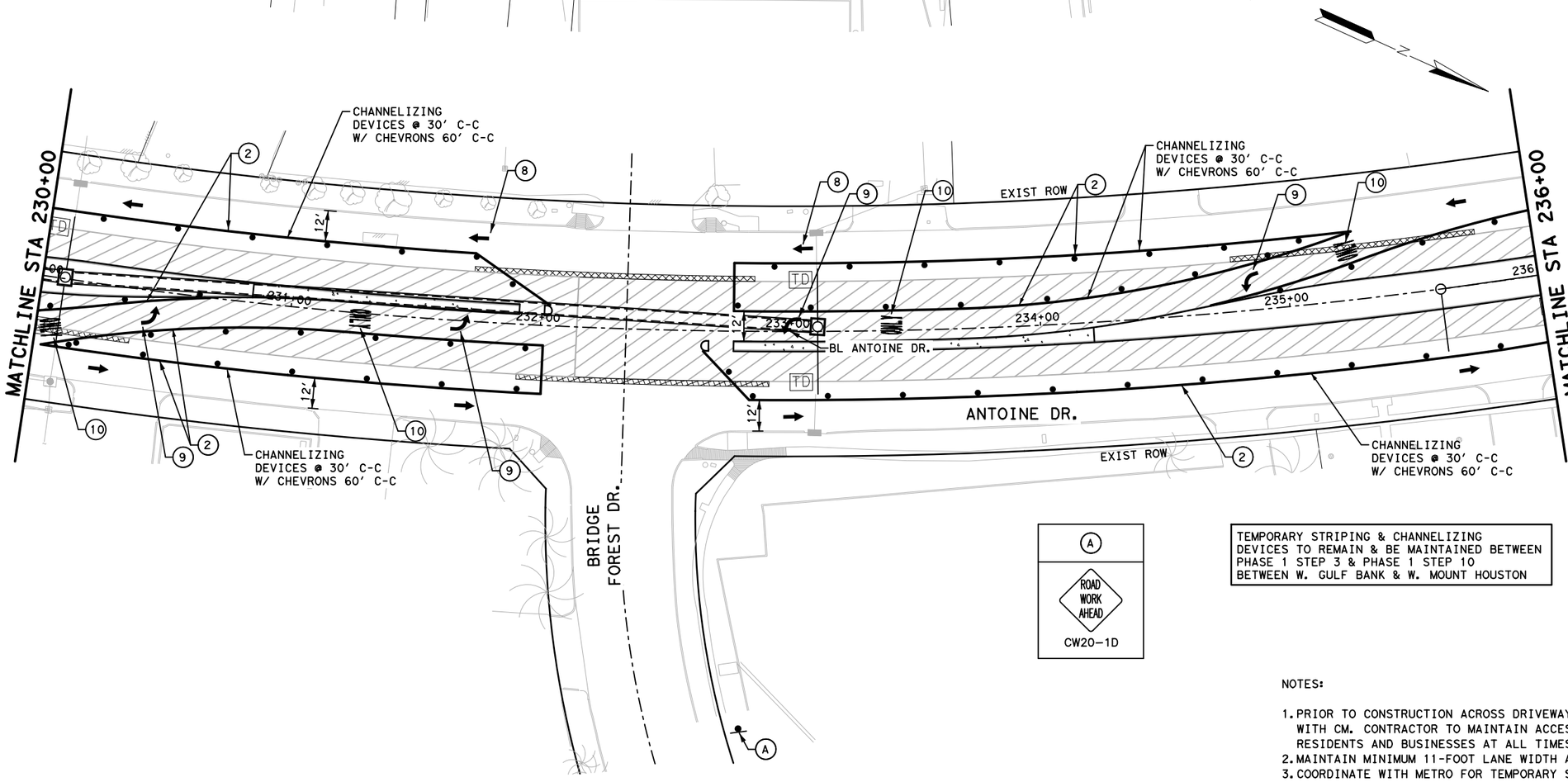

LEGEND

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No.	DATE	REVISIONS	APP.

0' 25' 50'
SCALE IN FEET

A

CW20-1D

TEMPORARY STRIPING & CHANNELIZING DEVICES TO REMAIN & BE MAINTAINED BETWEEN PHASE 1 STEP 3 & PHASE 1 STEP 10 BETWEEN W. GULF BANK & W. MOUNT HOUSTON

NOTES:

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PHASE 1 STEP 3 STA 224+40 TO STA 236+00

SHEET 2 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 43 OF 718	

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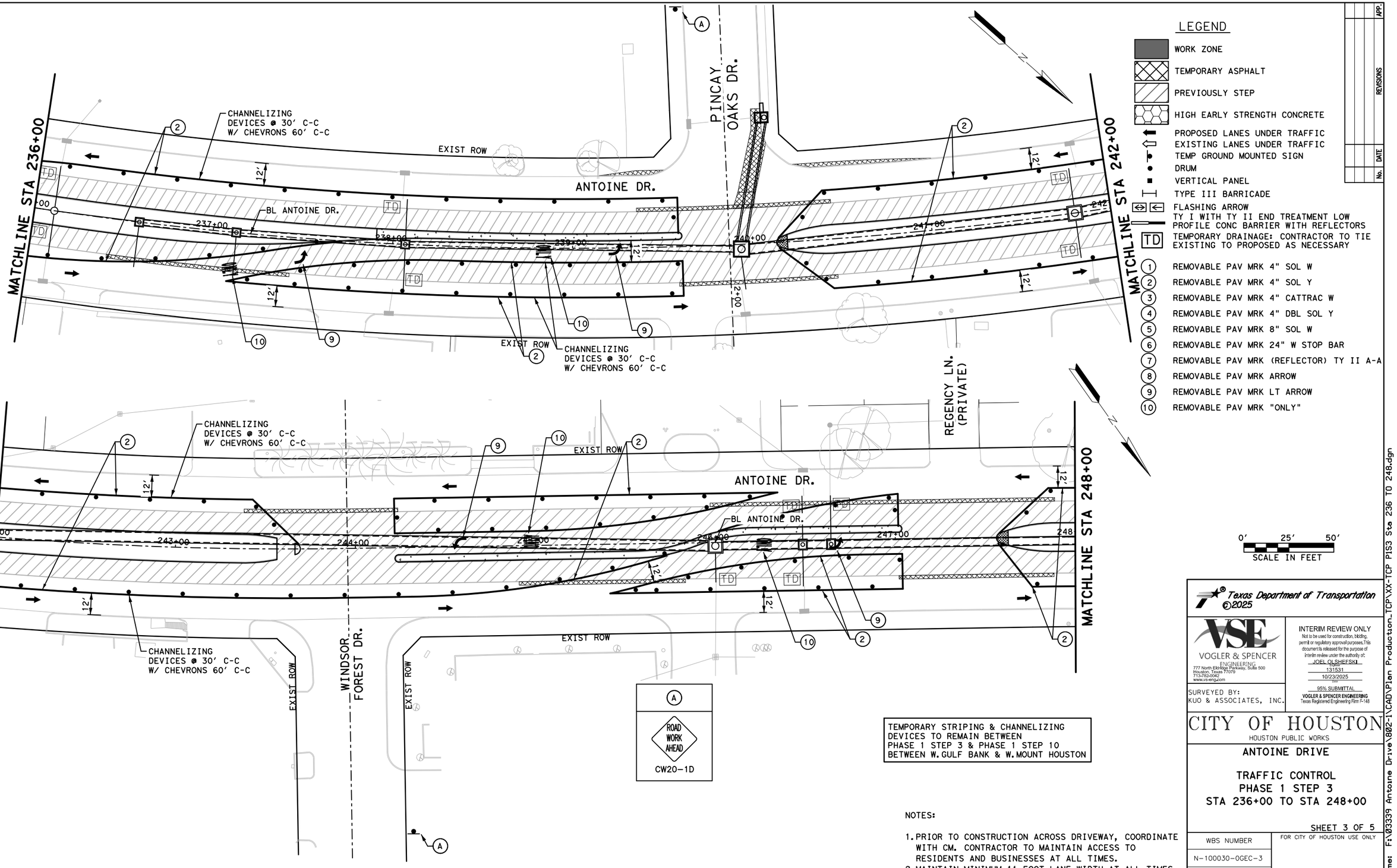

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS
- TD — TEMPORARY DRAINAGE: CONTRACTOR TO TIE EXISTING TO PROPOSED AS NECESSARY

1. REMOVABLE PAV MRK 4" SOL W
2. REMOVABLE PAV MRK 4" SOL Y
3. REMOVABLE PAV MRK 4" CATTRAC W
4. REMOVABLE PAV MRK 4" DBL SOL Y
5. REMOVABLE PAV MRK 8" SOL W
6. REMOVABLE PAV MRK 24" W STOP BAR
7. REMOVABLE PAV MRK (REFLECTOR) TY II A-A
8. REMOVABLE PAV MRK ARROW
9. REMOVABLE PAV MRK LT ARROW
10. REMOVABLE PAV MRK "ONLY"

No.	DATE	REVISIONS	APP.

0' 25' 50'
SCALE IN FEET

TEMPORARY STRIPING & CHANNELIZING DEVICES TO REMAIN BETWEEN PHASE 1 STEP 3 & PHASE 1 STEP 10 BETWEEN W. GULF BANK & W. MOUNT HOUSTON

NOTES:

1. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY, COORDINATE WITH CM. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES.
2. MAINTAIN MINIMUM 11-FOOT LANE WIDTH AT ALL TIMES.
3. COORDINATE WITH METRO FOR TEMPORARY SIGNS IF NEEDED, METRO TEMP STOPS TO BE RELOCATED WITH THE TRAFFIC CONTROL SO THAT ACCESS TO METRO IS ALWAYS MAINTAINED.
4. REFER TO TCP STANDARD DETAILS FOR MORE INFORMATION.

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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PHASE 1 STEP 3 STA 236+00 TO STA 248+00

SHEET 3 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 44 OF 718	

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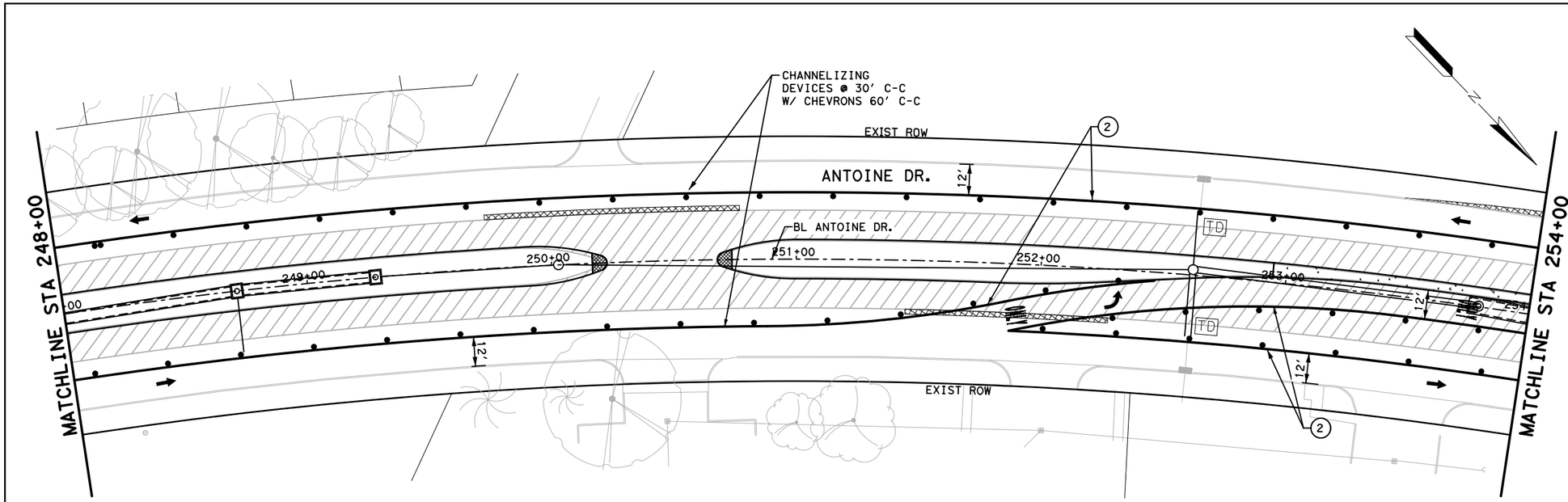
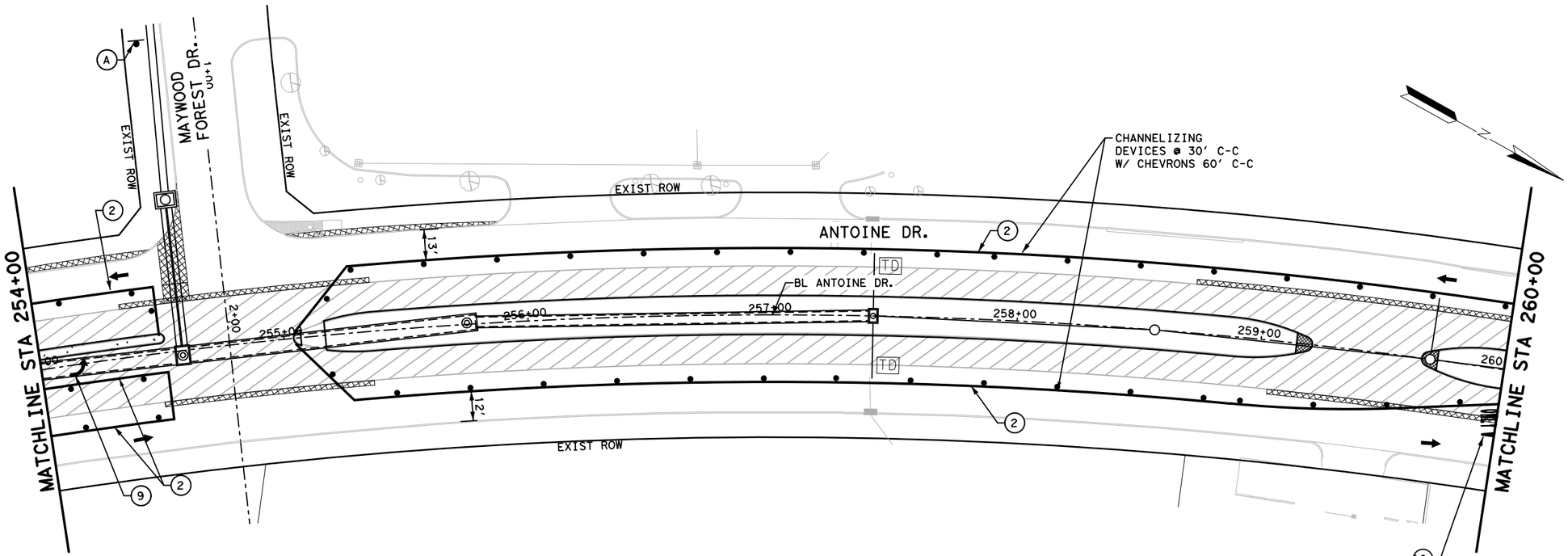
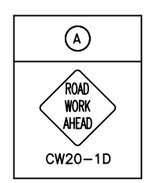




LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS
- TD TEMPORARY DRAINAGE: CONTRACTOR TO TIE EXISTING TO PROPOSED AS NECESSARY
- 1 REMOVABLE PAV MRK 4" SOL W
- 2 REMOVABLE PAV MRK 4" SOL Y
- 3 REMOVABLE PAV MRK 4" CATTRAC W
- 4 REMOVABLE PAV MRK 4" DBL SOL Y
- 5 REMOVABLE PAV MRK 8" SOL W
- 6 REMOVABLE PAV MRK 24" W STOP BAR
- 7 REMOVABLE PAV MRK (REFLECTOR) TY II A-A
- 8 REMOVABLE PAV MRK ARROW
- 9 REMOVABLE PAV MRK LT ARROW
- 10 REMOVABLE PAV MRK "ONLY"

0' 25' 50'
SCALE IN FEET



TEMPORARY STRIPING & CHANNELIZING DEVICES TO REMAIN BETWEEN PHASE 1 STEP 3 & PHASE 1 STEP 10 BETWEEN W.GULF BANK & W.MOUNT HOUSTON

NOTES:

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL
PHASE 1 STEP 3
STA 248+00 TO STA 260+00

SHEET 4 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 45 OF 718	

No.	DATE	REVISIONS	APP.

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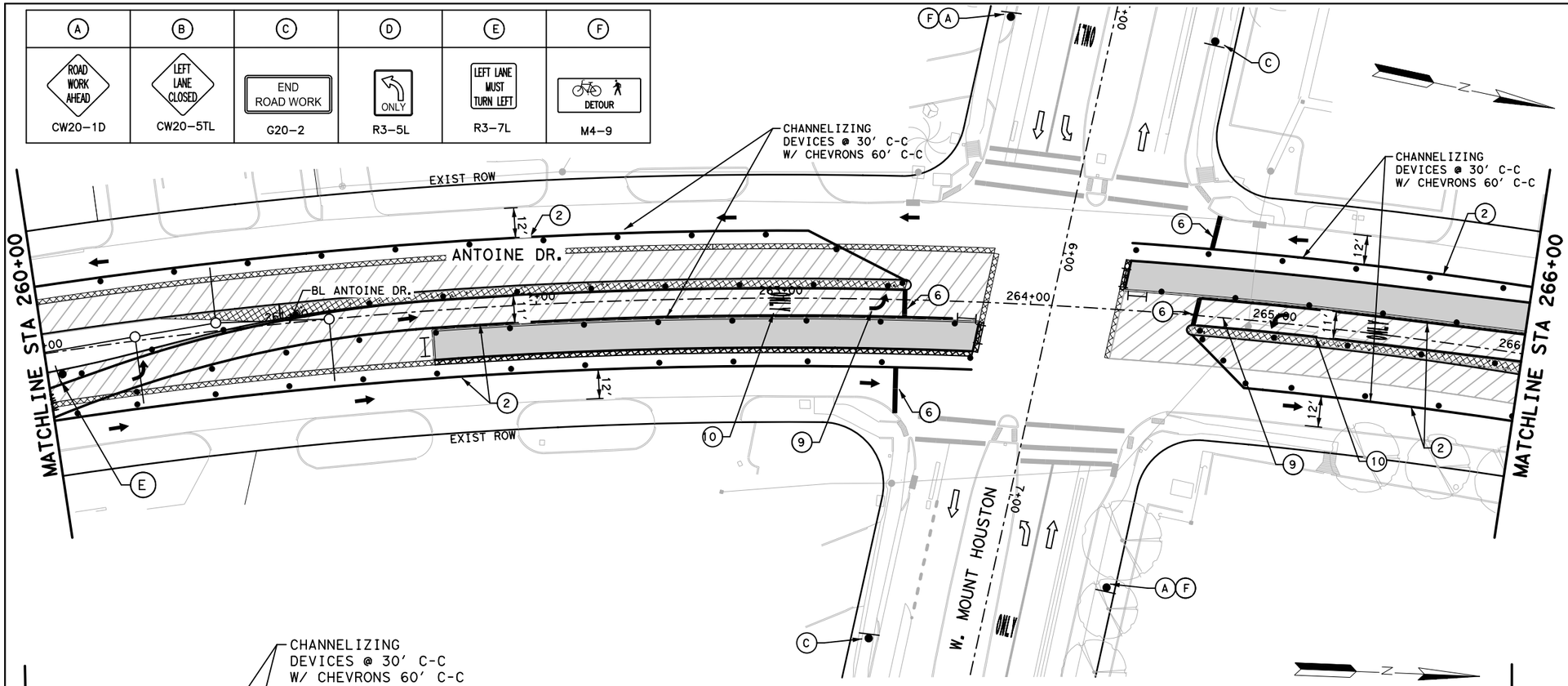
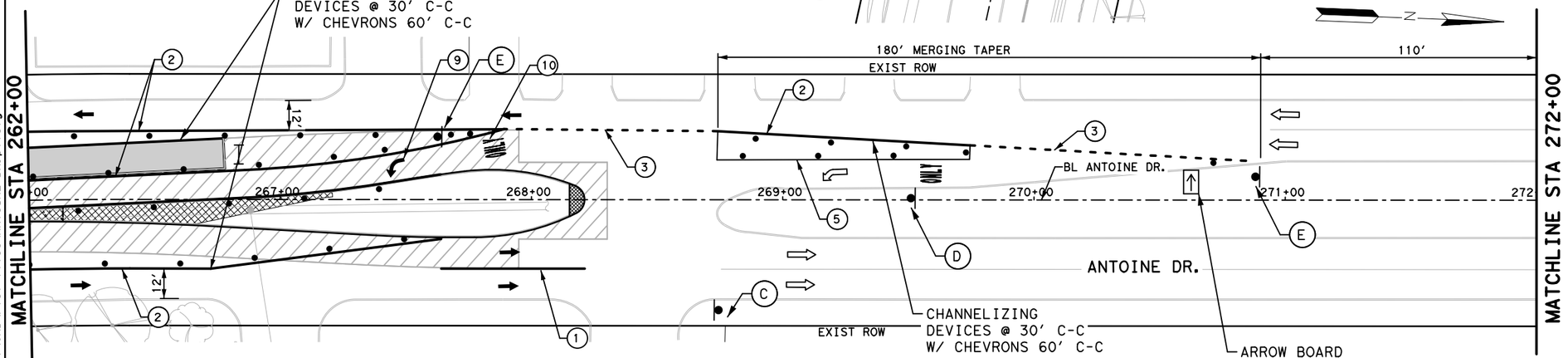
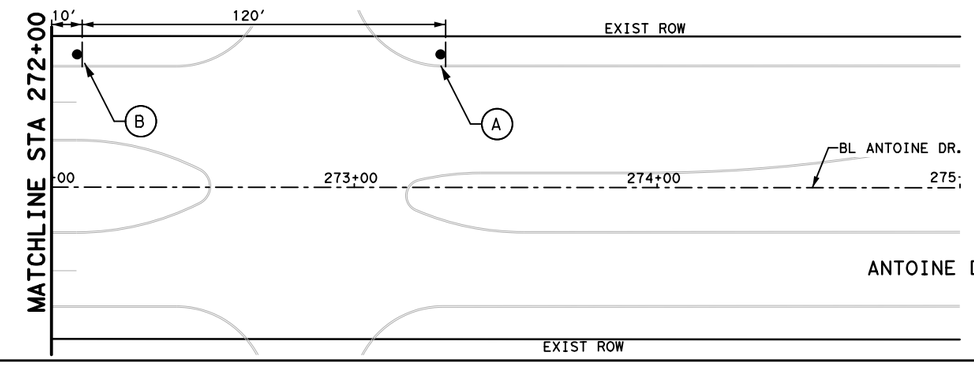
A	B	C	D	E	F
ROAD WORK AHEAD	LEFT LANE CLOSED	END ROAD WORK	ONLY	LEFT LANE MUST TURN LEFT	DETOUR
CW20-1D	CW20-5TL	G20-2	R3-5L	R3-7L	M4-9







TEMPORARY STRIPING & CHANNELIZING DEVICES TO REMAIN BETWEEN PHASE 1 STEP 3 & PHASE 1 STEP 10 BETWEEN W. GULF BANK & W. MOUNT HOUSTON

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS
- TD — TEMPORARY DRAINAGE: CONTRACTOR TO TIE EXISTING TO PROPOSED AS NECESSARY

1. REMOVABLE PAV MRK 4" SOL W
2. REMOVABLE PAV MRK 4" SOL Y
3. REMOVABLE PAV MRK 4" CATTRAC W
4. REMOVABLE PAV MRK 4" DBL SOL Y
5. REMOVABLE PAV MRK 8" SOL W
6. REMOVABLE PAV MRK 24" W STOP BAR
7. REMOVABLE PAV MRK (REFLECTOR) TY II A-A
8. REMOVABLE PAV MRK ARROW
9. REMOVABLE PAV MRK LT ARROW
10. REMOVABLE PAV MRK "ONLY"

No.	DATE	REVISIONS	APP.

0' 25' 50'
SCALE IN FEET

NOTES:

1. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY, COORDINATE WITH CM. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES.
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PHASE 1 STEP 3 STA 260+00 TO END PROJECT

SHEET 5 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 46 OF 718	

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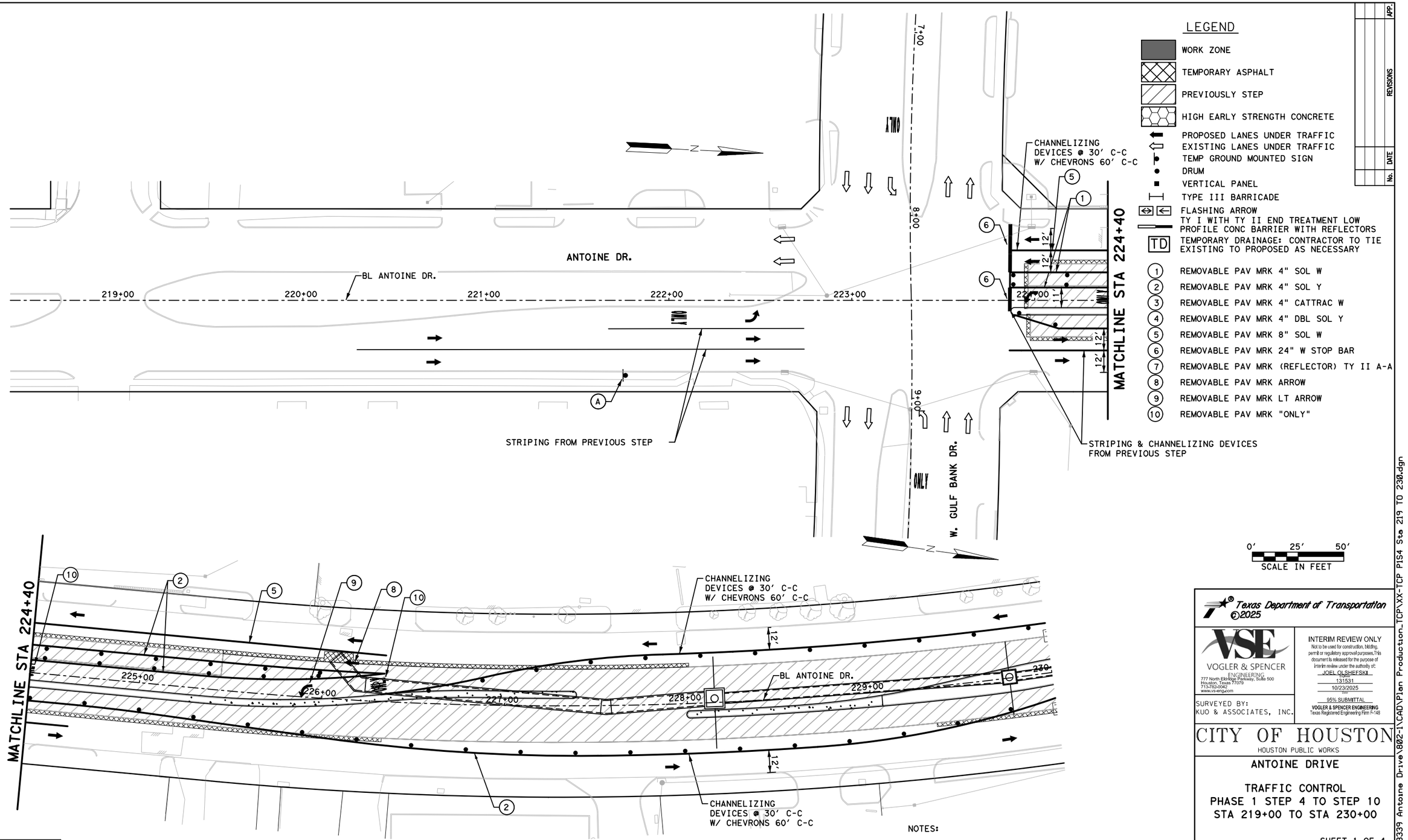

A
ROAD WORK AHEAD
CW20-1D

NOTES:

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL
PHASE 1 STEP 4 TO STEP 10
STA 219+00 TO STA 230+00

SHEET 1 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 47 OF 718	

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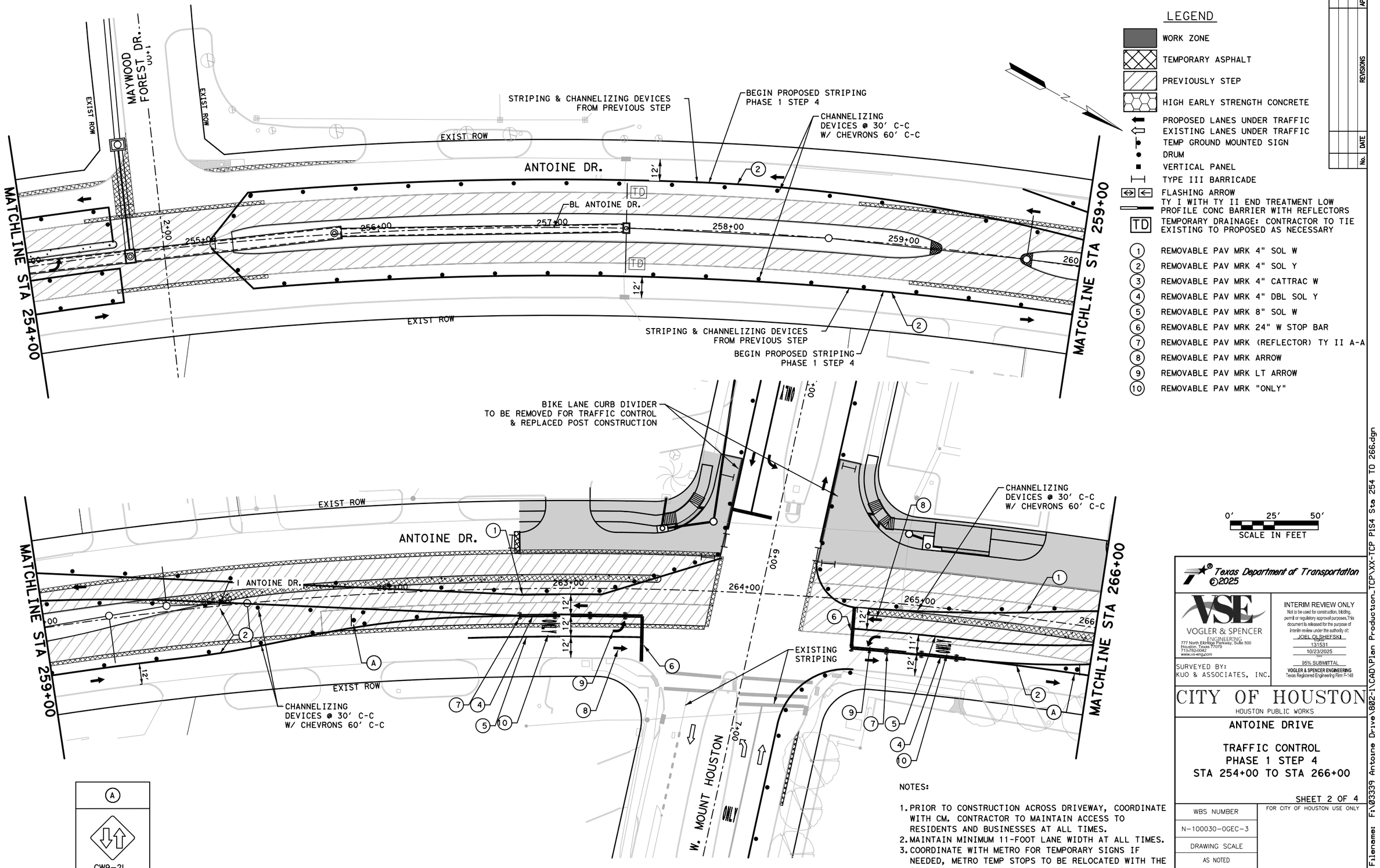

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS
- TD — TEMPORARY DRAINAGE: CONTRACTOR TO TIE EXISTING TO PROPOSED AS NECESSARY
- (1) REMOVABLE PAV MRK 4" SOL W
- (2) REMOVABLE PAV MRK 4" SOL Y
- (3) REMOVABLE PAV MRK 4" CATTRAC W
- (4) REMOVABLE PAV MRK 4" DBL SOL Y
- (5) REMOVABLE PAV MRK 8" SOL W
- (6) REMOVABLE PAV MRK 24" W STOP BAR
- (7) REMOVABLE PAV MRK (REFLECTOR) TY II A-A
- (8) REMOVABLE PAV MRK ARROW
- (9) REMOVABLE PAV MRK LT ARROW
- (10) REMOVABLE PAV MRK "ONLY"

NOTES:

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No.	DATE	REVISIONS	APP:

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PHASE 1 STEP 4 STA 254+00 TO STA 266+00

SHEET 2 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 48 OF 718	

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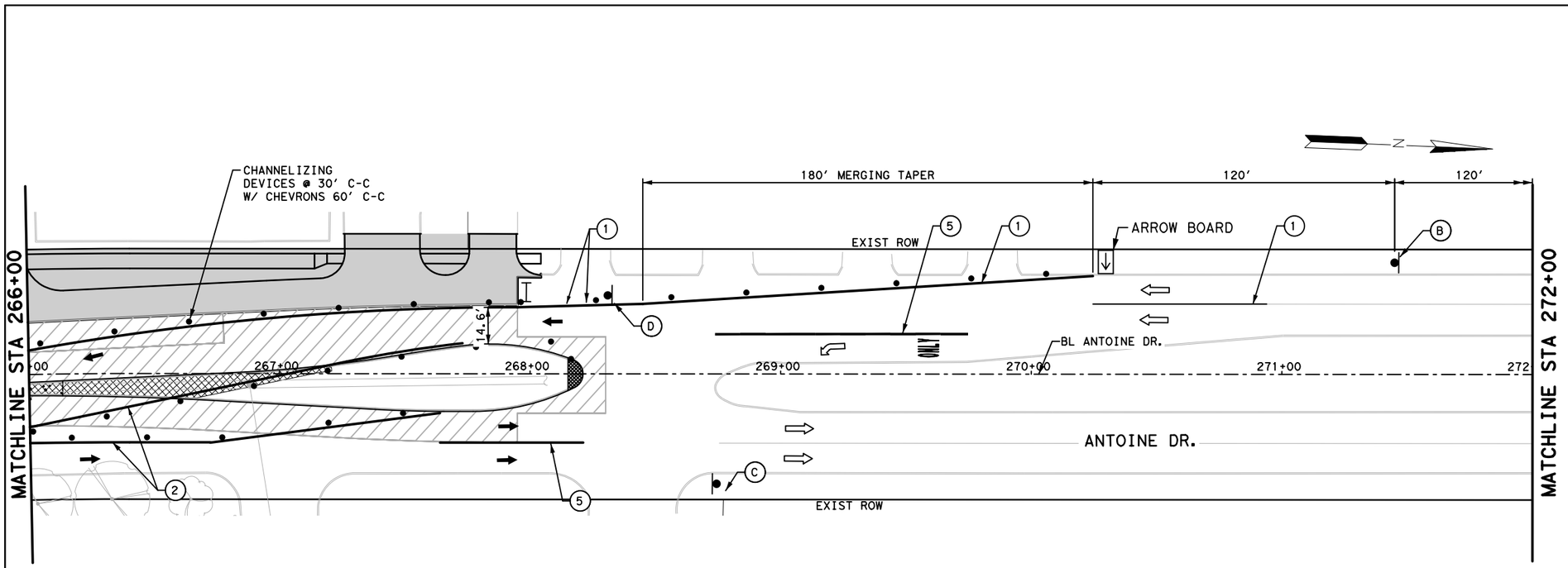

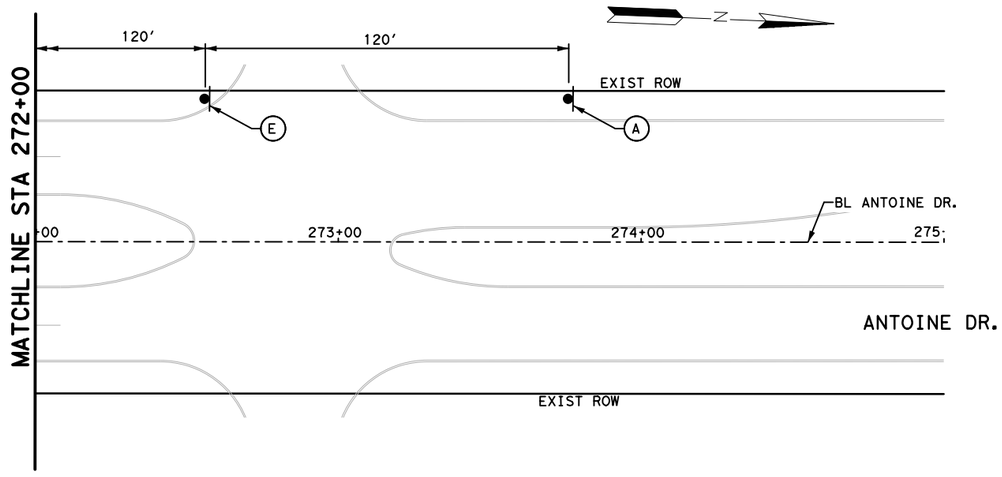

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
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- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS
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9. REMOVABLE PAV MRK LT ARROW
10. REMOVABLE PAV MRK "ONLY"

APP.	No.	DATE	REVISIONS

A	B	C	D	E
ROAD WORK AHEAD	RIGHT LANE CLOSED	END ROAD WORK		RIGHT LANE CLOSED AHEAD
CW20-1D	CW20-5TR	G20-2	ECW1-4L	W9-3R

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0' 25' 50'
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL
PHASE 1 STEP 4
STA 266+00 TO END PROJECT

SHEET 3 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 49 OF 718	

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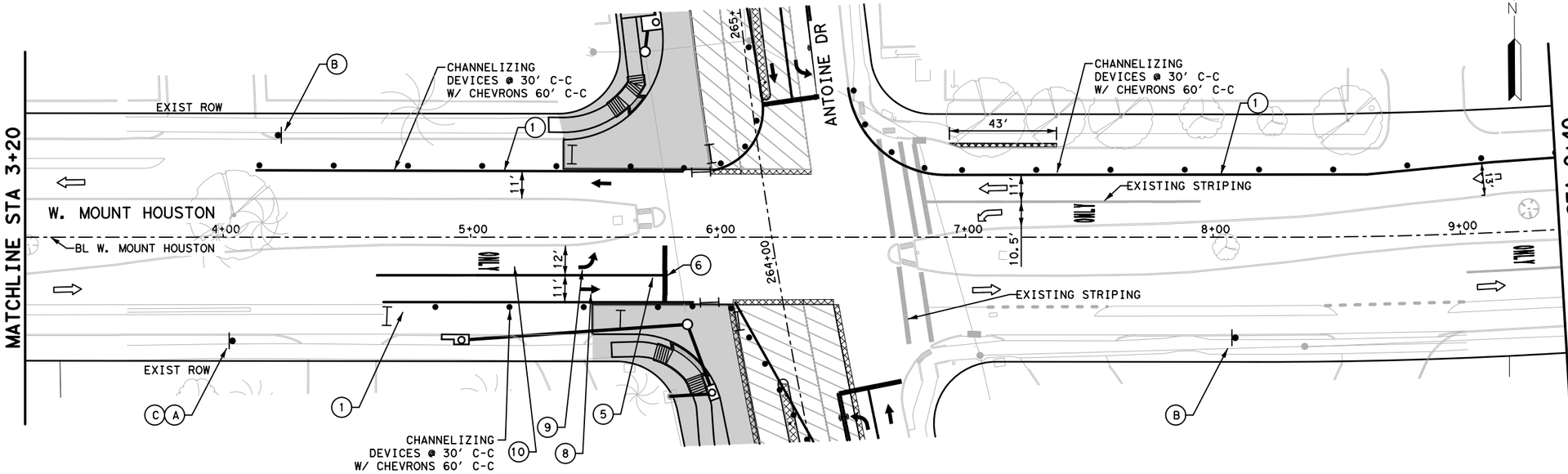

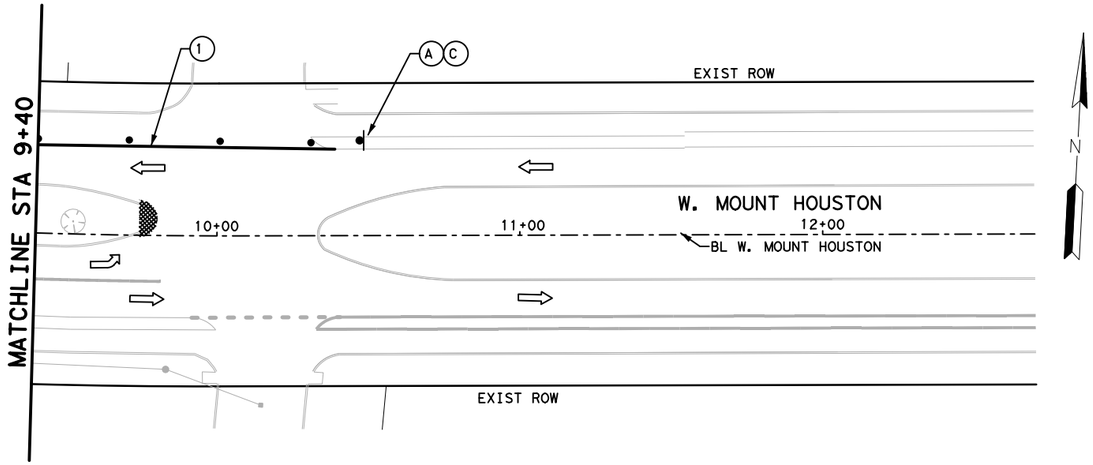

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
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- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
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- FLASHING ARROW
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- 1 REMOVABLE PAV MRK 4" SOL W
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- 3 REMOVABLE PAV MRK 4" CATTRAC W
- 4 REMOVABLE PAV MRK 4" DBL SOL Y
- 5 REMOVABLE PAV MRK 8" SOL W
- 6 REMOVABLE PAV MRK 24" W STOP BAR
- 7 REMOVABLE PAV MRK (REFLECTOR) TY II A-A
- 8 REMOVABLE PAV MRK ARROW
- 9 REMOVABLE PAV MRK LT ARROW
- 10 REMOVABLE PAV MRK "ONLY"

0' 25' 50'
SCALE IN FEET

A	B	C
ROAD WORK AHEAD	END ROAD WORK	DETOUR
CW20-1D	G20-2	M4-9

NOTES:

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
TRAFFIC CONTROL
PHASE 1 STEP 4
W. MOUNT HOUSTON
BEGIN PROJECT TO
END PROJECT

SHEET 4 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 50 OF 718	

No.	DATE	REVISIONS	APP.

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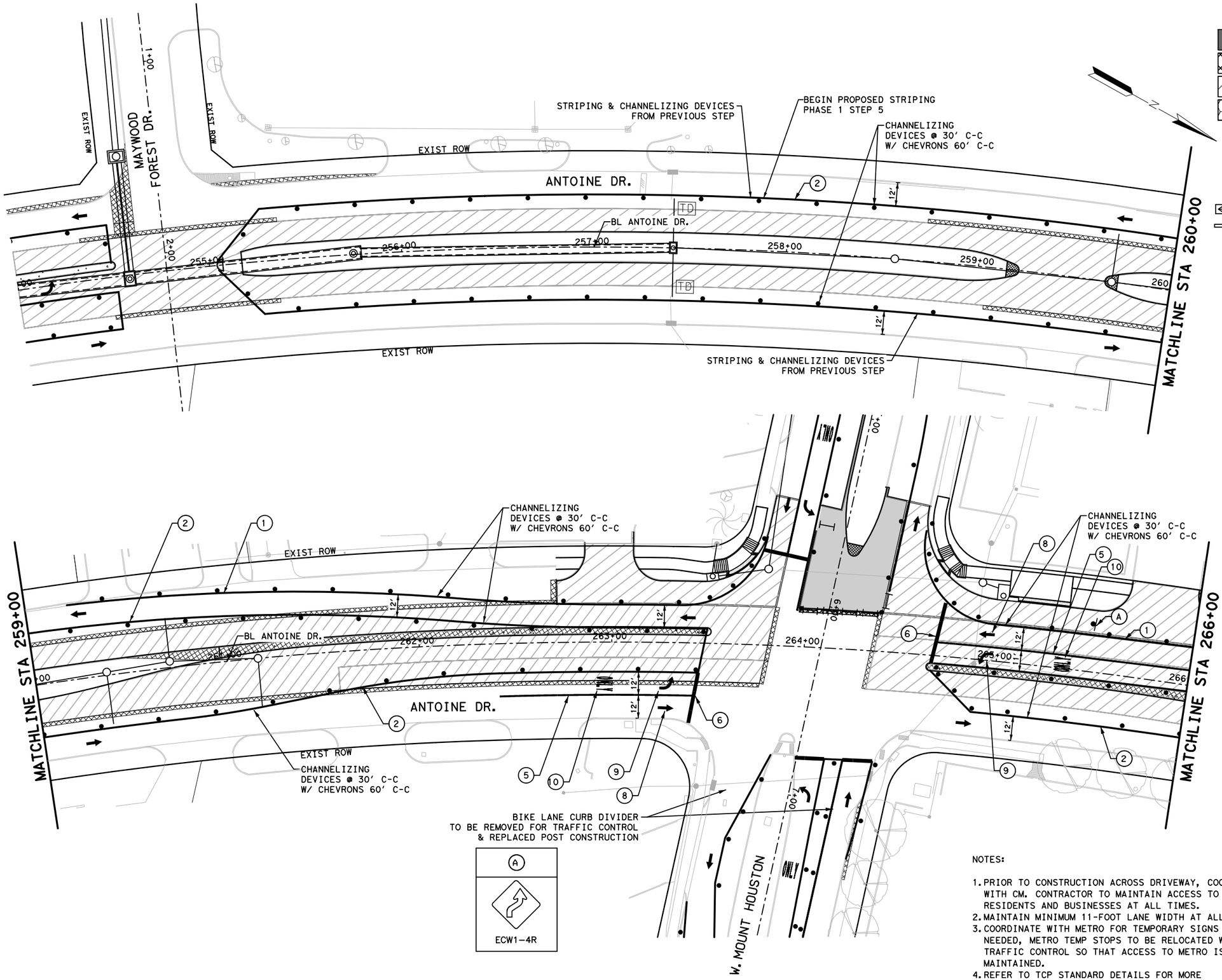

NOTES:

1. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY, COORDINATE WITH CM. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES.
2. MAINTAIN MINIMUM 11-FOOT LANE WIDTH AT ALL TIMES.
3. COORDINATE WITH METRO FOR TEMPORARY SIGNS IF NEEDED, METRO TEMP STOPS TO BE RELOCATED WITH THE TRAFFIC CONTROL SO THAT ACCESS TO METRO IS ALWAYS MAINTAINED.
4. REFER TO TCP STANDARD DETAILS FOR MORE INFORMATION.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PHASE 1 STEP 5 STA 254+00 TO STA 266+00

SHEET 1 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 51 OF 718	

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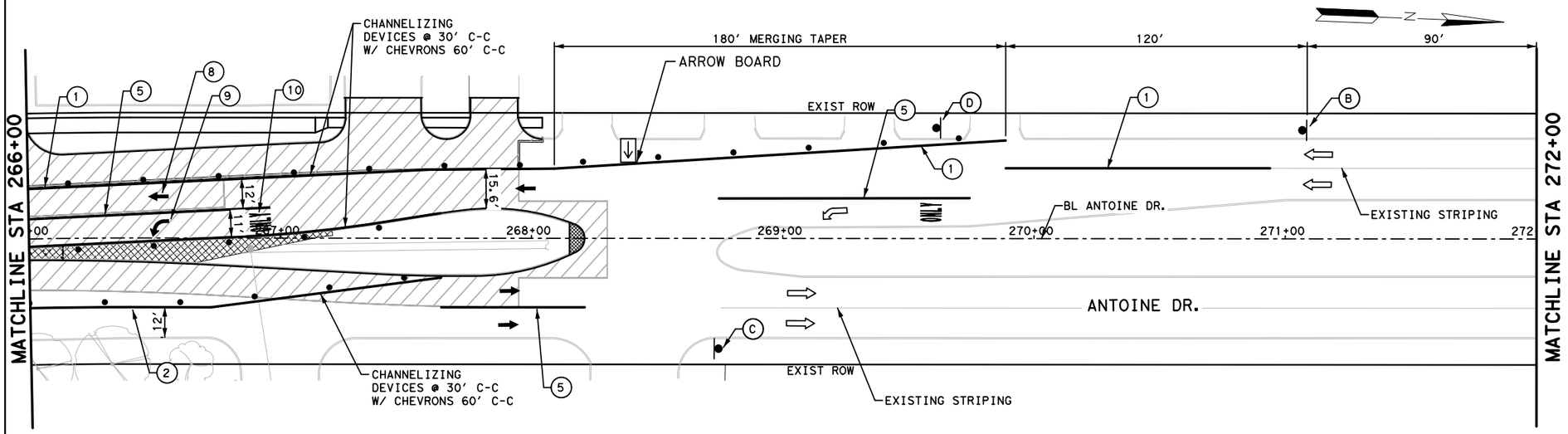
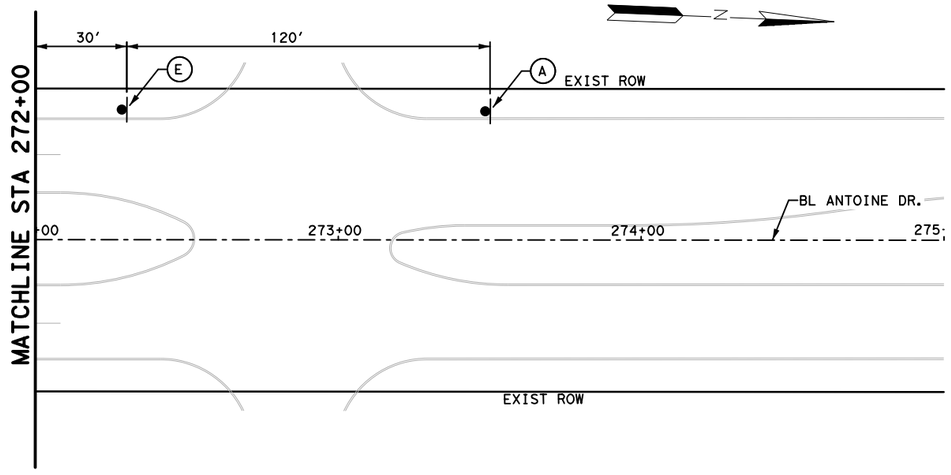




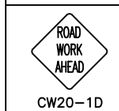
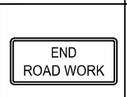
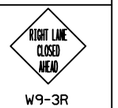
LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS
- TD — TEMPORARY DRAINAGE: CONTRACTOR TO TIE EXISTING TO PROPOSED AS NECESSARY

1. REMOVABLE PAV MRK 4" SOL W
2. REMOVABLE PAV MRK 4" SOL Y
3. REMOVABLE PAV MRK 4" CATTRAC W
4. REMOVABLE PAV MRK 4" DBL SOL Y
5. REMOVABLE PAV MRK 8" SOL W
6. REMOVABLE PAV MRK 24" W STOP BAR
7. REMOVABLE PAV MRK (REFLECTOR) TY II A-A
8. REMOVABLE PAV MRK ARROW
9. REMOVABLE PAV MRK LT ARROW
10. REMOVABLE PAV MRK "ONLY"

APP.	DATE	No.	REVISIONS

TEMPORARY STRIPING & CHANNELIZING DEVICES TO REMAIN BETWEEN PHASE 1 STEP 5 & PHASE 1 STEP 9 SOUTHBOUND-NORTH OF W. MOUNT HOUSTON

A	B	C	D	E
				
CW20-1D	CW20-5TR	G20-2	ECW1-4R	W9-3R

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0' 25' 50'
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL
PHASE 1 STEP 5
STA 266+00 TO END PROJECT

SHEET 2 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 52 OF 718	

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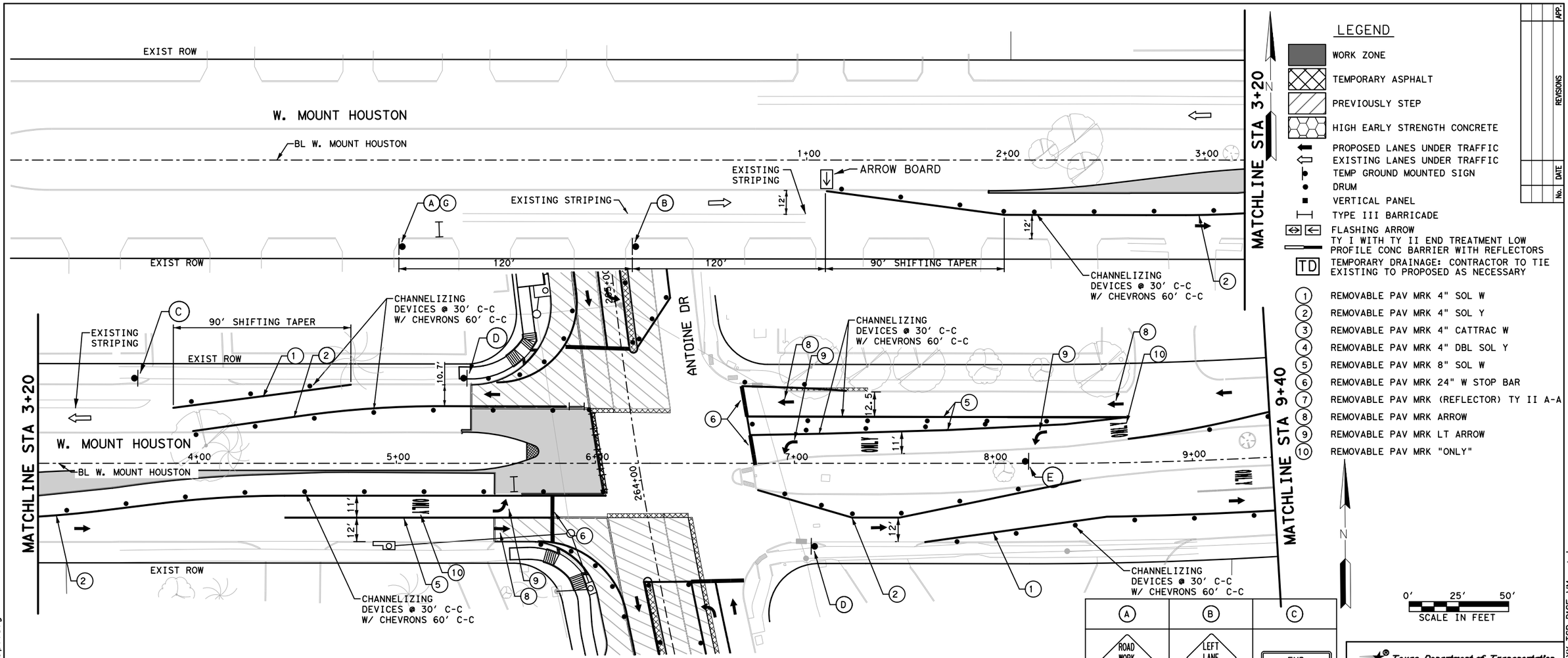

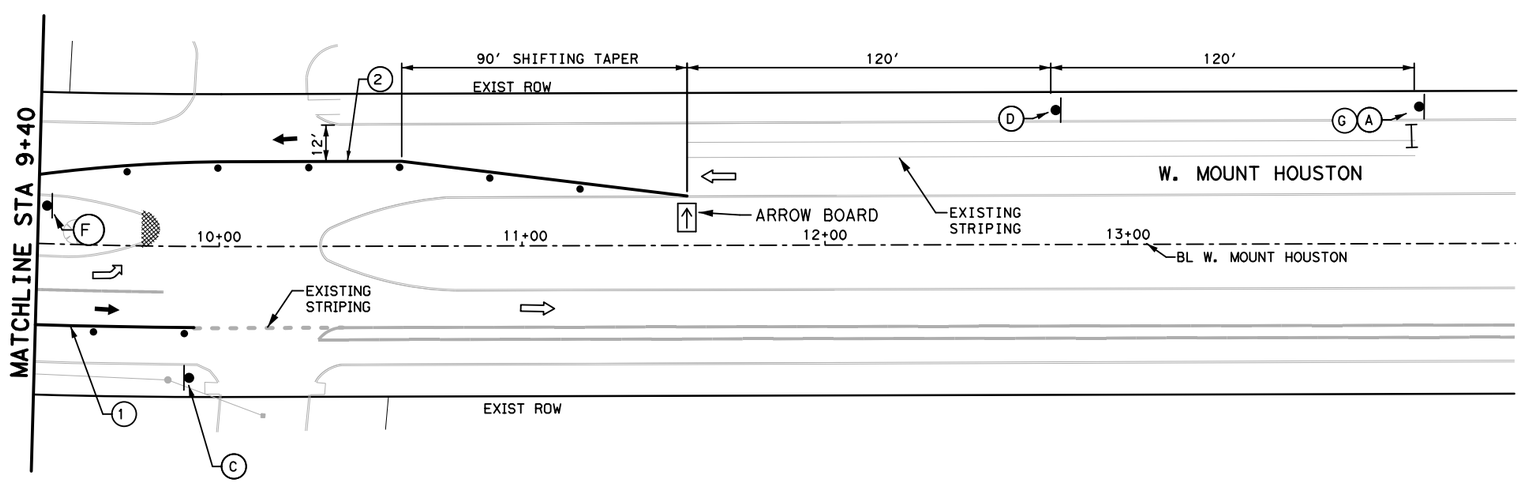

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS
- TD — TEMPORARY DRAINAGE: CONTRACTOR TO TIE EXISTING TO PROPOSED AS NECESSARY

1. REMOVABLE PAV MRK 4" SOL W
2. REMOVABLE PAV MRK 4" SOL Y
3. REMOVABLE PAV MRK 4" CATTRAC W
4. REMOVABLE PAV MRK 4" DBL SOL Y
5. REMOVABLE PAV MRK 8" SOL W
6. REMOVABLE PAV MRK 24" W STOP BAR
7. REMOVABLE PAV MRK (REFLECTOR) TY II A-A
8. REMOVABLE PAV MRK ARROW
9. REMOVABLE PAV MRK LT ARROW
10. REMOVABLE PAV MRK "ONLY"

APP.	No.	DATE	REVISIONS

A	B	C
ROAD WORK AHEAD — CW20-1D	LEFT LANE CLOSED — CW20-5TL	END ROAD WORK — G20-2
D	E	F
ECW1-4L	ONLY — R3-5L	LEFT LANE MUST TURN LEFT — R3-7L
G		
DETOUR — M4-9		

NOTES:

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE TRAFFIC CONTROL PHASE 1 STEP 5 W. MOUNT HOUSTON BEGIN PROJECT TO END PROJECT

SHEET 3 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 53 OF 718	

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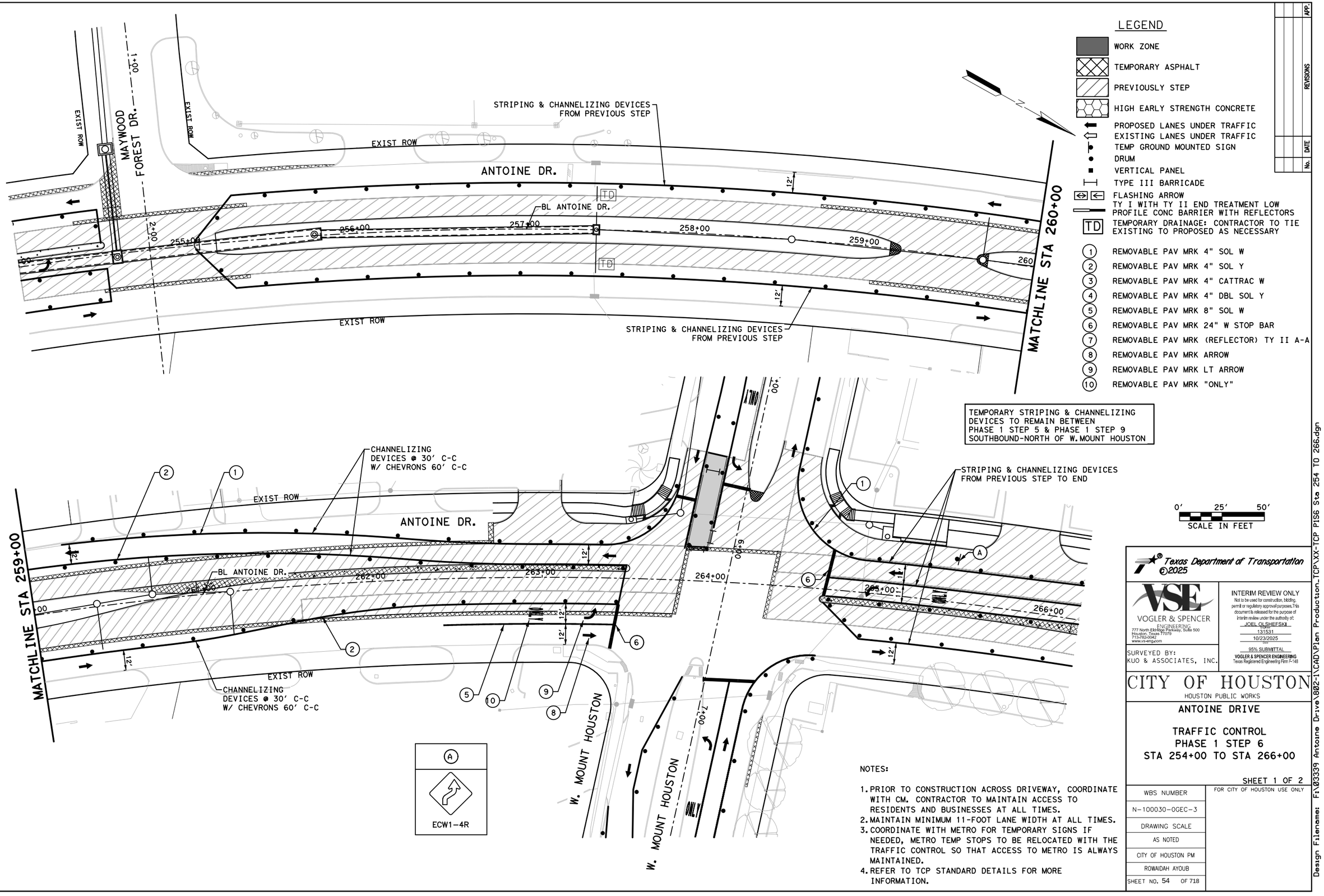

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS
- TD — TEMPORARY DRAINAGE: CONTRACTOR TO TIE EXISTING TO PROPOSED AS NECESSARY
- (1) REMOVABLE PAV MRK 4" SOL W
- (2) REMOVABLE PAV MRK 4" SOL Y
- (3) REMOVABLE PAV MRK 4" CATTRAC W
- (4) REMOVABLE PAV MRK 4" DBL SOL Y
- (5) REMOVABLE PAV MRK 8" SOL W
- (6) REMOVABLE PAV MRK 24" W STOP BAR
- (7) REMOVABLE PAV MRK (REFLECTOR) TY II A-A
- (8) REMOVABLE PAV MRK ARROW
- (9) REMOVABLE PAV MRK LT ARROW
- (10) REMOVABLE PAV MRK "ONLY"

TEMPORARY STRIPING & CHANNELIZING DEVICES TO REMAIN BETWEEN PHASE 1 STEP 5 & PHASE 1 STEP 9 SOUTHBOUND-NORTH OF W. MOUNT HOUSTON

0' 25' 50'
SCALE IN FEET

NOTES:

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APP:	DATE	REVISIONS
No.		

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PHASE 1 STEP 6 STA 254+00 TO STA 266+00

SHEET 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 54 OF 718	

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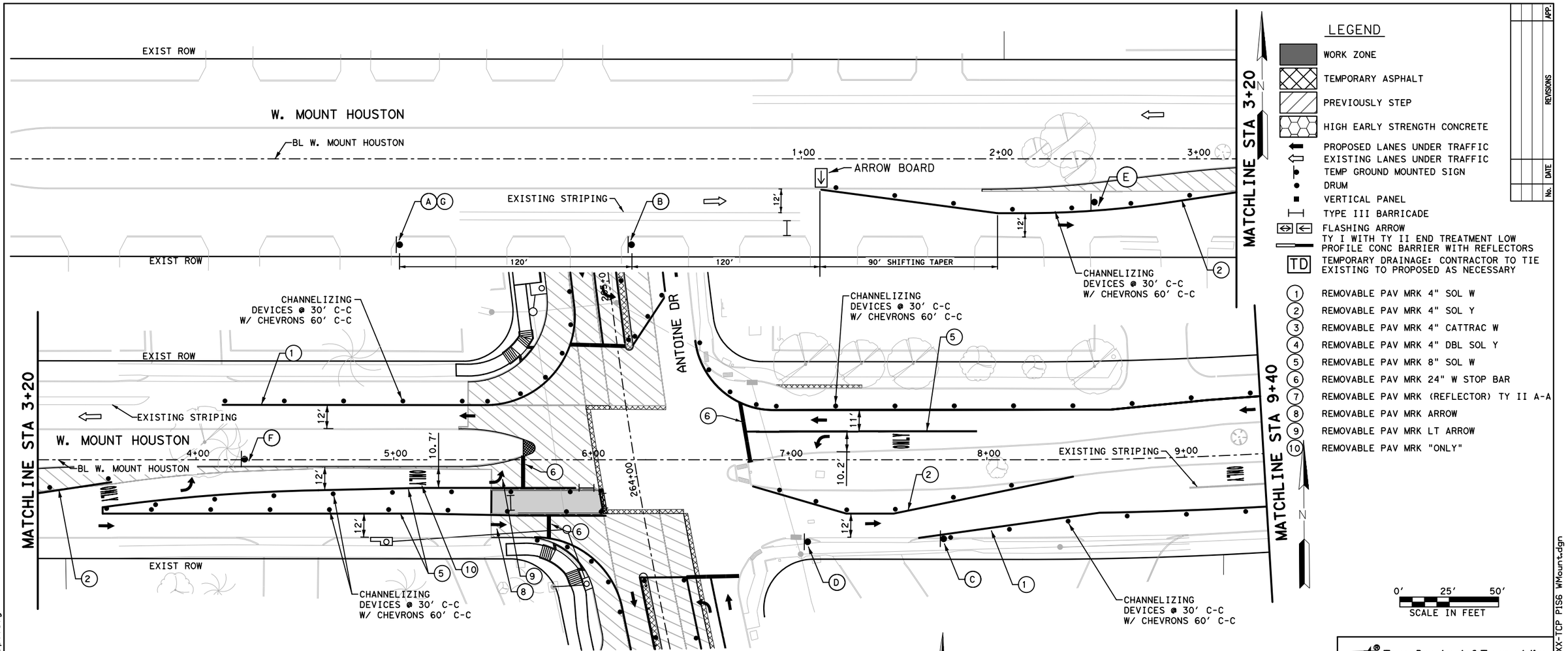

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS
- TD — TEMPORARY DRAINAGE: CONTRACTOR TO TIE EXISTING TO PROPOSED AS NECESSARY

1. REMOVABLE PAV MRK 4" SOL W
2. REMOVABLE PAV MRK 4" SOL Y
3. REMOVABLE PAV MRK 4" CATTRAC W
4. REMOVABLE PAV MRK 4" DBL SOL Y
5. REMOVABLE PAV MRK 8" SOL W
6. REMOVABLE PAV MRK 24" W STOP BAR
7. REMOVABLE PAV MRK (REFLECTOR) TY II A-A
8. REMOVABLE PAV MRK ARROW
9. REMOVABLE PAV MRK LT ARROW
10. REMOVABLE PAV MRK "ONLY"

APP.	No.	DATE	REVISIONS

A	B	C
ROAD WORK AHEAD — CW20-1D	LEFT LANE CLOSED — CW20-5TL	END ROAD WORK — G20-2

D	E	F	G
ECW1-4R	ONLY — R3-5L	LEFT LANE MUST TURN LEFT — R3-7L	DETOUR — M4-9

NOTES:

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ANTOINE DRIVE TRAFFIC CONTROL PHASE 1 STEP 6 W. MOUNT HOUSTON BEGIN PROJECT TO END PROJECT

SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 55 OF 718	

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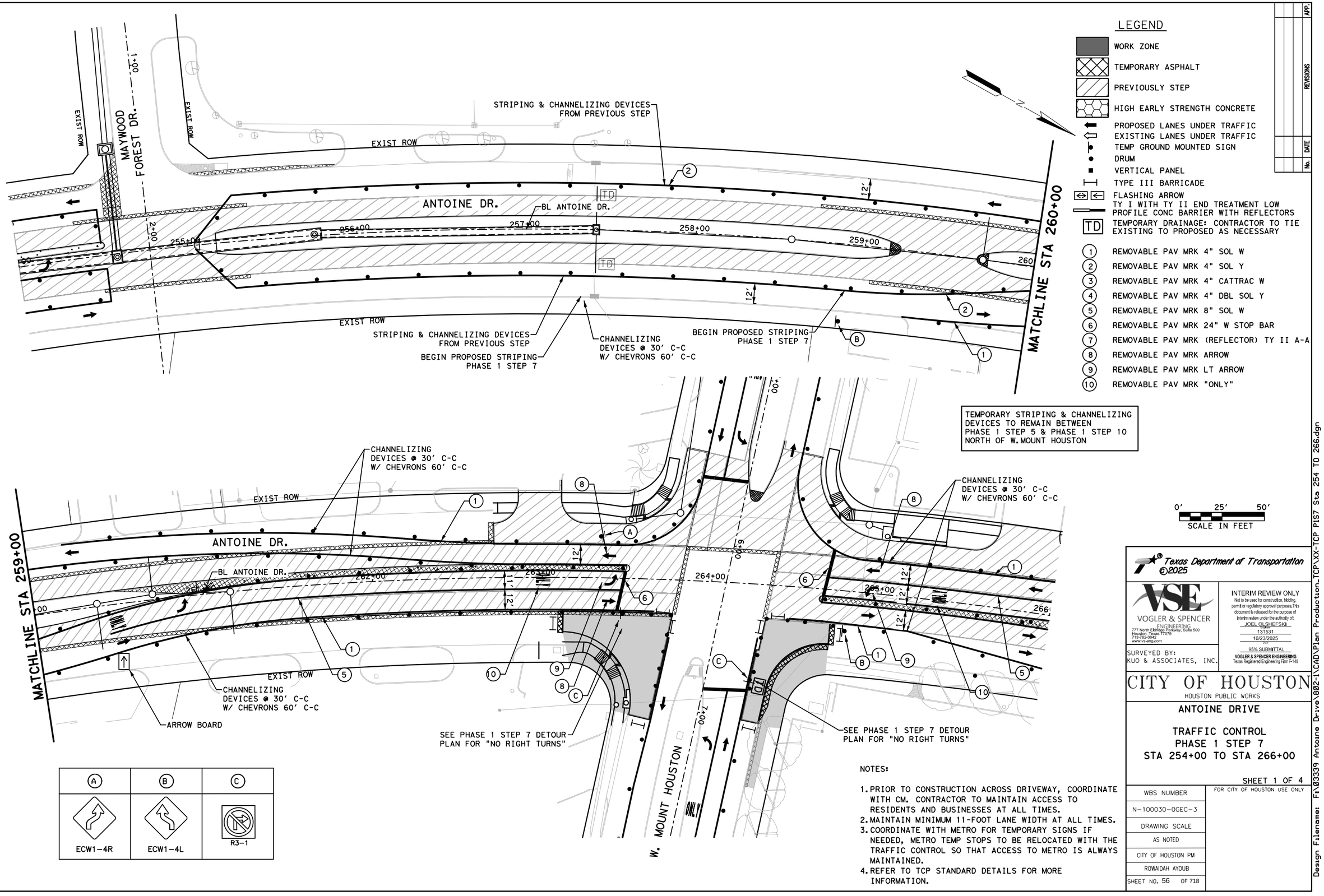

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PHASE 1 STEP 7 STA 254+00 TO STA 266+00

SHEET 1 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 56 OF 718	

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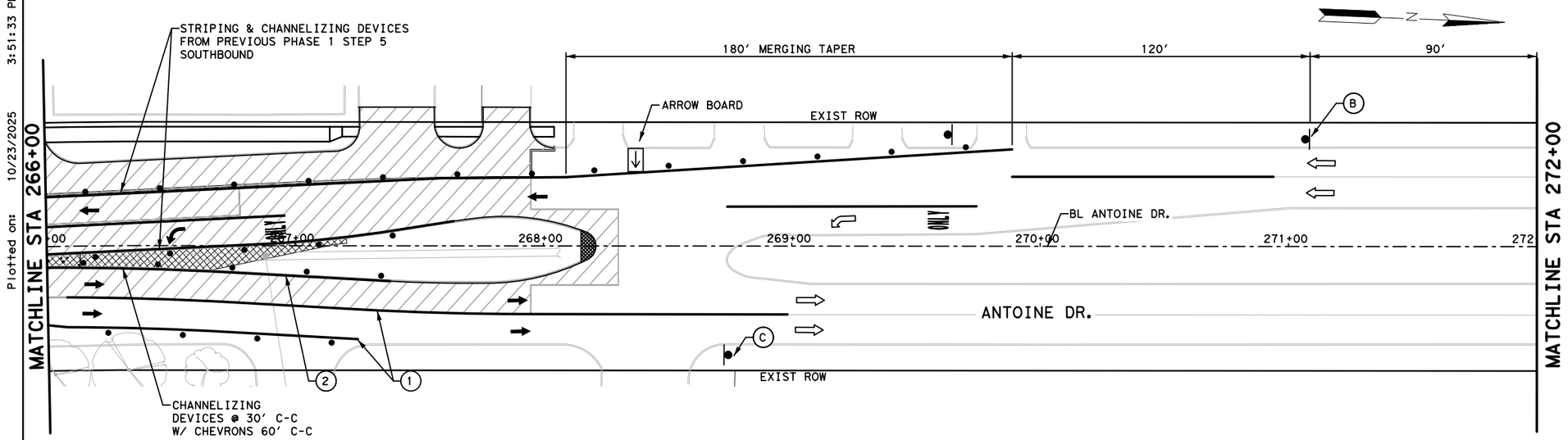
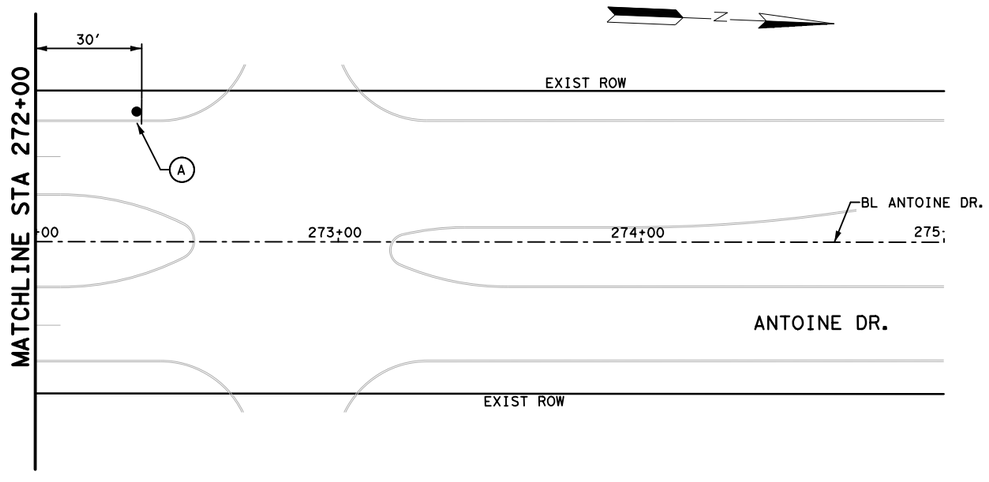


LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS
- TD TEMPORARY DRAINAGE: CONTRACTOR TO TIE EXISTING TO PROPOSED AS NECESSARY
- 1 REMOVABLE PAV MRK 4" SOL W
- 2 REMOVABLE PAV MRK 4" SOL Y
- 3 REMOVABLE PAV MRK 4" CATTRAC W
- 4 REMOVABLE PAV MRK 4" DBL SOL Y
- 5 REMOVABLE PAV MRK 8" SOL W
- 6 REMOVABLE PAV MRK 24" W STOP BAR
- 7 REMOVABLE PAV MRK (REFLECTOR) TY II A-A
- 8 REMOVABLE PAV MRK ARROW
- 9 REMOVABLE PAV MRK LT ARROW
- 10 REMOVABLE PAV MRK "ONLY"

TEMPORARY STRIPING & CHANNELIZING DEVICES TO REMAIN BETWEEN PHASE 1 STEP 5 & PHASE 1 STEP 9 SOUTHBOUND-NORTH OF W.MOUNT HOUSTON



A	B	C	D
ROAD WORK AHEAD	RIGHT LANE CLOSED	END ROAD WORK	
CW20-1D	CW20-5TR	G20-2	ECW1-4R

0' 25' 50'
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL
PHASE 1 STEP 7
STA 266+00 TO END PROJECT

SHEET 2 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 57 OF 718	

No.	DATE	REVISIONS	APP.

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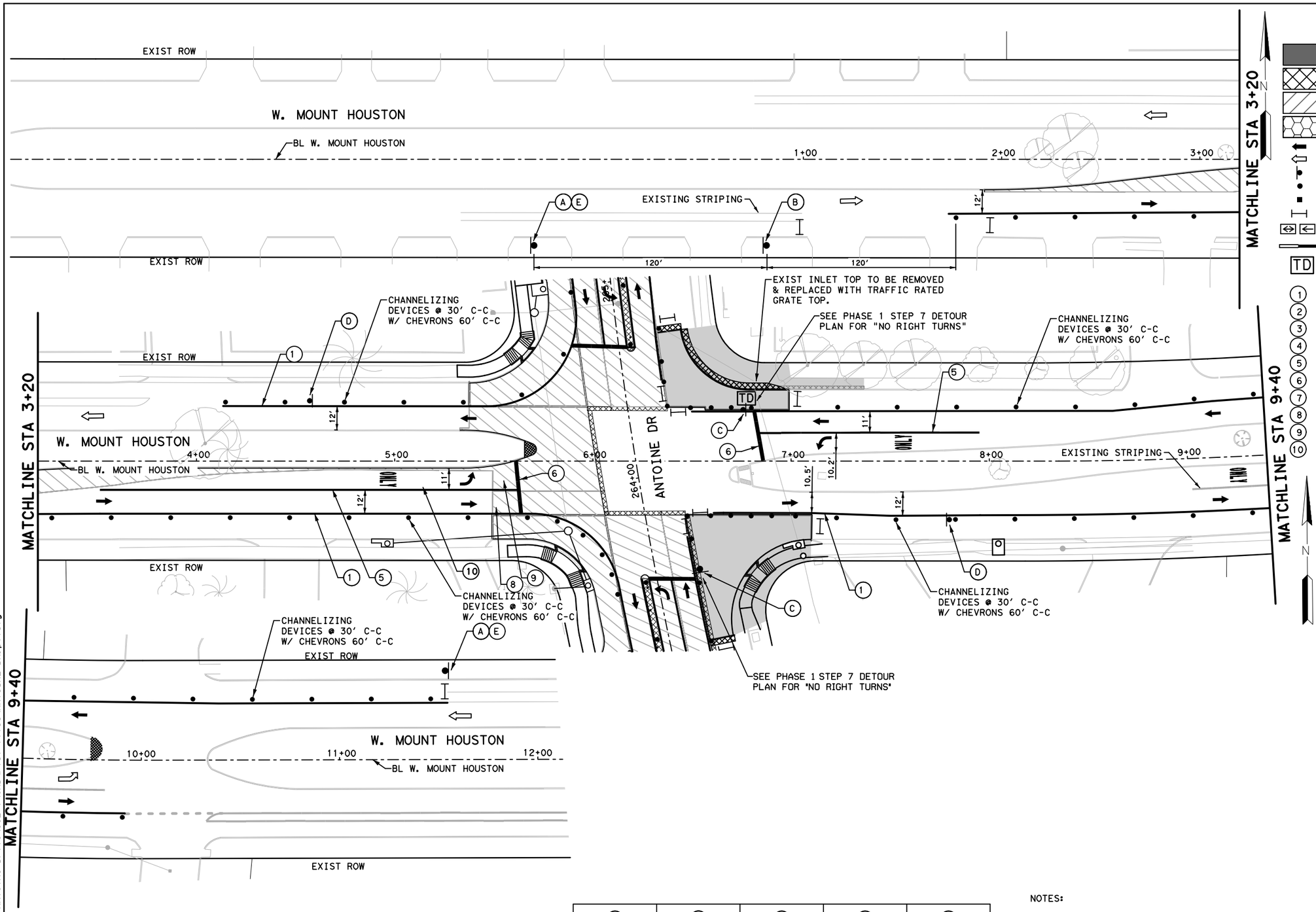

LEGEND

- WORK ZONE
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- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
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- TYPE III BARRICADE
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS
- TD — TEMPORARY DRAINAGE: CONTRACTOR TO TIE EXISTING TO PROPOSED AS NECESSARY

1. REMOVABLE PAV MRK 4" SOL W
2. REMOVABLE PAV MRK 4" SOL Y
3. REMOVABLE PAV MRK 4" CATTRAC W
4. REMOVABLE PAV MRK 4" DBL SOL Y
5. REMOVABLE PAV MRK 8" SOL W
6. REMOVABLE PAV MRK 24" W STOP BAR
7. REMOVABLE PAV MRK (REFLECTOR) TY II A-A
8. REMOVABLE PAV MRK ARROW
9. REMOVABLE PAV MRK LT ARROW
10. REMOVABLE PAV MRK "ONLY"

REVISIONS			
No.	DATE		APP.

A	B	C	D	E
ROAD WORK AHEAD	RIGHT LANE CLOSED		END ROAD WORK	DETOUR
CW20-1D	CW20-5TR 36"x36"	R3-1	G20-2	M4-9

NOTES:

1. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY, COORDINATE WITH CM. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES.
2. MAINTAIN MINIMUM 11-FOOT LANE WIDTH AT ALL TIMES.
3. COORDINATE WITH METRO FOR TEMPORARY SIGNS IF NEEDED, METRO TEMP STOPS TO BE RELOCATED WITH THE TRAFFIC CONTROL SO THAT ACCESS TO METRO IS ALWAYS MAINTAINED.
4. REFER TO TCP STANDARD DETAILS FOR MORE INFORMATION.

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www.vs-eng.com

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JOEL OLSHEFSKI
Date
131531
10/23/2025
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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE TRAFFIC CONTROL PHASE 1 STEP 7 W. MOUNT HOUSTON BEGIN PROJECT TO END PROJECT

SHEET 3 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 58 OF 718	

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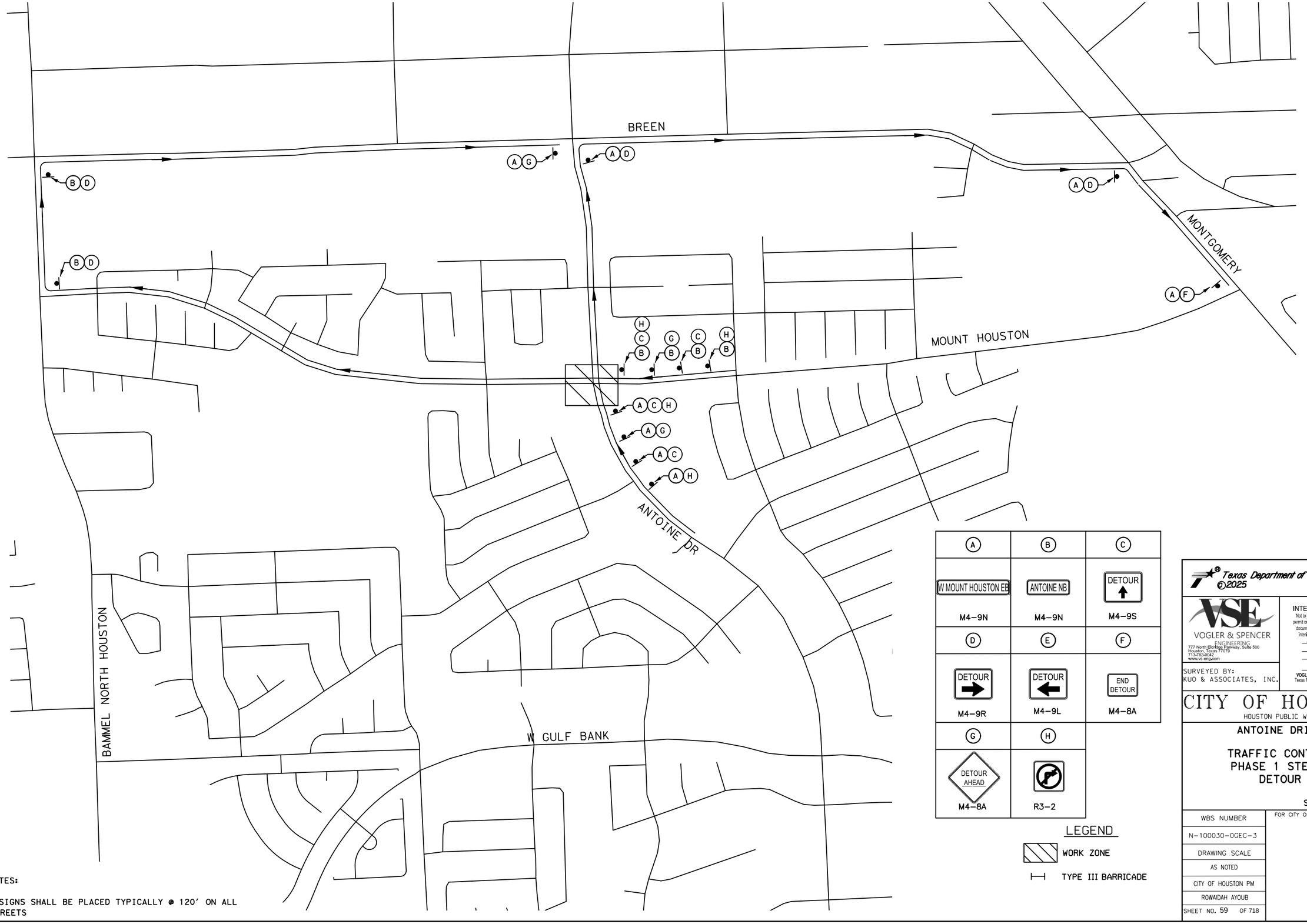

A	B	C
W MOUNT HOUSTON EB M4-9N	ANTOINE NB M4-9N	DETOUR M4-9S
D	E	F
DETOUR M4-9R	DETOUR M4-9L	END DETOUR M4-8A
G	H	
DETOUR AHEAD M4-8A	R3-2	

LEGEND

WORK ZONE

TYPE III BARRICADE

NOTES:

1. SIGNS SHALL BE PLACED TYPICALLY @ 120' ON ALL STREETS

No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PHASE 1 STEP 7 DETOUR

SHEET 4 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 59 OF 718	

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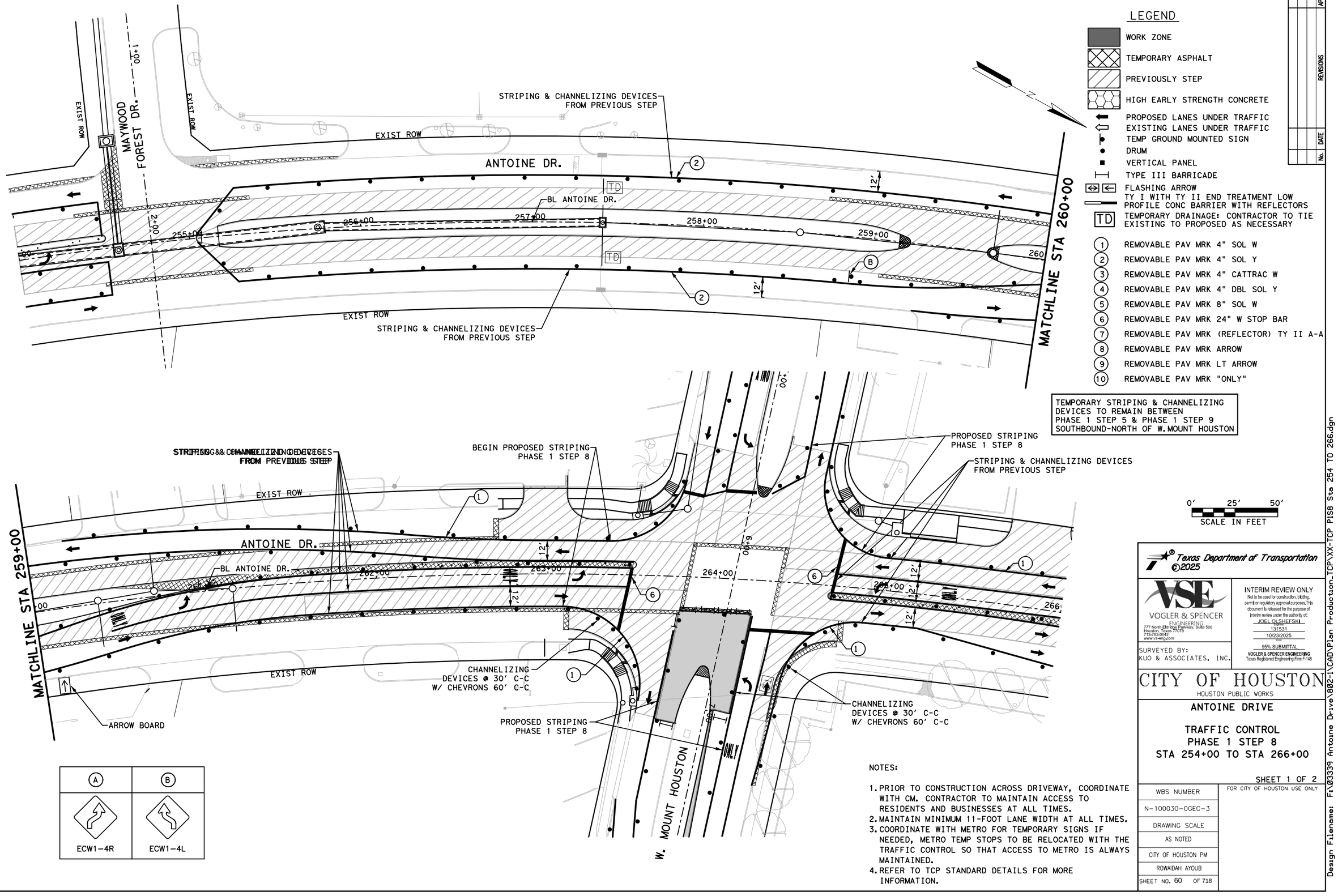

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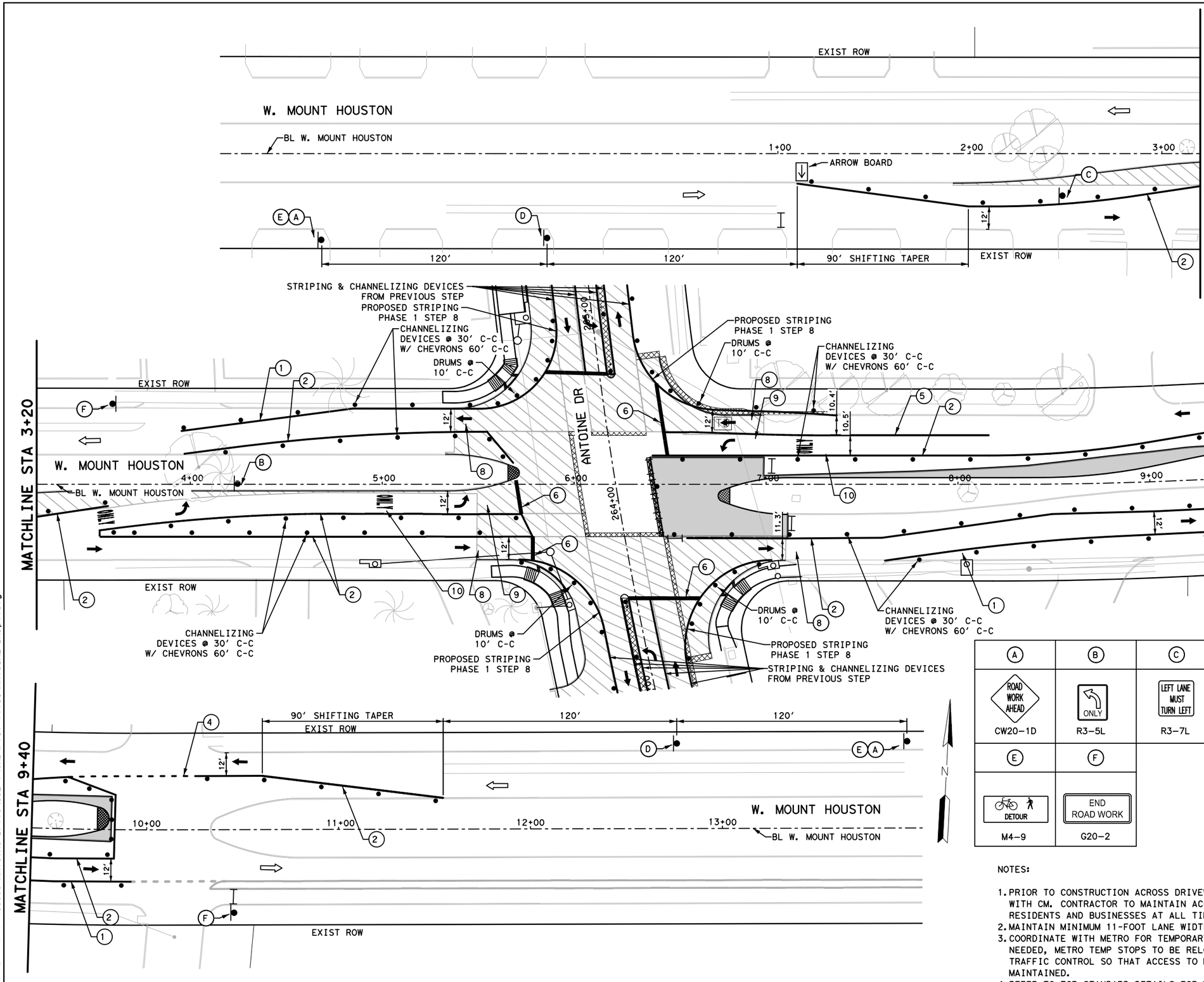

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
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- TYPE III BARRICADE
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7. REMOVABLE PAV MRK (REFLECTOR) TY II A-A
8. REMOVABLE PAV MRK ARROW
9. REMOVABLE PAV MRK LT ARROW
10. REMOVABLE PAV MRK "ONLY"

APP.	No.	DATE	REVISIONS

A	B	C	D
ROAD WORK AHEAD — CW20-1D	ONLY — R3-5L	LEFT LANE MUST TURN LEFT — R3-7L	ECW1-4R
E	**F**		
DETOUR — M4-9	END ROAD WORK — G20-2		

NOTES:

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE TRAFFIC CONTROL PHASE 1 STEP 8 W. MOUNT HOUSTON BEGIN PROJECT TO END PROJECT

SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 61 OF 718	

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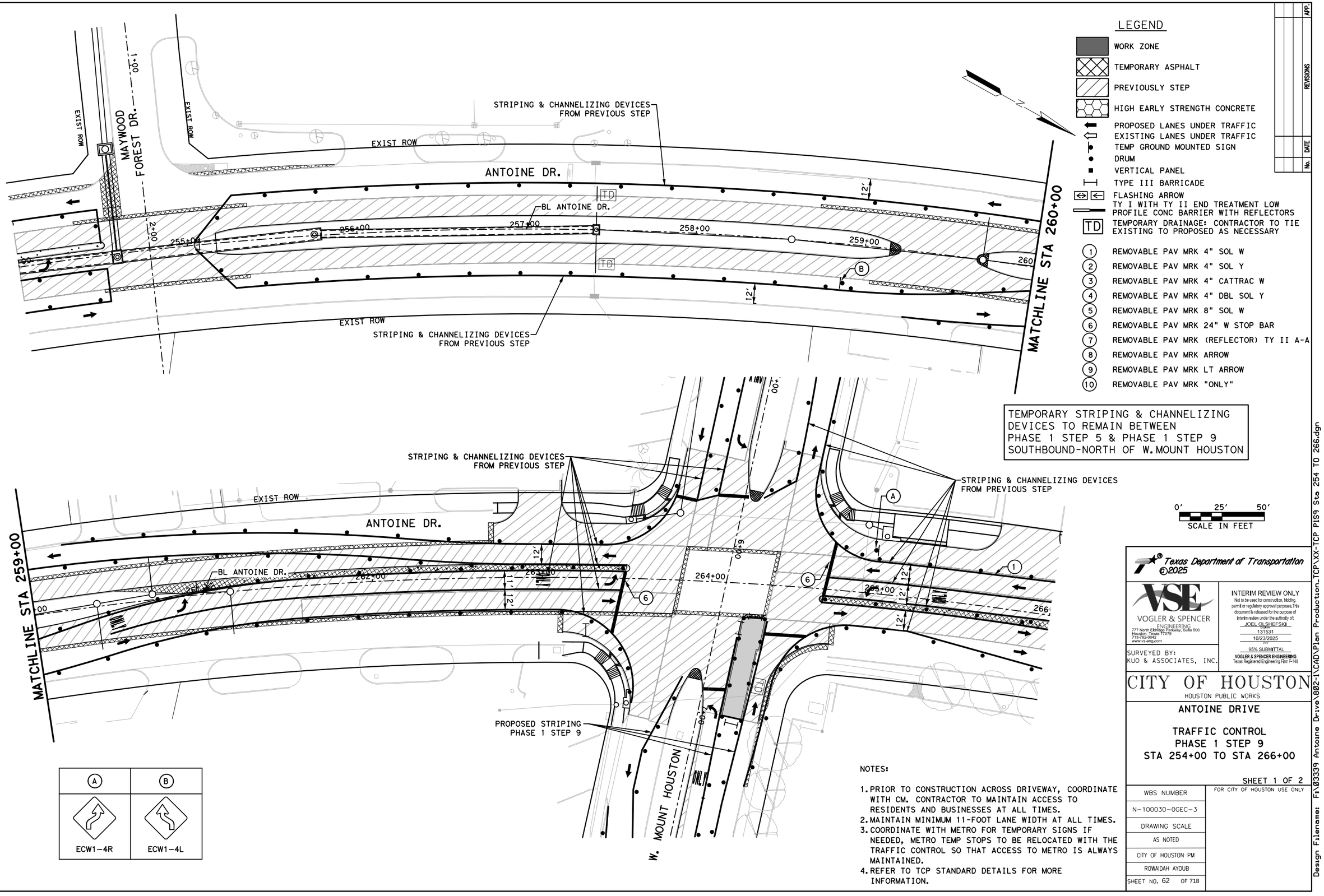

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL
PHASE 1 STEP 9
STA 254+00 TO STA 266+00

SHEET 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 62 OF 718	

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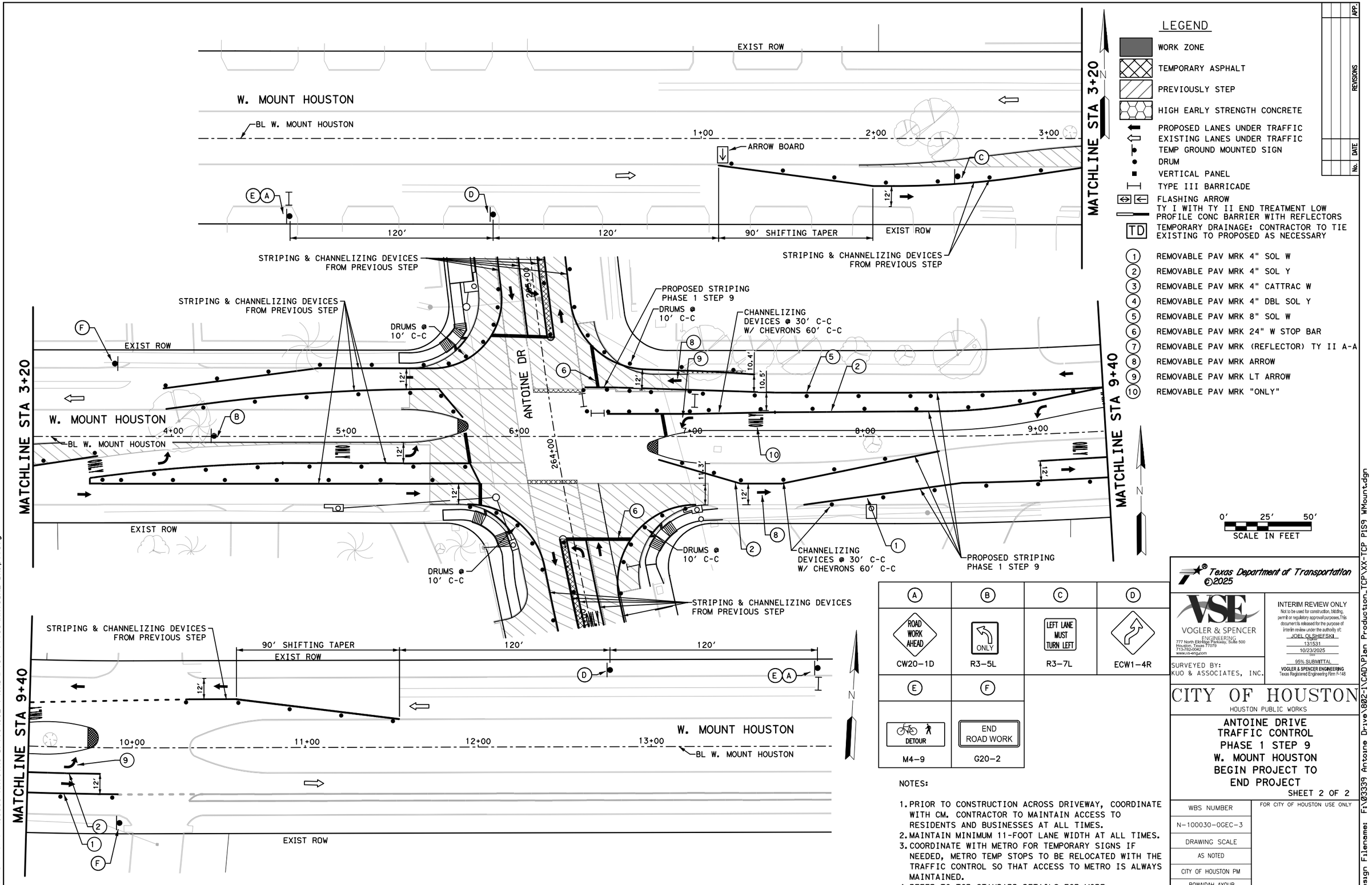

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE
- FLASHING ARROW
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8. REMOVABLE PAV MRK ARROW
9. REMOVABLE PAV MRK LT ARROW
10. REMOVABLE PAV MRK "ONLY"

APP.	No.	DATE	REVISIONS

A	B	C	D
ROAD WORK AHEAD	ONLY	LEFT LANE MUST TURN LEFT	
CW20-1D	R3-5L	R3-7L	ECW1-4R
E	F		
DETOUR	END ROAD WORK		
M4-9	G20-2		

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Texas Registered Engineering Firm F-148

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE TRAFFIC CONTROL PHASE 1 STEP 9 W. MOUNT HOUSTON BEGIN PROJECT TO END PROJECT

SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 63 OF 718	

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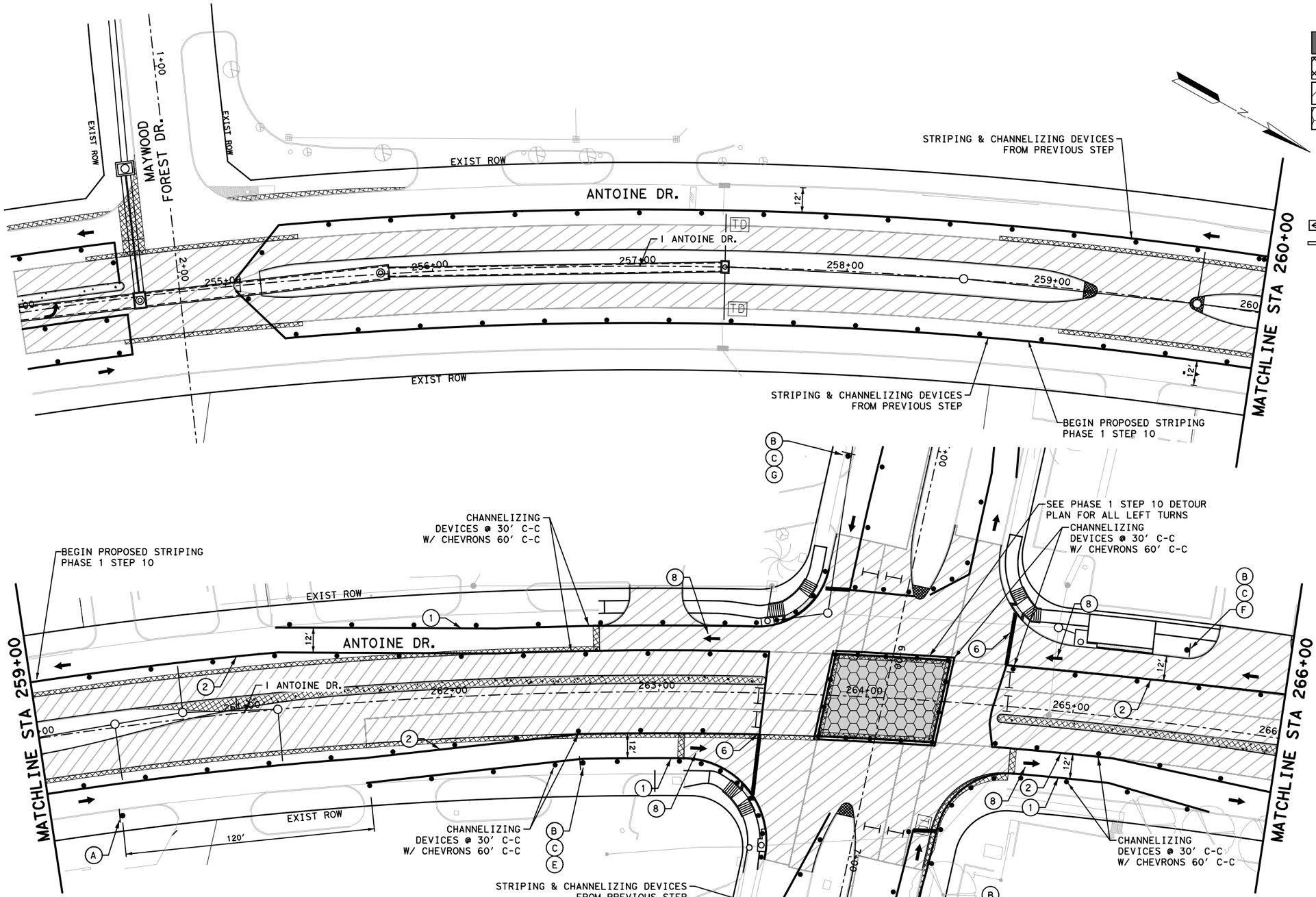

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
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9. REMOVABLE PAV MRK LT ARROW
10. REMOVABLE PAV MRK "ONLY"

REVISIONS	No.	DATE	APP.

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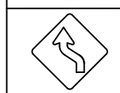							
ECW1-4L	R3-2	M4-9S	M4-8A	M4-9N	M4-9N	M4-9N	M4-9N

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL
PHASE 1 STEP 10
STA 254+00 TO STA 266+00

SHEET 1 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 64 OF 718	

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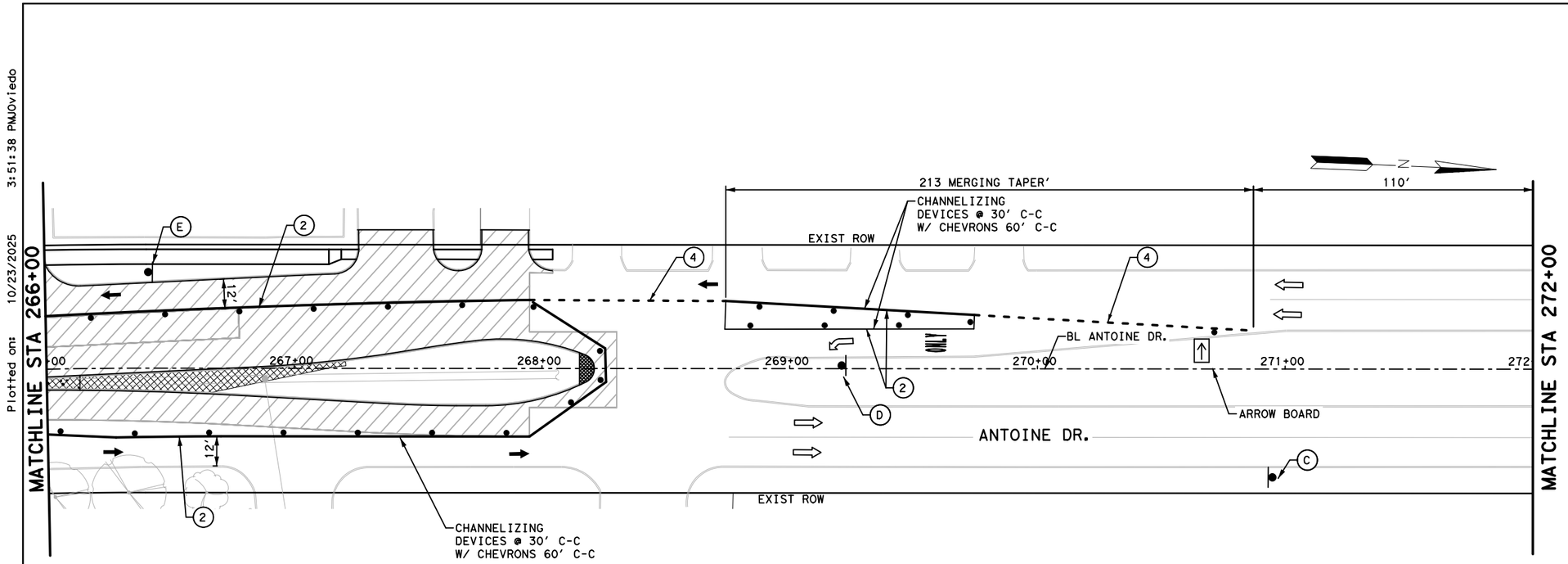

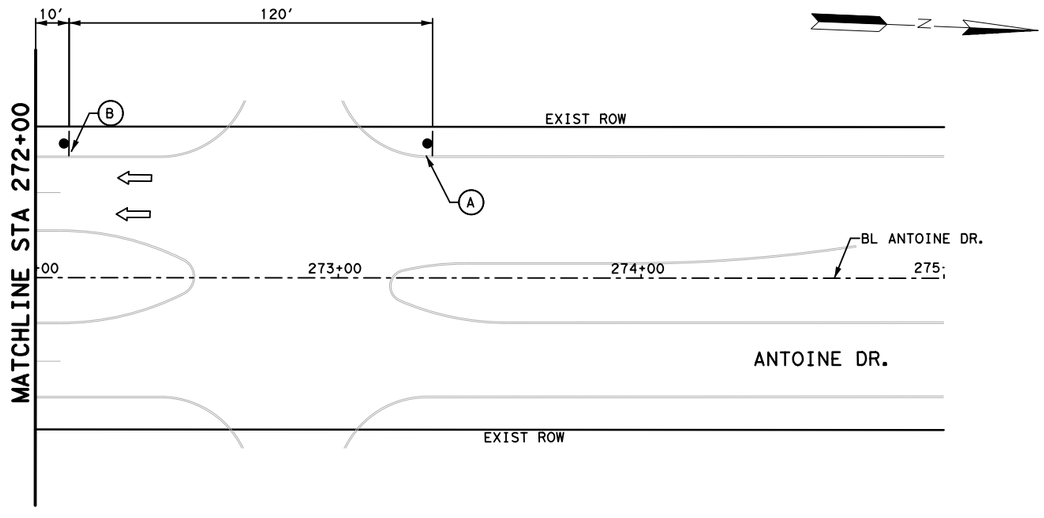

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
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- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS
- TD — TEMPORARY DRAINAGE: CONTRACTOR TO TIE EXISTING TO PROPOSED AS NECESSARY

1. REMOVABLE PAV MRK 4" SOL W
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REVISIONS			APP.
No.	DATE		

0' 25' 50'
SCALE IN FEET

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		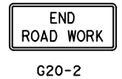		
CW20-1D	CW20-5TL	G20-2	R3-5L	R3-2

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL
PHASE 1 STEP 10
STA 266+00 TO END PROJECT

SHEET 2 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 65 OF 718	

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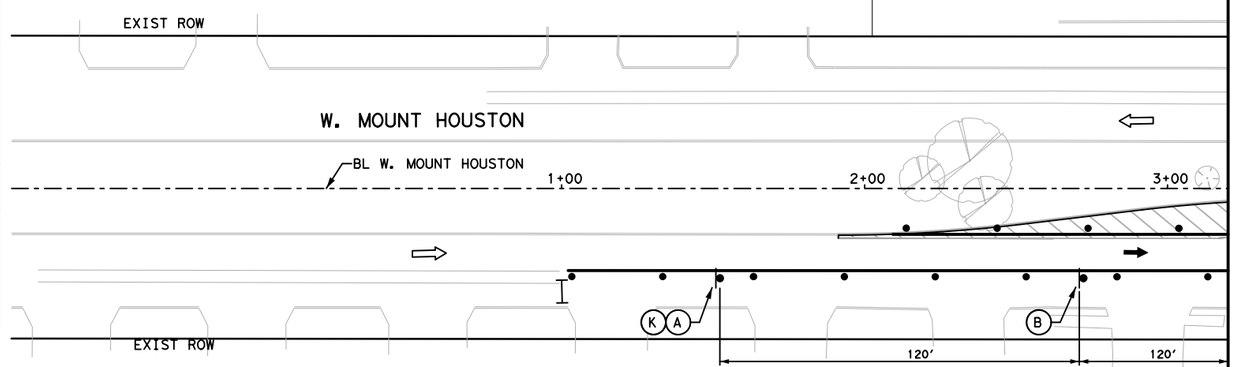
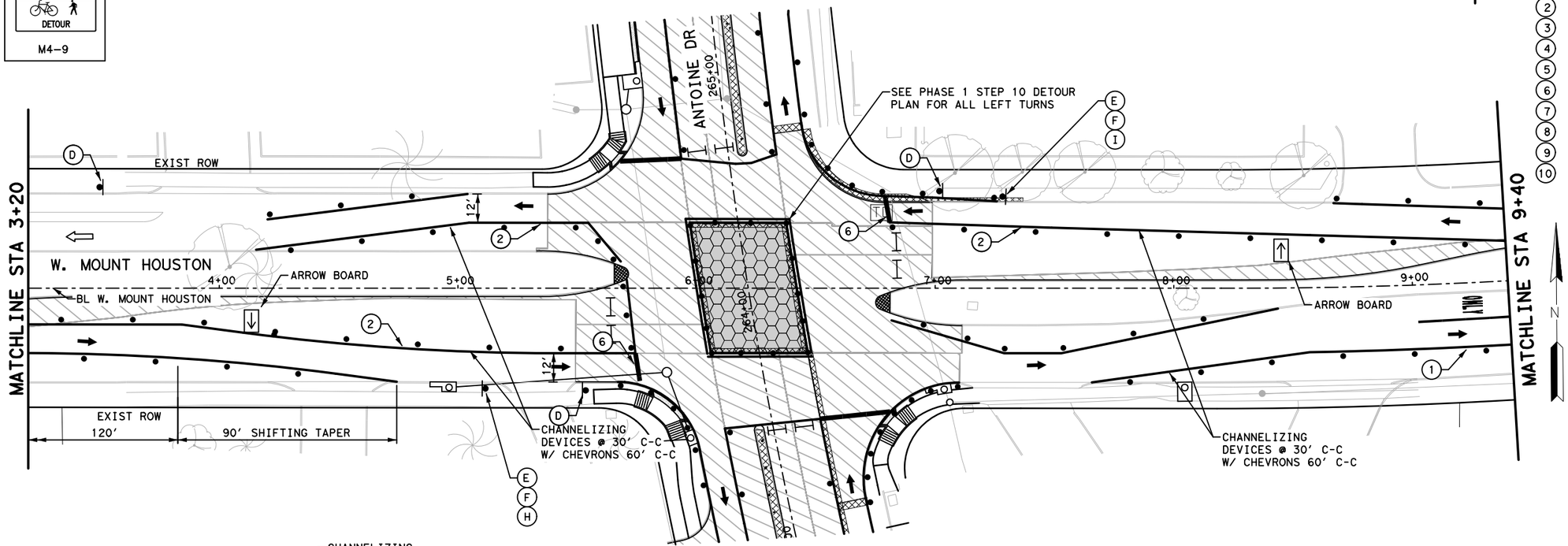
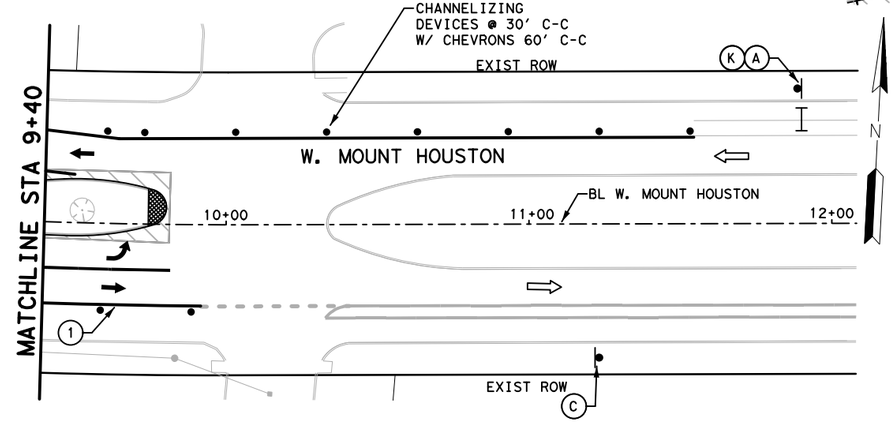
Design Filename: F:\03339 Antoine Drive\802-1\CAD\Plan Production_TCP\XX-TCP PIS10 Sta 266 to End.dgn

A	B	C	D	E
ROAD WORK AHEAD CW20-1D	LEFT LANE CLOSED CW20-5TL	END ROAD WORK G20-2	ECW1-4L	R3-2
F	**G**	**H**	**I**	**J**
DETOUR M4-9S	DETOUR AHEAD M4-8A	ANTOINE NB M4-9N	ANTOINE SB M4-9N	ECW1-4R
K				
DETOUR M4-9				







LEGEND

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- PROPOSED LANES UNDER TRAFFIC
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APP:	DATE	No.	REVISIONS

0' 25' 50'
SCALE IN FEET

NOTES:

1. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY, COORDINATE WITH CM. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES.
2. MAINTAIN MINIMUM 11-FOOT LANE WIDTH AT ALL TIMES.
3. COORDINATE WITH METRO FOR TEMPORARY SIGNS IF NEEDED, METRO TEMP STOPS TO BE RELOCATED WITH THE TRAFFIC CONTROL SO THAT ACCESS TO METRO IS ALWAYS MAINTAINED.
4. REFER TO TCP STANDARD DETAILS FOR MORE INFORMATION.

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777 North Eldridge Parkway, Suite 500
Houston, Texas 77079
713-782-0042
www.vs-eng.com

SURVEYED BY:
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JOEL OLSHEFSKI
131531
10/23/2025
95% SUBMITTAL
VOGLER & SPENCER ENGINEERING
Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
TRAFFIC CONTROL
PHASE 1 STEP 10
W. MOUNT HOUSTON
BEGIN PROJECT TO
END PROJECT

SHEET 3 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 66 OF 718	

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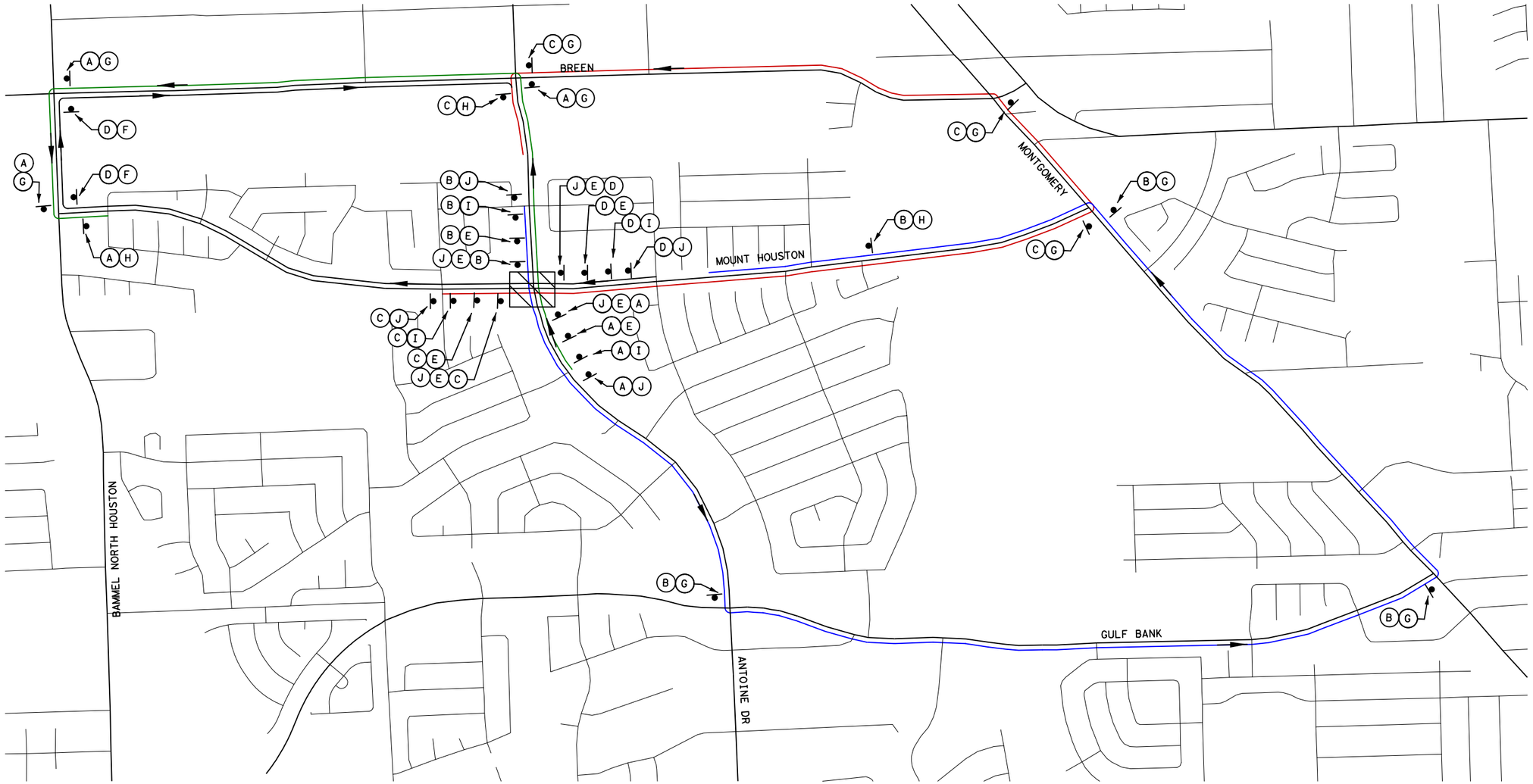

A	B	C	D	E	F
W MOUNT HOUSTON WB M4-9N	W MOUNT HOUSTON EB M4-9N	ANTOINE NB M4-9N	ANTOINE SB M4-9N	DETOUR M4-9S	DETOUR M4-9R

G	H	I	J
DETOUR M4-9L	END DETOUR M4-8A	DETOUR AHEAD M4-8A	R3-2

LEGEND

- WORK ZONE
- NB TRAFFIC
- SB TRAFFIC
- EB TRAFFIC
- WB TRAFFIC

NOTES:

1. SIGNS SHALL BE PLACED TYPICALLY @ 120' ON ALL STREETS

No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PHASE 1 STEP 10 DETOUR

SHEET 4 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 67 OF 718	

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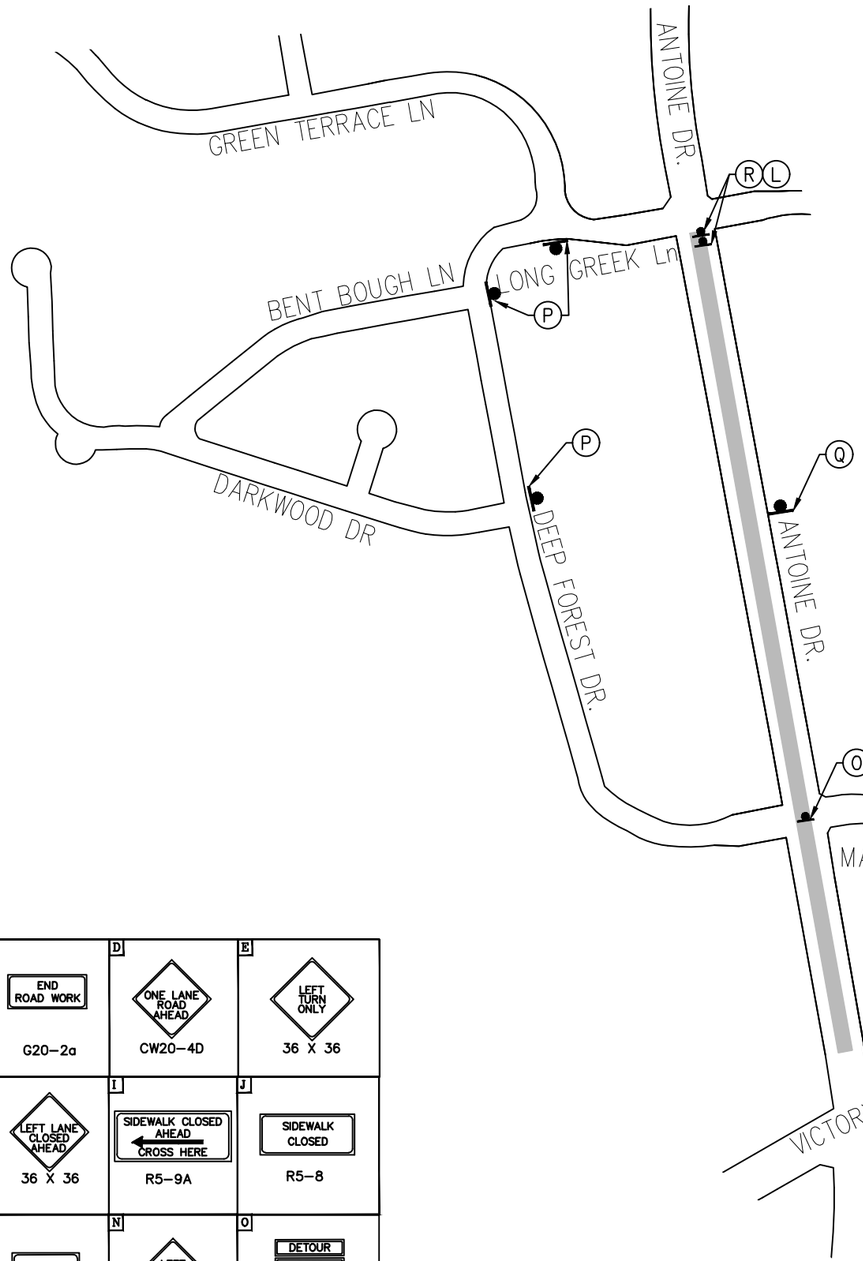

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE W/ ROAD CLOSED SIGN
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS

1. REMOVABLE PAV MRK BUTTONS TY W
2. REMOVABLE PAV MRK BUTTONS TY Y
3. REMOVABLE PAV MRK BUTTONS W STOP BAR
4. REMOVABLE PAV MRK (REFLECTOR) TY I-C
5. REMOVABLE PAV MRK (REFLECTOR) TY A-A
6. REMOVABLE PAV MRK (REFLECTOR) TY I-A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
10. REMOVABLE PAV MRK BUTTONS DBL ARROW
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

No.	DATE	REVISIONS	APP.

N

0' 25' 50'
SCALE IN FEET

A ROAD WORK AHEAD CW20-1D	B THRU TRAFFIC MERGE RIGHT CW4-1A	C END ROAD WORK G20-2a	D ONE LANE ROAD AHEAD CW20-4D	E LEFT TURN ONLY 36 X 36
F RIGHT LANE MUST TURN RIGHT	G ONE LANE ROAD CW20-4	H LEFT LANE CLOSED AHEAD 36 X 36	I SIDEWALK CLOSED AHEAD CROSS HERE R5-9A	J SIDEWALK CLOSED R5-8
K DETOUR AHEAD CW20-2B	L DETOUR DEEP FOREST DR	M LEFT LANE MUST TURN LEFT	N LEFT LANE CLOSED CW20-5(1)	O DETOUR DEEP FOREST DR
P DETOUR W GULF BANK Rd	Q DETOUR VICTORY DR	R DETOUR VICTORY DR		

NOTES:

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ENGINEER: NKEMDI I. OHALETE
P.E. SERIAL No.: 79423
2026

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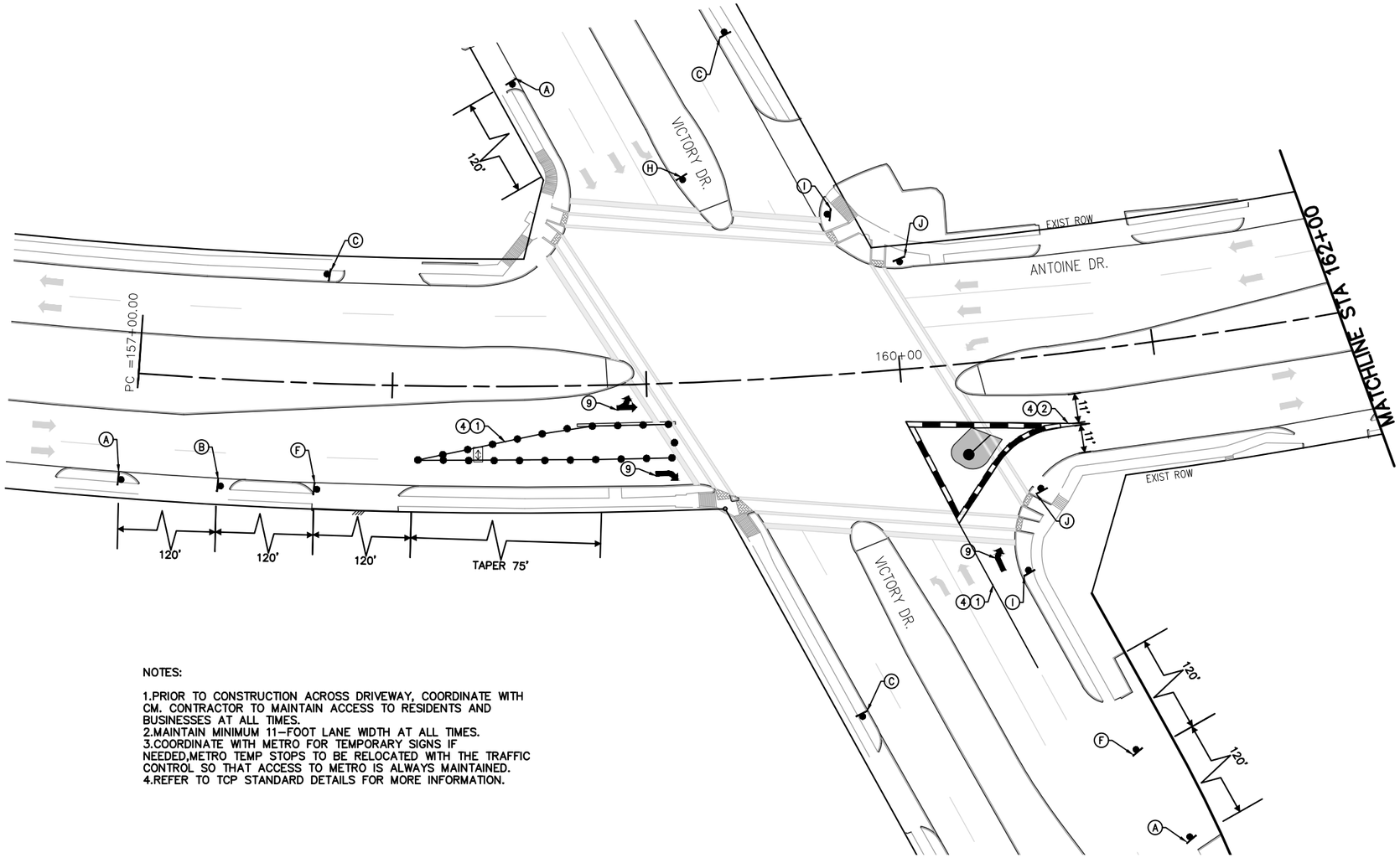
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 2 STEP 1
DETOUR PLAN

SHEET 1 OF 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 68 OF 718	



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LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE W/ ROAD CLOSED SIGN
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS

(1) REMOVABLE PAV MRK BUTTONS TY W
(2) REMOVABLE PAV MRK BUTTONS TY Y
(3) REMOVABLE PAV MRK BUTTONS W STOP BAR
(4) REMOVABLE PAV MRK (REFLECTOR) TY I–C
(5) REMOVABLE PAV MRK (REFLECTOR) TY A–A
(6) REMOVABLE PAV MRK (REFLECTOR) TY I–A
(7) REMOVABLE PAV MRK BUTTONS TY W (DOT)
(8) REMOVABLE PAV MRK BUTTONS TY Y (DOT)
(9) REMOVABLE PAV MRK BUTTONS ARROW
(10) REMOVABLE PAV MRK BUTTONS DBL ARROW
(11) REMOVABLE PAV MRK BUTTONS TPL ARROW

N

0' 25' 50'
SCALE IN FEET

No.	DATE	REVISIONS	APP.

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ENGINEER: NKEMDI I. OHALETE
P.E. SERIAL No.: 79423
2026

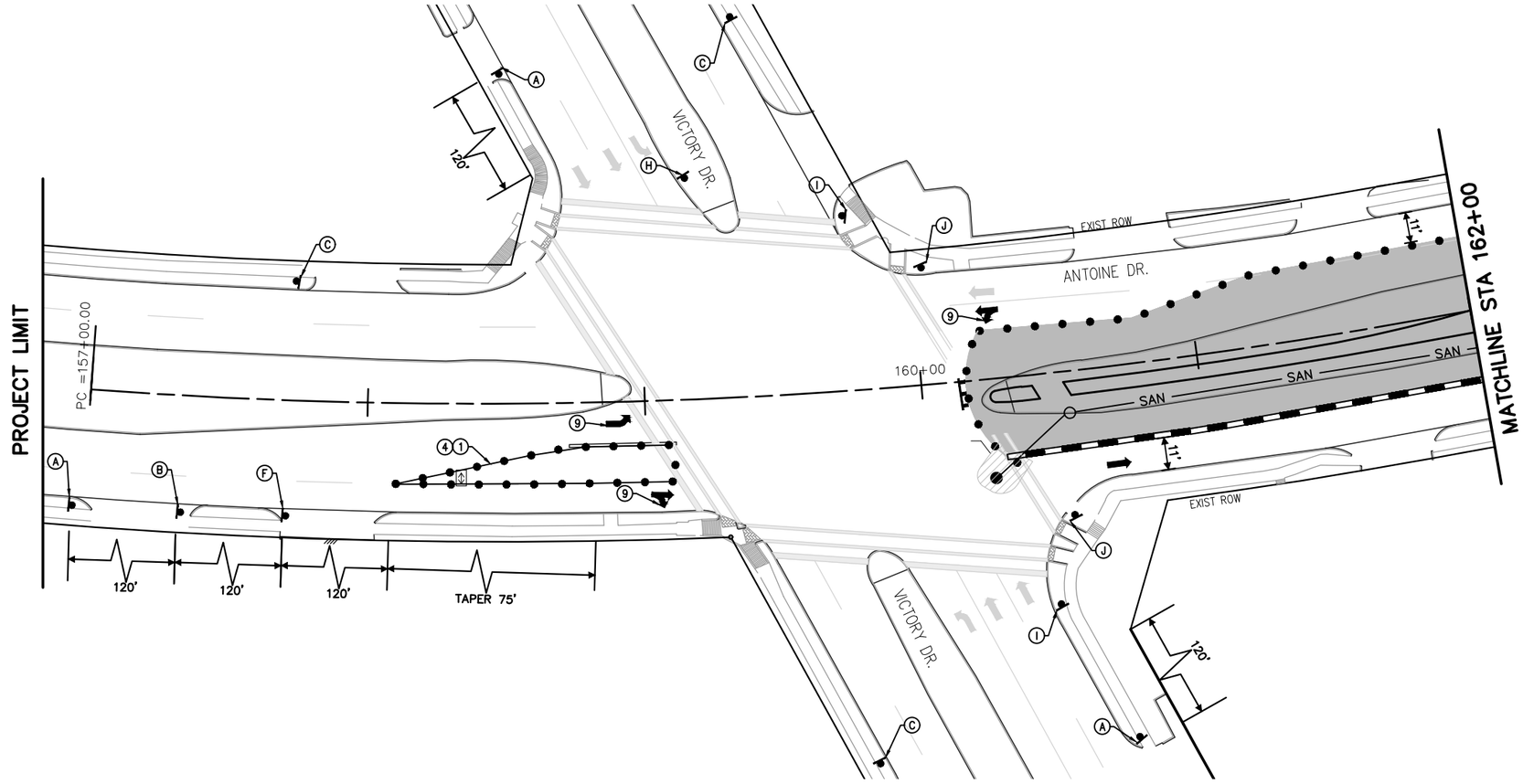
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN PHASE 2 STEP 1

SHEET 2 OF 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N–100030–0GEC–3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 69 OF 718	



LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
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6. REMOVABLE PAV MRK (REFLECTOR) TY I-A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
10. REMOVABLE PAV MRK BUTTONS DBL ARROW
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

No.	DATE	REVISIONS	APP.

N

0' 25' 50'
SCALE IN FEET

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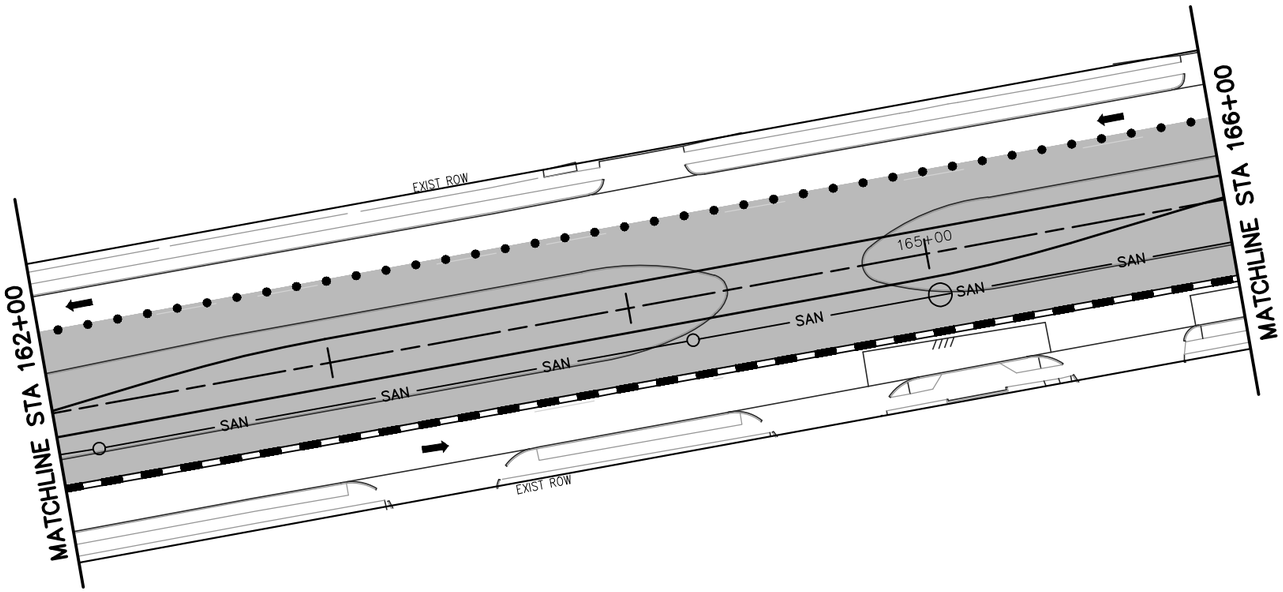
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

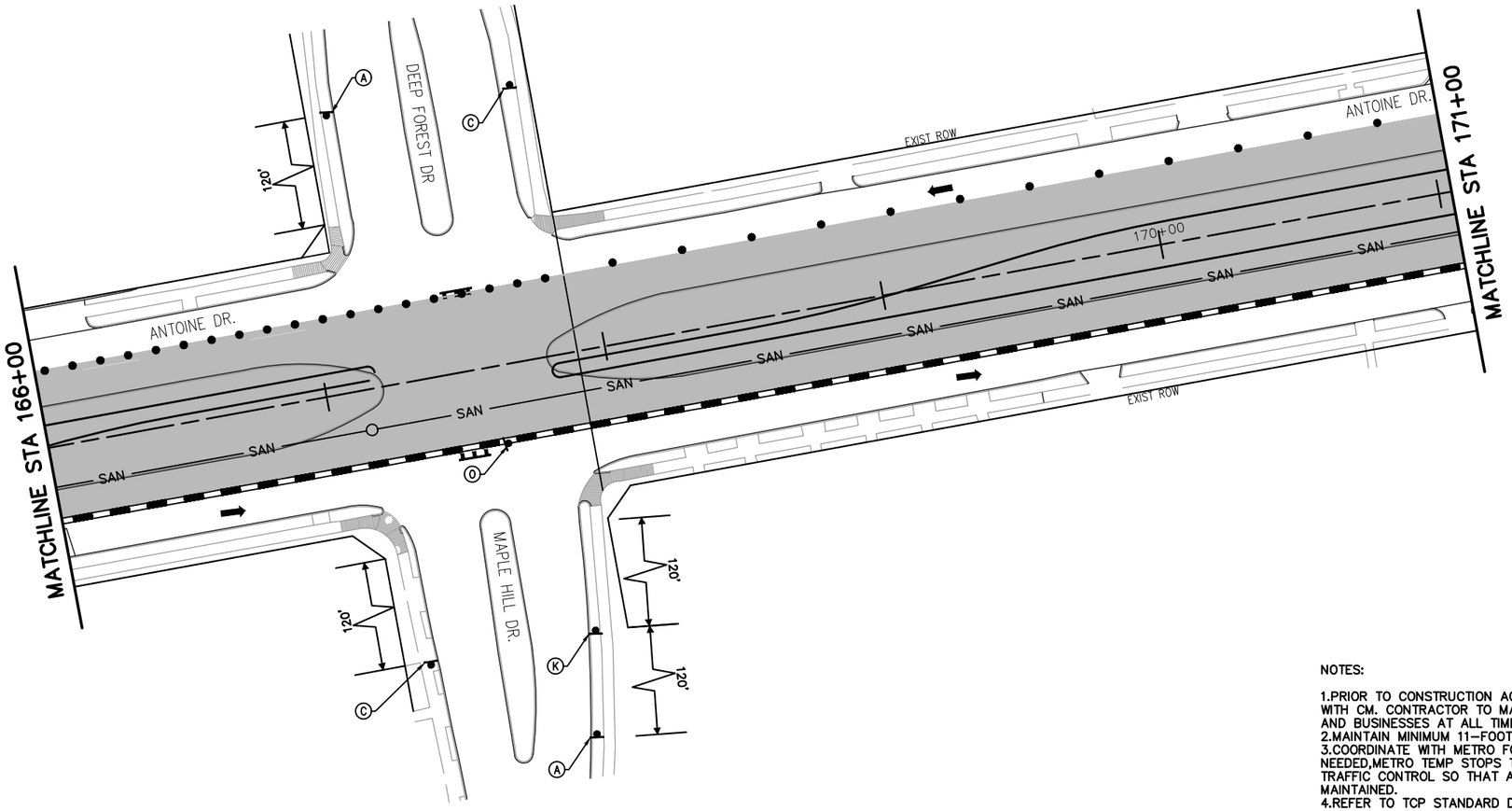
ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 2 STEP 1

SHEET 3 OF 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 70 OF 718	





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No.	DATE	REVISIONS	APP.

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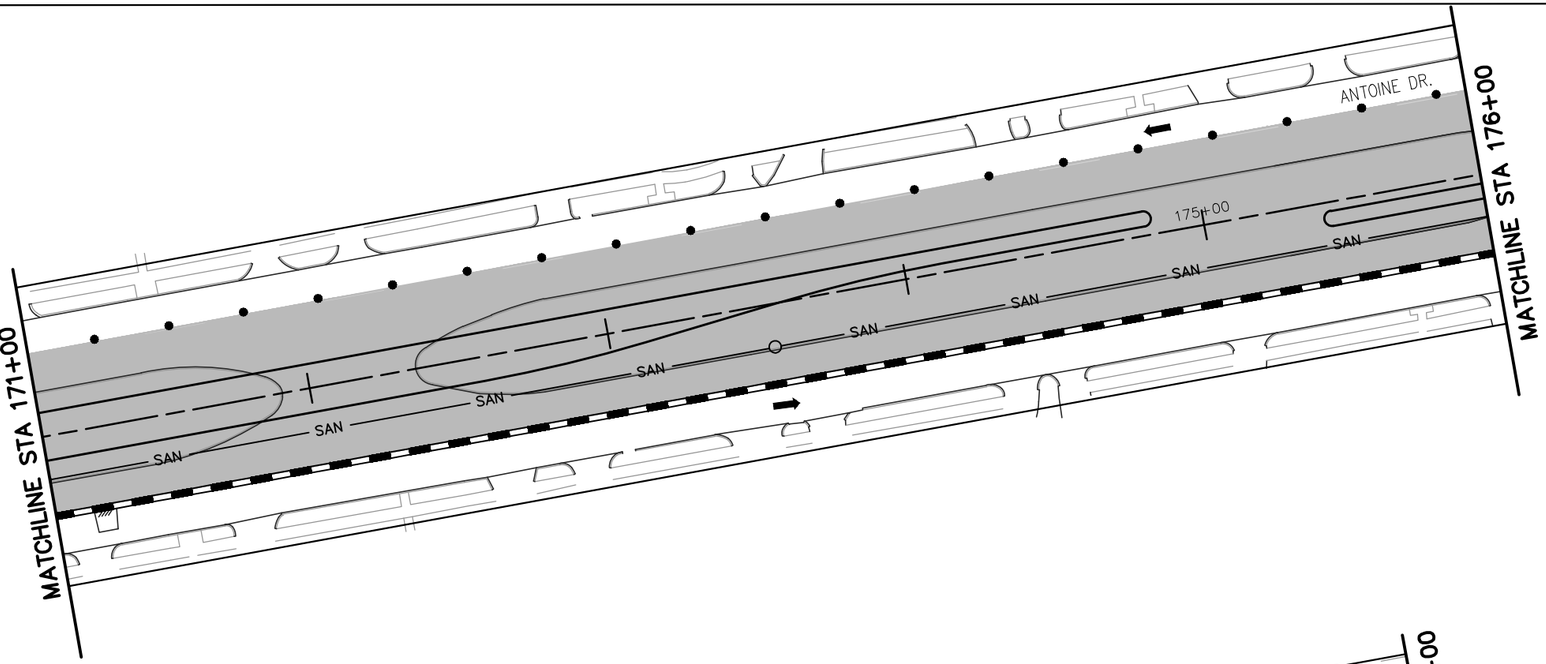
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

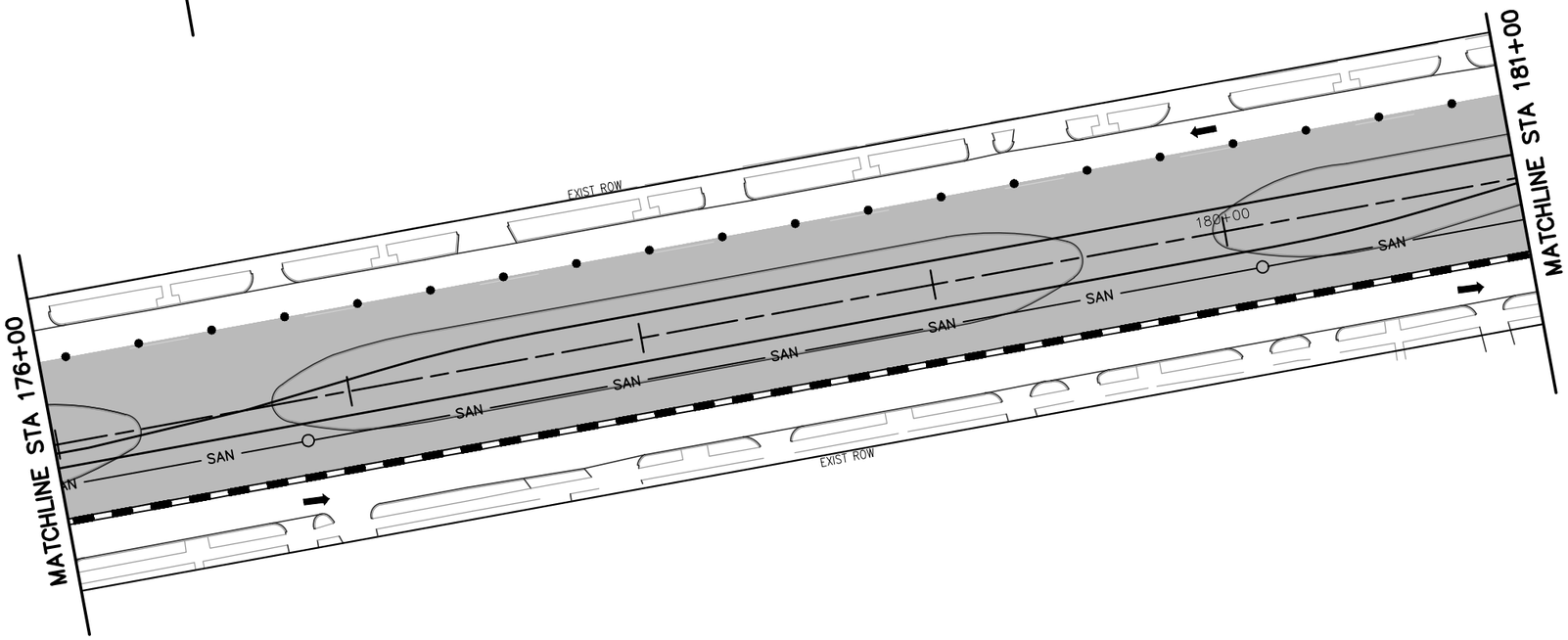
ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 2 STEP 1

SHEET 4 OF 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 71 OF 718	





LEGEND

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No.	DATE	REVISIONS	APP.

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ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 2 STEP 1

SHEET 5 OF 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
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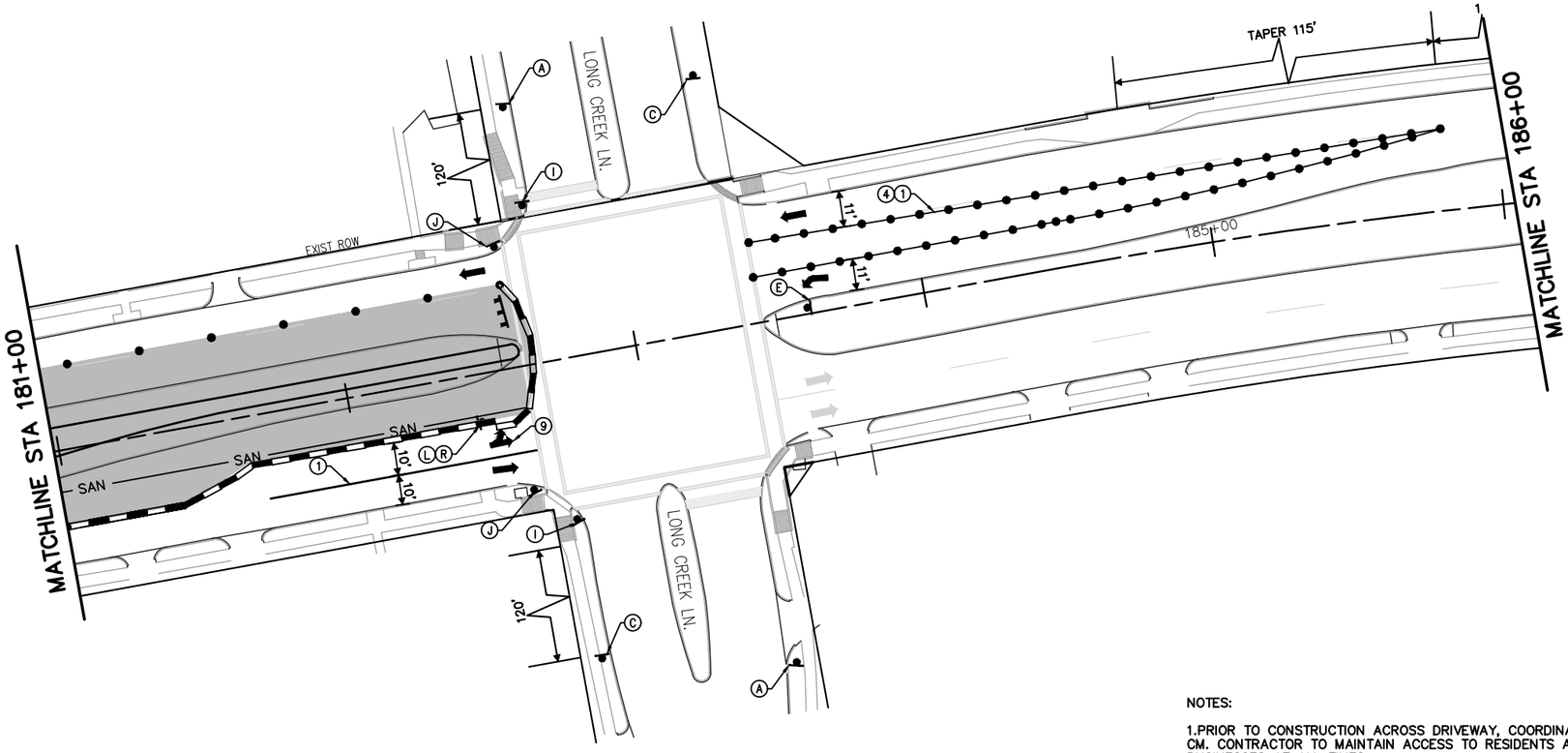

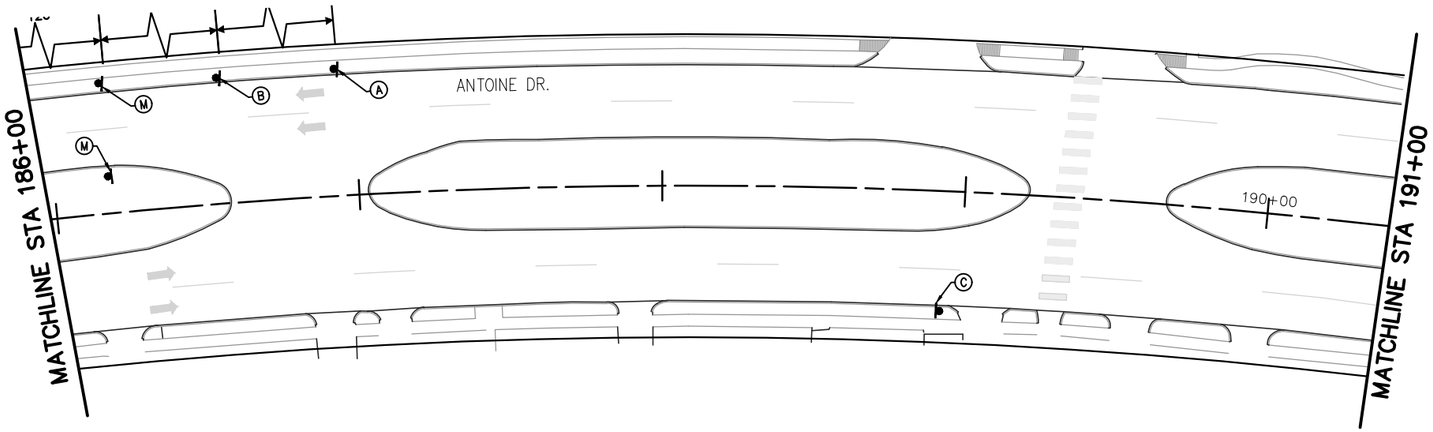

LEGEND

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HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 2 STEP 1

SHEET 6 OF 6

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ROWAIDAH AYOUB	
SHEET NO. 73 OF 718	

A	B	C	D	E
 CW20-1D 36" X 36"	 CW4-1A 36 X 36	 G20-2a 48 X 24	 CW20-4D 48 X 48	 36 X 36
F	G	H	I	J
	 CW20-4 36 X 36	 36 X 36	 CW20-5(1) 36 X 36	
K	L	M	N	O
 K-9763	 W16-5PR	 W16-5PL		 R4-7 24x30
P	Q	R	S	
 R5-1	 M6-3	 M5-1L	 M5-1R	

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE W/ ROAD CLOSED SIGN
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS

1. REMOVABLE PAV MRK BUTTONS TY W
2. REMOVABLE PAV MRK BUTTONS TY Y
3. REMOVABLE PAV MRK BUTTONS W STOP BAR
4. REMOVABLE PAV MRK (REFLECTOR) TY I-C
5. REMOVABLE PAV MRK (REFLECTOR) TY A-A
6. REMOVABLE PAV MRK (REFLECTOR) TY I-A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
10. REMOVABLE PAV MRK BUTTONS DBL ARROW
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

No.	DATE	REVISIONS	APP.

N

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SCALE IN FEET

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ENGINEER: NKEMDI I. OHALETE
P.E. SERIAL No.: 79423
2026

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KUO & ASSOCIATES, INC.

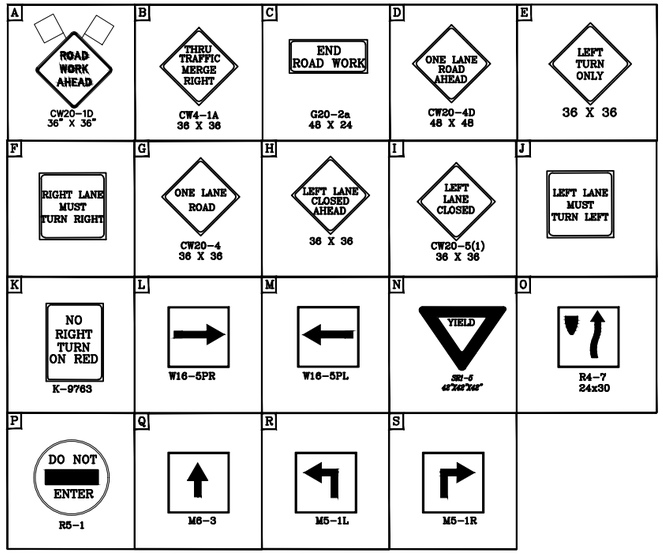
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

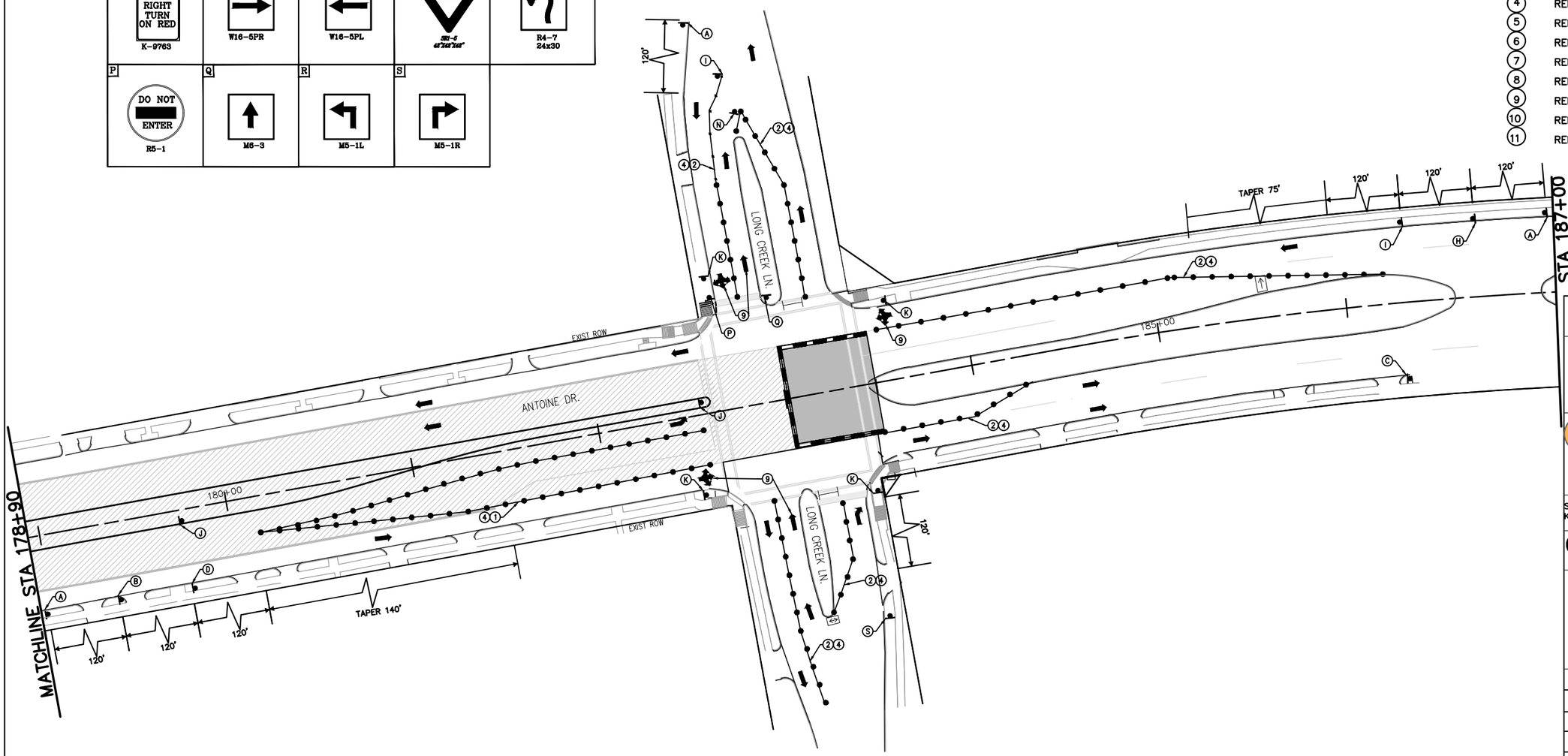
ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 2 STEP 2

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. OF 718	





LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE W/ ROAD CLOSED SIGN
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS

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2. REMOVABLE PAV MRK BUTTONS TY Y
3. REMOVABLE PAV MRK BUTTONS W STOP BAR
4. REMOVABLE PAV MRK (REFLECTOR) TY I-C
5. REMOVABLE PAV MRK (REFLECTOR) TY A-A
6. REMOVABLE PAV MRK (REFLECTOR) TY I-A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
10. REMOVABLE PAV MRK BUTTONS DBL ARROW
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 2 STEP 3

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 75 OF 718	

NOTES:

1.PRIOR TO CONSTRUCTION ACROSS DRIVEWAY, COORDINATE WITH CM. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES.
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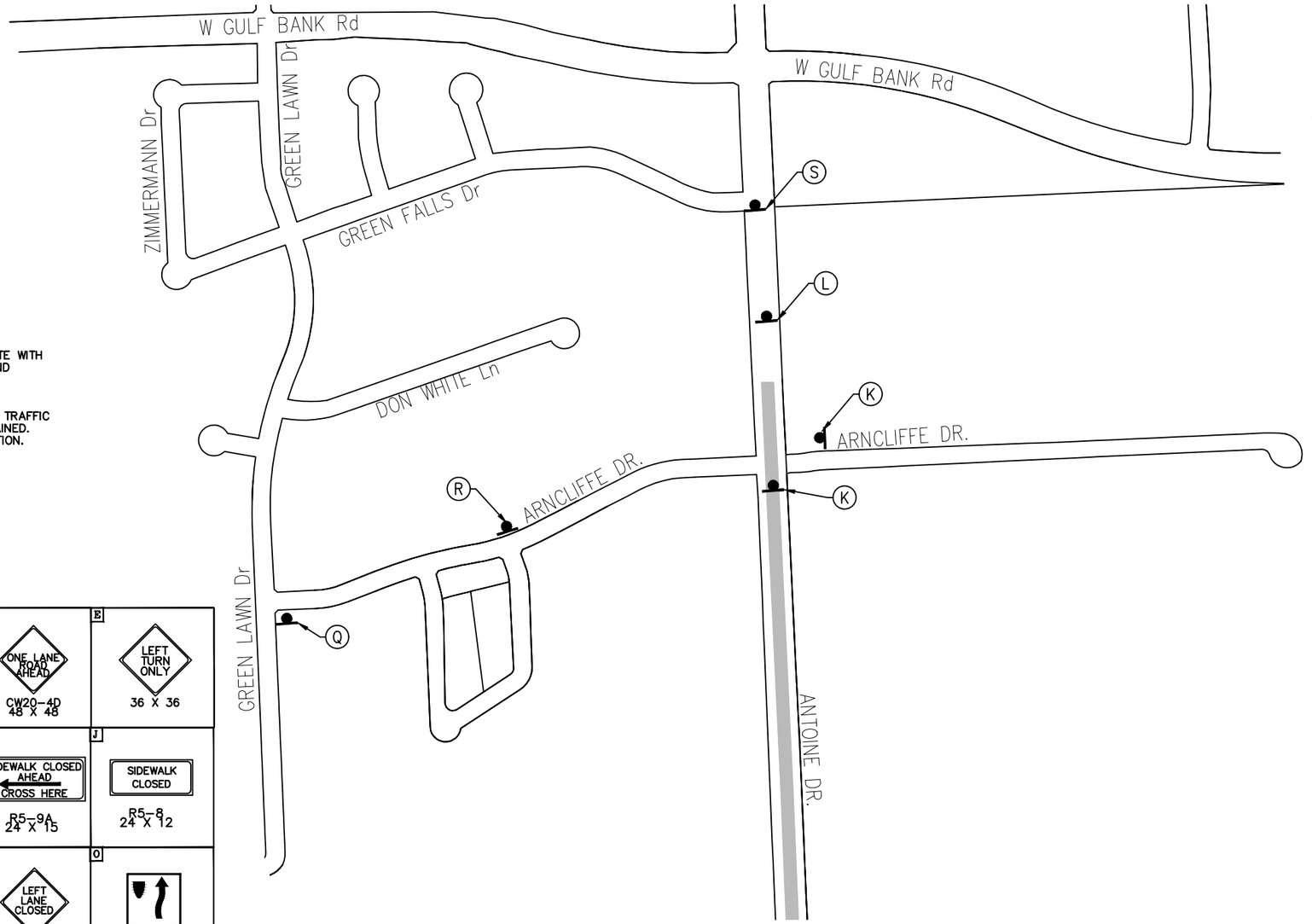

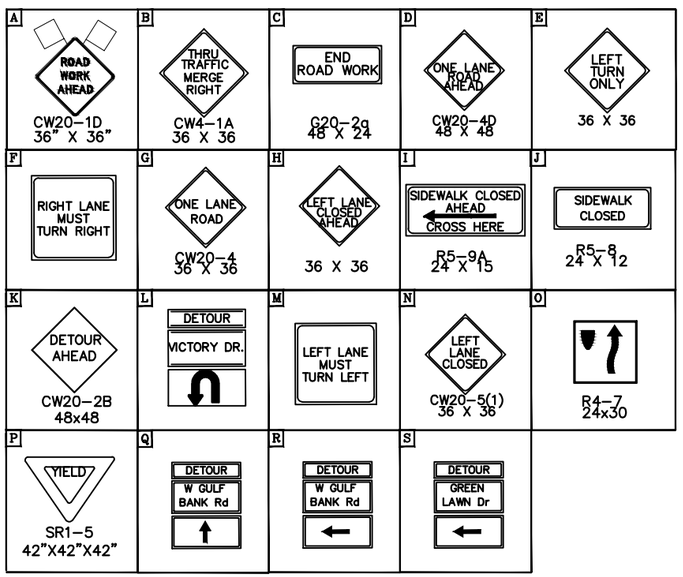

LEGEND

- WORK ZONE
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1. REMOVABLE PAV MRK BUTTONS TY W
2. REMOVABLE PAV MRK BUTTONS TY Y
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4. REMOVABLE PAV MRK (REFLECTOR) TY I-C
5. REMOVABLE PAV MRK (REFLECTOR) TY A-A
6. REMOVABLE PAV MRK (REFLECTOR) TY I-A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
10. REMOVABLE PAV MRK BUTTONS DBL ARROW
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

No.	DATE	REVISIONS	APP.

N

0' 25' 50'
SCALE IN FEET

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CITY OF HOUSTON
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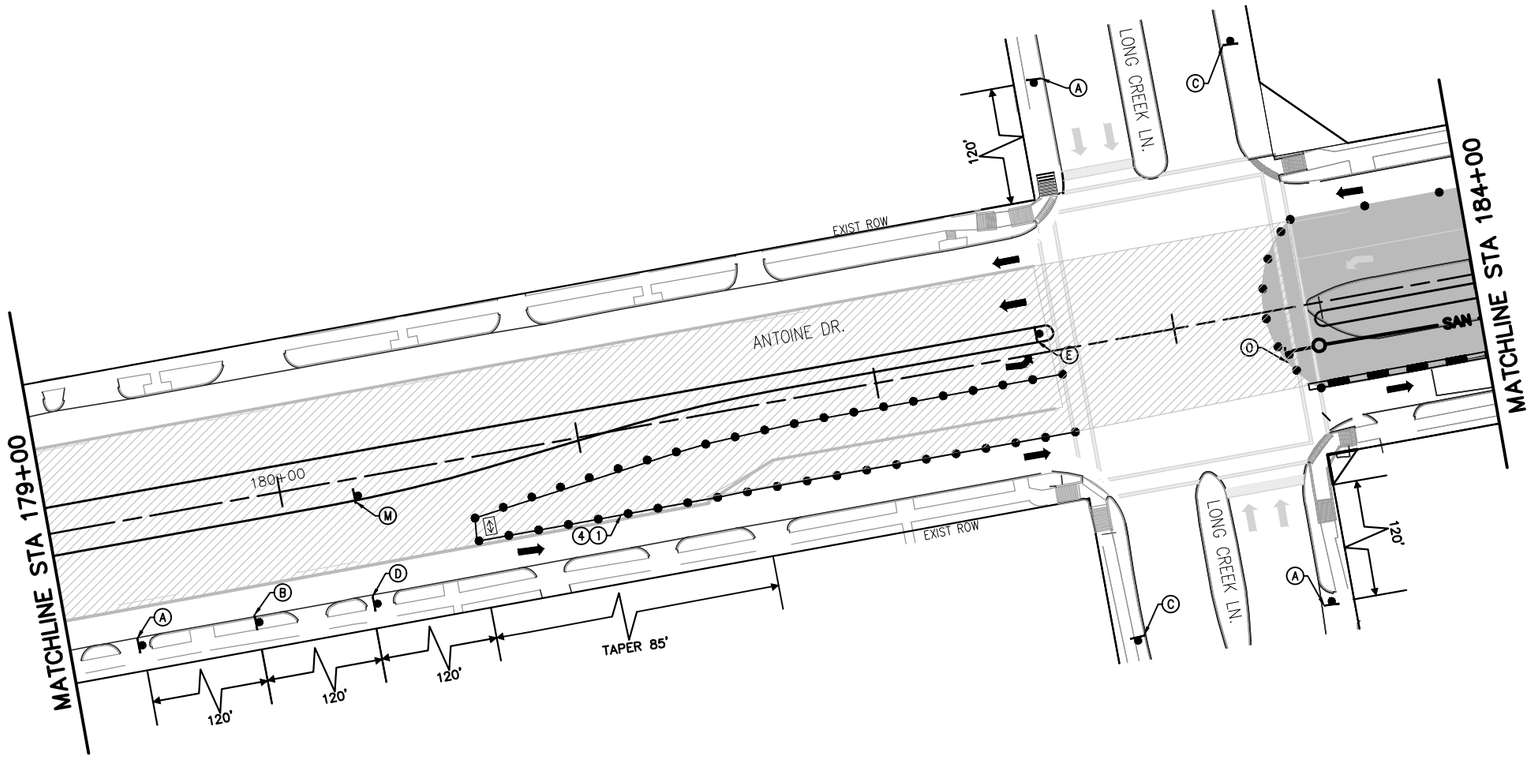
ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 2 STEP 4
DETOUR PLAN

SHEET 1 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 76 OF 718	



LEGEND

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11. REMOVABLE PAV MRK BUTTONS TPL ARROW

No.	DATE	REVISIONS	APP.

N

0' 25' 50'
SCALE IN FEET

A ROAD WORK AHEAD CW20–1D 36" X 36"	B THRU TRAFFIC MERGE RIGHT CW4–1A 36 X 36	C END ROAD WORK G20–2g 48 X 24	D ONE LANE ROAD AHEAD CW20–4D 48 X 48	E LEFT TURN ONLY 36 X 36
F RIGHT LANE MUST TURN RIGHT	G ONE LANE ROAD CW20–4 36 X 36	H LEFT LANE CLOSED AHEAD 36 X 36	I SIDEWALK CLOSED AHEAD CROSS HERE R5–9A 24 X 15	J SIDEWALK CLOSED R5–8 24 X 12
K DETOUR AHEAD CW20–2B 48x48	L DETOUR VICTORY DR.	M LEFT LANE MUST TURN LEFT	N LEFT LANE CLOSED CW20–5(1) 36 X 36	O R4–7 24x30
P YIELD SR1–5 42"X42"X42"				

NOTES:

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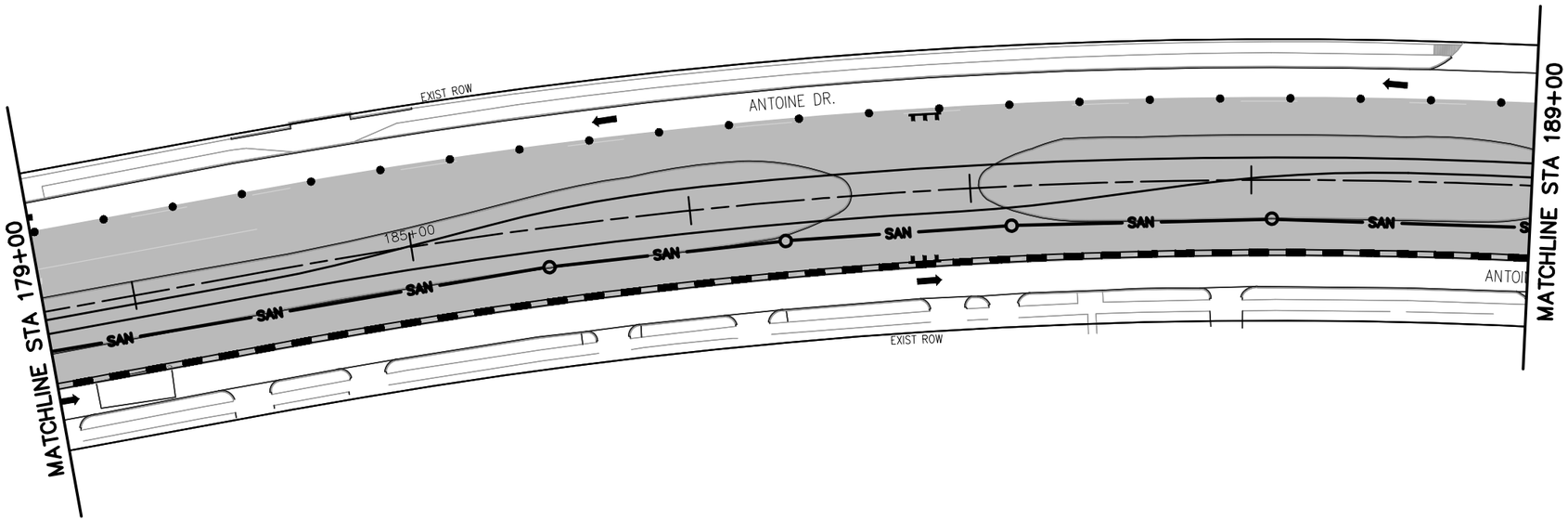
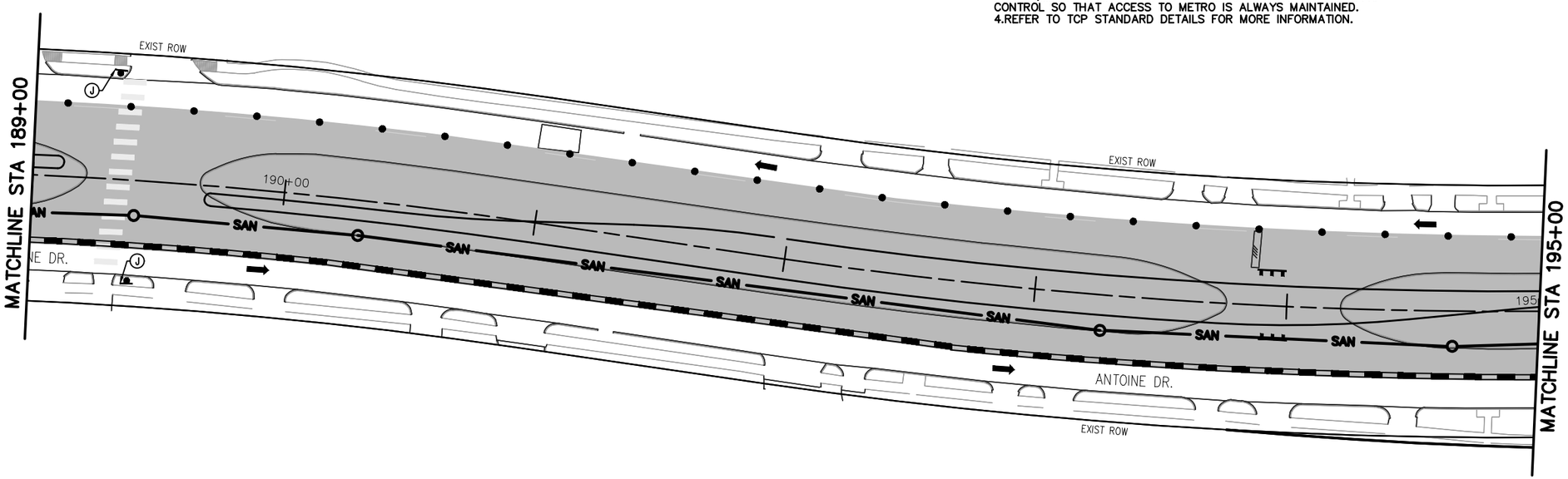
ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 2 STEP 4

SHEET 2 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N–100030–0GEC–3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 77 OF 718	





LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE W/ ROAD CLOSED SIGN
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS

1. REMOVABLE PAV MRK BUTTONS TY W
2. REMOVABLE PAV MRK BUTTONS TY Y
3. REMOVABLE PAV MRK BUTTONS W STOP BAR
4. REMOVABLE PAV MRK (REFLECTOR) TY I–C
5. REMOVABLE PAV MRK (REFLECTOR) TY A–A
6. REMOVABLE PAV MRK (REFLECTOR) TY I–A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
10. REMOVABLE PAV MRK BUTTONS DBL ARROW
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

No.	DATE	REVISIONS	APP.

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N

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ANTOINE DRIVE

TRAFFIC CONTROL PLAN PHASE 2 STEP 4

SHEET 3 OF 5

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ROWAIDAH AYOUB	
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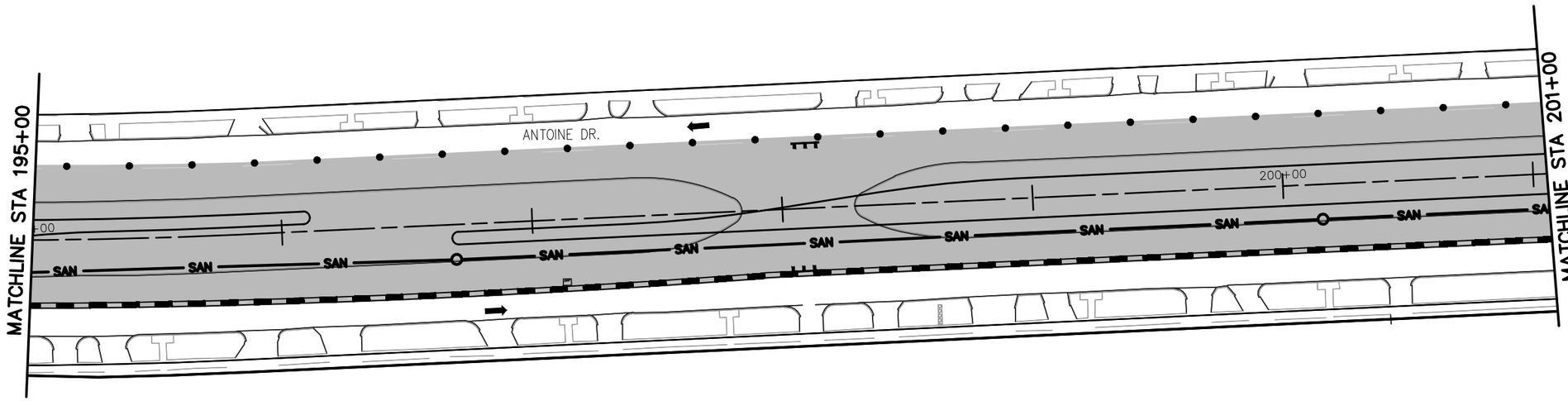

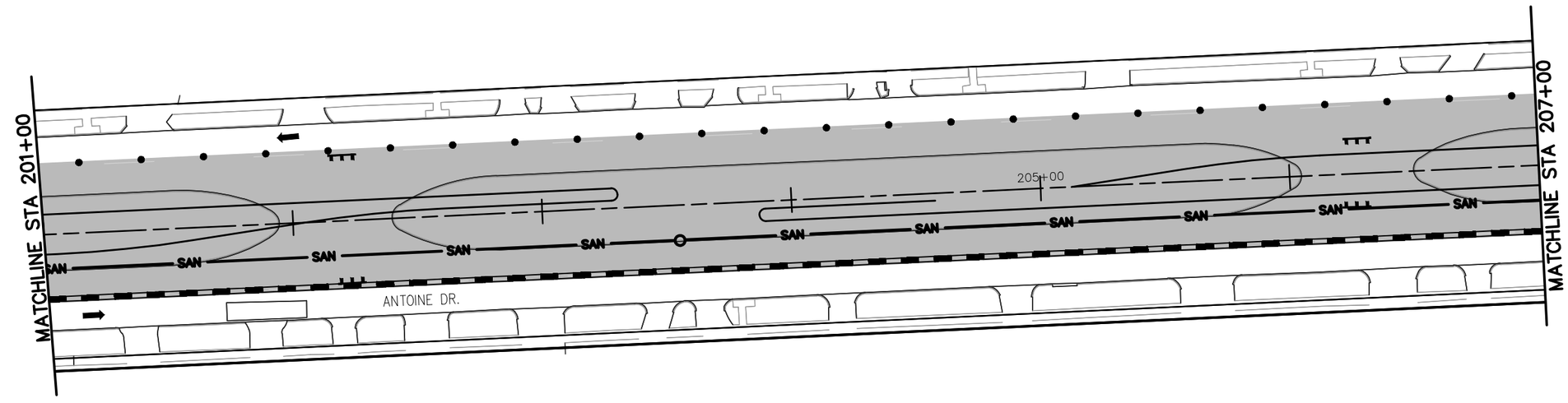

LEGEND

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3. REMOVABLE PAV MRK BUTTONS W STOP BAR
4. REMOVABLE PAV MRK (REFLECTOR) TY I-C
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No.	DATE	REVISIONS	APP.

N

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SCALE IN FEET

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ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 2 STEP 4

SHEET 4 OF 5

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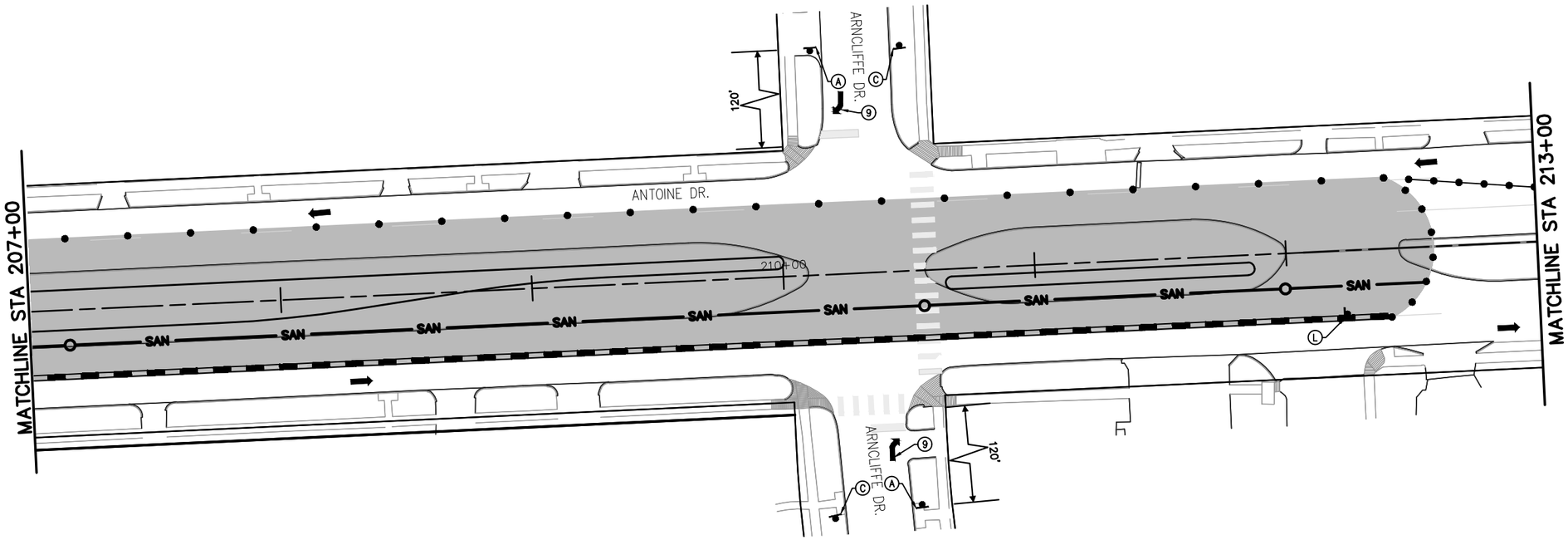

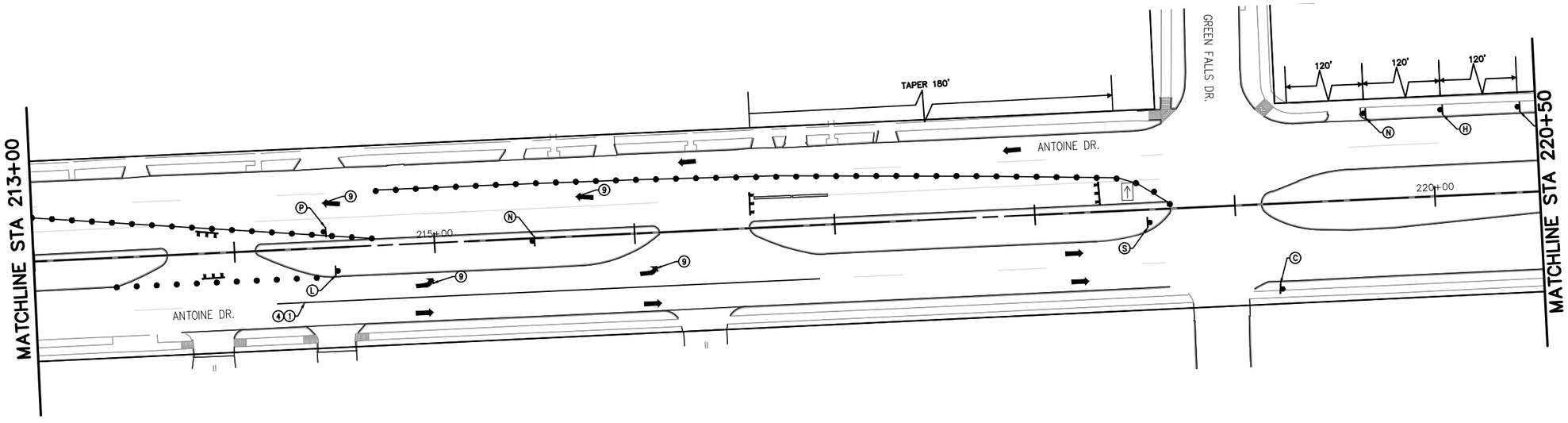

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HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 2 STEP 4

SHEET 5 OF 5

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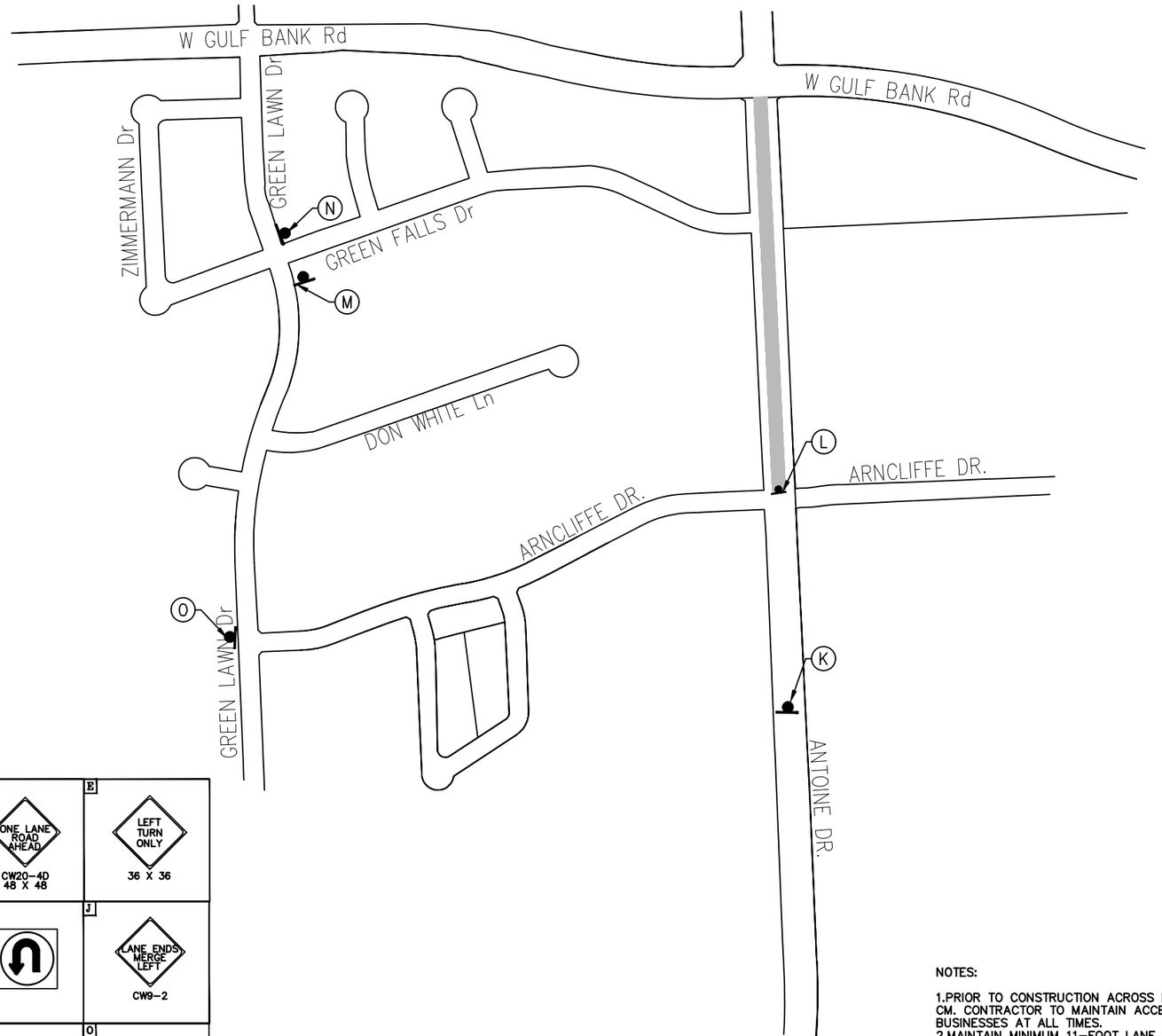

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No.	DATE	REVISIONS	APP.

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0' 25' 50'

SCALE IN FEET

A: ROAD WORK AHEAD CW20-1D 36" X 36"	B: THRU TRAFFIC MERGE RIGHT CW4-1A 36 X 36	C: END ROAD WORK G20-2a 48 X 24	D: ONE LANE ROAD AHEAD CW20-4D 48 X 48	E: LEFT TURN ONLY 36 X 36
F: LEFT LANE MUST TURN LEFT	G: ONE LANE ROAD CW20-4	H: STOP R1-1	I:	J: LANE ENDS MERGE LEFT CW9-2
K: DETOUR AHEAD CW20-2B	L: DETOUR GREEN FALLS Dr	M: DETOUR W GULF BANK Rd	N: DETOUR W GULF BANK Rd	O: DETOUR GREEN FALLS Dr

NOTES:

1. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY, COORDINATE WITH CM. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES.
2. MAINTAIN MINIMUM 11-FOOT LANE WIDTH AT ALL TIMES.
3. COORDINATE WITH METRO FOR TEMPORARY SIGNS IF NEEDED, METRO TEMP STOPS TO BE RELOCATED WITH THE TRAFFIC CONTROL SO THAT ACCESS TO METRO IS ALWAYS MAINTAINED.
4. REFER TO TCP STANDARD DETAILS FOR MORE INFORMATION.

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Date

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ENGINEER: NKEMDI I. OHALETE
P.E. SERIAL No.: 79423
2026

SURVEYED BY:
KUO & ASSOCIATES, INC.

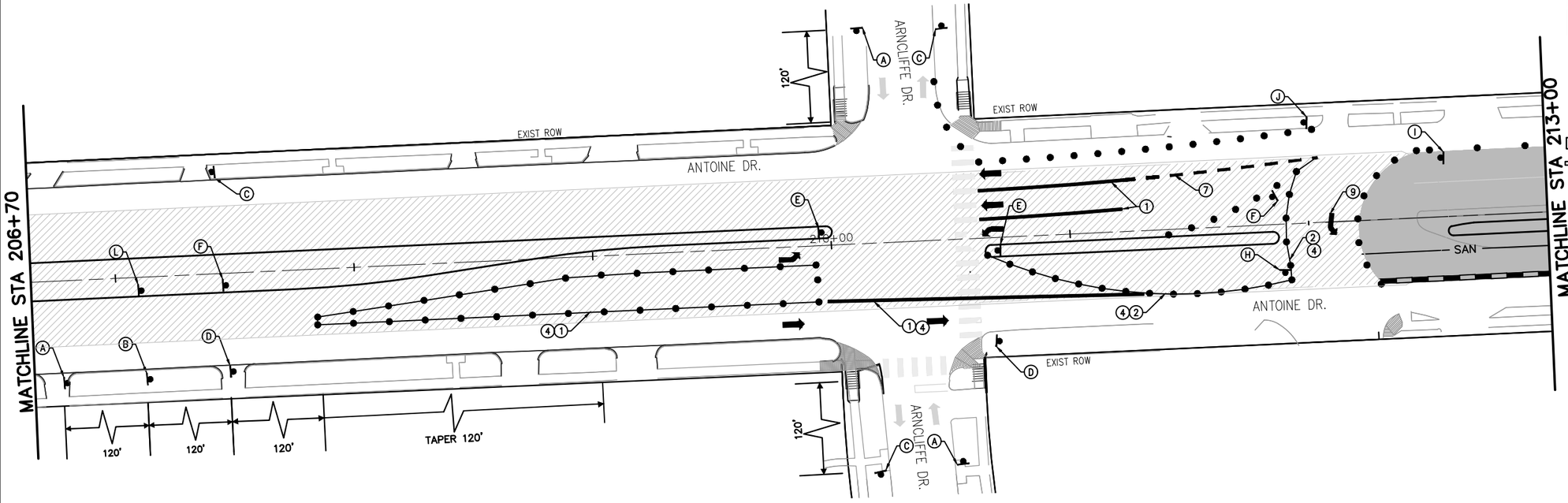
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 2 STEP 5
DETOUR PLAN

SHEET 1 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 81 OF 718	



LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE W/ ROAD CLOSED SIGN
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS

1. REMOVABLE PAV MRK BUTTONS TY W
2. REMOVABLE PAV MRK BUTTONS TY Y
3. REMOVABLE PAV MRK BUTTONS W STOP BAR
4. REMOVABLE PAV MRK (REFLECTOR) TY I–C
5. REMOVABLE PAV MRK (REFLECTOR) TY A–A
6. REMOVABLE PAV MRK (REFLECTOR) TY I–A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
10. REMOVABLE PAV MRK BUTTONS DBL ARROW
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

No.	DATE	REVISIONS	APP.

N

0' 25' 50'
SCALE IN FEET

A	B	C	D	E
ROAD WORK AHEAD CW20–1D 36" X 36"	THRU TRAFFIC MERGE RIGHT CW4–1A 36 X 36	END ROAD WORK G20–2a 48 X 24	ONE LANE ROAD AHEAD CW20–4D 48 X 48	LEFT TURN ONLY 36 X 36
F	**G**	**H**	**I**	**J**
LEFT LANE MUST TURN LEFT	ONE LANE ROAD CW20–4 36 X 36	STOP R1–1		LANE ENDS MERGE LEFT CW9–2 36 X 36

NOTES:

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 2 STEP 5

SHEET 2 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N–100030–0GEC–3	
DRAWING SCALE	
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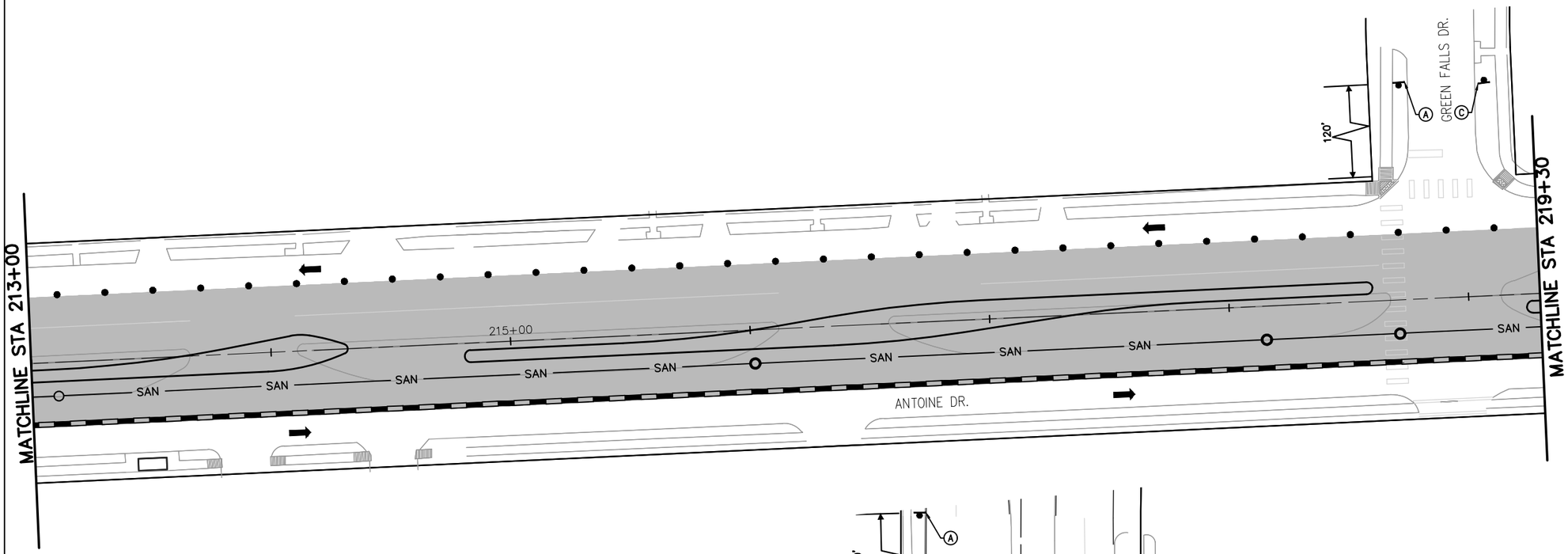
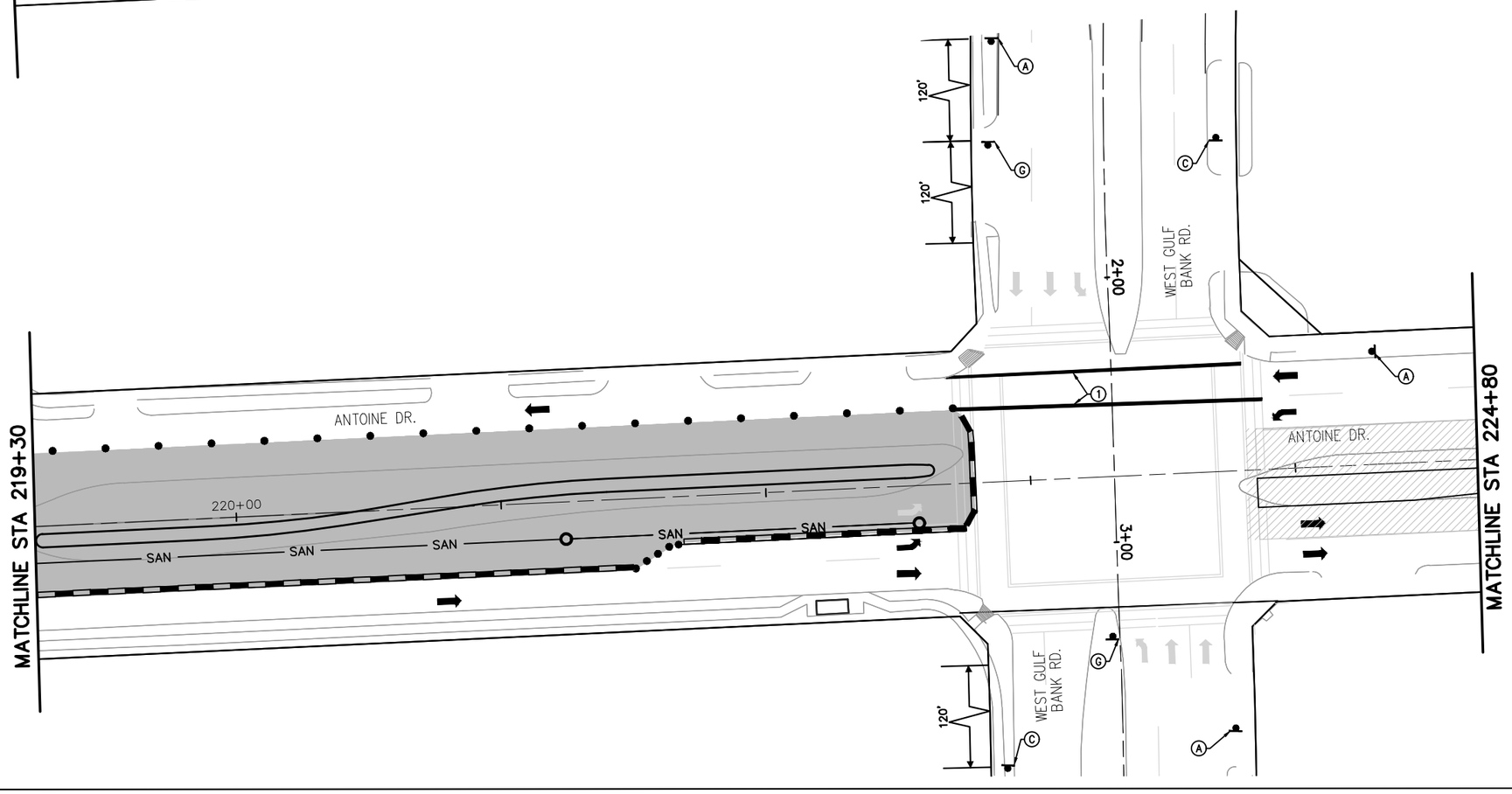
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 82 OF 718	





LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
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2. REMOVABLE PAV MRK BUTTONS TY Y
3. REMOVABLE PAV MRK BUTTONS W STOP BAR
4. REMOVABLE PAV MRK (REFLECTOR) TY I-C
5. REMOVABLE PAV MRK (REFLECTOR) TY A-A
6. REMOVABLE PAV MRK (REFLECTOR) TY I-A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
10. REMOVABLE PAV MRK BUTTONS DBL ARROW
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

No.	DATE	REVISIONS	APP.

N

0' 25' 50'
SCALE IN FEET

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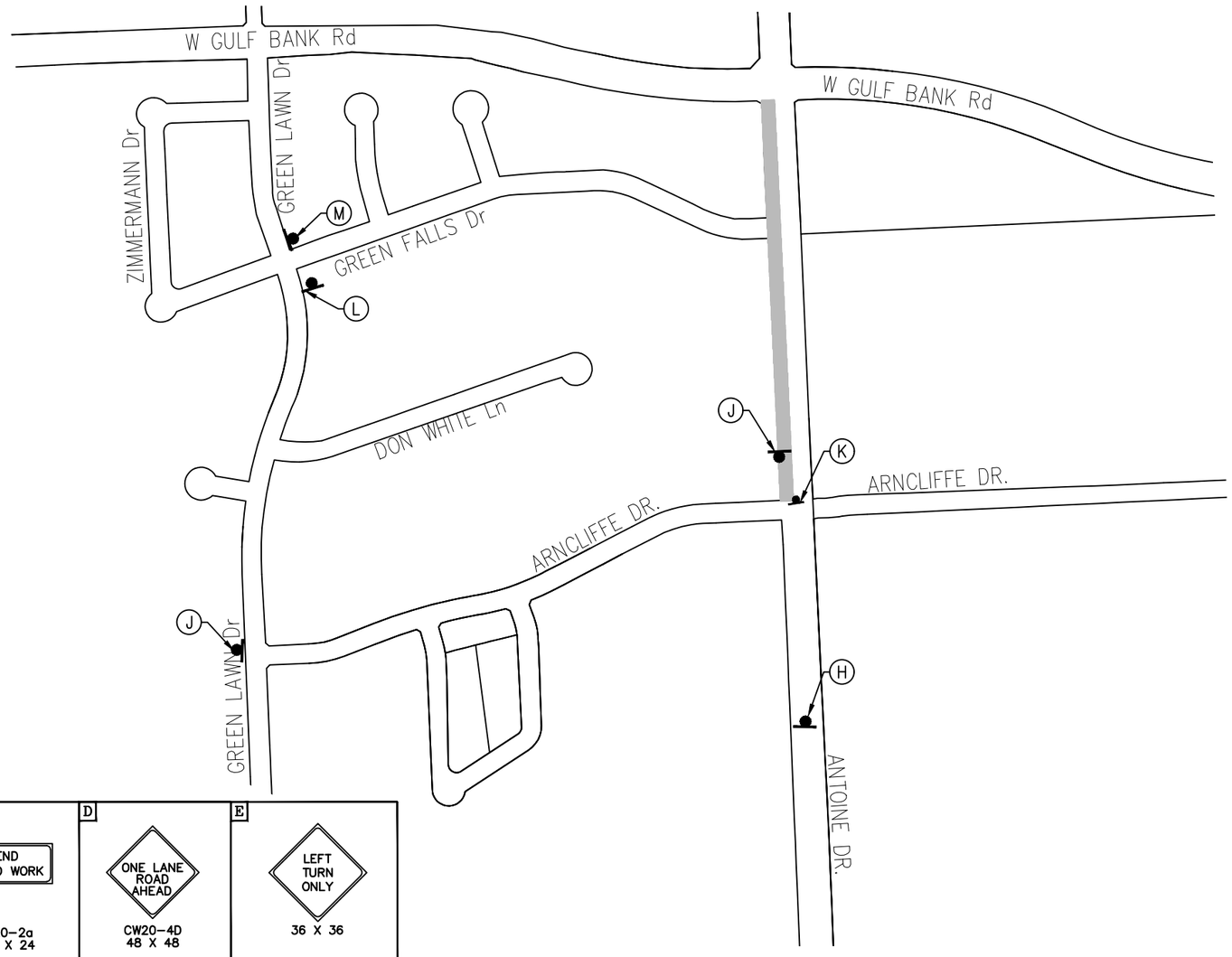
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 2 STEP 5

SHEET 3 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 83 OF 718	



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No.	DATE	REVISIONS	APP.

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SCALE IN FEET

A	B	C	D	E
ROAD WORK AHEAD CW20-1D 36" X 36"	THRU TRAFFIC MERGE RIGHT CW4-1A 36 X 36	END ROAD WORK G20-2a 48 X 24	ONE LANE ROAD AHEAD CW20-4D 48 X 48	LEFT TURN ONLY 36 X 36
F	G	H	I	J
LEFT LANE MUST TURN LEFT	ONE LANE ROAD CW20-4 36 X 36	GREEN FALLS DETOUR M4-9T	DETOUR GREEN FALLS DR.	DETOUR GREEN FALLS DR.
k	L	M		
DETOUR GREEN FALLS DR.	DETOUR W GULF BANK Rd	DETOUR W GULF BANK Rd		

NOTES:

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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 3 STEP 1
DETOUR PLAN

SHEET 1 OF 3

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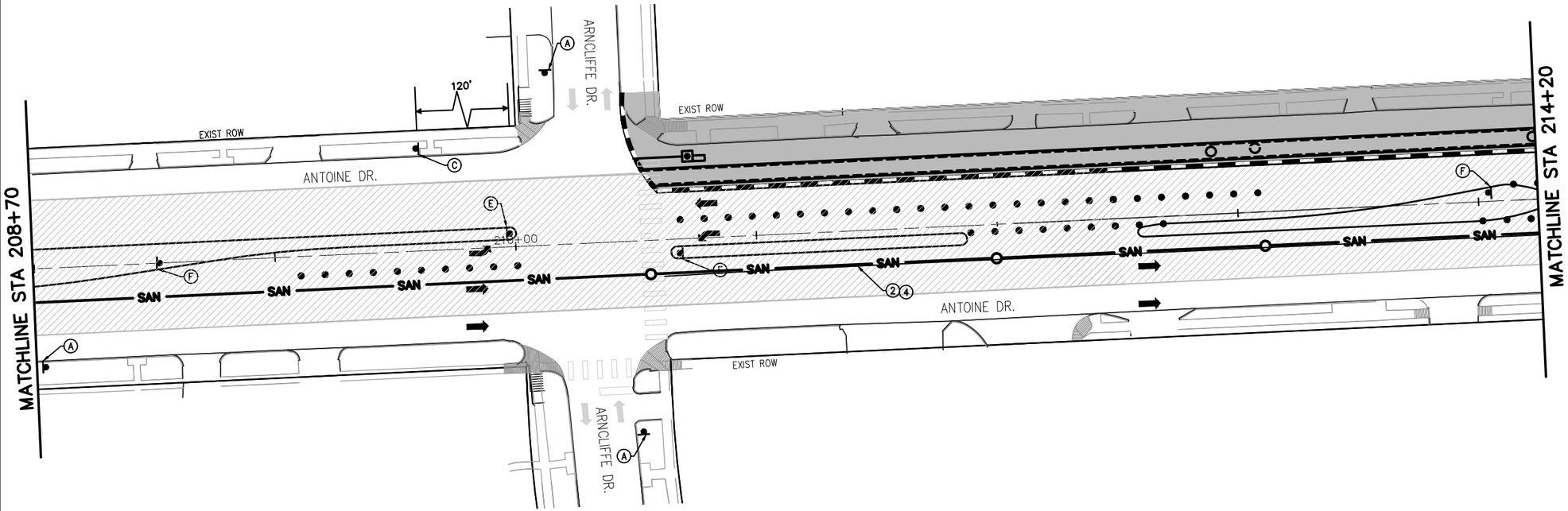
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 84 OF 718	



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APP.	REVISIONS	DATE	No.

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HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 3 STEP 1

SHEET 2 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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ROWAIDAH AYOUB	
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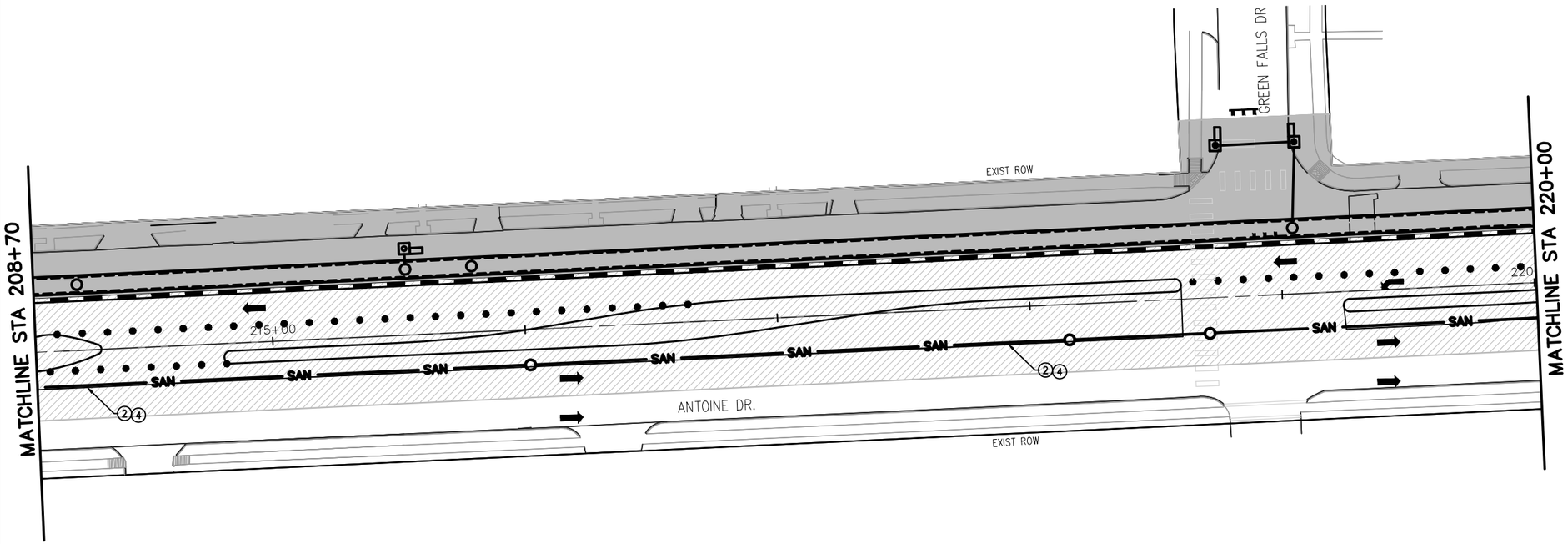

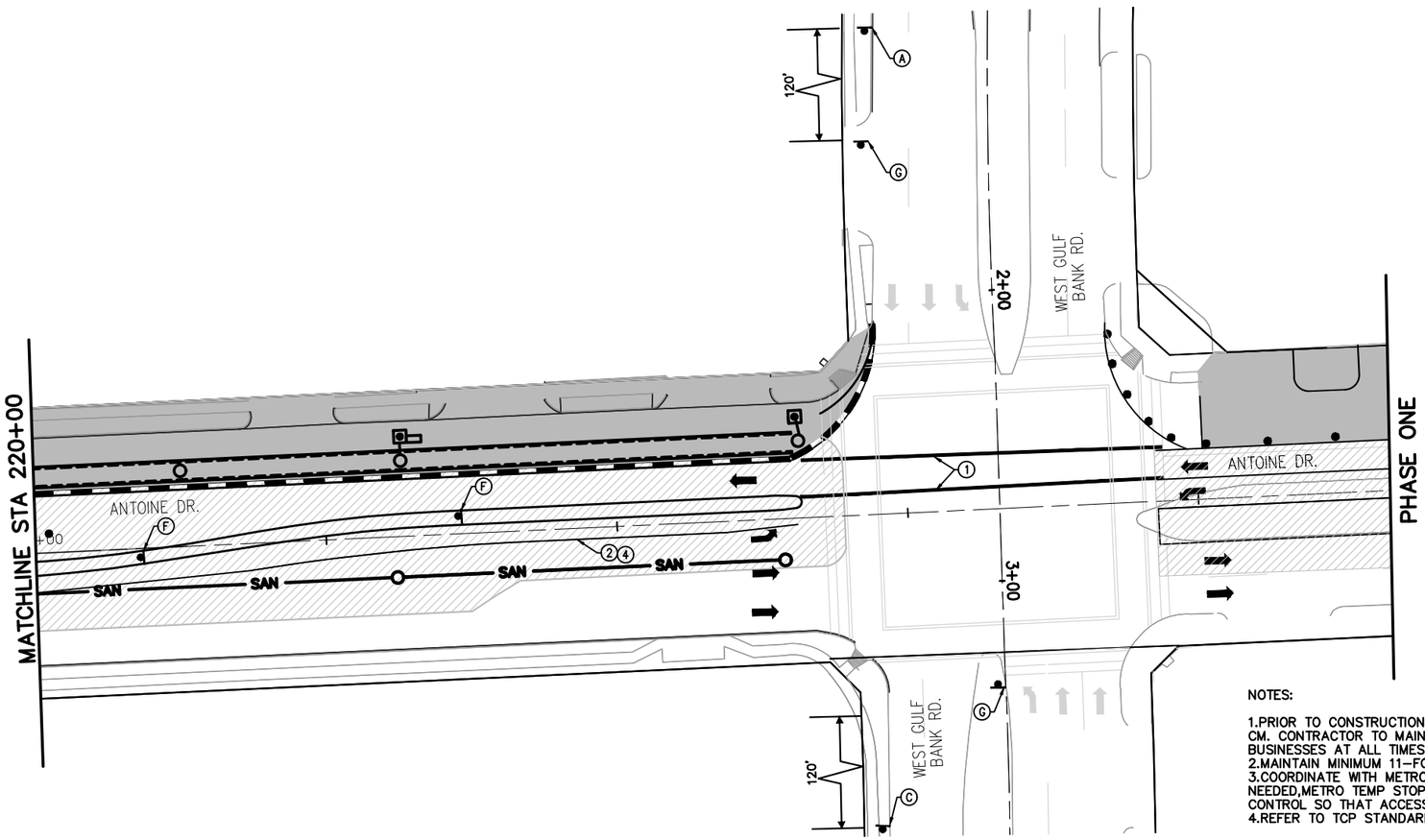

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(2) REMOVABLE PAV MRK BUTTONS TY Y
(3) REMOVABLE PAV MRK BUTTONS W STOP BAR
(4) REMOVABLE PAV MRK (REFLECTOR) TY I-C
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(6) REMOVABLE PAV MRK (REFLECTOR) TY I-A
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No.	DATE	REVISIONS	APP.

N

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SCALE IN FEET

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PHASE 3 STEP 1

SHEET 3 OF 3

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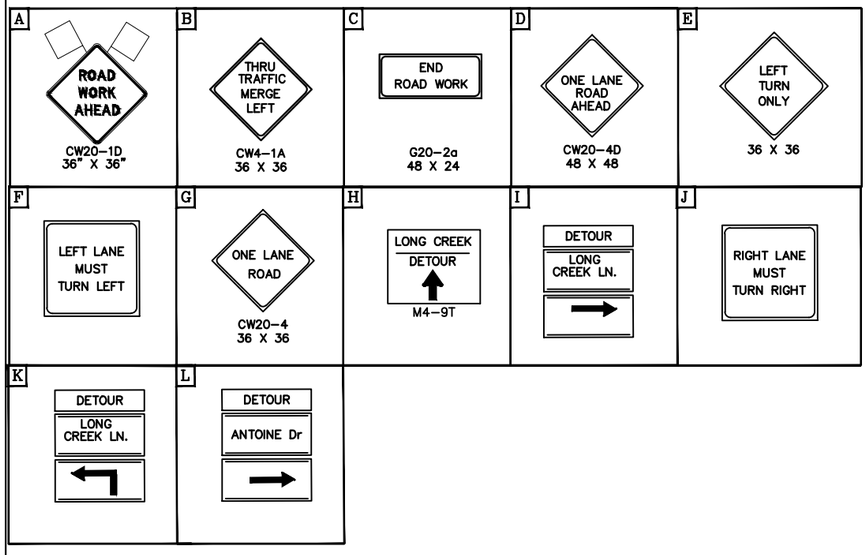

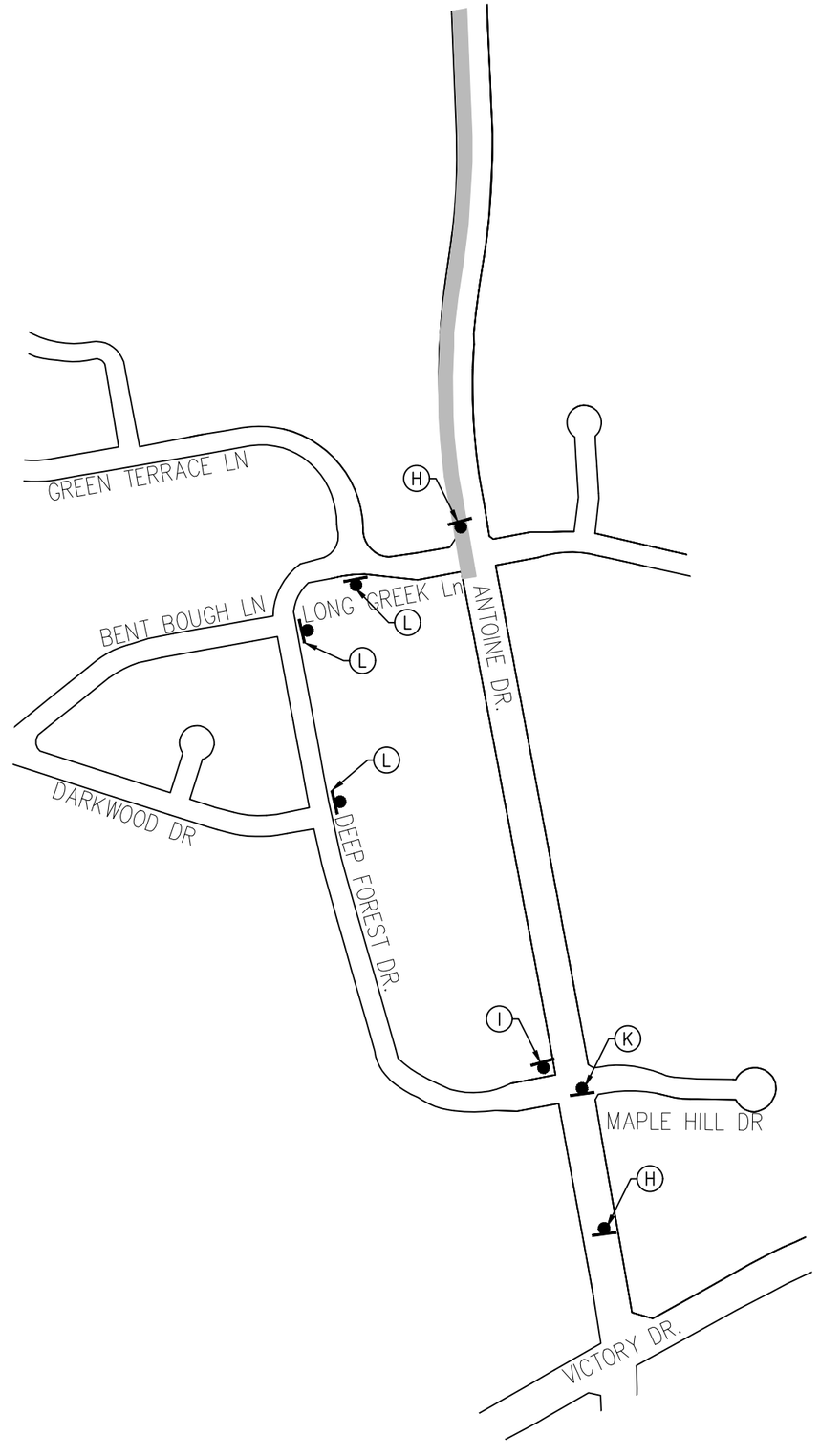

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HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 3 STEP 2
DETOUR PLAN

SHEET 1 OF 5

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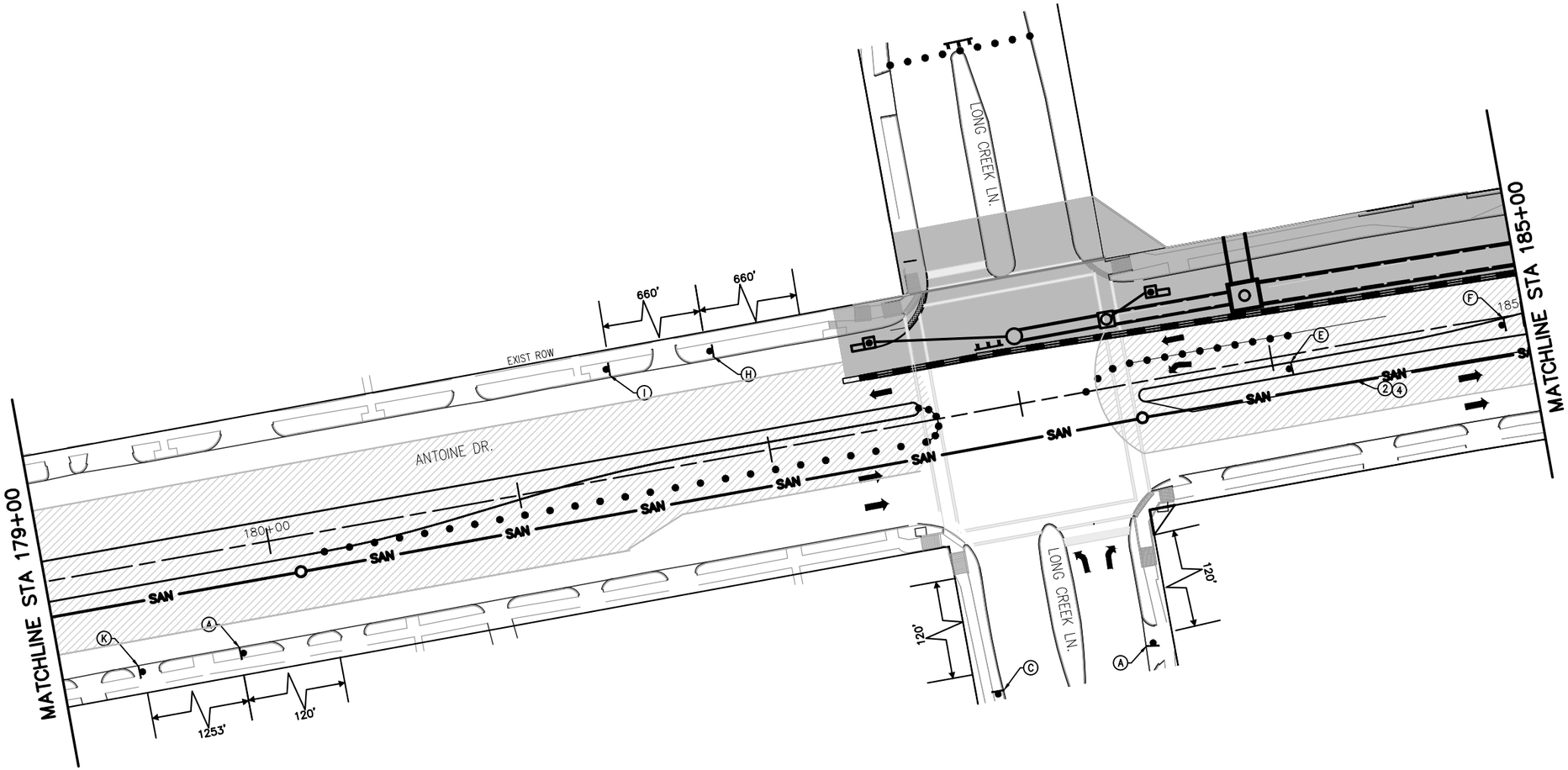

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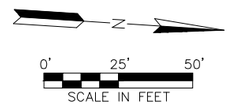
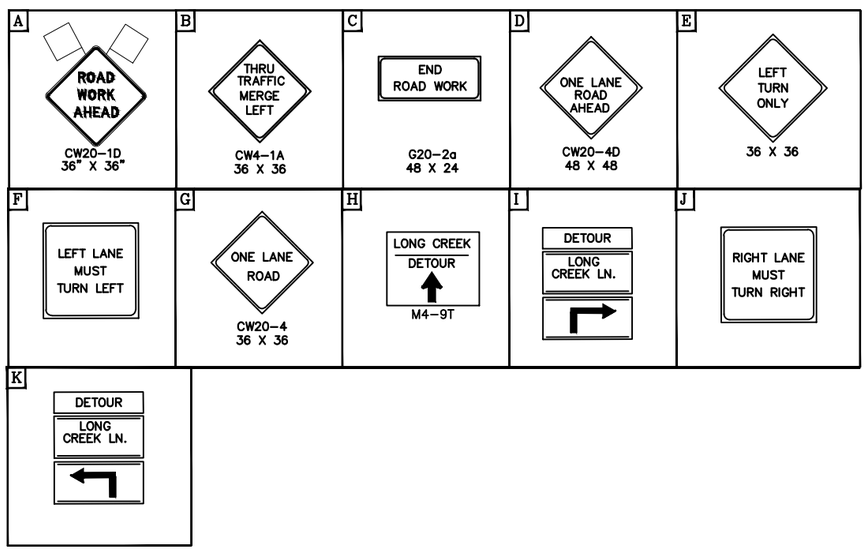
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

APP.	DATE	No.	REVISIONS





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ENGINEER: NKEMDI I. OHALETE
P.E. SERIAL No.: 79423
2026

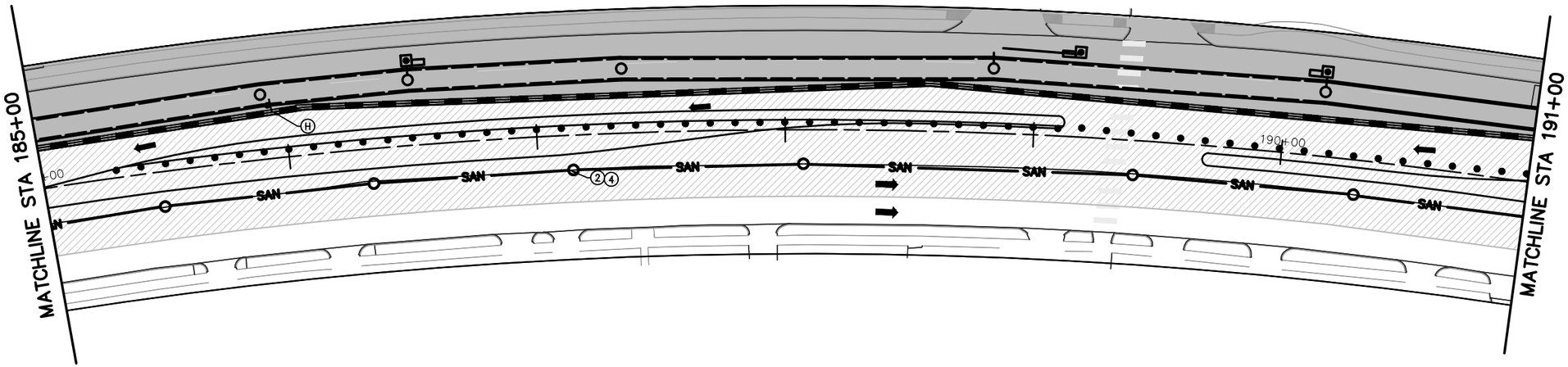
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

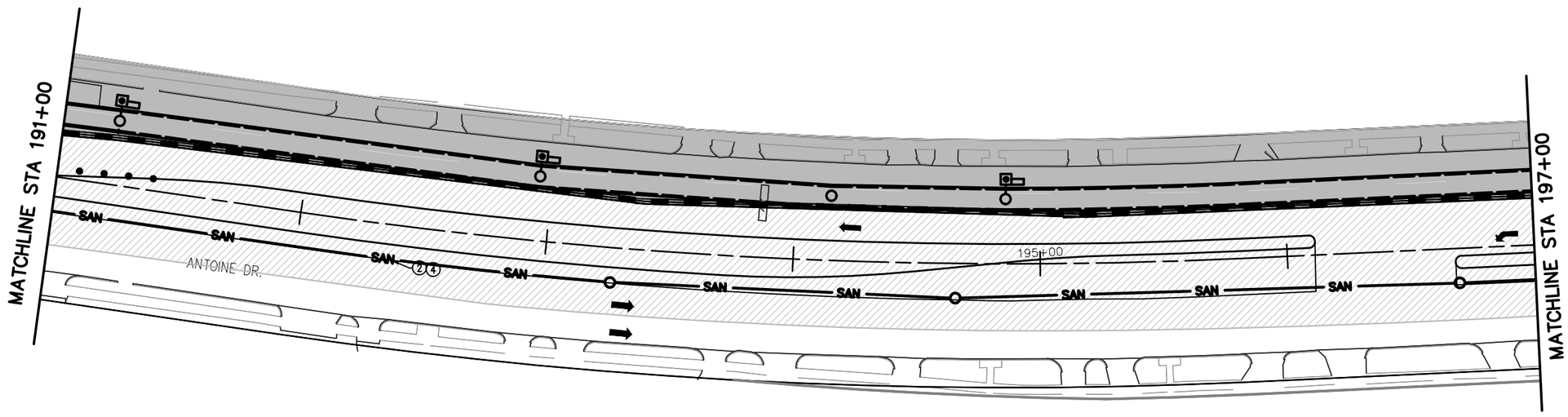
ANTOINE DRIVE

TRAFFIC CONTROL PLAN PHASE 3 STEP 2

SHEET 2 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N–100030–0GEC–3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 88 OF 718	





LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE W/ ROAD CLOSED SIGN
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS

1. REMOVABLE PAV MRK BUTTONS TY W
2. REMOVABLE PAV MRK BUTTONS TY Y
3. REMOVABLE PAV MRK BUTTONS W STOP BAR
4. REMOVABLE PAV MRK (REFLECTOR) TY I–C
5. REMOVABLE PAV MRK (REFLECTOR) TY A–A
6. REMOVABLE PAV MRK (REFLECTOR) TY I–A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
10. REMOVABLE PAV MRK BUTTONS DBL ARROW
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

APP.	REVISIONS	DATE	No.

N

0' 25' 50'
SCALE IN FEET

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HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN PHASE 3 STEP 2

SHEET 3 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
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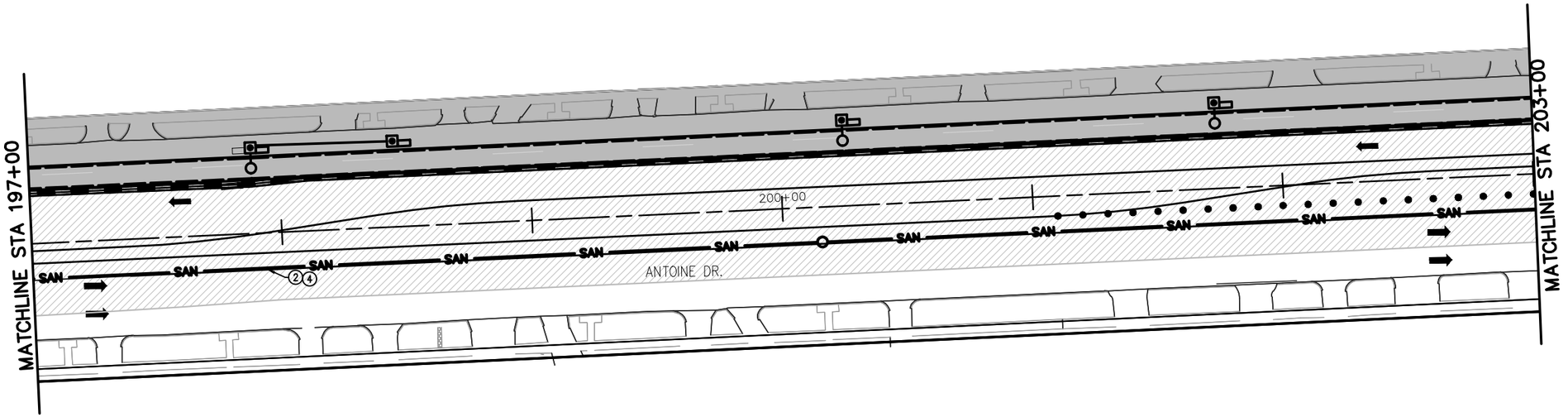
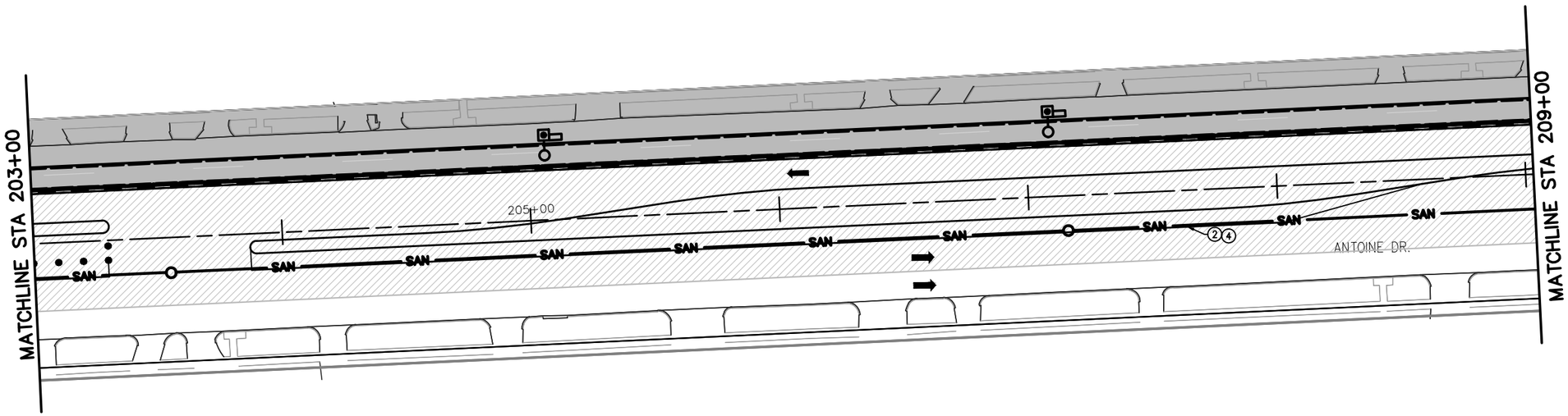
ROWAIDAH AYOUB	
SHEET NO. 89 OF 718	





LEGEND

- WORK ZONE
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3. REMOVABLE PAV MRK BUTTONS W STOP BAR
4. REMOVABLE PAV MRK (REFLECTOR) TY I-C
5. REMOVABLE PAV MRK (REFLECTOR) TY A-A
6. REMOVABLE PAV MRK (REFLECTOR) TY I-A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
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10. REMOVABLE PAV MRK BUTTONS DBL ARROW
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

APP.	DATE	No.	REVISIONS

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SCALE IN FEET

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HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 3 STEP 2

SHEET 4 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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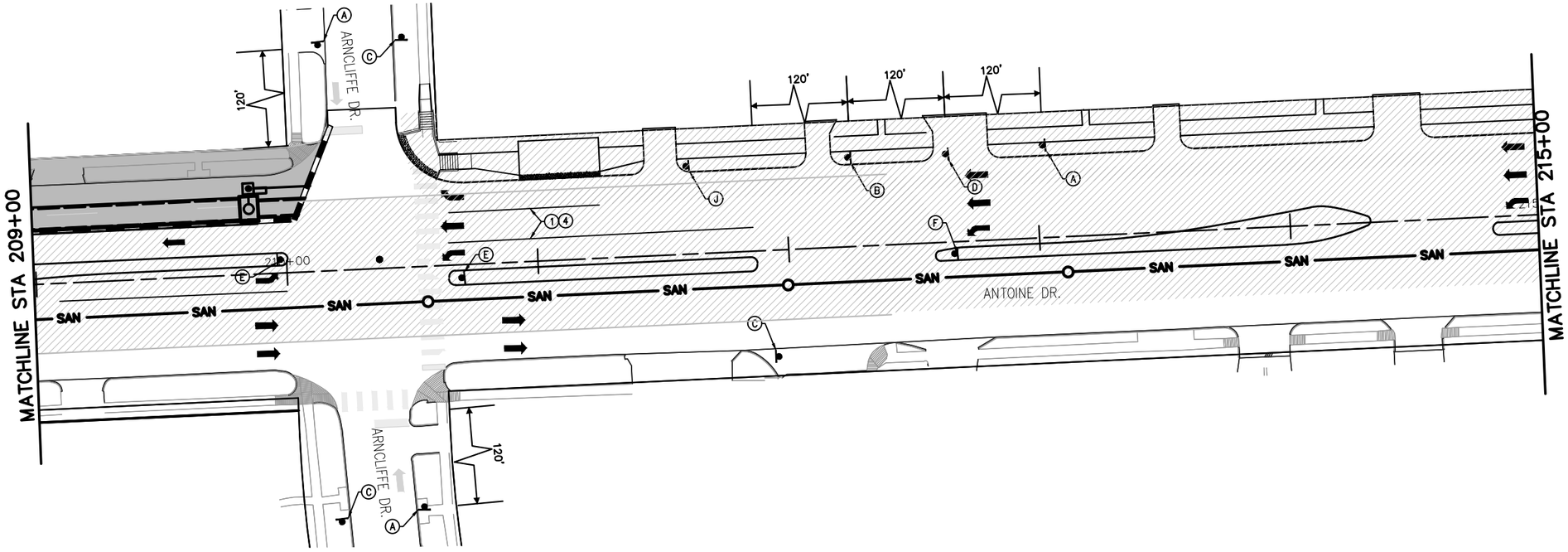
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 90 OF 718	



LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
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1. REMOVABLE PAV MRK BUTTONS TY W
2. REMOVABLE PAV MRK BUTTONS TY Y
3. REMOVABLE PAV MRK BUTTONS W STOP BAR
4. REMOVABLE PAV MRK (REFLECTOR) TY I-C
5. REMOVABLE PAV MRK (REFLECTOR) TY A-A
6. REMOVABLE PAV MRK (REFLECTOR) TY I-A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
10. REMOVABLE PAV MRK BUTTONS DBL ARROW
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

No.	DATE	REVISIONS	APP.

N

0' 25' 50'
SCALE IN FEET

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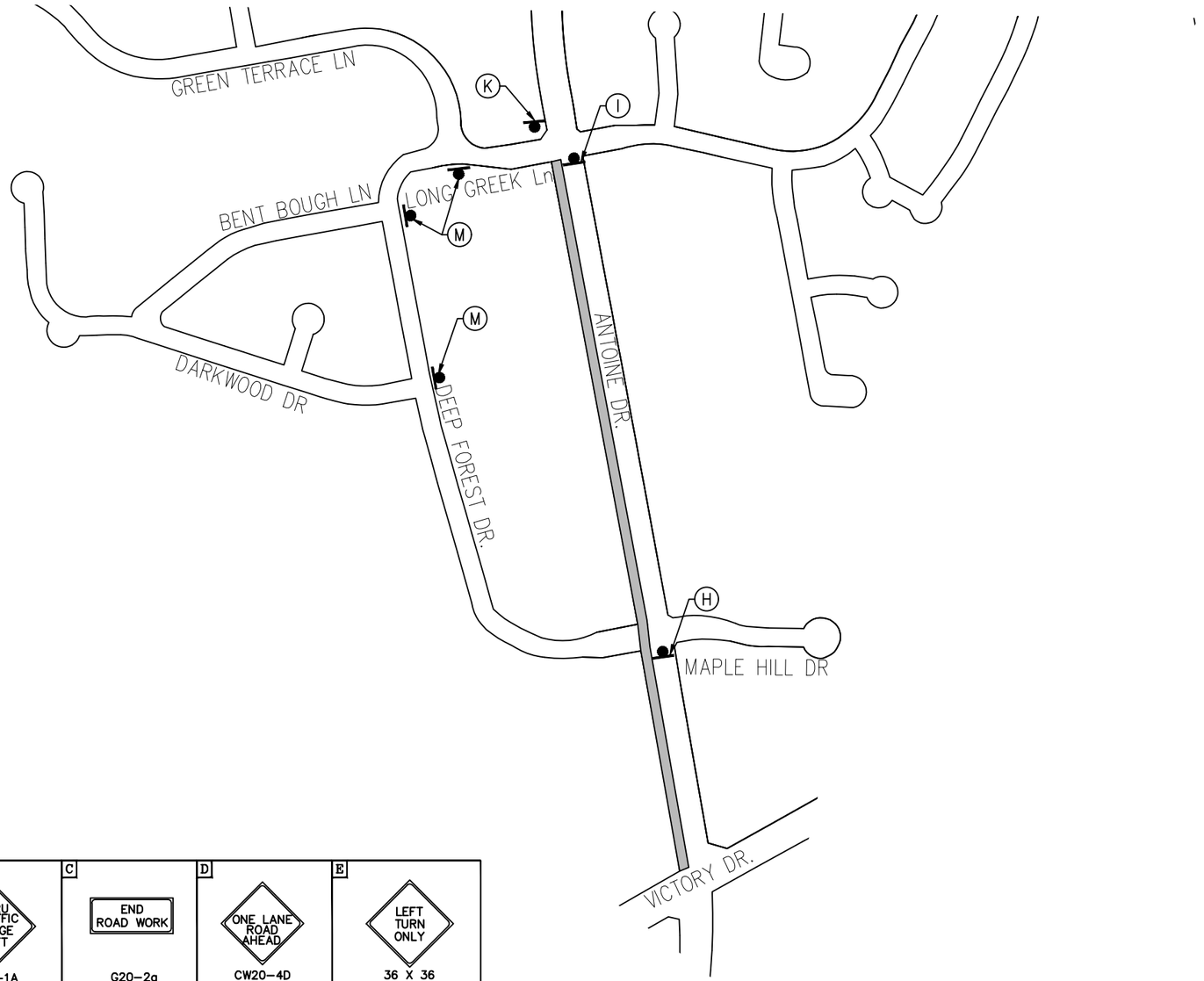
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 3 STEP 2

SHEET 5 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 91 OF 718	



LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
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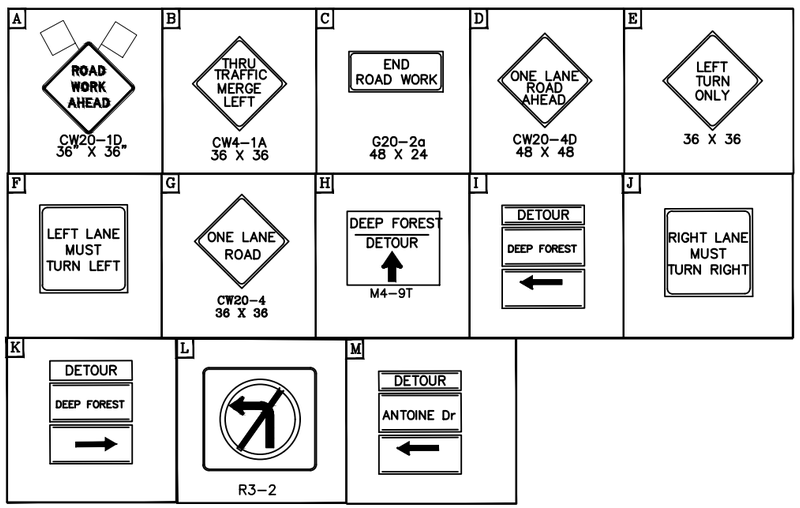
N

0' 25' 50'

SCALE IN FEET



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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 3 STEP 3

SHEET 1 OF 4

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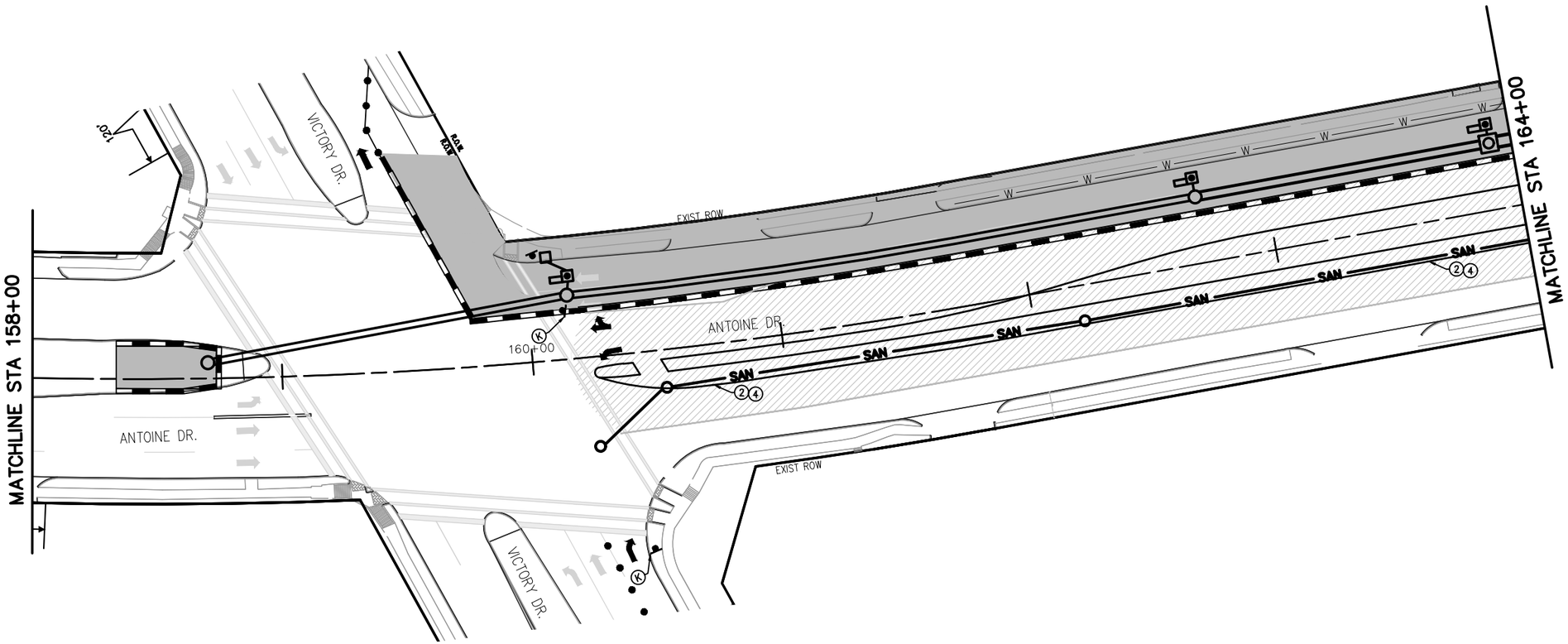

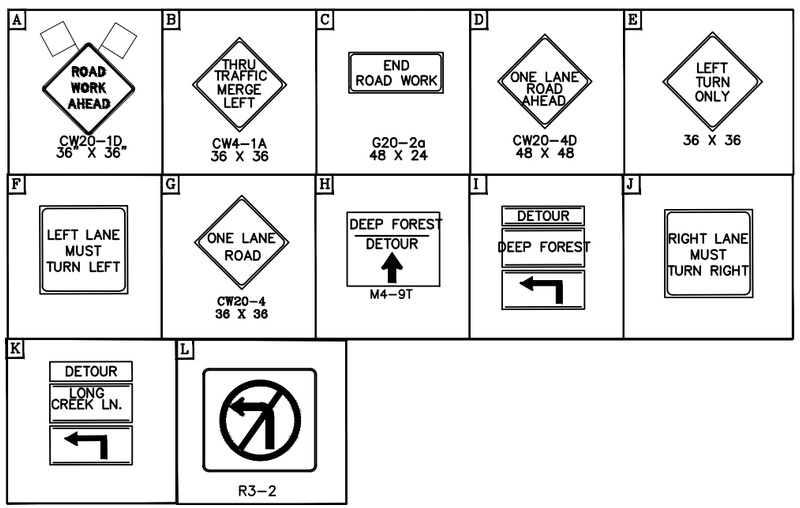

LEGEND

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2. REMOVABLE PAV MRK BUTTONS TY Y
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4. REMOVABLE PAV MRK (REFLECTOR) TY I-C
5. REMOVABLE PAV MRK (REFLECTOR) TY A-A
6. REMOVABLE PAV MRK (REFLECTOR) TY I-A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
10. REMOVABLE PAV MRK BUTTONS DBL ARROW
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No.	DATE	REVISIONS	APP.

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PHASE 3 STEP 3

SHEET 2 OF 4

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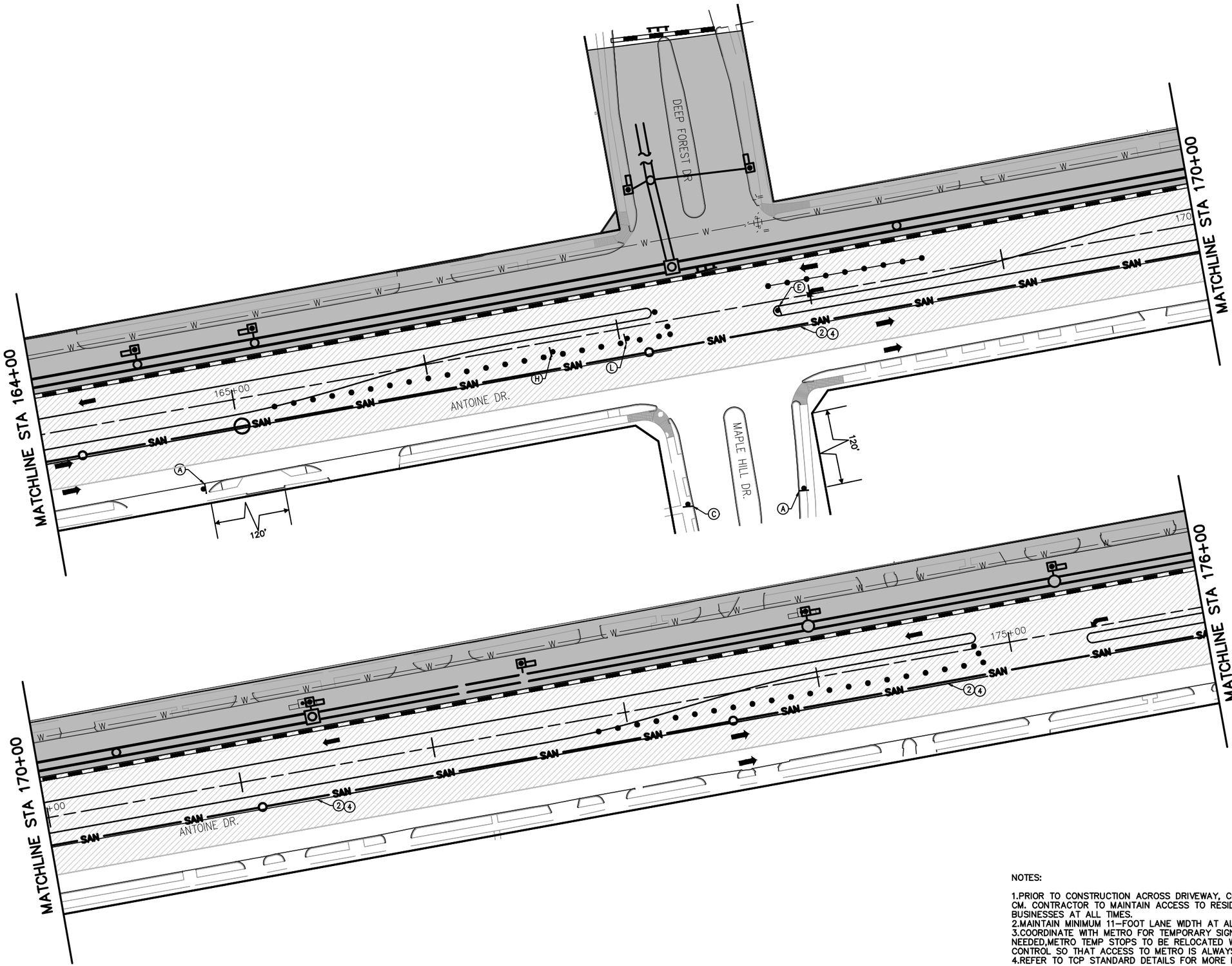

LEGEND

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No.	DATE	REVISIONS	APP.

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ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 3 STEP 3

SHEET 3 OF 4

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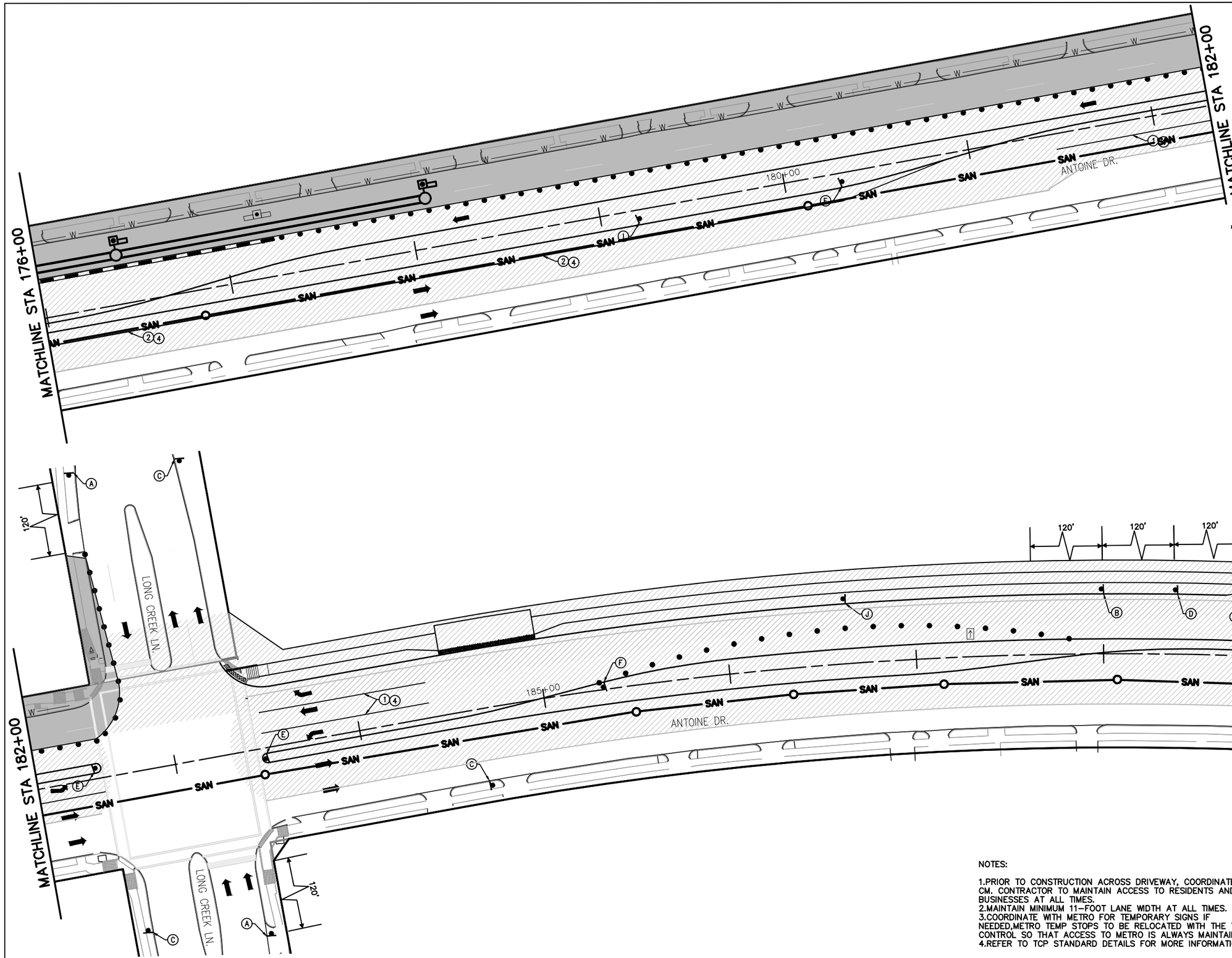

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Houston, Texas 77036
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www.NeduEngineers.com

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ENGINEER: NKEMDI I. OHALETE
P.E. SERIAL No.: 79423
2026

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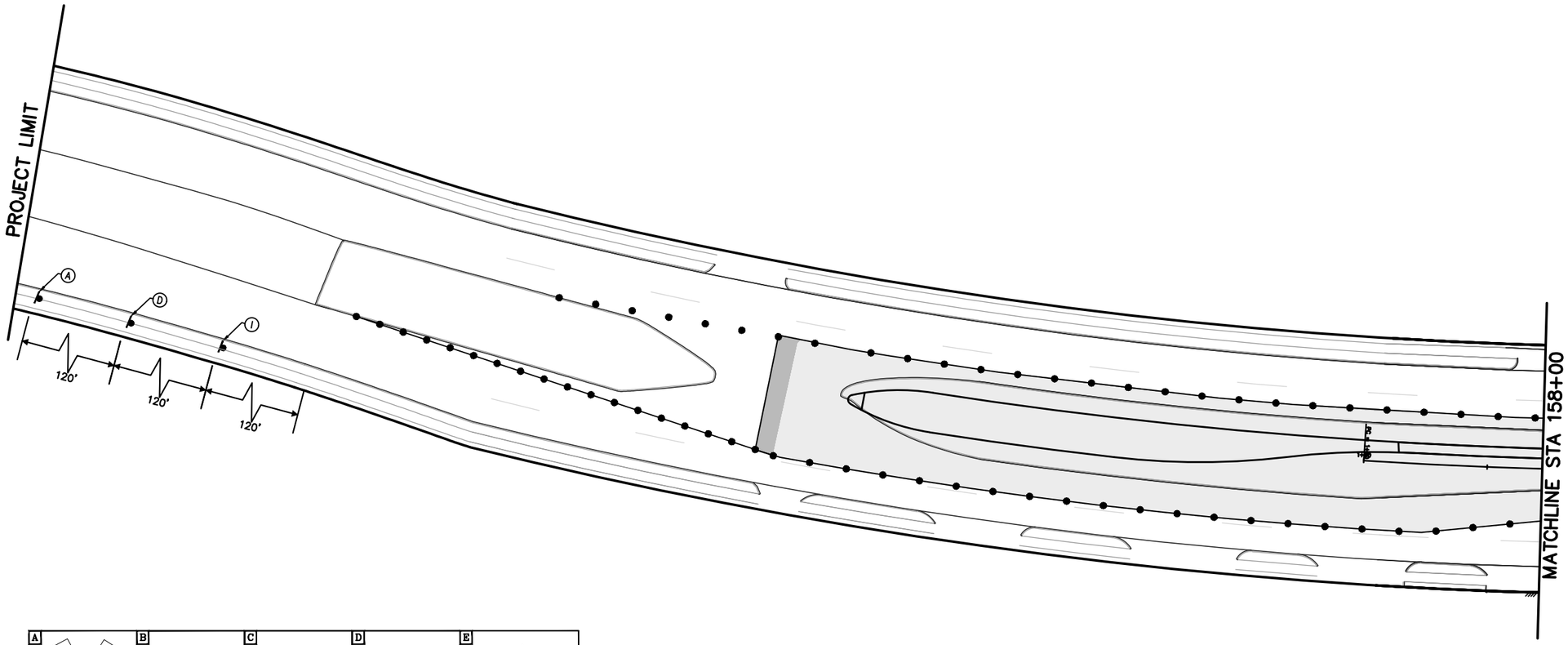
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 3 STEP 3

SHEET 4 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 95 OF 718	



LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE W/ ROAD CLOSED SIGN
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS

1. REMOVABLE PAV MRK BUTTONS TY W
2. REMOVABLE PAV MRK BUTTONS TY Y
3. REMOVABLE PAV MRK BUTTONS W STOP BAR
4. REMOVABLE PAV MRK (REFLECTOR) TY I-C
5. REMOVABLE PAV MRK (REFLECTOR) TY A-A
6. REMOVABLE PAV MRK (REFLECTOR) TY I-A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
10. REMOVABLE PAV MRK BUTTONS DBL ARROW
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

APP.	DATE	No.	REVISIONS

N

0' 25' 50'
SCALE IN FEET

A ROAD WORK AHEAD CW20-1D 36" X 36"	B THRU TRAFFIC MERGE RIGHT CW4-1A 36 X 36	C END ROAD WORK G20-2a 48 X 24	D ONE LANE ROAD AHEAD CW20-4D 48 X 48	E LEFT TURN ONLY 36 X 36
F RIGHT LANE MUST TURN RIGHT	G ONE LANE ROAD CW20-4 36 X 36	H RIGHT LANE CLOSED 36 X 36	I LEFT LANE CLOSED CW20-5(1) 36 X 36	J LEFT LANE MUST TURN LEFT
K NO RIGHT TURN ON RED K-9763	L W16-5PR	M W16-5PL	N THRU TRAFFIC MERGE LEFT	O R4-7 24x30

NOTES:

1. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY, COORDINATE WITH CM. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES.
2. MAINTAIN MINIMUM 11-FOOT LANE WIDTH AT ALL TIMES.
3. COORDINATE WITH METRO FOR TEMPORARY SIGNS IF NEEDED, METRO TEMP STOPS TO BE RELOCATED WITH THE TRAFFIC CONTROL SO THAT ACCESS TO METRO IS ALWAYS MAINTAINED.
4. REFER TO TCP STANDARD DETAILS FOR MORE INFORMATION.

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Date

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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 3&2 STEP 4

SHEET 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
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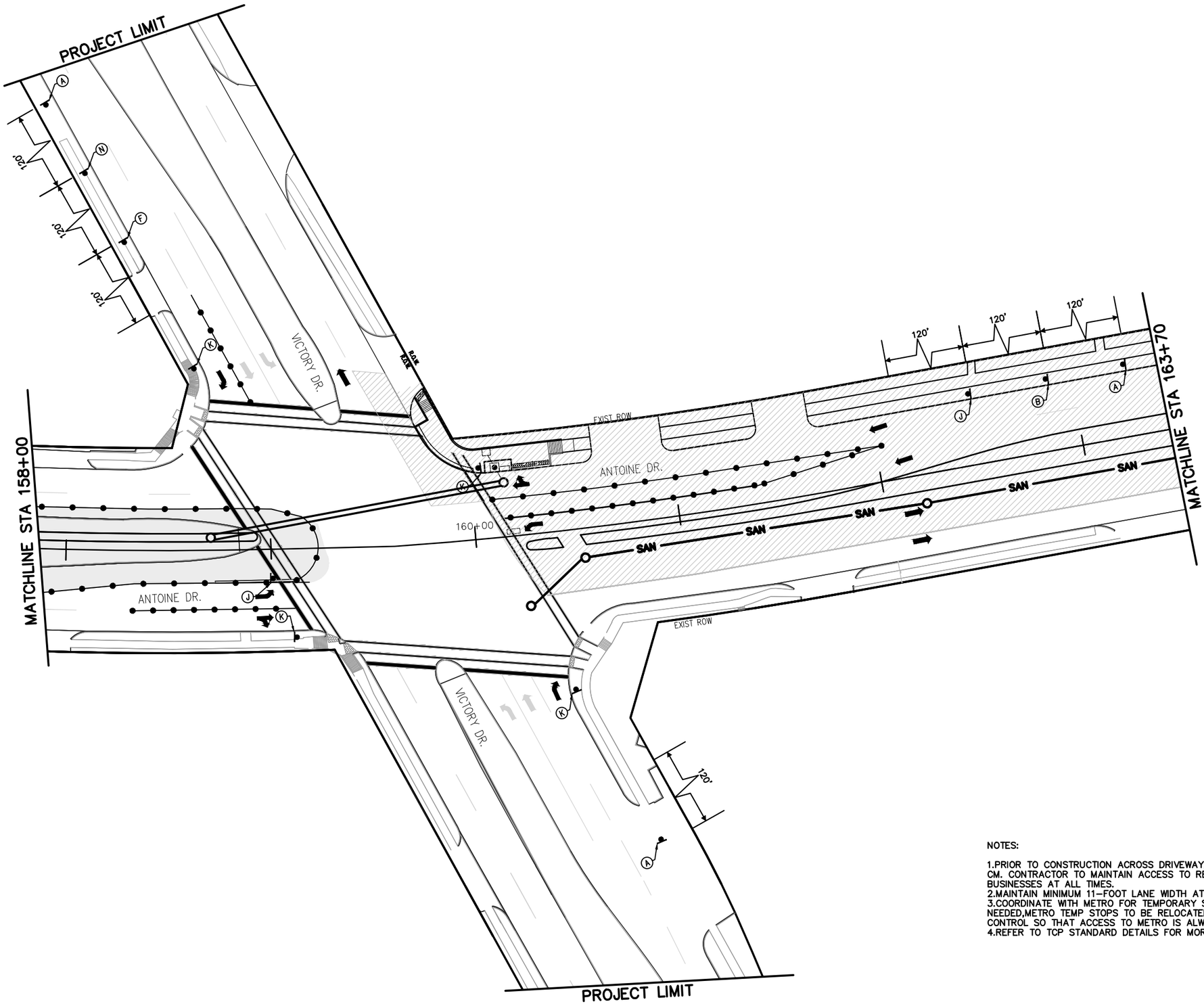
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 96 OF 718	



LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
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- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS

1. REMOVABLE PAV MRK BUTTONS TY W
2. REMOVABLE PAV MRK BUTTONS TY Y
3. REMOVABLE PAV MRK BUTTONS W STOP BAR
4. REMOVABLE PAV MRK (REFLECTOR) TY I–C
5. REMOVABLE PAV MRK (REFLECTOR) TY A–A
6. REMOVABLE PAV MRK (REFLECTOR) TY I–A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
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No.	DATE	REVISIONS	APP.

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SCALE IN FEET

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2026

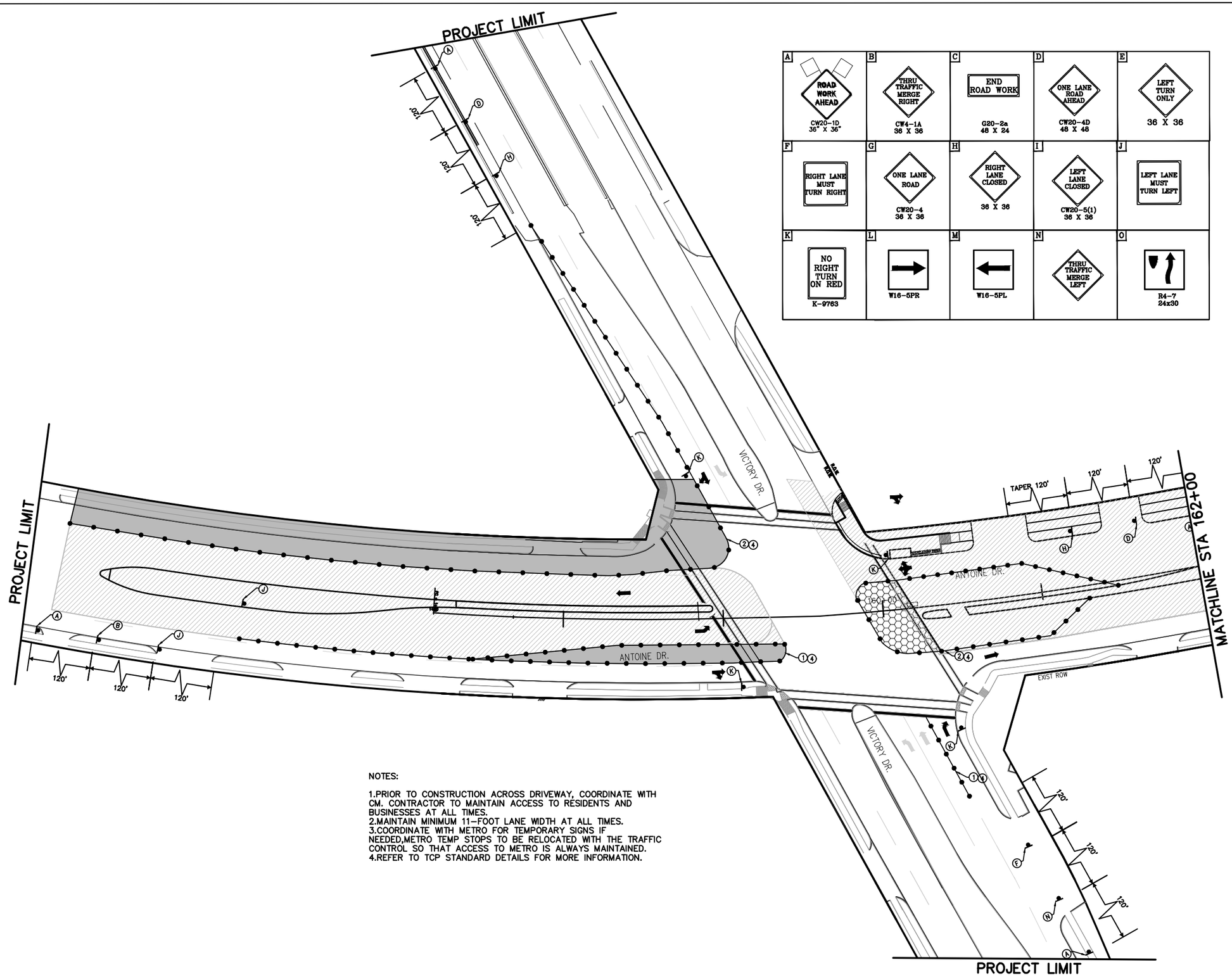
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 3&2 STEP 4

SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N–100030–0GEC–3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 97 OF 718	



A ROAD WORK AHEAD CW20-1D 36" X 36"	B THRU TRAFFIC MERGE RIGHT CW4-1A 36 X 36	C END ROAD WORK G20-2a 48 X 24	D ONE LANE ROAD AHEAD CW20-4D 48 X 48	E LEFT TURN ONLY 36 X 36
F RIGHT LANE MUST TURN RIGHT	G ONE LANE ROAD CW20-4 36 X 36	H RIGHT LANE CLOSED 36 X 36	I LEFT LANE CLOSED CW20-5(1) 36 X 36	J LEFT LANE MUST TURN LEFT
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LEGEND

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(3) REMOVABLE PAV MRK BUTTONS W STOP BAR
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(6) REMOVABLE PAV MRK (REFLECTOR) TY I-A
(7) REMOVABLE PAV MRK BUTTONS TY W (DOT)
(8) REMOVABLE PAV MRK BUTTONS TY Y (DOT)
(9) REMOVABLE PAV MRK BUTTONS ARROW
(10) REMOVABLE PAV MRK BUTTONS DBL ARROW
(11) REMOVABLE PAV MRK BUTTONS TPL ARROW

No.	DATE	REVISIONS	APP.

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SCALE IN FEET

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ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 3 STEP 5

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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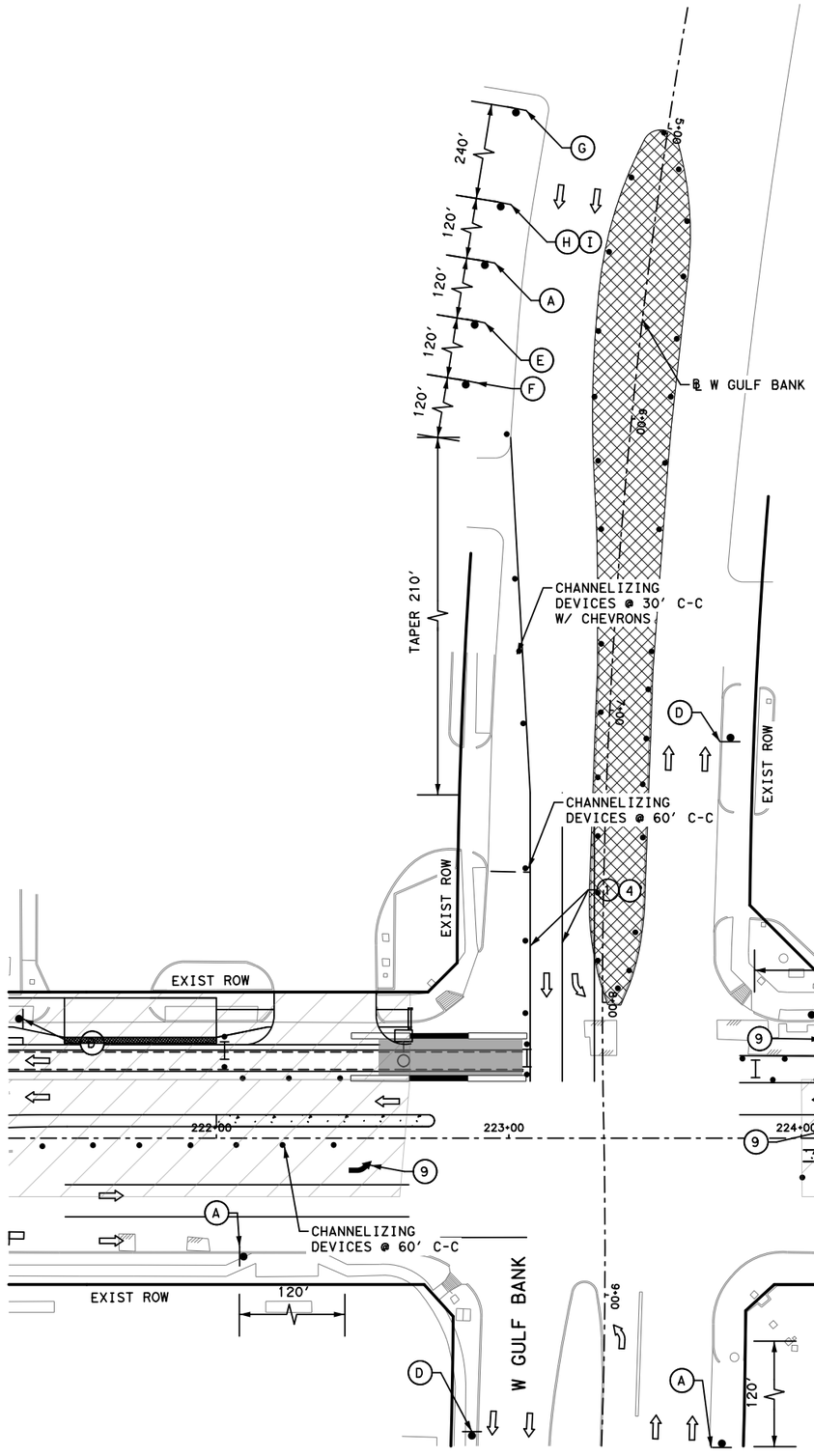
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 98 OF 718	



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A	B	C	D	E
ROAD WORK AHEAD CW20-1D	THRU TRAFFIC MERGE LEFT CW9-2L	RIGHT LANE MUST TURN RIGHT R3-7R	END ROAD WORK G20-2	RIGHT LANE CLOSED AHEAD W9-3R
F	**G**	**H**	**I**	
RIGHT LANE CLOSED CW20-5TR	SPEED LIMIT 30 G20-2	SPEED LIMIT 30 G20-2	WORK ZONE G20-2	

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
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- VERTICAL PANEL
- TYPE III BARRICADE W/ ROAD CLOSED SIGN
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS
- (1) REMOVABLE PAV MRK BUTTONS TY W
- (2) REMOVABLE PAV MRK BUTTONS TY Y
- (3) REMOVABLE PAV MRK BUTTONS W STOP BAR
- (4) REMOVABLE PAV MRK (REFLECTOR) TY I-C
- (5) REMOVABLE PAV MRK (REFLECTOR) TY A-A
- (6) REMOVABLE PAV MRK (REFLECTOR) TY I-A
- (7) REMOVABLE PAV MRK BUTTONS TY W (DOT)
- (8) REMOVABLE PAV MRK BUTTONS TY Y (DOT)
- (9) REMOVABLE PAV MRK BUTTONS ARROW
- (10) REMOVABLE PAV MRK BUTTONS DBL ARROW
- (11) REMOVABLE PAV MRK BUTTONS TPL ARROW

No.	DATE	REVISIONS	APP.

N

0′ 25′ 50′
SCALE IN FEET

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TEXAS PE FIRM REG. # 20017
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HOUSTON, TX 77079

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN PHASE 4 STEP 1

SHEET 1 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 99 OF 718	

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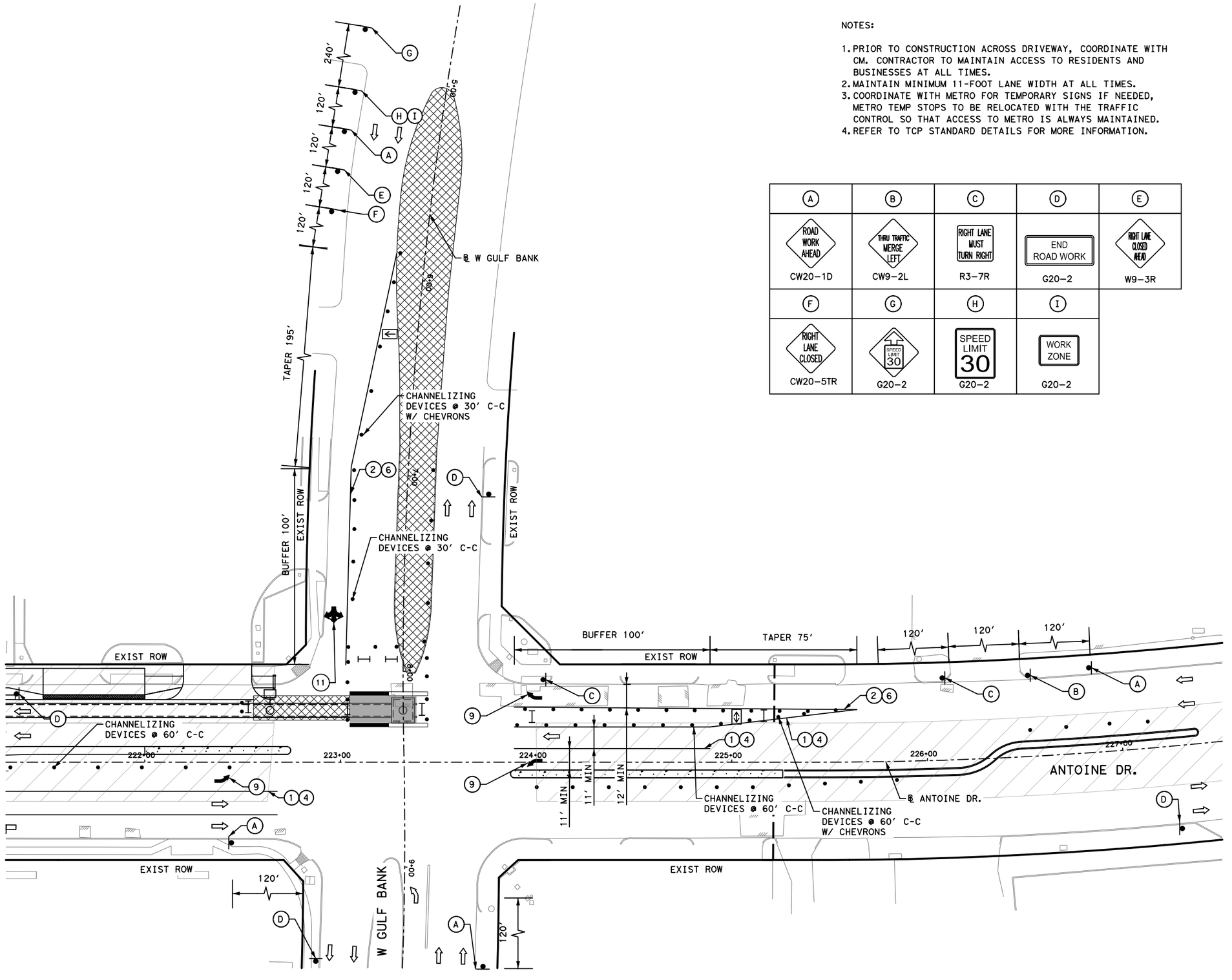

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ROAD WORK AHEAD CW20-1D	THRU TRAFFIC MERGE LEFT CW9-2L	RIGHT LANE MUST TURN RIGHT R3-7R	END ROAD WORK G20-2	RIGHT LANE CLOSED AHEAD W9-3R
F	**G**	**H**	**I**	
RIGHT LANE CLOSED CW20-5TR	SPEED LIMIT 30 G20-2	SPEED LIMIT 30 G20-2	WORK ZONE G20-2	

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
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- HIGH EARLY STRENGTH CONCRETE
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- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS

1. REMOVABLE PAV MRK BUTTONS TY W
2. REMOVABLE PAV MRK BUTTONS TY Y
3. REMOVABLE PAV MRK BUTTONS W STOP BAR
4. REMOVABLE PAV MRK (REFLECTOR) TY I-C
5. REMOVABLE PAV MRK (REFLECTOR) TY A-A
6. REMOVABLE PAV MRK (REFLECTOR) TY I-A
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11. REMOVABLE PAV MRK BUTTONS TPL ARROW

No.	DATE	REVISIONS	APP.

N

0' 25' 50'
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN PHASE 4 STEP 2

SHEET 2 OF 8

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CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO 100 OF 718	

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Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Traffic Control\W GULF BANK\SEG 1-TCP_PH4_ST 2.dgn

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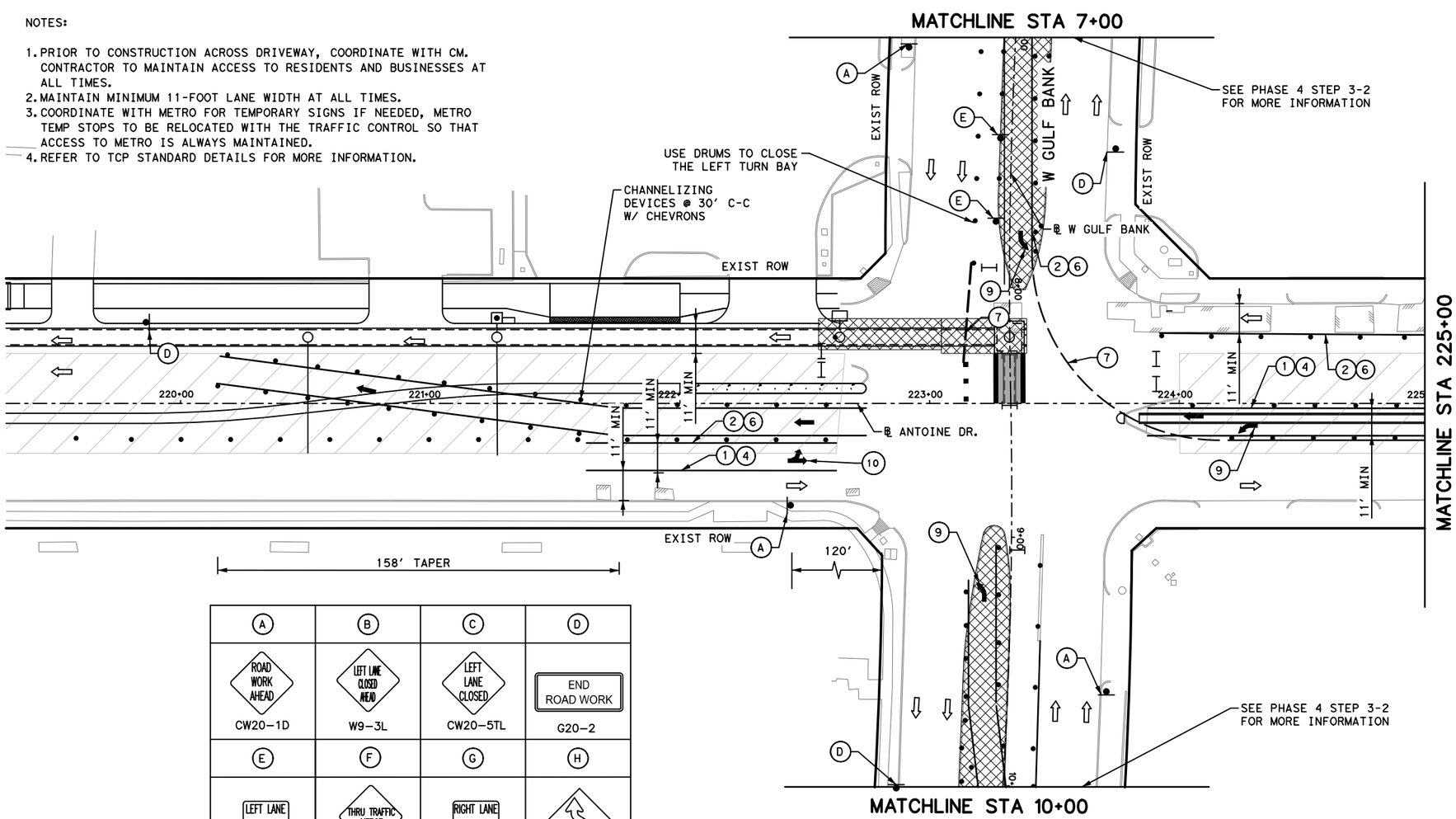
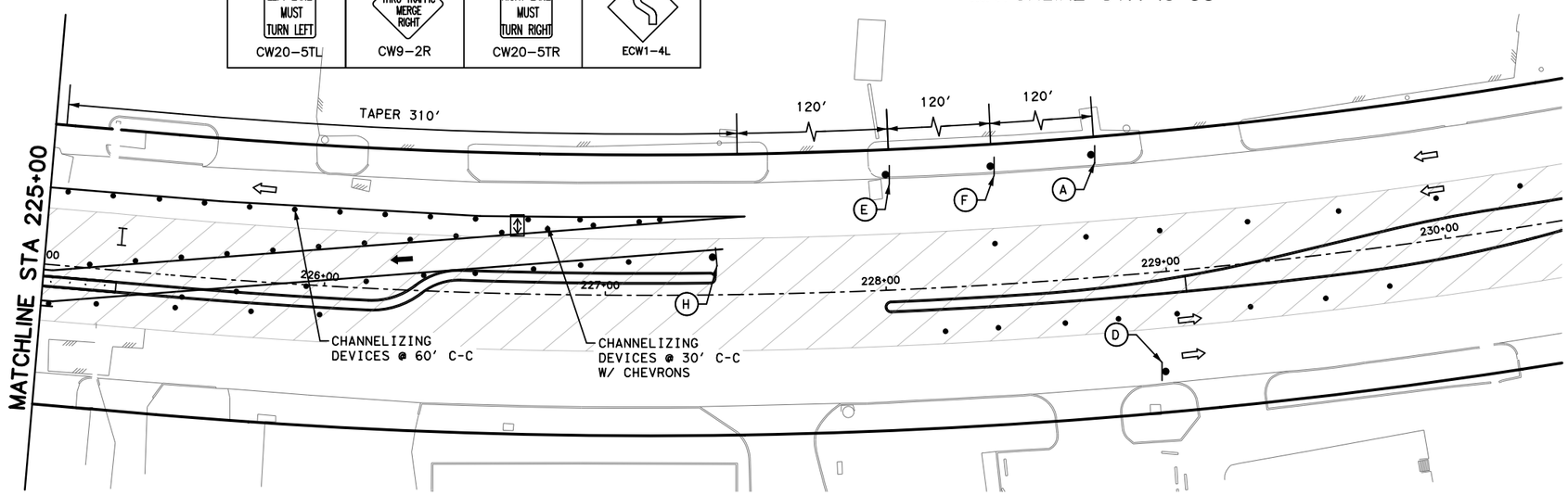


A	B	C	D
ROAD WORK AHEAD	LEFT LANE CLOSED AHEAD	LEFT LANE CLOSED	END ROAD WORK
CW20-1D	W9-3L	CW20-5TL	G20-2
E	F	G	H
LEFT LANE MUST TURN LEFT	THRU TRAFFIC MERGE RIGHT	RIGHT LANE MUST TURN RIGHT	
CW20-5TL	CW9-2R	CW20-5TR	ECW1-4L



LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
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- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
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- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS

1. REMOVABLE PAV MRK BUTTONS TY W
2. REMOVABLE PAV MRK BUTTONS TY Y
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4. REMOVABLE PAV MRK (REFLECTOR) TY I-C
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No.	DATE	REVISIONS	APP.

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SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 4 STEP 3 - 1

SHEET 3 OF 8

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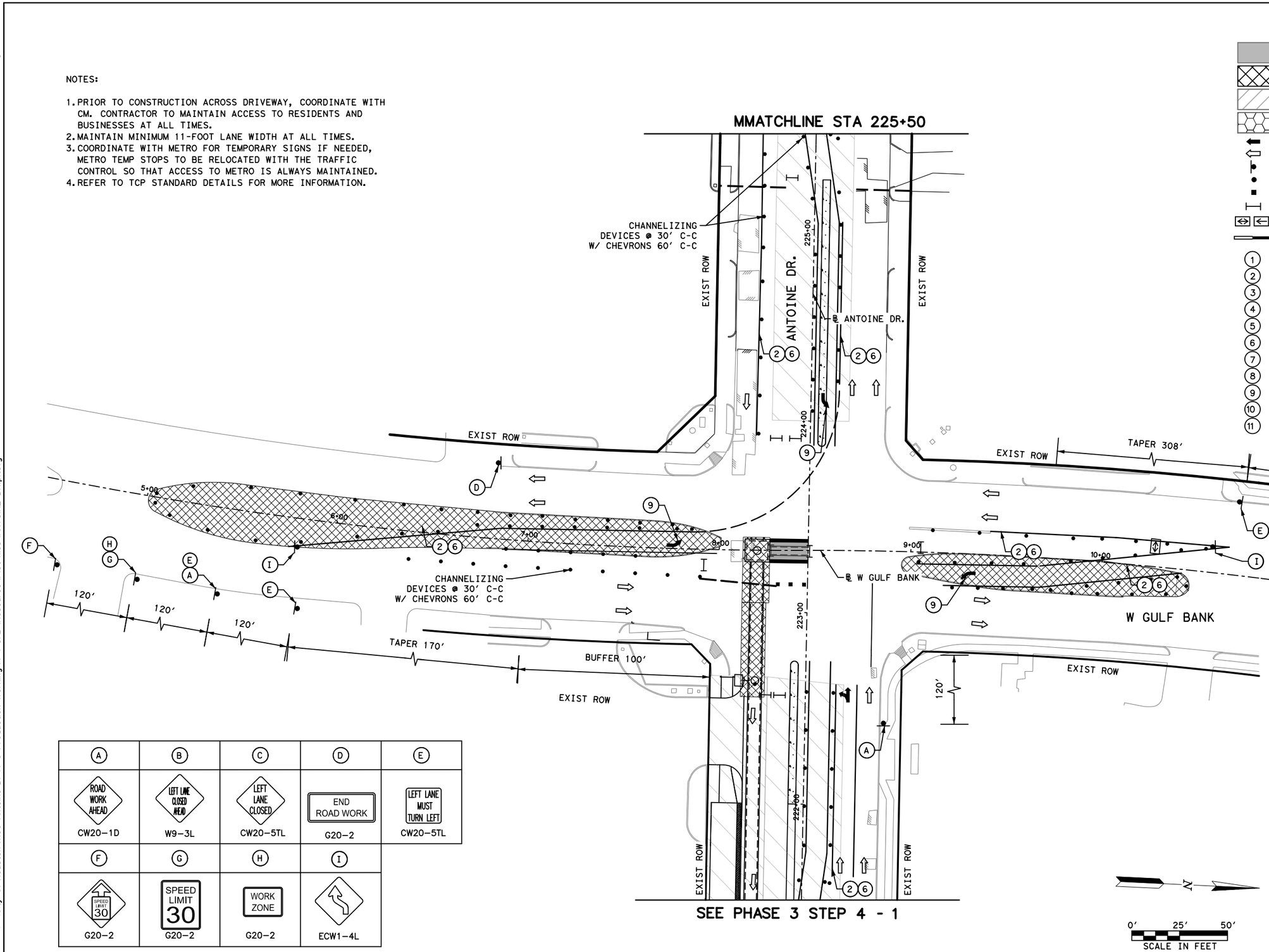

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- (2) REMOVABLE PAV MRK BUTTONS TY Y
- (3) REMOVABLE PAV MRK BUTTONS W STOP BAR
- (4) REMOVABLE PAV MRK (REFLECTOR) TY I-C
- (5) REMOVABLE PAV MRK (REFLECTOR) TY A-A
- (6) REMOVABLE PAV MRK (REFLECTOR) TY I-A
- (7) REMOVABLE PAV MRK BUTTONS TY W (DOT)
- (8) REMOVABLE PAV MRK BUTTONS TY Y (DOT)
- (9) REMOVABLE PAV MRK BUTTONS ARROW
- (10) REMOVABLE PAV MRK BUTTONS DBL ARROW
- (11) REMOVABLE PAV MRK BUTTONS TPL ARROW

No.	DATE	REVISIONS	APP.

(A)	(B)	(C)	(D)	(E)
ROAD WORK AHEAD CW20-1D	LEFT LANE CLOSED AHEAD W9-3L	LEFT LANE CLOSED CW20-5TL	END ROAD WORK G20-2	LEFT LANE MUST TURN LEFT CW20-5TL
(F)	**(G)**	**(H)**	**(I)**	
SPEED LIMIT 30 G20-2	SPEED LIMIT 30 G20-2	WORK ZONE G20-2	 ECW1-4L	

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

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Texas 125611
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Texas Registered Engineering Firm F-20017

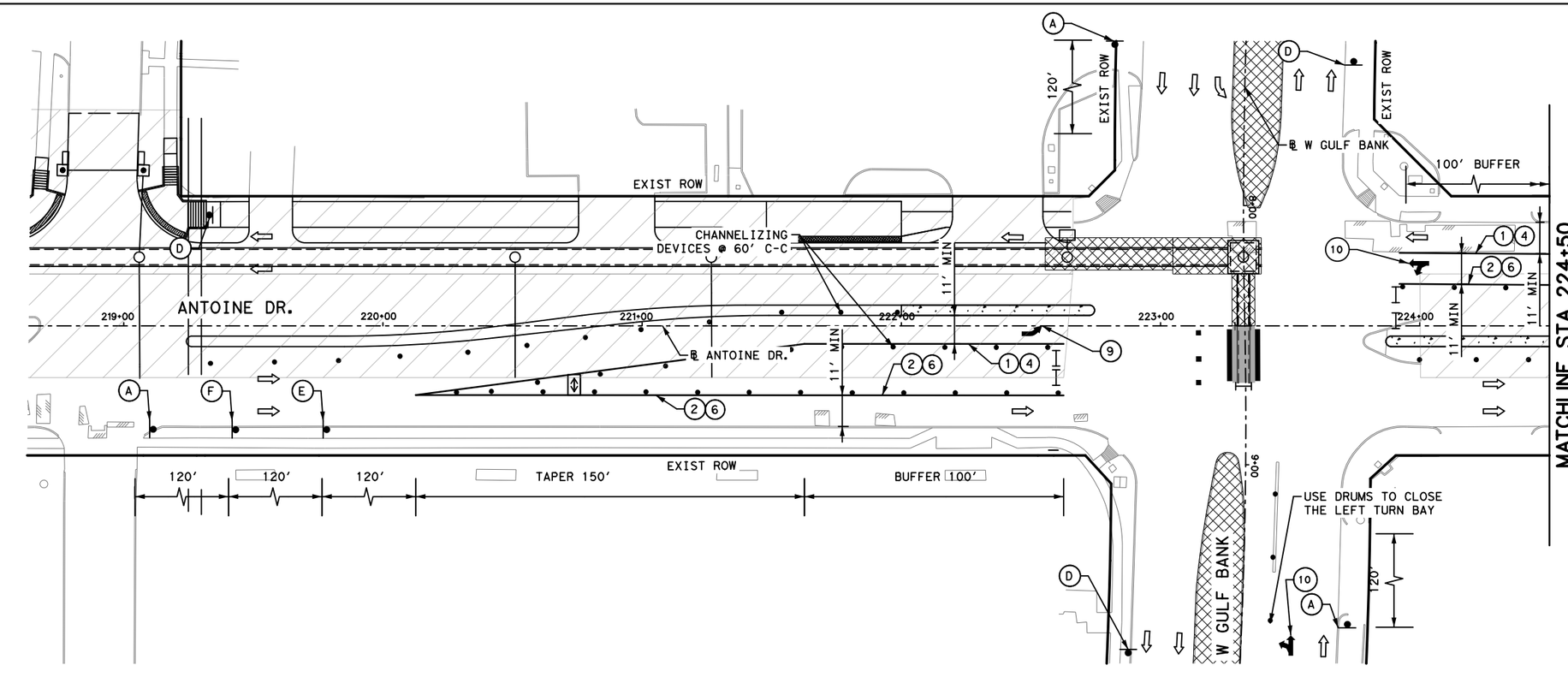
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

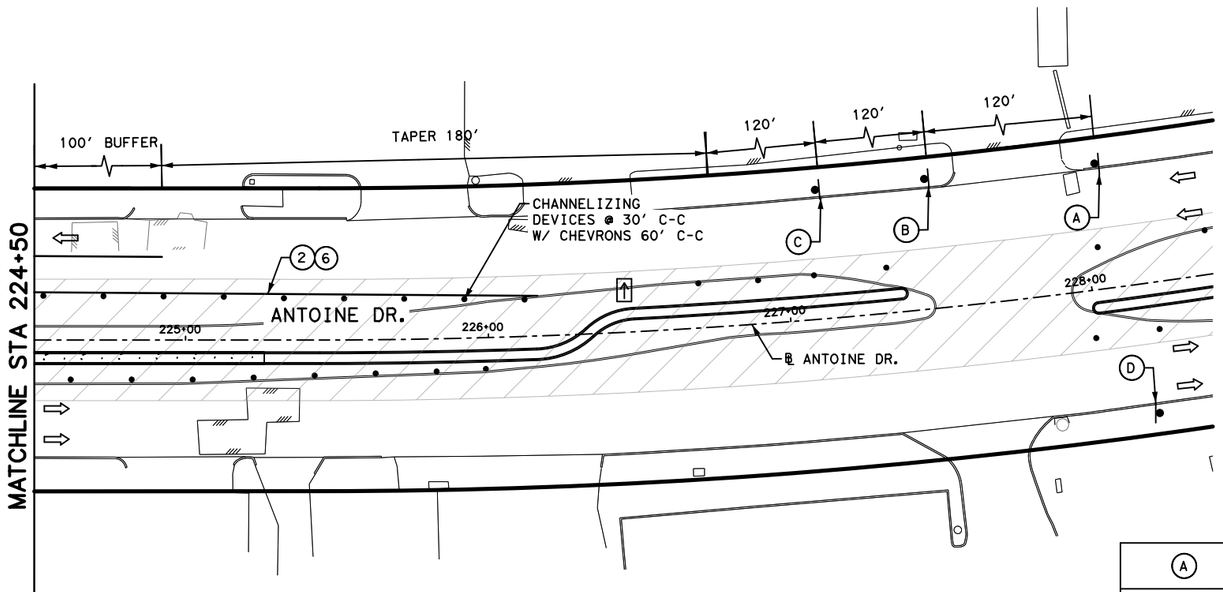
ANTOINE DRIVE

TRAFFIC CONTROL PLAN PHASE 4 TEP 3- 2

SHEET 4 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO 102 OF 718	





LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE W/ ROAD CLOSED SIGN
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS

1. REMOVABLE PAV MRK BUTTONS TY W
2. REMOVABLE PAV MRK BUTTONS TY Y
3. REMOVABLE PAV MRK BUTTONS W STOP BAR
4. REMOVABLE PAV MRK (REFLECTOR) TY I-C
5. REMOVABLE PAV MRK (REFLECTOR) TY A-A
6. REMOVABLE PAV MRK (REFLECTOR) TY I-A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
10. REMOVABLE PAV MRK BUTTONS DBL ARROW
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

NOTES:

1. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY, COORDINATE WITH CM. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES.
2. MAINTAIN MINIMUM 11-FOOT LANE WIDTH AT ALL TIMES.
3. COORDINATE WITH METRO FOR TEMPORARY SIGNS IF NEEDED, METRO TEMP STOPS TO BE RELOCATED WITH THE TRAFFIC CONTROL SO THAT ACCESS TO METRO IS ALWAYS MAINTAINED.
4. REFER TO TCP STANDARD DETAILS FOR MORE INFORMATION.

(A)	(B)	(C)	(D)	(E)	(F)
ROAD WORK AHEAD	LEFT LANE CLOSED AHEAD	LEFT LANE CLOSED	END ROAD WORK	LEFT LANE MUST TURN LEFT	THRU TRAFFIC MERGE RIGHT
CW20-1D	W9-3L	CW20-5TL	G20-2	CW20-5TL	CW9-2R

N

0' 25' 50'
SCALE IN FEET

No.	DATE	REVISIONS	APP.

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HOUSTON, TX 77079

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN PHASE 4 TEP 4

SHEET 5 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO.103 OF 718	

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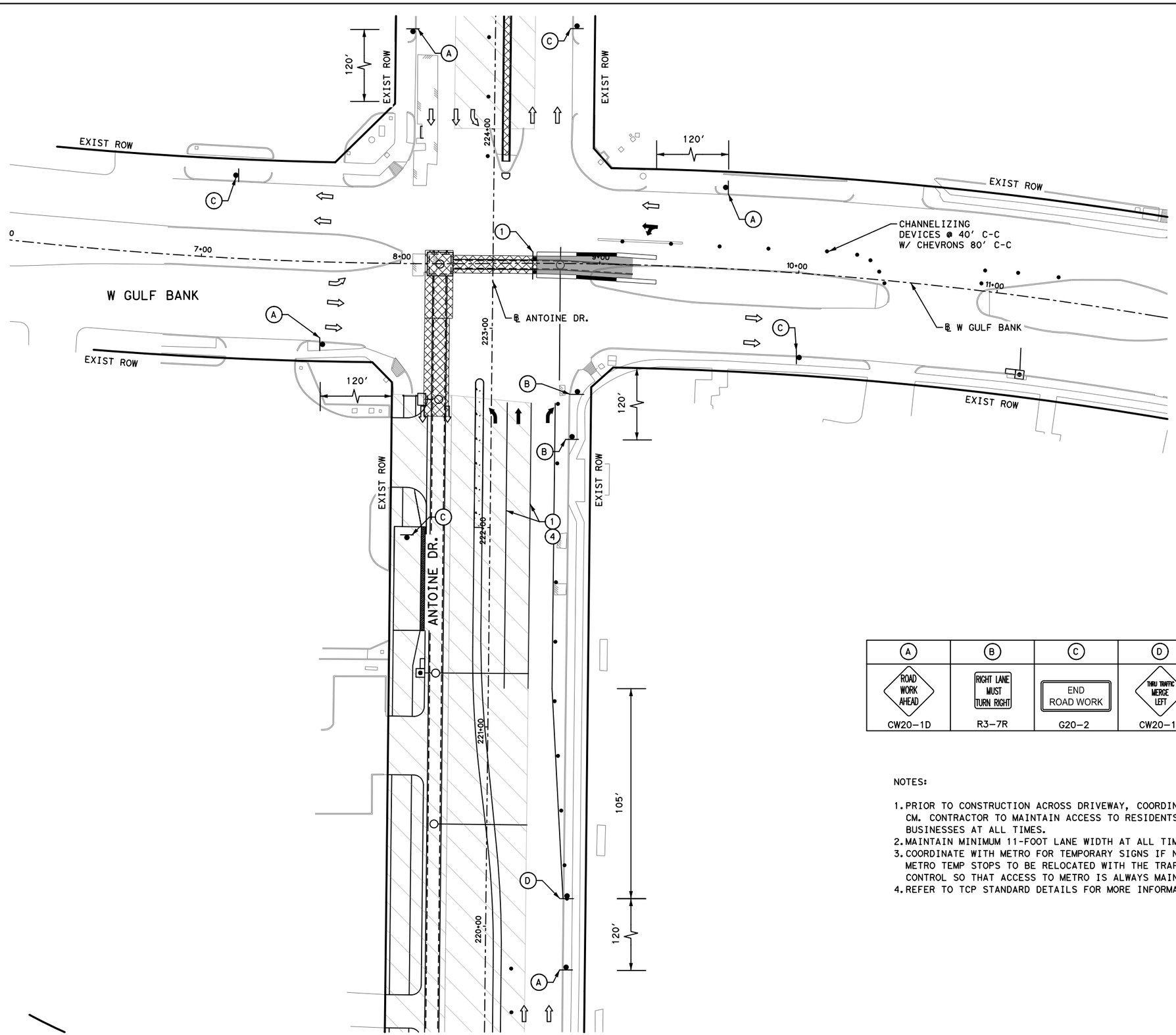

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE W/ ROAD CLOSED SIGN
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS

1. REMOVABLE PAV MRK BUTTONS TY W
2. REMOVABLE PAV MRK BUTTONS TY Y
3. REMOVABLE PAV MRK BUTTONS W STOP BAR
4. REMOVABLE PAV MRK (REFLECTOR) TY I-C
5. REMOVABLE PAV MRK (REFLECTOR) TY A-A
6. REMOVABLE PAV MRK (REFLECTOR) TY I-A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
10. REMOVABLE PAV MRK BUTTONS DBL ARROW
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

N

0' 25' 50'
SCALE IN FEET

APP.	DATE	REVISIONS
No.		

A	B	C	D
ROAD WORK AHEAD	RIGHT LANE MUST TURN RIGHT	END ROAD WORK	THRU TRAFFIC MERGE LEFT
CW20-1D	R3-7R	G20-2	CW20-1D

NOTES:

1. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY, COORDINATE WITH CM. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES.
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3. COORDINATE WITH METRO FOR TEMPORARY SIGNS IF NEEDED, METRO TEMP STOPS TO BE RELOCATED WITH THE TRAFFIC CONTROL SO THAT ACCESS TO METRO IS ALWAYS MAINTAINED.
4. REFER TO TCP STANDARD DETAILS FOR MORE INFORMATION.

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HOUSTON, TX 77079

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN PHASE 4 STEP 5

SHEET 6 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 104 OF 718	

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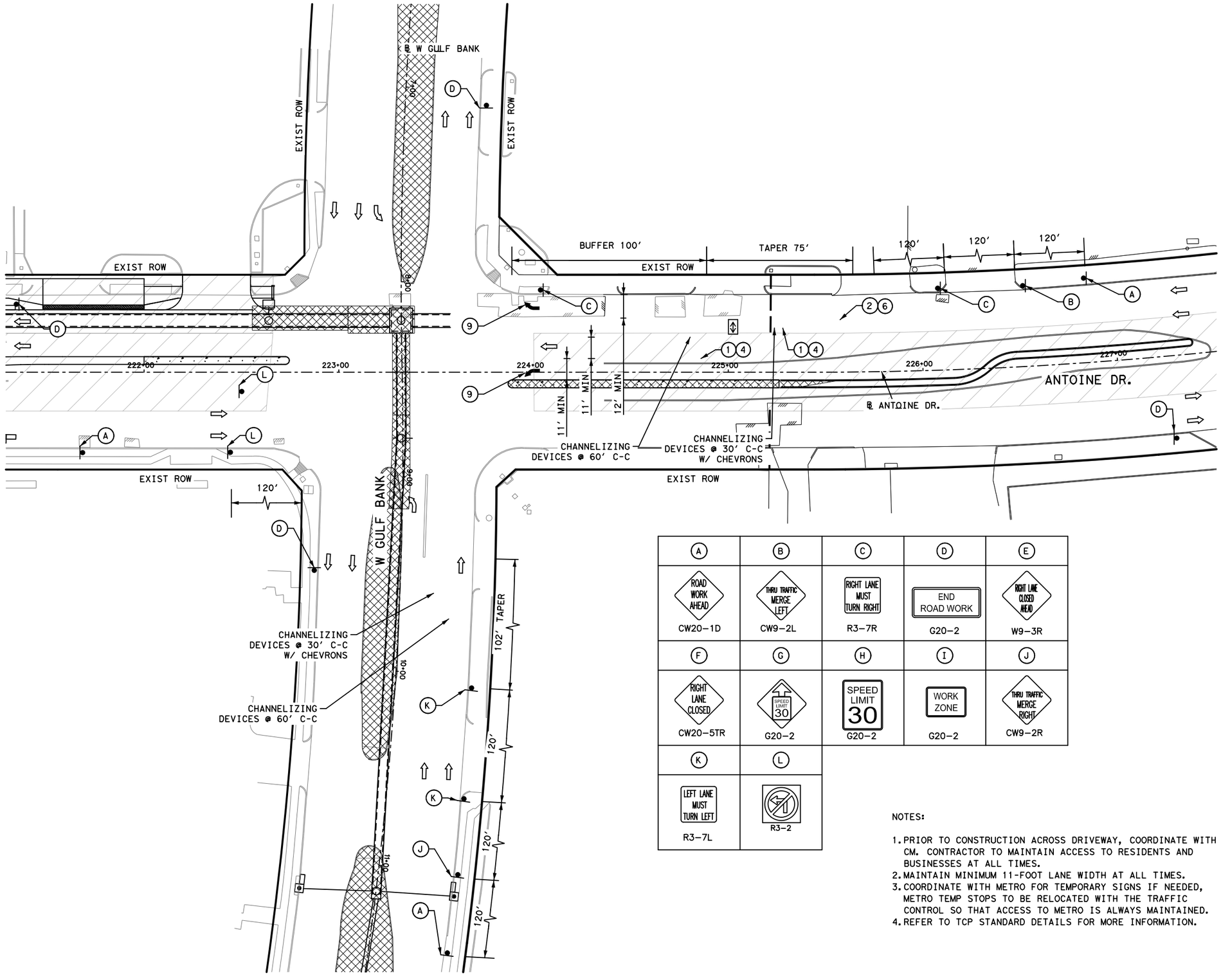

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE W/ ROAD CLOSED SIGN
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS

1. REMOVABLE PAV MRK BUTTONS TY W
2. REMOVABLE PAV MRK BUTTONS TY Y
3. REMOVABLE PAV MRK BUTTONS W STOP BAR
4. REMOVABLE PAV MRK (REFLECTOR) TY I-C
5. REMOVABLE PAV MRK (REFLECTOR) TY A-A
6. REMOVABLE PAV MRK (REFLECTOR) TY I-A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
10. REMOVABLE PAV MRK BUTTONS DBL ARROW
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
ROAD WORK AHEAD CW20-1D	THRU TRAFFIC MERGE LEFT CW9-2L	RIGHT LANE MUST TURN RIGHT R3-7R	END ROAD WORK G20-2	RIGHT LANE CLOSED AHEAD W9-3R
Ⓕ	Ⓖ	Ⓗ	Ⓘ	Ⓙ
RIGHT LANE CLOSED CW20-5TR	SPEED LIMIT 30 G20-2	SPEED LIMIT 30 G20-2	WORK ZONE G20-2	THRU TRAFFIC MERGE RIGHT CW9-2R
Ⓚ	Ⓛ			
LEFT LANE MUST TURN LEFT R3-7L	R3-2			

NOTES:

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4. REFER TO TCP STANDARD DETAILS FOR MORE INFORMATION.

N

0' 25' 50'

SCALE IN FEET

No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN PHASE 4 STEP 6

SHEET 7 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO 105 OF 718	

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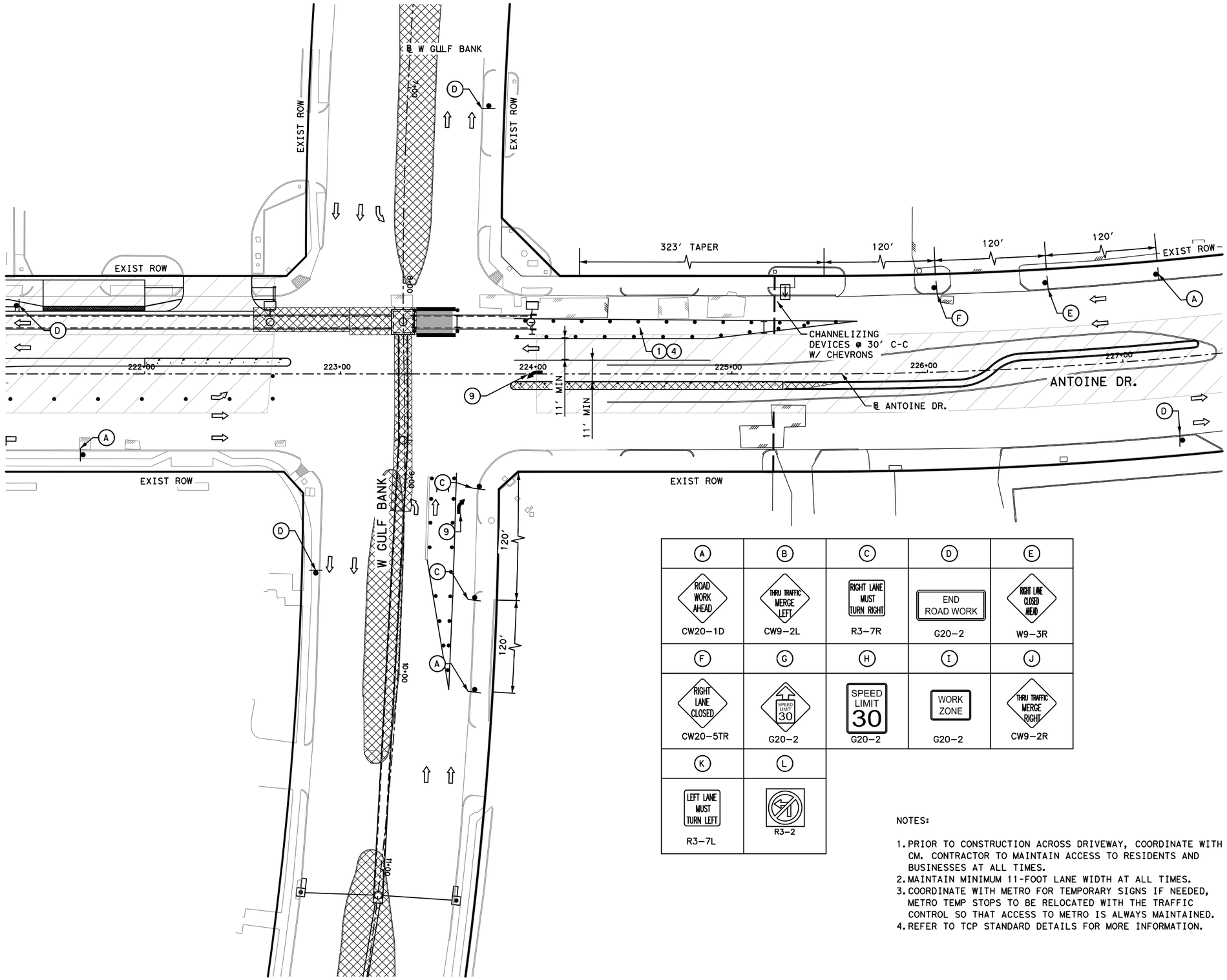

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE W/ ROAD CLOSED SIGN
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS

1. REMOVABLE PAV MRK BUTTONS TY W
2. REMOVABLE PAV MRK BUTTONS TY Y
3. REMOVABLE PAV MRK BUTTONS W STOP BAR
4. REMOVABLE PAV MRK (REFLECTOR) TY I-C
5. REMOVABLE PAV MRK (REFLECTOR) TY A-A
6. REMOVABLE PAV MRK (REFLECTOR) TY I-A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
10. REMOVABLE PAV MRK BUTTONS DBL ARROW
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

APP.	DATE	REVISIONS

A	B	C	D	E
ROAD WORK AHEAD CW20-1D	THRU TRAFFIC MERGE LEFT CW9-2L	RIGHT LANE MUST TURN RIGHT R3-7R	END ROAD WORK G20-2	RIGHT LANE CLOSED AHEAD W9-3R
F	**G**	**H**	**I**	**J**
RIGHT LANE CLOSED CW20-5TR	SPEED LIMIT 30 G20-2	SPEED LIMIT 30 G20-2	WORK ZONE G20-2	THRU TRAFFIC MERGE RIGHT CW9-2R
K	**L**			
LEFT LANE MUST TURN LEFT R3-7L	R3-2			

NOTES:

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN PHASE 4 STEP 7

SHEET 8 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO 106 OF 718	

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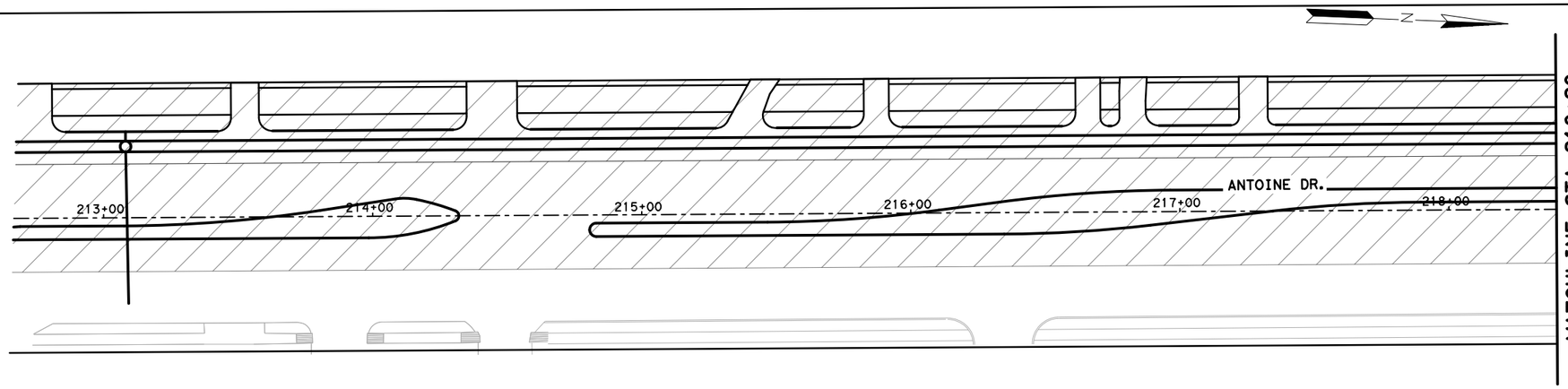

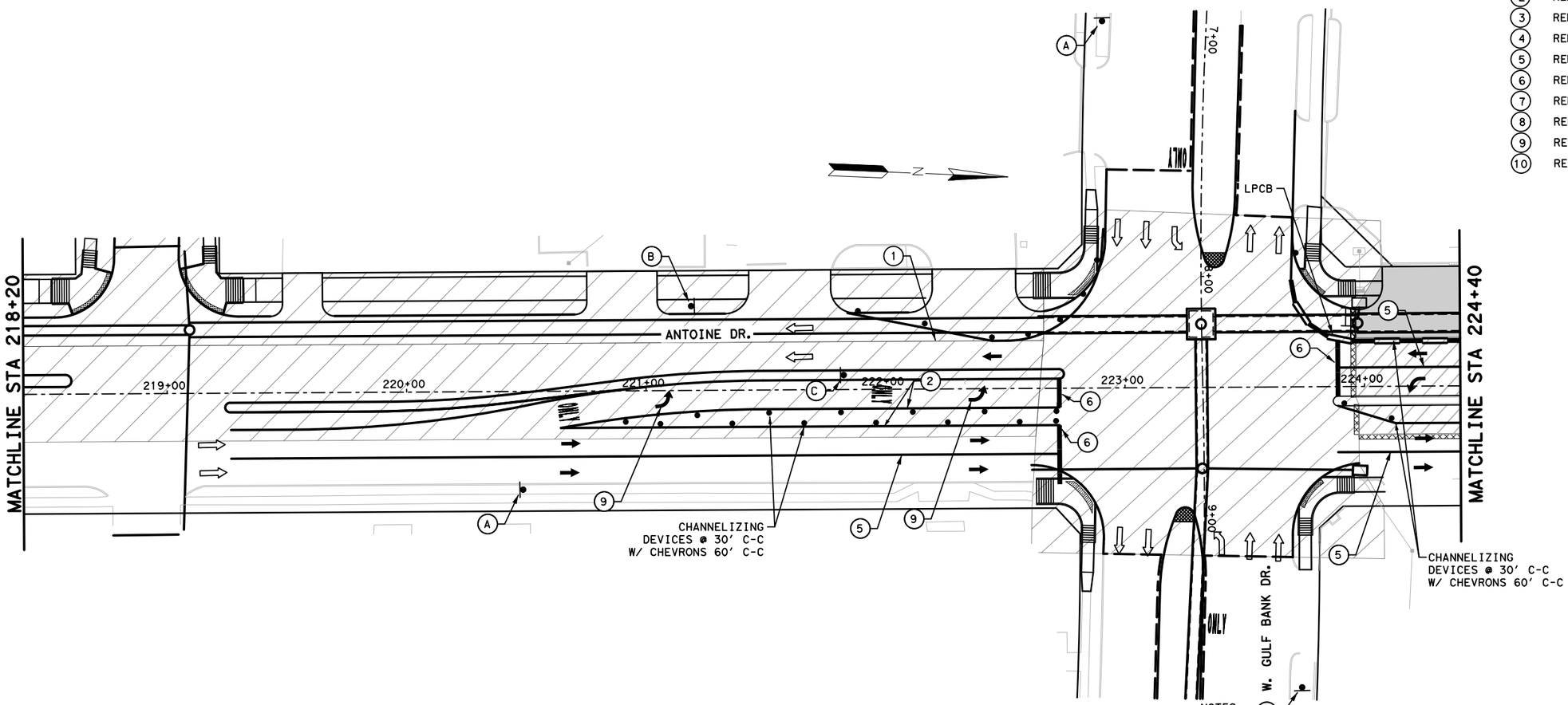

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS
- TD — TEMPORARY DRAINAGE: CONTRACTOR TO TIE EXISTING TO PROPOSED AS NECESSARY

1. REMOVABLE PAV MRK 4" SOL W
2. REMOVABLE PAV MRK 4" SOL Y
3. REMOVABLE PAV MRK 4" CATTRAC W
4. REMOVABLE PAV MRK 4" DBL SOL Y
5. REMOVABLE PAV MRK 8" SOL W
6. REMOVABLE PAV MRK 24" W STOP BAR
7. REMOVABLE PAV MRK (REFLECTOR) TY II A-A
8. REMOVABLE PAV MRK ARROW
9. REMOVABLE PAV MRK LT ARROW
10. REMOVABLE PAV MRK "ONLY"

REVISIONS			
No.	DATE		APP.

A	B	C
ROAD WORK AHEAD	END ROAD WORK	ONLY
CW20-1D	G20-2	R3-5L

NOTES:

1. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY, COORDINATE WITH CM. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES.
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0' 25' 50'
SCALE IN FEET

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Houston, Texas 77079
713-782-0042
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131531
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL
PHASE 5 STEP 1
STA 213+00 TO STA 224+40

SHEET 1 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 107 OF 718	

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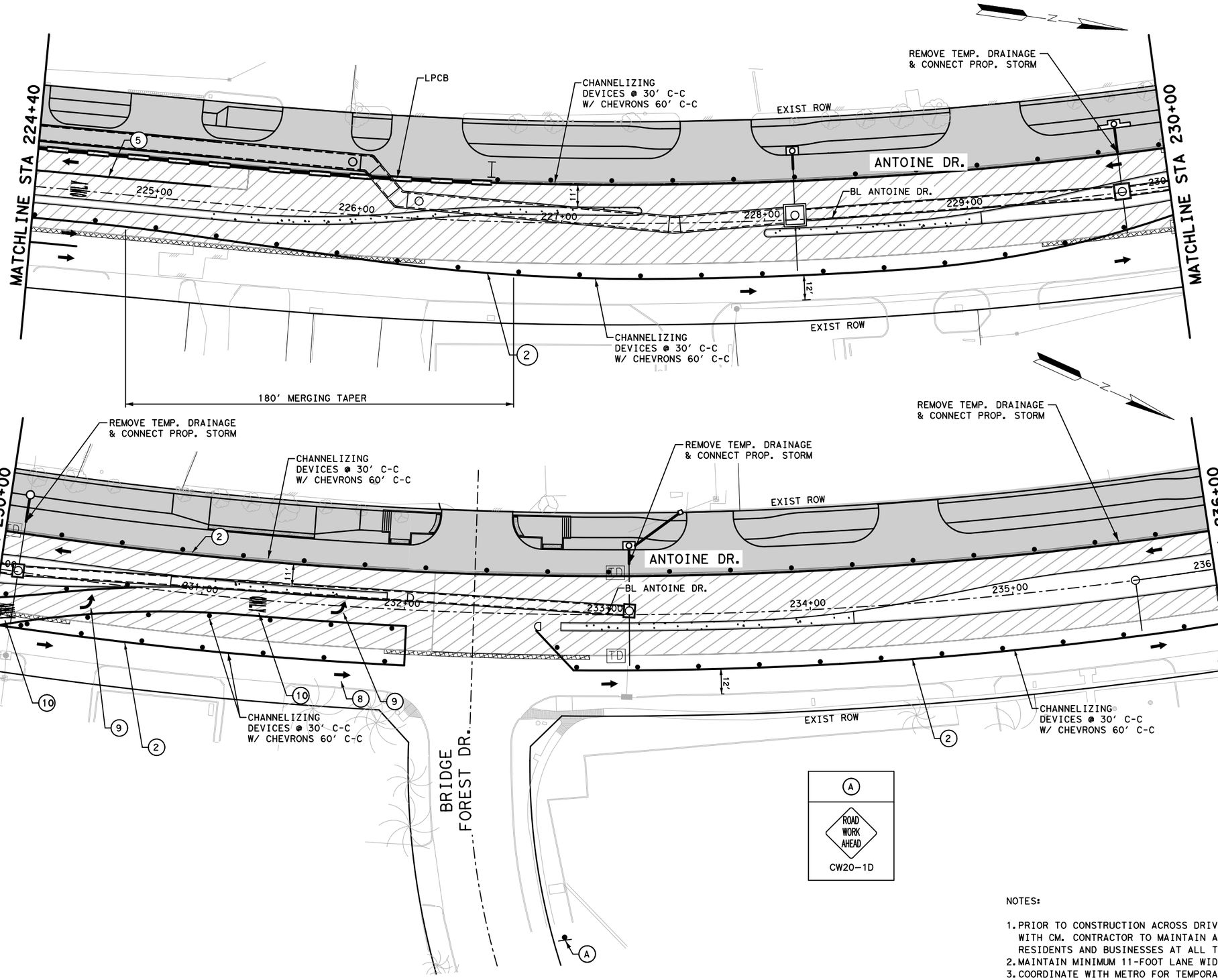

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
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1. REMOVABLE PAV MRK 4" SOL W
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4. REMOVABLE PAV MRK 4" DBL SOL Y
5. REMOVABLE PAV MRK 8" SOL W
6. REMOVABLE PAV MRK 24" W STOP BAR
7. REMOVABLE PAV MRK (REFLECTOR) TY II A-A
8. REMOVABLE PAV MRK ARROW
9. REMOVABLE PAV MRK LT ARROW
10. REMOVABLE PAV MRK "ONLY"

NOTES:

1. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY, COORDINATE WITH CM. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES.
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No.	DATE	REVISIONS	APP.

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www.vs-eng.com

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131531
10/23/2025
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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PHASE 5 STEP 1 STA 224+40 TO STA 236+00

SHEET 2 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 108 OF 718	

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MAYWOOD FOREST DRIVE TO REMAIN OPEN DURING INTERSECTION CONSTRUCTION. INTERSECTION CONSTRUCTION TO BE COMPLETED DURING THE WEEKEND. REFERENCE PHASE 5 STEP 1 PINCAY OAKS DR. CLOSURE DETOUR PLAN

PINCAY OAKS DR.

MATCHLINE STA 236+00

MATCHLINE STA 242+00

MATCHLINE STA 242+00

MATCHLINE STA 248+00

ANTOINE DR.

BL ANTOINE DR.

EXIST ROW

CHANNELIZING DEVICES @ 30' C-C W/ CHEVRONS 60' C-C

REMOVE TEMP. DRAINAGE & CONNECT PROP. STORM

REMOVE TEMP. DRAINAGE & CONNECT PROP. STORM

CHANNELIZING DEVICES @ 30' C-C W/ CHEVRONS 60' C-C

CHANNELIZING DEVICES @ 30' C-C W/ CHEVRONS 60' C-C

CHANNELIZING DEVICES @ 30' C-C W/ CHEVRONS 60' C-C

CHANNELIZING DEVICES @ 30' C-C W/ CHEVRONS 60' C-C

REGENCY LN. (PRIVATE)

WINDSOR FOREST DR.

EXIST ROW

EXIST ROW

EXIST ROW

236+00

237+00

238+00

239+00

240+00

241+00

242

243+00

244+00

245+00

246+00

247+00

248

11'

12'

TD

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS
- TD — TEMPORARY DRAINAGE: CONTRACTOR TO TIE EXISTING TO PROPOSED AS NECESSARY

1. REMOVABLE PAV MRK 4" SOL W
2. REMOVABLE PAV MRK 4" SOL Y
3. REMOVABLE PAV MRK 4" CATTRAC W
4. REMOVABLE PAV MRK 4" DBL SOL Y
5. REMOVABLE PAV MRK 8" SOL W
6. REMOVABLE PAV MRK 24" W STOP BAR
7. REMOVABLE PAV MRK (REFLECTOR) TY II A-A
8. REMOVABLE PAV MRK ARROW
9. REMOVABLE PAV MRK LT ARROW
10. REMOVABLE PAV MRK "ONLY"

A

ROAD WORK AHEAD

CW20-1D

0' 25' 50'

SCALE IN FEET

NOTES:

1. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY, COORDINATE WITH CM. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES.
2. MAINTAIN MINIMUM 11-FOOT LANE WIDTH AT ALL TIMES.
3. COORDINATE WITH METRO FOR TEMPORARY SIGNS IF NEEDED, METRO TEMP STOPS TO BE RELOCATED WITH THE TRAFFIC CONTROL SO THAT ACCESS TO METRO IS ALWAYS MAINTAINED.
4. REFER TO TCP STANDARD DETAILS FOR MORE INFORMATION.

No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PHASE 5 STEP 1 STA 236+00 TO STA 248+00

SHEET 3 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 109 OF 718	

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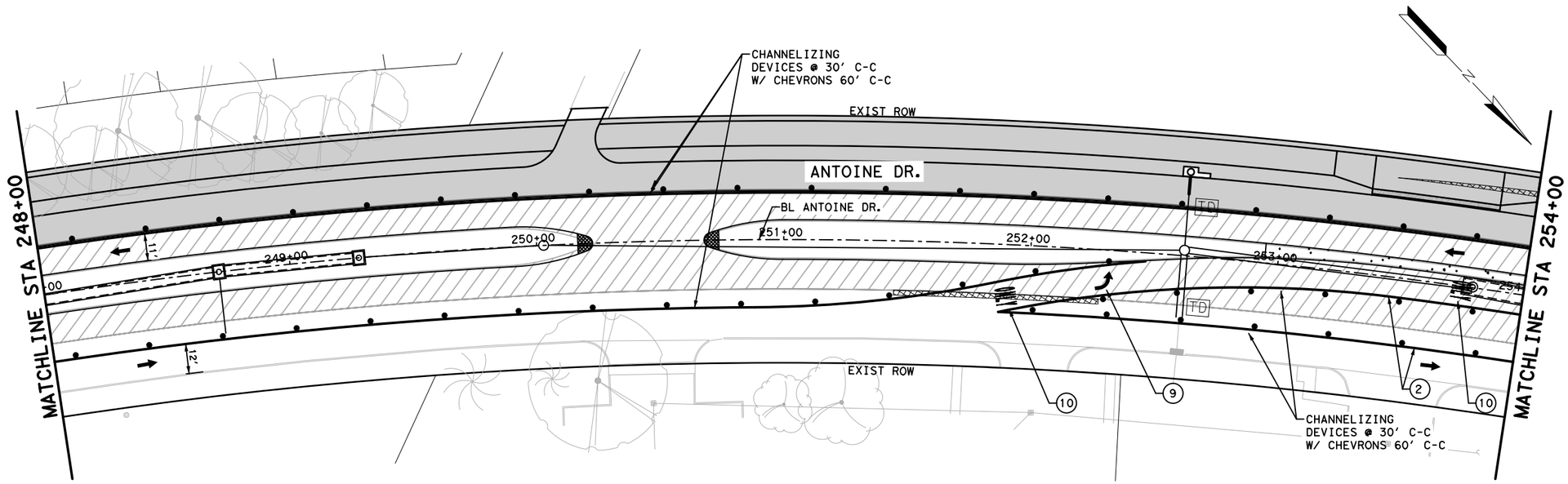
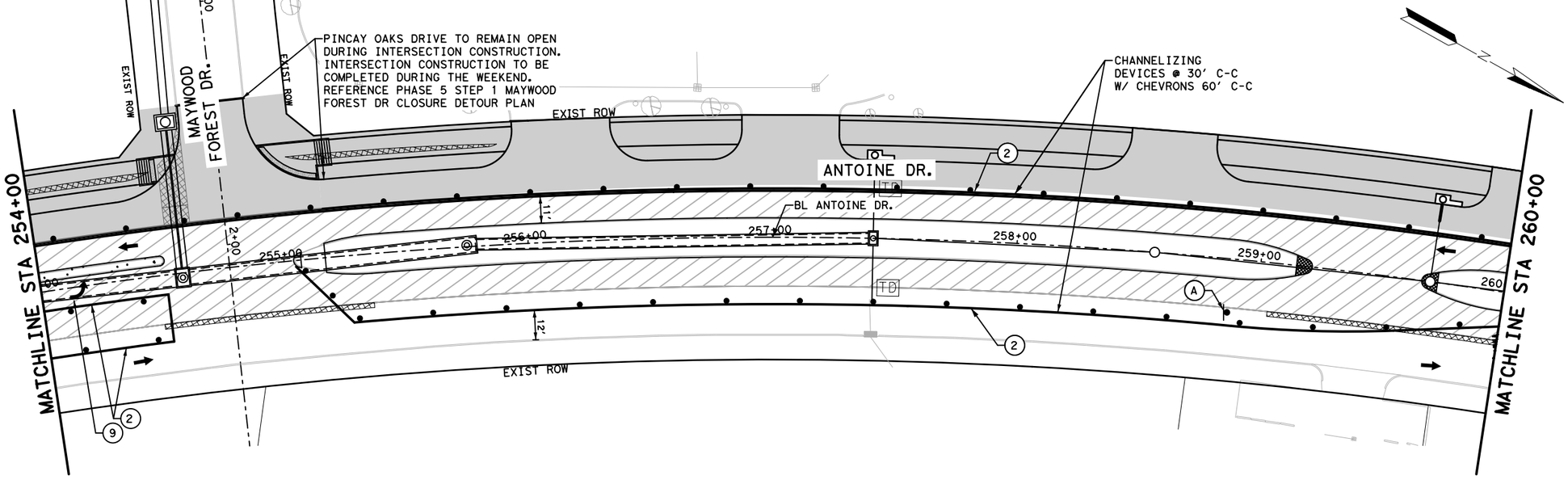




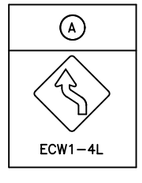
LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS
- TD — TEMPORARY DRAINAGE: CONTRACTOR TO TIE EXISTING TO PROPOSED AS NECESSARY

1. REMOVABLE PAV MRK 4" SOL W
2. REMOVABLE PAV MRK 4" SOL Y
3. REMOVABLE PAV MRK 4" CATTRAC W
4. REMOVABLE PAV MRK 4" DBL SOL Y
5. REMOVABLE PAV MRK 8" SOL W
6. REMOVABLE PAV MRK 24" W STOP BAR
7. REMOVABLE PAV MRK (REFLECTOR) TY II A-A
8. REMOVABLE PAV MRK ARROW
9. REMOVABLE PAV MRK LT ARROW
10. REMOVABLE PAV MRK "ONLY"

No.	DATE	REVISIONS	APP.

0' 25' 50'
SCALE IN FEET



NOTES:

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL
PHASE 5 STEP 1
STA 248+00 TO STA 260+00

SHEET 4 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 110 OF 718	

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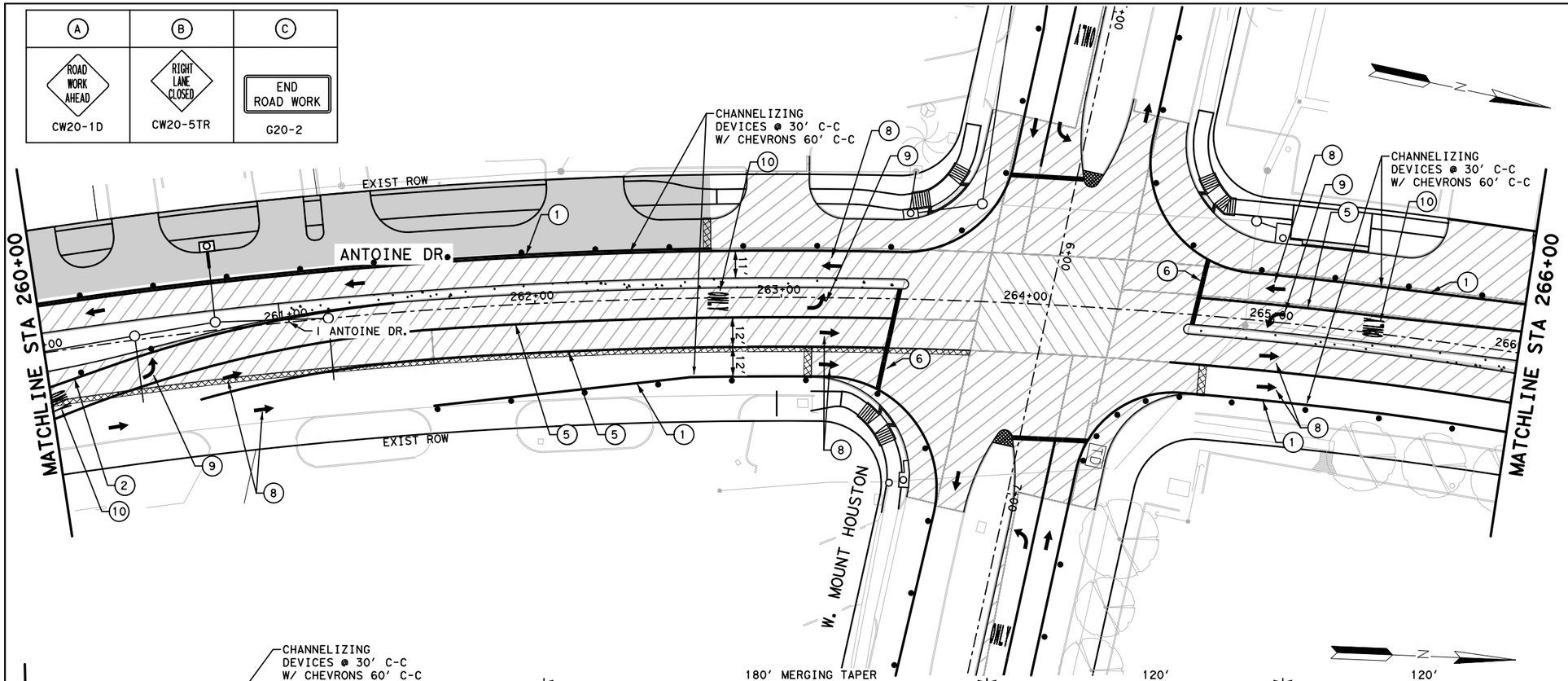
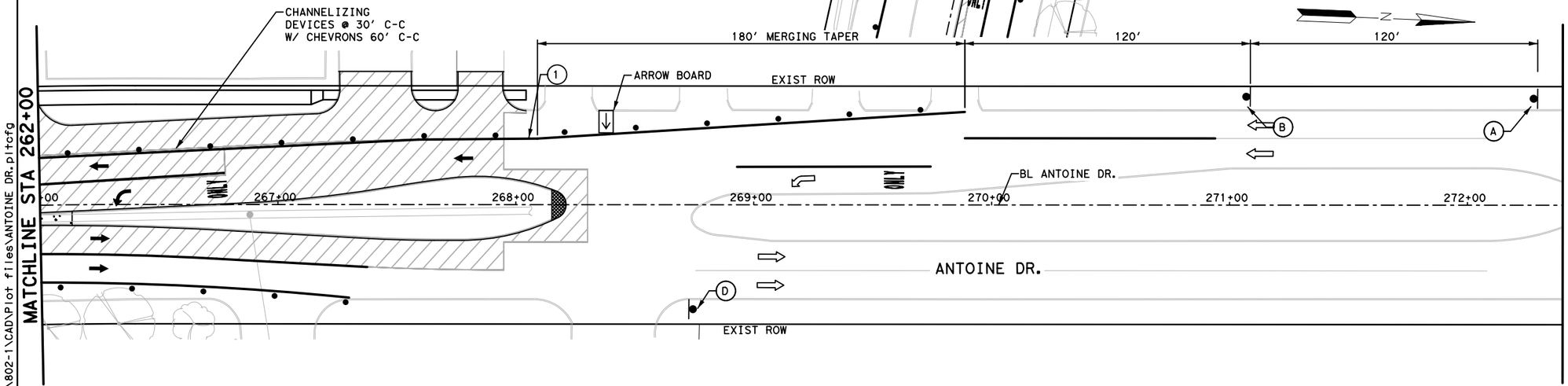
A	B	C
ROAD WORK AHEAD CW20-1D	RIGHT LANE CLOSED CW20-5TR	END ROAD WORK G20-2





LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS
- TD — TEMPORARY DRAINAGE: CONTRACTOR TO TIE EXISTING TO PROPOSED AS NECESSARY

1. REMOVABLE PAV MRK 4" SOL W
2. REMOVABLE PAV MRK 4" SOL Y
3. REMOVABLE PAV MRK 4" CATTRAC W
4. REMOVABLE PAV MRK 4" DBL SOL Y
5. REMOVABLE PAV MRK 8" SOL W
6. REMOVABLE PAV MRK 24" W STOP BAR
7. REMOVABLE PAV MRK (REFLECTOR) TY II A-A
8. REMOVABLE PAV MRK ARROW
9. REMOVABLE PAV MRK LT ARROW
10. REMOVABLE PAV MRK "ONLY"

No.	DATE	REVISIONS	APP:

0' 25' 50'
SCALE IN FEET

NOTES:

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL
PHASE 5 STEP 1
STA 260+00 TO END PROJECT

SHEET 5 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 111 OF 718	

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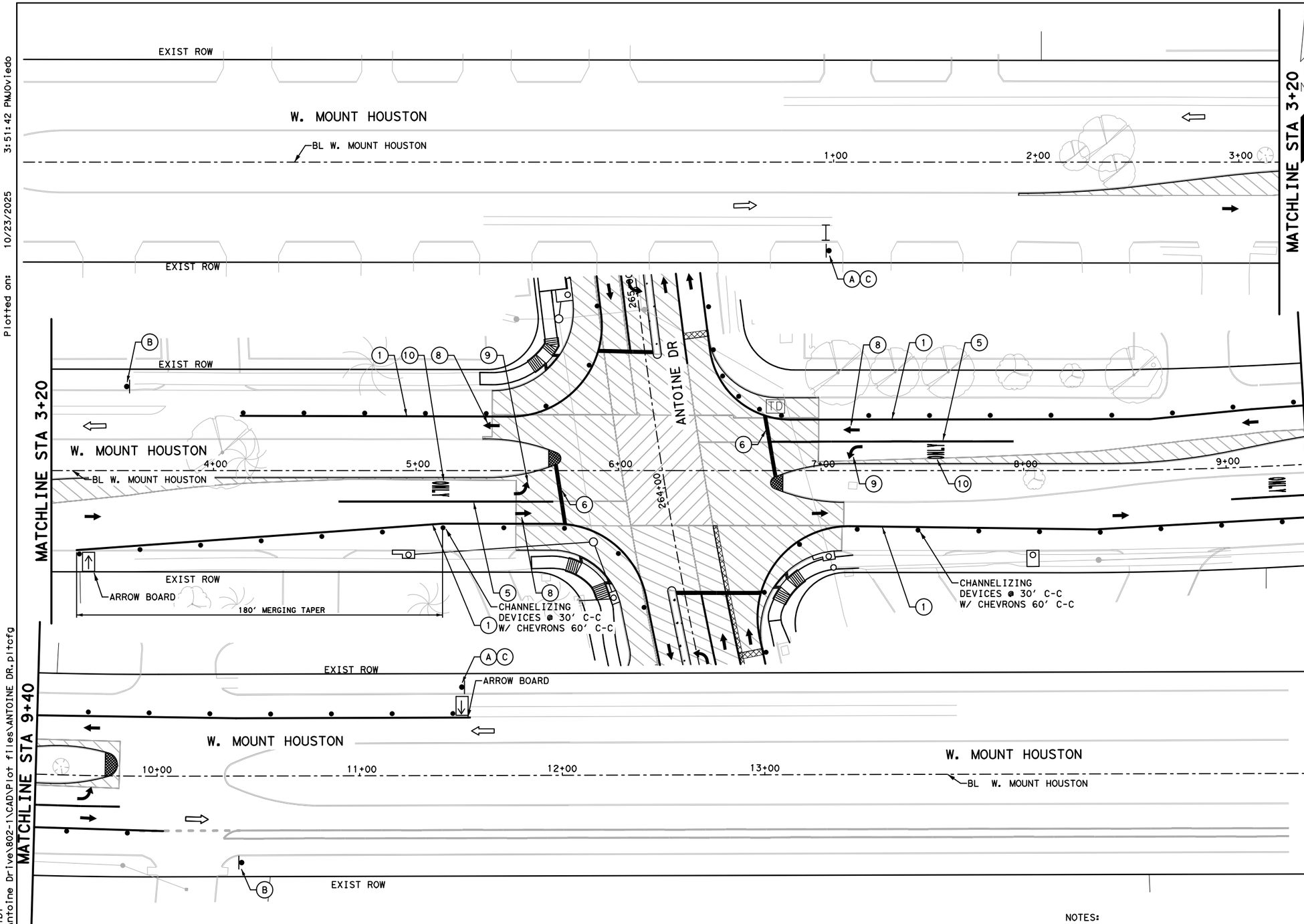

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS
- TD TEMPORARY DRAINAGE: CONTRACTOR TO TIE EXISTING TO PROPOSED AS NECESSARY
- 1 REMOVABLE PAV MRK 4" SOL W
- 2 REMOVABLE PAV MRK 4" SOL Y
- 3 REMOVABLE PAV MRK 4" CATTRAC W
- 4 REMOVABLE PAV MRK 4" DBL SOL Y
- 5 REMOVABLE PAV MRK 8" SOL W
- 6 REMOVABLE PAV MRK 24" W STOP BAR
- 7 REMOVABLE PAV MRK (REFLECTOR) TY II A-A
- 8 REMOVABLE PAV MRK ARROW
- 9 REMOVABLE PAV MRK LT ARROW
- 10 REMOVABLE PAV MRK "ONLY"

0' 25' 50'
SCALE IN FEET

A	B	C
ROAD WORK AHEAD	END ROAD WORK	DETOUR
CW20-1D	G20-2	M4-9

NOTES:

1. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY, COORDINATE WITH CM. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES.
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4. REFER TO TCP STANDARD DETAILS FOR MORE INFORMATION.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
TRAFFIC CONTROL
PHASE 5 STEP 1
W. MOUNT HOUSTON
BEGIN PROJECT TO
END PROJECT

SHEET 6 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 112 OF 718	

No.	DATE	REVISIONS	APP.

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N

No.	DATE	REVISIONS	APP.

A	B	C
MAYWOOD FOREST M4-9N	ANTOINE M4-9N	DETOUR M4-9S
D	**E**	**F**
DETOUR M4-9R	DETOUR M4-9L	END DETOUR M4-8A
G	**H**	**I**
DETOUR AHEAD M4-8A	L3-2	R3-2
J	LEGEND	
ROAD CLOSED R11-2	WORK ZONE TYPE III BARRICADE	

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL
PHASE 5 STEP 1
MAYWOOD FOREST DR
CLOSURE DETOUR

SHEET 7 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 113 OF 718	

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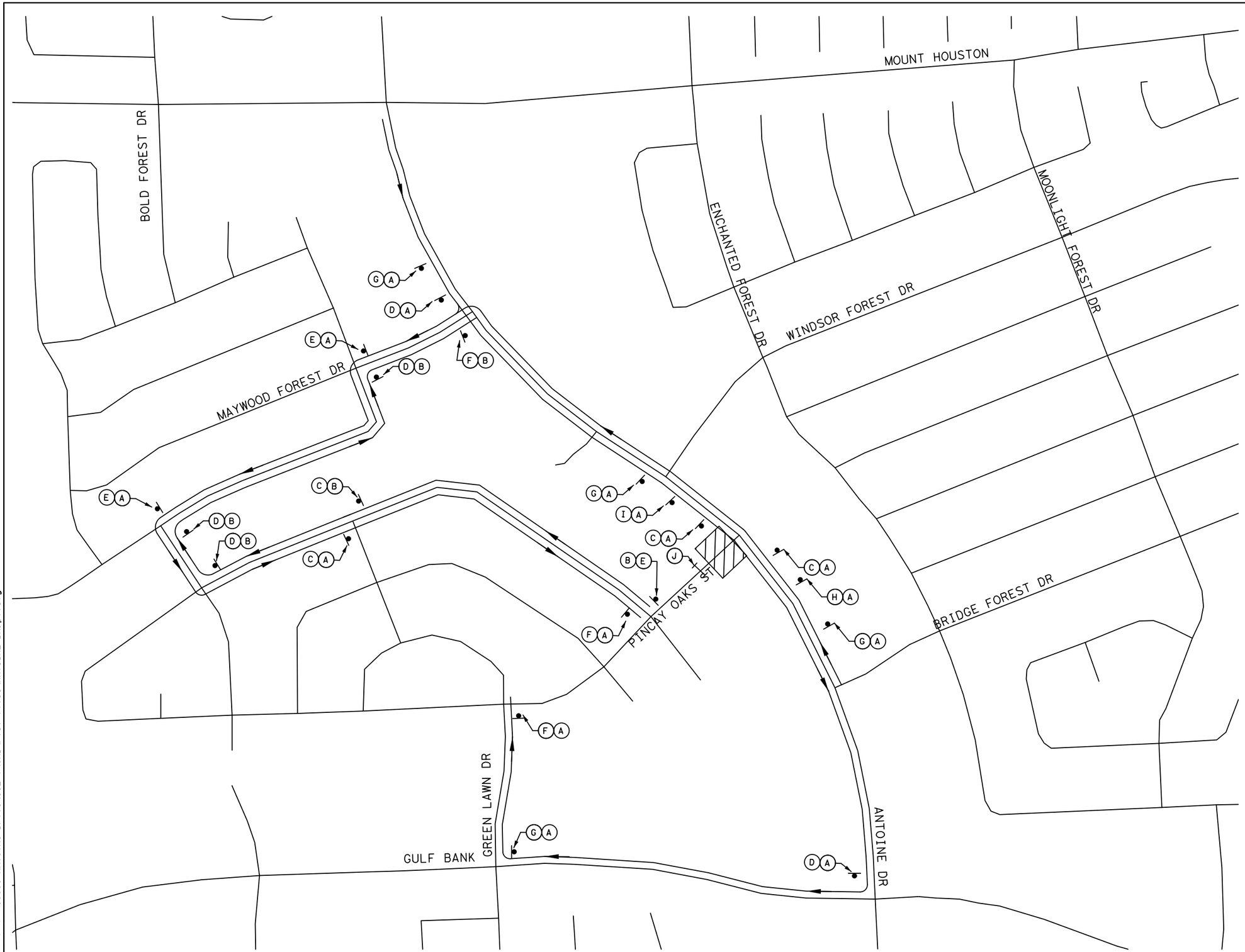

NOTES:

1. SIGNS SHALL BE PLACED TYPICALLY @ 120' ON ALL STREETS

REVISIONS			
No.	DATE		APP.

A	B	C
PINCAY OAKS M4-9N	ANTOINE M4-9N	DETOUR M4-9S
D	E	F
DETOUR M4-9R	DETOUR M4-9L	END DETOUR M4-8A
G	H	I
DETOUR AHEAD M4-8A	L3-2	R3-2
J	LEGEND	
ROAD CLOSED R11-2	WORK ZONE TYPE III BARRICADE	

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PHASE 5 STEP 1 PINCAY OAKS DR CLOSURE DETOUR

SHEET 8 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 114 OF 718	

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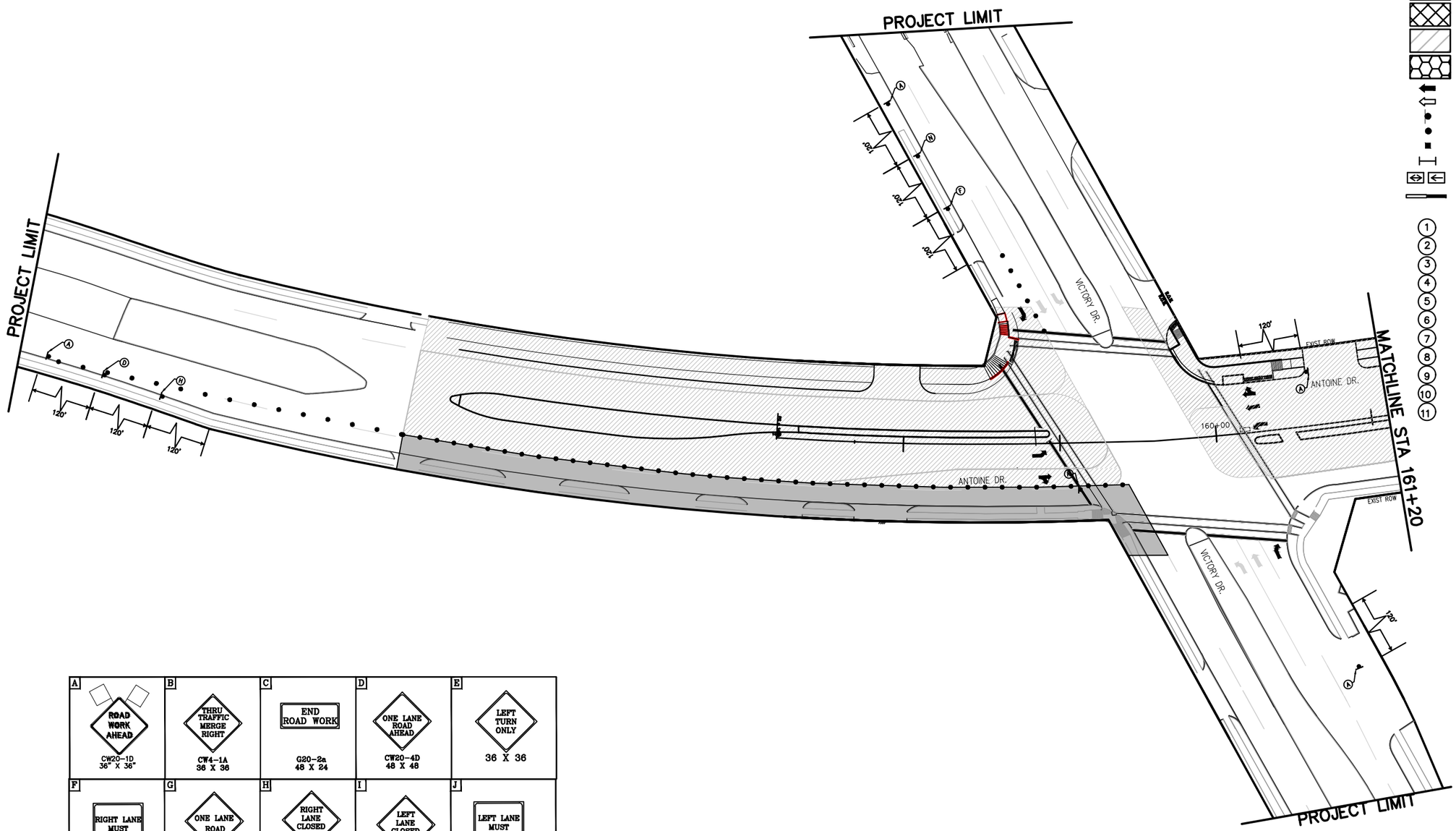

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE W/ ROAD CLOSED SIGN
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS

1. REMOVABLE PAV MRK BUTTONS TY W
2. REMOVABLE PAV MRK BUTTONS TY Y
3. REMOVABLE PAV MRK BUTTONS W STOP BAR
4. REMOVABLE PAV MRK (REFLECTOR) TY I-C
5. REMOVABLE PAV MRK (REFLECTOR) TY A-A
6. REMOVABLE PAV MRK (REFLECTOR) TY I-A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
10. REMOVABLE PAV MRK BUTTONS DBL ARROW
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

APP.	REVISIONS	DATE	No.

N

0' 25' 50'
SCALE IN FEET

A ROAD WORK AHEAD CW20-1D 36" X 36"	B THRU TRAFFIC MERGE RIGHT CW4-1A 36 X 36	C END ROAD WORK G20-2a 48 X 24	D ONE LANE ROAD AHEAD CW20-4D 48 X 48	E LEFT TURN ONLY 36 X 36
F RIGHT LANE MUST TURN RIGHT	G ONE LANE ROAD CW20-4 36 X 36	H RIGHT LANE CLOSED 36 X 36	I LEFT LANE CLOSED CW20-5(1) 36 X 36	J LEFT LANE MUST TURN LEFT
K NO RIGHT TURN ON RED K-9763	L W16-5PR	M W16-5PL	N THRU TRAFFIC MERGE LEFT	O R4-7 24x30

NOTES:

1. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY, COORDINATE WITH CM. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES.
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4. REFER TO TCP STANDARD DETAILS FOR MORE INFORMATION.

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TX FIRM No.: F-13481

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www.NeduEngineers.com

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P.E. SERIAL No.: 79423
2026

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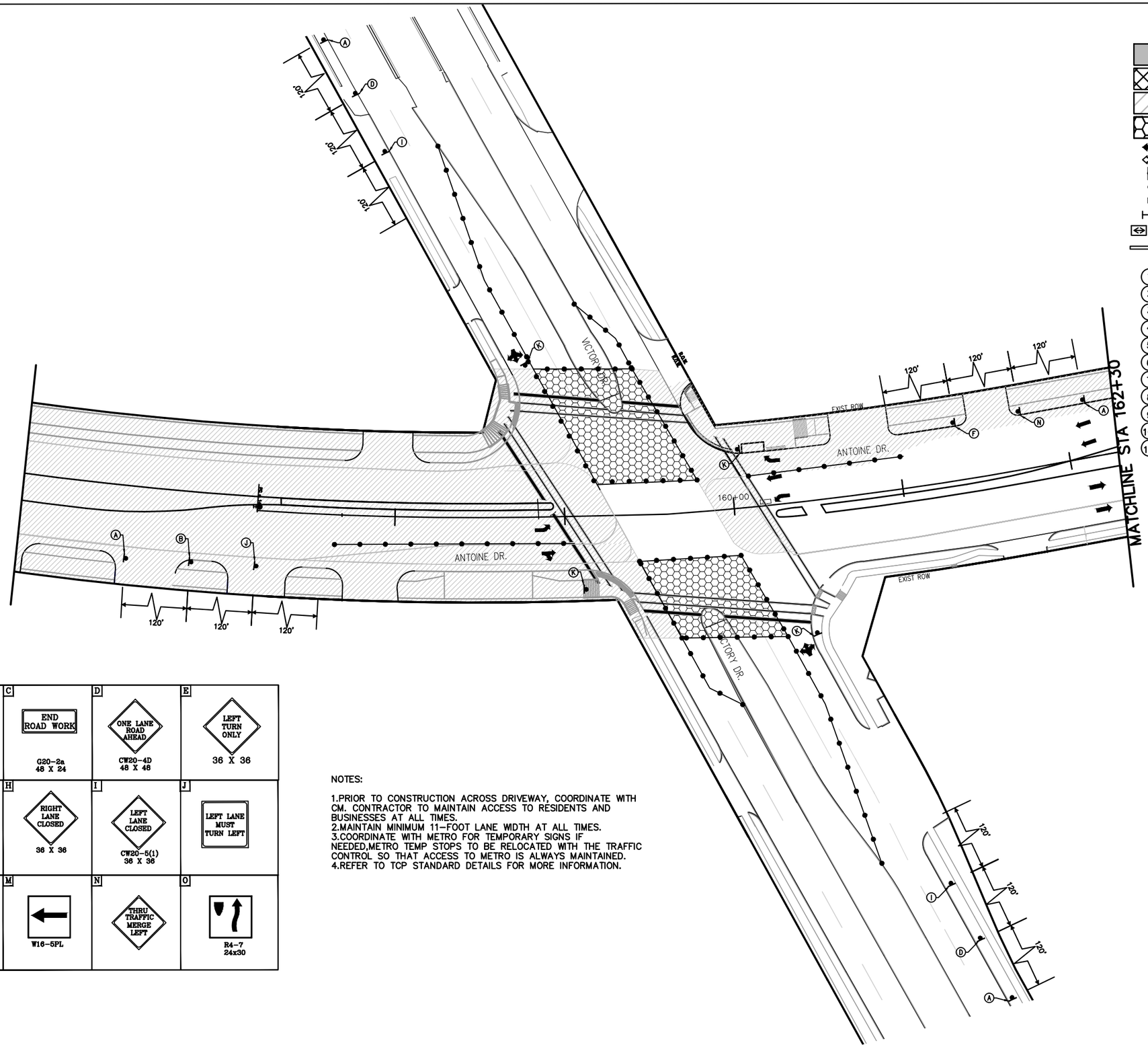
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 6 STEP 1

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 115 OF 718	



LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE W/ ROAD CLOSED SIGN
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS

1. REMOVABLE PAV MRK BUTTONS TY W
2. REMOVABLE PAV MRK BUTTONS TY Y
3. REMOVABLE PAV MRK BUTTONS W STOP BAR
4. REMOVABLE PAV MRK (REFLECTOR) TY I–C
5. REMOVABLE PAV MRK (REFLECTOR) TY A–A
6. REMOVABLE PAV MRK (REFLECTOR) TY I–A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
10. REMOVABLE PAV MRK BUTTONS DBL ARROW
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

APP.	REVISIONS	DATE	No.

N

0' 25' 50'
SCALE IN FEET

A ROAD WORK AHEAD CW20–1D 36" X 36"	B THRU TRAFFIC MERGE RIGHT CW4–1A 36 X 36	C END ROAD WORK G20–2a 48 X 24	D ONE LANE ROAD AHEAD CW20–4D 48 X 48	E LEFT TURN ONLY 36 X 36
F RIGHT LANE MUST TURN RIGHT	G ONE LANE ROAD CW20–4 36 X 36	H RIGHT LANE CLOSED 36 X 36	I LEFT LANE CLOSED CW20–5(1) 36 X 36	J LEFT LANE MUST TURN LEFT
K NO RIGHT TURN ON RED K–9763	L W16–5PR	M W16–5PL	N THRU TRAFFIC MERGE LEFT	O R4–7 24x30

NOTES:

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ENGINEER: NKEMDI I. OHALETE
P.E. SERIAL No.: 79423
2026

SURVEYED BY:
KUO & ASSOCIATES, INC.

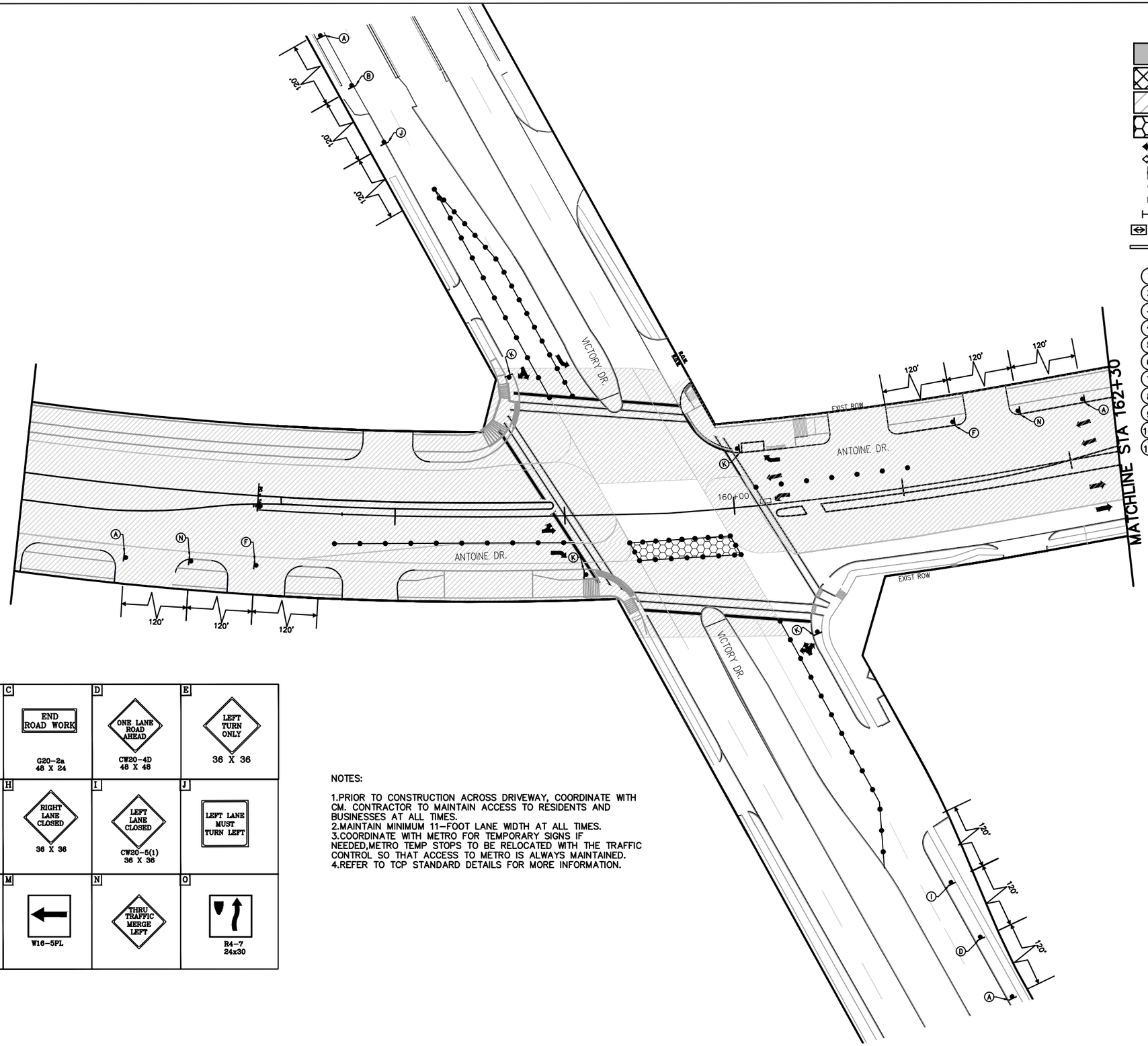
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
VICTORY DR. PAVING
STEP 1

SHEET 1 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N–100030–0GEC–3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 116 OF 718	



LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE W/ ROAD CLOSED SIGN
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS

1. REMOVABLE PAV MRK BUTTONS TY W
2. REMOVABLE PAV MRK BUTTONS TY Y
3. REMOVABLE PAV MRK BUTTONS W STOP BAR
4. REMOVABLE PAV MRK (REFLECTOR) TY I–C
5. REMOVABLE PAV MRK (REFLECTOR) TY A–A
6. REMOVABLE PAV MRK (REFLECTOR) TY I–A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
10. REMOVABLE PAV MRK BUTTONS DBL ARROW
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

APP.	REVISIONS	DATE	No.

N

0' 25' 50'
SCALE IN FEET

A ROAD WORK AHEAD CW20–1D 36" X 36"	B THRU TRAFFIC MERGE RIGHT CW4–1A 36 X 36	C END ROAD WORK G20–2a 48 X 24	D ONE LANE ROAD AHEAD CW20–4D 48 X 48	E LEFT TURN ONLY 36 X 36
F RIGHT LANE MUST TURN RIGHT	G ONE LANE ROAD CW20–4 36 X 36	H RIGHT LANE CLOSED 36 X 36	I LEFT LANE CLOSED CW20–5(1) 36 X 36	J LEFT LANE MUST TURN LEFT
K NO RIGHT TURN ON RED K–9763	L W16–5PR	M W16–5PL	N THRU TRAFFIC MERGE LEFT	O R4–7 24x30

NOTES:

1. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY, COORDINATE WITH CM. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES.
2. MAINTAIN MINIMUM 11–FOOT LANE WIDTH AT ALL TIMES.
3. COORDINATE WITH METRO FOR TEMPORARY SIGNS IF NEEDED, METRO TEMP STOPS TO BE RELOCATED WITH THE TRAFFIC CONTROL SO THAT ACCESS TO METRO IS ALWAYS MAINTAINED.
4. REFER TO TCP STANDARD DETAILS FOR MORE INFORMATION.

Texas Department of Transportation
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
VICTORY DR. PAVING
STEP 2

SHEET 2 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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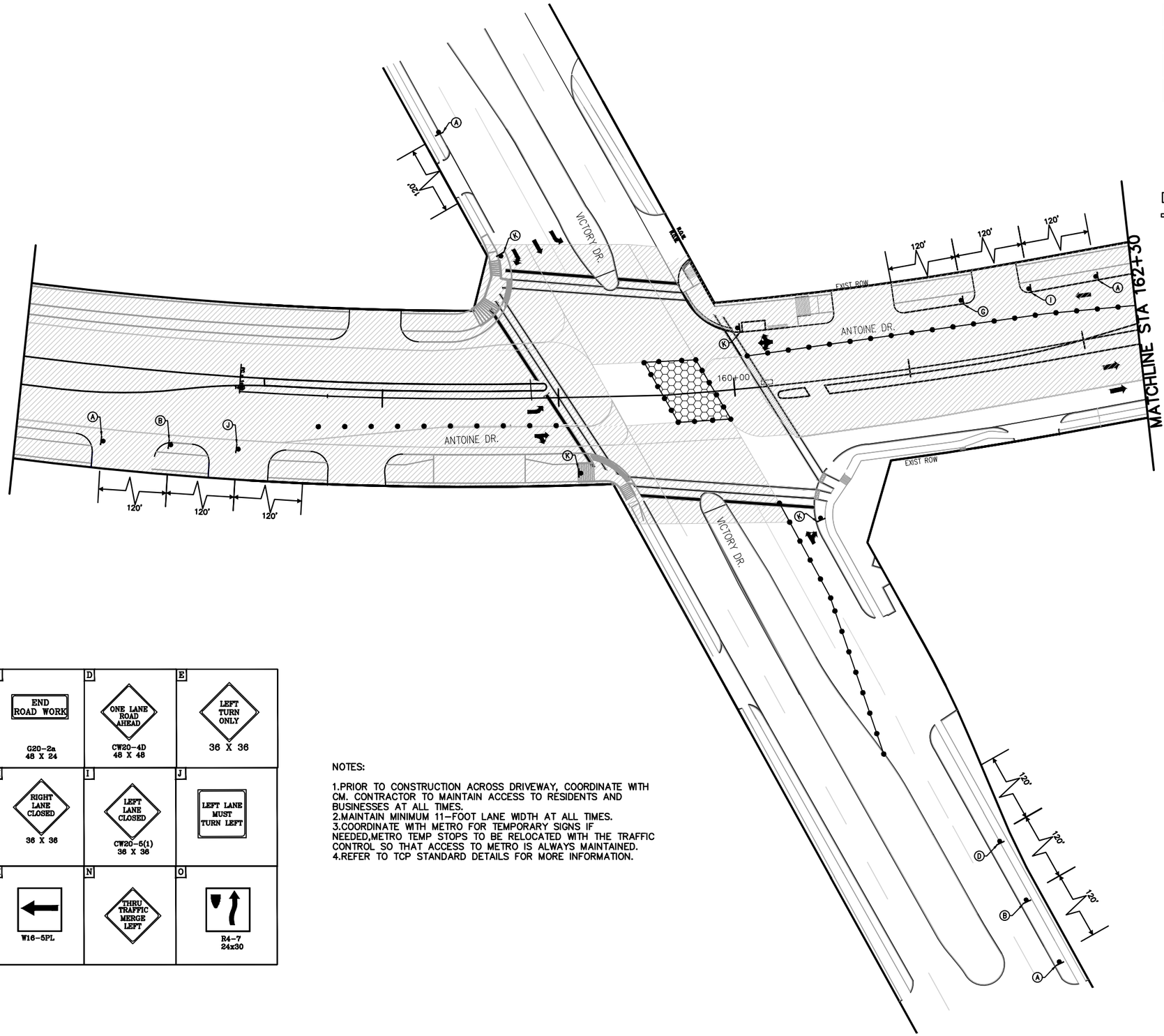
SHEET NO. 117 OF 718	



LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
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APP.	DATE	No.	REVISIONS

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K NO RIGHT TURN ON RED K-9763	L W16-5PR	M W16-5PL	N THRU TRAFFIC MERGE LEFT	O R4-7 24x30

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
VICTORY DR. PAVING
STEP 3

SHEET 3 OF 4

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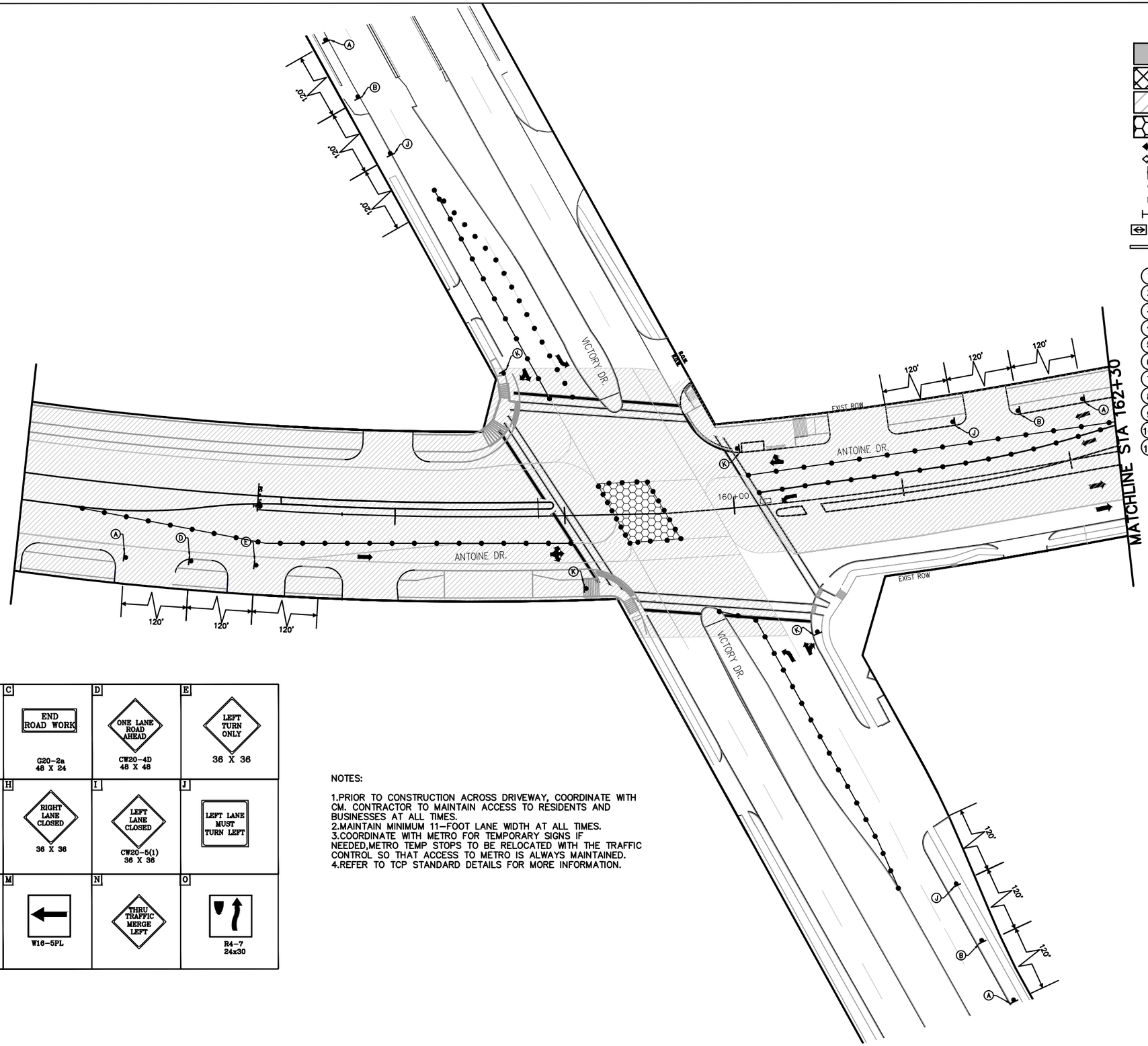
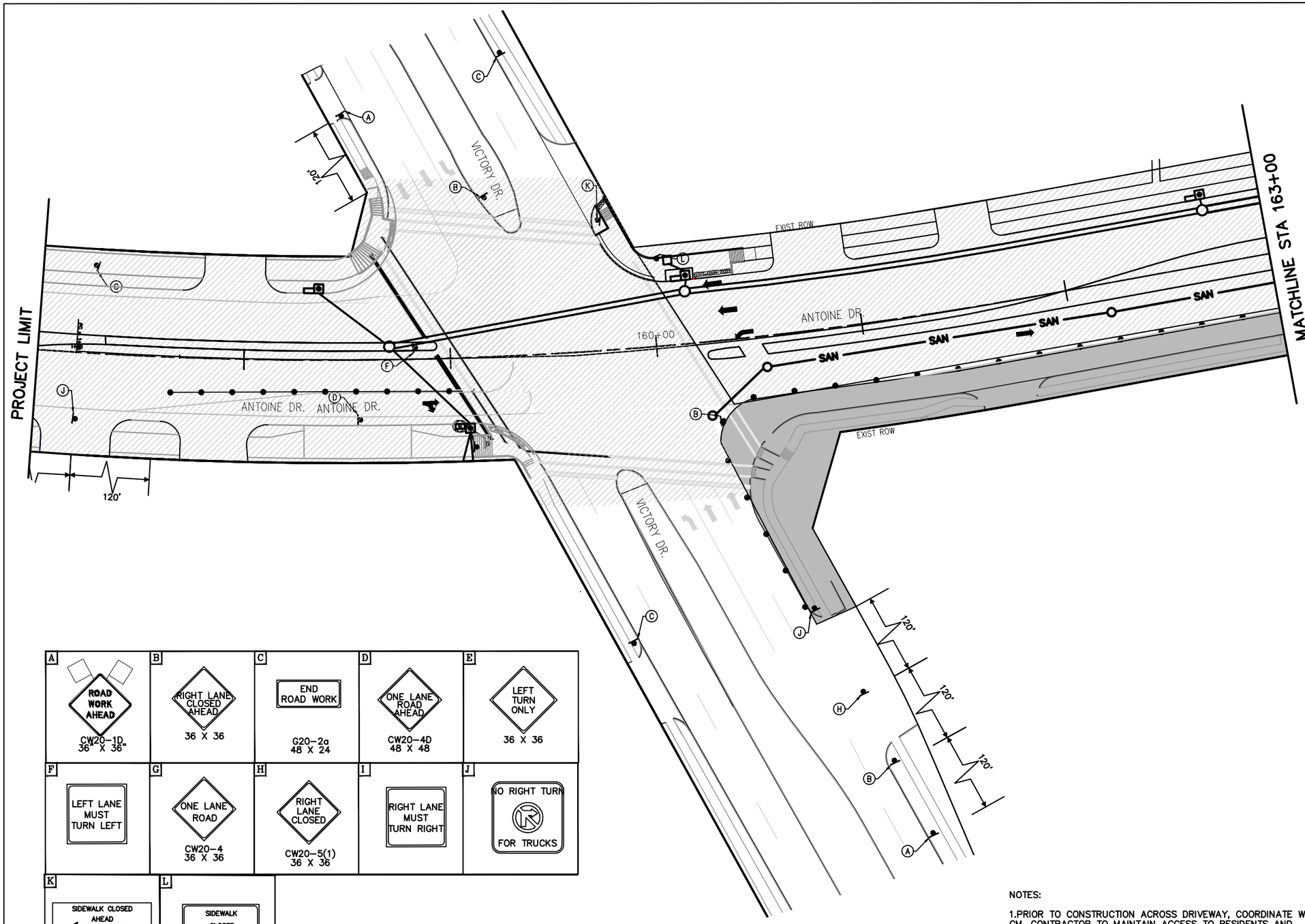
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 118 OF 718	


VICTORY DR.
ANTOINE DR.
EXIST ROW
160+00
MATCHLINE STA 162+30
120'
120'
120'



LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
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11. REMOVABLE PAV MRK BUTTONS TPL ARROW

No.	DATE	REVISIONS	APP.

N

0' 25' 50'
SCALE IN FEET

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F LEFT LANE MUST TURN LEFT	G ONE LANE ROAD CW20-4 36 X 36	H RIGHT LANE CLOSED CW20-5(1) 36 X 36	I RIGHT LANE MUST TURN RIGHT	J NO RIGHT TURN FOR TRUCKS
K SIDEWALK CLOSED AHEAD CROSS HERE R5-9A 24 X 15	L SIDEWALK CLOSED R5-8 24 X 12			

NOTES:

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 6 STEP2

SHEET 1 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
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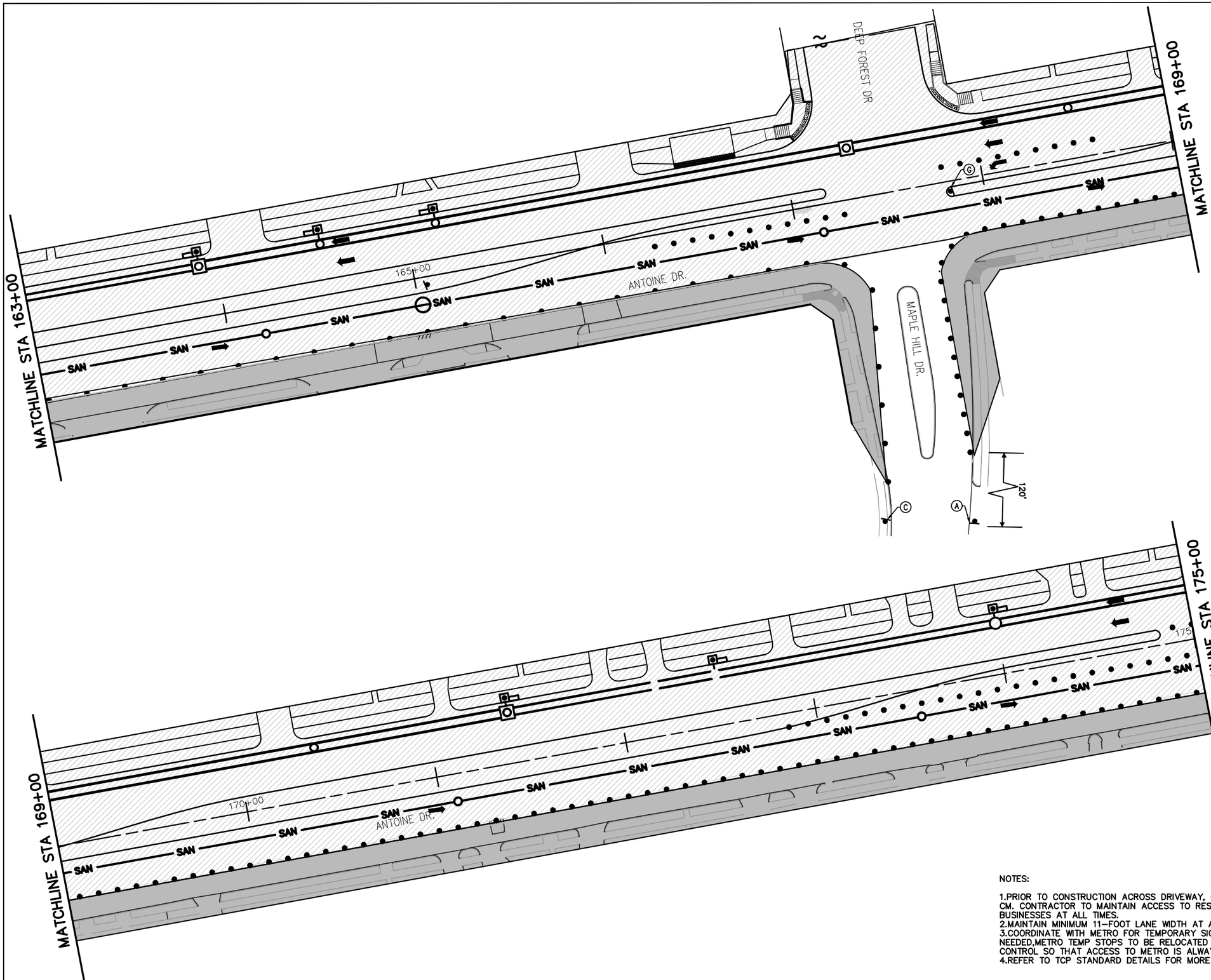
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 120 OF 718	



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No.	DATE	REVISIONS	APP.

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SCALE IN FEET

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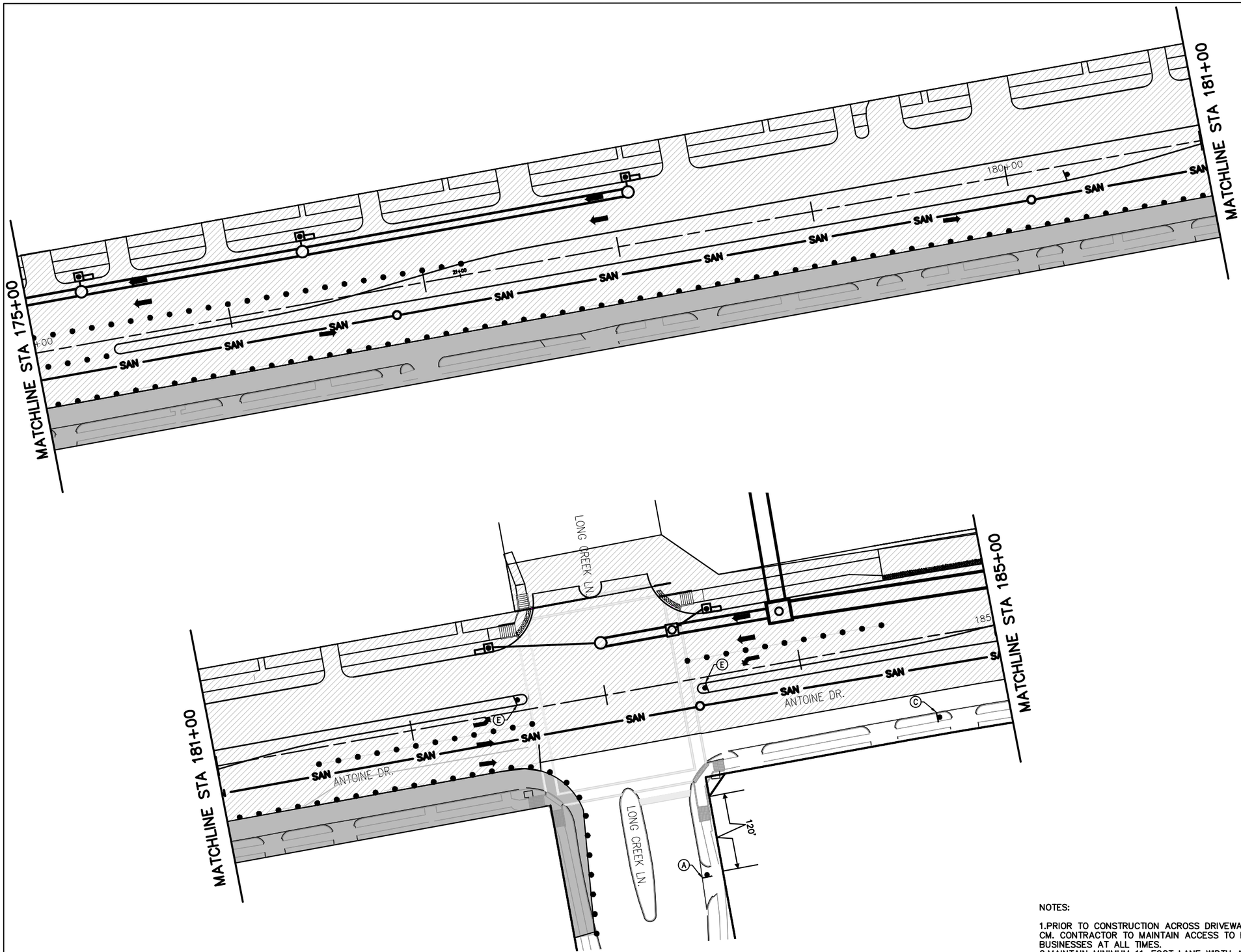
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 6 STEP2

SHEET 2 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 121 OF 718	



LEGEND

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11. REMOVABLE PAV MRK BUTTONS TPL ARROW

APP.	DATE	No.	REVISIONS

N

0' 25' 50'

SCALE IN FEET

NOTES:

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HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 6 STEP 2

SHEET 3 OF 3

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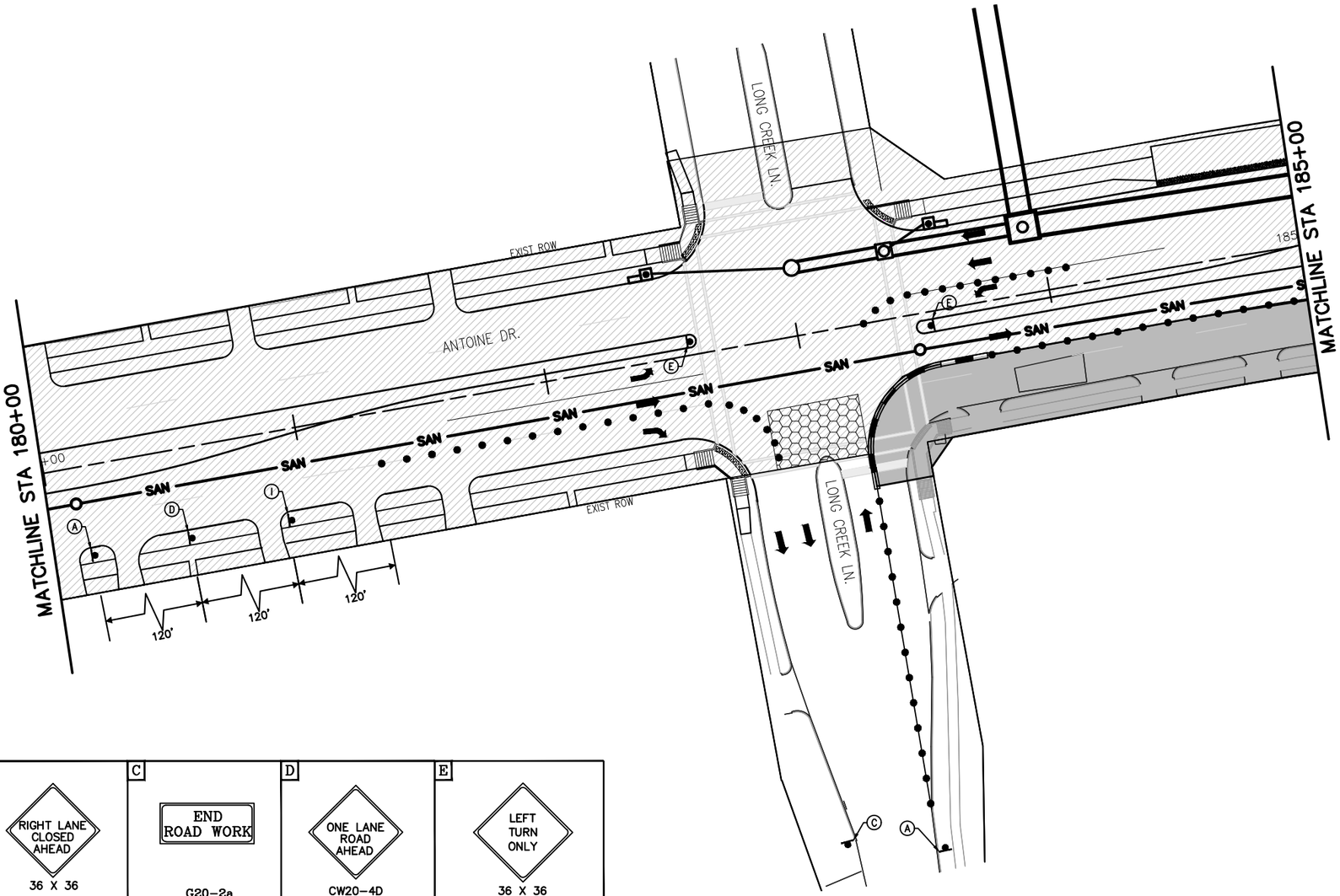

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F	**G**	**H**	**I**	**J**
LEFT LANE MUST TURN LEFT	ONE LANE ROAD CW20–4 36 X 36	RIGHT LANE CLOSED CW20–5(1) 36 X 36	RIGHT LANE MUST TURN RIGHT	RIGHT TURN ONLY 36 X 36

NOTES:

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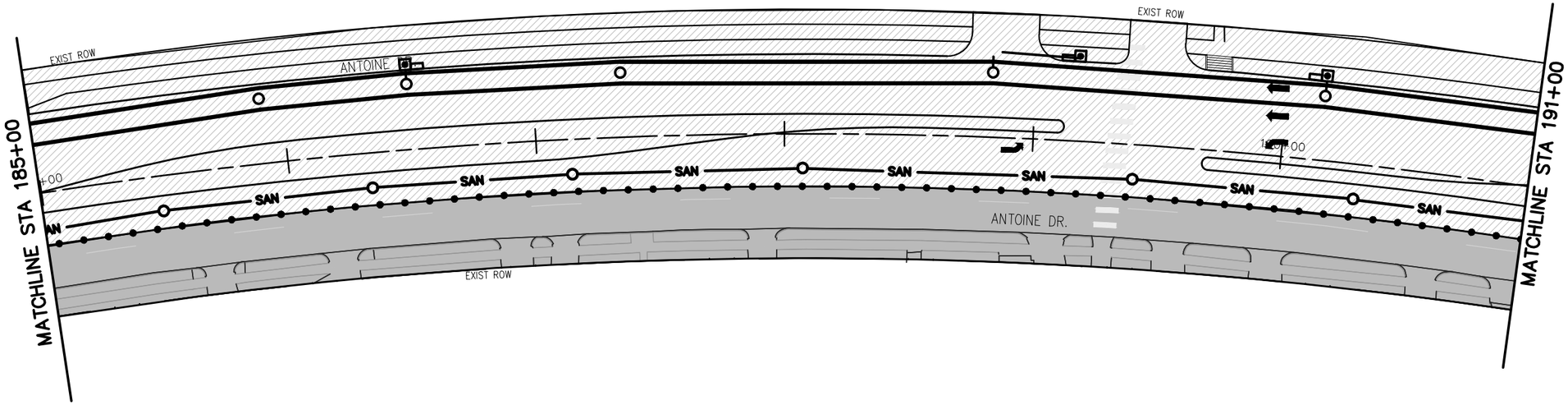

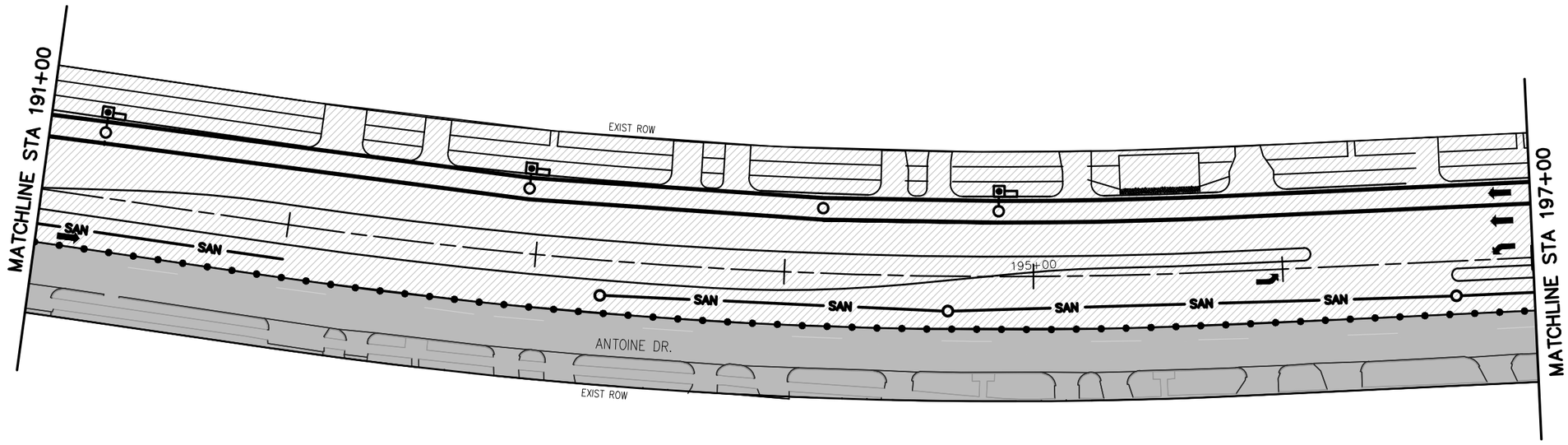

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F- 713-706-4410
TX FIRM No.: F–13481

NEDU ENGINEERING SERVICES, INC.
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Houston, Texas 77036
info@NeduEngineers.com
www.NeduEngineers.com

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ENGINEER: NKEMDI I. OHALETE
P.E. SERIAL No.: 79423
2026

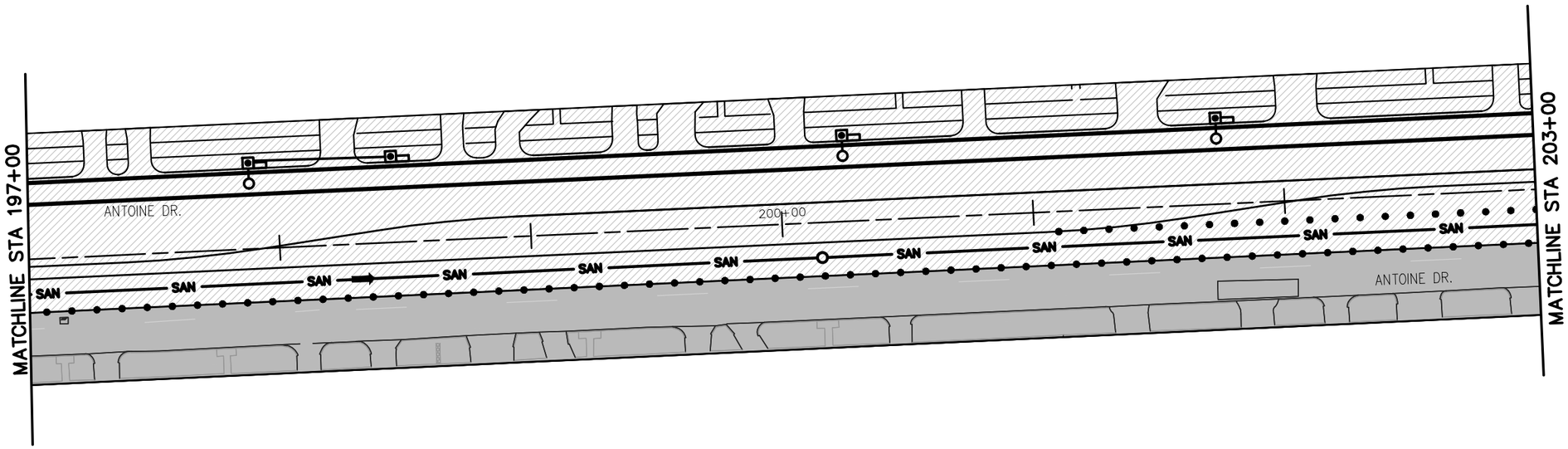
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

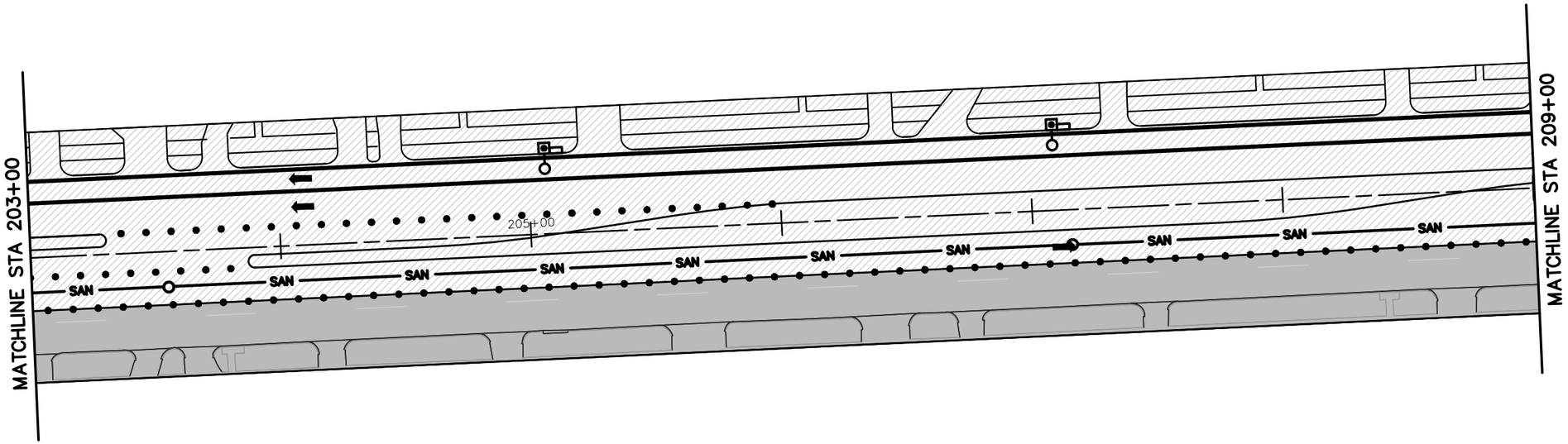
ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 6 STEP 3

SHEET 2 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N–100030–0GEC–3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 124 OF 718	





LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE W/ ROAD CLOSED SIGN
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS

1. REMOVABLE PAV MRK BUTTONS TY W
2. REMOVABLE PAV MRK BUTTONS TY Y
3. REMOVABLE PAV MRK BUTTONS W STOP BAR
4. REMOVABLE PAV MRK (REFLECTOR) TY I–C
5. REMOVABLE PAV MRK (REFLECTOR) TY A–A
6. REMOVABLE PAV MRK (REFLECTOR) TY I–A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
10. REMOVABLE PAV MRK BUTTONS DBL ARROW
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

No.	DATE	REVISIONS	APP.

N

0' 25' 50'

SCALE IN FEET

NOTES:

1. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY, COORDINATE WITH CM. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES.
2. MAINTAIN MINIMUM 11–FOOT LANE WIDTH AT ALL TIMES.
3. COORDINATE WITH METRO FOR TEMPORARY SIGNS IF NEEDED, METRO TEMP STOPS TO BE RELOCATED WITH THE TRAFFIC CONTROL SO THAT ACCESS TO METRO IS ALWAYS MAINTAINED.
4. REFER TO TCP STANDARD DETAILS FOR MORE INFORMATION.

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CITY OF HOUSTON

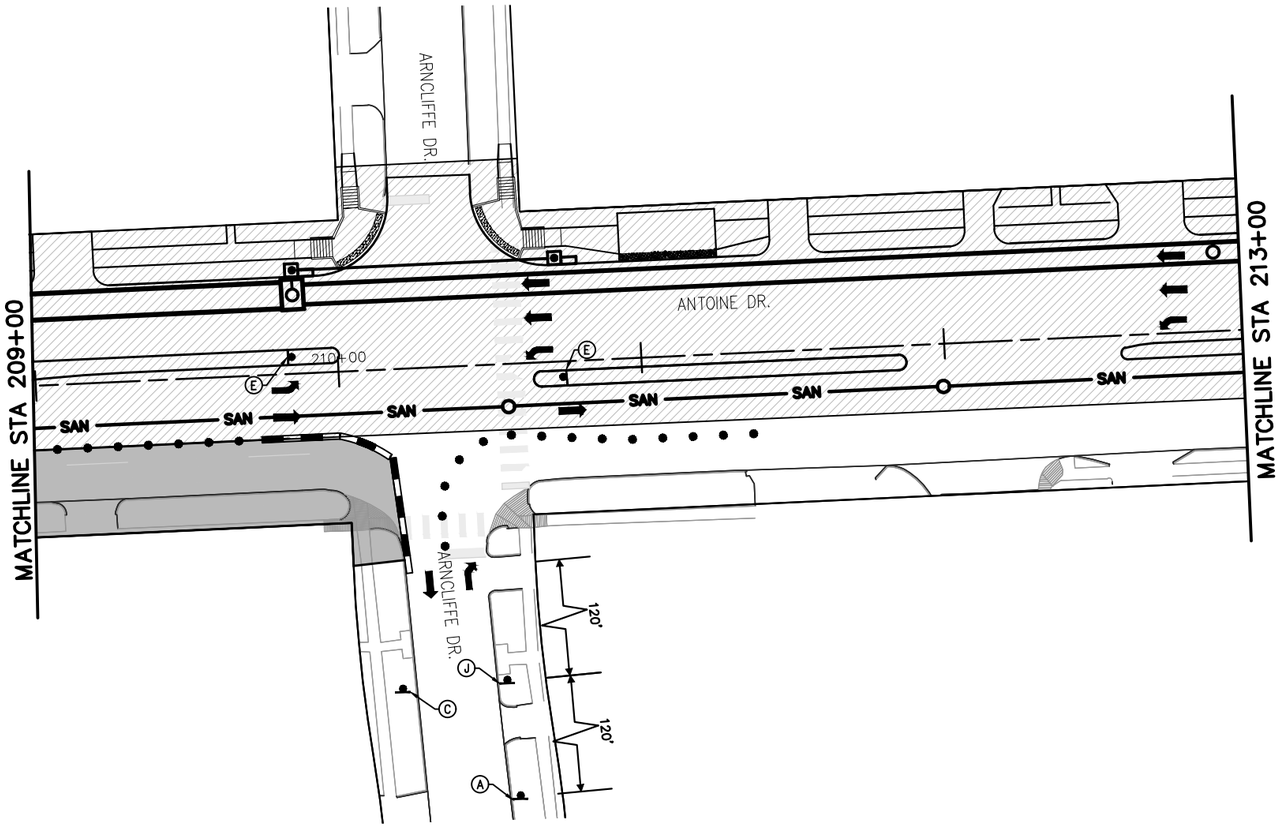
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 6 STEP 3

SHEET 3 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N–100030–0GEC–3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 125 OF 718	



LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE W/ ROAD CLOSED SIGN
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS

1. REMOVABLE PAV MRK BUTTONS TY W
2. REMOVABLE PAV MRK BUTTONS TY Y
3. REMOVABLE PAV MRK BUTTONS W STOP BAR
4. REMOVABLE PAV MRK (REFLECTOR) TY I-C
5. REMOVABLE PAV MRK (REFLECTOR) TY A-A
6. REMOVABLE PAV MRK (REFLECTOR) TY I-A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
10. REMOVABLE PAV MRK BUTTONS DBL ARROW
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

No.	DATE	REVISIONS	APP.

N

0' 25' 50'
SCALE IN FEET

NOTES:

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2026

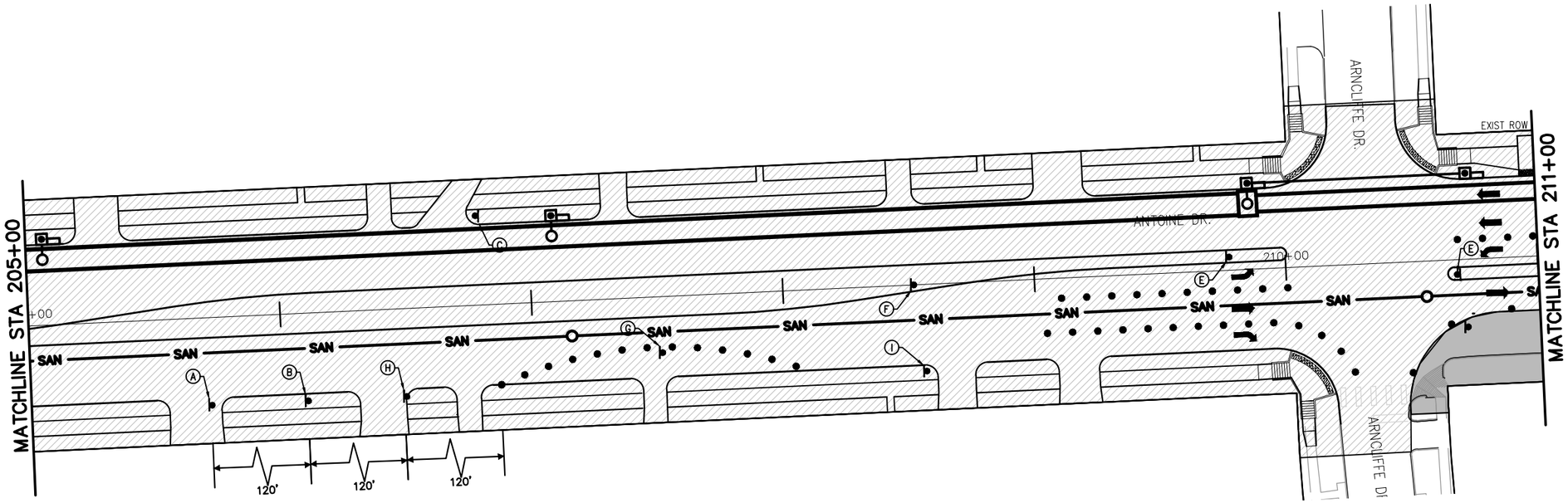
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 6 STEP 3

SHEET 4 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 126 OF 718	



LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
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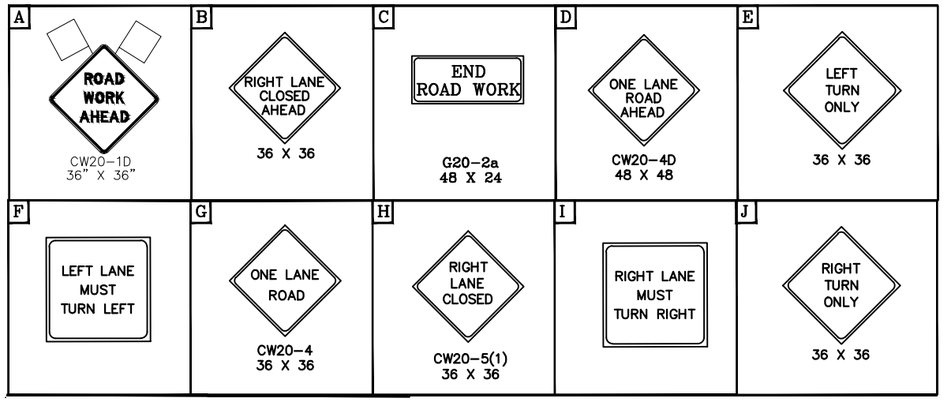
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE W/ ROAD CLOSED SIGN
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS

1. REMOVABLE PAV MRK BUTTONS TY W
2. REMOVABLE PAV MRK BUTTONS TY Y
3. REMOVABLE PAV MRK BUTTONS W STOP BAR
4. REMOVABLE PAV MRK (REFLECTOR) TY I-C
5. REMOVABLE PAV MRK (REFLECTOR) TY A-A
6. REMOVABLE PAV MRK (REFLECTOR) TY I-A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
10. REMOVABLE PAV MRK BUTTONS DBL ARROW
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

APP.	DATE	No.	REVISIONS



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N

0' 25' 50'
SCALE IN FEET

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2026

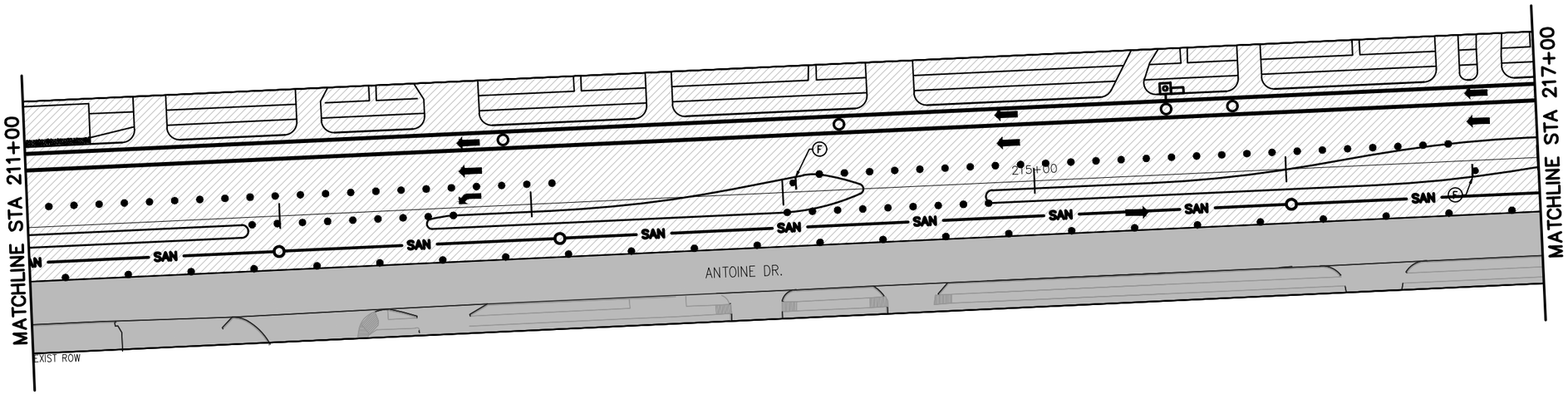
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

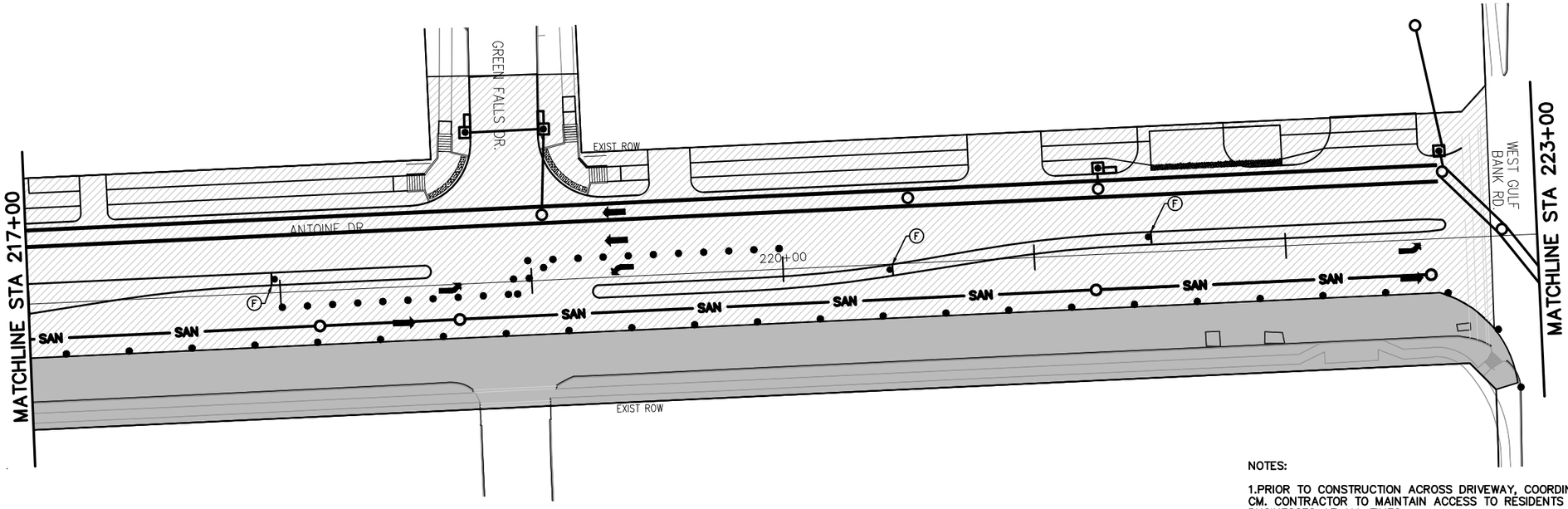
ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 6 STEP 4

SHEET 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 127 OF 718	





LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
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2. REMOVABLE PAV MRK BUTTONS TY Y
3. REMOVABLE PAV MRK BUTTONS W STOP BAR
4. REMOVABLE PAV MRK (REFLECTOR) TY I-C
5. REMOVABLE PAV MRK (REFLECTOR) TY A-A
6. REMOVABLE PAV MRK (REFLECTOR) TY I-A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
10. REMOVABLE PAV MRK BUTTONS DBL ARROW
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

No.	DATE	REVISIONS	APP.

N

0' 25' 50'
SCALE IN FEET

NOTES:

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2026

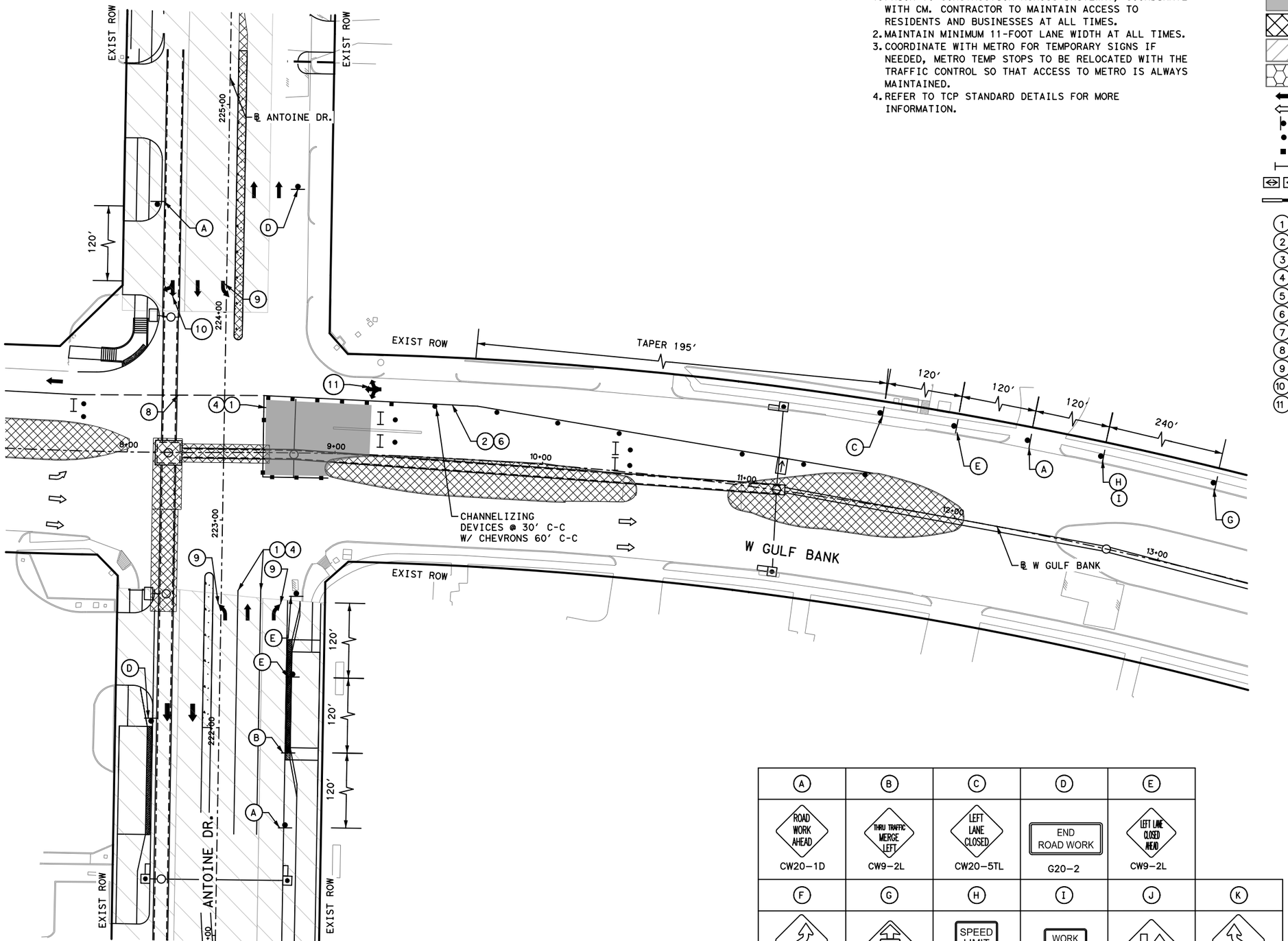
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 6 STEP 4

SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 128 OF 718	



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LEGEND

- WORK ZONE
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4. REMOVABLE PAV MRK (REFLECTOR) TY I-C
5. REMOVABLE PAV MRK (REFLECTOR) TY A-A
6. REMOVABLE PAV MRK (REFLECTOR) TY I-A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
10. REMOVABLE PAV MRK BUTTONS DBL ARROW
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

N

0′ 25′ 50′
SCALE IN FEET

REVISIONS			
No.	DATE		APP.

A	B	C	D	E
ROAD WORK AHEAD CW20-1D	THRU TRAFFIC MERGE LEFT CW9-2L	LEFT LANE CLOSED CW20-5TL	END ROAD WORK G20-2	LEFT LANE CLOSED AHEAD CW9-2L

F	G	H	I	J	K
ECW1-4R	SPEED LIMIT 30 G20-2	SPEED LIMIT 30 G20-2	WORK ZONE G20-2	CW9-2L	ECW1-4L

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

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10/24/2025
95% SUBMITTAL
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Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN PHASE 7 STEP 1

SHEET 1 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 129 OF 718	

Pen Table: ANTOINE DR.tbl
Plot Driver: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Resource\Plot files\ANTOINE DR.pltcfg
Plotted on: 10/24/2025 3:06:11 PM michael.guthrie
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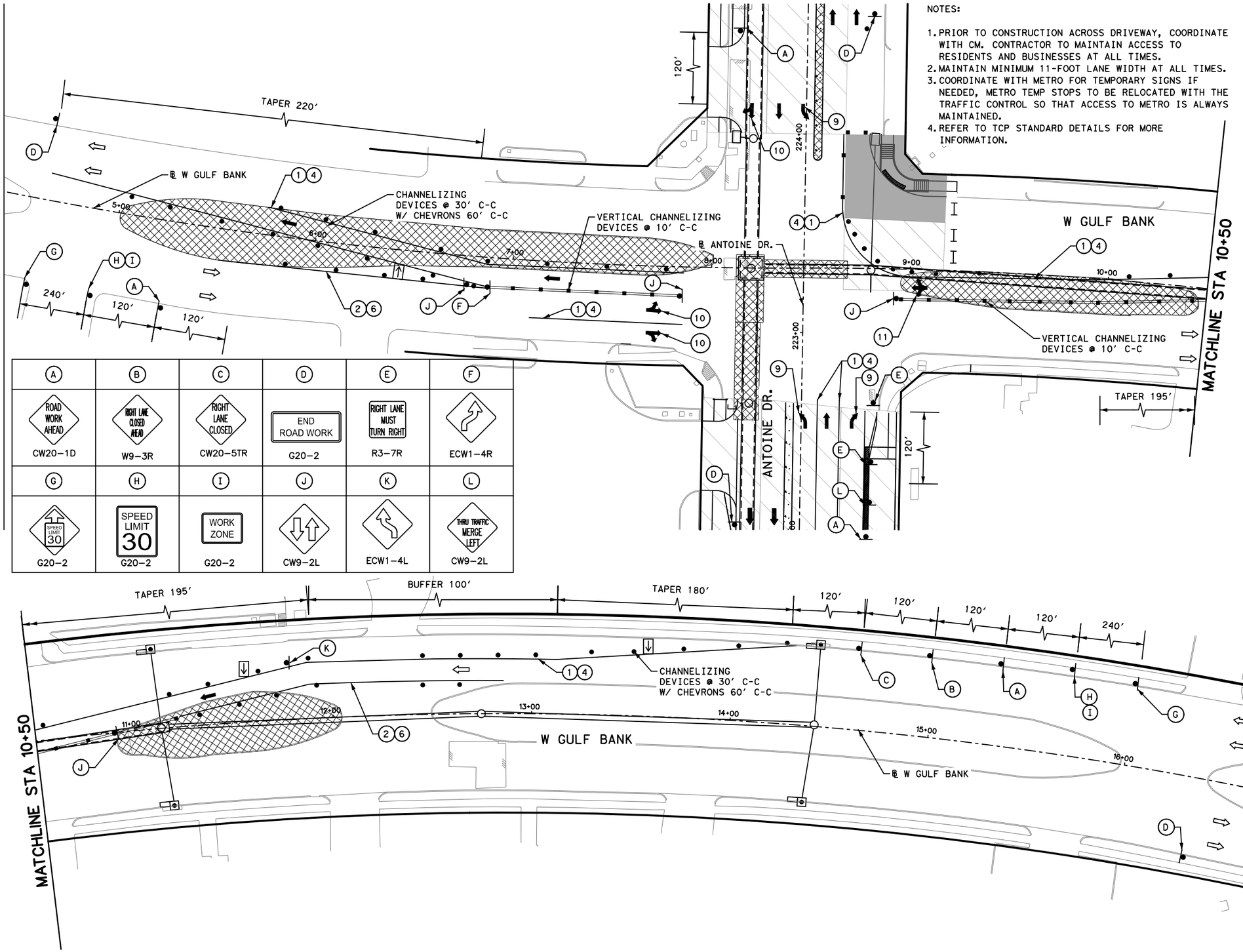

A	B	C	D	E	F
ROAD WORK AHEAD CW20-1D	RIGHT LANE CLOSED AHEAD W9-3R	RIGHT LANE CLOSED CW20-5TR	END ROAD WORK G20-2	RIGHT LANE MUST TURN RIGHT R3-7R	ECW1-4R
G	H	I	J	K	L
SPEED LIMIT 30 G20-2	SPEED LIMIT 30 G20-2	WORK ZONE G20-2	CW9-2L	ECW1-4L	THRU TRAFFIC MERGE LEFT CW9-2L

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 7 STEP 2

SHEET 2 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 130 OF 718	

No.	DATE	REVISIONS	APP.

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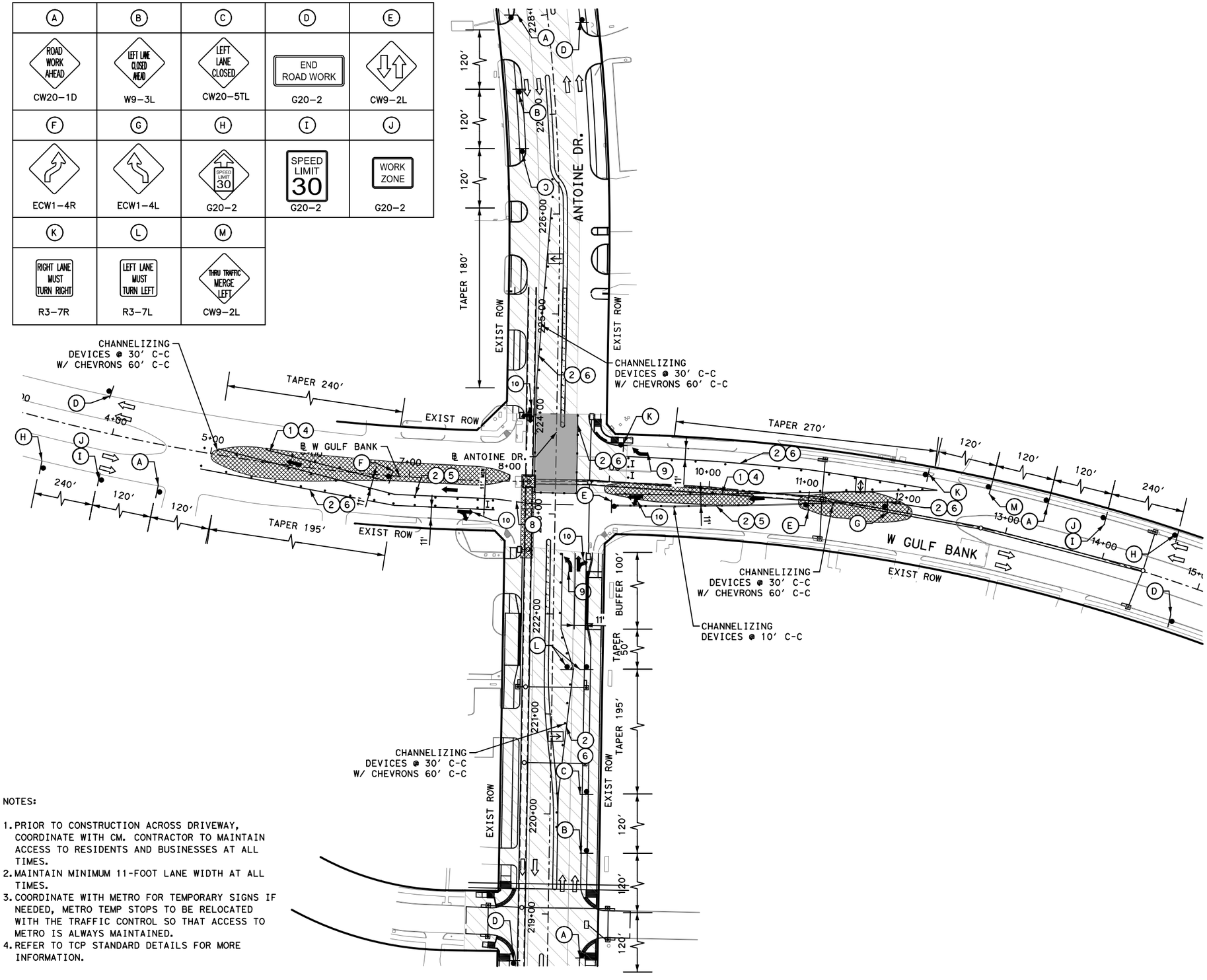
Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Traffic Control\W GULF BANK\SEG 1-TCP_PH7_ST 2.dgn

A	B	C	D	E
ROAD WORK AHEAD CW20-1D	LEFT LANE CLOSED AHEAD W9-3L	LEFT LANE CLOSED CW20-5TL	END ROAD WORK G20-2	 CW9-2L
F	G	H	I	J
 ECW1-4R	 ECW1-4L	SPEED LIMIT 30 G20-2	SPEED LIMIT 30 G20-2	WORK ZONE G20-2
K	L	M		
RIGHT LANE MUST TURN RIGHT R3-7R	LEFT LANE MUST TURN LEFT R3-7L	THRU TRAFFIC MERGE LEFT CW9-2L		



LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
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- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS

1. REMOVABLE PAV MRK BUTTONS TY W
2. REMOVABLE PAV MRK BUTTONS TY Y
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4. REMOVABLE PAV MRK (REFLECTOR) TY I-C
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6. REMOVABLE PAV MRK (REFLECTOR) TY I-A
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8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
10. REMOVABLE PAV MRK BUTTONS DBL ARROW
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

N

0' 50' 100'
SCALE IN FEET

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No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN PHASE 7 STEP 3

SHEET 3 OF 8

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AS NOTED	
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ROWAIDAH AYOUB	
SHEET NO. 131 OF 718	

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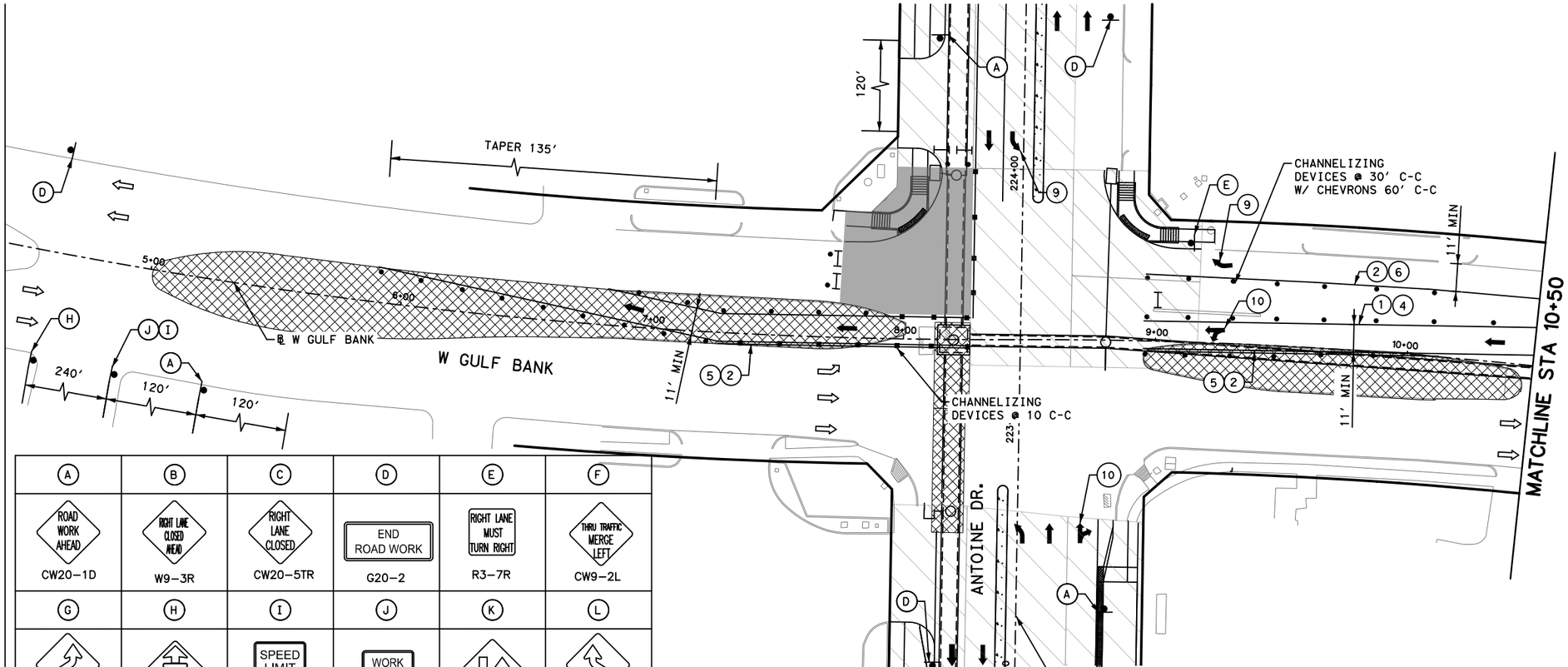

A	B	C	D	E	F
ROAD WORK AHEAD CW20-1D	RIGHT LANE CLOSED AHEAD W9-3R	RIGHT LANE CLOSED CW20-5TR	END ROAD WORK G20-2	RIGHT LANE MUST TURN RIGHT R3-7R	THRU TRAFFIC MERGE LEFT CW9-2L
G	H	I	J	K	L
ECW1-4R	SPEED LIMIT 30 G20-2	SPEED LIMIT 30 G20-2	WORK ZONE G20-2	CW9-2L	ECW1-4L

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE W/ ROAD CLOSED SIGN
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS

1. REMOVABLE PAV MRK BUTTONS TY W
2. REMOVABLE PAV MRK BUTTONS TY Y
3. REMOVABLE PAV MRK BUTTONS W STOP BAR
4. REMOVABLE PAV MRK (REFLECTOR) TY I-C
5. REMOVABLE PAV MRK (REFLECTOR) TY A-A
6. REMOVABLE PAV MRK (REFLECTOR) TY I-A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
10. REMOVABLE PAV MRK BUTTONS DBL ARROW
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

NOTES:

1. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY, COORDINATE WITH CM. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES.
2. MAINTAIN MINIMUM 11-FOOT LANE WIDTH AT ALL TIMES.
3. COORDINATE WITH METRO FOR TEMPORARY SIGNS IF NEEDED, METRO TEMP STOPS TO BE RELOCATED WITH THE TRAFFIC CONTROL SO THAT ACCESS TO METRO IS ALWAYS MAINTAINED.
4. REFER TO TCP STANDARD DETAILS FOR MORE INFORMATION.

No.	DATE	REVISIONS	APP.

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
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HOUSTON, TX 77079

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 7 STEP 4

SHEET 4 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 132 OF 718	

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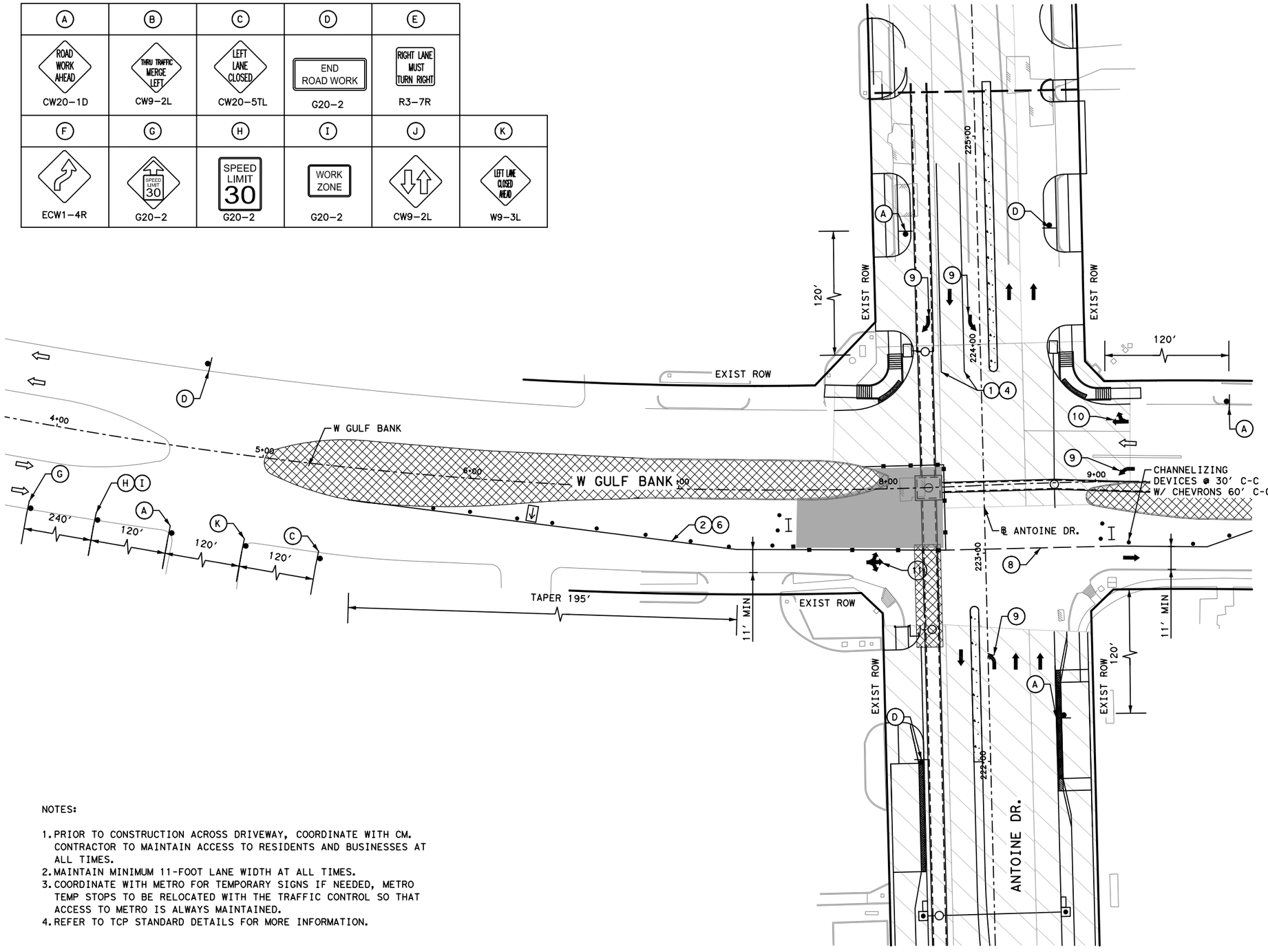
Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Traffic Control\W GULF BANK\SEG 1-TCP_PH7_ST 4.dgn

A	B	C	D	E	F	G	H	I	J	K
ROAD WORK AHEAD CW20-1D	THRU TRAFFIC MERGE LEFT CW9-2L	LEFT LANE CLOSED CW20-5TL	END ROAD WORK G20-2	RIGHT LANE MUST TURN RIGHT R3-7R						
					ECW1-4R	SPEED LIMIT 30 G20-2	SPEED LIMIT 30 G20-2	WORK ZONE G20-2	CW9-2L	LEFT LANE CLOSED AHEAD W9-3L



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LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE W/ ROAD CLOSED SIGN
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS

1. REMOVABLE PAV MRK BUTTONS TY W
2. REMOVABLE PAV MRK BUTTONS TY Y
3. REMOVABLE PAV MRK BUTTONS W STOP BAR
4. REMOVABLE PAV MRK (REFLECTOR) TY I-C
5. REMOVABLE PAV MRK (REFLECTOR) TY A-A
6. REMOVABLE PAV MRK (REFLECTOR) TY I-A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
10. REMOVABLE PAV MRK BUTTONS DBL ARROW
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

N

0′ 25′ 50′
SCALE IN FEET

No.	DATE	REVISIONS	APP.

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HOUSTON, TX 77079

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN PHASE 7 STEP 5

SHEET 5 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 133 OF 718	

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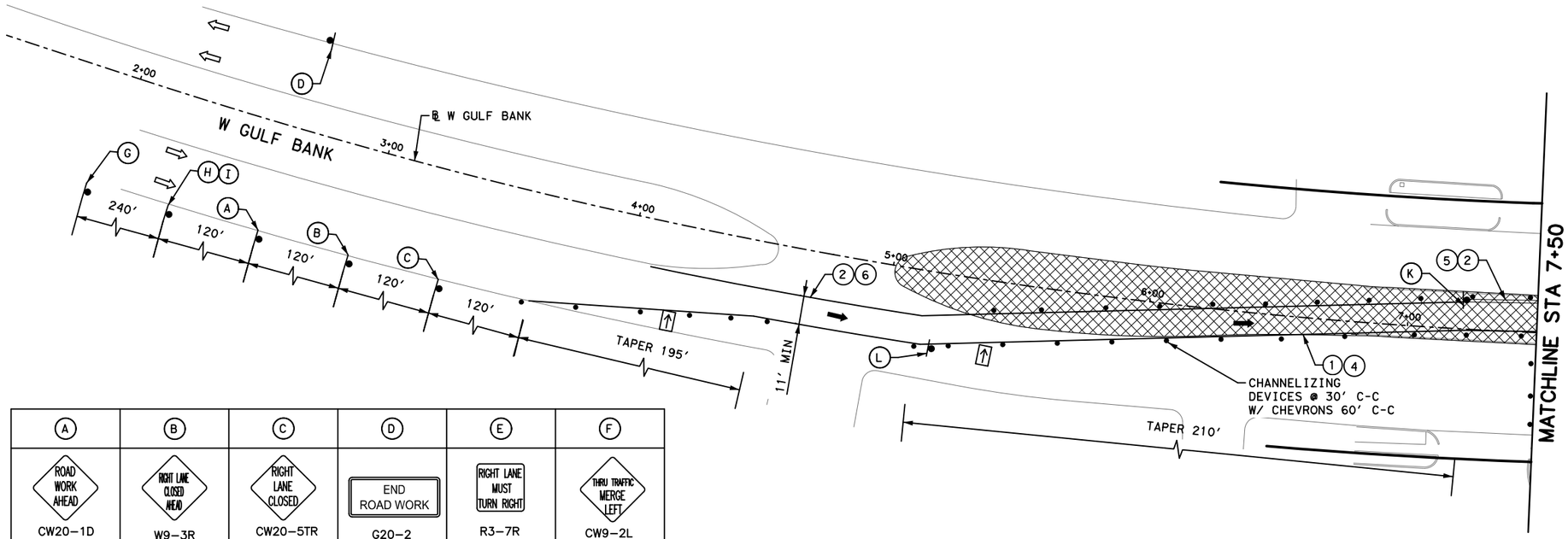
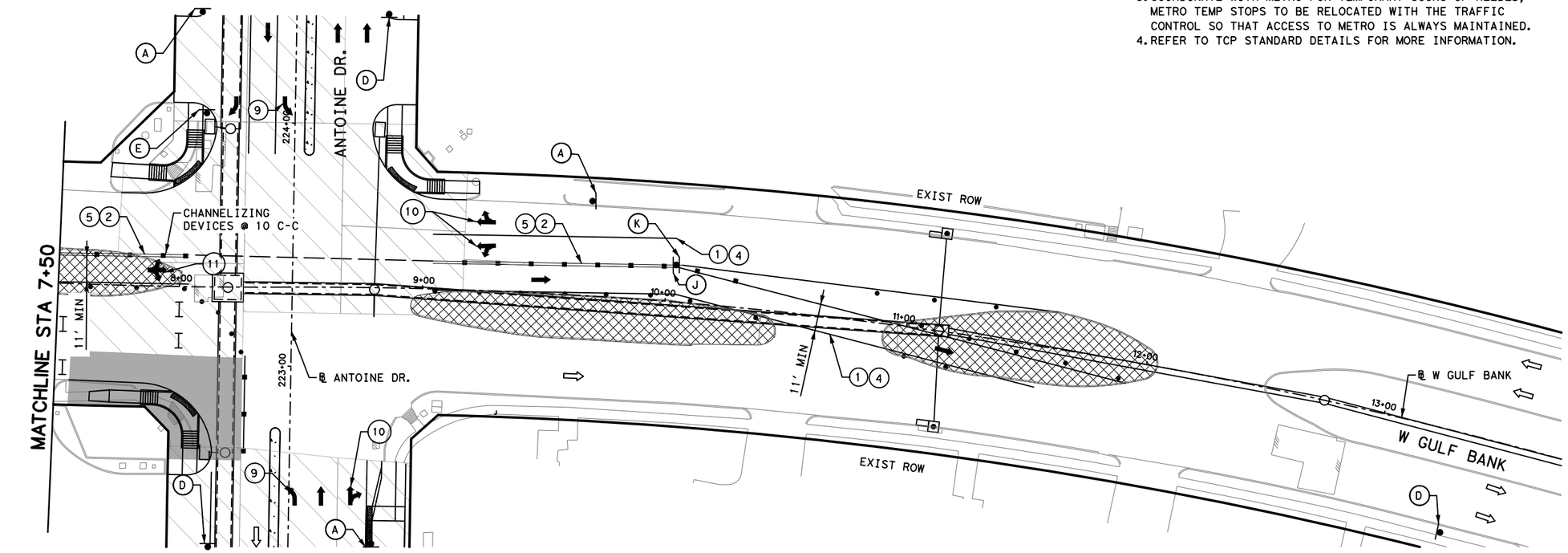
Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Traffic Control\W GULF BANK\SEG 1-TCP_PH7_ST 5.dgn



A	B	C	D	E	F
ROAD WORK AHEAD — CW20-1D	RIGHT LANE CLOSED AHEAD — W9-3R	RIGHT LANE CLOSED — CW20-5TR	END ROAD WORK — G20-2	RIGHT LANE MUST TURN RIGHT — R3-7R	THRU TRAFFIC MERGE LEFT — CW9-2L
G	**H**	**I**	**J**	**K**	**L**
ECW1-4R	SPEED LIMIT 30 — G20-2	SPEED LIMIT 30 — G20-2	WORK ZONE — G20-2	CW9-2L	ECW1-4L



LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE W/ ROAD CLOSED SIGN
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS
- (1) REMOVABLE PAV MRK BUTTONS TY W
- (2) REMOVABLE PAV MRK BUTTONS TY Y
- (3) REMOVABLE PAV MRK BUTTONS W STOP BAR
- (4) REMOVABLE PAV MRK (REFLECTOR) TY I-C
- (5) REMOVABLE PAV MRK (REFLECTOR) TY A-A
- (6) REMOVABLE PAV MRK (REFLECTOR) TY I-A
- (7) REMOVABLE PAV MRK BUTTONS TY W (DOT)
- (8) REMOVABLE PAV MRK BUTTONS TY Y (DOT)
- (9) REMOVABLE PAV MRK BUTTONS ARROW
- (10) REMOVABLE PAV MRK BUTTONS DBL ARROW
- (11) REMOVABLE PAV MRK BUTTONS TPL ARROW

NOTES:

1. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY, COORDINATE WITH CM. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES.
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4. REFER TO TCP STANDARD DETAILS FOR MORE INFORMATION.

N

0′ 25′ 50′
SCALE IN FEET

No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN PHASE 7 STEP 6

SHEET 6 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 134 OF 718	

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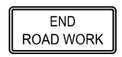
A	B	C	D	E
 CW20-1D	 W9-3L	 CW20-5TL	 G20-2	 CW9-2L
F	G	H	I	J
 ECW1-4R	 ECW1-4L	 G20-2	 G20-2	 G20-2
K	L	M		
 R3-7R	 CW9-2L	 R3-7L		

NOTES:

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LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE W/ ROAD CLOSED SIGN
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS

1. REMOVABLE PAV MRK BUTTONS TY W
2. REMOVABLE PAV MRK BUTTONS TY Y
3. REMOVABLE PAV MRK BUTTONS W STOP BAR
4. REMOVABLE PAV MRK (REFLECTOR) TY I-C
5. REMOVABLE PAV MRK (REFLECTOR) TY A-A
6. REMOVABLE PAV MRK (REFLECTOR) TY I-A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
10. REMOVABLE PAV MRK BUTTONS DBL ARROW
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

N

0′ 50′ 100′
SCALE IN FEET

No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN
PHASE 7 STEP 7

SHEET 7 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 135 OF 718	

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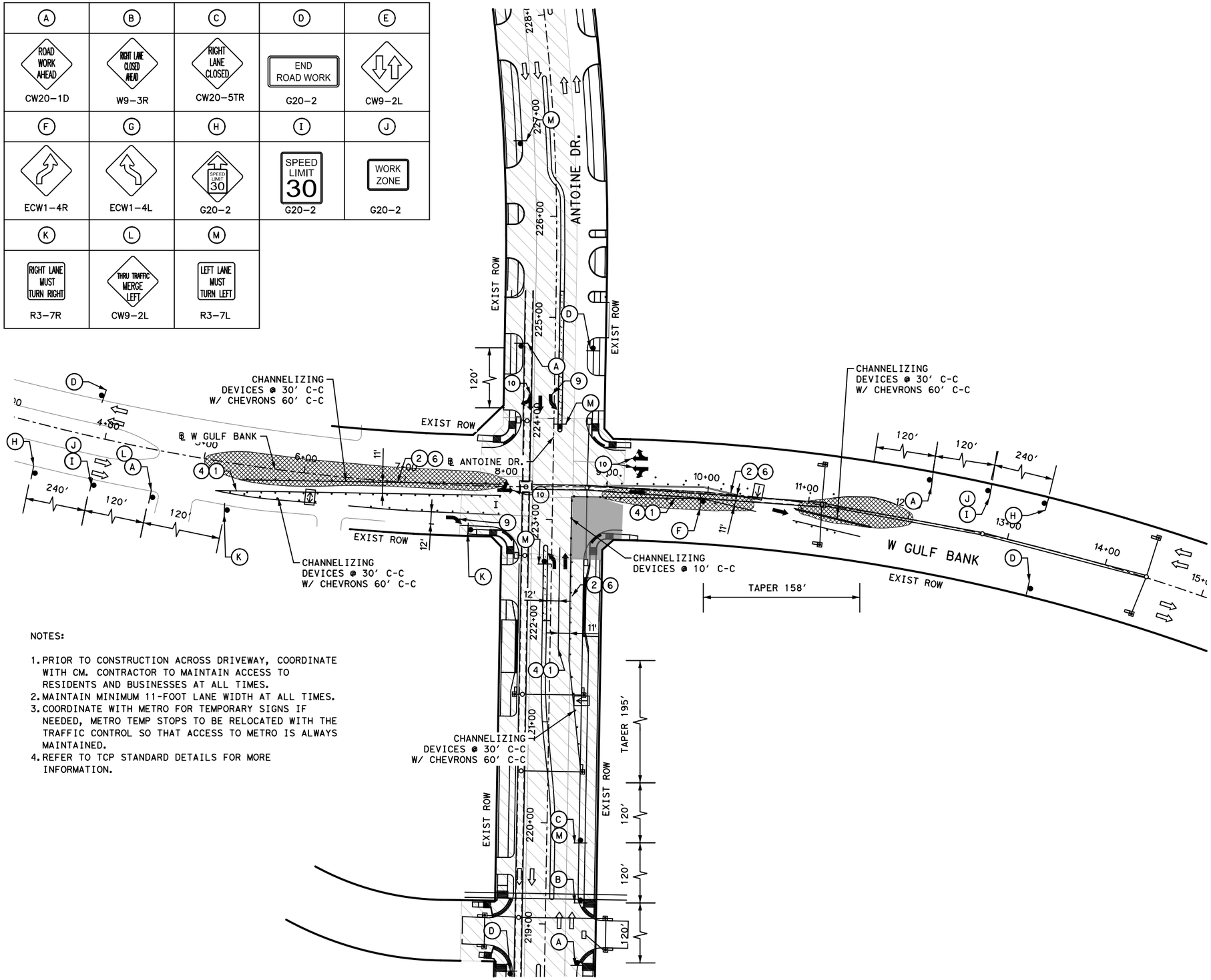
A	B	C	D	E
ROAD WORK AHEAD CW20-1D	RIGHT LANE CLOSED AHEAD W9-3R	RIGHT LANE CLOSED CW20-5TR	END ROAD WORK G20-2	 CW9-2L
F	G	H	I	J
 ECW1-4R	 ECW1-4L	SPEED LIMIT 30 G20-2	SPEED LIMIT 30 G20-2	WORK ZONE G20-2
K	L	M		
RIGHT LANE MUST TURN RIGHT R3-7R	THRU TRAFFIC MERGE LEFT CW9-2L	LEFT LANE MUST TURN LEFT R3-7L		



LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE W/ ROAD CLOSED SIGN
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS

1. REMOVABLE PAV MRK BUTTONS TY W
2. REMOVABLE PAV MRK BUTTONS TY Y
3. REMOVABLE PAV MRK BUTTONS W STOP BAR
4. REMOVABLE PAV MRK (REFLECTOR) TY I-C
5. REMOVABLE PAV MRK (REFLECTOR) TY A-A
6. REMOVABLE PAV MRK (REFLECTOR) TY I-A
7. REMOVABLE PAV MRK BUTTONS TY W (DOT)
8. REMOVABLE PAV MRK BUTTONS TY Y (DOT)
9. REMOVABLE PAV MRK BUTTONS ARROW
10. REMOVABLE PAV MRK BUTTONS DBL ARROW
11. REMOVABLE PAV MRK BUTTONS TPL ARROW

No.	DATE	REVISIONS	APP.

N

0' 50' 100'
SCALE IN FEET

NOTES:

1. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY, COORDINATE WITH CM. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES.
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Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN PHASE 7 STEP 8

SHEET 8 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 136 OF 718	

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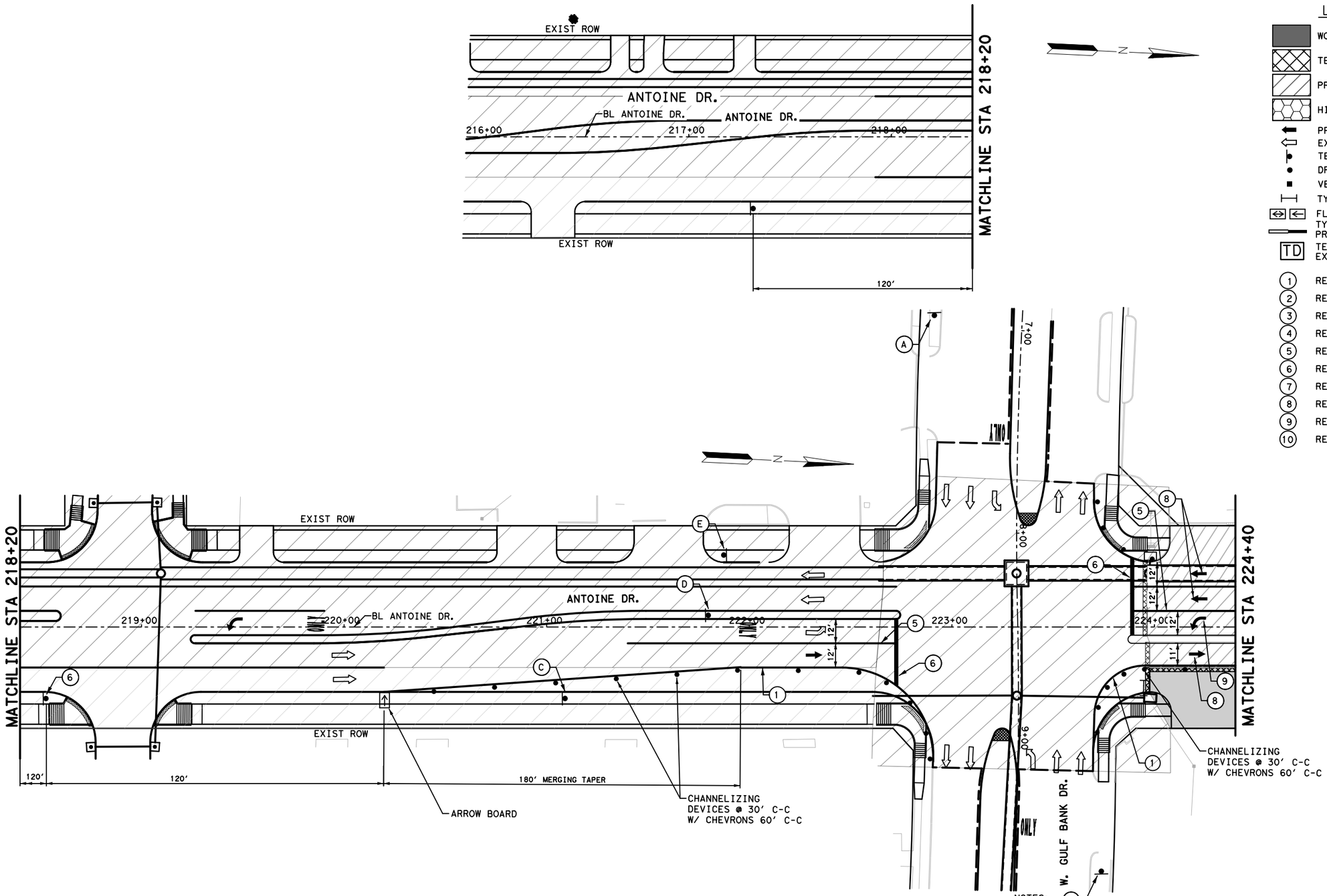

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS
- TD — TEMPORARY DRAINAGE: CONTRACTOR TO TIE EXISTING TO PROPOSED AS NECESSARY

1. REMOVABLE PAV MRK 4" SOL W
2. REMOVABLE PAV MRK 4" SOL Y
3. REMOVABLE PAV MRK 4" CATTRAC W
4. REMOVABLE PAV MRK 4" DBL SOL Y
5. REMOVABLE PAV MRK 8" SOL W
6. REMOVABLE PAV MRK 24" W STOP BAR
7. REMOVABLE PAV MRK (REFLECTOR) TY II A-A
8. REMOVABLE PAV MRK ARROW
9. REMOVABLE PAV MRK LT ARROW
10. REMOVABLE PAV MRK "ONLY"

No.	DATE	REVISIONS	APP.

0' 25' 50'
SCALE IN FEET

A	B	C	D	E
ROAD WORK AHEAD	RIGHT LANE CLOSED	THRU TRAFFIC MERGE RIGHT	ONLY	END ROAD WORK
CW20-1D	CW20-5TR	CW4-1A	R3-5L	G20-2

NOTES:
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713-782-0042
www.vs-eng.com

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10/23/2025
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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL
PHASE 8 STEP 1
STA 213+00 TO STA 224+40

SHEET 1 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 137 OF 718	

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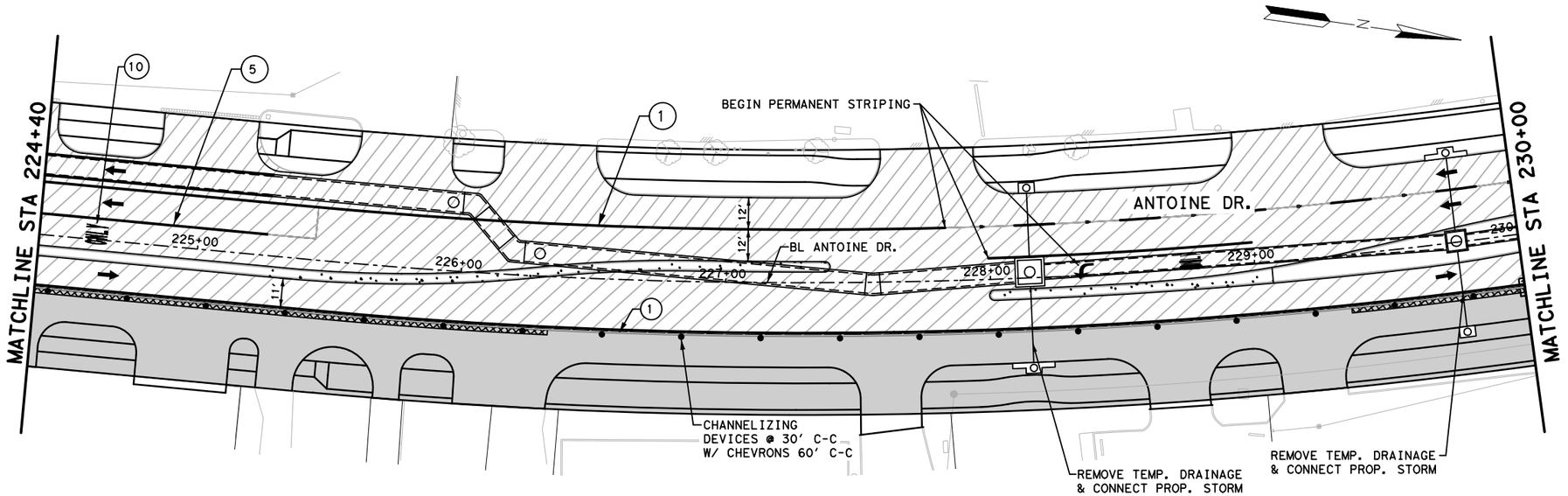

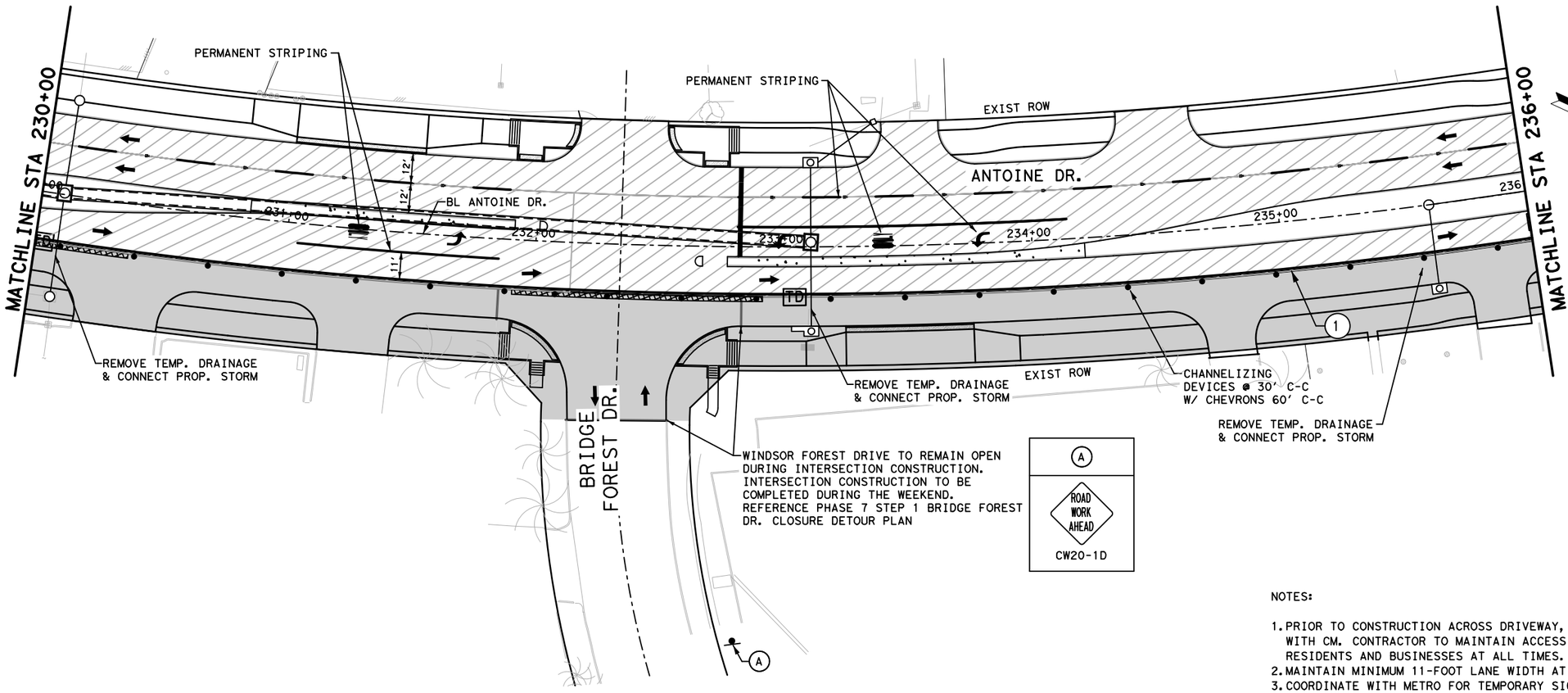

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
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3. REMOVABLE PAV MRK 4" CATTRAC W
4. REMOVABLE PAV MRK 4" DBL SOL Y
5. REMOVABLE PAV MRK 8" SOL W
6. REMOVABLE PAV MRK 24" W STOP BAR
7. REMOVABLE PAV MRK (REFLECTOR) TY II A-A
8. REMOVABLE PAV MRK ARROW
9. REMOVABLE PAV MRK LT ARROW
10. REMOVABLE PAV MRK "ONLY"

APP:	DATE	REVISIONS
No.		

0' 25' 50'
SCALE IN FEET

NOTES:

1. PRIOR TO CONSTRUCTION ACROSS DRIVEWAY, COORDINATE WITH CM. CONTRACTOR TO MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES AT ALL TIMES.
2. MAINTAIN MINIMUM 11-FOOT LANE WIDTH AT ALL TIMES.
3. COORDINATE WITH METRO FOR TEMPORARY SIGNS IF NEEDED, METRO TEMP STOPS TO BE RELOCATED WITH THE TRAFFIC CONTROL SO THAT ACCESS TO METRO IS ALWAYS MAINTAINED.
4. REFER TO TCP STANDARD DETAILS FOR MORE INFORMATION.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL
PHASE 8 STEP 1
STA 224+40 TO STA 236+00

SHEET 2 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 138 OF 718	

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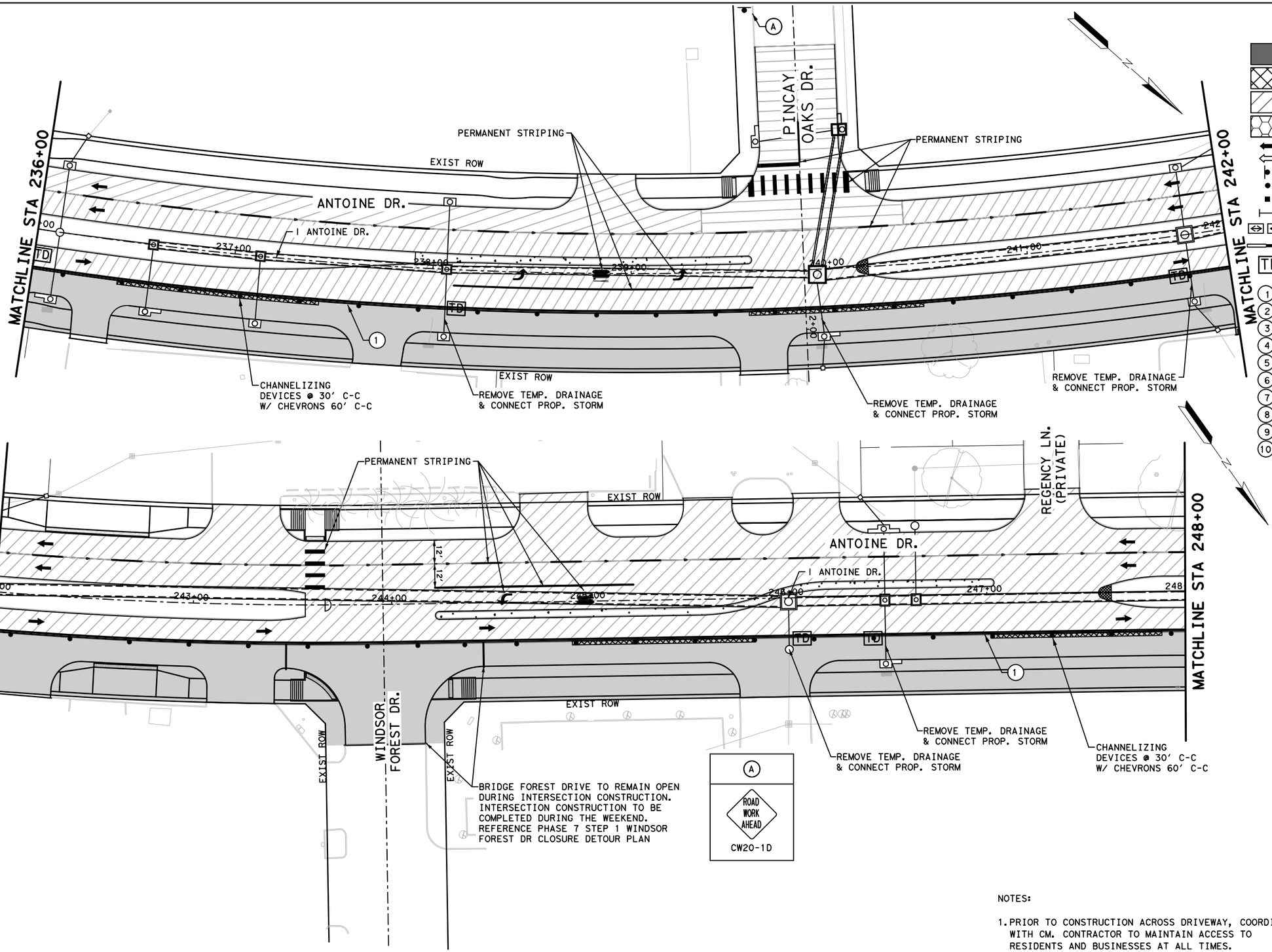

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
- EXISTING LANES UNDER TRAFFIC
- TEMP GROUND MOUNTED SIGN
- DRUM
- VERTICAL PANEL
- TYPE III BARRICADE
- FLASHING ARROW
- TY I WITH TY II END TREATMENT LOW PROFILE CONC BARRIER WITH REFLECTORS
- TD — TEMPORARY DRAINAGE: CONTRACTOR TO TIE EXISTING TO PROPOSED AS NECESSARY

1. REMOVABLE PAV MRK 4" SOL W
2. REMOVABLE PAV MRK 4" SOL Y
3. REMOVABLE PAV MRK 4" CATTRAC W
4. REMOVABLE PAV MRK 4" DBL SOL Y
5. REMOVABLE PAV MRK 8" SOL W
6. REMOVABLE PAV MRK 24" W STOP BAR
7. REMOVABLE PAV MRK (REFLECTOR) TY II A-A
8. REMOVABLE PAV MRK ARROW
9. REMOVABLE PAV MRK LT ARROW
10. REMOVABLE PAV MRK "ONLY"

No.	DATE	REVISIONS	APP.

NOTES:

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL
PHASE 8 STEP 1
STA 236+00 TO STA 248+00

SHEET 3 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 139 OF 718	

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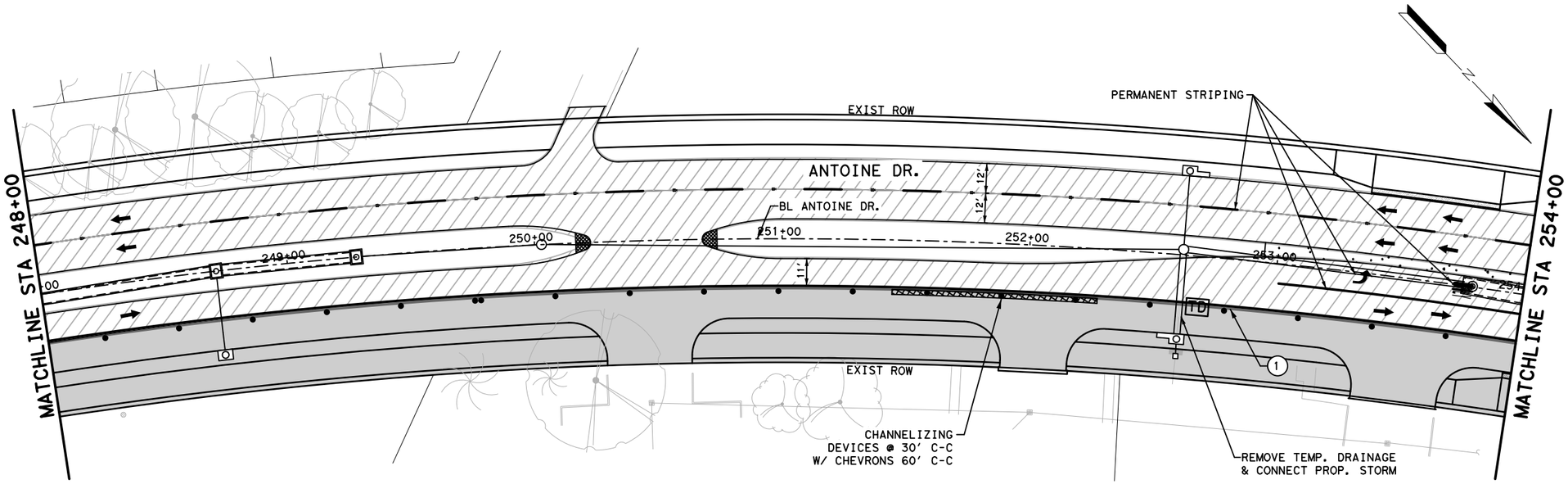

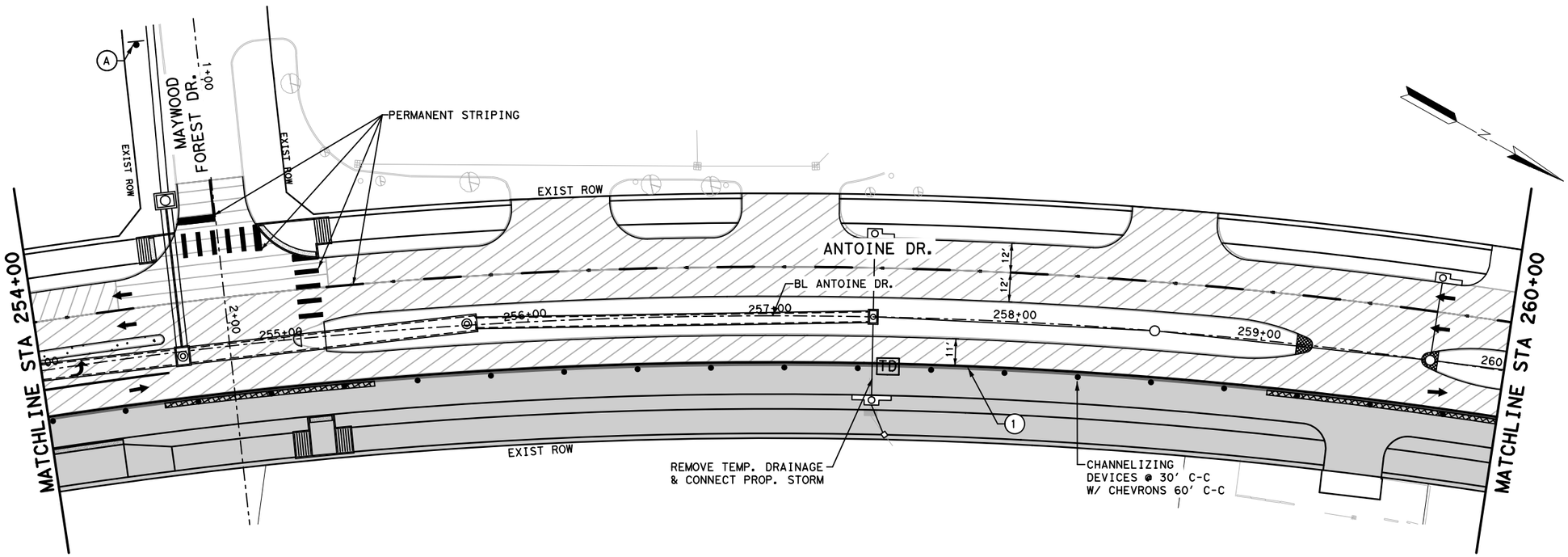

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
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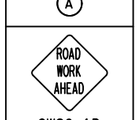
9. REMOVABLE PAV MRK LT ARROW
10. REMOVABLE PAV MRK "ONLY"

No.	DATE	REVISIONS	APP.

0' 25' 50'
SCALE IN FEET

A



CW20-1D

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Texas Registered Engineering Firm F-148

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL
PHASE 8 STEP 1
STA 248+00 TO STA 260+00

SHEET 4 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 140 OF 718	

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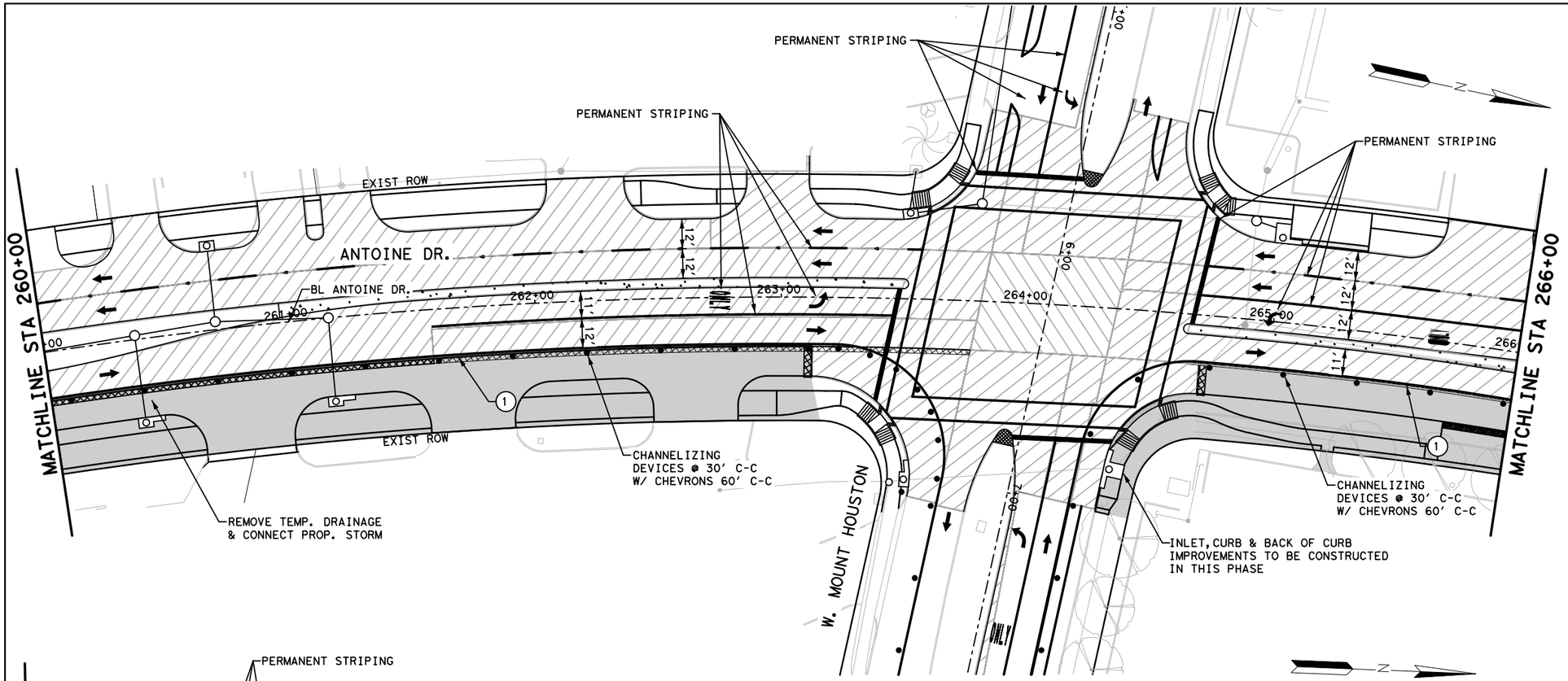

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
- PROPOSED LANES UNDER TRAFFIC
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8. REMOVABLE PAV MRK ARROW
9. REMOVABLE PAV MRK LT ARROW
10. REMOVABLE PAV MRK "ONLY"

No.	DATE	REVISIONS	APP.

0' 25' 50'
SCALE IN FEET

A	B
ROAD WORK AHEAD	END ROAD WORK
CW20-1D	G20-2

NOTES:

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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL
PHASE 8 STEP 1
STA 260+00 TO END PROJECT

SHEET 5 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 141 OF 718	

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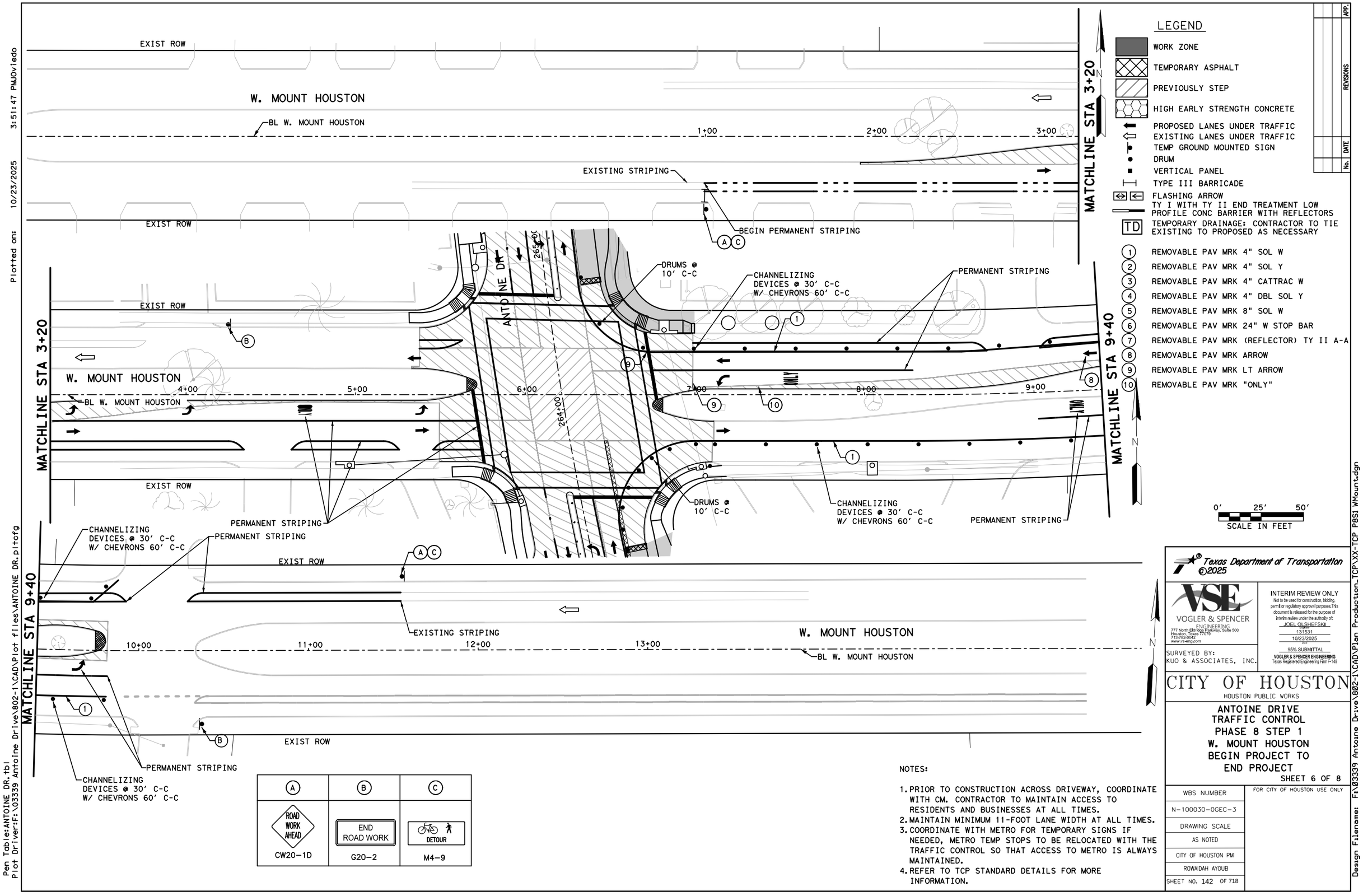

LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUSLY STEP
- HIGH EARLY STRENGTH CONCRETE
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8. REMOVABLE PAV MRK ARROW
9. REMOVABLE PAV MRK LT ARROW
10. REMOVABLE PAV MRK "ONLY"

APP.	No.	DATE	REVISIONS

(A)	(B)	(C)
ROAD WORK AHEAD	END ROAD WORK	DETOUR
CW20-1D	G20-2	M4-9

NOTES:

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE TRAFFIC CONTROL PHASE 8 STEP 1 W. MOUNT HOUSTON BEGIN PROJECT TO END PROJECT

SHEET 6 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 142 OF 718	

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N

REVISIONS			
No.	DATE		APP.

A	B	C
BRIDGE FOREST M4-9N	ANTOINE M4-9N	DETOUR M4-9S
D	E	F
DETOUR M4-9R	DETOUR M4-9L	END DETOUR M4-8A
G	H	I
DETOUR AHEAD M4-8A	L3-2	R3-2
J	LEGEND	
ROAD CLOSED R11-2	WORK ZONE TYPE III BARRICADE	

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PHASE 8 STEP 1 BRIDGE FOREST DR CLOSURE DETOUR

SHEET 7 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 143 OF 718	

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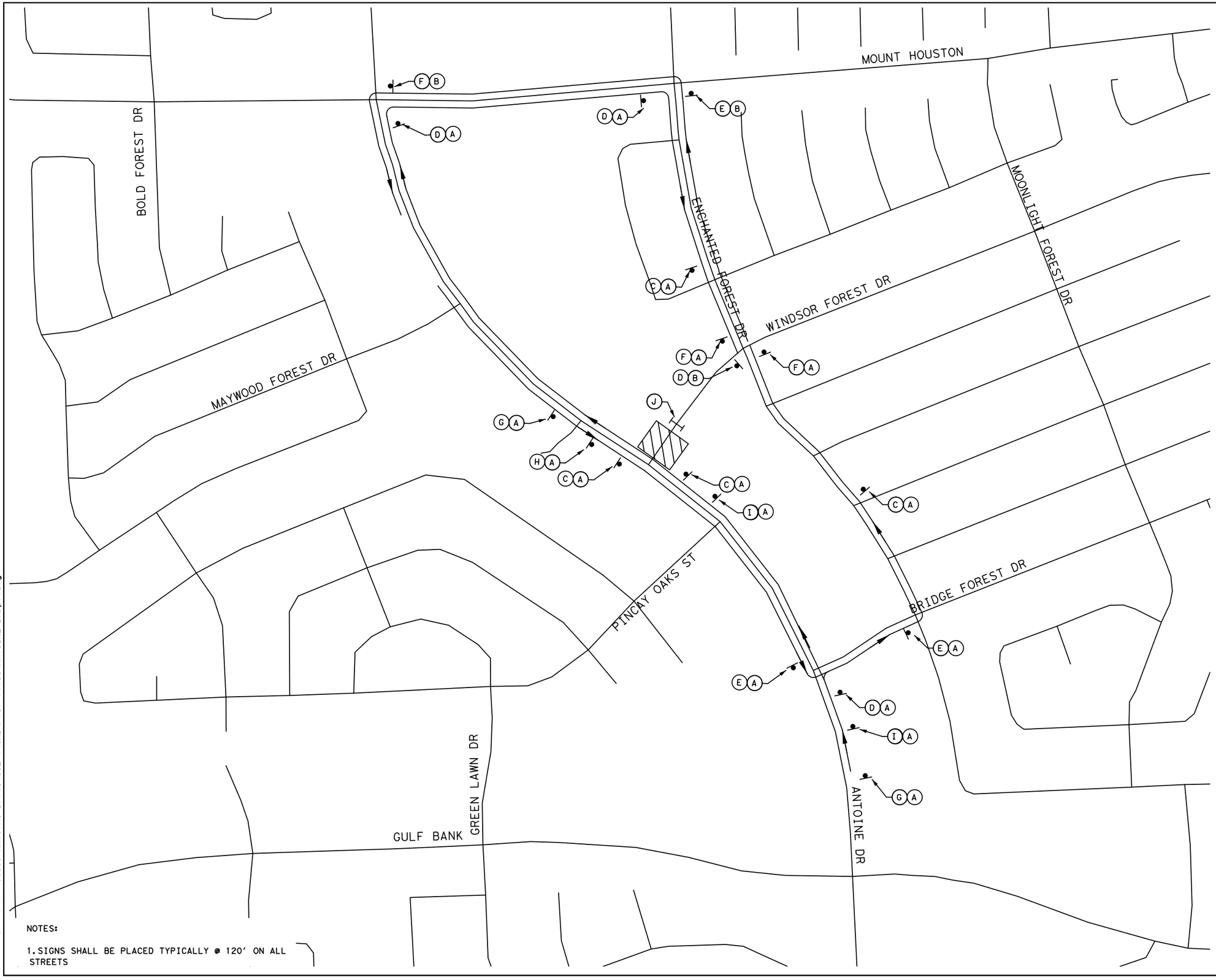

A	B	C
WINDSOR FOREST M4-9N	ANTOINE M4-9N	DETOUR M4-9S
D	E	F
DETOUR M4-9R	DETOUR M4-9L	END DETOUR M4-8A
G	H	I
DETOUR AHEAD M4-8A	L3-2	R3-2
J		
ROAD CLOSED R11-2		

LEGEND

WORK ZONE

TYPE III BARRICADE

NOTES:

1. SIGNS SHALL BE PLACED TYPICALLY @ 120' ON ALL STREETS

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL
PHASE 8 STEP 1
WINDSOR FOREST DR
CLOSURE DETOUR

SHEET 8 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 144 OF 718	

No.	DATE	REVISIONS	APP.

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GENERAL NOTES

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH PART VI OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) LATEST EDITION WITH REVISIONS DURING THE ENTIRE CONSTRUCTION PERIOD.
2. ALL SIGNS AND TRAFFIC CONTROL DEVICES SHALL CONFORM THE LATEST VERSION OF THE TMUTCD.
3. NO LANES SHALL BE CLOSED DURING THE HOURS OF 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM MONDAY THRU FRIDAY WITHOUT APPROVAL OF THE CITY TRAFFIC ENGINEER.
4. NO WORK SHALL BE PERFORMED IN RESIDENTIAL AREAS FROM 7:00 PM TO 7:00 AM.
5. CONTRACTOR SHALL MAINTAIN APPROVED NUMBER OF THROUGH LANES OF TRAFFIC IN EACH DIRECTION DURING CONSTRUCTION WORKING HOURS. TRAFFIC CONTROL PLANS SHALL INCLUDE ONE-WAY AND/OR DETOUR PLANS. CONTRACTOR SHALL MAINTAIN ADA COMPLIANT PEDESTRIAN ACCESS TO BUS STOPS AND ADEQUATE BUS ACCESS TO ALL THE BUS STOPS.
6. CONTRACTOR SHALL MAINTAIN TRAFFIC LANES AND DETOURS ACCORDING TO TRAFFIC CONTROL PLANS DURING WORKING HOURS.
7. CONTRACTOR SHALL COVER OPEN PAVEMENT EXCAVATIONS FOR MINOR UTILITY WORK WITH ANCHORED STEEL PLATES DURING NON-WORKING HOURS, AND OPEN LANES FOR NORMAL TRAFFIC FLOW WHEN FEASIBLE.
8. IF THE CONTRACTOR CHOOSES TO USE A DIFFERENT METHOD OF "TRAFFIC CONTROL PLANS" DURING THE CONSTRUCTION THAN WHAT IS OUTLINED IN THE CONTRACT DRAWINGS, THE CONTRACTOR SHALL BE RESPONSIBLE TO PREPARE AND SUBMIT AN ALTERNATE SET OF TRAFFIC CONTROL PLANS TO THE CITY OF HOUSTON PROJECT MANAGER FOR APPROVAL TEN WORKING DAYS PRIOR TO IMPLEMENTATION. THESE PLANS SHALL BE DRAWN TO SCALE ON REPRODUCIBLE MYLARS AND SHALL BE SEALED BY A LICENSED ENGINEER IN THE STATE OF TEXAS. OFFICE OF CITY ENGINEER, MOBILITY PERMITS SECTION REPRESENTATIVE APPROVAL IS REQUIRED TO ACCEPT THE PROPOSED CHANGES.
9. CONTRACTOR SHALL SECURE LANE/SIDEWALK/BICYCLE FACILITY CLOSURE PERMITS FROM OFFICE OF CITY ENGINEER (MOBILITY PERMIT SECTION AT https://gethub.houstontx.gov) BEFORE IMPLEMENTING THE TRAFFIC CONTROL PLAN. THE APPLICATION MUST BE SUBMITTED AT LEAST TEN DAYS PRIOR TO THE IMPLEMENTATION OF THE TRAFFIC CONTROL PLAN AND/OR BEGINNING CONSTRUCTION WORK. THE CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL PLANS, CONSTRUCTION SEQUENCING, AND CONSTRUCTION SCHEDULE WITH THE APPLICATION.
10. CONTRACTOR SHALL HAVE APPROVED TRAFFIC CONTROL PLAN AND PERMIT AT THE JOB SITE FOR INSPECTION AT ALL TIMES.
11. DURING PAVEMENT SURFACE RESTORATION PROJECTS; THE CONTRACTOR SHALL NOT OPEN CLOSED LANES UNTIL THE PAVEMENT SURFACE HAS CURED ENOUGH TO ALLOW VEHICULAR TRAFFIC ACCORDING TO CITY OF HOUSTON STANDARD SPECIFICATIONS.
12. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING AND COORDINATING ALL CONSTRUCTION ACTIVITIES WITH S'AKE HOLDERS IN THE VICINITY NCLUDING EMERGENCY RESPONSE AGENCIES SUCH AS HOUSTON POLICE DEPARTMENT, HOUSTON FIRE DEPARTMENT, AND METROPOLITAN TRANSIT AUTHORITY.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR ISSUING ALL WORK DIRECTIVES TO ALL SUB-CONTRACTORS, UTILITY COMPANIES, AND ALL OTHER ENTITIES PERFORMING CONSTRUCTION WORK ASSOCIATED WITH THE PROJECT.
14. NOTHING IN THESE NOTES OR PLANS SHALL RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL MODES OF TRANSPORTATION, PERSONS, AND PROPERTY, AND THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO WORKING HOURS.
15. THE OFFICE OF CITY ENGINEER (MOBILITY PERMITS GROUP) PER THE DIRECTION OF THE CITY TRAFFIC ENGINEER HAVE THE RIGHT TO DEMAND THE INSTALLATION OF ADDITIONAL TRAFFIC CONTROL DEVICES OR MODIFICATIONS OF THESE PLANS AND NOTES, AS DEEMED NECESSARY TO PROMOTE THE SAFE AND ORDERLY FLOW OF TRAFFIC, INCLUDING PEDESTRIANS AND BICYCLES, THROUGH THE CONSTRUCTION WORK ZONE. THE CONTRACTOR SHALL COMPLY WITH THESE ADDITIONAL REQUESTS OR MODIFICATIONS WITH DLE DILIGENCE.
16. ALL EXISTING TRAFFIC CONTROL SIGNS AND PAVEMENT MARKINGS SHALL BE MAINTAINED IN VISIBLE LOCATIONS DURING CONSTRUCTION UNLESS PRIOR WRITTEN APPROVAL IS OBTAINED FROM CITY OF HOUSTON PROJECT MANAGER. THE CONTRACTOR SHALL RESTORE OR REPLACE (AT THE DISCRETION OF THE CITY TRAFFIC ENGINEER) ANY PAVEMENT MARKING OR SIGNING DAMAGE DURING CONSTRUCTION OPERATIONS, INCLUDING RAISED PAVEMENT MARKERS (RPMS).
17. WHEN ENTERING OR LEAVING ROADWAYS CARRYING PUBLIC TRAFFIC, THE CONTRACTOR'S EQUIPMENT, WHETHER EMPTY OR LOADED SHALL N ALL CASES YIELD TO PUBLIC TRAFFIC WITH THE ASSISTANCE OF CONTRACTOR PROVIDED CERTFIED FLAGGER/PEACE OFFICER.
18. ACCESS TO DRIVEWAYS ADJACENT TO THE CONSTRUCTION WORK ZONE SHALL BE MAINTAINED AT ALL TIMES AS MUCH AS POSSIBLE. ADDITIONAL CONES AND/OR DELINEATORS MAY BE REQUIRED TO DELINEATE THE DRIVEWAY ACCESS ROUTE THROUGH THE CONSTRUCTION WORK ZONE. A MINIMUM OF ONE TRAVEL LANE SHALL BE MAINTAINED ACROSS THE DRIVEWAYS, UNLESS PRIOR WRITTEN APPROVAL IS OBTAINED FROM CITY OF HOUSTON PROJECT MANAGER.
19. SPILLAGE RESULTING FROM HAULING OPERATIONS ALONG OR ACROSS ANY PUBLIC TRAVELED WAY SHALL BE REMOVED IMMEDIATELY BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL SUBMIT AN APPLICATION FOR TEMPORARY PARKING RESTRICTIONS IF THERE ARE PARKING METERS LOCATED AT THE PROPOSED LANE CLOSURES FROM PARKING MANAGEMENT DIVISION (832-393-8690) AT LEAST TEN BUSINESS DAYS BEFORE IMPLEMENTATION OF LANE CLOSURES. IN ADDITION, TEMPORARY NO PARKING SIGNS SHALL BE POSTED 24 HOURS PRIOR TO COMMENCEMENT OF WORK.
21. ADDITIONAL OFF DUTY OFFICERS/FLAGGERS MAY BE REQUESTED TO DIRECT TRAFFIC WHEN LANES ARE BLOCKED AT THE DISCRETION OF THE CITY PROJECT MANAGER EVEN IF THEY ARE NOT SPECIFICALLY IDENTIFIED ON THE PROJECT PLANS.
22. THE CONTRACTOR SHALL REPLACE WITHIN 72 HOURS, ALL TRAFFIC SIGNAL LOOP DETECTORS DAMAGED DURING CONSTRUCTION.
23. IN GENERAL, A SOLAR POWERED FLASHING ARROW BOARD SHALL BE REQUIRED ON ALL MAJOR THOROUGHFARE LANES CLOSURES. EXCEPTIONS TO FLASHING ARROW BOARDS AND/OR IMPLEMENTATION ON RESIDENTIAL LANE CLOSURES SHALL BE APPROVED BY CITY TRAFFIC ENGINEER.
24. APPROVED TRAFFIC CONTROL PLAN SHALL BE IN PLACE BEFORE STARTING ANY EXCAVATION.
25. WATER FILLED BARRIERS CAN BE USED AS INSTRUCTED BY THE ENGINEER AND APPROVED BY THE CITY FOR PROJECTS WHERE SPACE IS LIMITED AND HEAVY EQUIPMENT TO PLACE CONCRETE BARRIERS IS NOT FEASIBLE. WATER FILLED BARRIERS SHALL NOT BE USED ON ROADWAYS WITH A POSTED SPEED LIMIT MORE THAN 45 MPH.
26. WATER FILLED BARRIERS MUST BE INSTALLED AND MAINTAINED PER THE MANUFACTURER'S REQUIREMENTS AND ROUTINELY INSPECTED FOR DEFECTS.
27. IF WATER FILLED BARRIER IS PROVIDED, USE ENVIRONMENTALLY SAFE ANTI-FREEZING AGENT IN THE WATER WHEN IT IS APPLICABLE PER MANUFACTURER SPECIFICATIONS AND RECOVER AGENT WHEN THE BARRIER IS DRAINED.
28. DISPOSE OF WATER AND AGENT PROPERLY. DO NOT DRAIN WATER FILLED BARRIER INTO OR ACROSS AN EXISTING TRAVEL LANE.
29. PROVIDE BARRIER UNITS THAT ARE CAPABLE OF BEING LIFTED AND MOVED WHEN FILLED IF DRAINING IS NOT POSSIBLE.
30. PROVIDE WATER FILLED BARRIER THAT ACTS AS ITS OWN FREE STANDING, NON-REDIRECTIVE END TREATMENT.
31. WHEN WATER FILLED BARRIERS ARE USED TO CHANNELIZE PEDESTRIANS, THEY MUST HAVE A CONTINUOUS DETECTABLE BOTTOM FOR USERS OF LONG CANES AND THE TOP OF THE UNIT SHALL NOT BE LESS THAN 32 INCHES IN HEIGHT.
32. ANY CLOSURE OF A PEDESTRIAN OR BICYCLE FACILITY SHALL REQUIRE THE SHORTEST DETOUR THAT MAINTAINS THE SAFETY OF PEDESTRIAN AND/OR BICYCLISTS.

SPACING FOR CHANNELIZING DEVICES

A. PLASTIC DRUMS ON MERGING TAPER @ 30' C – C WITH CHEVRON SIGN @ 60' C – C AND WARNING LIGHTS FOR OVERNIGHT CLOSURE.

B. PLASTIC DRUMS ON DOWNSTREAM TAPER @ 30' C – C (RETURN TAPER AND BARRICADE ARE OPTIONAL AND DIVIDED ROADWAY SECTION)

C. PLASTIC DRUMS ON RADII @ 35' C –C.

D. PLASTIC DRUMS ON TANGENT @ 35' C – C WITH VERTICAL PANEL AT 70' C – C AND APPROVED WARNING LIGHT @ 70' C – C (FOR OVERNIGHT CLOSURE).

E. PLASTIC DRUMS IN FRONT OF CONSTRUCTION ZONE @ 20' C – C WITH VERTICAL PANEL AT 40' C – C AND APPROVED WARNING LIGHT @ 40' C – C (FOR OVERNIGHT CLOSURE).

F. CONCRETE TRAFFIC BARRIER (CTB) OR LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) WITH APPROVED REFLECTORS @ 10' C – C IF PAVEMENT DROP IS GREATER THAN 1 FOOT.

G. PLASTIC DRUMS W/GUARD RAIL MOUNTED.

H. SELF- RIGHTING VERTICAL PANEL SPACING.
- 4 LANES TO 2 LANES UNDIVIDED ROADWAY SECTION @ 20' C – C.
- 4 LANES DIVIDED ROADWAY TO ONE SIDE TWO WAY ROADWAY @ 20' C – C.
- LEFT LANE AND RIGHT LANE STORAGE BAYS @ 15' C – C.

I. SPACING SHOWN ON TRAFFIC CONTROL SHALL SUPERSEDE THE ABOVE SPACING.

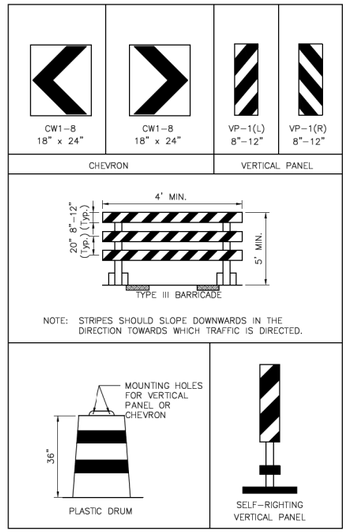
J. SPACING MAY BE ADJUSTED TO PROVIDE DRIVEWAYS, INTERSECTIONS AND /OR MEDIAN OPENINGS.

TABLE C3 – TYPICAL SIGN SPACING, TAPER LENGTHS, AND SUGGESTED SPACING OF CHANNELIZATION DEVICES

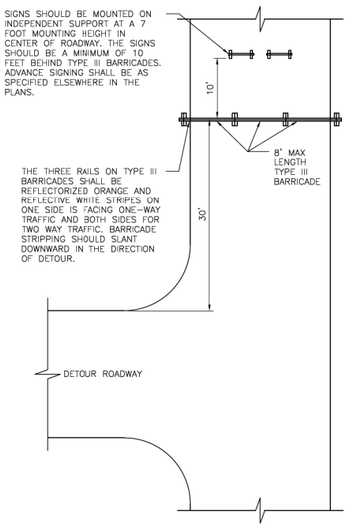
POSTED SPEED (MPH)	SIGN SPACING "X" (FEET)	MIN. DESIRABLE TAPER LENGTH "L"			SUGGESTED MAXIMUM SPACING OF DEVICE	
		10' OFFSET	11' OFFSET	12' OFFSET	ON A TAPER	ON A TANGENT
30	120'	150'	165'	180'	30'	60'-75'
35	160'	205'	225'	245'	35'	70'-90'
40	240'	265'	295'	320'	40'	80'-100'
45	320'	450'	495'	540'	45'	90'-110'
50	400'	500'	550'	600'	50'	100'-125'
55	500'	550'	605'	660'	55'	110'-140'

TABLE C4 – STOPPING SIGHT DISTANCE AS A FUNCTION OF SPEED

POSTED SPEED (MPH)	DISTANCE "D" (FEET)
30	200
35	250
40	305
45	360
50	425
55	495



CHANNELIZATION AND BARRICADES



PLAN VIEW
TYPE III BARRICADE (POST AND SKID)
TYPICAL APPLICATION

LEGEND:

- SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- BARRICADE
- FLASHING ARROW PANEL
- AREA UNDER CONSTRUCTION
- EXISTING TRAVEL WAY
- TRAFFIC CONTROL PLAN DETOUR TRAVEL WAY

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CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: DocuSigned by: Carol Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 01555-01

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TCP NOTES CHANNELIZING DEVICES AND BARRICADES

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TCP NOTES CHANNELIZING DEVICES AND BARRICADES

SHEET 1 OF 1

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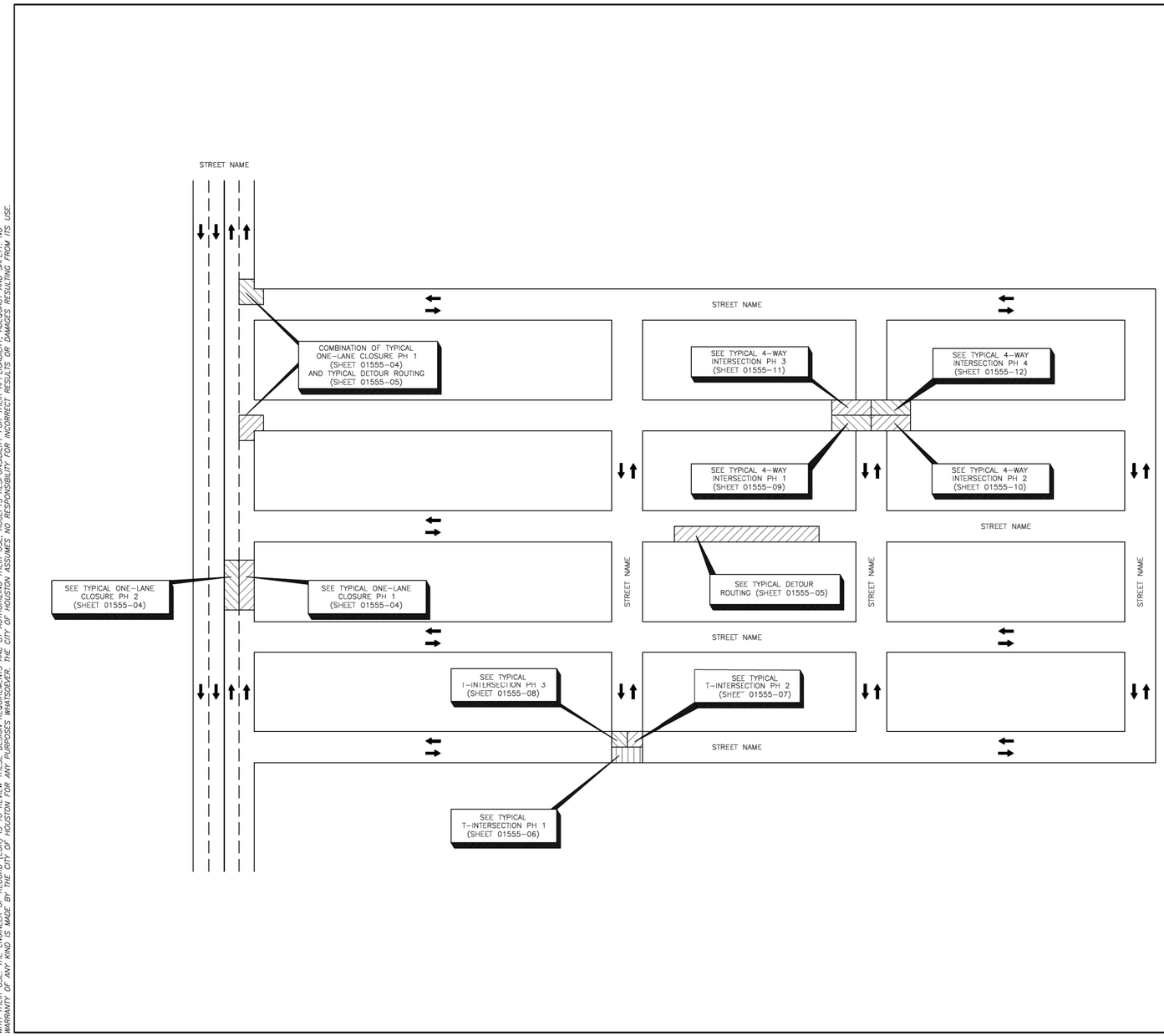

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Docusigned by: Suhail Kanwar	Docusigned by: HUNG NGUYEN
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: Docusigned by: Carol Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
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TCP OVERALL TRAFFIC CONTROL LAYOUT

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HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TCP OVERALL TRAFFIC CONTROL LAYOUT

SHEET 1 OF 1

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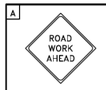			
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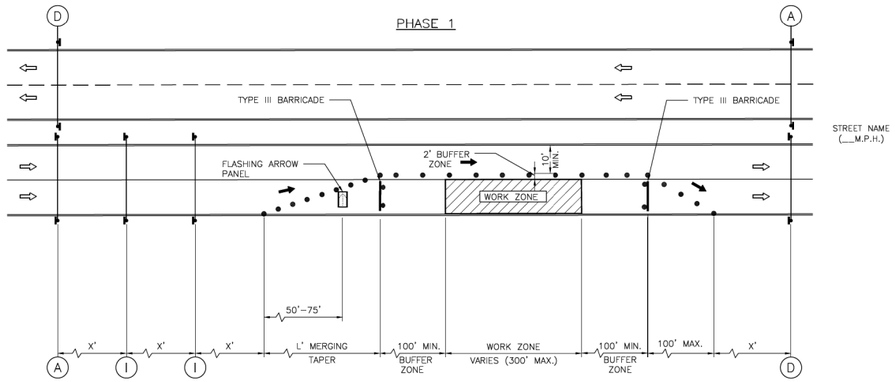

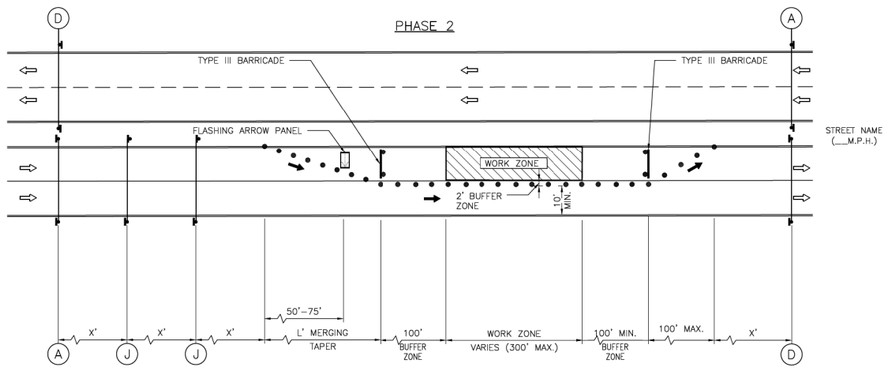

LEGEND:

- SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- BARRICADE
- FLASHING ARROW PANEL
- AREA UNDER CONSTRUCTION
- EXISTING TRAVEL WAY
- TRAFFIC CONTROL PLAN DETOUR TRAVEL WAY

NOTES:

1. RETURN TAPERS AND DOWNSTREAM BARRICADES ARE OPTIONAL ON A DIVIDED ROADWAY SECTION.
2. DOUBLE SIGNS SHALL BE USED ONLY ON ROADWAYS WITH MEDIANS.
3. FOR DIMENSIONS REFER TO SHEET 01555-01.
4. INSTALL FLASHERS ON DRUMS WHERE REQUIRED AND APPROVED BY CITY TRAFFIC ENGINEER.

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DocuSigned by: Sukul Tanwar	DocuSigned by: KHANG NGUYEN
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APPROVED BY: DocuSigned by: Carl Haddock	
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TCP ONE LANE CLOSURE
PHASE 1 & 2

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ANTOINE DRIVE

TPC ONE LANE CLOSURE
PHASE 1 & 2

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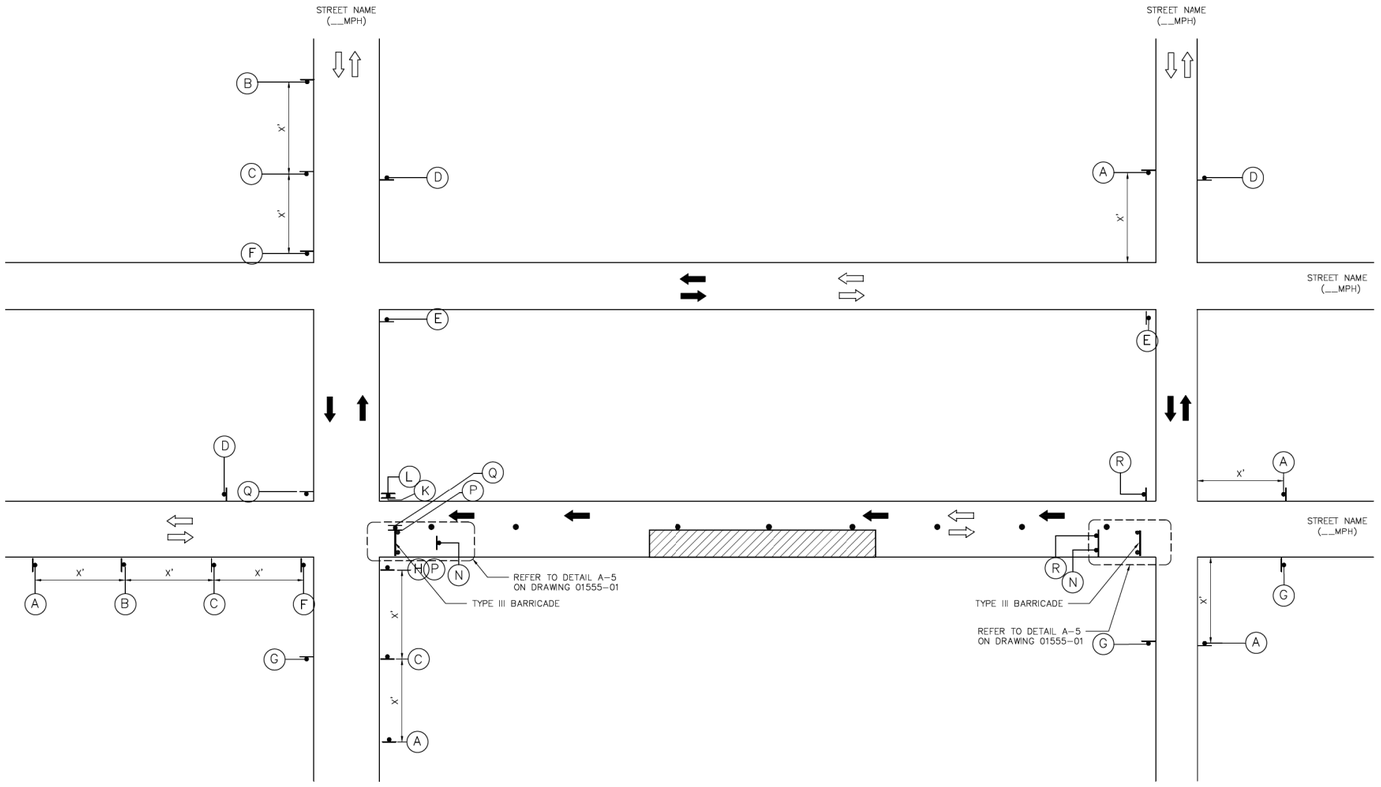
K	L	M	N	O	P	Q	R
ONE WAY ← R6-2(L)	ONE WAY → R6 2(R)	DO NOT ENTER R5-1	ROAD CLOSED R11-2	DETOUR M4-10(L)	 R3-1	 R3-2	BEGIN ONE WAY R6-6



LEGEND:

- SIGN
- FLAGGER
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- BARRICADE
- FLASHING ARROW PANEL
- AREA UNDER CONSTRUCTION
- EXISTING TRAVEL WAY
- TRAFFIC CONTROL PLAN DETOUR TRAVEL WAY

NOTES:

1. A 10' MINIMUM LANE WIDTH FOR EMERGENCY SHALL BE MADE AVAILABLE AND MAINTAINED BY THE CONTRACTOR AT ALL TIMES.
2. FOR DIMENSIONS REFER TO SHEET 01555-01.
3. INSTALL FLASHERS ON DRUMS WHERE REQUIRED AND APPROVED BY CITY TRAFFIC ENGINEER.

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CITY OF HOUSTON
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TCP TYPICAL DETOUR ROUTING WITH ONE LANE CLOSURE (ONE BLOCK)

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ANTOINE DRIVE

TCP TYPICAL DETOUR ROUTING WITH ONE LANE CLOSURE (ONE BLOCK)

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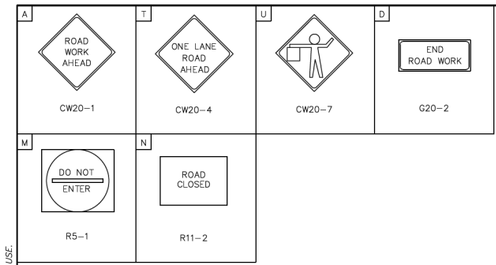

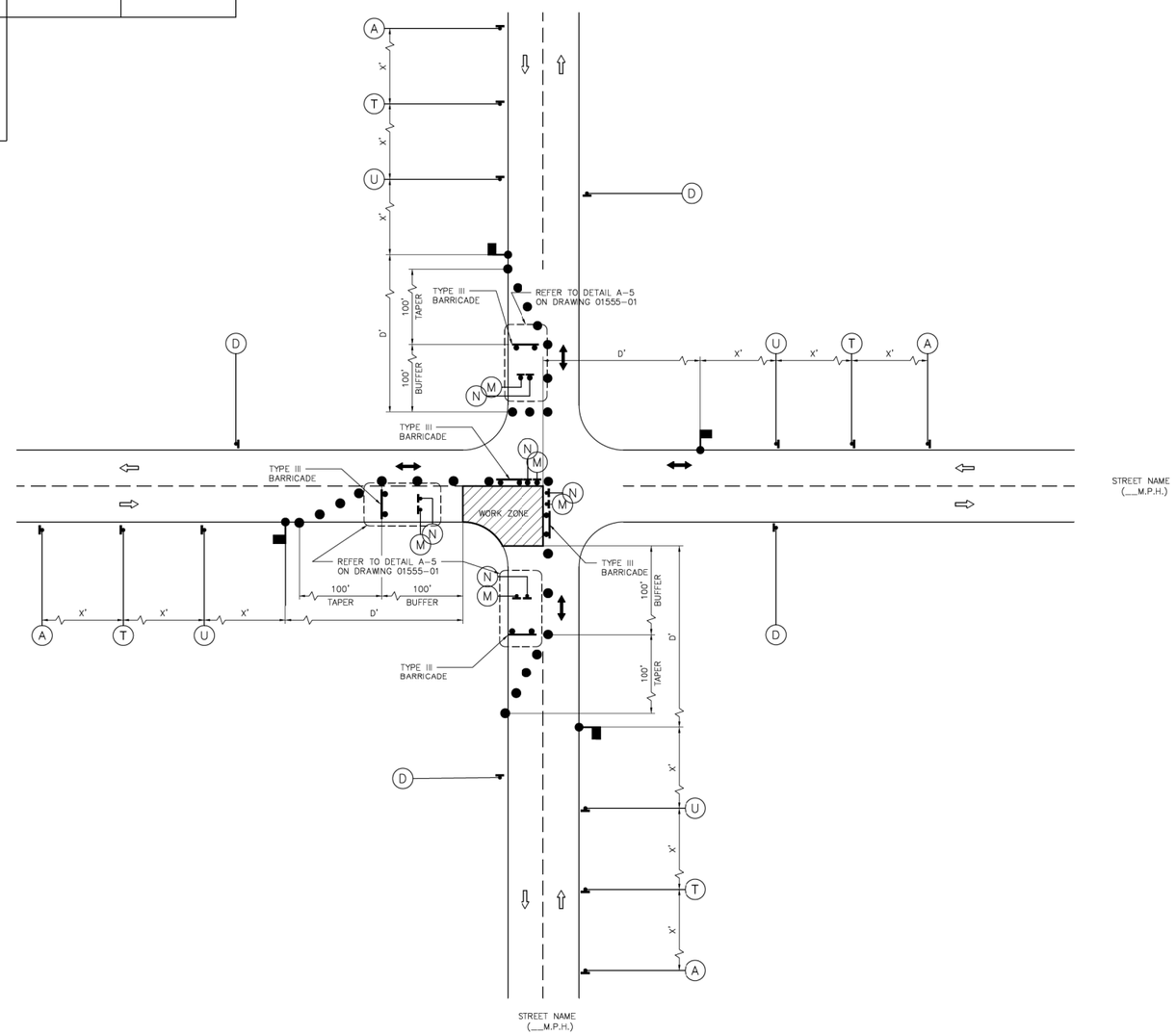

LEGEND:

- SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- BARRICADE
- FLASHING ARROW PANEL
- AREA UNDER CONSTRUCTION
- EXISTING TRAVEL WAY
- TRAFFIC CONTROL PLAN DETOUR TRAVEL WAY

NOTES:

1. MINOR WORK AND DAYTIME OPERATIONS ONLY.
2. REFER TO PROJECT SPECIFIC TRAFFIC CONTROL PLANS FOR MAJOR OPERATIONS AND OVERNIGHT LANE CLOSURES.
3. FOR DIMENSIONS REFER TO SHEET 01555-01.
4. INSTALL FLASHERS ON DRUMS WHERE REQUIRED AND APPROVED BY CITY TRAFFIC ENGINEER.
5. MAX. 100' WORK ZONE AT A TIME.

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APPROVED BY: DocuSigned by: Carol Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
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HOUSTON PUBLIC WORKS STANDARD

TCP TYPICAL CONSTRUCTION ZONE AT A 4-WAY INTERSECTION (LOW VOLUME TRAFFIC) PHASE 1 OF 4

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TCP TYPICAL CONSTURCTION ZONE AT A 4-WAY INTERSECTION (LOW VOLUME TRAFFIC) PHASE 1 OF 4
SHEET 1 OF 1

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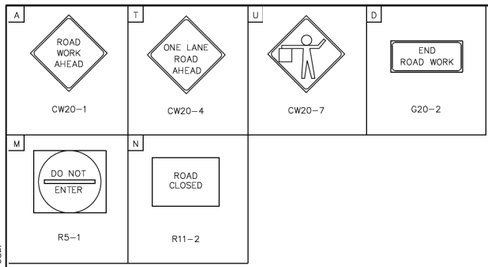

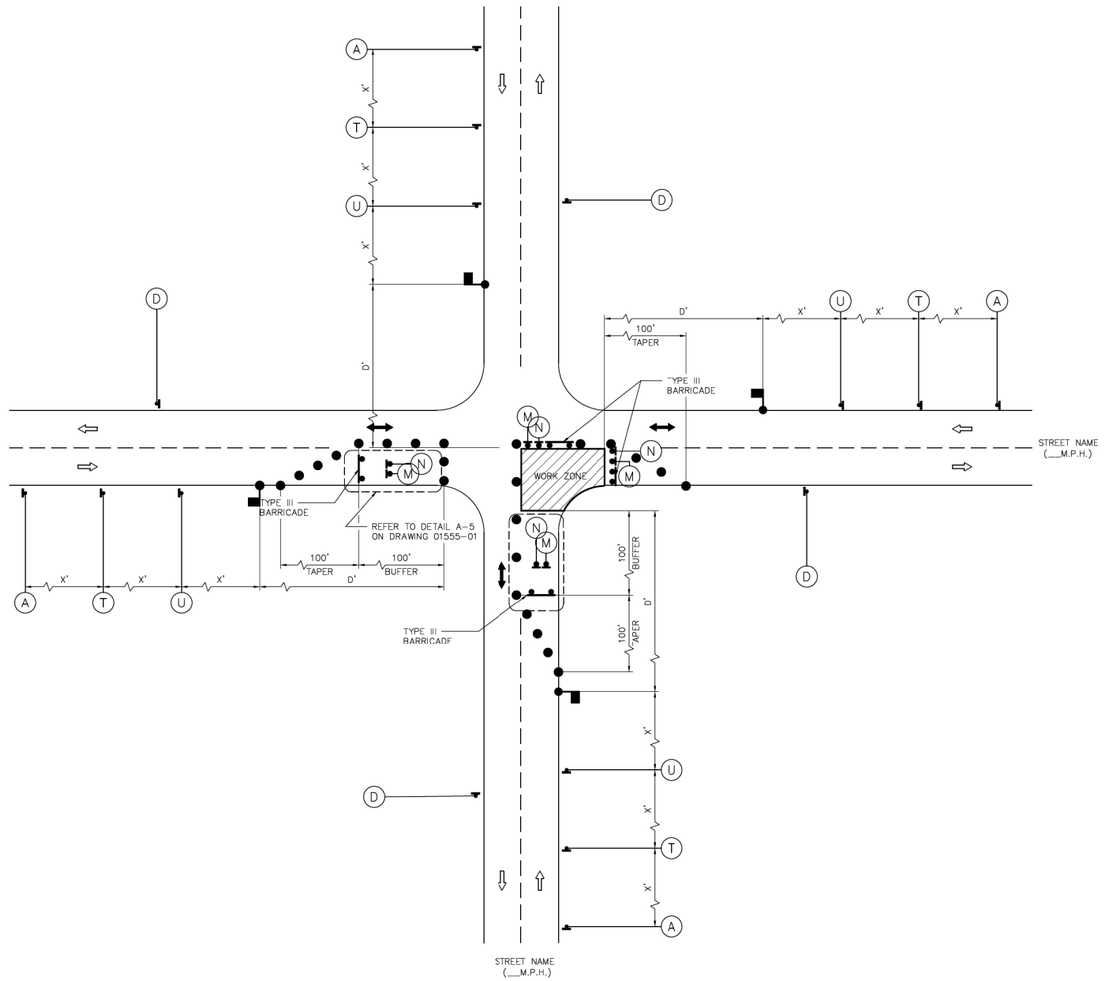

LEGEND:

- SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- BARRICADE
- FLASHING ARROW PANEL
- AREA UNDER CONSTRUCTION
- EXISTING TRAVEL WAY
- TRAFFIC CONTROL PLAN DETOUR TRAVEL WAY

NOTES:

1. MINOR WORK AND DAYTIME OPERATIONS ONLY.
2. REFER TO PROJECT SPECIFIC TRAFFIC CONTROL PLANS FOR MAJOR OPERATIONS AND OVERNIGHT LANE CLOSURES.
3. FOR DIMENSIONS REFER TO SHEET 01555-01.
4. INSTALL FLASHERS ON DRUMS WHERE REQUIRED AND APPROVED BY CITY TRAFFIC ENGINEER.
5. MAX. 100' WORK ZONE AT A TIME.

APPROVED BY:	APPROVED BY:
DocuSigned by: Suhail Kanwar 9EF8B0C64F1F4F8...	DocuSigned by: KHANG NGUYEN 95A29EF0A7B84C0...
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: DocuSigned by: Carol Haddock 9A8C4F0B7A8D4B3...	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 01555-10

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TCP TYPICAL CONSTRUCTION ZONE AT A 4-WAY INTERSECTION (LOW VOLUME TRAFFIC) PHASE 2 OF 4

FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE
NOT TO SCALE

Texas Department of Transportation ©2026

Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY, #400
HOUSTON, TX 77079

SURVEYED BY:
KUO & ASSOCIATES, INC.

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KARAM QADDO
Date: 125611
10/24/2025
Date: 95% SUBMITTAL
GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
TCP TYPICAL CONSTURCTION ZONE AT A 4-WAY INTERSECTION (LOW VOLUME TRAFFIC) PHASE 2 OF 4
SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 150 OF 718	

No.	DATE	REVISIONS	APP.

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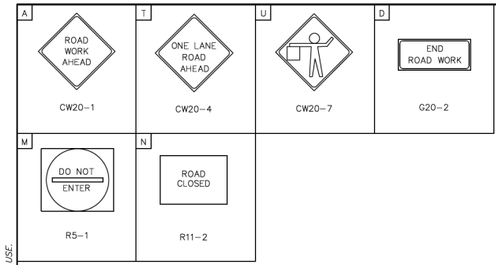

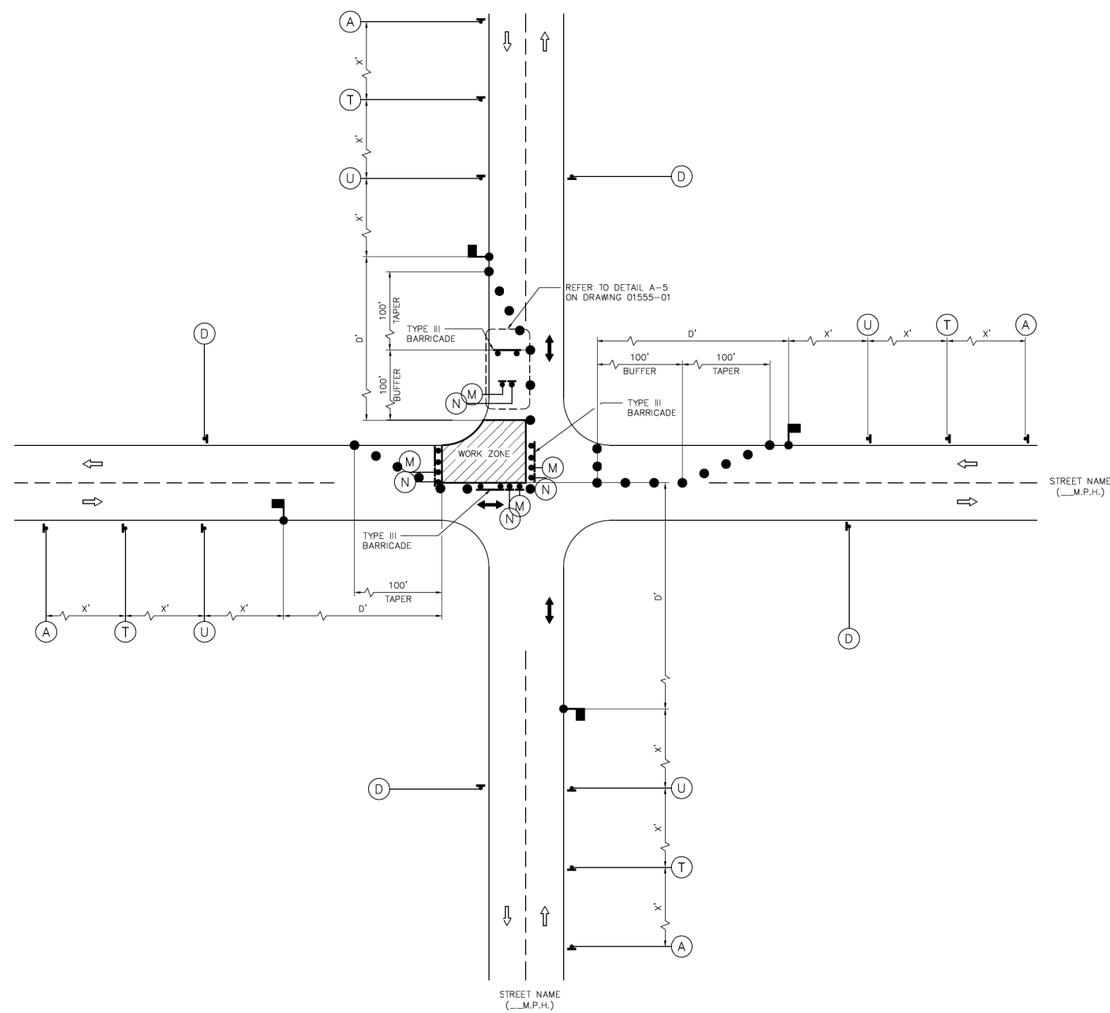

LEGEND:

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APPROVED BY:	APPROVED BY:
DocuSigned by: Suhail Kanwar	DocuSigned by: HUNG NGUYEN
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: DocuSigned by: Carol Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 01555-11

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TCP TYPICAL CONSTRUCTION ZONE AT A 4-WAY INTERSECTION (LOW VOLUME TRAFFIC) PHASE 3 OF 4

FOR CITY OF HOUSTON USE ONLY

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NOT TO SCALE

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY, #400
HOUSTON, TX 77079

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125611
10/24/2025
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Texas Registered Engineering Firm F-20017

SURVEYED BY:
KUO & ASSOCIATES, INC.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
TCP TYPICAL CONSTURCTION ZONE AT A 4-WAY INTERSECTION (LOW VOLUME TRAFFIC) PHASE 3 OF 4
SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 151 OF 718	

No.	DATE	REVISIONS	APP.

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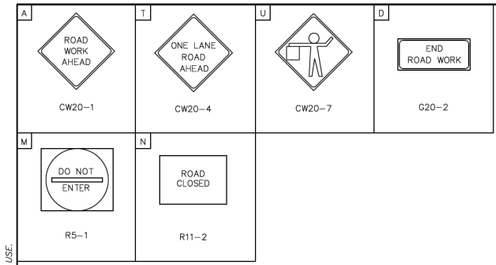

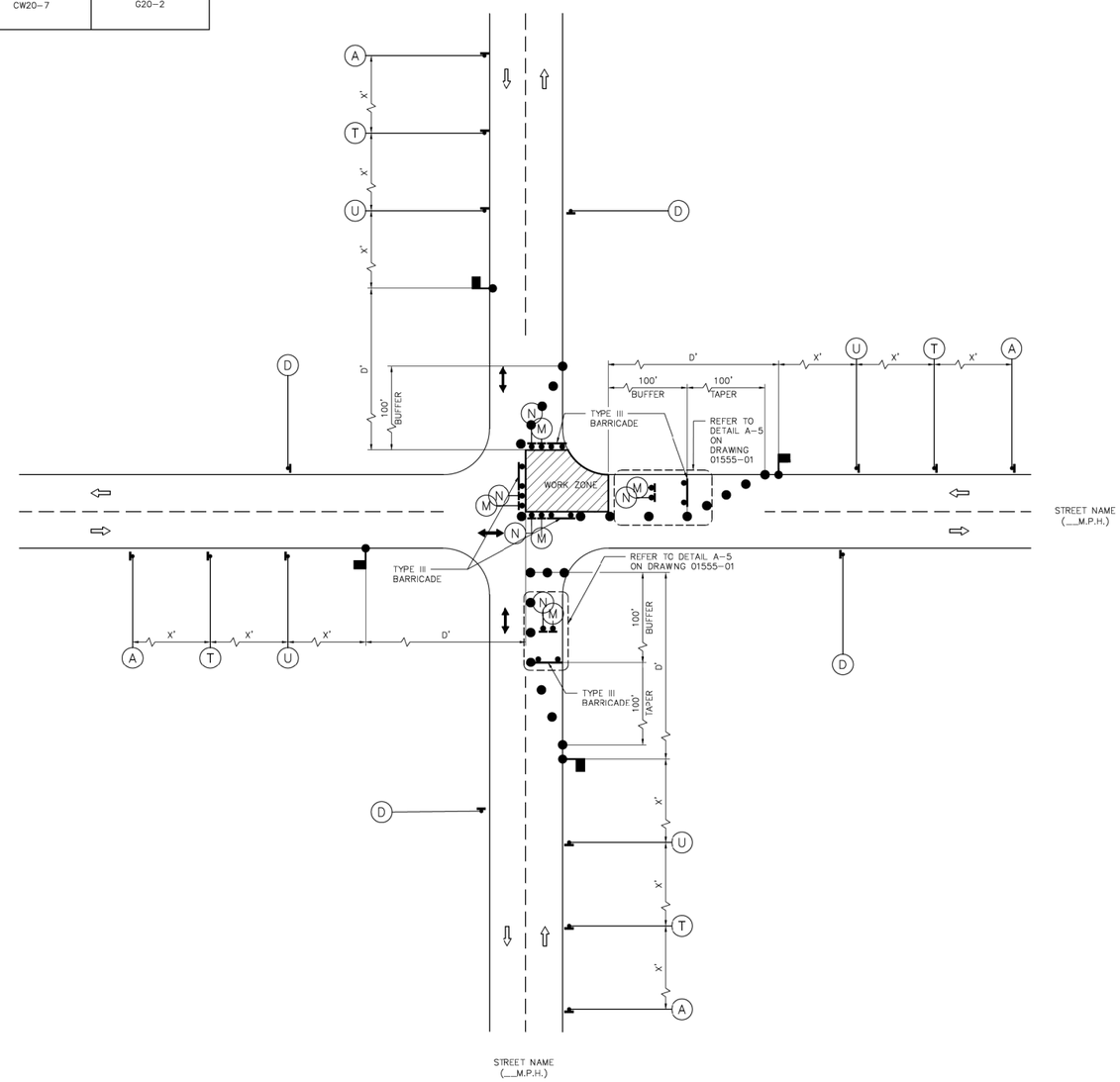

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APPROVED BY:	APPROVED BY:
DocuSigned by: Suhad Kanwar	DocuSigned by: KHUNG NGUYEN
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: DocuSigned by: Carol Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 01555-12

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TCP TYPICAL CONSTRUCTION ZONE AT A 4-WAY INTERSECTION (LOW VOLUME TRAFFIC) PHASE 4 OF 4

FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE
NOT TO SCALE

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY, #400
HOUSTON, TX 77079

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
TCP TYPICAL CONSTURCTION ZONE AT A 4-WAY INTERSECTION (LOW VOLUME TRAFFIC) PHASE 4 OF 4
SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 152 OF 718	

No.	DATE	REVISIONS	APP.

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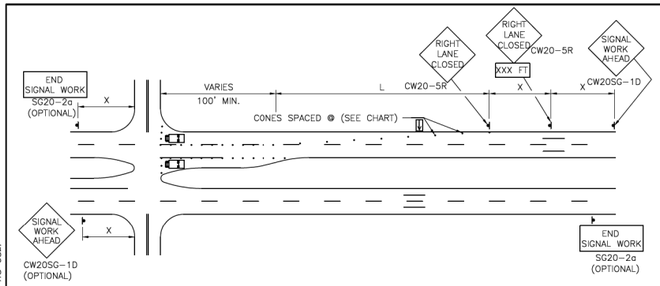
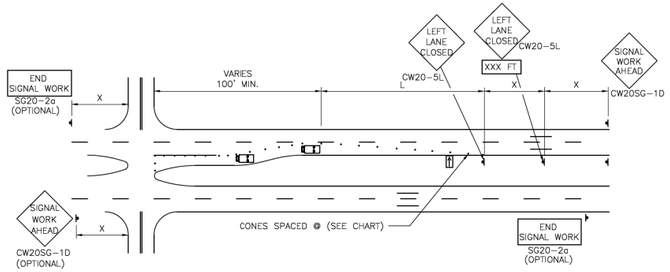
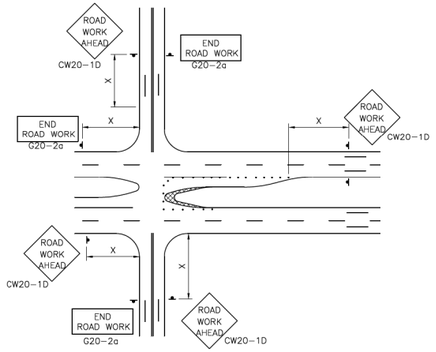
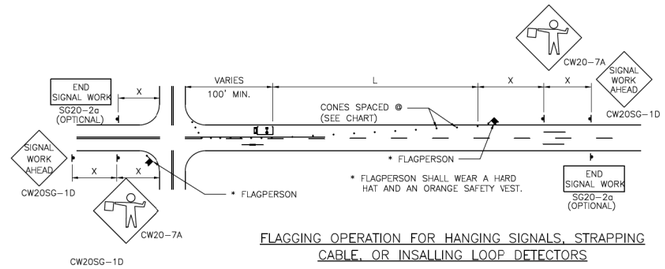


ONE LANE CLOSURE W/ RIGHT LANE AND/OR LEFT TURN LANE CLOSED

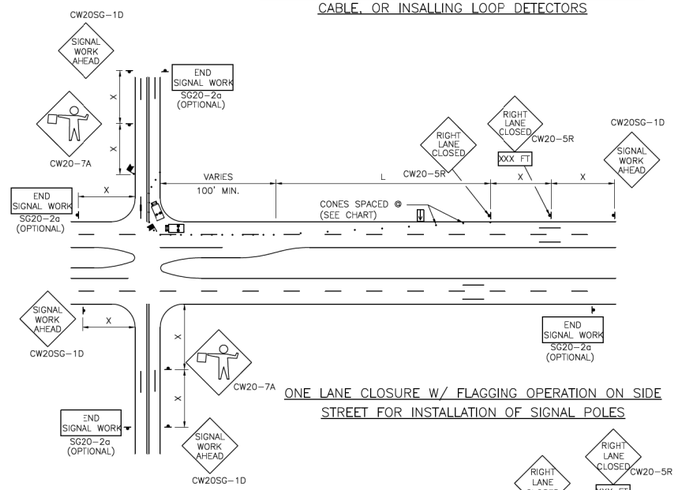


ONE LANE CLOSURE W/ LEFT LANE AND/OR LEFT TURN LANE CLOSED

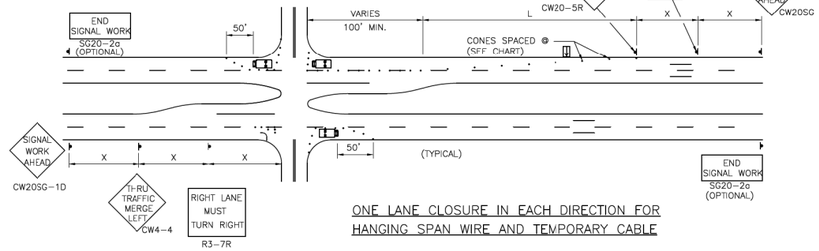




FLAGGING OPERATION FOR HANGING SIGNALS, STRAPPING CABLE, OR INSALLING LOOP DETECTORS



ONE LANE CLOSURE W/ FLAGGING OPERATION ON SIDE STREET FOR INSTALLATION OF SIGNAL POLES



ONE LANE CLOSURE IN EACH DIRECTION FOR HANGING SPAN WIRE AND TEMPORARY CABLE

TYPICAL TRANSITION LENGTHS

SUGGESTED MAXIMUM SPACING OF DEVICES

POSTED SPEED	FORMULA	MINIMUM DESIRABLE TAPER LENGTHS **			SUGGESTED MAXIMUM SPACING OF DEVICE		MINIMUM SIGN SPACNG X DISTANCE
		10' OFFSET	11' OFFSET	12' OFFSET	ON A TAPER	ON A TANGENT	
30	L=WS²/60	150'	165'	180'	30'	60'–75'	120'
35		205'	225'	245'	35'	70'–90'	160'
40		265'	295'	320'	40'	80'100'	240'
45	L=WS	450'	495'	540'	45'	90'–110'	320'
50		500'	550'	600'	50'	100'–125'	400'
55		550'	605'	660'	55'	100'–140'	500'
60		600'	660'	720'	60'	120'–150'	600'

** TAPER LENGTHS HAVE BEEN ROUNDED OFF
L=LENGTH OF TAPER (FT.)
W=WIDTH OF OFFSET (FT.)
S=POSTED SPEED(MPH)

NOTES:

1. ALL TRAFFIC CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST REVISION.
2. THE MINIMUM LANE WIDTH ALLOWED IS 10 FEET. THE MINIMUM BUFFER ZONE BETWEEN THE WORK ZONE AND ADJACENT TRAFFIC IS 2 FEET.
3. FLORESCENT ORANGE SHALL BE THE BACKGROUND COLOR ON ALL WORK ZONE SIGNS.
4. THE CONTRACTOR SHALL REMOVE ADVANCE SIGNS WHEN NO CONSTRUCTION OPERATIONS ARE UNDERWAY.
5. OBSTRUCTIONS OR HAZARDS AT THE WORK AREA SHALL BE CLEARLY MARKED AND DELINEATED AT ALL TIMES.
6. ALL HOLES, TRENCHES OR OTHER HAZARDOUS AREAS SHALL BE ADEQUATELY PROTECTED BY LIGHTS OR OTHER PROTECTIVE DEVICES.
7. TRENCHES SHALL BE COVERED OR SURROUNDED WITH ORANGE PLASTIC CONSTRUCTION FENCE AS DIRECTED BY THE ENGINEER.
8. FLAGGER AND FCW20-7a SIGN MAY BE REQUIRED ACCORDING TO FIELD CONDITIONS.
9. VEHICLES PARKED IN ROADWAY SHALL BE EQUIPPED WITH TWO STROBES.

LEGEND:

HEAVY WORK VEHICLE

FLASHING ARROW PANEL

APPROVED BY:	APPROVED BY:
Docusigned by: Sukul Kanvar	Docusigned by: HUNG NGUYEN
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: Docusigned by: Carl Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV–27–2023	DWG NO: 01555–13

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TRAFFIC CONTROL PLAN FOR SIGNAL CONSTRUCTION

	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	
NOT TO SCALE	

No.	DATE	REVISIONS	APP'D

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HOUSTON, TX 77079

SURVEYED BY:
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Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TRAFFIC CONTROL PLAN FOR SIGNAL CONSTRUCTION

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N–100030–0GEC–3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 153 OF 718	

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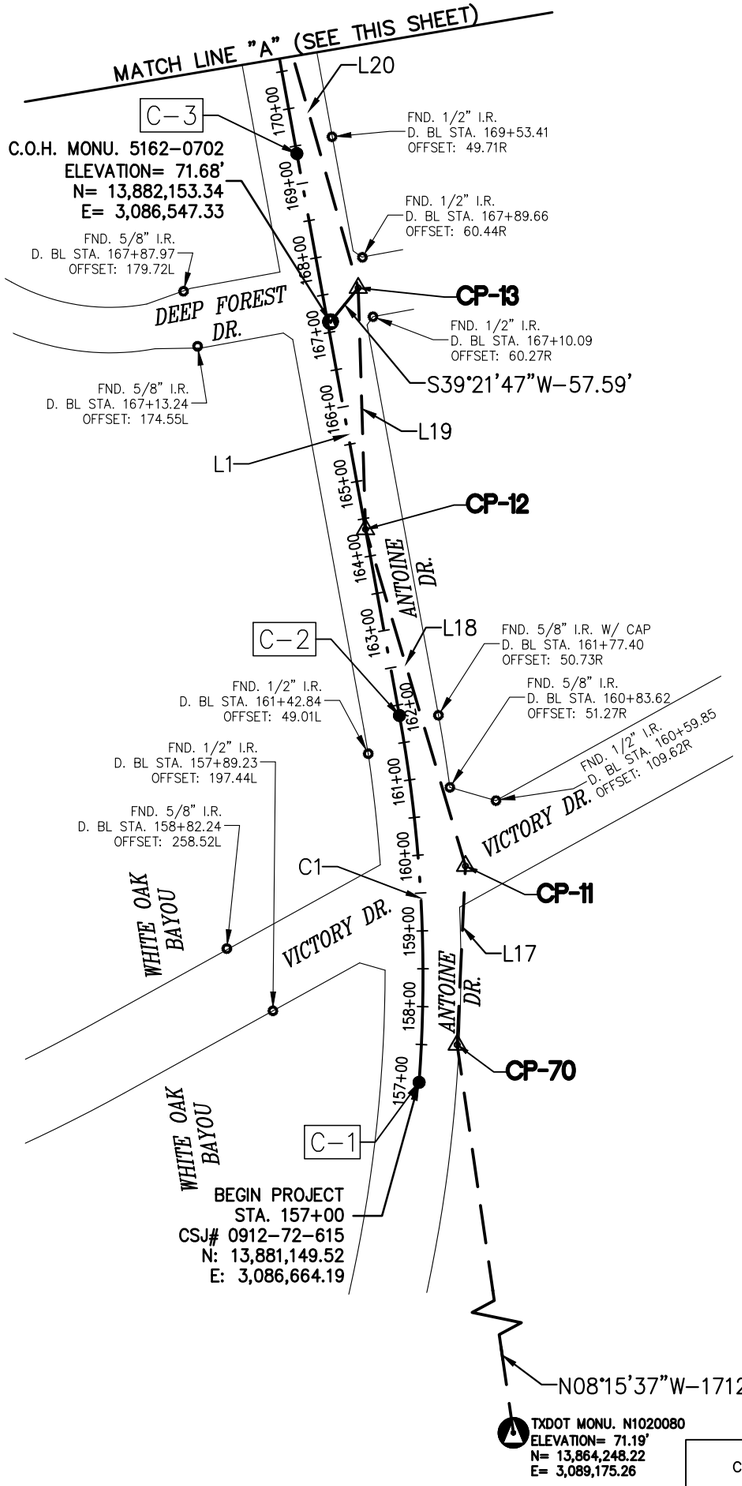
Plotted on: 10/24/2025 3:06:52 PM michael.guthrie
Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Traffic Control\W GULF BANK\STANDARD DETAILS\TCP_STD 09.dgn



CONTROL NAME	PUBLISHED COORDINATES INFORMATION			MEASURED COORDINATES INFORMATION			DIFFERENCE		
	N. COORD.	E. COORD.	ELEV. (NAVD88, 1991 ADJ)	N. COORD.	E. COORD.	ELEV. (NAVD88, GEOID 12A)	N. COORD.	E. COORD.	ELEV.
N1020080	13,864,248.20	3,089,175.24	71.38	13,864,248.22	3,089,175.26	71.19	-0.02	-0.02	0.19'

0 100 200
SCALE: 1" = 200'-0"

No.	DATE	REVISIONS	APP.

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162-0610, A BRASS DISK IN CONCRETE, LOCATED NEAR THE NORTH MEDIAN NOSE OF THE INTERSECTION OF ANTOINE DRIVE AND ARNCLIFFE DRIVE.

ELEV. 77.36 FEET NAVD 1988 (GEOID '12A)*

* OBSERVED BY GPS SURVEYING AND PROCESSED IN REFERENCE TO THE CORS DATED OCTOBER 30, 2017. ELEW.

NOTE:

ALL BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NORTH AMERICAN DATUM OF 1983, (2011) (EPOCH 2010.00).

ALL DISTANCES AND COORDINATES SHOWN ARE SURFACE AND MAY BE CONVERTED TO GRID BY DIVIDING BY A COMBINED ADJUSTMENT FACTOR OF 1.00013.

ALL ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), (GEOID '12A).

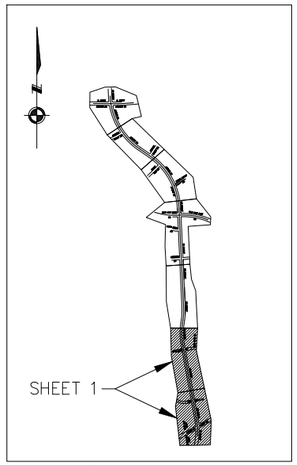
VERTICAL DATUM ADJUSTMENT TO TXDOT REFERENCE DATUM:

THE ELEVATION DIFFERENCE IN BETWEEN TXDOT MONUMENT'S (N1020080) PUBLISHED DATUM NAVD 1988, 1991 ADJUSTMENT AND CITY OF HOUSTON MONUMENT'S (5162-0610) DATUM NAVD 1988, GEOID '12A IS 0.19'.

NAVD 1988, 1991 ADJUSTMENT (TXDOT MONUMENT) ELEVATION
= NAVD 1988, GEOID '12A (CITY OF HOUSTON MONUMENT) ELEVATION + 0.19 FT

LEGEND:

B-X	SURVEY CONTROL POINT NUMBER
C-X	DESIGN BASELINE POINT NUMBER
▲	SURVEY CONTROL POINT
●	DESIGN BASELINE POINT
◉	CITY OF HOUSTON MONUMENT
D. BL:	DESIGN BASELINE
S. BL:	SURVEY BASELINE



SHEET LAYOUT
N.T.S.

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Consulting Engineers & Surveyors
10300 Westoffice Dr., Suite 800, Houston, Texas 77042
Tel: 713-975-8788, Fax: 713-975-2920, www.kuoassociates.com
TBPELS Engineering Firm Reg. No. F-4578
TBPELS Surveying Firm Reg. No. 10075600

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KUTUBUL A. M. MAINUDDIN, R.P.L.S.
TEXAS REG. NO.: 6404
DATE: MARCH, 2024

SURVEYED BY:
KUO & ASSOCIATES, INC.

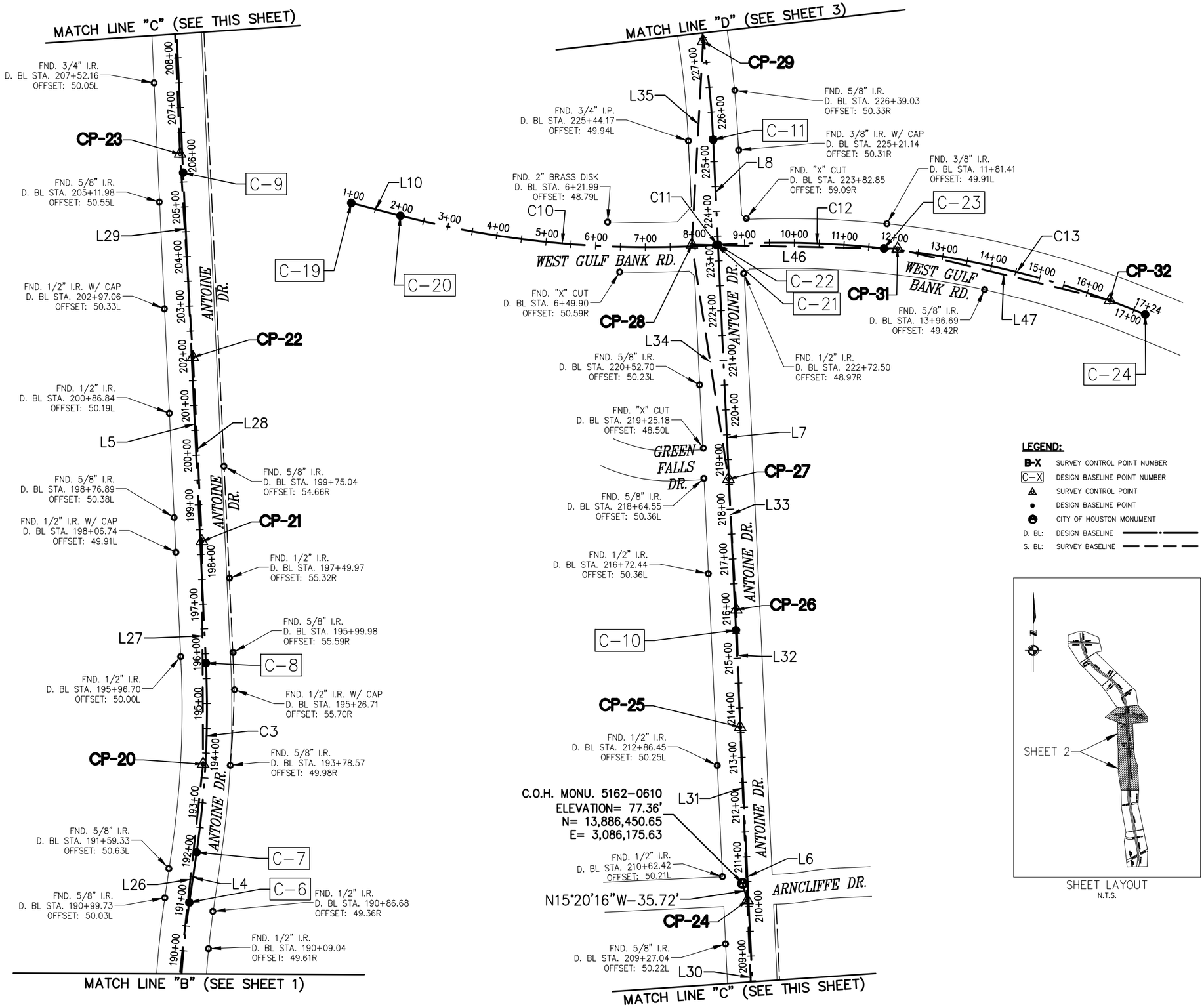
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE IMPROVEMENT FROM VICTORY DRIVE TO W. MOUNT HOUSTON ROAD

SURVEY CONTROL INDEX SHEET
(SHEET 1 OF 6)

WBS NUMBER	N-100030-0GEC-3
DRAWING SCALE	SCALE: 1" = 200'
CITY OF HOUSTON PM	ROWAIDAH AYOUB
SHEET NO.	OF 718

FOR CITY OF HOUSTON USE ONLY



0 100 200

SCALE: 1" = 200'-0"

No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON MONUMENT 5162-0610, A BRASS DISK IN CONCRETE, LOCATED NEAR THE NORTH MEDIAN NOSE OF THE INTERSECTION OF ANTOINE DRIVE AND ARNCLIFFE DRIVE.

ELEV. 77.36 FEET NAVD 1988 (GEOID '12A)*

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ALL ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), (GEOID '12A).

VERTICAL DATUM ADJUSTMENT TO TXDOT REFERENCE DATUM:

THE ELEVATION DIFFERENCE IN BETWEEN TXDOT MONUMENT'S (N1020080) PUBLISHED DATUM NAVD 1988, 1991 ADJUSTMENT AND CITY OF HOUSTON MONUMENT'S (5162-0610) DATUM NAVD 1988, GEOID '12A IS 0.19'.

NAVD 1988, 1991 ADJUSTMENT (TXDOT MONUMENT) ELEVATION
= NAVD 1988, GEOID '12A (CITY OF HOUSTON MONUMENT) ELEVATION + 0.19 FT

LEGEND:

B-X	SURVEY CONTROL POINT NUMBER
C-X	DESIGN BASELINE POINT NUMBER
	SURVEY CONTROL POINT
	DESIGN BASELINE POINT
	CITY OF HOUSTON MONUMENT
D. BL:	DESIGN BASELINE
S. BL:	SURVEY BASELINE

SHEET LAYOUT
N.T.S.

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10300 Westoffice Dr., Suite 800, Houston, Texas 77042
Tel: 713-975-8799, Fax: 713-975-0920, www.kuoassociates.com
TBPELS Engineering Firm Reg. No. F-4578
TBPELS Surveying Firm Reg. No. 10075600

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KUTUBUL A. M. MAINUDDIN, R.P.L.S.
TEXAS REG. NO.: 6404
DATE: MARCH, 2024

SURVEYED BY:
KUO & ASSOCIATES, INC.

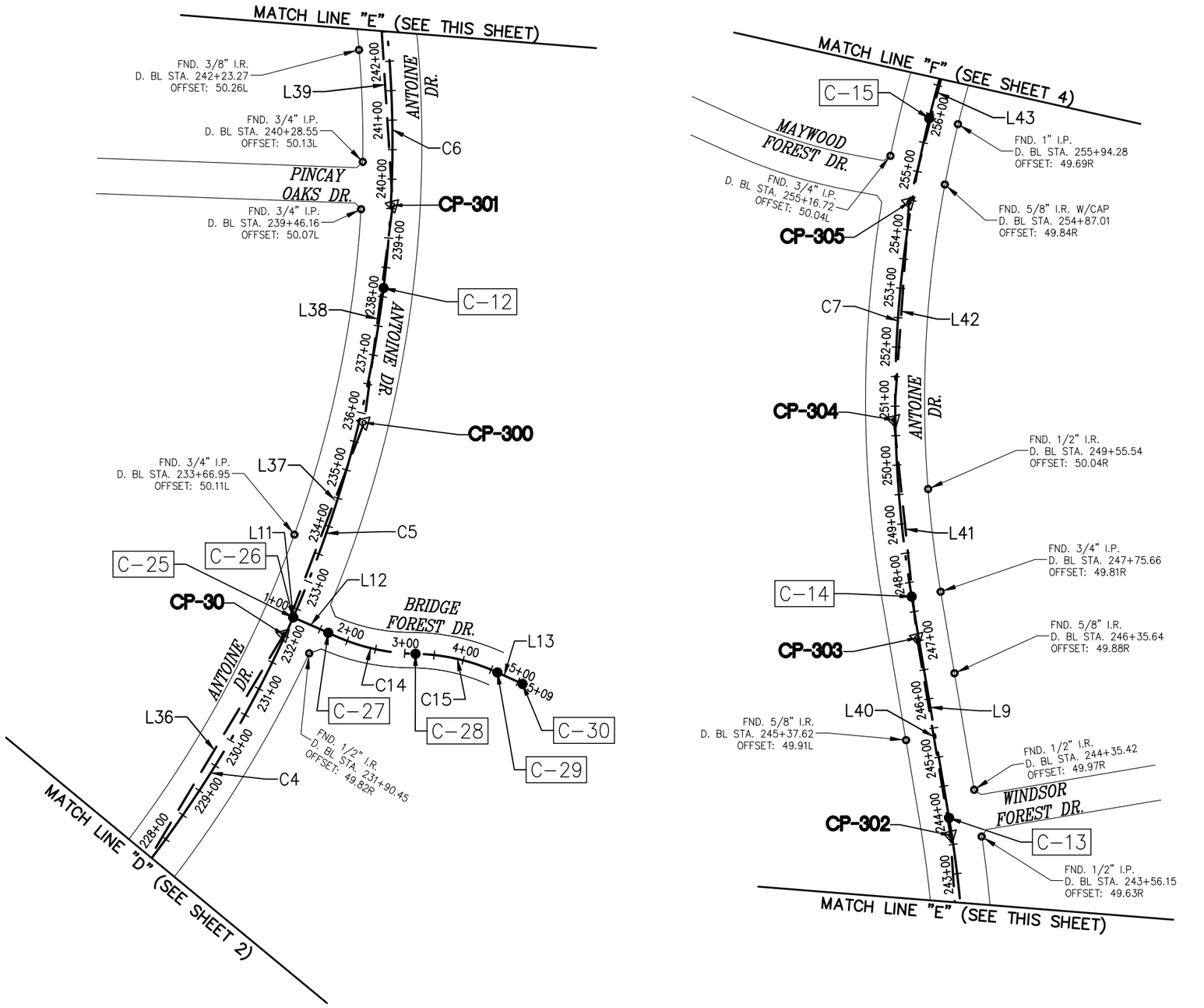
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE IMPROVEMENT FROM VICTORY DRIVE TO W. MOUNT HOUSTON ROAD

SURVEY CONTROL INDEX SHEET

(SHEET 2 OF 6)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
SCALE: 1" = 200'	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. OF 718	



0 100 200
SCALE: 1" = 200'-0"

No.	DATE	REVISIONS	APP.

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162-0610, A BRASS DISK IN CONCRETE, LOCATED NEAR THE NORTH MEDIAN NOSE OF THE INTERSECTION OF ANTOINE DRIVE AND ARNCLIFFE DRIVE.

ELEV. 77.36 FEET NAVD 1988 (GEOID '12A)*

* OBSERVED BY GPS SURVEYING AND PROCESSED IN REFERENCE TO THE CORS DATED OCTOBER 30, 2017. ELEW.

NOTE:

ALL BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NORTH AMERICAN DATUM OF 1983, (2011) (EPOCH 2010.00).

ALL DISTANCES AND COORDINATES SHOWN ARE SURFACE AND MAY BE CONVERTED TO GRID BY DIVIDING BY A COMBINED ADJUSTMENT FACTOR OF 1.00013.

ALL ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), (GEOID '12A).

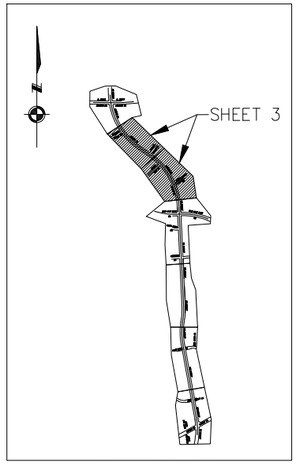
VERTICAL DATUM ADJUSTMENT TO TXDOT REFERENCE DATUM:

THE ELEVATION DIFFERENCE IN BETWEEN TXDOT MONUMENT'S (N1020080) PUBLISHED DATUM NAVD 1988, 1991 ADJUSTMENT AND CITY OF HOUSTON MONUMENT'S (5162-0610) DATUM NAVD 1988, GEOID '12A IS 0.19'.

NAVD 1988, 1991 ADJUSTMENT (TXDOT MONUMENT) ELEVATION
= NAVD 1988, GEOID '12A (CITY OF HOUSTON MONUMENT) ELEVATION + 0.19 FT

LEGEND:

B-X	SURVEY CONTROL POINT NUMBER
C-X	DESIGN BASELINE POINT NUMBER
	SURVEY CONTROL POINT
	DESIGN BASELINE POINT
	CITY OF HOUSTON MONUMENT
D. BL:	DESIGN BASELINE
S. BL:	SURVEY BASELINE



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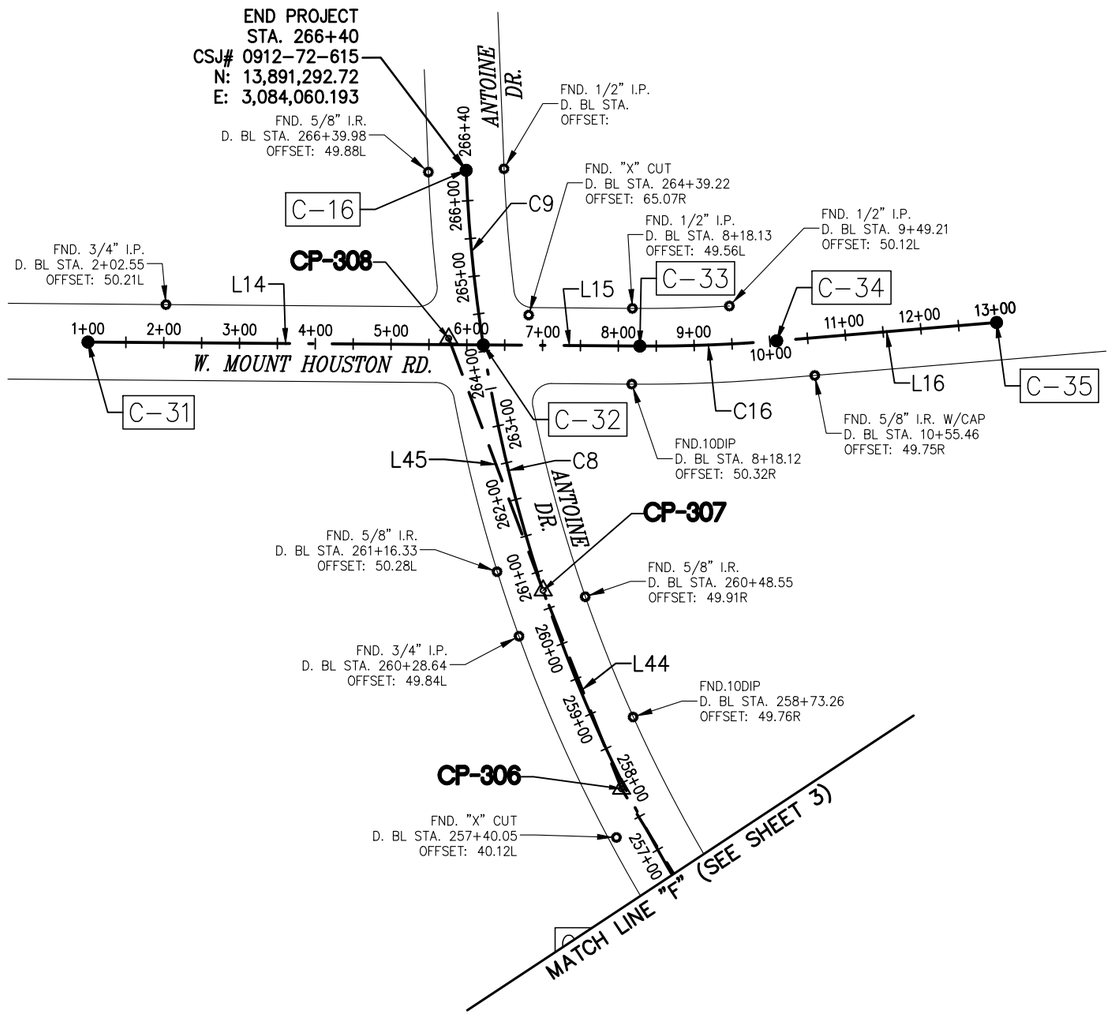
KUTUBUL A. M. MAINUDDIN, R.P.L.S.
TEXAS REG. NO.: 6404
DATE: MARCH, 2024

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE IMPROVEMENT FROM VICTORY DRIVE TO W. MOUNT HOUSTON ROAD

SURVEY CONTROL INDEX SHEET
(SHEET 3 OF 6)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
SCALE: 1" = 200'	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. OF 718	



0 100 200
SCALE: 1" = 200'-0"

No.	DATE	REVISIONS	APP.

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162-0610, A BRASS DISK IN CONCRETE, LOCATED NEAR THE NORTH MEDIAN NOSE OF THE INTERSECTION OF ANTOINE DRIVE AND ARNCLIFFE DRIVE.

ELEV. 77.36 FEET NAVD 1988 (GEOID '12A)*

* OBSERVED BY GPS SURVEYING AND PROCESSED IN REFERENCE TO THE CORS DATED OCTOBER 30, 2017. ELEW.

NOTE:

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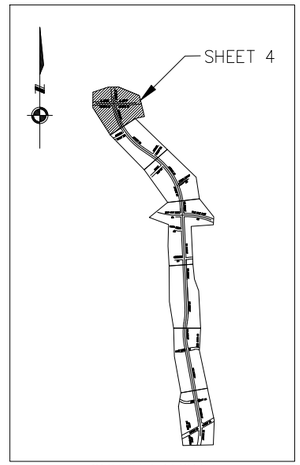
NAVD 1988, 1991 ADJUSTMENT (TXDOT MONUMENT) ELEVATION
= NAVD 1988, GEOID '12A (CITY OF HOUSTON MONUMENT) ELEVATION + 0.19 FT

LEGEND:

B-X	SURVEY CONTROL POINT NUMBER
C-X	DESIGN BASELINE POINT NUMBER
	SURVEY CONTROL POINT
	DESIGN BASELINE POINT
	CITY OF HOUSTON MONUMENT
D. BL:	DESIGN BASELINE
S. BL:	SURVEY BASELINE



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TEXAS REG. NO.: 6404
DATE: MARCH, 2024

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE IMPROVEMENT FROM VICTORY DRIVE TO W. MOUNT HOUSTON ROAD

SURVEY CONTROL INDEX SHEET
(SHEET 4 OF 6)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
SCALE: 1" = 200'	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. OF 718	

DESIGN BASELINE POINTS DATA			
POINT No.	D. BL STA.	NORTHING (SURFACE)	EASTING (SURFACE)
C-1	157+00.00	13,881,149.52	3,086,664.19
C-2	161+86.08	13,881,633.60	3,086,638.20
C-3	169+39.97	13,882,375.23	3,086,502.83
C-4	176+93.85	13,883,116.86	3,086,367.46
C-5	184+47.74	13,883,858.49	3,086,232.08
C-6	190+97.76	13,884,505.55	3,086,220.41
C-7	191+99.74	13,884,606.47	3,086,235.09
C-8	195+81.51	13,884,987.21	3,086,253.77
C-9	205+69.06	13,885,973.68	3,086,207.94
C-10	215+56.60	13,886,960.16	3,086,162.11
C-11	225+44.14	13,887,946.64	3,086,116.29
C-12	238+14.90	13,889,114.22	3,085,671.32
C-13	243+95.50	13,889,505.97	3,085,245.57
C-14	247+75.73	13,889,720.26	3,084,931.47
C-15	255+92.16	13,890,303.45	3,084,368.24
C-16	266+40.23	13,891,292.72	3,084,060.19
C-17	276+40.23	13,892,291.93	3,084,020.35
C-18	286+40.23	13,893,291.13	3,083,980.51
C-19	1+00.00	13,887,819.34	3,085,388.39
C-20	2+02.08	13,887,793.84	3,085,487.23
C-21	8+43.05	13,887,735.03	3,086,122.76
C-22	8+46.41	13,887,735.25	3,086,126.11
C-23	11+80.81	13,887,727.97	3,086,459.99
C-24	17+24.48	13,887,595.24	3,086,985.30
C-25	1+00.00	13,888,616.95	3,085,967.02
C-26	1+00.10	13,888,616.99	3,085,967.11
C-27	1+64.93	13,888,641.69	3,086,027.05
C-28	3+18.29	13,888,723.43	3,086,155.36
C-29	4+61.67	13,888,801.63	3,086,274.34
C-30	5+08.51	13,888,818.83	3,086,317.90
C-31	1+00.00	13,891,066.06	3,083,561.11
C-32	6+21.70	13,891,062.31	3,084,082.79
C-33	8+28.39	13,891,060.82	3,084,289.48
C-34	10+09.14	13,891,067.69	3,084,470.04
C-35	13+00.37	13,891,091.89	3,084,760.26

SURVEY BASELINE POINTS DATA (TEMPORARY BENCHMARK)						
POINT No.	NORTHING (SURFACE)	EASTING (SURFACE)	ELEVATION	D. BL STA.	OFFSET	DESCRIPTION
CP-11	13,881,435.03	3,086,725.42	73.43'	159+81.24	61.43R	SET "X" CUT ON CONC.
CP-12	13,881,879.36	3,086,593.45	72.30'	164+35.88	0.11R	SET "X" CUT ON CONC.
CP-13	13,882,197.86	3,086,583.85	71.22'	167+50.94	47.86R	SET "X" CUT ON CONC.
CP-14	13,882,663.27	3,086,452.47	73.15'	172+32.37	2.18R	SET "X" CUT ON CONC.
CP-15	13,883,093.99	3,086,374.22	74.31'	176+70.14	2.55R	SET "X" CUT ON CONC.
CP-16	13,883,412.59	3,086,317.39	74.64'	179+93.77	3.85R	SET "X" CUT ON CONC.
CP-17	13,883,758.79	3,086,256.80	74.05'	183+45.22	6.41R	FND. "X" CUT ON CONC.
CP-18	13,884,109.95	3,086,205.76	75.70'	187+00.92	3.28R	SET "X" CUT ON CONC.
CP-19	13,884,332.13	3,086,198.32	75.88'	189+23.14	4.53L	SET "X" CUT ON CONC.
CP-20	13,884,783.88	3,086,248.13	75.86'	193+77.83	4.73L	SET "X" CUT ON CONC.
CP-21	13,885,232.17	3,086,245.77	75.97'	198+26.58	3.38R	SET "X" CUT ON CONC.
CP-22	13,885,602.20	3,086,227.63	76.92'	201+97.06	2.43R	SET "X" CUT ON CONC.
CP-23	13,886,011.20	3,086,201.85	76.99'	206+06.81	4.34L	SET "X" CUT ON CONC.
CP-24	13,886,416.21	3,086,185.08	77.46'	210+12.16	2.30L	FND. "X" CUT ON CONC.
CP-25	13,886,765.09	3,086,170.53	78.59'	213+61.34	0.65L	SET 1/2" I.R. W/CAP
CP-26	13,887,001.19	3,086,162.81	79.61'	215+97.55	2.60R	FND. W.H.C.R.W.A. MONU. 30-035
CP-27	13,887,264.14	3,086,147.04	79.47'	218+60.95	0.95L	SET 1/2" I.R. W/CAP
CP-28	13,887,735.49	3,086,073.43	79.82'	223+35.20	52.61L	SET 1/2" I.R. W/CAP
CP-29	13,888,144.64	3,086,096.01	82.79'	227+43.31	1.16L	SET 1/2" I.R. W/CAP
CP-30	13,888,584.90	3,085,977.11	83.47'	232+00.78	2.72L	SET "X" CUT ON CONC.
CP-31	13,887,727.46	3,086,487.25	80.20'	12+07.93	2.52L	SET "X" CUT ON CONC.
CP-32	13,887,623.48	3,086,914.28	80.25'	16+48.05	0.62L	SET 1/2" I.R. W/CAP
CP-70	13,881,199.09	3,086,714.38	73.39'	157+51.84	47.14R	SET "X" CUT ON CONC.
CP-300	13,888,932.52	3,085,812.79	84.44'	235+85.15	8.58R	SET 1/2" I.R. W/CAP
CP-301	13,889,222.64	3,085,581.12	85.33'	239+55.82	3.26R	SET 1/2" I.R. W/CAP
CP-302	13,889,487.20	3,085,268.65	86.94'	243+65.82	2.28L	SET 1/2" I.R. W/CAP
CP-303	13,889,678.27	3,084,988.17	86.47'	247+05.23	2.73L	SET 1/2" I.R. W/CAP
CP-304	13,889,905.91	3,084,695.09	87.18'	250+76.39	2.44L	SET "X" CUT ON CONC.
CP-305	13,890,180.12	3,084,447.25	87.50'	254+45.89	4.50L	SET "X" CUT ON CONC.
CP-306	13,890,476.48	3,084,265.27	86.85'	257+93.30	4.67L	SET 1/2" I.R. W/CAP
CP-307	13,890,738.28	3,084,161.78	87.59'	260+74.67	0.02L	SET 1/2" I.R. W/CAP
CP-308	13,891,070.94	3,084,037.23	86.87'	264+23.84	43.73L	SET "X" CUT ON CONC.

REVISIONS			
No.	DATE		APP.

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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

ANTOINE DRIVE IMPROVEMENT FROM VICTORY DRIVE TO W. MOUNT HOUSTON ROAD

SURVEY CONTROL INDEX SHEET

(SHEET 5 OF 6)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
N/A	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. : OF 718	

SURVEY BASELINE: LINE TABLE		
LINE #	BEARING	LENGTH
L17	N2° 40' 43.49"E	236.20
L18	N16° 32' 28.47"W	463.51
L19	N1° 43' 34.77"W	318.65
L20	N15° 45' 52.76"W	483.60
L21	N10° 17' 46.80"W	437.77
L22	N10° 06' 49.52"W	323.63
L23	N9° 55' 40.25"W	351.46
L24	N8° 16' 08.90"W	354.85
L25	N1° 55' 09.16"W	222.31
L26	N6° 17' 31.81"E	454.48
L27	N0° 18' 03.98"W	448.29
L28	N2° 48' 24.98"W	370.48
L29	N3° 36' 22.05"W	409.81
L30	N2° 22' 16.92"W	405.36
L31	N2° 23' 19.10"W	349.19
L32	N1° 52' 22.64"W	236.23

SURVEY BASELINE: LINE TABLE		
LINE #	BEARING	LENGTH
L33	N3° 25' 54.58"W	263.42
L34	N8° 52' 33.97"W	477.06
L35	N3° 09' 34.62"E	409.78
L36	N15° 06' 48.64"W	456.04
L37	N25° 17' 57.94"W	384.50
L38	N38° 36' 33.15"W	371.27
L39	N49° 44' 46.42"W	409.43
L40	N55° 44' 10.19"W	339.37
L41	N52° 09' 48.97"W	371.10
L42	N42° 06' 29.54"W	369.62
L43	N31° 33' 05.85"W	347.77
L44	N21° 34' 13.57"W	281.51
L45	N20° 31' 31.03"W	355.22
L46	S88° 53' 18.30"E	413.90
L47	S76° 18' 55.35"E	439.51

DESIGN BASELINE: LINE TABLE		
LINE #	BEARING	LENGTH
L1	N10° 20' 40.59"W	753.88
L2	N10° 20' 40.59"W	753.88
L3	N10° 20' 40.59"W	753.88
L4	N8° 16' 37.71"E	101.98
L5	N2° 39' 35.29"W	987.54
L6	N2° 39' 35.29"W	987.54
L7	N2° 39' 35.29"W	775.92
L8	N2° 39' 35.29"W	211.62
L9	N55° 41' 50.00"W	380.23
L10	S75° 31' 54.00"E	102.08
L11	N67° 35' 56.18"E	0.10
L12	N67° 35' 56.19"E	64.83
L13	N68° 27' 07.55"E	46.83
L14	S89° 35' 16.61"E	521.70
L15	S89° 35' 16.61"E	206.69
L16	N85° 14' 01.88"E	291.23

DESIGN BASELINE: CURVE TABLE					
CURVE #	RADIUS	ARC LENGTH	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	1915.00	486.08	14°32'36"	N3° 04' 22.56"W	484.78
C2	2000.00	650.02	18°37'18"	N1° 02' 01.44"W	647.16
C3	2000.00	381.77	10°56'13"	N2° 48' 31.21"E	381.19
C4	2000.00	690.16	19°46'18"	N12° 32' 44"W	686.74
C5	2000.00	580.60	16°37'58"	N30° 44' 53"W	578.56
C6	2000.00	580.60	16°37'58"	N47° 22' 51"W	578.56
C7	2000.00	816.43	23°23'20"	S44° 00' 10"E	810.77
C8	2000.00	816.43	23°23'20"	S20° 36' 50"E	810.77
C9	2000.00	231.65	6°38'10"	S5° 36' 05"E	231.52
C10	2000.00	640.98	18°21'45"	S84° 42' 46.70"E	638.24
C11	1900.00	3.36	0°06'05"	S86° 09' 23"W	3.36
C12	1900.00	334.40	10°05'02"	N88° 45' 04"W	333.97
C13	1900.91	543.67	16°23'13"	S75° 49' 10.23"E	541.82
C14	349.05	153.36	25°10'27"	N57° 30' 09.19"E	152.13
C15	349.05	143.39	23°32'12"	N56° 41' 01.62"E	142.38
C16	2000.00	180.75	5°10'42"	N87° 49' 22.64"E	180.69

No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

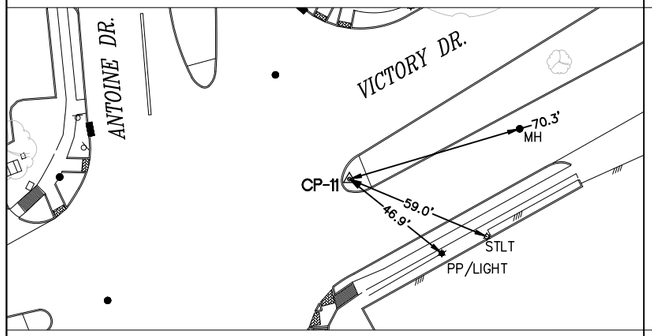
ANTOINE DRIVE IMPROVEMENT FROM VICTORY DRIVE TO W. MOUNT HOUSTON ROAD

SURVEY CONTROL INDEX SHEET
(SHEET 6 OF 6)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. : OF 718	

SURVEY CONTROL PT.
CP–11

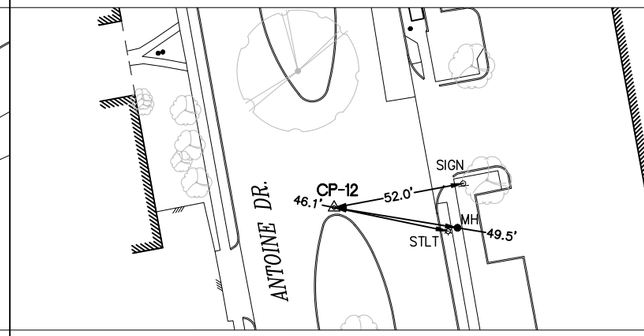
N= 13,881,435.03
E= 3,086,725.42
ELEVATION= 73.43'



CONTROL DESCRIPTION: SET "X" CUT ON CONC.
AT THE EAST MEDIAN OF THE INTERSECTION OF ANTOINE DR. AND VICTORY DR.

SURVEY CONTROL PT.
CP–12

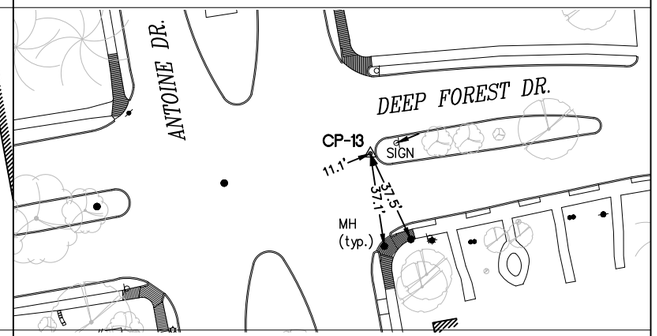
N= 13,881,879.36
E= 3,086,593.45
ELEVATION= 72.29'



CONTROL DESCRIPTION: SET "X" CUT ON CONC.
APPROX. 320' SOUTH OF THE INTERSECTION OF ANTOINE DR. AND DEEP FOREST DR.

SURVEY CONTROL PT.
CP–13

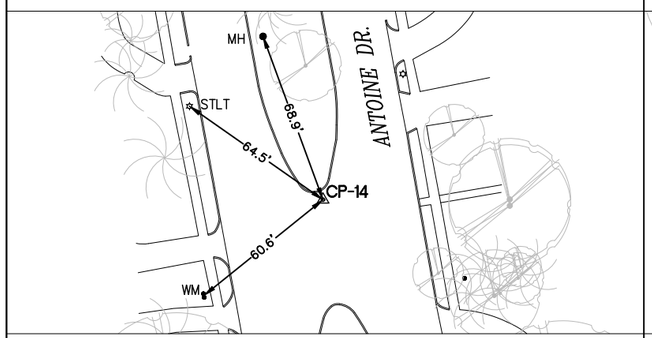
N= 13,882,197.86
E= 3,086,583.85
ELEVATION= 71.22'



CONTROL DESCRIPTION: SET "X" CUT ON CONC.
AT THE EAST MEDIAN OF THE INTERSECTION OF ANTOINE DR. AND DEEP FOREST DR.

SURVEY CONTROL PT.
CP–14

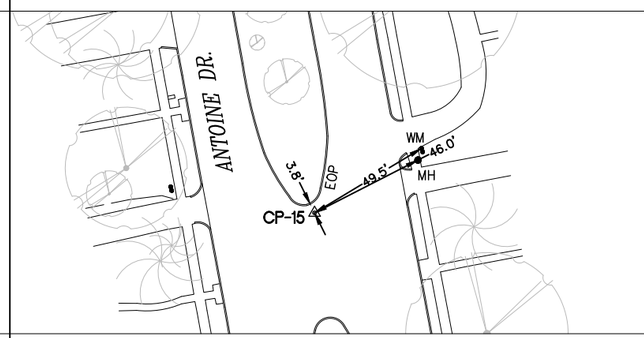
N= 13,882,663.27
E= 3,086,452.47
ELEVATION= 73.15'



CONTROL DESCRIPTION: SET "X" CUT ON CONC.
APPROX. 480' NORTH OF THE INTERSECTION OF ANTOINE DR. AND DEEP FOREST DR.

SURVEY CONTROL PT.
CP–15

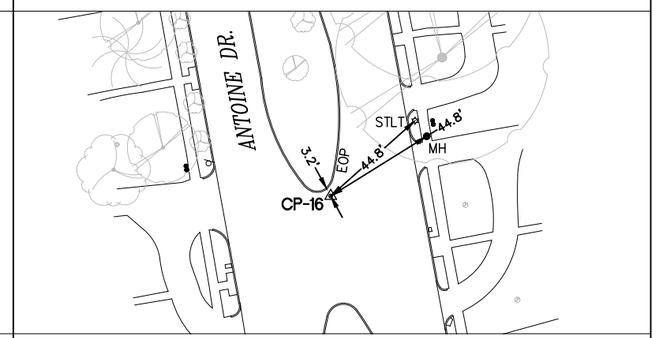
N= 13,883,093.99
E= 3,086,374.22
ELEVATION= 74.31'



CONTROL DESCRIPTION: SET "X" CUT ON CONC.
APPROX. 630' SOUTH OF THE INTERSECTION OF ANTOINE DR. AND LONG CREEK LN.

SURVEY CONTROL PT.
CP–16

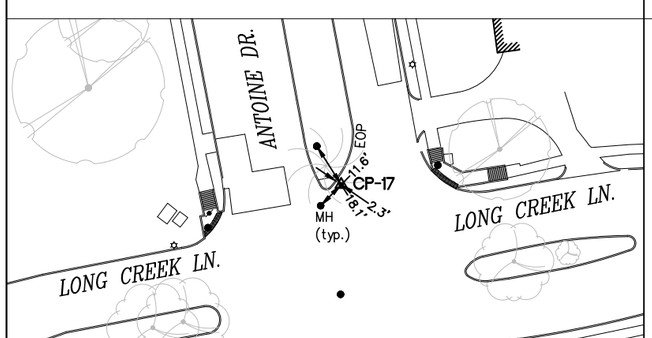
N= 13,883,412.59
E= 3,086,317.39
ELEVATION= 74.64'



CONTROL DESCRIPTION: SET "X" CUT ON CONC.
APPROX. 310' SOUTH OF THE INTERSECTION OF ANTOINE DR. AND LONG CREEK LN.

SURVEY CONTROL PT.
CP–17

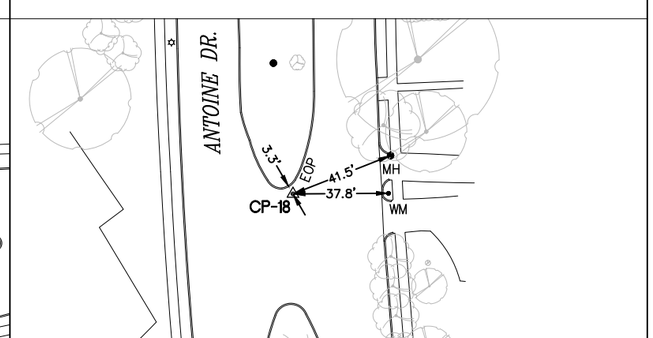
N= 13,883,758.79
E= 3,086,256.80
ELEVATION= 74.05'



CONTROL DESCRIPTION: FND. "X" CUT ON CONC.
AT THE NORTH MEDIAN OF THE INTERSECTION OF ANTOINE DR. AND LONG CREEK LN.

SURVEY CONTROL PT.
CP–18

N= 13,884,109.95
E= 3,086,205.76
ELEVATION= 75.70'



CONTROL DESCRIPTION: SET "X" CUT ON CONC.
APPROX. 400' NORTH OF THE INTERSECTION OF ANTOINE DR. AND LONG CREEK LN.

ABBREVIATIONS

FH – FIRE HYDRANT
FC – FENCE CORNER
LT – LIGHT POLE
MB – MAIL BOX
MH – MANHOLE
PP – POWER POLE
STLT – STREET LIGHT
PP/LIGHT – POWER POLE W/LIGHT
WM – WATER METER
EOP – EDGE OF PAVEMENT

EXIST. TOPOGRAPHIC LEGEND

- ASPHALT SYMBOL
- B OR BB INLET
- BUSH
- C INLET
- CLEANOUT
- brick column
- DOWN GUY
- E INLET
- ELEC MANHOLE
- FIRE HYDRANT
- GAS METER
- GAS VALVE
- GATE
- GRATE INLET
- GRATE INLET
- MAIL BOX
- STORM MANHOLE
- SANITARY MANHOLE
- PLANTER
- POWER POLE
- POWER POLE W/LT.
- SIGN
- SIGNAL POLE
- SPRINKER VALVE
- SPRINKLER HEAD
- STREET LIGHT/FLOOD LIGHT
- STREET LIGHT/PARKING LIGHT
- TREE
- TREE STUMP
- TREE–CREPE MYRTLE
- TREE–PINE
- WATER METER
- WATER VALVE
- IRRIGATION CONTROL VALVE

0 30 60
SCALE: 1" = 60'–0"

No.	DATE	REVISIONS	APP.

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162–0610, A BRASS DISK IN CONCRETE, LOCATED NEAR THE NORTH MEDIAN NOSE OF THE INTERSECTION OF ANTOINE DRIVE AND ARNCLIFFE DRIVE.

ELEV. 77.36 FEET NAVD 1988 (GEOID '12A)*

* OBSERVED BY GPS SURVEYING AND PROCESSED IN REFERENCE TO THE CORS DATED OCTOBER 30, 2017. ELEW.

NOTE:

ALL BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NORTH AMERICAN DATUM OF 1983, (2011) (EPOCH 2010.00).

ALL DISTANCES AND COORDINATES SHOWN ARE SURFACE AND MAY BE CONVERTED TO GRID BY DIVIDING BY A COMBINED ADJUSTMENT FACTOR OF 1.00013.

ALL ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), (GEOID '12A).

VERTICAL DATUM ADJUSTMENT TO TXDOT REFERENCE DATUM:

THE ELEVATION DIFFERENCE IN BETWEEN TXDOT MONUMENT'S (N1020080) PUBLISHED DATUM NAVD 1988, 1991 ADJUSTMENT AND CITY OF HOUSTON MONUMENT'S (5162–0610) DATUM NAVD 1988, GEOID '12A IS 0.19'.

NAVD 1988, 1991 ADJUSTMENT (TXDOT MONUMENT) ELEVATION
= NAVD 1988, GEOID '12A (CITY OF HOUSTON MONUMENT) ELEVATION + 0.19 FT

Texas Department of Transportation
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KUTUBUL A. M. MAINUDDIN, R.P.L.S.
TEXAS REG. NO.: 6404
DATE: MARCH, 2024

SURVEYED BY:
KUO & ASSOCIATES, INC.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE IMPROVEMENT FROM VICTORY DRIVE TO W. MOUNT HOUSTON ROAD

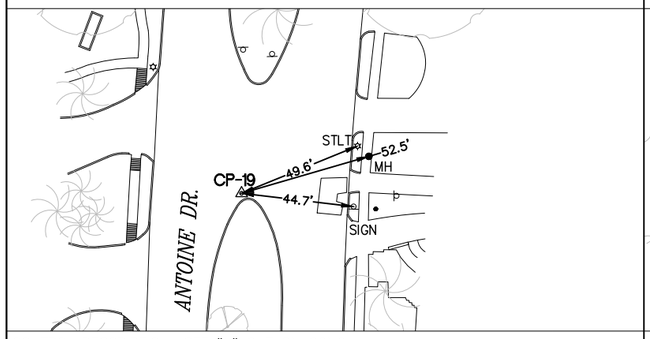
HORIZONTAL AND VERTICAL CONTROL SHEET (SHEET 1 OF 5)

WBS NUMBER	N–100030–0GEC–3
DRAWING SCALE	SCALE: 1" = 60'
CITY OF HOUSTON PM	ROWAIDAH AYOUB
SHEET NO.	OF 718

FOR CITY OF HOUSTON USE ONLY

SURVEY CONTROL PT.
CP–19

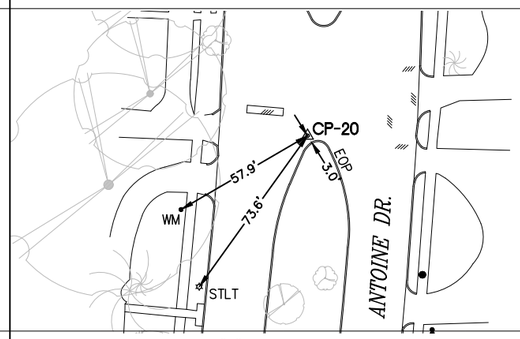
N= 13,884,332.13
E= 3,086,198.32
ELEVATION= 75.88'



CONTROL DESCRIPTION: SET "X" CUT ON CONC.
APPROX. 630' NORTH OF THE INTERSECTION OF ANTOINE DR. AND LONG CREEK LN.

SURVEY CONTROL PT.
CP–20

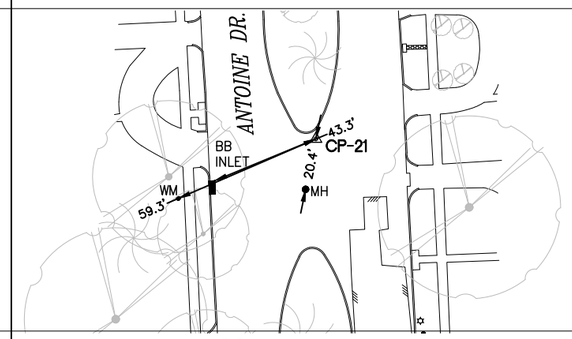
N= 13,884,783.88
E= 3,086,248.13
ELEVATION= 75.86'



CONTROL DESCRIPTION: SET "X" CUT ON CONC.
APPROX. 1660' SOUTH OF THE INTERSECTION OF ANTOINE DR. AND ARNCLIFFE DR.

SURVEY CONTROL PT.
CP–21

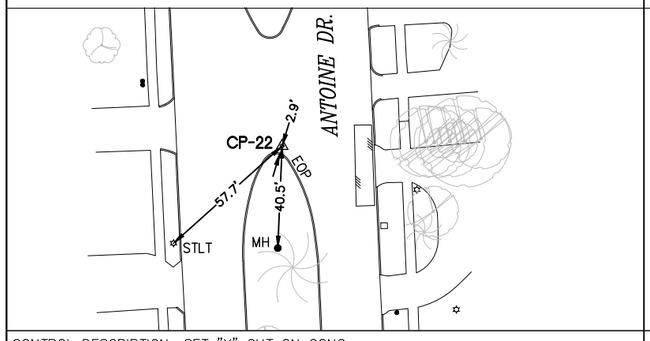
N= 13,885,232.17
E= 3,086,245.77
ELEVATION= 75.97'



CONTROL DESCRIPTION: SET "X" CUT ON CONC.
APPROX. 1200' SOUTH OF THE INTERSECTION OF ANTOINE DR. AND ARNCLIFFE DR.

SURVEY CONTROL PT.
CP–22

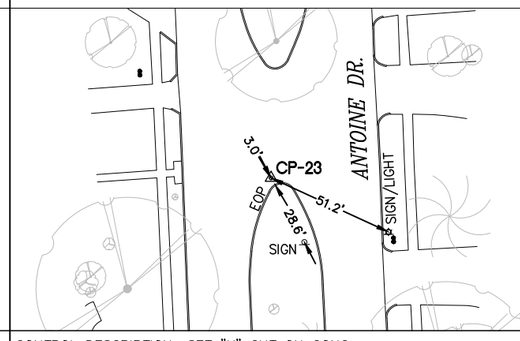
N= 13,885,602.20
E= 3,086,227.63
ELEVATION= 76.92'



CONTROL DESCRIPTION: SET "X" CUT ON CONC.
APPROX. 840' SOUTH OF THE INTERSECTION OF ANTOINE DR. AND ARNCLIFFE DR.

SURVEY CONTROL PT.
CP–23

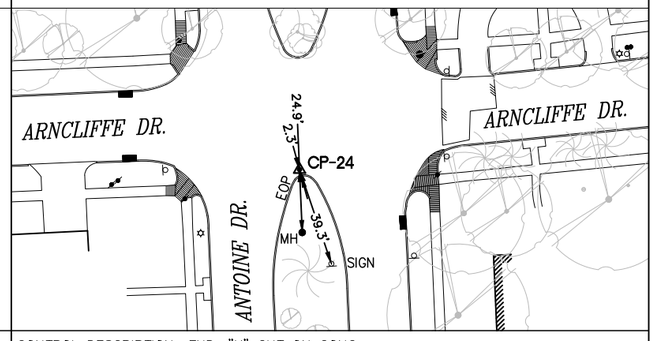
N= 13,886,011.20
E= 3,086,201.85
ELEVATION= 76.99'



CONTROL DESCRIPTION: SET "X" CUT ON CONC.
APPROX. 440' SOUTH OF THE INTERSECTION OF ANTOINE DR. AND ARNCLIFFE DR.

SURVEY CONTROL PT.
CP–24

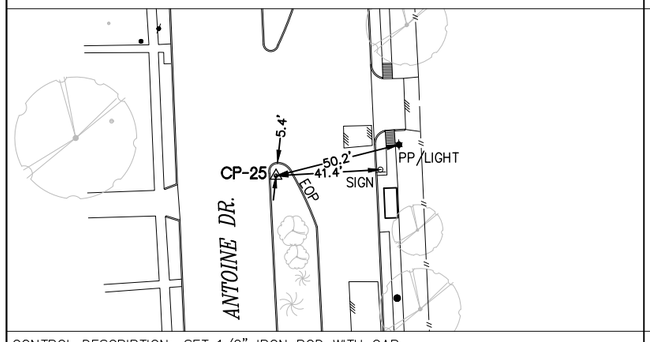
N= 13,886,416.21
E= 3,086,185.08
ELEVATION= 77.46'



CONTROL DESCRIPTION: FND. "X" CUT ON CONC.
AT THE SOUTH SIDE OF THE INTERSECTION OF ANTOINE DR. AND ARNCLIFFE DR.

SURVEY CONTROL PT.
CP–25

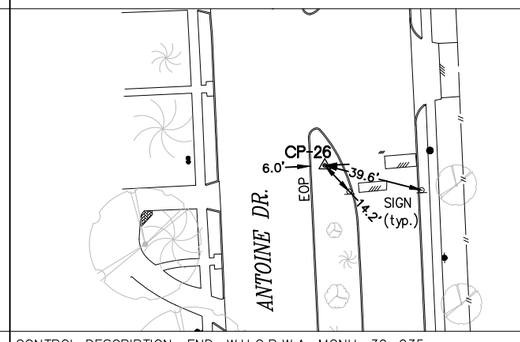
N= 13,886,765.09
E= 3,086,170.53
ELEVATION= 78.59'



CONTROL DESCRIPTION: SET 1/2" IRON ROD WITH CAP
APPROX. 330' NORTH OF THE INTERSECTION OF ANTOINE DR. AND ARNCLIFFE DR.

SURVEY CONTROL PT.
CP–26

N= 13,887,001.19
E= 3,086,162.81
ELEVATION= 79.61'



CONTROL DESCRIPTION: FND. W.H.C.R.W.A. MONU. 30–035
APPROX. 560' NORTH OF THE INTERSECTION OF ANTOINE DR. AND ARNCLIFFE DR.

ABBREVIATIONS

FH – FIRE HYDRANT
FC – FENCE CORNER
LT – LIGHT POLE
MB – MAIL BOX
MH – MANHOLE
PP – POWER POLE
STLT – STREET LIGHT
PP/LIGHT – POWER POLE W/LIGHT
WM – WATER METER
EOP – EDGE OF PAVEMENT

EXIST. TOPOGRAPHIC LEGEND

- ASPHALT SYMBOL
- B OR BB INLET
- BUSH
- C INLET
- CLEANOUT
- brick column
- DOWN GUY
- E INLET
- ELEC MANHOLE
- FIRE HYDRANT
- GAS METER
- GAS VALVE
- GATE
- GRATE INLET
- GRATE INLET
- MAIL BOX
- STORM MANHOLE
- SANITARY MANHOLE
- PLANTER
- POWER POLE
- POWER POLE W/LT.
- SIGN
- SIGNAL POLE
- SPRINKER VALVE
- SPRINKLER HEAD
- STREET LIGHT/FLOOD LIGHT
- STREET LIGHT/PARKING LIGHT
- TREE
- TREE STUMP
- TREE–CREPE MYRTLE
- TREE–PINE
- WATER METER
- WATER VALVE
- IRRIGATION CONTROL VALVE

0 30 60
SCALE: 1" = 60'–0"

No.	DATE	REVISIONS	APP.

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162–0610, A BRASS DISK IN CONCRETE, LOCATED NEAR THE NORTH MEDIAN NOSE OF THE INTERSECTION OF ANTOINE DRIVE AND ARNCLIFFE DRIVE.

ELEV. 77.36 FEET NAVD 1988 (GEOID '12A)*

* OBSERVED BY GPS SURVEYING AND PROCESSED IN REFERENCE TO THE CORS DATED OCTOBER 30, 2017. ELEW.

NOTE:

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THE ELEVATION DIFFERENCE IN BETWEEN TXDOT MONUMENT'S (N1020080) PUBLISHED DATUM NAVD 1988, 1991 ADJUSTMENT AND CITY OF HOUSTON MONUMENT'S (5162–0610) DATUM NAVD 1988, GEOID '12A IS 0.19'.

NAVD 1988, 1991 ADJUSTMENT (TXDOT MONUMENT) ELEVATION
= NAVD 1988, GEOID '12A (CITY OF HOUSTON MONUMENT) ELEVATION + 0.19 FT

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KUTUBUL A. M. MAINUDDIN, R.P.L.S.
TEXAS REG. NO.: 6404
DATE: MARCH, 2024

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

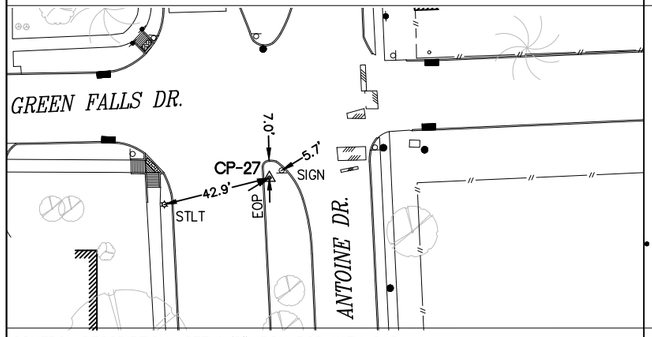
ANTOINE DRIVE IMPROVEMENT FROM VICTORY DRIVE TO W. MOUNT HOUSTON ROAD

HORIZONTAL AND VERTICAL CONTROL SHEET
(SHEET 2 OF 5)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N–100030–0GEC–3	
DRAWING SCALE	
SCALE: 1" = 60'	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. : OF 718	

SURVEY CONTROL PT.
CP–27

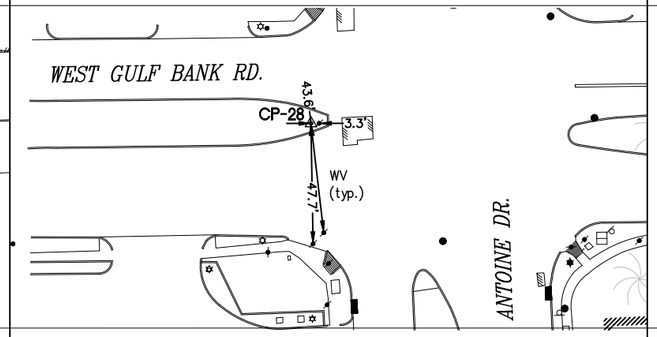
N= 13,887,264.14
E= 3,086,147.04
ELEVATION= 79.47'



CONTROL DESCRIPTION: SET 1/2" IRON ROD WITH CAP
AT THE INTERSECTION OF ANTOINE DR. AND GREEN FALLS DR.

SURVEY CONTROL PT.
CP–28

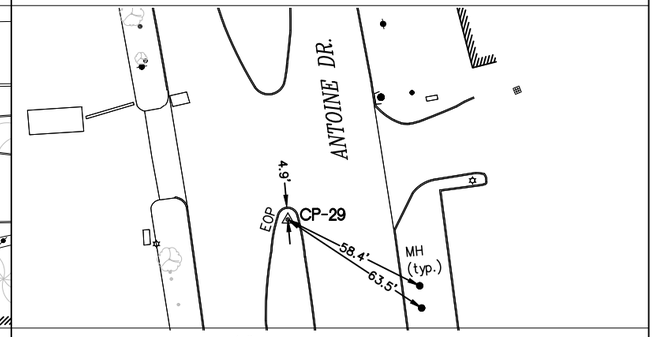
N= 13,887,735.49
E= 3,086,073.43
ELEVATION= 79.83'



CONTROL DESCRIPTION: SET 1/2" IRON ROD WITH CAP
AT THE INTERSECTION OF ANTOINE DR. AND WEST GULF BANK RD.

SURVEY CONTROL PT.
CP–29

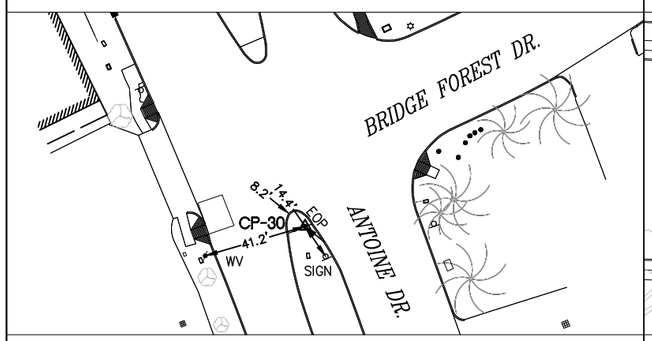
N= 13,888,144.64
E= 3,086,096.01
ELEVATION= 82.79'



CONTROL DESCRIPTION: SET 1/2" IRON ROD WITH CAP
APPROX. 410' NORTH OF THE INTERSECTION OF ANTOINE DR. AND WEST GULF BANK RD.

SURVEY CONTROL PT.
CP–30

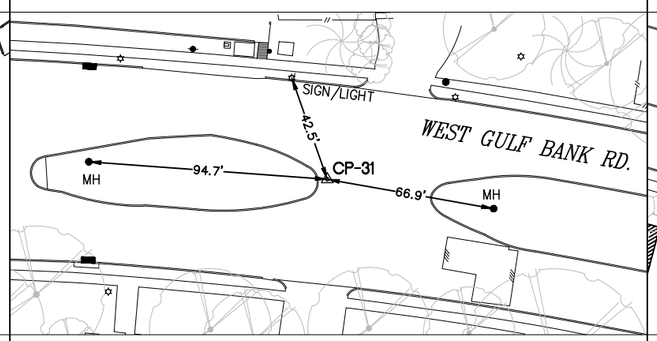
N= 13,888,584.90
E= 3,085,977.11
ELEVATION= 83.47'



CONTROL DESCRIPTION: SET "X" CUT ON CONC.
AT THE SOUTH MEDIAN OF THE INTERSECTION OF ANTOINE DR. AND BRIDGE FOREST DR.

SURVEY CONTROL PT.
CP–31

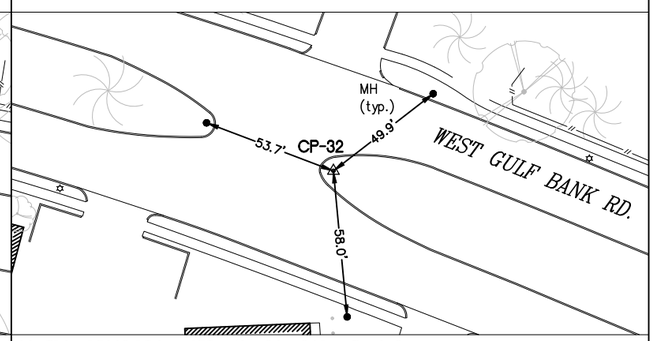
N= 13,887,727.46
E= 3,086,487.25
ELEVATION= 80.20'



CONTROL DESCRIPTION: SET "X" CUT ON CONC.
APPROX. 370' EAST OF THE INTERSECTION OF ANTOINE DR. AND WEST GULF BANK RD.

SURVEY CONTROL PT.
CP–32

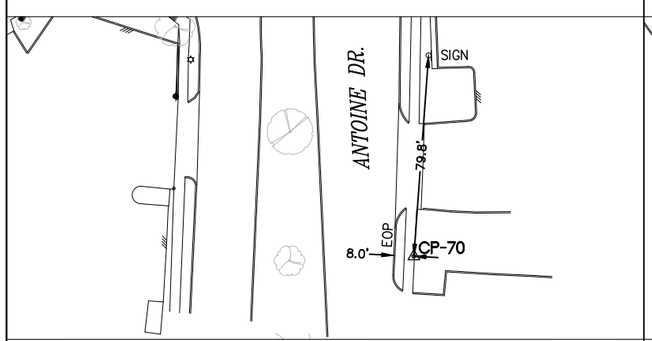
N= 13,887,623.48
E= 3,086,914.28
ELEVATION= 80.25'



CONTROL DESCRIPTION: SET 1/2" IRON ROD WITH CAP
APPROX. 880' EAST OF THE INTERSECTION OF ANTOINE DR. AND WEST GULF BANK RD.

SURVEY CONTROL PT.
CP–70

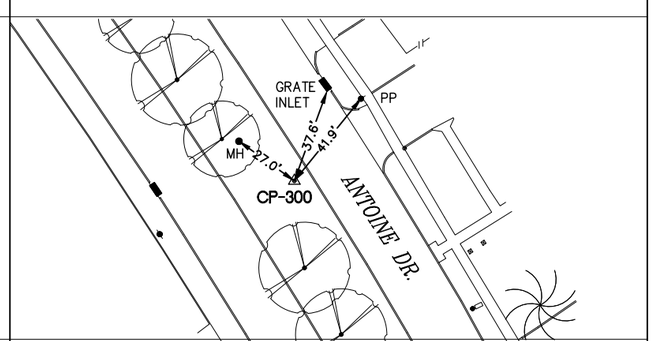
N= 13,881,199.09
E= 3,086,714.38
ELEVATION= 73.39'



CONTROL DESCRIPTION: SET "X" CUT ON CONC.
APPROX. 240' SOUTH OF THE INTERSECTION OF ANTOINE DR. AND VICTORY DR.

SURVEY CONTROL PT.
CP–300

N= 13,888,932.52
E= 3,085,812.79
ELEVATION= 84.44'



CONTROL DESCRIPTION: SET 1/2" IRON ROD WITH CAP
APPROX. 360' NORTH EAST OF THE INTERSECTION OF ANTOINE DR. AND
BRIDGE FOREST DR.

ABBREVIATIONS

FH – FIRE HYDRANT
FC – FENCE CORNER
LT – LIGHT POLE
MB – MAIL BOX
MH – MANHOLE
PP – POWER POLE
STLT – STREET LIGHT
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WM – WATER METER
EOP – EDGE OF PAVEMENT

EXIST. TOPOGRAPHIC LEGEND

- ASPHALT SYMBOL
- B OR BB INLET
- BUSH
- C INLET
- CLEANOUT
- brick column
- DOWN GUY
- E INLET
- ELEC MANHOLE
- FIRE HYDRANT
- GAS METER
- GAS VALVE
- GATE
- GRATE INLET
- GRATE INLET
- MAIL BOX
- STORM MANHOLE
- SANITARY MANHOLE
- PLANTER
- POWER POLE
- POWER POLE W/LT.
- SIGN
- SIGNAL POLE
- SPRINKER VALVE
- SPRINKLER HEAD
- STREET LIGHT/FLOOD LIGHT
- STREET LIGHT/PARKING LIGHT
- TREE
- TREE STUMP
- TREE–CREPE MYRTLE
- TREE–PINE
- WATER METER
- WATER VALVE
- IRRIGATION CONTROL VALVE

0 30 60
SCALE: 1" = 60'–0"

No.	DATE	REVISIONS	APP.

BENCHMARK:

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ELEV. 77.36 FEET NAVD 1988 (GEOID '12A)*

* OBSERVED BY GPS SURVEYING AND PROCESSED IN REFERENCE TO THE CORS DATED OCTOBER 30, 2017. ELEW.

NOTE:

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ALL DISTANCES AND COORDINATES SHOWN ARE SURFACE AND MAY BE CONVERTED TO GRID BY DIVIDING BY A COMBINED ADJUSTMENT FACTOR OF 1.00013.

ALL ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), (GEOID '12A).

VERTICAL DATUM ADJUSTMENT TO TXDOT REFERENCE DATUM:

THE ELEVATION DIFFERENCE IN BETWEEN TXDOT MONUMENT'S (N1020080) PUBLISHED DATUM NAVD 1988, 1991 ADJUSTMENT AND CITY OF HOUSTON MONUMENT'S (5162–0610) DATUM NAVD 1988, GEOID '12A IS 0.19'.

NAVD 1988, 1991 ADJUSTMENT (TXDOT MONUMENT) ELEVATION
= NAVD 1988, GEOID '12A (CITY OF HOUSTON MONUMENT) ELEVATION + 0.19 FT

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KUO & associates
Consulting Engineers & Surveyors
10300 Westoffice Dr., Suite 800, Houston, Texas 77042
Tel: 713-975-8769, Fax: 713-975-2920, www.kuoassociates.com
TBPELS Engineering Firm Reg. No. F-4578
TBPELS Surveying Firm Reg. No. 10075600

INTERIM REVIEW ONLY
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KUTUBUL A. M. MAINUDDIN, R.P.L.S.
TEXAS REG. NO.: 6404
DATE: MARCH, 2024

SURVEYED BY:
KUO & ASSOCIATES, INC.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

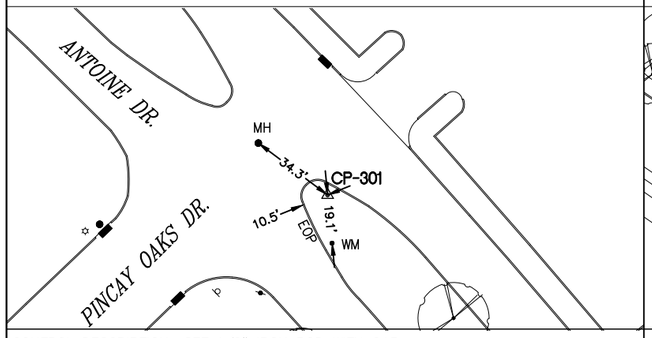
ANTOINE DRIVE IMPROVEMENT FROM VICTORY DRIVE TO W. MOUNT HOUSTON ROAD

HORIZONTAL AND VERTICAL CONTROL SHEET (SHEET 3 OF 5)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N–100030–0GEC–3	
DRAWING SCALE	
SCALE: 1" = 60'	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. : OF 718	

SURVEY CONTROL PT.
CP–301

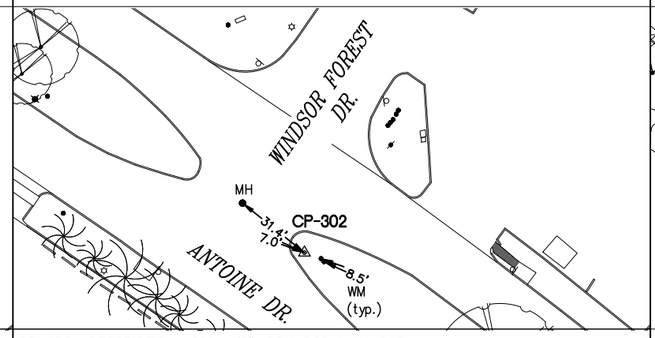
N= 13,889,222.64
E= 3,085,581.12
ELEVATION= 85.33'



CONTROL DESCRIPTION: SET 1/2" IRON ROD WITH CAP
AT THE INTERSECTION OF ANTOINE DR. AND PINCAY OAKS DR.

SURVEY CONTROL PT.
CP–302

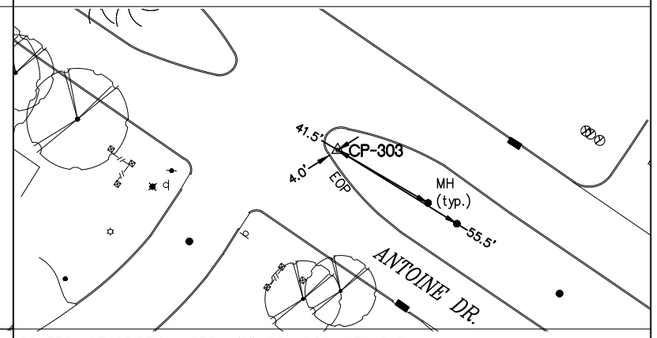
N= 13,889,487.20
E= 3,085,268.65
ELEVATION= 86.94'



CONTROL DESCRIPTION: SET 1/2" IRON ROD WITH CAP
AT THE INTERSECTION OF ANTOINE DR. AND WINDSOR FOREST DR.

SURVEY CONTROL PT.
CP–303

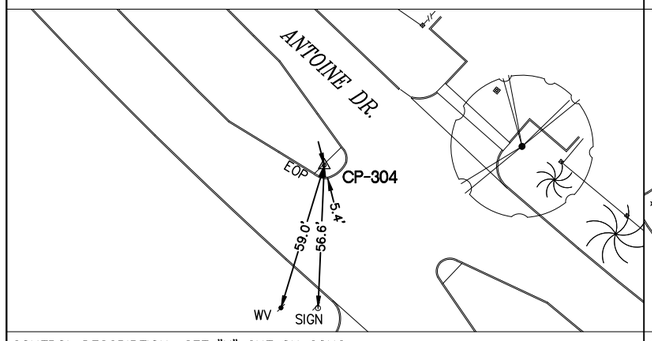
N= 13,889,678.27
E= 3,084,988.18
ELEVATION= 86.47'



CONTROL DESCRIPTION: SET 1/2" IRON ROD WITH CAP
APPROX. 320' NORTHWEST OF THE INTERSECTION OF ANTOINE DR. AND
WINDSOR FOREST DR.

SURVEY CONTROL PT.
CP–304

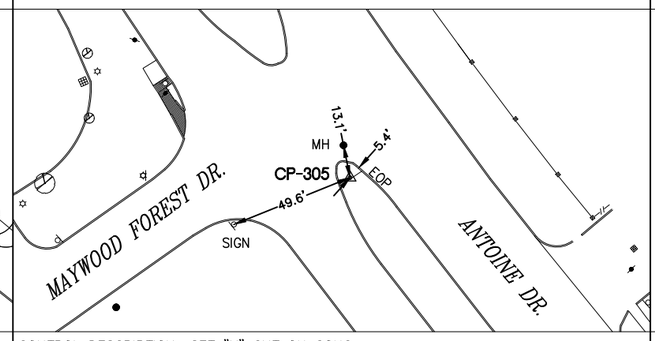
N= 13889905.9088
E= 3084695.0889
ELEVATION= 87.18'



CONTROL DESCRIPTION: SET "X" CUT ON CONC.
APPROX. 420' SOUTHEAST OF THE INTERSECTION OF ANTOINE DR. AND
MAYWOOD FOREST DR.

SURVEY CONTROL PT.
CP–305

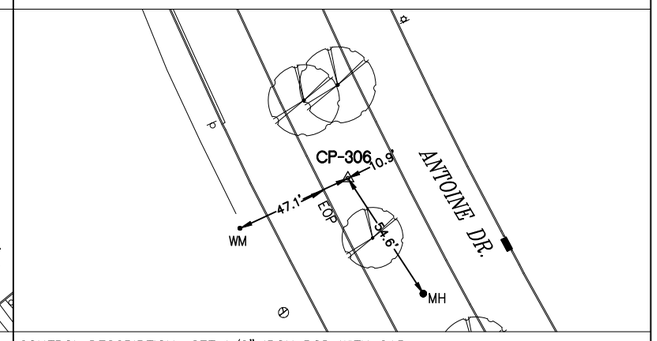
N= 13890180.1188
E= 3084447.2498
ELEVATION= 87.50'



CONTROL DESCRIPTION: SET "X" CUT ON CONC.
AT THE INTERSECTION OF ANTOINE DR. AND MAYWOOD FOREST DR.

SURVEY CONTROL PT.
CP–306

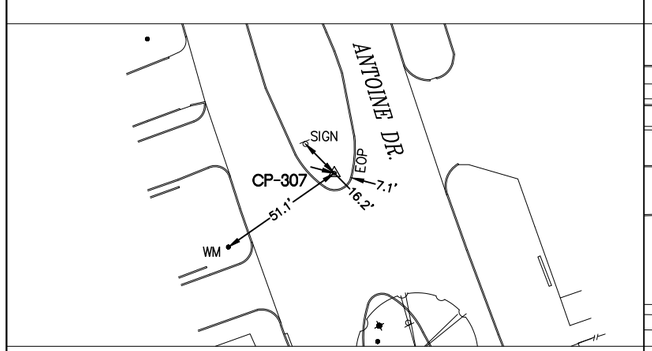
N= 13,890,476.48
E= 3,084,265.27
ELEVATION= 86.85'



CONTROL DESCRIPTION: SET 1/2" IRON ROD WITH CAP
APPROX. 330' NORTHWEST OF THE INTERSECTION OF ANTOINE DR. AND
MAYWOOD FOREST DR.

SURVEY CONTROL PT.
CP–307

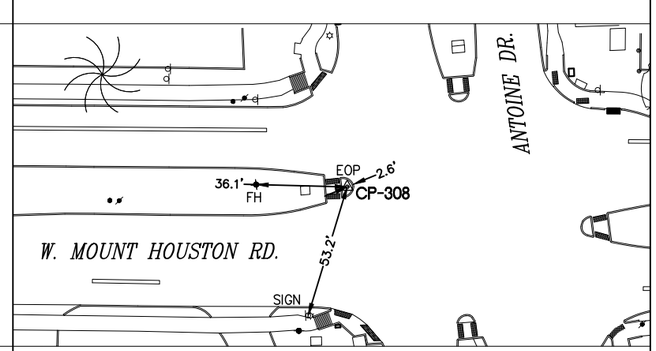
N= 13,890,738.28
E= 3,084,161.78
ELEVATION= 87.59'



CONTROL DESCRIPTION: SET 1/2" IRON ROD WITH CAP
APPROX. 340' SOUTH OF THE INTERSECTION OF ANTOINE DR. AND
WEST MOUNT HOUSTON RD.

SURVEY CONTROL PT.
CP–308

N= 13,891,070.94
E= 3,084,037.23
ELEVATION= 86.87'



CONTROL DESCRIPTION: SET "X" CUT ON CONC.
AT THE WEST MEDIAN OF THE INTERSECTION OF ANTOINE DR. AND
WEST MOUNT HOUSTON RD.

ABBREVIATIONS

FH – FIRE HYDRANT
FC – FENCE CORNER
LT – LIGHT POLE
MB – MAIL BOX
MH – MANHOLE
PP – POWER POLE
STLT – STREET LIGHT
PP/LIGHT – POWER POLE W/LIGHT
WM – WATER METER
EOP – EDGE OF PAVEMENT

EXIST. TOPOGRAPHIC LEGEND

- ASPHALT SYMBOL
- B OR BB INLET
- BUSH
- C INLET
- CLEANOUT
- brick column
- DOWN GUY
- E INLET
- ELEC MANHOLE
- FIRE HYDRANT
- GAS METER
- GAS VALVE
- GATE
- GRATE INLET
- GRATE INLET
- MAIL BOX
- STORM MANHOLE
- SANITARY MANHOLE
- PLANTER
- POWER POLE
- POWER POLE W/LT.
- SIGN
- SIGNAL POLE
- SPRINKER VALVE
- SPRINKLER HEAD
- STREET LIGHT/FLOOD LIGHT
- STREET LIGHT/PARKING LIGHT
- TREE
- TREE STUMP
- TREE–CREPE MYRTLE
- TREE–PINE
- WATER METER
- WATER VALVE
- IRRIGATION CONTROL VALVE

0 30 60
SCALE: 1" = 60'–0"

APP. | REVISIONS | DATE | No.

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162–0610, A BRASS DISK IN CONCRETE, LOCATED NEAR THE NORTH MEDIAN NOSE OF THE INTERSECTION OF ANTOINE DRIVE AND ARNCLIFFE DRIVE.

ELEV. 77.36 FEET NAVD 1988 (GEOID '12A)*

* OBSERVED BY GPS SURVEYING AND PROCESSED IN REFERENCE TO THE CORS DATED OCTOBER 30, 2017. ELEW.

NOTE:

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VERTICAL DATUM ADJUSTMENT TO TXDOT REFERENCE DATUM:

THE ELEVATION DIFFERENCE IN BETWEEN TXDOT MONUMENT'S (N1020080) PUBLISHED DATUM NAVD 1988, 1991 ADJUSTMENT AND CITY OF HOUSTON MONUMENT'S (5162–0610) DATUM NAVD 1988, GEOID '12A IS 0.19'.

NAVD 1988, 1991 ADJUSTMENT (TXDOT MONUMENT) ELEVATION
= NAVD 1988, GEOID '12A (CITY OF HOUSTON MONUMENT) ELEVATION + 0.19 FT

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

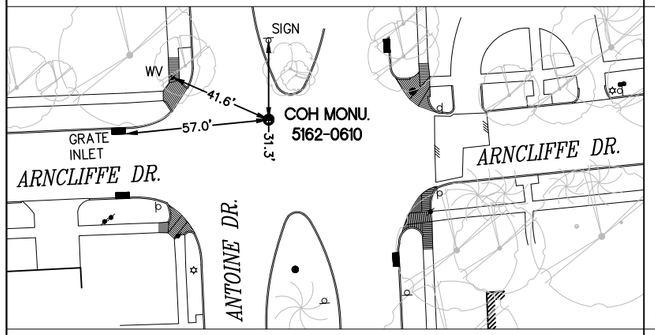
ANTOINE DRIVE IMPROVEMENT FROM VICTORY DRIVE TO W. MOUNT HOUSTON ROAD

HORIZONTAL AND VERTICAL CONTROL SHEET
(SHEET 4 OF 5)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N–100030–0GEC–3	
DRAWING SCALE	
SCALE: 1" = 60'	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. OF 718	

C.O.H. MONUMENT
5162–0610

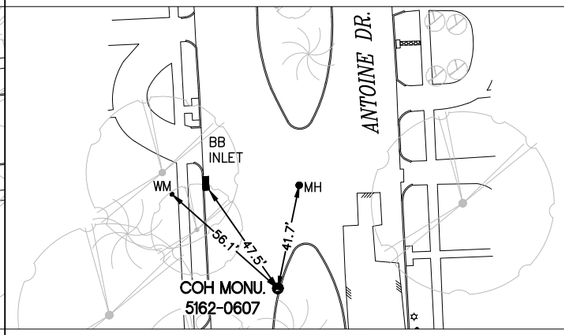
N= 13,886,450.65
E= 3,086,175.63
ELEVATION= 77.36'



CONTROL DESCRIPTION: SET 5/8" IRON ROD WITH BRASS CAP
AT THE NORTH SIDE OF THE INTERSECTION OF ANTOINE DR. AND ARNCLIFFE DR.

C.O.H. MONUMENT
5162–0607

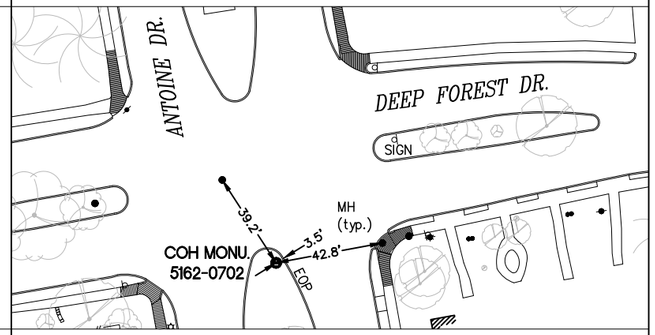
N= 13,885,171.38
E= 3,086,233.25
ELEVATION= 75.85'



CONTROL DESCRIPTION: SET 5/8" IRON ROD WITH BRASS CAP
APPROX. 1260' SOUTH OF THE INTERSECTION OF ANTOINE DR. AND ARNCLIFFE DR.

C.O.H. MONUMENT
5162–0702

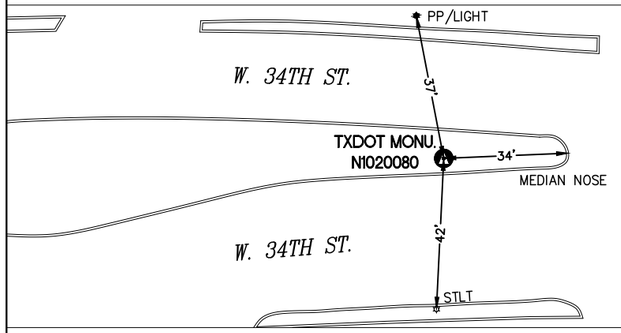
N= 13,882,153.34
E= 3,086,547.33
ELEVATION= 71.68'



CONTROL DESCRIPTION: SET 5/8" IRON ROD WITH BRASS CAP
AT THE SOUTH MEDIAN OF THE INTERSECTION OF ANTOINE DR. AND DEEP FOREST DR.

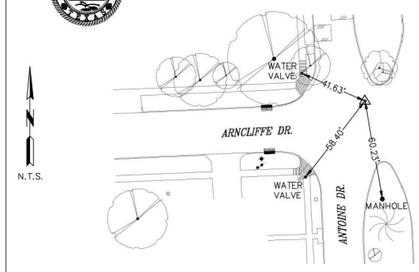
TXDOT MONUMENT
N1020080

N= 13,864,248.22
E= 3,089,175.26
ELEVATION= 71.19'



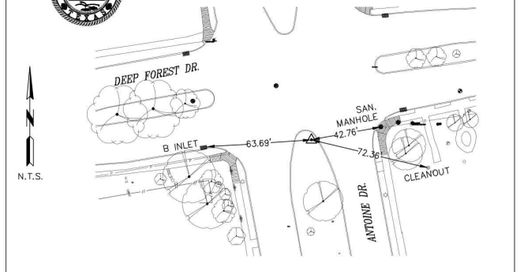
CONTROL DESCRIPTION: SET 5/8" IRON ROD WITH ALUM DISK
IN THE MEDIAN OF W. 34TH ST ABOUT 460' EAST OF US 290 NORTHBOUND
FRONTAGE RD

CITY OF HOUSTON
CITY SURVEY 5162 0610
SITE CONTROL MONUMENT



Project WBS# N–100030–0001–3
Texas Coordinate System of 1983, South Central Zone, U. S. Survey Feet
X= 3,085,774.4817
Y= 13,884,645.6483
Lat.= 29° 52' 50.80389" (N)
Lon.= 95° 28' 25.94646" (W)
Reference Frame Used: NAD '83 (2011) (EPOCH: 2010)
Vertical Adjustment used: NAVD '88
General Location: AT THE INTERSECTION OF ANTOINE DR. AND ARNCLIFFE DR.
Date Set: 12–14–1977 Type of Mark: 4A
3 Nearest project control points (bearings and distances stated below):
1 S 15° 20' 16" E 35.72'
2 N 00° 55' 49" W 314.48'
3 S 03° 24' 52" E 440.24'
NOTE:
1. Bearings are grid bearings.
2. Scale Factor = (S.F. 0.999870017).
3. Surface= Grid / S.F.
Surveyed By: Kuo & Associates, Inc.
10300 Westoffice Drive, Suite 800
Houston, TX 77042
Keymap Page: 411 P
Orthometric Elevation =77.36 FEET
Ellipsoid Height= –12.6611 FEET
Geoid: GEOID '12A
Datum Source & Adjustment: GPS STATIC (OBSERVED ON 10–30–17)
Date Revised: 10–30–2017
City of Houston, Harris County, Texas

CITY OF HOUSTON
CITY SURVEY 5162 0702
SITE CONTROL MONUMENT



Project WBS# N–100030–0001–3
Texas Coordinate System of 1983, South Central Zone, U. S. Survey Feet
X= 3,086,146.1322
Y= 13,880,348.8979
Lat.= 29° 52' 08.17592" (N)
Lon.= 95° 28' 23.19815" (W)
Reference Frame Used: NAD '83 (2011) (EPOCH: 2010)
Vertical Adjustment used: NAVD '88
General Location: AT THE SOUTH MEDIUM NOSE OF THE INTERSECTION OF ANTOINE DR. AND DEEP FOREST DR.
Date Set: 12–13–1977 Type of Mark: 4A
3 Nearest project control points (bearings and distances stated below):
1 N 39° 21' 47" E 57.59'
2 S 09° 33' 20" W 277.84'
3 N 10° 32' 18" W 518.84'
NOTE:
1. Bearings are grid bearings.
2. Scale Factor = (S.F. 0.999870017).
3. Surface= Grid / S.F.
Surveyed By: Kuo & Associates, Inc.
10300 Westoffice Drive, Suite 800
Houston, TX 77042
Keymap Page: 411 Q
Orthometric Elevation =71.68 FEET
Ellipsoid Height=
Geoid: GEOID '12A
Datum Source & Adjustment: GPS STATIC (TIED TO MONUMENT 5162–0610)
Date Revised: 10–30–2017
City of Houston, Harris County, Texas

ABBREVIATIONS

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FC – FENCE CORNER
LT – LIGHT POLE
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PP – POWER POLE
STLT – STREET LIGHT
PP/LIGHT – POWER POLE W/LIGHT
WM – WATER METER
EOP – EDGE OF PAVEMENT

EXIST. TOPOGRAPHIC LEGEND

ASPHALT SYMBOL
B OR BB INLET
BUSH
C INLET
CLEANOUT
brick column
DOWN GUY
E INLET
ELEC MANHOLE
FIRE HYDRANT
GAS METER
GAS VALVE
GATE
GRATE INLET
GRATE INLET
MAIL BOX
STORM MANHOLE
SANITARY MANHOLE
PLANTER
POWER POLE
POWER POLE W/LT.
SIGN
SIGNAL POLE
SPRINKER VALVE
SPRINKLER HEAD
STREET LIGHT/FLOOD LIGHT
STREET LIGHT/PARKING LIGHT
TREE
TREE STUMP
TREE–CREPE MYRTLE
TREE–PINE
WATER METER
WATER VALVE
IRRIGATION CONTROL VALVE

N
0 30 60
SCALE: 1" = 60'–0"

No.	DATE	REVISIONS	APP.

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162–0610, A BRASS DISK IN CONCRETE, LOCATED NEAR THE NORTH MEDIAN NOSE OF THE INTERSECTION OF ANTOINE DRIVE AND ARNCLIFFE DRIVE.

ELEV. 77.36 FEET NAVD 1988 (GEOID '12A)*

* OBSERVED BY GPS SURVEYING AND PROCESSED IN REFERENCE TO THE CORS DATED OCTOBER 30, 2017. ELEW.

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HORIZONTAL AND VERTICAL CONTROL SHEET (SHEET 5 OF 5)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N–100030–0GEC–3	
DRAWING SCALE	
SCALE: 1" = 60'	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. : OF 718	

ANTOINE DR SEG 1-A & 1-B

Curve Data

Curve SEG_1A_1B_1

P.I. Station	159+44.35	N	13,881,393.2170	E	3,086,682.0834
Delta =	14° 32′ 36.06"	(LT)			
Degree =	2° 59′ 31.01"				
Tangent =	244.3550				
Length =	486.0832				
Radius =	1,915.0000				
External =	15.5270				
Long Chord =	484.7793				
Mid. Ord. =	15.4021				
P.C. Station	157+00.00	N	13,881,149.5178	E	3,086,664.1926
P.T. Station	161+86.08	N	13,881,633.6001	E	3,086,638.2050
C.C.		N	13,881,289.7270	E	3,084,754.3323
Back = N	4° 11′ 55.47" E				
Ahead = N	10° 20′ 40.59" W				
Chord Bear = N	3° 04′ 22.56" W				

Course from PT SEG_1A_1B_1 to PC SEG_1A_1B_4 N 10° 20′ 40.59" W Dist 2,261.6542

Curve Data

Curve SEG_1A_1B_4

P.I. Station	187+75.64	N	13,884,181.0647	E	3,086,173.2030
Delta =	18° 37′ 18.30"	(RT)			
Degree =	2° 51′ 53.24"				
Tangent =	327.9023				
Length =	650.0217				
Radius =	2,000.0000				
External =	26.7017				
Long Chord =	647.1645				
Mid. Ord. =	26.3499				
P.C. Station	184+47.74	N	13,883,858.4922	E	3,086,232.0838
P.T. Station	190+97.76	N	13,884,505.5514	E	3,086,220.4083
C.C.		N	13,884,217.6286	E	3,088,199.5749
Back = N	10° 20′ 40.59" W				
Ahead = N	8° 16′ 37.71" E				
Chord Bear = N	1° 02′ 01.44" W				

Course from PT SEG_1A_1B_4 to PC SEG_1A_1B_7 N 8° 16′ 37.71" E Dist 101.9829

Curve Data

Curve SEG_1A_1B_7

P.I. Station	193+91.21	N	13,884,795.9450	E	3,086,262.6538
Delta =	10° 56′ 13.00"	(LT)			
Degree =	2° 51′ 53.24"				
Tangent =	191.4674				
Length =	381.7714				
Radius =	2,000.0000				
External =	9.1440				
Long Chord =	381.1920				
Mid. Ord. =	9.1024				
P.C. Station	191+99.74	N	13,884,606.4720	E	3,086,235.0899
P.T. Station	195+81.51	N	13,884,987.2061	E	3,086,253.7686
C.C.		N	13,884,894.3948	E	3,084,255.9233
Back = N	8° 16′ 37.71" E				
Ahead = N	2° 39′ 35.29" W				
Chord Bear = N	2° 48′ 31.21" E				

Course from PT SEG_1A_1B_7 to PC SEG_1A_1B_10 N 2° 39′ 35.29" W Dist 2,962.6285

Curve Data

Curve SEG_1A_1B_10

P.I. Station	235+42.12	N	13,888,943.5465	E	3,086,069.9740
Delta =	53° 02′ 14.71"	(LT)			
Degree =	2° 51′ 53.24"				
Tangent =	997.9788				
Length =	1,851.3551				
Radius =	2,000.0000				
External =	235.1648				
Long Chord =	1,785.9601				
Mid. Ord. =	210.4228				
P.C. Station	225+44.14	N	13,887,946.6429	E	3,086,116.2859
P.T. Station	243+95.50	N	13,889,505.9735	E	3,085,245.5727
C.C.		N	13,887,853.8315	E	3,084,118.4405
Back = N	2° 39′ 35.29" W				
Ahead = N	55° 41′ 50.00" W				
Chord Bear = N	29° 10′ 42.65" W				

Course from PT SEG_1A_1B_10 to PC SEG_1A_1B_13 N 55° 41′ 50.00" W Dist 380.2328

Curve Data

Curve SEG_1A_1B_13

P.I. Station	257+81.93	N	13,890,287.3200	E	3,084,100.2808
Delta =	53° 24′ 50.17"	(RT)			
Degree =	2° 51′ 53.24"				
Tangent =	1,006.2000				
Length =	1,864.4981				
Radius =	2,000.0000				
External =	238.8476				
Long Chord =	1,797.7106				
Mid. Ord. =	213.3665				
P.C. Station	247+75.73	N	13,889,720.2598	E	3,084,931.4734
P.T. Station	266+40.23	N	13,891,292.7212	E	3,084,060.1935
C.C.		N	13,891,372.4018	E	3,086,058.6056
Back = N	55° 41′ 50.00" W				
Ahead = N	2° 16′ 59.83" W				
Chord Bear = N	28° 59′ 24.91" W				

Course from PT SEG_1A_1B_13 to 26 N 2° 16′ 59.83" W Dist 2,000.0007

Point 26 N 13,893,291.1340 E 3,083,980.5129 Sta 286+40.23

==========

Ending chain SEG_1A_1B description

No.	DATE	REVISIONS	APP.

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

SURVEYED BY:
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95% SUBMITTAL
GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

HORIZONTAL CURVE DATA

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 165 OF 718	

Pen Table: ANTOINE DR.tbl
Plot Driver: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Resource\Plot files\ANTOINE DR.pltcfg
Plotted on: 10/24/2025 3:06:57 PM michael.guthrie
Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Roadway\W GULF BANK\PR HORIZ CURVE DATA 01.dgn

ANTOINE DR SEG 1-B (EAST TOC)

Beginning profile SEG_IB-PR_E description:

		STATION	ELEV	GRADE	TOTAL L	BACK L	AHEAD L
VPI	1	157+18.28	73.1400				
VPI	2	159+05.00	72.5400	-0.3213			
VPI	3	159+78.60	73.1000	0.7609			
VPI	4	160+79.60	72.2952	-0.7968			
VPI	5	161+81.74	73.0000	0.6900			
VPI	6	166+96.20	71.4566	-0.3000			
VPI	7	167+21.21	71.0700	-1.5459			
VPI	8	167+48.62	71.6000	1.9336			
VPI	9	167+80.30	70.9700	-1.9886			
VPI	10	168+05.30	71.3509	1.5236			
VPI	11	179+55.00	74.8000	0.3000			
VPI	12	182+47.80	73.7000	-0.3757			
VPI	13	183+04.84	73.3360	-0.6382			
VPI	14	183+55.30	73.9000	1.1178			
VPI	15	188+53.99	76.0000	0.4211			
VPI	16	191+33.00	75.1000	-0.3226			
VPI	17	193+13.93	75.6428	0.3000			
VPI	18	194+00.00	75.3846	-0.3000			
VPI	19	196+04.20	76.1000	0.3504			
VPI	20	198+04.96	75.4403	-0.3286			
VPI	21	203+28.00	77.0493	0.3076			
VPI	22	205+06.22	76.4000	-0.3643			
VPI	23	208+79.36	77.5194	0.3000			
VPI	24	209+92.90	77.1500	-0.3254			
VPI	25	210+32.70	77.0943	-0.1399			
VPI	26	210+70.12	77.2234	0.3451			
VPI	27	217+04.92	79.1278	0.3000			
VPI	28	218+52.30	78.3000	-0.5617			
VPI	29	218+90.03	78.5355	0.6241			
VPI	30	219+29.30	78.3020	-0.5946			
VPI	31	222+00.00	79.4800	0.4352			

Ending profile SEG_IB-PR_E description

ANTOINE DR SEG 1-B (WEST TOC)

Beginning profile SEG_IB-PR_W description:

		STATION	ELEV	GRADE	TOTAL L	BACK L	AHEAD L
VPI	1	160+07.20	72.4000				
VPI	2	161+81.74	73.0000	0.3438			
VPI	3	166+95.11	71.4300	-0.3058			
VPI	4	167+48.62	71.6000	0.3177			
VPI	5	168+04.23	71.3477	-0.4537			
VPI	6	179+55.00	74.8000	0.3000			
VPI	7	182+47.80	73.6800	-0.3825			
VPI	8	183+04.84	73.3360	-0.6032			
VPI	9	183+56.73	73.8800	1.0485			
VPI	10	188+53.99	76.0000	0.4263			
VPI	11	191+33.00	74.6864	-0.4708			
VPI	12	196+04.20	76.1000	0.3000			
VPI	13	198+05.45	75.2800	-0.4075			
VPI	14	203+28.00	76.8477	0.3000			
VPI	15	205+06.22	76.2500	-0.3353			
VPI	16	208+79.36	77.3700	0.3002			
VPI	17	209+92.80	77.0297	-0.3000			
VPI	18	210+32.70	77.0943	0.1620			
VPI	19	210+70.12	77.1000	0.0152			
VPI	20	217+04.92	79.0044	0.3000			
VPI	21	218+52.30	78.5623	-0.3000			
VPI	22	218+90.03	78.5355	-0.0710			
VPI	23	219+29.30	78.6211	0.2180			
VPI	24	222+00.00	79.4800	0.3173			

Ending profile SEG_IB-PR_W description

ANTOINE DR GULF BANK (NORTH TOC)

Beginning profile PF_GB_N description:

		STATION	ELEV	GRADE	TOTAL L	BACK L	AHEAD L
VPI	1	7+55.98	80.2200				
VPI	2	7+84.89	79.8500	-1.2798			
VPI	3	8+15.47	79.5500	-0.9810			
VPI	4	8+79.13	79.6900	0.2199			
VPI	5	9+08.31	80.0000	1.0624			
VPI	6	9+16.90	79.7958	-2.3772			

Ending profile PF_GB_N description

ANTOINE DR GULF BANK (SOUTH TOC)

Beginning profile PF_GB_S description:

		STATION	ELEV	GRADE	TOTAL L	BACK L	AHEAD L
VPI	1	7+55.90	80.2200				
VPI	2	7+83.78	79.8500	-1.3271			
VPI	3	8+11.98	79.5500	-1.0638			
VPI	4	8+76.35	79.4800	-0.1087			
VPI	5	9+08.14	79.8800	1.2583			
VPI	6	9+16.36	79.8500	-0.3650			

Ending profile PF_GB_S description

ANTOINE DR - GULFBANK (EAST TOC)

Beginning profile ETOC_GULFBANK description:

		STATION	ELEV	GRADE	TOTAL L	BACK L	AHEAD L
VPI	1	222+00.00	79.4800				
VPI	2	222+60.79	79.2653	-0.3531			
VPI	3	222+90.75	79.8500	1.9515			
VPI	4	222+90.75	79.3495				
VPI	5	223+16.31	79.8612	2.0021			
VPI	6	223+16.31	80.3600				
VPI	7	223+32.03	80.5500	1.2087			
VPI	8	223+32.03	80.0482				
VPI	9	223+69.44	79.3000	-2.0000			
VPI	10	223+69.44	79.8000				
VPI	11	224+00.26	79.6933	-0.3462			
VPI	12	225+20.07	80.5200	0.6900			

Ending profile ETOC_GULFBANK description

ANTOINE DR - GULFBANK (WEST TOC)

Beginning profile WTOC_GULFBANK description:

		STATION	ELEV	GRADE	TOTAL L	BACK L	AHEAD L
VPI	1	222+00.00	79.4800				
VPI	2	222+68.75	79.2700	-0.3055			
VPI	3	222+93.03	79.8800	2.5124			
VPI	4	222+93.03	79.3809				
VPI	5	223+29.05	80.1000	1.9964			
VPI	6	223+29.05	80.6000				
VPI	7	223+45.51	80.6000	0.0000			
VPI	8	223+45.51	80.0986				
VPI	9	223+69.44	79.6200	-2.0000			
VPI	10	223+69.44	80.1200				
VPI	11	224+00.32	79.6937	-1.3804			
VPI	12	225+20.07	80.5200	0.6900			

Ending profile WTOC_GULFBANK description

APP: | DATE | No. | REVISIONS

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TEXAS PE FIRM REG. # 20017
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HOUSTON, TX 77079

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125611
10/24/2025
95% SUBMITTAL
GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

VERTICAL CURVE DATA

SHEET 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 166 OF 718	

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ANTOINE DR SEG 1-B (EAST TOC)

Beginning profile description:

	STATION	ELEV	GRADE	TOTAL L	BACK L	AHEAD L
	225+20.07	80.52				
VPI 1	227+54.44	82.14	0.69			
VPI 2	228+15	81.96	-0.30			
VPI 3	229+06.81	82.58	0.67			
VPI 4	229+76.67	82.37	-0.30			
VPI 5	232+33.94	83.14	0.30			
VPI 6	233+10.86	82.85	-0.38			
VPI 7	234+76.55	83.35	0.30			
VPI 8	236+11.06	82.94	-0.30			
VPI 9	237+60.93	83.94	0.66			
VPI 10	238+07	83.80	-0.30			
VPI 11	239+58.22	84.36	0.37			
VPI 12	239+95.79	84.25	-0.30			
VPI 13	241+50	85.25	0.65			
VPI 14	241+80	85.16	-0.30			
VPI 15	243+95.5	86.35	0.55			
VPI 16	246+48.56	85.40	-0.38			
VPI 17	250+45	86.64	0.31			
VPI 18	252+62	85.88	-0.35			
VPI 19	254+77.75	86.70	0.38			
VPI 20	257+41.14	85.60	-0.42			
VPI 21	261+37.06	86.79	0.30			
VPI 22	263+12.32	85.92	-0.50			
VPI 23	263+53.06	85.32	-0.96			
VPI 24	263+53.80	85.30	0.30			
25	264+35.64	85.44				
VPI 26	264+71.42	85.92	-0.95			
VPI 27	267+94.97	87.20	0.40			

End profile description

ANTOINE DR SEG 1-B (WEST TOC)

Beginning profile description:

	STATION	ELEV	GRADE	TOTAL L	BACK L	AHEAD L
	225+33.68	80.61				
VPI 1	227+54.44	82.14	0.69			
VPI 2	228+15.00	81.96	-0.30			
VPI 3	229+06.81	82.23	0.30			
VPI 4	229+76.67	82.02	-0.30			
VPI 5	232+33.94	83.14	0.43			
VPI 6	233+10.86	82.85	-0.38			
VPI 7	234+76.55	83.35	0.30			
VPI 8	236+11.06	82.94	-0.30			
VPI 9	237+60.93	83.94	0.66			
VPI 10	238+07	83.80	-0.30			
VPI 11	239+58.22	84.36	0.37			
VPI 12	239+95.79	84.24	-0.30			
VPI 13	241+50	85.25	0.65			
VPI 14	241+80	85.16	-0.30			
VPI 15	243+95.50	86.35	0.55			
VPI 16	246+48.56	85.40	-0.38			
VPI 17	250+45	86.64	0.31			
VPI 18	252+62	85.88	-0.35			
VPI 19	254+77.75	86.70	0.38			
VPI 20	257+41.14	85.60	-0.42			
VPI 21	261+37.06	86.79	0.30			
VPI 22	263+46.29	85.75	-0.50			
VPI 23	263+51.95	85.70	-0.50			
VPI 24	263+79.62	86.24	0.91			
25	264+59.14	86.42				
VPI 26	264.97.38	86.08	0.54			
VPI 27	267.94.97	87.40	0.44			

End profile description

ANTOINE DR WEST M HOUSTON (NORTH TOC)

Beginning profile description:

	STATION	ELEV	GRADE	TOTAL L	BACK L	AHEAD L
	5+37.69	86.45	-0.54			
VPI 1	5+77.47	86.08				
2	6+44.21	85.92	-0.95			
VPI 3	6+78+86	85.44	0.45			
VPI 4	6+98.81	85.53				

End profile description

ANTOINE DR WEST M HOUSTON (SOUTH TOC)

Beginning profile description:

	STATION	ELEV	GRADE	TOTAL L	BACK L	AHEAD L
	5+49.44	86.29				
VPI 1	5+77+47	86.08	-0.25			
VPI 2	5+99.78	85.70	-1.28			
VPI 3	6+01.35	85.73	0.50			
VPI 4	6+70+88	85.92				
VPI 5	7+03.39	85.30	-0.96			
VPI 6	7+09.99	85.32	0.30			
7	7+10.21	85.32	0.30			

End profile description

No.	DATE	REVISIONS	APP.

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777 North Eldridge Parkway, Suite 500
Houston, Texas 77079
713-783-0043
www.vs-engr.com

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JOEL OLSHEFSKI
Date
131531
10/21/2025
for
95% SUBMITTAL
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Texas Registered Engineering Firm F-148

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

VERTICAL CURVE DATA

SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 167 OF 718	

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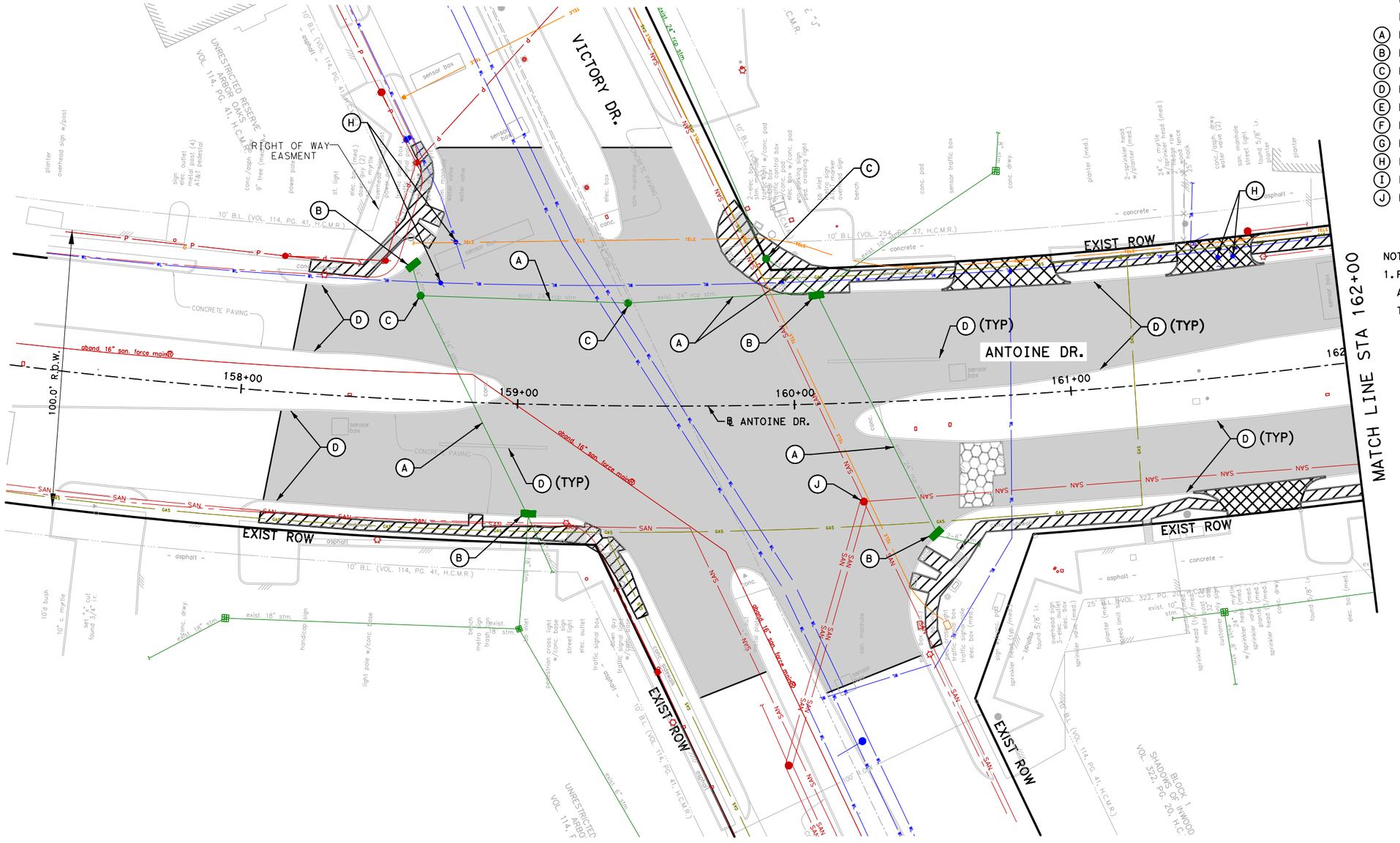

LEGEND

- REMOVE ASPH PAV & BASE
- REMOVE CONC DRWY
- REMOVE ASPH/BRICK/GRAVEL DRWY
- REMOVE CONC SIDEWALK/RAMP
- REMOVE CONC PAV
- (A) REMOVE PIPE(RCP, PVC OR CMP)
- (B) REMOVE INLET/JCT BOX
- (C) REMOVE STORM MH
- (D) REMOVE CURB
- (E) REMOVE EXIST FENCE
- (F) REMOVE STRUCTURES
- (G) REMOVE CURB STOP
- (H) REMOVE UTILITY
- (I) REMOVE ISLAND
- (J) REMOVE EXIST SAN SWR MH

NOTE:
1. REFER TO TREE MITIGATION AND REMOVAL PLANS FOR TREE REMOVAL.

N

0' 20' 40'
SCALE IN FEET

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ADDRESS:
3300 S. Gessner Rd.
TEL.No.: 713-706-4412

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108363
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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DEMOLITION PLAN
BEGIN PROJECT TO STA 162+00

SHEET 1 OF 26

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 168 718	

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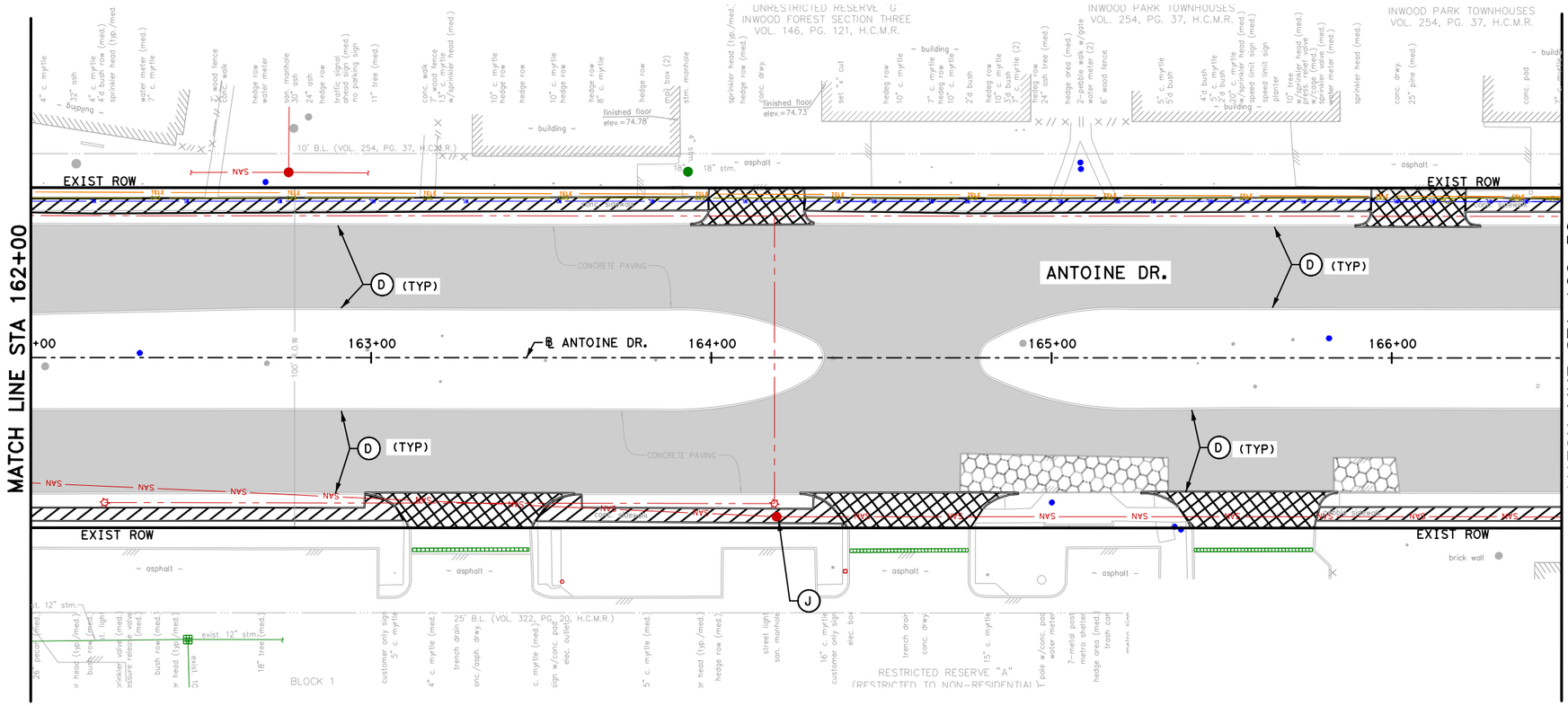

LEGEND

- REMOVE ASPH PAV & BASE
- REMOVE CONC DRWY
- REMOVE ASPH/BRICK/GRAVEL DRWY
- REMOVE CONC SIDEWALK/RAMP
- REMOVE CONC PAV
- (A) REMOVE PIPE(RCP, PVC OR CMP)
- (B) REMOVE INLET/JCT BOX
- (C) REMOVE STORM MH
- (D) REMOVE CURB
- (E) REMOVE EXIST FENCE
- (F) REMOVE STRUCTURES
- (G) REMOVE CURB STOP
- (H) REMOVE UTILITY
- (I) REMOVE ISLAND
- (J) REMOVE EXIST SAN SWR MH

NOTE:

1. REFER TO TREE MITIGATION AND REMOVAL PLANS FOR TREE REMOVAL.

N

0' 20' 40'

SCALE IN FEET

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ADDRESS:
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TEL.No.: 713-706-4412

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Name
108363
10/21/2025
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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DEMOLITION PLAN
STA 162+00 TO STA 166+50

SHEET 2 OF 26

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-OGEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 169 718	

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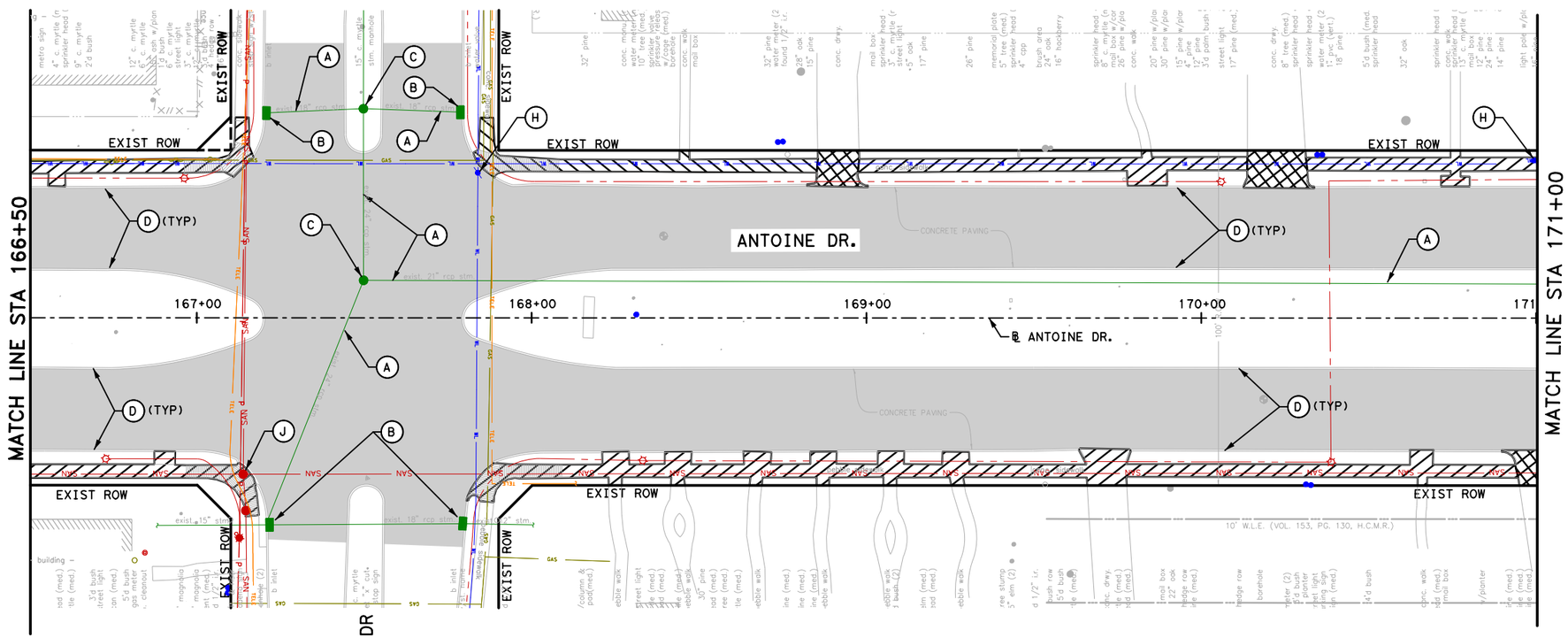

LEGEND

- REMOVE ASPH PAV & BASE
- REMOVE CONC DRWY
- REMOVE ASPH/BRICK/GRAVEL DRWY
- REMOVE CONC SIDEWALK/RAMP
- REMOVE CONC PAV
- (A) REMOVE PIPE(RCP, PVC OR CMP)
- (B) REMOVE INLET/JCT BOX
- (C) REMOVE STORM MH
- (D) REMOVE CURB
- (E) REMOVE EXIST FENCE
- (F) REMOVE STRUCTURES
- (G) REMOVE CURB STOP
- (H) REMOVE UTILITY
- (I) REMOVE ISLAND
- (J) REMOVE EXIST SAN SWR MH

NOTE:
1. REFER TO TREE MITIGATION AND REMOVAL PLANS FOR TREE REMOVAL.

N

0' 20' 40'
SCALE IN FEET

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108363
10/21/2025
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Texas Registered Engineering Firm F-13481

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DEMOLITION PLAN
STA 166+50 TO STA 171+00

SHEET 3 OF 26

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 170 718	

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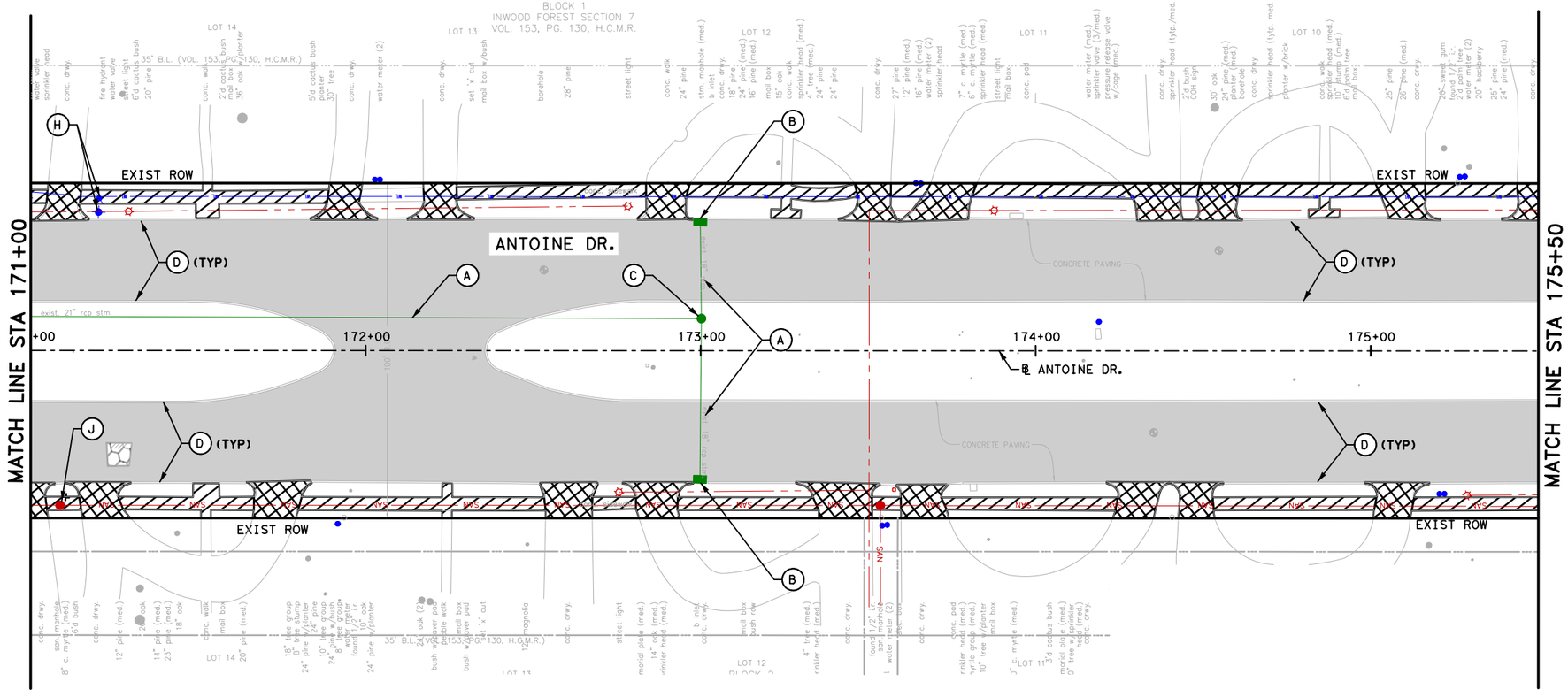

LEGEND

- REMOVE ASPH PAV & BASE
- REMOVE CONC DRWY
- REMOVE ASPH/BRICK/GRAVEL DRWY
- REMOVE CONC SIDEWALK/RAMP
- REMOVE CONC PAV
- (A) REMOVE PIPE(RCP, PVC OR CMP)
- (B) REMOVE INLET/JCT BOX
- (C) REMOVE STORM MH
- (D) REMOVE CURB
- (E) REMOVE EXIST FENCE
- (F) REMOVE STRUCTURES
- (G) REMOVE CURB STOP
- (H) REMOVE UTILITY
- (I) REMOVE ISLAND
- (J) REMOVE EXIST SAN SWR MH

NOTE:
1. REFER TO TREE MITIGATION AND REMOVAL PLANS FOR TREE REMOVAL.

N

0' 20' 40'
SCALE IN FEET

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10/21/2025
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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DEMOLITION PLAN
STA 171+00 TO STA 175+50

SHEET 4 OF 26

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 171 718	

Plotted on: 10/23/2025 2:19:54 PM GEO
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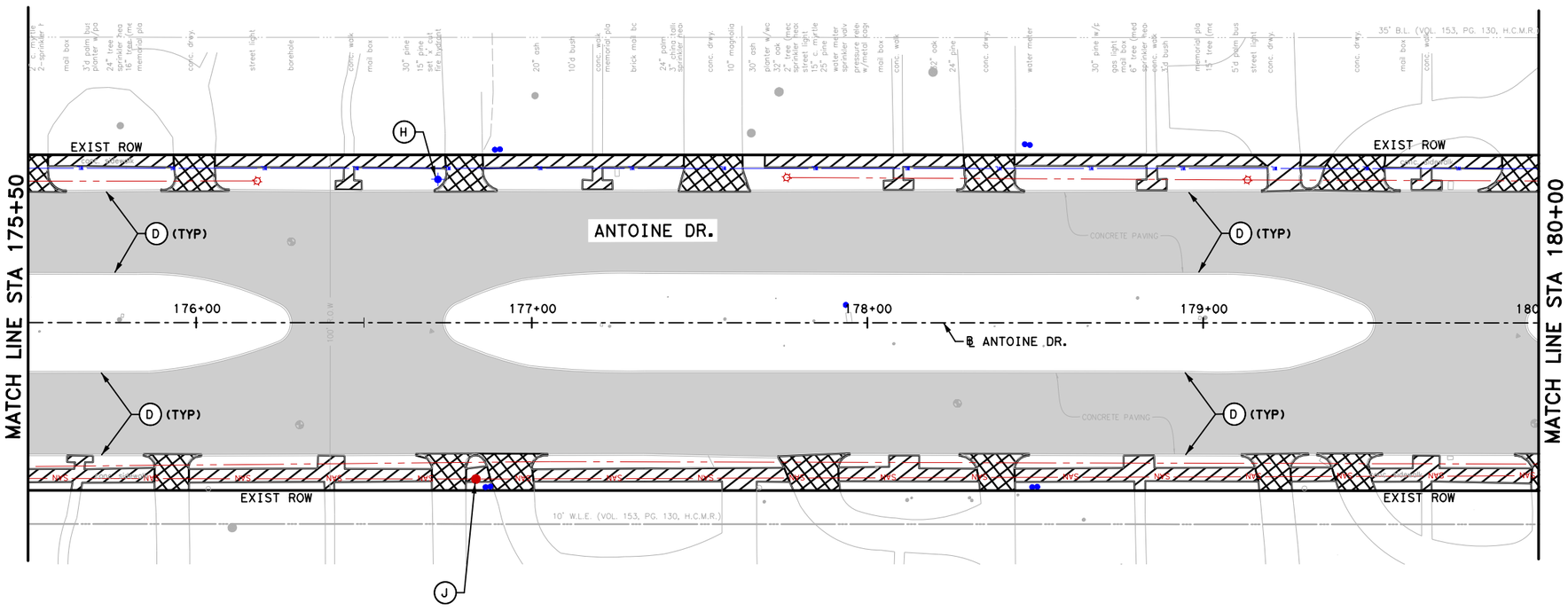

LEGEND

- REMOVE ASPH PAV & BASE
- REMOVE CONC DRWY
- REMOVE ASPH/BRICK/GRAVEL DRWY
- REMOVE CONC SIDEWALK/RAMP
- REMOVE CONC PAV
- (A) REMOVE PIPE(RCP, PVC OR CMP)
- (B) REMOVE INLET/JCT BOX
- (C) REMOVE STORM MH
- (D) REMOVE CURB
- (E) REMOVE EXIST FENCE
- (F) REMOVE STRUCTURES
- (G) REMOVE CURB STOP
- (H) REMOVE UTILITY
- (I) REMOVE ISLAND
- (J) REMOVE EXIST SAN SWR MH

NOTE:
1. REFER TO TREE MITIGATION AND REMOVAL PLANS FOR TREE REMOVAL.

N

0' 20' 40'
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DEMOLITION PLAN
STA 175+50 TO STA 180+00

SHEET 5 OF 26

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-OGEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 172 718	

Plotted on: 10/23/2025 2:19:55 PM GEO
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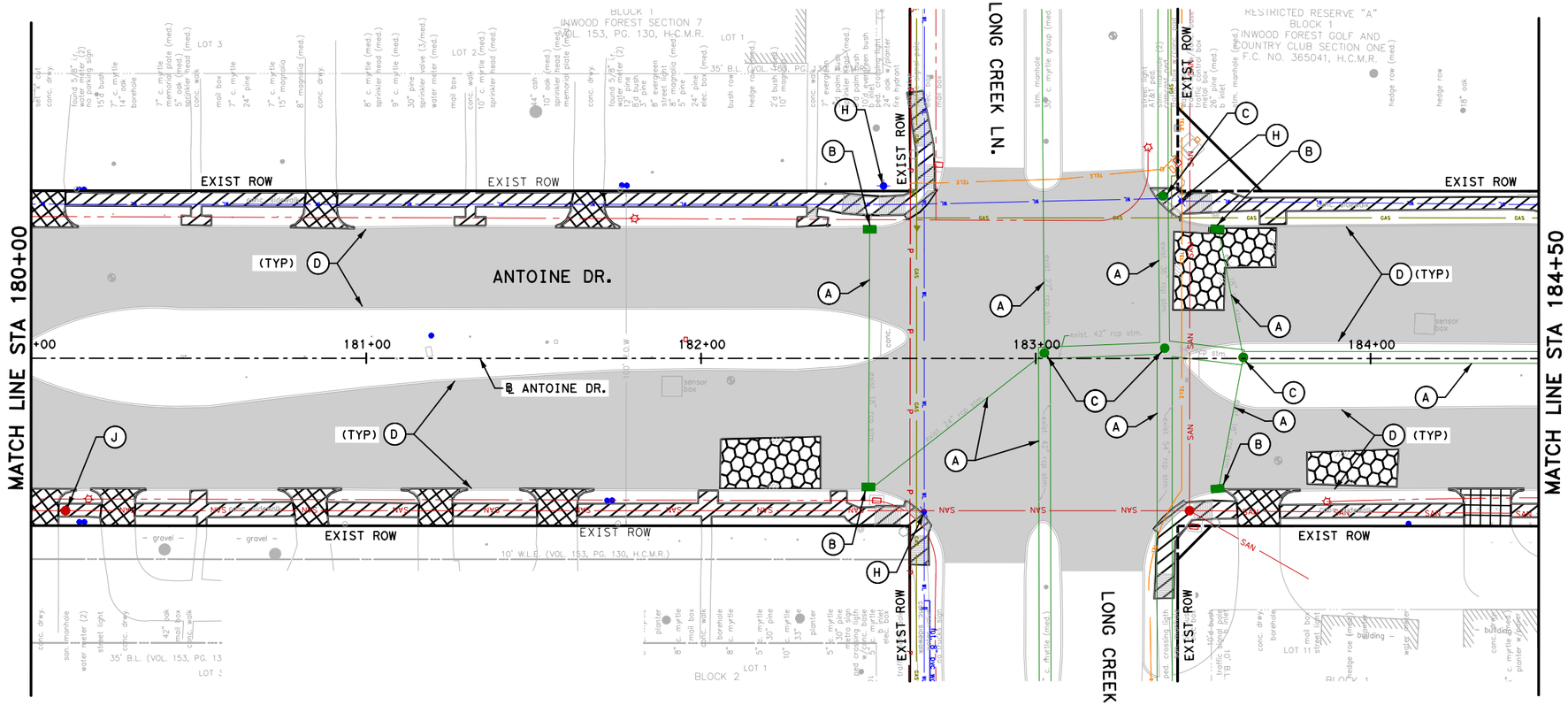
LEGEND

- REMOVE ASPH PAV & BASE
- REMOVE CONC DRWY
- REMOVE ASPH/BRICK/GRAVEL DRWY
- REMOVE CONC SIDEWALK/RAMP
- REMOVE CONC PAV
- (A) REMOVE PIPE(RCP, PVC OR CMP)
- (B) REMOVE INLET/JCT BOX
- (C) REMOVE STORM MH
- (D) REMOVE CURB
- (E) REMOVE EXIST FENCE
- (F) REMOVE STRUCTURES
- (G) REMOVE CURB STOP
- (H) REMOVE UTILITY
- (I) REMOVE ISLAND
- (J) REMOVE EXIST SAN SWR MH

NOTE:
1. REFER TO TREE MITIGATION AND REMOVAL PLANS FOR TREE REMOVAL.



0′ 20′ 40′
SCALE IN FEET

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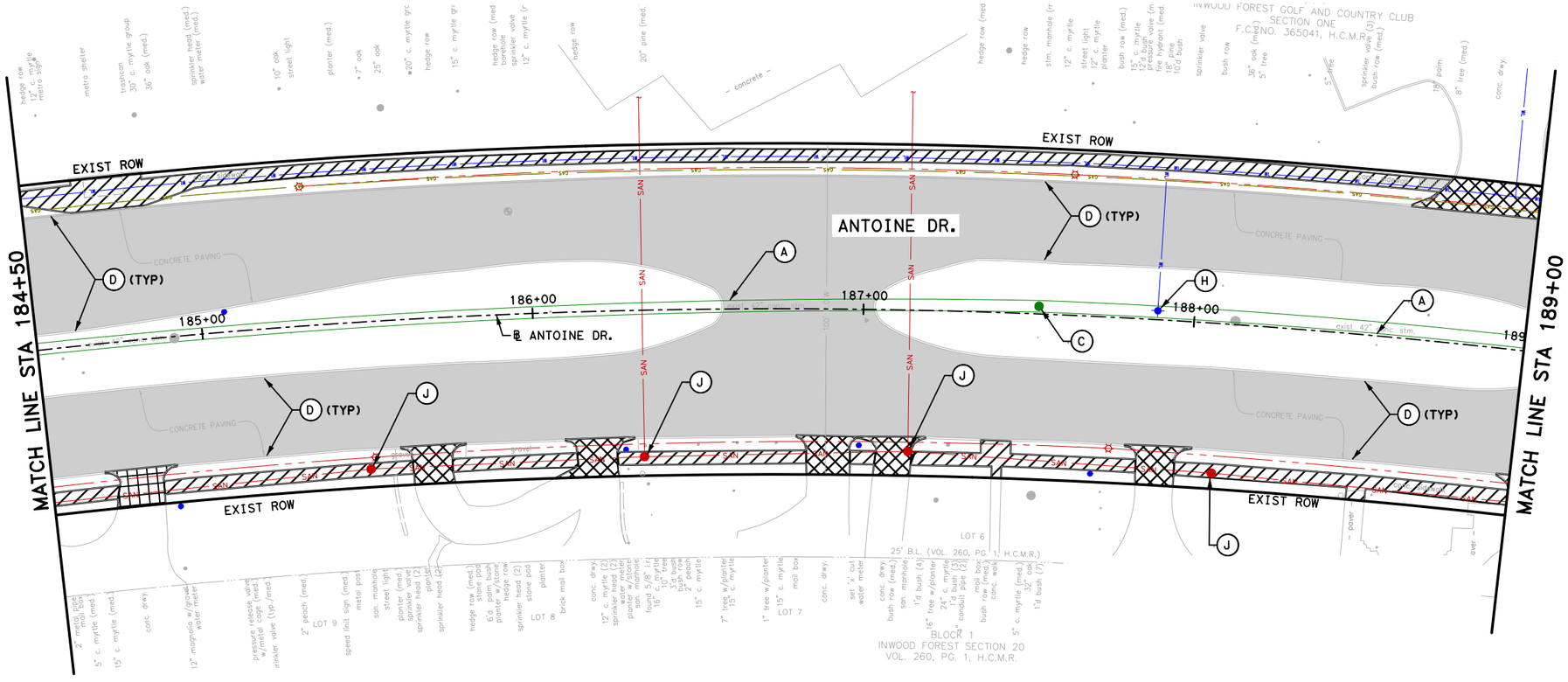
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DEMOLITION PLAN
STA 180+00 TO STA 184+50

SHEET 6 OF 26

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 173 718	



LEGEND

- REMOVE ASPH PAV & BASE
- REMOVE CONC DRWY
- REMOVE ASPH/BRICK/GRAVEL DRWY
- REMOVE CONC SIDEWALK/RAMP
- REMOVE CONC PAV
- (A) REMOVE PIPE(RCP, PVC OR CMP)
- (B) REMOVE INLET/JCT BOX
- (C) REMOVE STORM MH
- (D) REMOVE CURB
- (E) REMOVE EXIST FENCE
- (F) REMOVE STRUCTURES
- (G) REMOVE CURB STOP
- (H) REMOVE UTILITY
- (I) REMOVE ISLAND
- (J) REMOVE EXIST SAN SWR MH

NOTE:
1. REFER TO TREE MITIGATION AND REMOVAL PLANS FOR TREE REMOVAL.

N

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SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DEMOLITION PLAN
STA 184+50 TO STA 189+00

SHEET 7 OF 26

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-OGEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 174 718	

Plotted on: 10/23/2025 2:19:55 PM GEO
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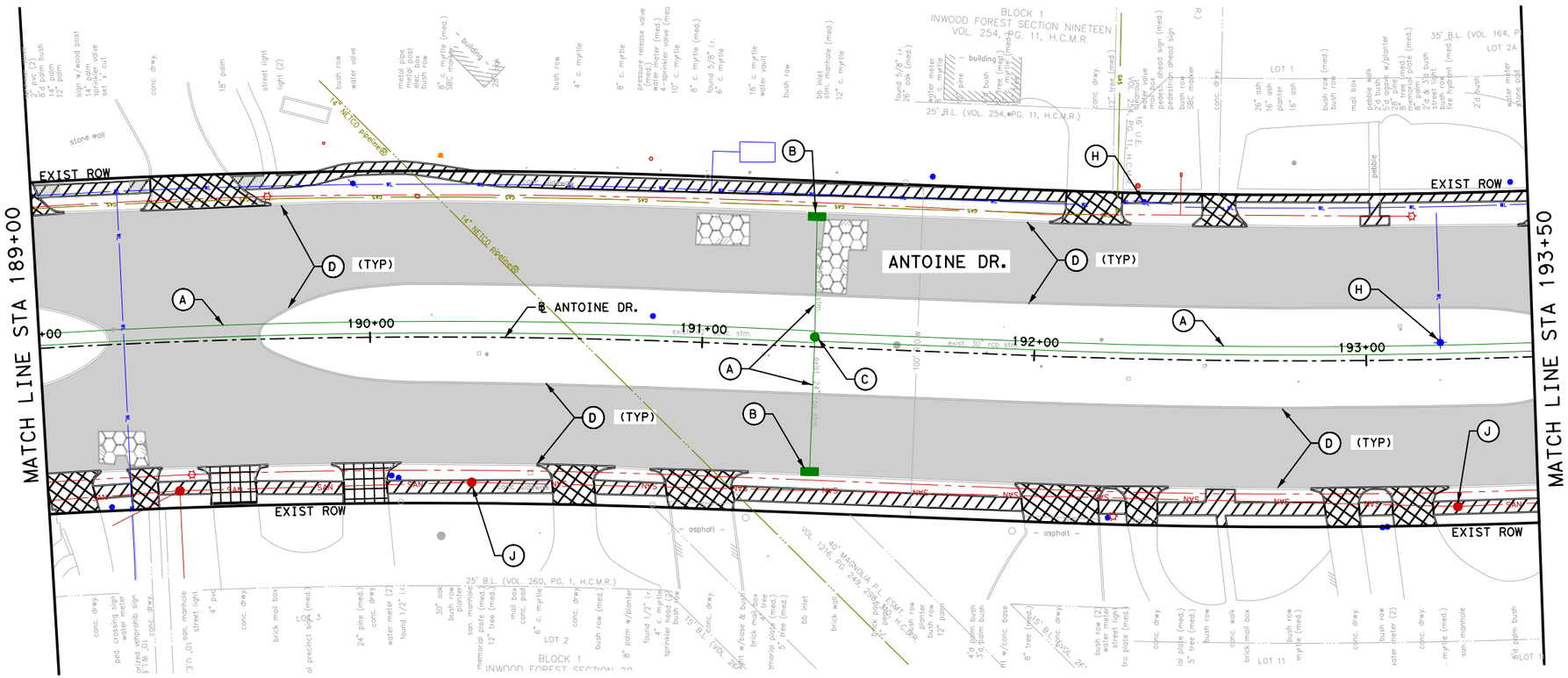

LEGEND

- REMOVE ASPH PAV & BASE
- REMOVE CONC DRWY
- REMOVE ASPH/BRICK/GRAVEL DRWY
- REMOVE CONC SIDEWALK/RAMP
- REMOVE CONC PAV
- (A) REMOVE PIPE(RCP, PVC OR CMP)
- (B) REMOVE INLET/JCT BOX
- (C) REMOVE STORM MH
- (D) REMOVE CURB
- (E) REMOVE EXIST FENCE
- (F) REMOVE STRUCTURES
- (G) REMOVE CURB STOP
- (H) REMOVE UTILITY
- (I) REMOVE ISLAND
- (J) REMOVE EXIST SAN SWR MH

NOTE:

1. REFER TO TREE MITIGATION AND REMOVAL PLANS FOR TREE REMOVAL.

N

0' 20' 40'

SCALE IN FEET

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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DEMOLITION PLAN
STA 189+00 TO STA 193+50

SHEET 8 OF 26

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-OGEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 175 718	

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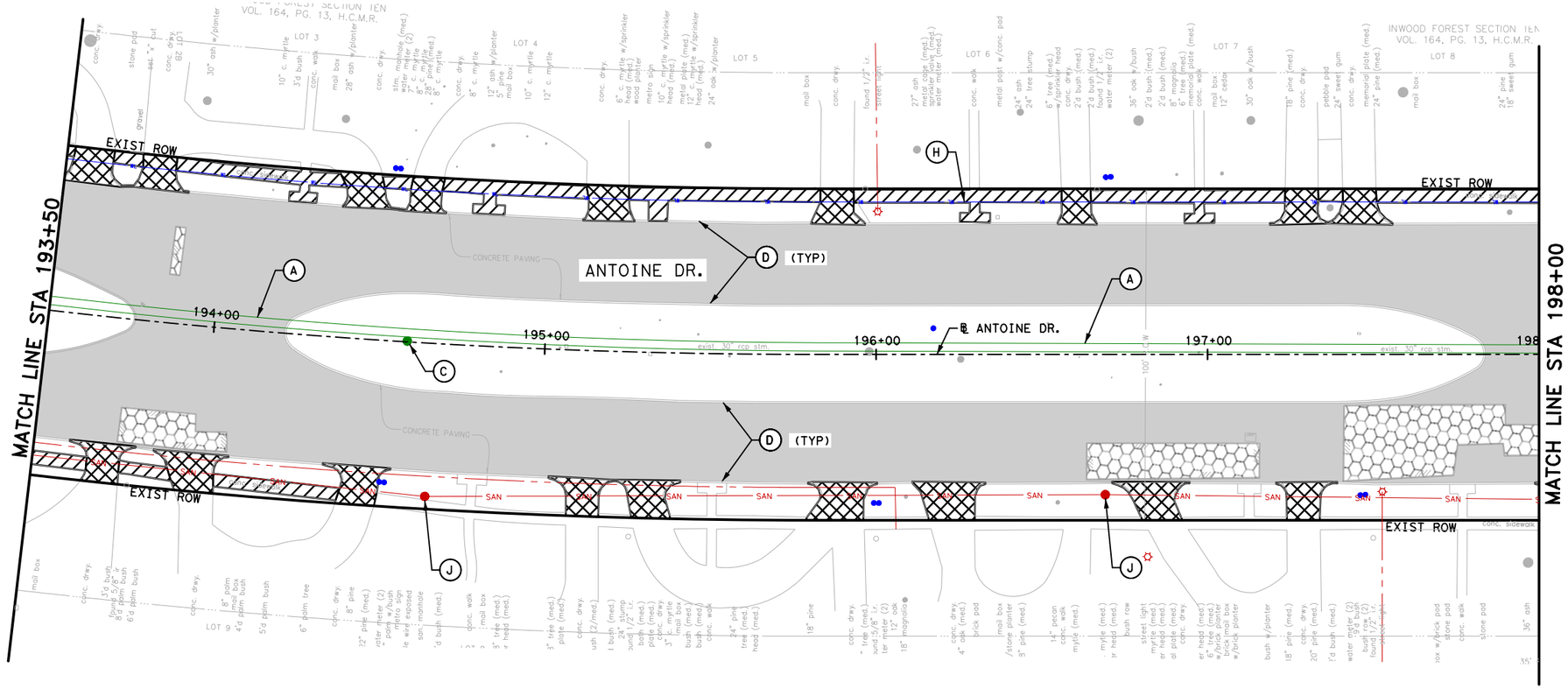

LEGEND

- REMOVE ASPH PAV & BASE
- REMOVE CONC DRWY
- REMOVE ASPH/BRICK/GRAVEL DRWY
- REMOVE CONC SIDEWALK/RAMP
- REMOVE CONC PAV
- (A) REMOVE PIPE(RCP, PVC OR CMP)
- (B) REMOVE INLET/JCT BOX
- (C) REMOVE STORM MH
- (D) REMOVE CURB
- (E) REMOVE EXIST FENCE
- (F) REMOVE STRUCTURES
- (G) REMOVE CURB STOP
- (H) REMOVE UTILITY
- (I) REMOVE ISLAND
- (J) REMOVE EXIST SAN SWR MH

NOTE:
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N

0' 20' 40'
SCALE IN FEET

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ANTOINE DRIVE

DEMOLITION PLAN
STA 193+50 TO STA 198+00

SHEET 9 OF 26

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 176 718	

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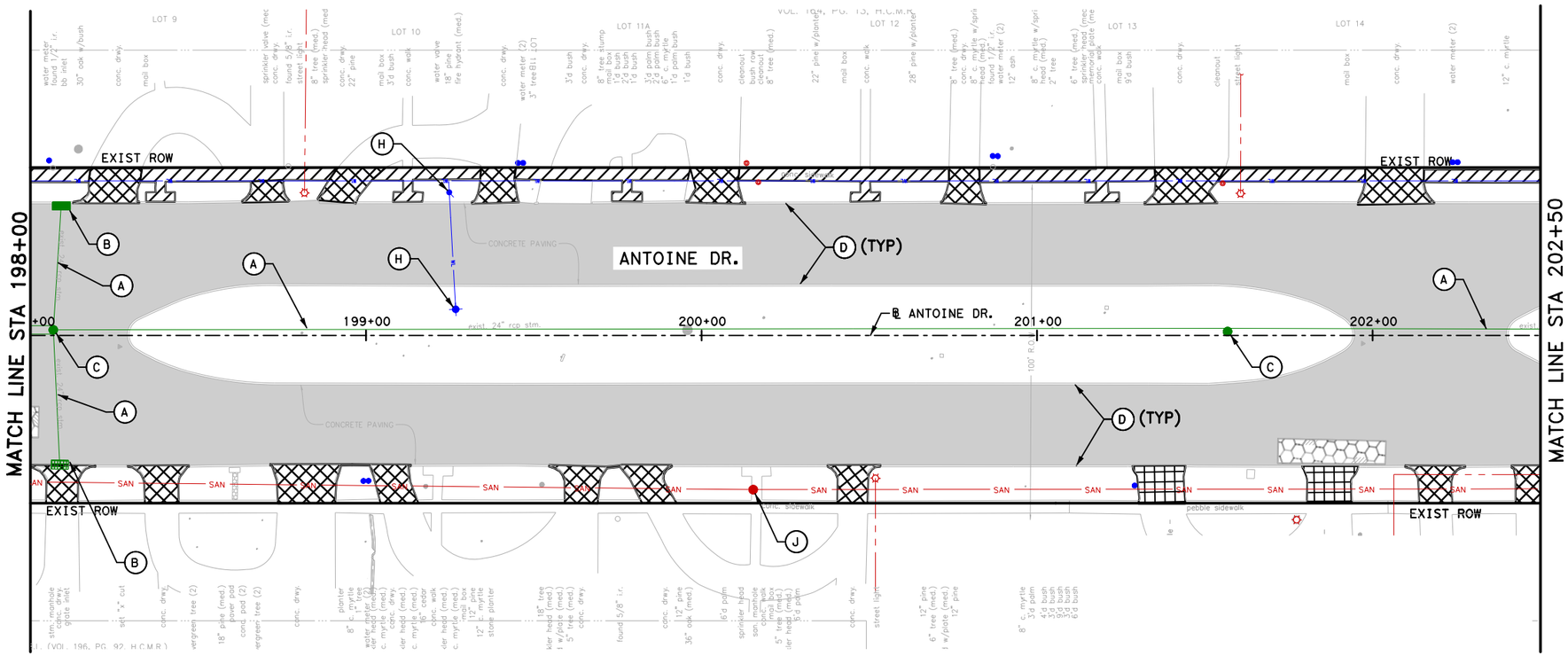
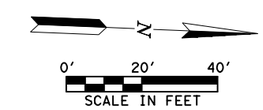
LEGEND

- REMOVE ASPH PAV & BASE
- REMOVE CONC DRWY
- REMOVE ASPH/BRICK/GRAVEL DRWY
- REMOVE CONC SIDEWALK/RAMP
- REMOVE CONC PAV
- (A) REMOVE PIPE(RCP, PVC OR CMP)
- (B) REMOVE INLET/JCT BOX
- (C) REMOVE STORM MH
- (D) REMOVE CURB
- (E) REMOVE EXIST FENCE
- (F) REMOVE STRUCTURES
- (G) REMOVE CURB STOP
- (H) REMOVE UTILITY
- (I) REMOVE ISLAND
- (J) REMOVE EXIST SAN SWR MH

NOTE:

1. REFER TO TREE MITIGATION AND REMOVAL PLANS FOR TREE REMOVAL.





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HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DEMOLITION PLAN
STA 198+00 TO STA 202+50

SHEET 10 OF 26

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 177 718	

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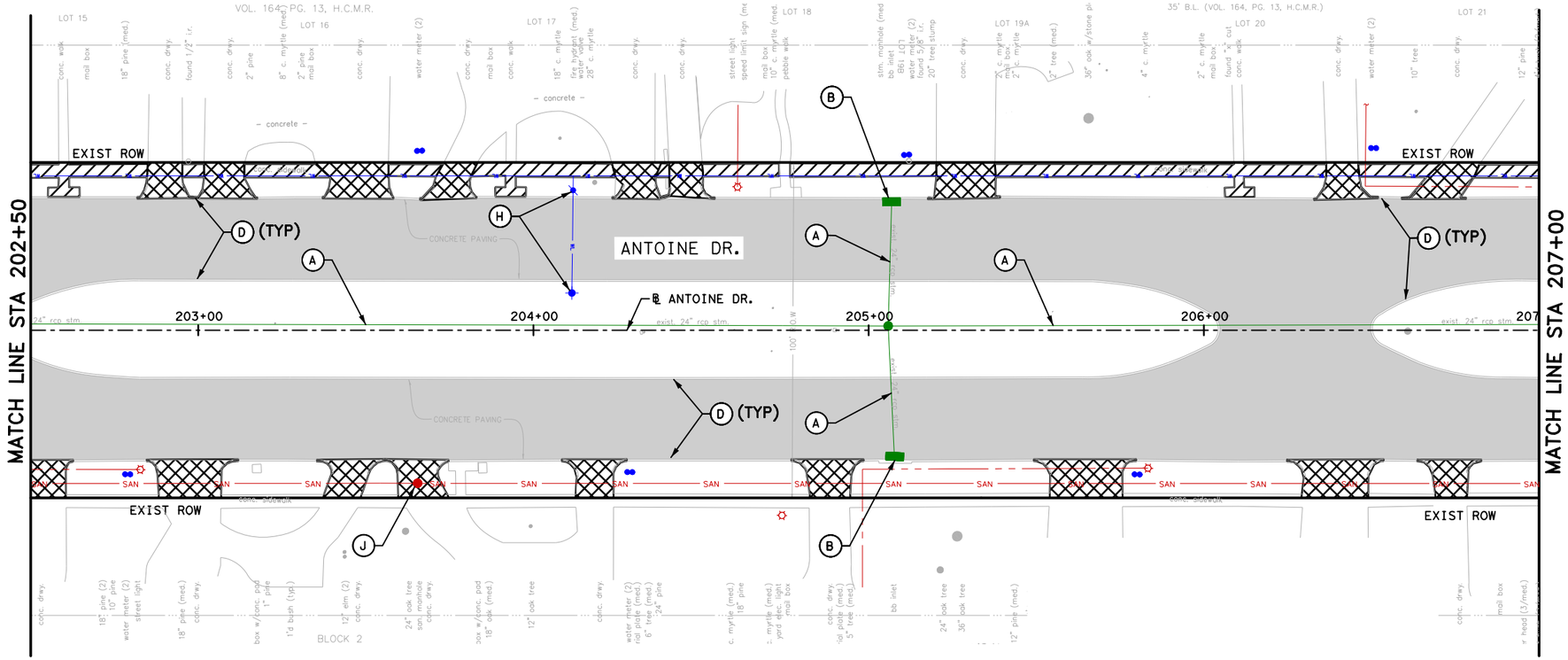

LEGEND

- REMOVE ASPH PAV & BASE
- REMOVE CONC DRWY
- REMOVE ASPH/BRICK/GRAVEL DRWY
- REMOVE CONC SIDEWALK/RAMP
- REMOVE CONC PAV
- (A) REMOVE PIPE(RCP, PVC OR CMP)
- (B) REMOVE INLET/JCT BOX
- (C) REMOVE STORM MH
- (D) REMOVE CURB
- (E) REMOVE EXIST FENCE
- (F) REMOVE STRUCTURES
- (G) REMOVE CURB STOP
- (H) REMOVE UTILITY
- (I) REMOVE ISLAND
- (J) REMOVE EXIST SAN SWR MH

NOTE:
1. REFER TO TREE MITIGATION AND REMOVAL PLANS FOR TREE REMOVAL.

N

0' 20' 40'
SCALE IN FEET

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Texas Registered Engineering Firm F-13481

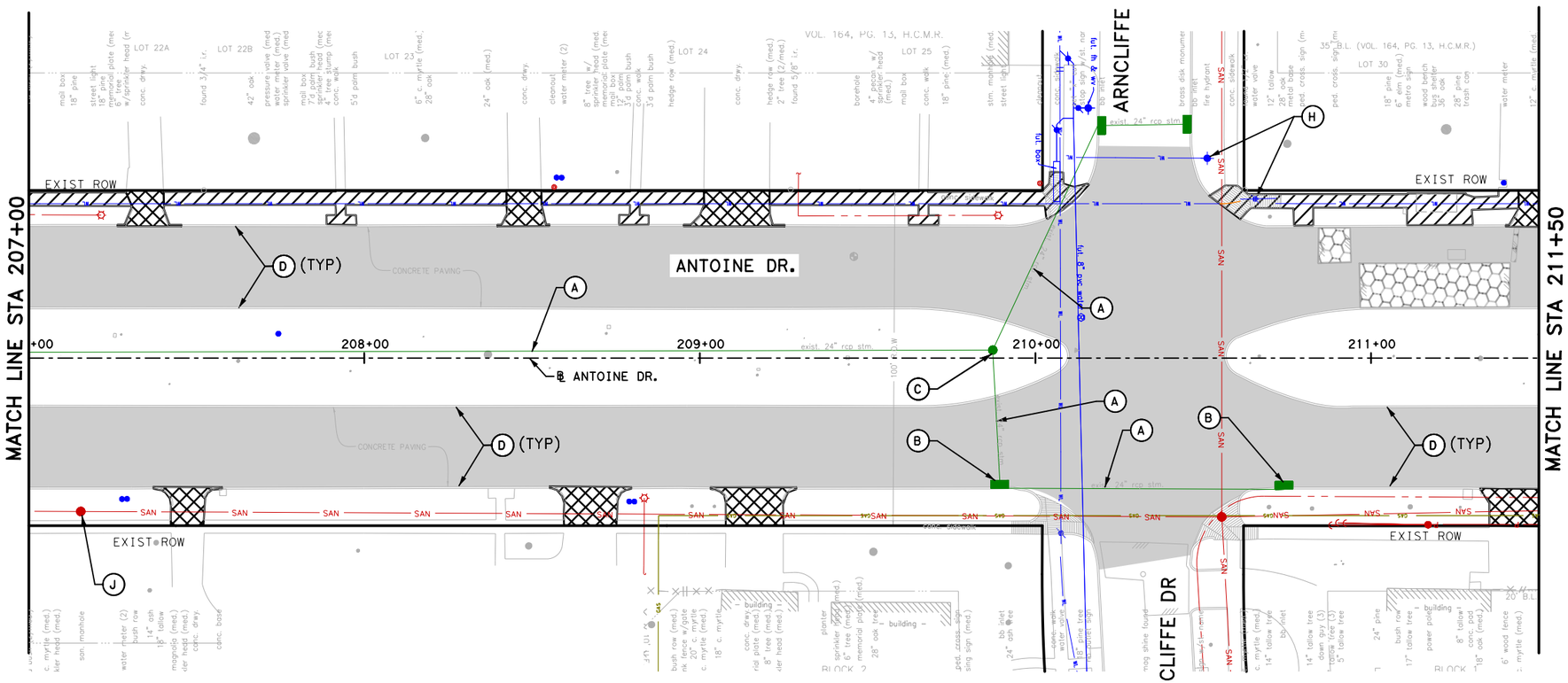
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DEMOLITION PLAN
STA 202+50 TO STA 207+00

SHEET 11 OF 26

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-OGEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 178 718	



LEGEND

- REMOVE ASPH PAV & BASE
- REMOVE CONC DRWY
- REMOVE ASPH/BRICK/GRAVEL DRWY
- REMOVE CONC SIDEWALK/RAMP
- REMOVE CONC PAV
- (A) REMOVE PIPE(RCP, PVC OR CMP)
- (B) REMOVE INLET/JCT BOX
- (C) REMOVE STORM MH
- (D) REMOVE CURB
- (E) REMOVE EXIST FENCE
- (F) REMOVE STRUCTURES
- (G) REMOVE CURB STOP
- (H) REMOVE UTILITY
- (I) REMOVE ISLAND
- (J) REMOVE EXIST SAN SWR MH

NOTE:

1. REFER TO TREE MITIGATION AND REMOVAL PLANS FOR TREE REMOVAL.

N

0′ 20′ 40′

SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DEMOLITION PLAN
STA 207+00 TO STA 211+50

SHEET 12 OF 26

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-OGEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 179 718	

Plotted on: 10/23/2025 2:19:58 PM GEO
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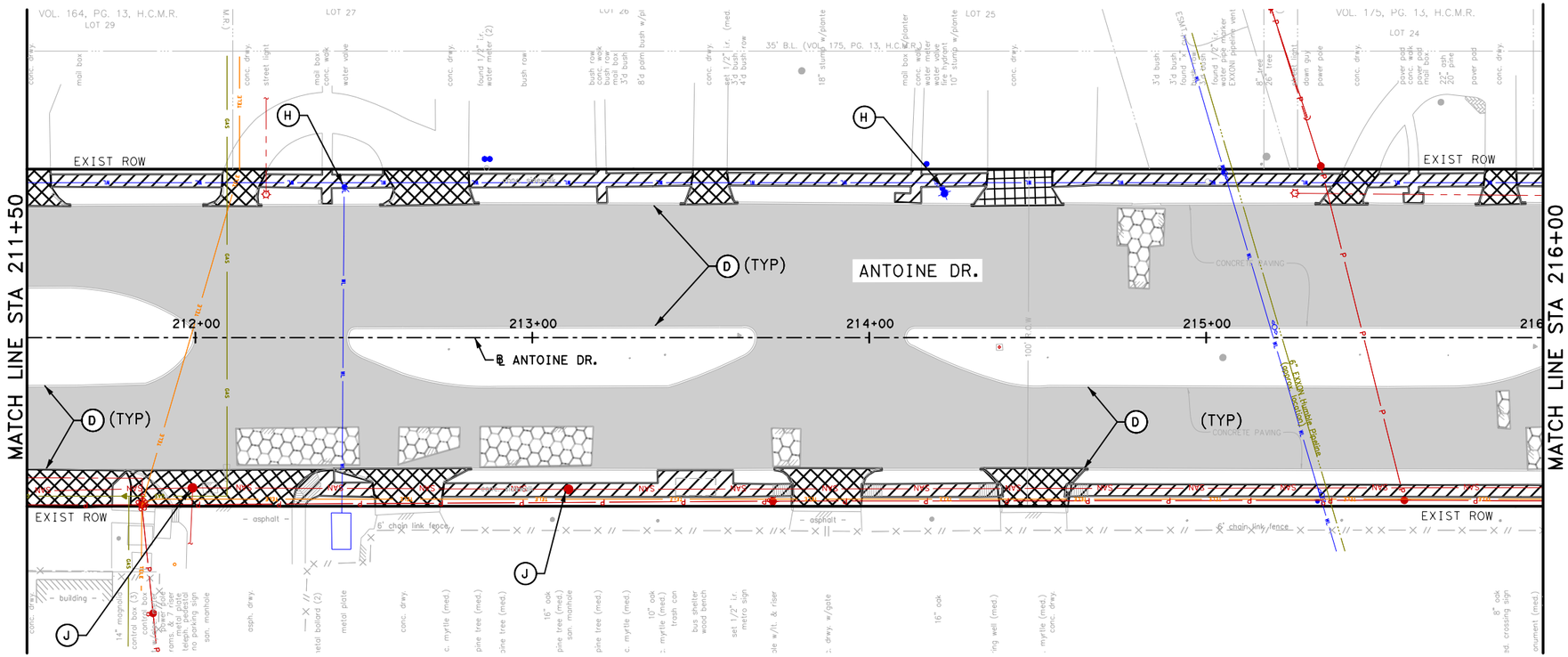

LEGEND

- REMOVE ASPH PAV & BASE
- REMOVE CONC DRWY
- REMOVE ASPH/BRICK/GRAVEL DRWY
- REMOVE CONC SIDEWALK/RAMP
- REMOVE CONC PAV
- (A) REMOVE PIPE(RCP, PVC OR CMP)
- (B) REMOVE INLET/JCT BOX
- (C) REMOVE STORM MH
- (D) REMOVE CURB
- (E) REMOVE EXIST FENCE
- (F) REMOVE STRUCTURES
- (G) REMOVE CURB STOP
- (H) REMOVE UTILITY
- (I) REMOVE ISLAND
- (J) REMOVE EXIST SAN SWR MH

NOTE:
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N

0′ 20′ 40′
SCALE IN FEET

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ANTOINE DRIVE

DEMOLITION PLAN
STA 211+50 TO STA 216+00

SHEET 13 OF 26

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 180 718	

Plotted on: 10/23/2025 2:19:58 PM GEO
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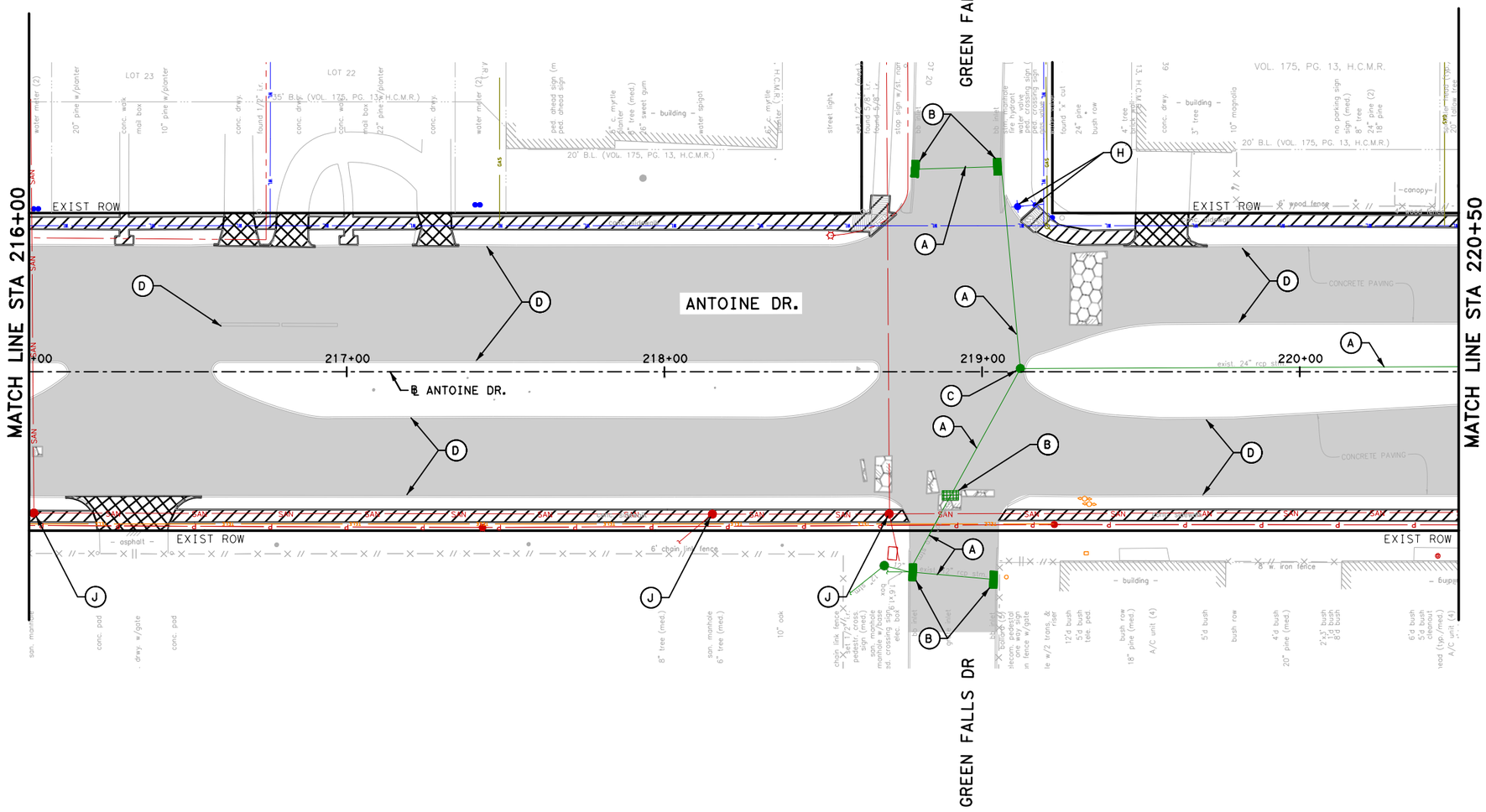

LEGEND

- REMOVE ASPH PAV & BASE
- REMOVE CONC DRWY
- REMOVE ASPH/BRICK/GRAVEL DRWY
- REMOVE CONC SIDEWALK/RAMP
- REMOVE CONC PAV
- (A) REMOVE PIPE(RCP, PVC OR CMP)
- (B) REMOVE INLET/JCT BOX
- (C) REMOVE STORM MH
- (D) REMOVE CURB
- (E) REMOVE EXIST FENCE
- (F) REMOVE STRUCTURES
- (G) REMOVE CURB STOP
- (H) REMOVE UTILITY
- (I) REMOVE ISLAND
- (J) REMOVE EXIST SAN SWR MH

NOTE:
1. REFER TO TREE MITIGATION AND REMOVAL PLANS FOR TREE REMOVAL.

N

0' 20' 40'
SCALE IN FEET

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TEL.No.: 713-706-4412

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Texas Registered Engineering Firm F-13481

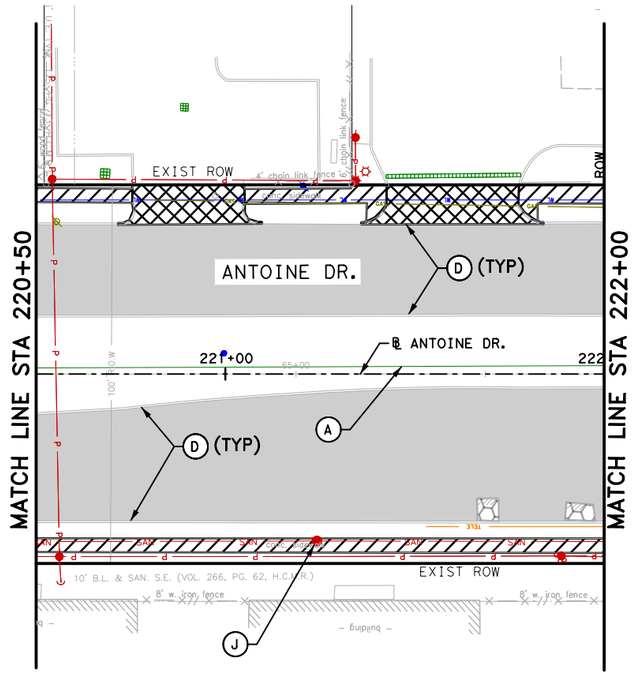
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DEMOLITION PLAN
STA 216+00 TO STA 220+50

SHEET 14 OF 26

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-OGEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 181 718	



LEGEND

- REMOVE ASPH PAV & BASE
- REMOVE CONC DRWY
- REMOVE ASPH/BRICK/GRAVEL DRWY
- REMOVE CONC SIDEWALK/RAMP
- REMOVE CONC PAV
- (A) REMOVE PIPE(RCP, PVC OR CMP)
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- (F) REMOVE STRUCTURES
- (G) REMOVE CURB STOP
- (H) REMOVE UTILITY
- (I) REMOVE ISLAND
- (J) REMOVE EXIST SAN SWR MH

NOTE:
1. REFER TO TREE MITIGATION AND REMOVAL PLANS FOR TREE REMOVAL.

N

0′ 20′ 40′
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DEMOLITION PLAN
STA 220+50 TO END

SHEET 15 OF 26

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 182 718	

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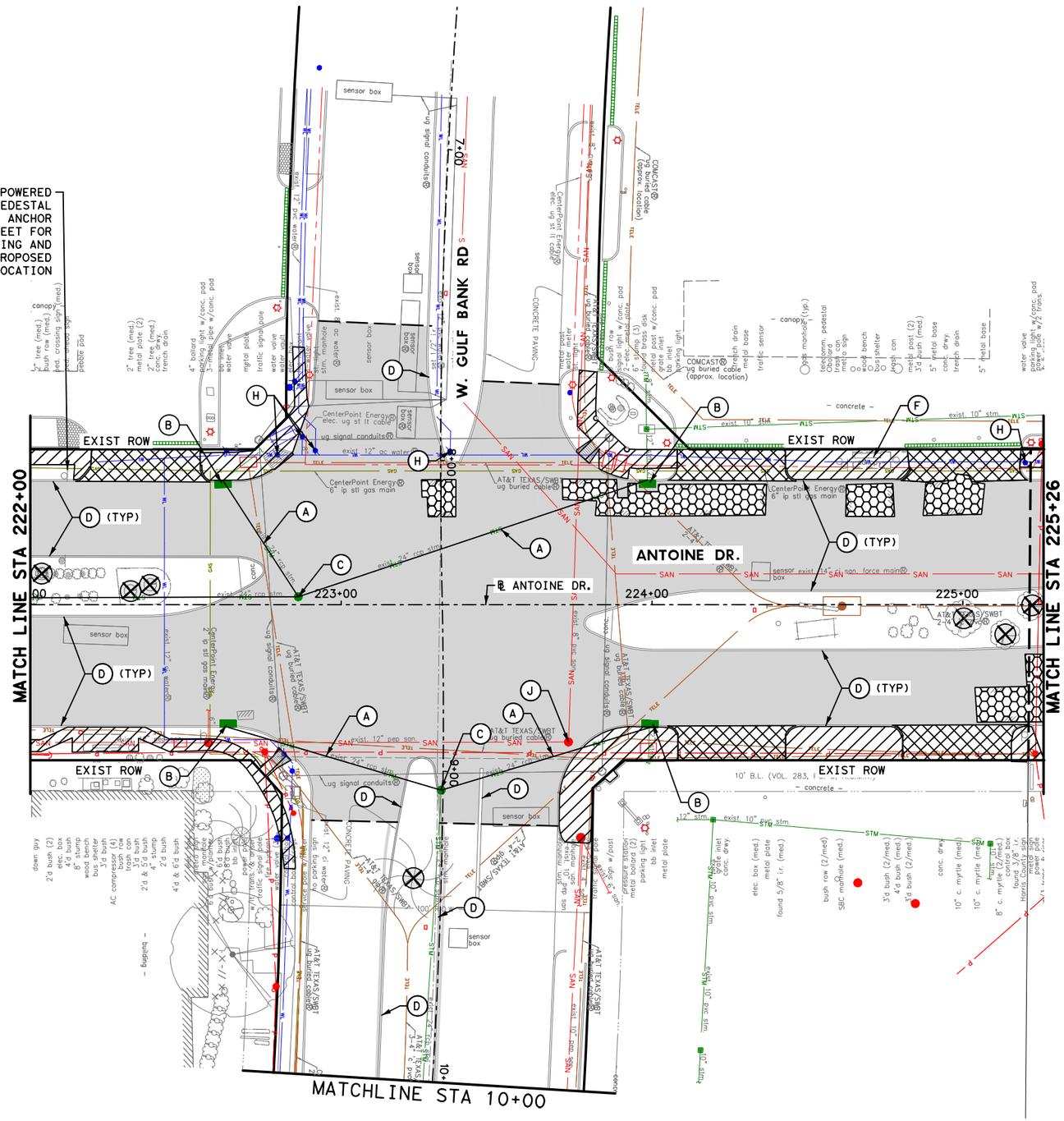
REMOVE AND SALAVAGE SOLAR POWERED SCHOOL FLASHING BEACON AND PEDESTAL POLE WITH SCREW-IN ANCHOR FOUNDATION. SEE TCP SHEET FOR TEMPORARY LOCATION. SEE SIGNING AND PAVEMENT MARKING SHEET FOR PROPOSED LOCATION



LEGEND

- REMOVE ASPH PAV & BASE
- REMOVE CONC DRWY
- REMOVE ASPH DRWY
- REMOVE CONC SIDEWALK/RAMP
- REMOVE CONC PAV
- REMOVE TREE
- (A) REMOVE PIPE(RCP, PVC OR CMP)
- (B) REMOVE INLET/JCT BOX
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- (G) REMOVE CURB STOP
- (H) REMOVE UTILITY
- (I) REMOVE ISLAND
- (J) REMOVE EXIST SAN SWR MH

No.	DATE	REVISIONS	APP:

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TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DEMOLITION PLAN
STA 222+00 TO STA 225+26

SHEET 16 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 183 OF 718	

Plotted on: 10/24/2025 3:07:00 PM michael.guthrie
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LEGEND

- REMOVE ASPH PAV & BASE
- REMOVE CONC DRWY
- REMOVE CONC SIDEWALK/RAMP
- REMOVE CONC PAV
- REMOVE TREE
- (A) REMOVE PIPE(RCP, PVC OR CMP)
- (B) REMOVE INLET/JCT BOX
- (C) REMOVE STORM MH
- (D) REMOVE CURB
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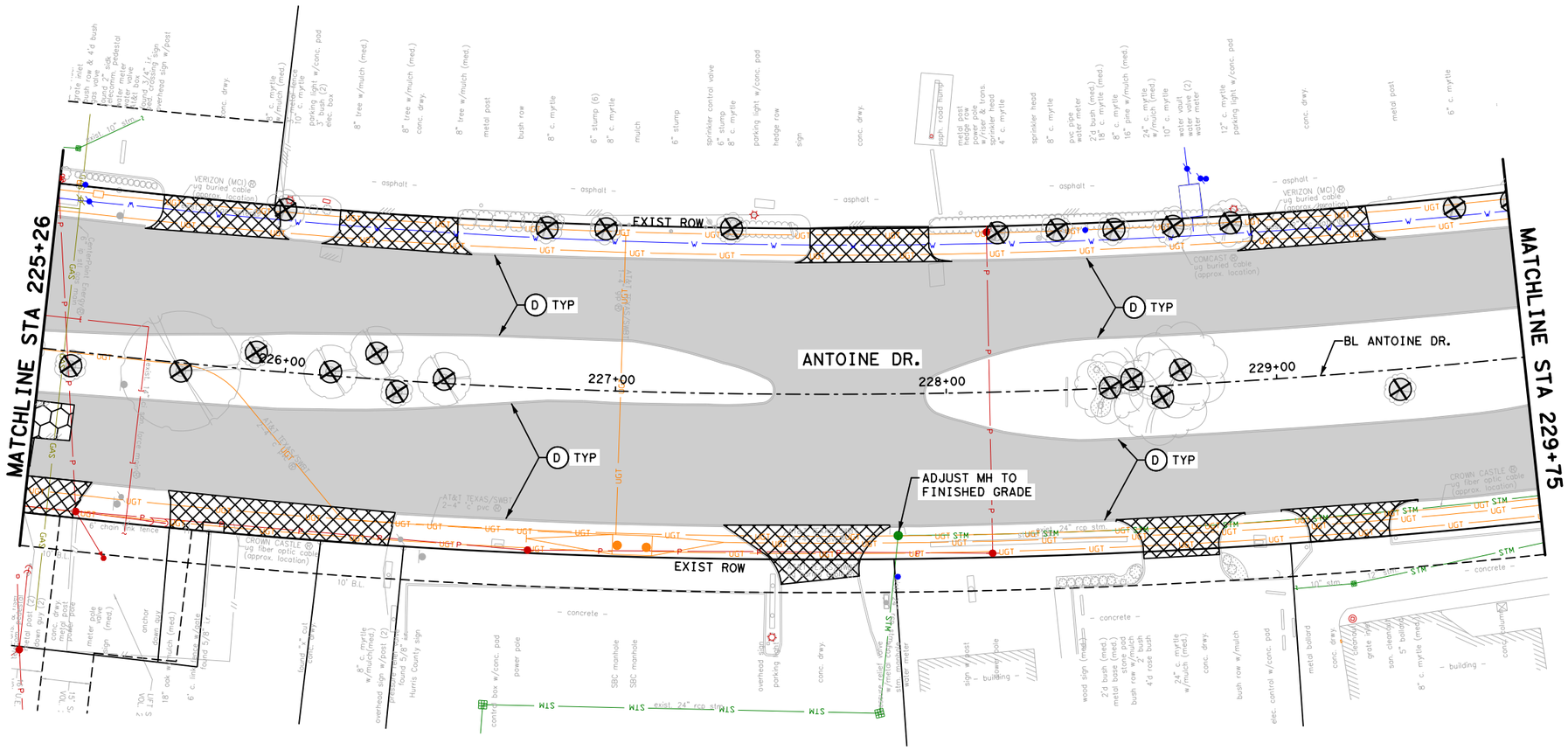
- (F) REMOVE STRUCTURES
- (G) REMOVE CURB STOP
- (H) REMOVE UTILITY
- (I) REMOVE ISLAND
- (J) REMOVE EXIST SAN SWR MH

No.	DATE	REVISIONS	APP:



N

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SCALE IN FEET

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ANTOINE DRIVE

DEMOLITION PLAN
STA 225+26 TO STA 229+75

SHEET 17 OF 26

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 184 OF 718	

Design Filename: F:\03339 Antoine Drive\802-1\CAD\Plan Production_Demo\01-Demo-AntoineDrive.dgn

LEGEND

- REMOVE ASPH PAV & BASE
- REMOVE CONC DRWY
- REMOVE CONC SIDEWALK/RAMP
- REMOVE CONC PAV
- REMOVE TREE
- (A) REMOVE PIPE(RCP, PVC OR CMP)
- (B) REMOVE INLET/JCT BOX
- (C) REMOVE STORM MH
- (D) REMOVE CURB
- (E) REMOVE EXIST FENCE
- (F) REMOVE STRUCTURES
- (G) REMOVE CURB STOP
- (H) REMOVE UTILITY
- (I) REMOVE ISLAND
- (J) REMOVE EXIST SAN SWR MH

No.	DATE	REVISIONS	APP:

MATCHLINE STA 229+75

MATCHLINE STA 234+25

ANTOINE DR.

BL ANTOINE DR.

BRIDGE FOREST DR.

EXIST ROW

EXIST ROW

EXIST ROW

EXIST ROW

230+00

231+00

232+00

233+00

234+00

0+00

1+00

2+00

(A) 38 LF

(A) 41 LF

(A) 302 LF

(A) 28 LF

(A) 39 LF

(A) 39 LF

(A) 114 LF

(B)

(C)

(D) TYP

(D) TYP

(D) TYP

(D)

0' 20' 40'

SCALE IN FEET

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ANTOINE DRIVE

DEMOLITION PLAN
STA 229+75 TO STA 234+25

SHEET 18 OF 26

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 185 OF 718	

Plotted on: 10/23/2025 1:41:38 PM Oviedo

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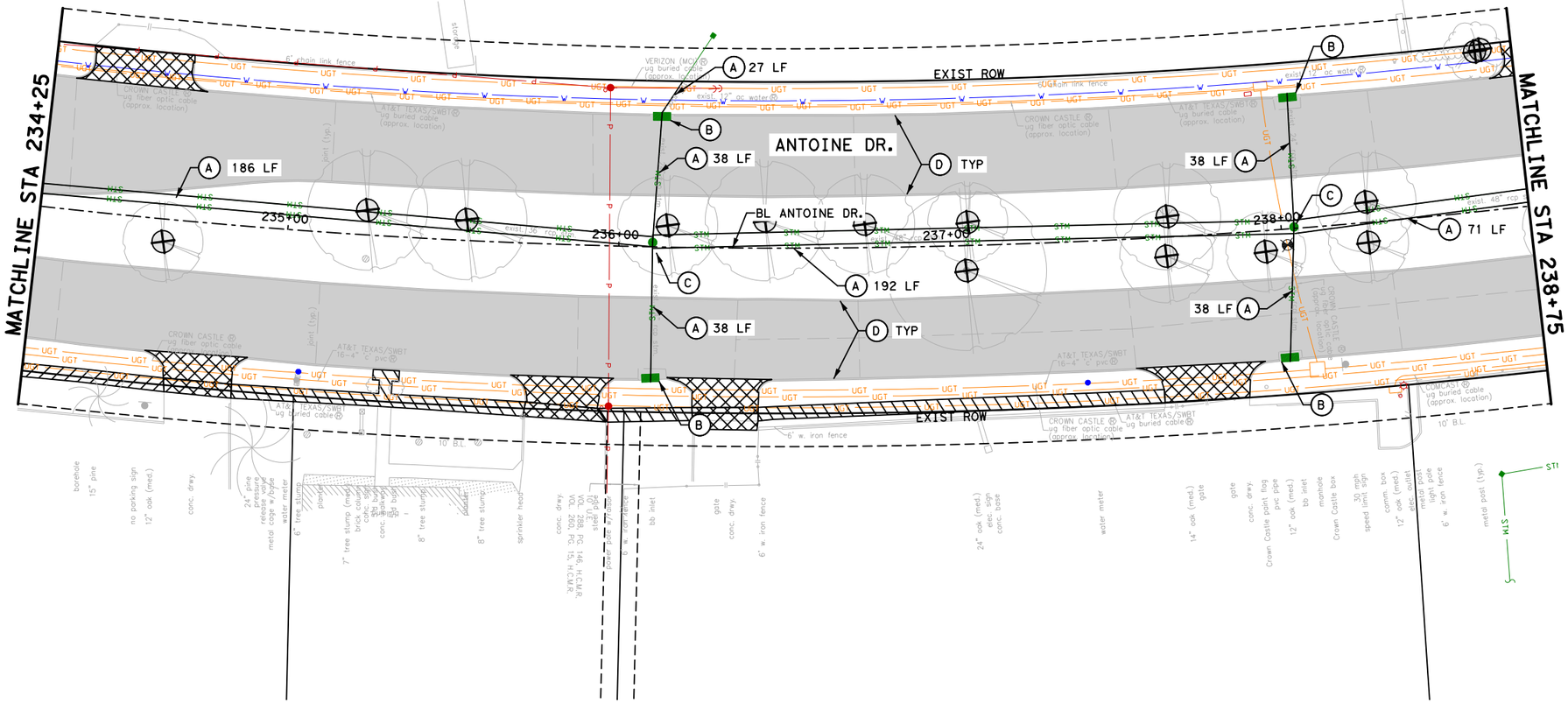
Plotted on: 10/23/2025 1:41:39 PM Oviedo

LEGEND

- REMOVE ASPH PAV & BASE
- REMOVE CONC DRWY
- REMOVE CONC SIDEWALK/RAMP
- REMOVE CONC PAV
- REMOVE TREE
- (A) REMOVE PIPE(RCP, PVC OR CMP)
- (B) REMOVE INLET/JCT BOX
- (C) REMOVE STORM MH
- (D) REMOVE CURB
- (E) REMOVE EXIST FENCE
- (F) REMOVE STRUCTURES
- (G) REMOVE CURB STOP
- (H) REMOVE UTILITY
- (I) REMOVE ISLAND
- (J) REMOVE EXIST SAN SWR MH

No.	DATE	REVISIONS	APP:



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ANTOINE DRIVE

DEMOLITION PLAN
STA 234+25 TO STA 238+75

SHEET 19 OF 26

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 186 OF 718	

Design Filename: F:\03339 Antoine Drive\802-1\CAD\Plan Production_Demo\03-Demo-AntoineDrive.dgn
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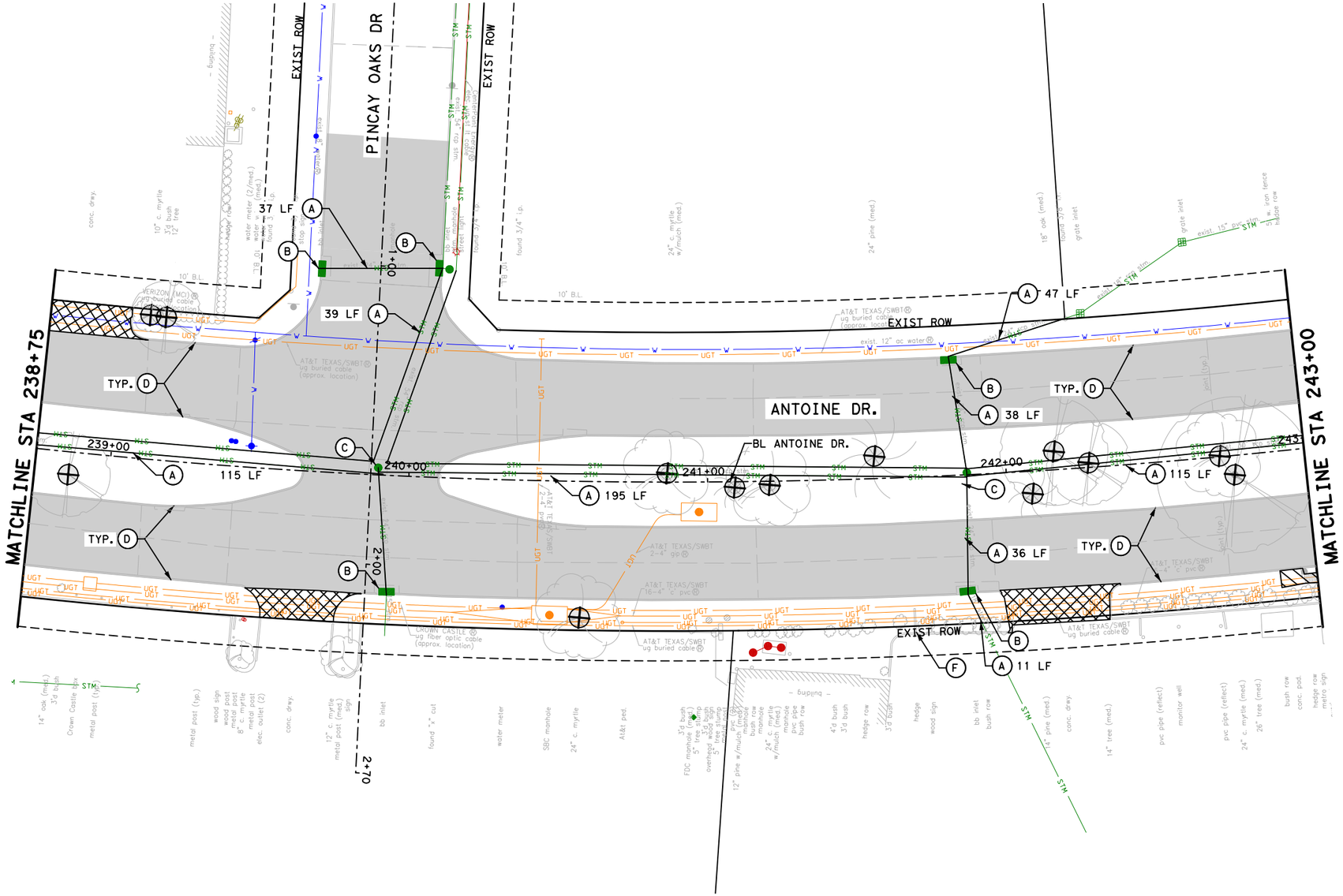
LEGEND

- REMOVE ASPH PAV & BASE
- REMOVE CONC DRWY
- REMOVE CONC SIDEWALK/RAMP
- REMOVE CONC PAV
- REMOVE TREE
- (A) REMOVE PIPE(RCP, PVC OR CMP)
- (B) REMOVE INLET/JCT BOX
- (C) REMOVE STORM MH
- (D) REMOVE CURB
- (E) REMOVE EXIST FENCE
- (F) REMOVE STRUCTURES
- (G) REMOVE CURB STOP
- (H) REMOVE UTILITY
- (I) REMOVE ISLAND
- (J) REMOVE EXIST SAN SWR MH

No.	DATE	REVISIONS	APP:



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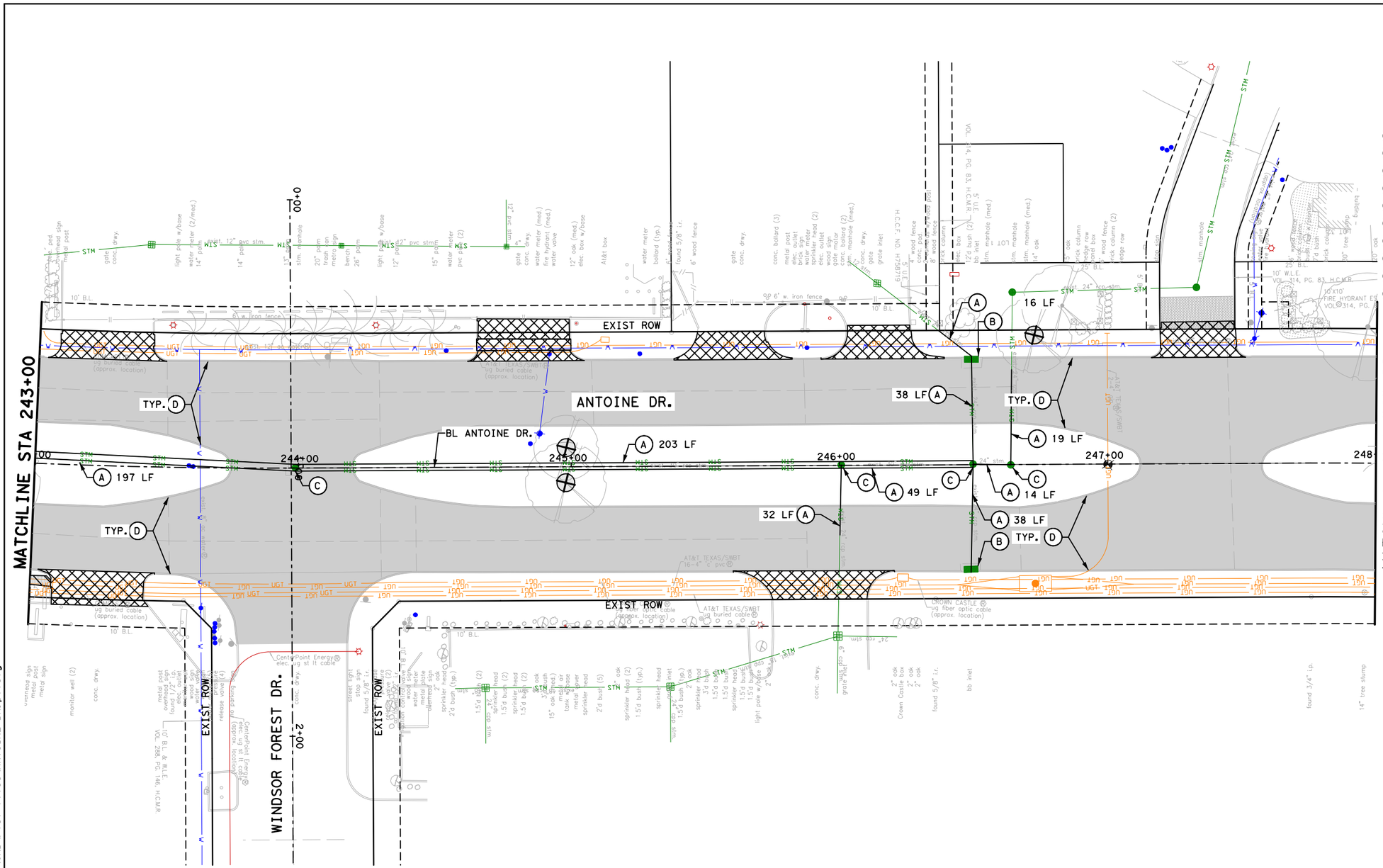
ANTOINE DRIVE

DEMOLITION PLAN
STA 238+75 TO STA 243+00

SHEET 20 OF 26

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 187 OF 718	

Design Filename: F:\03339 Antoine Drive\802-1\CAD\Plan Production_Demo\04-Demo-AntoineDrive.dgn



LEGEND

- REMOVE ASPH PAV & BASE
- REMOVE CONC DRWY
- REMOVE CONC SIDEWALK/RAMP
- REMOVE CONC PAV
- REMOVE TREE
- (A) REMOVE PIPE(RCP, PVC OR CMP)
- (B) REMOVE INLET/JCT BOX
- (C) REMOVE STORM MH
- (D) REMOVE CURB
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- (F) REMOVE STRUCTURES
- (G) REMOVE CURB STOP
- (H) REMOVE UTILITY
- (I) REMOVE ISLAND
- (J) REMOVE EXIST SAN SWR MH

0' 20' 40'
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ANTOINE DRIVE

DEMOLITION PLAN
STA 243+00 TO STA 248+00

SHEET 21 OF 26

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 188 OF 718	

No.	DATE	REVISIONS	APP.

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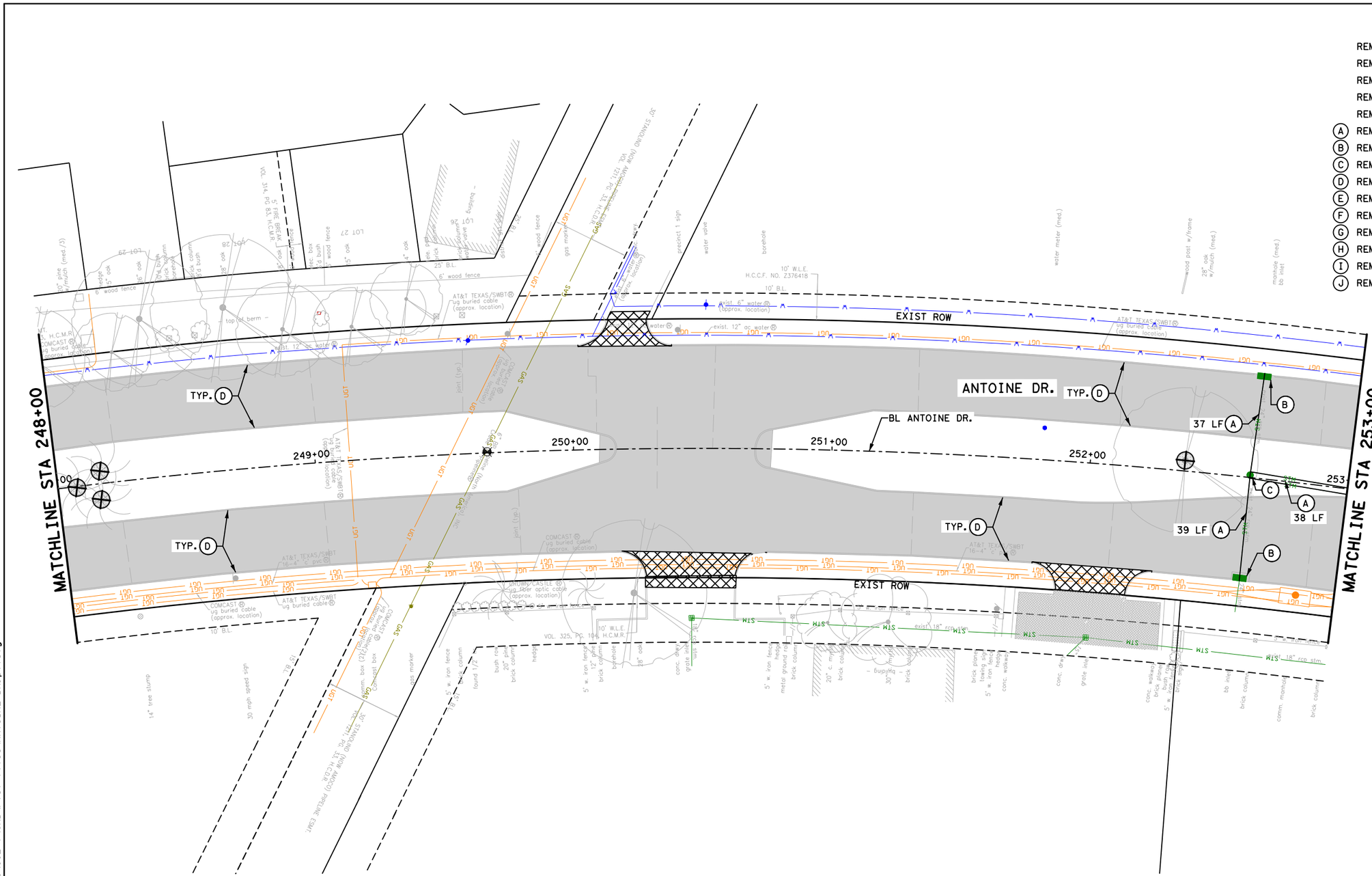

0′ 20′ 40′
SCALE IN FEET

LEGEND

- REMOVE ASPH PAV & BASE
- REMOVE CONC DRWY
- REMOVE CONC SIDEWALK/RAMP
- REMOVE CONC PAV
- REMOVE TREE
- (A) REMOVE PIPE(RCP, PVC OR CMP)
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- (F) REMOVE STRUCTURES
- (G) REMOVE CURB STOP
- (H) REMOVE UTILITY
- (I) REMOVE ISLAND
- (J) REMOVE EXIST SAN SWR MH

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DEMOLITION PLAN
STA 248+00 TO STA 253+00

SHEET 22 OF 26

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 189 OF 718	

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LEGEND

- REMOVE ASPH PAV & BASE
- REMOVE CONC DRWY
- REMOVE CONC SIDEWALK/RAMP
- REMOVE CONC PAV
- REMOVE TREE
- (A) REMOVE PIPE(RCP, PVC OR CMP)
- (B) REMOVE INLET/JCT BOX
- (C) REMOVE STORM MH
- (D) REMOVE CURB
- (E) REMOVE EXIST FENCE
- (F) REMOVE STRUCTURES
- (G) REMOVE CURB STOP
- (H) REMOVE UTILITY
- (I) REMOVE ISLAND
- (J) REMOVE EXIST SAN SWR MH

No.	DATE	REVISIONS	APP:

MAYWOOD FOREST DR.

ANTOINE DR.

BL ANTOINE DR.

EXIST ROW

MATCHLINE STA 253+00

MATCHLINE STA 258+00

72 LF (A)
(C)
111 LF (A)
158 LF (A)
281 LF (A)
39 LF (A)
37 LF (A)
9 LF (A)
(B)
TYP. (D)

253+00 254+00 255+00 256+00 257+00 258+00
1+00 2+00 3+00 3+09

0′ 20′ 40′
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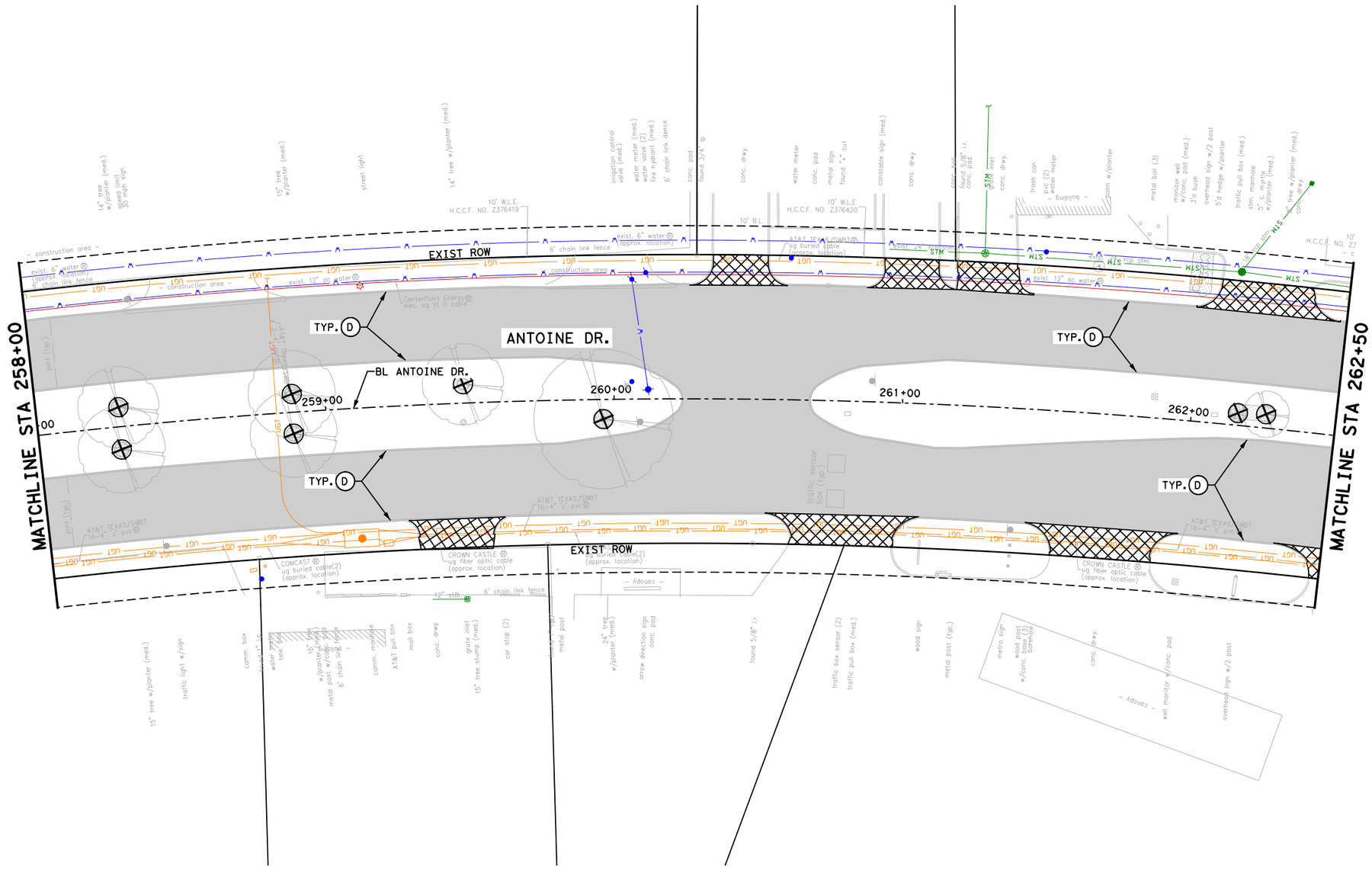
ANTOINE DRIVE

DEMOLITION PLAN
STA 253+00 TO STA 258+00

SHEET 23 OF 26

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 190 OF 718	



LEGEND

- REMOVE ASPH PAV & BASE
- REMOVE CONC DRWY
- REMOVE CONC SIDEWALK/RAMP
- REMOVE CONC PAV
- REMOVE TREE
- (A) REMOVE PIPE(RCP, PVC OR CMP)
- (B) REMOVE INLET/JCT BOX
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- (G) REMOVE CURB STOP
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- (I) REMOVE ISLAND
- (J) REMOVE EXIST SAN SWR MH

No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DEMOLITION PLAN
STA 258+00 TO STA 262+50

SHEET 24 OF 26

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 191 OF 718	

Plotted on: 10/23/2025 1:41:42 PM JOviedo
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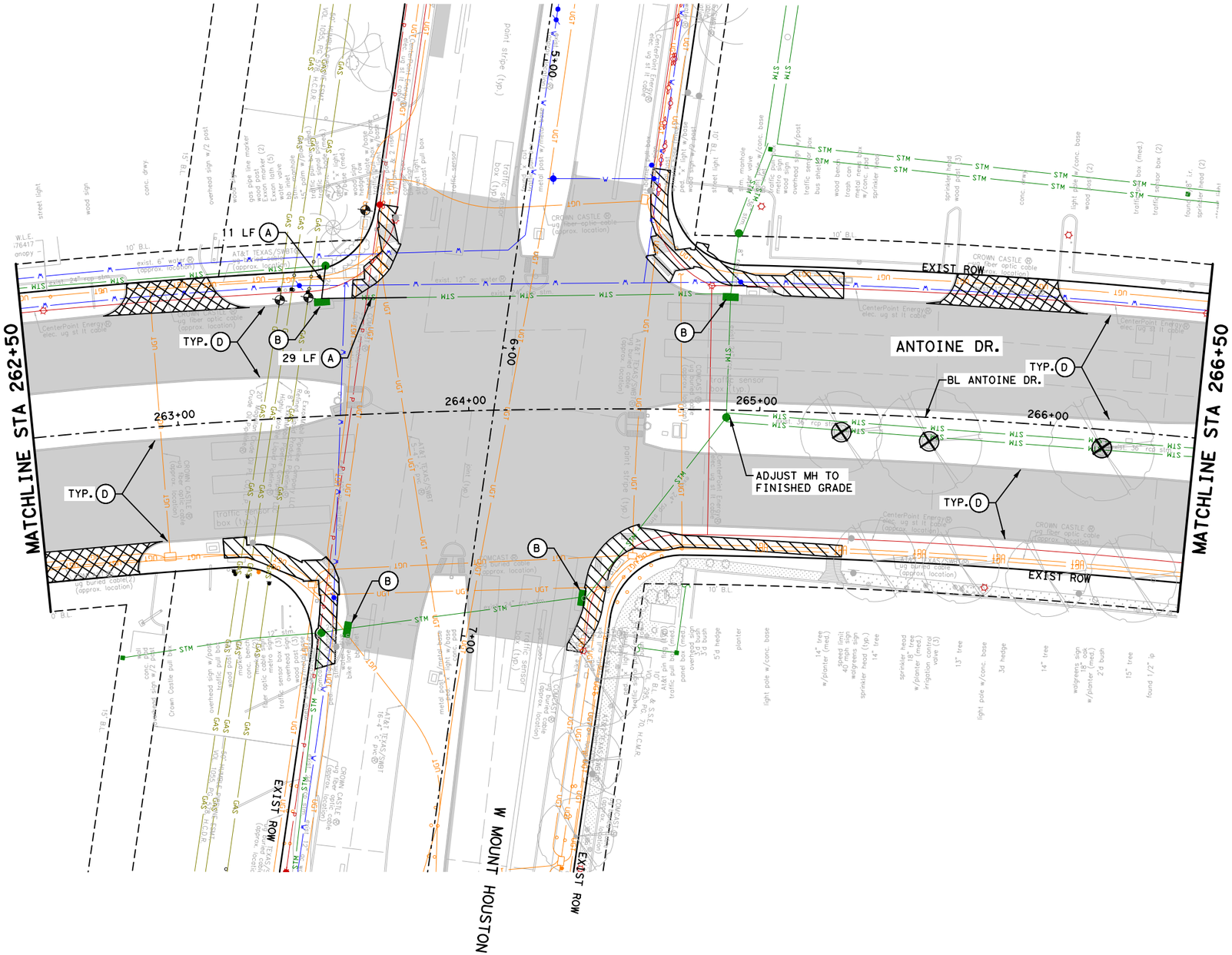

LEGEND

- REMOVE ASPH PAV & BASE
- REMOVE CONC DRWY
- REMOVE CONC SIDEWALK/RAMP
- REMOVE CONC PAV
- REMOVE TREE
- (A) REMOVE PIPE(RCP, PVC OR CMP)
- (B) REMOVE INLET/JCT BOX
- (C) REMOVE STORM MH
- (D) REMOVE CURB
- (E) REMOVE EXIST FENCE
- (F) REMOVE STRUCTURES
- (G) REMOVE CURB STOP
- (H) REMOVE UTILITY
- (I) REMOVE ISLAND
- (J) REMOVE EXIST SAN SWR MH

0' 20' 40'
SCALE IN FEET

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777 North Eldridge Parkway, Suite 500
Houston, Texas 77079
713-782-0042
www.vs-eng.com

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10/23/2025
Date: 95% SUBMITTAL
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DEMOLITION PLAN
STA 262+50 TO STA 266+50

SHEET 25 OF 26

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 192 OF 718	

No.	DATE	REVISIONS	APP.

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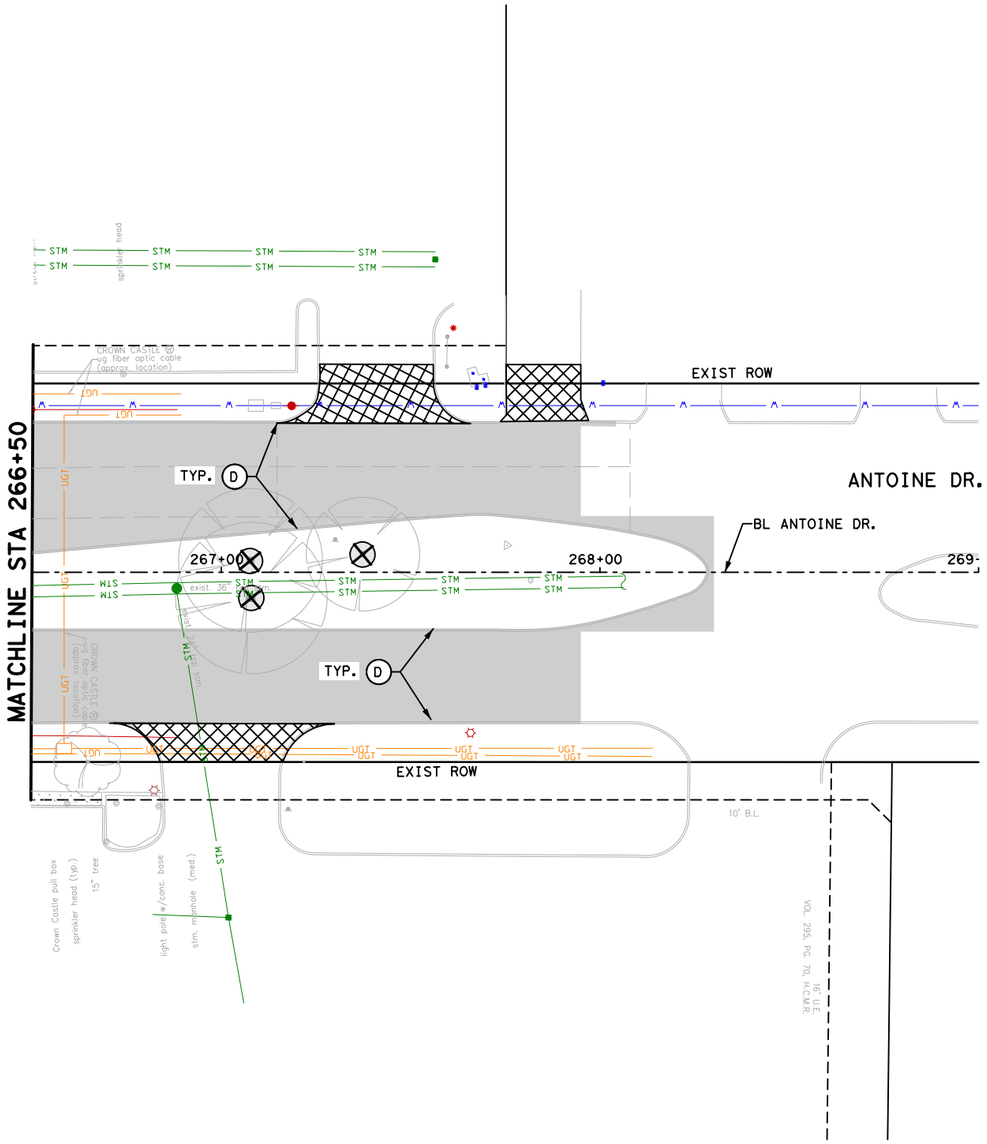

LEGEND

- REMOVE ASPH PAV & BASE
- REMOVE CONC DRWY
- REMOVE CONC SIDEWALK/RAMP
- REMOVE CONC PAV
- REMOVE TREE
- (A) REMOVE PIPE(RCP, PVC OR CMP)
- (B) REMOVE INLET/JCT BOX
- (C) REMOVE STORM MH
- (D) REMOVE CURB
- (E) REMOVE EXIST FENCE
- (F) REMOVE STRUCTURES
- (G) REMOVE CURB STOP
- (H) REMOVE UTILITY
- (I) REMOVE ISLAND
- (J) REMOVE EXIST SAN SWR MH

No.	DATE	REVISIONS	APP.

N

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SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DEMOLITION PLAN
STA 266+50 TO END

SHEET 26 OF 26

WBS NUMBER
N-100030-0GEC-3
DRAWING SCALE
AS NOTED
CITY OF HOUSTON PM
ROWAIDAH AYOUB
SHEET NO. 193 OF 718

FOR CITY OF HOUSTON USE ONLY

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LEGEND

- REMOVE ASPH PAV & BASE
- REMOVE CONC DRWY
- REMOVE ASPH DRWY
- REMOVE CONC SIDEWALK/RAMP
- REMOVE CONC PAV
- REMOVE TREE
- (A) REMOVE PIPE(RCP, PVC OR CMP)
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- (C) REMOVE STORM MH
- (D) REMOVE CURB
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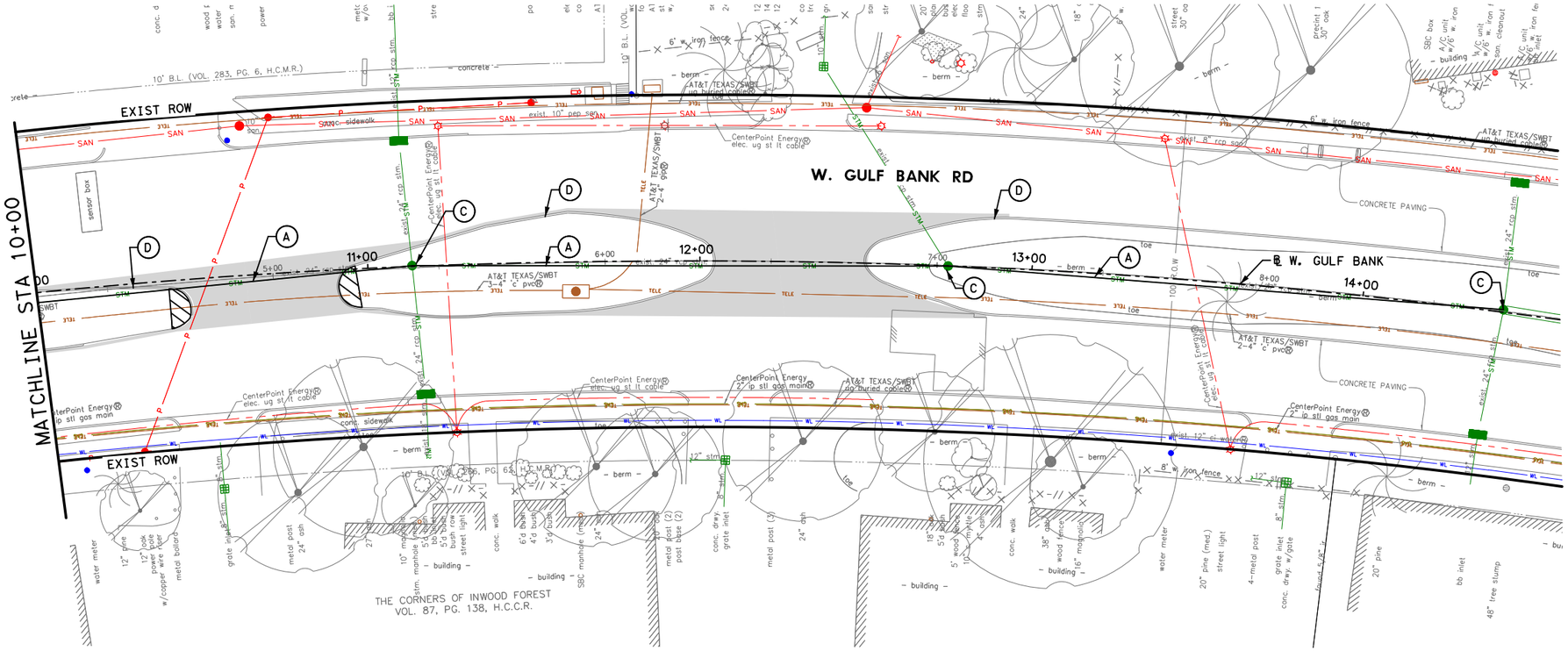
- (F) REMOVE STRUCTURES
- (G) REMOVE CURB STOP
- (H) REMOVE UTILITY
- (I) REMOVE ISLAND
- (J) REMOVE EXIST SAN SWR MH

No.	DATE	REVISIONS	APP:



0' 20' 40'
SCALE IN FEET

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY, #400
HOUSTON, TX 77079

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125611
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GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

W. GULF BANK
DEMOLITION PLAN
STA 10+00 TO STA END PROJECT

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 194 OF 718	

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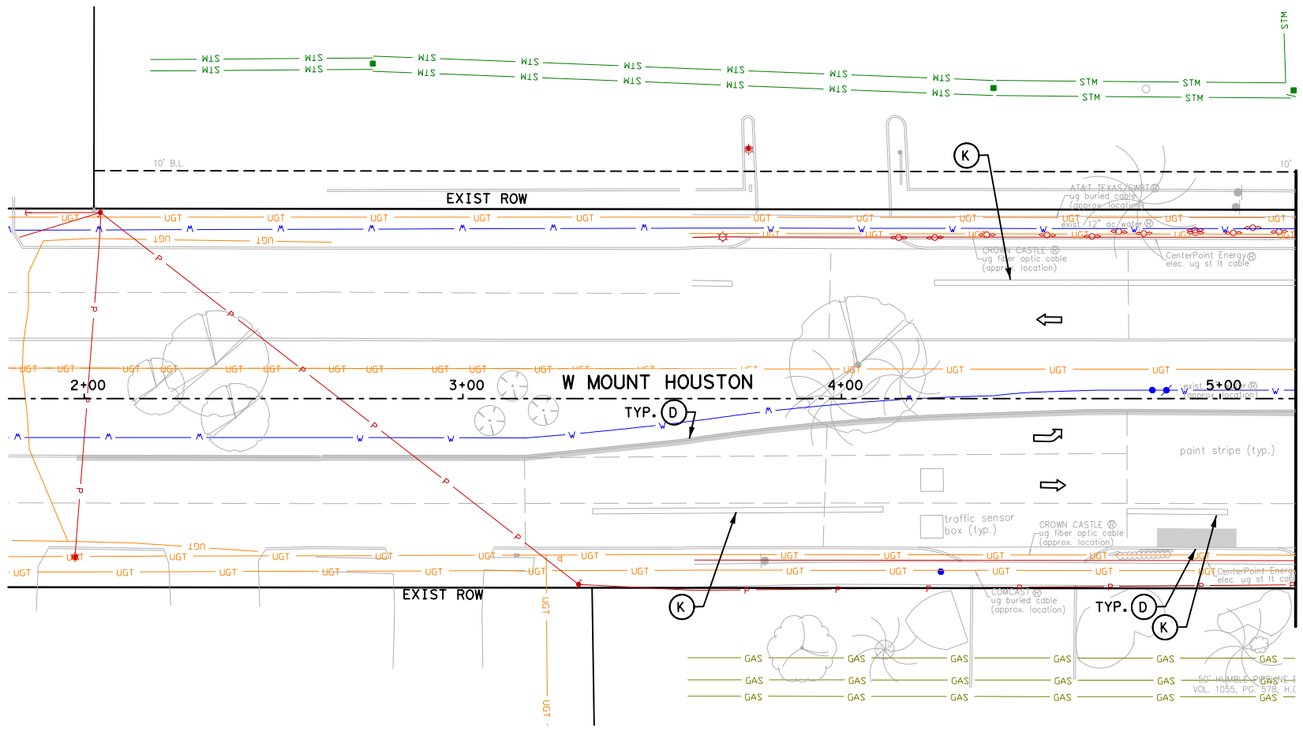

LEGEND

- REMOVE ASPH PAV & BASE
- REMOVE CONC DRWY
- REMOVE CONC SIDEWALK/RAMP
- REMOVE CONC PAV
- REMOVE TREE
- (A) REMOVE PIPE(RCP, PVC OR CMP)
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- (D) REMOVE CURB
- (E) REMOVE EXIST FENCE
- (F) REMOVE STRUCTURES
- (G) REMOVE CURB STOP
- (H) REMOVE UTILITY
- (I) REMOVE ISLAND
- (J) REMOVE EXIST SAN SWR MH
- (K) SET ASIDE BIKE LANE CURB DIVDEDER AND RE-INSTALL POST CONSTRUCTION

N

No.	DATE	REVISIONS	APP'D

0' 20' 40'
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WEST MOUNT HOUSTON DEMOLITION PLAN STA 1+80 TO STA 5+20

SHEET 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 195 OF 718	

Plotted on: 10/23/2025 1:41:43 PM JOviedo
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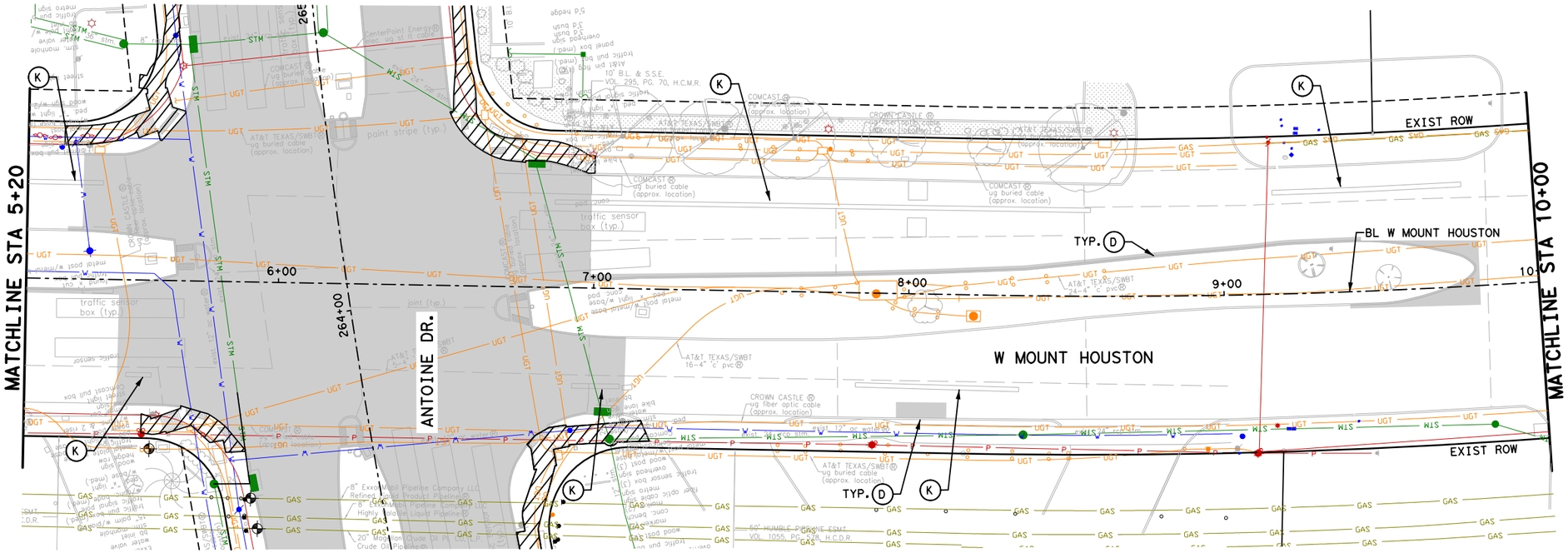

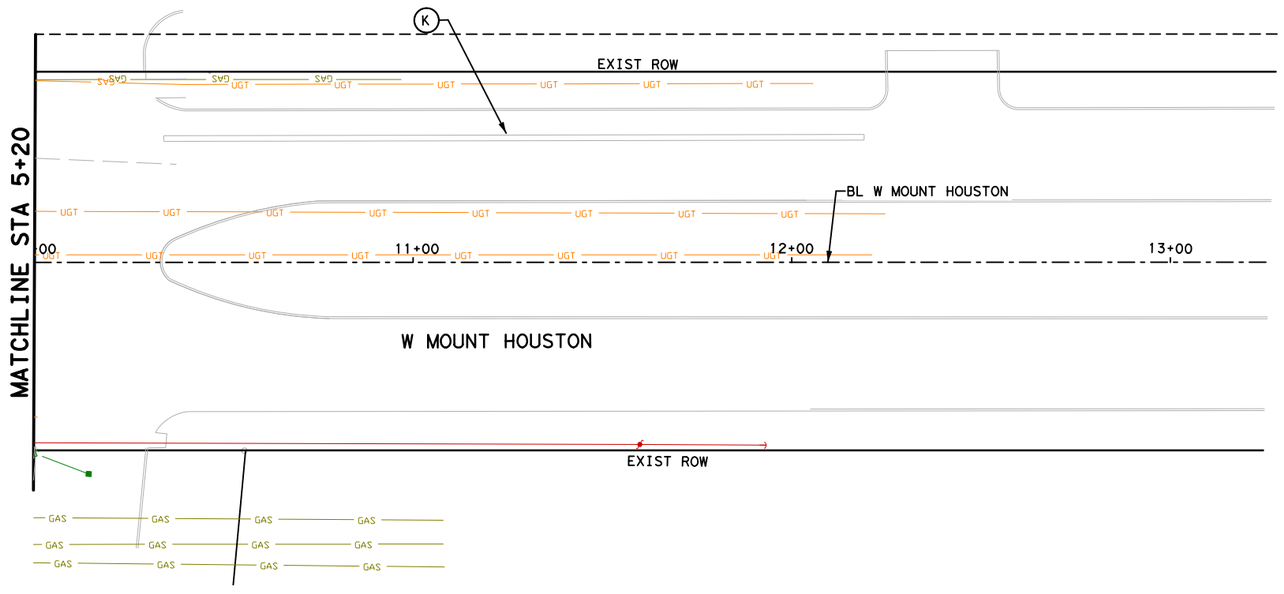

LEGEND

- REMOVE ASPH PAV & BASE
- REMOVE CONC DRWY
- REMOVE CONC SIDEWALK/RAMP
- REMOVE CONC PAV
- REMOVE TREE
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- (G) REMOVE CURB STOP
- (H) REMOVE UTILITY
- (I) REMOVE ISLAND
- (J) REMOVE EXIST SAN SWR MH
- (K) SET ASIDE BIKE LANE CURB DIVDEDER AND RE-INSTALL POST CONSTRUCTION

No.	DATE	REVISIONS	APP.

N

0′ 20′ 40′
SCALE IN FEET

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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
WEST MOUNT HOUSTON
DEMOLITION PLAN
STA 5+20 TO STA 13+00

SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 196 OF 718	

Plotted on: 10/23/2025 1:41:44 PM Oviedo
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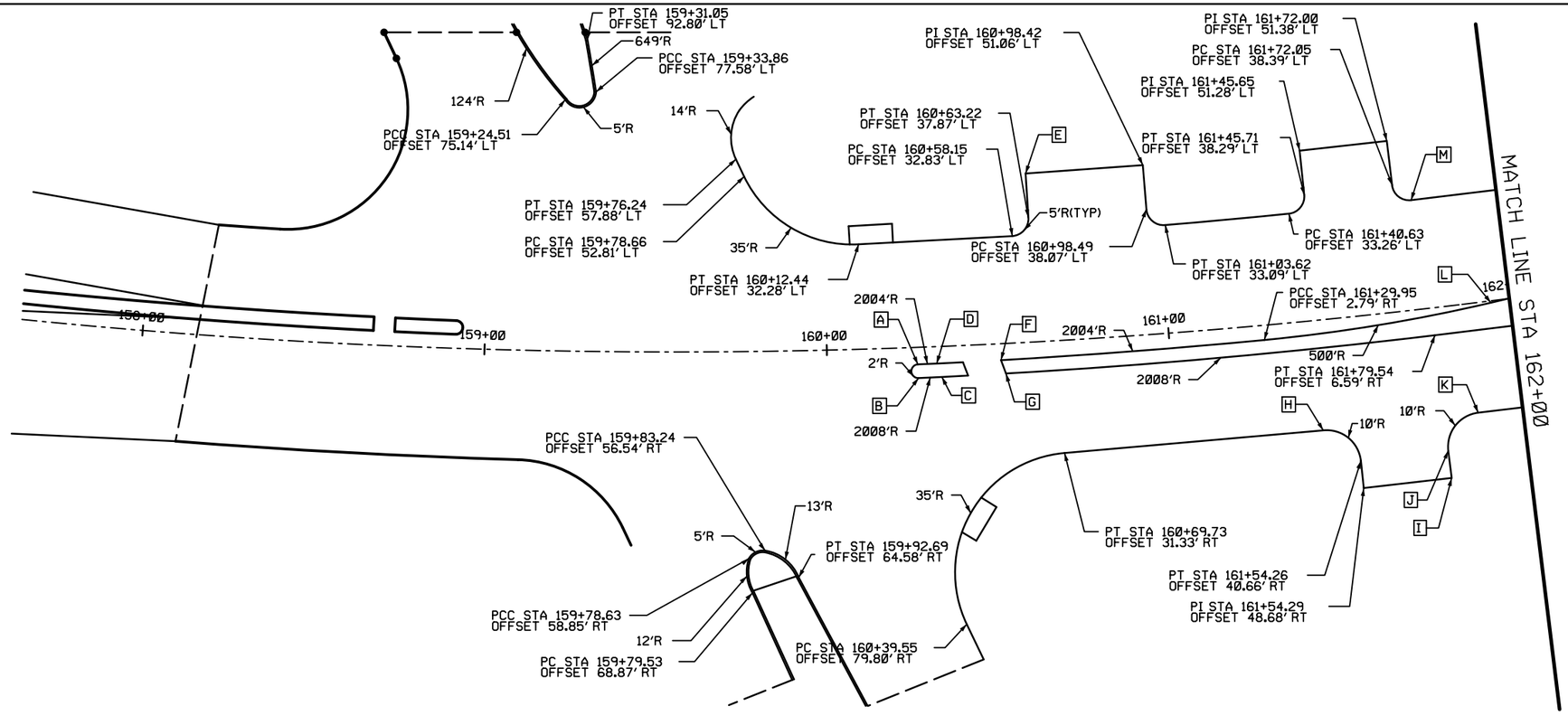

HORIZONTAL GEOMETRY DATA			
NO.	DESCRIPT	STATION	OFFSET
A	PCC	160+28.64	3.36' RT
B	PCC	160+28.67	7.36' RT
C	PT	160+35.47	7.32' RT
D	PC	160+34.12	3.33' RT
E	PI	160+63.14	50.86' LT
F	PI	160+52.90	3.20' RT
G	PC	160+54.15	7.20' RT
H	PC	161+44.43	30.72' RT
I	PI	161+79.48	48.59' RT
J	PC	161+79.45	40.59' RT
K	PT	161+89.31	30.58' RT
L	PRC	161+96.89	0.88' LT
M	PT	161+77.18	33.40' LT

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TEL.No.: 713-706-4412

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108363
10/21/2025
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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

HORIZONTAL GEOMETRY LAYOUT STA 157+65 TO STA 167+00

SHEET 1 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-OGEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 197 718	

Plotted on: 10/27/2025 2:32:26 AM GEO
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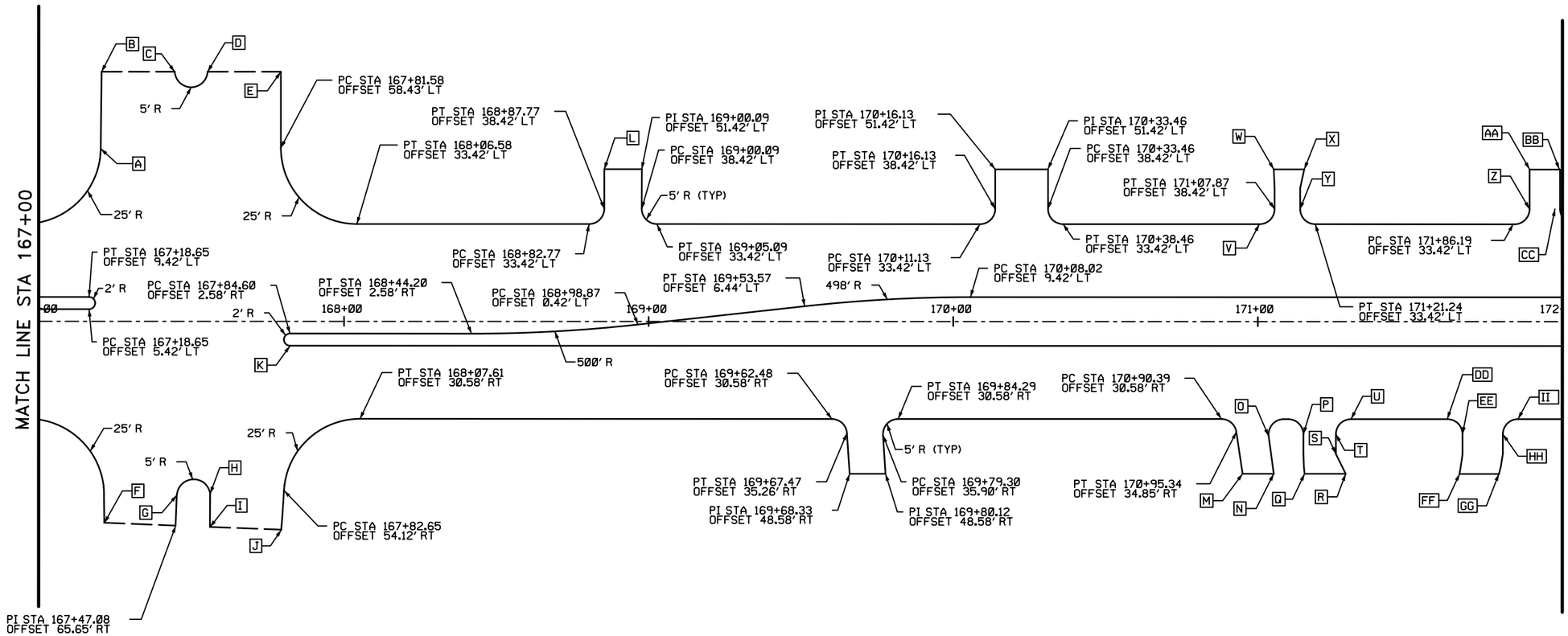

HORIZONTAL GEOMETRY DATA			
NO.	DESCRIPT	STATION	OFFSET
A	PT	167+22.46	58.17' LT
B	PI	167+22.74	83.42' LT
C	PC	167+46.75	83.42' LT
D	PT	167+57.54	83.42' LT
E	PI	167+81.59	83.42' LT
F	PI	167+23.67	64.75' RT
G	PC	167+47.46	55.67' RT
H	PT	167+58.40	55.17' RT
I	PI	167+58.32	66.09' RT
J	PI	167+81.76	66.99' RT
K	PT	167+84.60	6.58' RT
L	PI	168+87.77	51.42' LT
M	PI	170+97.37	48.58' RT
N	PI	171+07.59	48.58' RT
O	PC	171+05.94	36.24' RT
P	PT	171+17.31	35.58' RT
Q	PI	171+17.73	48.58' RT
R	PI	171+31.22	48.58' RT
S	PI	171+27.99	42.06' RT
T	PC	171+27.99	35.58' RT
U	PC	171+32.99	30.58' RT
V	PC	171+02.87	33.42' LT
W	PI	171+07.60	51.42' LT
X	PI	171+17.60	51.42' LT
Y	PC	171+16.24	38.42' LT
Z	PI	171+91.19	38.42' LT

HORIZONTAL GEOMETRY DATA			
NO.	DESCRIPT	STATION	OFFSET
AA	PI	171+91.58	51.42' LT
BB	PI	172+01.35	51.42' LT
CC	PC	171+99.94	38.42' LT
DD	PC	171+64.57	30.58' RT
EE	PT	171+69.57	35.58' RT
FF	PI	171+68.61	48.58' RT
GG	PI	171+81.52	48.58' RT
HH	PT	171+82.81	35.58' RT
II	PC	171+87.81	30.58' RT

0' 20' 40'
SCALE IN FEET

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Number
108363
10/21/2025
on
95% SUBMITTAL
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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

HORIZONTAL GEOMETRY LAYOUT STA 167+00 TO STA 172+00

SHEET 2 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 198 718	

Plotted on: 10/27/2025 2:32:26 AM GEO
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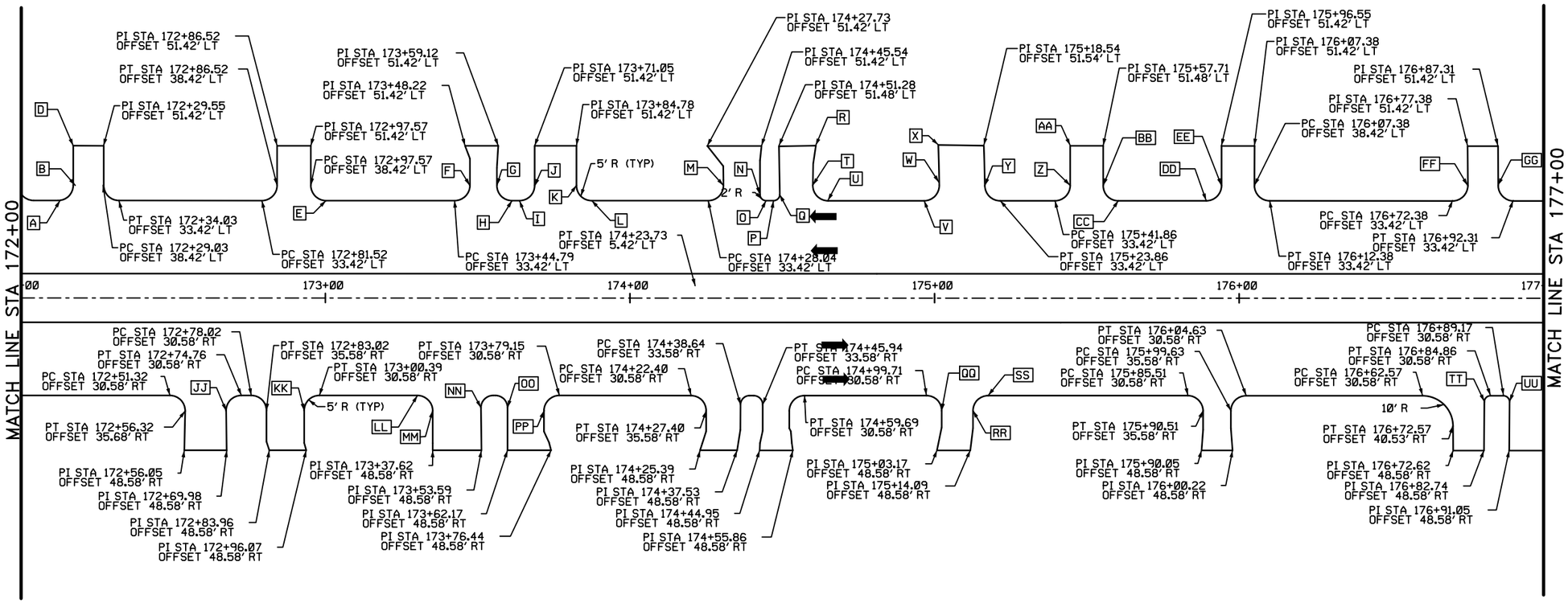

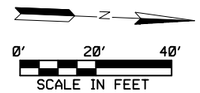

HORIZONTAL GEOMETRY DATA			
NO.	DESCRIPT	STATION	OFFSET
A	PC	172+15.26	33.42' LT
B	PT	172+20.26	38.42' LT
D	PT	172+19.57	51.42' LT
E	PT	173+02.57	33.42' LT
F	PT	173+49.79	38.42' LT
G	PC	173+58.65	38.42' LT
H	PT	173+63.65	33.42' LT
I	PC	173+66.05	33.42' LT
J	PT	173+71.05	38.42' LT
K	PC	173+84.78	38.42' LT
L	PT	173+89.78	33.42' LT
M	PT	174+33.04	38.42' LT
N	PC	174+45.05	35.42' LT
O	PT	174+47.05	33.42' LT
P	PC	174+49.51	33.42' LT
Q	PT	174+51.51	35.42' LT
R	PI	174+63.36	51.49' LT
T	PC	174+62.37	38.50' LT
U	PT	174+67.37	33.42' LT
V	PC	174+98.90	33.42' LT
W	PT	175+03.90	38.53' LT
X	PI	175+03.58	51.72' LT
Y	PC	175+18.87	38.32' LT
Z	PT	175+46.86	38.42' LT

HORIZONTAL GEOMETRY DATA			
NO.	DESCRIPT	STATION	OFFSET
AA	PI	175+46.86	51.50' LT
BB	PC	175+57.51	38.42' LT
CC	PT	175+62.71	33.42' LT
DD	PC	175+91.55	33.42' LT
EE	PT	175+96.55	38.42' LT
FF	PT	176+77.38	38.42' LT
GG	PC	176+87.31	38.42' LT
JJ	PC	172+69.76	35.66' RT
KK	PC	172+95.39	35.58' RT
LL	PC	173+32.58	30.58' RT
MM	PT	173+37.58	35.58' RT
NN	PC	173+53.44	34.62' RT
OO	PT	173+62.17	34.58' RT
PP	PC	173+74.15	35.58' RT
QQ	PT	175+04.71	35.58' RT
RR	PC	175+14.97	35.58' RT
SS	PT	175+19.97	30.58' RT
TT	PC	176+82.86	32.56' RT
UU	PT	176+91.17	32.59' RT

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

HORIZONTAL GEOMETRY LAYOUT STA 167+00 TO STA 177+00

SHEET 3 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 199 718	

Plotted on: 10/27/2025 2:32:27 AM GEO
Design Filename: Y:\2017012 Antoine North Paving and Drainage\MicroStation\95% SET-CAD DESIGN FILES -03.07.2025\P&P Sheets\Horizontal Geometry Layout\003-Horiz_Geometry_ML.dgn
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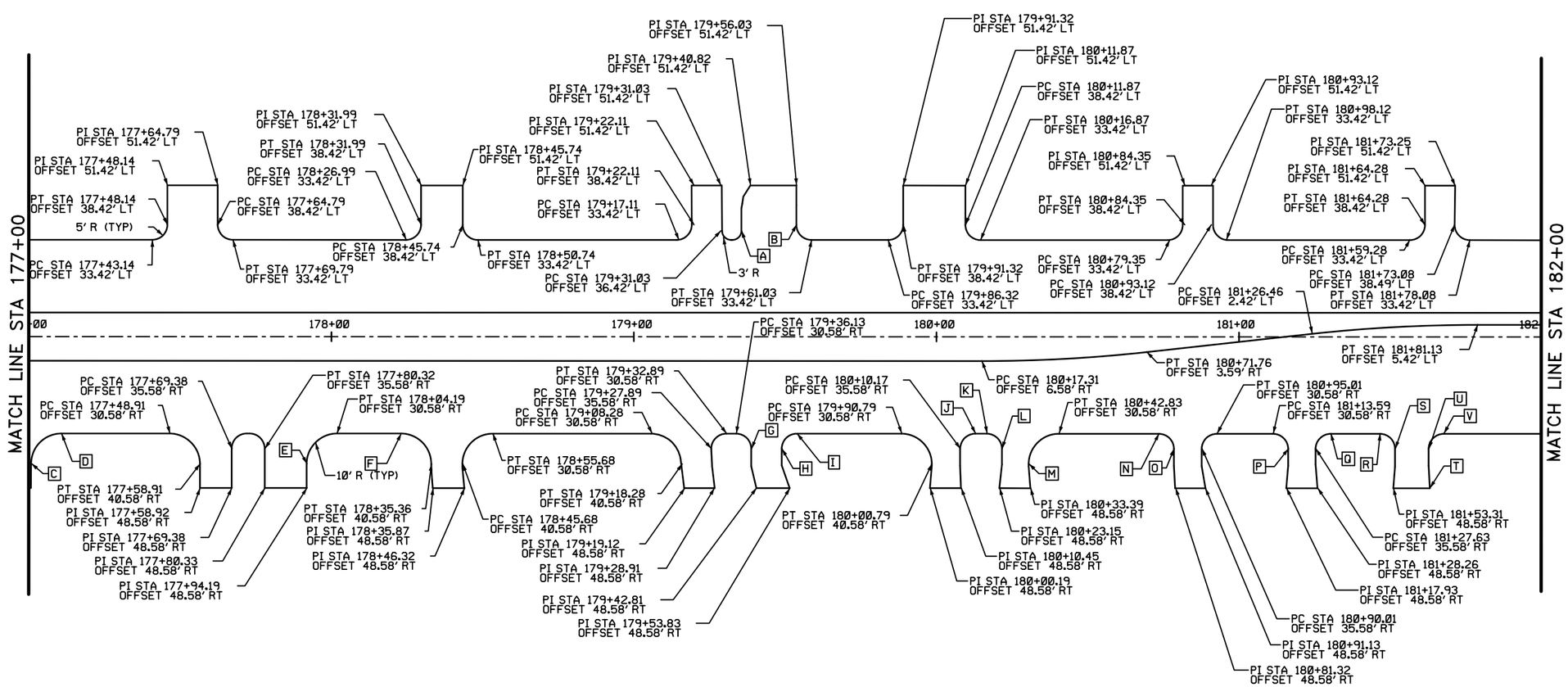

HORIZONTAL GEOMETRY DATA			
NO.	DESCRIPT	STATION	OFFSET
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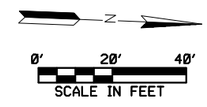
B	PC	179+56.03	38.42' LT
C	PC	177+03.13	40.50' RT
D	PT	177+13.13	30.58' RT
E	PC	177+94.19	40.58' RT
F	PC	178+25.36	30.56' RT
G	PT	179+41.13	35.58' RT
H	PC	179+51.18	35.58' RT
I	PT	179+56.18	30.58' RT
J	PT	180+15.17	35.58' RT
K	PC	180+18.98	30.58' RT
L	PT	180+23.98	35.58' RT
M	PC	180+32.83	40.58' RT
N	PC	180+75.82	30.58' RT
O	PT	180+80.82	35.58' RT
P	PT	181+18.59	35.58' RT
Q	PT	181+32.63	30.58' RT
R	PC	181+48.91	30.58' RT
S	PT	181+53.91	35.58' RT
T	PI	181+65.38	48.58' RT
U	PC	181+65.01	35.58' RT
V	PT	181+70.01	30.58' RT
W	PC	184+68.60	30.55' RT
X	PT	184+73.70	35.56' RT



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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

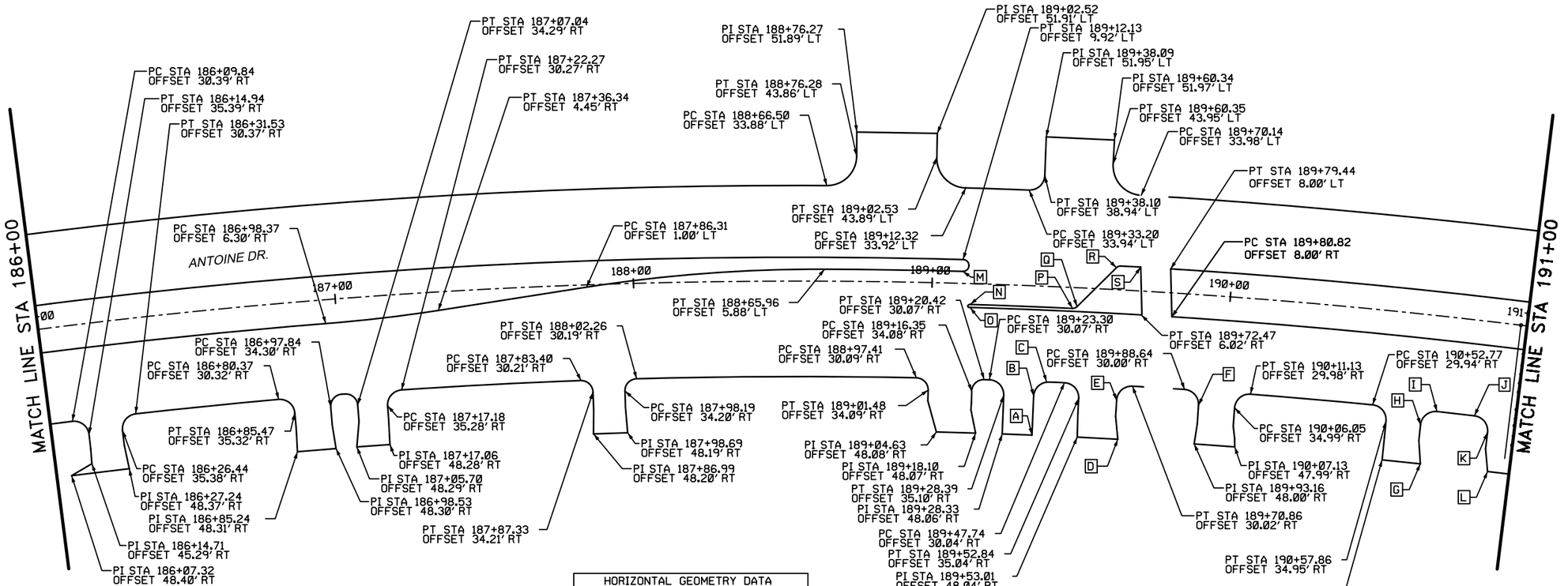
HORIZONTAL GEOMETRY LAYOUT STA 177+00 TO STA 186+00

SHEET 4 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-OGEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 200 718	

Pen Table:ANTOINE DR.tbl
Plot Driver:Y:\2017012 Antoine North Paving and Drainage\MicroStation\90% SET-CAD DESIGN FILES\Resource Files\ANTOINE DR.pltcfg
Plotted on: 10/27/2025 2:32:27 AM GEO

Design Filename: Y:\2017012 Antoine North Paving and Drainage\MicroStation\95% SET-CAD DESIGN FILES -03.07.2025\P&P Sheets\Horizontal Geometry Layout\004-Horiz. Geometry-ML.dgn



HORIZONTAL GEOMETRY DATA			
NO.	DESCRIPT	STATION	OFFSET
A	PI	189+36.37	48.16' RT
B	PC	189+36.58	34.98' RT
C	PT	189+41.66	30.05' RT
D	PI	189+66.95	48.02' RT
E	PC	189+65.78	35.03' RT
F	PT	189+93.74	35.00' RT
G	PI	190+71.04	47.93' RT
H	PC	190+69.68	34.93' RT
I	PT	190+74.77	29.92' RT
J	PC	190+87.57	29.91' RT
K	PT	190+92.66	34.91' RT
L	PI	190+94.28	47.91' RT
M	PC	189+12.13	5.92' LT
N	PC	189+12.83	8.00' RT
O	PT	189+12.83	7.00' RT
P	PT	189+47.36	7.00' RT
Q	PC	189+48.84	6.36' RT
R	PI	189+61.38	7.35' LT
S	PI	189+69.45	8.00' LT

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

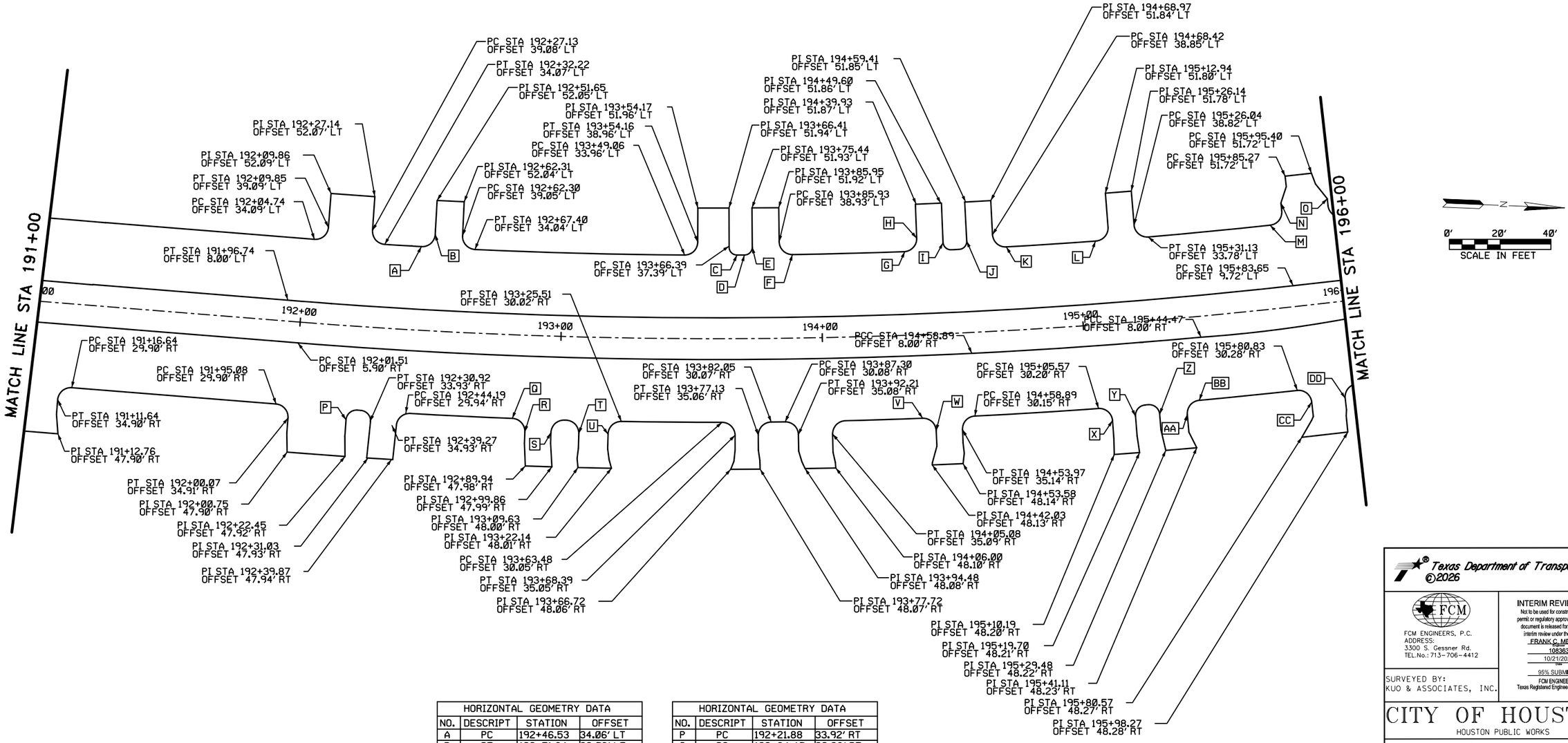
ANTOINE DRIVE

HORIZONTAL GEOMETRY LAYOUT STA 186+00 TO STA 191+00

SHEET 5 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 201 718	

Pen Table:ANTOINE DR.tbl
Plot Driver:Y:\2017012 Antoine North Paving and Drainage\MicroStation\90% SET-CAD DESIGN FILES\Resource Files\ANTOINE DR.pltcfg
Plotted on: 10/27/2025 2:32:27 AM GEO
Design Filename: Y:\2017012 Antoine North Paving and Drainage\MicroStation\95% SET-CAD DESIGN FILES -03.07.2025\P&P Sheets\Horizontal Geometry Layout\005-Horiz.Geometry_ML.dgn



HORIZONTAL GEOMETRY DATA			
NO.	DESCRIPT	STATION	OFFSET
A	PC	192+46.53	34.06' LT
B	PT	192+51.64	39.06' LT
C	PT	193+69.44	33.94' LT
D	PC	193+72.36	33.94' LT
E	PT	193+75.42	36.94' LT
F	PT	193+91.03	33.92' LT
G	PC	194+34.81	33.88' LT
H	PT	194+39.91	38.88' LT
I	PC	194+51.01	36.86' LT
J	PT	194+58.73	36.85' LT
K	PT	194+73.52	33.84' LT
L	PC	195+09.16	33.80' LT
M	PC	195+77.43	33.73' LT
N	PT	195+82.52	41.66' LT
O	PC	196+00.33	41.37' LT

HORIZONTAL GEOMETRY DATA			
NO.	DESCRIPT	STATION	OFFSET
P	PC	192+21.88	33.92' RT
Q	PC	192+84.40	29.98' RT
R	PT	192+89.31	34.98' RT
S	PC	192+99.11	34.99' RT
T	PT	193+09.60	35.00' RT
U	PC	193+20.60	35.01' RT
V	PC	194+39.17	30.13' RT
W	PT	194+44.08	35.13' RT
X	PT	195+10.48	35.20' RT
Y	PC	195+19.25	34.21' RT
Z	PT	195+28.37	34.22' RT
AA	PT	195+38.74	35.22' RT
BB	PC	195+43.66	30.24' RT
CC	PT	195+85.82	35.28' RT
DD	PC	195+98.72	35.28' RT

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

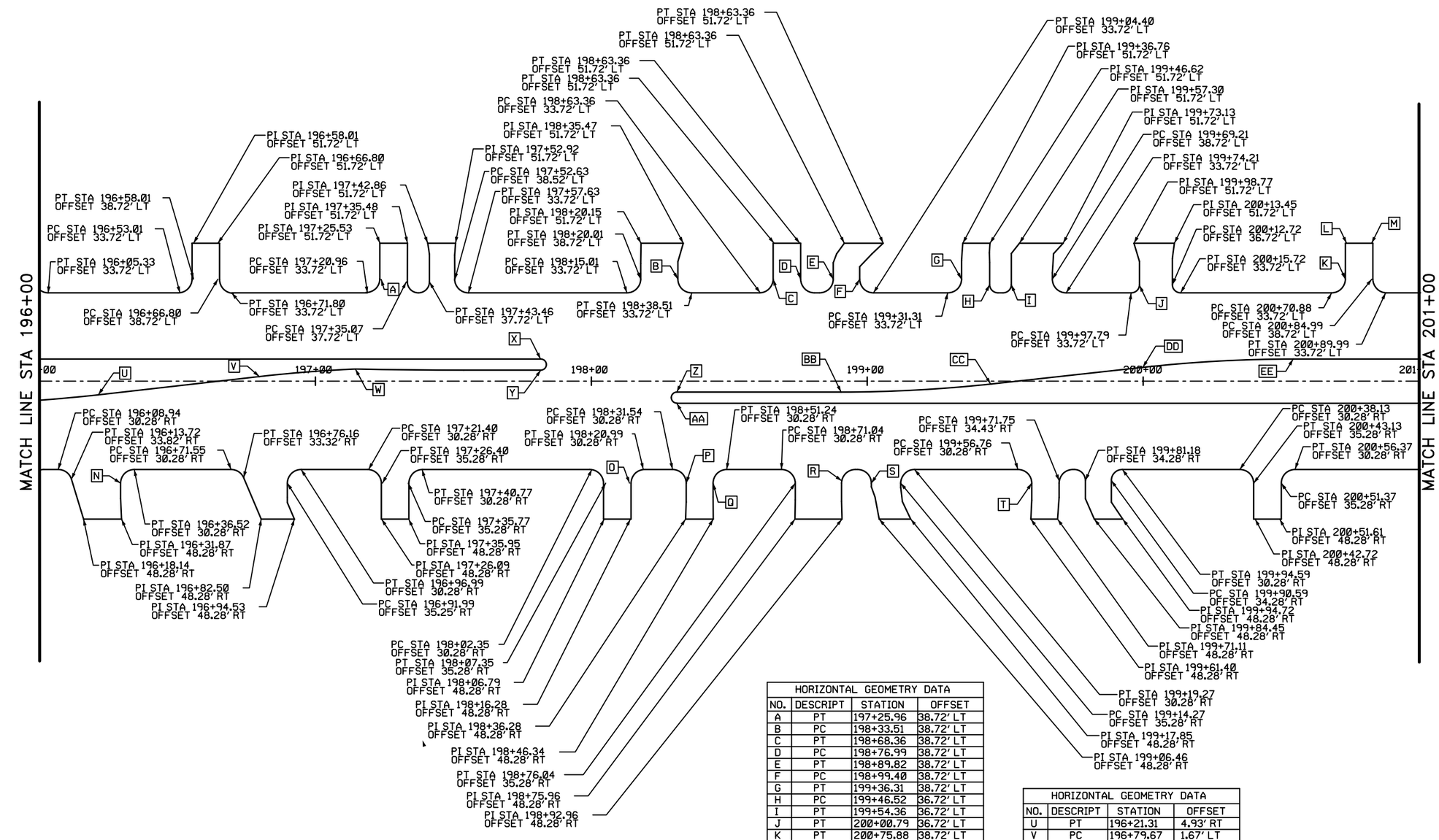
HORIZONTAL GEOMETRY LAYOUT STA 191+00 TO STA 196+00

SHEET 6 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 202 718	

Pen Table:ANTOINE DR.tbl
Plot Driver:Y:\2017012 Antoine North Paving and Drainage\MicroStation\90% SET-CAD DESIGN FILES\Resource Files\ANTOINE DR.pltcfg
Plotted on: 10/27/2025 2:32:27 AM GEO

Design Filename: Y:\2017012 Antoine North Paving and Drainage\MicroStation\95% SET-CAD DESIGN FILES _03.07.2025\P&P Sheets\Horizontal Geometry Layout\006-Horiz.Geometry_ML.dgn



HORIZONTAL GEOMETRY DATA			
NO.	DESCRIPT	STATION	OFFSET
A	PT	197+25.96	38.72' LT
B	PC	198+33.51	38.72' LT
C	PT	198+68.36	38.72' LT
D	PC	198+76.99	38.72' LT
E	PT	198+89.82	38.72' LT
F	PC	198+99.40	38.72' LT
G	PT	199+36.31	38.72' LT
H	PC	199+46.52	36.72' LT
I	PT	199+54.36	36.72' LT
J	PT	200+00.79	36.72' LT
K	PT	200+75.88	38.72' LT
L	PC	200+75.86	52.10' LT
M	PC	200+84.93	51.72' LT
N	PC	196+31.52	35.28' RT
O	PC	198+15.99	35.27' RT
P	PT	198+36.54	35.28' RT
Q	PC	198+46.24	35.28' RT
R	PC	198+92.84	35.28' RT
S	PT	199+03.63	35.28' RT
T	PT	199+61.76	35.28' RT

HORIZONTAL GEOMETRY DATA			
NO.	DESCRIPT	STATION	OFFSET
U	PT	196+21.31	4.93' RT
V	PC	196+79.67	1.67' LT
W	PT	197+14.51	4.39' LT
X	PC	197+81.62	8.00' LT
Y	PT	197+81.72	4.00' LT
Z	PC	198+30.96	3.97' RT
AA	PT	198+30.96	8.00' RT
BB	PC	198+90.52	3.97' RT
CC	PT	199+44.72	1.03' RT
DD	PC	199+99.89	5.01' LT
EE	PT	200+54.34	8.00' LT

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

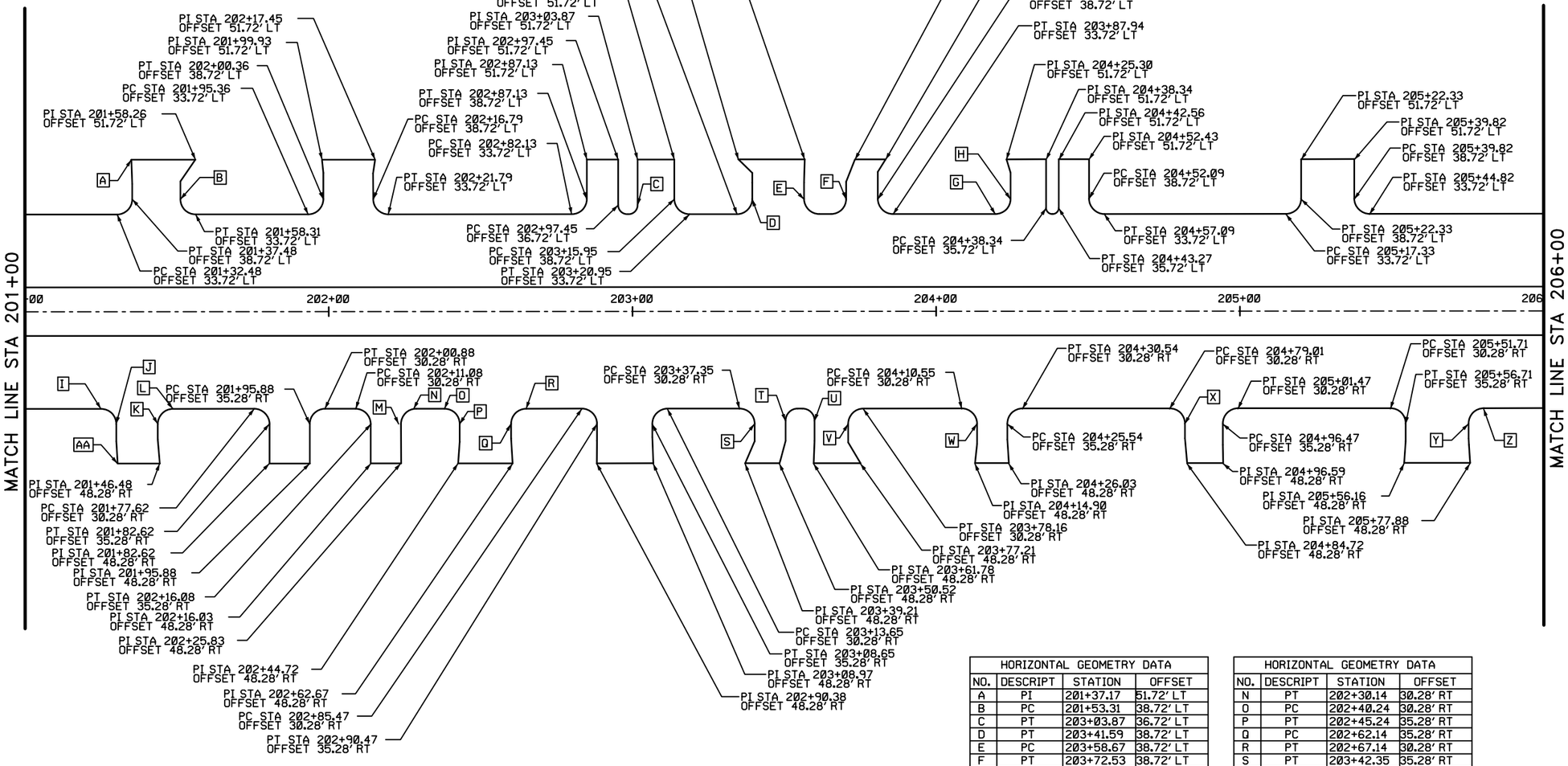
HORIZONTAL GEOMETRY LAYOUT
STA 196+00 TO STA 201+00

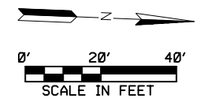
SHEET 7 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 203 718	

Pen Table:ANTOINE DR.tbl
Plot Driver:Y:\2017012 Antoine North Paving and Drainage\MicroStation\90% SET-CAD DESIGN FILES\Resource Files\ANTOINE DR.pltcfg
Plotted on: 10/27/2025 2:32:28 AM GEO

Design Filename: Y:\2017012 Antoine North Paving and Drainage\MicroStation\95% SET-CAD DESIGN FILES _03.07.2025\P&P Sheets\Horizontal Geometry Layout\007-Horiz. Geometry_ML.dgn





HORIZONTAL GEOMETRY DATA			
NO.	DESCRIPT	STATION	OFFSET
A	PI	201+37.17	51.72' LT
B	PC	201+53.31	38.72' LT
C	PT	203+03.87	36.72' LT
D	PT	203+41.59	38.72' LT
E	PC	203+58.67	38.72' LT
F	PT	203+72.53	38.72' LT
G	PC	204+21.64	33.72' LT
H	PT	204+26.64	38.72' LT
I	PC	201+27.18	30.28' RT
J	PT	201+32.18	35.28' RT
K	PC	201+45.85	35.28' RT
L	PT	201+50.30	30.31' RT
M	PC	202+25.14	35.28' RT

HORIZONTAL GEOMETRY DATA			
NO.	DESCRIPT	STATION	OFFSET
N	PT	202+30.14	30.28' RT
O	PC	202+40.24	30.28' RT
P	PT	202+45.24	35.28' RT
Q	PC	202+62.14	35.28' RT
R	PT	202+67.14	30.28' RT
S	PT	203+42.35	35.28' RT
T	PC	203+52.51	34.28' LT
U	PT	203+62.07	34.28' LT
V	PC	203+73.16	35.28' RT
W	PT	204+15.55	35.28' RT
X	PT	204+84.01	35.28' RT
Y	PC	205+77.40	35.26' RT
Z	PT	205+82.40	30.28' RT
AA	PI	201+32.63	48.27' RT

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

HORIZONTAL GEOMETRY LAYOUT STA 201+00 TO STA 206+00

SHEET 8 OF 18

WBS NUMBER
N-100030-0GEC-3
DRAWING SCALE
AS NOTED
CITY OF HOUSTON PM
ROWAIDAH AYOUB
SHEET NO. 204 718

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Pen Table:ANTOINE DR.tbl
Plot Driver:Y:\2017012 Antoine North Paving and Drainage\MicroStation\90% SET-CAD DESIGN FILES\Resource Files\ANTOINE DR.pltcfg
Design Filename: Y:\2017012 Antoine North Paving and Drainage\MicroStation\95% SET-CAD DESIGN FILES _03.07.2025\P&P Sheets\Horizontal Geometry Layout\008-Horiz.Geometry_ML.dgn

Plotted on: 10/27/2025 2:32:28 AM GEO
Pen Table:ANTOINE DR.tbl
Plot Driver:Y:\2017012 Antoine North Paving and Drainage\MicroStation\90% SET-CAD DESIGN FILES\Resource Files\ANTOINE DR.pltcfg
Design Filename: Y:\2017012 Antoine North Paving and Drainage\MicroStation\95% SET-CAD DESIGN FILES -03.07.2025\P&P Sheets\Horizontal Geometry Layout\009-Horiz.Geometry_ML.dgn

MATCH LINE STA 206+00

MATCH LINE STA 211+00

MATCH LINE STA 211+00

MATCH LINE STA 216+00

ANTOINE DR.

PI STA 206+84.69 OFFSET 51.72' LT
PC STA 206+78.56 OFFSET 41.25' LT
PT STA 206+82.88 OFFSET 33.72' LT
PI STA 206+38.66 OFFSET 51.72' LT
PI STA 206+48.17 OFFSET 51.72' LT
PI STA 207+31.20 OFFSET 51.72' LT
PI STA 207+42.29 OFFSET 51.72' LT
PC STA 207+41.97 OFFSET 38.72' LT
PT STA 207+46.97 OFFSET 33.72' LT
PC STA 206+48.17 OFFSET 37.72' LT
PT STA 206+52.17 OFFSET 33.72' LT
PT STA 206+58.44 OFFSET 35.09' LT
PC STA 206+55.43 OFFSET 33.72' LT
PT STA 207+31.21 OFFSET 38.73' LT
PC STA 207+26.21 OFFSET 33.72' LT
PI STA 208+54.88 OFFSET 51.72' LT
PI STA 208+45.03 OFFSET 51.72' LT
PT STA 208+45.03 OFFSET 38.72' LT
PC STA 208+40.03 OFFSET 33.72' LT
PT STA 209+22.93 OFFSET 51.72' LT
PT STA 209+03.35 OFFSET 51.72' LT
PC STA 208+54.88 OFFSET 38.72' LT
PT STA 208+59.88 OFFSET 33.72' LT
PC STA 209+22.93 OFFSET 38.72' LT
PC STA 209+95.89 OFFSET 33.72' LT
PT STA 209+27.93 OFFSET 33.72' LT
PT STA 209+03.35 OFFSET 38.72' LT
PC STA 208+98.35 OFFSET 33.72' LT
PC STA 210+48.26 OFFSET 64.70' LT
PT STA 210+20.96 OFFSET 64.96' LT
PT STA 210+00.60 OFFSET 9.72' LT
PT STA 210+73.25 OFFSET 33.72' LT
PT STA 208+31.60 OFFSET 3.29' RT
PC STA 208+86.30 OFFSET 2.73' LT
PT STA 209+40.97 OFFSET 5.72' LT
PC STA 207+77.15 OFFSET 6.28' RT
PC STA 210+00.60 OFFSET 5.72' LT
PC STA 210+68.53 OFFSET 2.28' RT
PT STA 210+68.53 OFFSET 6.28' RT
PT STA 206+55.83 OFFSET 30.28' RT
PC STA 206+65.83 OFFSET 30.28' RT
PT STA 206+70.83 OFFSET 35.28' RT
PC STA 206+50.83 OFFSET 35.28' RT
PT STA 206+85.58 OFFSET 30.28' RT
PC STA 207+40.03 OFFSET 30.28' RT
PT STA 207+45.03 OFFSET 35.28' RT
PT STA 207+59.23 OFFSET 30.28' RT
PC STA 208+57.18 OFFSET 30.28' RT
PT STA 208+82.17 OFFSET 30.28' RT
PC STA 209+05.35 OFFSET 30.28' RT
PT STA 209+31.44 OFFSET 30.28' RT
PC STA 209+95.73 OFFSET 30.28' RT
PT STA 210+72.26 OFFSET 30.28' RT
PC STA 206+80.58 OFFSET 35.28' RT
PT STA 206+80.51 OFFSET 48.28' RT
PT STA 206+71.13 OFFSET 48.28' RT
PT STA 206+51.13 OFFSET 48.28' RT
PT STA 206+31.63 OFFSET 48.28' RT
PC STA 207+54.23 OFFSET 35.28' RT
PT STA 207+54.18 OFFSET 48.28' RT
PT STA 207+44.48 OFFSET 48.28' RT
PT STA 208+62.18 OFFSET 35.28' RT
PT STA 208+61.56 OFFSET 48.28' RT
PC STA 208+77.17 OFFSET 35.28' RT
PT STA 208+77.14 OFFSET 48.28' RT
PC STA 209+26.44 OFFSET 35.28' RT
PT STA 209+27.08 OFFSET 48.28' RT
PT STA 209+09.87 OFFSET 48.28' RT
PC STA 210+47.47 OFFSET 59.96' RT
PT STA 210+21.08 OFFSET 61.35' RT

HORIZONTAL GEOMETRY DATA			
NO.	DESCRIPT	STATION	OFFSET
A	PC	206+33.66	33.72' LT
B	PT	206+38.66	38.72' LT
C	PI	206+72.94	51.72' LT
D	PC	206+27.44	30.28' LT
E	PT	206+32.44	35.28' LT
F	PI	209+10.35	35.28' LT
G	PC	211+41.14	33.72' LT
H	PT	211+46.14	38.72' LT
I	PT	212+20.48	38.72' LT
J	PT	215+47.85	40.47' LT
K	PT	215+94.20	38.72' LT

0' 20' 40'
SCALE IN FEET

PI STA 212+61.46 OFFSET 38.72' LT
PC STA 212+56.46 OFFSET 33.72' LT
PI STA 212+23.50 OFFSET 51.72' LT
PI STA 213+60.08 OFFSET 51.72' LT
PI STA 212+57.75 OFFSET 51.72' LT
PI STA 212+83.22 OFFSET 51.72' LT
PT STA 213+60.08 OFFSET 38.72' LT
PC STA 213+65.08 OFFSET 33.72' LT
PI STA 214+56.06 OFFSET 51.72' LT
PI STA 214+37.29 OFFSET 51.72' LT
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PI STA 215+42.92 OFFSET 51.72' LT
PI STA 215+34.28 OFFSET 36.28' LT
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PI STA 212+10.65 OFFSET 51.72' LT
PI STA 211+46.14 OFFSET 51.72' LT
PT STA 212+10.65 OFFSET 38.72' LT
PC STA 212+05.65 OFFSET 33.72' LT
PT STA 213+49.72 OFFSET 51.72' LT
PT STA 213+49.72 OFFSET 38.72' LT
PC STA 214+32.29 OFFSET 33.72' LT
PT STA 214+56.06 OFFSET 51.72' LT
PT STA 214+37.29 OFFSET 38.72' LT
PT STA 214+56.06 OFFSET 38.72' LT
PC STA 214+61.06 OFFSET 33.72' LT
PC STA 215+99.20 OFFSET 33.72' LT
PC STA 215+52.53 OFFSET 33.72' LT
PT STA 211+59.15 OFFSET 38.72' LT
PC STA 211+64.15 OFFSET 33.72' LT
PC STA 212+25.48 OFFSET 33.72' LT
PC STA 213+44.72 OFFSET 33.72' LT
PC STA 212+88.22 OFFSET 33.72' LT
PT STA 214+10.50 OFFSET 8.13' LT
PCC STA 214+18.50 OFFSET 7.90' LT
PC STA 213+75.63 OFFSET 3.02' LT
PC STA 214+32.95 OFFSET 3.58' LT
PC STA 214+84.76 OFFSET 2.28' RT
PT STA 215+41.22 OFFSET 2.28' RT
PT STA 211+87.45 OFFSET 2.28' RT
PC STA 212+62.53 OFFSET 2.28' RT
PC STA 211+30.00 OFFSET 30.28' RT
PC STA 211+87.45 OFFSET 6.28' RT
PT STA 212+62.53 OFFSET 6.28' RT
PT STA 213+03.07 OFFSET 2.28' RT
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PC STA 214+33.87 OFFSET 30.28' RT
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PT STA 214+83.87 OFFSET 30.28' RT
PC STA 214+73.87 OFFSET 40.28' RT
PI STA 214+73.87 OFFSET 48.28' RT

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Texas Registered Engineering Firm F-13481

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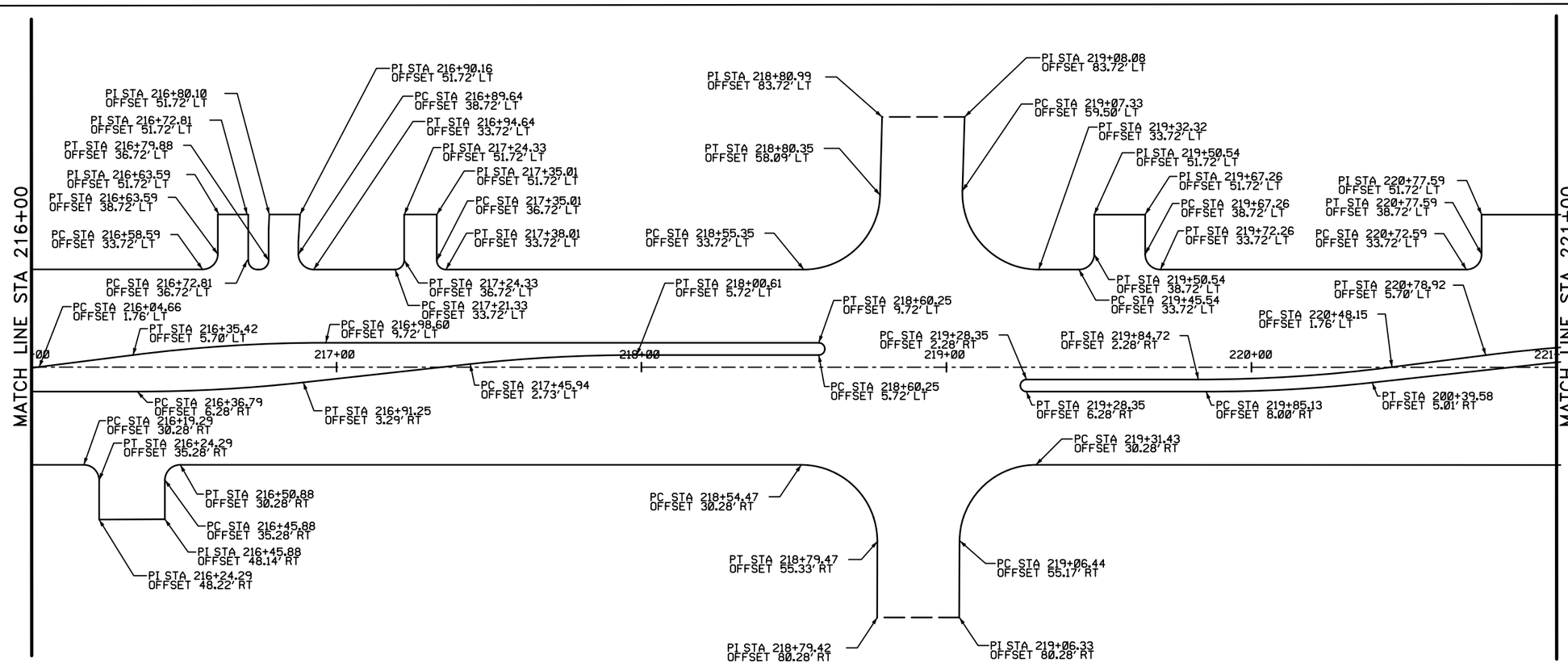
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

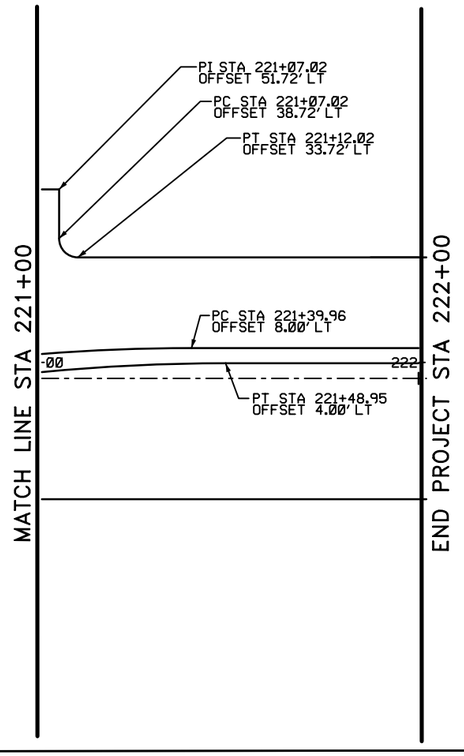
ANTOINE DRIVE

HORIZONTAL GEOMETRY LAYOUT STA 206+00 TO STA 216+00

SHEET 9 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 205 718	





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ADDRESS:
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TEL.No.: 713-706-4412

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

HORIZONTAL GEOMETRY LAYOUT STA 216+00 TO STA 222+00

SHEET 10 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 206 718	

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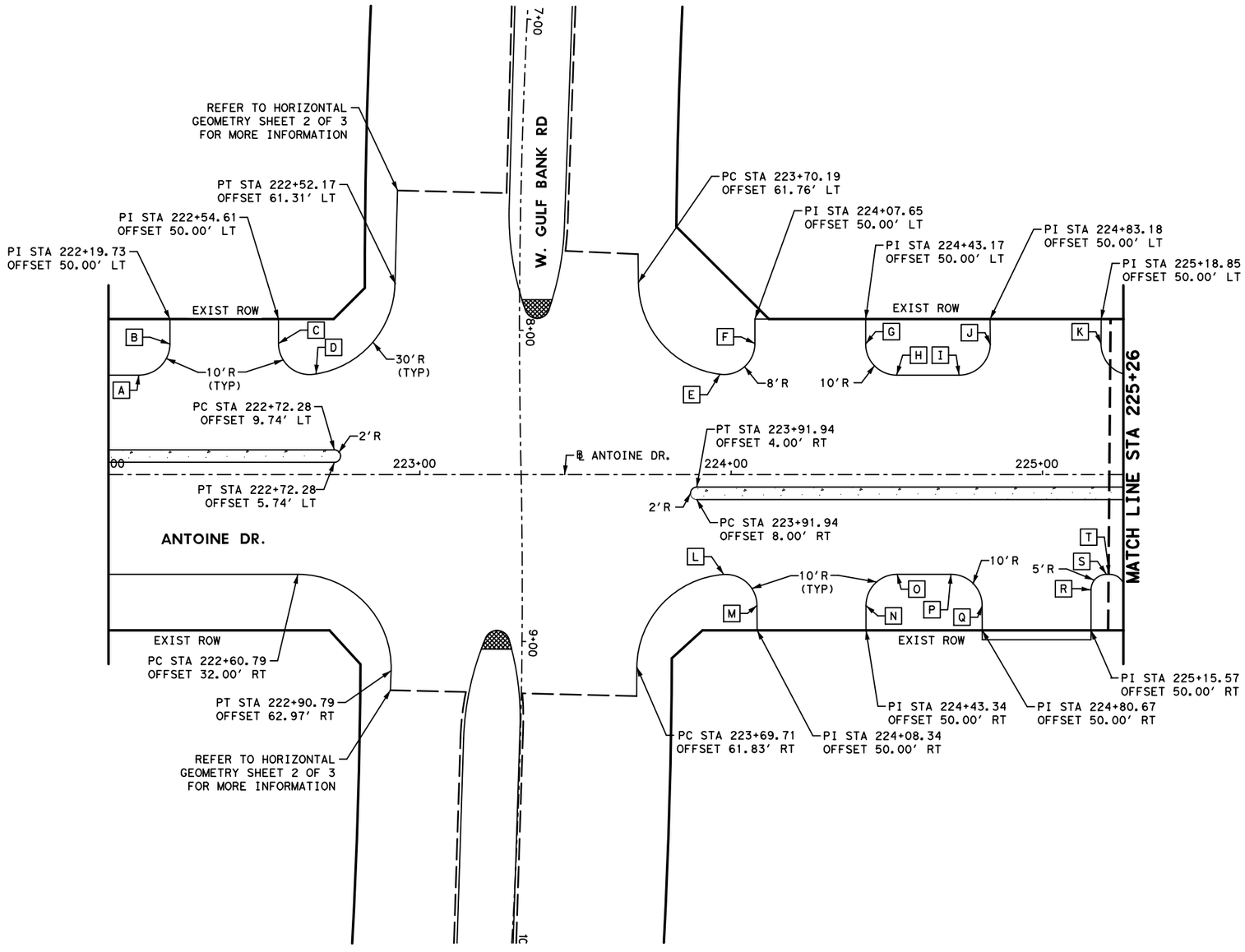
HORIZONTAL GEOMETRY DATA			
NO.	DESCRIP	STATION	OFFSET
A	PC	222+09.68	32.00'LT
B	PT	222+19.73	42.00'LT
C	PC	222+54.61	42.15'LT
D	PCC	222+65.82	32.22'LT
E	PCC	223+96.38	32.24'LT
F	PT	224+07.65	42.16'LT
G	PC	224+43.17	42.00'LT
H	PT	224+53.17	32.00'LT
I	PC	224+73.22	32.00'LT
J	PT	224+83.22	42.05'LT
K	PC	225+18.79	42.07'LT
L	PCC	223+97.60	32.07'RT
M	PT	224+08.29	42.00'RT
N	PC	224+43.30	42.05'RT
O	PT	224+53.30	32.00'RT
P	PC	224+70.63	32.00'RT
Q	PT	224+80.63	41.95'RT
R	PC	225+15.57	36.98'RT
S	PT	225+19.57	32.00'RT
T	PC	225+21.45	32.00'RT



0' 20' 40'
SCALE IN FEET

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TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
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Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

HORIZONTAL GEOMETRY LAYOUT STA 222+00 TO STA 225+26

SHEET 11 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 207 OF 718	

No.	DATE	REVISIONS	APP.

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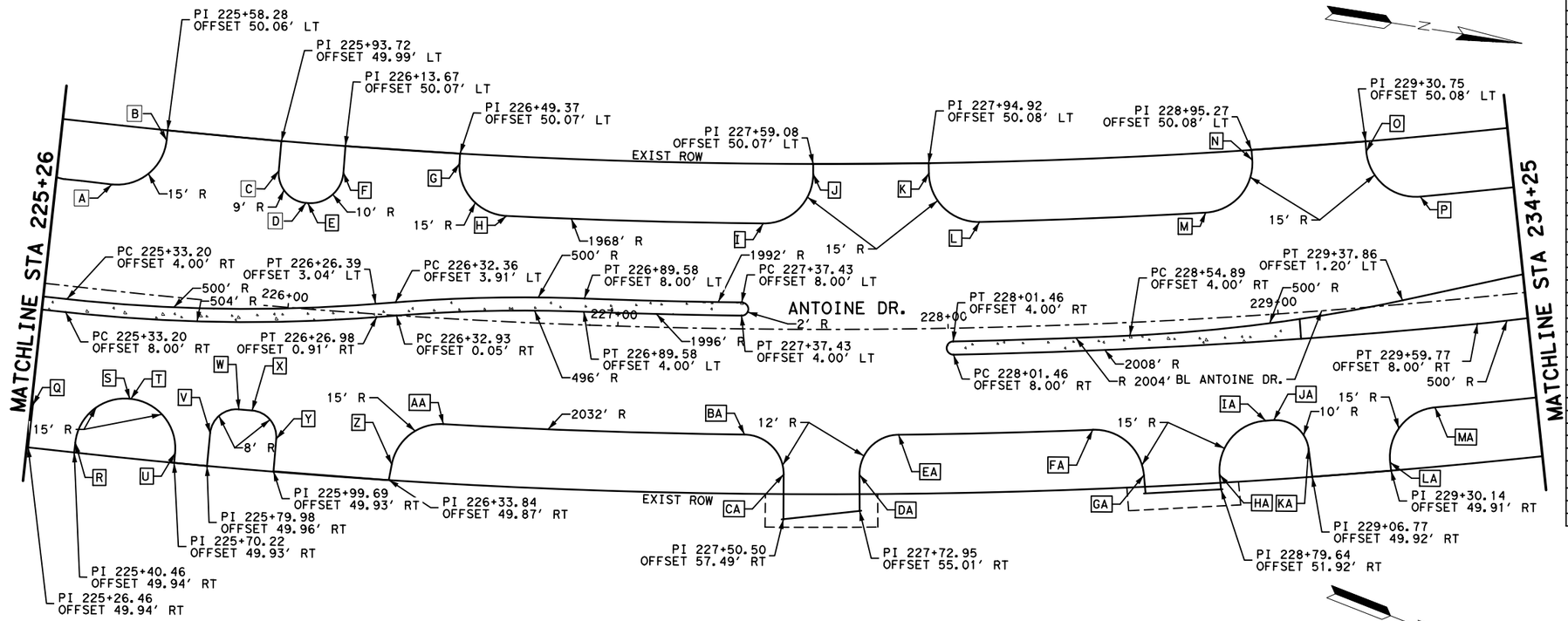
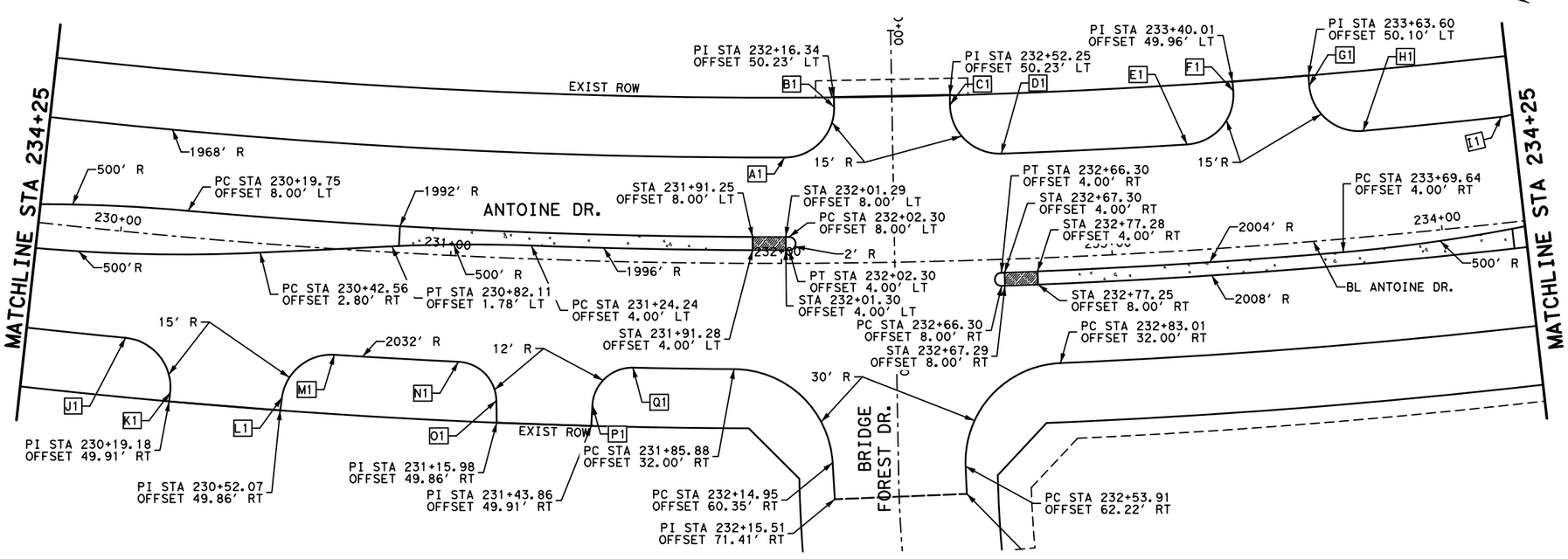


HORIZONTAL GEOMETRY DATA			
NO.	DESCRIP	STATION	OFFSET
A	PC	225+42.94	32' LT
B	PT	225+58.28	47.05' LT
C	PC	225+93.73	41.02' LT
D	PT	226+02.91	32' LT
E	PC	226+03.46	32' LT
F	PT	226+13.67	42.02' LT
G	PC	226+49.38	47.05' LT
H	PT	226+64.74	32' LT
I	PC	227+43.71	32' LT
J	PT	227+59.08	47.05' LT
K	PC	227+94.92	47.05' LT
L	PT	228+10.28	32' LT
M	PC	228+79.90	32' LT
N	PT	228+95.27	47.05' LT
O	PC	229+30.75	47.05' LT
P	PT	229+46.11	32' LT
Q	PT	225+26.46	37' RT
R	PC	225+40.46	46.70' RT
S	PT	225+55.20	32' RT
T	PC	225+55.57	32' RT
U	PT	225+70.23	46.95' RT
V	PC	225+80.03	39.94' RT
W	PT	225+87.87	32' RT
X	PC	225+91.85	32' RT
Y	PT	225+99.69	39.98' RT
Z	PC	226+34.39	45.17' RT
AA	PT	226+48.94	32' RT
BA	PC	227+38.76	32' RT
CA	PT	227+50.50	43.97' RT
DA	PC	227+72.95	43.97' RT
EA	PT	227+84.69	32' RT
FA	PC	228+42.50	32' RT
GA	PT	228+57.14	46.38' RT
HA	PC	228+79.50	47.43' RT
IA	PT	228+94.15	32' RT
JA	PC	228+96.52	32' RT
KA	PT	229+06.30	41.40' RT
LA	PC	229+30.06	47.42' RT
MA	PT	229+44.71	32' RT

HORIZONTAL GEOMETRY DATA			
NO.	DESCRIP	STATION	OFFSET
A1	PC	232+01.01	32' LT
B1	PT	232+16.37	47.20' LT
C1	PC	232+52.22	47.19' LT
D1	PT	232+67.58	32' LT
E1	PC	233+24.68	32' LT
F1	PT	233+40.04	47.24' LT
G1	PC	233+63.60	47.05' LT
H1	PT	233+78.96	32' LT
I1	PC	234+21.56	32' LT
J1	PC	230+04.71	32' RT
K1	PT	230+19.25	47.31' RT
L1	PC	230+52.28	46.05' RT
M1	PT	230+66.89	32' RT
N1	PC	231+03.87	32' RT
O1	PT	231+15.59	43.28' RT
P1	PC	231+44.05	43.60' RT
Q1	PT	231+55.79	32' RT



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Houston, Texas 77079
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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

HORIZONTAL GEOMETRY LAYOUT STA 225+26 TO STA 234+25

SHEET 12 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 208 OF 718	

APP: | DATE | No. | REVISIONS

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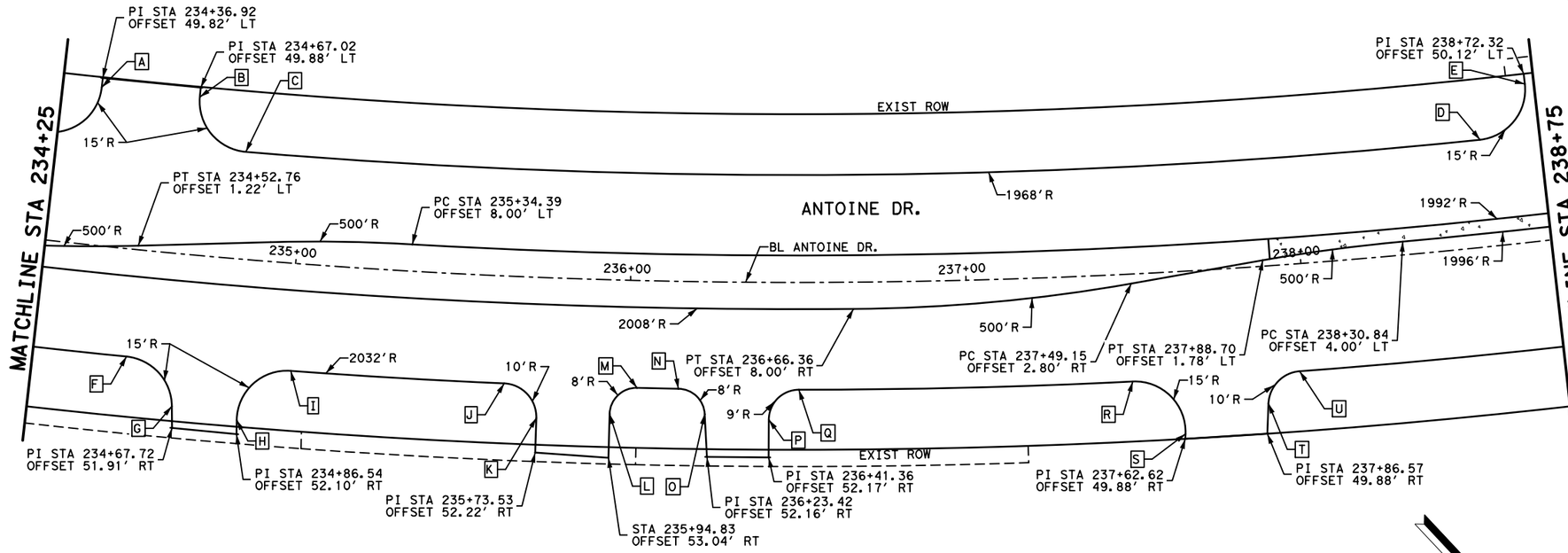

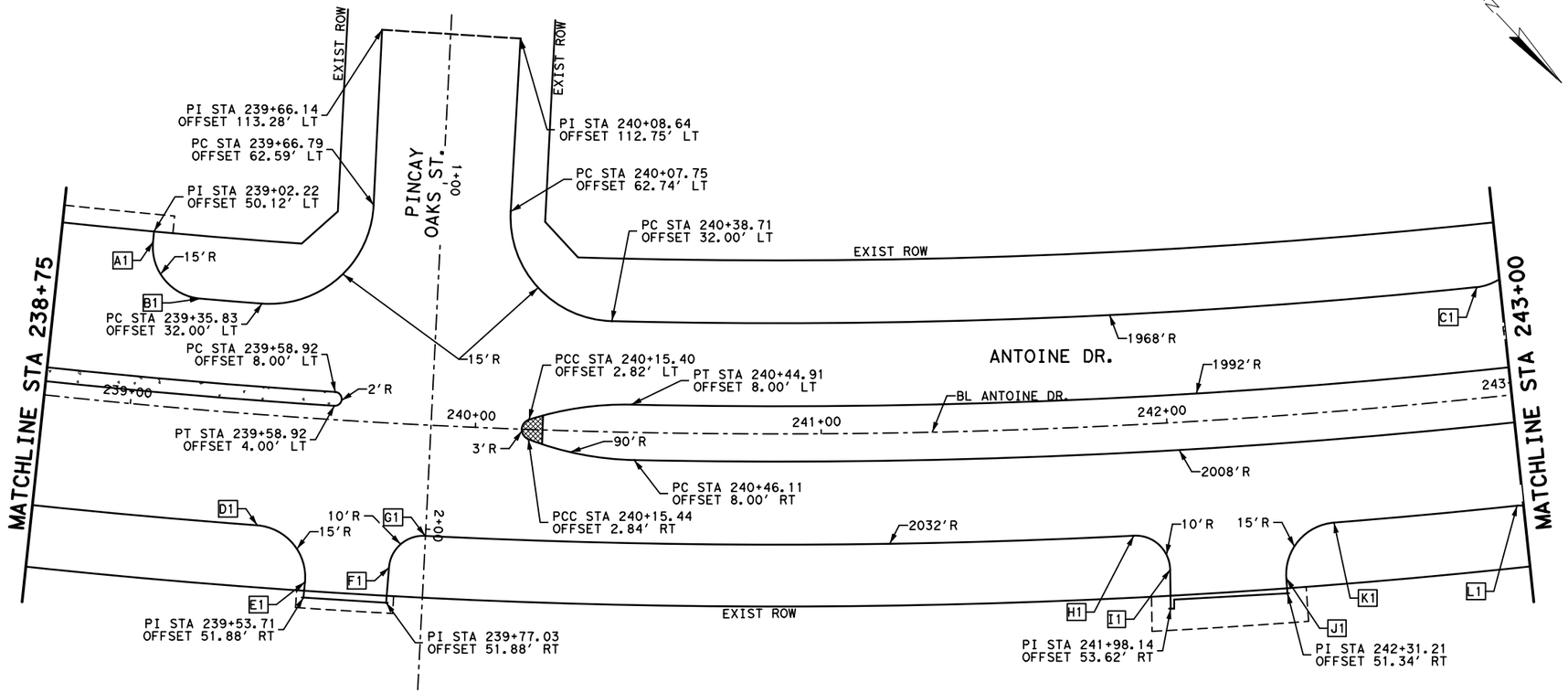

HORIZONTAL GEOMETRY DATA			
NO.	DESCRIP	STATION	OFFSET
A	PT	234+36.92	47.05' LT
B	PC	234+67.02	47.05' LT
C	PT	234+82.38	32' LT
D	PC	238+56.96	32' LT
E	PT	238+72.32	47.05' LT
F	PC	234+52.53	32' RT
G	PT	234+67.12	45.5' RT
H	PC	234+86.28	47.91' RT
I	PT	235+00.91	32' RT
J	PC	235+63.67	32' RT
K	PT	235+73.46	41.91' RT
L	PC	235+94.83	39.98' RT
M	PT	236+02.67	32' RT
N	PC	236+14.82	32' RT
O	PT	236+22.64	39.48' RT
P	PC	236+41.36	40.98' RT
Q	PT	236+50.18	32' RT
R	PC	237+48.18	32' RT
S	PT	237+62.76	48.42' RT
T	PC	237+87.51	40.91' RT
U	PT	237+97.24	32' RT

HORIZONTAL GEOMETRY DATA			
NO.	DESCRIP	STATION	OFFSET
A1	PC	239+02.22	47.05' LT
B1	PT	239+17.58	32' LT
C1	PC	242+93.15	32' LT
D1	PT	239+39.19	32' RT
E1	PC	239+53.84	47.39' RT
F1	PT	239+77.28	41.72' RT
G1	PC	239+87.07	32' RT
H1	PT	241+88.79	32' RT
I1	PC	241+98.58	42.37' RT
J1	PT	242+31.21	46.95' RT
K1	PC	242+45.87	32' RT
L1	PT	242+98.14	32' RT

No.	DATE	REVISIONS	APP.

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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

HORIZONTAL GEOMETRY LAYOUT STA 234+25 TO STA 243+00

SHEET 13 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 209 OF 718	

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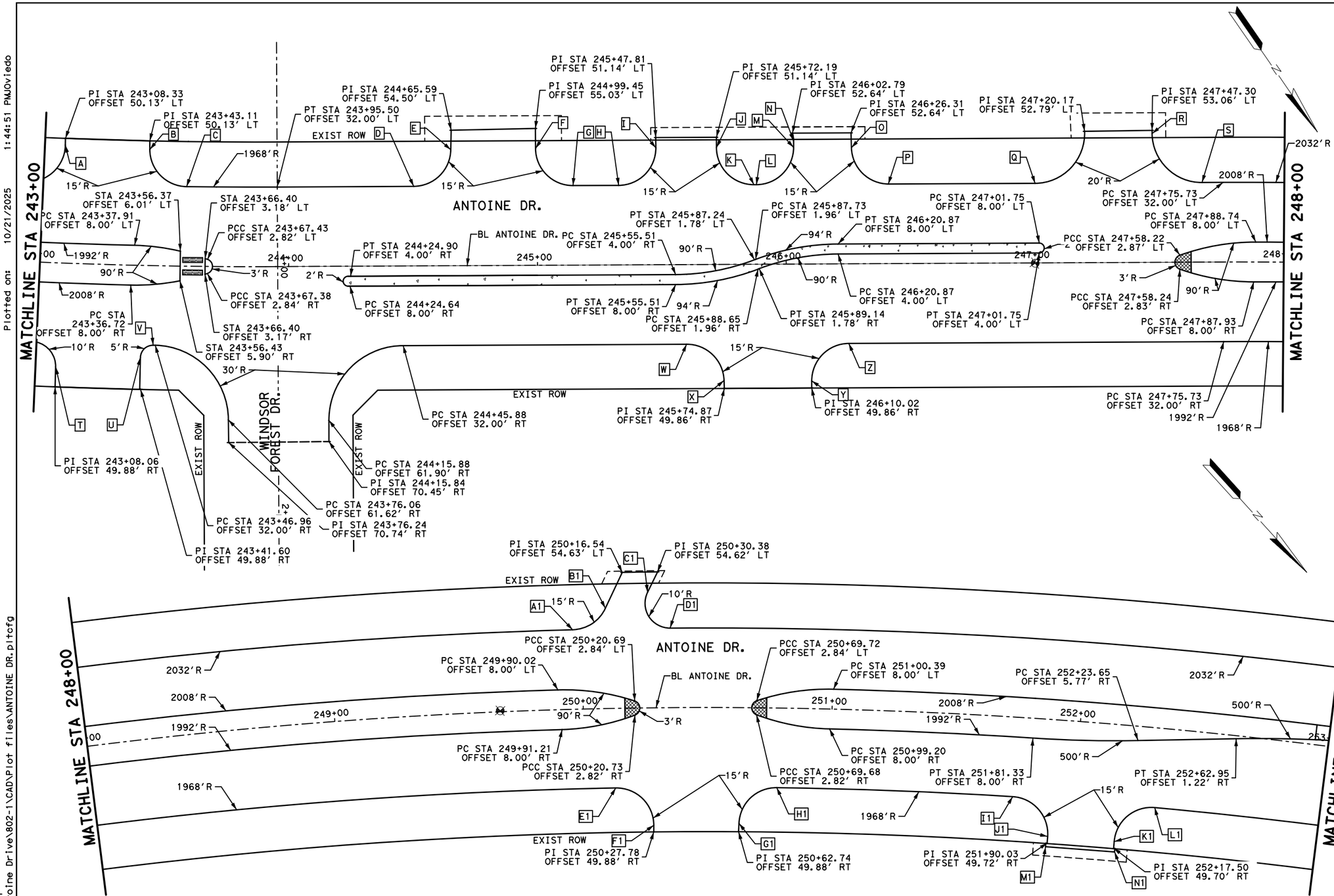

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B	PC	243+43.20	46.67' LT
C	PT	243+58.55	32' LT
D	PC	244+50.40	32' LT
E	PT	244+65.40	46.64' LT
F	PC	244+99.45	47' LT
G	PT	245+14.45	32' LT
H	PC	245+32.81	32' LT
I	PT	245+47.81	47' LT
J	PC	245+72.19	47' LT
K	PT	245+87.19	32' LT
L	PC	245+88.19	32' LT
M	PT	246+03.19	46.91' LT
N	PC	246+03.21	49.49' LT
O	PT	246+26.43	46.7' LT
P	PC	246+41.42	32' LT
Q	PT	247+00.19	32' LT
R	PC	247+47.31	51.8' LT
S	PT	247+67.31	32' LT
T	PC	243+07.94	41.82' RT
U	PT	243+41.25	36.99' RT
V	PC	243+46.16	32' RT
W	PT	245+59.80	32' RT
X	PC	245+74.80	46.69' RT
Y	PT	246+10.02	47' RT
Z	PC	246+25.02	32' RT

HORIZONTAL GEOMETRY DATA			
NO.	DESCRIP	STATION	OFFSET
A1	PC	249+96.55	32' LT
B1	PT	250+09.70	40.33' LT
C1	PC	250+26.38	46.49' LT
D1	PT	250+35.12	32' LT
E1	PC	250+12.45	32' RT
F1	PT	250+27.81	47.23' RT
G1	PC	250+62.87	46.51' RT
H1	PT	250+78.22	32' RT
I1	PC	251+74.67	32' RT
J1	PT	251+90.03	47.05' RT
K1	PC	252+17.51	47.05' RT
L1	PT	252+32.87	32' RT
M1	-	251+89.51	51.22' RT
N1	-	252+18.03	51.2' RT

APP.	DATE	No.	REVISIONS

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

HORIZONTAL GEOMETRY LAYOUT
STA 243+00 TO STA 253+00

SHEET 14 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 210 OF 718	

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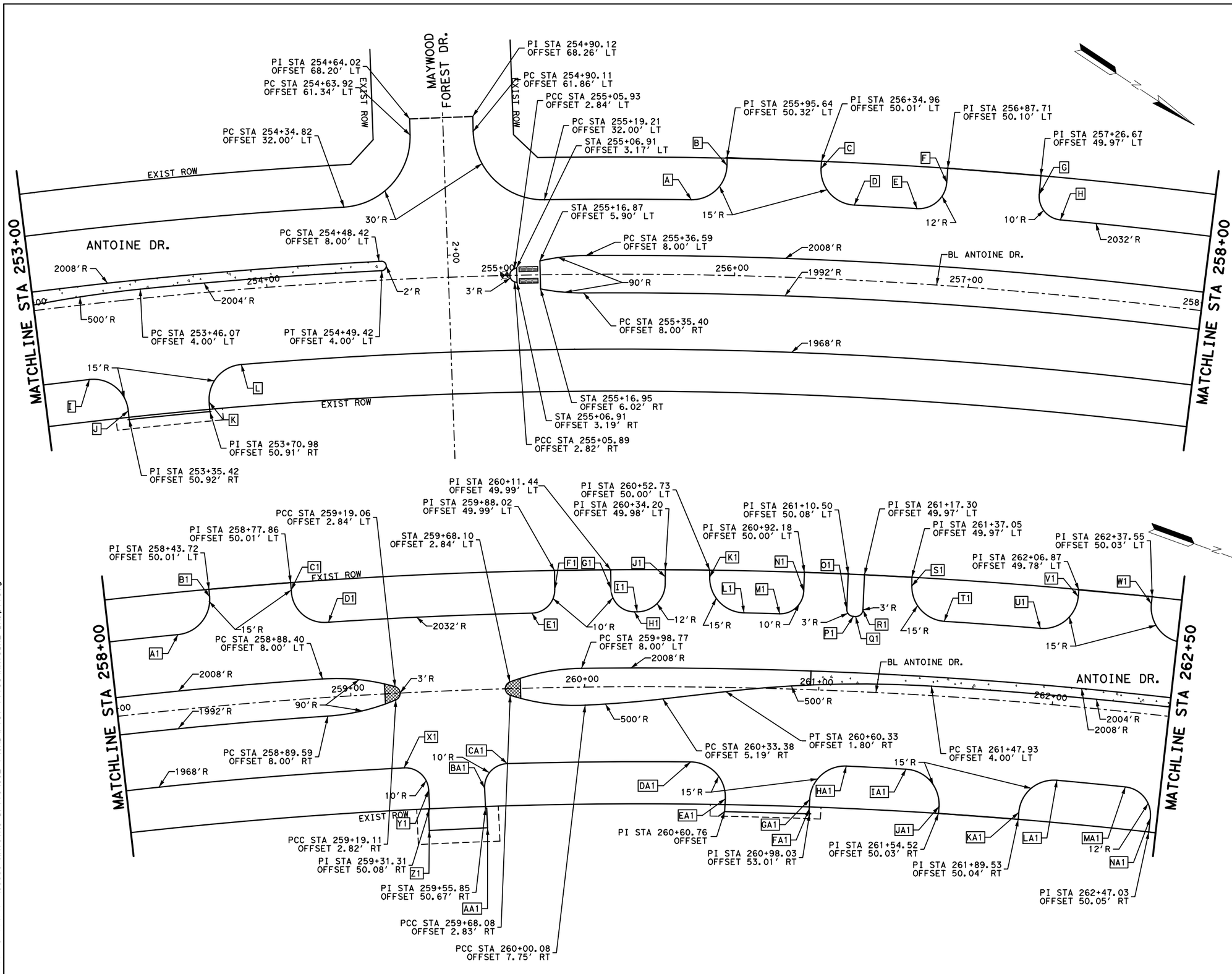

HORIZONTAL GEOMETRY DATA			
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B	PT	255+95.64	46.95' LT
C	PT	256+34.96	46.95' LT
D	PC	256+49.61	32' LT
E	PC	256+75.97	32' LT
F	PT	256+87.71	43.97' LT
G	PT	257+26.67	41.98' LT
H	PC	257+36.47	32' LT
I	PC	253+20.10	32' RT
J	PT	253+35.46	47.18' RT
K	PT	253+71.03	46.86' RT
L	PC	253+86.39	32' RT

HORIZONTAL GEOMETRY DATA			
NO.	DESCRIP	STATION	OFFSET
A1	PC	258+29.04	32' LT
B1	PT	258+43.69	46.82' LT
C1	PT	258+77.89	46.82' LT
D1	PC	258+92.55	32' LT
E1	PC	259+78.18	32' LT
F1	PT	259+87.98	41.92' LT
G1	PT	260+11.48	41.92' LT
H1	PC	260+21.28	32' LT
I1	PC	260+22.46	32' LT
J1	PT	260+34.20	46.95' LT
K1	PT	260+52.73	46.95' LT
L1	PC	260+67.38	32' LT
M1	PC	260+82.39	32' LT
N1	PT	260+92.18	41.98' LT
O1	PT	261+10.50	35' LT
P1	PC	261+13.45	32' LT
Q1	PC	261+14.35	32' LT
R1	PT	261+17.30	35' LT
S1	PT	261+37.23	46.19' LT
T1	PC	261+51.87	32' LT
U1	PC	261+92.22	32' LT
V1	PT	262+06.87	46.95' LT
W1	PT	262+37.55	46.95' LT
X1	PC	259+21.10	32' RT
Y1	PT	259+31.31	42.02' RT
Z1	-	259+30.80	59.24' RT
AA1	-	259+56.48	59.08' RT
BA1	PT	259+55.74	42.15' RT
CA1	PC	259+65.95	32' RT
DA1	PC	260+45.60	32' RT
EA1	PT	260+60.95	47.06' RT
FA1	-	260+97.79	50.87' RT
GA1	PT	260+97.85	46.82' RT
HA1	PC	261+13.21	32' RT
IA1	PC	261+39.16	32' RT
JA1	PT	261+54.52	47.05' RT
KA1	PT	261+89.53	47.05' RT
LA1	PC	262+04.89	32' RT
MA1	PC	262+34.76	32' RT
NA1	PT	262+47.03	44.03' RT

No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

HORIZONTAL GEOMETRY LAYOUT STA 253+00 TO STA 262+50

SHEET 15 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
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ROWAIDAH AYOUB	
SHEET NO. 211 OF 718	

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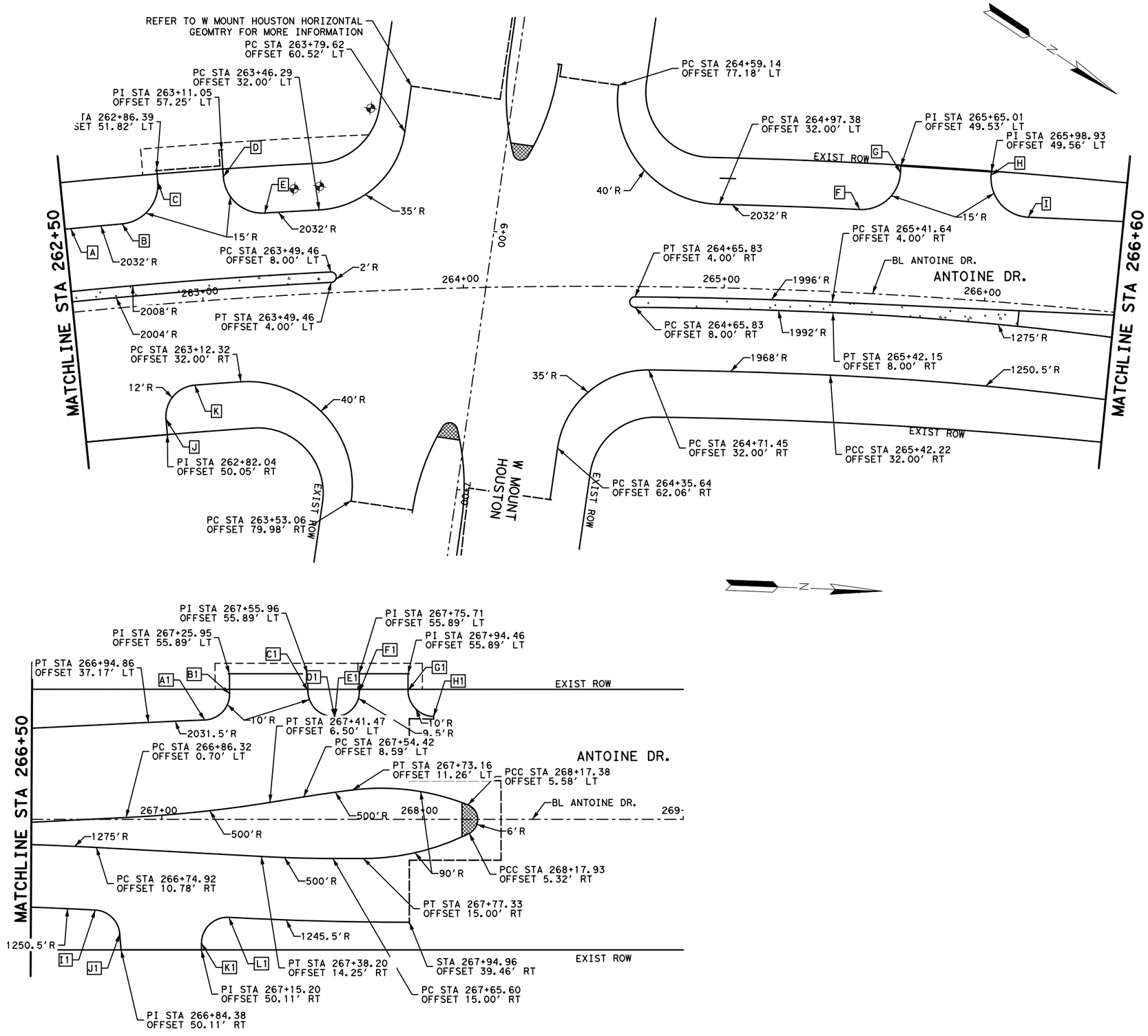

HORIZONTAL GEOMETRY DATA			
NO.	DESCRIP	STATION	OFFSET
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B	PT	262+71.73	32' LT
C	PC	262+86.39	46.95' LT
D	PT	263+11.05	46.95' LT
E	PC	263+25.71	32' LT
F	PT	265+50.42	32.02' LT
G	PC	265+65.01	46.97' LT
H	PT	265+98.93	48.27' LT
I	PC	266+14.11	33.33' LT
J	PT	262+82.04	44.03' RT
K	PC	262+94.31	32' RT

HORIZONTAL GEOMETRY DATA			
NO.	DESCRIP	STATION	OFFSET
A1	PC	267+16.42	38.12' LT
B1	PT	267+26.04	48.22' LT
C1	PC	267+56.04	49.31' LT
D1	PT	267+66.18	39.43' LT
E1	PC	267+66.39	39.43' LT
F1	PT	267+75.76	49' LT
G1	PC	267+94.46	49.48' LT
H1	PT	268+04.29	39.47' LT
I1	PC	266+74.48	34.79' RT
J1	PT	266+83.89	43.99' RT
K1	PC	267+15.21	47.54' RT
L1	PT	267+25.75	37.6' RT

APP.	DATE	No.	REVISIONS

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Texas Registered Engineering Firm F-148

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

HORIZONTAL GEOMETRY LAYOUT
STA 262+50 to END

SHEET 16 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 212 OF 718	

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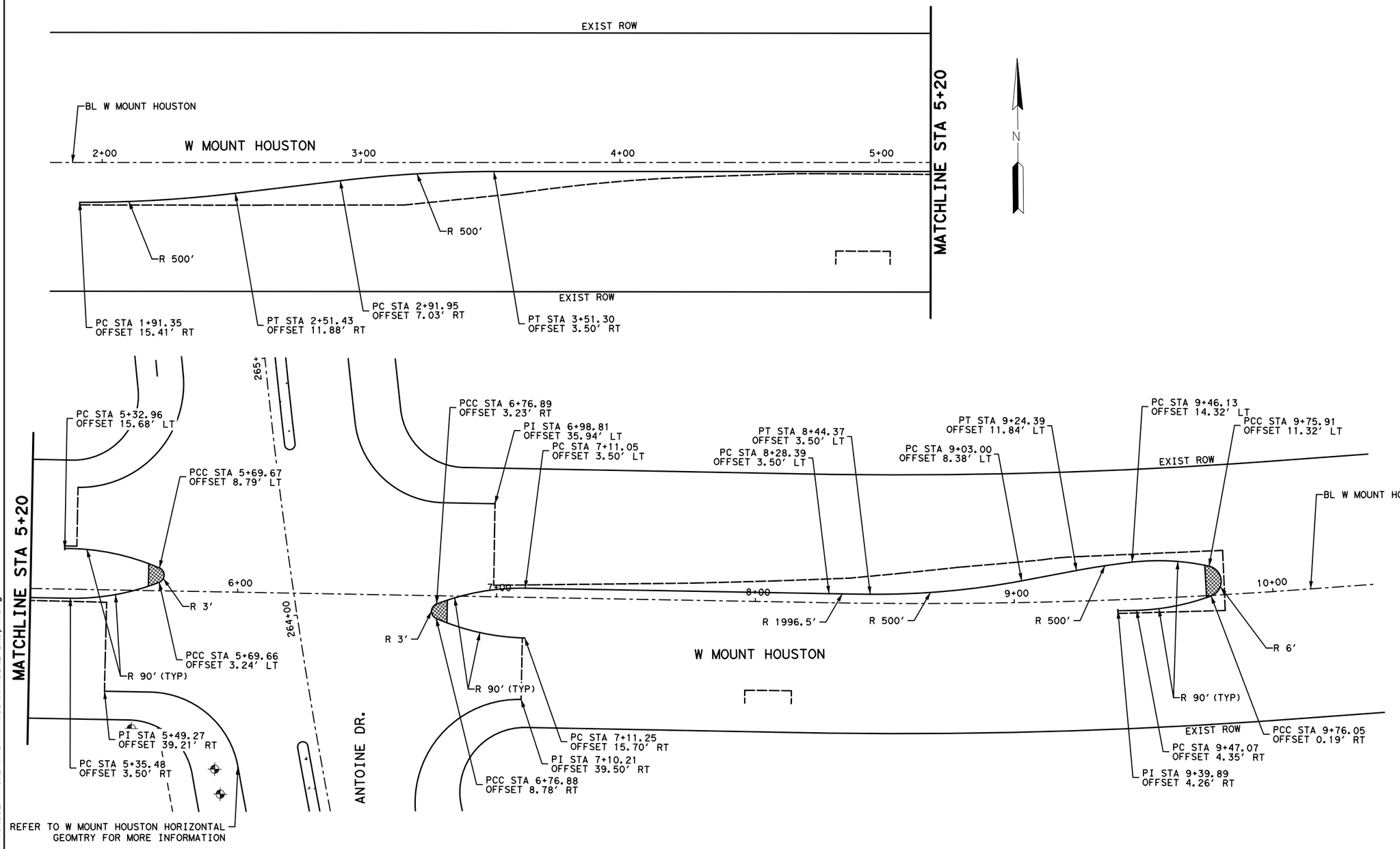

No.	DATE	REVISIONS	APP'D

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VOGLER & SPENCER ENGINEERING
777 North Eldridge Parkway, Suite 500
Houston, Texas 77079
713-783-0042
www.vs-eng.com

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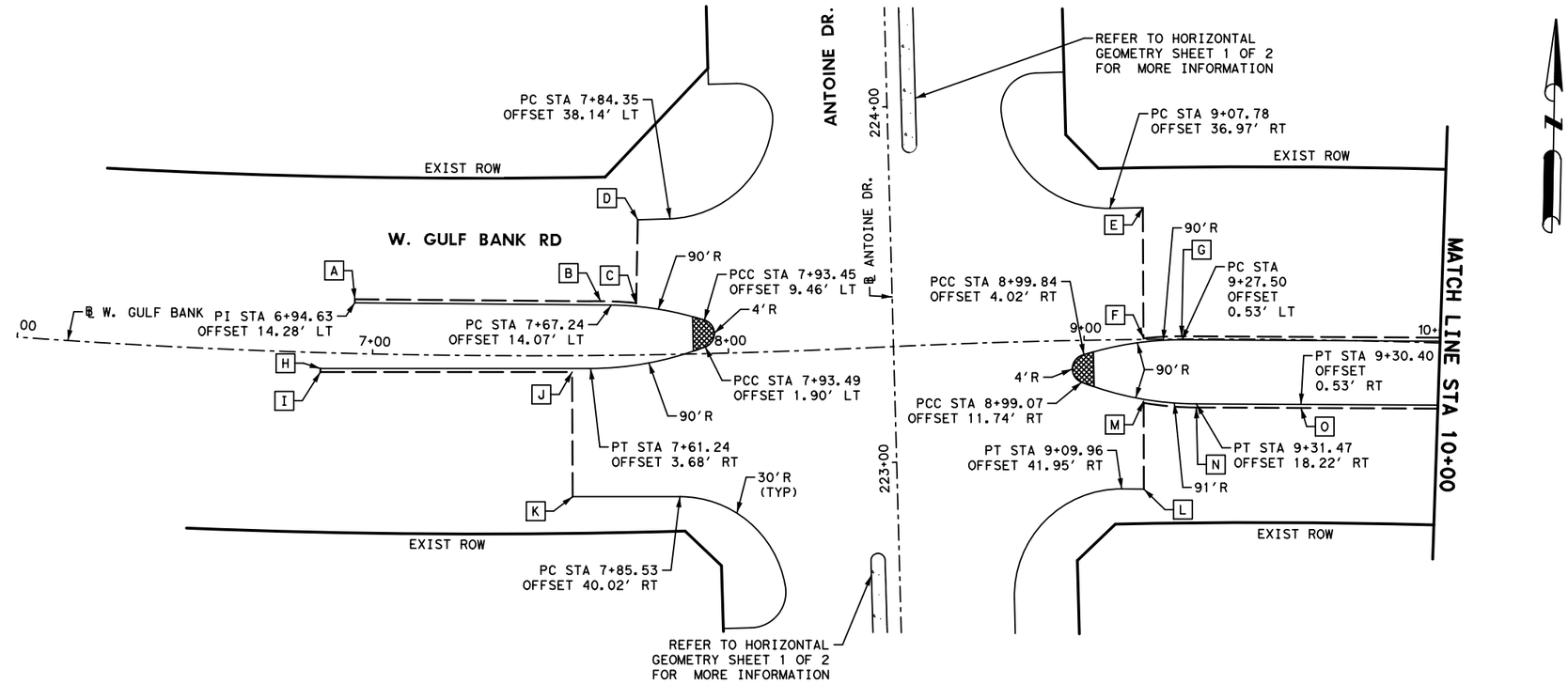
131531
10/21/2025
95% SUBMITTAL
VOGLER & SPENCER ENGINEERING
Texas Registered Engineering Firm F-148

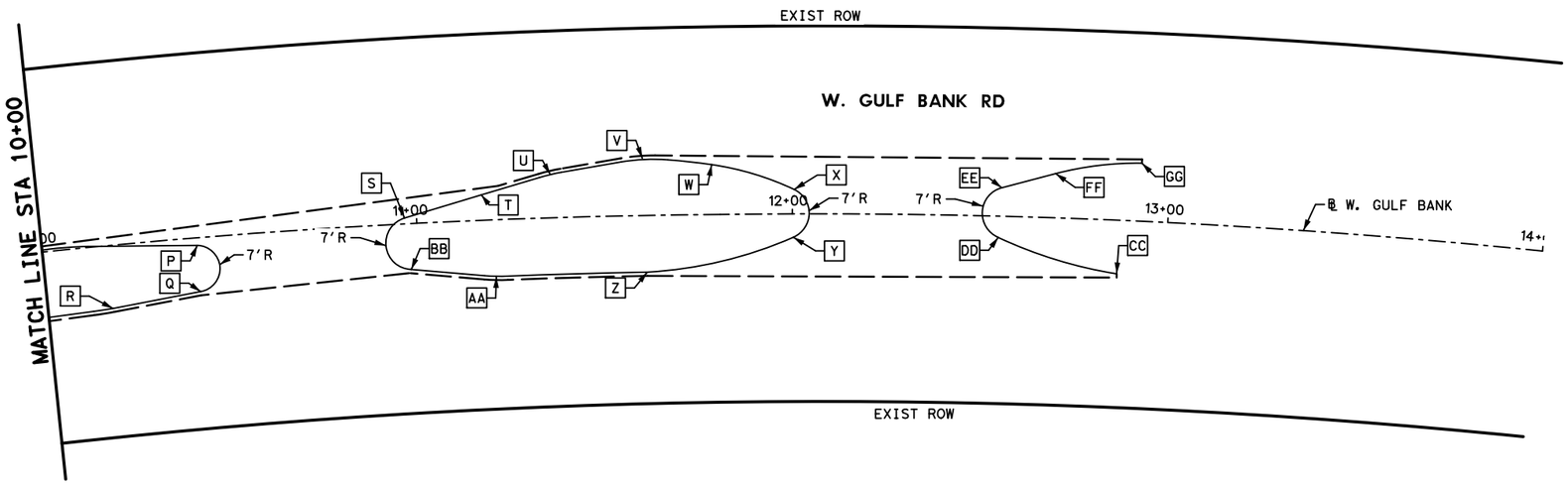
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
HORIZONTAL GEOMETRY LAYOUT
W MOUNT HOUSTON
STA 1+80 TO STA 10+00

SHEET 17 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 213 OF 718	





HORIZONTAL GEOMETRY DATA			
NO.	DESCRIP	STATION	OFFSET
A	PI	6+94.61	15.28'LT
B	PC	7+64.26	15.13'LT
C	PI	7+74.29	14.36'LT
D	PI	7+75.10	37.98'LT
E	PI	9+16.89	37.06'LT
F	PC	9+16.65	0.43'LT
G	PT	9+27.38	0.78'LT
H	PI	6+85.46	4.48'RT
I	PI	6+85.49	5.48'RT
J	PI	7+56.02	4.63'RT
K	PI	7+55.98	39.62'RT
L	PI	9+16.36	42.06'RT
M	PC	9+16.53	17.32'RT
N	PT	9+32.10	18.94'RT
O	PI	9+61.16	19.16'RT
P	PC	10+41.29	2.04'RT
Q	PT	10+41.17	14.38'RT
R	PI	10+12.54	17.24'RT
S	PT	10+96.84	1.55'LT
T	PI	11+17.52	6.75'LT
U	PI	11+35.91	11.56'LT
V	PI	11+60.39	15.23'LT
W	PC	11+78.66	13.29'LT
X	PCC	12+00.50	6.51'LT
Y	PCC	12+00.29	6.22'RT
Z	PRC	11+61.18	15.10'RT
AA	PT	10+97.79	12.20'RT
BB	PT	11+20.61	15.14'RT
CC	PT	12+86.96	14.26'RT
DD	PT	12+55.00	5.64'RT
EE	PT	12+55.59	7.60'RT
FF	PT	12+69.73	11.77'RT
GG	PT	12+92.41	15.45'RT

0' 20' 40'
SCALE IN FEET

APP:	DATE	REVISIONS
No.		

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

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125611
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95% SUBMITTAL
GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

W GULF BANK
HORIZONTAL GEOMETRY LAYOUT
STA 6+00 TO END PROJECT

SHEET 18 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 214 OF 718	

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TEMPORARY ASPHALT PAVING AND LANE TRANSITION

TIE INTO EXIST SIDEWALK STA 158+61.58, 91.70 LT

SAWCUT, INSTALL PAVING HEADER, PAVEMENT, AND CURBS MATCH EXIST PAVEMENT

VICTORY DR.

EXIST ROW

SAWCUT, INSTALL PAVING HEADER, PAVEMENT, AND CURBS MATCH EXIST PAVEMENT

PROP WATERLINE (SEE NOTE 2)

EXIST ROW

BEGIN PROJECT STA 158+13.81 MATCH EXIST

100' R.O.W.

2'R

159+00

160+00

161+00

ANTOINE DR.

36' F-F

2.0%

PROP STORM SEWER (SEE NOTE 1)

100' ROW

MATCH LINE STA 162+00

6' (TYP)

SAWCUT, INSTALL PAVING HEADER, PAVEMENT, AND CURBS MATCH EXIST PAVEMENT

TRANSITION 5' SIDEWALK TO 4' SIDEWALK

24' F-F

20'R (TYP)

EXIST ROW

PROP SAN SWR (SEE NOTE 2)

PROP 52' WIDE BOOST CONCRETE BUS STOP 8262. SEE METRO BUS STOP DETAILS FOR MORE INFORMATION

TIE INTO EXIST SIDEWALK STA 159+42.81 61.58, 72.50 RT

SAWCUT, INSTALL PAVING HEADER, PAVEMENT, AND CURBS MATCH EXIST PAVEMENT

SAWCUT, INSTALL PAVING HEADER, PAVEMENT, AND CURBS MATCH EXIST PAVEMENT

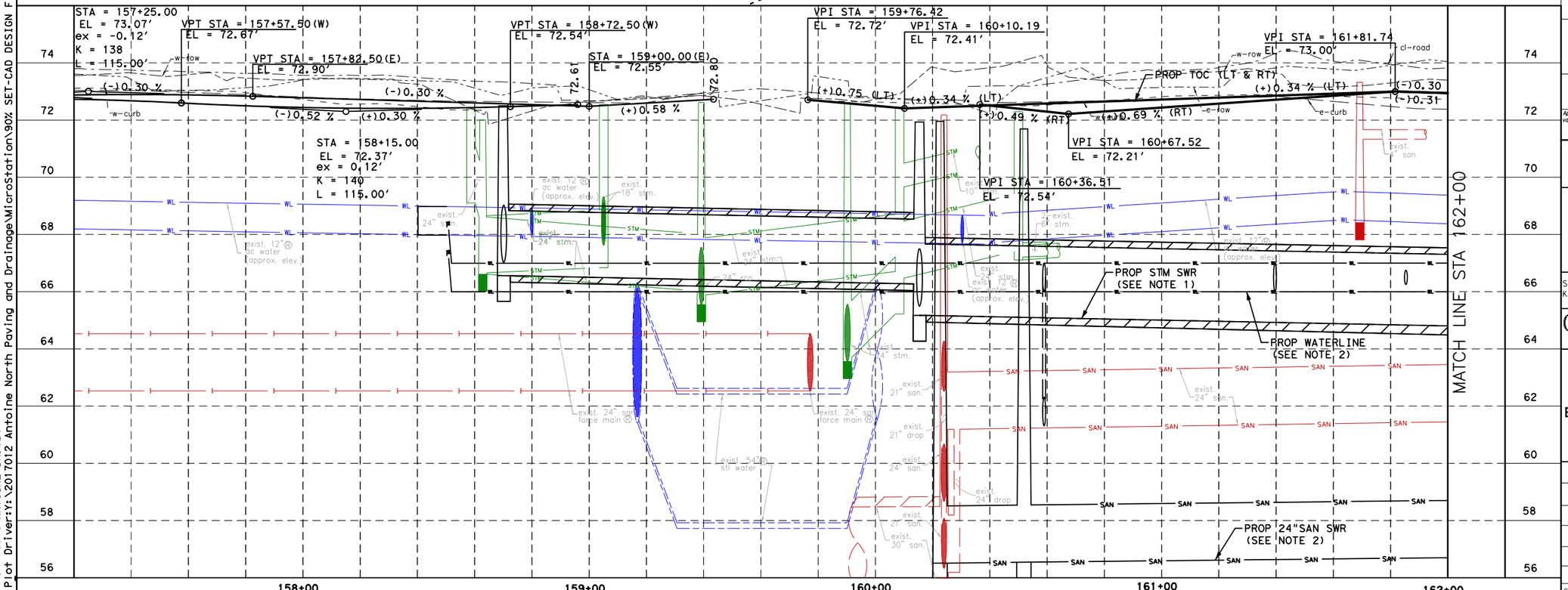
LEGEND

- PROP LANE
- EXIST ROW
- PROP 6" CURB
- (A) PROP 11" JRCP
- (B) PROP CONC DRIVEWAY
- (C) PROP 6' SIDEWALK
- (D) PROP WHEEL CHAIR RAMP
- (X) PROP DRIVEWAY No.

NOTE:
REFER TO SHEET 15 OF 36 FOR ROADWAY NOTES.

N

0' 20' 40'
SCALE IN FEET



NOTICE:
FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS SIGNATURE DOES NOT FULFILL YOUR OBLIGATION TO CALL 811

VERIFICATION OF PRIVATE UTILITY LINES

Date

CenterPoint Energy natural gas utilities shown. (Gas service lines are not shown). This signature not be used for conflict verification.

Signature valid for six months.

Date

CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY. (This signature verifies existing underground facilities - not to be used for conflict verification)

Signature valid for six months.

Approved for AT&T underground conduit facilities only. Signature Date valid for one year.

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FCM ENGINEERS, P.C.
ADDRESS:
3300 S. Gessner Rd.
TEL.No.: 713-706-4412

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ROADWAY PLAN AND PROFILE BEGIN PROJECT TO STA 162+00

SHEET 1 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 215 718	

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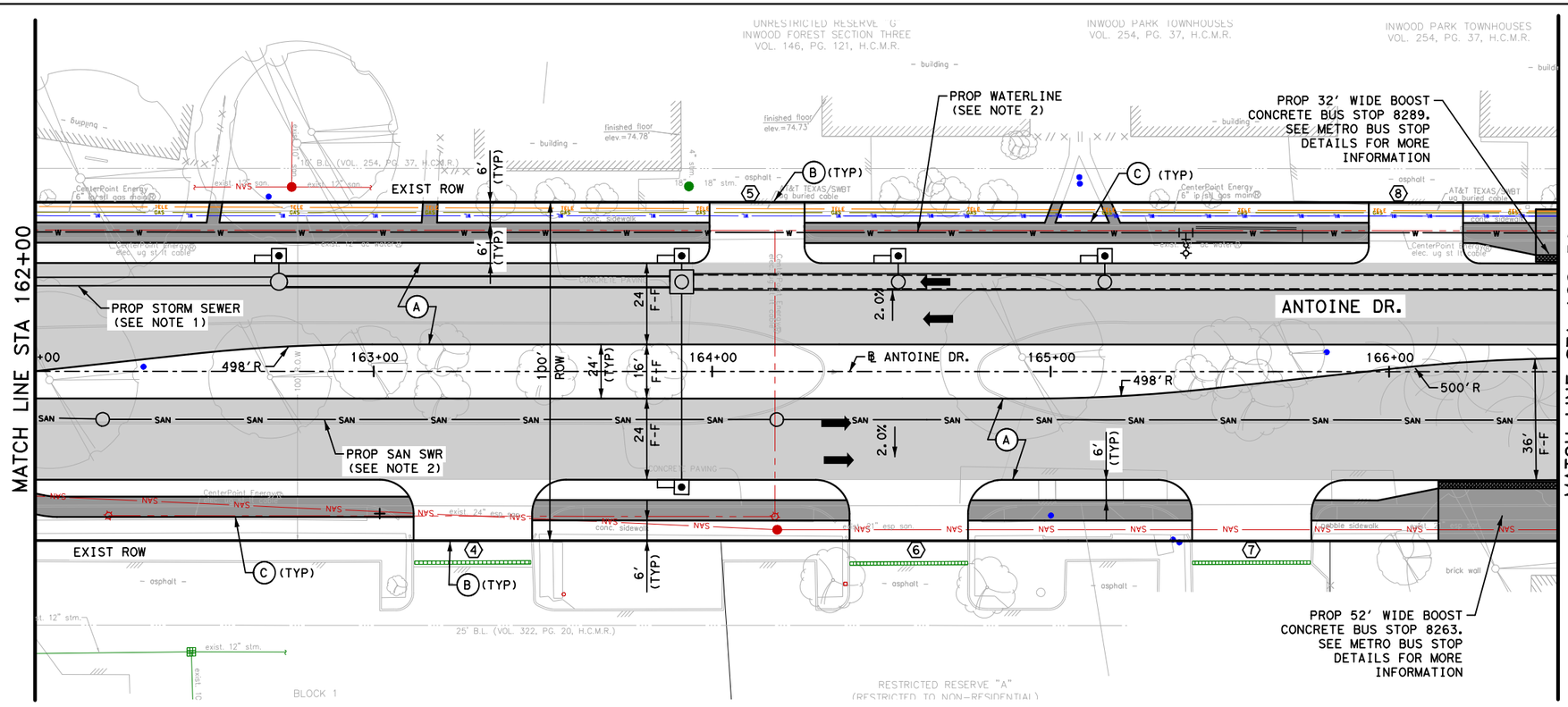

LEGEND

- PROP LANE
- EXIST ROW
- PROP 6" CURB
- (A) PROP 11" JRCP
- (B) PROP CONC DRIVEWAY
- (C) PROP 6' SIDEWALK
- (D) PROP WHEEL CHAIR RAMP
- (X) PROP DRIVEWAY No.

NOTE:
REFER TO SHEET 15 OF 36 FOR ROADWAY NOTES.

N

0' 20' 40'
SCALE IN FEET

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Date

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Texas Registered Engineering Firm F-13481

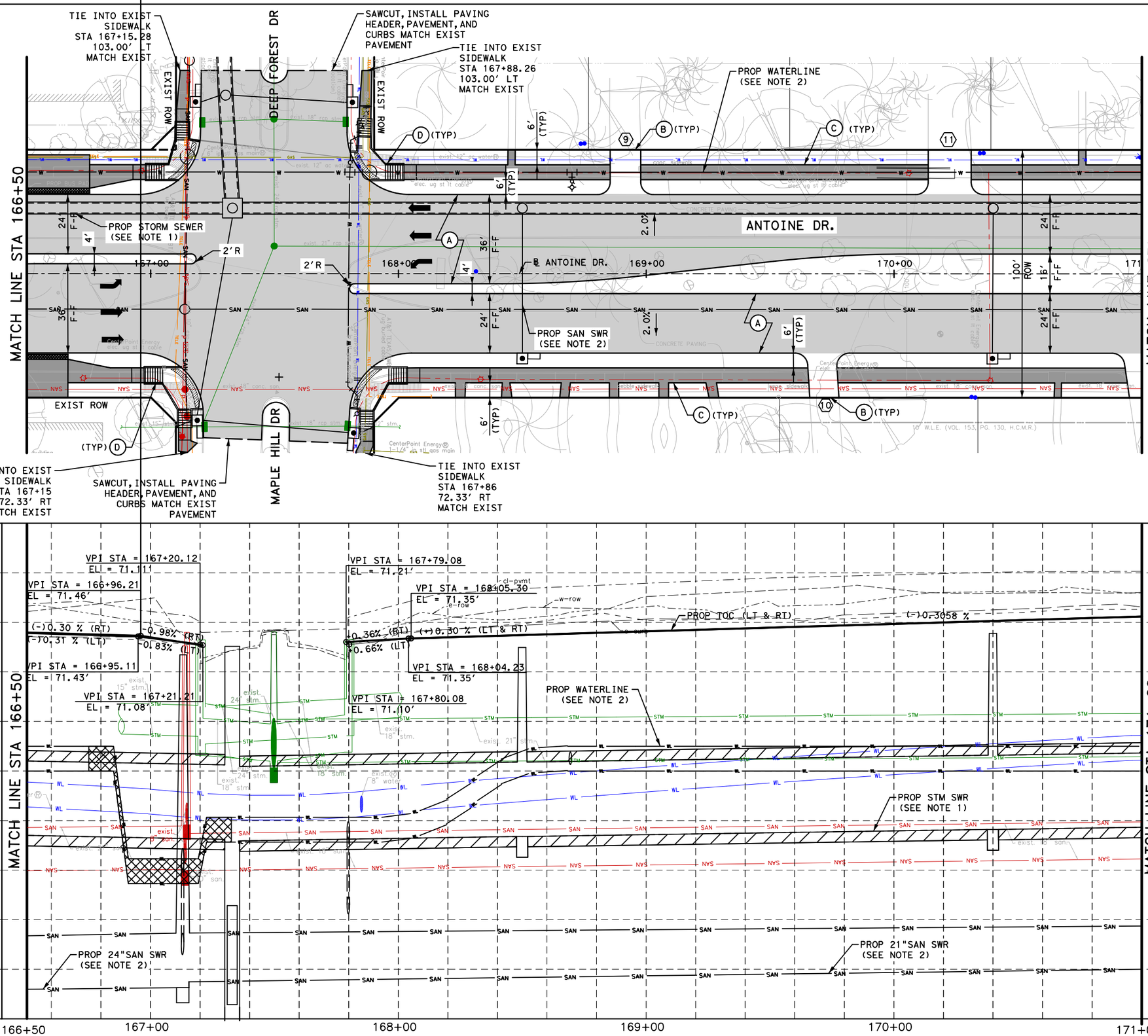
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ROADWAY PLAN AND PROFILE
STA 162+00 TO STA 166+50

SHEET 2 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 216 718	



LEGEND

- PROP LANE
- EXIST ROW
- PROP 6" CURB
- (A) PROP 11" JRCP
- (B) PROP CONC DRIVEWAY
- (C) PROP 6' SIDEWALK
- (D) PROP WHEEL CHAIR RAMP
- (X) PROP DRIVEWAY No.

NOTE:
REFER TO SHEET 15 OF 36 FOR ROADWAY NOTES.

N

0' 20' 40'
SCALE IN FEET

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ROADWAY PLAN AND PROFILE STA 166+50 TO STA 171+00

SHEET 3 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 217 718	

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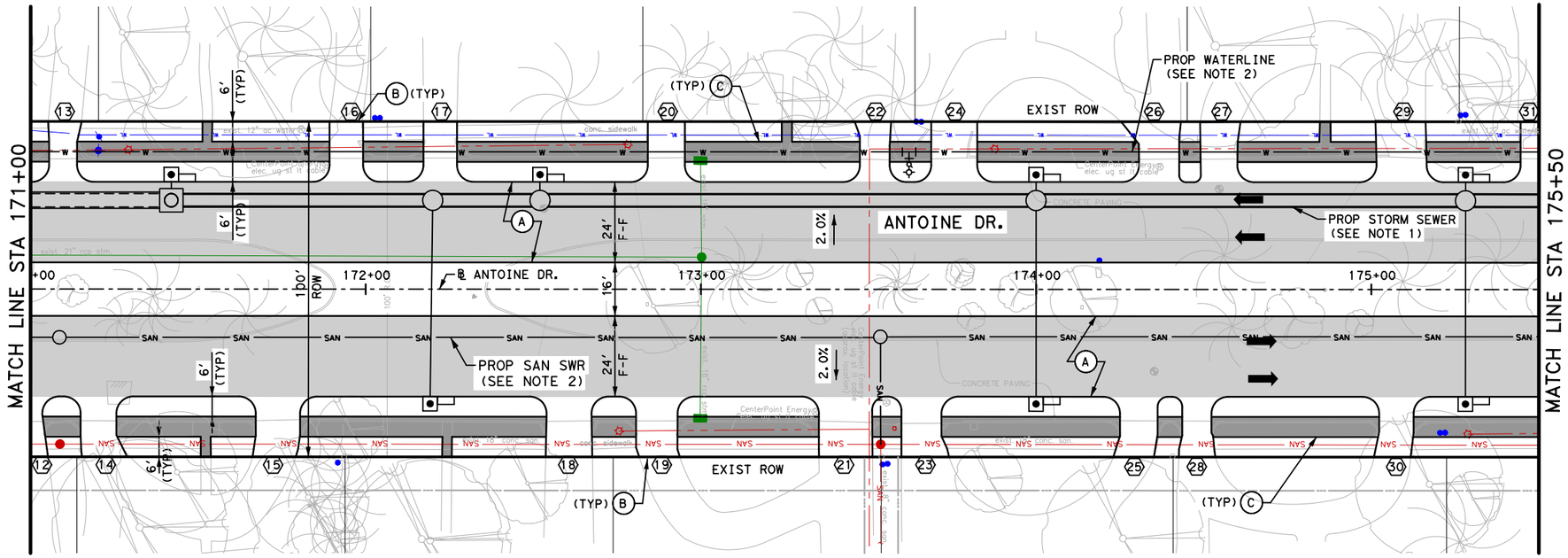

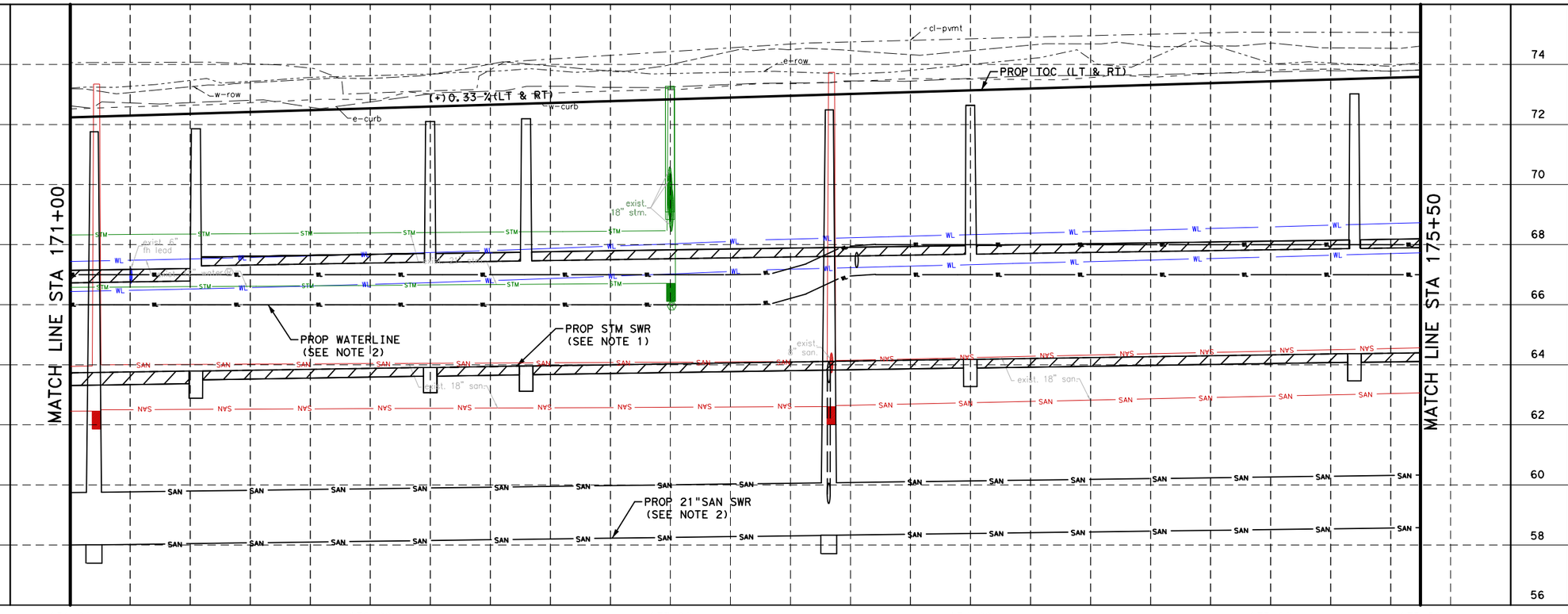

LEGEND

- PROP LANE
- EXIST ROW
- PROP 6" CURB
- (A) PROP 11" JRCP
- (B) PROP CONC DRIVEWAY
- (C) PROP 6' SIDEWALK
- (D) PROP WHEEL CHAIR RAMP
- (X) PROP DRIVEWAY No.

NOTE:
REFER TO SHEET 15 OF 36 FOR ROADWAY NOTES.

N

0' 20' 40'
SCALE IN FEET

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VERIFICATION OF PRIVATE UTILITY LINES

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Signature valid for six months.

Date

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95% SUBMITTAL
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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ROADWAY PLAN AND PROFILE STA 171+00 TO STA 175+50

SHEET 4 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 218 718	

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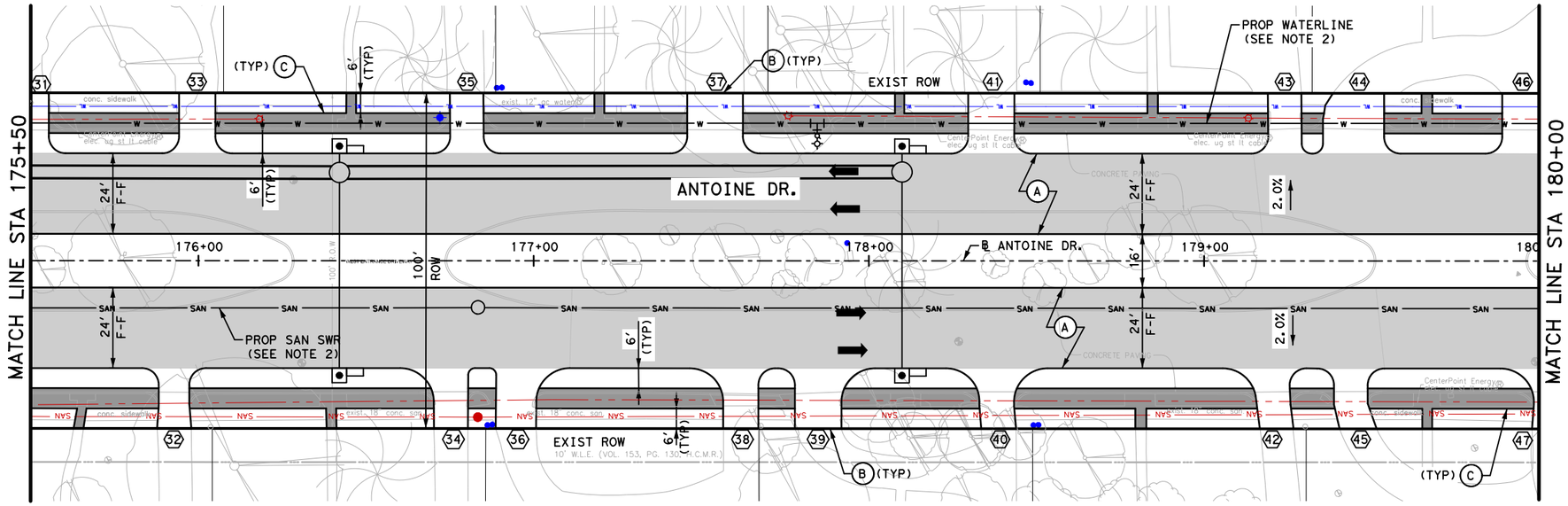

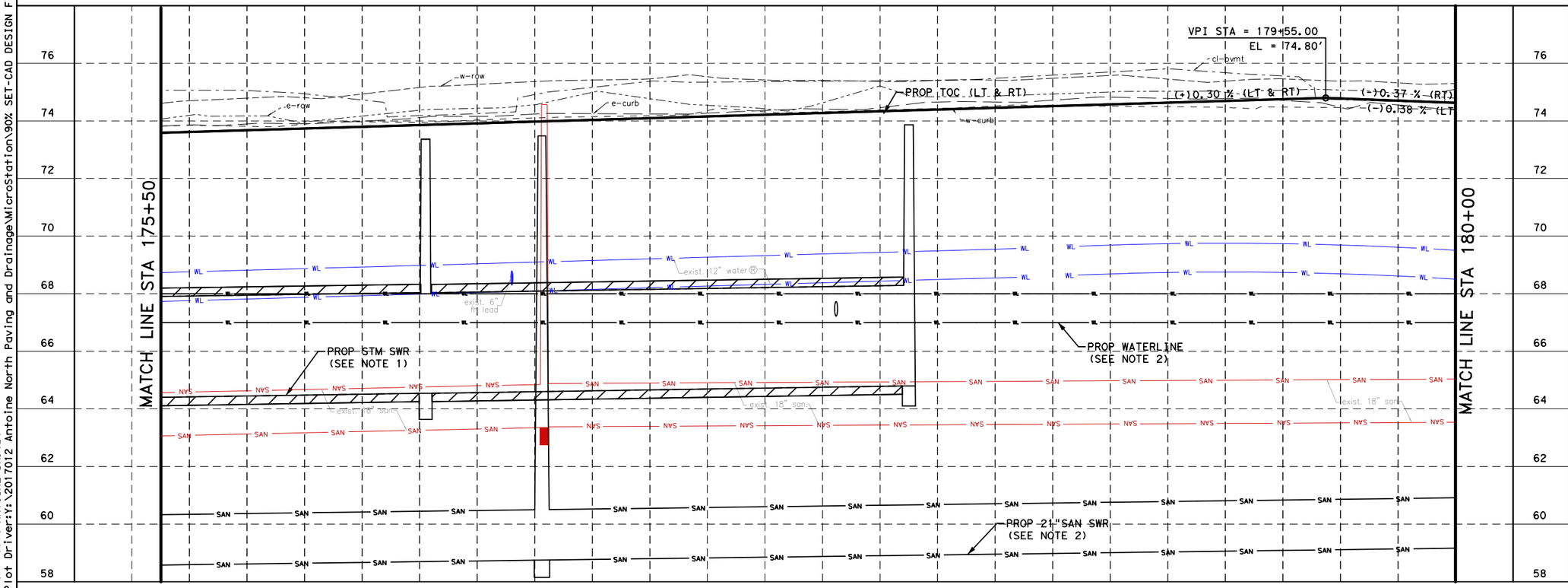

LEGEND

- PROP LANE
- EXIST ROW
- PROP 6" CURB
- (A) PROP 11" JRCP
- (B) PROP CONC DRIVEWAY
- (C) PROP 6' SIDEWALK
- (D) PROP WHEEL CHAIR RAMP
- (X) PROP DRIVEWAY No.

NOTE:
REFER TO SHEET 15 OF 36 FOR ROADWAY NOTES.

0' 20' 40'
SCALE IN FEET

NOTICE:
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VERIFICATION OF PRIVATE UTILITY LINES

Date

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Signature valid for six months.

Date

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Signature valid for six months.

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ROADWAY PLAN AND PROFILE STA 175+50 TO STA 180+00

SHEET 5 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 219 718	

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Plot Driver:Y:\2017012 Antoine North Paving and Drainage\MicroStation\90% SET-CAD DESIGN FILES\Resource Files\ANTOINE DR.pltcfg
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TIE INTO EXIST SIDEWALK
STA 182+67.89, 104.35' RT
MATCH EXIST

LONG CREEK LN.

PROP WATERLINE
(SEE NOTE 2)

TRANSITION 5' SIDEWALK
TO 4' SIDEWALK

EXIST ROW

SAWCUT, INSTALL PAVING
HEADER, PAVEMENT, AND CURBS.
MATCH EXIST PAVEMENT

MATCH LINE STA 180+00

ANTOINE DR.

PROP STORM SEWER
(SEE NOTE 1)

MATCH LINE STA 184+50

PROP SAN SWR
(SEE NOTE 2)

TRANSITION 5' SIDEWALK
TO 4' SIDEWALK

SAWCUT, INSTALL PAVING
HEADER, PAVEMENT, AND CURBS.
MATCH EXIST PAVEMENT

TIE INTO EXIST SIDEWALK
STA 183+36.97, 95' RT
MATCH EXIST

LEGEND

- PROP LANE
- EXIST ROW
- PROP 6" CURB
- (A) PROP 11" JRCP
- (B) PROP CONC DRIVEWAY
- (C) PROP 6' SIDEWALK
- (D) PROP WHEEL CHAIR RAMP
- (X) PROP DRIVEWAY No.

NOTE:
REFER TO SHEET 15 OF 36 FOR ROADWAY NOTES.

0' 20' 40'
SCALE IN FEET

NOTICE:
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VERIFICATION OF PRIVATE UTILITY LINES

Date

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Date

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Approved for AT&T underground conduit facilities only. Signature Date valid for one year.

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ADDRESS:
3300 S. Gessner Rd.
TEL.No.: 713-706-4412

SURVEYED BY:
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ROADWAY PLAN AND PROFILE
STA 180+00 TO STA 184+50

SHEET 6 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-OGEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 220 718	

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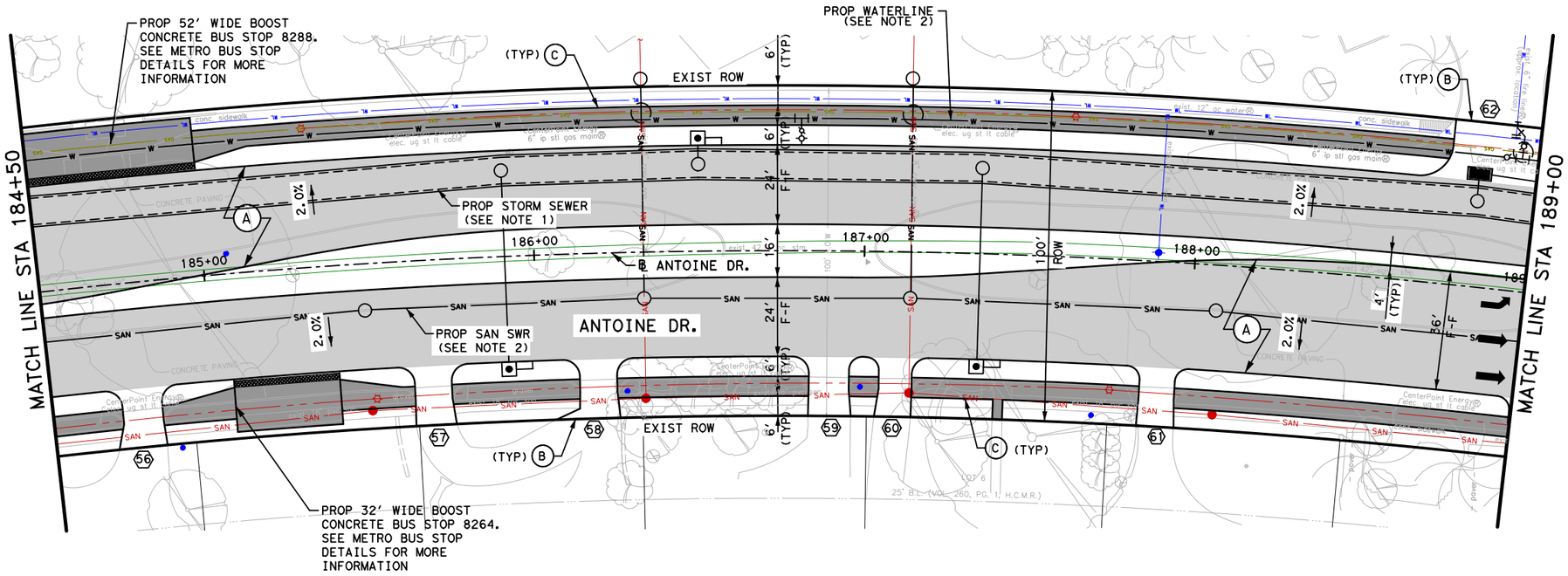
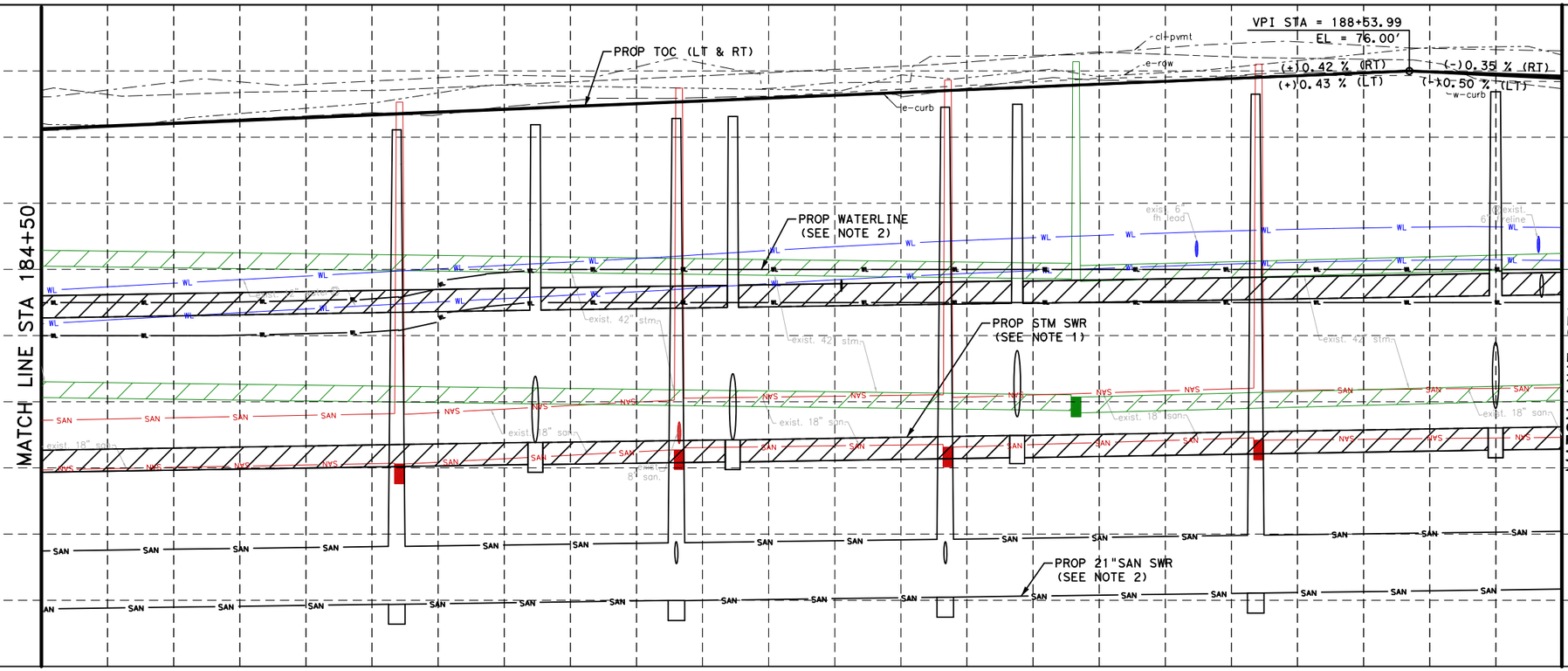


LEGEND

- PROP LANE
- EXIST ROW
- PROP 6" CURB
- (A) PROP 11" JRCP
- (B) PROP CONC DRIVEWAY
- (C) PROP 6' SIDEWALK
- (D) PROP WHEEL CHAIR RAMP
- (X) PROP DRIVEWAY No.

NOTE:
REFER TO SHEET 15 OF 36 FOR ROADWAY NOTES.

0' 20' 40'
SCALE IN FEET



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VERIFICATION OF PRIVATE UTILITY LINES

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Date

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FCM ENGINEERS, P.C.
ADDRESS:
3300 S. Gessner Rd.
TEL.No.: 713-706-4412

SURVEYED BY:
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108363
10/21/2025
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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ROADWAY PLAN AND PROFILE
STA 184+50 TO STA 189+00

SHEET 7 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 221 718	

Plotted on: 10/23/2025 2:18:07 PM GEO
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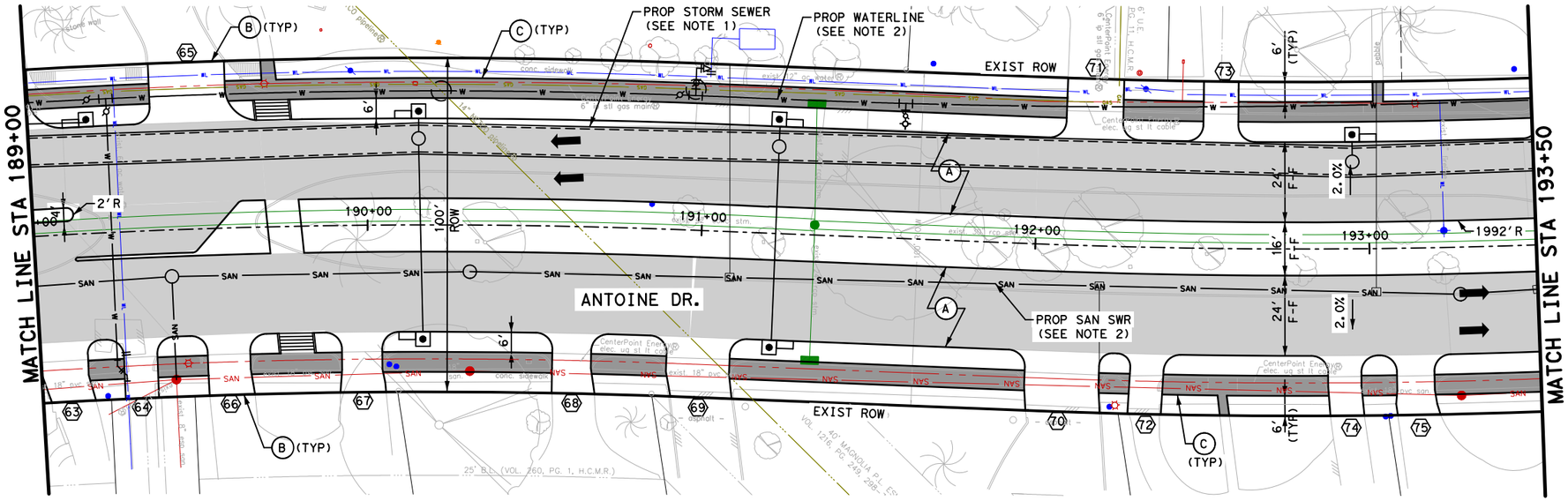

LEGEND

- PROP LANE
- EXIST ROW
- PROP 6" CURB
- (A) PROP 11" JRCP
- (B) PROP CONC DRIVEWAY
- (C) PROP 6' SIDEWALK
- (D) PROP WHEEL CHAIR RAMP
- (X) PROP DRIVEWAY No.

NOTE:
REFER TO SHEET 15 OF 36 FOR ROADWAY NOTES.

N

0' 20' 40'
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ROADWAY PLAN AND PROFILE STA 189+00 TO STA 193+50

SHEET 8 OF 36

WBS NUMBER	N-100030-0GEC-3
DRAWING SCALE	AS NOTED
CITY OF HOUSTON PM	ROWAIDAH AYOUB
SHEET NO. 222	718

FOR CITY OF HOUSTON USE ONLY

Plotted on: 10/23/2025 2:18:08 PM GEO
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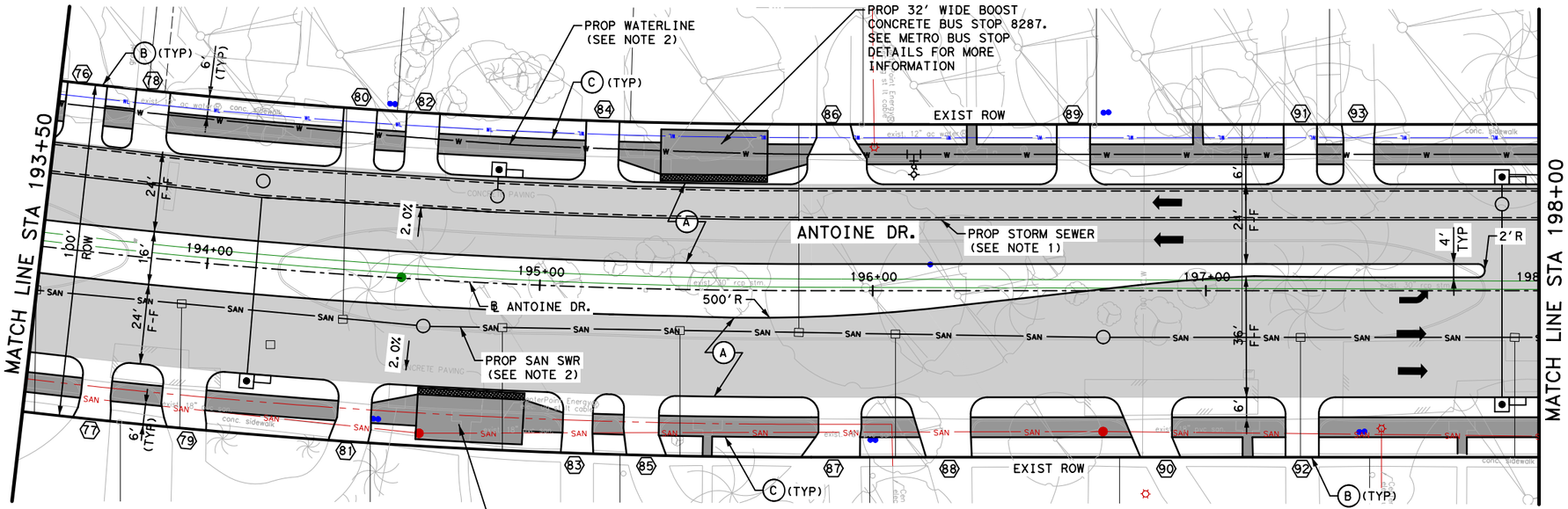
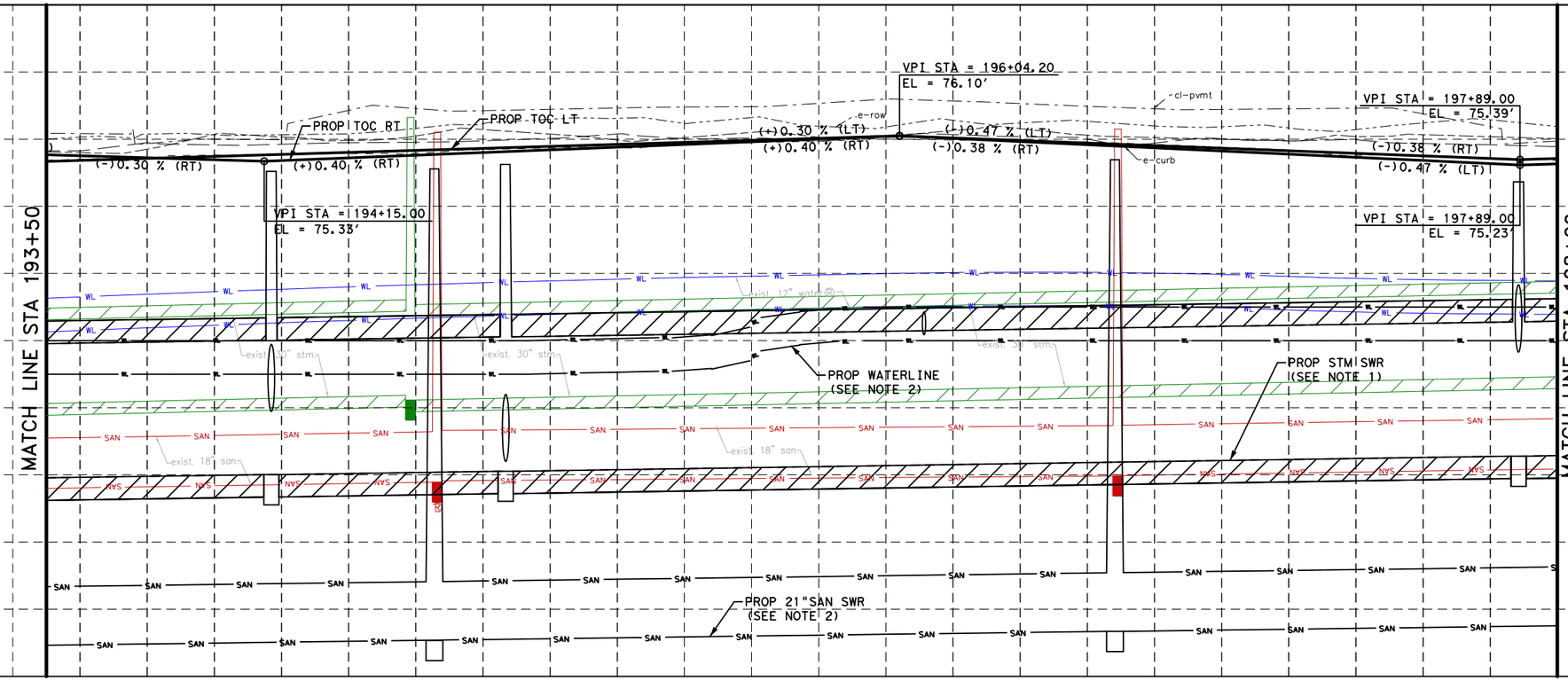


LEGEND

- PROP LANE
- EXIST ROW
- PROP 6" CURB
- (A) PROP 11" JRCP
- (B) PROP CONC DRIVEWAY
- (C) PROP 6' SIDEWALK
- (D) PROP WHEEL CHAIR RAMP
- (X) PROP DRIVEWAY No.

NOTE:
REFER TO SHEET 15 OF 36 FOR ROADWAY NOTES.

N
0' 20' 40'
SCALE IN FEET



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VERIFICATION OF PRIVATE UTILITY LINES

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ROADWAY PLAN AND PROFILE STA 193+50 TO STA 198+00

SHEET 9 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 223 718	

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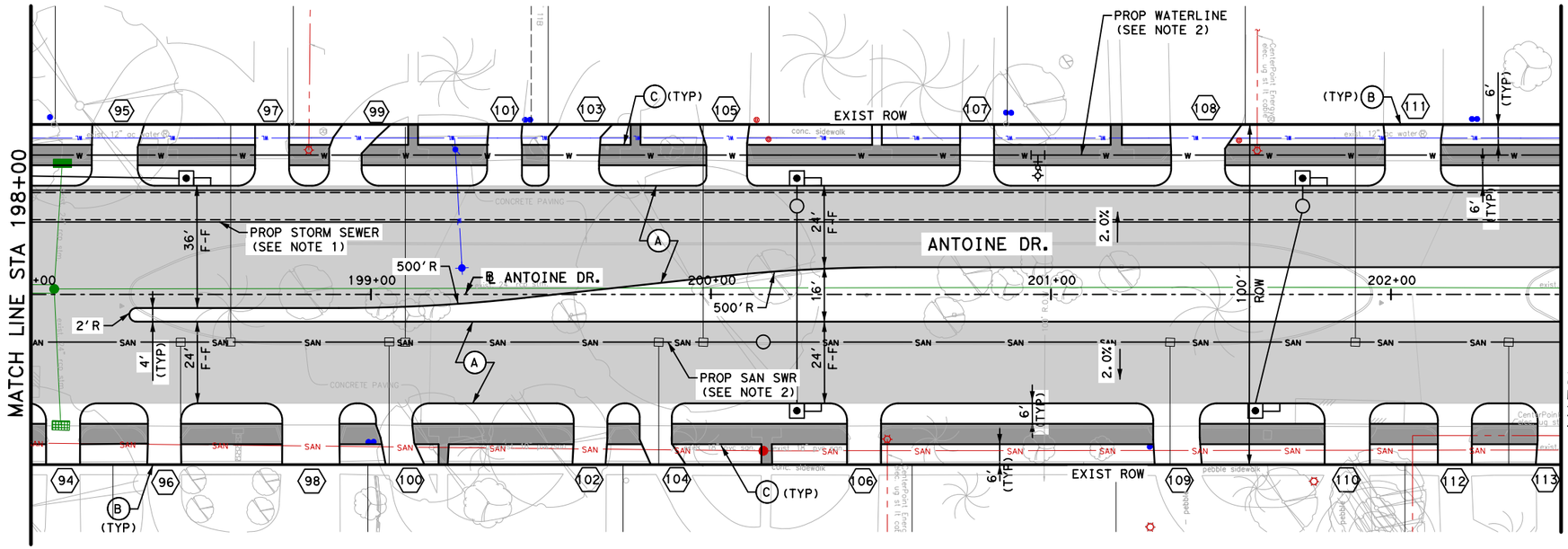

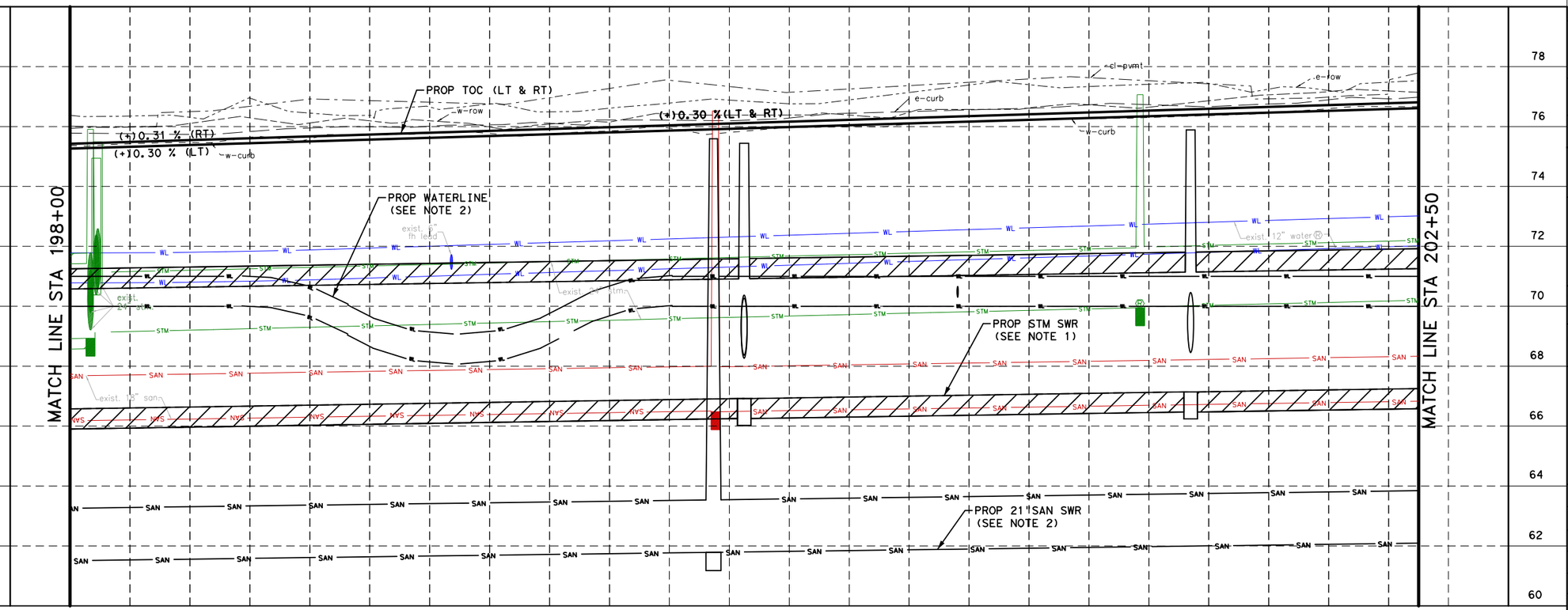

LEGEND

- PROP LANE
- EXIST ROW
- PROP 6" CURB
- (A) PROP 11" JRCP
- (B) PROP CONC DRIVEWAY
- (C) PROP 6' SIDEWALK
- (D) PROP WHEEL CHAIR RAMP
- (X) PROP DRIVEWAY No.

NOTE:
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0' 20' 40'
SCALE IN FEET

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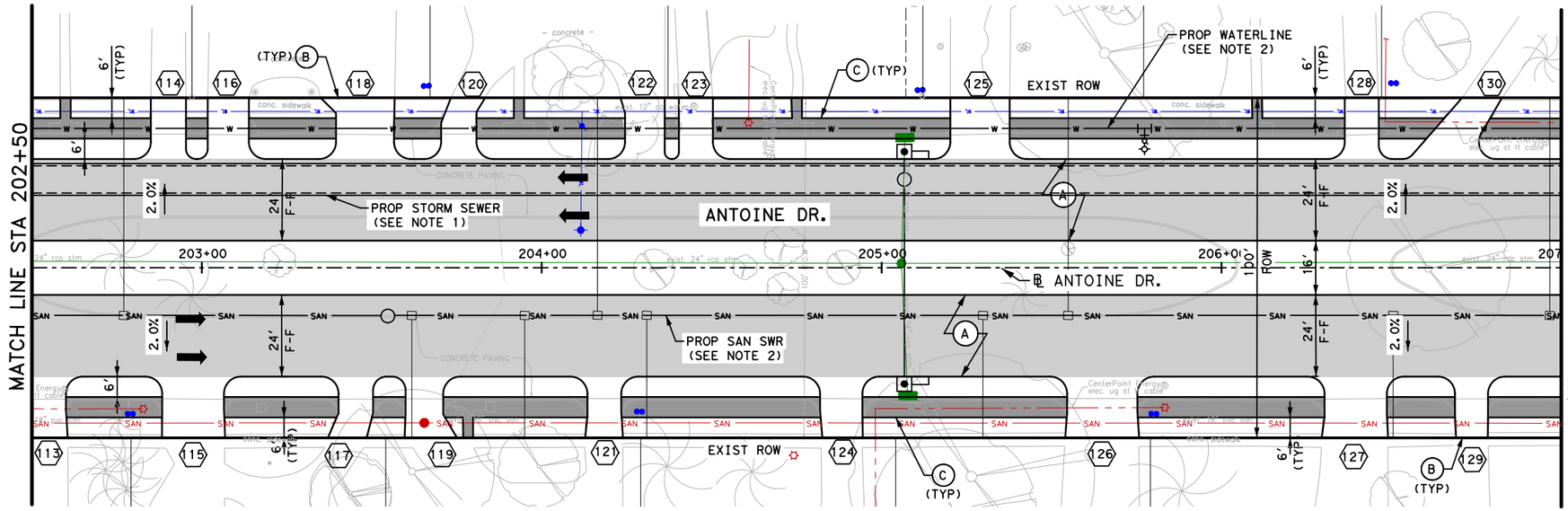
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

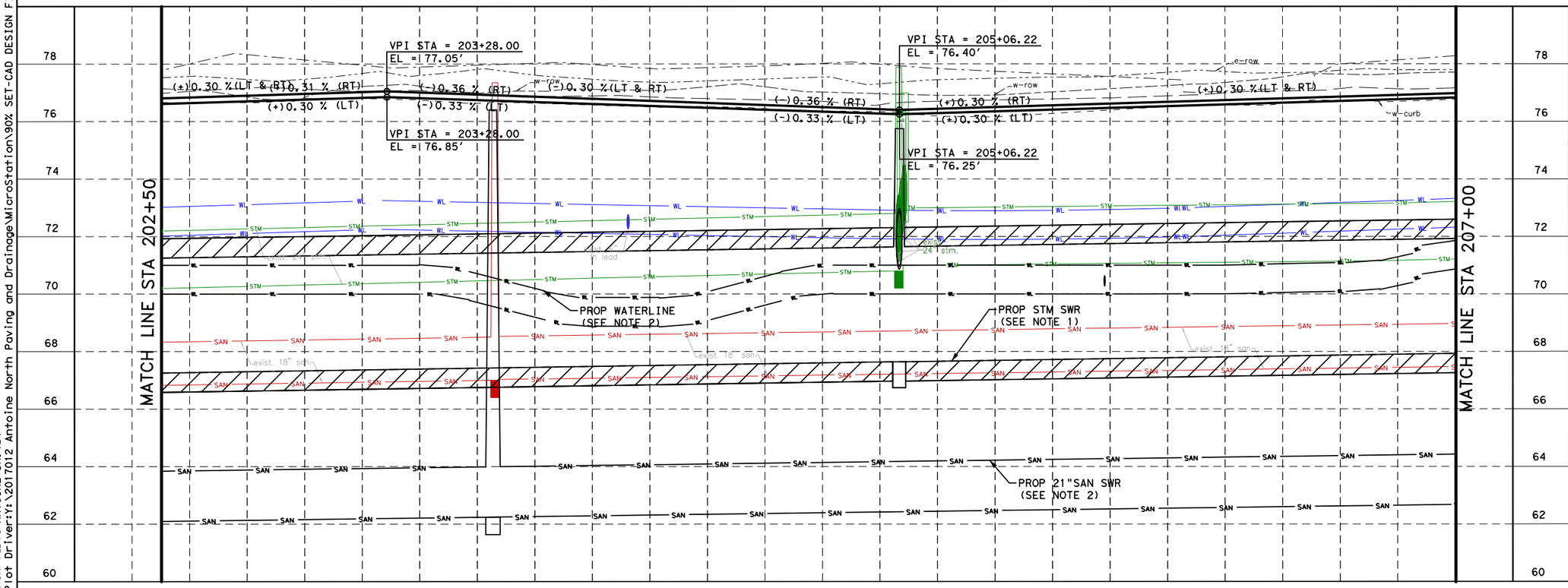
ANTOINE DRIVE

ROADWAY PLAN AND PROFILE STA 198+00 TO STA 202+50

SHEET 10 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-OGEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 224 718	





LEGEND

- PROP LANE
- EXIST ROW
- PROP 6" CURB
- (A) PROP 11" JRCP
- (B) PROP CONC DRIVEWAY
- (C) PROP 6' SIDEWALK
- (D) PROP WHEEL CHAIR RAMP
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NOTE:
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SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ROADWAY PLAN AND PROFILE STA 202+50 TO STA 207+00

SHEET 11 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 225 718	

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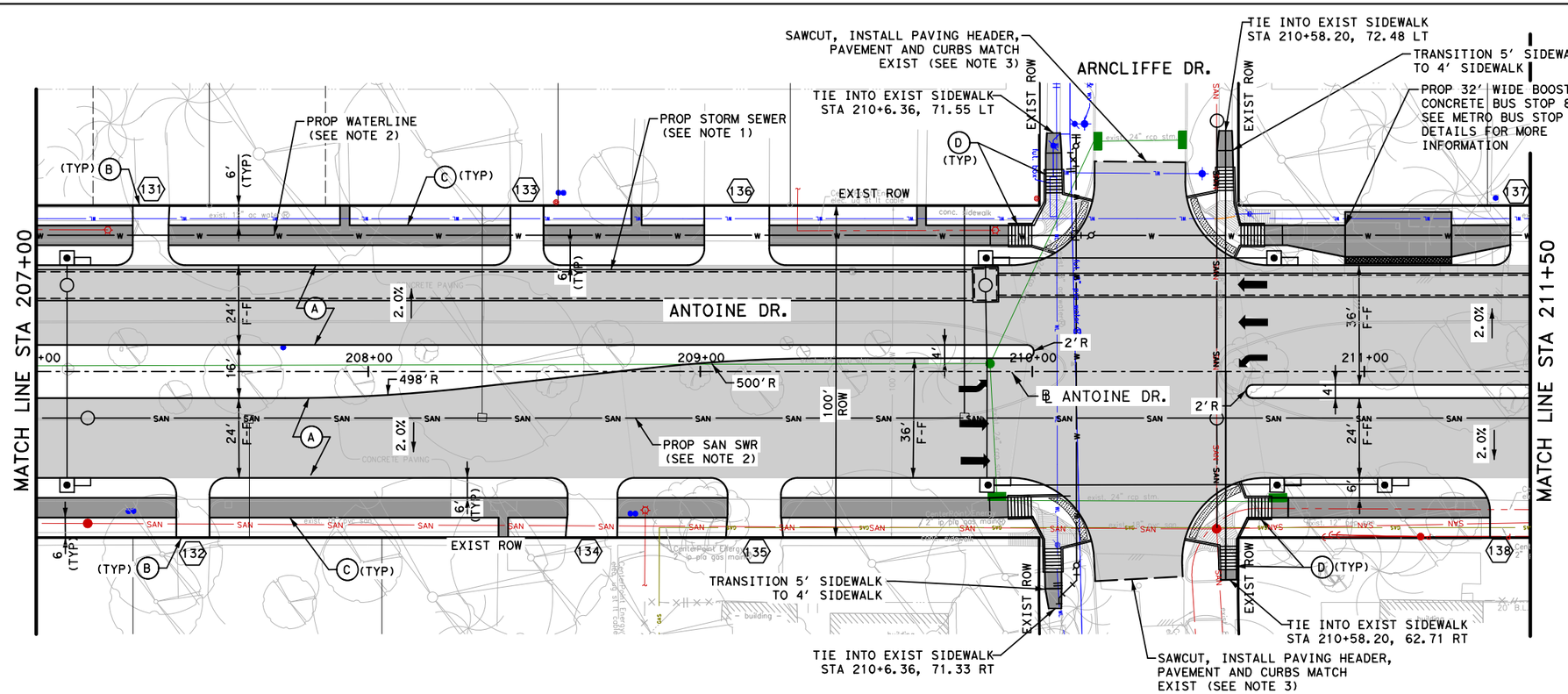

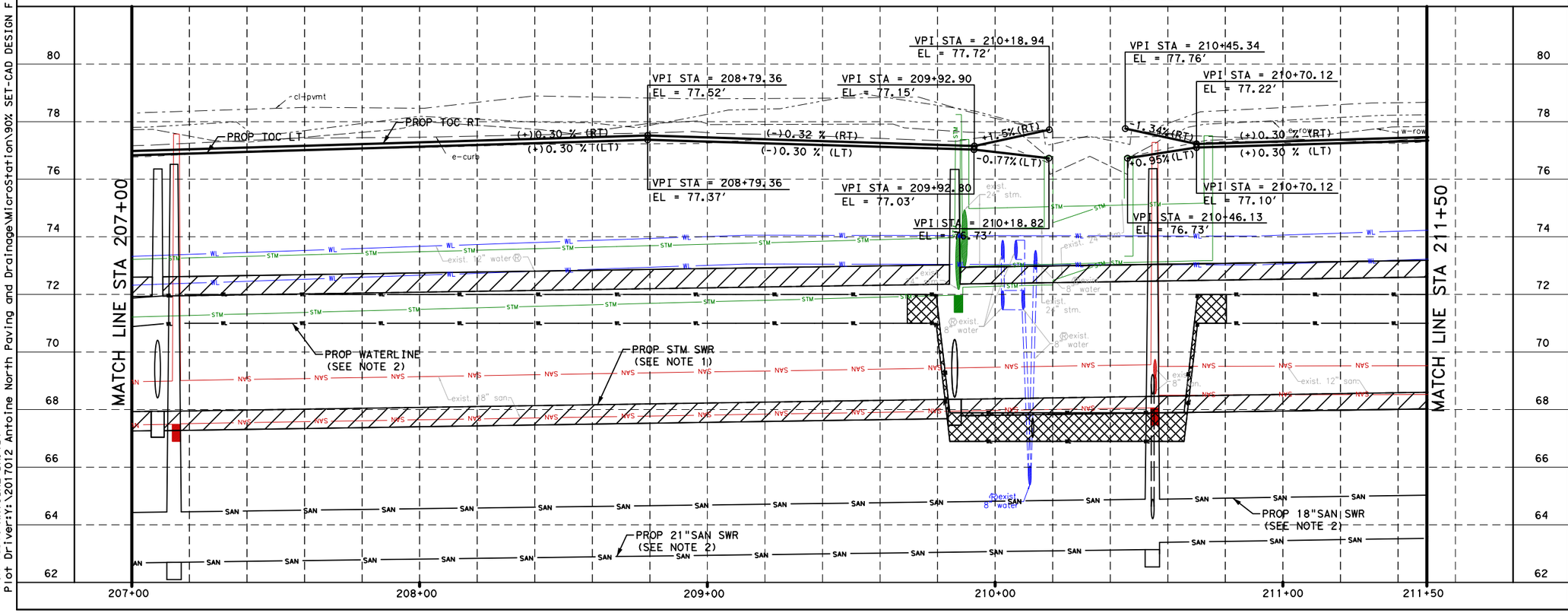

LEGEND

- PROP LANE
- EXIST ROW
- PROP 6" CURB
- (A) PROP 11" JRCP
- (B) PROP CONC DRIVEWAY
- (C) PROP 6' SIDEWALK
- (D) PROP WHEEL CHAIR RAMP
- (X) PROP DRIVEWAY No.

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0' 20' 40'
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ROADWAY PLAN AND PROFILE STA 207+00 TO STA 211+50

SHEET 12 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 226 718	

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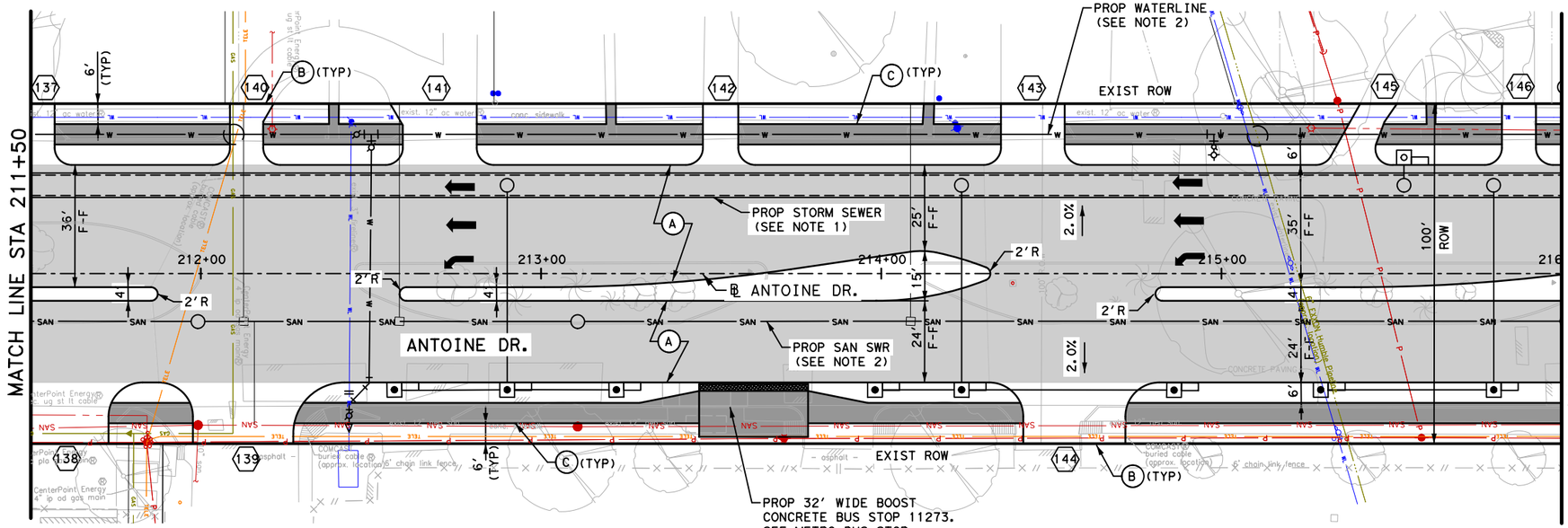

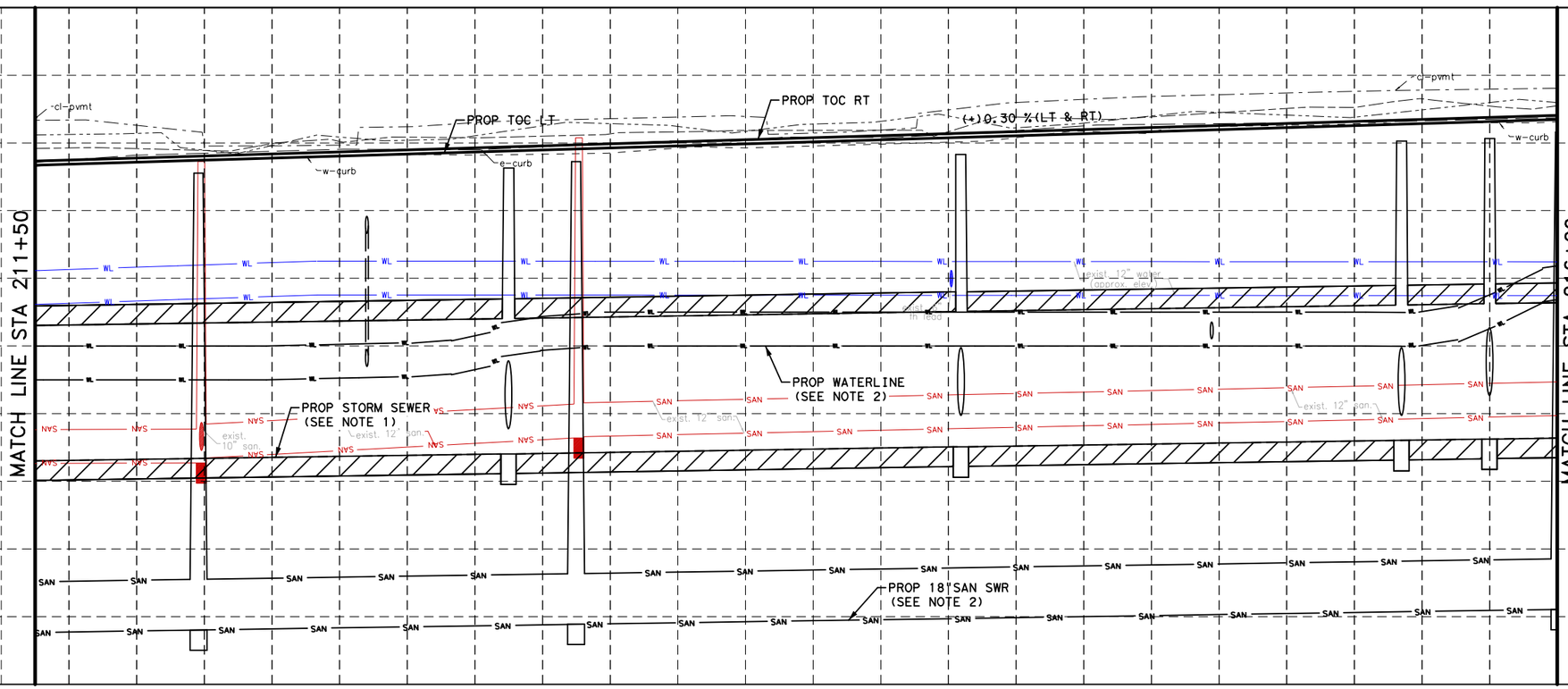

LEGEND

- PROP LANE
- EXIST ROW
- PROP 6" CURB
- (A) PROP 11" JRCP
- (B) PROP CONC DRIVEWAY
- (C) PROP 6' SIDEWALK
- (D) PROP WHEEL CHAIR RAMP
- (X) PROP DRIVEWAY No.

NOTE:
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0' 20' 40'
SCALE IN FEET

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Texas Registered Engineering Firm F-13481

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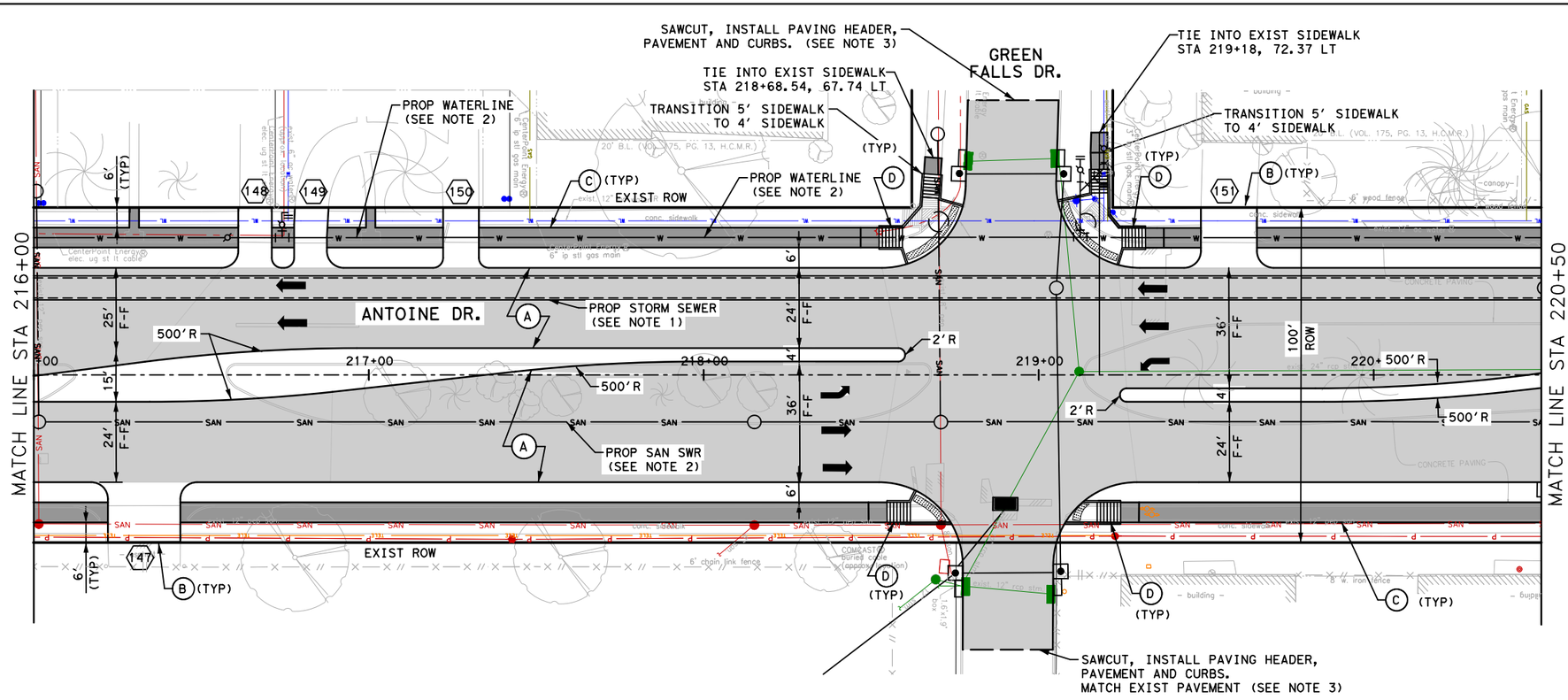
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ROADWAY PLAN AND PROFILE STA 211+50 TO STA 216+00

SHEET 13 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-OGEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 227 718	



LEGEND

- PROP LANE
- EXIST ROW
- PROP 6" CURB
- (A) PROP 11" JRCP
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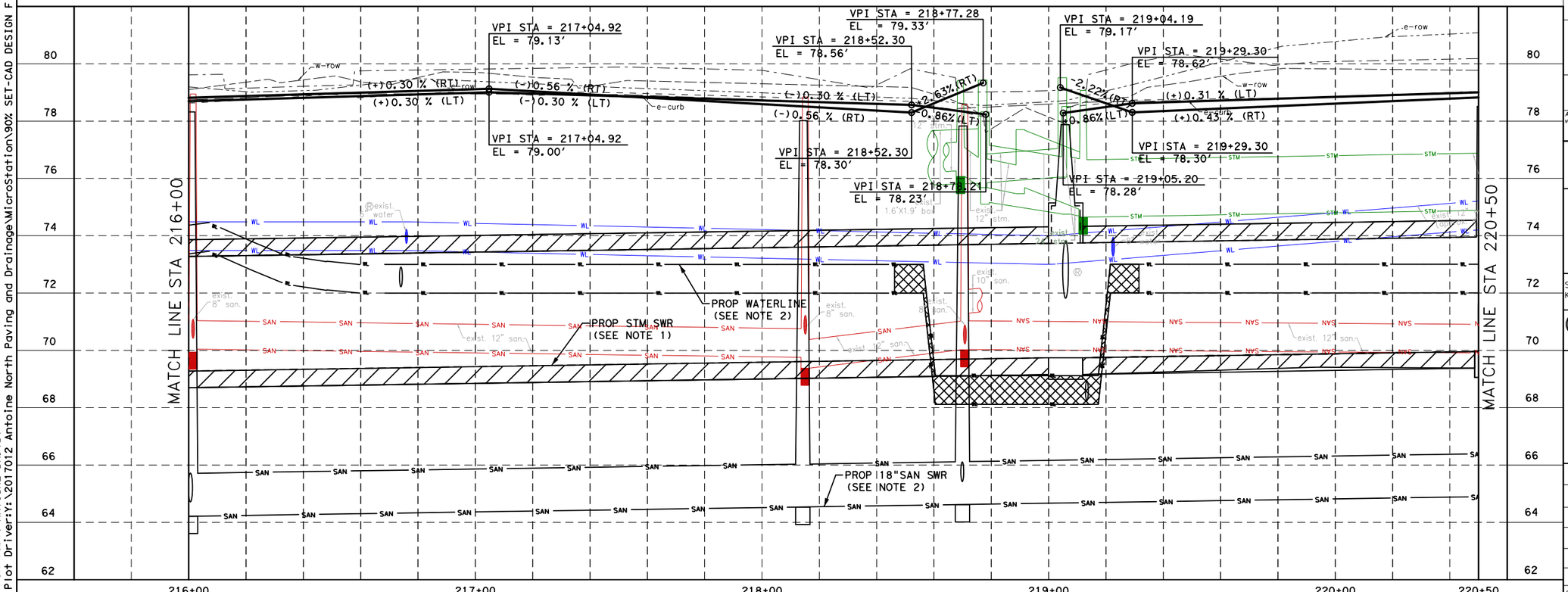
0' 20' 40'
SCALE IN FEET



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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ROADWAY PLAN AND PROFILE STA 216+00 TO STA 220+50

SHEET 14 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 228 718	

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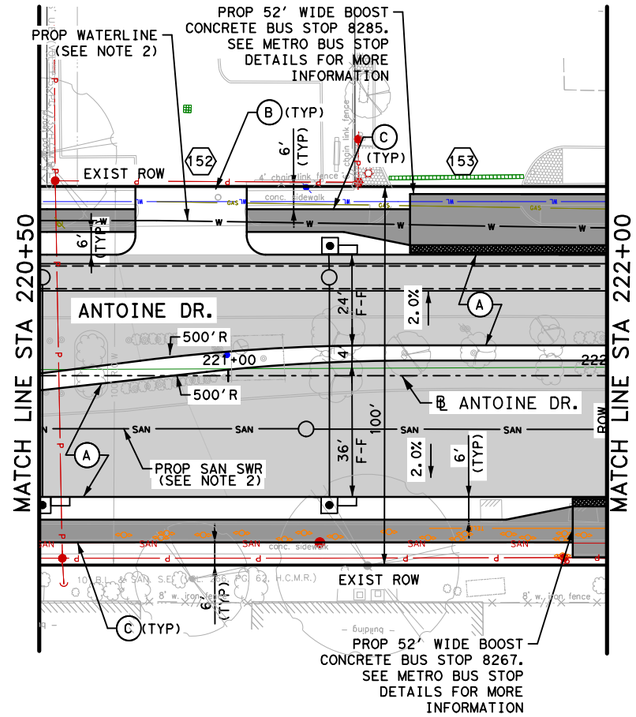
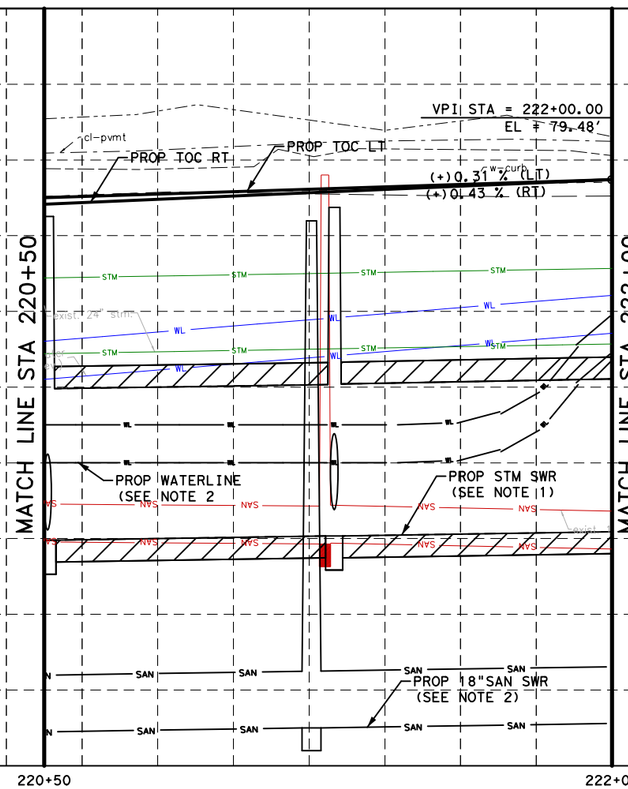


LEGEND

- PROP LANE
- EXIST ROW
- PROP 6" CURB
- (A) PROP 11" JRCP
- (B) PROP CONC DRIVEWAY
- (C) PROP 6' SIDEWALK
- (D) PROP WHEEL CHAIR RAMP
- (X) PROP DRIVEWAY No.

NOTES:

1. REFER TO DRAINAGE PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
2. REFER TO WATER & SANITARY SEWER PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
3. REFER TO HORIZONTAL GEOMETRY SHEETS FOR ADDITIONAL INFORMATION.
4. REFER TO SIGNING AND STRIPING PLANS FOR ADDITIONAL INFORMATION.
5. ALL DIMENSIONS ARE TO FACE OF CURB OR CENTER OF SIDEWALK UNLESS OTHERWISE NOTED.
6. RELOCATE IN CONFLICT MAIL BOXES AS NEEDED. REFER TO MAILBOX DETAIL FOR MORE INFORMATION.



0' 20' 40'
SCALE IN FEET

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VERIFICATION OF PRIVATE UTILITY LINES

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Signature valid for six months.

Date

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Approved for AT&T underground conduit facilities only. Signature Date
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FCM ENGINEERS, P.C.
ADDRESS:
3300 S. Gessner Rd.
TEL.No.: 713-706-4412

SURVEYED BY:
KUO & ASSOCIATES, INC.

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FRANK C. MBACHU
108363
10/21/2025
95% SUBMITTAL
FCM ENGINEERING
Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ROADWAY PLAN AND PROFILE STA 220+50 TO END

SHEET 15 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 229 718	

Plotted on: 10/27/2025 2:59:55 PM michael.guthrie
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Pen Table: ANTOINE DR.tbl
Plot Driver:

SAWCUT, INSTALL PAVING HEADER, PAVEMENT AND CURBS. MATCH EXIST PAVEMENT (SEE NOTE 1)

TIE INTO EXIST SIDEWALK STA 222+86.25, 82.86 LT MATCH EXIST

TRANSITION 5' SIDEWALK TO 4' SIDEWALK

REFER TO W GULF BANK P&P FOR MORE INFORMATION

SAWCUT, INSTALL PAVING HEADER, PAVEMENT AND CURBS. MATCH EXIST PAVEMENT (SEE NOTE 1)

TIE INTO EXIST SIDEWALK STA 223+79.60, 75.14 LT MATCH EXIST

PROP WATERLINE (SEE NOTE 3)

HARRIS COUNTY LIMITS

W. GULF BANK RD

ANTOINE DR.

℄ ANTOINE DR. STA 8+46.41
℄ W GULF BANK RD. STA 223+32.52
℄ ANTOINE DR.

MATCH LINE STA 222+00

MATCH LINE STA 225+26

PROP STORM SEWER (SEE NOTE 2)

PROP SAN SWR (SEE NOTE 3)

SAWCUT, INSTALL PAVING HEADER, PAVEMENT AND CURBS. MATCH EXIST PAVEMENT (SEE NOTE 1)

EXIST ROW

100' ROW

PROP 52' WIDE BOOST CONC BUS STOP SEE METRO BUS STOP DETAILS FOR MORE INFORMATION

TRANSITION 4' SIDEWALK TO 3.5' SIDEWALK

TIE INTO EXIST SIDEWALK STA 222+83.47, 84.88 RT MATCH EXIST

TIE INTO EXIST SIDEWALK STA 223+76.16, 76.49 RT MATCH EXIST

LEGEND

- PROP LANE
- EXIST LANE
- EXIST ROW
- PROP 6" CURB
- (A) PROP 11" JRCP
- (B) PROP 7" CONC DRIVEWAY
- (C) PROP 6' CONC SDWK
- (D) PROP WHEEL CHAIR RAMP
- (E) PROP RETAINING WALL
- (F) ADJUST TO GRADE
- (G) ADJUST TO GRADE/ RELOCATE(BY OTHERS)
- (H) PROP 6' CONC MEDIAN NOSE
- (I) RELOCATE UTILITY
- (X) PROP DRIVEWAY No.

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

NOTES:

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2. REFER TO DRAINAGE PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
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4. REFER TO SIGN AND PAVEMENT MARKING SHEETS FOR ADDITIONAL INFORMATION.
5. ALL DIMENSIONS ARE TO FACE OF CURB OR CENTER OF SIDEWALK UNLESS OTHERWISE NOTED.

VPI STA 222+90.75 (W)
EL = 79.85
VPI STA 222+61.11 (E,W)
EL = 79.55
+ 0.31% (LT & RT)
+ 0.69% (RT)
+ 0.72% (LT)
PROP TOC
VPI STA 222+93.03 (E)
EL = 79.88
VPI STA 223+69.44 (E)
EL = 80.12
VPI STA 224+00.26 (E,W)
EL = 79.69
- 0.96% (RT)
+ 0.69% (LT & RT)
- 0.25% (LT)
PROP TOC
VPI STA 223+69.44 (W)
EL = 79.80
PROP WATER LINE (SEE NOTE 3)
PROP STM SWR (SEE NOTE 2)

222+00 223+00 224+00 225+00 225+26

86 84 82 80 78 76 74 72 70 68

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY, #400
HOUSTON, TX 77079

SURVEYED BY:
KUO & ASSOCIATES, INC.

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GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

W. GULF BANK
ROADWAY PLAN & PROFILE
STA 222+00 TO STA 225+26

SHEET 16 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 230 OF 718	

APP. | DATE | No. | REVISIONS

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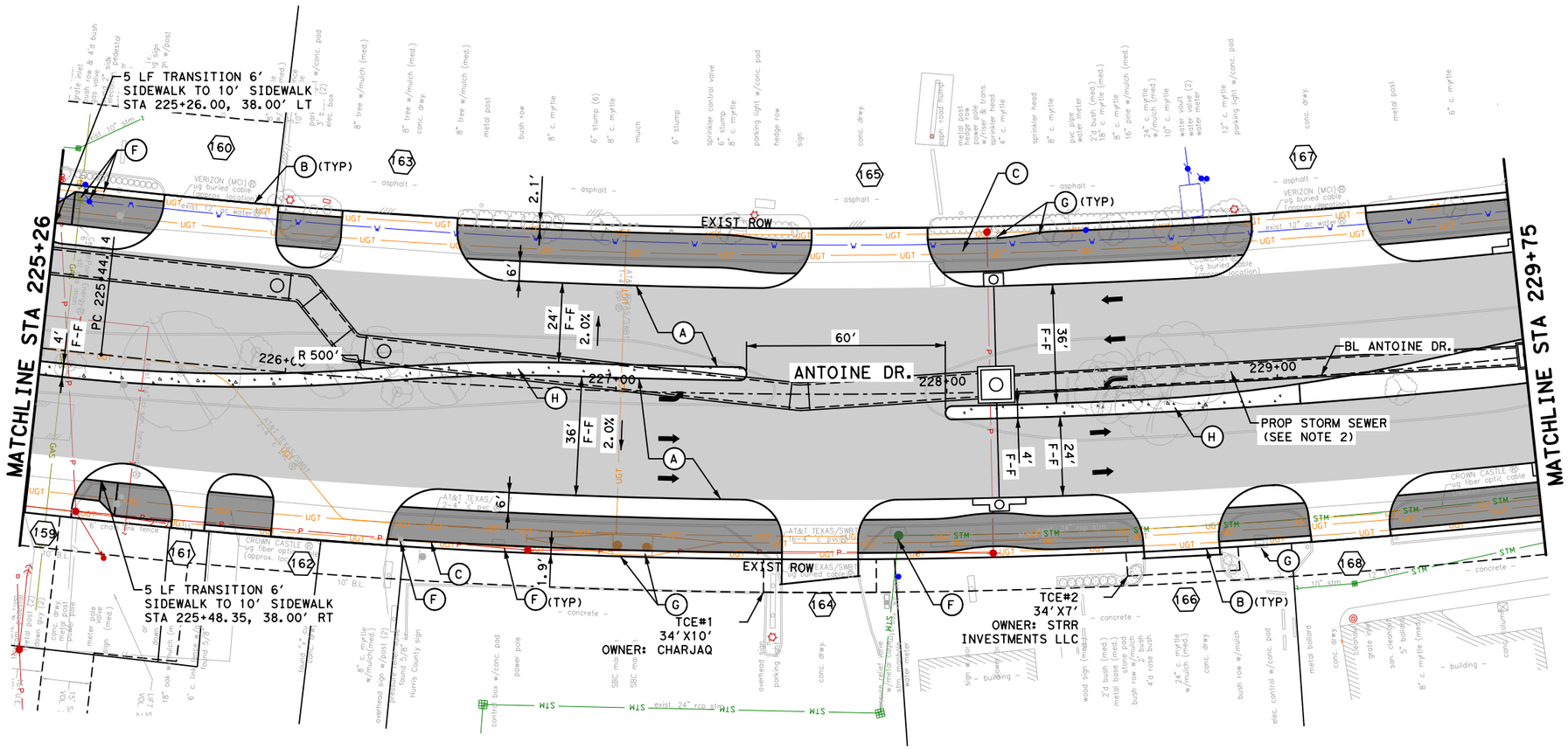

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LEGEND

- PROP LANE
- EXIST LANE
- EXIST ROW
- PROP 6" CURB
- (A) PROP 10" JRCP
- (B) PROP 7" CONC DRIVEWAY
- (C) PROP 10' CONC SUP
- (D) PROP WHEEL CHAIR RAMP
- (E) PROP RETAINING WALL
- (F) ADJUST TO GRADE
- (G) ADJUST TO GRADE/ RELOCATE (BY OTHERS)
- (H) PROP 6' CONC MEDIAN NOSE
- (I) RELOCATE UTILITY
- (J) CONTACT METRO 7 TO 10 DAYS IN ADVANCE FOR REMOVAL OR REPLACEMENT OF BUS SHELTERS, SIGNS, ETC. AT 713-615-6195
- (X) PROP DRIVEWAY No.

0' 20' 40'
SCALE IN FEET

No.	DATE	REVISIONS	APP.

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VOGLER & SPENCER ENGINEERING
777 North Eldridge Parkway, Suite 500
Houston, Texas 77079
713-782-0042
www.vs-engr.com

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Date
131531
10/23/2025
95% SUBMITTAL
VOGLER & SPENCER ENGINEERING
Texas Registered Engineering Firm F-148

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KUO & ASSOCIATES, INC.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ROADWAY PLAN
STA 225+26 TO STA 229+75

SHEET 17 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 231 OF 718	

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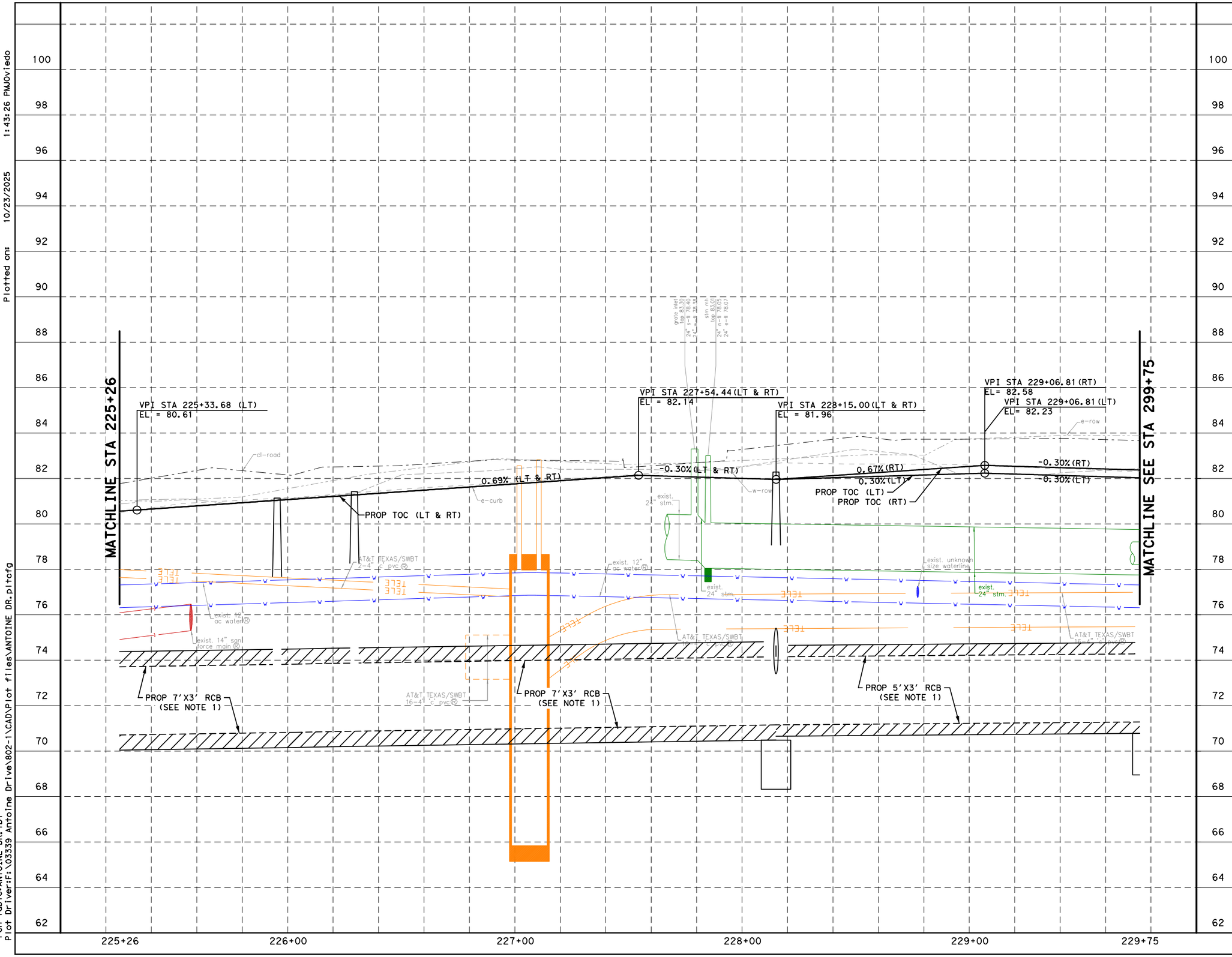

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SCALE IN FEET

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10/23/2025
Date
95% SUBMITTAL
VOGLER & SPENCER ENGINEERING
Texas Registered Engineering Firm F-148

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KUO & ASSOCIATES, INC.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ROADWAY PROFILE
STA 225+26 TO STA 229+75

SHEET 18 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 232 OF 718	

No.	DATE	REVISIONS	APP.

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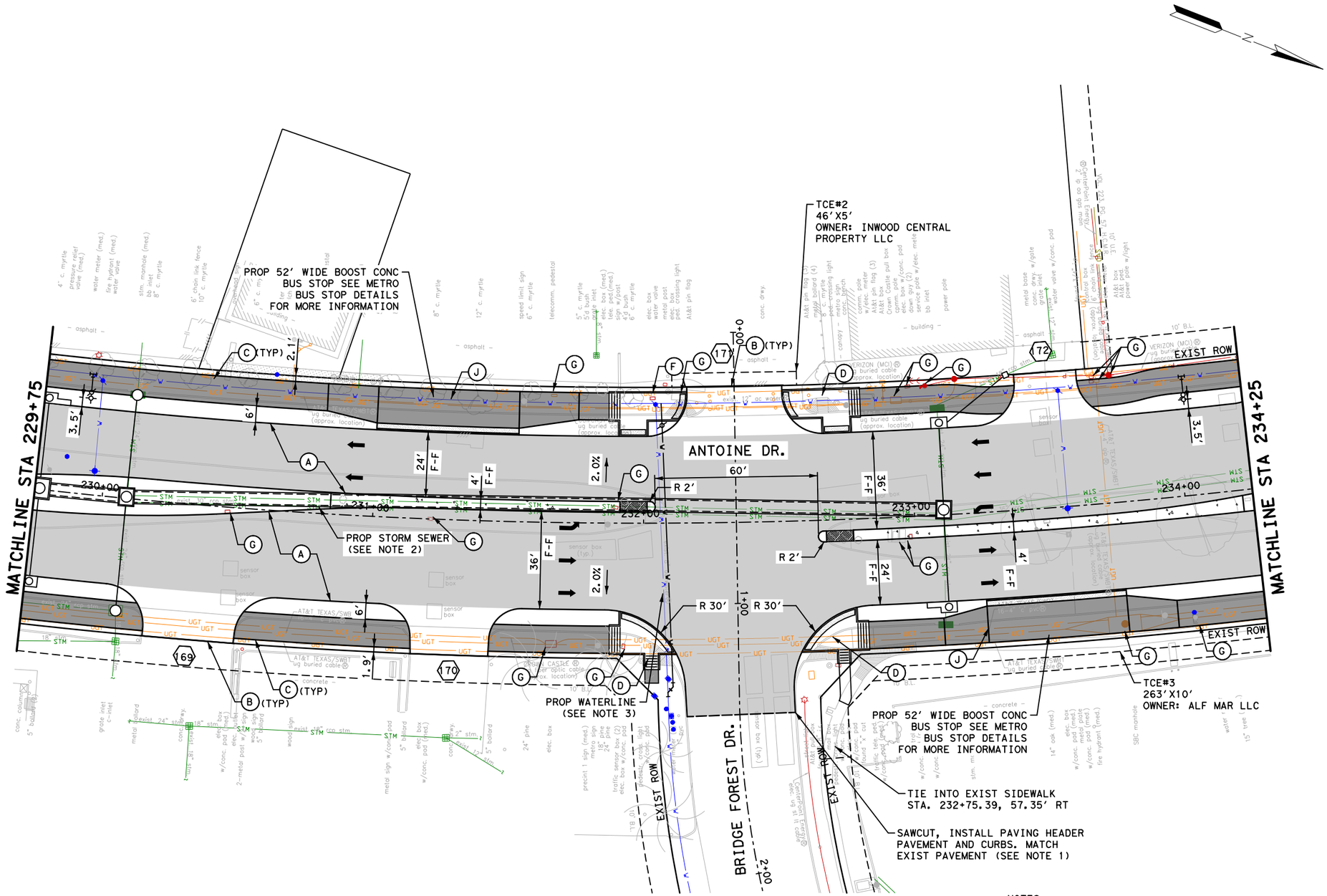

LEGEND

- PROP LANE
- EXIST LANE
- EXIST ROW
- PROP 6" CURB
- (A) PROP 10" JRCP
- (B) PROP 7" CONC DRIVEWAY
- (C) PROP 10' CONC SUP
- (D) PROP WHEEL CHAIR RAMP
- (E) PROP RETAINING WALL
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No.	DATE	REVISIONS	APP.

0' 20' 40'
SCALE IN FEET

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713-782-0042
www.vs-eng.com

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131531
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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ROADWAY PLAN
STA 229+75 TO STA 234+25

SHEET 19 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 233 OF 718	

NOTES:

1. REFER TO ROADWAY HORIZONTAL GEOMETRY SHEETS FOR ADDITIONAL INFORMATION.
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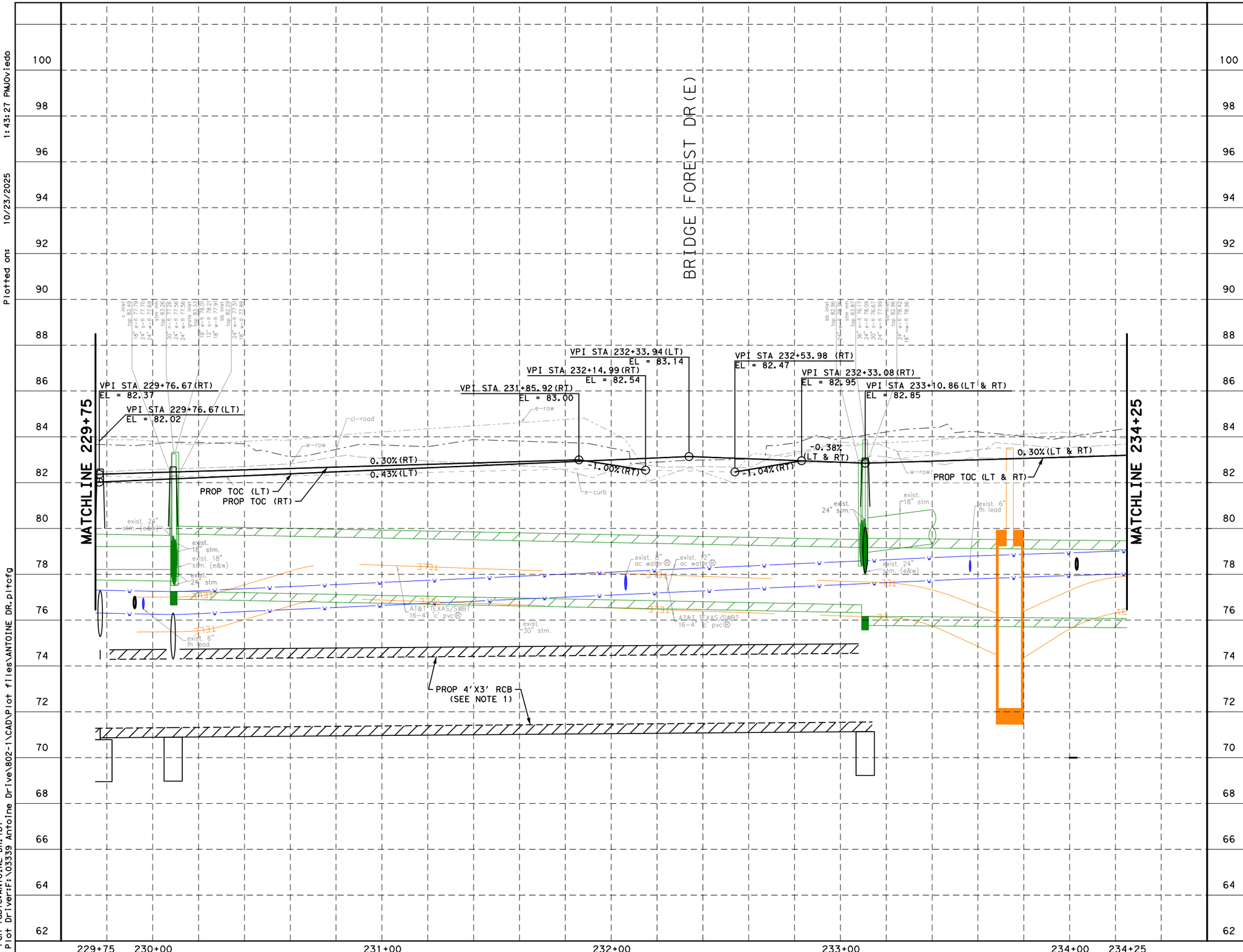

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0' 20' 40'
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JOEL OLSHEFSKI
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10/23/2025
Date
95% SUBMITTAL
VOGLER & SPENCER ENGINEERING
Texas Registered Engineering Firm F-148

SURVEYED BY:
KUO & ASSOCIATES, INC.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ROADWAY PROFILE
STA 229+75 TO STA 234+25

SHEET 20 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 234 OF 718	

No.	DATE	REVISIONS	APP.

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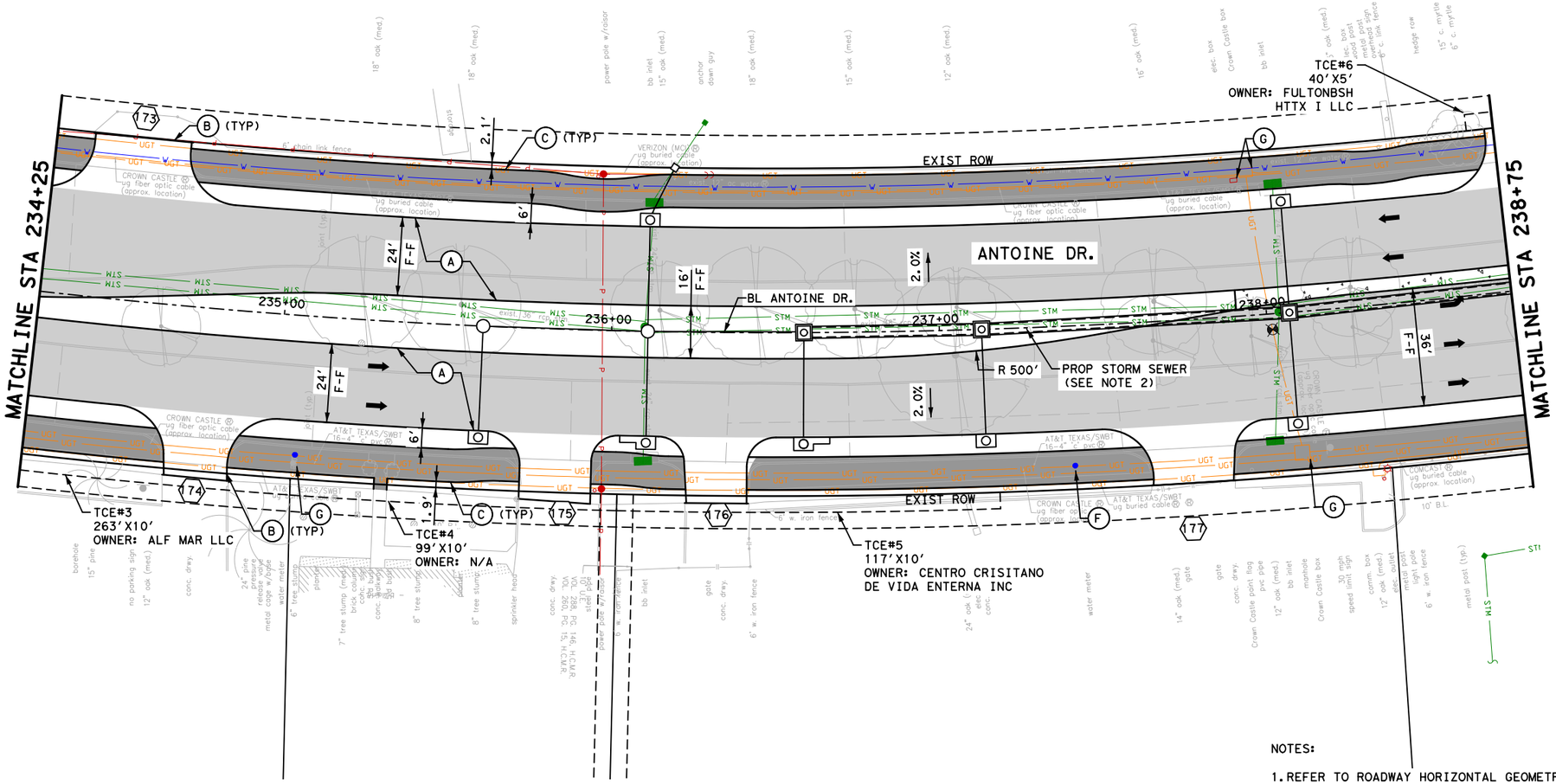
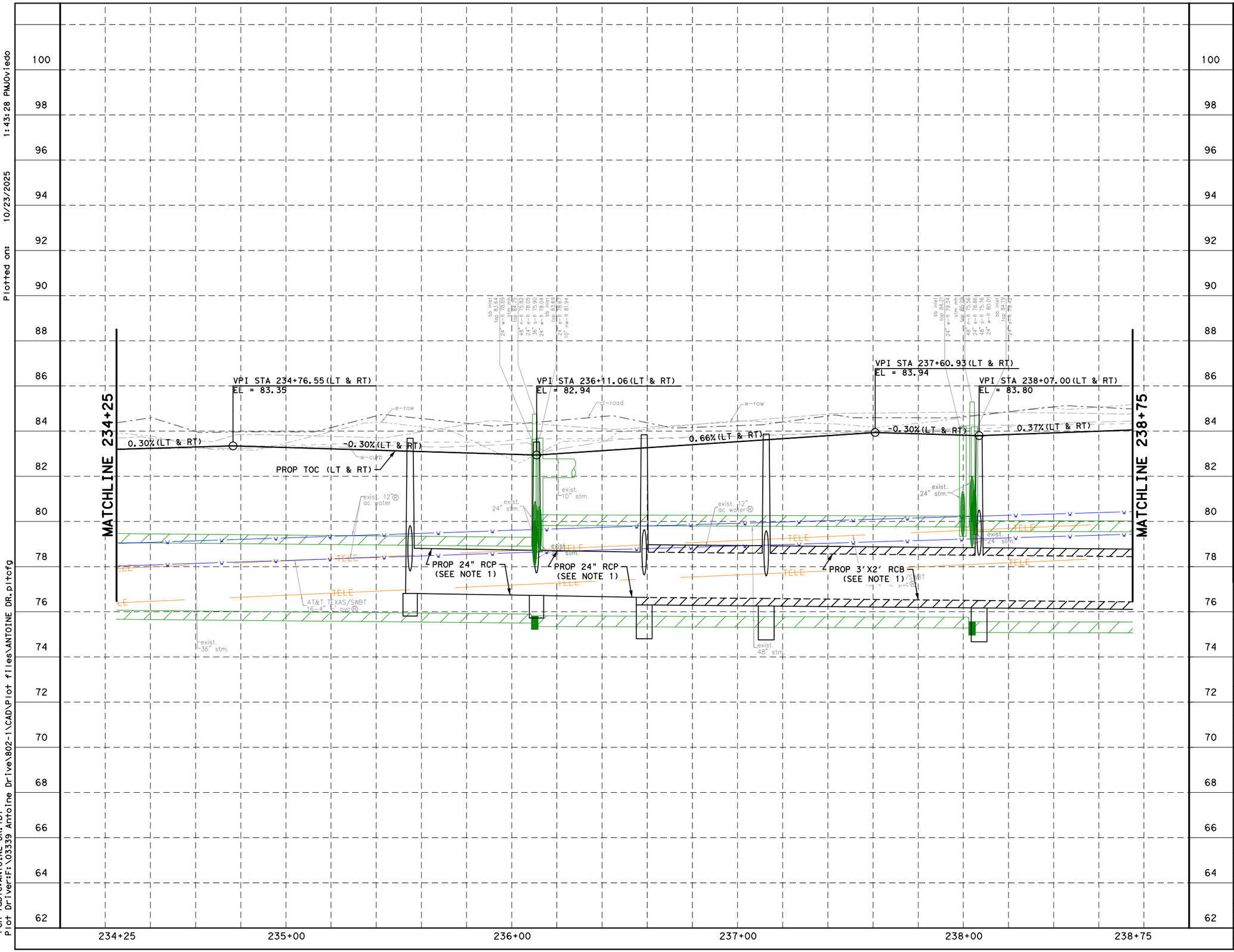

MATCHLINE STA 234+25
MATCHLINE STA 238+75
ANTOINE DR.
BL ANTOINE DR.
EXIST ROW
EXIST ROW
235+00
236+00
237+00
238+00
R 500'
PROP STORM SEWER
(SEE NOTE 2)
TCE#6
40'X5'
OWNER: FULTONBSH
HTTX I LLC
TCE#3
263'X10'
OWNER: ALF MAR LLC
TCE#4
99'X10'
OWNER: N/A
TCE#5
117'X10'
OWNER: CENTRO CRISITANO
DE VIDA ENTERNA INC
2.0%
2.0%
2.1'
6'
24' F-F
16' F-F
36' F-F
(TYP)
CROWN CASTLE @ ug fiber optic cable (approx. location)
AT&T TEXAS/SWBT 16-4" S pvc @
VERIZON (MCI) @ ug buried cable (approx. location)
COMCAST @ ug buried cable (approx. location)
6' chain link fence
6' w. iron fence
STM
UGT
UGT
UGT

Plotted on: 10/23/2025 1:43:28 PM Oviedo
Pen Table:ANTOINE DR.tbl
Plot Driver:F:\03339 Antoine Drive\802-1\CADD\Plot files\ANTOINE DR.pltcfg



No.	DATE	REVISIONS	APP.

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131531
10/23/2025
95% SUBMITTAL
VOGLER & SPENCER ENGINEERING
Texas Registered Engineering Firm F-148

SURVEYED BY:
KUO & ASSOCIATES, INC.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

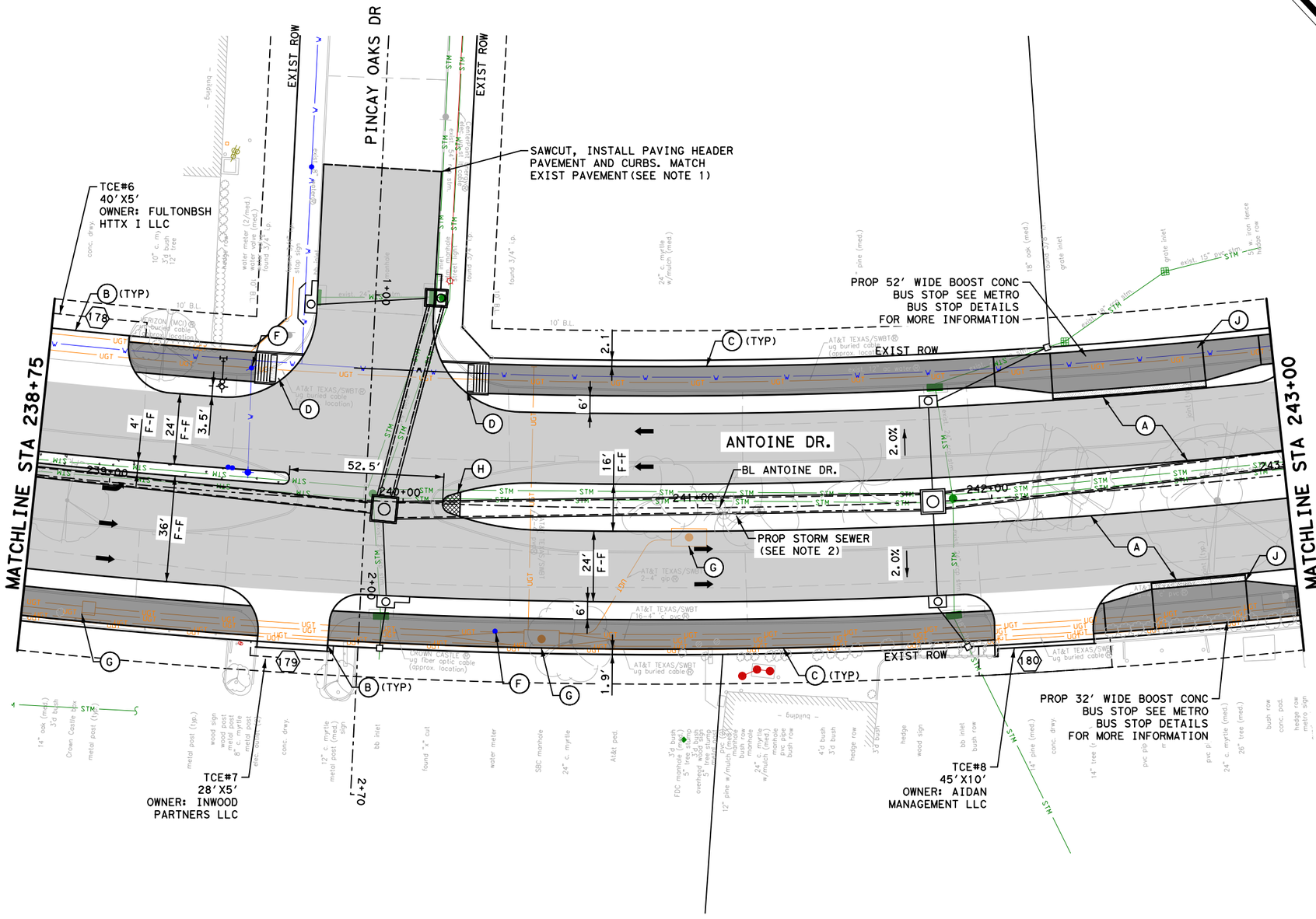
ANTOINE DRIVE

ROADWAY PROFILE
STA 234+25 TO STA 238+75

SHEET 22 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 236 OF 718	

Design Filename: F:\03339 Antoine Drive\802-1\CADD\Plan Production_Roadway\06-Roadway-AntoineDrive-03-PRF.dgn



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LEGEND

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- EXIST LANE
- EXIST ROW
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- (A) PROP 10" JRCP
- (B) PROP 7" CONC DRIVEWAY
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No.	DATE	REVISIONS	APP.

0' 20' 40'
SCALE IN FEET

NOTICE:

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VERIFICATION OF PRIVATE UTILITY LINES

Date

CenterPoint Energy natural gas utilities shown. (Gas service lines are not shown). This signature not be used for conflict verification.

Signature valid for six months.

Date

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Approved for AT&T underground conduit facilities only. Signature *Date*
valid for one year.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ROADWAY PLAN
STA 238+75 TO STA 243+00

SHEET 23 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 237 OF 718	

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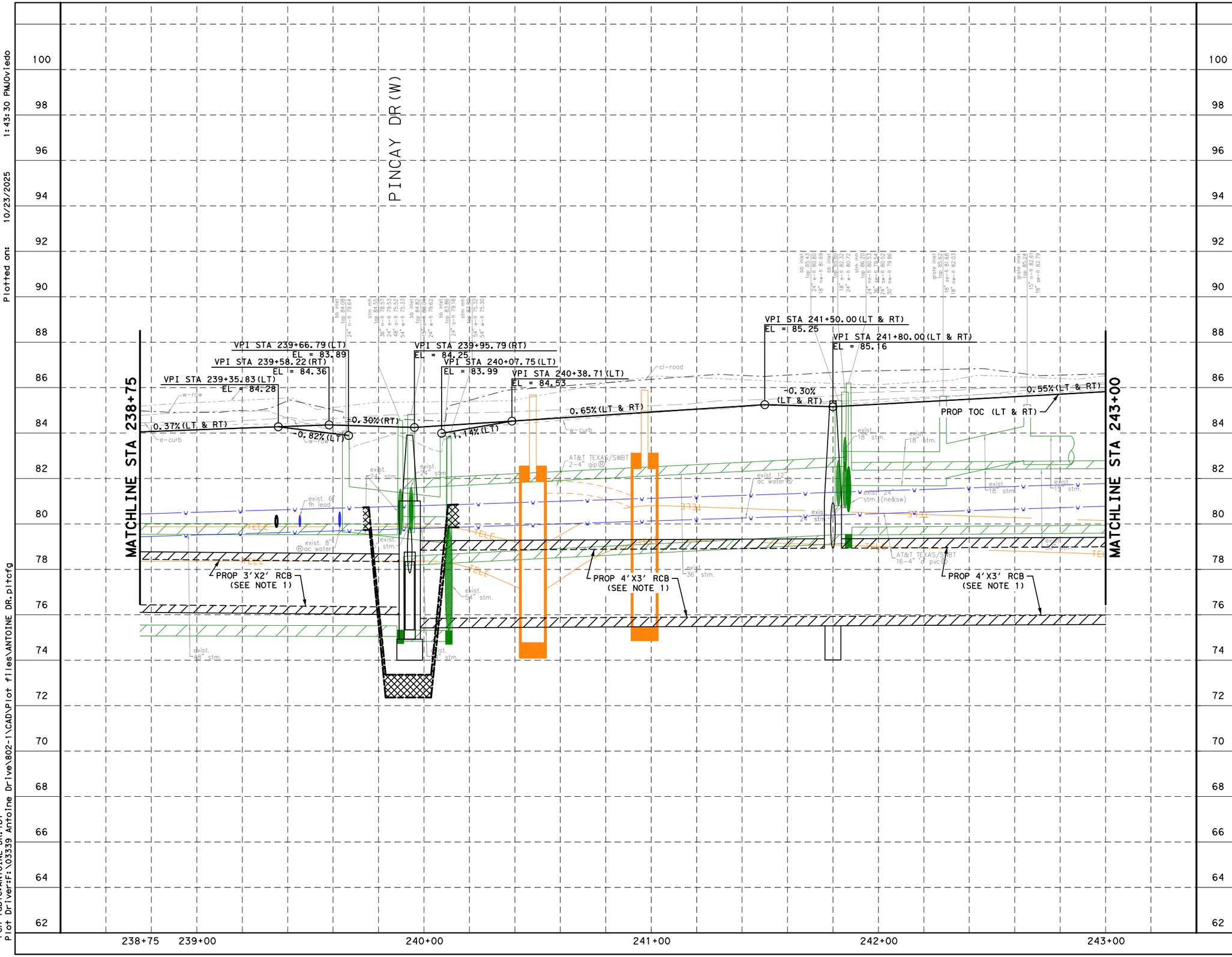

NOTES:

1. REFER TO DRAINAGE PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
2. REFER TO WATER AND SANITARY SEWER PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.

0' 20' 40'
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ROADWAY PROFILE
STA 238+75 TO STA 243+00

SHEET 24 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 238 OF 718	

No.	DATE	REVISIONS	APP.

Plotted on: 10/23/2025 1:43:30 PMJOviedo

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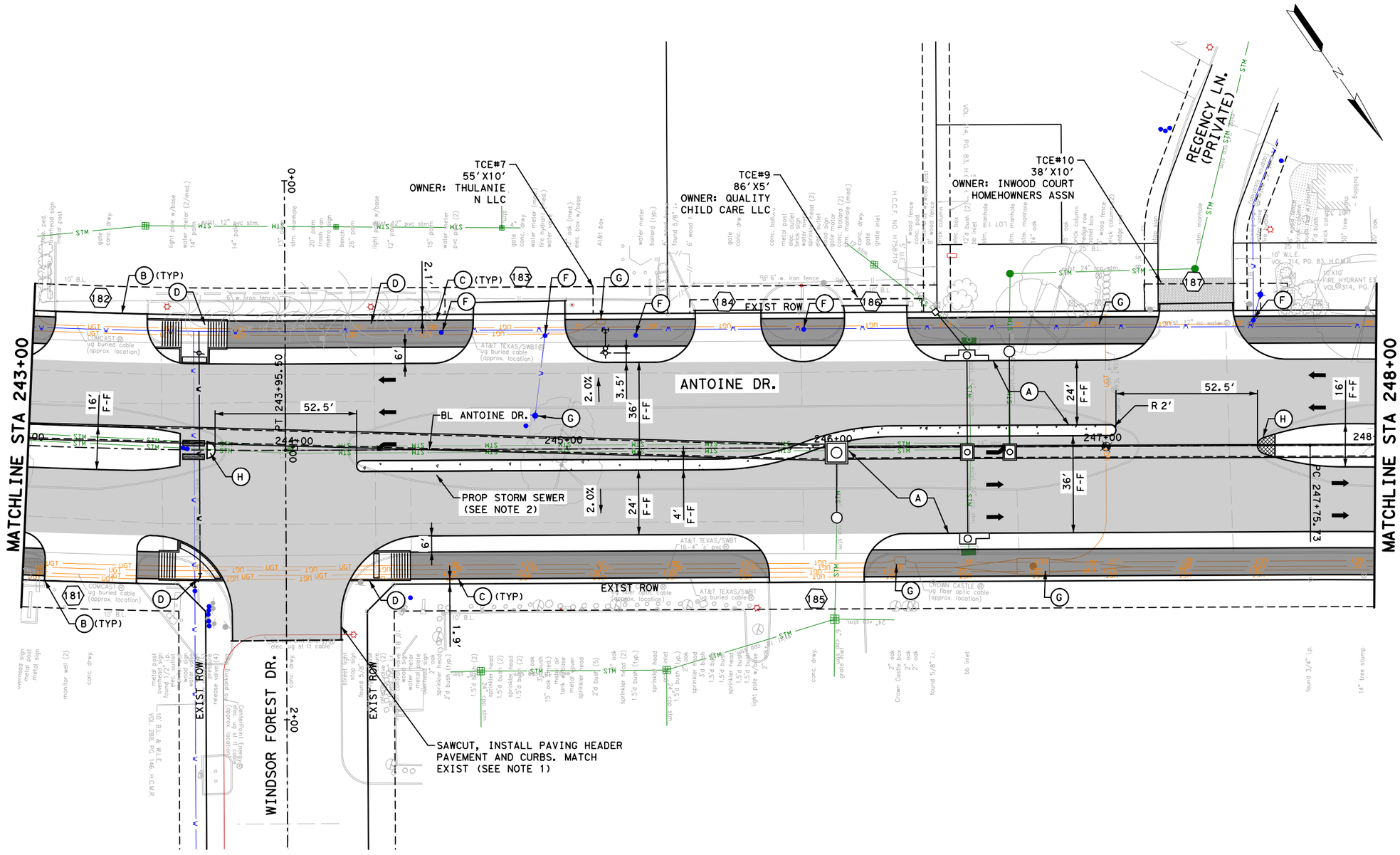

LEGEND

- PROP LANE
- EXIST LANE
- EXIST ROW
- PROP 6" CURB
- (A) PROP 10" JRCP
- (B) PROP 7" CONC DRIVEWAY
- (C) PROP 10' CONC SUP
- (D) PROP WHEEL CHAIR RAMP
- (E) PROP RETAINING WALL
- (F) ADJUST TO GRADE
- (G) ADJUST TO GRADE/ RELOCATE (BY OTHERS)
- (H) PROP 6' CONC MEDIAN NOSE
- (I) RELOCATE UTILITY
- (J) CONTACT METRO 7 TO 10 DAYS IN ADVANCE FOR REMOVAL OR REPLACEMENT OF BUS SHELTERS, SIGNS, ETC. AT 713-615-6195
- (X) PROP DRIVEWAY No.

0' 20' 40'
SCALE IN FEET

NOTES:

1. REFER TO ROADWAY HORIZONTAL GEOMETRY SHEETS FOR ADDITIONAL INFORMATION.
2. REFER TO DRAINAGE PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
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4. REFER TO SIGN AND PAVEMENT MARKING SHEETS FOR ADDITIONAL INFORMATION.
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No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ROADWAY PLAN
STA 243+00 TO STA 248+00

SHEET 25 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 239 OF 718	

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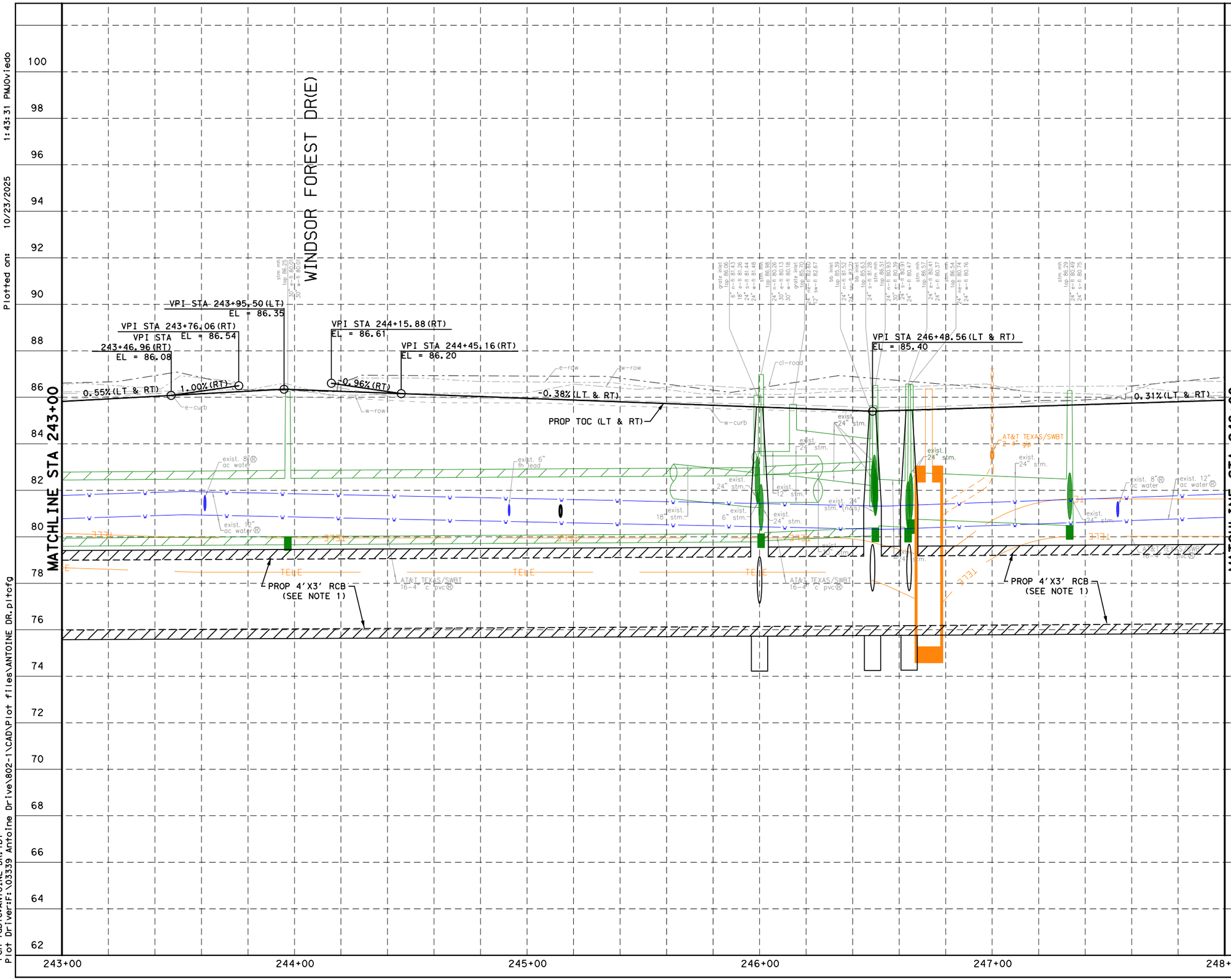

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0' 20' 40'
SCALE IN FEET

No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ROADWAY PROFILE
STA 243+00 TO STA 248+00

SHEET 26 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 240 OF 718	

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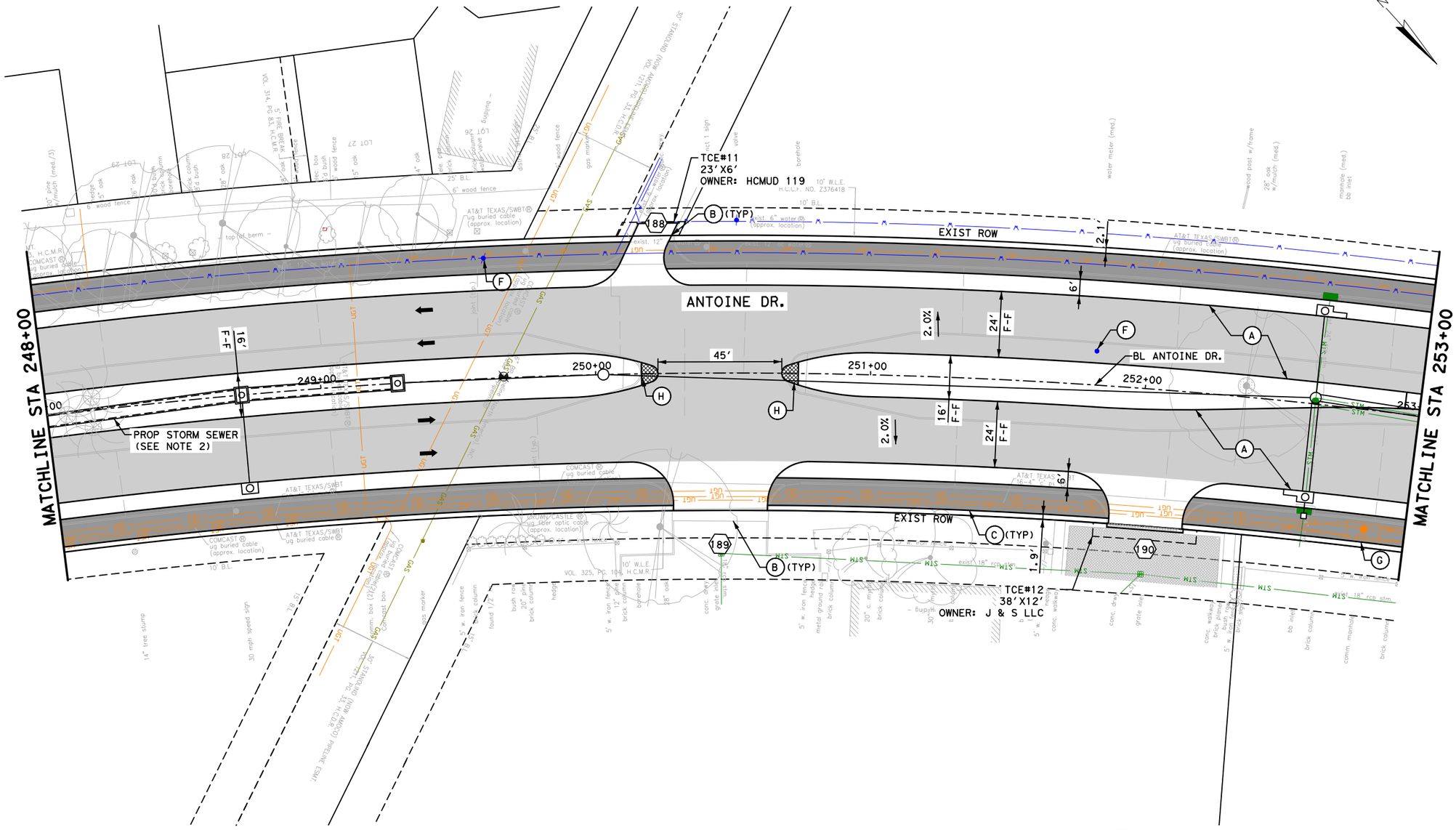

LEGEND

- PROP LANE
- EXIST LANE
- EXIST ROW
- PROP 6" CURB
- (A) PROP 10" JRCP
- (B) PROP 7" CONC DRIVEWAY
- (C) PROP 10' CONC SUP
- (D) PROP WHEEL CHAIR RAMP
- (E) PROP RETAINING WALL
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- (H) PROP 6' CONC MEDIAN NOSE
- (I) RELOCATE UTILITY
- (J) CONTACT METRO 7 TO 10 DAYS IN ADVANCE FOR REMOVAL OR REPLACEMENT OF BUS SHELTERS, SIGNS, ETC. AT 713-615-6195
- (X) PROP DRIVEWAY No.

No.	DATE	REVISIONS	APP.

0' 20' 40'
SCALE IN FEET

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Texas Registered Engineering Firm F-148

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ROADWAY PLAN
STA 248+00 TO STA 253+00

SHEET 27 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 241 OF 718	

NOTES:

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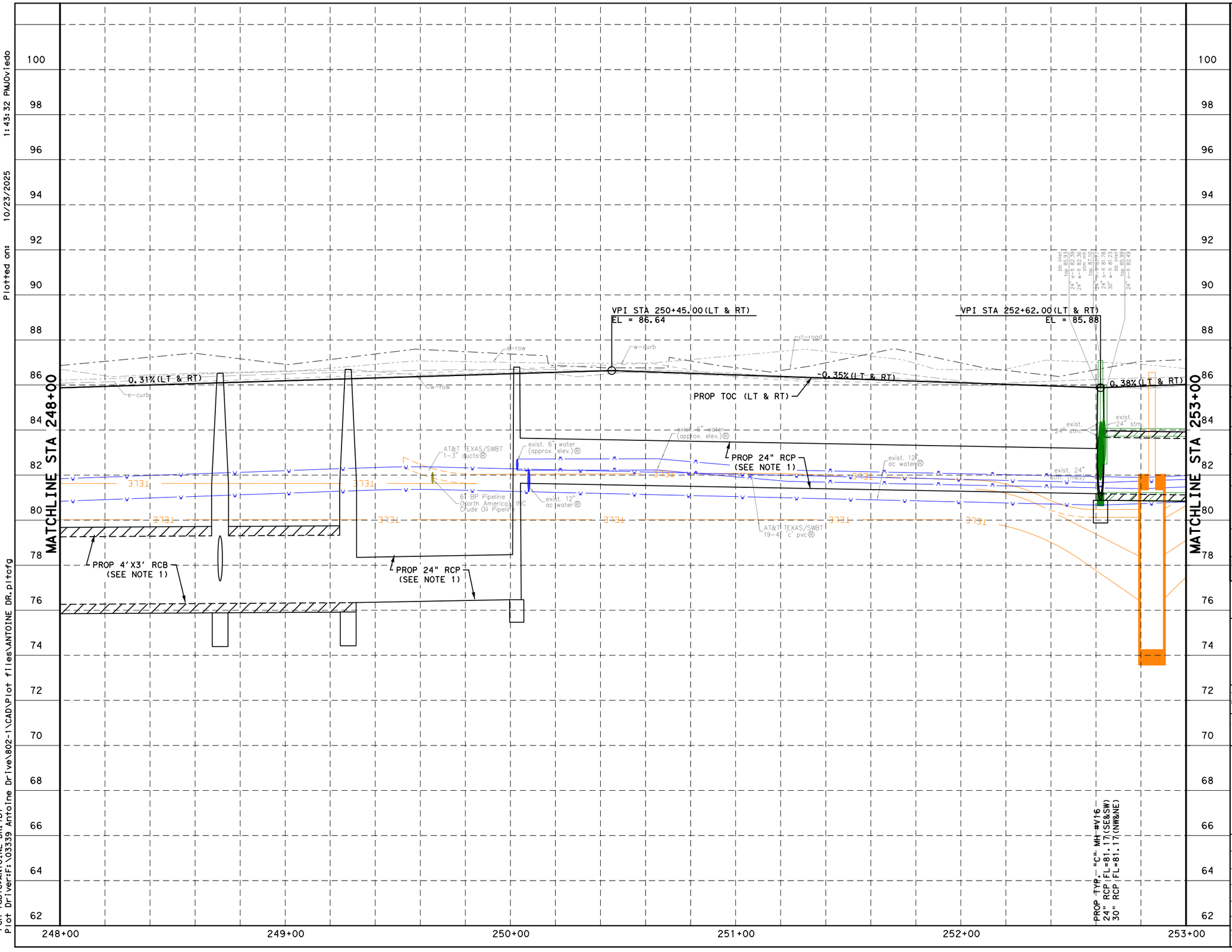

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0' 20' 40'
SCALE IN FEET

No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

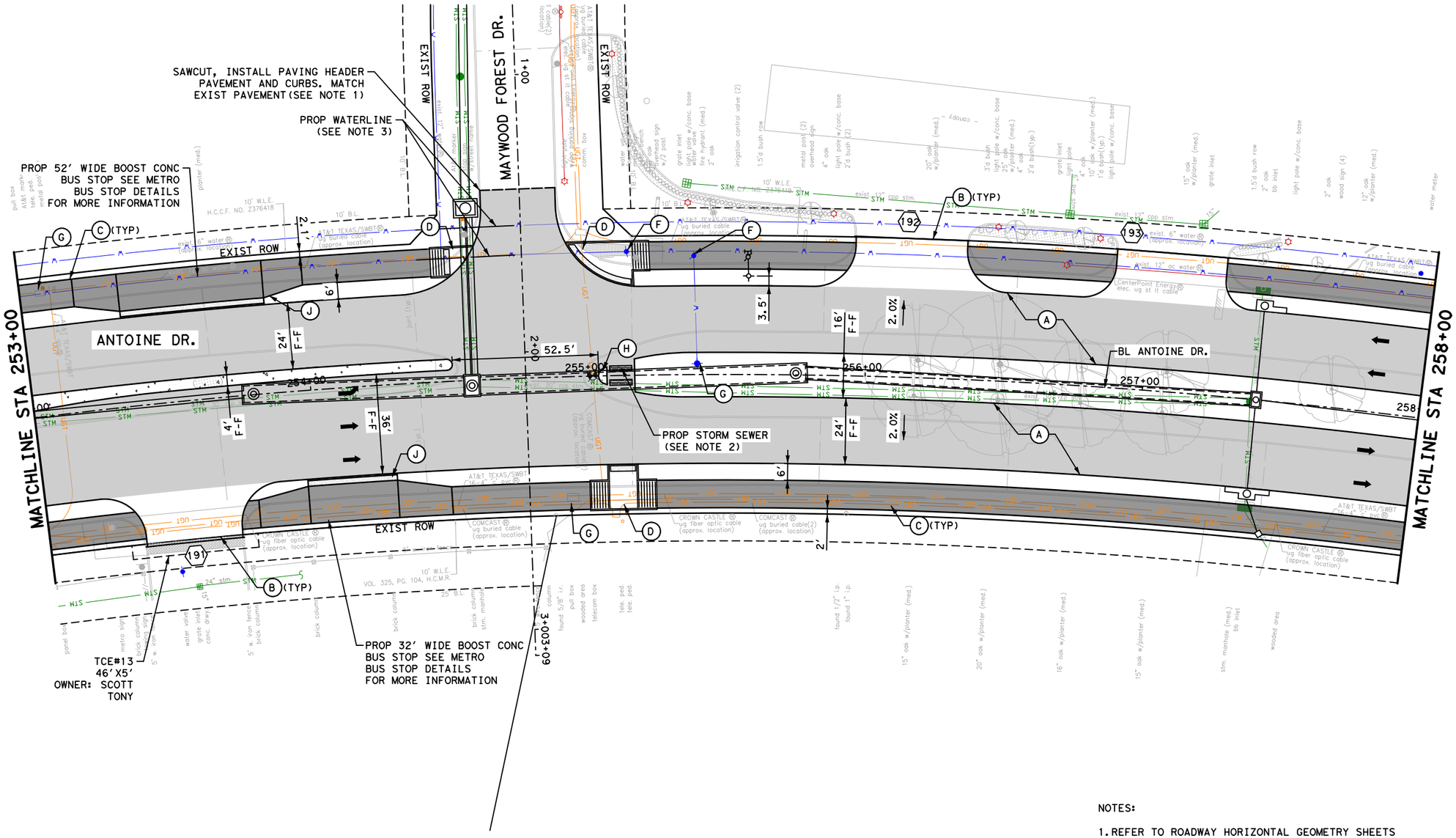
ANTOINE DRIVE

ROADWAY PROFILE
STA 248+00 TO STA 253+00

SHEET 28 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 242 OF 718	

Design Filename: F:\03339 Antoine Drive\802-1\CAD\Plan Production_Roadway\12-Roadway-AntoineDrive-06-PRF.dgn



LEGEND

- PROP LANE
- EXIST LANE
- EXIST ROW
- PROP 6" CURB
- (A) PROP 10" JRCP
- (B) PROP 7" CONC DRIVEWAY
- (C) PROP 10' CONC SUP
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- (X) PROP DRIVEWAY No.

No.	DATE	REVISIONS	APP.

0' 20' 40'
SCALE IN FEET

NOTES:

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ROADWAY PLAN
STA 253+00 TO STA 258+00

SHEET 29 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 243 OF 718	

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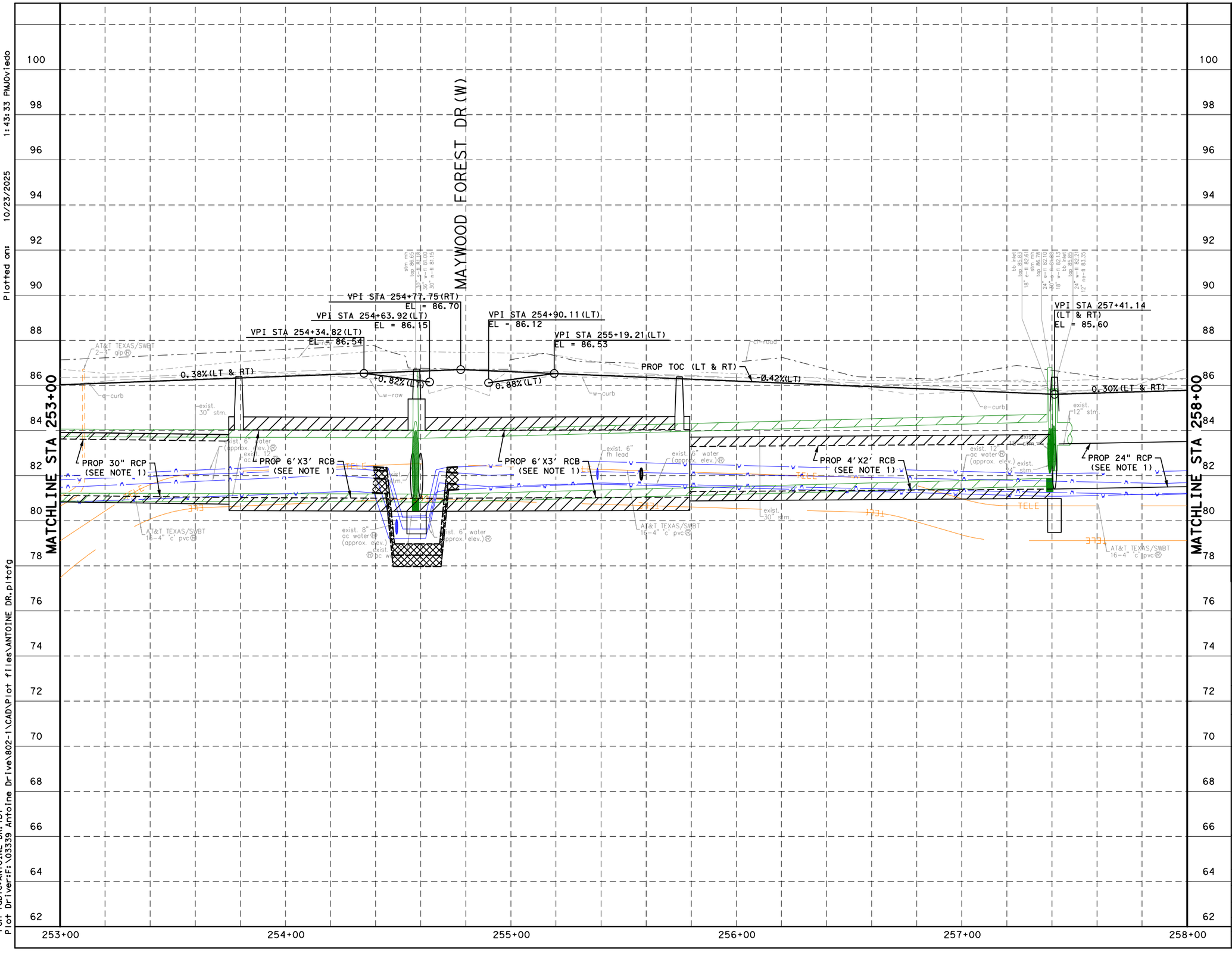

No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ROADWAY PROFILE
STA 253+00 TO STA 258+00

SHEET 30 OF 36

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DRAWING SCALE	
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CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 244 OF 718	

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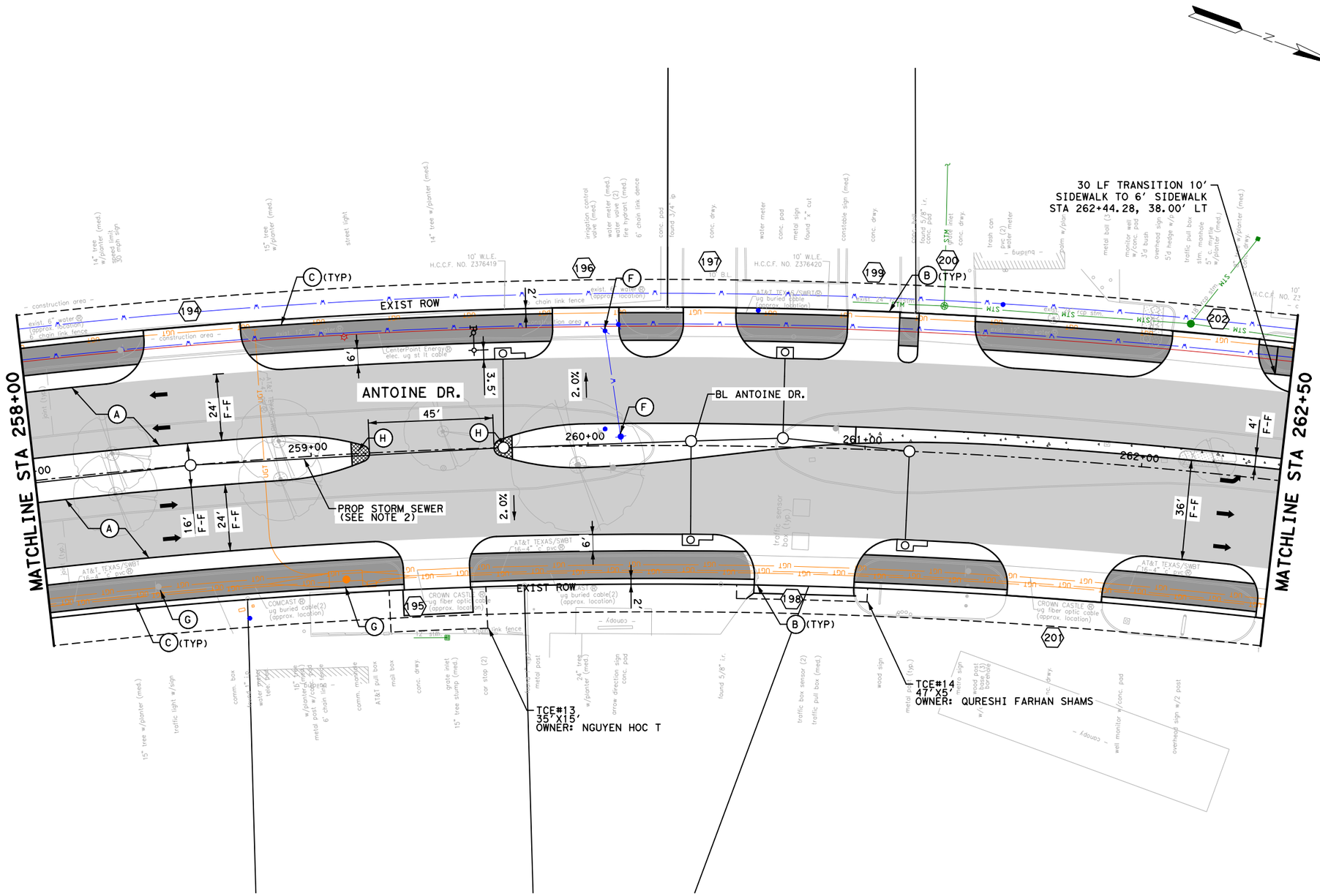

LEGEND

- PROP LANE
- EXIST LANE
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ROADWAY PLAN
STA 258+00 TO STA 262+50

SHEET 31 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 245 OF 718	

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No.	DATE	REVISIONS	APP.

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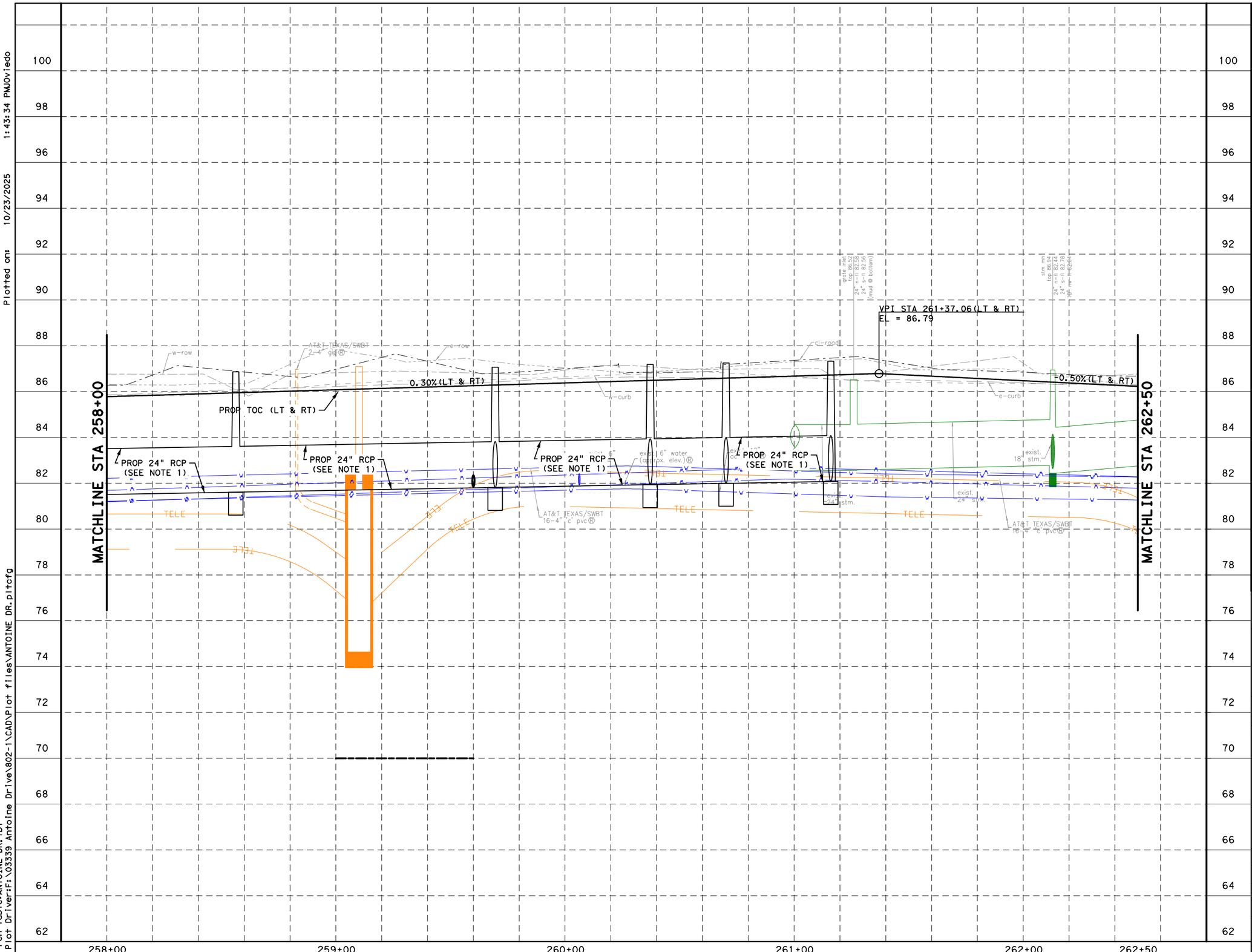

NOTES:

1. REFER TO DRAINAGE PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
2. REFER TO WATER AND SANITARY SEWER PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.

0′ 20′ 40′
SCALE IN FEET

NOTICE:

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VERIFICATION OF PRIVATE UTILITY LINES

Date

CenterPoint Energy natural gas utilities shown.tGas service lines are not shown.tThis signature not be used for conflict verification.

Signature valid for six months.

Date

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Signature valid for six months.

Approved for AT&T underground conduit facilities only. Signature Date
valid for one year.

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Texas
131531
10/23/2025
Date
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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ROADWAY PROFILE
STA 258+00 TO STA 262+50

SHEET 32 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 246 OF 718	

APP. | REVISIONS | DATE | No.

Plotted on: 10/23/2025 1:43:34 PM Oviedo
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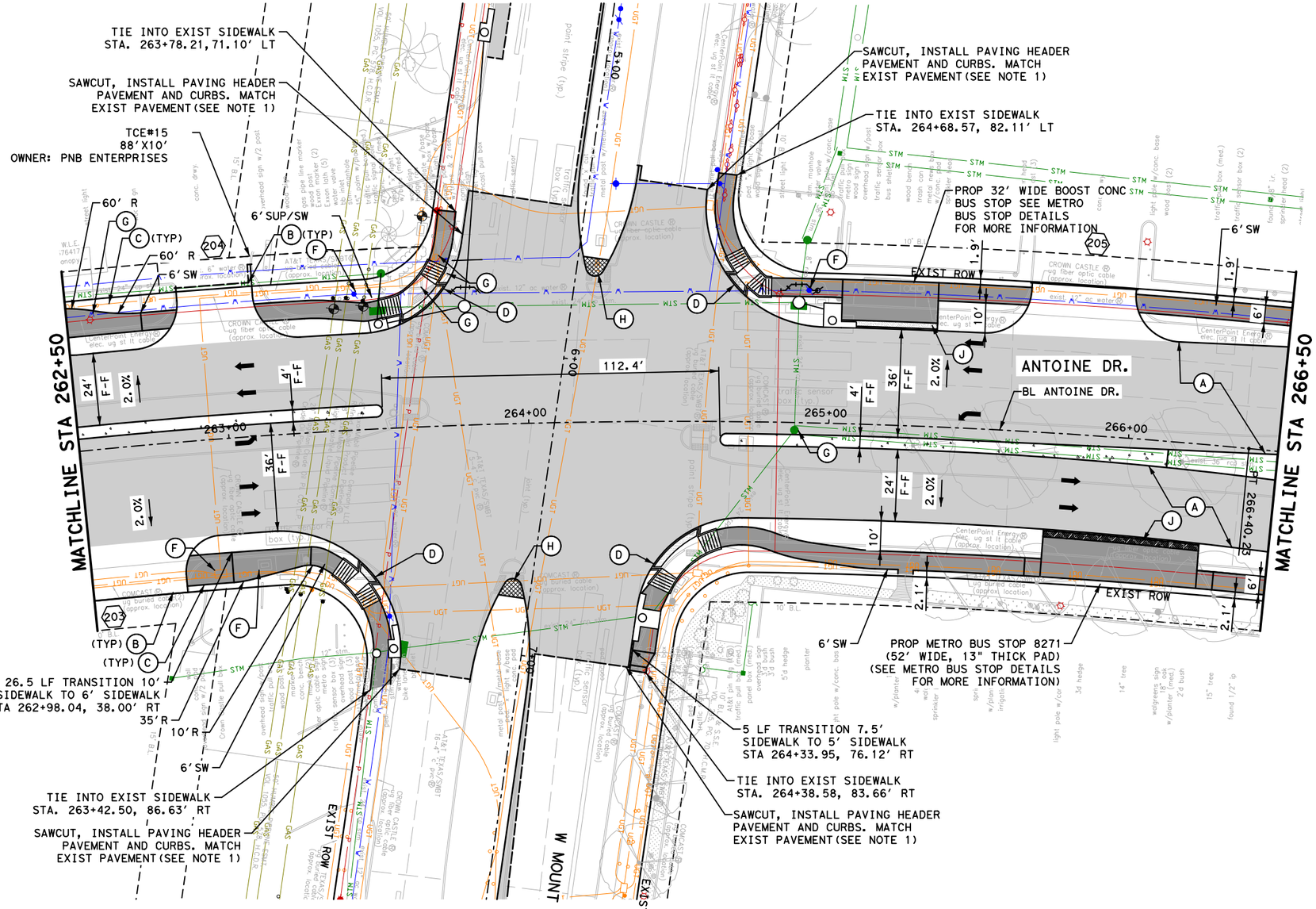

LEGEND

- PROP LANE
- EXIST LANE
- EXIST ROW
- PROP 6" CURB
- (A) PROP 10" JRCP
- (B) PROP 7" CONC DRIVEWAY
- (C) PROP 10' CONC SUP
- (D) PROP WHEEL CHAIR RAMP
- (E) PROP RETAINING WALL
- (F) ADJUST TO GRADE
- (G) ADJUST TO GRADE/ RELOCATE (BY OTHERS)
- (H) PROP 6' CONC MEDIAN NOSE
- (I) RELOCATE UTILITY
- (J) CONTACT METRO 7 TO 10 DAYS IN ADVANCE FOR REMOVAL OR REPLACEMENT OF BUS SHELTERS, SIGNS, ETC. AT 713-615-6195
- (X) PROP DRIVEWAY No.

0' 20' 40'
SCALE IN FEET

NOTES:

1. REFER TO ROADWAY HORIZONTAL GEOMETRY SHEETS FOR ADDITIONAL INFORMATION.
2. REFER TO DRAINAGE PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
3. REFER TO WATER & SANITARY SEWER PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
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No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ROADWAY PLAN
STA 262+50 TO STA 266+50

SHEET 33 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 247 OF 718	

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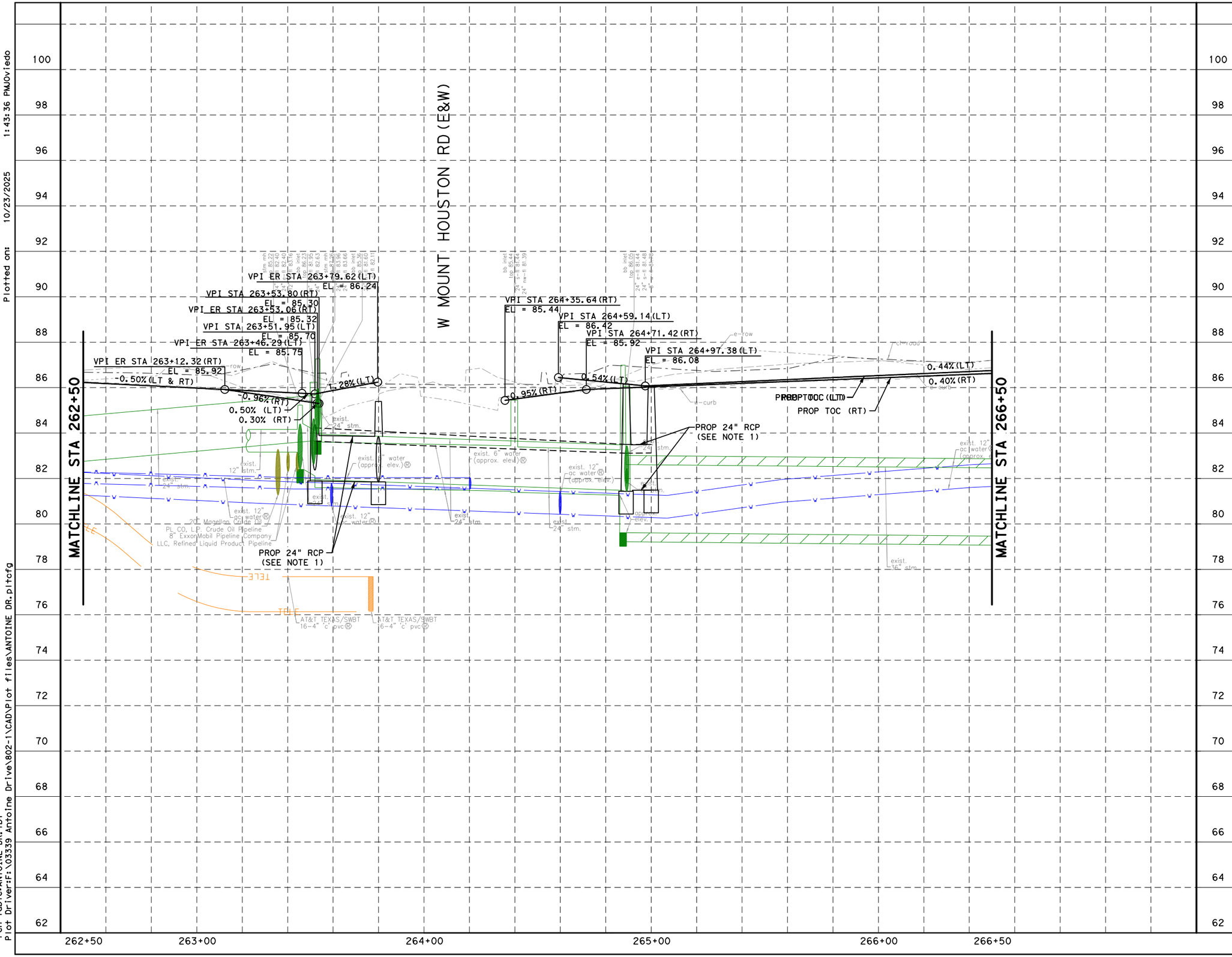

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ROADWAY PROFILE
STA 262+50 TO STA 266+50

SHEET 34 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 248 OF 718	

No.	DATE	REVISIONS	APP.

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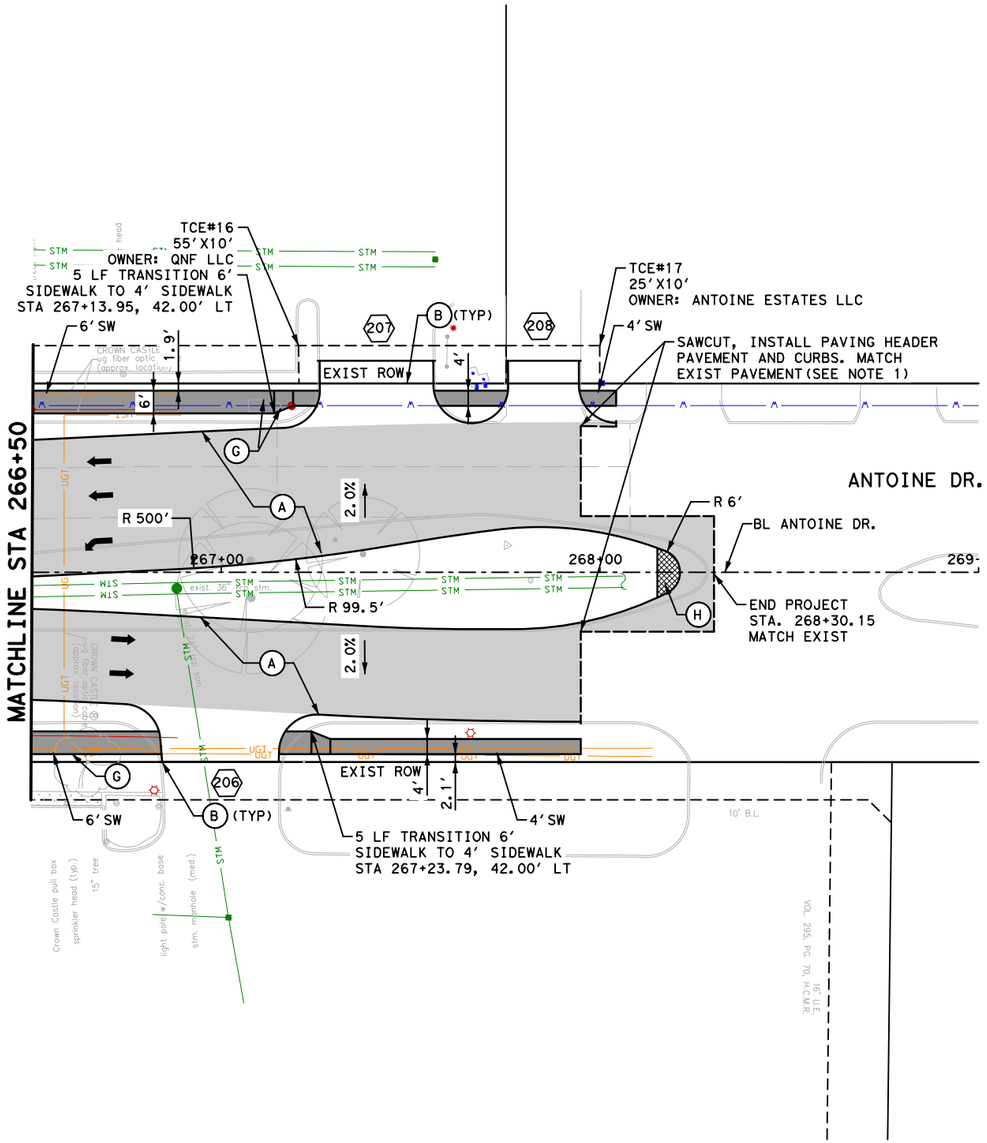

LEGEND

- PROP LANE
- EXIST LANE
- EXIST ROW
- PROP 6" CURB
- (A) PROP 10" JRCP
- (B) PROP 7" CONC DRIVEWAY
- (C) PROP 10' CONC SUP
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- (X) PROP DRIVEWAY No.

0' 20' 40'
SCALE IN FEET

No.	DATE	REVISIONS	APP.

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ANTOINE DRIVE

ROADWAY PLAN
STA 266+50 TO END

SHEET 35 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 249 OF 718	

Plotted on: 10/23/2025 1:43:36 PM JOviedo
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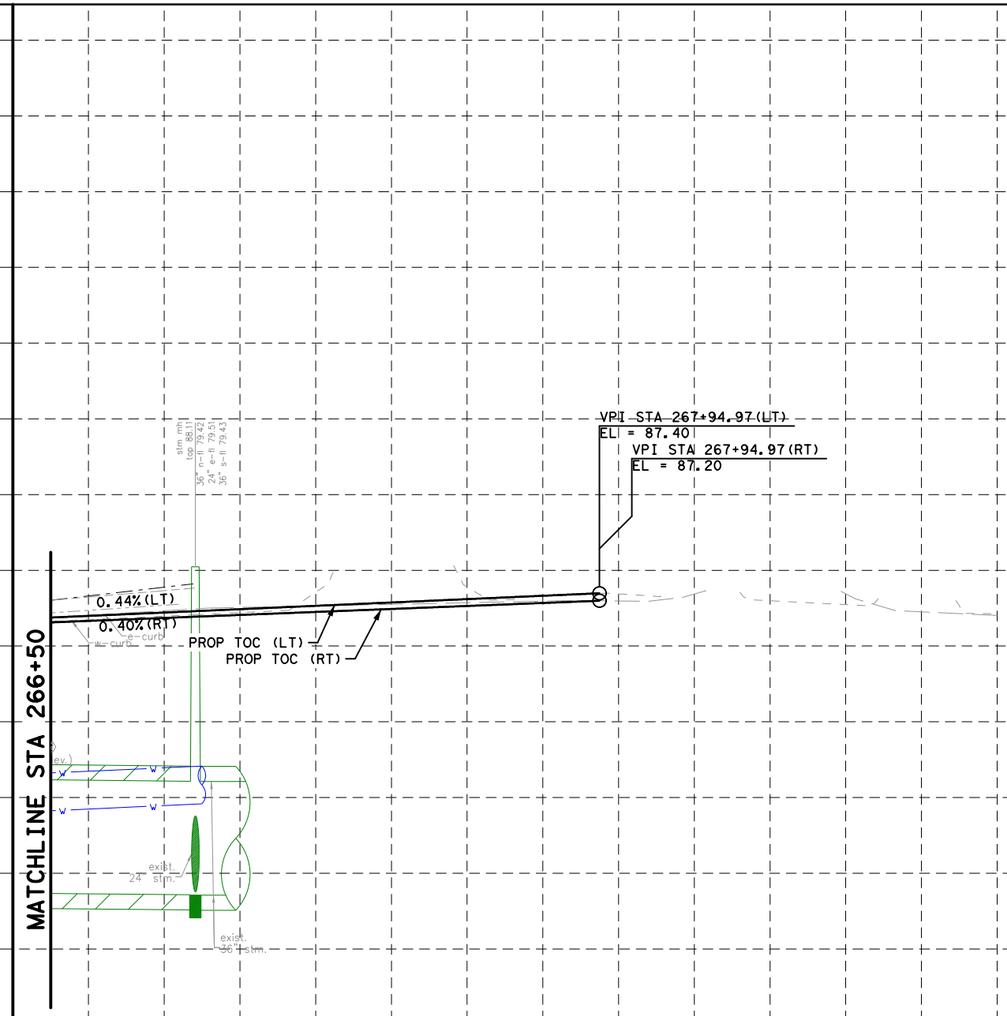

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SCALE IN FEET

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ANTOINE DRIVE

ROADWAY PROFILE
STA 266+50 TO END

SHEET 36 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 250 OF 718	

No.	DATE	REVISIONS	APP.

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Plotted on: 10/27/2025 2:59:57 PM michael.guthrie
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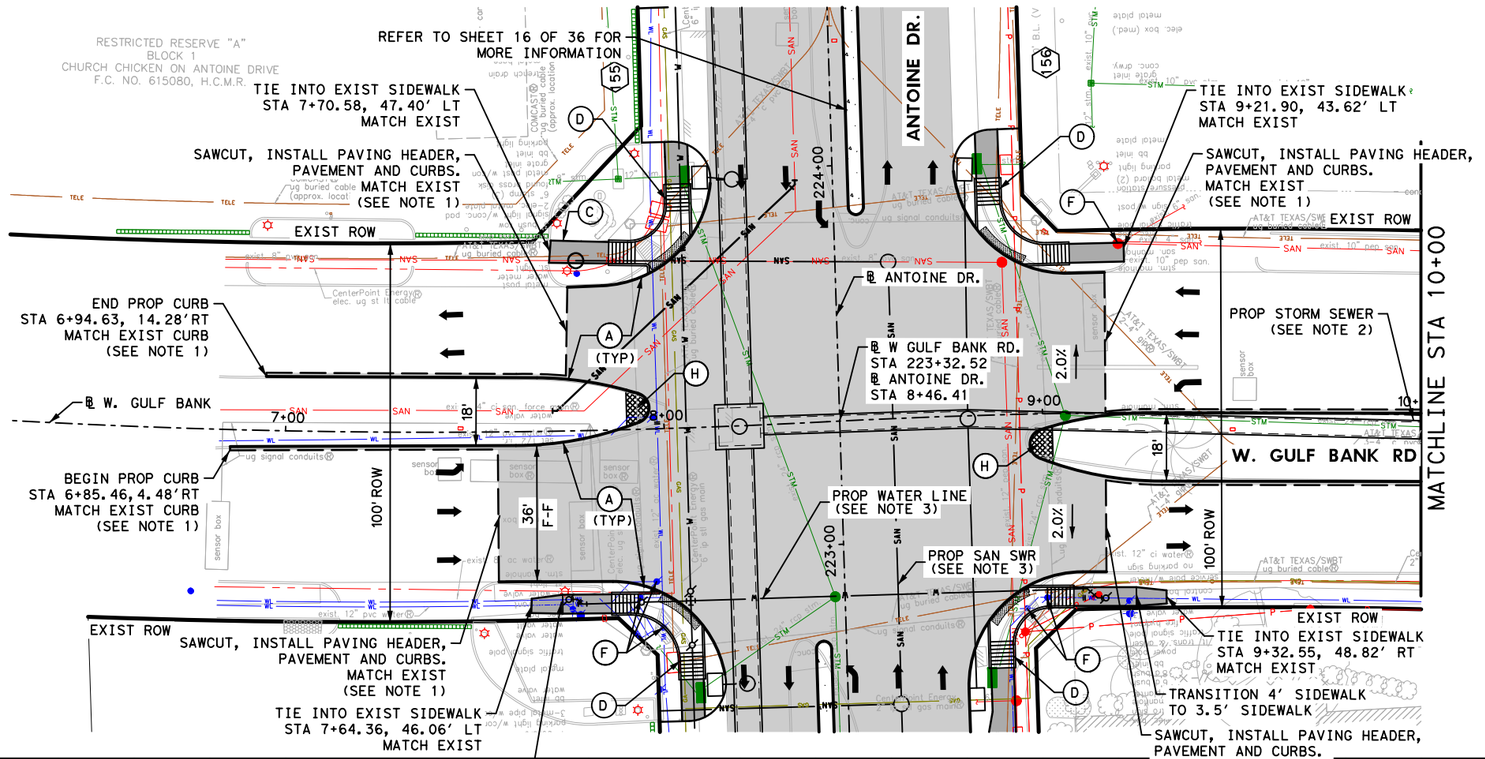

LEGEND

- PROP LANE
- EXIST LANE
- EXIST ROW
- PROP 6" CURB
- (A) PROP 9" JRCP
- (B) PROP 10" CONC DRIVEWAY
- (C) PROP 6' CONC SIDEWALK
- (D) PROP WHEEL CHAIR RAMP
- (E) PROP RETAINING WALL
- (F) ADJUST TO GRADE
- (G) ADJUST TO GRADE/ RELOCATE(BY OTHERS)
- (H) PROP 6' CONC MEDIAN NOSE
- (I) RELOCATE UTILITY
- (X) PROP DRIVEWAY No.

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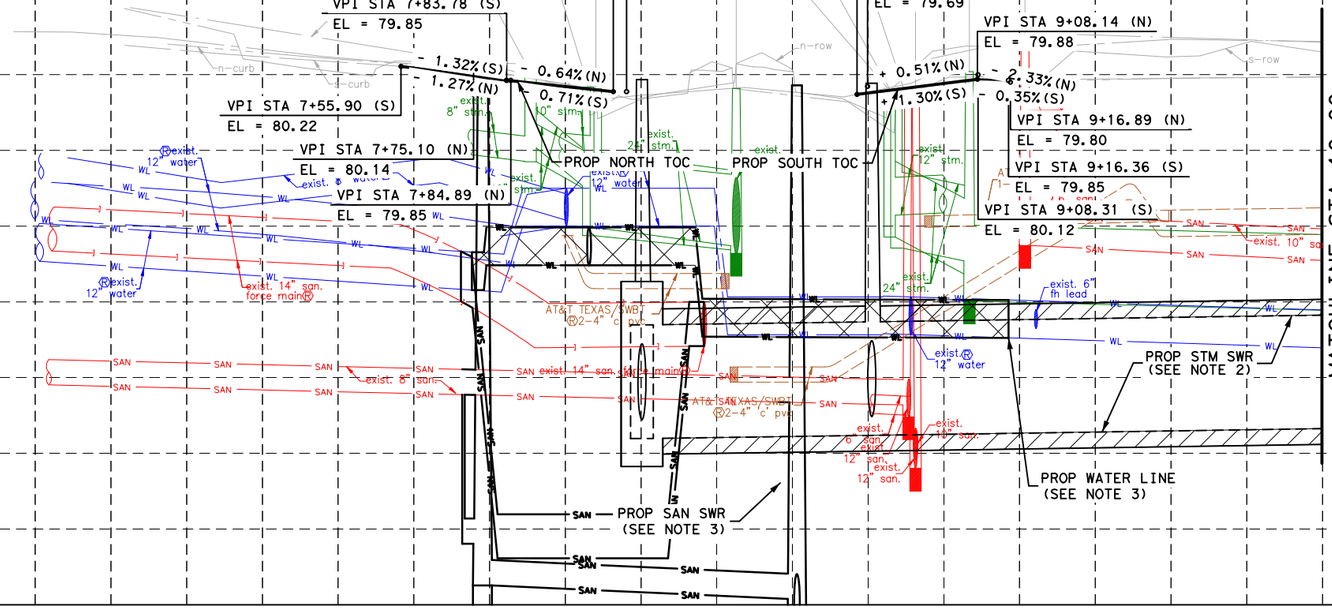
HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET



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TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

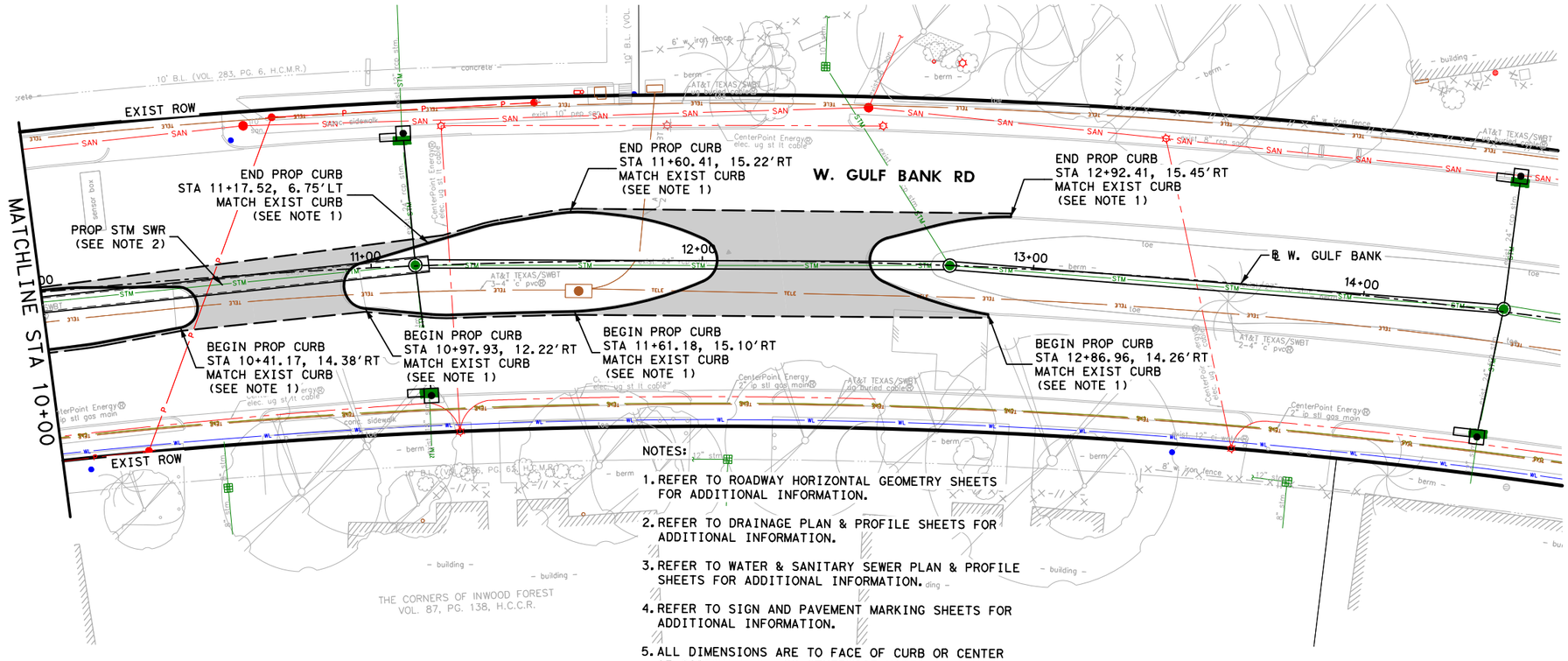
ANTOINE DRIVE
W. GULF BANK
ROADWAY PLAN & PROFILE
BEGIN PROJECT TO STA 10+00.00

SHEET 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 251 OF 718	

No.	DATE	REVISIONS	APP.

Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Roadway\W GULF BANK\PR_RDWY_02.dgn



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LEGEND

- PROP LANE
- EXIST LANE
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HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

No.	DATE	REVISIONS	APP:

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TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
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Texas Registered Engineering Firm F-20017

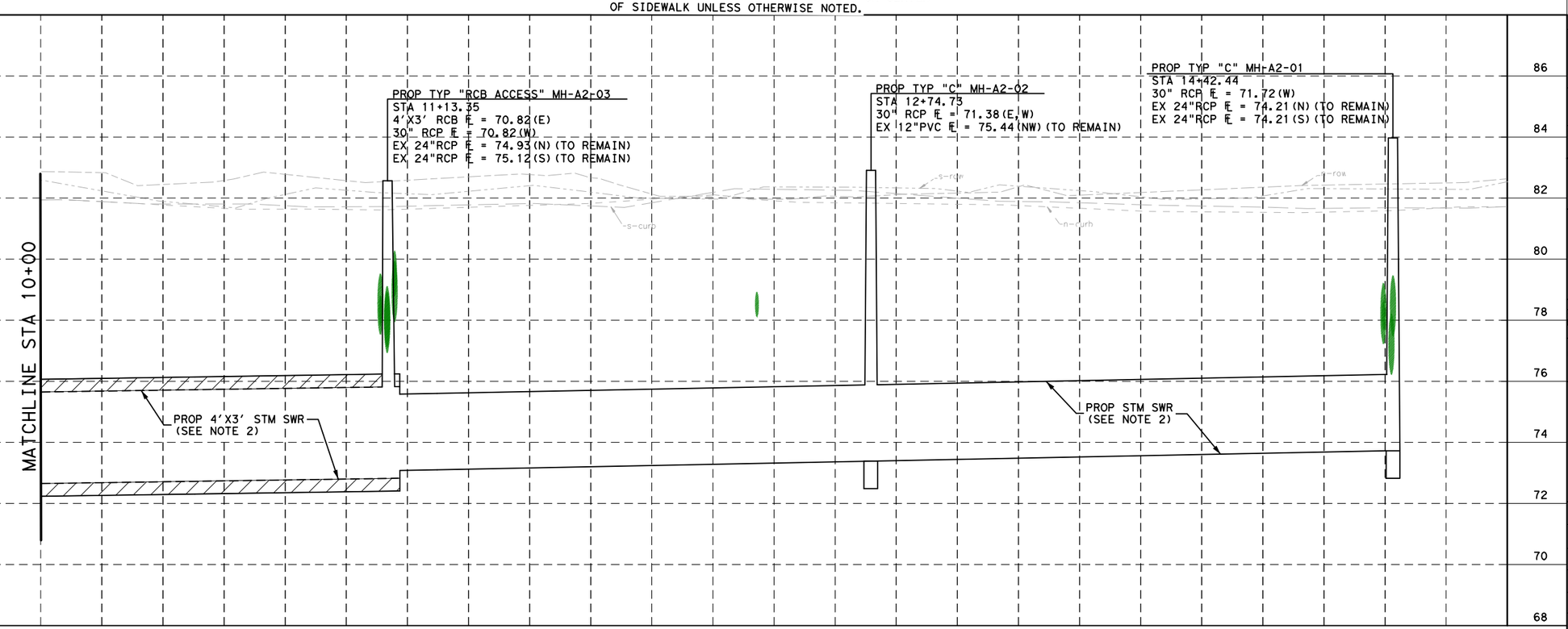
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

W. GULF BANK
ROADWAY PLAN & PROFILE
STA 10+00 TO END PROJECT

SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 252 OF 718	



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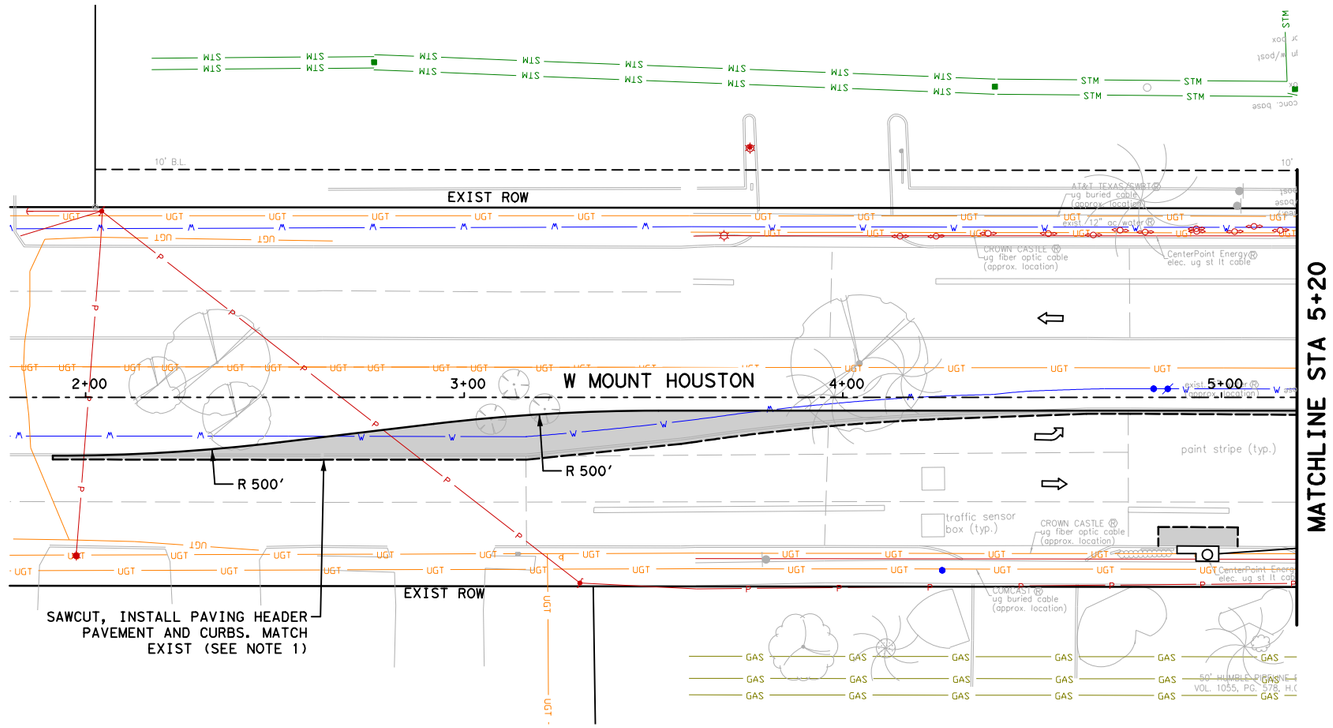

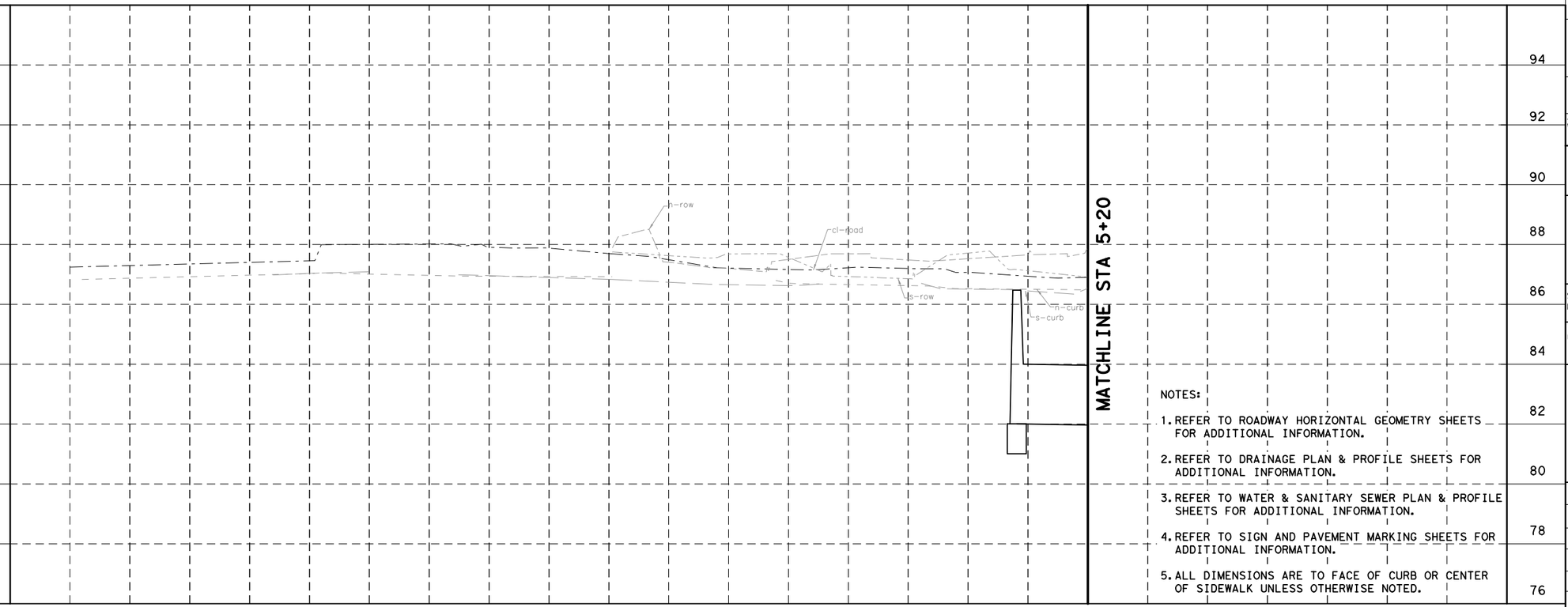

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No.	DATE	REVISIONS	APP.

N

0' 20' 40'
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
WEST MOUNT HOUSTON ROADWAY PLAN & PROFILE STA 1+80 TO STA 5+20

SHEET 1 OF 2

NOTES:

1. REFER TO ROADWAY HORIZONTAL GEOMETRY SHEETS FOR ADDITIONAL INFORMATION.
2. REFER TO DRAINAGE PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
3. REFER TO WATER & SANITARY SEWER PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
4. REFER TO SIGN AND PAVEMENT MARKING SHEETS FOR ADDITIONAL INFORMATION.
5. ALL DIMENSIONS ARE TO FACE OF CURB OR CENTER OF SIDEWALK UNLESS OTHERWISE NOTED.

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 253 OF 718	

Plotted on: 10/23/2025 1:43:37 PM Ovi edo
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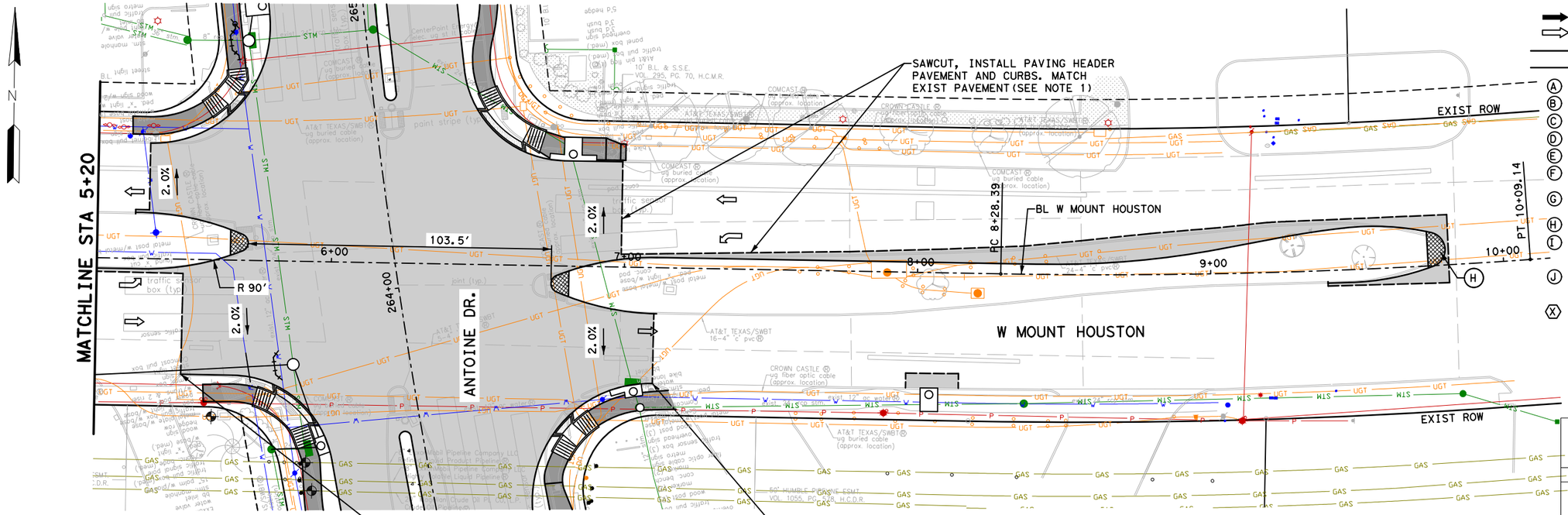
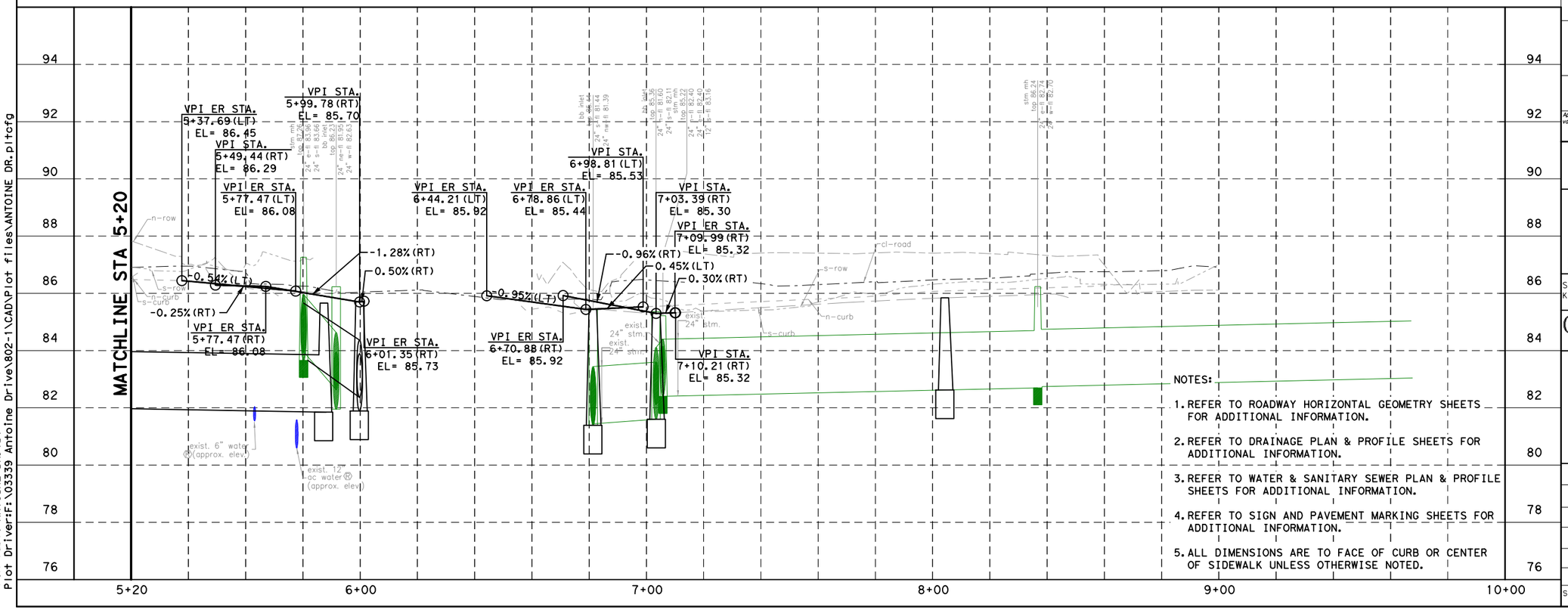


LEGEND

- PROP LANE
- EXIST LANE
- EXIST ROW
- PROP 6" CURB
- (A) PROP 10" JRCP
- (B) PROP 7" CONC DRIVEWAY
- (C) PROP 10' CONC SUP
- (D) PROP WHEEL CHAIR RAMP
- (E) PROP RETAINING WALL
- (F) ADJUST TO GRADE
- (G) ADJUST TO GRADE/ RELOCATE(BY OTHERS)
- (H) PROP 6' CONC MEDIAN NOSE
- (I) RELOCATE UTILITY
- (J) CONTACT METRO 7 TO 10 DAYS IN ADVANCE FOR REMOVAL OR REPLACEMENT OF BUS SHELTERS, SIGNS, ETC. AT 713-615-6195
- (X) PROP DRIVEWAY No.

0' 20' 40'
SCALE IN FEET

No.	DATE	REVISIONS	APP.



NOTES:

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5. ALL DIMENSIONS ARE TO FACE OF CURB OR CENTER OF SIDEWALK UNLESS OTHERWISE NOTED.

NOTICE:

FOR YOUR SAFETY,YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED.THIS SIGNATURE DOES NOT FULFILL YOUR OBLIGATION TO CALL 811

VERIFICATION OF PRIVATE UTILITY LINES

Date

CenterPoint Energy natural gas utilities shown.(Gas service lines are not shown).This signature not be used for conflict verification.

Signature valid for six months.

Date

CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY. (This signature verifies existing underground facilities - not to be used for conflict verification)

Signature valid for six months.

Approved for AT&T underground conduit facilities only. Signature Date valid for one year.

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Houston, Texas 77079
713-782-0042
www.vs-eng.com

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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
WEST MOUNT HOUSTON
ROADWAY PLAN & PROFILE
STA 5+20 TO STA 10+00

SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 254 OF 718	

Design Filename: F:\03339 Antoine Drive\802-1\CAD\Plan Production_Roadway\22-Roadway-W Mt Houston Road-11-PP.dgn

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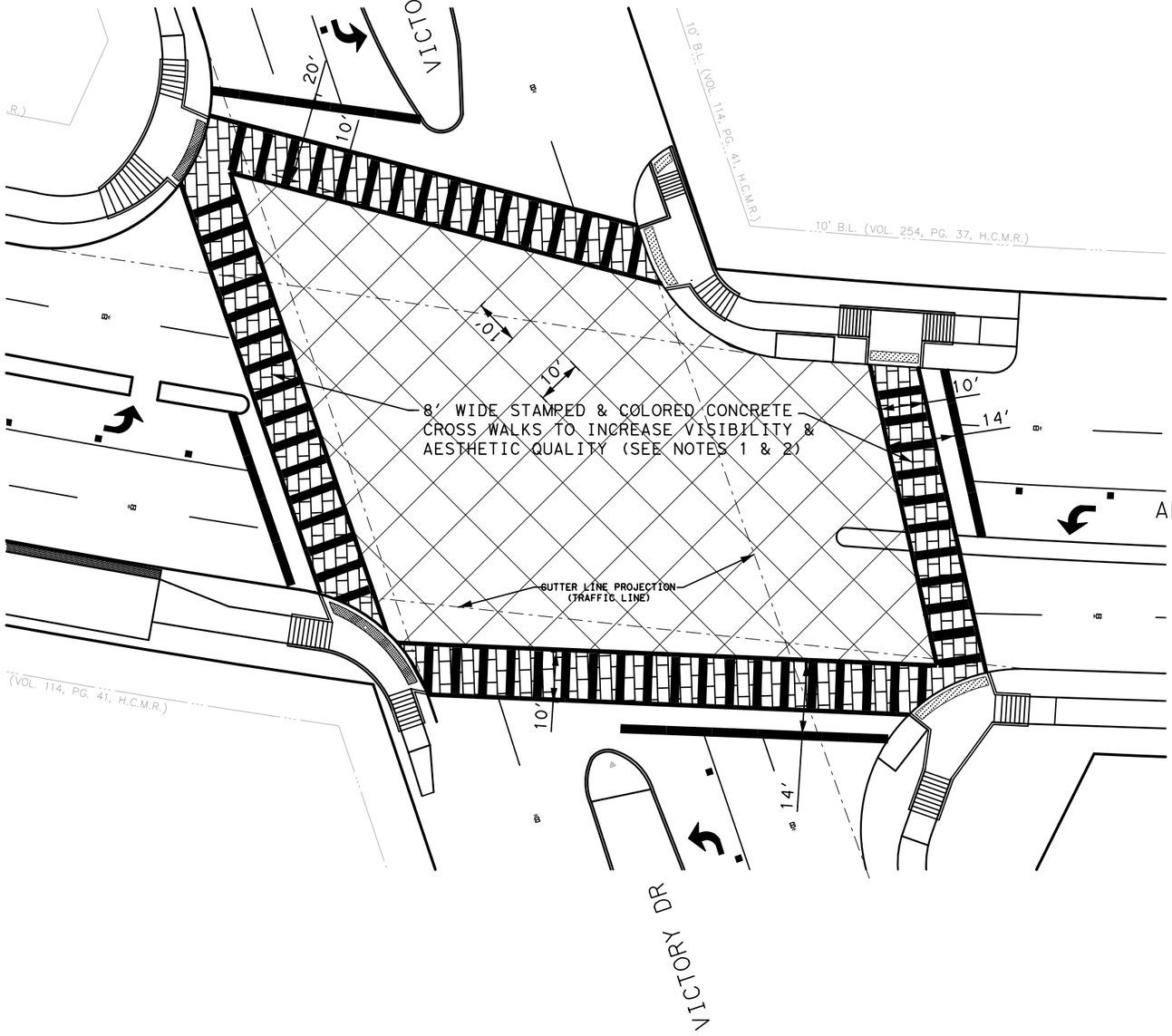

NOTES

1. COLOR SELECTION TO BE MADE IN THE FILED BY NEAR NORTHWEST MANAGEMENT DISTRICT USING TEMPORARY 6'X6' CONCRETE PADS. (FRENCH GRAY, CHARCOAL & DARK GRAY CONSIDERED AT THIS TIME)
2. SEE SPECIFICATION 02750 (02760) (3360) FOR INTEGRALLY COLORED CONCRETE AND STAMPED/IMPRINTED CONCRETE PAVEMENT.
3. SAWCUTS SHALL BE 1/4" DEPTH ON A 10' GRID.

N

0' 30' 60'
SCALE IN FEET

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ADDRESS:
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TEL.No.: 713-706-4412

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

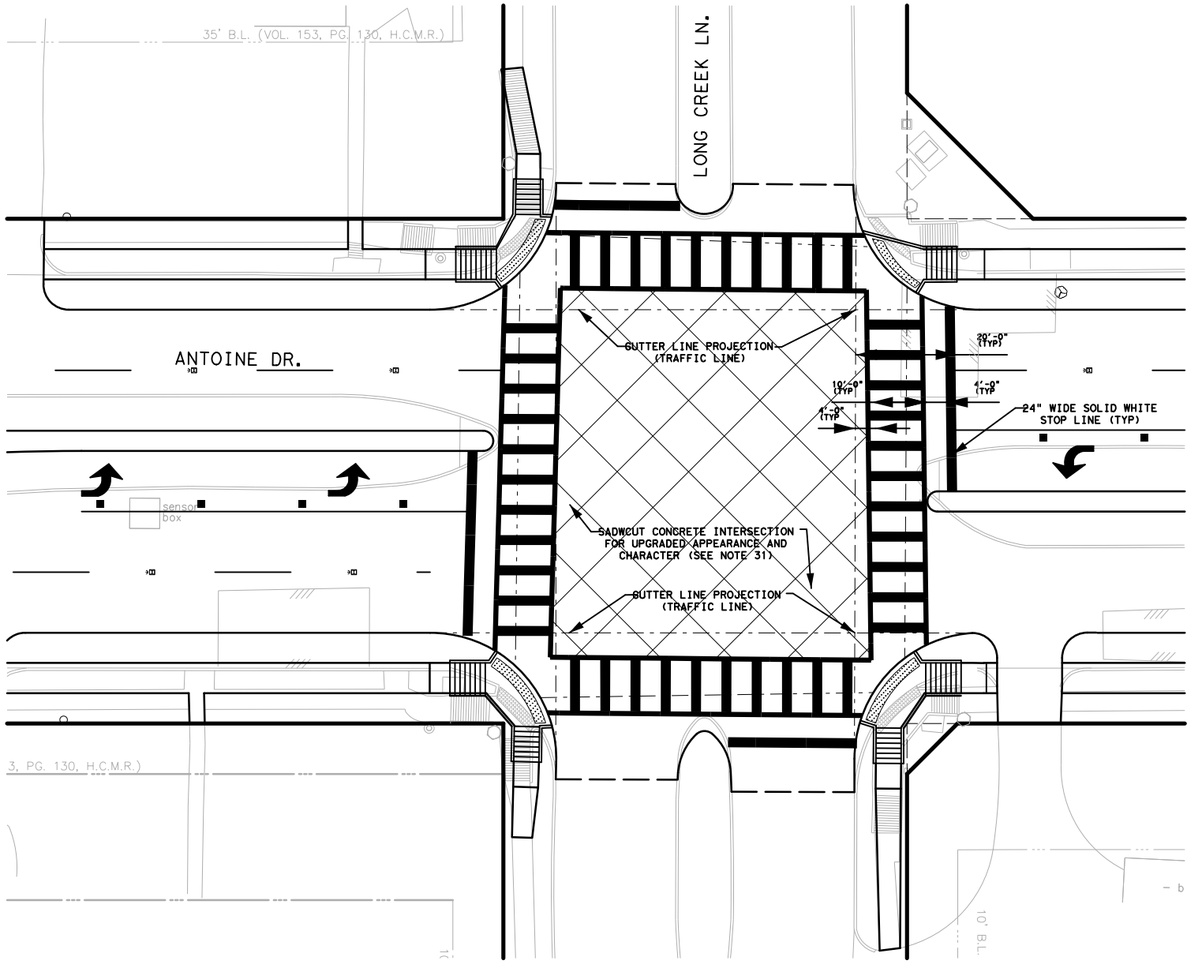
ANTOINE DRIVE

INTERSECTION BEAUTIFICATION LAYOUT ANTOINE @ VICTORY DR.

SHEET 1 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-OGEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 255 718	

Design Filename: Y:\2017012 Antoine North Paving and Drainage\MicroStation\95% SET-CAD DESIGN FILES _03_07_2025\P&P Sheets\Intersection Layouts\Beautification_Intersection\VICTORY_DR_INT



NOTES

1. COLOR SELECTION TO BE MADE IN THE FILED BY NEAR NORTHWEST MANAGEMENT DISTRICT USING TEMPORARY 6'X6' CONCRETE PADS. (FRENCH GRAY, CHARCOAL & DARK GRAY CONSIDERED AT THIS TIME)
2. SEE SPECIFICATION 02750 (02760) (3360) FOR INTEGRALLY COLORED CONCRETE AND STAMPED/IMPRINTED CONCRETE PAVEMENT.
3. SAWCUTS SHALL BE 1/4" DEPTH ON A 10' GRID.

N

0' 30' 60'
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

INTERSECTION BEAUTIFICATION LAYOUT ANTOINE @ WEST GULF BANK

SHEET 2 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 256 718	

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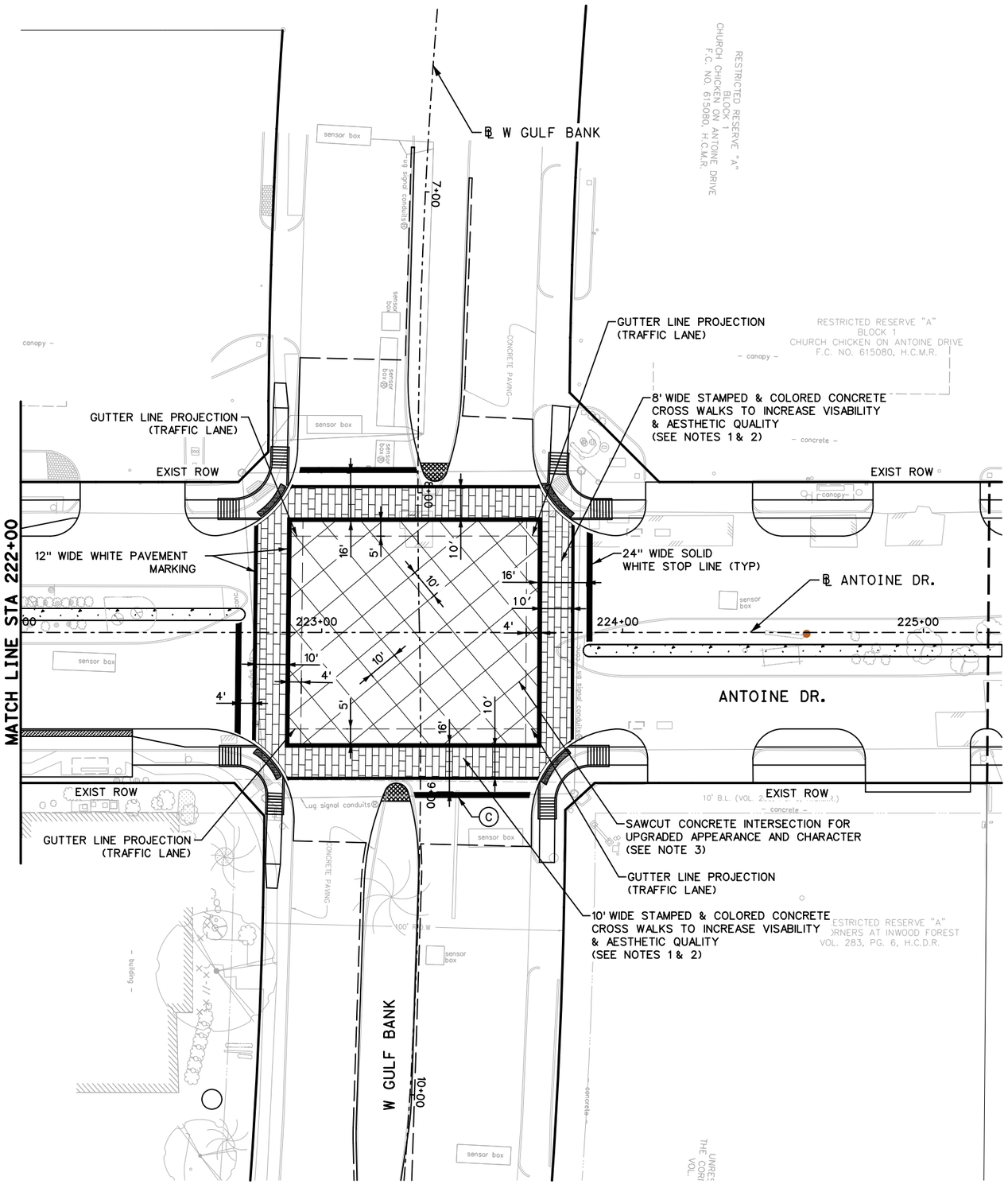

NOTES:

1. COLOR SELECTION TO BE MADE IN FIELD BY NEAR NORTHWEST MANAGEMENT DISTRICT USING TEMPORARY 6'X6' CONCRETE PADS. (FRENCH GRAY. CHARCOAL & DARK GRAY CONSIDERED AT THIS TIME).
2. SEE SPECIFICATION 02750, 02760, 3360 FOR INTEGRALLY COLORED CONCRETE AND STAMPED/IMPRINTED CONCRETE PAVEMENT.
3. SAWCUTS SHALL BE 1/4" DEPTH TO A 10' GRID.

0' 20' 40'
SCALE IN FEET

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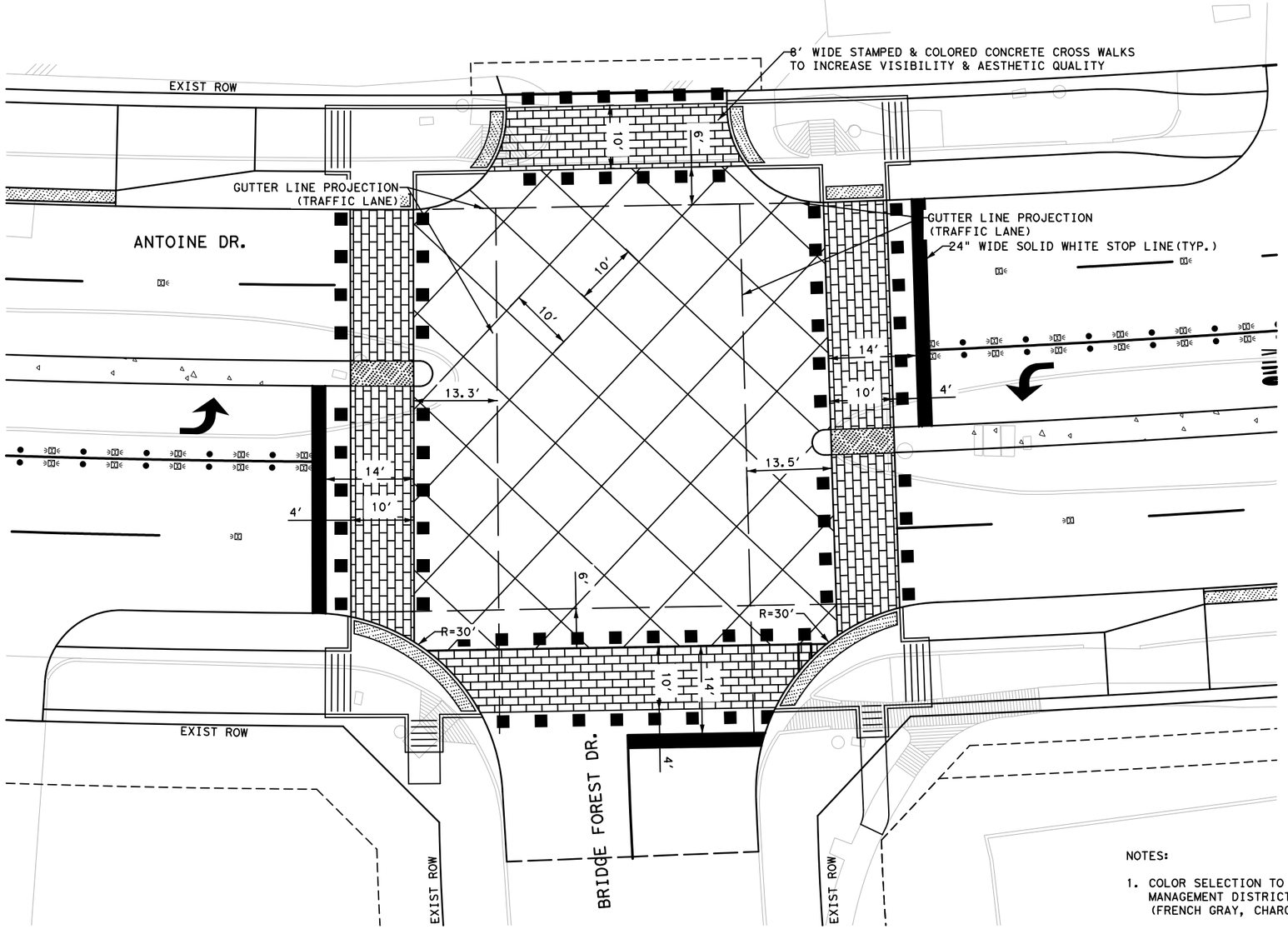
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

INTERSECTION BEAUTIFICATION LAYOUT
ANTOINE @ W GULF BANK

SHEET 3 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 257 OF 718	



N

0' 10' 20'
SCALE IN FEET

NOTES:

1. COLOR SELECTION TO BE MADE IN THE FIELD BY NEAR NORTHWEST MANAGEMENT DISTRICT USING TEMPORARY 6'x6' CONCRETE PADS. (FRENCH GRAY, CHARCOAL & DARK GRAY CONSIDERED AT THIS TIME)
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No.	DATE	REVISIONS	APP.

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Date
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10/23/2025
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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

BRIDGE FOREST DR @ ANTOINE DR INTERSECTION BEAUTIFICATION LAYOUT

SHEET 4 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 258 OF 718	

Plotted on: 10/23/2025 1:43:39 PM
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Design Filename: F:\03339 Antoine Drive\802-1\CAD\Plan Production_Roadway\XX-Intersection Beautification Layout Bridge Forest Dr-dgn

Plotted on: 10/23/2025 1:43:40 PM Oviedo
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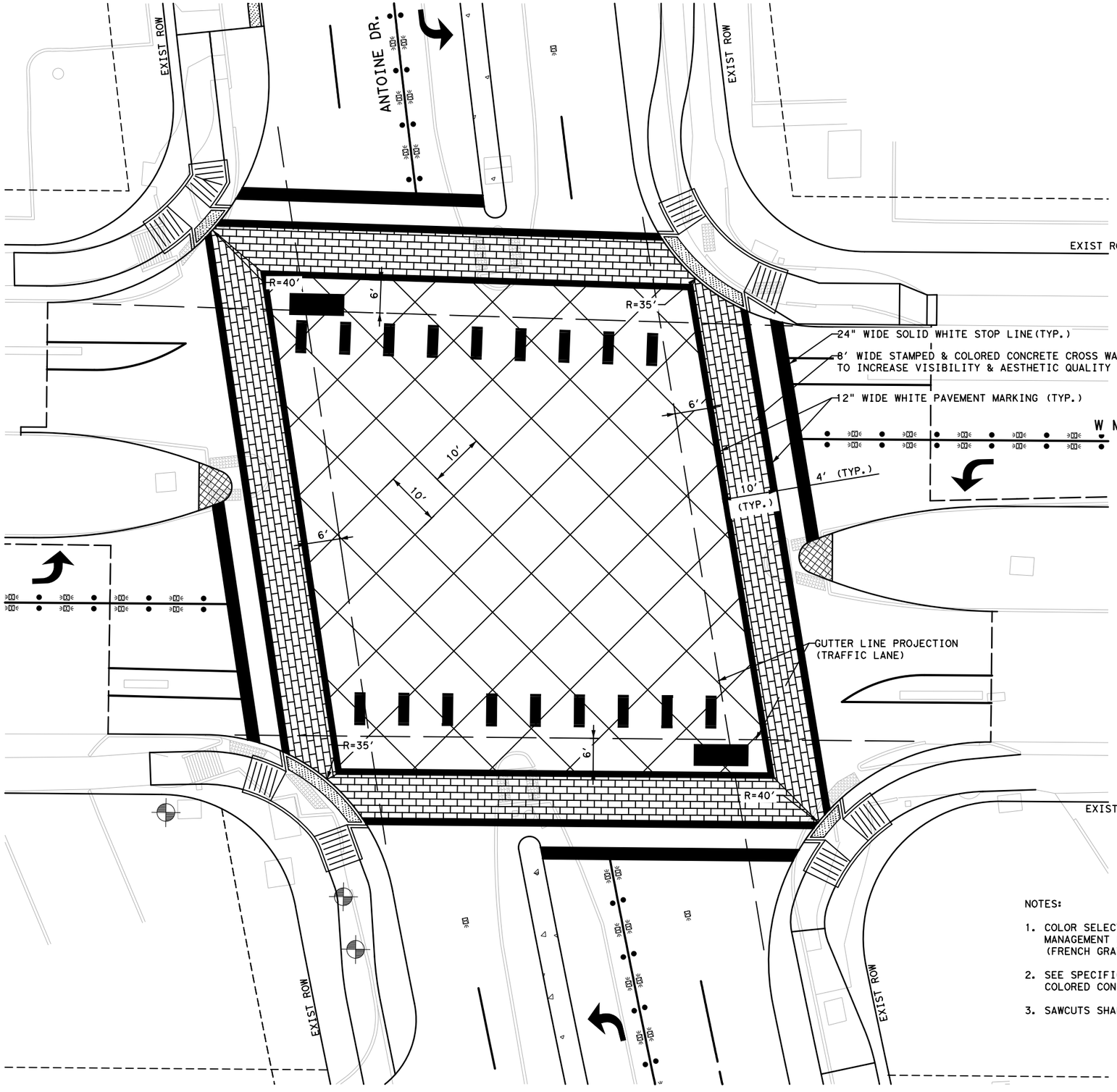

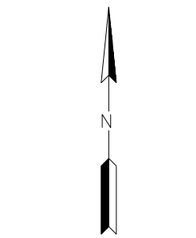

NOTES:

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No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
W. MOUNT HOUSTON @ ANTOINE DR INTERSECTION BEAUTIFICATION LAYOUT

SHEET 5 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 259 OF 718	

Design Filename: F:\03339 Antoine Drive\802-1\CAD\Plan Production_Roadway\XX-Intersection Beautification Layout W Mount Houston.dgn

Pen Table:ANTOINE DR.tbl
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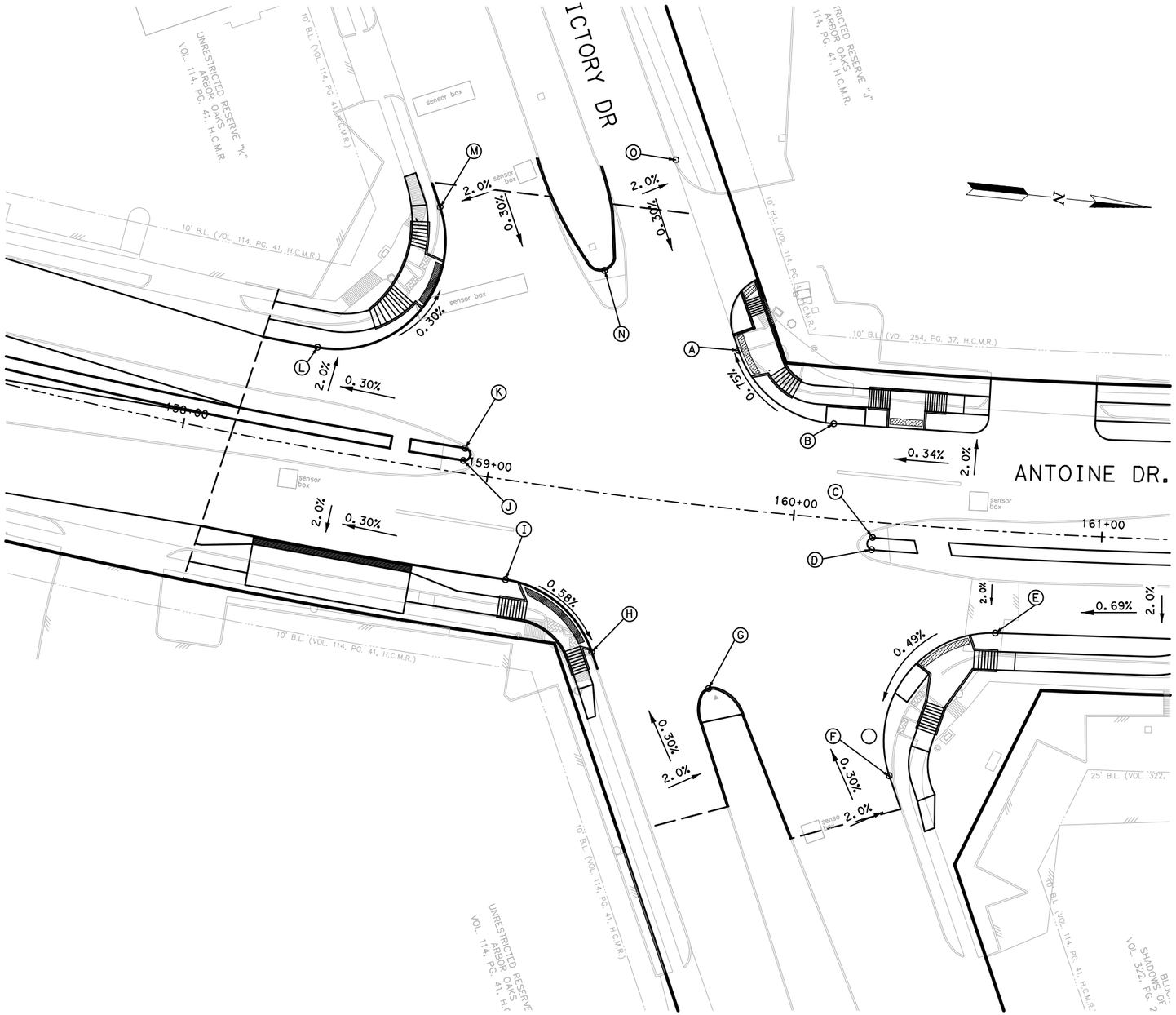
Design Filename:Y:\2017012 Antoine North Paving and Drainage\MicroStation\95% SET-CAD DESIGN FILES _03_07_2025\P&P Sheets\Intersection Layouts\VICTORY_DR_INT_LAYOUT.dgn

HORIZONTAL GEOMETRY DATA

NO.	ELEVATION	DESCRIPTION
A	72.72	TOC
B	72.41	TOC
C	73.13	TOC
D	73.13	TOC
E	72.21	TOC
F	72.54	TOC
G	73.28	TOC
H	72.80	TOC
I	72.55	TOC
J	73.27	TOC
K	73.27	TOC
L	72.64	TOC
M	72.61	TOC
N	73.33	TOC
O	72.33	TOC

TOC = TOP OF CURB



0' 20' 40'
SCALE IN FEET

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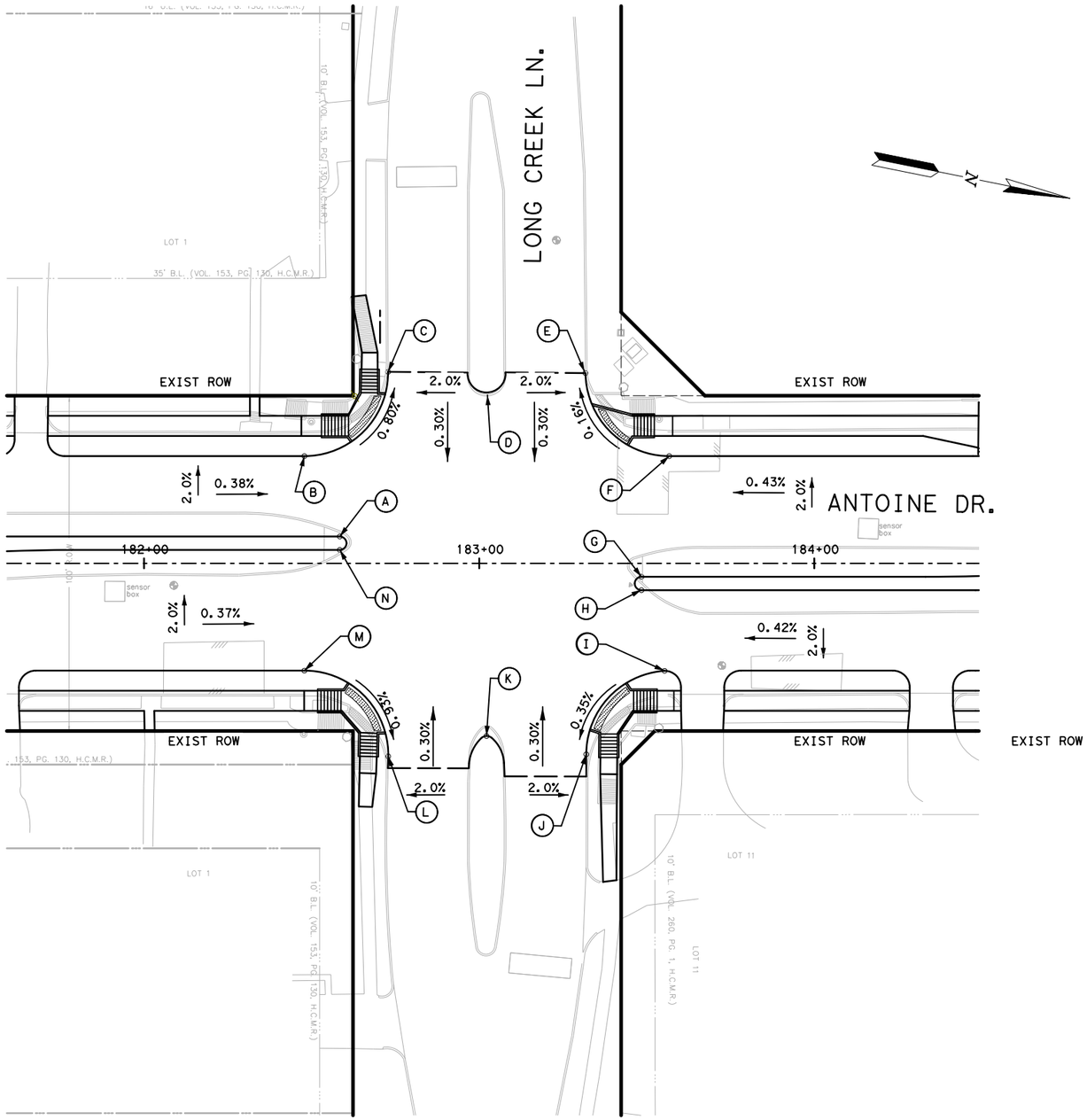
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

VICTORY DR
INTERSECTION LAYOUT

SHEET 1 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 26718	



HORIZONTAL GEOMETRY DATA		
NO.	ELEVATION	DESCRIPTION
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B	73.68	TOC
C	73.99	TOC
D	74.41	TOC
E	74.03	TOC
F	73.90	TOC
G	74.59	TOC
H	74.36	TOC
I	73.88	TOC
J	73.94	TOC
K	74.41	TOC
L	74.07	TOC
M	73.70	TOC
N	74.59	TOC
TOC = TOP OF CURB		

0' 20' 40'
SCALE IN FEET

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

LONG CREEK LN INTERSECTION LAYOUT

SHEET 2 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 26718	

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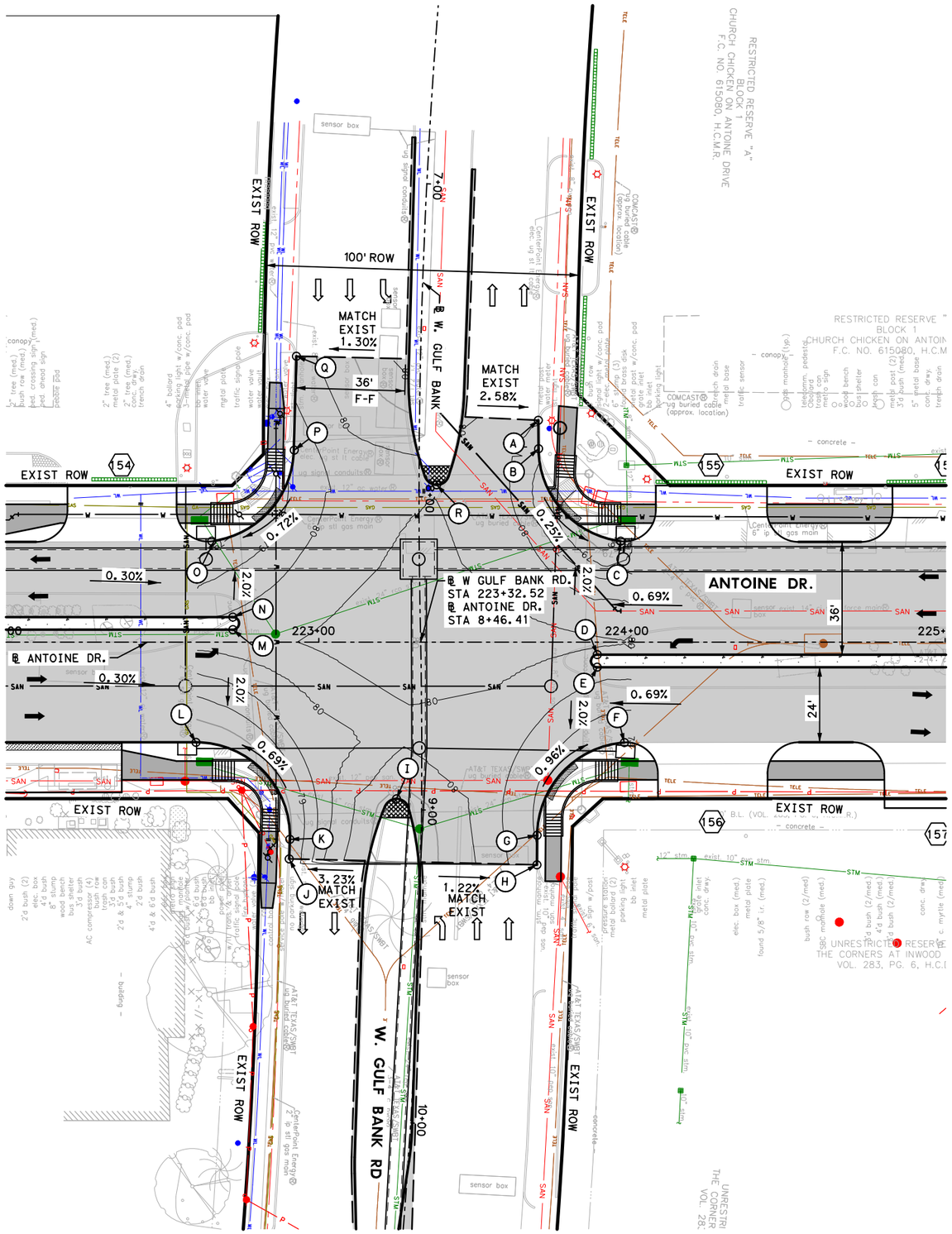

LEGEND

PROP PAVEMENT

SOIL BORING

HORIZONTAL GEOMETRY DATA		
NO.	ELEVATION	DESCRIPTION
A	79.69	TOC
B	79.80	TOC
C	79.69	TOC
D	79.75	TOC
E	79.68	TOC
F	79.69	TOC
G	80.12	TOC
H	79.79	TOC
I	80.06	TOC
J	79.15	TOC
K	79.88	TOC
L	79.55	TOC
M	79.66	TOC
N	79.62	TOC
O	79.55	TOC
P	79.85	TOC
Q	79.82	TOC
R	79.77	TOC

TOC = TOP OF CURB

No.	DATE	REVISIONS	APP.

0′ 20′ 40′

SCALE IN FEET

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TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY, #400
HOUSTON, TX 77079

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Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

W. GULF BANK INTERSECTION LAYOUT

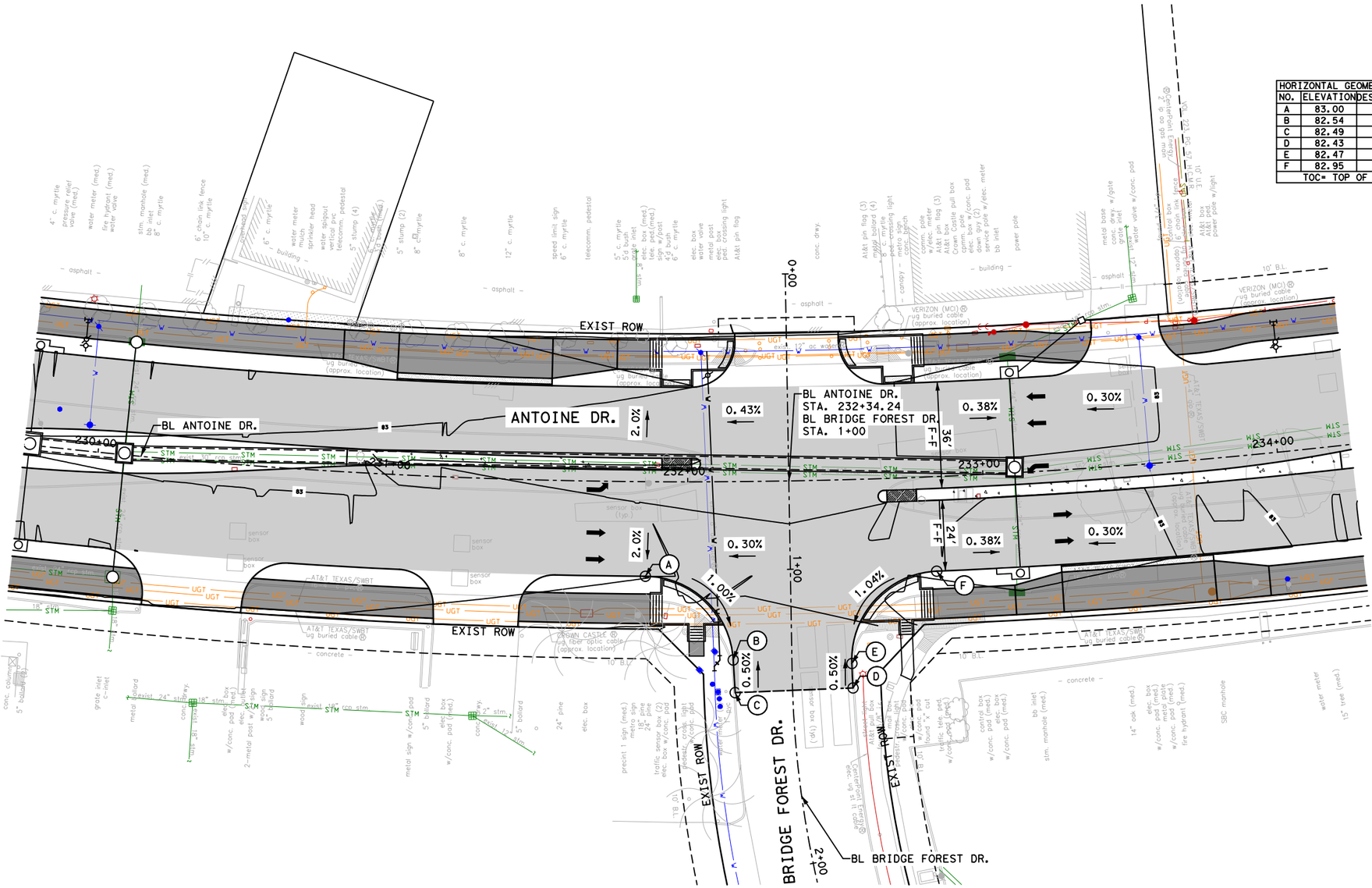
SHEET 3 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 262 OF 718	

Pen Table: ANTOINE DR.tbl
Plot Driver: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Resource\Plot files\ANTOINE DR NEW.pltcfg
Plotted on: 10/27/2025 3:00:01 PM michael.guthrie
Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Roadway\W GULF BANK\PR_INTER SECT_01.dgn

HORIZONTAL GEOMETRY DATA		
NO.	ELEVATION	DESCRIPTION
A	83.00	TOC
B	82.54	TOC
C	82.49	TOC
D	82.43	TOC
E	82.47	TOC
F	82.95	TOC
TOC= TOP OF CURB		

No.	DATE	REVISIONS	APP.



0′ 20′ 40′
SCALE IN FEET

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10/23/2025
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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

BRIDGE FOREST DRIVE INTERSECTION LAYOUT

SHEET 4 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 263 OF 718	

Plotted on: 10/23/2025 1:43:40 PM
Pen Table:ANTOINE DR.tbl
Plot Driver:F:\03339 Antoine Drive\802-1\CADD\Plot files\ANTOINE DR.pltcfg
Design Filename: F:\03339 Antoine Drive\802-1\CADD\Plan Production_Roadway\XX-Intersection Layout-01 Bridge Forest Dr.dgn

HORIZONTAL GEOMETRY DATA		
NO.	ELEVATION	DESCRIPTION
A	84.28	TOC
B	83.89	TOC
C	84.19	TOC
D	84.13	TOC
E	83.96	TOC
F	83.99	TOC
G	84.53	TOC
TOC= TOP OF CURB		

PINCAY OAKS DR

EXIST ROW

ANTOINE DR.

BL ANTOINE DR.

BL ANTOINE DR.
STA. 232+34.24
BL PINCAY OAKS DR.
STA. 1+69.96

0.60%
0.40%
0.30%
1.14%
0.82%
0.37%
0.65%
2.0%

4' F-F
24' F-F
36' F-F
16' F-F

239+00
240+00
241+00
242+00
243
2+70

0' 20' 40'
SCALE IN FEET

No.	DATE	REVISIONS	APP.

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VOGLER & SPENCER ENGINEERING
777 North Eldridge Parkway, Suite 500
Houston, Texas 77079
713-782-0042
www.vs-eng.com

SURVEYED BY:
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JOEL OLSHEFSKI
Date
131531
10/23/2025
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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PINCAY OAKS DR
INTERSECTION LAYOUT

SHEET 5 OF 8

WBS NUMBER
N-100030-0GEC-3
DRAWING SCALE
AS NOTED
CITY OF HOUSTON PM
ROWAIDAH AYOUB
SHEET NO. 264 OF 718

FOR CITY OF HOUSTON USE ONLY

Plotted on: 10/23/2025 1:43:41 PM Ovieldo

Pen Table:ANTOINE DR.tbl
Plot Driver:F:\03339 Antoine Drive\802-1\CAD\Plot files\ANTOINE DR.pltcfg

Design Filename: F:\03339 Antoine Drive\802-1\CAD\Plan Production_Roadway\XX-Intersection Layout-02 Pincay Oaks Dr.dgn

HORIZONTAL GEOMETRY DATA		
NO.	ELEVATION	DESCRIPTION
A	86.08	TOC
B	86.54	TOC
C	86.57	TOC
D	86.57	TOC
E	86.61	TOC
F	86.20	TOC
TOC= TOP OF CURB		

0′ 20′ 40′
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WINDSOR FOREST DR.
INTERSECTION LAYOUT

SHEET 6 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 265 OF 718	

No.	DATE	REVISIONS	APP.

Plotted on: 10/23/2025 1:43:41 PM\Oviedo
Pen Table:ANTOINE DR.tbl
Plot Driver:F:\03339 Antoine Drive\802-1\CAD\Plot files\ANTOINE DR.pltcfg
Design Filename: F:\03339 Antoine Drive\802-1\CAD\Plan Production_Roadway\XX-Intersection Layout-03 Windsor Forest Dr.dgn

HORIZONTAL GEOMETRY DATA		
NO.	ELEVATION	DESCRIPTION
A	86.54	TOC
B	86.15	TOC
C	86.13	TOC
D	86.09	TOC
E	86.12	TOC
F	86.53	TOC
TOC= TOP OF CURB		

No.	DATE	REVISIONS	APP.

0' 20' 40'
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

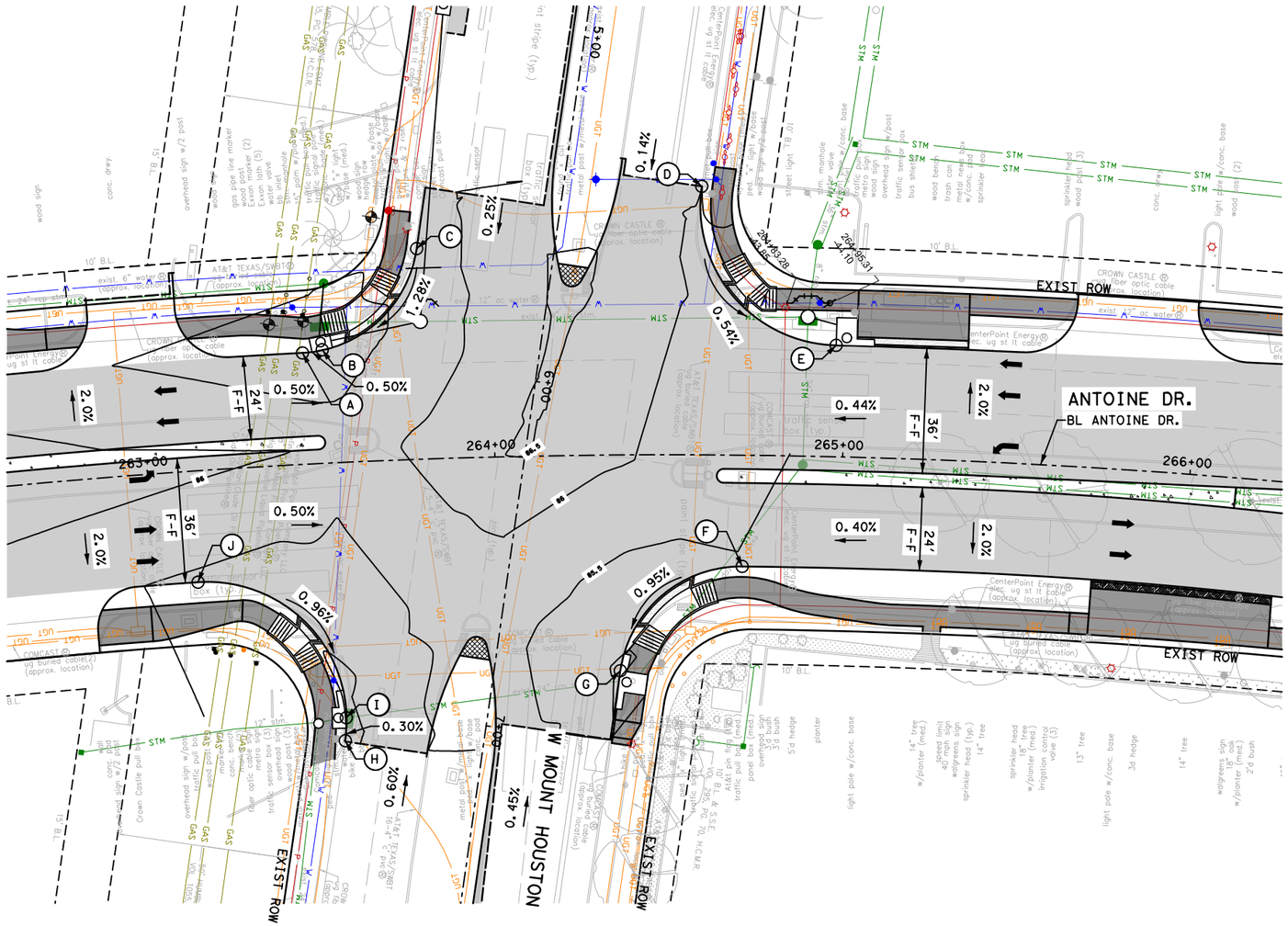
ANTOINE DRIVE

MAYWOOD FOREST DR INTERSECTION LAYOUT

SHEET 7 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 266 OF 718	

Plotted on: 10/23/2025 1:43:42 PM Oviedo
Pen Table: ANTOINE DR.tbl
Plot Driver: F:\03339 Antoine Drive\802-1\CAD\Plot files\ANTOINE DR.pltcfg
Design Filename: F:\03339 Antoine Drive\802-1\CAD\Plan Production_Roadway\XX-Intersection Layout-04 Maywood Forest Dr.dgn



HORIZONTAL GEOMETRY DATA		
NO.	ELEVATION	DESCRIPTION
A	85.75	TOC
B	85.70	TOC
C	86.24	TOC
D	86.42	TOC
E	86.08	TOC
F	85.92	TOC
G	85.44	TOC
H	85.32	TOC
I	85.30	TOC
J	85.92	TOC
TOC= TOP OF CURB		

0′ 20′ 40′
SCALE IN FEET

No.	DATE	REVISIONS	APP.

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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

W. MOUNT HOUSTON INTERSECTION LAYOUT

SHEET 8 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 267 OF 718	

Plotted on: 10/23/2025 1:43:42 PM JOviedo
Pen Table:ANTOINE DR.tbl
Plot Driver:F:\03339 Antoine Drive\802-1\CAD\Plot files\ANTOINE DR.pltcfg
Design Filename: F:\03339 Antoine Drive\802-1\CAD\Plan Production_Roadway\XX-Intersection Layout-05 W Mount Houston.dgn

DRIVEWAY NO.	DRIVEWAY CL STATION	EXIST DRWY WIDTH (ft)	EXIST DRWY MATERIAL	PROP DRWY WIDTH (ft)	PROP DRWY MATERIAL	PROP RADIUS (ft)	OFFSET *				ELEVATION				Slope			DRIVEWAY CONCRETE THICKNESS	SIDEWALK WIDTH THRU DRIVEWAY	DRIVEWAY TYPE
							POINT "A"	POINT "B"	POINT "C"	POINT "D"	POINT "A"	POINT "B"	POINT "C"	POINT "D"	*A-B*	*B-C*	*C-D*			
1	160+75	34.33	Concrete	34.33	Concrete	5	32	38	48	50	72.13	72.63	72.83	73.16	8.33%	2.00%	16.66%	7" CONC	10.0 ft	COMMERCIAL
2	161+58	25.64	Concrete	25.64	Concrete	5	32	38	48	50	72.41	72.91	73.11	73.45	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
3	161+58	25.82	Concrete	25.82	Concrete	10	32	38	48	50	72.35	72.84	73.04	73.38	8.33%	2.00%	16.66%	7" CONC	10.0 ft	COMMERCIAL
4	163+25	35.07	Concrete	35.07	Concrete	10	32	38	48	50	71.06	71.56	71.76	72.1	8.33%	2.00%	16.66%	7" CONC	10.0 ft	COMMERCIAL
5	164+25	28.09	Concrete	28.09	Concrete	5	32	38	48	50	71.74	72.24	72.44	72.78	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
6	164+57	34.93	Concrete	34.93	Concrete	10	32	38	48	50	70.67	71.17	71.37	71.7	8.33%	2.00%	16.66%	7" CONC	10.0 ft	COMMERCIAL
7	165+67	35.2	Concrete	35.2	Concrete	10	32	38	48	50	70.34	70.84	71.04	71.37	8.33%	2.00%	16.66%	7" CONC	10.0 ft	COMMERCIAL
8	166+14	27.83	Concrete	27.83	Concrete	5	32	38	48	50	71.16	71.66	71.86	72.19	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
9	168+96	12.31	Concrete	12.31	Concrete	5	32	38	48	50	71.13	71.63	71.83	72.16	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
10	169+75	11.78	Concrete	11.78	Concrete	5	32	38	48	50	71.36	71.86	72.06	72.39	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
11	170+25	17.33	Concrete	17.33	Concrete	5	32	38	48	50	71.51	72.01	72.21	72.55	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
12	171+01	10.22	Concrete	10.22	Concrete	5	32	38	48	50	71.74	72.24	72.44	72.77	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
13	171+13	10	Concrete	10	Concrete	5	32	38	48	50	71.78	72.28	72.48	72.81	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
14	171+25	13.49	Concrete	13.49	Concrete	5	32	38	48	50	71.81	72.31	72.51	72.84	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
15	171+75	12.91	Concrete	12.91	Concrete	5	32	38	48	50	71.96	72.46	72.66	72.99	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
16	171+99	9.76	Concrete	9.76	Concrete	5	32	38	48	50	72.04	72.53	72.73	73.07	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
17	172+25	9.98	Concrete	9.98	Concrete	5	32	38	48	50	72.11	72.61	72.81	73.15	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
18	172+62	13.93	Concrete	13.93	Concrete	5	32	38	48	50	72.22	72.72	72.92	73.25	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
19	172+93	12.1	Concrete	12.1	Concrete	5	32	38	48	50	72.31	72.81	73.01	73.35	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
20	172+86	11.05	Concrete	11.05	Concrete	5	32	38	48	50	72.3	72.8	73	73.33	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
21	173+41	15.97	Concrete	15.97	Concrete	5	32	38	48	50	72.46	72.96	73.16	73.49	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
22	173+56	10.89	Concrete	10.89	Concrete	5	32	38	48	50	72.51	73.01	73.21	73.54	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
23	173+65	14.27	Concrete	14.27	Concrete	5	32	38	48	50	72.53	73.03	73.23	73.56	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
24	174+75	13.73	Concrete	13.73	Concrete	5	32	38	48	50	72.86	73.36	73.56	73.9	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
25	173+75	12.14	Concrete	12.14	Concrete	5	32	38	48	50	72.56	73.06	73.26	73.59	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
26	174+41	17.8	Concrete	17.8	Concrete	5	32	38	48	50	72.76	73.26	73.46	73.79	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
27	174+53	10.91	Concrete	10.91	Concrete	5	32	38	48	50	72.8	73.3	73.5	73.83	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
28	175+09	12.07	Concrete	12.07	Concrete	5	32	38	48	50	72.96	73.46	73.66	74	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
29	174+62	14.96	Concrete	14.96	Concrete	5	32	38	48	50	72.82	73.32	73.52	73.86	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
30	175+10	10.97	Concrete	10.97	Concrete	5	32	38	48	50	72.97	73.46	73.66	74	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
31	175+55	10.85	Concrete	10.85	Concrete	5	32	38	48	50	73.1	73.6	73.8	74.14	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
32	176+00	10.17	Concrete	10.17	Concrete	5	32	38	48	50	73.24	73.73	73.93	74.27	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
33	176+00	10.83	Concrete	10.83	Concrete	5	32	38	48	50	73.24	73.74	73.94	74.27	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
34	176+85	10.12	Concrete	10.12	Concrete	10	32	38	48	50	73.49	73.99	74.19	74.52	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
35	176+75	9.93	Concrete	9.93	Concrete	5	32	38	48	50	73.46	73.96	74.16	74.5	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
36	176+95	12.02	Concrete	12.02	Concrete	10	32	38	48	50	73.52	74.02	74.22	74.55	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
37	177+59	16.65	Concrete	16.65	Concrete	5	32	38	48	50	73.72	74.21	74.41	74.75	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
38	177+55	10.46	Concrete	10.46	Concrete	10	32	38	48	50	73.7	74.2	74.4	74.73	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
39	177+89	13.87	Concrete	13.87	Concrete	10	32	38	48	50	73.8	74.3	74.5	74.84	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
40	178+37	13.75	Concrete	13.75	Concrete	5	32	38	48	50	73.95	74.45	74.65	74.98	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
41	178+37	10.44	Concrete	10.44	Concrete	10	32	38	48	50	73.95	74.45	74.65	74.98	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
42	179+25	9.78	Concrete	9.78	Concrete	10	32	38	48	50	74.21	74.71	74.91	75.24	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
43	179+25	8.91	Concrete	8.91	Concrete	5	32	38	48	50	74.21	74.71	74.91	75.25	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
44	179+47	15.21	Concrete	15.21	Concrete	5	32	38	48	50	74.28	74.78	74.98	75.31	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
45	179+47	11.02	Concrete	11.02	Concrete	5	32	38	48	50	74.28	74.78	74.98	75.31	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
46	179+99	20.55	Concrete	20.55	Concrete	5	32	38	48	50	74.13	74.63	74.83	75.17	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
47	179+99	10.26	Concrete	10.26	Concrete	10	32	38	48	50	74.14	74.64	74.84	75.17	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
48	180+30	10.23	Concrete	10.23	Concrete	10	32	38	48	50	74.02	74.52	74.72	75.06	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
49	180+85	9.81	Concrete	9.81	Concrete	5	32	38	48	50	73.81	74.31	74.51	74.84	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
50	180+89	8.77	Concrete	8.77	Concrete	5	32	38	48	50	73.8	74.3	74.5	74.84	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
51	181+25	10.32	Concrete	10.32	Concrete	5	32	38	48	50	73.67	74.17	74.37	74.7	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
52	181+64	12.07	Concrete	12.07	Concrete	5	32	38	48	50	73.53	74.03	74.23	74.56	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
53	181+71	8.97	Concrete	8.97	Concrete	5	32	38	48	50	73.48	73.98	74.18	74.51	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
54	183+68	12.43	Concrete	12.43	Concrete	5	32	38	48	50	73.45	73.95	74.15	74.49	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
55	184+37	14.22	Brick	14.22	Concrete	5	32	38	48	50	73.74	74.24	74.44	74.78	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
56	184+79	14.59	Brick	14.59	Concrete	5	32	38	48	50	73.92	74.42	74.62	74.95	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
57	185+71	12.28	Concrete	12.28	Concrete	5	32	38	48	50	74.31	74.81	75.01	75.34	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
58	186+25	19.43	Concrete	19.43	Concrete	5	32	38	48	50	74.53	75.03	75.23	75.57	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
59	186+89	12.96	Concrete	12.96	Concrete	5	32	38	48	50	74.8	75.3	75.5	75.84	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
60	187+14	11.08	Concrete	11.08	Concrete	5	32	38	48	50	74.91	75.41	75.61	75.94	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
61	187+91	11.41	Concrete	11.41	Concrete	4	32	38	48	50	75.23	75.73	75.93	76.26	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
62	188+85	26.93	Concrete	26.93	Concrete	10	32	38	48	50	75.35	75.85	76.05	76.39	8.33%	2.00%	16.66%	7" CONC	10.0 ft	COMMERCIAL
63	189+09	13.15	Concrete	13.15	Concrete	4	32	38	48	50	75.32	75.82	76.02	76.36	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
64	189+33	7.85	Concrete	7.85	Concrete	5	32	38	48	50	75.25	75.75	75.95	76.28	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
65	189+45	22.82	Concrete	22.82	Concrete	10	32	38	48	50	75.07	75.57	75.77	76.11	8.33%	2.00%	16.66%	7" CONC	10.0 ft	COMMERCIAL
66	189+60	13.6	Brick	13.6	Concrete	5	32	38	48	50	75.16	75.66	75.86	76.19	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
67	189+95	13.64	Brick	13.64	Concrete	5	32	38	48	50	75.05	75.55	75.75	76.08	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
68	190+65	12.85	Concrete	12.85	Concrete	5	32	38	48	50	74.82	75.32	75.52	75.86	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
69	190+95	18.4	Concrete	18.4	Concrete	5	32	38	48	50	74.73	75.23	75.43	75.76	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
70	192+06	22.22	Concrete	22.22	Concrete	5	32	38	48	50	74.82	75.32	75.52	75.85	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
71	192+17	16.82	Concrete	16.82	Concrete	5	32	38	48	50	74.44	74.94	75.14	75.48	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
72	192+34	9.05	Concrete	9.05	Concrete	5	32	38	48	50	74.9	75.4	75.6	75.94	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
73	192+95	10.38	Concrete	10.38	Concrete	5	32	38	48	50	74.68	75.18	75.38	75.71	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
74	192+60	10.15	Concrete	10.15	Concrete	5	32	38	48	50	74.98	75.48	75.68	76.01	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
75	193+16	12.81	Concrete	12.81	Concrete	5	32	38	48	50	75.13	75.63	75.83	76.16	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
76	193+75	11.91	Concrete	11.91	Concrete	5	32	38	48	50	74.92	75.42	75.62	75.95	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
77	193+62	11.26	Concrete	11.26	Concrete	5	32	38	48	50	74.99	75.49	75.69	76.03	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
78	193+81	10.23	Concrete	10.23	Concrete	5	32	38	48	50	74.93	75.43	75.63	75.97	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
79	194+00	11.8	Concrete	11.8	Concrete	5	32	38	48	50	74.88	75.38	75.58	75.91	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
80	194+48	9.42	Concrete	9.42	Concrete	5	32	38	48	50	75.14	75.63	75.83	76.17	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
81	194+48	11.83	Concrete	11.83	Concrete	5	32	38	48	50	75.05	75.55	75.75	76.08	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
82	194+71	9.31	Concrete	9.31	Concrete	5	32	38	48	50	75.2	75.7	75.9	76.24	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
83	195+25	12.86	Concrete	12.86	Concrete	5	32	38	48	50	75.32	75.82	76.02	76.35	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
84	195+15	9.74	Concrete	9.74	Concrete	5	32	38	48	50	75.34	75.84	76.04	76.37	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL

No.	DATE	REVISIONS	APP.

NOTES:

1. REFER TO CONCRETE & DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.
2. ELEVATION AT POINT "D" IS (+/-) AS SHOWN IN DRIVEWAY TABLE. MATCH EXIST ELEVATION AT ROW.
3. REFER TO PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
4. 4"/FT MAXIMUM IS OVER A DISTANCE OF 1'-6". IF DISTANCE FROM A TO B IS GREATER THAN 1'-6", MAXIMUM SLOPE IS 12%.

Texas Department of Transportation ©2026

Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

SURVEYED BY:
KUO & ASSOCIATES, INC.

INTERIM REVIEW ONLY
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KARAM QADDO
Texas 125611
10/24/2025
95% SUBMITTAL
GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRIVEWAY TABULATION DETAILS

SHEET 1 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 268 OF 718	

Plotted on: 10/24/2025 3:07:12 PM michael.guthrie
Pen Table: ANTOINE DR.tbl
Plot Driver: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Resource\Plot files\ANTOINE DR.pltcfg
Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Roadway\W GULF BANK\PR DRIVEWAY TAB 01.dgn

DRIVEWAY NO.	DRIVEWAY CL STATION	EXIST DRWY WIDTH (ft)	EXIST DRWY MATERIAL	PROP DRWY WIDTH (ft)	PROP DRWY MATERIAL	PROP RADIUS (ft)	OFFSET *				ELEVATION				Slope			DRIVEWAY CONCRETE THICKNESS	SIDEWALK WIDTH THRU DRIVEWAY	DRIVEWAY TYPE
							POINT "A"	POINT "B"	POINT "C"	POINT "D"	POINT "A"	POINT "B"	POINT "C"	POINT "D"	A-B	B-C	C-D			
85	195+33	11.92	Concrete	11.92	Concrete	5	32	38	48	50	75.35	75.85	76.05	76.38	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
86	195+92	10.13	Concrete	10.13	Concrete	5	32	38	48	50	75.57	76.07	76.27	76.6	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
87	195+92	17.71	Concrete	17.71	Concrete	5	32	38	48	50	75.55	76.05	76.25	76.59	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
88	196+25	13.57	Concrete	13.57	Concrete	5	32	38	48	50	75.53	76.03	76.23	76.56	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
89	196+67	8.78	Concrete	8.78	Concrete	5	32	38	48	50	75.34	75.84	76.04	76.37	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
90	196+86	12.02	Concrete	12.02	Concrete	5	32	38	48	50	75.33	75.83	76.03	76.36	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
91	197+35	9.85	Concrete	9.85	Concrete	5	32	38	48	50	75.06	75.56	75.76	76.1	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
92	197+35	9.95	Concrete	9.95	Concrete	5	32	38	48	50	75.17	75.67	75.87	76.2	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
93	197+53	10.05	Concrete	10.05	Concrete	5	32	38	48	50	74.99	75.49	75.69	76.02	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
94	198+15	9.48	Concrete	9.48	Concrete	5	32	38	48	50	74.97	75.47	75.67	76.01	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
95	198+25	15.32	Concrete	15.32	Concrete	5	32	38	48	50	74.84	75.34	75.54	75.87	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
96	198+41	10.05	Concrete	10.05	Concrete	5	32	38	48	50	75.05	75.55	75.75	76.09	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
97	198+78	9.32	Concrete	9.32	Concrete	5	32	38	48	50	75	75.5	75.7	76.03	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
98	198+78	17	Concrete	17	Concrete	5	32	38	48	50	75.17	75.67	75.87	76.2	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
99	199+00	14.09	Concrete	14.09	Concrete	5	32	38	48	50	75.07	75.56	75.76	76.1	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
100	199+45	11.38	Concrete	11.38	Concrete	5	32	38	48	50	75.38	75.88	76.08	76.41	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
101	199+12	9.86	Concrete	9.86	Concrete	5	32	38	48	50	75.1	75.6	75.8	76.13	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
102	199+64	15.5	Concrete	15.5	Concrete	5	32	38	48	50	75.44	75.94	76.14	76.47	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
103	199+64	9.7	Concrete	9.7	Concrete	5	32	38	48	50	75.26	75.76	75.96	76.29	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
104	200+09	10.27	Concrete	10.27	Concrete	4	32	38	48	50	75.58	76.08	76.28	76.61	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
105	199+90	14.68	Concrete	14.68	Concrete	3	32	38	48	50	75.34	75.83	76.03	76.37	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
106	200+49	8.89	Concrete	8.89	Concrete	5	32	38	48	50	75.7	76.2	76.4	76.73	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
107	200+83	9.07	Concrete	9.07	Concrete	5	32	38	48	50	75.61	76.11	76.31	76.65	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
108	201+46	13.84	Concrete	13.84	Concrete	5	32	38	48	50	75.8	76.3	76.5	76.84	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
109	201+39	21.09	Gravel	21.09	Concrete	5	32	38	48	50	75.98	76.48	76.68	77.01	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
110	201+89	13.27	Gravel	13.27	Concrete	5	32	38	48	50	76.13	76.63	76.83	77.17	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
111	202+09	17.51	Concrete	17.51	Concrete	5	32	38	48	50	75.99	76.49	76.69	77.03	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
112	202+25	9.79	Concrete	9.79	Concrete	5	32	38	48	50	76.25	76.74	76.94	77.28	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
113	202+54	17.95	Concrete	17.95	Concrete	5	32	38	48	50	76.34	76.83	77.03	77.37	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
114	202+92	10.31	Concrete	10.31	Concrete	5	32	38	48	50	76.24	76.74	76.94	77.27	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
115	202+50	18.59	Concrete	18.59	Concrete	5	32	38	48	50	76.32	76.82	77.02	77.36	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
116	202+92	12.07	Concrete	12.07	Concrete	5	32	38	48	50	76.24	76.74	76.94	77.27	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
117	203+12	21.84	Concrete	21.84	Concrete	5	32	38	48	50	76.51	77.01	77.21	77.55	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
118	203+50	11.31	Concrete	11.31	Concrete	5	32	38	48	50	76.28	76.78	76.98	77.31	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
119	203+70	15.42	Concrete	15.42	Concrete	5	32	38	48	50	76.4	76.9	77.1	77.43	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
120	204+25	10.06	Concrete	10.06	Concrete	5	32	38	48	50	76.03	76.53	76.73	77.06	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
121	203+80	11.12	Concrete	11.12	Concrete	5	32	38	48	50	76.36	76.86	77.06	77.4	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
122	204+32	13.04	Concrete	13.04	Concrete	5	32	38	48	50	76.01	76.51	76.71	77.04	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
123	204+53	9.86	Concrete	9.86	Concrete	5	32	38	48	50	75.94	76.44	76.64	76.97	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
124	204+90	11.87	Concrete	11.87	Concrete	5	32	38	48	50	75.97	76.47	76.67	77	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
125	205+31	17.48	Concrete	17.48	Concrete	5	32	38	48	50	75.83	76.32	76.52	76.86	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
126	205+75	21.72	Concrete	21.72	Concrete	5	32	38	48	50	76.11	76.61	76.81	77.14	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
127	206+42	19.5	Concrete	19.5	Concrete	5	32	38	48	50	76.31	76.81	77.01	77.34	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
128	206+42	9.5	Concrete	9.5	Concrete	5	32	38	48	50	76.16	76.66	76.86	77.19	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
129	206+77	11.75	Concrete	11.75	Concrete	5	32	38	48	50	76.41	76.91	77.11	77.45	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
130	206+65	9.37	Concrete	9.37	Concrete	5	32	38	48	50	76.23	76.73	76.93	77.26	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
131	207+39	11.09	Concrete	11.09	Concrete	5	32	38	48	50	76.45	76.95	77.15	77.48	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
132	207+52	9.69	Concrete	9.69	Concrete	5	32	38	48	50	76.64	77.14	77.34	77.67	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
133	208+51	9.85	Concrete	9.85	Concrete	5	32	38	48	50	76.79	77.28	77.48	77.82	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
134	208+70	15.58	Concrete	15.58	Concrete	5	32	38	48	50	76.99	77.49	77.69	78.03	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
135	209+17	19.58	Concrete	19.58	Concrete	5	32	38	48	50	76.9	77.4	77.6	77.93	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
136	209+17	17.21	Concrete	17.21	Concrete	5	32	38	48	50	76.76	77.26	77.46	77.79	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
137	211+55	13.01	Concrete	13.01	Concrete	5	32	38	48	50	76.86	77.35	77.55	77.89	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
138	211+55	40.04	Concrete	40.04	Concrete	10	32	38	48	50	76.98	77.47	77.67	78.01	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
139	212+17	29.52	Asphalt	29.52	Concrete	15	32	38	48	50	77.16	77.66	77.86	78.19	8.33%	2.00%	16.66%	7" CONC	10.0 ft	COMMERCIAL
140	212+17	12.79	Concrete	12.79	Concrete	5	32	38	48	50	77.04	77.54	77.74	78.07	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
141	212+73	25.47	Concrete	25.47	Concrete	5	32	38	48	50	77.21	77.71	77.91	78.24	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
142	213+58	10.35	Concrete	10.35	Concrete	5	32	38	48	50	77.46	77.96	78.16	78.5	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
143	214+48	18.77	Asphalt	18.77	Concrete	5	32	38	48	50	77.73	78.23	78.43	78.77	8.33%	2.00%	16.66%	7" CONC	10.0 ft	COMMERCIAL
144	214+48	30	Concrete	30	Concrete	10	32	38	48	50	77.85	78.35	78.55	78.89	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
145	215+39	10.78	Concrete	10.78	Concrete	5	32	38	48	50	78.01	78.51	78.71	79.04	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
146	215+92	9.28	Concrete	9.28	Concrete	5	32	38	48	50	78.17	78.67	78.87	79.2	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
147	216+30	21.59	Asphalt	21.59	Concrete	5	32	38	48	50	78.4	78.9	79.1	79.43	8.33%	2.00%	16.66%	7" CONC	10.0 ft	COMMERCIAL
148	216+73	9.21	Concrete	9.21	Concrete	5	32	38	48	50	78.41	78.91	79.11	79.44	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
149	216+87	10.06	Concrete	10.06	Concrete	5	32	38	48	50	78.45	78.95	79.15	79.48	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
150	217+25	10.67	Concrete	10.67	Concrete	3	32	38	48	50	78.44	78.94	79.14	79.47	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
151	219+62	16.71	Concrete	16.71	Concrete	5	32	38	48	50	77.9	78.4	78.6	78.93	8.33%	2.00%	16.66%	7" CONC	10.0 ft	RESIDENTIAL
152	220+86	29.43	Concrete	29.43	Concrete	5	32	38	48	50	78.27	78.77	78.97	79.3	8.33%	2.00%	16.66%	7" CONC	10.0 ft	COMMERCIAL
153	221+60	34.21	Concrete	34.21	Concrete	10'	32.00	38.00	48.00	50.00	0.00	0.50	0.70	1.03	8.33%	2.0%	16.66%	7" CONC	10'	COMMERCIAL
154	222+37	34.80	Concrete	34.80	Concrete	10'	32.00	38.00	48.00	50.00	79.13	79.22	79.42	79.38	1.50%	2.00%	-2.0%	7" CONC	10'	COMMERCIAL
155	224+25	35.50	Concrete	35.50	Concrete	10'	32.00	38.00	48.00	50.00	79.37	79.52	79.72	79.73	2.50%	2.00%	0.5%	7" CONC	10'	COMMERCIAL
156	224+25	35.00	Concrete	35.00	Concrete	10'	32.00	38.00	48.00	50.00	79.37	79.76	79.96	80.15	6.50%	2.00%	9.5%	7" CONC	10'	COMMERCIAL
157	224+98	34.90	Concrete	34.90	Concrete	10.5	32.00	38.00	48.00	53.00	79.89	80.37	80.57	81.02	8.00%	2.00%	9.0%	7" CONC	10'	COMMERCIAL
158	225+01	35.70	Concrete	35.70	Concrete	10'	32.00	38.00	48.00	50.00	79.89	80.25	80.45	80.48	6.00%	2.00%	1.5%	7" CONC	10'	COMMERCIAL
159	225+33.46		Conc. Pvm	15	Conc. Pvmt	L=5'/R=15'	32		36.5	46.5	49.94	80.11	80.56	80.66	81.02	10.00%	1.00%	10.50%	10"	10'	COMMERCIAL
160	225+76.00		Conc. Pvm	35.5	Conc. Pvmt	L=15'/R=9'	32		38	48	50.1	80.4	80.46	80.66	80.87	1.00%	2.00%	10.00%	10"	10'	COMMERCIAL
161	225+74.10		Conc. Pvm	10	Conc. Pvmt	L=15'/R=8'	32		38	48	49.93	80.39	80.75	80.95	81.16	6.00%	2.00%	10.90%	10"	10'	HCMUD 118 PVT LIFT STATION ACCESS
162	226+17.01		Conc. Pvm	35	Conc. Pvmt	L=8'/R=15'	32		38	48	50	80.64	81.18	81.38	81.54	9.00%	2.00%	8.00%	10"	10'	COMMERCIAL
163	226+31.52		Conc. Pvm	35.8	Conc. Pvmt	L=10'/R=15'	32		38	48	50.15	80.79	81	81.2	81.41	3.50%	2.00%	9.80%	10"	10'	COMMERCIAL
164	227+60.03		Conc. Pvm	27.7	Conc. Pvmt	12'	32		38	48	57.5	81.62	82.22	82.42	82.64	10.00%	2.00%	2.30%	10"	10'	COMMERCIAL
165	227+77.00		Conc. Pvm	35.9	Conc. Pvmt	15'	32		36.5	46.5	50.16	81.57	81.82	82.02	82.33	5.50%	2.00%	8.50%	10"	10'	COMMERCIAL
166	228+68.43		Conc. Pvm	23.9	Conc. Pvmt	15'	32		38	48	52	81.82	82.42	82.62	83.04	10.00%	2.00%	10.50%	10"	10'	COMMERCIAL
167	229+13.01		Conc. Pvm	35.6	Conc. Pvmt	15'	32		38	48	50.16	81.72	81.84	82.04	82.2	2.00%	2.00%	7.40%	10"	10'	COMMERCIAL
168	229+18.46		Conc. Pvm	25	Conc. Pvmt	L=10'/R=15'	32		38	48	49.88	82.04	82.55	82.75	82.93	8.50%	2.00%	9.60%	10"	10'	COMMERCIAL
169	230+35.62		Conc. Pvm	34.7	Conc. Pvmt	15'	32		38	48	50	82.55	82.88	83.08	83.14	5.50%	2.00%	3.00%	10"	10'	COMMERCIAL

NOTES:

1. REFER TO CONCRETE & DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.
2. ELEVATION AT POINT "D" IS (+/-) AS SHOWN IN DRIVEWAY TABLE. MATCH EXIST ELEVATION AT ROW.
3. REFER TO PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
4. 4"/FT MAXIMUM IS OVER A DISTANCE OF 1'-6". IF DISTANCE FROM A TO B IS GREATER THAN 1'-6", MAXIMUM SLOPE IS 12%.

No.	DATE	REVISIONS	APP.

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

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Texas 125611
10/24/2025
95% SUBMITTAL
GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRIVEWAY TABULATION DETAILS

SHEET 2 OF 3

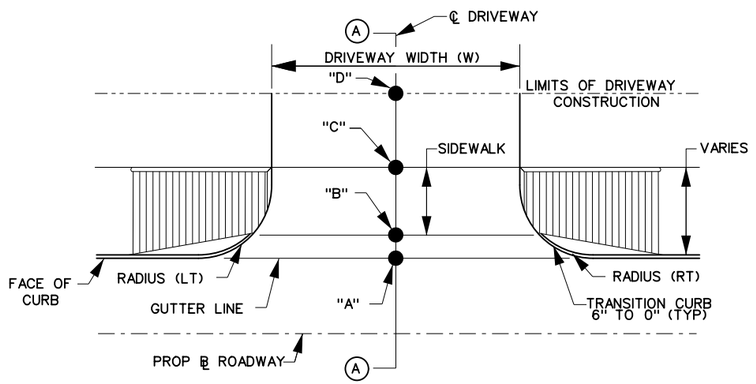
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 269 OF 718	

Plotted on: 10/24/2025 3:07:15 PM michael.guthrie
Pen Table: ANTOINE DR.tbl
Plot Driver: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Resource\Plot files\ANTOINE DR.pltcfg
Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Roadway\W GULF BANK\PR DRIVEWAY TAB 02.dgn

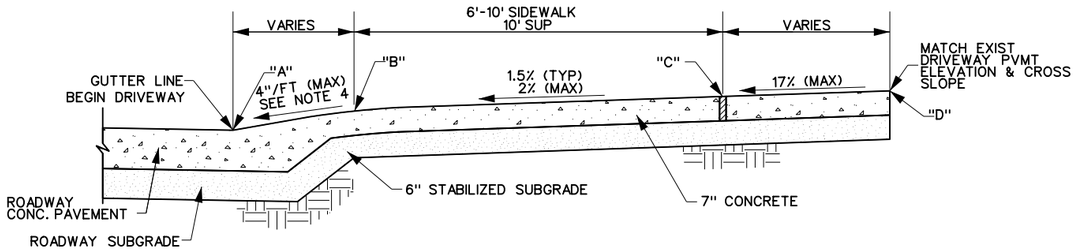
DRIVEWAY NO.	DRIVEWAY CL STATION	EXIST DRWY WIDTH (ft)	EXIST DRWY MATERIAL	PROP DRWY WIDTH (ft)	PROP DRWY MATERIAL	PROP RADIUS (ft)	OFFSET *				ELEVATION				Slope			DRIVEWAY CONCRETE THICKNESS	SIDEWALK WIDTH THRU DRIVEWAY	DRIVEWAY TYPE
							POINT "A"	POINT "B"	POINT "C"	POINT "D"	POINT "A"	POINT "B"	POINT "C"	POINT "D"	A-B	B-C	C-D			
170	231+29.91		Conc. Pvm	29.6	Conc. Pvm†	12′	32	38	48	49.86	82.83	82.89	83.09	83.14	1.00%	2.00%	2.70%	10"	10′	COMMERCIAL
171	232+34.29		Conc. Pvm	36	Conc. Pvm†	15′	32	38	48	50.31	82.64	82.7	82.75	82.69	1.00%	0.50%	-2.60%	10"	10′	COMMERCIAL
172	233+51.80		Conc. Pvm	24	Conc. Pvm†	15′	32	36	46	50.06	82.47	82.77	82.97	83.34	7.50%	2.00%	9.10%	10"	10′	COMMERCIAL
173	234+51.97		Conc. Pvm	30.4	Conc. Pvm†	15′	32	38	48	49.91	82.77	83.22	83.42	83.61	7.50%	2.00%	9.90%	10"	10′	COMMERCIAL
174	234+77.13		Conc. Pvm	20.3	Conc. Pvm†	15′	32	38	48	51.98	82.85	82.97	83.07	83.16	2.00%	1.00%	2.30%	10"	10′	COMMERCIAL
175	235+85.50		Conc. Pvm	25.6	Conc. Pvm†	L=8′/R=10′	32	37	47	52.66	82.63	83.08	83.28	83.74	9.00%	2.00%	8.10%	10"	10′	COMMERCIAL
176	236+32.47		Conc. Pvm	19.3	Conc. Pvm†	L=9′/R=8′	32	38	48	52.3	82.85	82.97	83.17	83.44	2.00%	2.00%	6.30%	10"	10′	COMMERCIAL
177	237+74.40		Conc. Pvm	25.5	Conc. Pvm†	L=15′/R=10′	32	38	48	49.73	83.4	83.91	84.11	84.29	8.50%	2.00%	10.40%	10"	10′	COMMERCIAL
178	238+87.27		Conc. Pvm	30.1	Conc. Pvm†	15′	32	38	48	53	83.6	84.2	84.4	84.89	10.00%	2.00%	9.80%	10"	10′	COMMERCIAL
179	239+65.42		Conc. Pvm	24.9	Conc. Pvm†	L=15′/R=10′	32	38	48	51.84	83.84	84.44	84.64	84.95	10.00%	2.00%	8.10%	10"	10′	COMMERCIAL
180	242+14.69		Conc. Pvm	34.7	Conc. Pvm†	L=15′/R=10′	32	38	48	51.3	84.85	85.45	85.65	85.99	10.00%	2.00%	10.30%	10"	10′	COMMERCIAL
181	243+24.90		Conc. Pvm	35.5	Conc. Pvm†	L=10′/R=5′	32	38	48	49.8	85.46	85.94	86.14	86.2	8.00%	2.00%	3.30%	10"	10′	COMMERCIAL
182	243+25.72		Conc. Pvm	34.9	Conc. Pvm†	15′	32	38	48	50.2	85.46	85.82	86.02	86.25	6.00%	2.00%	10.50%	10"	10′	COMMERCIAL
183	244+82.52		Conc. Pvm	34.9	Conc. Pvm†	15′	32	38	48	54.77	85.52	85.64	85.84	86.19	2.00%	2.00%	5.20%	10"	10′	COMMERCIAL
184	245+60.00		Conc. Pvm	25.4	Conc. Pvm†	15′	32	38	48	51.14	85.23	85.83	86.03	86.28	10.00%	2.00%	8.00%	10"	10′	COMMERCIAL
185	245+92.44		Conc. Pvm	36.2	Conc. Pvm†	15′	32	38	48	49.86	85.11	85.41	85.61	85.74	5.00%	2.00%	7.00%	10"	10′	COMMERCIAL
186	246+14.81		Conc. Pvm	24.2	Conc. Pvm†	15′	32	38	48	52.5	85.03	85.63	85.83	86.28	10.00%	2.00%	10.00%	10"	10′	COMMERCIAL
187	247+33.74		Conc. Pvm	28.12	Conc. Pvm†	20′	32	38	48	52.93	85.17	85.56	85.76	86.27	6.50%	2.00%	10.30%	10"	10′	PVT RESIDENTIAL
188	250+21.29		Conc. Pvm	15.2	Conc. Pvm†	L=15′/R=10′	32	38	48	54.5	85.07	85.67	85.87	86.54	10.00%	2.00%	10.30%	10"	10′	HCMUD 119 PVT WWTF ACCESS
189	250+45.26		Conc. Pvm	35.1	Conc. Pvm†	15′	32	38	48	49.96	86.14	86.56	86.76	86.97	7.00%	2.00%	10.70%	10"	10′	RESIDENTAL/APPARTMENT
190	252+03.77		Conc. Pvm	27.8	Conc. Pvm†	15′	32	38	48	51.5	85.48	86.08	86.28	86.6	10.00%	2.00%	9.10%	10"	10′	COMMERCIAL
191	253+53.24		Conc. Pvm	35.7	Conc. Pvm†	15′	32	38	48	51	85.64	86.24	86.44	86.69	10.00%	2.00%	8.30%	10"	10′	RESIDENTAL/APPARTMENT
192	256+15.30		Conc. Pvm	41.3	Conc. Pvm†	15′	32	38	48	50.06	85.58	85.94	86.14	86.35	6.00%	2.00%	10.20%	10"	10′	COMMERCIAL
193	257+07.19		Conc. Pvm	40.9	Conc. Pvm†	12′	32	38	48	49.93	85.17	85.8	86	86.19	10.50%	2.00%	9.80%	10"	10′	COMMERCIAL
194	258+60.79		Conc. Pvm	36	Conc. Pvm†	15′	32	38	48	49.94	85.34	85.46	85.66	85.8	2.00%	2.00%	7.20%	10"	10′	COMMERCIAL
195	259+43.58		Conc. Pvm	24.9	Conc. Pvm†	10′	32	38	48	59	85.71	86.31	86.51	87.9	10.00%	2.00%	12.60%	10"	10′	COMMERCIAL
196	259+99.73		Conc. Pvm	25	Conc. Pvm†	8′	32	38	48	49.95	85.76	86.12	86.32	86.51	6.00%	2.00%	9.70%	10"	10′	COMMERCIAL
197	260+43.46		Conc. Pvm	20	Conc. Pvm†	15′	32	38	48	49.97	85.89	86.37	86.57	86.7	8.00%	2.00%	6.60%	10"	10′	COMMERCIAL
198	260+79.90		Conc. Pvm	36	Conc. Pvm†	15′	32	38	48	53.1	86	86.6	86.8	87.29	10.00%	2.00%	9.60%	10"	10′	COMMERCIAL
199	261+01.34		Conc. Pvm	19.8	Conc. Pvm†	L=10′/R=3′	32	38	48	50.02	86.07	86.58	86.78	87	8.50%	2.00%	10.90%	10"	10′	COMMERCIAL
200	261+27.17		Conc. Pvm	21.2	Conc. Pvm†	L=3′/R=15′	32	38	48	49.94	86.14	86.35	86.55	86.75	3.50%	2.00%	10.30%	10"	10′	COMMERCIAL
201	261+72.03		Conc. Pvm	35.1	Conc. Pvm†	15′	32	38	48	50.12	86.11	86.56	86.76	86.97	7.50%	2.00%	9.90%	10"	10′	COMMERCIAL
202	262+22.21		Conc. Pvm	32.4	Conc. Pvm†	15′	32	38	48	49.84	85.86	86.37	86.57	86.75	8.50%	2.00%	9.80%	10"	10′	COMMERCIAL
203	262+64.54		Conc. Pvm	35.1	Conc. Pvm†	15′	32	38	48	50.13	85.66	85.99	86.19	86.41	5.50%	2.00%	10.30%	10"	10′	COMMERCIAL
204	262+98.72		Conc. Pvm	26.3	Conc. Pvm†	15′	32	38	48	52.9	85.49	86.09	86.29	86.83	10.00%	2.00%	11.00%	10"	10′	COMMERCIAL
205	265+81.97		Conc. Pvm	35.8	Conc. Pvm†	15′	32.41	42	48	49.47	85.95	86.86	86.98	87.12	9.50%	2.00%	9.50%	10"	10′	COMMERCIAL
206	266+99.79		Conc. Pvm	31.8	Conc. Pvm†	10′	36.18	42	48	50.11	86.32	86.44	86.56	86.77	2.00%	2.00%	10.10%	10"	10′	COMMERCIAL
207	267+41.02		Conc. Pvm	31	Conc. Pvm†	10′	38.77	44	48	56	86.65	87.17	87.25	88.1	10.00%	2.00%	10.60%	10"	10′	COMMERCIAL
208	267+85.11		Conc. Pvm	19.7	Conc. Pvm†	10′	39.45	44	48	56	86.85	87.31	87.39	88.2	10.00%	2.00%	10.20%	10"	10′	COMMERCIAL

NOTES:

1. REFER TO CONCRETE & DRIVEWAY DETAILS FOR ADDITIONAL INFORMATION.
2. ELEVATION AT POINT "D" IS (+/-) AS SHOWN IN DRIVEWAY TABLE. MATCH EXIST ELEVATION AT ROW.
3. REFER TO PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
4. 4"/FT MAXIMUM IS OVER A DISTANCE OF 1′-6". IF DISTANCE FROM A TO B IS GREATER THAN 1′-6", MAXIMUM SLOPE IS 12%.



TYPICAL DRIVEWAY LAYOUT
N.T.S



SECTION A
TYPICAL DRIVEWAY SECTION
N.T.S

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Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRIVEWAY TABULATION DETAILS

SHEET 3 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 270 OF 718	

No.	DATE	REVISIONS	APP:

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Plotted on: 10/24/2025 3:07:16 PM michael.guthrie
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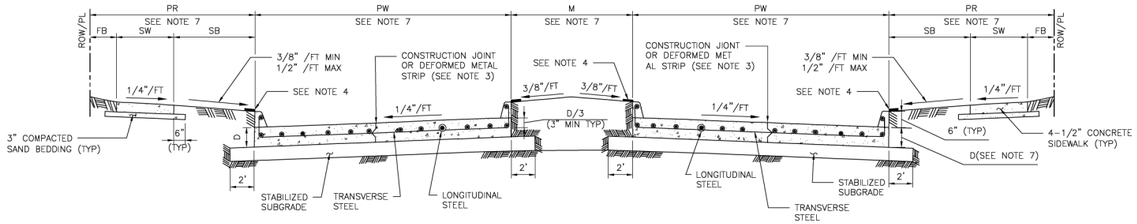
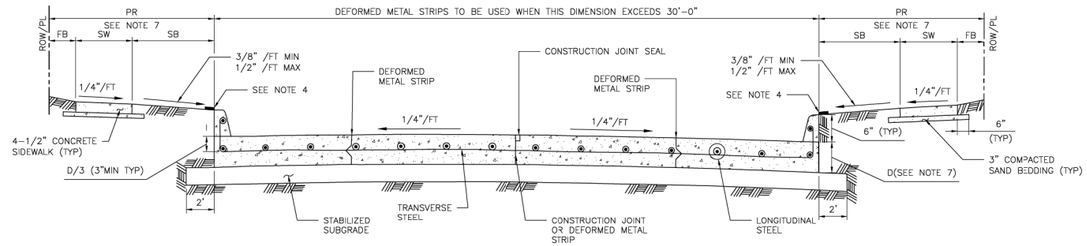


TYPICAL DOUBLE ROADWAY SECTION FOR CONCRETE PAVEMENT WITH CURBS



TYPICAL SINGLE ROADWAY SECTION FOR CONCRETE PAVEMENT WITH CURBS

TABLE 1

REINFORCING STEEL BAR SIZES AND SPACINGS FOR VARIOUS PAVEMENT THICKNESSES (D) WITH: MAXIMUM TRANSVERSE CONTROL JOINT SPACING = 20'-0"
MAXIMUM EXPANSION JOINT SPACING = 80'-0"
fc' = 4,000 PSI/28 DAYS AND fy = 60,000 PSI

PAVEMENT THICKNESS 'D' (IN)	PAVEMENT WIDTH 'PW' (FT)	LONGITUDINAL STEEL									TRAVERSE STEEL		
		#4 BARS			#5 BARS			#6 BARS			#4 BARS	#5 BARS	#6 BARS
		NUMBER OF BARS	SPACING (IN)	END BAR SPACING (IN)	NUMBER OF BARS	SPACING (IN)	END BAR SPACING (IN)	NUMBER OF BARS	SPACING (IN)	END BAR SPACING (IN)	SPACING (IN)	SPACING (IN)	SPACING (IN)
6	28	17	20.50	4.00	–	–	–	–	–	–	36	–	–
7	25	17	18.25	4.00	–	–	–	–	–	–	36	–	–
7	35	24	18.00	3.00	–	–	–	–	–	–	36	–	–
7	36	25	17.75	3.00	–	–	–	–	–	–	36	–	–
7	37	25	18.25	3.00	–	–	–	–	–	–	36	–	–
7	41	28	18.00	3.00	–	–	–	–	–	–	36	–	–
7	45	31	17.75	3.75	–	–	–	–	–	–	36	–	–
8	25	20	15.50	2.75	13	24.50	3.0	–	–	–	36	36	–
8	34	27	15.50	2.50	17	25.00	4.0	–	–	–	36	36	–
8	35	27	16.00	2.00	18	24.25	4.0	–	–	–	36	36	–
8	36	28	15.75	3.25	18	25.00	3.0	–	–	–	30	36	–
8	44	24	15.75	4.00	22	24.75	4.0	–	–	–	30	36	–
8	45	35	15.75	2.25	23	24.25	3.0	–	–	–	30	36	–
9	25	22	14.00	3.00	14	22.50	4.0	–	–	–	36	36	–
9	34	31	13.50	2.00	19	22.25	3.5	–	–	–	30	36	–
9	35	31	13.75	3.75	20	21.75	3.5	–	–	–	30	36	–
9	36	32	13.75	3.00	21	21.25	3.5	–	–	–	30	36	–
9	44	39	13.75	2.75	25	21.75	3.0	–	–	–	24	36	–
9	45	39	14.00	4.00	26	21.25	4.5	–	–	–	24	36	–
10	25	24	12.75	3.50	17	18.25	4.0	–	–	–	36	36	36
10	34	33	12.50	4.00	21	20.00	4.0	–	–	–	30	36	36
10	35	34	12.50	3.75	23	18.75	4.0	–	–	–	30	36	36
10	36	35	12.50	3.50	24	18.50	3.0	–	–	–	30	36	36
10	44	44	12.00	4.00	29	18.50	4.5	–	–	–	24	36	36
10	45	44	12.50	3.00	29	19.00	3.0	–	–	–	24	36	36
11	25	27	11.25	3.00	17	18.25	4.0	12	26.75	3	36	36	36
11	34	36	11.50	2.75	24	17.50	2.5	17	25.00	4	24	36	36
11	35	37	11.50	3.00	24	18.00	3.0	17	25.75	4	24	36	36
11	36	40	11.00	2.00	25	17.75	3.0	17	26.50	4	24	36	36
11	44	48	11.125	2.50	30	18.00	3.0	21	26.00	4	24	36	36
11	45	49	11.125	3.00	31	17.75	4.0	22	25.50	3	24	36	36
12	25	–	–	–	19	16.25	4.0	13	24.50	3	36	36	36
12	34	–	–	–	26	16.00	4.0	18	23.50	4	24	36	36
12	35	–	–	–	26	16.50	4.0	19	23.00	3	24	36	36
12	36	–	–	–	27	16.25	4.5	20	22.25	4.5	24	36	36
12	44	–	–	–	33	16.25	4.0	24	22.50	5	24	30	36
12	45	–	–	–	35	15.75	3.0	25	22.25	3	24	30	36

MINIMUM LAP LENGTH (L):
A. # 4 BARS ; L = 22 INCHES
B. # 5 BARS ; L = 27 INCHES
C. # 6 BARS ; L = 32 INCHES

NOTES:

1. THE MAXIMUM WIDTH BETWEEN LONGITUDINAL JOINTS SHALL NOT EXCEED 15'-0".
2. ALL EARTHEN AREAS ARE TO BE HYDROMULCHED UNLESS SHOWN OTHERWISE ON DRAWINGS.
3. CONTRACTOR MAY SAW CUT IN LIEU OF DEFORMED METAL STRIP.
4. USE STRIP OF SOD GRASS TO PREVENT EROSION UNTIL STAND OF GRASS IS ESTABLISHED.
5. AN EQUAL OR LARGER AREA OF WELDED REINFORCEMENT BAR CONFORMING TO ASTM A497, MAY BE SUBSTITUTED FOR REBARS LISTED IN TABLE 1.
6. IF AVAILABLE ROW IS NOT SUFFICIENT TO ACCOMMODATE SIDEWALK WIDTH (SW) ACCORDING TO IDM REQUIREMENTS, ENGINEER SHALL OBTAIN A VARIANCE FROM THE CITY ENGINEER.
7. REFER TO CONTRACT DRAWINGS FOR PAVEMENT WIDTH (PW) AND PAVEMENT THICKNESS (D), MEDIAN (M), PEDESTRIAN REALM (PR), SIDEWALK (SW), FRONTAGE BUFFER (FB), AND SAFETY BUFFER (SB) WIDTHS.

APPROVED BY:	APPROVED BY:
DocuSigned by: Sulaul Kanwar	DocuSigned by: HANG NGUYEN
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: DocuSigned by: Carl Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 02751-01

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

CONCRETE PAVEMENT DETAILS

	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	
NOT TO SCALE	

No.	DATE	REVISIONS	APP.

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY, #400
HOUSTON, TX 77079

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Date: 10/24/2025
for
95% SUBMITTAL
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Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STREET PAVING & SIDEWALK STANDARDS

SHEET 1 OF 17

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 271 OF 718	

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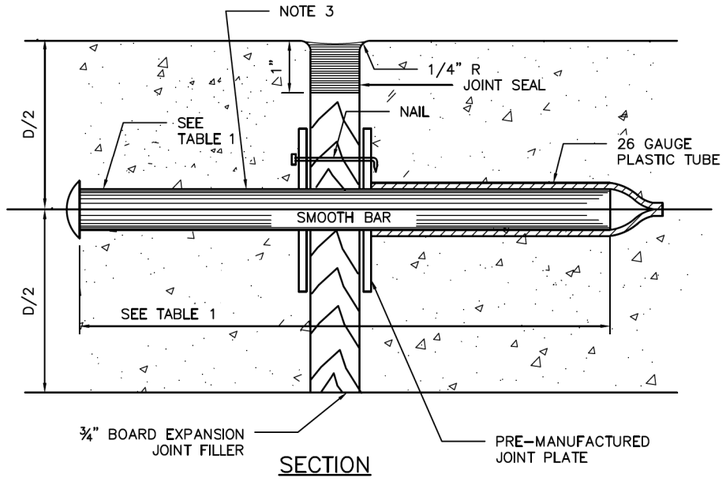

SECTION

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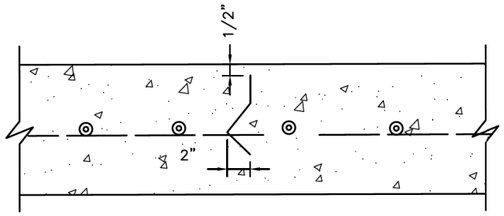

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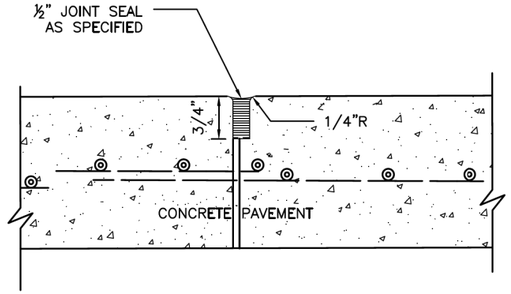

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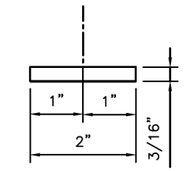
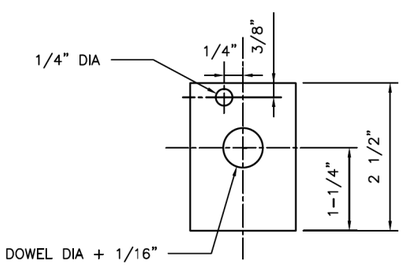


PLAN VIEW

JOINT PLATE



ELEVATION VIEW

JOINT PLATE

NOTES:

1. STEEL TO MEET ASTM STANDARD SPECIFICATIONS FOR CONCRETE REINFORCING BARS. UNITS TO BE SPACED 12" CENTER ON CENTER.
2. EXPANSION JOINT TO BE PLACED AT THE END OF EACH CURB RADIUS.
3. CENTER DOWEL HORIZONTALLY ON JOINT.
4. CENTER DOWEL VERTICALLY IN CONCRETE BASE. EXTEND THICKENED CONCRETE AS NEEDED TO MAINTAIN 3" MIN COVER.
5. CITY OF HOUSTON APPROVED PRODUCTS MAY BE USED AS JOINT PLATE ALTERNATIVE.

TABLE 1

PAVEMENT THICKNESS (IN)	DOWEL SIZES AND SPACINGS		
	DIAMETER (IN)	LENGTH (IN)	SPACING (IN)
6	3/4	18	12
7	1	18	12
8	1	18	12
9	1 1/4	18	12
10	1 1/4	18	12
11	1 1/4	18	12
12	1 1/4	18	12

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

PAVEMENT EXPANSION AND CONSTRUCTION JOINT DETAILS

(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Suhail Kanwar — CITY ENGINEER

DocuSigned by: KHANG NGUYEN — CITY TRAFFIC ENGINEER

DocuSigned by: Carol Haddock — DIRECTOR OF HPW

EFF DATE: NOV-27-2023 | DWG NO: 02752-01

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY, #400
HOUSTON, TX 77079

SURVEYED BY:
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Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STREET PAVING & SIDEWALK STANDARDS

SHEET 2 OF 17

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 272 OF 718	

No.	DATE	REVISIONS	APP.

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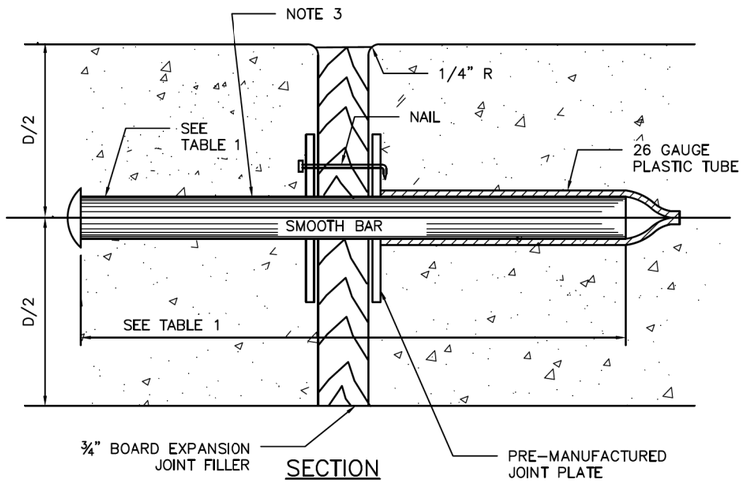

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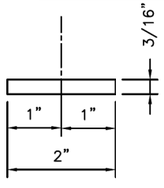
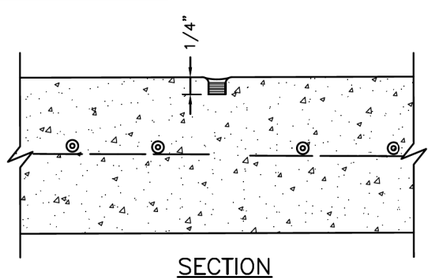


PLAN VIEW

JOINT PLATE



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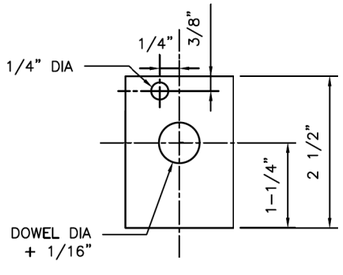
CONTROL JOINT

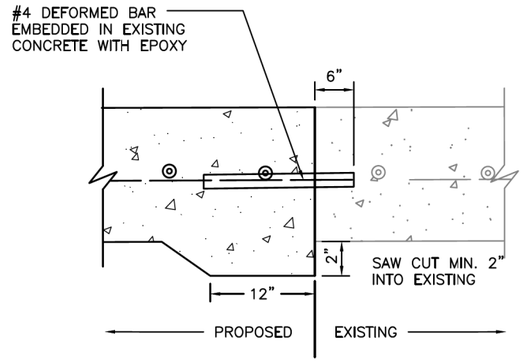


ELEVATION VIEW

JOINT PLATE

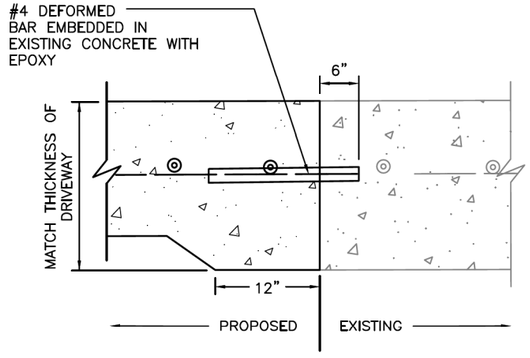
TABLE 1

PAVEMENT THICKNESS (IN)	DOWEL SIZES AND SPACINGS		
	DIAMETER (IN)	LENGTH (IN)	SPACING (IN)
4 1/2	1/2	18	12
5	1/2	18	12
6	3/4	18	12
7	1	18	12



SECTION

SIDEWALK TO EXISTING SIDEWALK



SECTION

SIDEWALK TO EXISTING DRIVEWAY

NOTES:

1. STEEL TO MEET ASTM STANDARD SPECIFICATIONS FOR CONCRETE REINFORCING BARS.
2. EXPANSION JOINT TO BE PLACED AT THE END OF EACH CURB RADIUS AND SPACED AT A MAXIMUM DISTANCE OF 3 FEET MAXIMUM SPACING FOR CONTROL JOINTS SHALL BE 5 FEET.
3. CENTER DOWEL HORIZONTALLY ON JOINT.
4. CENTER DOWEL VERTICALLY IN CONCRETE AS NEEDED TO MAINTAIN A 2 INCH MINIMUM COVER.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

SIDEWALK EXPANSION AND CONSTRUCTION JOINT DETAILS

(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Suhail Kanwar 9EF8B0C641F5478... CITY ENGINEER

DocuSigned by: KHANG NGUYEN 95A29EFDA75B4CD... CITY TRAFFIC ENGINEER

DocuSigned by: Carol Haddock A93C410B72B3453... DIRECTOR OF HPW

EFF DATE: NOV-27-2023 DWG NO: 02752-02

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY, #400
HOUSTON, TX 77079

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STREET PAVING & SIDEWALK STANDARDS

SHEET 3 OF 17

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 273 OF 718	

No.	DATE	REVISIONS	APP:

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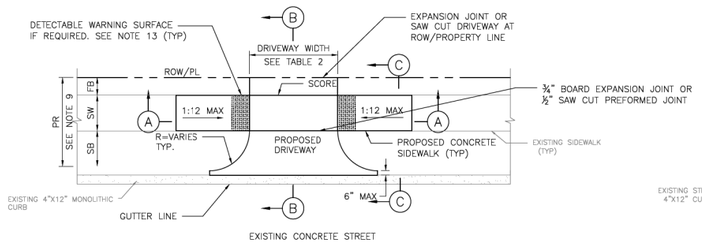
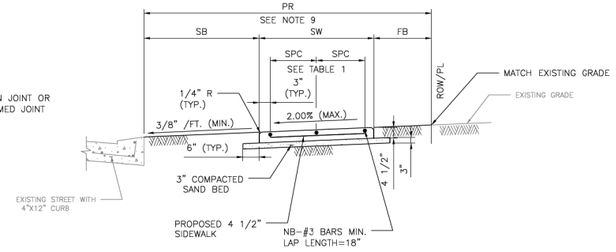
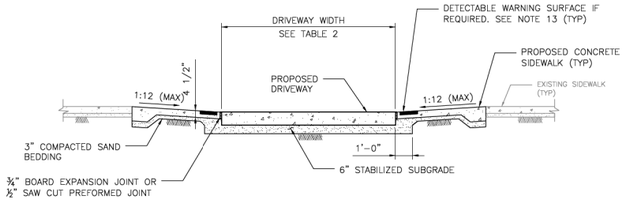


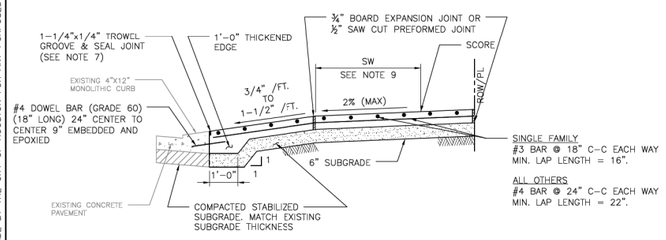
PLAN VIEW
DRIVEWAY



SECTION C–C
TYPICAL SIDEWALK SECTION



SECTION A–A
PROPOSED SIDEWALK THROUGH DRIVEWAY WITH EXCESSIVE GRADES



SECTION B–B
TYPICAL DRIVEWAY SECTION

TABLE 1

REINFORCING STEEL INFORMATION
FOR 4 ½ " THICK SIDEWALKS
EXPANSION JOINT SPACING = 40 FT
fc' = 3,500 PSI AND fy = 60,000 PSI
REFER TO CONTRACT DRAWINGS FOR SIDEWALKS WIDER THAN 6 FEET.

SIDEWALK THICKNESS (IN)	SIDEWALK WIDTH (FT)	LONGITUDINAL STEEL			TRANSVERSE STEEL
		#3 BARS			#3 BARS SPACING (IN)
		NO. OF BARS "NB"	SPACING "SPC" (IN)	END BAR SPACING (IN)	
4.5	5	3	27	3	48
4.5	6	4	22	3	48

TABLE 2

DRIVEWAY DESIGN CRITERIA (1)(2)

TRAFFIC TYPE	TYPE A DRIVEWAY (FOR SINGLE FAMILY RESIDENTIAL HOUSES OR DUPLEXES)				TYPE B DRIVEWAY (SHARED ACCESS/SHARED DRIVEWAY)				TYPE C DRIVEWAY (COMMERCIAL DRIVEWAY)			
	WIDTH (FT)		RADIUS (FT)		WIDTH (FT)		RADIUS (FT)		WIDTH (FT)		RADIUS (FT)	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
ONE-WAY	10	12	4	10	12(5)	16(5)	4(5)	10(5)	15	20	10	20
TWO-WAY	10(3)	24(4)	4	10	16(6)	24	4	10	24	35	10	20

(1) REFER TO INFRASTRUCTURE DESIGN MANUAL ARTICLE 15.2.07.C.1.F FOR DRIVEWAYS THAT REQUIRE A VEHICLE SWEPT PATH ANALYSIS.
(2) REFER TO INFRASTRUCTURE DESIGN MANUAL ARTCILES 15.2.07.C.1.G.(1) AND 15.2.07.C.1.G.(2) FOR TYPE 1 PAE AND TYPE 2 PAE REQUIREMENTS.
(3) THE MINIMUM WIDTH FOR JOINT ACCESS DRIVEWAY IS 12 FT.
(4) REFER TO CHAPTER 42 OF THE CODE OF ORDINANCES FOR DRIVEWAY WIDTHS FOR NARROW LOTS.
(5) ONLY MURS AND COURTYARD STYLE DEVELOPMENTS ON CORNER LOTS CAN HAVE ONE-WAY DRIVEWAYS.
(6) REFER TO CHAPTER 42, SECTION 42-146 OF THE CODE OF ORDINANCES FOR EXCEPTIONS TO THE MINIMUM DRIVEWAY WIDTH FOR SHARED DRIVEWAYS.

NOTES:

1. REPAIR, RECONSTRUCTION OR REPLACEMENT OF SIDEWALKS SHALL MEET PERMITTING REQUIREMENTS OF CODE OF ORDINANCES SECTION 40-552.
2. FOR REPAIR, RECONSTRUCTION, OR REPLACEMENT OF EXISTING SIDEWALKS:
   - 2.1. EXISTING SIDEWALKS LESS THAN OR EQUAL TO 20 FEET IN TOTAL LENGTH:
     - 2.1.1. THE PROPOSED SIDEWALK WIDTH WILL BE ALLOWED TO MATCH THE EXISTING SIDEWALK.
   - 2.2. EXISTING SIDEWALKS GREATER THAN 20 FEET IN TOTAL LENGTH:
     - 2.2.1. THE SIDEWALK WIDTH FOR THE ENTIRE PROPERTY WIDTH SHALL BE IMPROVED TO MEET WIDTH REQUIREMENTS ACCORDING TO THE LATEST INFRASTRUCTURE DESIGN MANUAL.
   - 2.3. 20 FOOT TOTAL LENGTH IS DEFINED AS:
     - 2.3.1. UP TO 10 FEET ON BOTH SIDES OF THE DRIVEWAY; OR
     - 2.3.2. UP TO 20 FEET WHEN SIDEWALK AFFECTED IS LOCATED ONLY ON ONE SIDE OF THE DRIVEWAY.
3. IF AVAILABLE ROW IS NOT SUFFICIENT TO ACCOMMODATE SIDEWALK WIDTH (SW) ACCORDING TO IDM REQUIREMENTS, ENGINEER SHALL OBTAIN A VARIANCE FROM THE CITY ENGINEER.
4. DRIVEWAYS SHALL BE 6" THICK FOR SINGLE FAMILY OR DUPLEXES.
5. DRIVEWAYS AND SIDEWALKS SHALL BE CONSTRUCTED WITH PORTLAND CEMENT CONCRETE AND INCLUDE 5 1/2 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE.
6. THE OUTER DOWEL BARS ARE TO BE LOCATED 12" FROM END OF PROPOSED EDGE OF DRIVEWAY RETURN. EXTEND DOWEL 3" INCHES INTO PROPOSED DRIVEWAY AND BEND REMAINING BAR TO EXTEND TO RADIUS RETURN BOTH SIDES.
7. TROWEL GROOVE SEALANT SHALL BE LOW MODULUS SILICONE OR POLYURETHANE SEALANT.
8. ALL JOINTS ALONG THE SIDEWALK SHALL BE CONSTRUCTED ACCORDING TO DRAWING 02752-02 AND SPECIFICATION 02752.
9. REFER TO CONTRACT DRAWINGS FOR PEDESTRIAN REALM (PR), SIDEWALK (SW), FRONTAGE BUFFER (FB), AND SAFETY BUFFER (SB) WIDTHS.
10. CEMENT STABILIZED SAND 1.5 SACKS OF CEMENT PER TON OF DRY SAND.
11. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOUSTON PUBLIC WORKS STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
12. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.
13. DETECTABLE WARNING SURFACES:
    - 13.1. SIDEWALK SHALL HAVE A DETECTABLE WARNING SURFACE WHERE:
      - 13.1.1. SIDEWALK INTERSECTS TYPE C DRIVEWAYS (COMMERCIAL DRIVEWAYS) THAT ARE STOP, YIELD OR TRAFFIC SIGNAL CONTROLLED; OR
      - 13.1.2. SIDEWALK SLOPE IS GREATER THAN 1:20 AND INTERSECTS A TYPE C DRIVEWAY (COMMERCIAL DRIVEWAY)
    - 13.2. DETECTABLE WARNING SURFACES ARE OPTIONAL WHERE SIDEWALKS INTERSECT TYPE A DRIVEWAYS (SINGLE FAMILY RESIDENTIAL HOUSES OR DUPLEXES) OR TYPE B DRIVEWAYS (SHARED ACCESS/SHARED DRIVEWAYS).
    - 13.3. REFER TO STANDARD DETAILS 02775-06 TO 02775-07 FOR DETECTABLE WARNING SURFACE STANDARDS.

APPROVED BY:	APPROVED BY:
Docusigned by: Sukul Kanwar	Docusigned by: HANG NGUYEN
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: Docusigned by: Carl Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 02754-01A

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

DRIVEWAY DETAIL WITH 4"x12" CURB FOR LOCAL RESIDENTIAL STREETS

	FOR CITY OF HOUSTON USE ONLY
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STREET PAVING & SIDEWALK STANDARDS

SHEET 4 OF 17

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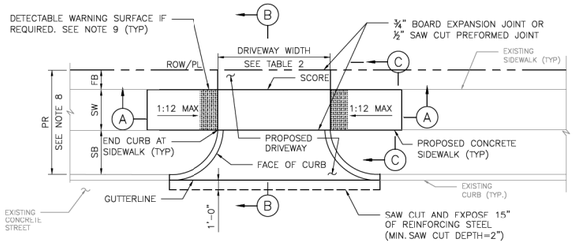
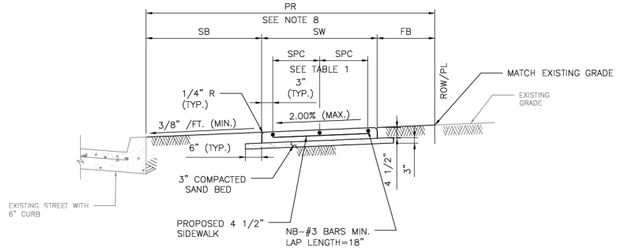
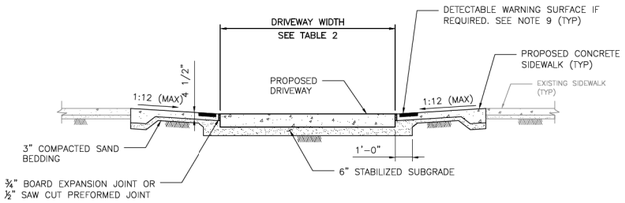


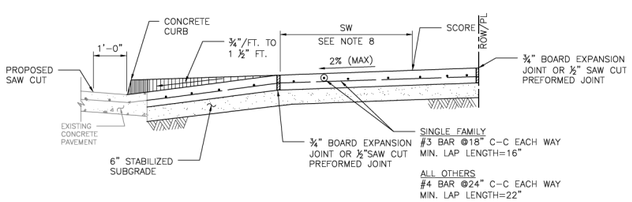
PLAN VIEW
DRIVEWAY



SECTION C–C
TYPICAL SIDEWALK SECTION



SECTION A–A
PROPOSED SIDEWALK THROUGH DRIVEWAY
WITH EXCESSIVE ELEVATION DIFFERENCE
WITH EXISTING SIDEWALK



SECTION B–B
TYPICAL DRIVEWAY SECTION

NOTES:

1. REPAIR, RECONSTRUCTION OR REPLACEMENT OF SIDEWALKS SHALL MEET PERMITTING REQUIREMENTS OF CODE OF ORDINANCES SECTION 40–552.
2. FOR REPAIR, RECONSTRUCTION, OR REPLACEMENT OF EXISTING SIDEWALKS:
   - 2.1. EXISTING SIDEWALKS LESS THAN OR EQUAL TO 20 FEET IN TOTAL LENGTH:
     - 2.1.1. THE PROPOSED SIDEWALK WIDTH WILL BE ALLOWED TO MATCH THE EXISTING SIDEWALK.
   - 2.2. EXISTING SIDEWALKS GREATER THAN 20 FEET IN TOTAL LENGTH:
     - 2.2.1. THE SIDEWALK WIDTH FOR THE ENTIRE PROPERTY WIDTH SHALL BE IMPROVED TO MEET WIDTH REQUIREMENTS ACCORDING TO THE LATEST INFRASTRUCTURE DESIGN MANUAL.
   - 2.3. 20 FOOT TOTAL LENGTH IS DEFINED AS:
     - 2.3.1. UP TO 10 FEET ON BOTH SIDES OF THE DRIVEWAY; OR
     - 2.3.2. UP TO 20 FEET WHEN SIDEWALK AFFECTED IS LOCATED ONLY ON ONE SIDE OF THE DRIVEWAY.
3. ALL JOINTS ALONG THE SIDEWALK SHALL BE CONSTRUCTED ACCORDING TO DRAWING 02752–02 AND SPECIFICATION 02752.
4. DRIVEWAYS SHALL BE MINIMUM 6" THICK FOR SINGLE FAMILY AND DUPLEXES. DRIVEWAYS SHALL BE MINIMUM 7" THICK FOR ALL OTHERS (I.E. COMMERCIAL, INDUSTRIAL, ETC.)
5. DRIVEWAYS AND SIDEWALKS SHALL BE CONSTRUCTED WITH PORTLAND CEMENT CONCRETE AND INCLUDE 5 1/2 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE.
6. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOUSTON PUBLIC WORKS STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
7. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.
8. REFER TO CONTRACT DRAWINGS FOR PEDESTRIAN REALM (PR), SIDEWALK (SW), FRONTAGE BUFFER (FB), AND SAFETY BUFFER (SB) WIDTHS.
9. DETECTABLE WARNING SURFACES:
   - 9.1. SIDEWALK SHALL HAVE A DETECTABLE WARNING SURFACE WHERE:
     - 9.1.1. SIDEWALK INTERSECTS TYPE C DRIVEWAYS (COMMERCIAL DRIVEWAYS) THAT ARE STOP, YIELD, OR TRAFFIC SIGNAL CONTROLLED; OR
     - 9.1.2. SIDEWALK SLOPE IS GREATER THAN 1:20 AND INTERSECTS A TYPE C DRIVEWAY (COMMERCIAL DRIVEWAY)
   - 9.2. DETECTABLE WARNING SURFACES ARE OPTIONAL WHERE SIDEWALKS INTERSECT TYPE A DRIVEWAYS (SINGLE FAMILY RESIDENTIAL HOUSES OR DUPLEXES) OR TYPE B DRIVEWAYS (SHARED ACCESS/SHARED DRIVEWAYS).
   - 9.3. REFER TO STANDARD DETAILS 02775–06 TO 02775–07 FOR DETECTABLE WARNING SURFACE STANDARDS.

TABLE 1

REINFORCING STEEL INFORMATION
FOR 4 ½ " THICK SIDEWALKS
EXPANSION JOINT SPACING = 40 FT
fc' = 3,500 PSI AND fy = 60,000 PSI
REFER TO CONTRACT DRAWINGS FOR SIDEWALKS WIDER THAN 6 FEET.

SIDEWALK THICKNESS (IN)	SIDEWALK WIDTH (FT)	LONGITUDINAL STEEL			TRANSVERSE STEEL #3 BARS SPACING (IN)
		#3 BARS			
		NO. OF BARS "NB"	SPACING "SPC" (IN)	END BAR SPACING (IN)	
4.5	5	3	27	3	48
4.5	6	4	22	3	48

TABLE 2

DRIVEWAY DESIGN CRITERIA (1)(2)

TRAFFIC TYPE	TYPE A DRIVEWAY (FOR SINGLE FAMILY RESIDENTIAL HOUSES OR DUPLEXES)				TYPE B DRIVEWAY (SHARED ACCESS/SHARED DRIVEWAY)				TYPE C DRIVEWAY (COMMERCIAL DRIVEWAY)			
	WIDTH (FT)		RADIUS (FT)		WIDTH (FT)		RADIUS (FT)		WIDTH (FT)		RADIUS (FT)	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
ONE–WAY	10	12	4	10	12(5)	16(5)	4(5)	10(5)	15	20	10	20
TWO–WAY	10(3)	24(4)	4	10	16(6)	24	4	10	24	35	10	20

(1) REFER TO INFRASTRUCTURE DESIGN MANUAL ARTICLE 15.2.07.C.1.F FOR DRIVEWAYS THAT REQUIRE A VEHICLE SWEPT PATH ANALYSIS.
(2) REFER TO INFRASTRUCTURE DESIGN MANUAL ARTCILES 15.2.07.C.1.G.(1) AND 15.2.07.C.1.G.(2) FOR TYPE 1 PAE AND TYPE 2 PAE REQUIREMENTS.
(3) THE MINIMUM WIDTH FOR JOINT ACCESS DRIVEWAY IS 12 FT.
(4) REFER TO CHAPTER 42 OF THE CODE OF ORDINANCES FOR DRIVEWAY WIDTHS FOR NARROW LOTS.
(5) ONLY MURS AND COURTYARD STYLE DEVELOPMENTS ON CORNER LOTS CAN HAVE ONE–WAY DRIVEWAYS.
(6) REFER TO CHAPTER 42, SECTION 42–146 OF THE CODE OF ORDINANCES FOR EXCEPTIONS TO THE MINIMUM DRIVEWAY WIDTH FOR SHARED DRIVEWAYS.

APPROVED BY:	APPROVED BY:
Docusigned by: Sukai Kanwar	Docusigned by: LEKING NGUYEN
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: Docusigned by: Carl Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV–27–2023	DWG NO: 02754–01B

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

DRIVEWAY DETAIL WITH 6" CURBED STREETS

DRAWING SCALE
NOT TO SCALE

FOR CITY OF HOUSTON USE ONLY

No.	DATE	REVISIONS	APP'D

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

SURVEYED BY:
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STREET PAVING & SIDEWALK STANDARDS

SHEET 5 OF 17

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N–100030–0GEC–3	
DRAWING SCALE: AS NOTED	
CITY OF HOUSTON PM: ROWAIDAH AYOUB	
SHEET NO. 275 OF 718	

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Plotted on: 10/24/2025 3:07:32 PM michael.guthrie
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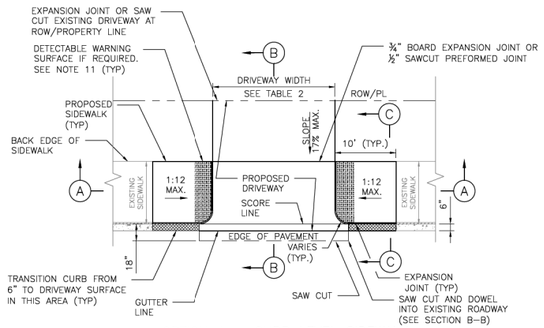
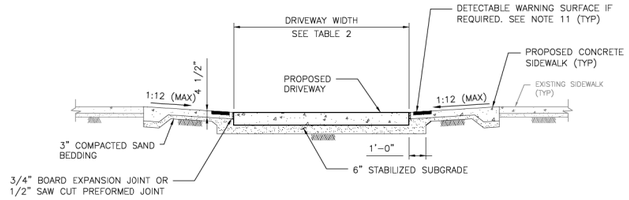
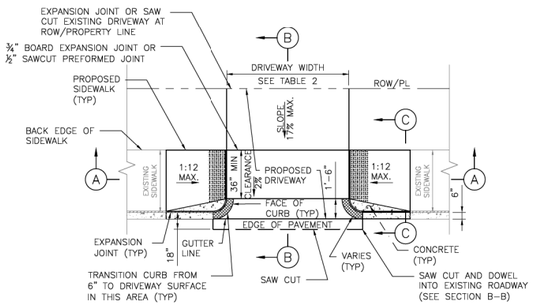


OPTION 1 – CURB LEVEL SIDEWALK
PLAN VIEW – DRIVEWAY WITHOUT CURB AT CURB RETURN

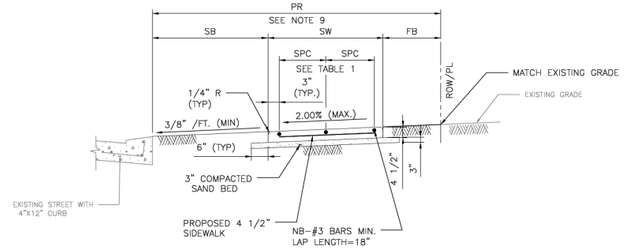


SECTION A–A
PROPOSED SIDEWALK THROUGH DRIVEWAY



OPTION 2 – CURB LEVEL SIDEWALK
PLAN VIEW – DRIVEWAY WITH CURB AT CURB RETURN

SECTION B–B
TYPICAL DRIVEWAY SECTION THROUGH DRIVEWAY



SECTION C–C
TYPICAL SIDEWALK SECTION

TABLE 1

REINFORCING STEEL INFORMATION
FOR 4 ½ " THICK SIDEWALKS
EXPANSION JOINT SPACING = 40 FT
fc' = 3,500 PSI AND fy = 60,000 PSI
REFER TO CONTRACT DRAWINGS FOR SIDEWALKS WIDER THAN 6 FEET.

SIDEWALK THICKNESS (IN)	SIDEWALK WIDTH (FT)	LONGITUDINAL STEEL			TRANSVERSE STEEL #3 BARS SPACING (IN)
		#3 BARS			
		NO. OF BARS "NB"	SPACING "SPC" (IN)	END BAR SPACING (IN)	
4.5	5	3	27	3	48
4.5	6	4	22	3	48

TABLE 2

DRIVEWAY DESIGN CRITERIA (1)(2)

TRAFFIC TYPE	TYPE A DRIVEWAY (FOR SINGLE FAMILY RESDENTIAL HOUSES OR DUPLEXES)				TYPE B DRIVEWAY (SHARED ACCESS/SHARED DRIVEWAY)				TYPE C DRIVEWAY (COMMERCIAL DRIVEWAY)			
	WIDTH (FT)		RADIUS (FT)		WIDTH (FT)		RADIUS (FT)		WIDTH (FT)		RADIUS (FT)	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
ONE–WAY	10	12	4	10	12(5)	16(5)	4(5)	10(5)	15	20	10	20
TWO–WAY	10(3)	24(4)	4	10	16(6)	24	4	10	24	35	10	20

(1) REFER TO INFRASTRUCTURE DESIGN MANUAL ARTICLE 15.2.07.C.1.F FOR DRIVEWAYS THAT REQUIRE A VEHICLE SWEPT PATH ANALYSIS.
(2) REFER TO INFRASTRUCTURE DESIGN MANUAL ARTCILES 15.2.07.C.1.G.(1) AND 15.2.07.C.1.G.(2) FOR TYPE 1 PAE AND TYPE 2 PAE REQUIREMENTS.
(3) THE MINIMUM WIDTH FOR JOINT ACCESS DRIVEWAY IS 12 FT.
(4) REFER TO CHAPTER 42 OF THE CODE OF ORDINANCES FOR DRIVEWAY WIDTHS FOR NARROW LOTS.
(5) ONLY MURS AND COURTYARD STYLE DEVELOPMENTS ON CORNER LOTS CAN HAVE ONE–WAY DRIVEWAYS.
(6) REFER TO CHAPTER 42, SECTION 42–146 OF THE CODE OF ORDINANCES FOR EXCEPTIONS TO THE MINIMUM DRIVEWAY WIDTH FOR SHARED DRIVEWAYS.

NOTES:

1. REPAIR, RECONSTRUCTION OR REPLACEMENT OF SIDEWALKS SHALL MEET PERMITTING REQUIREMENTS OF CODE OF ORDINANCES SECTION 40–552.
2. FOR REPAIR, RECONSTRUCTION, OR REPLACEMENT OF EXISTING SIDEWALKS:
   - 2.1. EXISTING SIDEWALKS LESS THAN OR EQUAL TO 20 FEET IN TOTAL LENGTH:
     - 2.1.1. THE PROPOSED SIDEWALK WIDTH WILL BE ALLOWED TO MATCH THE EXISTING SIDEWALK.
   - 2.2. EXISTING SIDEWALKS GREATER THAN 20 FEET IN TOTAL LENGTH:
     - 2.2.1. THE SIDEWALK WIDTH FOR THE ENTIRE PROPERTY WIDTH SHALL BE IMPROVED TO MEET WIDTH REQUIREMENTS ACCORDING TO THE LATEST INFRASTRUCTURE DESIGN MANUAL.
   - 2.3. 20 FOOT TOTAL LENGTH IS DEFINED AS:
     - 2.3.1. UP TO 10 FEET ON BOTH SIDES OF THE DRIVEWAY; OR
     - 2.3.2. UP TO 20 FEET WHEN SIDEWALK AFFECTED IS LOCATED ONLY ON ONE SIDE OF THE DRIVEWAY.
3. PROPOSED SIDEWALKS THAT DO NOT FALL WITHIN THE SCOPE DEFINED IN NOTE 2 SHALL BE DESIGNED ACCORDING TO IDM REQUIREMENTS AND CONSTRUCTED ACCORDING TO THE CONTRACT DRAWINGS.
4. DRIVEWAY WIDTH VARIES TO MATCH EXISTING DRIVE.
5. DRIVEWAY DETAIL TO PROVIDE FOR SIDEWALK TRANSITION FROM EXISTING BACK OF CURB TO PROPOSED DRIVEWAY EDGE.
6. DRIVEWAY WITH WIDTH >5' @ 2% CROSS SLOPE QUALIFIES AS PASSING SPACE. (SEE OPTION 1 AND OPTION 2 PLANS)
7. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOUSTON PUBLIC WORKS STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
8. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.
9. REFER TO CONTRACT DRAWINGS FOR PEDESTRIAN REALM (PR), SIDEWALK (SW), FRONTAGE BUFFER (FB), AND SAFETY BUFFER (SB) WIDTHS.
10. DRIVEWAYS SHALL BE MINIMUM 6" THICK FOR SINGLE FAMILY AND DUPLEXES. DRIVEWAYS SHALL BE MINIMUM 7" THICK FOR ALL OTHERS (I.E. COMMERCIAL, INDUSTRIAL, ETC.)
11. DETECTABLE WARNING SURFACES:
    - 11.1. SIDEWALK SHALL HAVE A DETECTABLE WARNING SURFACE WHERE:
      - 11.1.1. SIDEWALK INTERSECTS TYPE C DRIVEWAYS (COMMERCIAL DRIVEWAYS) THAT ARE STOP, YIELD OR TRAFFIC SIGNAL CONTROLLED; OR
      - 11.1.2. SIDEWALK SLOPE IS GREATER THAN 1:20 AND INTERSECTS A TYPE C DRIVEWAY (COMMERCIAL DRIVEWAY)
    - 11.2. DETECTABLE WARNING SURFACES ARE OPTIONAL WHERE SIDEWALKS INTERSECT TYPE A DRIVEWAYS (SINGLE FAMILY RESIDENTIAL HOUSES OR DUPLEXES) OR TYPE B DRIVEWAYS (SHARED ACCESS/SHARED DRIVEWAYS).
    - 11.3. REFER TO STANDARD DETAILS 02775–06 TO 02775–07 FOR DETECTABLE WARNING SURFACE STANDARDS.

APPROVED BY:	APPROVED BY:
DocuSigned by: Sulaiman Kaiwar	DocuSigned by: Kalang Nguyen
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: DocuSigned by: Carol Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV–27–2023	DWG NO: 02754–03

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

PROPOSED SIDEWALK THROUGH DRIVEWAY WITH EXCESSIVE ELEVATION DIFFERENCE

	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	
NOT TO SCALE	

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TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STREET PAVING & SIDEWALK STANDARDS

SHEET 6 OF 17

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N–100030–0GEC–3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 276 OF 718	

No.	DATE	REVISIONS	APP.

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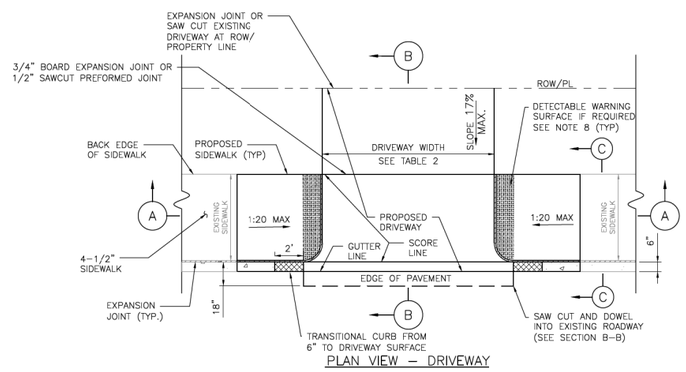
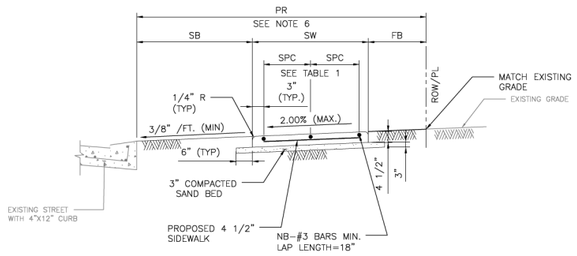
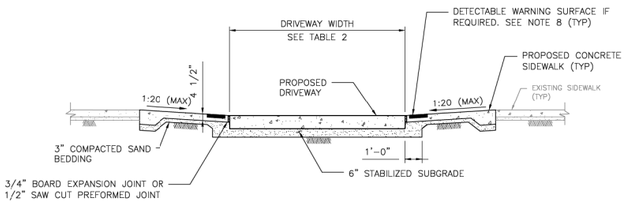


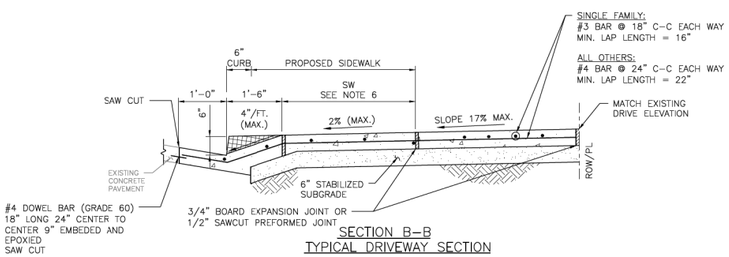
PLAN VIEW – DRIVEWAY



SECTION C–C
TYPICAL SIDEWALK SECTION



SECTION A–A
PROPOSED SIDEWALK THROUGH DRIVEWAY



SECTION B–B
TYPICAL DRIVEWAY SECTION

NOTES:

1. REPAIR, RECONSTRUCTION OR REPLACEMENT OF SIDEWALKS SHALL MEET PERMITTING REQUIREMENTS OF CODE OF ORDINANCES SECTION 40–552.
2. FOR REPAIR, RECONSTRUCTION, OR REPLACEMENT OF EXISTING SIDEWALKS:
   - 2.1. EXISTING SIDEWALKS LESS THAN OR EQUAL TO 20 FEET IN TOTAL LENGTH:
     - 2.1.1. THE PROPOSED SIDEWALK WIDTH WILL BE ALLOWED TO MATCH THE EXISTING SIDEWALK.
   - 2.2. EXISTING SIDEWALKS GREATER THAN 20 FEET IN TOTAL LENGTH:
     - 2.2.1. THE SIDEWALK WIDTH FOR THE ENTIRE PROPERTY WIDTH SHALL BE IMPROVED TO MEET WIDTH REQUIREMENTS ACCORDING TO THE LATEST INFRASTRUCTURE DESIGN MANUAL.
   - 2.3. 20 FOOT TOTAL LENGTH IS DEFINED AS:
     - 2.3.1. UP TO 10 FEET ON BOTH SIDES OF THE DRIVEWAY; OR
     - 2.3.2. UP TO 20 FEET WHEN SIDEWALK AFFECTED IS LOCATED ONLY ON ONE SIDE OF THE DRIVEWAY.
3. PROPOSED SIDEWALKS THAT DO NOT FALL WITHIN THE SCOPE DEFINED IN NOTE 2 SHALL BE DESIGNED ACCORDING TO IDM REQUIREMENTS AND CONSTRUCTED ACCORDING TO THE CONTRACT DRAWINGS.
4. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOUSTON PUBLIC WORKS STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
5. CURB RAMPS THAT ARE STEEPER THAN A 1:20 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.
6. REFER TO CONTRACT DRAWINGS FOR PEDESTRIAN REALM (PR), SIDEWALK (SW), FRONTAGE BUFFER (FB), AND SAFETY BUFFER (SB) WIDTHS.
7. DRIVEWAYS SHALL BE MINIMUM 6" THICK FOR SINGLE FAMILY AND DUPLEXES. DRIVEWAYS SHALL BE MINIMUM 7" THICK FOR ALL OTHERS (I.E. COMMERCIAL, INDUSTRIAL, ETC.)
8. DETECTABLE WARNING SURFACES:
   - 8.1. SIDEWALK SHALL HAVE A DETECTABLE WARNING SURFACE WHERE SIDEWALK INTERSECTS TYPE C DRIVEWAYS (COMMERCIAL DRIVEWAYS) THAT ARE STOP, YIELD, OR TRAFFIC SIGNAL CONTROLLED.
   - 8.2. DETECTABLE WARNING SURFACES ARE OPTIONAL WHERE SIDEWALKS INTERSECT TYPE A DRIVEWAYS (SINGLE FAMILY RESIDENTIAL HOUSES OR DUPLEXES) OR TYPE B DRIVEWAYS (SHARED ACCESS/SHARED DRIVEWAYS).
   - 8.3. REFER TO STANDARD DETAILS 02775–06 TO 02775–07 FOR DETECTABLE WARNING SURFACE STANDARDS.

TABLE 1

REINFORCING STEEL INFORMATION
FOR 4 ½ " THICK SIDEWALKS
EXPANSION JOINT SPACING = 40 FT
f'_c = 3,500 PSI AND f_y = 60,000 PSI
REFER TO CONTRACT DRAWINGS FOR SIDEWALKS WIDER THAN 6 FEET.

SIDEWALK THICKNESS (IN)	SIDEWALK WIDTH (FT)	LONGITUDINAL STEEL #3 BARS NO. OF BARS "NB"	LONGITUDINAL STEEL #3 BARS SPACING "SPC" (IN)	LONGITUDINAL STEEL #3 BARS END BAR SPACING (IN)	TRANSVERSE STEEL #3 BARS SPACING (IN)
4.5	5	3	27	3	48
4.5	6	4	22	3	48

TABLE 2

DRIVEWAY DESIGN CRITERIA (1)(2)

TRAFFIC TYPE	TYPE A DRIVEWAY (FOR SINGLE FAMILY RESIDENTIAL HOUSES OR DUPLEXES) WIDTH (FT) MIN	MAX	RADIUS (FT) MIN	MAX	TYPE B DRIVEWAY (SHARED ACCESS/SHARED DRIVEWAY) WIDTH (FT) MIN	MAX	RADIUS (FT) MIN	MAX	TYPE C DRIVEWAY (COMMERCIAL DRIVEWAY) WIDTH (FT) MIN	MAX	RADIUS (FT) MIN	MAX
ONE–WAY	10	12	4	10	12(5)	16(5)	4(5)	10(5)	15	20	10	20
TWO–WAY	10(3)	24(4)	4	10	16(6)	24	4	10	24	35	10	20

(1) REFER TO INFRASTRUCTURE DESIGN MANUAL ARTICLE 15.2.07.C.1.F FOR DRIVEWAYS THAT REQUIRE A VEHICLE SWEPT PATH ANALYSIS.
(2) REFER TO INFRASTRUCTURE DESIGN MANUAL ARTICLES 15.2.07.C.1.G.(1) AND 15.2.07.C.1.G.(2) FOR TYPE 1 PAE AND TYPE 2 PAE REQUIREMENTS.
(3) THE MINIMUM WIDTH FOR JOINT ACCESS DRIVEWAY IS 12 FT.
(4) REFER TO CHAPTER 42 OF THE CODE OF ORDINANCES FOR DRIVEWAY WIDTHS FOR NARROW LOTS.
(5) ONLY MURS AND COURTYARD STYLE DEVELOPMENTS ON CORNER LOTS CAN HAVE ONE–WAY DRIVEWAYS.
(6) REFER TO CHAPTER 42, SECTION 42–146 OF THE CODE OF ORDINANCES FOR EXCEPTIONS TO THE MINIMUM DRIVEWAY WIDTH FOR SHARED DRIVEWAYS.

APPROVED BY:	APPROVED BY:
Docusigned by: Suhail Kanwar	Docusigned by: KHANG NGUYEN
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: Docusigned by: Carol Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV–27–2023	DWG NO: 02754–04

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

PROPOSED SIDEWALK THROUGH DRIVEWAY WITH MINIMAL ELEVATION DIFFERENCE

DRAWING SCALE	FOR CITY OF HOUSTON USE ONLY
NOT TO SCALE	

No.	DATE	REVISIONS	APP'D

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STREET PAVING & SIDEWALK STANDARDS

SHEET 7 OF 17

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N–100030–0GEC–3	
DRAWING SCALE: AS NOTED	
CITY OF HOUSTON PM: ROWAIDAH AYOUB	
SHEET NO. 277 OF 718	

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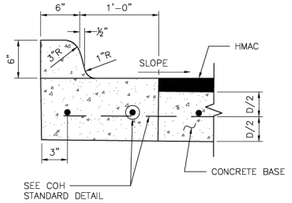

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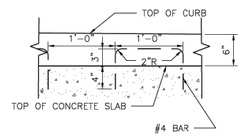

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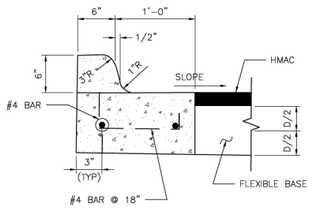

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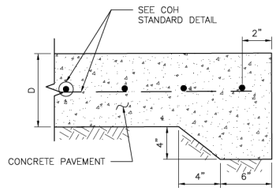
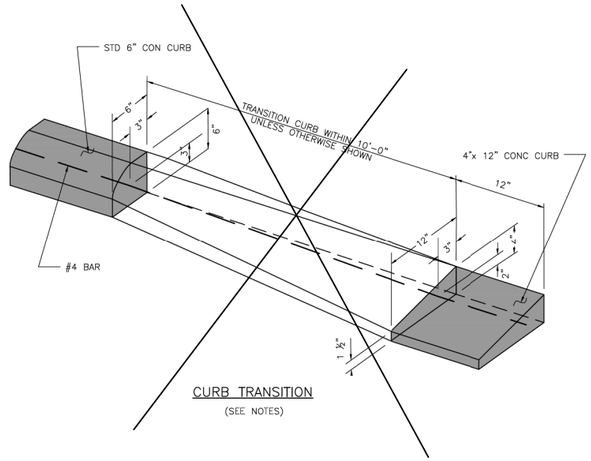


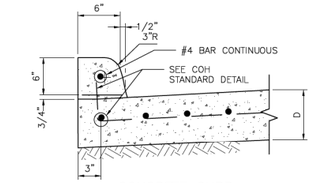
STANDARD CONCRETE PAVING HEADER



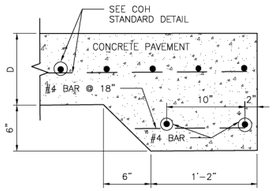
CURB TRANSITION
(SEE NOTES)

4"x12" MONOLITHIC AND TRANSITION CURB NOTES:

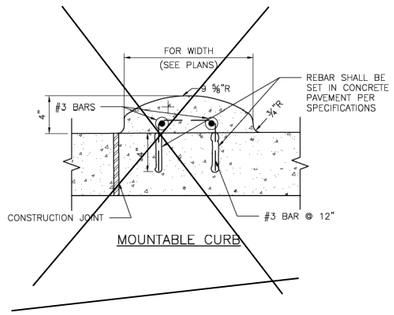
1. 6-INCH CONCRETE CURB TO BE CONSTRUCTED ON ALL ESPLANADES, ISLANDS, NON-RESIDENTIAL STREETS, AND RESIDENTIAL STREETS.
2. TRANSITIONS FROM 6- INCH CONCRETE CURB TO 4-NCH x 12-INCH CONCRETE CURB TO BE ACCOMPLISHED WITHIN 10 FEET, UNLESS OTHERWISE SHOWN. IF THIS 10-FEET TRANSITION CURB IS NOT POURED MONOLITHICALLY WITH THE PAVEMENT, THEN REINFORCING STEEL AS SHOWN IN "4-INCH x 12-INCH TRANSITION CURB" IS TO BE INSTALLED.



CONCRETE CURB

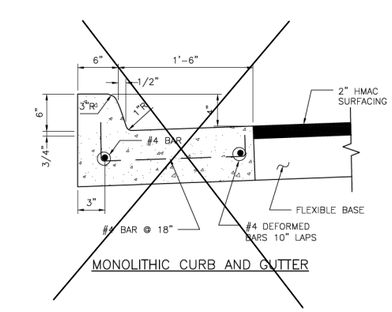


STANDARD RAILROAD HEADER

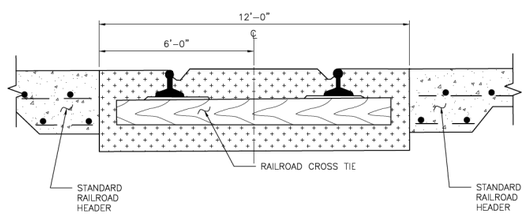


MOUNTABLE CURB

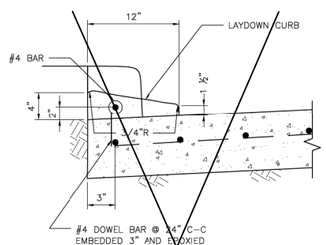
WHEN CONCRETE CURB IS TO BE PLACED EXISTING CONCRETE USE BASE #4 BAR @ 18x10" LONG, DOWELED AND SET IN EPOXY GROUT, SET #4 DOWEL BARS, 25" LONG AT 12" C-C WHEN PAVEMENT SECTION POURED.



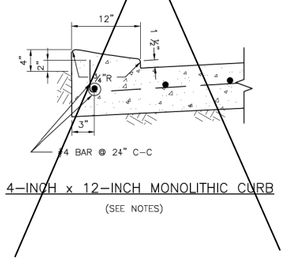
MONOLITHIC CURB AND GUTTER



STANDARD RAILROAD CROSSING – SINGLE TRACK



4-INCH x 12-INCH TRANSITION CURB
(SEE NOTES)



4-INCH x 12-INCH MONOLITHIC CURB
(SEE NOTES)

APPROVED BY:	APPROVED BY:
Docusigned by: Sukai Kanwar	Docusigned by: LUONG NGUYEN
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: Docusigned by: Carl Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 02771-01

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

CURB, CURB AND GUTTER AND HEADER DETAILS

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STREET PAVING & SIDEWALK STANDARDS

SHEET 8 OF 17

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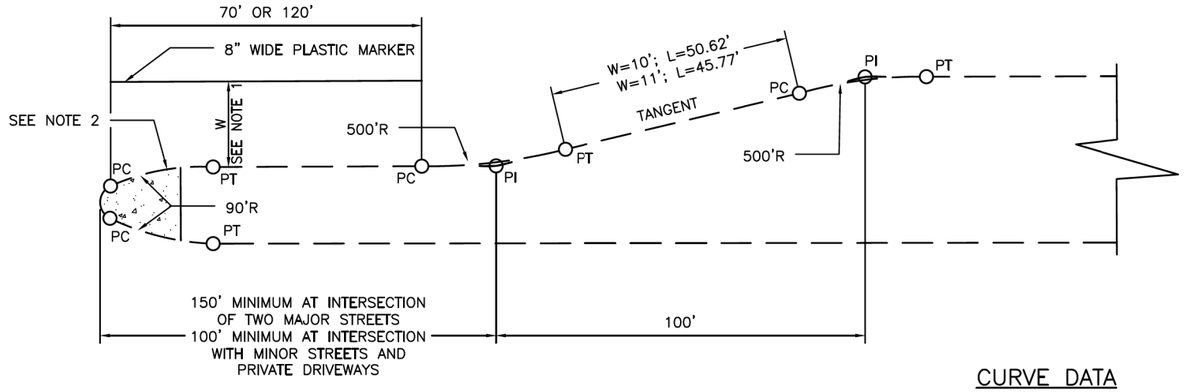


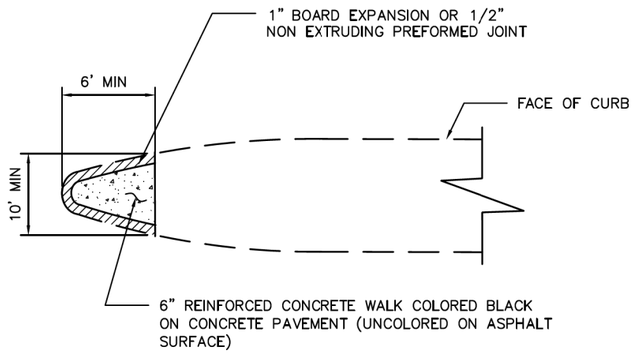
DETAIL OF LEFT TURN LANE

CURVE DATA

W=10' R=500' Δ = 5°42'38.14" L = 49.83' T=24.94'	W=11' R=500' Δ = 6°16'38.27" L = 54.78' T=27.42'

NOTES:

1. 10 FT FOR 80 FT ROW; 11 FT FOR 100 FT ROW.
2. FOR MEDIANS WITH BULLET NOSE CONFIGURATION, PAINT CURB WITH YELLOW REFLECTORIZED PAINT AROUND THE ESPLANADE NOSE TO THE PT OF THE 90 FT R. FOR MEDIANS WITHOUT BULLET NOSE CONFIGURATION, PAINT CURB FROM PC TO PT AND 30 FT BACK OF PC/PT.



ESPLANADE NOSE

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

ESPLANADE NOSE AND LEFT TURN DETAILS

(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Suhail Kanwar 9EF8B0C641F5478...
CITY ENGINEER

DocuSigned by: Carol Haddock A93C4108728345...
DIRECTOR OF HPW

DocuSigned by: KHANG NGUYEN 95A29EFDA75B4CD...
CITY TRAFFIC ENGINEER

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STREET PAVING & SIDEWALK STANDARDS

SHEET 9 OF 17

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SHEET NO. 279 OF 718	

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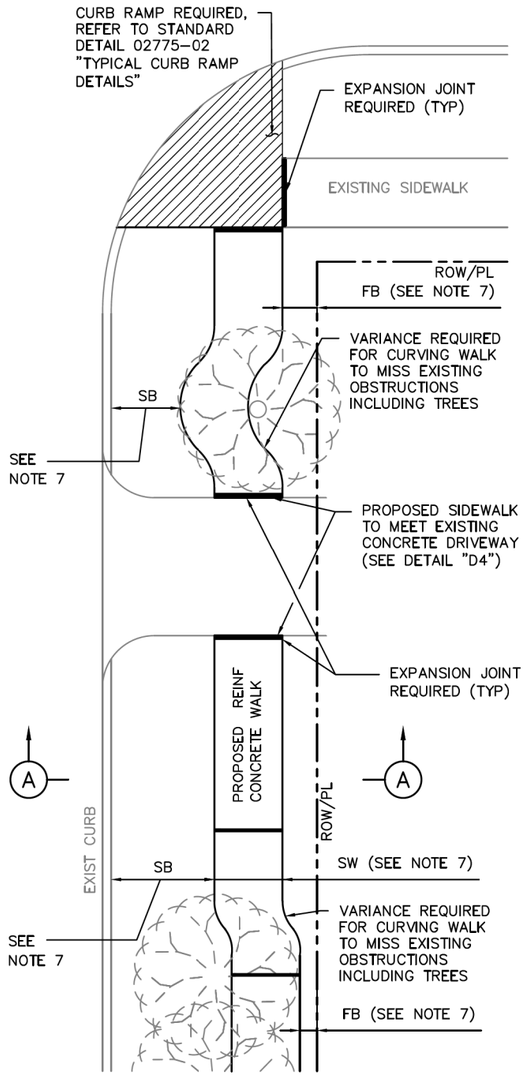
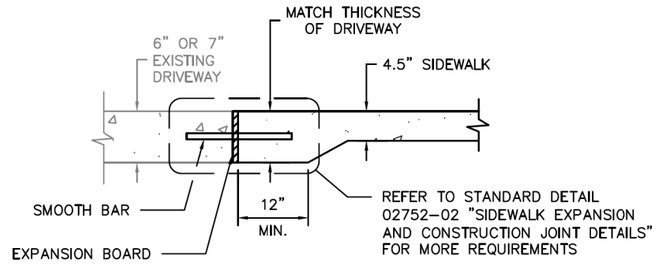


PLAN VIEW

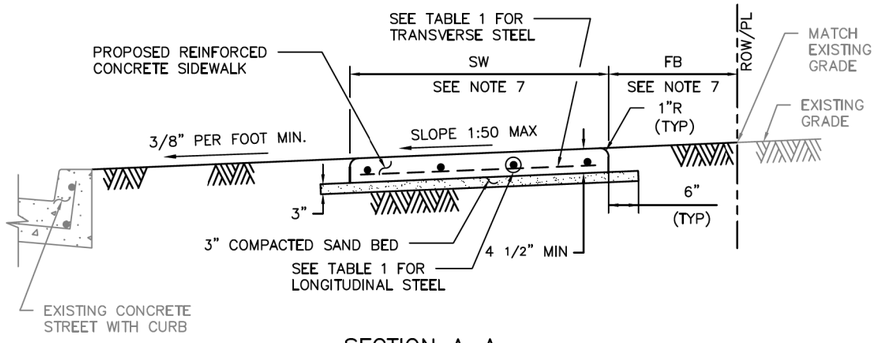


DETAIL D4
DRIVEWAY/SIDEWALK HEADER

TABLE 1

REINFORCING STEEL INFORMATION
FOR 4 ½ " THICK SIDEWALKS
EXPANSION JOINT SPACING = 40 FT
fc' = 3,500 PSI AND fy = 60,000 PSI
REFER TO CONTRACT DRAWINGS FOR SIDEWALKS WIDER THAN 6 FEET.

SIDEWALK THICKNESS (IN)	SIDEWALK WIDTH (FT)	LONGITUDINAL STEEL			TRANSVERSE STEEL #3 BARS SPACING (IN)
		#3 BARS			
		NO. OF BARS	SPACING (IN)	END BAR SPACING (IN)	
4.5	5	3	27	3	48
4.5	6	4	22	3	48



SECTION A–A

NOTES:

1. 6X6 – W2.9XW2.9 WELDED WIRE FABRIC MAY BE USED IN LIEU OF THE REINFORCING STEEL GIVEN IN TABLE 1.
2. REINFORCED CONCRETE SIDEWALKS THRU DRIVEWAYS OPENINGS SHALL BE EITHER 6" THICK OR 7" THICK AS SPECIFIED ON 6" STABILIZED SUBGRADE. FOR THE REINFORCING STEEL REQUIREMENTS, SEE CITY OF HOUSTON STANDARD DETAILS 02754–01A, 02754–01B, 02754–03, AND 02754–04.
3. MAXIMUM SPACING FOR EXPANSION JOINTS SHALL BE 40 FEET.
4. CONTRACTOR SHALL CONSTRUCT SIDEWALK IN A MANNER NOT TO BLOCK THE NATURAL DRAINAGE FROM ADJACENT PROPERTY.
5. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOUSTON PUBLIC WORKS STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
6. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON UNLESS NOTED OTHERWISE.
7. REFER TO CONTRACT DRAWINGS FOR SIDEWALK (SW), FRONTAGE BUFFER (FB), AND SAFETY BUFFER (SB) WIDTHS.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TYPICAL SIDEWALK LAYOUT AND DETAILS FOR STREETS WITH CURBS
(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Sulail Kanwar 9EFBB0C641F5478... CITY ENGINEER

DocuSigned by: KHANG NGUYEN 95A29EFDA75B4CD... CITY TRAFFIC ENGINEER

DocuSigned by: Carol Haddock A93C410B72B3453... DIRECTOR OF HPW

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HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STREET PAVING & SIDEWALK STANDARDS

SHEET 10 OF 17

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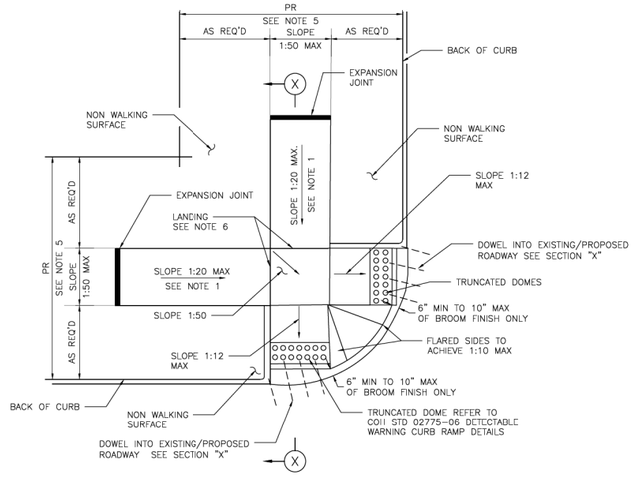
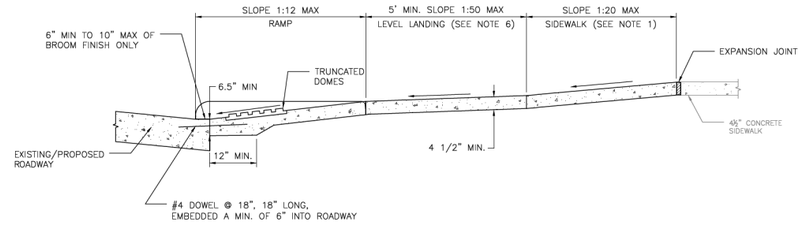


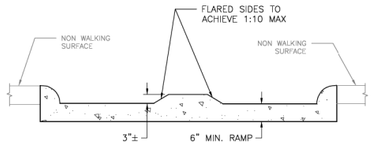
STREETS WITH NON- WALKING SURFACE BEHIND CURB
SEE NOTE-7



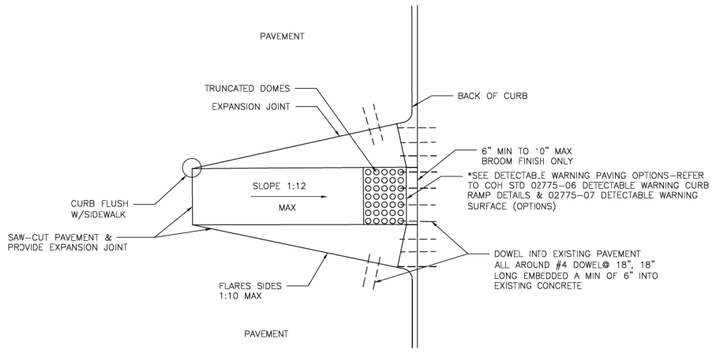
SECTION X-X

NOTES:

1. REPLACE EXISTING SIDEWALK FROM LEVEL LANDING AS NECESSARY TO ACHIEVE 1:20 SLOPE
2. BROOM FINISH IS MEASURED FROM FACE OF CURB.
3. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOUSTON PUBLIC WORKS STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
4. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON UNLESS NOTED OTHERWISE.
5. REFER TO CONTRACT DRAWINGS FOR PEDESTRIAN REALM (PR) WIDTH.
6. MINIMUM 5'x5' LANDING PAD ACCORDING TO ADA REQUIREMENTS. WHEN THE APPROACHING SIDEWALK IS WIDER THAN 5', THE LANDING PAD AND RAMP WIDTH MUST MATCH THE SIDEWALK WIDTH.
7. FOR STREETS WITH WALKABLE SURFACES IMMEDIATELY BEHIND THE CURB A FLARE IS REQUIRED ON BOTH SIDES OF THE RAMP.



ELEVATION
LOOKING UP RAMP



CURB RAMP CONSTRUCTION FOR EXISTING PAVEMENT

APPROVED BY:	APPROVED BY:
Docusigned by: Sahil Kanuga	Docusigned by: KHANG NGUYEN
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: Docusigned by: Carl Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 02775-02

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TYPICAL CURB RAMP DETAILS

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ANTOINE DRIVE

STREET PAVING & SIDEWALK STANDARDS

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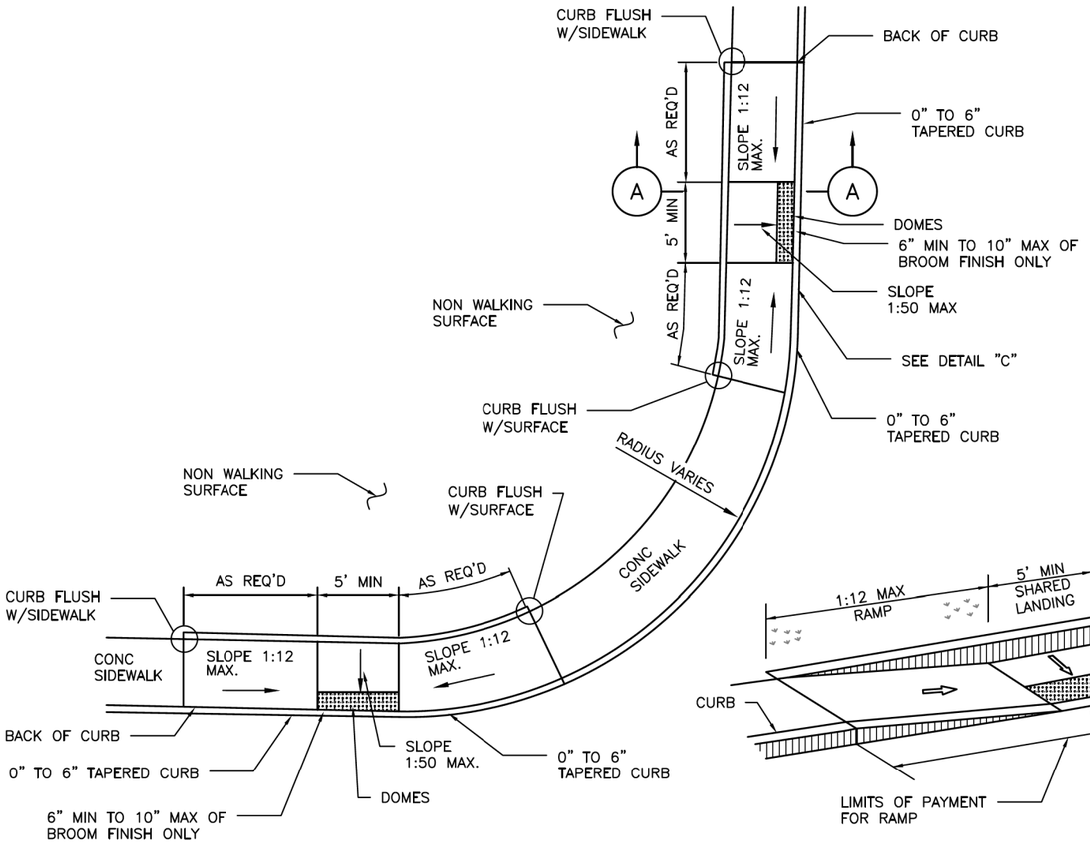
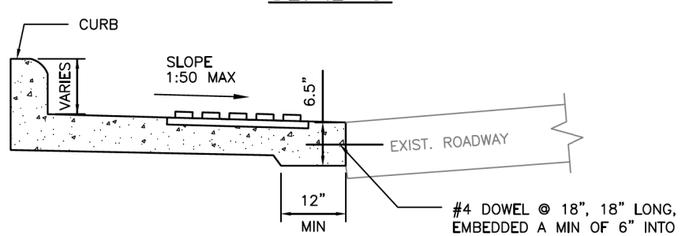


SIDEWALK ON BACK OF CURB

DETAIL "C"



SECTION A-A

NOTES:

1. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOUSTON PUBLIC WORKS STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
2. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.
3. REFER TO CONTRACT DRAWINGS FOR S-DIMENSION (S), SIDEWALK (SW), FRONTAGE BUFFER (FB), AND SAFETY BUFFER (SB) WIDTHS.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

PARALLEL CURB RAMP

(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Suhail Kanwar 9EF8B0C641F5478...
CITY ENGINEER

DocuSigned by: Carol Haddock A93C410B72B3453...
DIRECTOR OF HPW

DocuSigned by: KHANG NGUYEN 95A29EFDA75B4CD...
CITY TRAFFIC ENGINEER

EFF DATE: NOV-27-2023 | DWG NO: 02775-03

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY, #400
HOUSTON, TX 77079

SURVEYED BY:
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Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STREET PAVING & SIDEWALK STANDARDS

SHEET 12 OF 17

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 282 OF 718	

No.	DATE	REVISIONS	APP.

DISCLAIMER:
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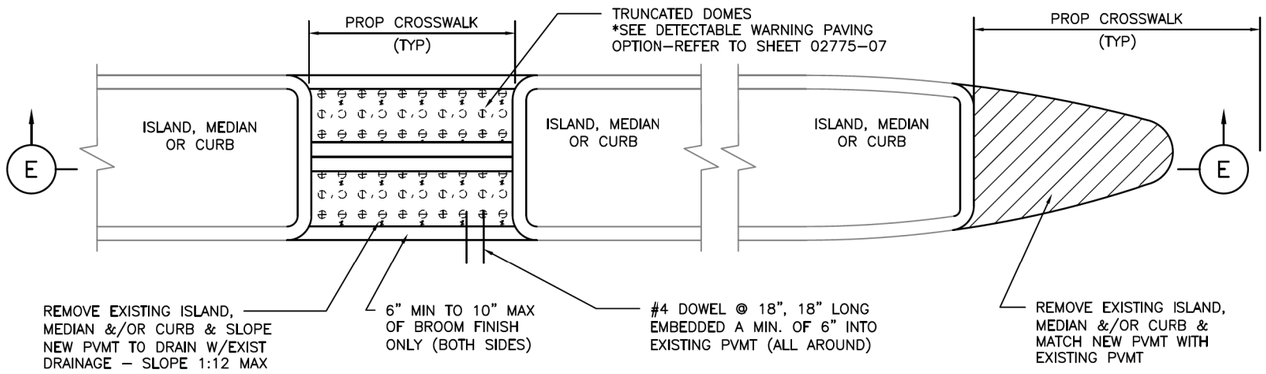
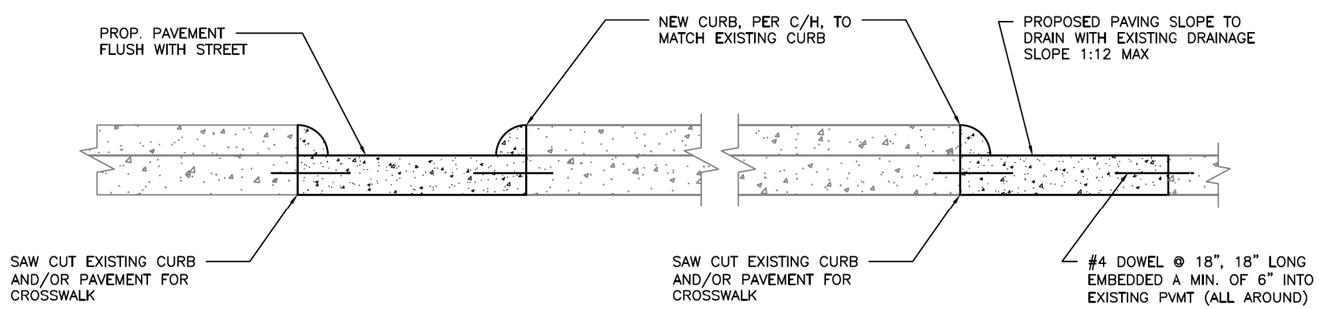


NOTES:

1. SEE COH STANDARD DETAIL FOR PAVEMENT MARKING DETAILS.
2. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOUSTON PUBLIC WORKS STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
3. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.



SECTION E–E
FOR ISLAND, MEDIAN, OR CURB MODIFICATIONS FOR CROSSWALKS

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

CURB MODIFICATION FOR CURB RAMPS & CROSSWALKS

(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Suhail Kanwar — 9EF8B0C641F5478... — CITY ENGINEER

DocuSigned by: KHANG NGUYEN — 95A29EFDA75B4CD... — CITY TRAFFIC ENGINEER

DocuSigned by: Carol Haddock — A93C410B7253453... — DIRECTOR OF HPW

EFF DATE: NOV–27–2023 | DWG NO: 02775–04

No.	DATE	REVISIONS	APP.

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11750 KATY FREEWAY. #400
HOUSTON, TX 77079

SURVEYED BY:
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Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STREET PAVING & SIDEWALK STANDARDS

SHEET 13 OF 17

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N–100030–0GEC–3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 283 OF 718	

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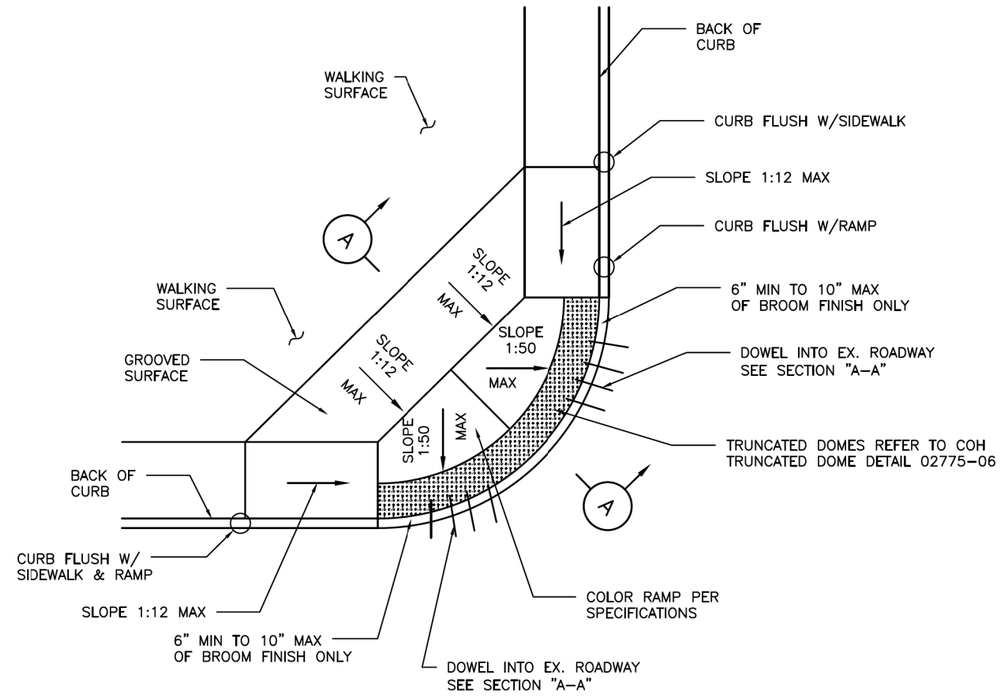
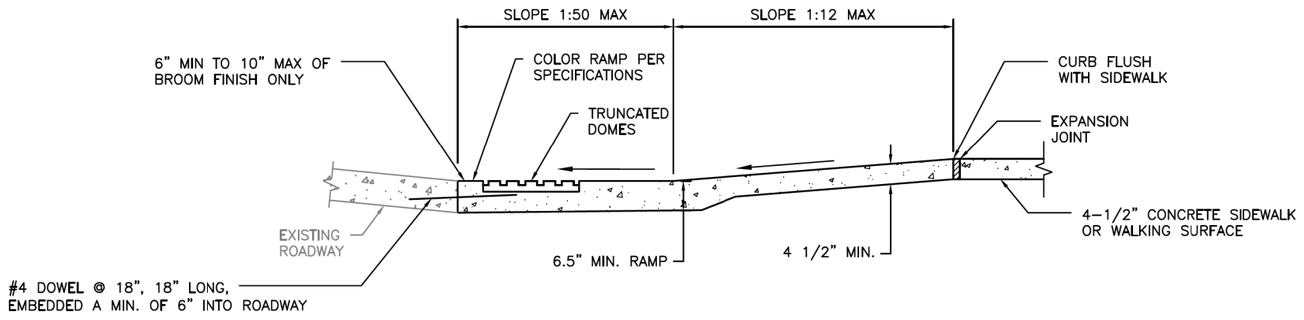


PLAN



SECTION A-A

NOTES:

1. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOUSTON PUBLIC WORKS STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
2. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.
3. THIS STANDARD DETAIL SHALL BE USED ONLY IF THE ROADWAY GEOMETRIC DOESN'T ALLOW STANDARD DETAILS 02775-02, 02775-03, AND 02775-09 TO BE USED.
4. THIS STANDARD DETAIL SHALL NOT BE USED IN LIEU OF STANDARD DETAILS 02775-02, 02775-03, AND 02775-09 UNLESS APPROVED BY THE CITY.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

COMMERCIAL & HIGH DENSITY CONDITIONS CURB RAMP DETAILS

(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Suhail Kanwar 9EF8B0C841F5478...
CITY ENGINEER

DocuSigned by: KHANG NGUYEN 95A29EFDA75B4CD...
CITY TRAFFIC ENGINEER

DocuSigned by: Carol Haddock A93C410B72B3453...
DIRECTOR OF HPW

EFF DATE: NOV-27-2023 | DWG NO: 02775-05

No.	DATE	REVISIONS	APP:

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11750 KATY FREEWAY. #400
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STREET PAVING & SIDEWALK STANDARDS

SHEET 14 OF 17

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 284 OF 718	

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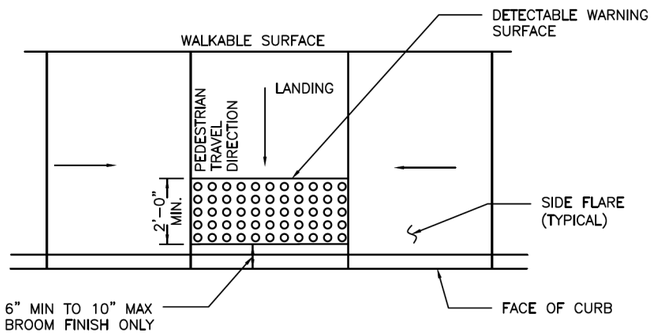
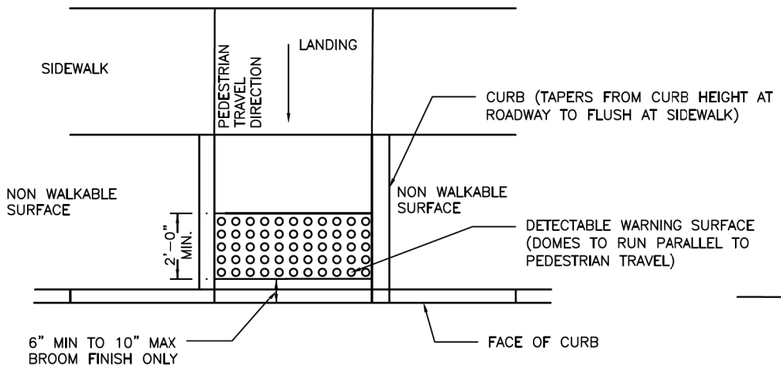
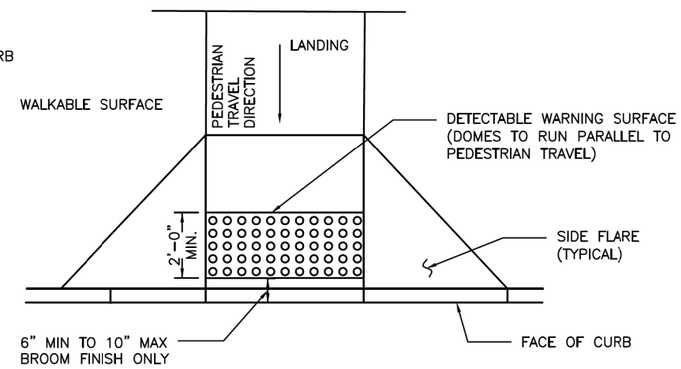


TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING AT STREET EDGE





TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN

GENERAL NOTES FOR DETECTABLE WARNINGS:

1. DETECTABLE WARNING SURFACES MUST BE FULLY ADA COMPLIANT.
2. ALL NEW CURB RAMPS MUST CONTAIN A DETECTABLE WARNING SURFACE THAT CONSISTS OF RAISED TRUNCATED DOMES. THE SURFACE MUST CONTRAST VISUALLY WITH ADJOINING SURFACE, INCLUDING SIDE FLARES. FURNISH DARK BROWN OR DARK RED DETECTABLE WARNING SURFACE ADJACENT TO UNCOLORED CONCRETE, UNLESS SPECIFIED ELSEWHERE IN THE PLANS.
3. DETECTABLE WARNING SURFACES MUST MAINTAIN A SLIP RESISTANCE WITH FA-VALUE OF EQUAL TO OR GREATER THAN 0.8.
4. DETECTABLE WARNING SURFACES MUST MAINTAIN A WATER ABSORPTION RATE OF LESS THAN 1%, DETECTABLE WARNING SHALL NOT ALLOW WATER TO ACCUMULATE.
5. DETECTABLE WARNINGS INSTALLED INTO FRESH CONCRETE SHALL BE WITHOUT VOIDS AND UTILIZING AN ACCEPTABLE ANCHORING SYSTEM.
6. ALIGN TRUNCATED DOMES IN THE DIRECTION OF PEDESTRIAN TRAVEL WHEN ENTERING THE STREET.
7. DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24" IN DEPTH IN THE DIRECTION OF PEDESTRIAN TRAVEL, AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR LANDING WHERE THE PEDESTRIAN ACCESS ROUTE ENTERS THE STREET.
8. DETECTABLE WARNING SURFACES SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6" MIN TO 10" MAX FROM THE DETECTABLE WARNING SURFACES MAY BE CURVED ALONG THE CORNER RADIUS.
9. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOUSTON PUBLIC WORKS STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
10. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.

DISCLAIMER:
THE USE OF THIS STANDARD IS GOVERNED BY THE TEXAS ENGINEERING PRACTICE ACT. THE DESIGN REQUIREMENTS ON THIS STANDARD DO NOT PURPORT TO ADDRESS ALL OF THE SAFETY CONCERNS ASSOCIATED WITH THEIR USE. THE ENGINEER OF RECORD (EOR) IS TO REVIEW THESE DESIGN REQUIREMENTS AND BY AUTHORIZING THEIR USE, ACCEPTS RESPONSIBILITY FOR THEIR APPLICABILITY, ADEQUACY AND SAFETY. NO WARRANTY OF ANY KIND IS MADE BY THE CITY OF HOUSTON FOR ANY PURPOSES WHATSOEVER. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

DETECTABLE WARNING CURB RAMP DETAILS

(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Sukait Kanwar 9EF8B0C841F5478...
CITY ENGINEER

DocuSigned by: Carol Haddock A93C410B72B3453...
DIRECTOR OF HPW

DocuSigned by: KHANG NGUYEN 95A29EFDA75B4CD...
CITY TRAFFIC ENGINEER

EFF DATE: NOV-27-2023 | DWG NO: 02775-06

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STREET PAVING & SIDEWALK STANDARDS

SHEET 15 OF 17

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 285 OF 718	

No.	DATE	REVISIONS	APP.

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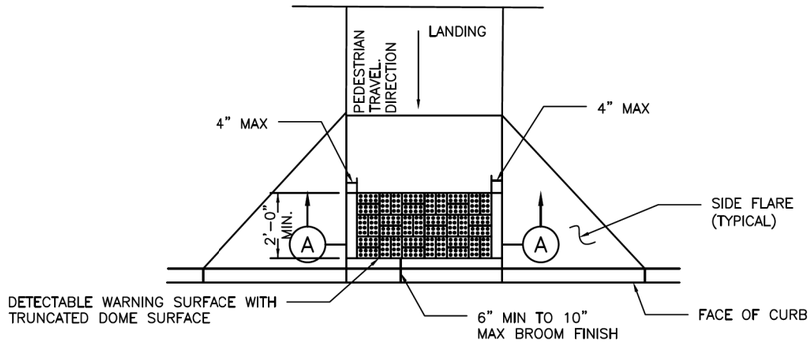
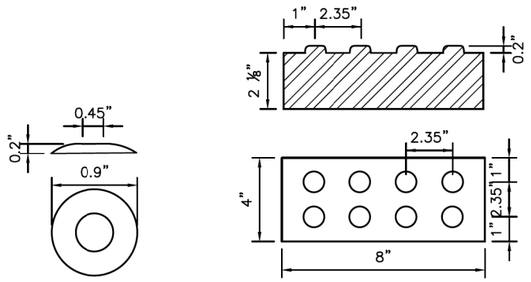


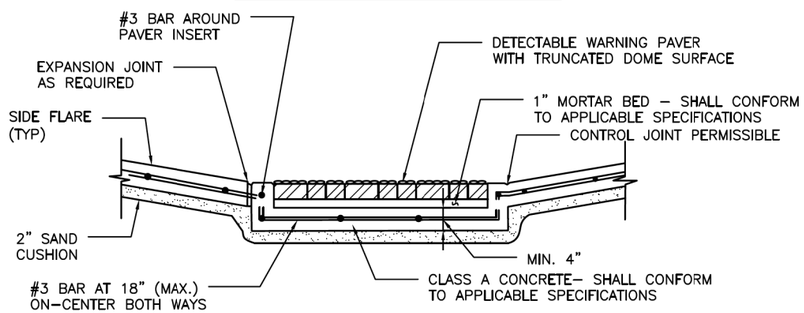
PLAN VIEW

DETECTABLE WARNING SURFACE



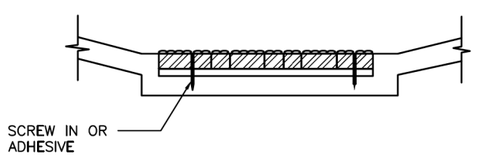
DETAIL

DETECTABLE WARNING PAVER



SECTION A–A

PAVER



DETAIL A–5

NOTES:

GENERAL NOTES

1. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOUSTON PUBLIC WORKS STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
2. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.

PAVERS

1. FURNISH DETECTABLE WARNING SURFACE UNITS MEETING ALL REQUIREMENTS OF ASTM C–936, C–33. LAY IN A TWO BY TWO UNIT BASKET WEAVE PATTERN OR AS DIRECTED.
2. LAY FULL–SIZE UNITS FIRST FOLLOWED BY CLOSURE UNITS CONSISTING OF AT LEAST 25 PERCENT OF A FULL UNIT. CUT DETECTABLE WARNING POWER UNITS USING A POWER SAW.

POLYMER CONCRETE

1. DETECTABLE WARNING TILES SHALL BE MADE OF POLYMER CONCRETE MATERIALS.
2. DETECTABLE WARNING TILES SHALL BE INSTALLED INTO FRESH CONCRETE (CAST–IN–PLACE) UTILIZING AN ANCHORING SYSTEM.
3. DETECTABLE WARNING TILES SHALL BE OF TERRACOTTA (BRICK–RED) COLOR AND COLORED THROUGHOUT TO GUARANTEE THE ADA REQUIRED COLOR CONTRAST.
4. DETECTABLE WARNING TILES SHALL MEET OR EXCEED THE FOLLOWING ASTM–BASED "STANDARDS" FOR CONCRETE MATERIALS.
   A. COMPRESSION STRENGTH > 12,500 PSI PER ASTM C 39–04
   B. WATER ABSORPTION < 0.25% PER ASTM C 97–09

PADS

1. FURNISH REQUIREMENTS OF ADAAG (MARCH 2003).
2. OTHER MATERIALS MAY BE USED IF APPROVED BY THE CITY ENGINEER

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

DETECTABLE WARNING SURFACE (OPTIONS)

(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Suhail Kanwar 9EF8B0CB41F5478... CITY ENGINEER

DocuSigned by: KHANG NGUYEN 95A29EFDA75B4CD... CITY TRAFFIC ENGINEER

DocuSigned by: Carol Haddock A93C410B72B3453... DIRECTOR OF HPW

EFF DATE: NOV–27–2023 DWG NO: 02775–07

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11750 KATY FREEWAY. #400
HOUSTON, TX 77079

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Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STREET PAVING & SIDEWALK STANDARDS

SHEET 16 OF 17

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N–100030–0GEC–3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 286 OF 718	

No.	DATE	REVISIONS	APP.

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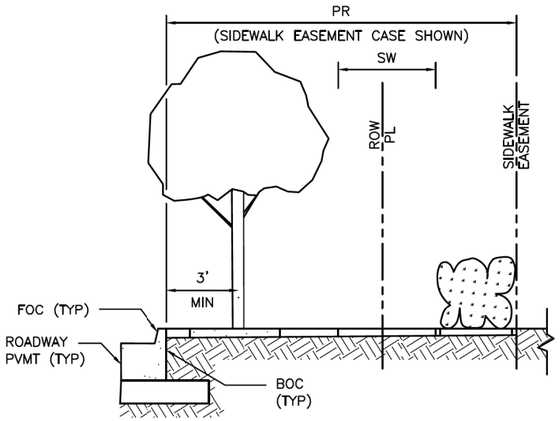
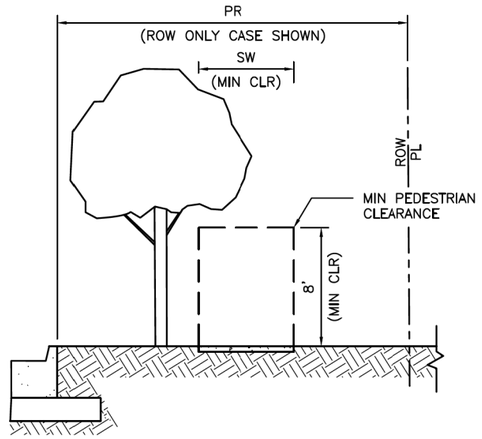
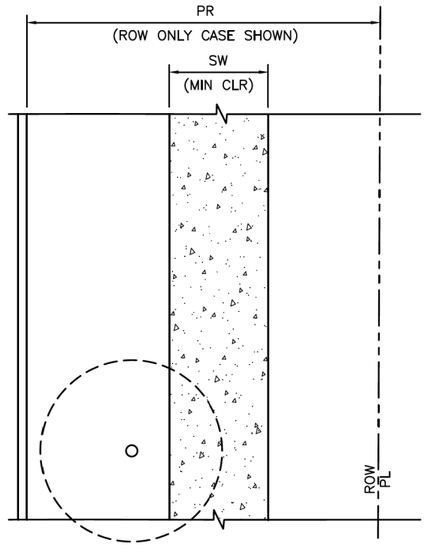


ELEVATION

PLAN
PEDESTRIAN REALM PERFORMANCE STANDARD



ELEVATION



PLAN
SIDEWALK & CLEAR PEDESTRIAN ZONE
MANDATORY MINIMUM REQUIREMENT

NOTES

1. REFER TO CONTRACT DRAWINGS FOR PEDESTRIAN REALM (PR), AND SIDEWALK (SW) WIDTHS.
2. THE MINIMUM UNOBSTRUCTED VERTICAL CLEARANCE OF A SIDEWALK IS EIGHT (8) FEET AS MEASURED VERTICALLY FROM THE SURFACE OF THE SIDEWALK. FOR VERTICAL CLEARANCE TO IMPROVEMENTS CONSTRUCTED OVER A SIDEWALK WITHIN THE PEDESTRIAN REALM, REFER TO THE CONTRACT DRAWINGS.
3. FOR PEDESTRIAN REALM DESIGN BACKGROUND, REFER TO CHAPTER 42 OF THE CODE OF ORDINANCES, ARTICLE IV – ENHANCED PEDESTRIAN REALM STANDARDS AND THE USERS' GUIDE FOR WALKABLE PLACES AND TRANSIT–ORIENTED DEVELOPMENT.
4. FOR ADDITIONAL PLANTING REQUIREMENTS, REFER TO CHAPTER 33 OF THE CODE OF ORDINANCES, SECTION 129 – GENERAL PLANTING STANDARDS.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

SIDEWALK AND CLEAR ZONE
TRANSIT CORRIDOR STREET

(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Sulail Kanwar — CITY ENGINEER

DocuSigned by: KHANG NGUYEN — CITY TRAFFIC ENGINEER

DocuSigned by: Carol Haddock — DIRECTOR OF HPW

EFF DATE: NOV–27–2023 | DWG NO: 02775–08

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STREET PAVING & SIDEWALK STANDARDS

SHEET 17 OF 17

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 287 OF 718	

No.	DATE	REVISIONS	APP:

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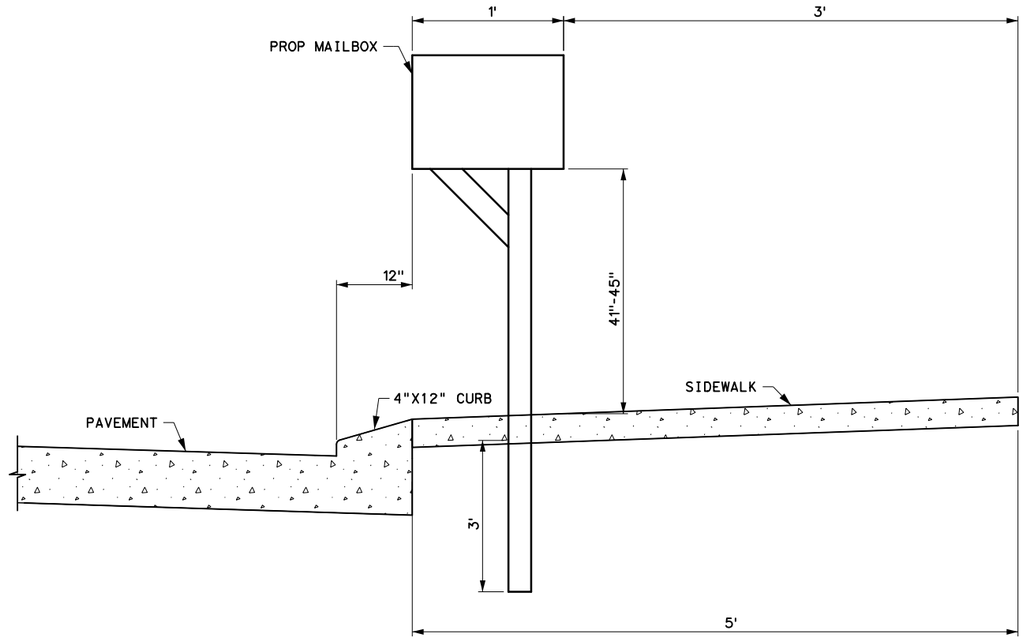

PROP MAILBOX DETAIL

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

MAILBOX DETAIL

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
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CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 288 OF 718	

No.	DATE	REVISIONS	APP.

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Table B-1 - Bus Stop Design Variables

Design Variable	Value	Design Criteria
Back-of-Curb to ROW Dimension (E)	20' ≤ E ≤ 25'	See Table B-2
	E < 20'	Use Standard ROW Detail A
	E > 25'	Atypical; Adapt As Needed
Design Bus Length	40'	Dimensions Marked * = 0'
	60'	Include Dimensiones Marked *
Platform Curb Height	9" (Preferred)	Include Design Elements Marked ^
	6"	Omit Design Elements Marked ^

Table B-2 - Dimensions

Total Back-of-Curb (E)	20'	23'	25'
Front Curbside Programming (A1)	2'	5'	5'
Rear Curbside Programming (A2)	3'	6'	6'
Clear Shelter Frontage (B)	5'	5'	5'
Shelter Foundation Depth (C1)	6'	6'	6'
Back-of-Platform Programming (C2)	4'	4'	4'
ROW Buffer (D)	1'	1'	1'
Clear Sidewalk (G)	6'	6'	8'

Table B-3 - Slopes & Concrete Thickness

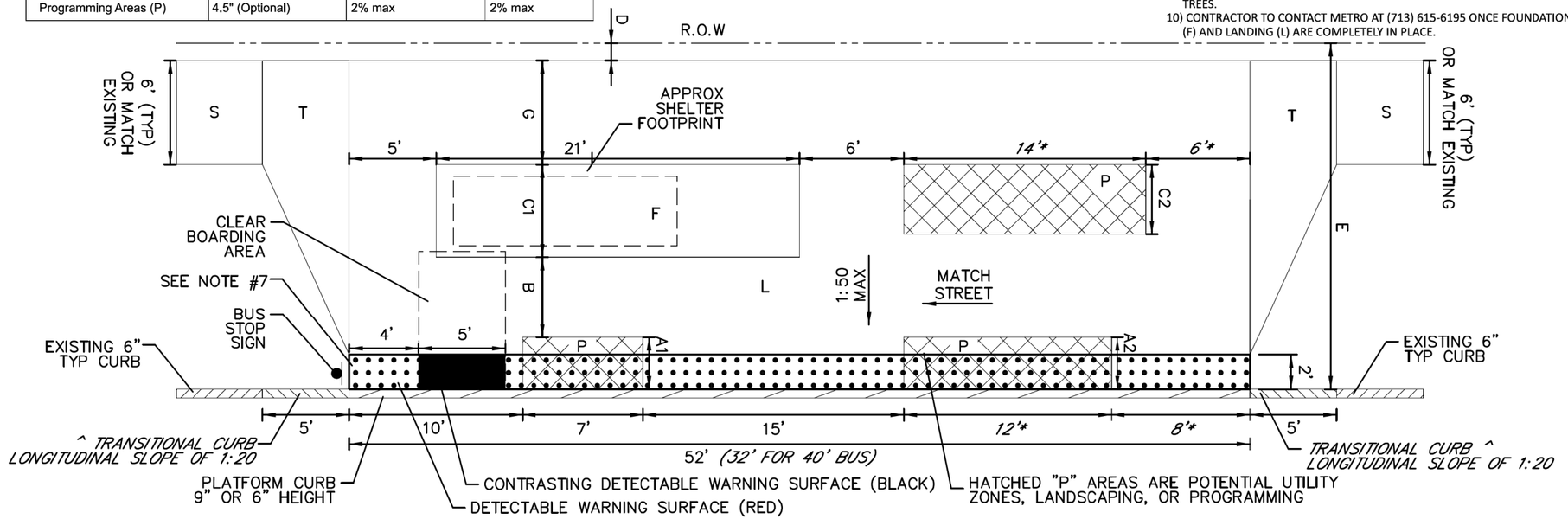
Area	Paving Thickness	Running Slope	Cross Slope
Landing (L) 2'	4.5"	Match Street	2% max
Bus Shelter Area (F)‡	9"	2% max	2% max
Transition Area (T)	4.5"	5% max	2% max
Sidewalk (S)	4.5"	5% max	2% max†
Programming Areas (P)	4.5" (Optional)	2% max	2% max

† Except to match existing

‡ See METRO Foundation Details Type I, II, and IV

Notes

1) LOCATION OF BUS STOP LONGITUDINALLY ALONG THE ROADWAY SHOULD ACCOUNT FOR THE CRITICAL SHELTER OBSTRUCTION TO LINE OF SIGHT AND OTHER GUIDELINES SET FORTH IN METRO TRANSIT DESIGN STANDARDS.
2) THE TRANSITION (T) SHOULD BE MINIMUM 5' LONG OR MAY BE LENGTHENED TO MITIGATE EXCESSIVE SLOPE.
3) REFER TO "METRO BUS STOP CONCRETE DETAILS" FOR REBAR REQUIREMENTS FOR 9 INCH AND TRANSITIONAL CURB AND EXPANSION AND CONTROL JOINTS. EXPANSION JOINTS WILL BE USED BETWEEN LANDING (L) AND TRANSITION (T). SAW CUT CONTROL JOINTS SHOULD BE SPACED MAX 8' IN EACH DIRECTION.
4) REFER TO CITY OF HOUSTON "CONCRETE SIDEWALK DETAILS FOR STREETS WITH CURBS" DWG NO. 02775-01 FOR SIDEWALK DETAILS. THE DRIVEWAY/SIDEWALK HEADER DETAIL PER CITY OF HOUSTON DWG NO. 02775-01 WILL BE USED TO CONNECT THE LANDING (L) (4 1/2" THICK) TO THE PAD (F) (9" THICK).
5) PROGRAMMING AREAS (P) MAY INCLUDE LANDSCAPING, BIKE PARKING, UTILITIES, STREET FURNITURE, ETC. TO BE DETERMINED BY METRO.
6) THE LANDING AREA (L) SHALL CONTAIN REINFORCING TRANSVERSE STEEL #4 BAR CONTINUOUS 12" C-C (TYP) AND LONGITUDINAL STEEL #4 BAR CONTINUOUS 12" C-C (TYP).
7) DETECTABLE WARNING SURFACE SHALL EXTEND ALONG TRANSITIONAL CURB WHERE SIDEWALK PAVING MEETS TRANSITIONAL CURB.
8) SHOW EXISTING PRIVATE AND PUBLIC UTILITIES. ADJUST VALVES AND PULLBOXES IF NEEDED. AVOID VERTICAL UTILITY CONFLICTS IN AREAS MARKED "L." VERTICAL UTILITES MAY EXIST IN AREAS MARKED "P." IDENTIFY AND PROTECT EXISTING GAS PIPELINES OR VALVES WITHIN THE WORK AREA.
9) CONTRACTOR TO AVOID DAMAGE TO ANY PRIVATE PROPERTY AND/OR TREES.
10) CONTRACTOR TO CONTACT METRO AT (713) 615-6195 ONCE FOUNDATION (F) AND LANDING (L) ARE COMPLETELY IN PLACE.



NO	DATE	REVISIONS	BY	CK	APP

METRO

J.L. DESIGNED	3/16/2021 DATE
J.L. DRAWN	3/16/2021 DATE
J.L. CHECKED	3/16/2021 DATE
APPROVED	DATE

SCALE: N.T.S

CONTRACT NO | DRAWING NO | PAGE

METRO BOOST Bus Stop Detail B
Sidewalk Behind Shelter

No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

METRO BOOST BUS STOP DETAIL B
SIDEWALK BEHIND SHELTER

SHEET 1 OF 1

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ROWAIDAH AYOUB	
SHEET NO. 289 OF 718	

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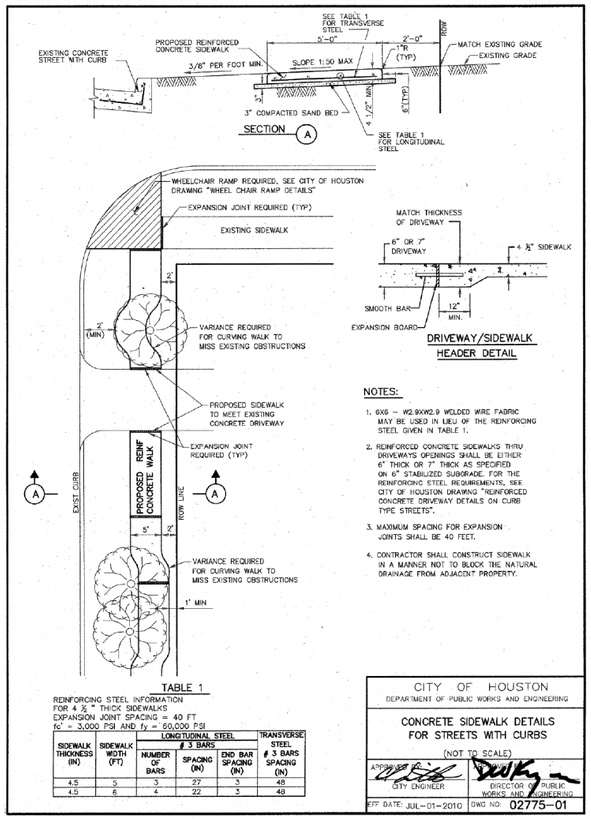


DRIVEWAY/SIDEWALK HEADER DETAIL

NOTES:

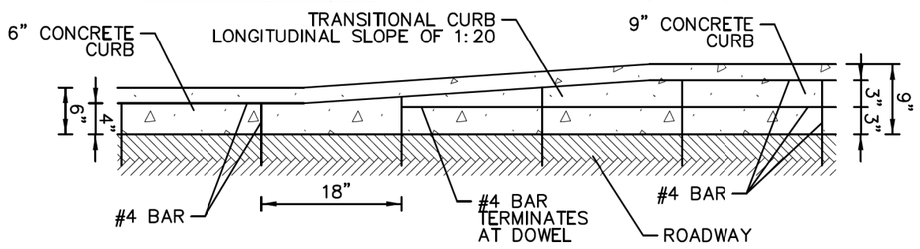
1. 6X6 – W2.9XW2.9 WELDED WIRE FABRIC MAY BE USED IN LIEU OF THE REINFORCING STEEL GIVEN IN TABLE 1.
2. REINFORCED CONCRETE SIDEWALKS THRU DRIVEWAYS OPENINGS SHALL BE EITHER 6" THICK OR 7" THICK AS SPECIFIED ON 6" STABILIZED SUBGRADE. FOR THE REINFORCING STEEL REQUIREMENTS, SEE CITY OF HOUSTON DRAWING "REINFORCED CONCRETE DRIVEWAY DETAILS ON CURB TYPE STREETS".
3. MAXIMUM SPACING FOR EXPANSION JOINTS SHALL BE 40 FEET.
4. CONTRACTOR SHALL CONSTRUCT SIDEWALK IN A MANNER NOT TO BLOCK THE NATURAL DRAINAGE FROM ADJACENT PROPERTY.

TABLE 1

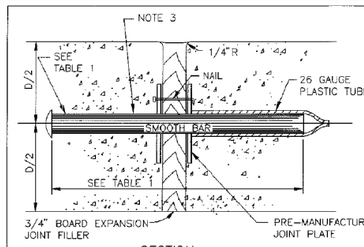
REINFORCING STEEL INFORMATION
FOR 4 ½ " THICK SIDEWALKS
EXPANSION JOINT SPACING = 40 FT.
f_c' = 3,000 PSI AND f_y = 60,000 PSI

SIDEWALK THICKNESS (IN)	SIDEWALK WIDTH (FT)	LONGITUDINAL STEEL # 3 BARS NUMBER OF BARS	LONGITUDINAL STEEL # 3 BARS SPACING (IN)	LONGITUDINAL STEEL # 3 BARS END BAR SPACING (IN)	TRANSVERSE STEEL # 3 BARS SPACING (IN)
4.5	5	3	27	3	48
4.5	6	4	22	3	48

CITY OF HOUSTON	
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
CONCRETE SIDEWALK DETAILS FOR STREETS WITH CURBS (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2010	DWG NO: 02775-01



TRANSITIONAL CURB PROFILE



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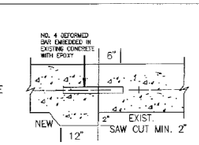
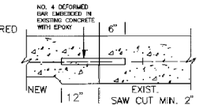
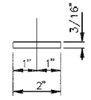
DOWEL TYPE EXPANSION JOINT
N.T.S



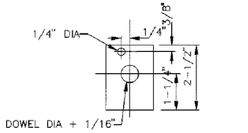
SECTION
SIDEWALK TO EXISTING SIDEWALK



SECTION
SIDEWALK TO EXISTING DRIVEWAY



PLAN – JOINT PLATE



ELEVATION – JOINT PLATE
N.T.S.



SECTION
CONTROL JOINT
N.T.S.

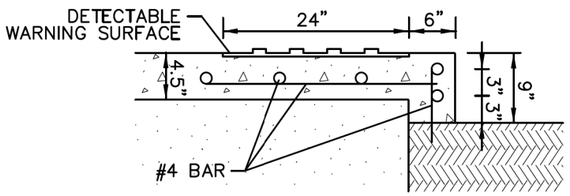
NOTES:

1. STEEL TO MEET ASTM STANDARD SPECIFICATIONS FOR CONCRETE REINFORCING BARS.
2. EXPANSION JOINT TO BE PLACED AT THE END OF EACH CURB RADIUS AND SPACED AT A MAXIMUM DISTANCE OF 36' FEET. MAXIMUM SPACING FOR CONTROL JOINTS SHALL BE 5' FEET.
3. CENTER DOWEL HORIZONTALLY ON JOINT.
4. CENTER DOWEL VERTICALLY IN CONCRETE AS NEEDED TO MAINTAIN 2" MIN. COVER.

TABLE 1

PAVEMENT THICKNESS (IN)	DOWEL SIZES AND SPACINGS DIAMETER (IN)	LENGTH (IN)	SPACING (IN)
4 1/2	1/2	18	12
5	1/2	18	12
6	3/4	18	12
7	1	18	12

CITY OF HOUSTON	
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION	
SIDEWALK EXPANSION AND CONSTRUCTION JOINT DETAILS (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002	DWG NO: 02752-02



9-INCH DOWELED-ON CURB

NO	DATE	REVISIONS	BY	CK	APP

METRO

JL	3/16/2021	DESIGNED
VKM	3/16/2021	DRAWN
JL	3/16/2021	CHECKED
		APPROVED

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METRO BOOST Bus Stop
Concrete Details

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ANTOINE DRIVE

METRO BOOST BUS STOP
CONCRETE DETAILS

SHEET 1 OF 1

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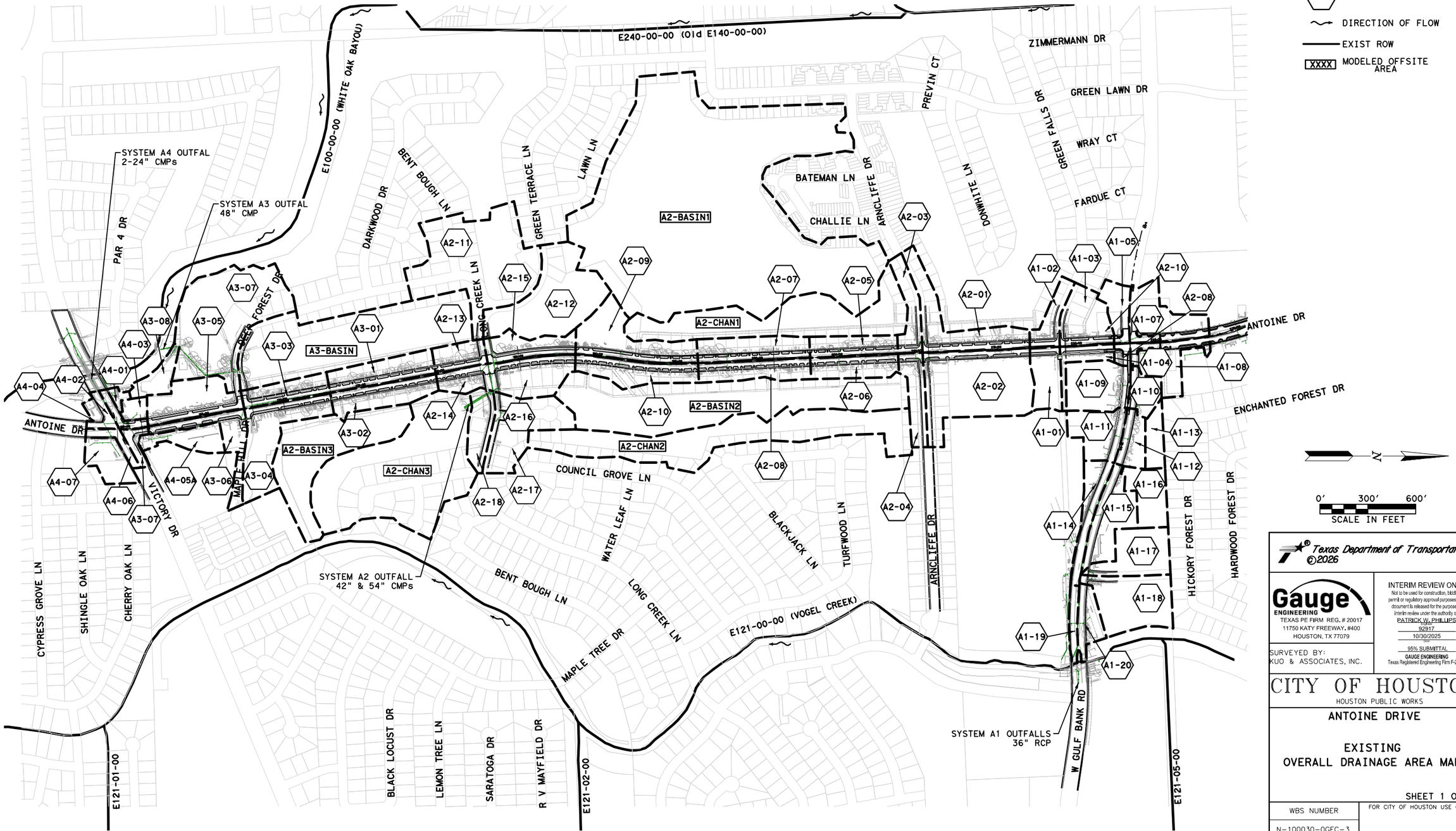

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CITY OF HOUSTON
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ANTOINE DRIVE

EXISTING OVERALL DRAINAGE AREA MAP

SHEET 1 OF 1

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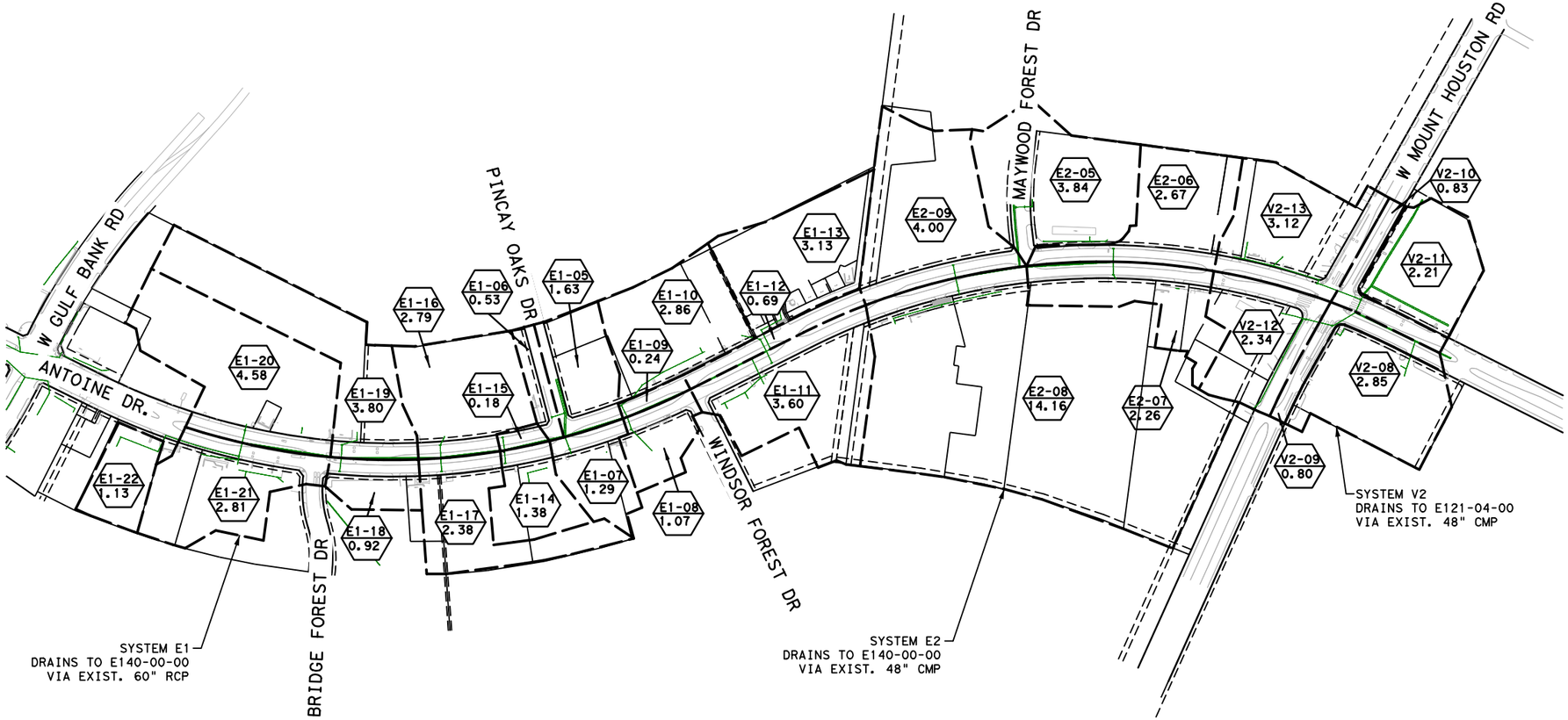

LEGEND

- EXIST DRAINAGE AREA BOUNDARY
- ID — DRAINAGE AREA ID
- DIRECTION OF FLOW

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0′ 200′ 400′
SCALE IN FEET

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CITY OF HOUSTON
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ANTOINE DRIVE

EXISTING OVERALL DRAINAGE AREA MAP BEGIN PROJECT TO END PROJECT

SHEET 1 OF 1

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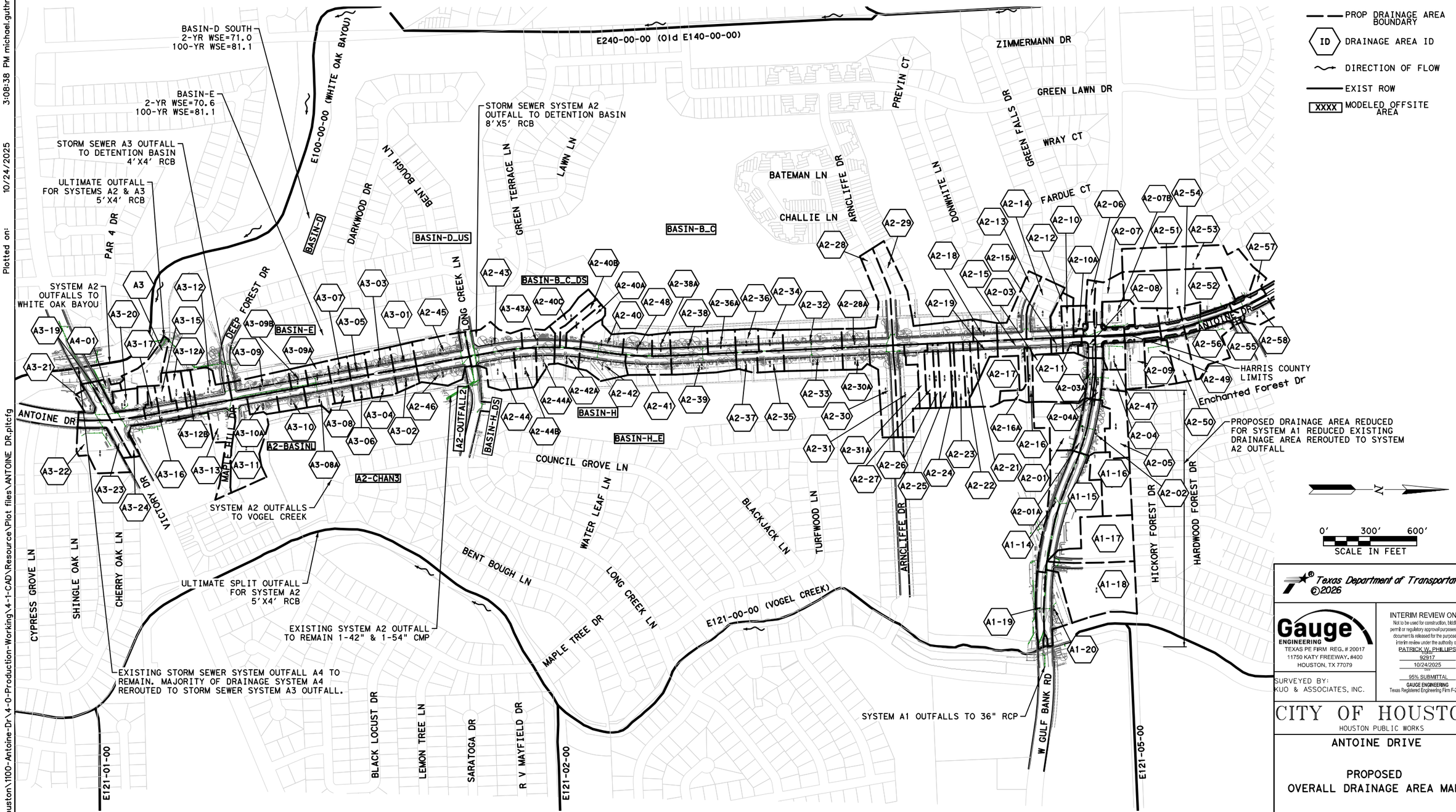

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CITY OF HOUSTON
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ANTOINE DRIVE

PROPOSED OVERALL DRAINAGE AREA MAP

SHEET 1 OF 1

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- PROP DRAINAGE AREA BOUNDARY
- ID — DRAINAGE AREA ID
- DIRECTION OF FLOW

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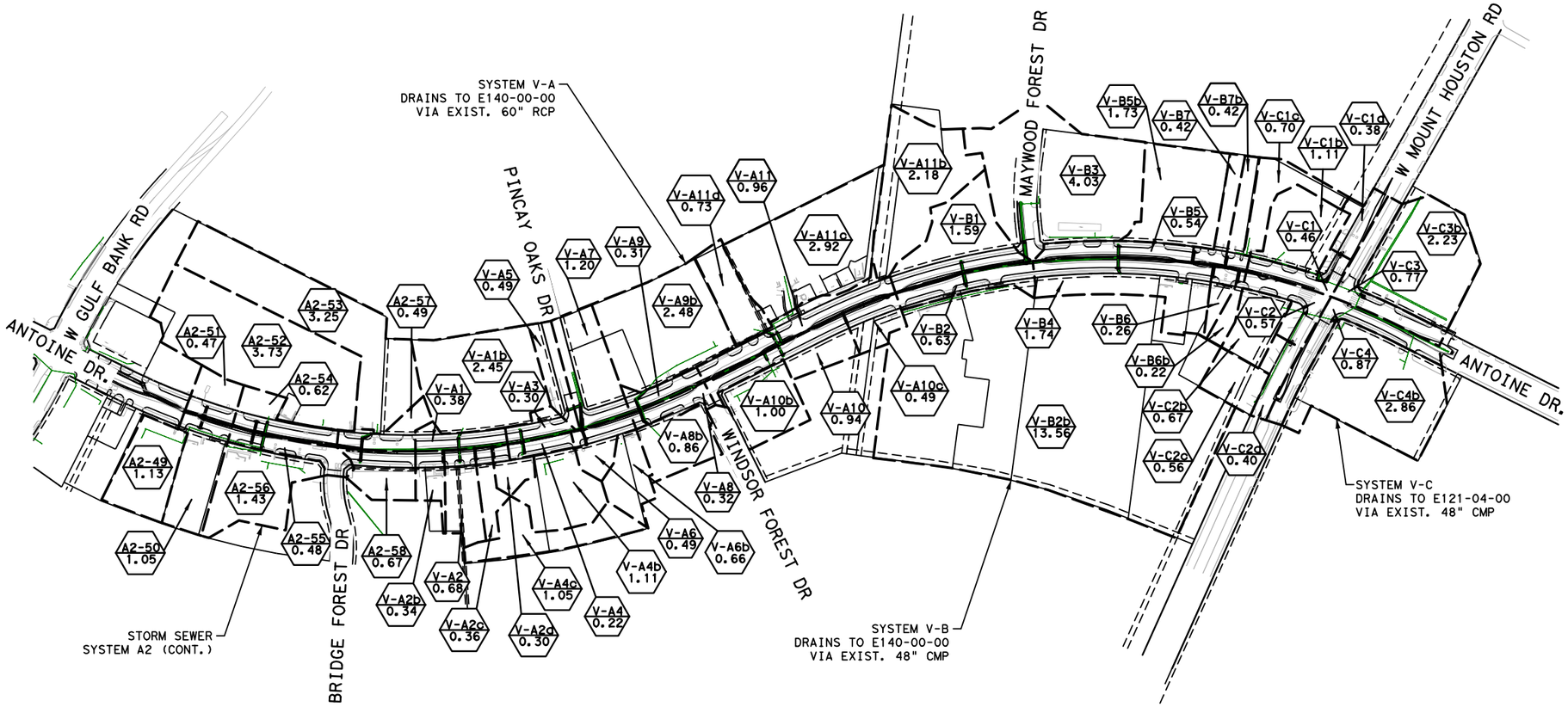

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ANTOINE DRIVE
PROPOSED OVERALL DRAINAGE AREA MAP BEGIN PROJECT TO END PROJECT

SHEET 1 OF 1

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- ID — DRAINAGE AREA ID
- DIRECTION OF FLOW

No.	DATE	REVISIONS	APP.

A4-04 A4-02 A4-01 A3-08 A4-03 A3-05 A3-03 A4-06 A3-07 A4-05A A4-07 A3-06 A3-04

EXIST ROW — VICTORY DR — EXIST ROW — DEEP FOREST DR — EXIST ROW

ANTOINE DR — ℄ ANTOINE DR.

159+00 160+00 161+00 162+00 163+00 164+00 165+00 166+00 167+00 168+00 169+00 170+00

MATCH LINE STA 170+00

MAPLE HILL DR

N

0′ 50′ 100′
SCALE IN FEET

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

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Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

EXISTING DRAINAGE AREA MAP BEGIN PROJECT TO STA 170+00

SHEET 1 OF 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 295 OF 718	

Plotted on: 10/24/2025 3:08:44 PM michael.guthrie
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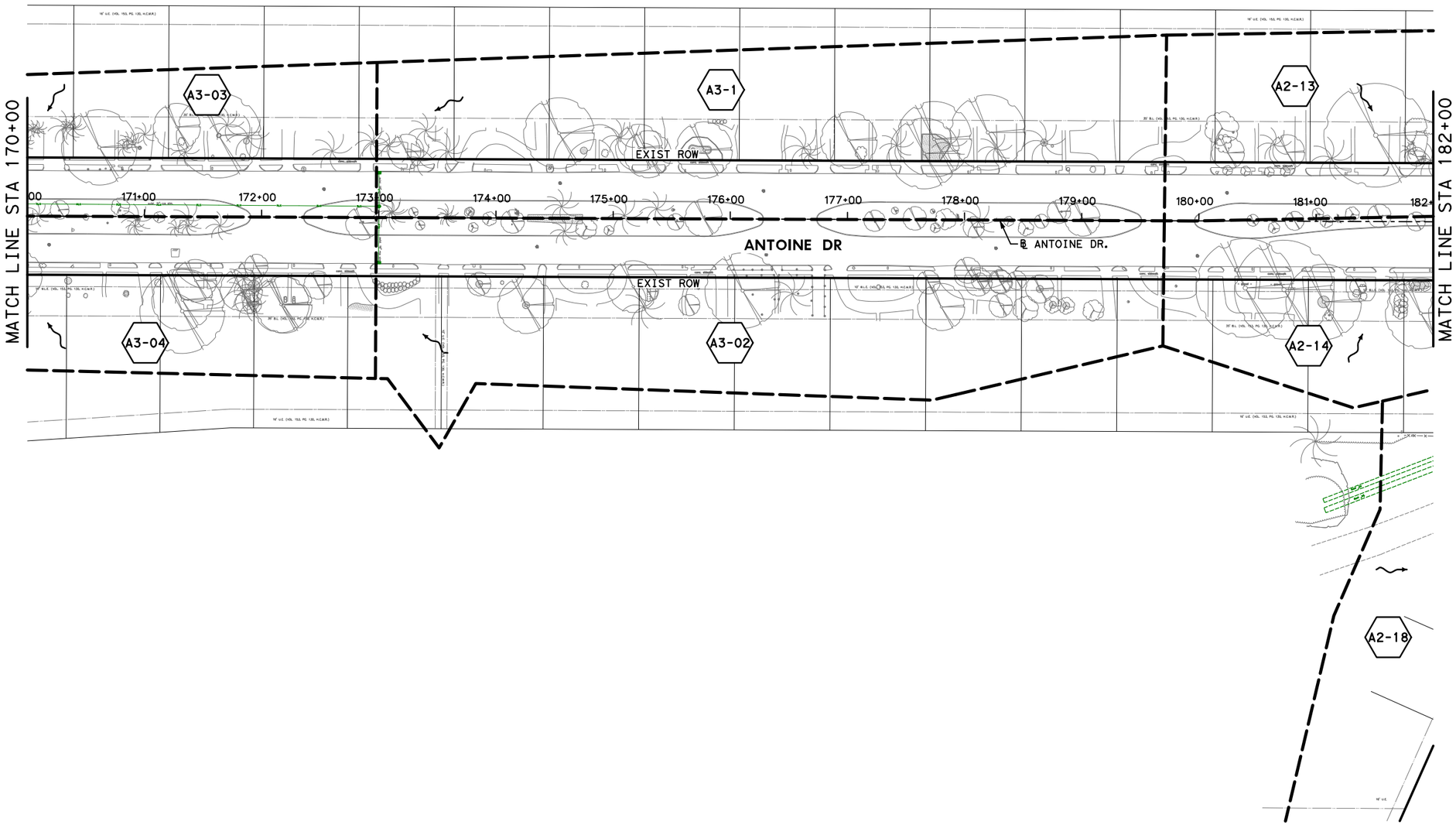
LEGEND

- PROP DRAINAGE AREA BOUNDARY
- ID — DRAINAGE AREA ID
- DIRECTION OF FLOW

No.	DATE	REVISIONS	APP.



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0′ 50′ 100′
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

EXISTING DRAINAGE AREA MAP STA 170+00 TO STA 182+00

SHEET 2 OF 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 296 OF 718	

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LEGEND

- PROP DRAINAGE AREA BOUNDARY
- ID — DRAINAGE AREA ID
- DIRECTION OF FLOW

No.	DATE	REVISIONS	APP.



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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

EXISTING DRAINAGE AREA MAP STA 182+00 TO STA 194+00

SHEET 3 OF 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 297 OF 718	

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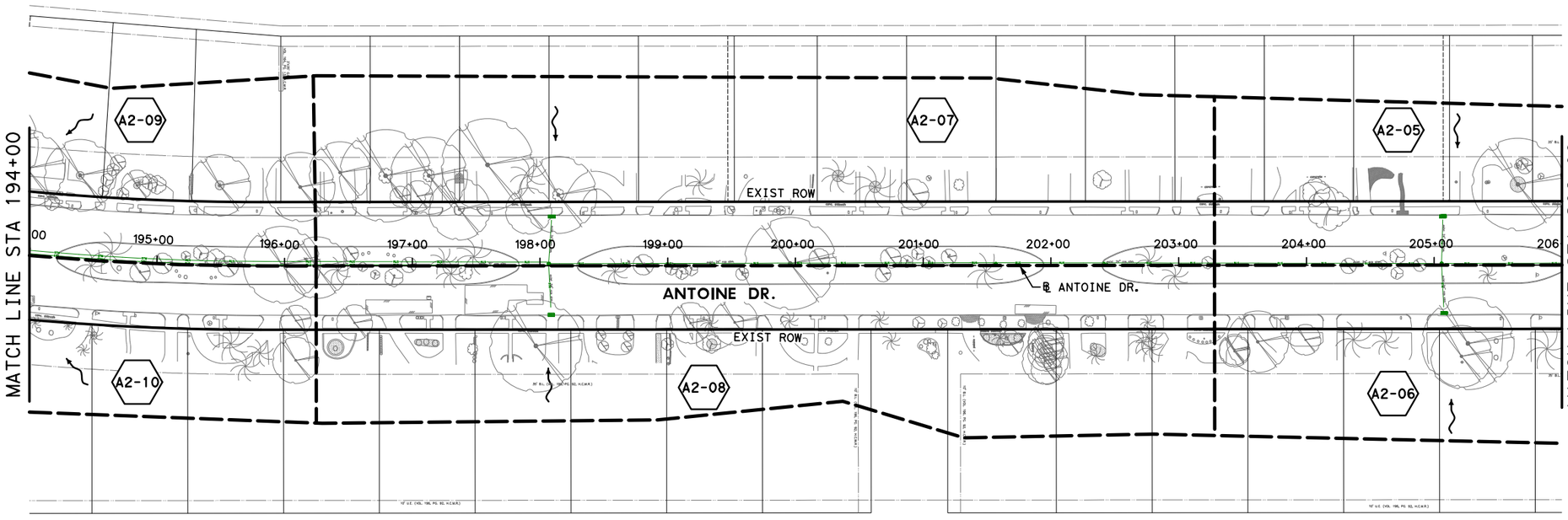
LEGEND

- PROP DRAINAGE AREA BOUNDARY
- ID — DRAINAGE AREA ID
- DIRECTION OF FLOW

No.	DATE	REVISIONS	APP.



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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

EXISTING DRAINAGE AREA MAP STA 194+00 TO STA 206+00

SHEET 4 OF 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 298 OF 718	

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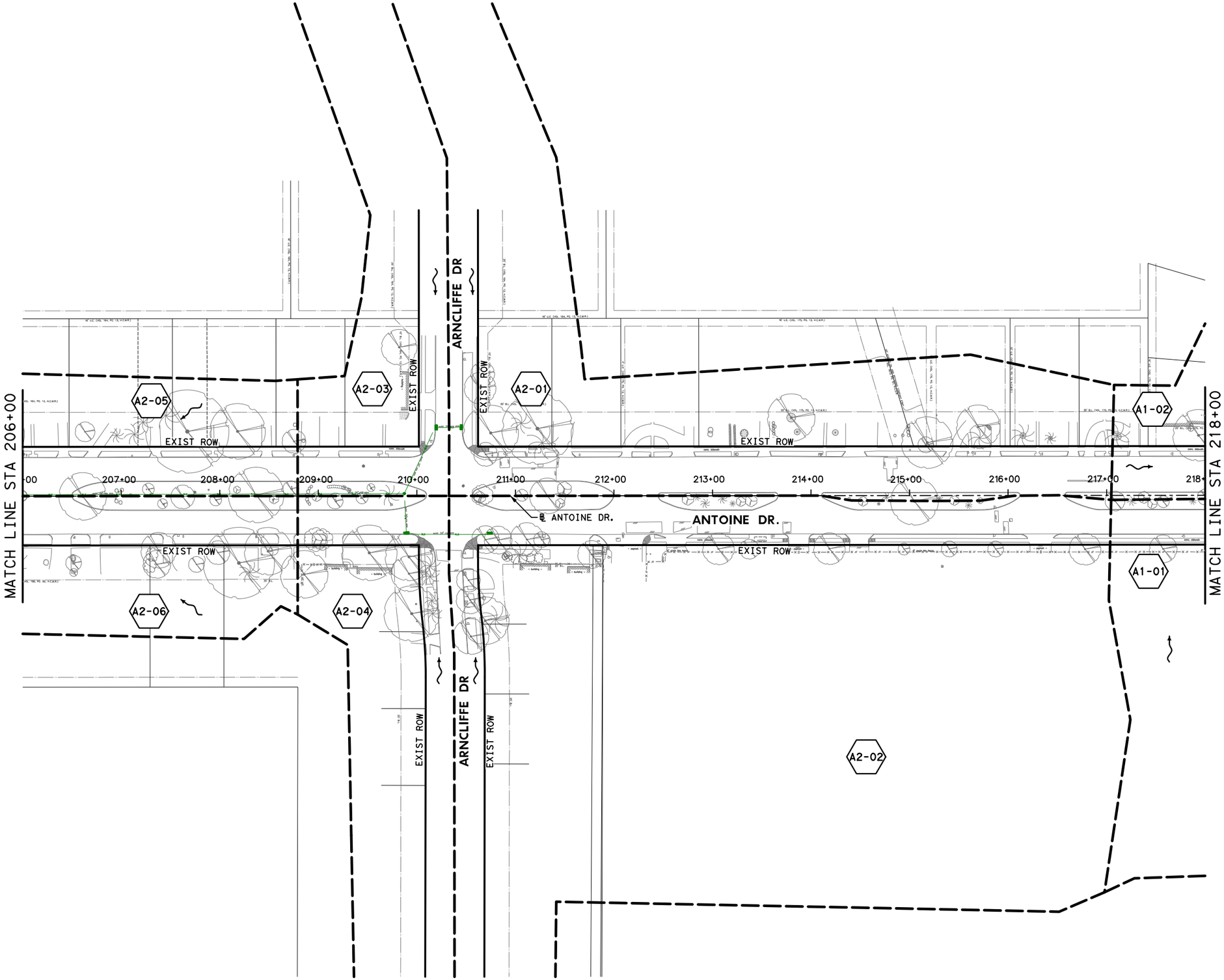
LEGEND

- PROP DRAINAGE AREA BOUNDARY
- ID — DRAINAGE AREA ID
- DIRECTION OF FLOW

No.	DATE	REVISIONS	APP.



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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

EXISTING DRAINAGE AREA MAP STA 206+00 TO STA 218+00

SHEET 5 OF 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 299 OF 718	

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LEGEND

- PROP DRAINAGE AREA BOUNDARY
- ID — DRAINAGE AREA ID
- DIRECTION OF FLOW

No.	DATE	REVISIONS	APP.

MATCH LINE STA 218+00

ANTOINE DR.

℄ ANTOINE DR.

WEST GULF BANK RD

GREEN FALLS DR

HARRIS COUNTY LIMITS

EXIST ROW

A1-01 A1-02 A1-03 A1-04 A1-05 A1-07 A1-08 A1-09 A1-10 A1-11 A1-13 A2-08

N

0′ 50′ 100′
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

EXISTING DRAINAGE AREA MAP STA 218+00 TO END PROJECT

SHEET 6 OF 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 300 OF 718	

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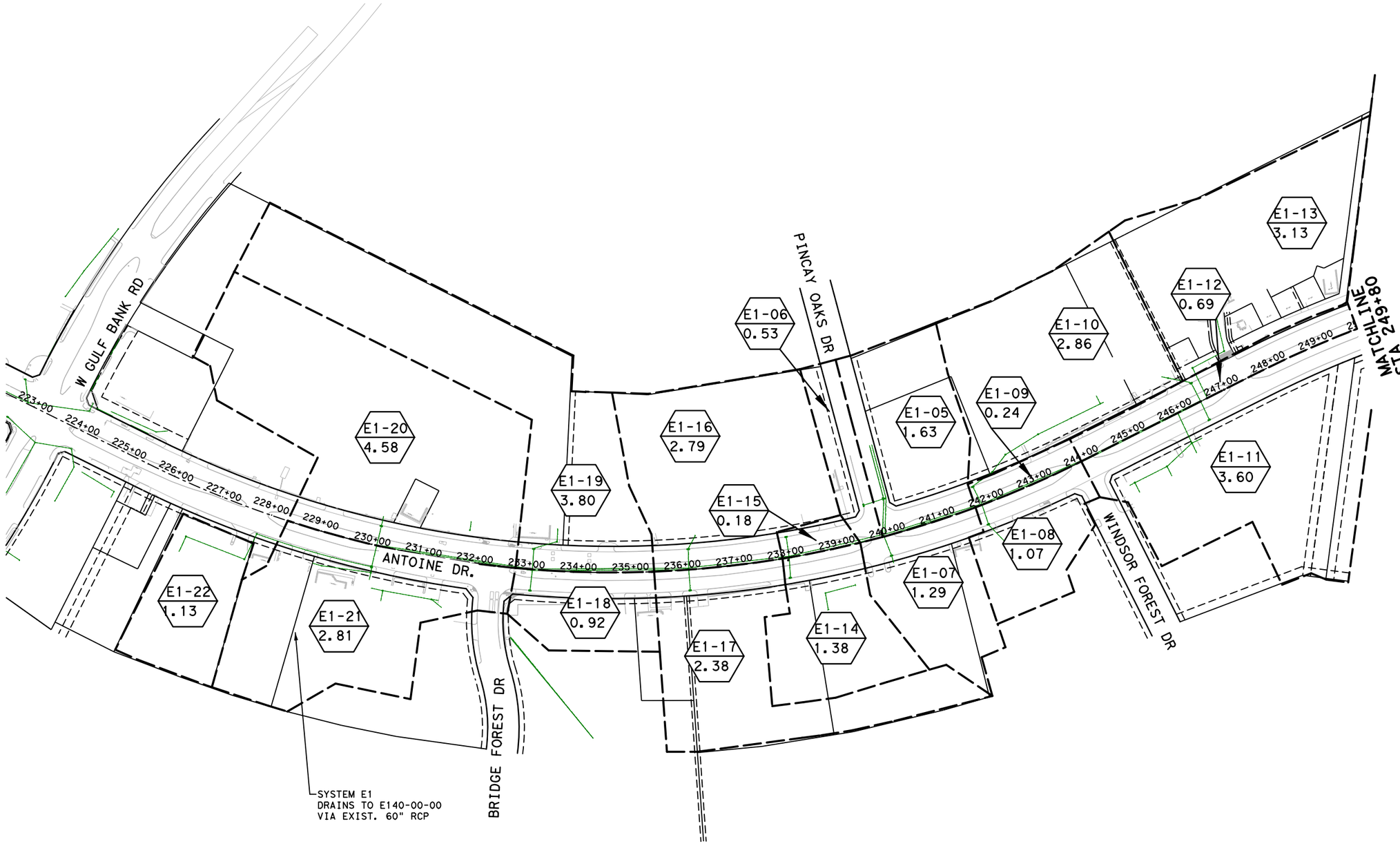
LEGEND

- EXIST DRAINAGE AREA BOUNDARY
- ID — DRAINAGE AREA ID
- DIRECTION OF FLOW

No.	DATE	REVISIONS	APP.



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10/23/2025
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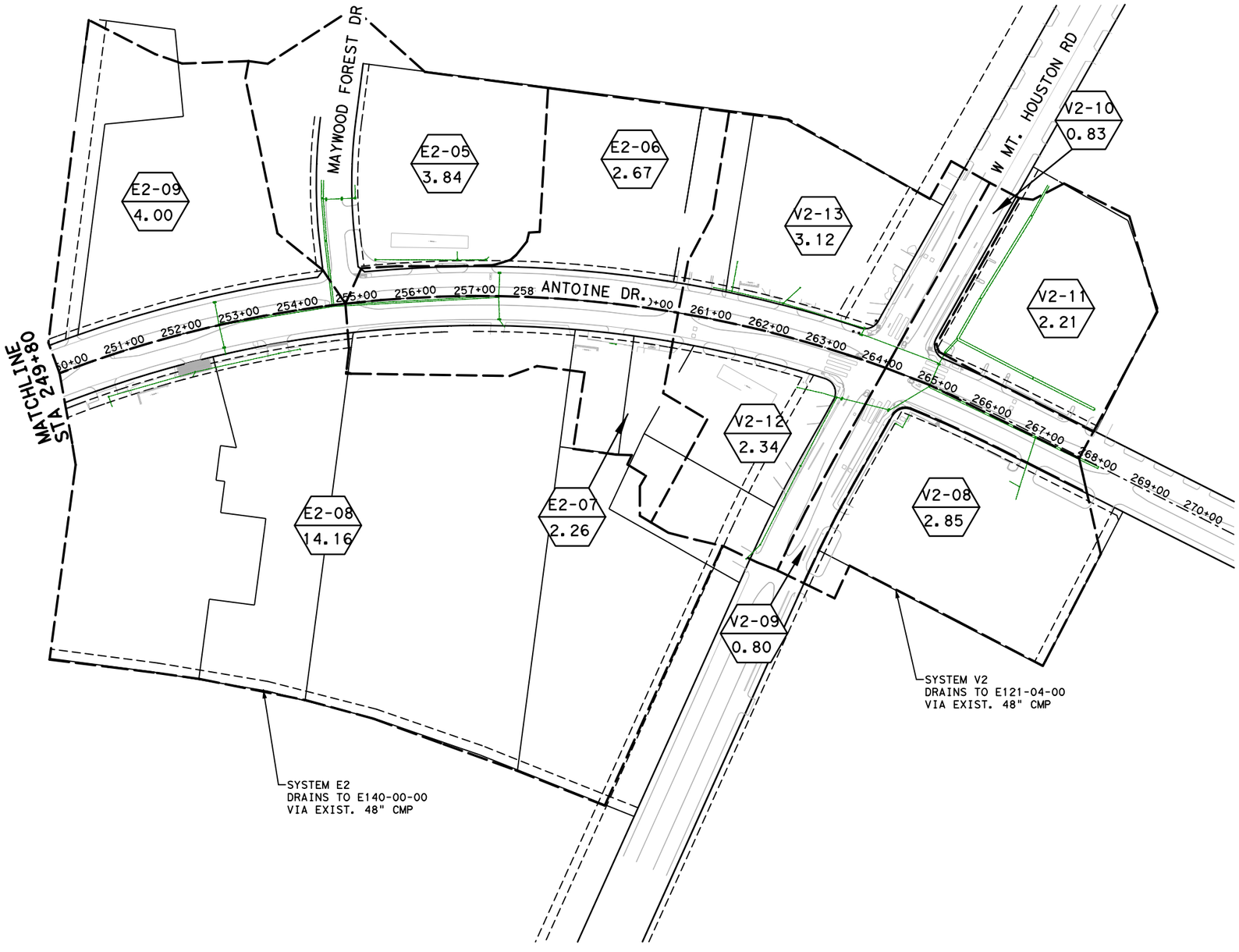
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
EXISTING DRAINAGE AREA MAP BEGIN PROJECT TO STA. 250+45

SHEET 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 301 OF 718	



LEGEND

- EXIST DRAINAGE AREA BOUNDARY
- ID — DRAINAGE AREA ID
- DIRECTION OF FLOW

N

0′ 100′ 200′
SCALE IN FEET

No.	DATE	REVISIONS	APP.

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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

EXISTING DRAINAGE AREA MAP STA. 250+45 TO PROJECT END

SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 302 OF 718	

Plotted on: 10/23/2025 1:44:57 PM JOviedo
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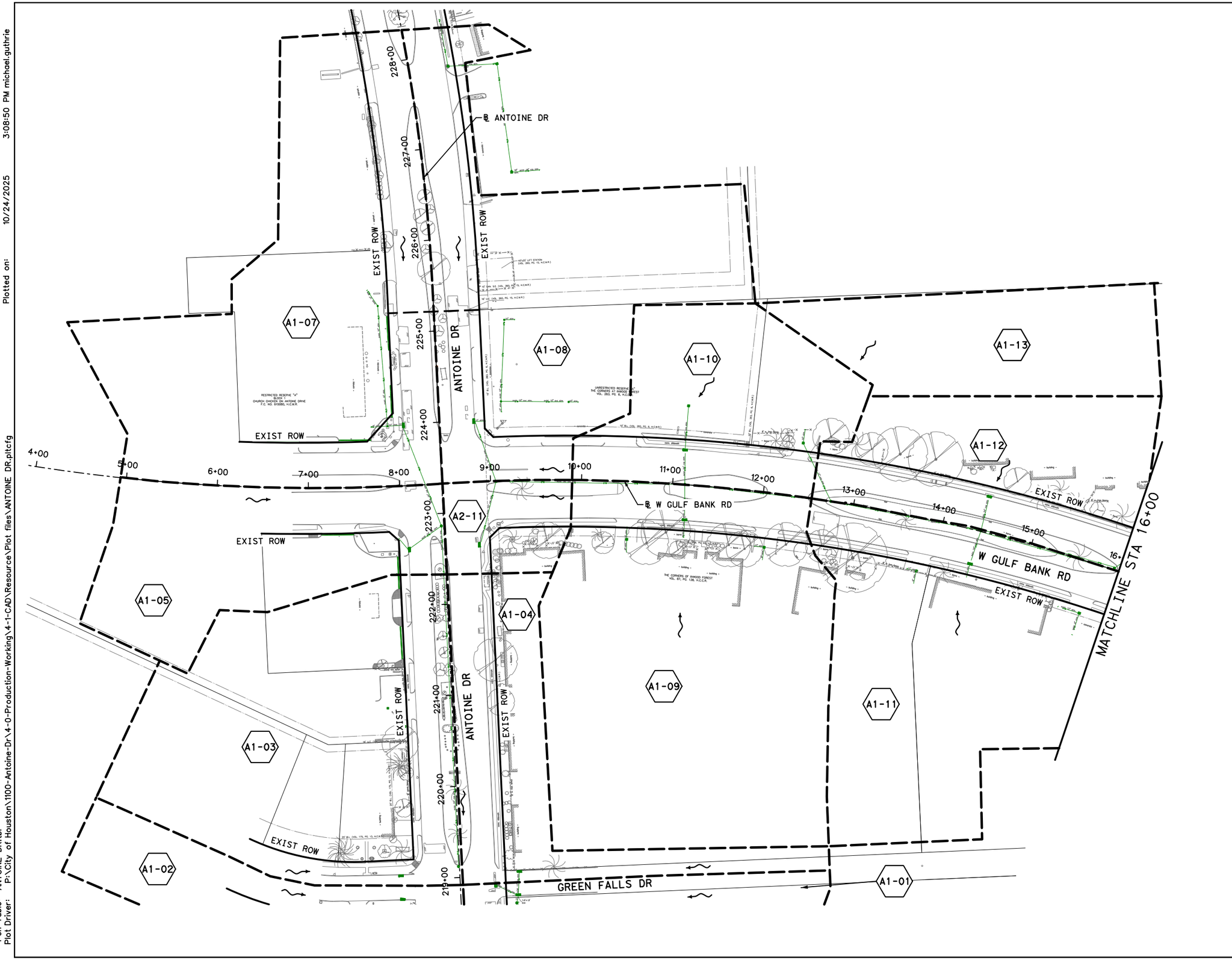

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

EXISTING
DRAINAGE AREA MAP
STA 4+00 TO STA 16+00

SHEET 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 303 OF 718	

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LEGEND

- PROP DRAINAGE AREA BOUNDARY
- ID — DRAINAGE AREA ID
- DIRECTION OF FLOW

N

0′ 50′ 100′
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

EXISTING DRAINAGE AREA MAP STA 16+00 TO END PROJECT

SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 304 OF 718	

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LEGEND

- PROP DRAINAGE AREA BOUNDARY
- ID — DRAINAGE AREA ID
- DIRECTION OF FLOW
- PROP STORM SEWER
- ID — PROPOSED INLET
- ID — PROP MANHOLE/JCT

No.	DATE	REVISIONS	APP.

ANTOINE DR.

VICTORY DR

DEEP FOREST DR

MAPLE HILL DR

EXIST ROW

A3 A3-09 A3-10A A3-11 A3-12 A3-12A A3-12B A3-13 A3-15 A3-16 A3-17 A3-19 A3-20 A3-21 A3-22 A3-23 A3-24 A4-01

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#MH-A3-05 #MH-A3-06 #MH-A3-09 #MH-A3-10 #MH-A3-11 #MH-A3-12 #MH-A3-17 #MH-A3-18

157+00 158+00 159+00 160+00 161+00 162+00 163+00 164+00 165+00 166+00 167+00 168+00 169+00 170+00

MATCH LINE STA 170+00

N

0′ 50′ 100′
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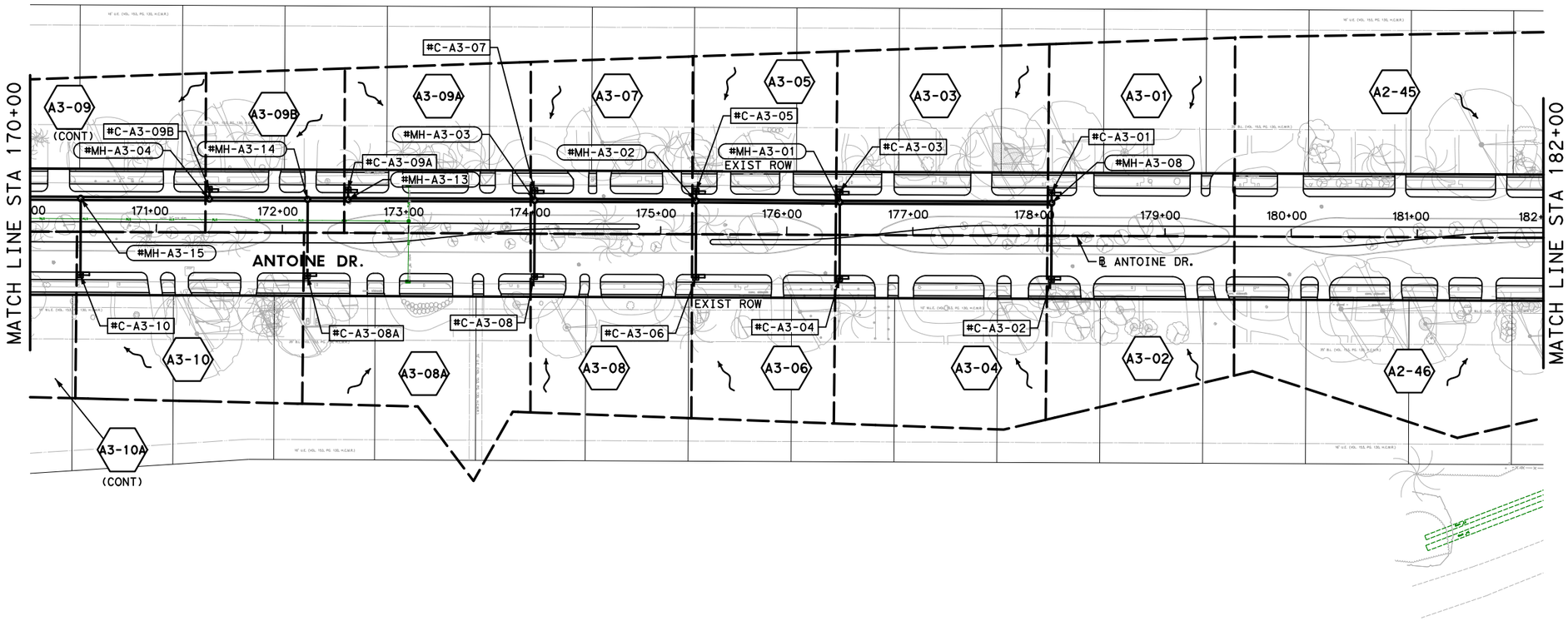
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED DRAINAGE AREA MAP
BEGIN PROJECT TO STA 170+00

SHEET 1 OF 7

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 305 OF 718	



LEGEND

- PROP DRAINAGE AREA BOUNDARY
- ID — DRAINAGE AREA ID
- DIRECTION OF FLOW
- PROP STORM SEWER
- ID — PROPOSED INLET
- ID — PROP MANHOLE/JCT

No.	DATE	REVISIONS	APP.

N

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED DRAINAGE AREA MAP STA 170+00 TO STA 182+00

SHEET 2 OF 7

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 306 OF 718	

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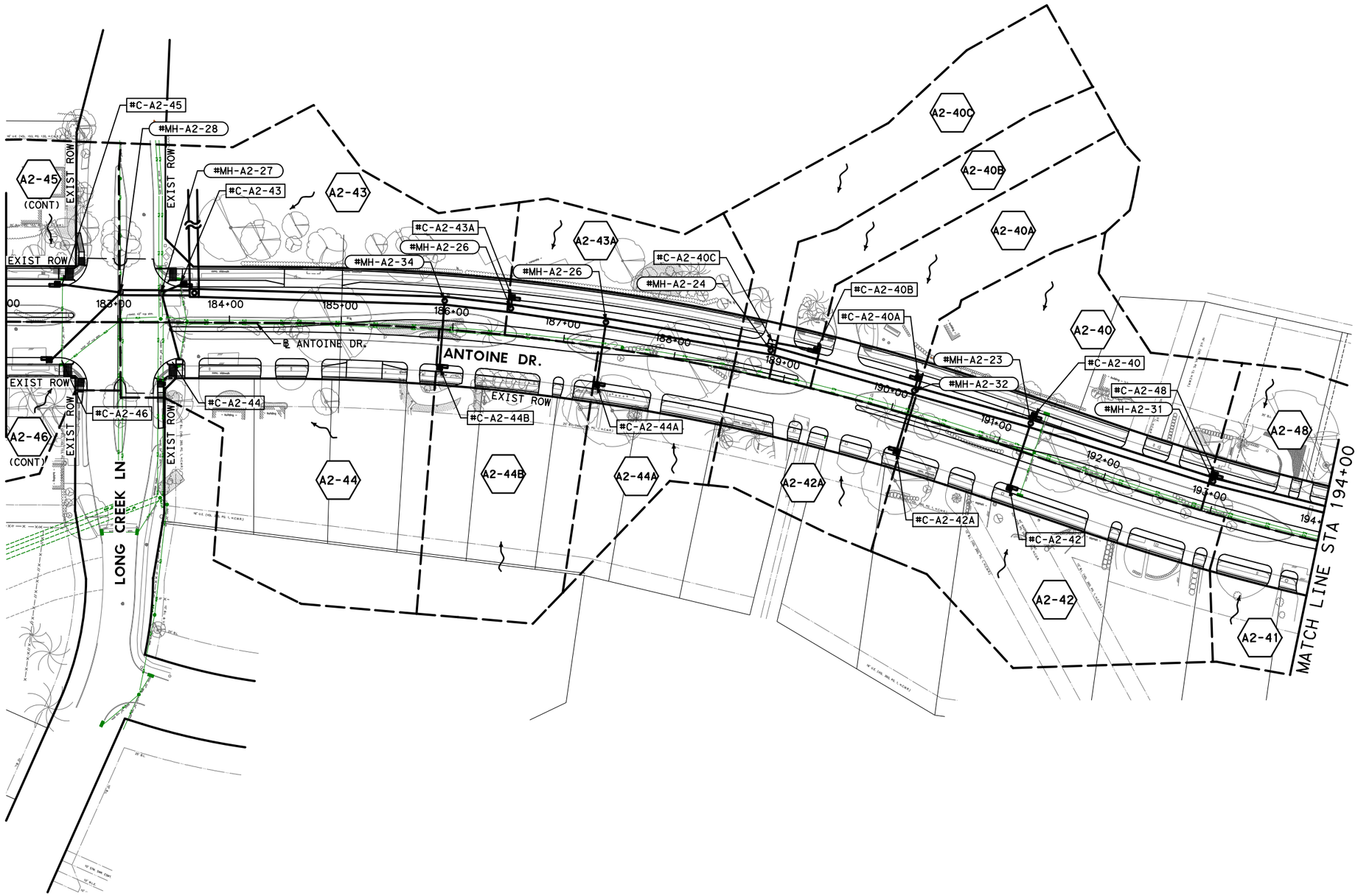
LEGEND

- PROP DRAINAGE AREA BOUNDARY
- ID — DRAINAGE AREA ID
- DIRECTION OF FLOW
- PROP STORM SEWER
- ID — PROPOSED INLET
- ID — PROP MANHOLE/JCT

No.	DATE	REVISIONS	APP.



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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED DRAINAGE AREA MAP STA 182+00 TO STA 194+00

SHEET 3 OF 7

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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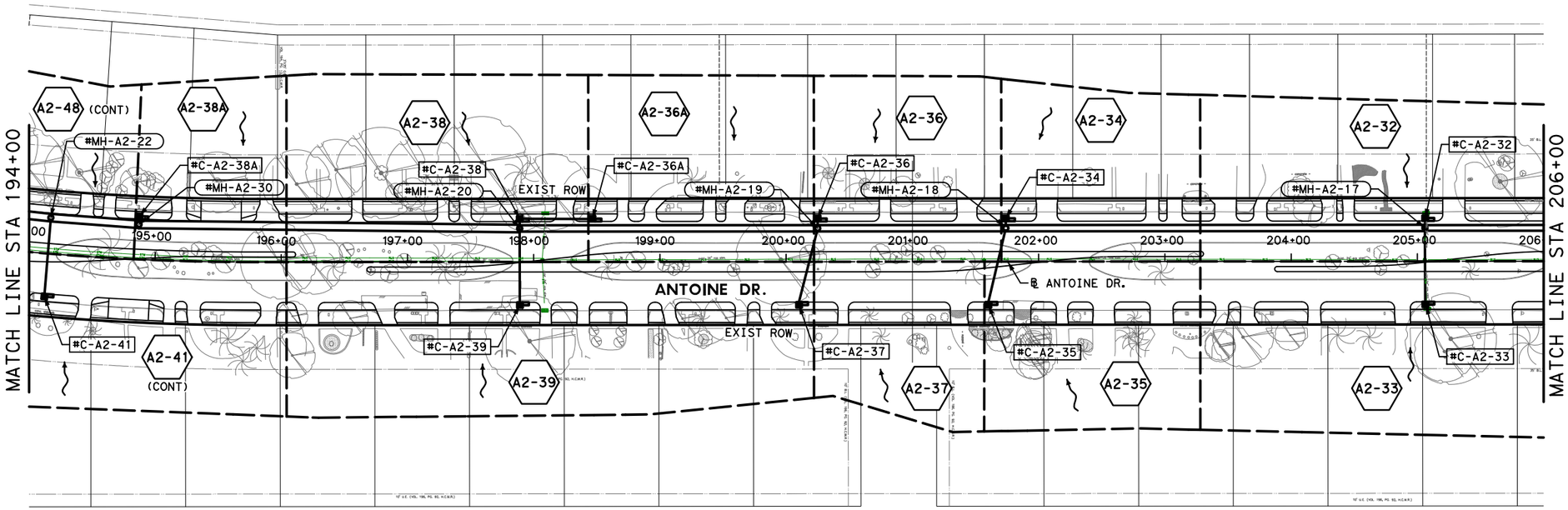
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 307 OF 718	



LEGEND

- PROP DRAINAGE AREA BOUNDARY
- ID — DRAINAGE AREA ID
- DIRECTION OF FLOW
- PROP STORM SEWER
- ID — PROPOSED INLET
- ID — PROP MANHOLE/JCT

No.	DATE	REVISIONS	APP.

N

0′ 50′ 100′
SCALE IN FEET

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

SURVEYED BY:
KUO & ASSOCIATES, INC.

INTERIM REVIEW ONLY
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PATRICK W. PHILLIPS
92917
10/24/2025
95% SUBMITTAL
GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED DRAINAGE AREA MAP STA 194+00 TO STA 206+00

SHEET 4 OF 7

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 308 OF 718	

Pen Table: ANTOINE DR.tbl
Plot Driver: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Resource\Plot files\ANTOINE DR.pltcfg
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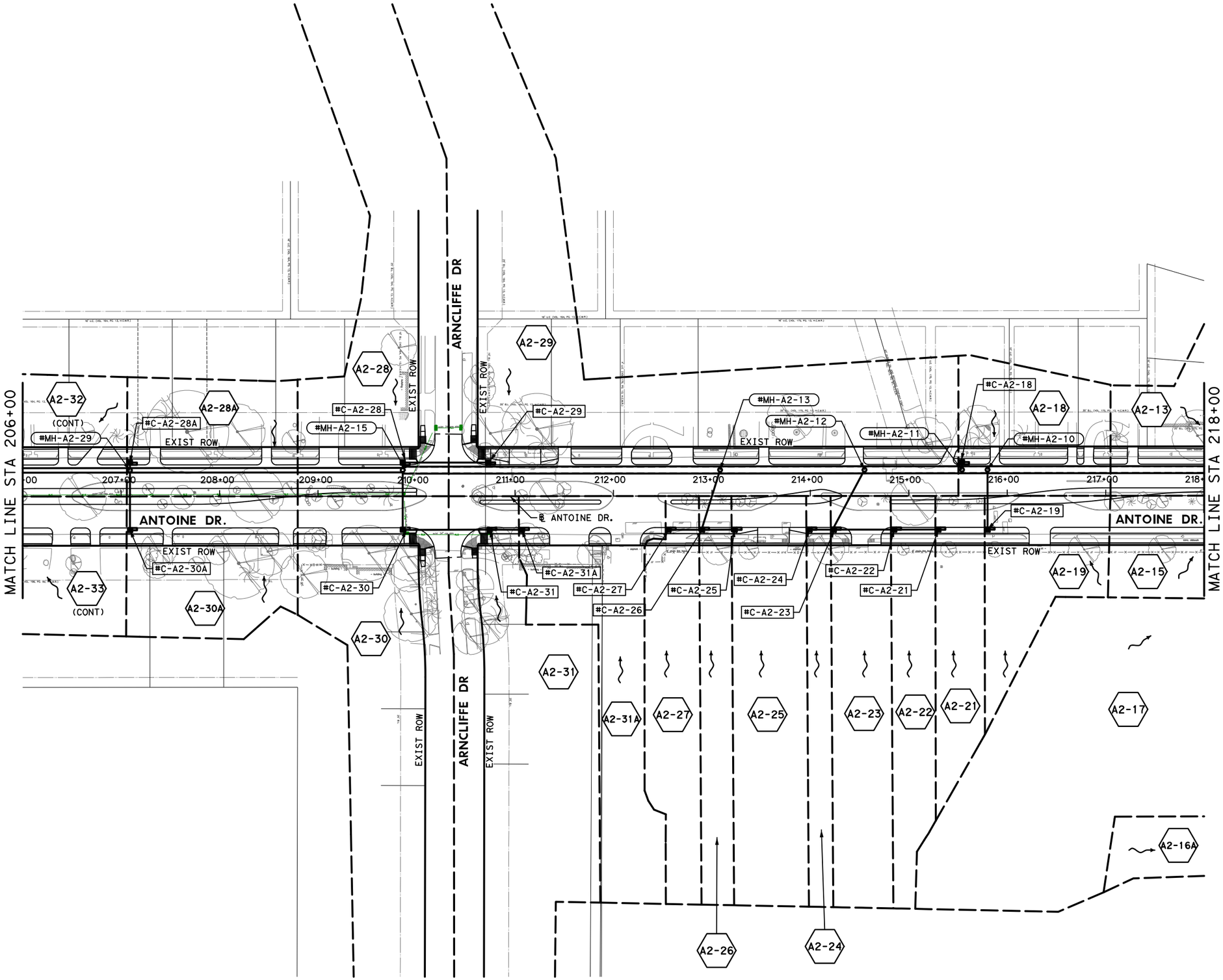
Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Drainage\W GULF BANK\PR_DAM 18.dgn



LEGEND

- PROP DRAINAGE AREA BOUNDARY
- ID — DRAINAGE AREA ID
- DIRECTION OF FLOW
- PROP STORM SEWER
- ID — PROPOSED INLET
- ID — PROP MANHOLE/JCT

N

0' 50' 100'
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED DRAINAGE AREA MAP STA 206+00 TO STA 218+00

SHEET 5 OF 7

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 309 OF 718	

No.	DATE	REVISIONS	APP.

Pen Table: ANTOINE DR.tbl
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Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Drainage\W GULF BANK\PR_DAM 20.dgn

LEGEND

- PROP DRAINAGE AREA BOUNDARY
- ID — DRAINAGE AREA ID
- DIRECTION OF FLOW
- PROP STORM SEWER
- ID — PROPOSED INLET
- ID — PROP MANHOLE/JCT

No.	DATE	REVISIONS	APP.

WEST GULF BANK RD

ANTOINE DR.

MATCH LINE STA 218+00

MATCH LINE STA 230+00

GREEN FALLS DR

HARRIS COUNTY LIMITS

EXIST ROW

(CONT)

A2-01, A2-01A, A2-02, A2-03, A2-03A, A2-04, A2-04A, A2-05, A2-06, A2-07, A2-07B, A2-08, A2-09, A2-10, A2-10A, A2-11, A2-12, A2-13, A2-14, A2-15, A2-15A, A2-16, A2-16A, A2-47, A2-49, A2-50, A2-51, A2-52, A2-53, A2-54, A2-55, A2-56

#C-A2-06, #C-A2-07, #C-A2-08, #C-A2-09, #C-A2-10, #C-A2-10A, #C-A2-11, #C-A2-13, #C-A2-14, #C-A2-15A, #C-A2-16, #C-A2-16A, #C-A2-50, #C-A2-51, #C-A2-54, #C-A2-55

#MH-A2-05, #MH-A2-06, #MH-A2-07, #MH-A2-08, #MH-A2-14, #MH-A2-35, #MH-A2-39, #MH-A2-43, #MH-A2-44, #MH-11, #MH-12, #MH-A1-28, #JB-A2-01

219+00, 220+00, 221+00, 222+00, 223+00, 224+00, 225+00, 226+00, 227+00, 228+00, 229+00, 230+00, 3+00, 4+00, 5+00, 6+00, 7+00, 8+00, 9+00, 10+00, 11+00, 12+00

N

0′ 50′ 100′
SCALE IN FEET

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HOUSTON, TX 77079

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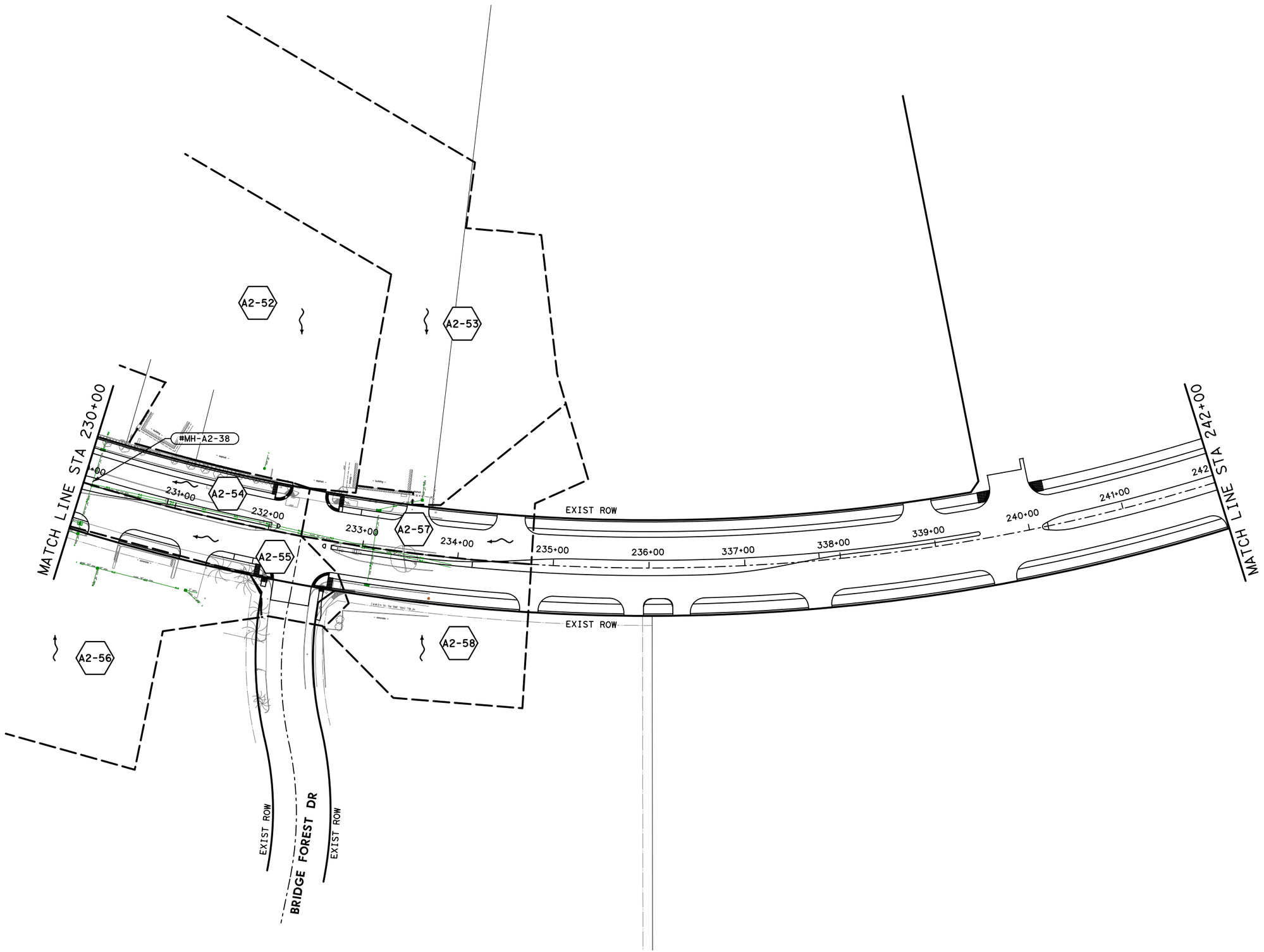
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED DRAINAGE AREA MAP STA 218+00 TO ST 230+00

SHEET 6 OF 7

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 310 OF 718	



LEGEND

- PROP DRAINAGE AREA BOUNDARY
- ID — DRAINAGE AREA ID
- DIRECTION OF FLOW
- PROP STORM SEWER
- ID — PROPOSED INLET
- ID — PROP MANHOLE/JCT

No.	DATE	REVISIONS	APP.

N

0′ 50′ 100′
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED DRAINAGE AREA MAP STA 230+00 TO ST 242+00

SHEET 7 OF 7

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 311 OF 718	

Pen Table: ANTOINE DR.tbl
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LEGEND

- PROP DRAINAGE AREA BOUNDARY
- ID — DRAINAGE AREA ID
- DIRECTION OF FLOW
- PROP STORM SEWER

No.	DATE	REVISIONS	APP.

STORM SEWER SYSTEM A2 (CONT.)

W GULF BANK RD

PINCAY OAKS DR

ANTOINE DR.

BRIDGE FOREST DR

WINDSOR FOREST DR

223+00 224+00 225+00 226+00 227+00 228+00 229+00 230+00 231+00 232+00 233+00 234+00 235+00 236+00 237+00 238+00 239+00 240+00 241+00 242+00 243+00 244+00 245+00 246+00 247+00 248+00 249+00 250+00

MATCHLINE STA 250+45

A2-49 1.13	A2-50 1.05	A2-51 0.47	A2-52 3.73	A2-53 3.25	A2-54 0.62	A2-55 0.48	A2-56 1.43	A2-57 0.49	A2-58 0.67	V-A1 0.38	V-A1b 2.45	V-A2 0.68	V-A2b 0.34	V-A2c 0.36	V-A2d 0.30	V-A3 0.30	V-A4 0.22	V-A4b 1.11	V-A4c 1.05	V-A5 0.49	V-A6 0.49	V-A6b 0.66	V-A7 1.20	V-A8 0.32	V-A8b 0.86	V-A9 0.31	V-A9b 2.48	V-A10 0.94	V-A10b 1.00	V-A10c 0.49	V-A11 0.96	V-A11b 0.73	V-A11c 2.92

SYSTEM V-A
DRAINS TO E140-00-00
VIA EXIST. 60" RCP

0' 100' 200'
SCALE IN FEET

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VOGLER & SPENCER ENGINEERING
777 North Eldridge Parkway, Suite 500
Houston, Texas 77079
713-782-0042
www.vs-eng.com

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Date
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10/23/2025
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Texas Registered Engineering Firm F-148

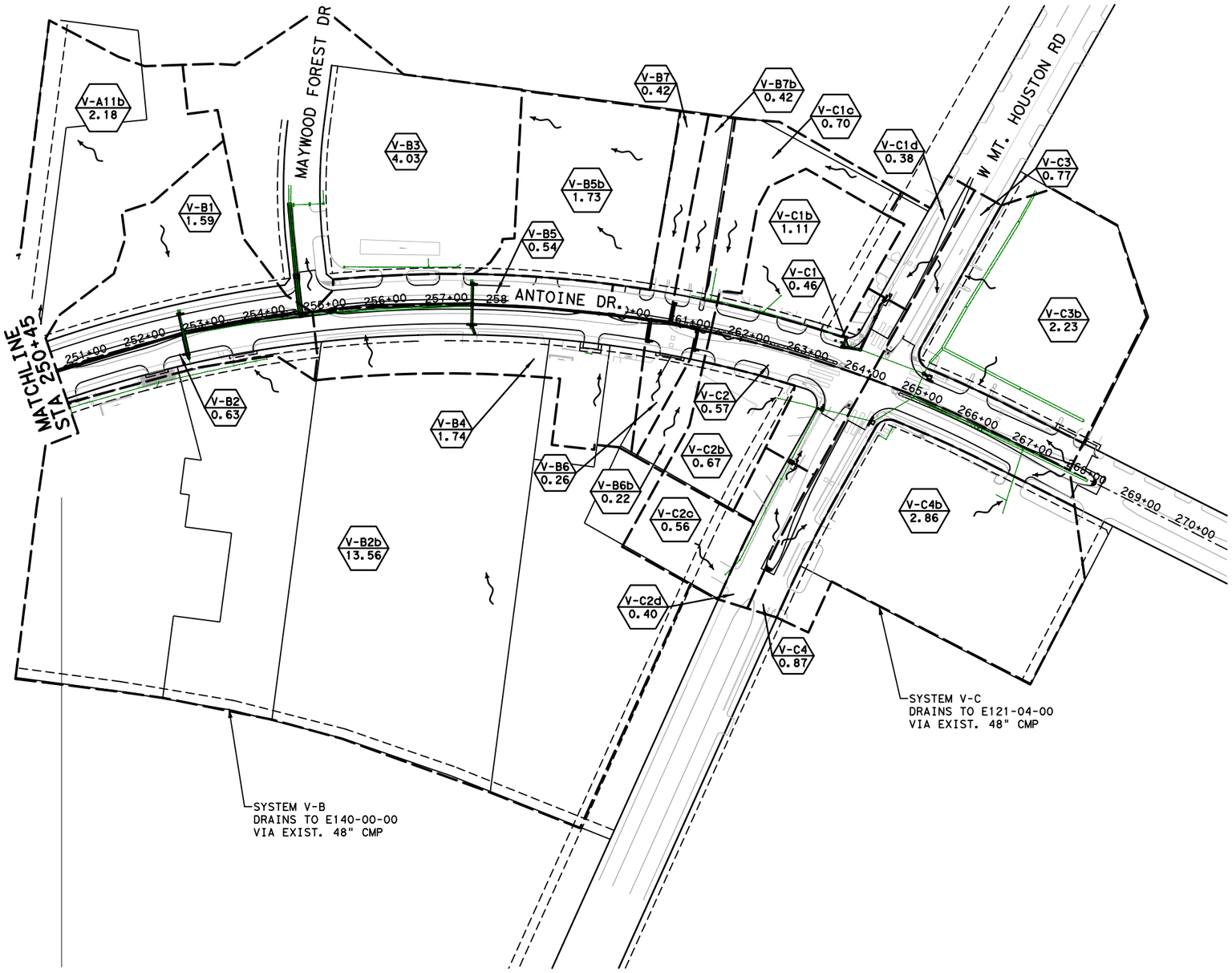
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
PROPOSED DRAINAGE AREA MAP BEGIN PROJECT TO STA. 250+45

SHEET 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 312 OF 718	

Design Filename: F:\03339 Antoine Drive\802-1\CAD\Plan Production_Drainage\22-DAM (SHT 1 of 2).dgn



LEGEND

- PROP DRAINAGE AREA BOUNDARY
- ID — DRAINAGE AREA ID
- DIRECTION OF FLOW
- PROP STORM SEWER

N

0′ 100′ 200′
SCALE IN FEET

No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED DRAINAGE AREA MAP STA. 250+45 TO PROJECT END

SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 313 OF 718	

Plotted on: 10/23/2025 1:44:59 PM Joviedo
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LEGEND

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- PROP STORM SEWER
- ID — PROPOSED INLET
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N

0′ 50′ 100′
SCALE IN FEET

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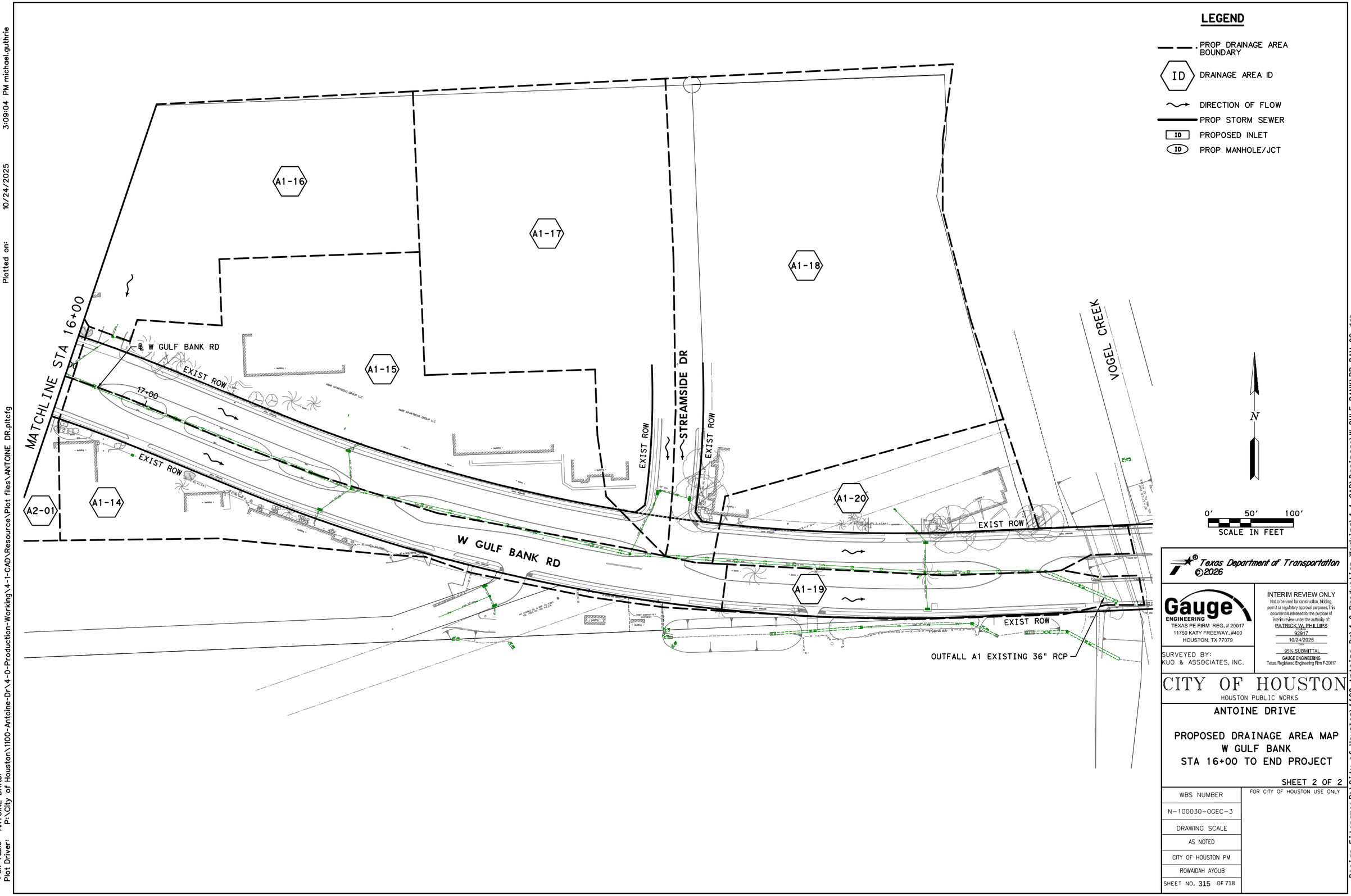
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED DRAINAGE AREA MAP
W GULF BANK
BEGIN PROJECT TO STA 16+00

SHEET 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 314 OF 718	



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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED DRAINAGE AREA MAP
W GULF BANK
STA 16+00 TO END PROJECT

SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 315 OF 718	

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Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Drainage\W GULF BANK\PR_DAM_02.dgn

		Portion of Area in each TxDOT Land Use category																			
		0.9		0.35		0.8		0.45		0.35		0.9		0.8		0.29		0.35		0.26		
		Commercial		Commercial w/Detention		Multifamily Residential		Single Family Residential		ROW Grass		ROW Pavement		Streets w/ROW		Undeveloped		Developed Grass		Undeveloped Wooded		
Drainage Area ID	Total Area (Acres)	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Weighted 'C' Value
V-A1	0.376	0.05	14.30	0	0	0	0	0	0	0.10	26.13	0.22	59.46	0	0	0	0	0	0	0	0	0.755
V-A1b	2.449	2.45	100.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.900
V-A2	0.681	0.56	81.89	0	0	0	0	0	0	0.03	4.52	0.09	13.59	0	0	0	0	0	0	0	0	0.875
V-A2b	0.336	0.17	50.75	0	0	0	0	0	0	0.03	9.09	0.08	24.96	0	0	0	0	0.05	15.20	0	0	0.766
V-A2c	0.355	0.29	81.61	0	0	0	0	0	0	0.02	6.57	0.04	11.82	0	0	0	0	0	0	0	0	0.864
V-A2d	0.300	0.23	77.01	0	0	0	0	0	0	0.02	6.84	0.05	16.16	0	0	0	0	0	0	0	0	0.862
V-A3	0.300	0.07	24.90	0	0	0	0	0	0	0.03	10.40	0.19	64.70	0	0	0	0	0	0	0	0	0.843
V-A4	0.219	0	0	0	0	0	0	0	0	0.02	10.37	0.20	89.63	0	0	0	0	0	0	0	0	0.843
V-A4b	1.110	1.10	99.38	0	0	0	0	0	0	0.01	0.47	0.00	0.15	0	0	0	0	0	0	0	0	0.897
V-A4c	1.047	1.05	99.99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.900
V-A5	0.487	0.25	52.24	0	0	0	0	0	0	0.00	1.01	0.04	8.01	0.19	38.74	0	0	0	0	0	0	0.856
V-A6	0.487	0.27	54.46	0	0	0	0	0	0	0.05	10.75	0.17	34.76	0	0	0	0	0	0	0	0	0.841
V-A6b	0.655	0.66	100.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.900
V-A7	1.198	0	0	0	0	0	0	0	0	0.05	3.95	0.15	12.47	0.19	16.16	0.81	67.41	0	0	0	0	0.451
V-A8	0.320	0.02	5.59	0	0	0	0	0	0	0.06	18.09	0.24	76.32	0	0	0	0	0	0	0	0	0.800
V-A8b	0.863	0.86	99.49	0	0	0	0	0	0	0.00	0.22	0.00	0.29	0	0	0	0	0	0	0	0	0.899
V-A9	0.312	0.01	2.40	0	0	0	0	0	0	0.06	18.82	0.22	70.17	0	0	0.03	8.62	0	0	0	0	0.744
V-A9b	2.482	1.77	71.29	0	0	0	0	0.00	0.07	0	0	0	0	0	0	0.71	28.64	0	0	0	0	0.725
V-A10	0.943	0	0	0	0	0	0	0	0	0.08	8.60	0.47	49.77	0	0	0	0	0	0	0.39	41.63	0.586
V-A10b	0.999	0.97	97.30	0	0	0	0	0	0	0.01	1.25	0.01	1.20	0	0	0	0	0	0	0.00	0.26	0.891
V-A10c	0.494	0.00	0.00	0	0	0.19	38.17	0	0	0.05	10.26	0.15	29.50	0	0	0	0	0	0	0.11	22.07	0.664
V-A11	0.964	0.03	2.99	0	0	0.13	13.79	0	0	0.16	16.62	0.62	64.61	0	0	0.02	1.99	0	0	0	0	0.783
V-A11b	2.179	0.64	29.54	0	0	0.01	0.27	0.00	0.00	0.00	0.03	0.00	0.01	0	0	1.53	70.14	0	0	0	0	0.472
V-A11c	2.919	0	0	0	0	2.89	99.13	0.02	0.79	0	0	0	0	0	0	0.00	0.08	0	0	0	0	0.797
V-A11d	0.732	0.66	90.45	0	0	0.04	5.94	0.03	3.60	0	0	0	0	0	0	0	0	0	0	0	0	0.878
V-B1	1.593	0	0	0	0	0	0	0	0	0.12	7.45	0.37	23.42	0	0	1.10	69.13	0	0	0	0	0.437
V-B2	0.633	0	0	0	0	0.03	4.70	0	0	0.11	17.05	0.42	65.75	0	0	0	0	0.08	12.44	0.00	0.06	0.733
V-B2b	13.558	0.52	3.87	0	0	3.88	28.64	0	0	0	0	0	0	0	0	0	0	1.28	9.41	7.87	58.04	0.448
V-B3	4.027	0.31	7.73	2.36	58.60	0	0	0.17	4.24	0.03	0.65	0.07	1.84	0.59	14.68	0.49	12.25	0	0	0	0	0.466
V-B4	1.737	0.57	32.75	0	0	0	0	0	0	0.17	9.50	0.46	26.75	0	0	0	0	0	0	0.54	30.97	0.649
V-B5	0.539	0	0	0	0	0	0	0	0	0.13	23.26	0.41	76.74	0	0	0	0	0	0	0	0	0.772
V-B5b	1.731	0	0	1.72	99.13	0	0	0	0	0.01	0.76	0.00	0.11	0	0	0	0	0	0	0	0	0.351
V-B6	0.262	0.17	65.72	0	0	0	0	0	0	0.01	3.00	0.08	31.26	0	0	0	0	0	0	0	0	0.883
V-B6b	0.218	0.19	87.71	0	0	0	0	0	0	0.00	1.94	0.02	10.37	0	0	0	0	0	0	0	0	0.890
V-B7	0.418	0.17	41.73	0	0	0	0	0	0	0.03	7.15	0.09	21.09	0	0	0	0	0.13	30.03	0	0	0.695
V-B7b	0.416	0.20	46.91	0	0	0	0	0	0	0.01	2.64	0.07	17.19	0	0	0	0	0.14	33.21	0	0	0.702
V-C1	0.460	0.01	2.28	0	0	0	0	0	0	0.04	9.64	0.37	80.43	0	0	0	0	0.04	7.65	0	0	0.805
V-C1b	1.111	1.04	93.16	0	0	0	0	0	0	0.00	0.05	0	0	0	0	0	0	0.08	6.78	0	0	0.862
V-C1c	0.701	0.70	99.93	0	0	0	0	0	0	0.00	0.02	0.00	0.05	0	0	0	0	0	0	0	0	0.900
V-C1d	0.382	0.03	7.46	0	0	0	0	0	0	0.04	10.18	0.22	57.29	0	0	0	0	0.10	25.07	0	0	0.706
V-C2	0.572	0.04	6.41	0	0	0	0	0	0	0.07	12.36	0.38	66.64	0	0	0	0	0.08	14.59	0	0	0.752
V-C2b	0.672	0.66	97.73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02	2.27	0	0	0.888
V-C2c	0.561	0.47	83.02	0	0	0	0	0	0	0	0	0.00	0.57	0	0	0	0	0.09	16.41	0	0	0.810
V-C2d	0.395	0.03	8.36	0	0	0	0	0	0	0.05	11.73	0.24	60.40	0	0	0	0	0.08	19.51	0	0	0.728
V-C3	0.765	0	0	0.01	1.10	0	0	0	0	0.16	20.25	0.60	78.64	0	0	0	0	0	0	0	0	0.783
V-C3b	2.232	0	0	2.23	99.85	0	0	0	0	0.00	0.00	0.00	0.14	0	0	0	0	0	0	0	0	0.351
V-C4	0.873	0	0	0	0	0	0	0	0	0.18	20.76	0.69	79.24	0	0	0	0	0	0	0	0	0.786
V-C4b	2.865	0	0	2.86	99.99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.350

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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

RUNOFF COEFFICIENT COMPUTATIONS

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 316 OF 718	

No.	DATE	REVISIONS	APP.

Plotted on: 10/23/2025 1:45:13 PM Jovi.edo
Pen Table:ANTOINE DR.tbl
Plot Driver:F:\03339 Antoine Drive\802-1\CAD\Plot files\ANTOINE DR.pltcfg
Design Filename: F:\03339 Antoine Drive\802-1\CAD\Plan Production_Drainage\XX-Storm Calcs 01 - Runoff C.dgn

SYSTEM A2						
ID	RUNOFF (C)	DRAINAGE AREA (AC)	TIME OF CONC. (MIN)	TIME USED (MIN)	INTENSITY (IN/HR)	DISCHARGE (CFS)
A2-01	0.80	1.74	9.00	10.00	5.74	7.97
A2-01A	0.62	0.41	2.00	10.00	5.74	1.44
A2-02	0.75	1.01	13.00	13.00	5.21	3.93
A2-03	0.80	2.45	5.00	10.00	5.74	11.26
A2-03A	0.62	0.30	2.00	10.00	5.74	1.08
A2-04	0.90	0.45	2.00	10.00	5.74	2.35
A2-04A	0.62	0.33	2.00	10.00	5.74	1.16
A2-05	0.80	1.39	8.00	10.00	5.74	6.36
A2-06	0.82	0.48	4.00	10.00	5.74	2.26
A2-07	0.86	1.69	4.00	10.00	5.74	8.35
A2-07B	0.90	0.77	8.00	10.00	5.74	3.99
A2-08	0.78	0.31	1.00	10.00	5.74	1.38
A2-09	0.86	1.49	5.00	10.00	5.74	7.34
A2-10	0.88	0.35	1.00	10.00	5.74	1.74
A2-10A	0.89	0.33	1.00	10.00	5.74	1.70
A2-11	0.78	0.26	2.00	10.00	5.74	1.17
A2-12	0.88	0.37	2.00	10.00	5.74	1.88
A2-13	0.65	1.19	10.00	10.00	5.74	4.44
A2-14	0.64	1.48	16.00	16.00	4.78	4.53
A2-15	0.82	0.97	3.00	10.00	5.74	4.57
A2-15A	0.78	0.18	1.00	10.00	5.74	0.79
A2-16	0.79	0.23	5.00	10.00	5.74	1.04
A2-16A	0.86	0.40	14.00	14.00	5.06	1.73
A2-17	0.90	1.65	4.00	10.00	5.74	8.50
A2-18	0.63	0.46	7.00	10.00	5.74	1.66
A2-19	0.84	0.41	8.00	10.00	5.74	1.99
A2-21	0.87	0.33	3.00	10.00	5.74	1.64
A2-22	0.88	0.39	4.00	10.00	5.74	1.99
A2-23	0.89	0.59	4.00	10.00	5.74	2.99
A2-24	0.89	0.24	3.00	10.00	5.74	1.21
A2-25	0.88	0.73	3.00	10.00	5.74	3.67
A2-26	0.88	0.31	3.00	10.00	5.74	1.59
A2-27	0.89	0.47	3.00	10.00	5.74	2.39
A2-28	0.64	1.48	16.00	16.00	4.78	4.52
A2-28A	0.62	0.47	8.00	10.00	5.74	1.68
A2-29	0.64	2.87	19.00	19.00	4.42	8.12
A2-30	0.64	1.57	15.00	15.00	4.91	4.93
A2-30A	0.61	0.55	10.00	10.00	5.74	1.93
A2-31	0.62	1.60	17.00	17.00	4.65	4.63
A2-31A	0.82	0.74	5.00	10.00	5.74	3.49
A2-32	0.64	1.10	7.00	10.00	5.74	4.04
A2-33	0.63	1.19	10.00	10.00	5.74	4.32
A2-34	0.64	0.50	10.00	10.00	5.74	1.82
A2-35	0.65	0.52	9.00	10.00	5.74	1.95
A2-36	0.60	0.50	11.00	11.00	5.55	1.67
A2-36A	0.61	0.61	12.00	12.00	5.38	1.99
A2-37	0.55	0.38	10.00	10.00	5.74	1.19
A2-38	0.63	0.82	12.00	12.00	5.38	2.76
A2-38A	0.64	0.39	11.00	11.00	5.55	1.38
A2-39	0.64	1.15	8.00	10.00	5.74	4.22
A2-40	0.73	0.92	9.00	10.00	5.74	3.84
A2-40A	0.81	0.60	7.00	10.00	5.74	2.80
A2-40B	0.84	0.42	8.00	10.00	5.74	2.00
A2-40C	0.79	0.61	9.00	10.00	5.74	2.76
A2-41	0.64	0.82	8.00	10.00	5.74	3.00
A2-42	0.61	1.07	11.00	11.00	5.55	3.64
A2-42A	0.64	0.42	7.00	10.00	5.74	1.55
A2-43	0.52	1.19	10.00	10.00	5.74	3.55
A2-43A	0.63	0.58	12.00	12.00	5.38	1.96
A2-44	0.57	1.21	12.00	12.00	5.38	3.71
A2-44A	0.62	0.40	13.00	13.00	5.21	1.29
A2-44B	0.59	0.79	12.00	12.00	5.38	2.49
A2-45	0.63	1.28	11.00	11.00	5.55	4.48
A2-46	0.64	0.99	9.00	10.00	5.74	3.65
A2-47	0.90	0.55	2.00	10.00	5.74	2.83
A2-48	0.61	0.60	12.00	12.00	5.38	1.96
A2-49	0.35	1.13	4.00	10.00	5.74	2.28
A2-50	0.75	1.05	10.00	10.00	5.74	4.54
A2-51	0.87	0.47	2.00	10.00	5.74	2.33
A2-52	0.90	3.73	2.00	10.00	5.74	19.27
A2-53	0.88	3.25	2.00	10.00	5.74	16.42
A2-54	0.82	0.62	4.00	10.00	5.74	2.94
A2-55	0.83	0.48	1.00	10.00	5.74	2.28
A2-56	0.87	1.43	17.00	17.00	4.65	5.78
A2-57	0.87	0.49	3.00	10.00	5.74	2.45
A2-58	0.85	0.67	6.00	10.00	5.74	3.27

SYSTEM A3						
ID	RUNOFF (C)	DRAINAGE AREA (AC)	TIME OF CONC. (MIN)	TIME USED (MIN)	INTENSITY (IN/HR)	DISCHARGE (CFS)
A3	0.36	1.05	15.00	15.00	4.91	1.86

SYSTEM A3 MAIN						
ID	RUNOFF (C)	DRAINAGE AREA (AC)	TIME OF CONC. (MIN)	TIME USED (MIN)	INTENSITY (IN/HR)	DISCHARGE (CFS)
A3-01	0.60	0.53	11.00	11.00	5.55	1.75
A3-02	0.61	0.44	8.00	10.00	5.74	1.53
A3-03	0.61	0.57	10.00	10.00	5.74	2.01
A3-04	0.61	0.58	14.00	14.00	5.06	1.80
A3-05	0.64	0.38	10.00	10.00	5.74	1.38
A3-06	0.63	0.38	11.00	11.00	5.55	1.35
A3-07	0.64	0.41	13.00	13.00	5.21	1.36
A3-08	0.64	0.42	12.00	12.00	5.38	1.45
A3-08A	0.62	0.62	13.00	13.00	5.21	2.01
A3-09	0.65	1.06	11.00	11.00	5.55	3.83
A3-09A	0.62	0.45	10.00	10.00	5.74	1.61
A3-09B	0.61	0.32	9.00	10.00	5.74	1.14
A3-10	0.61	0.55	10.00	10.00	5.74	1.94
A3-10A	0.69	0.53	11.00	11.00	5.55	2.04
A3-11	0.80	2.39	6.00	10.00	5.74	10.98
A3-12	0.80	1.00	12.00	12.00	5.38	4.28
A3-12A	0.79	0.48	3.00	10.00	5.74	2.19
A3-12B	0.78	0.34	17.00	17.00	4.65	1.22
A3-13	0.72	1.64	13.00	13.00	5.21	6.15
A3-15	0.77	0.47	10.00	10.00	5.74	2.09
A3-16	0.75	0.28	3.00	10.00	5.74	1.21
A3-17	0.77	0.28	13.00	13.00	5.21	1.12
A3-19	0.79	0.72	3.00	10.00	5.74	3.27
A3-20	0.90	0.49	1.00	10.00	5.74	2.52
A3-21	0.81	0.74	2.00	10.00	5.74	3.43
A3-22	0.79	1.51	13.00	13.00	5.21	6.23
A3-23	0.77	0.51	5.00	10.00	5.74	2.25
A3-24	0.81	0.56	2.00	10.00	5.74	2.62
A3-25	0.90	1.42	10.00	10.00	5.74	7.32

SYSTEM A4						
ID	RUNOFF (C)	DRAINAGE AREA (AC)	TIME OF CONC. (MIN)	TIME USED (MIN)	INTENSITY (IN/HR)	DISCHARGE (CFS)
A4-01	0.80	0.25	1.00	10.00	5.74	1.13

No.	DATE	REVISIONS	APP.

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

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92917
10/30/2025
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Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED 2-YEAR RUNOFF COMPUTATION

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 317 OF 718	

Pen Table:ANTOINE DR.tbl
Plot Driver:P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Resource\Plot files\ANTOINE DR TCP.pltcfg Plotted on: 10/30/2025 4:29:37 PM daniel.lerma

Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Drainage\W GULF BANK\DRN 2YR COMP 01.dgn

SYSTEM A2										
ID	Upstream ID	Downstream ID	US HGL (ft)	DS HGL (ft)	Discharge (cfs)	Capacity (cfs)	Slope %	Uniform		Actual	
								Velocity (ft/s)	Depth (ft)	Velocity (ft/s)	Depth (ft)
A2-01	A2-01	A2-03	78.42	78.03	7.97	13.76	0.30	4.29	1.14	2.54	2.00
A2-01A	A2-01A	MH-A2-01	77.07	77.07	1.44	38.96	2.60	5.61	0.27	0.48	1.85
A2-02	A2-02	MH-A2-01	77.07	77.07	3.93	42.95	3.10	8.10	0.42	1.46	1.60
A2-03	A2-03	A2-03A	78.03	77.55	19.07	25.01	1.10	8.26	1.38	6.07	2.00
A2-03A	A2-03A	MH-A2-03	77.55	76.35	20.05	35.00	2.10	10.88	1.14	7.41	1.61
A2-04	A2-04	A2-04A	76.92	76.92	2.35	29.40	1.50	5.32	0.40	1.00	1.39
A2-04A	A2-04A	MH-A2-03	76.92	76.93	3.50	29.83	1.50	6.04	0.48	1.50	1.39
A2-05	A2-05	MH-A2-02	79.30	77.04	6.36	5.87	2.80	8.31	1.00	8.10	1.00
A2-06	A2-06	MH-14	76.57	76.57	3.96	8.35	0.10	2.53	1.00	1.26	2.00
A2-07	A2-07	MH-A2-05	76.72	76.69	12.34	11.78	0.30	4.03	2.00	3.93	2.00
A2-07B	A2-07B	A2-07	76.73	76.72	3.99	40.02	2.70	7.74	0.44	1.27	2.00
A2-08	A2-08	MH-A2-04	76.73	76.73	1.38	59.63	6.00	7.46	0.22	0.63	1.31
A2-09	A2-09	MH-A2-04	76.87	76.73	10.16	49.65	4.20	11.78	0.64	3.24	2.00
A2-10	A2-10	MH-A2-06	76.40	76.40	1.74	42.62	3.10	6.33	0.29	0.55	2.00
A2-10A	A2-10A	A2-06	76.57	76.57	1.70	5.92	0.10	1.55	0.76	0.54	2.00
A2-11	A2-11	MH-A2-06	76.40	76.40	1.17	41.62	2.90	5.51	0.24	0.37	2.00
A2-12	A2-12	MH-A2-07	76.92	70.94	1.88	76.05	9.80	9.71	0.22	3.30	0.47
A2-13	A2-13	A2-14	76.16	76.15	4.44	10.71	0.20	3.07	0.94	1.41	2.00
A2-14	A2-14	MH-A2-08	76.15	76.11	8.22	10.30	0.20	3.48	1.41	2.62	2.00
A2-15	A2-15	A2-16A	76.63	76.55	4.57	10.54	0.20	3.03	0.97	3.33	0.90
A2-15A	A2-15A	MH-A2-07	76.30	76.30	0.79	24.23	1.00	3.36	0.26	0.25	2.00
A2-16	A2-16	MH-A2-08	76.44	76.11	14.11	10.46	0.30	4.61	2.00	4.49	2.00
A2-17	A2-17	A2-16A	84.01	76.55	8.50	2.27	4.90	11.11	1.00	10.83	1.00
A2-18	A2-18	MH-A2-11	75.46	75.46	1.66	52.57	4.70	7.21	0.25	0.53	2.00
A2-19	A2-19	MH-A2-10	75.51	75.50	1.99	36.22	2.20	5.88	0.33	0.64	2.00
A2-20	A2-16A	A2-16	76.55	76.44	13.24	10.74	0.30	4.32	2.00	4.21	2.00
A2-21	A2-21	A2-22	75.30	75.29	1.64	18.14	0.60	3.40	0.42	0.52	2.00
A2-22	A2-22	A2-23	75.29	75.28	3.63	19.67	0.60	4.52	0.61	1.15	2.00
A2-23	A2-23	MH-A2-12	75.28	75.20	7.83	11.28	0.20	3.65	1.29	2.49	2.00
A2-24	A2-24	A2-23	75.28	75.28	1.21	37.89	2.40	5.23	0.25	0.39	2.00
A2-25	A2-25	A2-26	75.02	75.01	3.67	44.03	3.30	8.07	0.41	1.17	2.00
A2-26	A2-26	MH-A2-13	75.01	74.94	7.65	19.03	0.60	5.45	0.92	2.44	2.00
A2-27	A2-27	A2-26	75.01	75.01	2.39	35.65	2.10	6.12	0.36	0.76	2.00
A2-28	A2-28	MH-A2-15	74.31	74.29	12.17	8.89	0.30	3.98	2.00	3.88	2.00
A2-28A	A2-28A	MH-A2-29	73.91	73.91	1.68	17.77	0.50	3.37	0.43	0.54	2.00
A2-29	A2-29	A2-28	74.43	74.31	8.12	10.70	0.20	3.60	1.35	2.58	2.00
A2-30	A2-30	MH-A2-15	74.46	74.29	11.98	11.28	0.20	3.91	2.00	3.81	2.00
A2-30A	A2-30A	MH-A2-29	73.92	73.91	1.93	14.68	0.40	3.08	0.51	0.61	2.00
A2-31	A2-31	A2-30	74.56	74.46	7.45	10.70	0.20	3.47	1.29	2.37	2.00
A2-31A	A2-31A	A2-31	74.57	74.56	3.49	11.21	0.20	3.01	0.79	1.11	2.00
A2-32	A2-32	MH-A2-17	73.62	73.62	4.04	12.56	0.30	3.40	0.81	1.29	2.00
A2-33	A2-33	MH-A2-17	73.64	73.62	4.32	11.28	0.20	3.17	0.90	1.38	2.00
A2-34	A2-34	MH-A2-18	73.14	73.14	1.82	15.39	0.40	3.10	0.48	0.58	2.00
A2-35	A2-35	MH-A2-18	73.14	73.14	1.95	14.15	0.30	3.01	0.52	0.62	2.00
A2-36	A2-36	MH-A2-19	72.92	72.92	1.67	15.39	0.40	3.04	0.46	0.53	2.00
A2-36A	A2-36A	A2-38	72.56	72.56	1.99	14.35	0.40	3.06	0.52	0.63	2.00
A2-37	A2-37	MH-A2-19	72.92	72.92	1.19	16.85	0.50	2.93	0.37	0.38	2.00
A2-38	A2-38	MH-A2-20	72.56	72.55	4.70	17.77	0.50	4.50	0.73	1.50	2.00
A2-38A	A2-38A	MH-A2-30	72.05	72.05	1.38	23.75	1.00	3.91	0.34	0.44	2.00
A2-39	A2-39	MH-A2-20	72.57	72.55	4.22	10.84	0.20	3.04	0.91	1.34	2.00
A2-40	A2-40	MH-A2-23	71.43	71.42	3.84	12.72	0.30	3.40	0.78	1.22	2.00
A2-40A	A2-40A	MH-A2-32	71.22	71.22	2.80	12.32	0.30	3.00	0.68	0.89	2.00
A2-40B	A2-40B	A2-40C	70.97	70.97	2.00	29.76	1.50	5.13	0.36	0.64	2.00
A2-40C	A2-40C	MH-A2-24	70.97	70.96	4.76	17.77	0.50	4.56	0.73	1.52	2.00
A2-41	A2-41	MH-A2-22	71.94	71.93	3.00	33.72	1.90	6.29	0.42	0.95	2.00
A2-42	A2-42	MH-A2-23	71.44	71.42	3.64	11.69	0.20	3.14	0.79	1.16	2.00
A2-42A	A2-42A	MH-A2-32	71.22	71.22	1.55	16.22	0.40	3.09	0.43	0.49	2.00
A2-43	A2-43	MH-A2-27	69.96	69.95	3.55	9.10	0.10	2.55	0.91	1.13	2.00
A2-43A	A2-43A	MH-A2-26	70.49	70.49	1.96	7.77	0.10	1.99	0.70	0.63	2.00
A2-44	A2-44	MH-A2-27	69.87	68.99	3.71	26.18	1.20	5.60	0.53	3.99	0.67
A2-44A	A2-44A	MH-A2-25	70.66	70.66	1.29	20.71	0.70	3.48	0.35	0.41	2.00
A2-44B	A2-44B	MH-A2-34	70.37	70.36	2.49	10.46	0.20	2.59	0.69	0.79	2.00
A2-45	A2-45	MH-A2-28	69.98	69.95	4.48	10.61	0.20	3.09	0.94	1.43	2.00
A2-46	A2-46	MH-A2-28	69.98	69.95	3.65	11.54	0.20	3.08	0.81	1.16	2.00
A2-47	A2-47	A2-09	78.53	78.15	2.83	13.20	0.30	3.17	0.65	3.18	0.65
A2-48	A2-48	MH-A2-31	71.73	71.73	1.96	19.87	0.70	3.82	0.44	0.62	2.00
A2-49	A2-49	MH-A2-42	79.45	78.42	2.28	32.89	1.80	5.71	0.37	3.47	0.53
A2-50	A2-50	MH-A2-40	76.93	76.92	6.82	32.86	0.60	5.02	0.80	1.39	2.50
A2-51	A2-51	MH-A2-40	76.93	76.92	2.33	19.26	0.60	3.92	0.49	0.74	2.00
A2-52	A2-52	MH-A2-41	85.29	78.48	19.27	7.88	2.90	11.19	1.50	10.91	1.50
A2-53	A2-53	A2-57	81.67	80.18	16.42	12.74	2.10	9.53	1.50	9.29	1.50
A2-54	A2-54	MH-A2-39	77.07	77.07	2.94	18.81	0.60	4.15	0.55	1.16	1.50
A2-55	A2-55	MH-A2-39	77.07	77.07	2.28	18.53	0.60	3.81	0.49	0.90	1.50
A2-56	A2-56	MH-A2-38	77.13	77.11	5.78	16.77	0.50	4.59	0.84	2.20	1.56
A2-57	A2-57	MH-A2-36	77.47	77.24	18.87	19.21	0.60	6.44	1.76	6.01	2.00
A2-58	A2-58	MH-A2-36	77.25	77.24	3.27	18.16	0.60	4.15	0.60	1.04	2.00
JB-A2-01	JB-A2-01	MH-14	76.65	76.57	92.47	128.99	0.10	4.98	3.09	3.85	4.00
JB-A2-02	JB-A2-02	JB-A2-03	69.95	69.67	186.80	991.10	2.20	15.58	1.50	4.67	5.00
MH-14	MH-14	MH-A2-06	76.57	76.40	94.94	131.48	0.20	5.11	3.09	3.96	4.00
MH-A2-01	MH-A2-01	MH-A2-02	77.07	77.04	5.23	19.87	0.20	3.20	0.92	1.07	2.50
MH-A2-02	MH-A2-02	MH-A2-03	77.04	76.93	10.70	26.00	0.30	4.73	1.17	2.18	2.50
MH-A2-03	MH-A2-03	MH-A2-04	76.93	76.73	31.17	51.38	0.10	3.82	2.04	2.60	3.00
MH-A2-04	MH-A2-04	JB-A2-01	76.73	76.65	40.01	51.19	0.20	4.15	2.41	3.33	3.00
MH-A2-05	MH-A2-05	JB-A2-01	76.69	76.65	57.03	110.55	0.20	4.39	1.86	2.72	3.00
MH-A2-06	MH-A2-06	MH-A2-07	76.40	76.30	96.09	128.15	0.10	4.98	3.22	4.00	4.00
MH-A2-07	MH-A2-07	MH-A2-08	76.30	76.11	97.48	130.95	0.10	5.05	3.22	4.06	4.00
MH-A2-08	MH-A2-08	MH-A2-10	76.11	75.50	115.32	130.34	0.20	5.36	3.59	4.81	4.00
MH-A2-10	MH-A2-10	MH-A2-11	75.50	75.46	116.78	131.86	0.20	5.42	3.59	4.87	4.00
MH-A2-11	MH-A2-11	MH-A2-12	75.46	75.20	117.98	128.40	0.10	5.30	3.71	4.92	4.00
MH-A2-12	MH-A2-12	MH-A2-13	75.20	74.94	119.55	133.21	0.10	5.37	3.71	4.98	4.00
MH-A2-13	MH-A2-13	MH-A2-15	74.94	74.29	123.80	129.35	0.10	5.38	3.84	5.16	4.00
MH-A2-15	MH-A2-15	MH-A2-29	74.29	73.91	142.47	193.34	0.10	5.54	3.22	4.45	4.00
MH-A2-17	MH-A2-17	MH-A2-18	73.62	73.14	146.20	192.69	0.20	5.68	3.22	4.57	4.00
MH-A2-18	MH-A2-18	MH-A2-19	73.14	72.92	148.70	190.79	0.20	5.78	3.22	4.65	4.00
MH-A2-19	MH-A2-19	MH-A2-20	72.92	72.55	150.64	193.93	0.20	5.85	3.22	4.71	4.00
MH-A2-20	MH-A2-20	MH-A2-30	72.55	72.05	156.81	191.77	0.10	5.66	3.47	4.90	4.00
MH-A2-22	MH-A2-22	MH-A2-31	71.93	71.73	159.75	193.69	0.10	5.76	3.47	4.99	4.00
MH-A2-23	MH-A2-23	MH-A2-32	71.42	71.22	166.18	190.83	0.10	5.79	3.59	5.19	4.00
MH-A2-24	MH-A2-24	MH-A2-25	70.96	70.66	172.22	194.59	0.20	6.00	3.59	5.38	4.00
MH-A2-25	MH-A2-25	MH-A2-26	70.66	70.49	173.16	193.04	0.10	5.83	3.71	5.41	4.00
MH-A2-26	MH-A2-26	MH-A2-34	70.49	70.36	174.55	181.69	0.10	5.69	3.84	5.46	4.00
MH-A2-27	MH-A2-27	JB-A2-02	69.95	69.95	14.69	322.19	2.30	9.75	0.68	0.98	4.01
MH-A2-28	MH-A2-28	MH-A2-27	69.95	69.95	7.93	62.40	0.20	3.24	1.00	0.63	3.95
MH-A2-29	MH-A2-29	MH-A2-17	73.91	73.62	144.94	190.88	0.10	5.63	3.22	4.53	4.00
MH-A2-30	MH-A2-30	MH-A2-22	72.05	71.93	157.76	187.66	0.10	5.69	3.47	4.93	4.00
MH-A2-31	MH-A2-31	MH-A2-23	71.73	71.42	161.13	193.38	0.20	5.81	3.47	5.04	4.00
MH-A2-32	MH-A2-32	MH-A2-24	71.22	70.96	169.06	192.14	0.20	5.89	3.59	5.28	4.00
MH-A2-34	MH-A2-34	JB-A2-02	70.36	69.95	176.32	193.87	0.10	5.94	3.71	5.51	4.00
MH-A2-36	MH-A2-36	MH-A2-38	77.24	77.11	22.14	51.23	0.10	3.51	1.58	1.85	3.00
MH-A2-38	MH-A2-38	MH-A2-39	77.11	77.07	39.15	46.70	0.10	3.77	2.60	3.26	3.00
MH-A2-39	MH-A2-39	MH-A2-40	77.07	76.92	43.20	69.51	0.20	4.23	2.04	2.88	3.00
MH-A2-40	MH-A2-40	MH-A2-44	76.92	76.82	49.72	107.89	0.10	4.14	1.72	2.37	3.00
MH-A2-41	MH-A2-41	MH-A2-38	77.41	77.11	19.27	17.71	0.60	6.29	2.00	6.38	1.84
MH-A2-42	MH-A2-42	A2-50	78.58	77.17	2.28	53.18	4.80	8.01	0.29	3.47	0.53
MH-A2-43	MH-A2-43	MH-A2-05	76.80	76.69	49.72	108.28	0.20	4.25	1.67	2.37	3.00
MH-A2-44	MH-A2-44	MH-A2-43	76.82	76.80	49.72	102.58	0.10	4.03	1.76	2.37	3.00
A2-OUT	JB-A2-03	A2-OUT	69.67	69.64	186.80	1489.37	5.00	20.47	1.14	4.67	5.00

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

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KUO & ASSOCIATES, INC.

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92917
10/30/2025
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Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED 2-YR STORM SEWER HYDROLOGIC COMPUTATIONS

SHEET 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 318 OF 718	

Pen Table:ANTOINE DR.tbl
Plot Driver:P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Resource\Plot files\ANTOINE DR TCP.pltcfg Plotted on: 10/30/2025 4:29:41 PM daniel.lerma

Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Drainage\W GULF BANK\DRN PR HYDROL COMP 01.dgn

SYSTEM A3											
ID	Upstream ID	Downstream ID	US HGL (ft)	DS HGL (ft)	Discharge (cfs)	Capacity (cfs)	Slope %	Uniform		Actual	
								Velocity (ft/s)	Depth (ft)	Velocity (ft/s)	Depth (ft)
A3	A3	A3-OUT	73.32	73.22	1.86	3.18	0.70	4.00	0.57	3.72	0.61

SYSTEM A3 MAIN											
ID	Upstream ID	Downstream ID	US HGL (ft)	DS HGL (ft)	Discharge (cfs)	Capacity (cfs)	Slope %	Uniform		Actual	
								Velocity (ft/s)	Depth (ft)	Velocity (ft/s)	Depth (ft)
A3-01	A3-01	MH-A3-08	70.66	70.66	1.75	68.29	7.90	8.82	0.23	0.56	2.00
A3-02	A3-02	MH-A3-08	70.66	70.66	1.53	26.84	1.20	4.41	0.34	0.49	2.00
A3-03	A3-03	MH-A3-01	70.66	70.66	2.01	86.47	12.60	10.84	0.22	0.64	2.00
A3-04	A3-04	MH-A3-01	70.66	70.66	1.80	33.10	1.90	5.35	0.33	0.57	2.00
A3-05	A3-05	MH-A3-02	70.65	70.65	1.38	62.83	6.70	7.75	0.21	0.44	2.00
A3-06	A3-06	MH-A3-02	70.65	70.65	1.35	49.17	4.10	6.47	0.24	0.43	2.00
A3-07	A3-07	MH-A3-03	70.64	70.64	1.36	108.47	19.90	11.29	0.16	0.43	2.00
A3-08	A3-08	MH-A3-03	70.64	70.64	1.45	39.45	2.60	5.67	0.27	0.46	2.00
A3-08A	A3-08A	MH-A3-14	70.62	70.62	2.01	22.78	0.90	4.24	0.42	0.64	2.00
A3-09	A3-09	MH-A3-06	70.48	70.47	3.83	30.54	1.60	6.29	0.50	1.22	2.00
A3-09A	A3-09A	MH-A3-13	70.62	70.62	1.61	108.83	20.00	11.90	0.18	0.51	2.00
A3-09B	A3-09B	MH-A3-04	70.60	70.60	1.14	74.87	9.50	8.25	0.18	0.36	2.00
A3-10	A3-10	MH-A3-15	70.59	70.58	1.94	14.34	0.40	3.04	0.51	0.62	2.00
A3-10A	A3-10A	MH-A3-16	70.54	70.54	2.04	13.99	0.30	3.01	0.54	0.65	2.00
A3-11	A3-11	A3-13	71.10	70.95	10.98	17.88	0.50	5.65	1.19	3.50	2.00
A3-12	A3-12	MH-A3-06	70.48	70.47	4.28	30.39	1.60	6.49	0.53	1.36	2.00
A3-12A	A3-12A	MH-A3-17	70.76	70.76	2.19	28.10	1.30	5.04	0.39	0.70	2.00
A3-12B	A3-12B	MH-A3-18	70.70	70.70	1.22	54.78	5.10	6.77	0.21	0.39	2.00
A3-13	A3-13	MH-A3-05	70.95	70.51	16.11	17.63	0.50	5.93	1.61	5.13	2.00
A3-15	A3-15	MH-A3-09	70.81	70.81	2.09	42.62	3.10	6.68	0.31	0.67	2.00
A3-16	A3-16	MH-A3-09	70.81	70.81	1.21	25.80	1.10	3.99	0.31	0.39	2.00
A3-17	A3-17	MH-A3-10	71.03	71.03	1.12	34.42	2.00	4.77	0.26	0.36	2.00
A3-19	A3-19	MH-A3-11	72.21	72.19	9.06	15.33	0.40	4.80	1.16	2.88	2.00
A3-20	A3-20	JB-A3-01	73.16	72.21	2.52	5.73	5.90	9.63	0.40	4.62	0.83
A3-21	A3-21	MH-A3-12	72.31	72.30	3.43	10.94	0.20	2.96	0.79	1.09	2.00
A3-22	A3-22	A3-23	72.41	72.38	6.23	36.71	2.30	8.27	0.58	1.98	2.00
A3-23	A3-23	MH-A3-12	72.38	72.30	8.25	12.25	0.30	3.95	1.26	2.63	2.00
A3-24	A3-24	MH-A3-11	72.35	72.19	9.87	28.33	1.40	7.80	0.85	3.14	2.00
A3-25	A3-25	A3-24	77.17	72.35	7.32	3.74	3.60	9.56	1.00	9.32	1.00
JB-A3-01	JB-A3-01	A3-19	72.21	72.21	5.79	8.35	0.10	2.70	1.29	1.84	2.00
MH-A3-01	MH-A3-01	MH-A3-02	70.66	70.65	6.48	41.79	0.10	2.96	0.98	0.67	3.50
MH-A3-02	MH-A3-02	MH-A3-03	70.65	70.64	8.74	41.70	0.10	3.26	1.13	0.91	3.50
MH-A3-03	MH-A3-03	MH-A3-13	70.64	70.62	11.16	41.73	0.10	3.49	1.28	1.16	3.50
MH-A3-04	MH-A3-04	MH-A3-15	70.60	70.58	14.84	50.83	0.10	3.08	1.21	1.24	3.00
MH-A3-05	MH-A3-05	MH-A3-06	70.51	70.47	61.68	96.83	0.10	4.53	2.72	3.08	4.00
MH-A3-06	MH-A3-06	MH-A3-07	70.47	70.30	68.01	104.32	0.20	4.78	2.85	3.40	4.00
MH-A3-08	MH-A3-08	MH-A3-01	70.66	70.66	3.23	42.58	0.20	2.52	0.67	0.34	3.50
MH-A3-09	MH-A3-09	MH-A3-17	70.81	70.76	30.79	57.39	0.20	4.15	1.86	2.57	3.00
MH-A3-10	MH-A3-10	MH-A3-09	71.03	70.81	28.30	32.22	0.20	4.89	2.29	4.00	3.00
MH-A3-11	MH-A3-11	MH-A3-10	72.19	71.03	27.82	19.79	0.40	5.81	2.50	5.67	2.50
MH-A3-12	MH-A3-12	MH-A3-11	72.30	72.19	11.27	19.73	0.20	3.88	1.43	2.30	2.50
MH-A3-13	MH-A3-13	MH-A3-14	70.62	70.62	12.27	42.78	0.20	3.64	1.34	1.28	3.50
MH-A3-14	MH-A3-14	MH-A3-04	70.62	70.60	14.05	42.45	0.20	3.77	1.44	1.46	3.50
MH-A3-15	MH-A3-15	MH-A3-16	70.58	70.54	16.19	50.88	0.20	3.23	1.25	1.35	3.00
MH-A3-16	MH-A3-16	MH-A3-05	70.54	70.51	17.43	51.99	0.20	3.35	1.30	1.45	3.00
MH-A3-17	MH-A3-17	MH-A3-18	70.76	70.70	32.43	61.19	0.20	4.37	1.86	2.70	3.00
MH-A3-18	MH-A3-18	MH-A3-05	70.70	70.51	32.21	59.00	0.20	4.34	1.86	2.68	3.00
A3-OUT_MAIN	MH-A3-07	A3-OUT_MAIN	70.30	70.06	68.01	48.29	0.30	5.72	3.00	5.67	3.00

SYSTEM A4											
ID	Upstream ID	Downstream ID	US HGL (ft)	DS HGL (ft)	Discharge (cfs)	Capacity (cfs)	Slope %	Uniform		Actual	
								Velocity (ft/s)	Depth (ft)	Velocity (ft/s)	Depth (ft)
A4-01	A4-1	A4-11	71.69	62.35	1.13	29.57	18.10	11.02	0.17	3.12	0.42
A4-OUT	A4-11	A4-OUT	62.55	58.42	1.13	53.72	4.90	6.54	0.21	2.89	0.37

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TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

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Texas Registered Engineering Firm F-20017

SURVEYED BY:
KUO & ASSOCIATES, INC.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED 2-YR STORM SEWER HYDROLOGIC COMPUTATIONS

SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 319 OF 718	

Pen Table:ANTOINE DR.tbl
Plot Driver:P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Resource\Plot files\ANTOINE DR TCP.pltcfg Plotted on: 10/30/2025 4:29:43 PM daniel.lerma

Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Drainage\W GULF BANK\DRN PR HYDROL COMP 02.dgn

Plotted on: 10/31/2025 10:53:42 A$USER$

SYSTEM VA - PROPOSED LINK COMPUTATION - 2 YEAR EVENT

LINK ID	US NODE	DS NODE	FLOWLINE US (FT)	FLOWLINE DS (FT)	SHAPE	SPAN	RISE	# OF BARRELS	LENGTH (FT)	SLOPE (%)	n-VALUE	HGL US(FT)	HGL DS (FT)	DEPTH (FT) UNIFORM	DEPTH (FT) ACTUAL	VELOCITY (ft/sec) UNIFORM	VELOCITY (ft/sec) ACTUAL	Q (cfs)	CAPACITY (cfs)	NOTES
VA-L01	V-A2b	#V01	78.01	77.81	Circular	n/a	2	1	34.00	0.59	0.013	80.03	80.03	X.XX	X.XX	X.XX	2.63	1.63	17.35	LAT-IN
VA-L02	#V01	#V02	76.81	76.72	Circular	n/a	2	1	50.00	0.18	0.013	80.03	80.03	X.XX	X.XX	X.XX	0.52	19.02	7.84	
VA-L03	V-A1	#V02	77.92	77.72	Circular	n/a	2	1	34.00	0.59	0.013	80.05	80.03	X.XX	X.XX	X.XX	4.51	19.02	12.18	LAT-IN
VA-L04	V-A2	#V02	77.92	77.72	Circular	n/a	2	1	34.00	0.59	0.013	80.19	80.03	X.XX	X.XX	X.XX	4.14	3.29	4.98	LAT-IN
VA-L05	#V02	#V03	76.72	76.64	Circular	n/a	2	1	46.00	0.18	0.013	80.03	80.02	X.XX	X.XX	X.XX	6.06	22.37	0.23	
VA-L06	V-A2c	#V03	77.84	77.64	Circular	n/a	2	1	32.00	0.63	0.013	80.03	80.02	X.XX	X.XX	X.XX	4.26	22.37	1.93	LAT-IN
VA-L07	#V03	#V04	76.64	76.59	Box	3	2	1	50.00	0.09	0.013	80.02	80.01	X.XX	X.XX	X.XX	3.73	27.77	13.37	
VA-L08	V-A2d	#V04	77.79	77.59	Circular	n/a	2	1	32.00	0.63	0.013	80.18	80.01	X.XX	X.XX	X.XX	6.95	27.77	1.95	LAT-IN
VA-L09	#V04	#V05	76.59	76.50	Box	3	2	1	90.00	0.09	0.013	80.01	80.00	X.XX	X.XX	X.XX	4.55	32.35	13.37	
VA-L10	V-A3	#V05	78.70	78.50	Circular	n/a	2	1	32.00	0.63	0.013	80.00	80.00	X.XX	X.XX	X.XX	2.48	32.35	75.18	LAT-IN
VA-L11	V-A4	#V05	78.70	78.50	Circular	n/a	2	1	32.00	0.63	0.013	80.00	80.00	X.XX	X.XX	X.XX	2.98	32.35	68.18	LAT-IN
VA-L12	#V05	#V06	76.50	76.34	Box	3	2	1	181.00	0.09	0.013	80.00	79.96	X.XX	X.XX	X.XX	4.70	41.76	14.51	
VA-L13	V-A6	#V06	78.04	77.84	Circular	n/a	2	1	28.00	0.73	0.013	79.96	79.96	X.XX	X.XX	X.XX	3.93	41.76	34.66	LAT-IN
VA-L14	#V06	V-A7-OF	75.34	75.30	Box	4	3	1	66.00	0.06	0.013	79.96	79.87	X.XX	X.XX	X.XX	3.52	44.58	26.41	
VA-L15	V-A5	V-A7-OF	77.50	77.30	Circular	n/a	2	1	39.00	0.51	0.013	79.88	79.87	X.XX	X.XX	X.XX	2.29	44.58	15.09	LAT-IN
VA-L16	#V07	#V06	75.93	75.84	Box	5	3	1	180.00	0.05	0.013	80.03	79.96	X.XX	X.XX	X.XX	2.81	41.76	35.19	
VA-L17	V-A8	#V07	79.13	78.93	Circular	n/a	2	1	31.00	0.66	0.013	80.04	80.03	X.XX	X.XX	X.XX	5.16	31.26	18.17	LAT-IN
VA-L18	V-A9	#V07	79.13	78.93	Circular	n/a	2	1	31.00	0.66	0.013	80.13	80.03	X.XX	X.XX	X.XX	5.85	31.26	19.48	LAT-IN
VA-L19	#V08	#V07	76.14	75.93	Box	5	3	1	416.00	0.05	0.013	80.16	80.03	X.XX	X.XX	X.XX	2.48	31.26	31.65	
VA-L20	V-A10b-OS	#V08	77.34	77.14	Circular	n/a	2	1	21.00	0.97	0.013	80.16	80.16	X.XX	X.XX	X.XX	4.17	26.58	10.87	LAT-OS
VA-L21	#V10	#V08	76.17	76.14	Box	4	3	1	45.00	0.06	0.013	80.17	80.16	X.XX	X.XX	X.XX	2.38	26.58	36.75	
VA-L22	V-A10	#V10	77.87	77.67	Circular	n/a	2	1	30.00	0.67	0.013	80.18	80.17	X.XX	X.XX	X.XX	1.94	25.90	12.80	LAT-IN
VA-L23	V-A11	#V10	77.87	77.67	Circular	n/a	2	1	33.00	0.61	0.013	80.18	80.17	X.XX	X.XX	X.XX	2.79	25.90	11.90	LAT-IN
VA-L24	#V11	#V10	76.18	76.17	Box	4	3	1	16.00	0.06	0.013	80.18	80.17	X.XX	X.XX	X.XX	3.76	25.90	261.37	
VA-L25	V-A11c-OS	#V11	77.88	77.68	Circular	n/a	2	1	35.00	0.57	0.013	83.04	80.18	X.XX	X.XX	X.XX	4.22	5.69	20.30	LAT-OS
VA-L26	#V13	#V11	76.30	76.18	Box	4	3	1	203.00	0.06	0.013	80.20	80.18	X.XX	X.XX	X.XX	4.39	23.41	11.59	
VA-L27	V-A10c	#V13	77.50	77.30	Circular	n/a	2	1	32.00	0.63	0.013	80.21	80.18	X.XX	X.XX	X.XX	3.33	21.82	66.49	LAT-IN

No.	DATE	REVISIONS	APP.

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713-782-0042
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Texas Registered Engineering Firm F-148

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KUO & ASSOCIATES, INC.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED SYSTEM V-A
2-YEAR
HYDRAULIC COMPUTATIONS
(2 OF 2)

SHEET 1 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 320 OF 718	

Pen Tables$PENTBL$$
Plot Drivers$PLTDRVL$
Design Filename: $FILEL$

Plotted on: 10/23/2025 1:45:17 PM\Ovledo
Pen Table:ANTOINE DR.tbl
Plot Driver:F:\03339 Antoine Drive\802-1\CADD\Plot files\ANTOINE DR.pltcfg

SYSTEM VB - PROPOSED RUNOFF COMPUTATION - 2 YEAR EVENT

Drainage Area ID	Drainage Area (AC)	Runoff Coefficient Weighted C Value	Time of Concentration (MIN)	Time of Concentration Used (MIN)	2-Year Intensity (IN/HR)	2-Year Peak Discharge (CFS)
V-B1	1.59	0.44	16.22	16.22	4.75	3.31
V-B2	0.63	0.73	8.49	10.00	5.74	2.67
V-B2b	13.56	0.45	32.95	32.95	3.32	20.15
V-B3	4.03	0.47	4.13	10.00	5.74	10.78
V-B4	1.74	0.65	25.55	25.55	3.81	4.30
V-B5	0.54	0.77	4.20	10.00	5.74	2.39
V-B5b	1.73	0.35	3.52	10.00	5.74	3.49
V-B6	0.26	0.88	3.14	10.00	5.74	1.33
V-B6b	0.22	0.89	4.34	10.00	5.74	1.11
V-B7	0.42	0.70	22.30	22.30	4.09	1.19
V-B7b	0.42	0.70	21.72	21.72	4.14	1.21

SYSTEM VC - PROPOSED RUNOFF COMPUTATION - 2 YEAR EVENT

Drainage Area ID	Drainage Area (AC)	Runoff Coefficient Weighted C Value	Time of Concentration (MIN)	Time of Concentration Used (MIN)	2-Year Intensity (IN/HR)	2-Year Peak Discharge (CFS)
V-C1	0.46	0.81	3.65	10.00	5.74	2.13
V-C1b	1.11	0.86	1.52	10.00	5.74	5.50
V-C1c	0.70	0.90	6.27	10.00	5.74	3.62
V-C1d	0.38	0.71	5.81	10.00	5.74	1.55
V-C2	0.57	0.75	2.59	10.00	5.74	2.46
V-C2b	0.67	0.89	2.52	10.00	5.74	3.43
V-C2c	0.56	0.81	1.80	10.00	5.74	2.61
V-C2d	0.40	0.73	2.98	10.00	5.74	1.66
V-C3	0.77	0.78	4.02	10.00	5.74	3.44
V-C3b	2.23	0.35	4.00	10.00	5.74	4.50
V-C4	0.87	0.79	4.46	10.00	5.74	3.94
V-C4b	2.86	0.35	6.84	10.00	5.74	5.75

SYSTEM VB - PROPOSED INLET COMPUTATION - 2 YEAR EVENT

INLET ID	INLET TYPE	PROFILE TYPE	SLOPES LONG. (%)	SLOPES TRANS. (%)	n-VALUE	TOTAL FLOW (CFS)	INLET CAPACITY (CFS)	BYPASS FLOW (CFS)	BYPASS INLET ID	PONDED WIDTH ALLOWED (FT)	PONDED WIDTH ACTUAL (FT)	PONDED DEPTH ALLOWED (FT)	PONDED DEPTH ACTUAL (FT)
V-B1	Curb	Sag	n/a	2.00	0.015	3.31	10.33	0.00	n/a	12.00	2.81	0.50	0.23
V-B2	Curb	Sag	n/a	2.00	0.015	2.67	10.33	0.00	n/a	12.00	2.43	0.50	0.20
V-B4	Curb	Sag	n/a	2.00	0.015	4.30	14.39	0.00	n/a	12.00	2.68	0.50	0.22
V-B5	Curb	Sag	n/a	2.00	0.015	2.39	10.33	0.00	n/a	12.00	2.26	0.50	0.19
V-B6	Curb	On Grade	0.30	2.00	0.015	1.33	1.33	0.00	V-B4	12.00	6.86	0.50	0.33
V-B6b	Curb	On Grade	0.30	2.00	0.015	1.11	1.11	0.00	V-B6	12.00	5.97	0.50	0.31
V-B7	Curb	On Grade	0.30	2.00	0.015	1.19	1.19	0.00	V-B5	12.00	6.30	0.50	0.32
V-B7b	Curb	On Grade	0.30	2.00	0.015	1.21	1.21	0.00	V-B7	12.00	6.40	0.50	0.32

SYSTEM VC - PROPOSED INLET COMPUTATION - 2 YEAR EVENT

INLET ID	INLET TYPE	PROFILE TYPE	SLOPES LONG. (%)	SLOPES TRANS. (%)	n-VALUE	TOTAL FLOW (CFS)	INLET CAPACITY (CFS)	BYPASS FLOW (CFS)	BYPASS INLET ID	PONDED WIDTH ALLOWED (FT)	PONDED WIDTH ACTUAL (FT)	PONDED DEPTH ALLOWED (FT)	PONDED DEPTH ACTUAL (FT)
V-C1	Curb	Sag	n/a	2.00	0.015	2.13	6.26	0.00	n/a	12.00	2.92	0.50	0.24
V-C1d	Curb	On Grade	0.31	2.00	0.015	1.55	1.55	0.00	V-C1	12.00	7.56	0.50	0.34
V-C2	Curb	Sag	n/a	2.00	0.015	2.46	10.33	0.00	n/a	12.00	2.31	0.50	0.19
V-C2d	Curb	On Grade	0.41	2.00	0.015	1.65	1.65	0.00	V-C2	12.00	7.22	0.50	0.33
V-C3	Curb	Sag	n/a	2.00	0.015	3.44	10.33	0.00	n/a	12.00	2.88	0.50	0.24
V-C4	Curb	Sag	n/a	2.00	0.015	3.94	14.39	0.00	n/a	12.00	2.53	0.50	0.21

SYSTEM VB - PROPOSED NODE COMPUTATION - 2 YEAR EVENT

Node ID	Node Type	Cumulative C-Value	Cumulative Area (AC)	Cumulative Tc (MIN)	Cumulative Intensity (IN/HR)	Supplied Discharge (CFS)	Cumulative Discharge (CFS)	Junction Loss (FT)
V-B1	Curb	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
V-B2	Curb	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
#V16	Junction	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
#V17	Junction	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
#V18	Junction	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
#V19	Junction	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
VX-B-OF	Outlet	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
#V20	Junction	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
#V21	Junction	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
V-B4	Curb	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
V-B5	Curb	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
#V22	Junction	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
#V23	Junction	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
V-B7	Curb	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
#V24	Junction	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
V-B6	Curb	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
#V25	Junction	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
V-B7b	Curb	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
#V26	Junction	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
V-B6b	Curb	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00

SYSTEM VC - PROPOSED NODE COMPUTATION - 2 YEAR EVENT

Node ID	Node Type	Cumulative C-Value	Cumulative Area (AC)	Cumulative Tc (MIN)	Cumulative Intensity (IN/HR)	Supplied Discharge (CFS)	Cumulative Discharge (CFS)	Junction Loss (FT)
VX-C1b	Junction	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
V-C1	Curb	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
#V27	Junction	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
V-C1d	Curb	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
#V28	Junction	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
V-C3	Curb	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
VX-C-OF	Outlet	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
VX-C2c	Junction	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
V-C2d	Curb	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
VX-C2b	Junction	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
V-C2	Curb	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00
V-C4	Curb	0.XX	XX.XX	XX.XX	XX.XX	0.00	XX.XX	0.00

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10/23/2025
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VOGLER & SPENCER ENGINEERING
Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
PROPOSED SYSTEMS V-B & V-C 2-YEAR HYDRAULIC COMPUTATIONS (1 OF 2)

SHEET 2 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 321 OF 718	

Design Filename: F:\03339 Antoine Drive\802-1\CADD\Plan Production_Drainage\XX-Storm Calcs pg 3.dgn

Plotted on: 10/31/2025 10:52:44 A$USER$

SYSTEM VB - PROPOSED LINK COMPUTATION - 2 YEAR EVENT

LINK ID	US NODE	DS NODE	FLOWLINE US (FT)	FLOWLINE DS (FT)	SHAPE	SPAN	RISE	# OF BARRELS	LENGTH (FT)	SLOPE (%)	n-VALUE	HGL US(FT)	HGL DS (FT)	DEPTH (FT) UNIFORM	DEPTH (FT) ACTUAL	VELOCITY (ft/sec) UNIFORM	VELOCITY (ft/sec) ACTUAL	Q (cfs)	CAPACITY (cfs)	NOTES
VB-L01	V-B1	#V16	81.23	81.17	Circular	n/a	2	1	32.00	0.18	0.013	83.41	83.41	X.XX	X.XX	X.XX	0.47	2.16	14.50	LAT-IN
VB-L02	V-B2	#V16	81.22	81.17	Circular	n/a	2.5	1	36.00	0.13	0.013	83.43	83.41	X.XX	X.XX	X.XX	3.66	12.44	11.84	LAT-IN
VB-L03	#V16	#V17	81.17	81.03	Circular	n/a	2.5	1	113.00	0.13	0.013	83.41	83.41	X.XX	X.XX	X.XX	3.10	7.42	15.91	
VB-L04	#V17	#V18	81.03	80.99	Box	6	3	1	83.00	0.04	0.013	83.41	83.41	X.XX	X.XX	X.XX	1.01	8.00	33.90	
VB-L05	#V18	#V19	80.99	80.87	Circular	n/a	2	2	58.00	0.18	0.013	83.41	83.39	X.XX	X.XX	X.XX	2.53	14.23	20.58	
VB-L06	#V19	VX-B-OF	80.87	80.75	Circular	n/a	3	1	117.00	0.10	0.013	83.39	83.38	X.XX	X.XX	X.XX	3.62	14.30	20.45	
VB-L07	#V20	#V18	81.04	80.99	Box	6	3	1	121.00	0.04	0.013	83.41	83.41	X.XX	X.XX	X.XX	0.65	8.39	36.99	
VB-L08	#V21	#V20	81.40	81.29	Box	4	2	1	161.00	0.07	0.013	83.43	83.41	X.XX	X.XX	X.XX	1.40	8.30	15.81	
VB-L09	V-B4	#V21	81.46	81.40	Circular	n/a	2	1	32.00	0.18	0.013	83.44	83.43	X.XX	X.XX	X.XX	1.43	4.32	9.80	LAT-IN
VB-L10	V-B5	#V21	81.46	81.40	Circular	n/a	2	1	31.00	0.18	0.013	83.44	83.43	X.XX	X.XX	X.XX	4.60	11.87	9.95	LAT-IN
VB-L11	#V22	#V21	81.61	81.40	Circular	n/a	2	1	113.00	0.18	0.013	83.44	83.43	X.XX	X.XX	X.XX	2.65	4.99	9.39	
VB-L12	#V23	#V22	81.82	81.61	Circular	n/a	2	1	113.00	0.18	0.013	83.44	83.44	X.XX	X.XX	X.XX	2.88	5.14	10.02	
VB-L13	V-B7	#V23	81.88	81.82	Circular	n/a	2	1	34.00	0.18	0.013	83.44	83.44	X.XX	X.XX	X.XX	0.93	1.65	9.53	LAT-IN
VB-L14	#V24	#V23	81.94	81.82	Circular	n/a	2	1	68.00	0.18	0.013	83.44	83.44	X.XX	X.XX	X.XX	2.21	3.64	9.57	
VB-L15	V-B6	#V24	82.00	81.94	Circular	n/a	2	1	36.00	0.18	0.013	83.44	83.44	X.XX	X.XX	X.XX	1.55	2.20	9.24	LAT-IN
VB-L16	#V25	#V24	82.00	81.94	Circular	n/a	2	1	33.00	0.18	0.013	83.44	83.44	X.XX	X.XX	X.XX	1.00	1.62	9.58	
VB-L17	V-B7b	#V25	82.05	82.00	Circular	n/a	2	1	31.00	0.18	0.013	83.44	83.44	X.XX	X.XX	X.XX	1.04	1.60	9.08	LAT-IN
VB-L18	#V26	#V25	82.08	82.00	Circular	n/a	2	1	45.00	0.18	0.013	83.44	83.44	X.XX	X.XX	X.XX	0.09	0.09	9.43	
VB-L19	V-B6b	#V26	82.14	82.08	Circular	n/a	2	1	34.00	0.18	0.013	83.44	83.44	X.XX	X.XX	X.XX	1.55	2.20	9.24	LAT-IN

SYSTEM VC - PROPOSED LINK COMPUTATION - 2 YEAR EVENT

LINK ID	US NODE	DS NODE	FLOWLINE US (FT)	FLOWLINE DS (FT)	SHAPE	SPAN	RISE	# OF BARRELS	LENGTH (FT)	SLOPE (%)	n-VALUE	HGL US(FT)	HGL DS (FT)	DEPTH (FT) UNIFORM	DEPTH (FT) ACTUAL	VELOCITY (ft/sec) UNIFORM	VELOCITY (ft/sec) ACTUAL	Q (cfs)	CAPACITY (cfs)	NOTES
VC-L01	VX-C1b	V-C1	82.61	82.40	Circular	n/a	2	1	16.63	1.23	0.013	83.95	83.79	X.XX	X.XX	X.XX	4.18	2.59	14.13	
VC-L02	V-C1	#V27	81.90	81.85	Circular	n/a	2	1	28.85	0.18	0.013	83.79	83.74	X.XX	X.XX	X.XX	5.09	10.29	30.80	
VC-L03	V-C1d	#V27	82.01	81.85	Circular	n/a	2	1	91.00	0.18	0.013	83.74	83.74	X.XX	X.XX	X.XX	1.24	7.67	9.59	
VC-L04	#V27	#V28	81.85	81.48	Circular	n/a	2	1	110.14	0.33	0.013	83.74	83.48	X.XX	X.XX	X.XX	4.89	11.73	15.76	EXIST
VC-L05	V-C3	#V28	81.96	81.94	Circular	n/a	2	1	11.36	0.18	0.013	88.19	83.48	X.XX	X.XX	X.XX	5.30	2.49	0.57	
VC-L06	#V28	VX-C-OF	81.44	81.10	Circular	n/a	2	1	37.77	0.84	0.013	83.48	83.20	X.XX	X.XX	X.XX	6.10	0.00	29.33	EXIST
VC-L07	VX-C2c	V-C2d	82.70	82.62	Circular	n/a	2	1	31.84	0.23	0.013	84.02	83.86	X.XX	X.XX	X.XX	2.21	2.58	168.30	EXIST
VC-L08	V-C2d	VX-C2b	82.63	82.40	Circular	n/a	2	1	98.10	0.23	0.013	83.86	83.69	X.XX	X.XX	X.XX	2.97	3.48	181.37	EXIST
VC-L09	VX-C2b	V-C2	82.40	82.18	Circular	n/a	2	1	4.99	3.38	0.013	83.69	83.59	X.XX	X.XX	X.XX	4.93	7.67	345.13	EXIST
VC-L10	V-C2	V-C4	81.61	81.44	Circular	n/a	2	1	79.49	0.21	0.013	83.59	83.45	X.XX	X.XX	X.XX	3.36	0.00	0.23	EXIST
VC-L11	V-C4	VX-C-OF	81.39	81.12	Circular	n/a	2	1	80.51	0.32	0.013	83.45	83.20	X.XX	X.XX	X.XX	5.30	13.93	8.34	EXIST

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713-782-0042
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131531
10/31/2025
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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED SYSTEMS V-B & V-C
2-YEAR
HYDRAULIC COMPUTATIONS
(2 OF 2)

SHEET 3 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 322 OF 718	

Pen Table:$PENTBL$
Plot Driver:$PLTDRVL$
Design Filename: $FILE$

SYSTEM VB - PROPOSED LINK COMPUTATION - 2 YEAR EVENT

LINK ID	US NODE	DS NODE	FLOWLINE US (FT)	FLOWLINE DS (FT)	SHAPE	SPAN	RISE	# OF BARRELS	LENGTH (FT)	SLOPE (%)	n-VALUE	HGL US(FT)	HGL DS (FT)	DEPTH (FT) UNIFORM	DEPTH (FT) ACTUAL	VELOCITY (ft/sec) UNIFORM	VELOCITY (ft/sec) ACTUAL	Q (cfs)	CAPACITY (cfs)	NOTES
VB-L01	V-B1	#V16	81.23	81.17	Circular	n/a	2	1	32.00	0.18	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	LAT-IN
VB-L02	V-B2	#V16	81.22	81.17	Circular	n/a	2.5	1	36.00	0.13	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	LAT-IN
VB-L03	#V16	#V17	81.17	81.03	Circular	n/a	2.5	1	113.00	0.13	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	
VB-L04	#V17	#V18	81.03	80.99	Box	6	3	1	83.00	0.04	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	
VB-L05	#V18	#V19	80.99	80.87	Circular	n/a	2	2	58.00	0.18	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	
VB-L06	#V19	VX-B-OF	80.87	80.75	Circular	n/a	3	1	117.00	0.10	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	
VB-L07	#V20	#V18	81.04	80.99	Box	6	3	1	121.00	0.04	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	
VB-L08	#V21	#V20	81.40	81.29	Box	4	2	1	161.00	0.07	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	
VB-L09	V-B4	#V21	81.46	81.40	Circular	n/a	2	1	32.00	0.18	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	LAT-IN
VB-L10	V-B5	#V21	81.46	81.40	Circular	n/a	2	1	31.00	0.18	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	LAT-IN
VB-L11	#V22	#V21	81.61	81.40	Circular	n/a	2	1	113.00	0.18	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	
VB-L12	#V23	#V22	81.82	81.61	Circular	n/a	2	1	113.00	0.18	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	
VB-L13	V-B7	#V23	81.88	81.82	Circular	n/a	2	1	34.00	0.18	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	LAT-IN
VB-L14	#V24	#V23	81.94	81.82	Circular	n/a	2	1	68.00	0.18	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	
VB-L15	V-B6	#V24	82.00	81.94	Circular	n/a	2	1	36.00	0.18	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	LAT-IN
VB-L16	#V25	#V24	82.00	81.94	Circular	n/a	2	1	33.00	0.18	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	
VB-L17	V-B7b	#V25	82.05	82.00	Circular	n/a	2	1	31.00	0.18	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	LAT-IN
VB-L18	#V26	#V25	82.08	82.00	Circular	n/a	2	1	45.00	0.18	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	
VB-L19	V-B6b	#V26	82.14	82.08	Circular	n/a	2	1	34.00	0.18	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	LAT-IN

SYSTEM VC - PROPOSED LINK COMPUTATION - 2 YEAR EVENT

LINK ID	US NODE	DS NODE	FLOWLINE US (FT)	FLOWLINE DS (FT)	SHAPE	SPAN	RISE	# OF BARRELS	LENGTH (FT)	SLOPE (%)	n-VALUE	HGL US(FT)	HGL DS (FT)	DEPTH (FT) UNIFORM	DEPTH (FT) ACTUAL	VELOCITY (ft/sec) UNIFORM	VELOCITY (ft/sec) ACTUAL	Q (cfs)	CAPACITY (cfs)	NOTES
VC-L01	VX-C1b	V-C1	82.61	82.40	Circular	n/a	2	1	16.63	1.23	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	
VC-L02	V-C1	#V27	81.90	81.85	Circular	n/a	2	1	28.85	0.18	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	
VC-L03	V-C1d	#V27	82.01	81.85	Circular	n/a	2	1	91.00	0.18	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	
VC-L04	#V27	#V28	81.85	81.48	Circular	n/a	2	1	110.14	0.33	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	EXIST
VC-L05	V-C3	#V28	81.96	81.94	Circular	n/a	2	1	11.36	0.18	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	
VC-L06	#V28	VX-C-OF	81.44	81.10	Circular	n/a	2	1	37.77	0.84	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	EXIST
VC-L07	VX-C2c	V-C2d	82.70	82.62	Circular	n/a	2	1	31.84	0.23	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	EXIST
VC-L08	V-C2d	VX-C2b	82.63	82.40	Circular	n/a	2	1	98.10	0.23	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	EXIST
VC-L09	VX-C2b	V-C2	82.40	82.18	Circular	n/a	2	1	4.99	3.38	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	EXIST
VC-L10	V-C2	V-C4	81.61	81.44	Circular	n/a	2	1	79.49	0.21	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	EXIST
VC-L11	V-C4	VX-C-OF	81.39	81.12	Circular	n/a	2	1	80.51	0.32	0.013	XX.XX	XX.XX	X.XX	X.XX	X.XX	X.XX	XX.XX	XX.XX	EXIST

REVISIONS

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED SYSTEMS V-B & V-C
2-YEAR
HYDRAULIC COMPUTATIONS
(2 OF 2)

SHEET 4 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 323 OF 718	

Plotted on: 10/23/2025 1:45:18 PM JOviedo
Pen Table:ANTOINE DR.tbl
Plot Driver:F:\03339 Antoine Drive\802-1\CAD\Plot files\ANTOINE DR.pltcfg
Design Filename: F:\03339 Antoine Drive\802-1\CAD\Plan Production_Drainage\XX-Storm Calcs pg 4.dgn

SYSTEM A2																			
ID	Type	Discharge (cfs)	Discharge (cfs)		Ponded Width (ft)		Max Allow Pond Width (ft)	Slope %		Curb Length (ft)	Grate Length (ft)	Width (ft)	Gutter Depr. (ft)	Area (ft)	Perim. (ft)	Capacity (cfs)	Max Allow Ponded	Ponded Depth (ft)	Transverse Slope (%)	Notes
			Left	Right	Left	Right		Left	Right											
A2-01A	Curb	1.44	0.72	0.72	7.82	7.82	12.00	0.30	0.30	10.00	n/a	n/a	0.25	n/a	n/a	12.52	0.50	0.12	2.00	
A2-02	Curb	3.93	1.97	1.97	11.38	11.38	12.00	0.30	0.30	10.00	n/a	n/a	0.25	n/a	n/a	12.52	0.50	0.23	2.00	
A2-03A	Curb	1.08	0.54	0.54	7.01	7.01	11.00	0.30	0.30	10.00	n/a	n/a	0.25	n/a	n/a	8.96	0.40	0.10	2.00	
A2-04A	Curb	1.16	0.58	0.58	7.20	7.20	11.00	0.30	0.30	10.00	n/a	n/a	0.25	n/a	n/a	8.96	0.40	0.10	2.00	
A2-06	Curb	2.26	1.36	0.91	9.91	8.51	12.00	0.30	0.30	5.00	n/a	n/a	0.25	n/a	n/a	8.46	0.50	0.21	2.00	
A2-07	Curb	8.35	4.59	3.76	10.45	10.73	12.00	2.58	1.50	5.00	n/a	n/a	0.25	n/a	n/a	8.46	0.50	0.50	2.00	
A2-08	Curb	1.38	0.34	1.03	5.93	8.95	12.00	0.30	0.30	5.00	n/a	n/a	0.25	n/a	n/a	8.46	0.50	0.15	2.00	
A2-09	Curb	7.34	2.57	4.77	10.38	11.50	12.00	0.84	1.67	5.00	n/a	n/a	0.25	n/a	n/a	8.46	0.50	0.46	2.00	
A2-13	Curb	4.44	2.22	2.22	11.91	9.78	12.00	0.30	0.86	10.00	n/a	n/a	0.25	n/a	n/a	12.52	0.50	0.25	2.00	
A2-14	Curb	4.53	1.59	2.95	10.50	10.87	12.00	0.30	0.86	10.00	n/a	n/a	0.25	n/a	n/a	12.52	0.50	0.25	2.00	
A2-15	Grate	4.57	2.51	2.06	11.10	11.58	12.00	0.56	0.30	n/a	5.96	2.75	n/a	9.08	17.42	9.50	0.50	0.31	2.00	
A2-16	Curb	1.04	0.52	0.52	6.93	4.76	12.00	0.30	2.22	10.00	n/a	n/a	0.25	n/a	n/a	12.52	0.50	0.10	2.00	
A2-16A	Curb	1.73	0.69	1.04	5.13	8.96	12.00	2.63	0.30	10.00	n/a	n/a	0.25	n/a	n/a	12.52	0.50	0.13	2.00	
A2-28	Curb	4.52	2.26	2.26	8.34	10.05	12.00	2.09	0.77	10.00	n/a	n/a	0.25	n/a	n/a	12.52	0.50	0.25	2.00	
A2-29	Curb	8.12	4.22	3.90	11.69	11.85	12.00	1.20	0.95	10.00	n/a	n/a	0.25	n/a	n/a	12.52	0.50	0.37	2.00	
A2-30	Curb	4.93	2.46	2.46	9.16	9.16	12.00	1.50	1.50	10.00	n/a	n/a	0.25	n/a	n/a	12.52	0.50	0.27	2.00	
A2-31	Curb	4.77	2.38	2.38	9.24	9.24	12.00	1.34	1.34	10.00	n/a	n/a	0.25	n/a	n/a	12.52	0.50	0.26	2.00	
A2-32	Curb	4.04	2.02	2.02	11.30	11.50	12.00	0.33	0.30	10.00	n/a	n/a	0.25	n/a	n/a	12.52	0.50	0.24	2.00	
A2-33	Curb	4.32	2.16	2.16	11.39	11.79	12.00	0.36	0.30	10.00	n/a	n/a	0.25	n/a	n/a	12.52	0.50	0.25	2.00	
A2-38	Curb	2.76	1.38	1.38	9.41	9.97	12.00	0.41	0.30	10.00	n/a	n/a	0.25	n/a	n/a	12.52	0.50	0.18	2.00	
A2-39	Curb	4.22	2.11	2.11	11.48	11.62	12.00	0.33	0.31	10.00	n/a	n/a	0.25	n/a	n/a	12.52	0.50	0.24	2.00	
A2-40	Curb	3.84	1.92	1.92	11.28	10.25	12.00	0.30	0.50	10.00	n/a	n/a	0.25	n/a	n/a	12.52	0.50	0.23	2.00	
A2-41	Curb	3.00	1.50	1.50	10.28	9.74	12.00	0.30	0.40	10.00	n/a	n/a	0.25	n/a	n/a	12.52	0.50	0.19	2.00	
A2-42	Curb	3.64	1.64	2.00	10.32	11.46	12.00	0.35	0.30	10.00	n/a	n/a	0.25	n/a	n/a	12.52	0.50	0.22	2.00	
A2-43	Curb	3.55	2.13	1.42	10.96	11.33	12.00	0.43	0.16	10.00	n/a	n/a	0.25	n/a	n/a	12.52	0.50	0.22	2.00	
A2-44	Curb	3.74	1.31	2.43	9.50	11.57	12.00	0.35	0.42	5.00	n/a	n/a	0.25	n/a	n/a	8.46	0.50	0.29	2.00	
A2-45	Curb	4.48	2.24	2.24	11.43	9.95	12.00	0.38	0.80	10.00	n/a	n/a	0.25	n/a	n/a	12.52	0.50	0.25	2.00	
A2-46	Curb	3.65	1.83	1.83	10.65	8.96	12.00	0.37	0.93	10.00	n/a	n/a	0.25	n/a	n/a	12.52	0.50	0.22	2.00	
A2-50	Curb	4.54	1.59	2.95	10.51	11.40	12.00	0.30	0.67	5.00	n/a	n/a	0.25	n/a	n/a	8.46	0.50	0.33	2.00	
A2-51	Curb	2.33	1.51	0.81	10.32	8.18	12.00	0.30	0.30	5.00	n/a	n/a	0.25	n/a	n/a	8.46	0.50	0.21	2.00	
A2-54	Curb	2.94	2.06	0.88	10.82	8.43	12.00	0.43	0.30	10.00	n/a	n/a	0.25	n/a	n/a	12.52	0.50	0.19	2.00	
A2-55	Curb	2.28	0.68	1.60	7.67	10.53	12.00	0.30	0.30	5.00	n/a	n/a	0.25	n/a	n/a	8.46	0.50	0.21	2.00	
A2-57	Curb	2.45	1.59	0.86	10.52	7.98	12.00	0.30	0.38	5.00	n/a	n/a	0.25	n/a	n/a	8.46	0.50	0.22	2.00	
A2-58	Curb	3.27	1.15	2.13	8.90	11.72	12.00	0.38	0.30	5.00	n/a	n/a	0.25	n/a	n/a	8.46	0.50	0.27	2.00	

SYSTEM A3 MAIN																			
ID	Type	Discharge (cfs)	Discharge (cfs)		Ponded Width (ft)		Max Allow Pond Width (ft)	Slope %		Curb Length (ft)	Grate Length (ft)	Width (ft)	Gutter Depr. (ft)	Area (ft)	Perim. (ft)	Capacity (cfs)	Max Allow Ponded	Ponded Depth (ft)	Transverse Slope (%)	Notes
			Left	Right	Left	Right		Left	Right											
A3-09	Curb	3.83	2.30	1.53	11.66	10.37	12.00	0.36	0.30	10.00	n/a	n/a	0.25	n/a	n/a	12.52	0.50	0.23	2.00	
A3-11	Curb	10.98	6.59	4.39	15.45	15.38	12.00	0.66	0.30	10.00	n/a	n/a	0.25	n/a	n/a	12.52	0.50	0.46	2.00	
A3-12	Curb	4.28	1.29	3.00	9.71	10.68	12.00	0.30	0.98	10.00	n/a	n/a	0.25	n/a	n/a	12.52	0.50	0.25	2.00	
A3-13	Curb	6.15	2.46	3.69	11.66	10.94	12.00	0.31	0.98	10.00	n/a	n/a	0.25	n/a	n/a	12.52	0.50	0.31	2.00	
A3-19	Curb	3.27	1.64	1.64	8.16	8.43	12.00	1.23	1.03	10.00	n/a	n/a	0.25	n/a	n/a	12.52	0.50	0.20	2.00	
A3-21	Curb	3.43	1.72	1.72	7.10	8.49	12.00	2.83	1.09	10.00	n/a	n/a	0.25	n/a	n/a	12.52	0.50	0.21	2.00	
A3-23	Curb	2.25	1.13	1.13	9.22	6.69	12.00	0.30	1.69	10.00	n/a	n/a	0.25	n/a	n/a	12.52	0.50	0.16	2.00	
A3-24	Curb	2.62	1.31	1.31	6.30	9.14	12.00	3.15	0.43	10.00	n/a	n/a	0.25	n/a	n/a	12.52	0.50	0.18	2.00	

No.	DATE	REVISIONS	APP.

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HOUSTON, TX 77079

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GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED 2-YEAR INLET COMPUTATIONS

SHEET 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 324 OF 718	

Pen Table:ANTOINE DR.tbl
Plot Driver:P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Resource\Plot files\ANTOINE DR TCP.pltcfg Plotted on: 10/30/2025 4:29:38 PM daniel.lerma

Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Drainage\W GULF BANK\DRN PR 2YR INLET 01.dgn

SYSTEM A2													
ID	TYPE	DISCHARGE (cfs)	PONDED WIDTH (ft)	PONDED DEPTH (ft)	MAX ALLOW POND WIDTH (ft)	TRANSVERSE SLOPE %	LONGITUDINAL SLOPE %	LENGTH (ft)	WIDTH (ft)	DEPR. (ft)	CAPACTIY (cfs)	BY PASS (cfs)	TO NODE
A2-10	Curb	1.74	10.88	0.22	12.00	2.00	0.30	10.00	n/a	0.25	1.74	0.00	A2-14
A2-11	Curb	1.17	9.36	0.19	12.00	2.00	0.30	10.00	n/a	0.25	1.17	0.00	A2-15A
A2-15A	Curb	0.79	8.08	0.16	12.00	2.00	0.30	10.00	n/a	0.25	0.79	0.00	A2-15
A2-18	Curb	1.66	10.67	0.21	12.00	2.00	0.30	10.00	n/a	0.25	1.66	0.00	A2-29
A2-19	Curb	1.99	11.44	0.23	12.00	2.00	0.30	10.00	n/a	0.25	1.99	0.00	A2-21
A2-21	Curb	1.64	10.64	0.21	12.00	2.00	0.30	10.00	n/a	0.25	1.64	0.00	A2-22
A2-22	Curb	1.99	11.43	0.23	12.00	2.00	0.30	10.00	n/a	0.25	1.99	0.00	A2-23
A2-23	Curb	2.99	13.32	0.27	12.00	2.00	0.30	10.00	n/a	0.25	2.95	0.04	A2-24
A2-24	Curb	1.26	9.63	0.19	12.00	2.00	0.30	10.00	n/a	0.25	1.26	0.00	A2-25
A2-25	Curb	3.67	14.38	0.29	12.00	2.00	0.30	10.00	n/a	0.25	3.49	0.19	A2-26
A2-26	Curb	1.77	10.95	0.22	12.00	2.00	0.30	10.00	n/a	0.25	1.77	0.00	A2-27
A2-27	Curb	2.39	12.25	0.25	12.00	2.00	0.30	10.00	n/a	0.25	2.39	0.00	A2-31A
A2-28A	Curb	1.68	10.74	0.22	12.00	2.00	0.30	10.00	n/a	0.25	1.68	0.00	A2-32
A2-30A	Curb	1.93	11.29	0.23	12.00	2.00	0.30	10.00	n/a	0.25	1.93	0.00	A2-33
A2-31A	Curb	3.49	14.11	0.28	12.00	2.00	0.30	10.00	n/a	0.25	3.35	0.14	A2-31
A2-34	Curb	1.82	11.06	0.22	12.00	2.00	0.30	10.00	n/a	0.25	1.82	0.00	A2-36
A2-35	Curb	1.95	11.29	0.23	12.00	2.00	0.31	10.00	n/a	0.25	1.95	0.00	A2-37
A2-36	Curb	1.67	10.71	0.21	12.00	2.00	0.30	10.00	n/a	0.25	1.67	0.00	A2-36A
A2-36A	Curb	1.99	11.43	0.23	12.00	2.00	0.30	10.00	n/a	0.25	1.99	0.00	A2-38
A2-37	Curb	1.19	9.44	0.19	12.00	2.00	0.30	10.00	n/a	0.25	1.19	0.00	A2-39
A2-38A	Curb	1.38	9.97	0.20	12.00	2.00	0.30	10.00	n/a	0.25	1.38	0.00	A2-48
A2-40A	Curb	2.84	11.87	0.24	12.00	2.00	0.50	10.00	n/a	0.25	2.71	0.13	A2-40D
A2-40B	Curb	2.41	11.16	0.22	12.00	2.00	0.50	10.00	n/a	0.25	2.37	0.04	A2-40A
A2-40C	Grate	2.76	11.74	0.24	12.00	2.00	0.50	n/a	2.75	n/a	2.35	0.41	A2-40B
A2-42A	Curb	1.55	10.28	0.21	12.00	2.00	0.32	10.00	n/a	0.25	1.55	0.00	A2-42
A2-43A	Curb	1.96	10.64	0.21	12.00	2.00	0.43	10.00	n/a	0.25	1.96	0.00	A2-43
A2-44A	Curb	1.29	9.08	0.18	12.00	2.00	0.43	10.00	n/a	0.25	1.29	0.00	A2-44B
A2-44B	Curb	2.49	11.62	0.23	12.00	2.00	0.43	10.00	n/a	0.25	2.46	0.03	A2-44
A2-48	Curb	1.96	11.36	0.23	12.00	2.00	0.30	10.00	n/a	0.25	1.96	0.00	A2-40

SYSTEM A3 MAIN													
ID	TYPE	DISCHARGE (cfs)	PONDED WIDTH (ft)	PONDED DEPTH (ft)	MAX ALLOW POND WIDTH (ft)	TRANSVERSE SLOPE %	LONGITUDINAL SLOPE %	LENGTH (ft)	WIDTH (ft)	DEPR. (ft)	CAPACTIY (cfs)	BY PASS (cfs)	TO NODE
A3-01	Curb	1.75	10.90	0.22	12.00	2.00	0.30	10.00	n/a	0.25	1.75	0.00	A3-03
A3-02	Curb	1.53	10.37	0.21	12.00	2.00	0.30	10.00	n/a	0.25	1.53	0.00	A3-04
A3-03	Curb	2.01	11.48	0.23	12.00	2.00	0.30	10.00	n/a	0.25	2.01	0.00	A3-05
A3-04	Curb	1.80	11.02	0.22	12.00	2.00	0.30	10.00	n/a	0.25	1.80	0.00	A3-06
A3-05	Curb	1.38	9.97	0.20	12.00	2.00	0.30	10.00	n/a	0.25	1.38	0.00	A3-07
A3-06	Curb	1.35	9.87	0.20	12.00	2.00	0.30	10.00	n/a	0.25	1.35	0.00	A3-08
A3-07	Curb	1.36	9.92	0.20	12.00	2.00	0.30	10.00	n/a	0.25	1.36	0.00	A3-09A
A3-08	Curb	1.45	10.16	0.20	12.00	2.00	0.30	10.00	n/a	0.25	1.45	0.00	A3-08A
A3-08A	Curb	2.01	11.47	0.23	12.00	2.00	0.30	10.00	n/a	0.25	2.01	0.00	A3-10
A3-09A	Curb	1.61	10.56	0.21	12.00	2.00	0.30	10.00	n/a	0.25	1.61	0.00	A3-09B
A3-09B	Curb	1.14	9.27	0.19	12.00	2.00	0.30	10.00	n/a	0.25	1.14	0.00	A3-09
A3-10	Curb	1.94	11.32	0.23	12.00	2.00	0.30	10.00	n/a	0.25	1.94	0.00	A3-10A
A3-10A	Curb	2.04	11.53	0.23	12.00	2.00	0.30	10.00	n/a	0.25	2.04	0.00	A3-11
A3-12A	Curb	2.19	11.86	0.24	12.00	2.00	0.30	10.00	n/a	0.25	2.19	0.00	A3-12B
A3-12B	Curb	1.22	9.52	0.19	12.00	2.00	0.30	10.00	n/a	0.25	1.22	0.00	A3-12
A3-15	Curb	2.09	11.65	0.23	12.00	2.00	0.30	10.00	n/a	0.25	2.09	0.00	A3-12A
A3-16	Curb	1.21	9.50	0.19	12.00	2.00	0.30	10.00	n/a	0.25	1.21	0.00	A3-13
A3-17	Curb	1.12	9.21	0.18	12.00	2.00	0.30	10.00	n/a	0.25	1.12	0.00	A3-15

No.	DATE	REVISIONS	APP.

Texas Department of Transportation ©2026

Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY, #400
HOUSTON, TX 77079

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95% SUBMITTAL
GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

SURVEYED BY:
KUO & ASSOCIATES, INC.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED 2-YEAR INLET COMPUTATIONS

SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 325 OF 718	

Plotted on: $DATE$ $TIME$ $USER$
Pen Table:$PENTBLS$
Plot Driver:$PLTDRVL$
Design Filename: $FILEL$

SYSTEM A2										
ID	Upstream ID	Downstream ID	US HGL (ft)	DS HGL (ft)	Discharge (cfs)	Capacity (cfs)	Slope %	Uniform		Actual	
								Velocity (ft/s)	Depth (ft)	Velocity (ft/s)	Depth (ft)
A2-01	A2-01	A2-03	78.42	78.03	7.97	13.76	0.30	4.29	1.14	2.54	2.00
A2-01A	A2-01A	MH-A2-01	77.07	77.07	1.44	38.96	2.60	5.61	0.27	0.48	1.85
A2-02	A2-02	MH-A2-01	77.07	77.07	3.93	42.95	3.10	8.10	0.42	1.46	1.60
A2-03	A2-03	A2-03A	78.03	77.55	19.07	25.01	1.10	8.26	1.38	6.07	2.00
A2-03A	A2-03A	MH-A2-03	77.55	76.35	20.05	35.00	2.10	10.88	1.14	7.41	1.61
A2-04	A2-04	A2-04A	76.92	76.92	2.35	29.40	1.50	5.32	0.40	1.00	1.39
A2-04A	A2-04A	MH-A2-03	76.92	76.93	3.50	29.83	1.50	6.04	0.48	1.50	1.39
A2-05	A2-05	MH-A2-02	79.30	77.04	6.36	5.87	2.80	8.31	1.00	8.10	1.00
A2-06	A2-06	MH-14	76.57	76.57	3.96	8.35	0.10	2.53	1.00	1.26	2.00
A2-07	A2-07	MH-A2-05	76.72	76.69	12.34	11.78	0.30	4.03	2.00	3.93	2.00
A2-07B	A2-07B	A2-07	76.73	76.72	3.99	40.02	2.70	7.74	0.44	1.27	2.00
A2-08	A2-08	MH-A2-04	76.73	76.73	1.38	59.63	6.00	7.46	0.22	0.63	1.31
A2-09	A2-09	MH-A2-04	76.87	76.73	10.16	49.65	4.20	11.78	0.64	3.24	2.00
A2-10	A2-10	MH-A2-06	76.40	76.40	1.74	42.62	3.10	6.33	0.29	0.55	2.00
A2-10A	A2-10A	A2-06	76.57	76.57	1.70	5.92	0.10	1.55	0.76	0.54	2.00
A2-11	A2-11	MH-A2-06	76.40	76.40	1.17	41.62	2.90	5.51	0.24	0.37	2.00
A2-12	A2-12	MH-A2-07	76.92	70.94	1.88	76.05	9.80	9.71	0.22	3.30	0.47
A2-13	A2-13	A2-14	76.16	76.15	4.44	10.71	0.20	3.07	0.94	1.41	2.00
A2-14	A2-14	MH-A2-08	76.15	76.11	8.22	10.30	0.20	3.48	1.41	2.62	2.00
A2-15	A2-15	A2-16A	76.63	76.55	4.57	10.54	0.20	3.03	0.97	3.33	0.90
A2-15A	A2-15A	MH-A2-07	76.30	76.30	0.79	24.23	1.00	3.36	0.26	0.25	2.00
A2-16	A2-16	MH-A2-08	76.44	76.11	14.11	10.46	0.30	4.61	2.00	4.49	2.00
A2-17	A2-17	A2-16A	84.01	76.55	8.50	2.27	4.90	11.11	1.00	10.83	1.00
A2-18	A2-18	MH-A2-11	75.46	75.46	1.66	52.57	4.70	7.21	0.25	0.53	2.00
A2-19	A2-19	MH-A2-10	75.51	75.50	1.99	36.22	2.20	5.88	0.33	0.64	2.00
A2-20	A2-16A	A2-16	76.55	76.44	13.24	10.74	0.30	4.32	2.00	4.21	2.00
A2-21	A2-21	A2-22	75.30	75.29	1.64	18.14	0.60	3.40	0.42	0.52	2.00
A2-22	A2-22	A2-23	75.29	75.28	3.63	19.67	0.60	4.52	0.61	1.15	2.00
A2-23	A2-23	MH-A2-12	75.28	75.20	7.83	11.28	0.20	3.65	1.29	2.49	2.00
A2-24	A2-24	A2-23	75.28	75.28	1.21	37.89	2.40	5.23	0.25	0.39	2.00
A2-25	A2-25	A2-26	75.02	75.01	3.67	44.03	3.30	8.07	0.41	1.17	2.00
A2-26	A2-26	MH-A2-13	75.01	74.94	7.65	19.03	0.60	5.45	0.92	2.44	2.00
A2-27	A2-27	A2-26	75.01	75.01	2.39	35.65	2.10	6.12	0.36	0.76	2.00
A2-28	A2-28	MH-A2-15	74.31	74.29	12.17	8.89	0.30	3.98	2.00	3.88	2.00
A2-28A	A2-28A	MH-A2-29	73.91	73.91	1.68	17.77	0.50	3.37	0.43	0.54	2.00
A2-29	A2-29	A2-28	74.43	74.31	8.12	10.70	0.20	3.60	1.35	2.58	2.00
A2-30	A2-30	MH-A2-15	74.46	74.29	11.98	11.28	0.20	3.91	2.00	3.81	2.00
A2-30A	A2-30A	MH-A2-29	73.92	73.91	1.93	14.68	0.40	3.08	0.51	0.61	2.00
A2-31	A2-31	A2-30	74.56	74.46	7.45	10.70	0.20	3.47	1.29	2.37	2.00
A2-31A	A2-31A	A2-31	74.57	74.56	3.49	11.21	0.20	3.01	0.79	1.11	2.00
A2-32	A2-32	MH-A2-17	73.62	73.62	4.04	12.56	0.30	3.40	0.81	1.29	2.00
A2-33	A2-33	MH-A2-17	73.64	73.62	4.32	11.28	0.20	3.17	0.90	1.38	2.00
A2-34	A2-34	MH-A2-18	73.14	73.14	1.82	15.39	0.40	3.10	0.48	0.58	2.00
A2-35	A2-35	MH-A2-18	73.14	73.14	1.95	14.15	0.30	3.01	0.52	0.62	2.00
A2-36	A2-36	MH-A2-19	72.92	72.92	1.67	15.39	0.40	3.04	0.46	0.53	2.00
A2-36A	A2-36A	A2-38	72.56	72.56	1.99	14.35	0.40	3.06	0.52	0.63	2.00
A2-37	A2-37	MH-A2-19	72.92	72.92	1.19	16.85	0.50	2.93	0.37	0.38	2.00
A2-38	A2-38	MH-A2-20	72.56	72.55	4.70	17.77	0.50	4.50	0.73	1.50	2.00
A2-38A	A2-38A	MH-A2-30	72.05	72.05	1.38	23.75	1.00	3.91	0.34	0.44	2.00
A2-39	A2-39	MH-A2-20	72.57	72.55	4.22	10.84	0.20	3.04	0.91	1.34	2.00
A2-40	A2-40	MH-A2-23	71.43	71.42	3.84	12.72	0.30	3.40	0.78	1.22	2.00
A2-40A	A2-40A	MH-A2-32	71.22	71.22	2.80	12.32	0.30	3.00	0.68	0.89	2.00
A2-40B	A2-40B	A2-40C	70.97	70.97	2.00	29.76	1.50	5.13	0.36	0.64	2.00
A2-40C	A2-40C	MH-A2-24	70.97	70.96	4.76	17.77	0.50	4.56	0.73	1.52	2.00
A2-41	A2-41	MH-A2-22	71.94	71.93	3.00	33.72	1.90	6.29	0.42	0.95	2.00
A2-42	A2-42	MH-A2-23	71.44	71.42	3.64	11.69	0.20	3.14	0.79	1.16	2.00
A2-42A	A2-42A	MH-A2-32	71.22	71.22	1.55	16.22	0.40	3.09	0.43	0.49	2.00
A2-43	A2-43	MH-A2-27	69.96	69.95	3.55	9.10	0.10	2.55	0.91	1.13	2.00
A2-43A	A2-43A	MH-A2-26	70.49	70.49	1.96	7.77	0.10	1.99	0.70	0.63	2.00
A2-44	A2-44	MH-A2-27	69.87	68.99	3.71	26.18	1.20	5.60	0.53	3.99	0.67
A2-44A	A2-44A	MH-A2-25	70.66	70.66	1.29	20.71	0.70	3.48	0.35	0.41	2.00
A2-44B	A2-44B	MH-A2-34	70.37	70.36	2.49	10.46	0.20	2.59	0.69	0.79	2.00
A2-45	A2-45	MH-A2-28	69.98	69.95	4.48	10.61	0.20	3.09	0.94	1.43	2.00
A2-46	A2-46	MH-A2-28	69.98	69.95	3.65	11.54	0.20	3.08	0.81	1.16	2.00
A2-47	A2-47	A2-09	78.53	78.15	2.83	13.20	0.30	3.17	0.65	3.18	0.65
A2-48	A2-48	MH-A2-31	71.73	71.73	1.96	19.87	0.70	3.82	0.44	0.62	2.00
A2-49	A2-49	MH-A2-42	79.45	78.42	2.28	32.89	1.80	5.71	0.37	3.47	0.53
A2-50	A2-50	MH-A2-40	76.93	76.92	6.82	32.86	0.60	5.02	0.80	1.39	2.50
A2-51	A2-51	MH-A2-40	76.93	76.92	2.33	19.26	0.60	3.92	0.49	0.74	2.00
A2-52	A2-52	MH-A2-41	85.29	78.48	19.27	7.88	2.90	11.19	1.50	10.91	1.50
A2-53	A2-53	A2-57	81.67	80.18	16.42	12.74	2.10	9.53	1.50	9.29	1.50
A2-54	A2-54	MH-A2-39	77.07	77.07	2.94	18.81	0.60	4.15	0.55	1.16	1.50
A2-55	A2-55	MH-A2-39	77.07	77.07	2.28	18.53	0.60	3.81	0.49	0.90	1.50
A2-56	A2-56	MH-A2-38	77.13	77.11	5.78	16.77	0.50	4.59	0.84	2.20	1.56
A2-57	A2-57	MH-A2-36	77.47	77.24	18.87	19.21	0.60	6.44	1.76	6.01	2.00
A2-58	A2-58	MH-A2-36	77.25	77.24	3.27	18.16	0.60	4.15	0.60	1.04	2.00
JB-A2-01	JB-A2-01	MH-14	76.65	76.57	92.47	128.99	0.10	4.98	3.09	3.85	4.00
JB-A2-02	JB-A2-02	JB-A2-03	69.95	69.67	186.80	991.10	2.20	15.58	1.50	4.67	5.00
MH-14	MH-14	MH-A2-06	76.57	76.40	94.94	131.48	0.20	5.11	3.09	3.96	4.00
MH-A2-01	MH-A2-01	MH-A2-02	77.07	77.04	5.23	19.87	0.20	3.20	0.92	1.07	2.50
MH-A2-02	MH-A2-02	MH-A2-03	77.04	76.93	10.70	26.00	0.30	4.73	1.17	2.18	2.50
MH-A2-03	MH-A2-03	MH-A2-04	76.93	76.73	31.17	51.38	0.10	3.82	2.04	2.60	3.00
MH-A2-04	MH-A2-04	JB-A2-01	76.73	76.65	40.01	51.19	0.20	4.15	2.41	3.33	3.00
MH-A2-05	MH-A2-05	JB-A2-01	76.69	76.65	57.03	110.55	0.20	4.39	1.86	2.72	3.00
MH-A2-06	MH-A2-06	MH-A2-07	76.40	76.30	96.09	128.15	0.10	4.98	3.22	4.00	4.00
MH-A2-07	MH-A2-07	MH-A2-08	76.30	76.11	97.48	130.95	0.10	5.05	3.22	4.06	4.00
MH-A2-08	MH-A2-08	MH-A2-10	76.11	75.50	115.32	130.34	0.20	5.36	3.59	4.81	4.00
MH-A2-10	MH-A2-10	MH-A2-11	75.50	75.46	116.78	131.86	0.20	5.42	3.59	4.87	4.00
MH-A2-11	MH-A2-11	MH-A2-12	75.46	75.20	117.98	128.40	0.10	5.30	3.71	4.92	4.00
MH-A2-12	MH-A2-12	MH-A2-13	75.20	74.94	119.55	133.21	0.10	5.37	3.71	4.98	4.00
MH-A2-13	MH-A2-13	MH-A2-15	74.94	74.29	123.80	129.35	0.10	5.38	3.84	5.16	4.00
MH-A2-15	MH-A2-15	MH-A2-29	74.29	73.91	142.47	193.34	0.10	5.54	3.22	4.45	4.00
MH-A2-17	MH-A2-17	MH-A2-18	73.62	73.14	146.20	192.69	0.20	5.68	3.22	4.57	4.00
MH-A2-18	MH-A2-18	MH-A2-19	73.14	72.92	148.70	190.79	0.20	5.78	3.22	4.65	4.00
MH-A2-19	MH-A2-19	MH-A2-20	72.92	72.55	150.64	193.93	0.20	5.85	3.22	4.71	4.00
MH-A2-20	MH-A2-20	MH-A2-30	72.55	72.05	156.81	191.77	0.10	5.66	3.47	4.90	4.00
MH-A2-22	MH-A2-22	MH-A2-31	71.93	71.73	159.75	193.69	0.10	5.76	3.47	4.99	4.00
MH-A2-23	MH-A2-23	MH-A2-32	71.42	71.22	166.18	190.83	0.10	5.79	3.59	5.19	4.00
MH-A2-24	MH-A2-24	MH-A2-25	70.96	70.66	172.22	194.59	0.20	6.00	3.59	5.38	4.00
MH-A2-25	MH-A2-25	MH-A2-26	70.66	70.49	173.16	193.04	0.10	5.83	3.71	5.41	4.00
MH-A2-26	MH-A2-26	MH-A2-34	70.49	70.36	174.55	181.69	0.10	5.69	3.84	5.46	4.00
MH-A2-27	MH-A2-27	JB-A2-02	69.95	69.95	14.69	322.19	2.30	9.75	0.68	0.98	4.01
MH-A2-28	MH-A2-28	MH-A2-27	69.95	69.95	7.93	62.40	0.20	3.24	1.00	0.63	3.95
MH-A2-29	MH-A2-29	MH-A2-17	73.91	73.62	144.94	190.88	0.10	5.63	3.22	4.53	4.00
MH-A2-30	MH-A2-30	MH-A2-22	72.05	71.93	157.76	187.66	0.10	5.69	3.47	4.93	4.00
MH-A2-31	MH-A2-31	MH-A2-23	71.73	71.42	161.13	193.38	0.20	5.81	3.47	5.04	4.00
MH-A2-32	MH-A2-32	MH-A2-24	71.22	70.96	169.06	192.14	0.20	5.89	3.59	5.28	4.00
MH-A2-34	MH-A2-34	JB-A2-02	70.36	69.95	176.32	193.87	0.10	5.94	3.71	5.51	4.00
MH-A2-36	MH-A2-36	MH-A2-38	77.24	77.11	22.14	51.23	0.10	3.51	1.58	1.85	3.00
MH-A2-38	MH-A2-38	MH-A2-39	77.11	77.07	39.15	46.70	0.10	3.77	2.60	3.26	3.00
MH-A2-39	MH-A2-39	MH-A2-40	77.07	76.92	43.20	69.51	0.20	4.23	2.04	2.88	3.00
MH-A2-40	MH-A2-40	MH-A2-44	76.92	76.82	49.72	107.89	0.10	4.14	1.72	2.37	3.00
MH-A2-41	MH-A2-41	MH-A2-38	77.41	77.11	19.27	17.71	0.60	6.29	2.00	6.38	1.84
MH-A2-42	MH-A2-42	A2-50	78.58	77.17	2.28	53.18	4.80	8.01	0.29	3.47	0.53
MH-A2-43	MH-A2-43	MH-A2-05	76.80	76.69	49.72	108.28	0.20	4.25	1.67	2.37	3.00
MH-A2-44	MH-A2-44	MH-A2-43	76.82	76.80	49.72	102.58	0.10	4.03	1.76	2.37	3.00
A2-OUT	JB-A2-03	A2-OUT	69.67	69.64	186.80	1489.37	5.00	20.47	1.14	4.67	5.00

No.	DATE	REVISIONS	APP.

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

SURVEYED BY:
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92917
10/30/2025
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GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED 2-YR STORM SEWER HYDROLOGIC COMPUTATIONS

SHEET 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 326 OF 718	

Pen Table:ANTOINE DR.tbl
Plot Driver:P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Resource\Plot files\ANTOINE DR TCP.pltcfg Plotted on: 10/30/2025 4:29:41 PM daniel.lerma

Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Drainage\W GULF BANK\DRN PR HYDROL COMP 01.dgn

SYSTEM A3											
ID	Upstream ID	Downstream ID	US HGL (ft)	DS HGL (ft)	Discharge (cfs)	Capacity (cfs)	Slope %	Uniform		Actual	
								Velocity (ft/s)	Depth (ft)	Velocity (ft/s)	Depth (ft)
A3	A3	A3-OUT	73.32	73.22	1.86	3.18	0.70	4.00	0.57	3.72	0.61

SYSTEM A3 MAIN											
ID	Upstream ID	Downstream ID	US HGL (ft)	DS HGL (ft)	Discharge (cfs)	Capacity (cfs)	Slope %	Uniform		Actual	
								Velocity (ft/s)	Depth (ft)	Velocity (ft/s)	Depth (ft)
A3-01	A3-01	MH-A3-08	70.66	70.66	1.75	68.29	7.90	8.82	0.23	0.56	2.00
A3-02	A3-02	MH-A3-08	70.66	70.66	1.53	26.84	1.20	4.41	0.34	0.49	2.00
A3-03	A3-03	MH-A3-01	70.66	70.66	2.01	86.47	12.60	10.84	0.22	0.64	2.00
A3-04	A3-04	MH-A3-01	70.66	70.66	1.80	33.10	1.90	5.35	0.33	0.57	2.00
A3-05	A3-05	MH-A3-02	70.65	70.65	1.38	62.83	6.70	7.75	0.21	0.44	2.00
A3-06	A3-06	MH-A3-02	70.65	70.65	1.35	49.17	4.10	6.47	0.24	0.43	2.00
A3-07	A3-07	MH-A3-03	70.64	70.64	1.36	108.47	19.90	11.29	0.16	0.43	2.00
A3-08	A3-08	MH-A3-03	70.64	70.64	1.45	39.45	2.60	5.67	0.27	0.46	2.00
A3-08A	A3-08A	MH-A3-14	70.62	70.62	2.01	22.78	0.90	4.24	0.42	0.64	2.00
A3-09	A3-09	MH-A3-06	70.48	70.47	3.83	30.54	1.60	6.29	0.50	1.22	2.00
A3-09A	A3-09A	MH-A3-13	70.62	70.62	1.61	108.83	20.00	11.90	0.18	0.51	2.00
A3-09B	A3-09B	MH-A3-04	70.60	70.60	1.14	74.87	9.50	8.25	0.18	0.36	2.00
A3-10	A3-10	MH-A3-15	70.59	70.58	1.94	14.34	0.40	3.04	0.51	0.62	2.00
A3-10A	A3-10A	MH-A3-16	70.54	70.54	2.04	13.99	0.30	3.01	0.54	0.65	2.00
A3-11	A3-11	A3-13	71.10	70.95	10.98	17.88	0.50	5.65	1.19	3.50	2.00
A3-12	A3-12	MH-A3-06	70.48	70.47	4.28	30.39	1.60	6.49	0.53	1.36	2.00
A3-12A	A3-12A	MH-A3-17	70.76	70.76	2.19	28.10	1.30	5.04	0.39	0.70	2.00
A3-12B	A3-12B	MH-A3-18	70.70	70.70	1.22	54.78	5.10	6.77	0.21	0.39	2.00
A3-13	A3-13	MH-A3-05	70.95	70.51	16.11	17.63	0.50	5.93	1.61	5.13	2.00
A3-15	A3-15	MH-A3-09	70.81	70.81	2.09	42.62	3.10	6.68	0.31	0.67	2.00
A3-16	A3-16	MH-A3-09	70.81	70.81	1.21	25.80	1.10	3.99	0.31	0.39	2.00
A3-17	A3-17	MH-A3-10	71.03	71.03	1.12	34.42	2.00	4.77	0.26	0.36	2.00
A3-19	A3-19	MH-A3-11	72.21	72.19	9.06	15.33	0.40	4.80	1.16	2.88	2.00
A3-20	A3-20	JB-A3-01	73.16	72.21	2.52	5.73	5.90	9.63	0.40	4.62	0.83
A3-21	A3-21	MH-A3-12	72.31	72.30	3.43	10.94	0.20	2.96	0.79	1.09	2.00
A3-22	A3-22	A3-23	72.41	72.38	6.23	36.71	2.30	8.27	0.58	1.98	2.00
A3-23	A3-23	MH-A3-12	72.38	72.30	8.25	12.25	0.30	3.95	1.26	2.63	2.00
A3-24	A3-24	MH-A3-11	72.35	72.19	9.87	28.33	1.40	7.80	0.85	3.14	2.00
A3-25	A3-25	A3-24	77.17	72.35	7.32	3.74	3.60	9.56	1.00	9.32	1.00
JB-A3-01	JB-A3-01	A3-19	72.21	72.21	5.79	8.35	0.10	2.70	1.29	1.84	2.00
MH-A3-01	MH-A3-01	MH-A3-02	70.66	70.65	6.48	41.79	0.10	2.96	0.98	0.67	3.50
MH-A3-02	MH-A3-02	MH-A3-03	70.65	70.64	8.74	41.70	0.10	3.26	1.13	0.91	3.50
MH-A3-03	MH-A3-03	MH-A3-13	70.64	70.62	11.16	41.73	0.10	3.49	1.28	1.16	3.50
MH-A3-04	MH-A3-04	MH-A3-15	70.60	70.58	14.84	50.83	0.10	3.08	1.21	1.24	3.00
MH-A3-05	MH-A3-05	MH-A3-06	70.51	70.47	61.68	96.83	0.10	4.53	2.72	3.08	4.00
MH-A3-06	MH-A3-06	MH-A3-07	70.47	70.30	68.01	104.32	0.20	4.78	2.85	3.40	4.00
MH-A3-08	MH-A3-08	MH-A3-01	70.66	70.66	3.23	42.58	0.20	2.52	0.67	0.34	3.50
MH-A3-09	MH-A3-09	MH-A3-17	70.81	70.76	30.79	57.39	0.20	4.15	1.86	2.57	3.00
MH-A3-10	MH-A3-10	MH-A3-09	71.03	70.81	28.30	32.22	0.20	4.89	2.29	4.00	3.00
MH-A3-11	MH-A3-11	MH-A3-10	72.19	71.03	27.82	19.79	0.40	5.81	2.50	5.67	2.50
MH-A3-12	MH-A3-12	MH-A3-11	72.30	72.19	11.27	19.73	0.20	3.88	1.43	2.30	2.50
MH-A3-13	MH-A3-13	MH-A3-14	70.62	70.62	12.27	42.78	0.20	3.64	1.34	1.28	3.50
MH-A3-14	MH-A3-14	MH-A3-04	70.62	70.60	14.05	42.45	0.20	3.77	1.44	1.46	3.50
MH-A3-15	MH-A3-15	MH-A3-16	70.58	70.54	16.19	50.88	0.20	3.23	1.25	1.35	3.00
MH-A3-16	MH-A3-16	MH-A3-05	70.54	70.51	17.43	51.99	0.20	3.35	1.30	1.45	3.00
MH-A3-17	MH-A3-17	MH-A3-18	70.76	70.70	32.43	61.19	0.20	4.37	1.86	2.70	3.00
MH-A3-18	MH-A3-18	MH-A3-05	70.70	70.51	32.21	59.00	0.20	4.34	1.86	2.68	3.00
A3-OUT_MAIN	MH-A3-07	A3-OUT_MAIN	70.30	70.06	68.01	48.29	0.30	5.72	3.00	5.67	3.00

SYSTEM A4											
ID	Upstream ID	Downstream ID	US HGL (ft)	DS HGL (ft)	Discharge (cfs)	Capacity (cfs)	Slope %	Uniform		Actual	
								Velocity (ft/s)	Depth (ft)	Velocity (ft/s)	Depth (ft)
A4-01	A4-1	A4-11	71.69	62.35	1.13	29.57	18.10	11.02	0.17	3.12	0.42
A4-OUT	A4-11	A4-OUT	62.55	58.42	1.13	53.72	4.90	6.54	0.21	2.89	0.37

No.	DATE	REVISIONS	APP.

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

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10/30/2025
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GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

SURVEYED BY:
KUO & ASSOCIATES, INC.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED 2-YR STORM SEWER HYDROLOGIC COMPUTATIONS

SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 327 OF 718	

Pen Table:ANTOINE DR.tbl
Plot Driver:P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Resource\Plot files\ANTOINE DR TCP.pltcfg Plotted on: 10/30/2025 4:29:43 PMdaniel.lerma

Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Drainage\W GULF BANK\DRN PR HYDROL COMP 02.dgn

SYSTEM A2											
ID	UPSTREAM ID	DOWNSTREAM ID	LENGTH (ft)	SHAPE	#	RISE (ft)	SPAN (ft)	n	SLOPE %	UPSTREAM INVERT (ft)	DOWNSTREAM INVERT (ft)
A2-01	A2-01	A2-03	319.21	Circular	1.00	2.00	n/a	0.013	0.32	72.50	71.48
A2-01A	A2-01A	MH-A2-01	39.40	Circular	1.00	2.00	n/a	0.013	2.56	75.22	74.21
A2-02	A2-02	MH-A2-01	40.44	Circular	1.00	2.00	n/a	0.013	3.12	75.47	74.21
A2-03	A2-03	A2-03A	67.21	Circular	1.00	2.00	n/a	0.013	1.06	75.94	75.23
A2-03A	A2-03A	MH-A2-03	39.65	Circular	1.00	2.00	n/a	0.013	2.07	75.94	75.12
A2-04	A2-04	A2-04A	46.60	Circular	1.00	2.00	n/a	0.013	1.46	75.53	74.85
A2-04A	A2-04A	MH-A2-03	39.94	Circular	1.00	2.00	n/a	0.013	1.50	75.53	74.93
A2-05	A2-05	MH-A2-02	70.81	Circular	1.00	1.00	n/a	0.013	2.34	77.10	75.44
A2-06	A2-06	MH-14	8.50	Circular	1.00	2.00	n/a	0.013	0.12	70.80	70.79
A2-07	A2-07	MH-A2-05	8.54	Circular	1.00	2.00	n/a	0.013	0.23	71.02	71.00
A2-07B	A2-07B	A2-07	36.98	Circular	1.00	2.00	n/a	0.013	2.70	74.50	73.50
A2-08	A2-08	MH-A2-04	74.11	Circular	1.00	2.00	n/a	0.013	6.00	75.42	70.97
A2-09	A2-09	MH-A2-04	65.83	Circular	1.00	2.00	n/a	0.013	4.16	73.71	70.97
A2-10	A2-10	MH-A2-06	7.50	Circular	1.00	2.00	n/a	0.013	3.07	71.00	70.77
A2-10A	A2-10A	A2-06	50.74	Circular	1.00	2.00	n/a	0.013	0.06	70.83	70.80
A2-11	A2-11	MH-A2-06	60.50	Circular	1.00	2.00	n/a	0.013	2.93	72.54	70.77
A2-12	A2-12	MH-A2-07	58.78	Circular	1.00	2.00	n/a	0.013	9.77	76.45	70.71
A2-13	A2-13	A2-14	31.00	Circular	1.00	2.00	n/a	0.013	0.19	71.94	71.88
A2-14	A2-14	MH-A2-08	33.49	Circular	1.00	2.00	n/a	0.013	0.18	71.88	71.82
A2-15	A2-15	A2-16A	26.66	Circular	1.00	2.00	n/a	0.013	0.19	75.73	75.68
A2-15A	A2-15A	MH-A2-07	60.50	Circular	1.00	2.00	n/a	0.013	0.99	70.83	70.23
A2-16	A2-16	MH-A2-08	86.53	Circular	1.00	2.00	n/a	0.013	0.18	71.98	71.82
A2-17	A2-17	A2-16A	131.01	Circular	1.00	1.00	n/a	0.013	0.35	72.50	72.04
A2-18	A2-18	MH-A2-11	7.50	Circular	1.00	2.00	n/a	0.013	4.67	70.30	69.95
A2-19	A2-19	MH-A2-10	60.50	Circular	1.00	2.00	n/a	0.013	2.21	71.88	70.54
A2-20	A2-16A	A2-16	30.80	Circular	1.00	2.00	n/a	0.013	0.19	72.04	71.98
A2-21	A2-21	A2-22	45.00	Circular	1.00	2.00	n/a	0.013	0.56	70.05	69.80
A2-22	A2-22	A2-23	61.25	Circular	1.00	2.00	n/a	0.013	0.65	69.80	69.40
A2-23	A2-23	MH-A2-12	60.50	Circular	1.00	2.00	n/a	0.013	0.21	70.08	69.95
A2-24	A2-24	A2-23	24.75	Circular	1.00	2.00	n/a	0.013	2.42	70.00	69.40
A2-25	A2-25	A2-26	32.99	Circular	1.00	2.00	n/a	0.013	3.27	71.01	69.93
A2-26	A2-26	MH-A2-13	60.50	Circular	1.00	2.00	n/a	0.013	0.61	69.93	69.56
A2-27	A2-27	A2-26	34.01	Circular	1.00	2.00	n/a	0.013	2.15	70.66	69.93
A2-28	A2-28	MH-A2-15	7.50	Circular	1.00	2.00	n/a	0.013	0.13	68.45	68.44
A2-28A	A2-28A	MH-A2-29	7.50	Circular	1.00	2.00	n/a	0.013	0.53	68.45	68.41
A2-29	A2-29	A2-28	88.00	Circular	1.00	2.00	n/a	0.013	0.19	68.62	68.45
A2-30	A2-30	MH-A2-15	60.50	Circular	1.00	2.00	n/a	0.013	0.21	68.56	68.43
A2-30A	A2-30A	MH-A2-29	60.50	Circular	1.00	2.00	n/a	0.013	0.36	68.63	68.41
A2-31	A2-31	A2-30	88.00	Circular	1.00	2.00	n/a	0.013	0.19	68.73	68.56
A2-31A	A2-31A	A2-31	33.01	Circular	1.00	2.00	n/a	0.013	0.21	68.80	68.73
A2-32	A2-32	MH-A2-17	7.50	Circular	1.00	2.00	n/a	0.013	0.27	70.99	70.97
A2-33	A2-33	MH-A2-17	60.50	Circular	1.00	2.00	n/a	0.013	0.21	70.99	70.86
A2-34	A2-34	MH-A2-18	7.50	Circular	1.00	2.00	n/a	0.013	0.40	68.49	68.46
A2-35	A2-35	MH-A2-18	62.14	Circular	1.00	2.00	n/a	0.013	0.34	68.67	68.46
A2-36	A2-36	MH-A2-19	7.50	Circular	1.00	2.00	n/a	0.013	0.40	68.30	68.27
A2-36A	A2-36A	A2-38	57.50	Circular	1.00	2.00	n/a	0.013	0.35	68.81	68.61
A2-37	A2-37	MH-A2-19	60.50	Circular	1.00	2.00	n/a	0.013	0.48	68.66	68.37
A2-38	A2-38	MH-A2-20	7.50	Circular	1.00	2.00	n/a	0.013	0.53	69.70	69.66
A2-38A	A2-38A	MH-A2-30	6.30	Circular	1.00	2.00	n/a	0.013	0.95	66.46	66.40
A2-39	A2-39	MH-A2-20	60.50	Circular	1.00	2.00	n/a	0.013	0.20	69.78	69.66
A2-40	A2-40	MH-A2-23	7.32	Circular	1.00	2.00	n/a	0.013	0.27	69.02	69.00
A2-40A	A2-40A	MH-A2-32	11.70	Circular	1.00	2.00	n/a	0.013	0.26	65.96	65.93
A2-40B	A2-40B	A2-40C	36.10	Circular	1.00	2.00	n/a	0.013	1.50	66.38	65.84
A2-40C	A2-40C	MH-A2-24	7.50	Circular	1.00	2.00	n/a	0.013	0.53	65.84	65.80
A2-41	A2-41	MH-A2-22	62.50	Circular	1.00	2.00	n/a	0.013	1.92	69.09	67.89
A2-42	A2-42	MH-A2-23	60.70	Circular	1.00	2.00	n/a	0.013	0.23	68.21	68.07
A2-42A	A2-42A	MH-A2-32	56.30	Circular	1.00	2.00	n/a	0.013	0.44	66.18	65.93
A2-43	A2-43	MH-A2-27	21.45	Circular	1.00	2.00	n/a	0.013	0.14	66.90	66.87
A2-43A	A2-43A	MH-A2-26	9.80	Circular	1.00	2.00	n/a	0.013	0.10	64.86	64.85
A2-44	A2-44	MH-A2-27	63.94	Circular	1.00	2.00	n/a	0.013	1.16	69.20	68.46
A2-44A	A2-44A	MH-A2-25	56.60	Circular	1.00	2.00	n/a	0.013	0.72	65.96	65.55
A2-44B	A2-44B	MH-A2-34	59.60	Circular	1.00	2.00	n/a	0.013	0.18	64.88	64.77
A2-45	A2-45	MH-A2-28	57.82	Circular	1.00	2.00	n/a	0.013	0.19	66.32	66.21
A2-46	A2-46	MH-A2-28	88.99	Circular	1.00	2.00	n/a	0.013	0.22	66.41	66.21
A2-47	A2-47	A2-09	108.79	Circular	1.00	2.00	n/a	0.013	0.29	77.88	77.56
A2-48	A2-48	MH-A2-31	6.00	Circular	1.00	2.00	n/a	0.013	0.67	66.36	66.32
A2-49	A2-49	MH-A2-42	47.63	Circular	1.00	2.00	n/a	0.013	1.83	78.92	78.05
A2-50	A2-50	MH-A2-40	36.07	Circular	1.00	2.50	n/a	0.013	0.55	73.79	73.59
A2-51	A2-51	MH-A2-40	31.94	Circular	1.00	2.00	n/a	0.013	0.63	74.29	74.09
A2-52	A2-52	MH-A2-41	201.40	Circular	1.00	1.50	n/a	0.013	0.49	78.00	77.02
A2-53	A2-53	A2-57	59.03	Circular	1.00	1.50	n/a	0.013	1.27	79.50	78.75
A2-54	A2-54	MH-A2-39	33.49	Circular	1.00	2.00	n/a	0.013	0.60	75.57	75.37
A2-55	A2-55	MH-A2-39	34.51	Circular	1.00	2.00	n/a	0.013	0.58	75.57	75.37
A2-56	A2-56	MH-A2-38	42.14	Circular	1.00	2.00	n/a	0.013	0.47	75.57	75.37
A2-57	A2-57	MH-A2-36	32.09	Circular	1.00	2.00	n/a	0.013	0.62	75.02	74.82
A2-58	A2-58	MH-A2-36	35.92	Circular	1.00	2.00	n/a	0.013	0.56	75.02	74.82
JB-A2-01	JB-A2-01	MH-14	67.93	Box	1.00	4.00	6.00	0.015	0.15	70.38	70.28
JB-A2-02	JB-A2-02	JB-A2-03	219.50	Box	1.00	5.00	8.00	0.015	2.21	62.86	58.00
MH-14	MH-14	MH-A2-06	137.30	Box	1.00	4.00	6.00	0.015	0.15	70.28	70.07
MH-A2-01	MH-A2-01	MH-A2-02	167.71	Circular	1.00	2.50	n/a	0.013	0.20	71.72	71.38
MH-A2-02	MH-A2-02	MH-A2-03	161.34	Circular	1.00	2.50	n/a	0.013	0.35	71.38	70.82
MH-A2-03	MH-A2-03	MH-A2-04	232.92	Box	1.00	3.00	4.00	0.015	0.15	70.82	70.47
MH-A2-04	MH-A2-04	JB-A2-01	60.34	Box	1.00	3.00	4.00	0.015	0.15	70.47	70.38
MH-A2-05	MH-A2-05	JB-A2-01	65.31	Box	1.00	3.00	7.00	0.015	0.15	71.48	71.38
MH-A2-06	MH-A2-06	MH-A2-07	75.70	Box	1.00	4.00	6.00	0.015	0.15	70.07	69.96
MH-A2-07	MH-A2-07	MH-A2-08	145.00	Box	1.00	4.00	6.00	0.015	0.15	69.96	69.74
MH-A2-08	MH-A2-08	MH-A2-10	326.00	Box	1.00	4.00	6.00	0.015	0.15	69.74	69.25
MH-A2-10	MH-A2-10	MH-A2-11	26.00	Box	1.00	4.00	6.00	0.015	0.15	69.25	69.21
MH-A2-11	MH-A2-11	MH-A2-12	130.25	Box	1.00	4.00	6.00	0.015	0.15	69.21	69.02
MH-A2-12	MH-A2-12	MH-A2-13	133.75	Box	1.00	4.00	6.00	0.015	0.16	69.02	68.81
MH-A2-13	MH-A2-13	MH-A2-15	304.00	Box	1.00	4.00	6.00	0.015	0.15	68.81	68.36
MH-A2-15	MH-A2-15	MH-A2-29	277.00	Box	1.00	4.00	8.00	0.015	0.15	68.36	67.94
MH-A2-17	MH-A2-17	MH-A2-18	332.00	Box	1.00	4.00	8.00	0.015	0.15	67.64	67.14
MH-A2-18	MH-A2-18	MH-A2-19	149.00	Box	1.00	4.00	8.00	0.015	0.15	67.14	66.92
MH-A2-19	MH-A2-19	MH-A2-20	236.00	Box	1.00	4.00	8.00	0.015	0.15	66.92	66.56
MH-A2-20	MH-A2-20	MH-A2-30	301.66	Box	1.00	4.00	8.00	0.015	0.15	66.56	66.11
MH-A2-22	MH-A2-22	MH-A2-31	118.29	Box	1.00	4.00	8.00	0.015	0.15	66.01	65.83
MH-A2-23	MH-A2-23	MH-A2-32	108.32	Box	1.00	4.00	8.00	0.015	0.15	65.57	65.41
MH-A2-24	MH-A2-24	MH-A2-25	149.75	Box	1.00	4.00	8.00	0.015	0.15	65.21	64.98
MH-A2-25	MH-A2-25	MH-A2-26	86.00	Box	1.00	4.00	8.00	0.015	0.15	64.98	64.85
MH-A2-26	MH-A2-26	MH-A2-34	59.75	Box	1.00	4.00	8.00	0.015	0.13	64.85	64.77
MH-A2-27	MH-A2-27	JB-A2-02	56.90	Circular	1.00	4.50	n/a	0.013	2.32	65.94	64.62
MH-A2-28	MH-A2-28	MH-A2-27	36.79	Circular	1.00	4.00	n/a	0.013	0.16	66.00	65.94
MH-A2-29	MH-A2-29	MH-A2-17	203.00	Box	1.00	4.00	8.00	0.015	0.15	67.94	67.64
MH-A2-30	MH-A2-30	MH-A2-22	70.00	Box	1.00	4.00	8.00	0.015	0.14	66.11	66.01
MH-A2-31	MH-A2-31	MH-A2-23	171.42	Box	1.00	4.00	8.00	0.015	0.15	65.83	65.57
MH-A2-32	MH-A2-32	MH-A2-24	133.56	Box	1.00	4.00	8.00	0.015	0.15	65.41	65.21
MH-A2-34	MH-A2-34	JB-A2-02	196.79	Box	1.00	4.00	8.00	0.015	0.15	64.77	64.47
MH-A2-36	MH-A2-36	MH-A2-38	301.26	Box	1.00	3.00	4.00	0.015	0.15	72.82	72.37
MH-A2-38	MH-A2-38	MH-A2-39	32.22	Box	1.00	3.00	4.00	0.015	0.12	72.37	72.33
MH-A2-39	MH-A2-39	MH-A2-40	161.59	Box	1.00	3.00	5.00	0.015	0.15	72.33	72.09
MH-A2-40	MH-A2-40	MH-A2-44	185.16	Box	1.00	3.00	7.00	0.015	0.15	72.09	71.82
MH-A2-41	MH-A2-41	MH-A2-38	37.78	Circular	1.00	2.00	n/a	0.013	0.53	75.57	75.37
MH-A2-42	MH-A2-42	A2-50	24.92	Circular	1.00	2.00	n/a	0.013	4.77	78.05	76.86
MH-A2-43	MH-A2-43	MH-A2-05	197.43	Box	1.00	3.00	7.00	0.015	0.15	71.77	71.48
MH-A2-44	MH-A2-44	MH-A2-43	37.93	Box	1.00	3.00	7.00	0.015	0.13	71.82	71.77
A2-OUT	JB-A2-03	A2-OUT	26.00	Box	1.00	5.00	8.00	0.015	5.00	56.00	54.70

No.	DATE	REVISIONS	APP.

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

SURVEYED BY:
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92917
10/30/2025
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Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED 2-YR STORM SEWER HYDROLOGIC CONFIGURATIONS

SHEET 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 328 OF 718	

Pen Table:ANTOINE DR.tbl
Plot Driver:P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Resource\Plot files\ANTOINE DR TCP.pltcfg Plotted on: 10/30/2025 4:29:44 PM daniel.lerma

Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Drainage\W GULF BANK\DRN PR LINK SUM 01.dgn

SYSTEM A3											
ID	UPSTREAM ID	DOWNSTREAM ID	LENGTH (ft)	SHAPE	#	RISE (ft)	SPAN (ft)	n	SLOPE %	UPSTREAM INVERT (ft)	DOWNSTREAM INVERT (ft)
A3	A3	A3-OUT	69.23	Circular	1.00	1.00	n/a	0.013	0.69	72.71	72.22

SYSTEM A3 MAIN											
ID	UPSTREAM ID	DOWNSTREAM ID	LENGTH (ft)	SHAPE	#	RISE (ft)	SPAN (ft)	n	SLOPE %	UPSTREAM INVERT (ft)	DOWNSTREAM INVERT (ft)
A3-01	A3-01	MH-A3-08	8.00	Circular	1.00	2.00	n/a	0.013	7.88	66.01	65.38
A3-02	A3-02	MH-A3-08	60.00	Circular	1.00	2.00	n/a	0.013	1.22	66.11	65.38
A3-03	A3-03	MH-A3-01	8.00	Circular	1.00	2.00	n/a	0.013	12.63	66.01	65.00
A3-04	A3-04	MH-A3-01	60.00	Circular	1.00	2.00	n/a	0.013	1.85	66.11	65.00
A3-05	A3-05	MH-A3-02	7.50	Circular	1.00	2.00	n/a	0.013	6.67	65.50	65.00
A3-06	A3-06	MH-A3-02	60.50	Circular	1.00	2.00	n/a	0.013	4.08	67.47	65.00
A3-07	A3-07	MH-A3-03	7.50	Circular	1.00	2.00	n/a	0.013	19.87	65.94	64.45
A3-08	A3-08	MH-A3-03	60.50	Circular	1.00	2.00	n/a	0.013	2.63	66.04	64.45
A3-08A	A3-08A	MH-A3-14	60.50	Circular	1.00	2.00	n/a	0.013	0.88	65.73	65.20
A3-09	A3-09	MH-A3-06	48.25	Circular	1.00	2.00	n/a	0.013	1.58	66.76	66.00
A3-09A	A3-09A	MH-A3-13	7.50	Circular	1.00	2.00	n/a	0.013	20.00	65.50	64.00
A3-09B	A3-09B	MH-A3-04	7.50	Circular	1.00	2.00	n/a	0.013	9.47	64.96	64.25
A3-10	A3-10	MH-A3-15	60.50	Circular	1.00	2.00	n/a	0.013	0.35	64.21	64.00
A3-10A	A3-10A	MH-A3-16	60.50	Circular	1.00	2.00	n/a	0.013	0.33	64.20	64.00
A3-11	A3-11	A3-13	62.96	Circular	1.00	2.00	n/a	0.013	0.54	67.42	67.08
A3-12	A3-12	MH-A3-06	14.75	Circular	1.00	2.00	n/a	0.013	1.56	66.63	66.40
A3-12A	A3-12A	MH-A3-17	7.50	Circular	1.00	2.00	n/a	0.013	1.33	64.22	64.12
A3-12B	A3-12B	MH-A3-18	7.50	Circular	1.00	2.00	n/a	0.013	5.07	64.50	64.12
A3-13	A3-13	MH-A3-05	87.69	Circular	1.00	2.00	n/a	0.013	0.52	66.72	66.26
A3-15	A3-15	MH-A3-09	7.50	Circular	1.00	2.00	n/a	0.013	3.07	65.23	65.00
A3-16	A3-16	MH-A3-09	60.50	Circular	1.00	2.00	n/a	0.013	1.12	66.65	65.97
A3-17	A3-17	MH-A3-10	7.50	Circular	1.00	2.00	n/a	0.013	2.00	64.34	64.19
A3-19	A3-19	MH-A3-11	7.56	Circular	1.00	2.00	n/a	0.013	0.40	65.53	65.50
A3-20	A3-20	JB-A3-01	71.88	Circular	1.00	0.83	n/a	0.013	5.91	71.25	67.00
A3-21	A3-21	MH-A3-12	44.53	Circular	1.00	2.00	n/a	0.013	0.20	67.11	67.02
A3-22	A3-22	A3-23	47.47	Circular	1.00	2.00	n/a	0.013	2.28	68.24	67.16
A3-23	A3-23	MH-A3-12	55.25	Circular	1.00	2.00	n/a	0.013	0.25	67.16	67.02
A3-24	A3-24	MH-A3-11	82.62	Circular	1.00	2.00	n/a	0.013	1.36	66.62	65.50
A3-25	A3-25	A3-24	114.21	Circular	1.00	1.00	n/a	0.013	0.95	68.20	67.11
JB-A3-01	JB-A3-01	A3-19	8.50	Circular	1.00	2.00	n/a	0.013	0.12	65.51	65.50
MH-A3-01	MH-A3-01	MH-A3-02	114.00	Circular	1.00	3.50	n/a	0.013	0.15	64.54	64.37
MH-A3-02	MH-A3-02	MH-A3-03	128.00	Circular	1.00	3.50	n/a	0.013	0.15	64.37	64.18
MH-A3-03	MH-A3-03	MH-A3-13	148.00	Circular	1.00	3.50	n/a	0.013	0.15	64.18	63.96
MH-A3-04	MH-A3-04	MH-A3-15	102.00	Box	1.00	3.00	4.00	0.015	0.15	63.79	63.64
MH-A3-05	MH-A3-05	MH-A3-06	43.50	Box	1.00	4.00	5.00	0.015	0.14	56.60	56.54
MH-A3-06	MH-A3-06	MH-A3-07	162.42	Box	1.00	4.00	5.00	0.015	0.16	56.54	56.28
MH-A3-08	MH-A3-08	MH-A3-01	168.00	Circular	1.00	3.50	n/a	0.013	0.15	64.80	64.54
MH-A3-09	MH-A3-09	MH-A3-17	64.00	Box	1.00	3.00	4.00	0.015	0.19	63.92	63.80
MH-A3-10	MH-A3-10	MH-A3-09	119.00	Circular	1.00	3.00	n/a	0.013	0.20	64.16	63.92
MH-A3-11	MH-A3-11	MH-A3-10	253.60	Circular	1.00	2.50	n/a	0.013	0.20	65.17	64.66
MH-A3-12	MH-A3-12	MH-A3-11	145.04	Circular	1.00	2.50	n/a	0.013	0.20	66.56	66.27
MH-A3-13	MH-A3-13	MH-A3-14	32.00	Circular	1.00	3.50	n/a	0.013	0.16	63.96	63.91
MH-A3-14	MH-A3-14	MH-A3-04	78.00	Circular	1.00	3.50	n/a	0.013	0.15	63.91	63.79
MH-A3-15	MH-A3-15	MH-A3-16	190.00	Box	1.00	3.00	4.00	0.015	0.15	63.64	63.36
MH-A3-16	MH-A3-16	MH-A3-05	117.00	Box	1.00	3.00	4.00	0.015	0.15	63.36	63.18
MH-A3-17	MH-A3-17	MH-A3-18	61.00	Box	1.00	3.00	4.00	0.015	0.21	63.80	63.67
MH-A3-18	MH-A3-18	MH-A3-05	217.00	Box	1.00	3.00	4.00	0.015	0.20	63.67	63.24
A3-OUT_MAIN	MH-A3-07	A3-OUT_MAIN	60.27	Box	1.00	3.00	4.00	0.015	0.13	56.28	56.20

SYSTEM A4											
ID	UPSTREAM ID	DOWNSTREAM ID	LENGTH (ft)	SHAPE	#	RISE (ft)	SPAN (ft)	n	SLOPE %	UPSTREAM INVERT (ft)	DOWNSTREAM INVERT (ft)
A4-01	A4-1	A4-11	46.20	Circular	1.00	1.25	n/a	0.013	18.11	71.27	62.18
A4-OUT	A4-11	A4-OUT	79.47	Circular	1.00	2.00	n/a	0.013	4.87	62.18	58.21

No.	DATE	REVISIONS	APP.

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TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED 2-YR STORM SEWER HYDROLOGIC CONFIGURATIONS

SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 329 OF 718	

Pen Table:ANTOINE DR.tbl
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PROP TYPE "C1" INLET A3-21
STA 158+38.29, 34.56 LT
TC EL=72.46

VICTORY DR.

PROP (4'x4') JUNCTION BOX A3-01
STA 160+07.55, 41.27 LT
TC EL= 72.40

PROP TYPE "C1" INLET A3-19
STA 160+15.80, 33.11 LT
TC EL=72.43

PROP WATER LINE
(SEE NOTE 3)

EXIST ROW

PROP 145 LF
30" RCP

PROP 43 LF 24" RCP

PROP MH STM SWR (MH-A3-12)
STA 158+70.75, 06.29 LT
TR= 72.84

PROP 182 LF 30" RCP

MATCH LINE STA 162+00

158+00

159+00

160+00

161+00

162

PROP 12 LF 24" RCP

℄ ANTOINE DR.

ANTOINE DR.

PROP MH STM SWR (MH-A3-11)
STA 160+15.17, 25.44 LT
TR= 71.91

PROP 54 LF 24" RCP

PROP SAN SWR
(SEE NOTE 3)

PROP 80 LF 24" RCP

EXIST ROW

PROP TYPE "C1" INLET A3-23
STA 159+07.55, 34.14 RT
TC EL=72.57

TIE EXIST 2-6" RCP
W/CONC COLLAR
STA 160+63.46, 53.14 RT

PROP TYPE "C1" INLET A3-24
STA 160+43.74, 52.89 RT
TC EL=71.80

EXIST ROW

TIE EXIST 18" RCP
W/CONC COLLAR
STA 159+04.41, 50.12 RT AND
STA 159+09.23, 50.15 RT

EXIST ROW

LEGEND:

- PROP STORM SEWER
- EXIST STORM SEWER
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

NOTES

REFER TO SHEET 15 OF 40 FOR DRAINAGE NOTES.

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

NOTICE:

FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS SIGNATURE DOES NOT FULFILL YOUR OBLIGATION TO CALL 811

VERIFICATION OF PRIVATE UTILITY LINES

Date

CenterPoint Energy natural gas utilities shown. (Gas service lines are not shown). This signature not be used for conflict verification.

Signature valid for six months.

Date

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Signature valid for six months.

Approved for AT&T underground conduit facilities only. Signature Date valid for one year.

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FCM ENGINEERS, P.C.
ADDRESS:
3300 S. Gessner Rd.
TEL.No.: 713-706-4412

SURVEYED BY:
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10/21/2025
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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PLAN AND PROFILE
BEGIN PROJECT TO STA 162+00

SHEET 1 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 330 718	

PROP TOC RT
PROP TOC LT
PROP TOC LT
PROP TOC RT
100 YR HGL
2 YR HGL
MATCH LINE STA 162+00
PROP 145 LF 30" RCP @ 0.20%
PROP 182 LF 30" RCP @ 0.20%
PROP WATER LINE (SEE NOTE 3)
PROP MH STM SWR (MH-A3-12)
TR EL= 72.84
30" FL= 66.56 (N)
24" FL= 67.02(SW)
24" FL= 67.02(NE)
PROP MH STM SWR (MH-A3-11)
TR EL=71.91
30" FL= 66.27(S)
30" FL= 65.17(N)
24" FL= 65.50(E)
24" FL= 65.50(W)
2' MIN CLR.
2' MIN CLR.
PROP SAN SWR (SEE NOTE 3)
74
72
70
68
66
64
62
60
58
56
158+00
159+00
160+00
161+00
162+00

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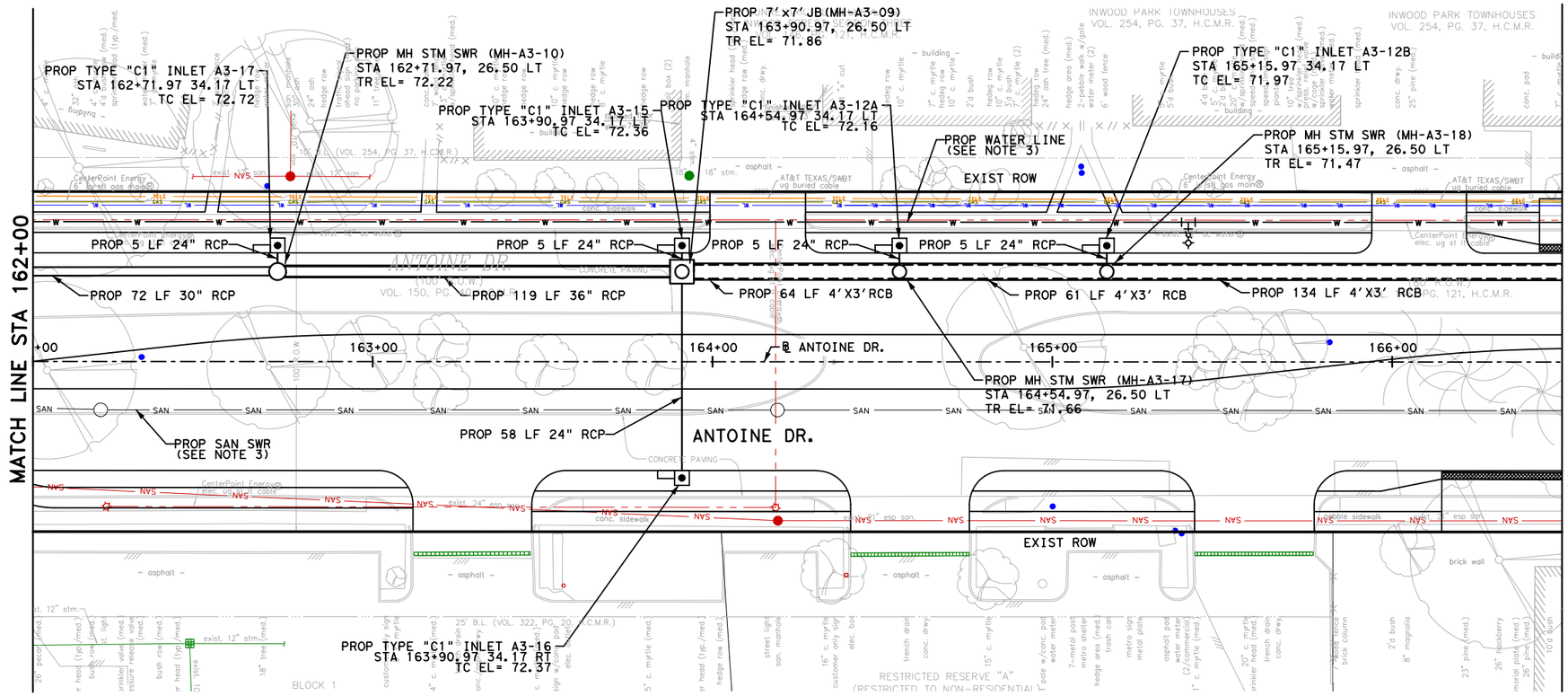

LEGEND:

- PROP STORM SEWER
- EXIST STORM SEWER
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

NOTES

REFER TO SHEET 15 OF 40 FOR DRAINAGE NOTES.

N

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PLAN AND PROFILE STA 162+00 TO STA 166+50

SHEET 2 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 718 331	

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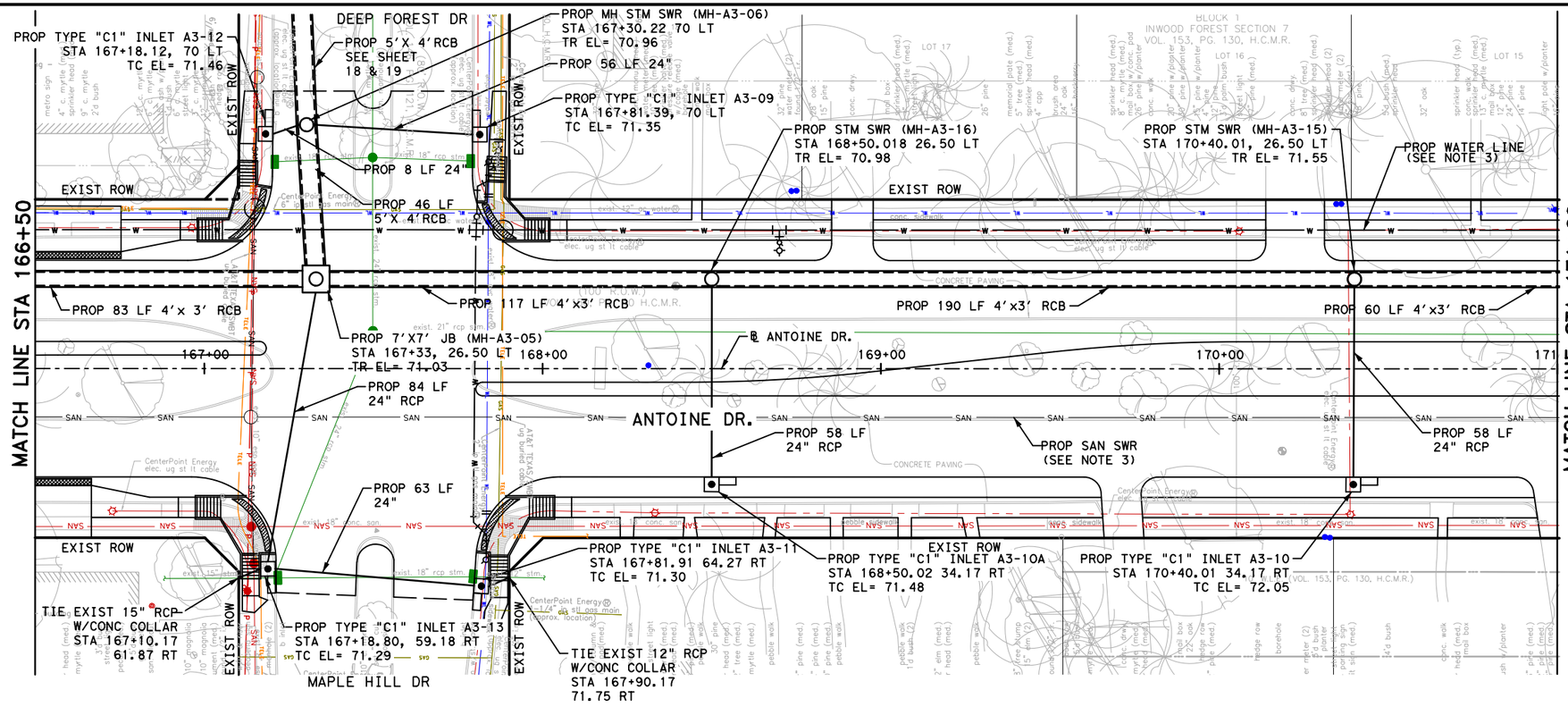


LEGEND:

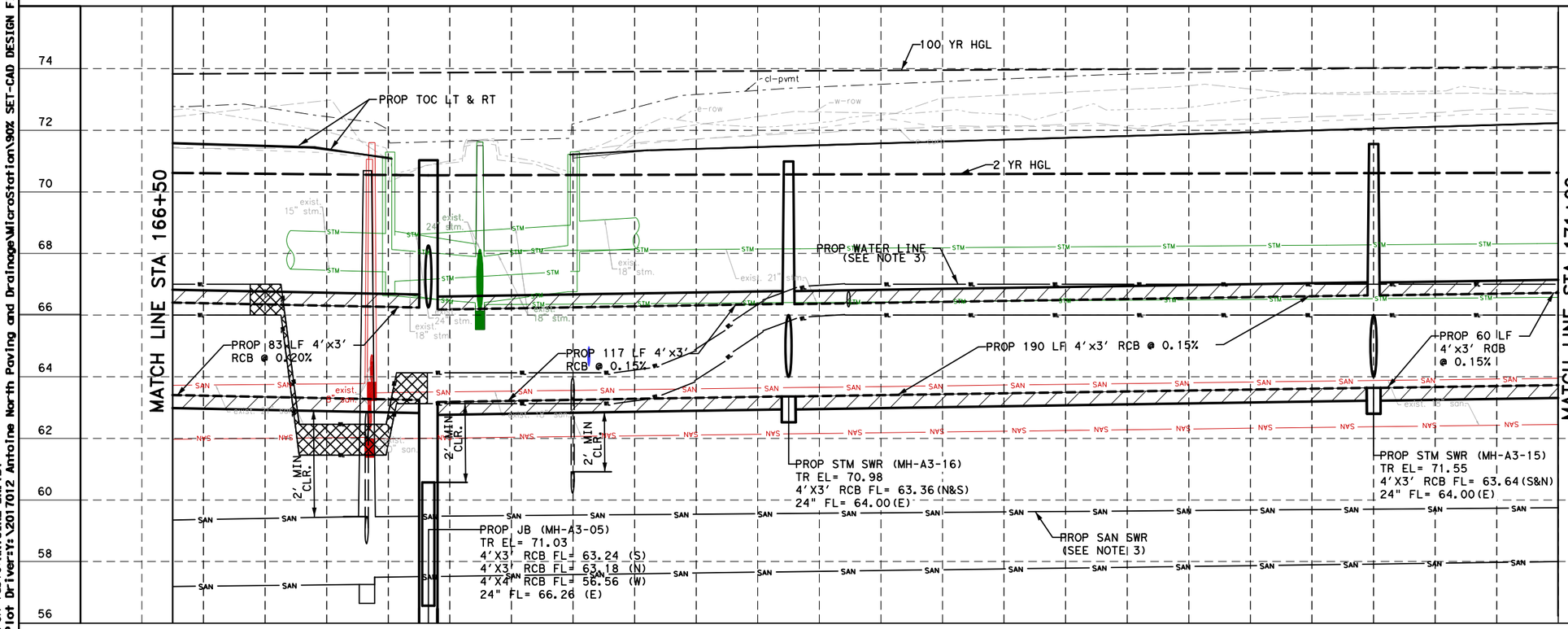
- PROP STORM SEWER
- EXIST STORM SEWER
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

NOTES

REFER TO SHEET 15 OF 40 FOR DRAINAGE NOTES.

N

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET



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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PLAN AND PROFILE STA 166+50 TO STA 171+00

SHEET 3 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-OGEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 332 718	

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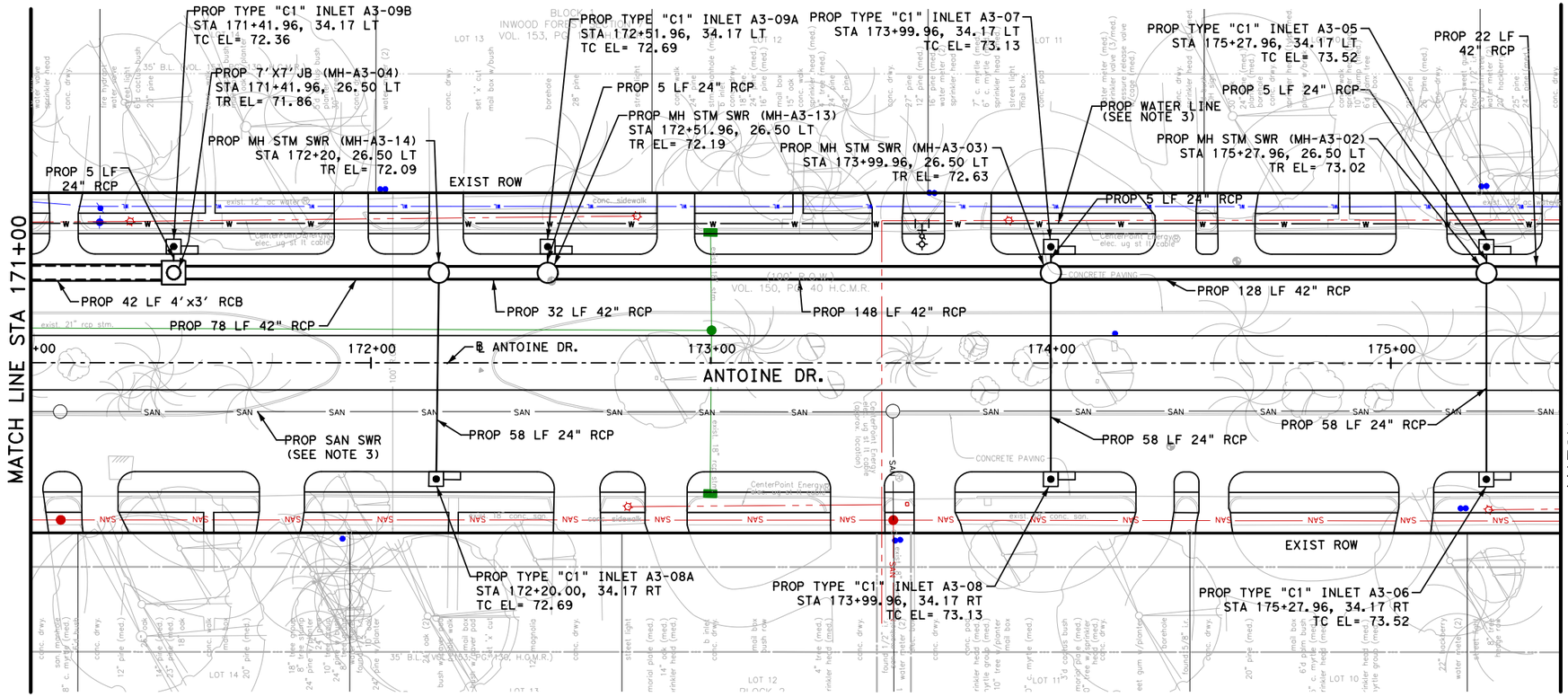


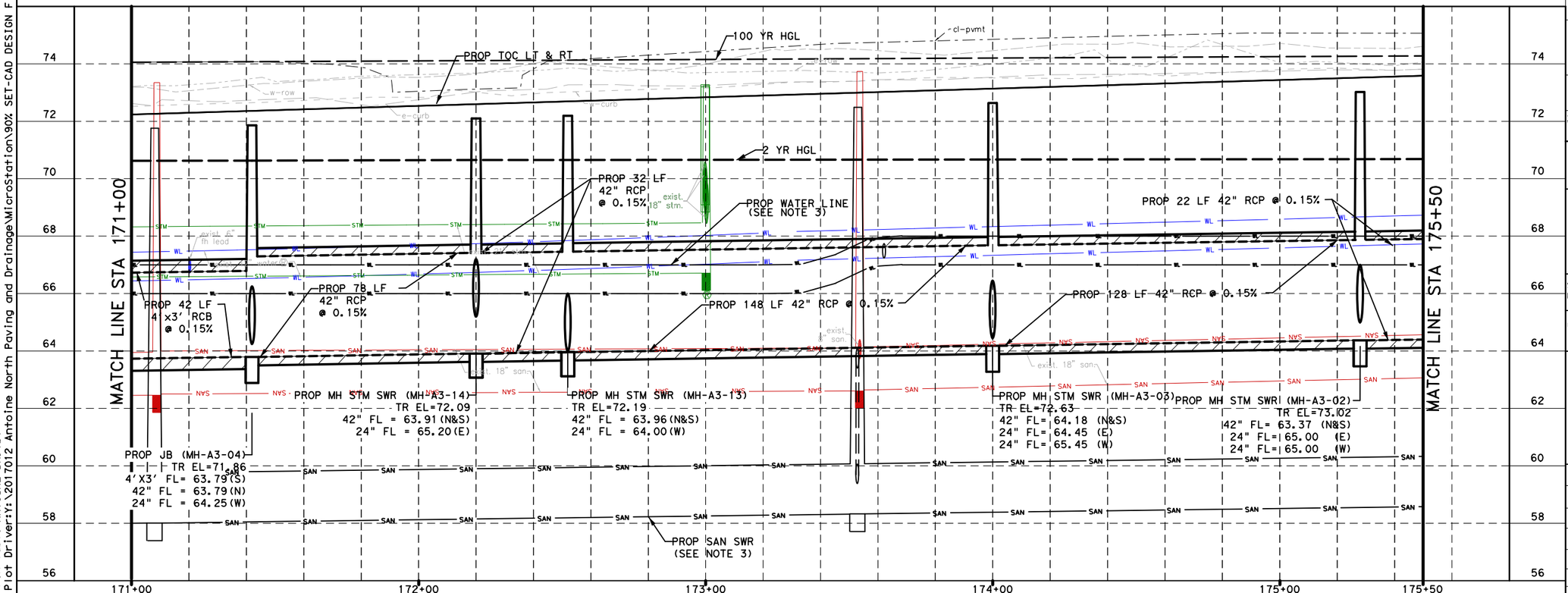
LEGEND:

- PROP STORM SEWER
- EXIST STORM SEWER
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

NOTES

REFER TO SHEET 15 OF 40 FOR DRAINAGE NOTES.

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET



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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

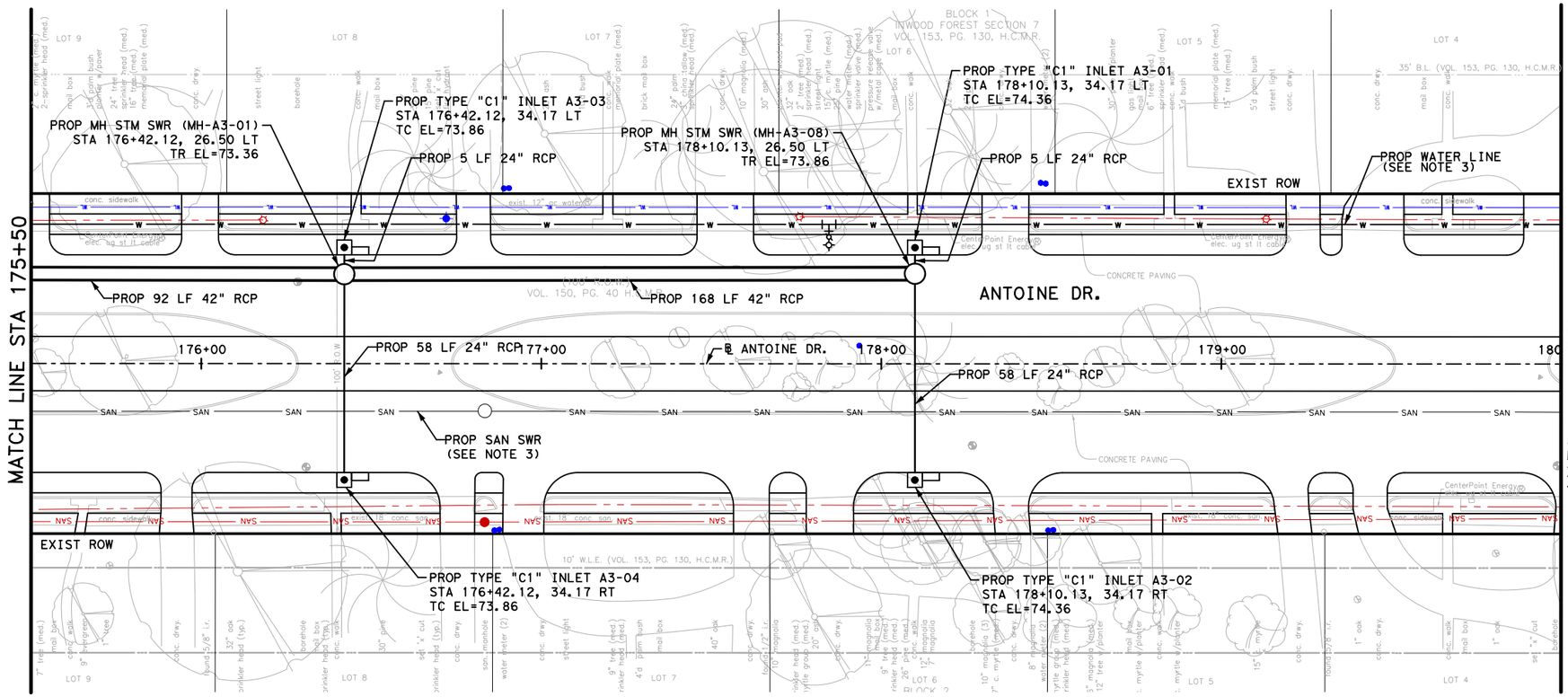
ANTOINE DRIVE

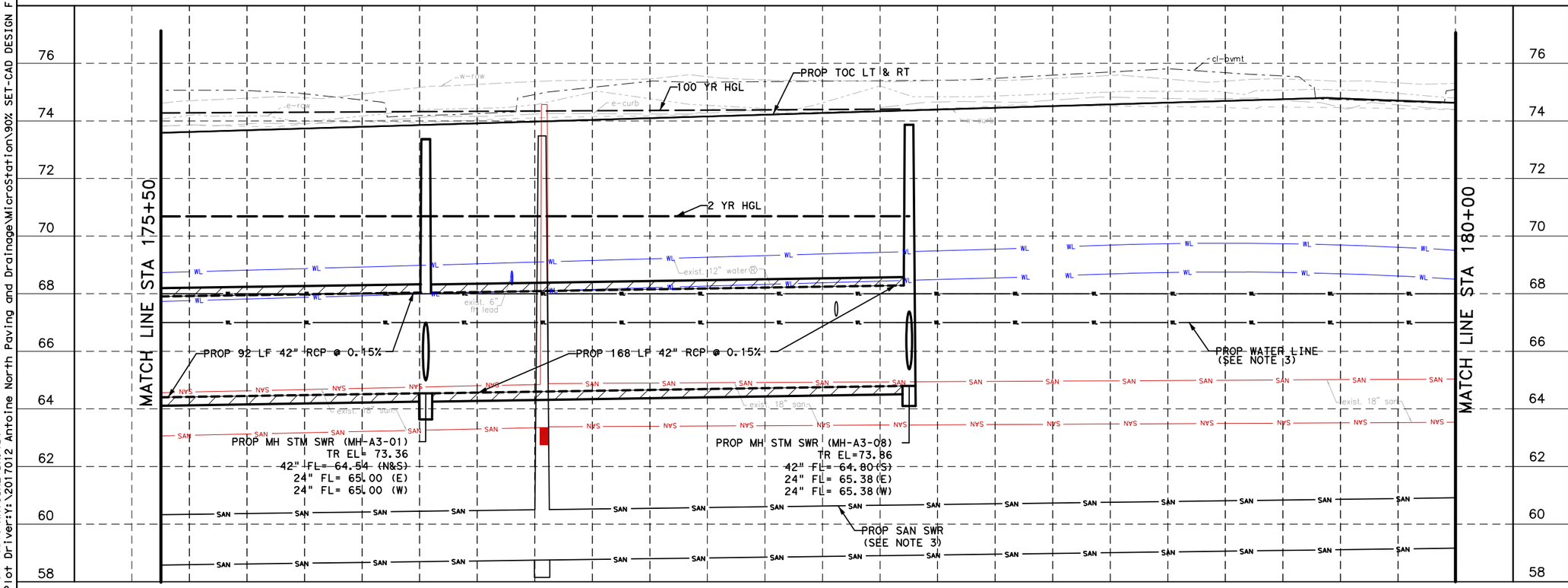
DRAINAGE PLAN AND PROFILE STA 171+00 TO STA 175+50

SHEET 4 OF 36

WBS NUMBER	N-100030-0GEC-3
DRAWING SCALE	AS NOTED
CITY OF HOUSTON PM	ROWAIDAH AYOUB
SHEET NO.	333 718

FOR CITY OF HOUSTON USE ONLY





LEGEND:

- PROP STORM SEWER
- EXIST STORM SEWER
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

NOTES

REFER TO SHEET 15 OF 40 FOR DRAINAGE NOTES.

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PLAN AND PROFILE STA 175+50 TO STA 180+00

SHEET 5 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 334 718	

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Design Filename: Y:\2017012 Antoine North Paving and Drainage\MicroStation\95% SET-CAD DESIGN FILES_03_07_2025\P&P Sheets\Storm Water\006-P&P_Antoine_STM.dgn

LONG CREEK LN.

ANTOINE DR.

MATCH LINE STA 180+00

MATCH LINE STA 184+50

PROP TYPE "C1" INLET A2-45
STA 182+50.31, 34.17 LT
TC EL=73.68

PROP WATER LINE
(SEE NOTE 3)

EXIST ROW

PROP 18 LF 24" STM SWR

PROP 57 LF 24" RCP

PROP MH STM SWR (MH-A2-28)
STA 183+02.31, 26.50 LT
TR=73.61

PROP 37 LF
48" RCP

PROP 57 LF
54" RCP

PROP 8'X5' RCB
SEE SHEET
16 & 17

PROP TYPE "C1" INLET A2-43
STA 183+55.70, 34.17 LT
TC EL= 73.87

PROP 12'X 11'
JB(A2-02)
STA 183+96, 26.50 LT
TR EL=73.55

PROP 57 LF
8'X4' RCB

℄ ANTOINE DR.

PROP SAN SWR
(SEE NOTE 3)

PROP 88 LF
24" RCP

PROP MH STM SWR (MH-A2-27)
STA 183+39.10, 26.50 LT
TR=73.54

PROP 62 LF
24" RCP

PROP TYPE "C1" INLET A2-46
STA 182+40.06 34.17 RT
TC EL=73.75

PROP GRATE INLET A2-44
STA 183+53.86 34.17 RT
TC EL=73.91

+00 181+00 182+00 183+00 184+00

LEGEND:

- PROP STORM SEWER
- EXIST STORM SEWER
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

NOTES

REFER TO SHEET 15 OF 40 FOR DRAINAGE NOTES.

N

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PLAN AND PROFILE STA 180+00 TO STA 184+50

SHEET 6 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 718	335

76 74 72 70 68 66 64 62 60 58

-cl-pvmt
PROP TOC (LT & RT)
-w-row
-e-row
-e-curb
-w-curb

100 YR HGL
2 YR HGL

PROP 37 LF 48"
STM SWR @ 0.15%

PROP 12" PVC
WATER LINE

PROP WATER LINE
(SEE NOTE 3)

PROP 57 LF
54" STM SWR

PROP 57 LF
8' x 4' RCB
@ 0.15%

2' MIN CLR.

PROP MH STM SWR
(MH-A2-28)
TR EL= 73.61
48" FL = 66.00 (N)
24" FL = 66.21 (SW)
24" FL = 66.21 (SE)

PROP MH STM SWR
(MH-A2-27)
TR EL=73.54
48" FL= 65.94 (S)
54" FL= 65.94 (N)
24" FL= 68.46 (NE)
24" FL= 66.87 (NW)

PROP 12' X 11'
JUNCTION BOX (A2-02)
TR EL= 73.55
54" FL= 62.62(S)
8'X5'RCB FL=62.86(W)
8'X4'RCB FL=64.47(N)

PROP SAN SWR
(SEE NOTE 3)

LIMITS OF PROP 12" PVC WATER LINE
W/ RESTRAINED JOINTS

180+00 181+00 182+00 183+00 184+00 184+50

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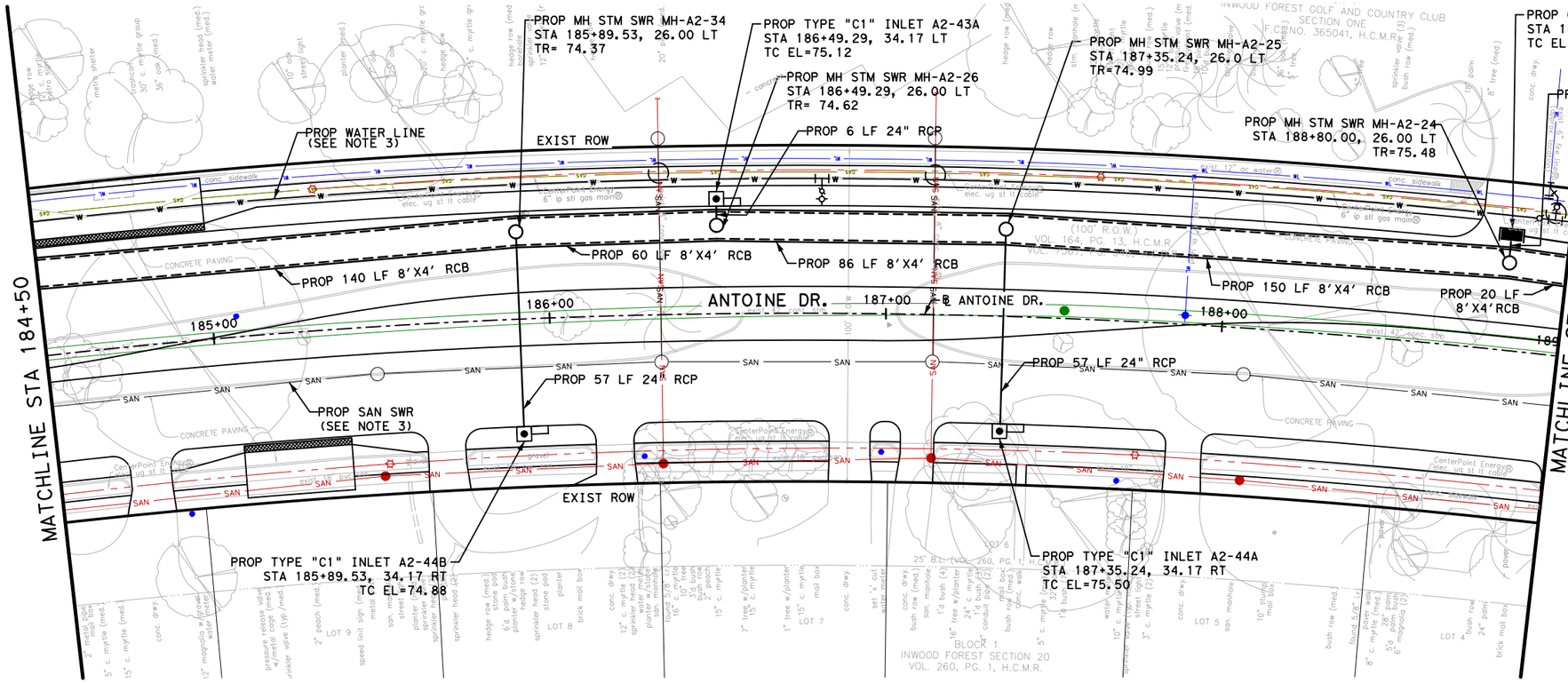

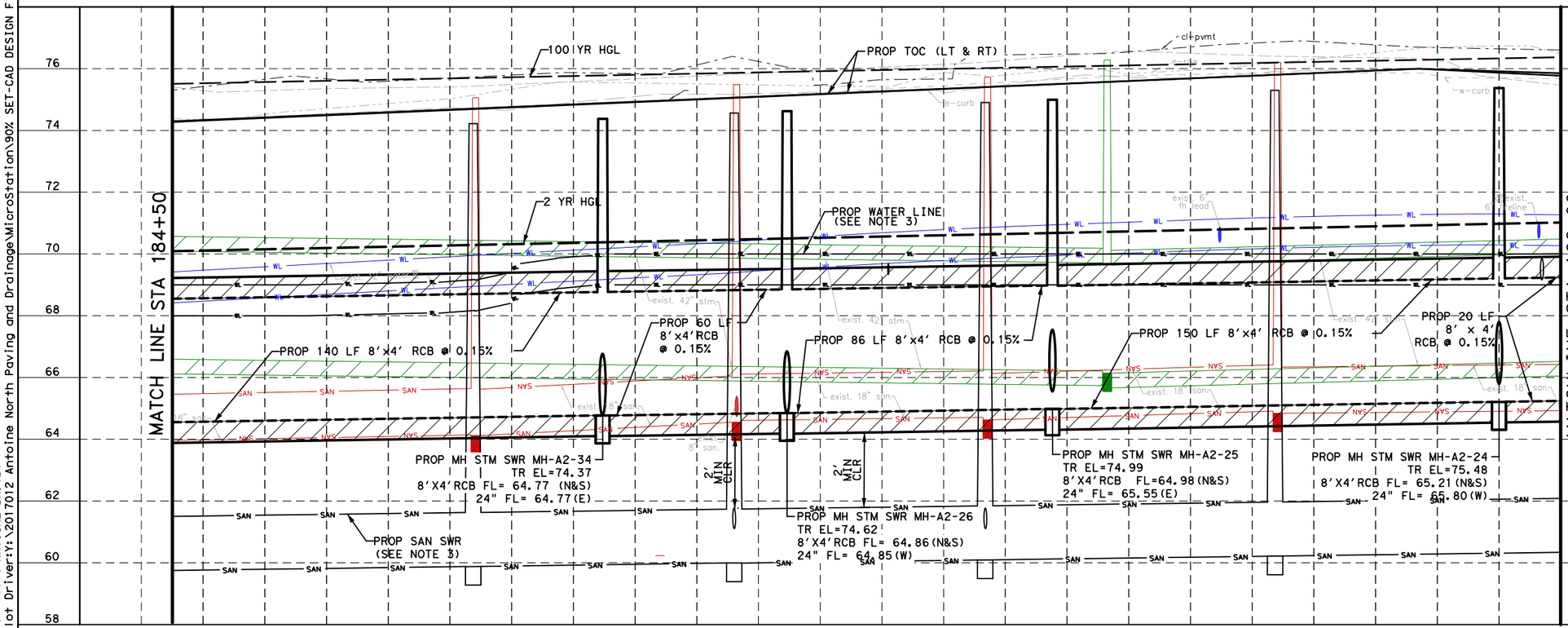

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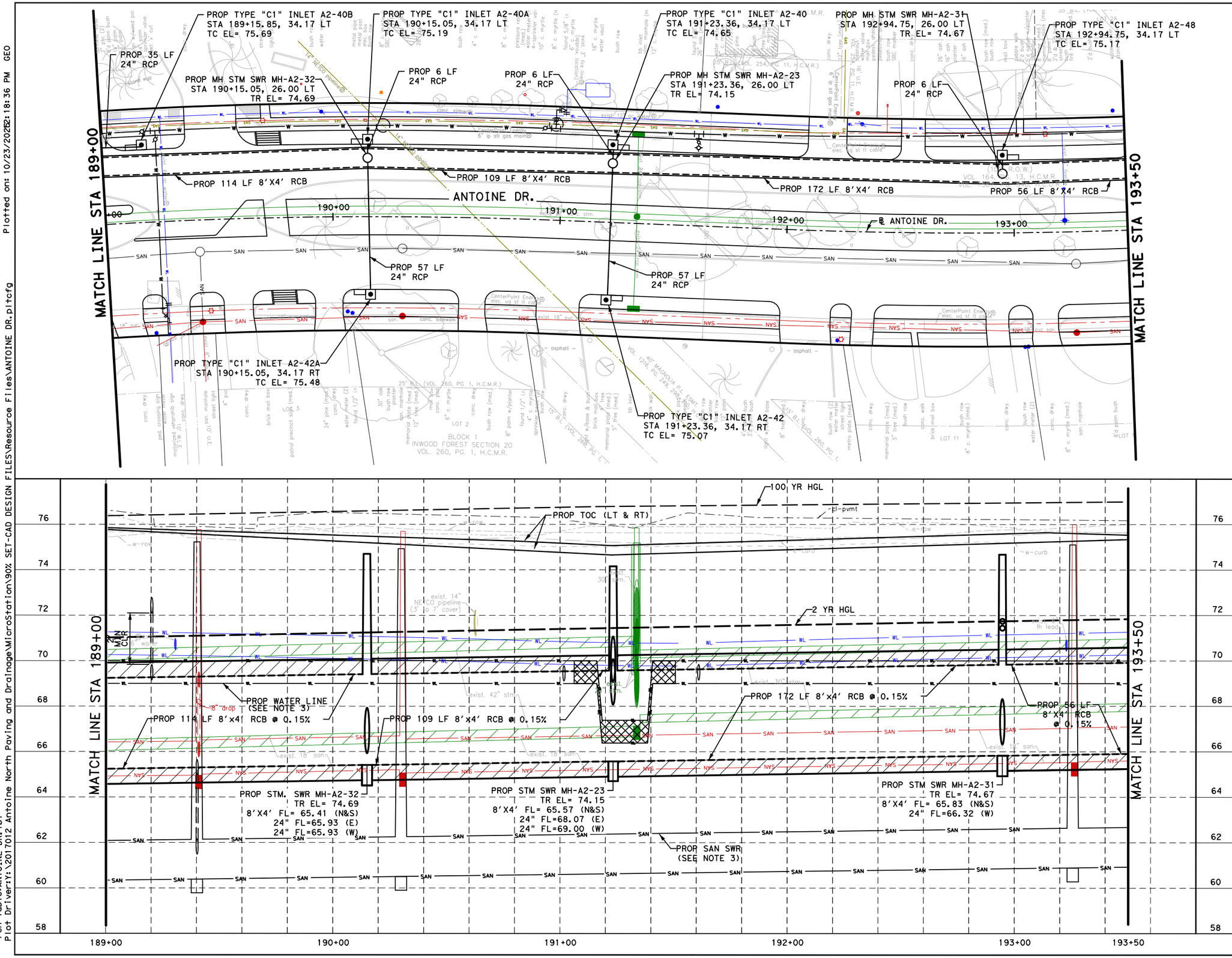
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PLAN AND PROFILE STA 184+50 TO STA 189+00

SHEET 7 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 336 718	



LEGEND:

- PROP STORM SEWER
- EXIST STORM SEWER
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

NOTES

REFER TO SHEET 15 OF 40 FOR DRAINAGE NOTES.

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

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Date

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Signature valid for six months.

Approved for AT&T underground conduit facilities only. Signature Date valid for one year.

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FCM ENGINEERS, P.C.
ADDRESS:
3300 S. Gessner Rd.
TEL.No.: 713-706-4412

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108363
10/21/2025
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FCM ENGINEERING
Texas Registered Engineering Firm F-13481

SURVEYED BY:
KUO & ASSOCIATES, INC.

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PLAN AND PROFILE STA 189+00 TO STA 193+50

SHEET 8 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-OGEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 337 718	

Plotted on: 10/23/2025 12:18:36 PM GEO

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Design Filename: Y:\2017012 Antoine North Paving and Drainage\MicroStation\95% SET-CAD DESIGN FILES_03_07_2025\P&P Sheets\Storm Water\009-P&P_Antoine_STM.dgn

MATCH LINE STA 193+50

MATCH LINE STA 198+00

PROP TYPE "C1" INLET A2-38A
STA 194+86.83 34.17 LT
TC EL=75.74

PROP MH STM SWR MH-A2-22
STA 194+17.03, 26.0 LT
TR EL= 75.03

PROP MH STM SWR MH-A2-30
STA 194+86.83, 26.00 LT
TR EL= 75.24

PROP 6 LF 24 RCP"

PROP WATER LINE
(SEE NOTE 3)

EXIST ROW

PROP TYPE "C1" INLET A2-38
STA 197+88.47 34.17 LT
TC EL=75.23

PROP 6 LF 24 RCP"

PROP MH STM SWR MH-A2-20
STA 197+88.47, 26.00 LT
TR EL= 74.73

PROP 67 LF
8'X4' RCB

PROP 70 LF 8'X4' RCB

PROP 302 LF 8'X4' RCB

PROP 11 LF
8'X4' RCB

194+00

195+00

196+00

197+00

198

℄ ANTOINE DR.

ANTOINE DR.

PROP 57 LF 24" RCP

PROP SAN SWR
(SEE NOTE 3)

PROP 57 LF
24" RCP

EXIST ROW

PROP TYPE "C1" INLET A2-41
STA 194+17.03, 34.17 RT
TC EL= 75.34

PROP TYPE "C1" INLET A2-39
STA 197+88.47, 34.17 RT
TC EL= 75.39

LEGEND:

- PROP STORM SEWER
- EXIST STORM SEWER
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

NOTES

REFER TO SHEET 15 OF 40 FOR DRAINAGE NOTES.

N

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

78 76 74 72 70 68 66 64 62 60

100 YR HGL

PROP TOC RT & LT

2 YR HGL

PROP 11 LF 8'x4 RCB @ 0.15%

PROP 302 LF 8'x4' RCB @ 0.15%

PROP WATER LINE
(SEE NOTE 3)

PROP 67 LF
8'x4' RCB
@ 0.15%

PROP 70 LF
8'x4' RCB
@ 0.15%

PROP MH STM SWR MH-A2-22
TR EL= 75.03
8'X4'RCB FL= 66.01 (N&S)
24" FL= 67.89(E)

PROP MH STM SWR MH-A2-30
TR EL= 75.24
8'X4'RCB FL= 66.11(N&S)
24" FL= 66.40 (W)

PROP MH STM SWR MH-A2-20
TR EL= 74.73
8'X4'RCB FL= 66.56 (N&S)
24" FL= 69.66 (E)
24" FL= 69.66 (W)

PROP SAN SWR
(SEE NOTE 3)

193+50 194+00 195+00 196+00 197+00 198+00

NOTICE:

FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS SIGNATURE DOES NOT FULFILL YOUR OBLIGATION TO CALL 811

VERIFICATION OF PRIVATE UTILITY LINES

Date

CenterPoint Energy natural gas utilities shown. (Gas service lines are not shown). This signature not be used for conflict verification.

Signature valid for six months.

Date

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108363
10/21/2025
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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PLAN AND PROFILE STA 193+50 TO STA 198+00

SHEET 9 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 338 718	

Plotted on: 10/23/2025 2:18:37 PM GEO
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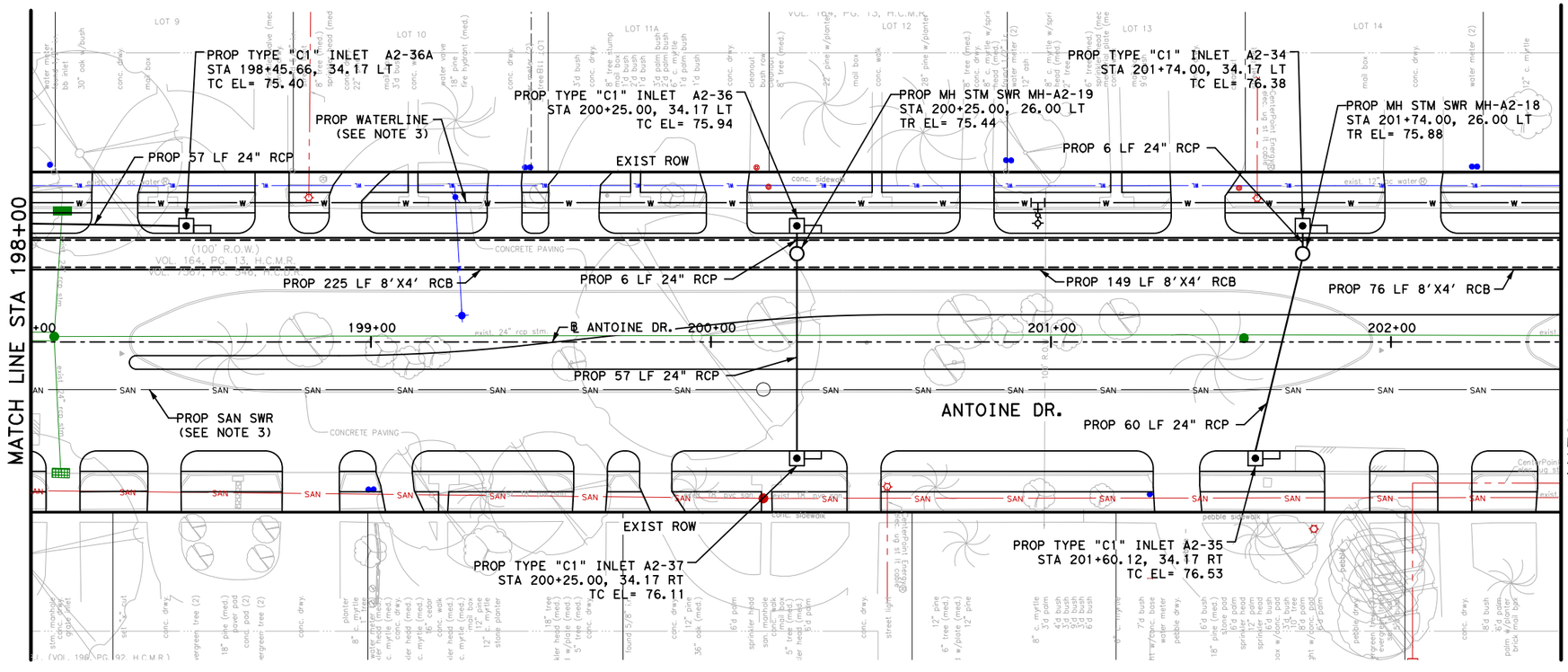

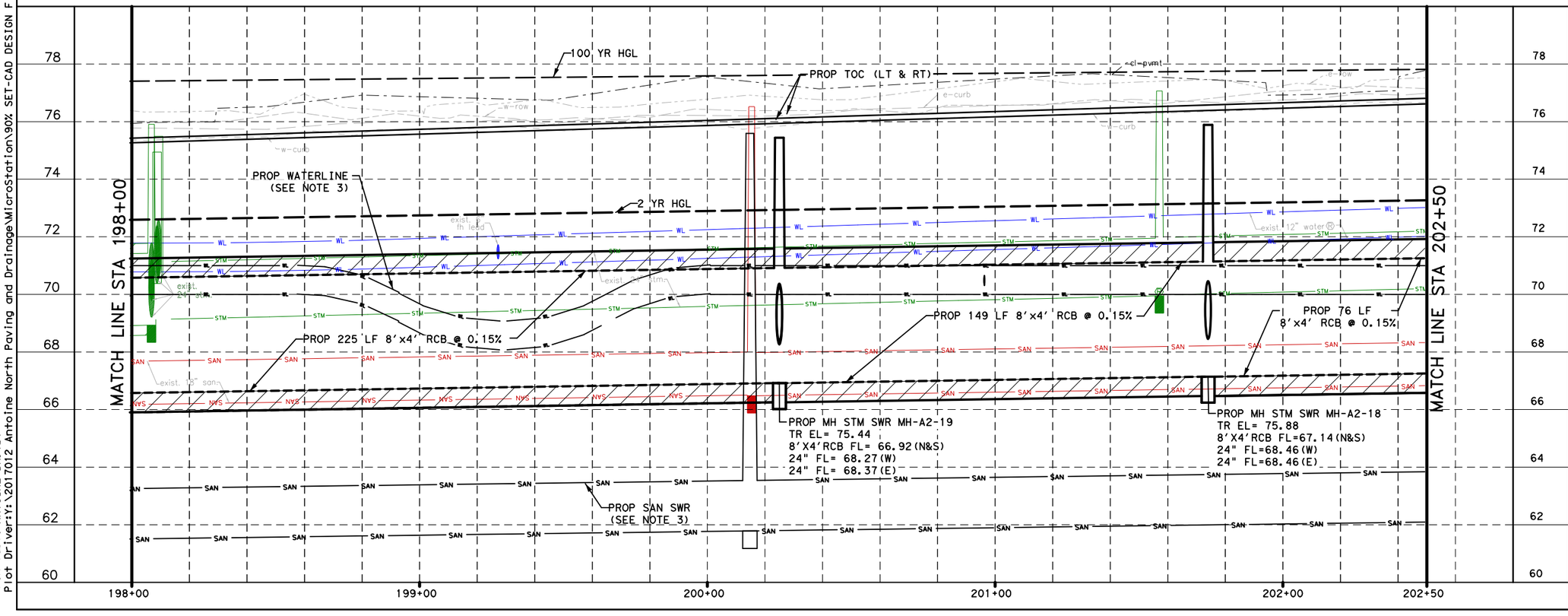

LEGEND:

- PROP STORM SEWER
- EXIST STORM SEWER
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

NOTES

REFER TO SHEET 15 OF 40 FOR DRAINAGE NOTES.

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

NOTICE:

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10/21/2025
or
95% SUBMITTAL
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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PLAN AND PROFILE STA 198+00 TO STA 202+50

SHEET 10 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 339 718	

Plotted on: 10/23/2025 2:18:37 PM GEO
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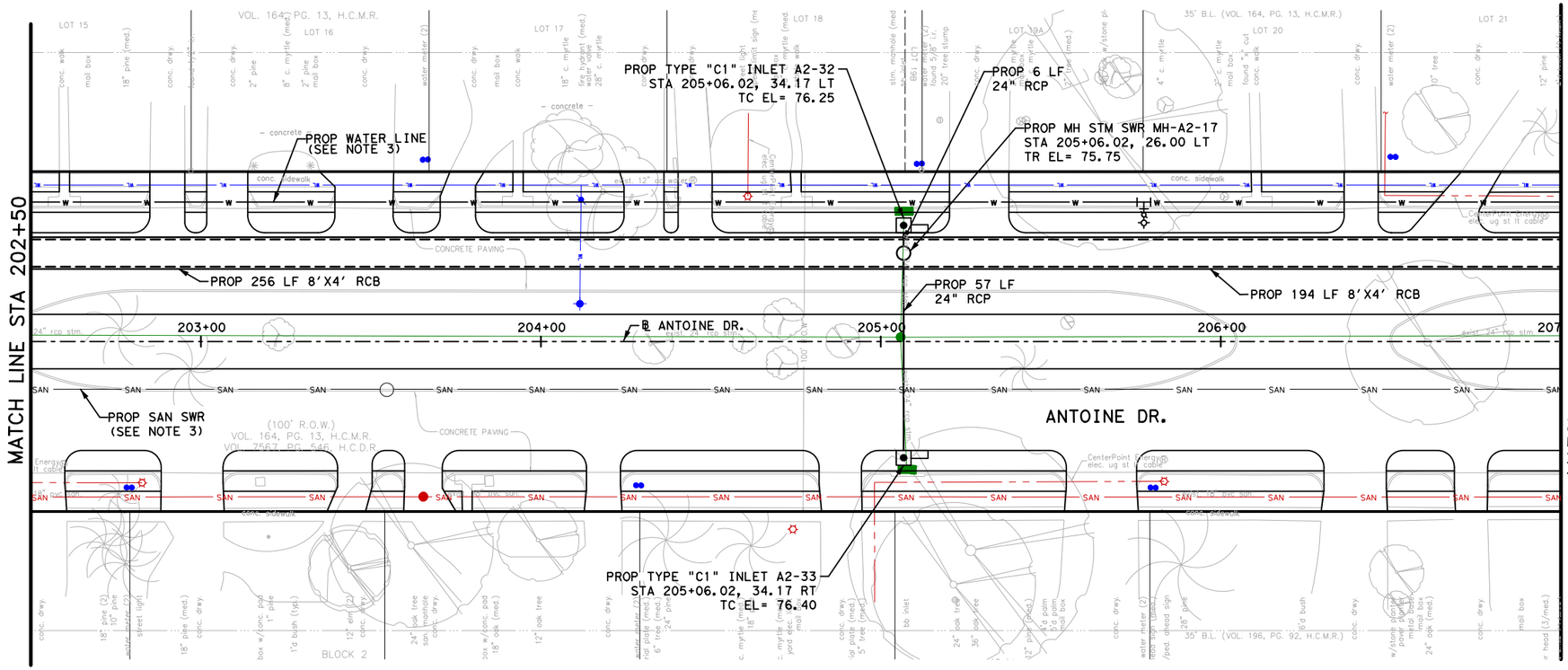

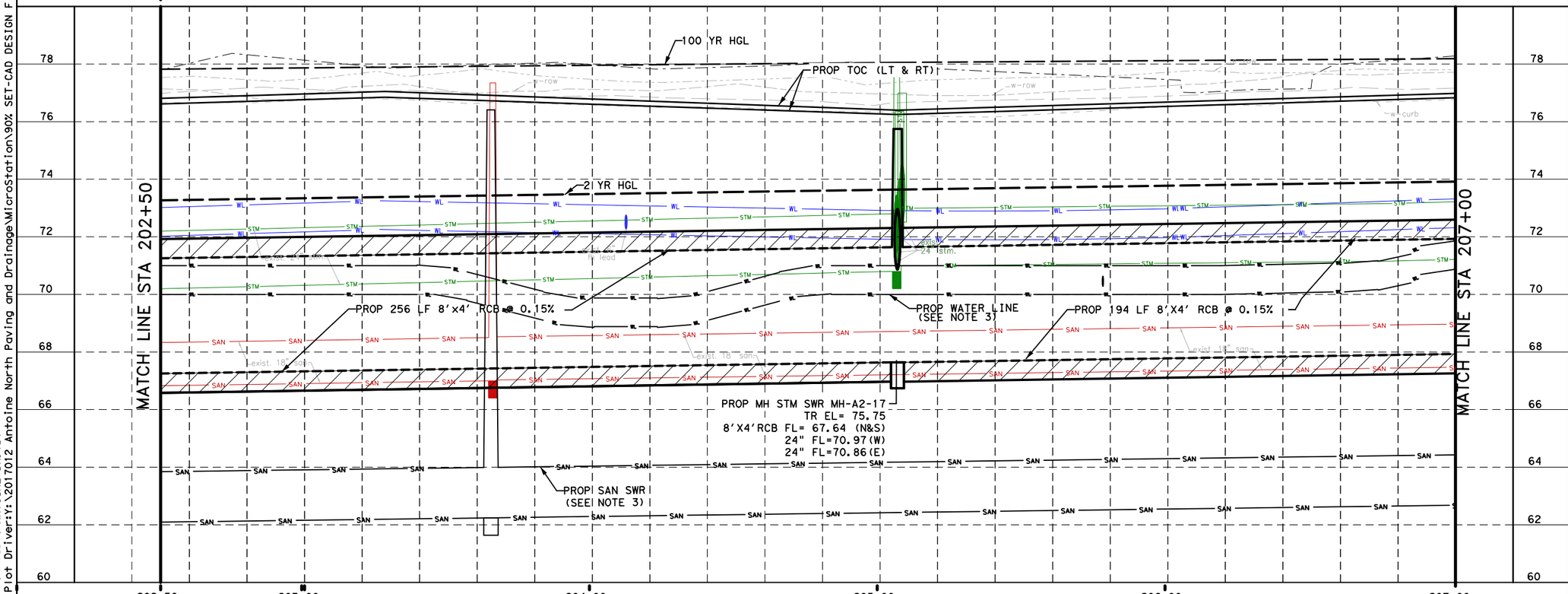

LEGEND:

- PROP STORM SEWER
- EXIST STORM SEWER
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

NOTES

REFER TO SHEET 15 OF 40 FOR DRAINAGE NOTES.

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

NOTICE:

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VERIFICATION OF PRIVATE UTILITY LINES

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Date

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PLAN AND PROFILE STA 202+50 TO STA 207+00

SHEET 11 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 340 718	

Plotted on: 10/23/2025 2:18:38 PM GEO
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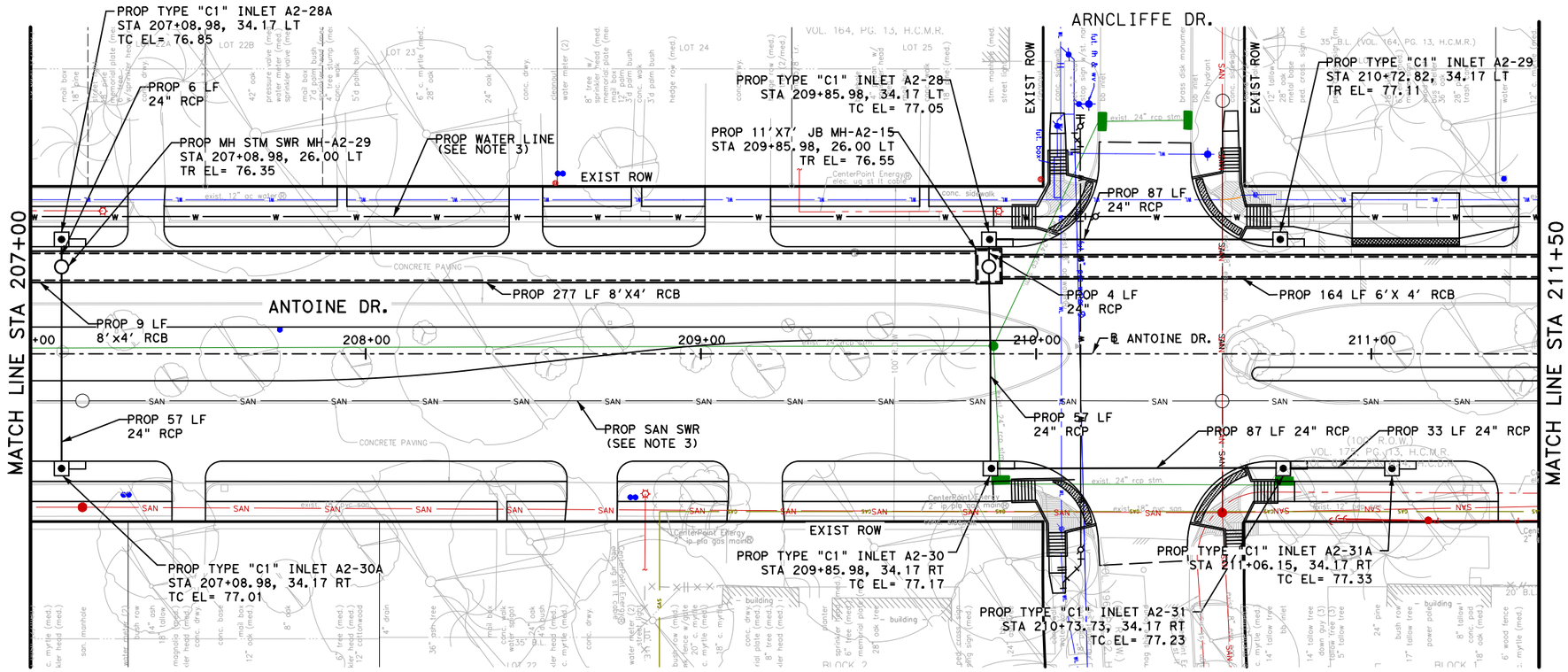

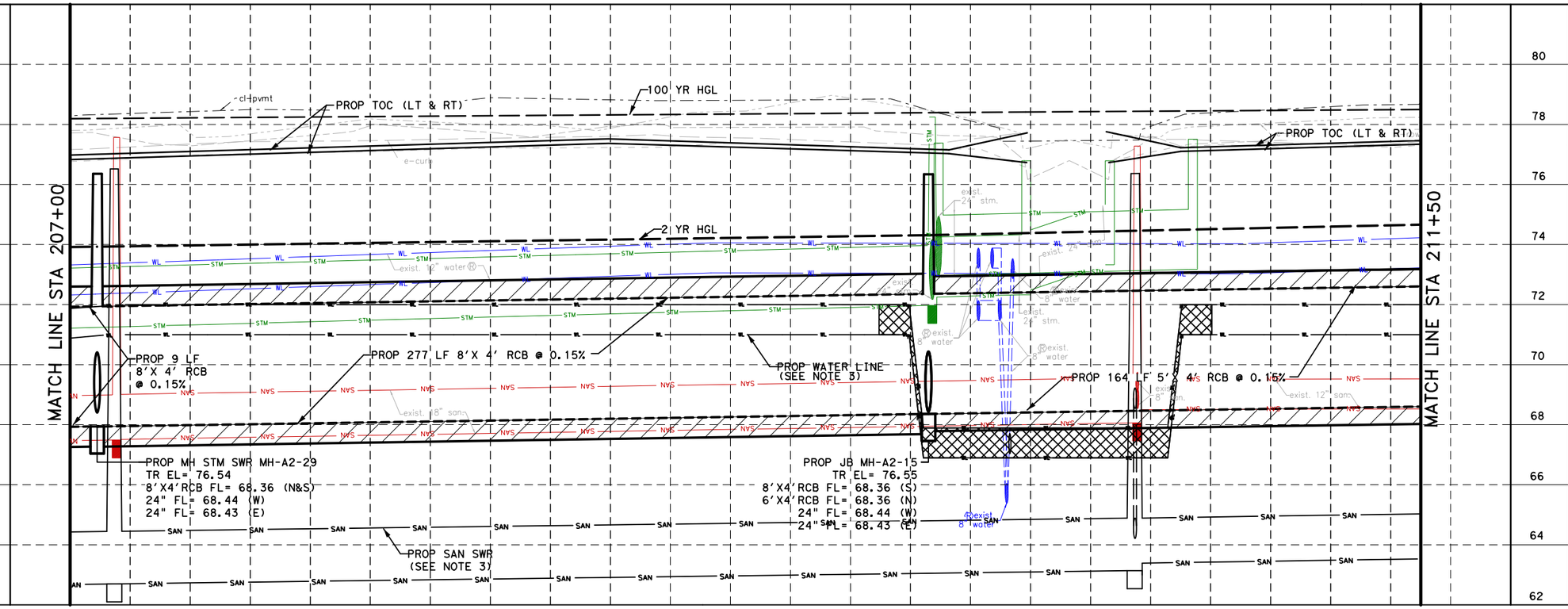

LEGEND:

- PROP STORM SEWER
- EXIST STORM SEWER
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

NOTES

REFER TO SHEET 15 OF 40 FOR DRAINAGE NOTES.

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PLAN AND PROFILE STA 207+00 TO STA 211+50

SHEET 12 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 341 718	

Plotted on: 10/23/2025 2:18:38 PM GEO
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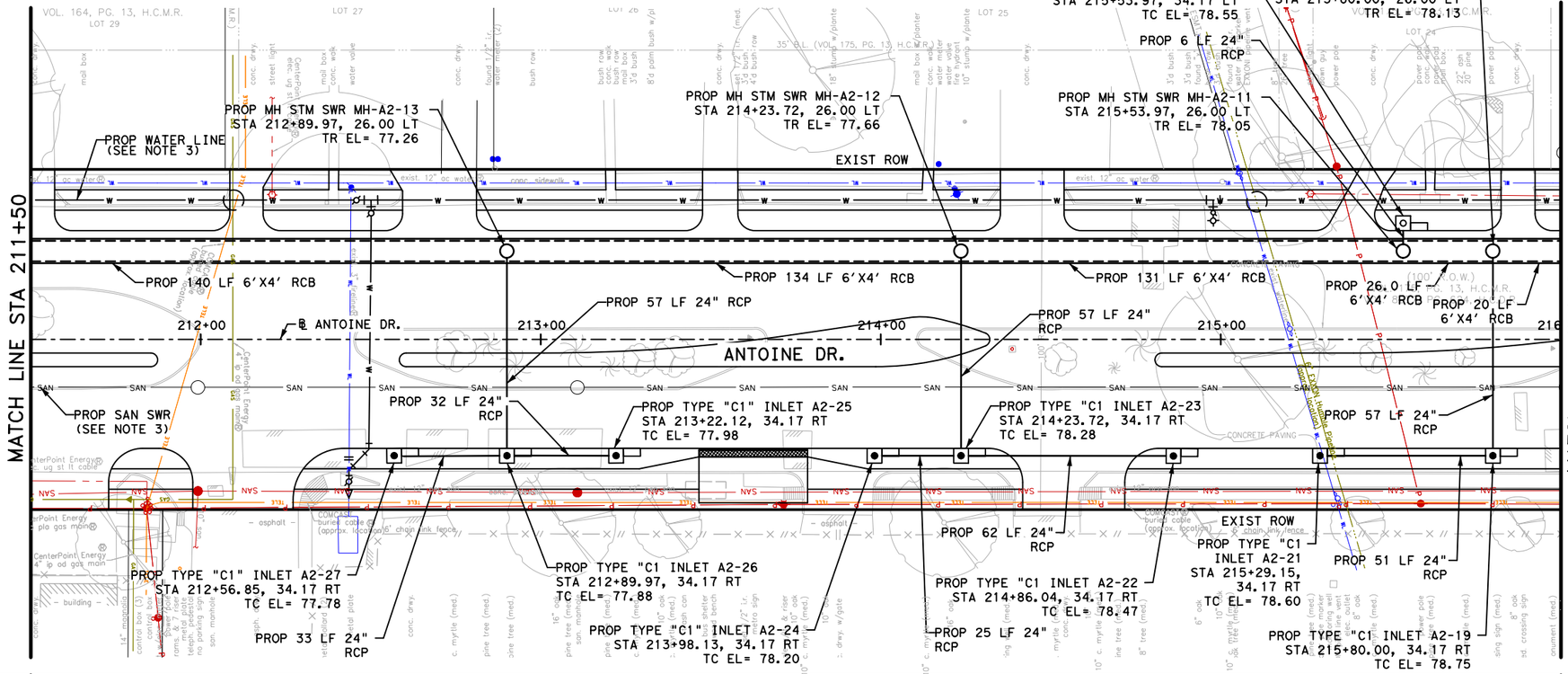

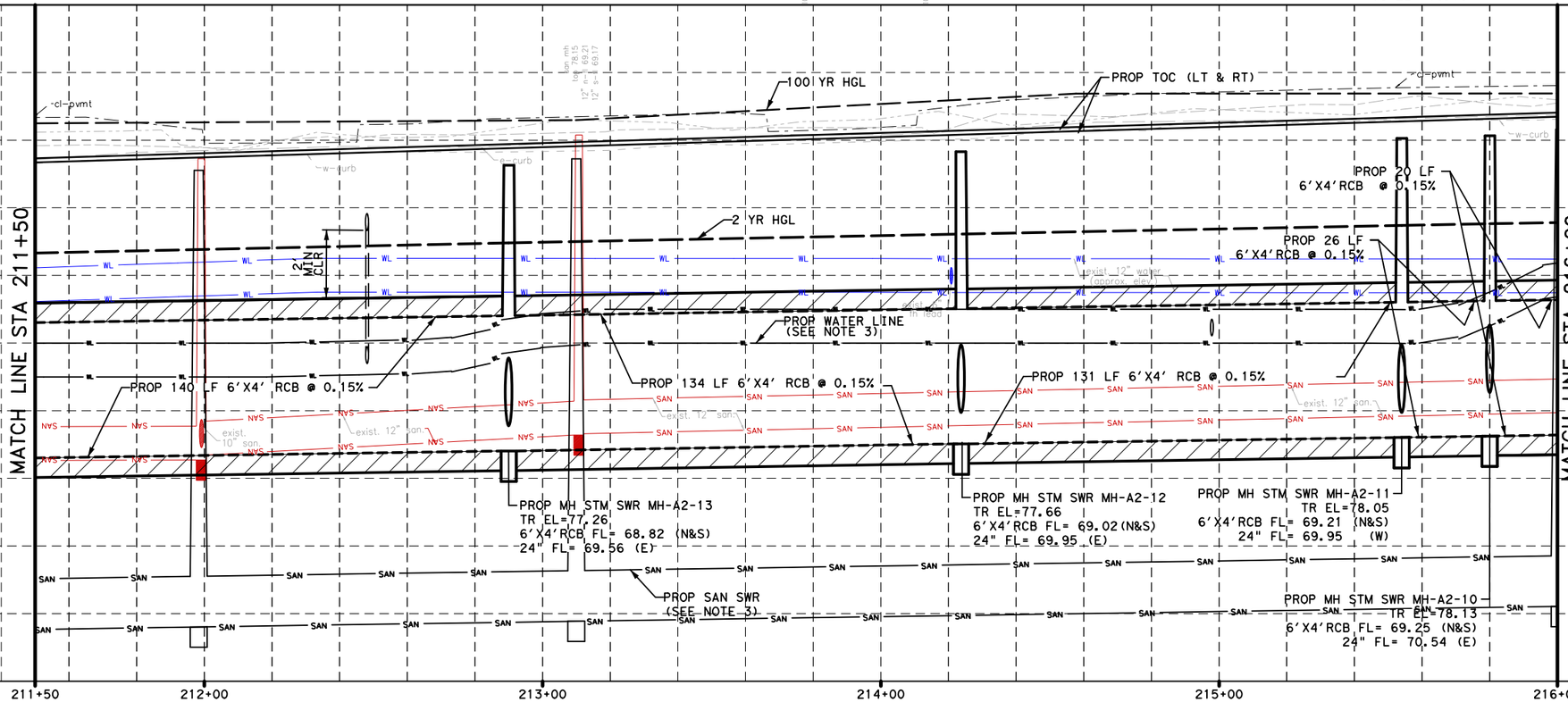

LEGEND:

- PROP STORM SEWER
- EXIST STORM SEWER
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

NOTES

REFER TO SHEET 15 OF 40 FOR DRAINAGE NOTES.

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PLAN AND PROFILE STA 211+50 TO STA 216+00

SHEET 13 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-OGEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 342 718	

Plotted on: 10/23/2025 2:18:39 PM GEO
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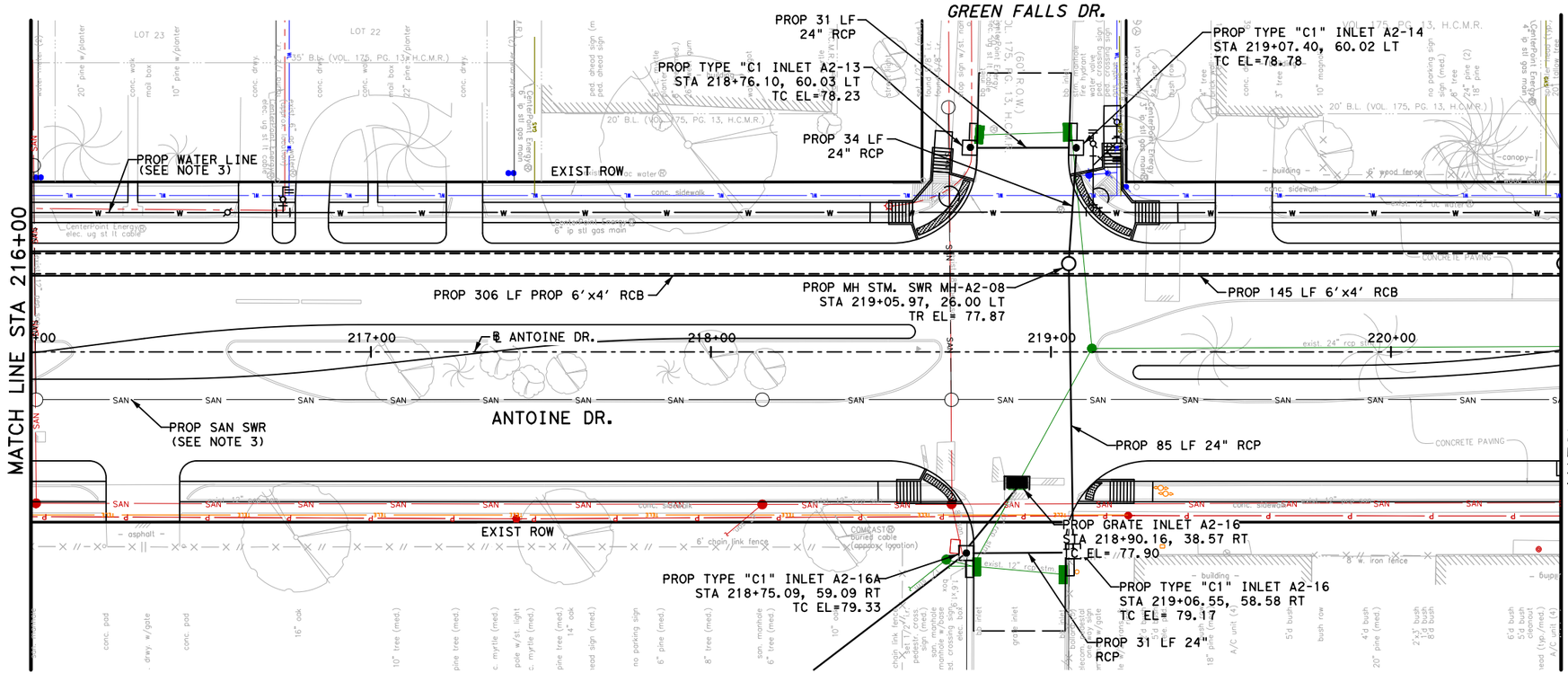

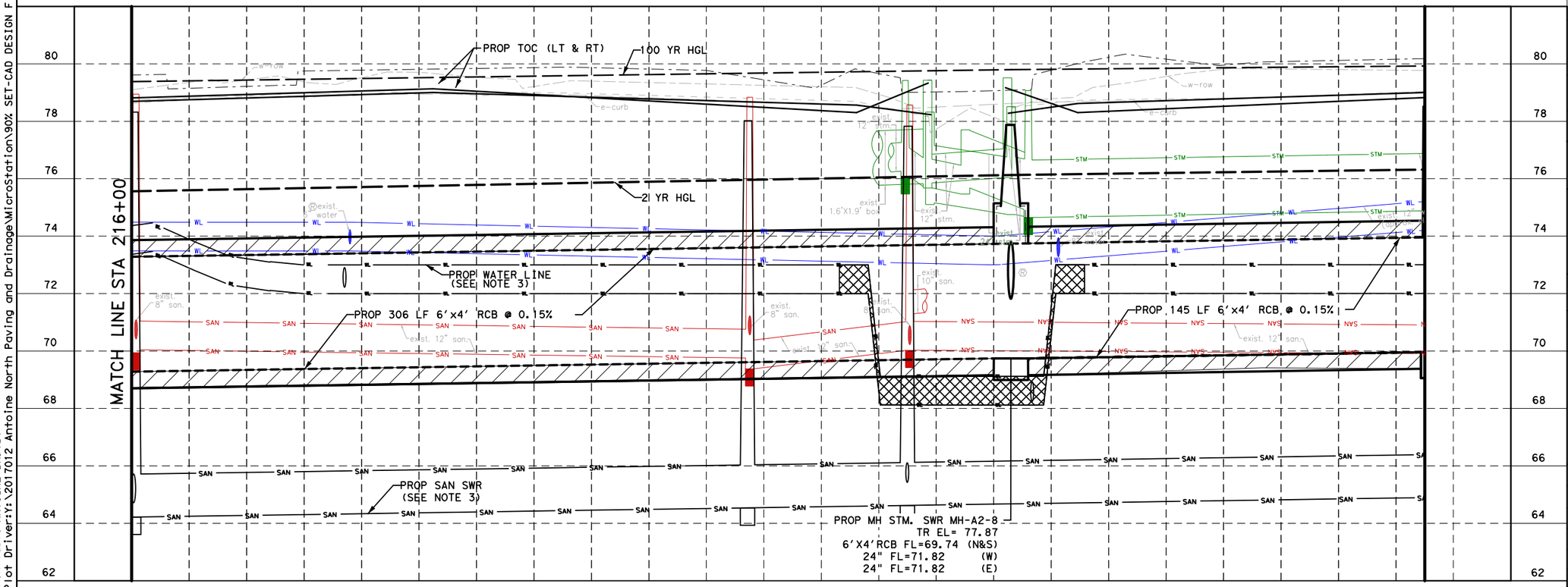

LEGEND:

- PROP STORM SEWER
- EXIST STORM SEWER
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

NOTES

REFER TO SHEET 15 OF 40 FOR DRAINAGE NOTES.

N

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PLAN AND PROFILE STA 216+00 TO STA 220+50

SHEET 14 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 343 718	

Plotted on: 10/23/2025 2:18:40 PM GEO
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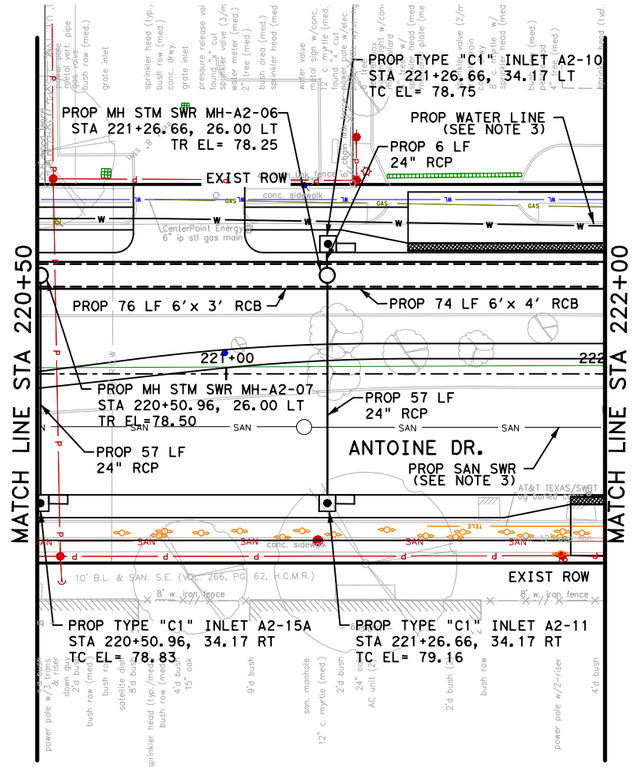

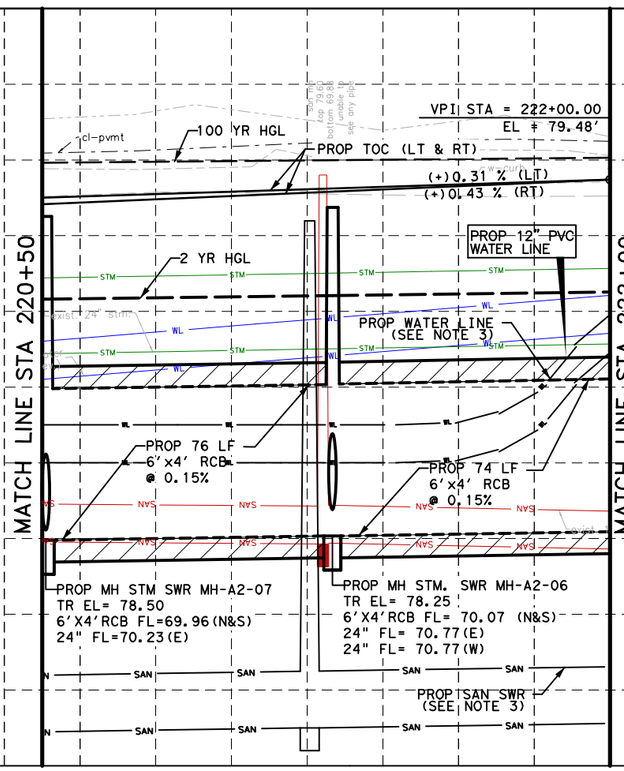

LEGEND:

- PROP STORM SEWER
- EXIST STORM SEWER
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

NOTES:

1. REFER TO LATERAL PROFILE SHEETS FOR PROPOSED FLOWLINES FOR STUB-INS
2. REFER TO ROADWAY & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
3. REFER TO WATER & SANITARY SEWER PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
4. ALL STORM SEWER ARE RCP CLASS III UNLESS OTHERWISE SPECIFIED
5. CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE DURING CONSTRUCTION AND FIELD VERIFY FLOWLINES OF ALL CONNECTIONS TO EXISTING DRIANAGE STRUCTURES.

N

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

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03/08/2024
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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

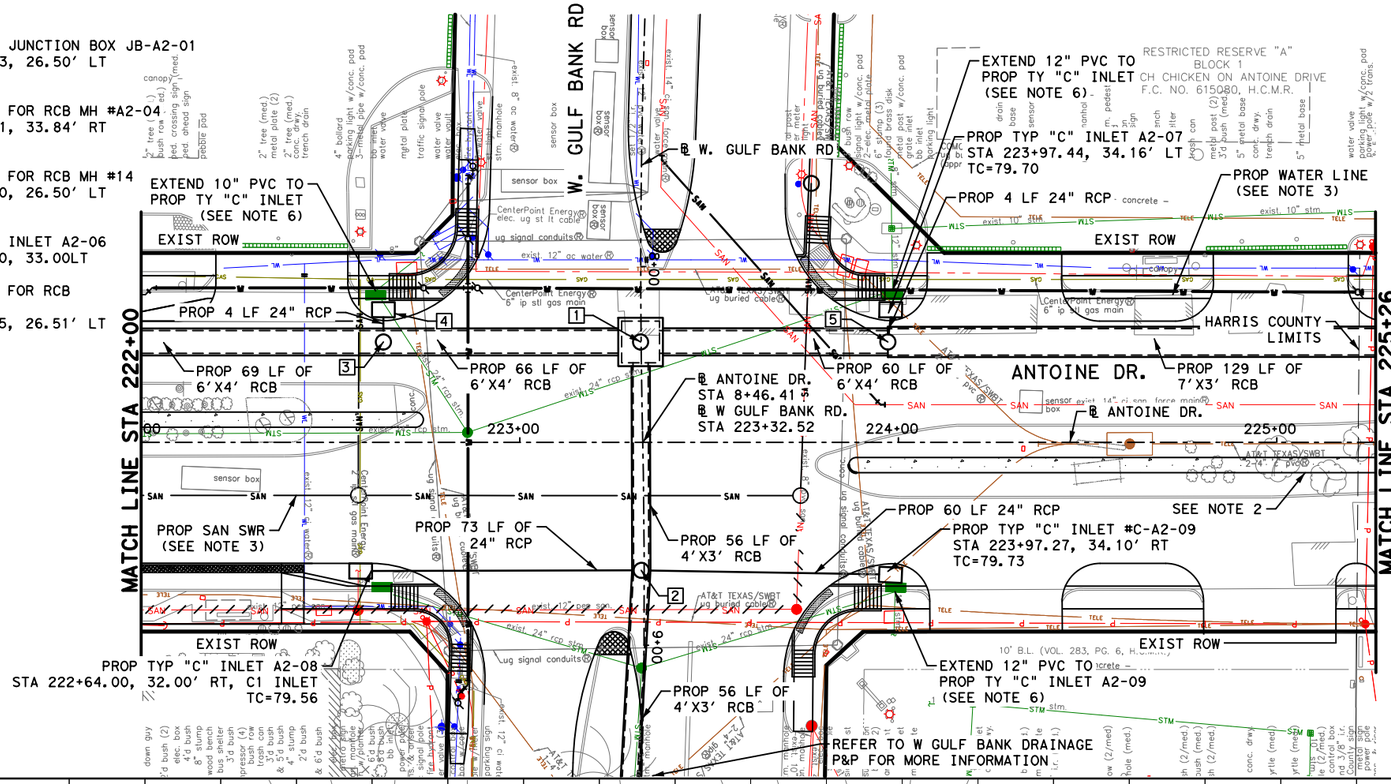
DRAINAGE PLAN AND PROFILE STA 220+50 TO END PROJECT

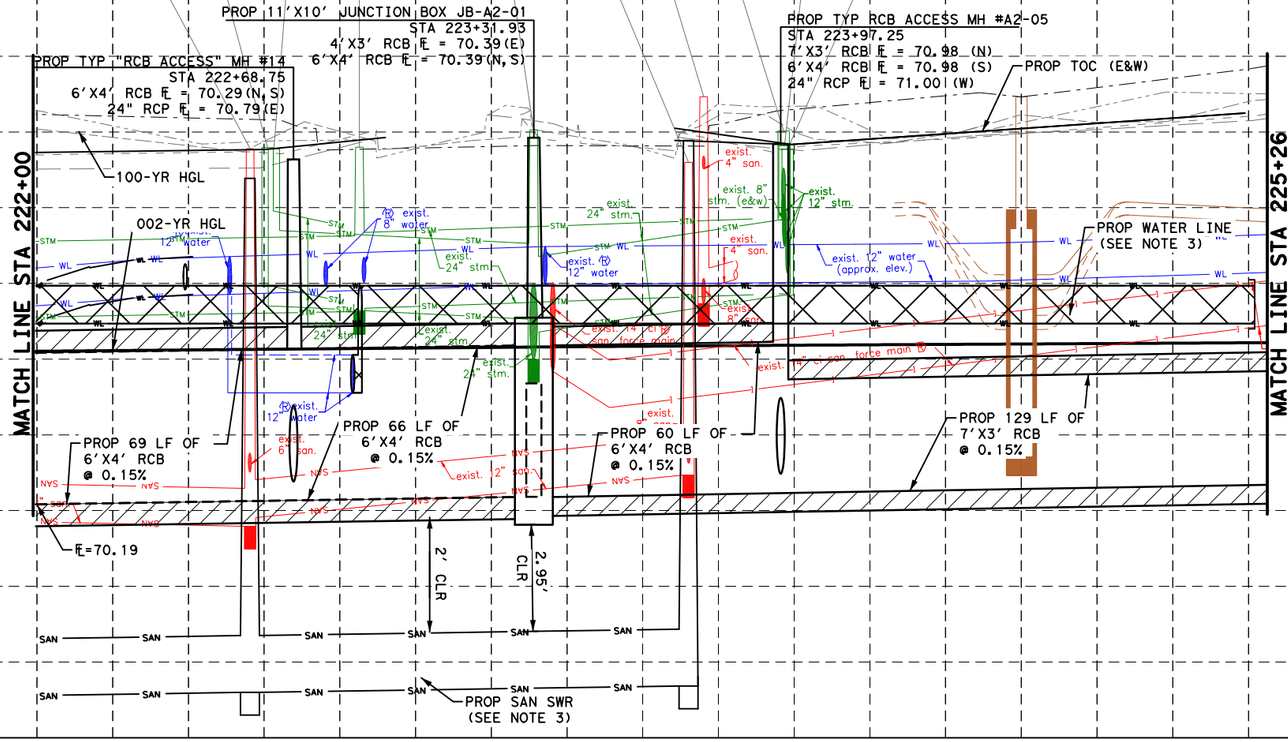
SHEET 15 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 344 718	

LABELS:

1. PROP 11'X10' JUNCTION BOX JB-A2-01
   STA 223+31.93, 26.50' LT
   TR=79.87
2. PROP TYP "C" FOR RCB MH #A2-04
   STA 223+32.11, 33.84' RT
   TR=79.77
3. PROP TYP "C" FOR RCB MH #14
   STA 222+64.00, 26.50' LT
   TR=79.30
4. PROP TYP "C" INLET A2-06
   STA 222+64.00, 33.00LT
5. PROP TYP "C" FOR RCB
   MH #A2-05
   STA 223+97.25, 26.51' LT
   TR=





LEGEND:

- PROP STORM SEWER
- PROP ROADWAY FACE OF CURB
- EXIST STORM SEWER
- EXIST CULVERT
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE
- 4" CONC RIPRAP

NOTES:

1. REFER TO LATERAL PROFILE SHEETS FOR PROPOSED FLOWLINES FOR STUB-INS
2. REFER TO ROADWAY & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
3. REFER TO WATER & SANITARY SEWER PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
4. ALL RCP ARE CLASS III UNLESS OTHERWISE SPECIFIED
5. CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE DURING CONSTRUCTION AND FIELD VERIFY FLOWLINES OF ALL CONNECTIONS TO EXISTING DRIANAGE STRUCTURES.
6. EXTENSION OF EXISTING STORM TO PROP TYP C INLET IS INCIDENTAL TO INLET CONSTRUCTION.

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

NOTICE:
FOR YOUR SAFETY,YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED.THIS SIGNATURE DOES NOT FULFILL YOUR OBLIGATION TO CALL 811

VERIFICATION OF PRIVATE UTILITY LINES

Date

CenterPoint Energy natural gas utilities shown.(Gas service lines are not shown).This signature not be used for conflict verification.

Signature valid for six months.

Date

CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY. (This signature verifies existing underground facilities - not to be used for conflict verification)

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Approved for AT&T underground conduit facilities only. Signature Date valid for one year.

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HOUSTON, TX 77079

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PLAN & PROFILE
STA 222+00 TO STA 225+26

SHEET 16 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 345 OF 718	

No.	DATE	REVISIONS	APP.

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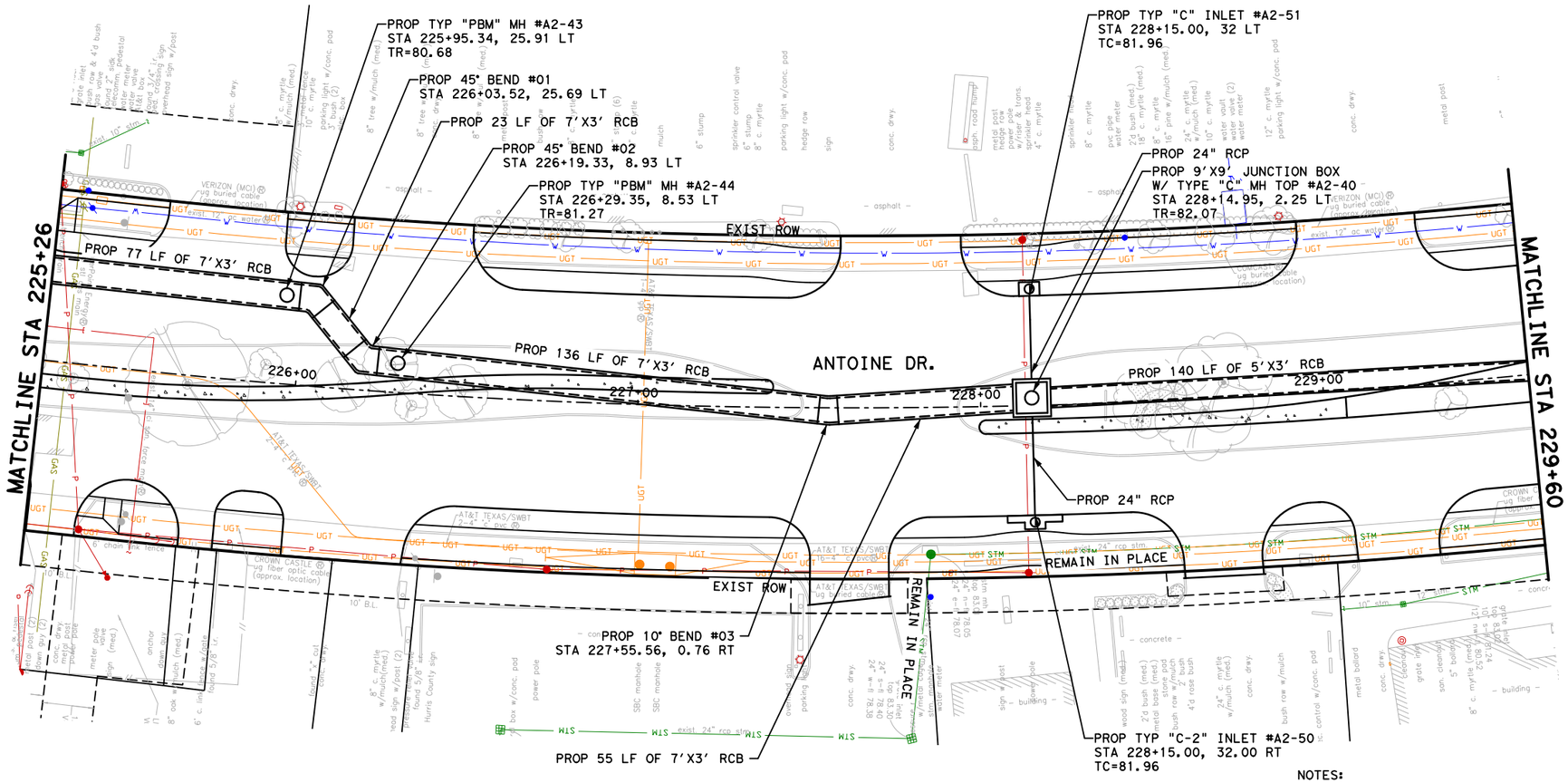

LEGEND:

- PROP STORM SEWER
- PROP ROADWAY FACE OF CURB
- EXIST STORM SEWER
- EXIST CULVERT
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

No.	DATE	REVISIONS	APP.

0' 20' 40'
SCALE IN FEET

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Texas Department of Transportation ©2025

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777 North Eldridge Parkway, Suite 500
Houston, Texas 77079
713-782-0042
www.vs-eng.com

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131531
10/23/2025
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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PLAN
STA 225+26 TO STA 229+60

SHEET 17 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 346 OF 718	

NOTES:

1. REFER TO LATERAL PROFILE SHEETS FOR PROPOSED FLOWLINES FOR STUB-INS
2. REFER TO ROADWAY & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
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5. CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE DURING CONSTRUCTION AND FIELD VERIFY FLOWLINES OF ALL CONNECTIONS TO EXISTING DRAINAGE STRUCTURES.

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Plotted on: 10/30/2025 9:31:49 AM JOVIedo
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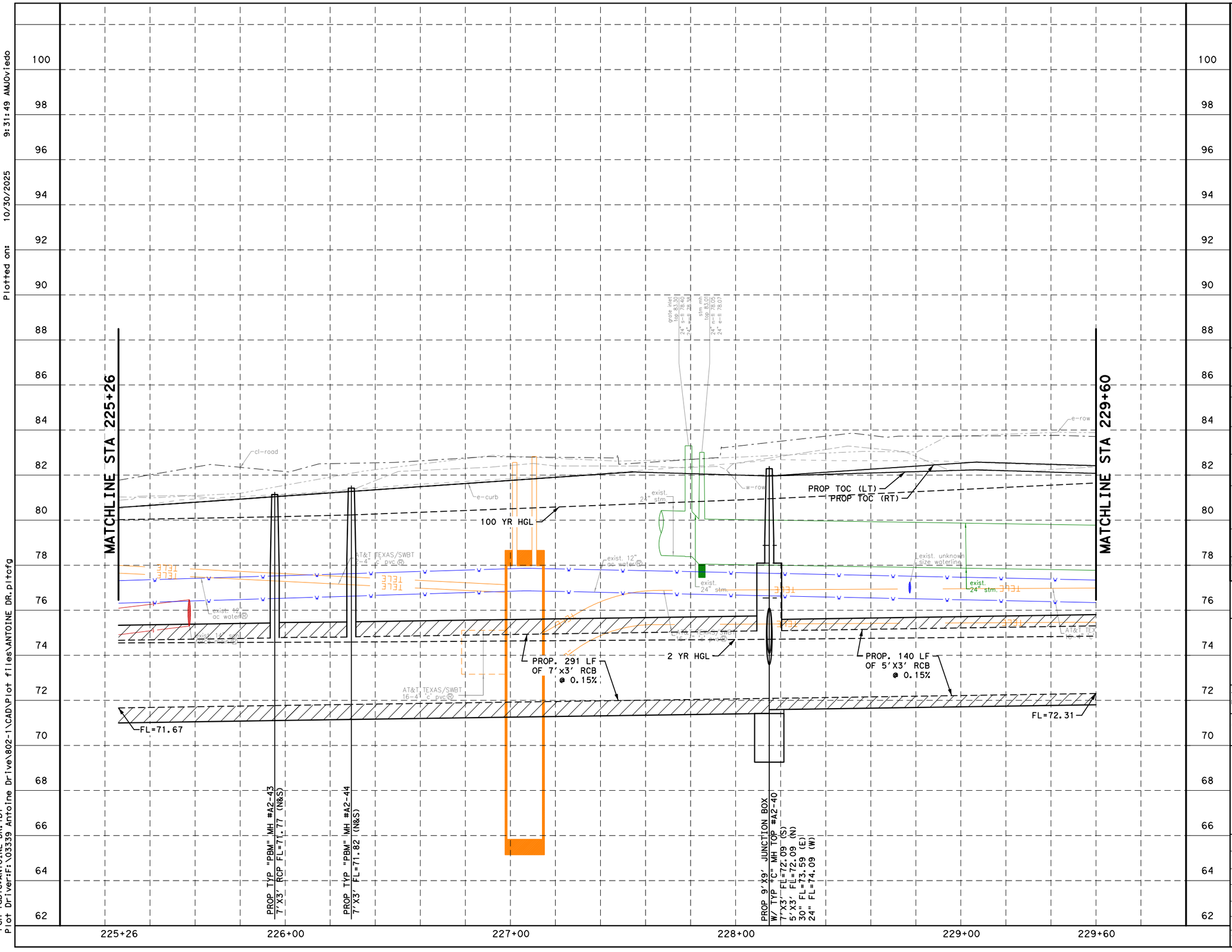

No.	DATE	REVISIONS	APP.

NOTES:

1. REFER TO DRAINAGE PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
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0' 20' 40'
SCALE IN FEET

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10/30/2025
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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PROFILE
STA 225+26 TO STA 229+60

SHEET 18 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 347 OF 718	

Plotted on: 10/23/2025 1:45:01 PM Oviedo
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PROP 13 LF OF 5'X3' RCB
PROP TYP "C-2" INLET #A2-54
STA 229+76.67, 32.00 LT'
TC=82.02
PROP 24" RCP
1-6"X12" TEE,
1-6" GV & BOX,
1-FH
PROP TYP "C" MH #A2-41
STA 230+09.39, 39.71 LT
TR=82.32
PROP 24" RCP
PROP 6'X5' JUNCTION BOX
W/ TYPE "C" MH TOP #A2-38
STA 230+08.91, 0.61 LT
TR=83.10
PROP TYP "C" INLET #A2-57
STA 233+10.86, 32.00 LT
TC=82.85
PROP 24" RCP
PROP 6'X5' JUNCTION BOX
W/ TYPE "C" MH TOP #A2-36
STA 233+10.83, 1.65' RT
TR=82.96
PROP 24" RCP
PROP CONC. COLLAR
(TIE EXIST 18" RCP)
STA 233+36.93, 50.10' LT
1-6"X12" TEE,
1-6" GV & BOX,
1-FH
MATCHLINE STA 229+60
MATCHLINE STA 234+25
EXIST ROW
ANTOINE DR.
PROP 296 LF OF 4'X3' RCB
PROP 26 LF OF 4'X3' RCB
PROP 24" RCP
PROP TYP "C" MH #A2-56
(TIE EXIST 24" & 18" RCP)
STA 230+08.91, 41.53 RT
TR=82.66
PROP 7'X7' JUNCTION BOX
W/ TYPE "C" MH TOP #A2-39
STA 229+77.08, 0.35 LT
TR=83.01
PROP 24" RCP
PROP TYP "C" INLET #A2-55
STA 229+76.67, 32.00 RT
TC=82.37
PROP 24" RCP
PROP TYP "C-1" INLET #A2-58
STA 233+10.86, 32.00 RT
TC=82.85
EXIST ROW
BRIDGE FOREST DR.
EXIST ROW
EXIST ROW
230+00
231+00
232+00
233+00
234+00
1+00
2+00

LEGEND:

- PROP STORM SEWER
- PROP ROADWAY FACE OF CURB
- EXIST STORM SEWER
- EXIST CULVERT
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

No.	DATE	REVISIONS	APP.

0' 20' 40'
SCALE IN FEET

NOTES:

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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Signature valid for six months.

Date

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Texas Registered Engineering Firm F-148

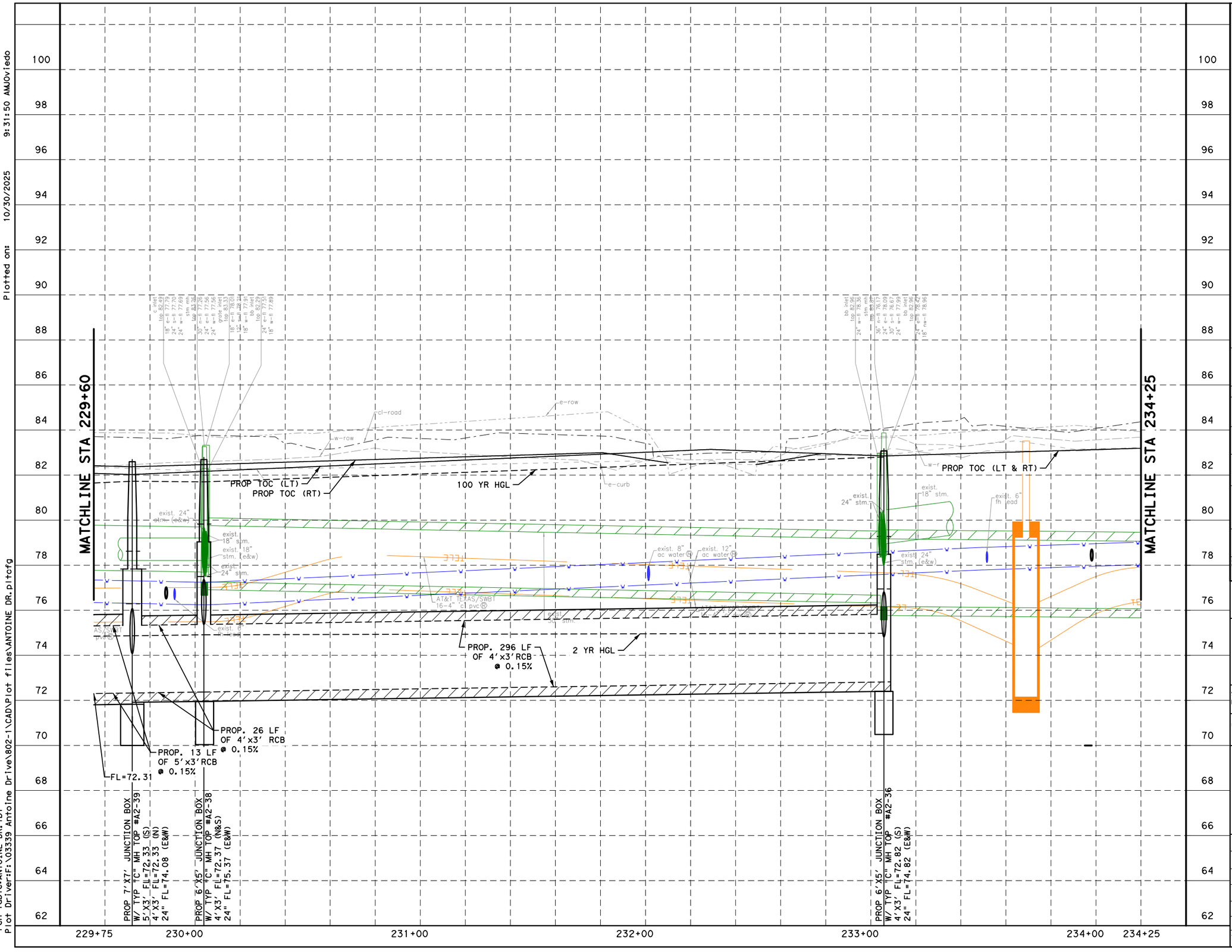
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PLAN
STA 229+60 TO STA 234+25

SHEET 19 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 348 OF 718	



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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PROFILE
STA 229+75 TO STA 234+25

SHEET 20 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 349 OF 718	

No.	DATE	REVISIONS	APP.

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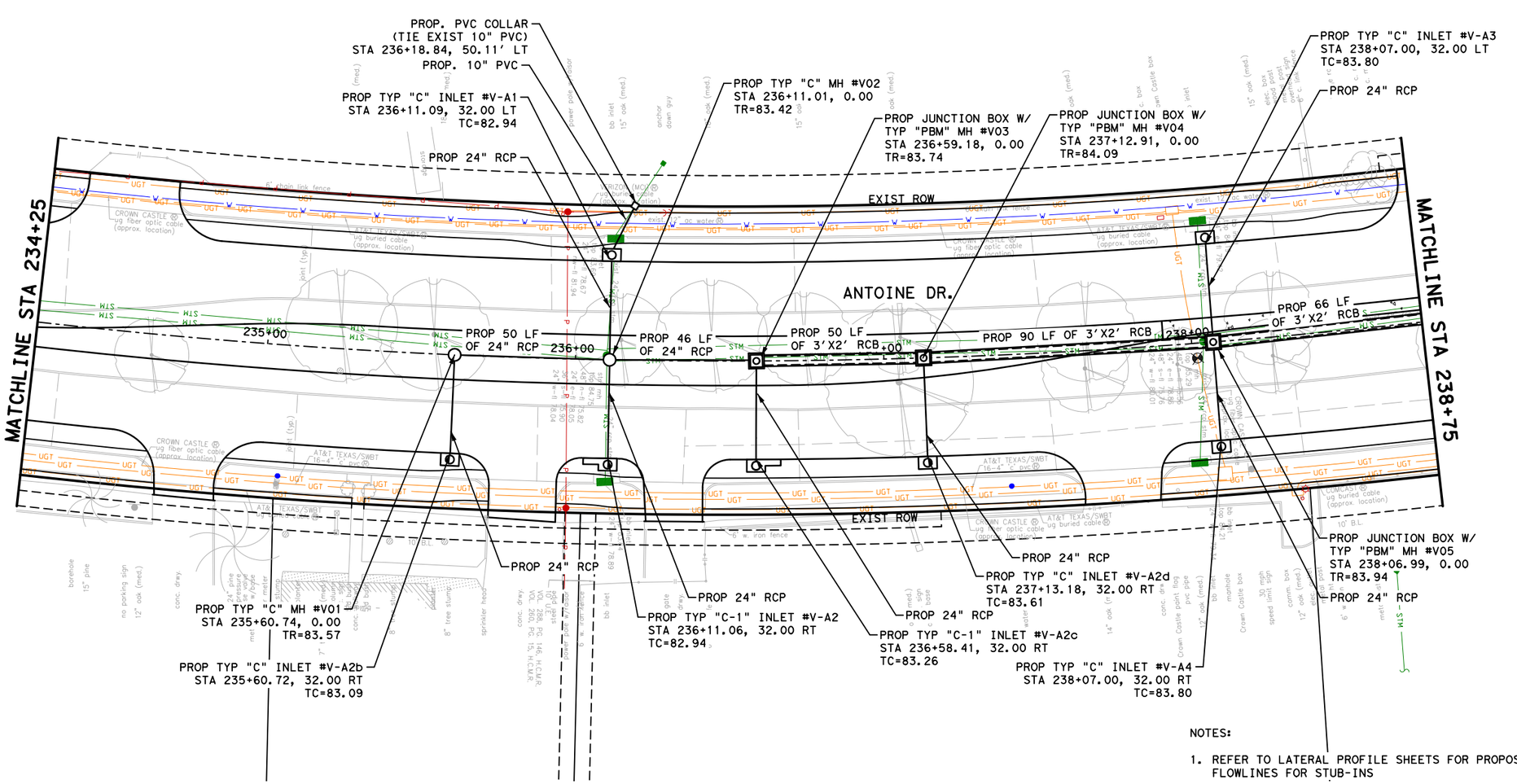

LEGEND:

- PROP STORM SEWER
- PROP ROADWAY FACE OF CURB
- EXIST STORM SEWER
- EXIST CULVERT
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

No.	DATE	REVISIONS	APP.

0' 20' 40'
SCALE IN FEET

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Texas Registered Engineering Firm F-148

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PLAN
STA 234+25 TO STA 238+75

SHEET 21 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 350 OF 718	

Plotted on: 10/23/2025 1:45:02 PM Oviedo
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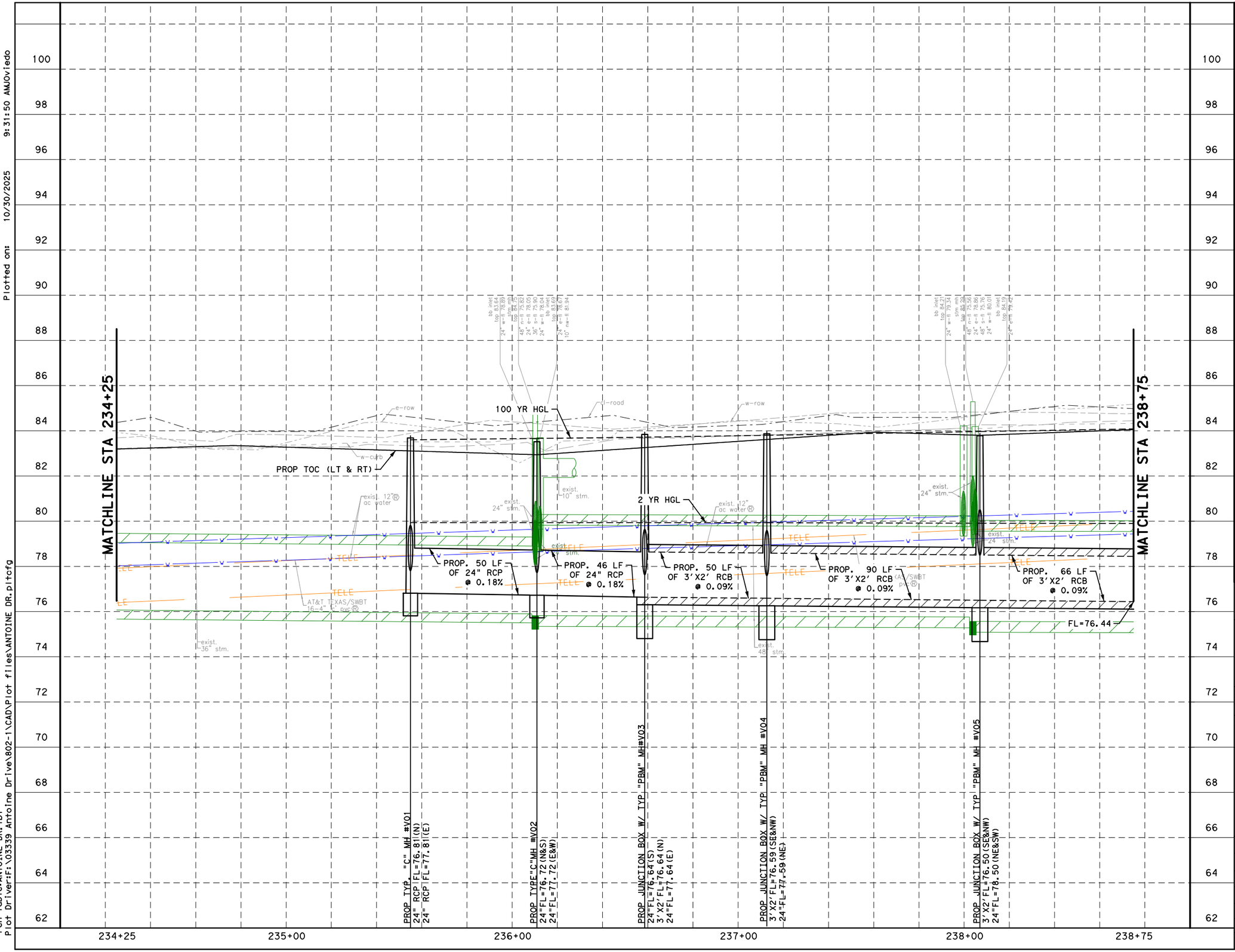

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No.	DATE	REVISIONS	APP.

NOTES:

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0' 20' 40'
SCALE IN FEET

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Texas Registered Engineering Firm F-148

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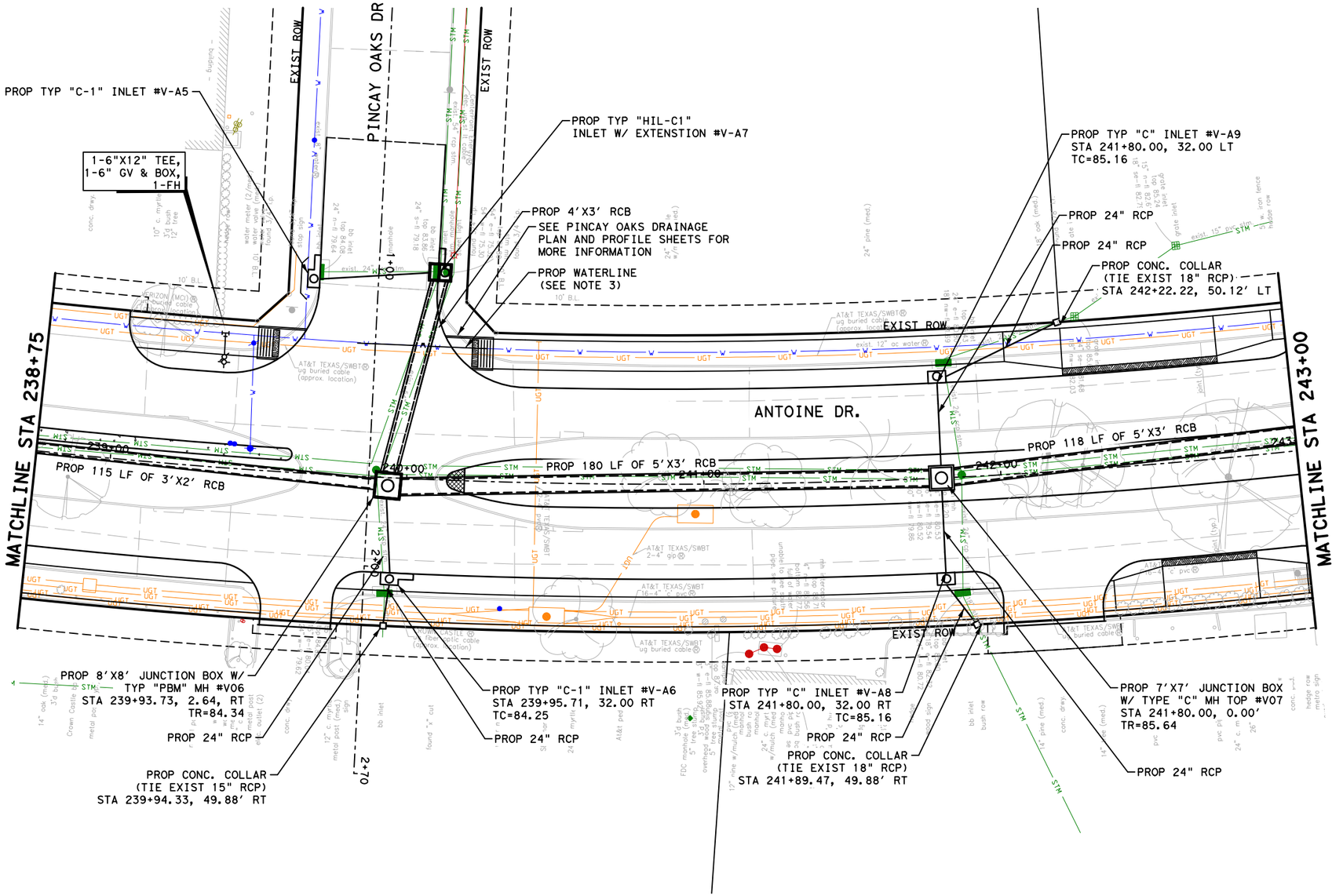
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PROFILE
STA 234+25 TO STA 238+75

SHEET 22 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 351 OF 718	



LEGEND:

- PROP STORM SEWER
- PROP ROADWAY FACE OF CURB
- EXIST STORM SEWER
- EXIST CULVERT
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

No.	DATE	REVISIONS	APP.

0' 20' 40'
SCALE IN FEET

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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PLAN
STA 238+75 TO STA 243+00

SHEET 23 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 352 OF 718	

Plotted on: 10/23/2025 1:45:03 PM Ovieldo
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Plotted on: 10/30/2025 9:31:50 AM JOviedo
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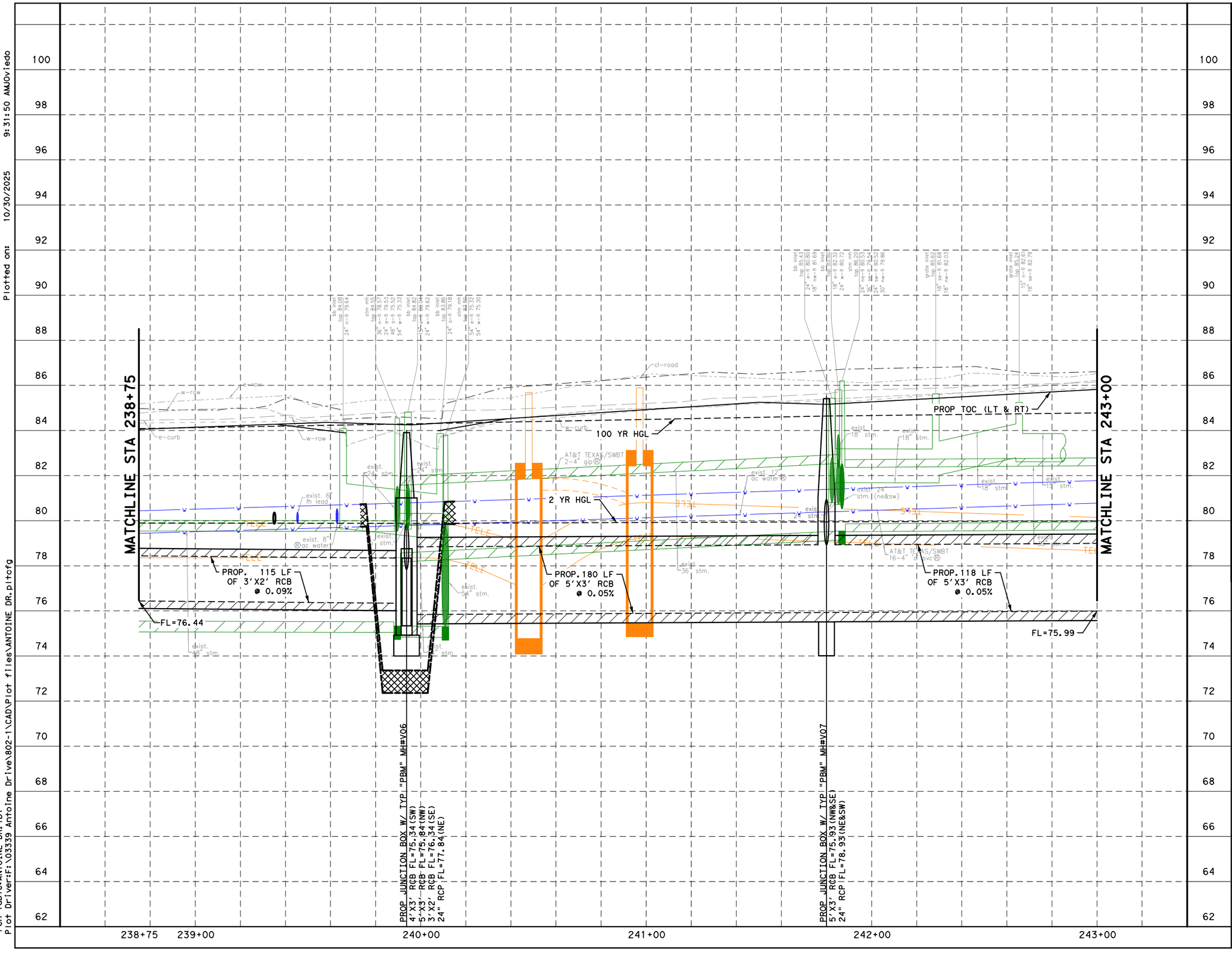

No.	DATE	REVISIONS	APP:

NOTES:

1. REFER TO DRAINAGE PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
2. REFER TO WATER AND SANITARY SEWER PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.

0' 20' 40'
SCALE IN FEET

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PROFILE
STA 238+75 TO STA 243+00

SHEET 24 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 353 OF 718	

Plotted on: 10/23/2025 1:45:04 PM Oviedo
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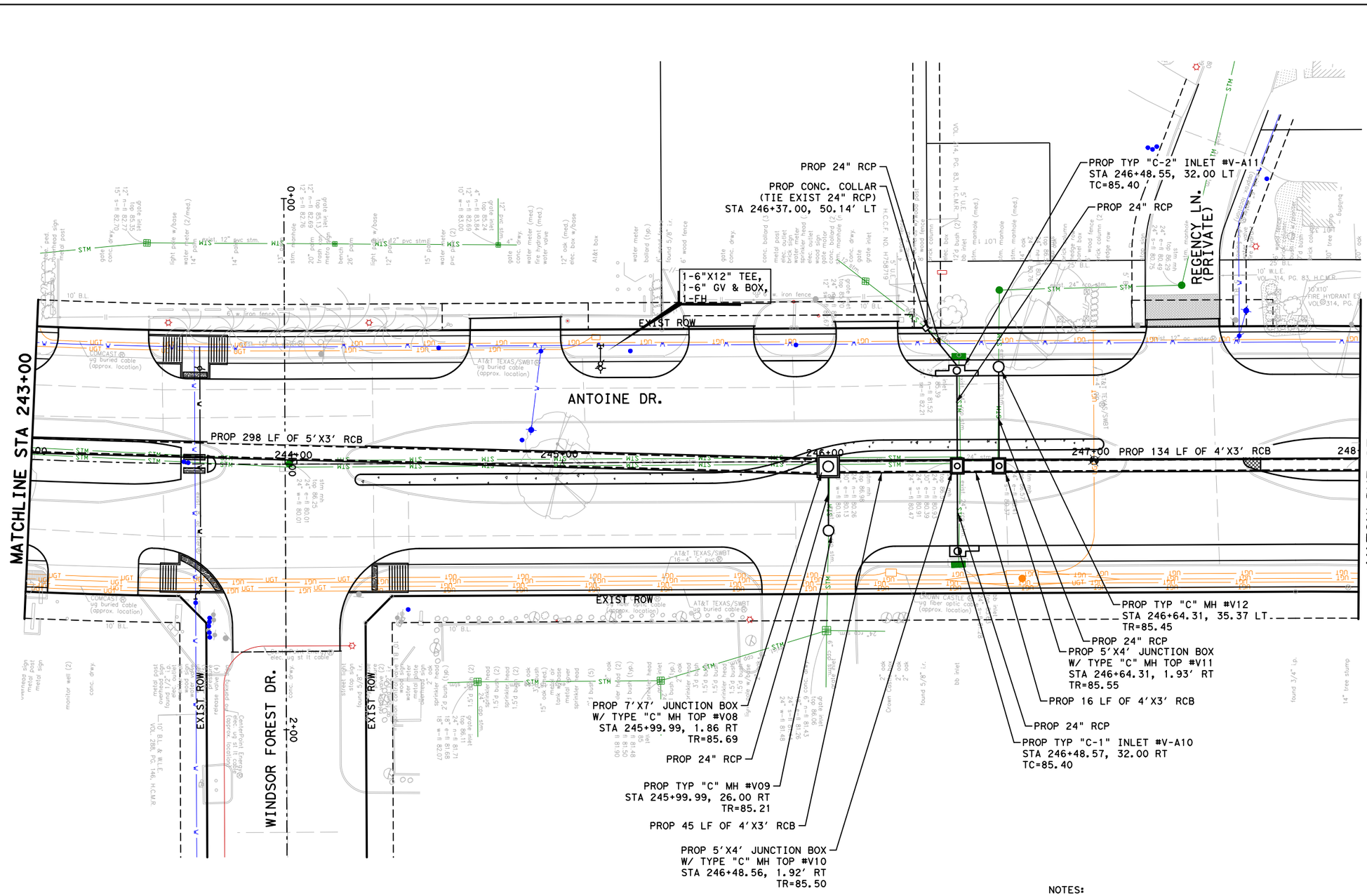

LEGEND:

- PROP STORM SEWER
- PROP ROADWAY FACE OF CURB
- EXIST STORM SEWER
- EXIST CULVERT
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

0' 20' 40'
SCALE IN FEET

NOTES:

1. REFER TO LATERAL PROFILE SHEETS FOR PROPOSED FLOWLINES FOR STUB-INS
2. REFER TO ROADWAY & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
3. REFER TO WATER & SANITARY SEWER PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
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5. CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE DURING CONSTRUCTION AND FIELD VERIFY FLOWLINES OF ALL CONNECTIONS TO EXISTING DRAINAGE STRUCTURES.

No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PLAN
STA 243+00 TO STA 248+00

SHEET 25 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 354 OF 718	

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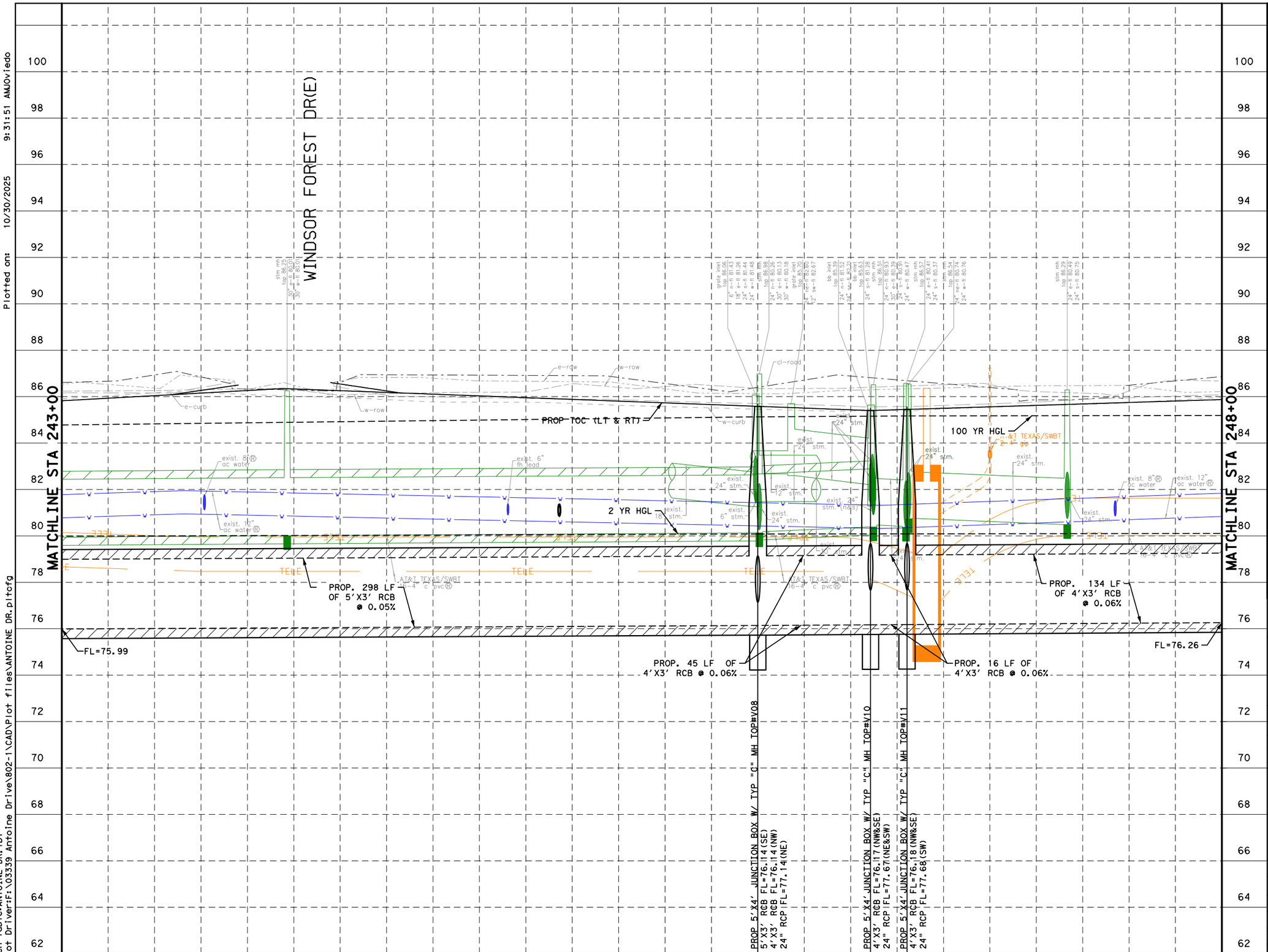

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0' 20' 40'
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PROFILE
STA 243+00 TO STA 248+00

SHEET 26 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 355 OF 718	

No.	DATE	REVISIONS	APP.

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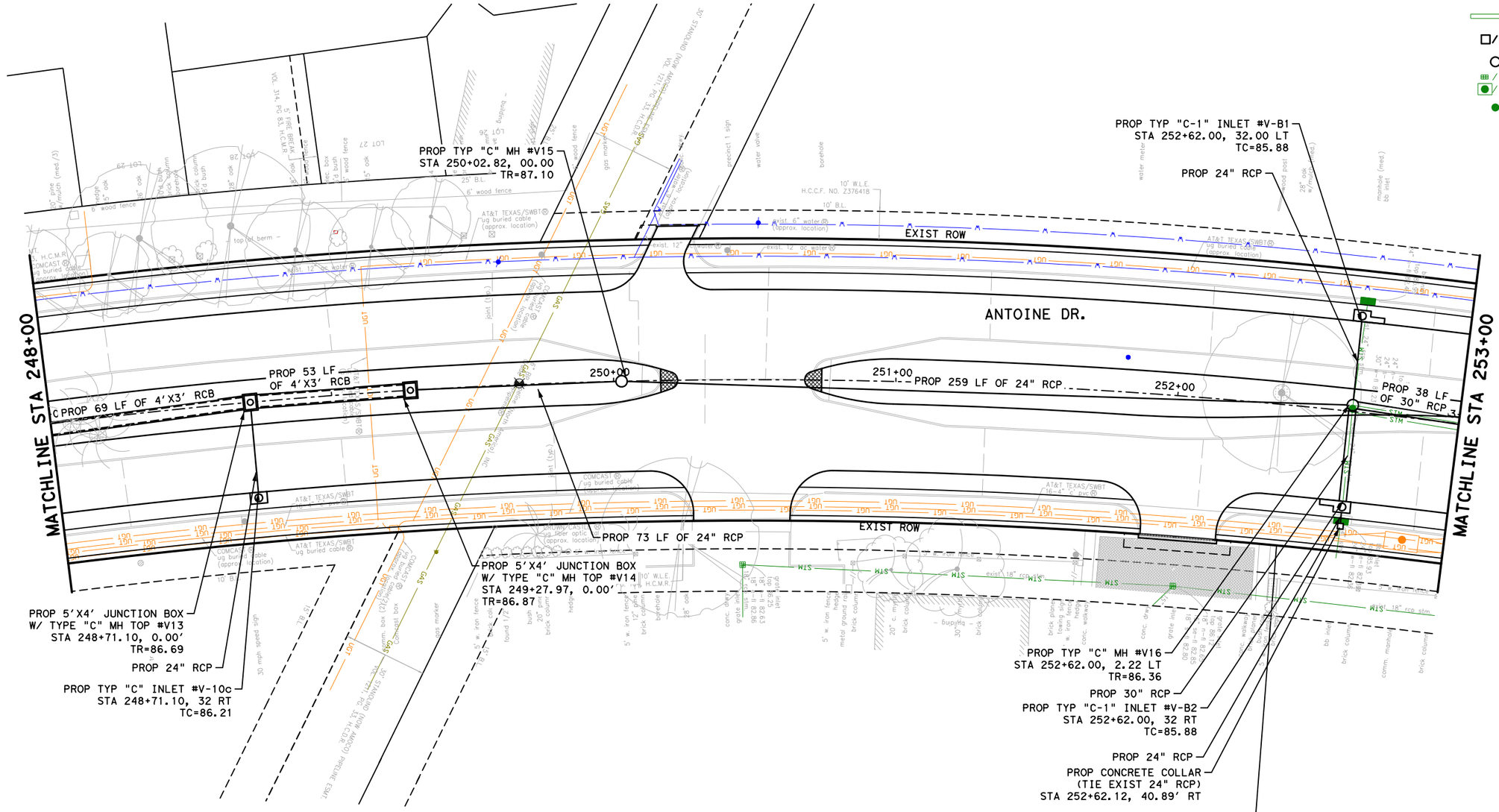

LEGEND:

- PROP STORM SEWER
- PROP ROADWAY FACE OF CURB
- EXIST STORM SEWER
- EXIST CULVERT
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

0' 20' 40'
SCALE IN FEET

NOTES:

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No.	DATE	REVISIONS	APP.

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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PLAN
STA 248+00 TO STA 253+00

SHEET 27 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 356 OF 718	

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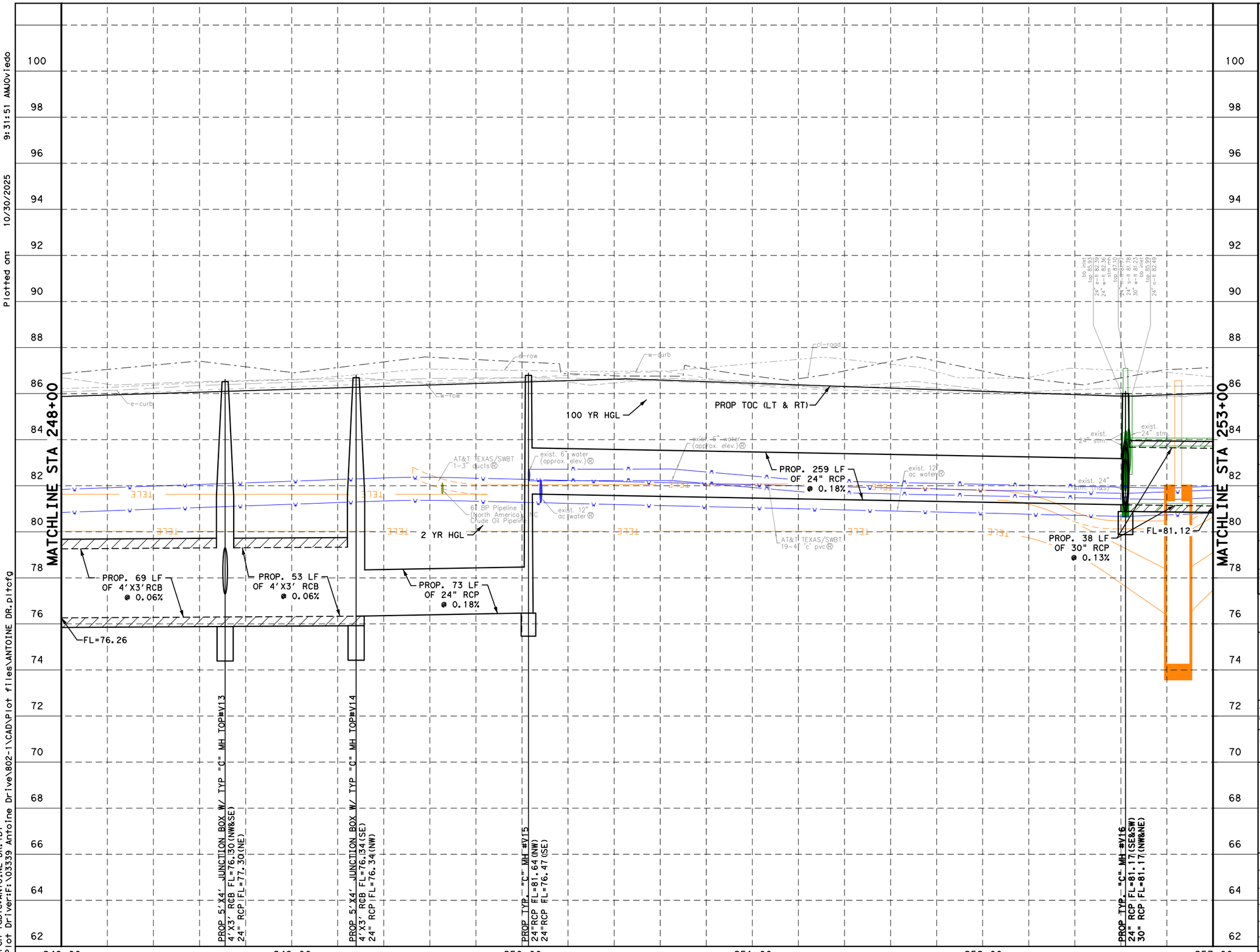

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No.	DATE	REVISIONS	APP.

NOTES:

1. REFER TO DRAINAGE PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
2. REFER TO WATER AND SANITARY SEWER PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.

0' 20' 40'
SCALE IN FEET

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Texas Registered Engineering Firm F-148

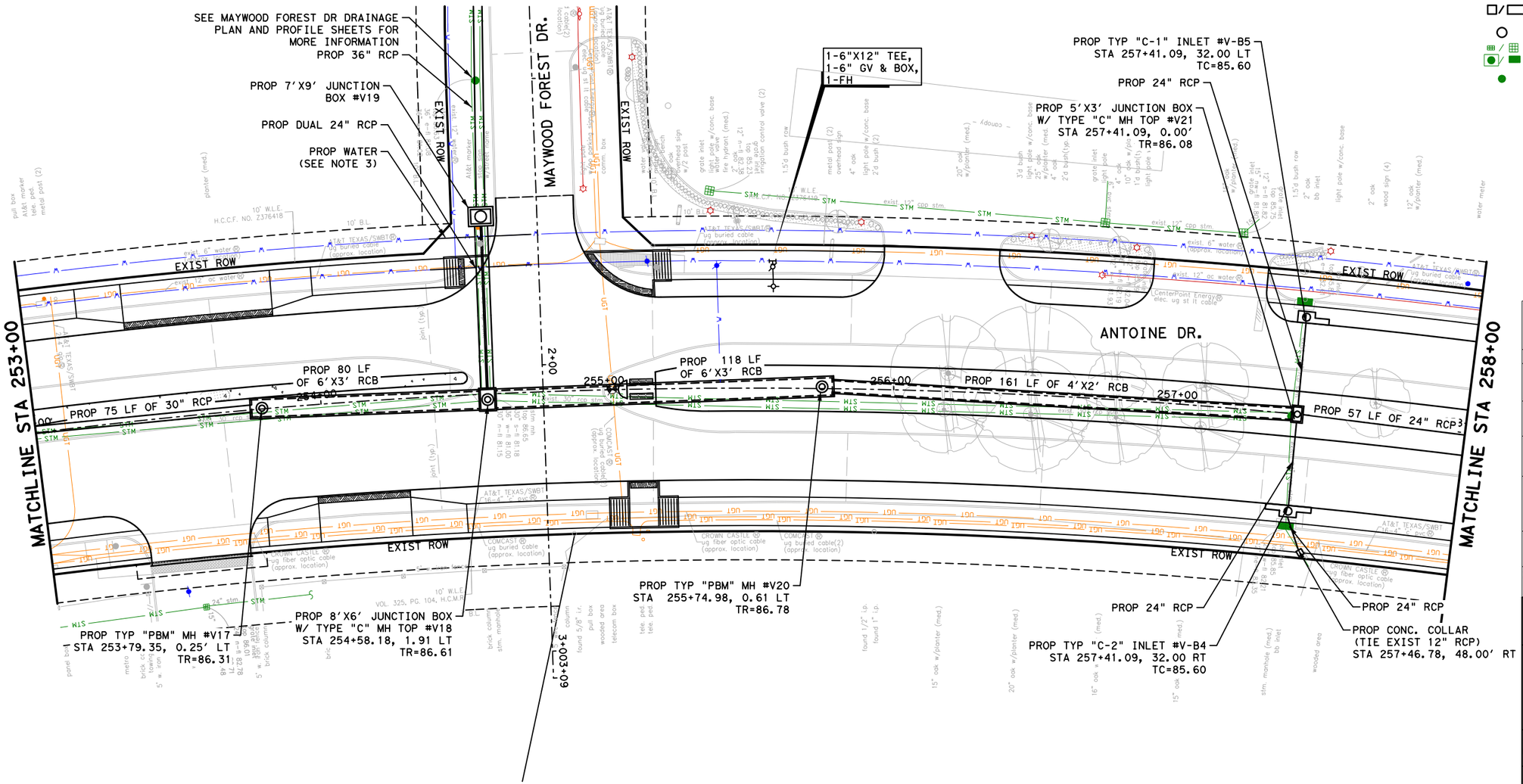
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PROFILE
STA 248+00 TO STA 253+00

SHEET 28 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 357 OF 718	



LEGEND:

- PROP STORM SEWER
- PROP ROADWAY FACE OF CURB
- EXIST STORM SEWER
- EXIST CULVERT
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

0' 20' 40'
SCALE IN FEET

No.	DATE	REVISIONS	APP.

NOTES:

1. REFER TO LATERAL PROFILE SHEETS FOR PROPOSED FLOWLINES FOR STUB-INS
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PLAN
STA 253+00 TO STA 258+00

SHEET 29 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 358 OF 718	

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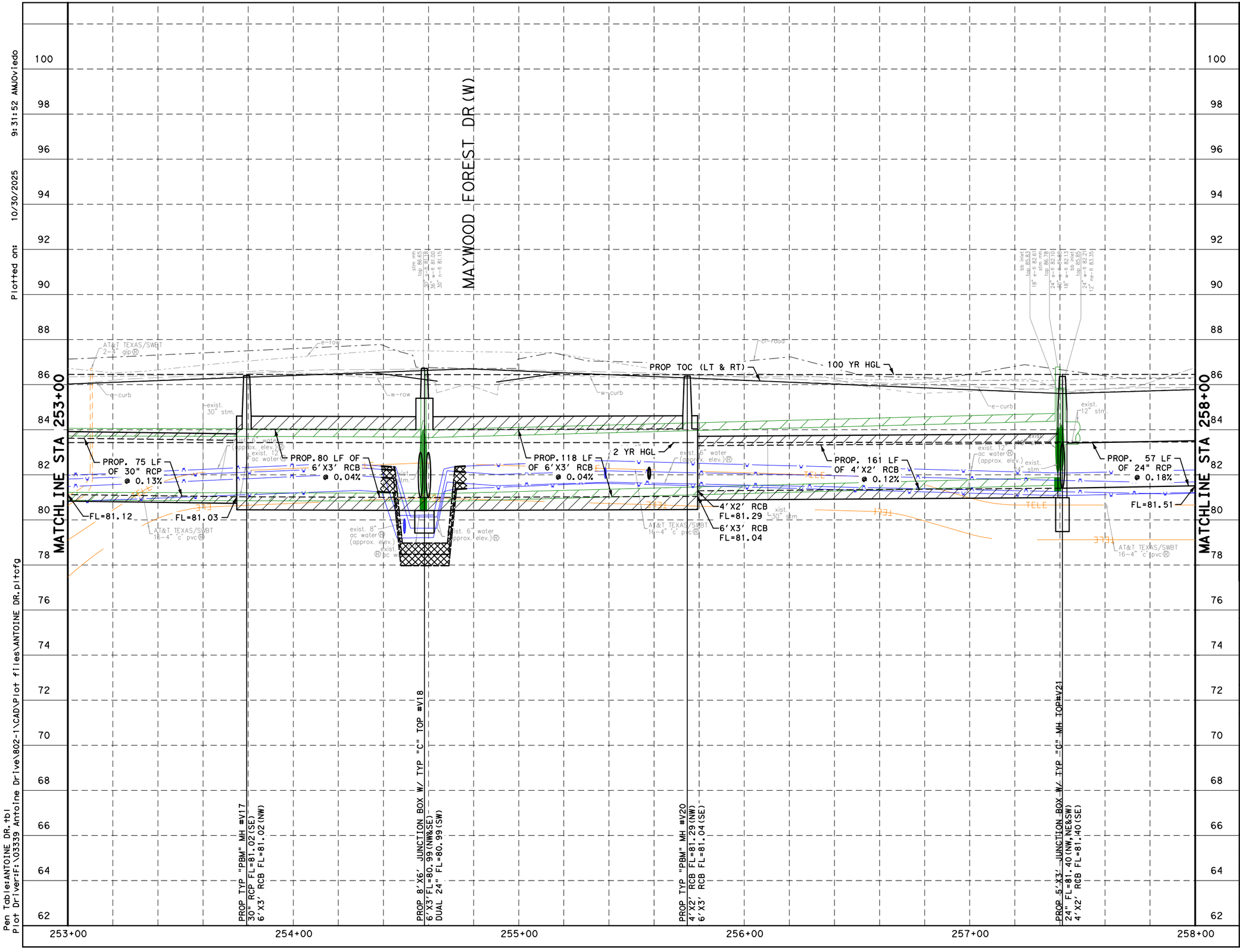

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No.	DATE	REVISIONS	APP.

NOTES:

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0' 20' 40'
SCALE IN FEET

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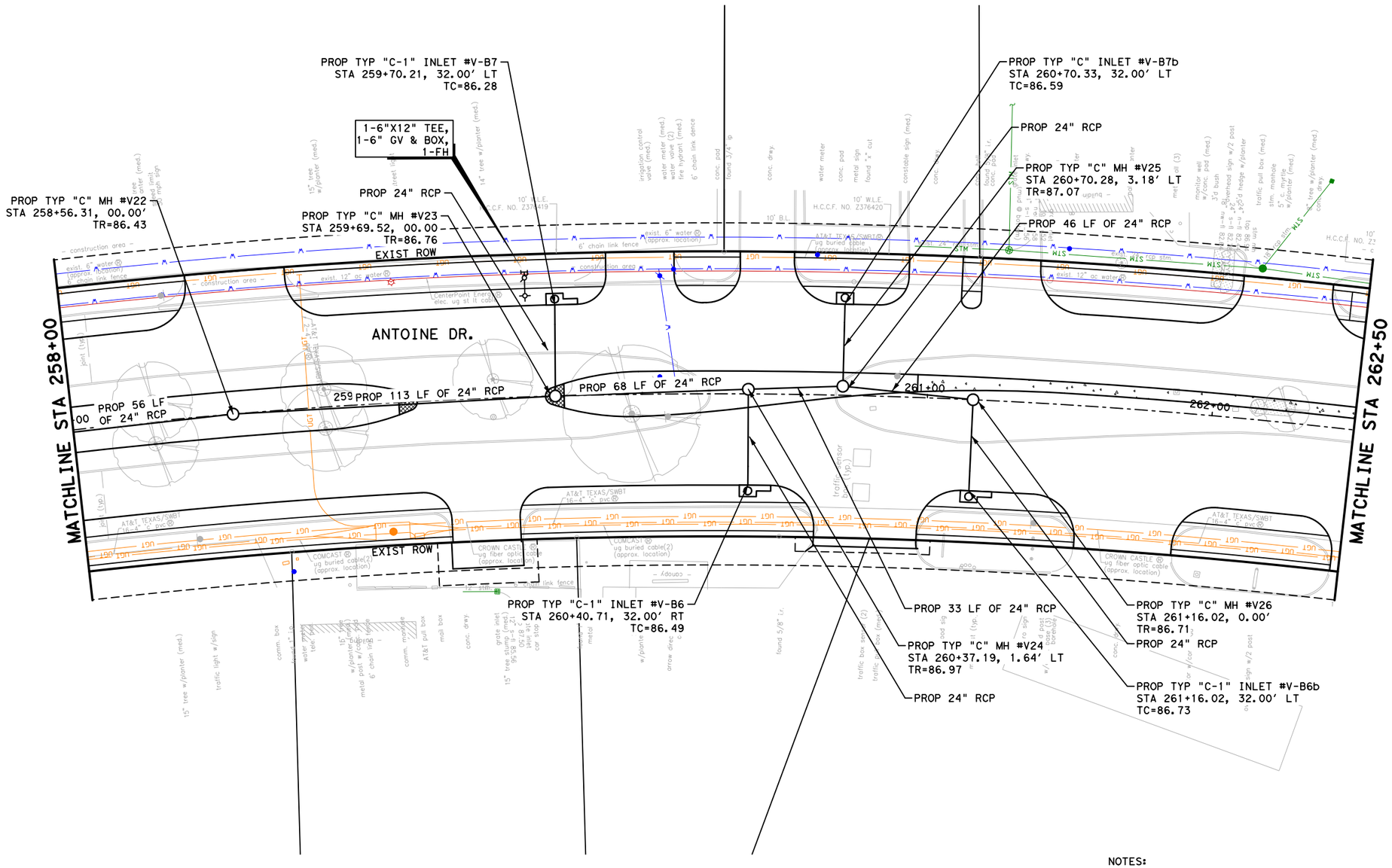
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PROFILE
STA 253+00 TO STA 258+00

SHEET 30 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 359 OF 718	



LEGEND:

- PROP STORM SEWER
- PROP ROADWAY FACE OF CURB
- EXIST STORM SEWER
- EXIST CULVERT
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

No.	DATE	REVISIONS	APP:

N

0′ 20′ 40′
SCALE IN FEET

NOTES:

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PLAN
STA 258+00 TO STA 262+50

SHEET 31 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 360 OF 718	

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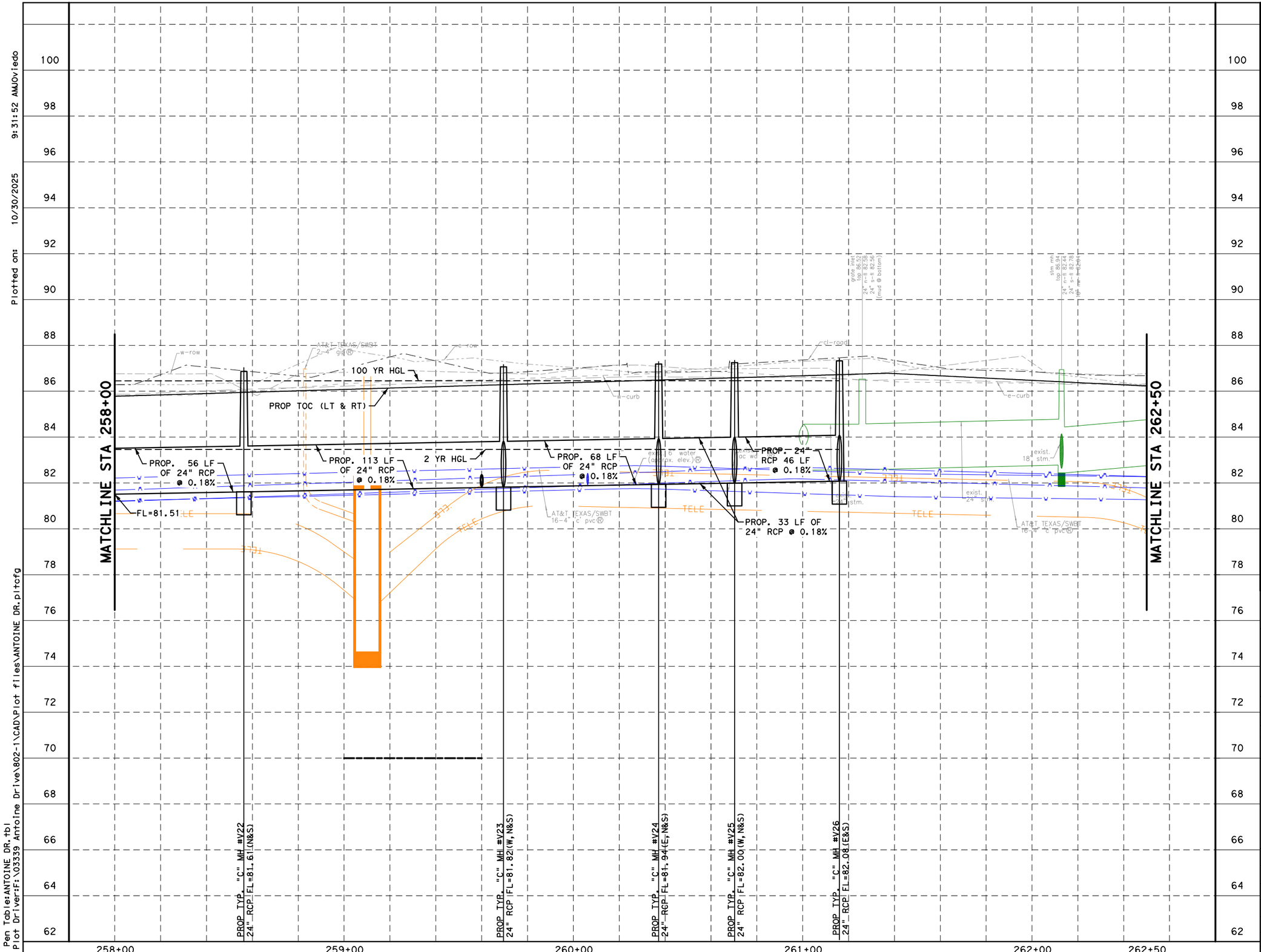

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0' 20' 40'
SCALE IN FEET

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Texas Registered Engineering Firm F-148

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PROFILE
STA 258+00 TO STA 262+50

SHEET 32 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 361 OF 718	

No.	DATE	REVISIONS	APP.

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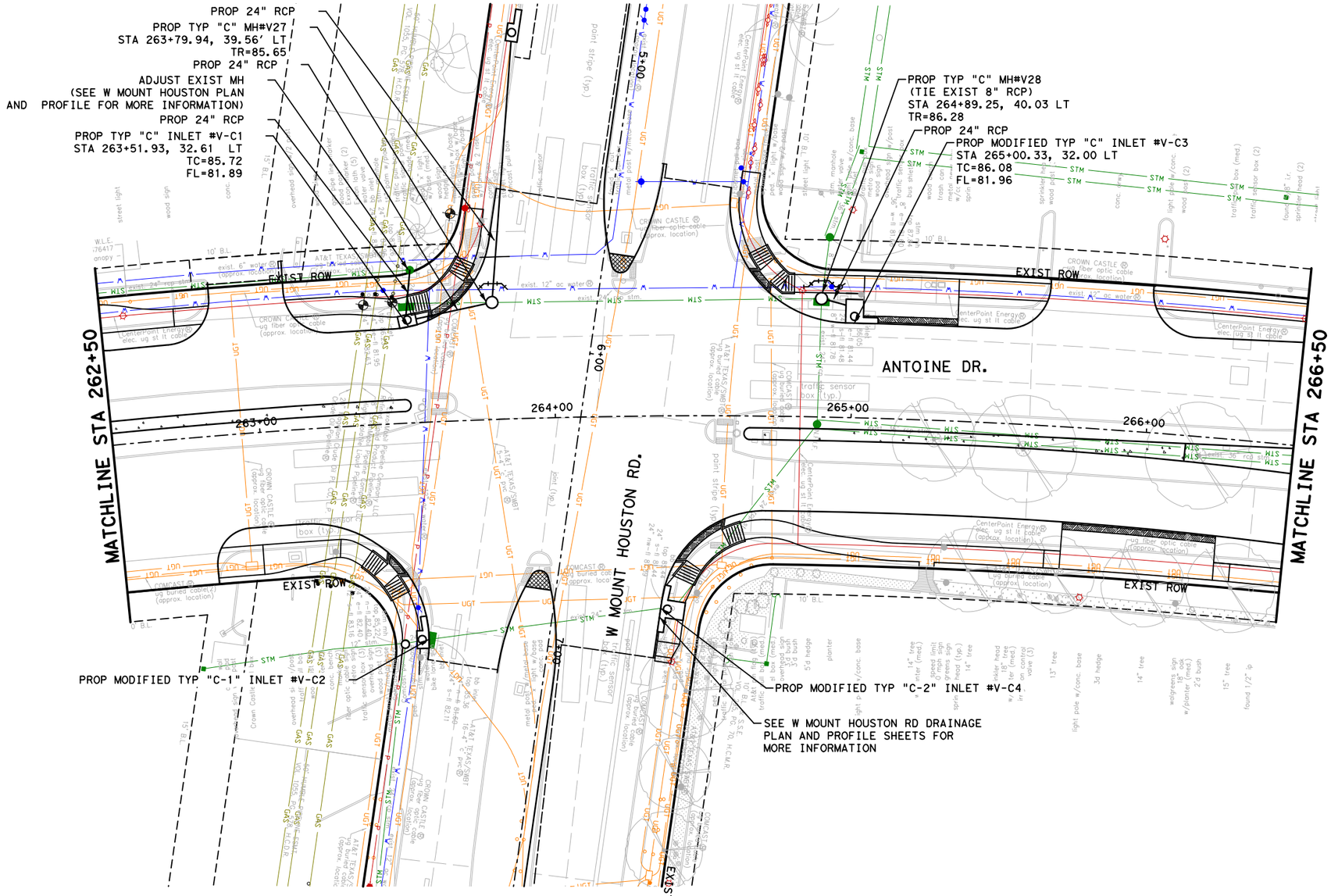

LEGEND:

- PROP STORM SEWER
- PROP ROADWAY FACE OF CURB
- EXIST STORM SEWER
- EXIST CULVERT
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

No.	DATE	REVISIONS	APP.

0' 20' 40'
SCALE IN FEET

NOTICE:
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VERIFICATION OF PRIVATE UTILITY LINES

Date

CenterPoint Energy natural gas utilities shown. (Gas service lines are not shown.) This signature not be used for conflict verification.

Signature valid for six months.

Date

CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY. (This signature verifies existing underground facilities - not to be used for conflict verification)

Signature valid for six months.

Approved for AT&T underground conduit facilities only. Signature valid for one year. Date

Texas Department of Transportation ©2025

VOGLER & SPENCER ENGINEERING
777 North Eldridge Parkway, Suite 500
Houston, Texas 77079
713-782-0042
www.vs-engr.com

SURVEYED BY:
KUO & ASSOCIATES, INC.

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JOEL OLSHEFSKI
131531
10/23/2025
95% SUBMITTAL
VOGLER & SPENCER ENGINEERING
Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PLAN
STA 262+50 TO STA 266+50

SHEET 33 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 362 OF 718	

NOTES:

1. REFER TO LATERAL PROFILE SHEETS FOR PROPOSED FLOWLINES FOR STUB-INS
2. REFER TO ROADWAY & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
3. REFER TO WATER & SANITARY SEWER PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
4. ALL RCP ARE CLASS III UNLESS OTHERWISE SPECIFIED
5. CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE DURING CONSTRUCTION AND FIELD VERIFY FLOWLINES OF ALL CONNECTIONS TO EXISTING DRAINAGE STRUCTURES.

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Plot Driver:F:\03339 Antoine Drive\802-1\CAD\Plot files\ANTOINE DR.pltcfg

W MOUNT HOUSTON RD (E&W)

MATCHLINE STA 262+50

MATCHLINE STA 266+50

100 YR HGL

2 YR HGL

PROP TOC (LT)

PROP TOC (RT)

PROP 11 LF OF 24" RCP @ 0.18%

PROP 26 LF OF 24" RCP @ 0.18%

PROP TYP. "C" INLET #V-C1
24" RCP FL=81.90(N)
24" RCP FL=82.40(W)

PROP TYP. "C" MH #V27
EXIST 24" RCP FL=81.85(N)
PROP 24" RCP FL=81.85(S&W)

PROP TYP. "C" MH #V28
24" RCP FL=81.94(N)
EXIST 24" RCP FL=81.44(E)
EXIST 24" RCP FL=81.48(S)
EXIST 8" RCP FL=81.79(W)

PROP MODIFIED TYP. "C" INLET W/EXTENSION #V-C3
EXIST 24" RCP FL=81.96(S)

20" Magellan Calde Oil Pipeline
PL CO, L.P. Crude Oil Pipeline
8" ExxonMobil Pipeline Company LLC, Refined Liquid Product Pipeline

AT&T TEXAS/SWBT 16-4" "c" pvc

AT&T TEXAS/SWBT 6-4" "c" pvc

262+50 263+00 264+00 265+00 266+00 266+50

NOTES:

1. REFER TO DRAINAGE PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
2. REFER TO WATER AND SANITARY SEWER PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.

0' 20' 40'
SCALE IN FEET

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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PROFILE
STA 262+50 TO STA 266+50

SHEET 34 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 363 OF 718	

APP. | REVISIONS | DATE | No.

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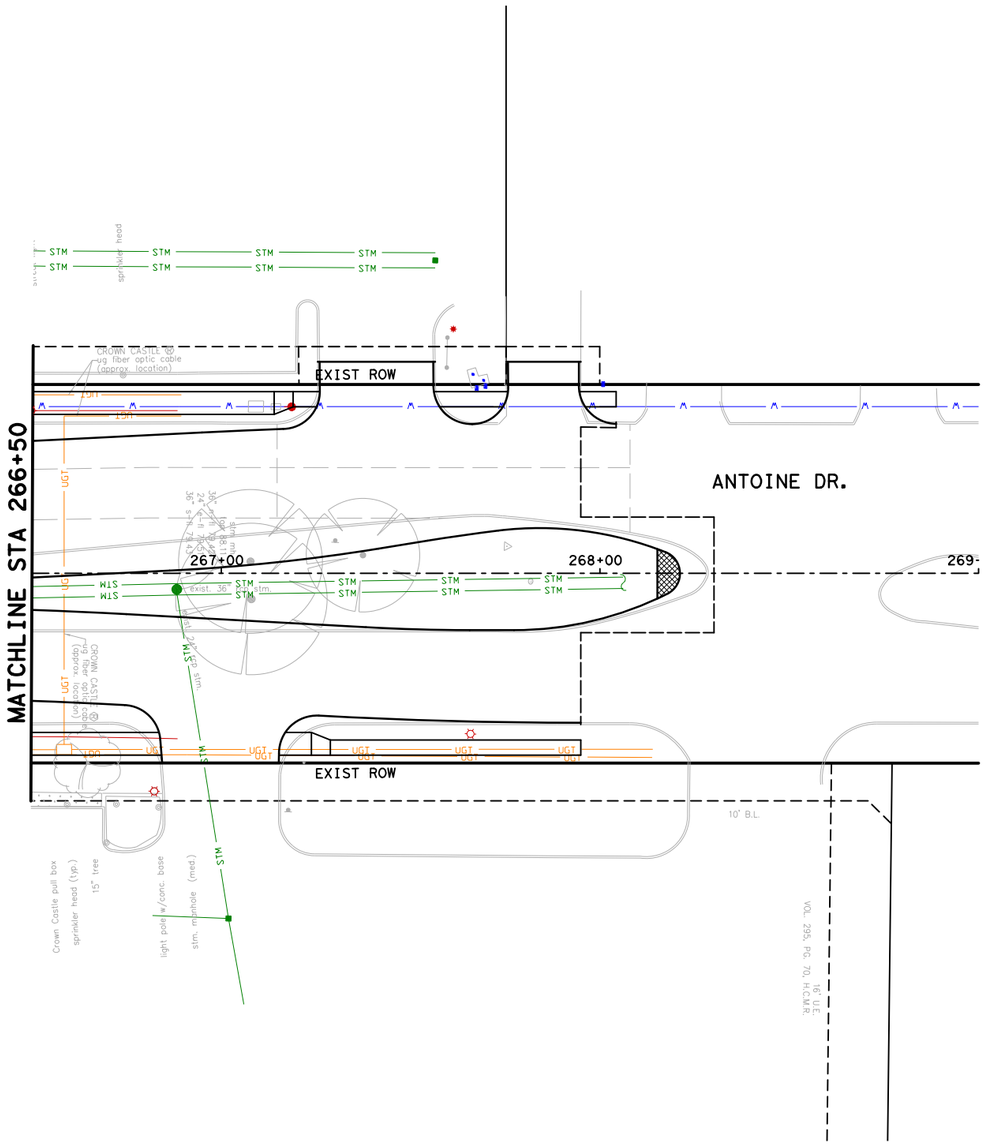

LEGEND:

- PROP STORM SEWER
- PROP ROADWAY FACE OF CURB
- EXIST STORM SEWER
- EXIST CULVERT
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

No.	DATE	REVISIONS	APP.

N

0' 20' 40'
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PLAN
STA 266+50 TO END

SHEET 35 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 364 OF 718	

NOTES:

1. REFER TO LATERAL PROFILE SHEETS FOR PROPOSED FLOWLINES FOR STUB-INS
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5. CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE DURING CONSTRUCTION AND FIELD VERIFY FLOWLINES OF ALL CONNECTIONS TO EXISTING DRAINAGE STRUCTURES.

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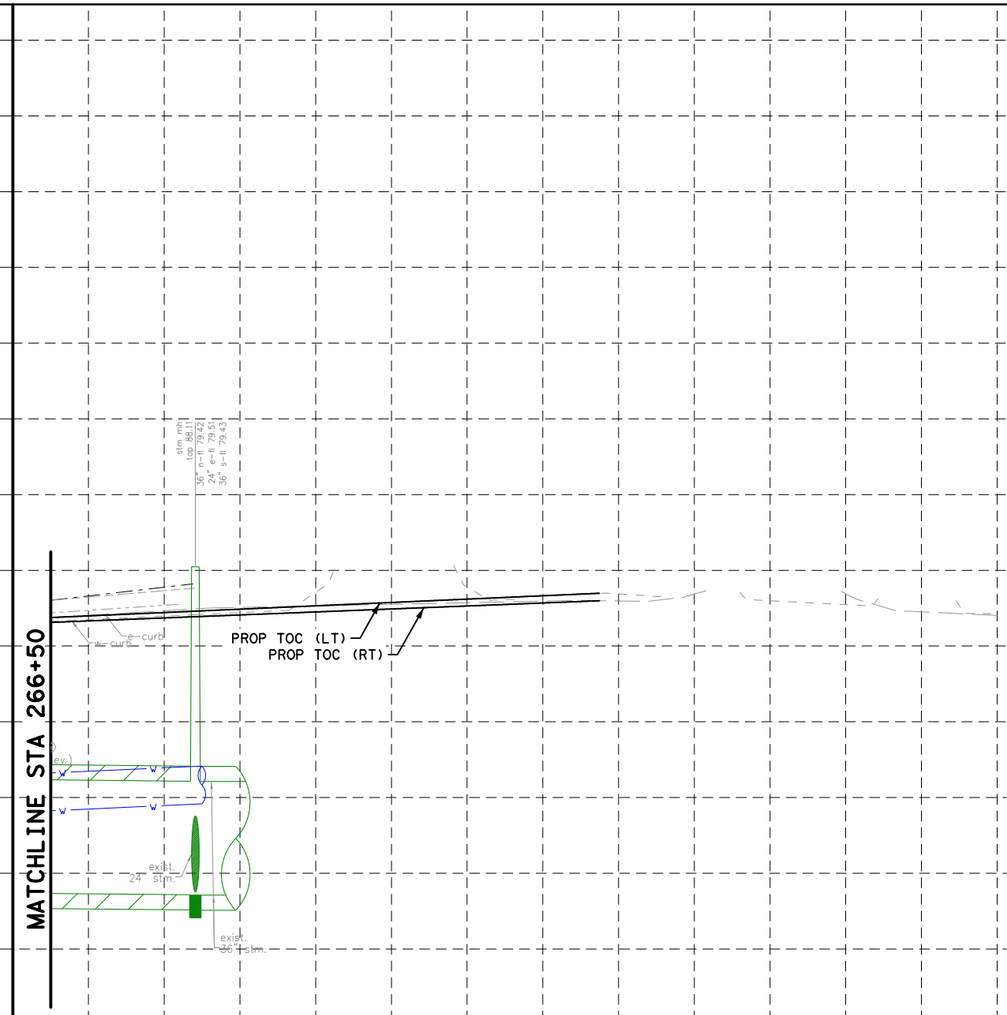

NOTES:

1. REFER TO DRAINAGE PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
2. REFER TO WATER AND SANITARY SEWER PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.

0′ 20′ 40′
SCALE IN FEET

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Texas Registered Engineering Firm F-148

SURVEYED BY:
KUO & ASSOCIATES, INC.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DRAINAGE PROFILE
STA 266+50 TO STA 269+00

SHEET 36 OF 36

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 365 OF 718	

No.	DATE	REVISIONS	APP.

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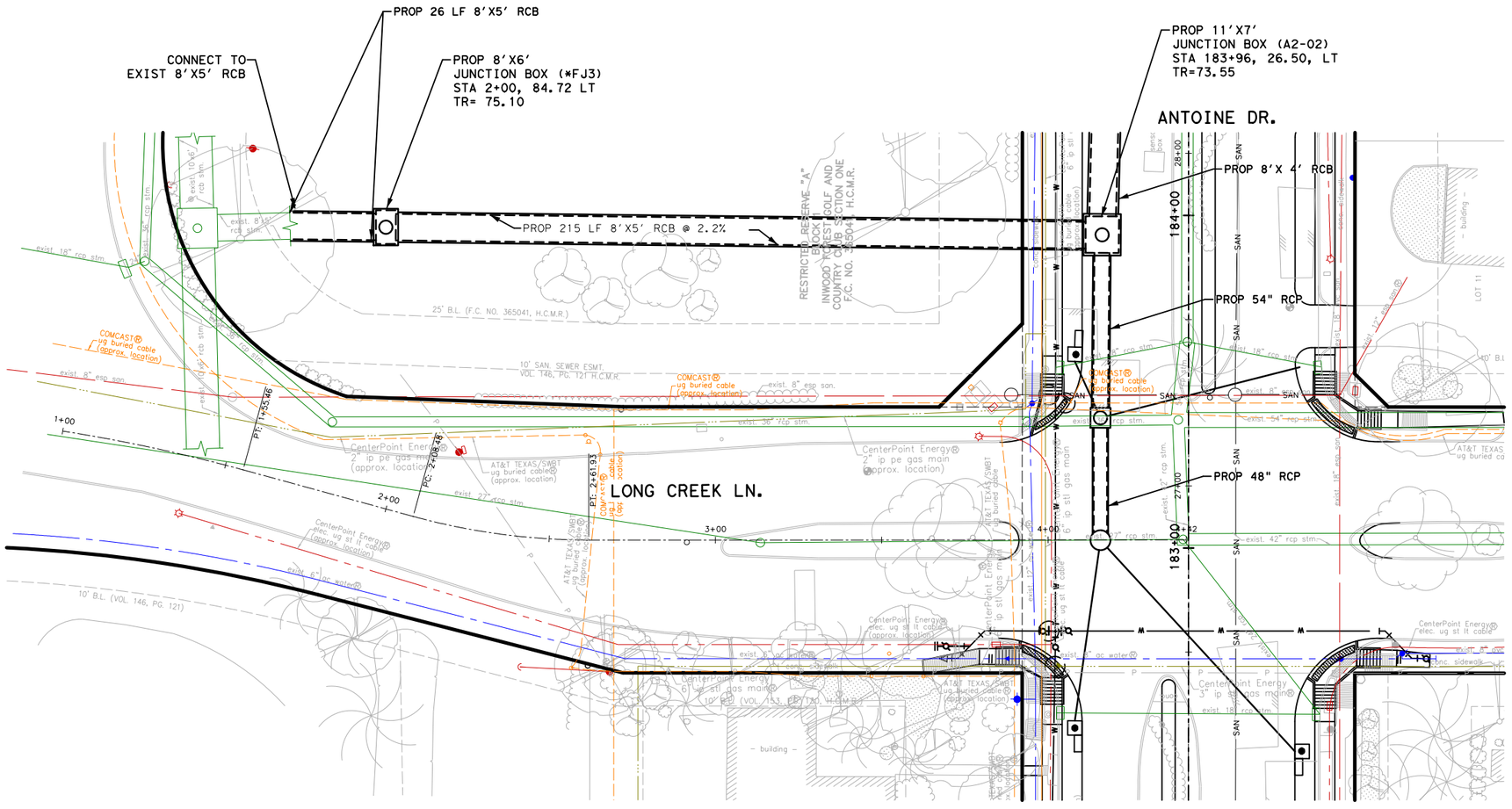
Design Filename: Y:\2017012 Antoine North Paving and Drainage\MicroStation\95% SET-CAD DESIGN FILES_03_07_2025\P&P Sheets\Storm Water\016-P&P_Long_Creek_STM.dgn

NOTES

REFER TO SHEET 15 OF 40 FOR DRAINAGE NOTES.



LEGEND:

- PROP STORM SEWER
- EXIST STORM SEWER
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

N

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

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SURVEYED BY:
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Date
108363
10/21/2025
for
95% SUBMITTAL
FCM ENGINEERING
Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
LONG CREEK LANE
DRAINAGE PLAN
STA 1+00 TO STA 4+42

SHEET 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-OGEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 366 718	

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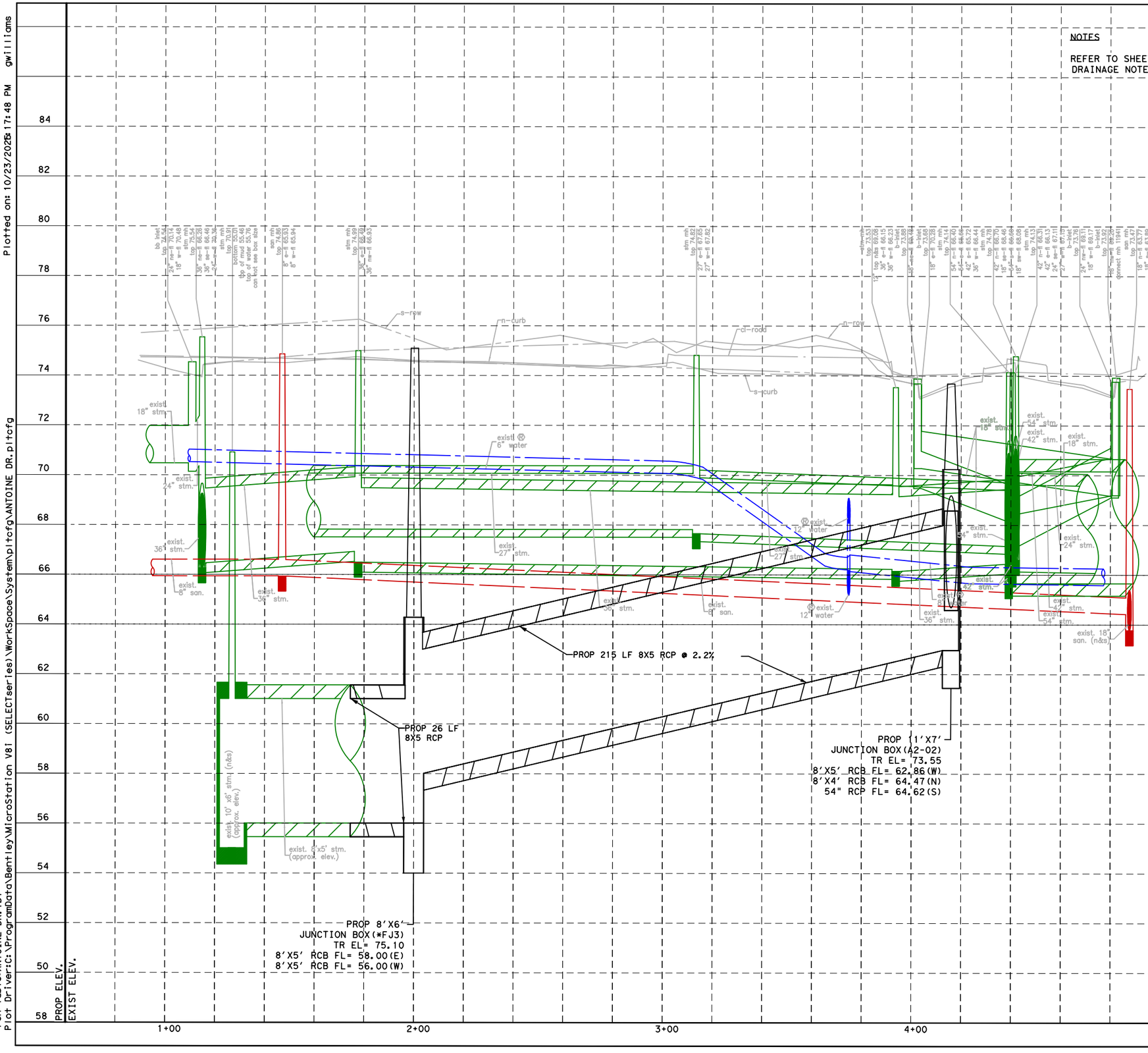

NOTES

REFER TO SHEET 15 OF 40 FOR DRAINAGE NOTES.

LEGEND:

- PROP STORM SEWER
- EXIST STORM SEWER
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

N

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

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FCM ENGINEERING
Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
LONG CREEK LANE
DRAINAGE PROFILE
STA 1+00 TO STA 4+42

SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 367 718	

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ANTOINE DR.

DEEP FOREST DR.

PROP 8'X8' JUNCTION BOX (MH-A3-06B) STA 2+12, 1.25 RT TR=71.73

PROP 99 LF 5'X4' RCB

PROP 70 LF 5'X4' RCB

PROP 46 LF 5'X4' RCB

PROP 4'X 3' RCB

PROP 4'X 3' RCB

PROP 8'X8' JUNCTION BOX (MH-A3-05) STA 167+33, 26.50, LT TR=71.03

PROP 4'X 3' RCB

PROP MH STM SWR (MH-A3-06A) STA 3+08.00, 22.80, RT TR=71.66

PROP MH STM SWR (MH-A3-06) STA 3+78.00, 19.94, RT TR=71.87

INWOOD PARK TOWNHOUSES VOL. 254, PG. 37, H.C.M.R.

INWOOD FOREST T/H (UNRECORDED)

INWOOD FOREST T/H (UNRECORDED)

NOTES

REFER TO SHEET 15 OF 40 FOR DRAINAGE NOTES.

LEGEND:

- PROP STORM SEWER
- EXIST STORM SEWER
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

N

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
DEEP FOREST DRIVE
DRAINAGE PLAN
STA 1+00 TO STA 4+50

SHEET 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-OGEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 368 718	

Plotted on: 10/23/2025 19:42 PM gwilliams

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Plot Driver:c:\ProgramData\Bentley\MicroStation V8I (SELECTseries)\WorkSpace\System\plotfg\ANTOINE DR.plotcfg

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PROP ELEV.
EXIST ELEV.

NOTES

REFER TO SHEET 15 OF 40 FOR DRAINAGE NOTES.

PROP 99 LF 5'X4' RCB @ 0.28%

PROP 70 LF 5'X4' RCB @ 0.30%

PROP 46 LF 5'X4' RCB @ 0.28%

PROP MH STM SWR (MH-A3-06A)
TR EL= 71.66
5'X4' RCB FL= 57.66(E)
5'X4' RCB FL= 57.66(W)

PROP MH STM SWR (MH-A3-06)
TR EL= 71.87
5'X4' RCB FL= 57.87(E)
5'X4' RCB FL= 57.87(W)

PROP 8'X8'
JUNCTION BOX(MH-A3-06B)
TR EL= 71.73
4'X3' RCB FL= 57.38(W)EXIST
5'X4' RCB FL= 57.38(E)

PROP 8'X8'
JUNCTION BOX(MH-A3-05)
TR EL= 71.03
4'X3' RCB FL= 63.24(S)
4'X3' RCB FL= 63.18(N)
5'X4' RCB FL= 58.00(W)

LEGEND:

- PROP STORM SEWER
- EXIST STORM SEWER
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

N

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

ANTOINE DRIVE

DEEP FOREST DRIVE
DRAINAGE PROFILE
STA 1+00 TO STA 4+50

SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 369 718	

Plotted on: 10/30/2025 11:25:52 AM ahmed.alobaidi
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Plot Driver: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Resource\Plot files\ANTOINE DR.pltcfg
Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Drainage\W GULF BANK\PR_DRN_02.dgn

RESTRICTED RESERVE "A"
BLOCK 1
CHURCH CHICKEN ON ANTOINE DRIVE
F.C. NO. 615080, H.C.M.R.

UNRESTRICTED RESERV
THE CORNERS AT INWOOD
VOL. 283, PG. 6, H.C

ANTOINE DR.

EXIST ROW

PROP 11'X10' JUNCTION BOX JB-A2-01
STA 8+19.53, 0.16' RT
TR=79.87

SEE NOTE 2

℄ W. GULF BANK RD.

REFER TO ANTOINE DRIVE
STA 222+00 TO STA 225+26
SHEET 1 FOR MORE INFORMATION

PROP 61 LF OF
24" RCP

REFER TO ANTOINE DRIVE
STA 222+00 TO STA 225+26
SHEET 1 FOR MORE INFORMATION

PROP TYP "RCB ACCESS" MH-12
STA 8+80.25, 0.78' RT
TR=79.77

℄ W GULF BANK RD.
STA 223+32.52
℄ ANTOINE DR.
STA 8+46.41

PROP 162 LF OF
4'X3' RCB

PROP 58 LF OF
4'X3' RCB

PROP 73 LF OF
24" RCP

W. GULF BANK RD

℄ ANTOINE DR.

EXIST ROW

MATCH LINE STA 10+50

LEGEND:

- PROP STORM SEWER
- PROP ROADWAY FACE OF CURB
- EXIST STORM SEWER
- EXIST CULVERT
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE
- 4" CONC RIPRAP

NOTES:

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3. REFER TO WATER & SANITARY SEWER PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
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HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

No.	DATE	REVISIONS	APP.

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VERIFICATION OF PRIVATE UTILITY LINES

Date

CenterPoint Energy natural gas utilities shown. Gas service lines are not shown. This signature not be used for conflict verification.

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY, #400
HOUSTON, TX 77079

SURVEYED BY:
KUO & ASSOCIATES, INC.

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RODRIGO GUADARRAMA
111437
10/30/2025
90% SUBMITTAL
GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
W. GULF BANK
DRAINAGE PLAN & PROFILE
BEGIN PROJECT TO STA 10+50

SHEET 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 370 OF 718	

PROP 11'X10' JUNCTION BOX JB-A2-01
STA 8+19.53
8'X3' RCB FL = 70.39(S)
4'X3' RCB FL = 70.39(E)
7'X3' RCP FL = 70.52(N)

PROP NORTH TOC

PROP SOUTH TOC

PROP TYP "RCB ACCESS" MH-A2-04
STA 8+80.25
4'X3' RCB FL = 70.47(E&W)
24" RCP FL = 70.97(N)

PROP NORTH TOC

PROP SOUTH TOC

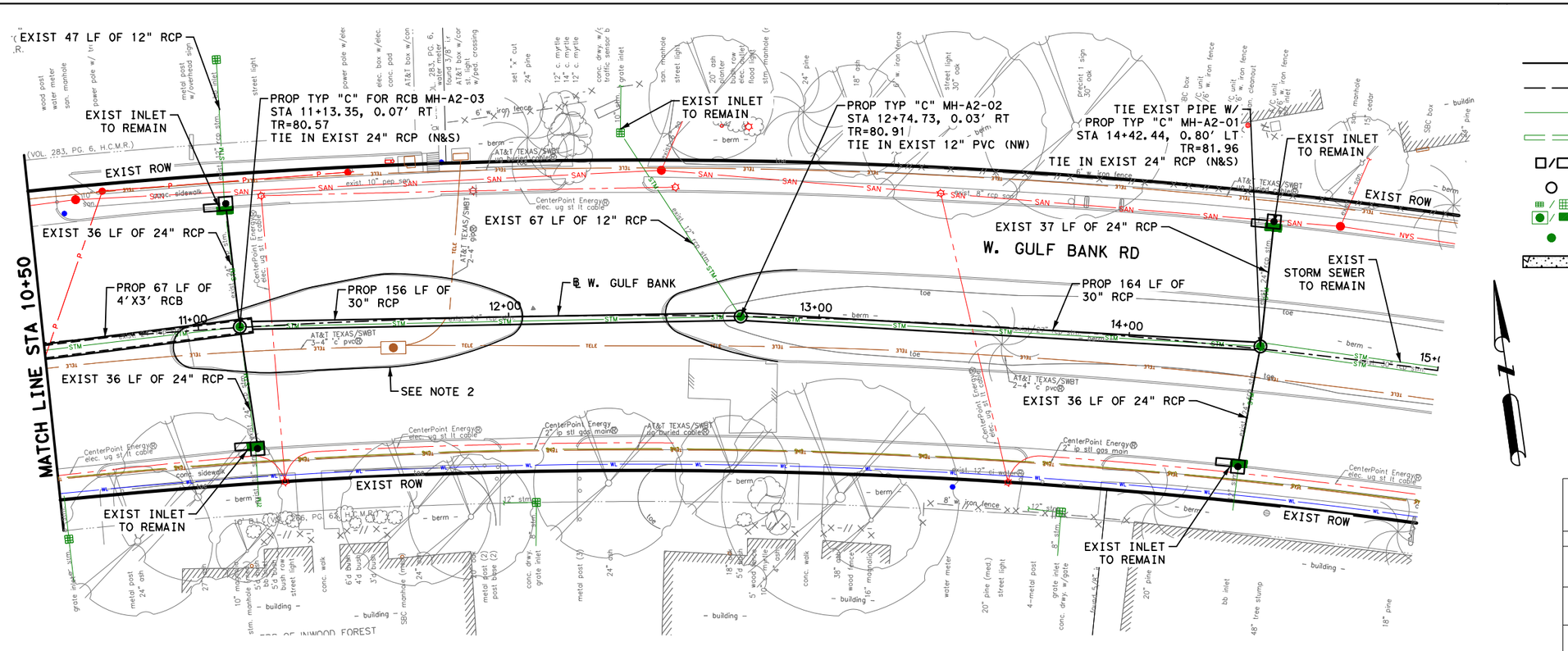
PROP 58 LF 4'X 3' RCB
@ 0.14%

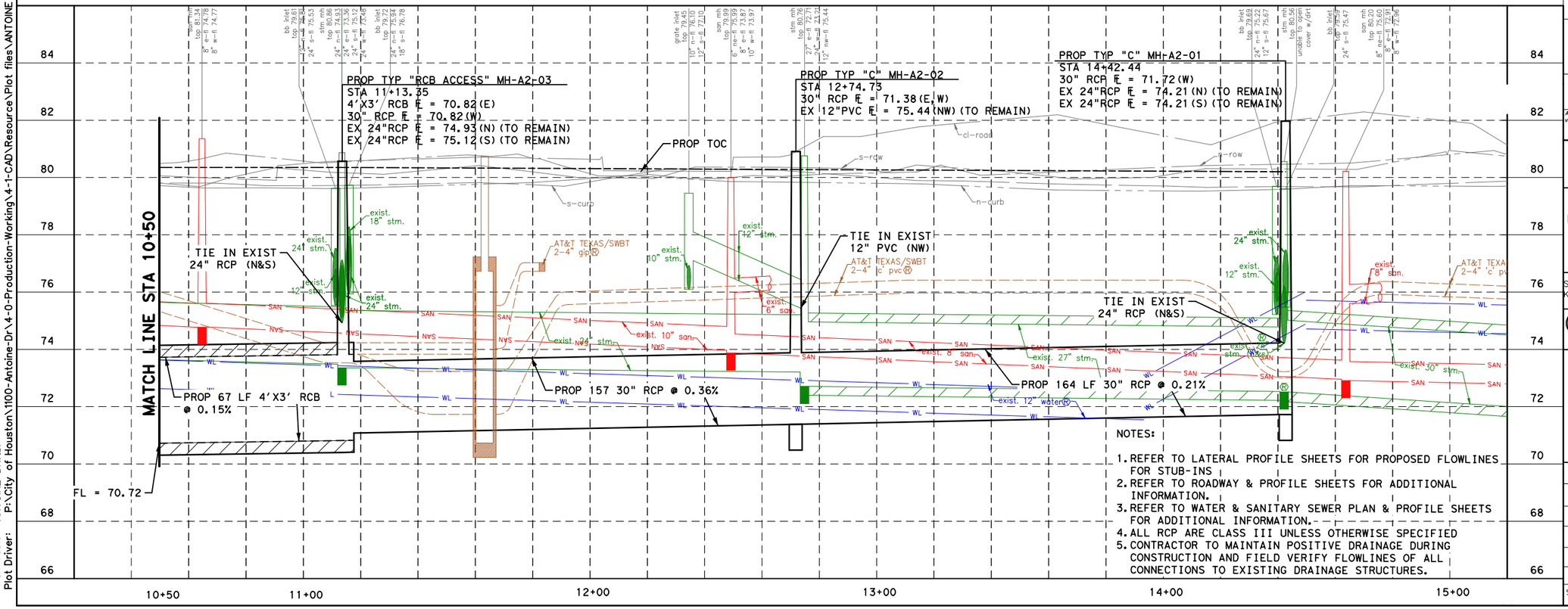
PROP 162 LF 4'X 3' RCB @ 0.15%

FL=70.72

MATCH LINE STA 10+50

7+00 8+00 9+00 10+00 10+50





LEGEND:

- PROP STORM SEWER
- PROP ROADWAY FACE OF CURB
- EXIST STORM SEWER
- EXIST CULVERT
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE
- 4" CONC RIPRAP

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

No.	DATE	REVISIONS	APP.

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HOUSTON, TX 77079

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111437
10/24/2025
90% SUBMITTAL
GAUGE ENGINEERING
Texas Registered Engineering Firm F-2017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
W. GULF BANK
DRAINAGE PLAN & PROFILE
STA 10+50 TO END PROJECT

SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 371 OF 718	

NOTES:

1. REFER TO LATERAL PROFILE SHEETS FOR PROPOSED FLOWLINES FOR STUB-INS
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3. REFER TO WATER & SANITARY SEWER PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
4. ALL RCP ARE CLASS III UNLESS OTHERWISE SPECIFIED
5. CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE DURING CONSTRUCTION AND FIELD VERIFY FLOWLINES OF ALL CONNECTIONS TO EXISTING DRAINAGE STRUCTURES.

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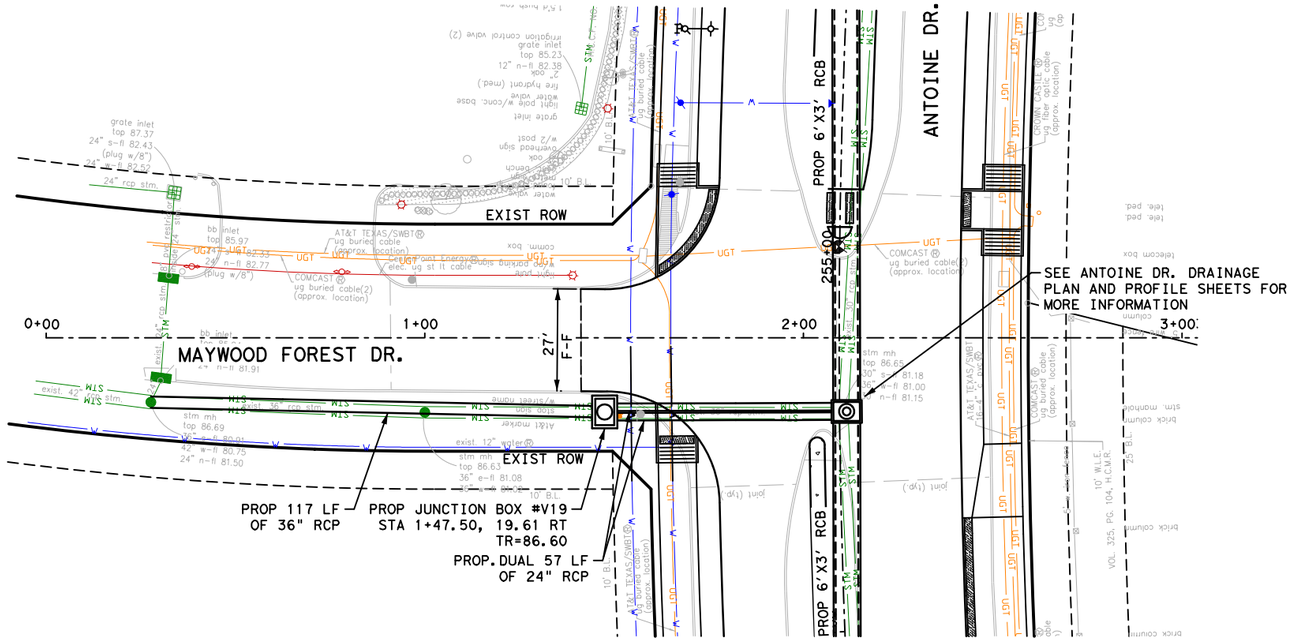

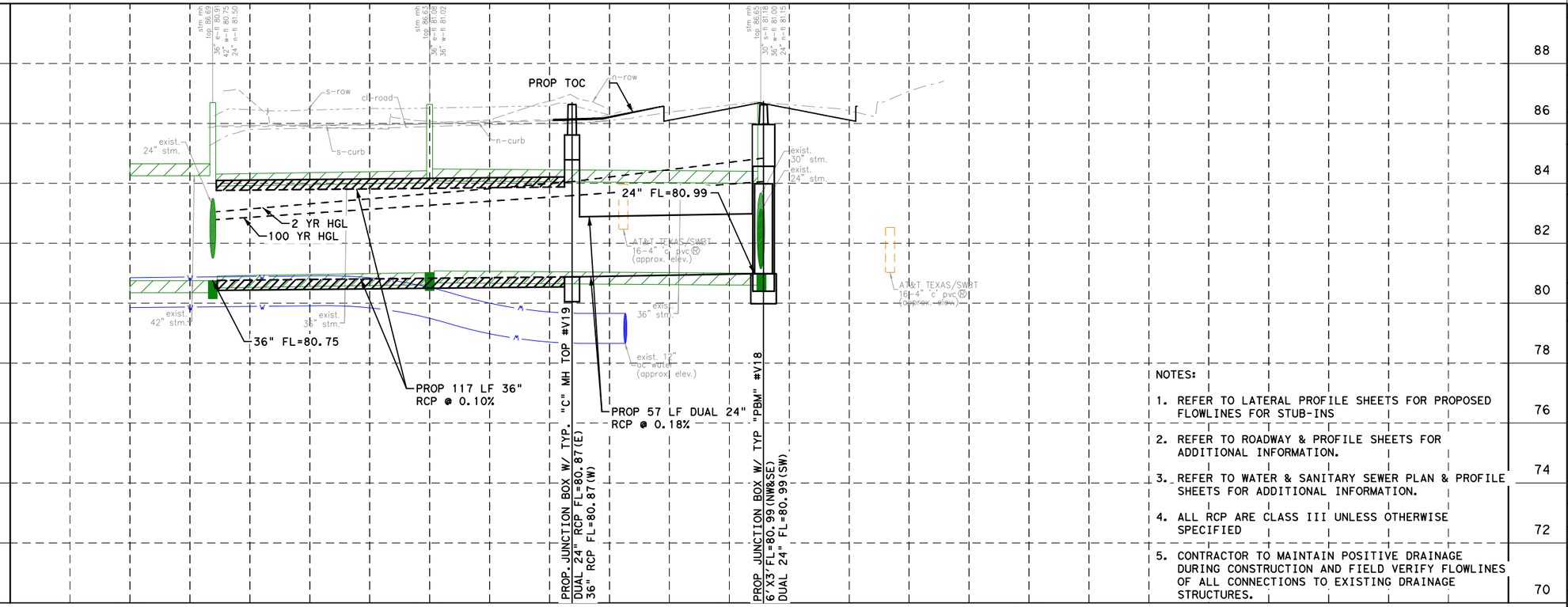

LEGEND:

- PROP STORM SEWER
- PROP ROADWAY FACE OF CURB
- EXIST STORM SEWER
- EXIST CULVERT
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

0′ 20′ 40′
SCALE IN FEET

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VOGLER & SPENCER ENGINEERING
777 North Eldridge Parkway, Suite 500
Houston, Texas 77079
713-782-0042
www.vs-engr.com

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JOEL OLSHEFSKI
Date
131531
10/23/2025
95% SUBMITTAL
VOGLER & SPENCER ENGINEERING
Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

MAYWOOD FOREST DRIVE
DRAINAGE PLAN
STA 0+00 TO END

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 372 OF 718	

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No.	DATE	REVISIONS	APP.

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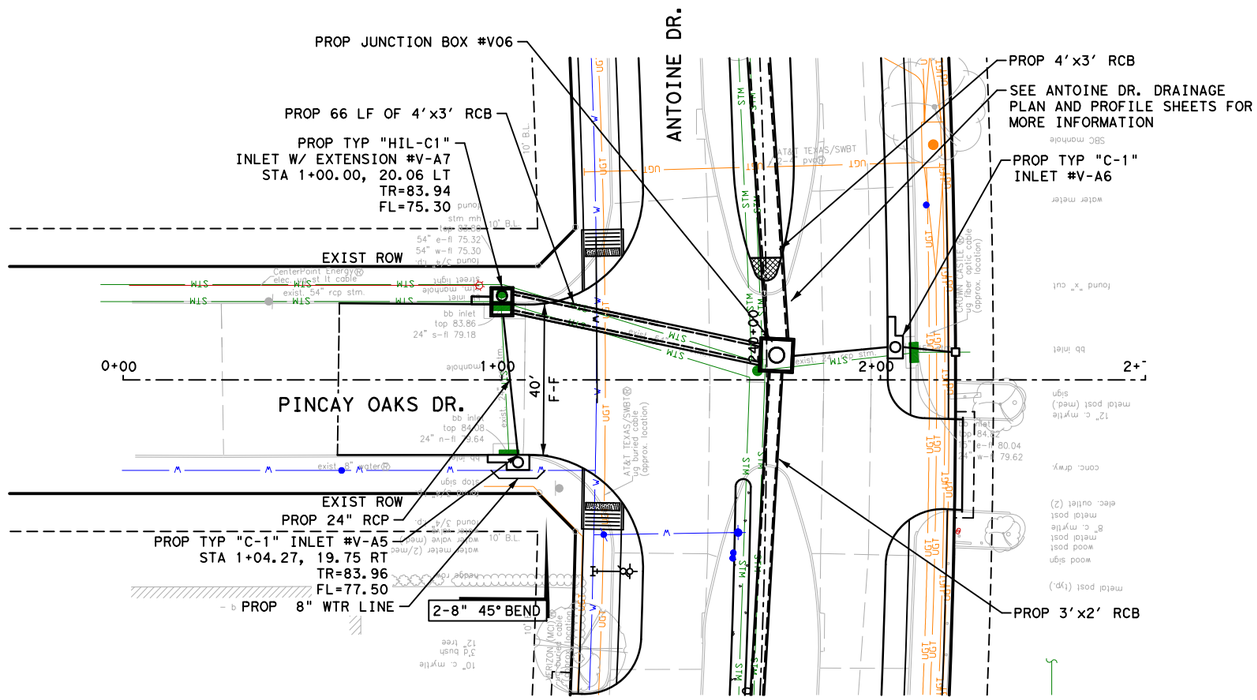

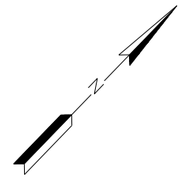

LEGEND:

- PROP STORM SEWER
- PROP ROADWAY FACE OF CURB
- EXIST STORM SEWER
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No.	DATE	REVISIONS	APP.

0' 20' 40'
SCALE IN FEET

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777 North Eldridge Parkway, Suite 500
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713.783.0043
www.vs-eng.com

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131531
10/23/2025
95% SUBMITTAL
VOGLER & SPENCER ENGINEERING
Texas Registered Engineering Firm F-148

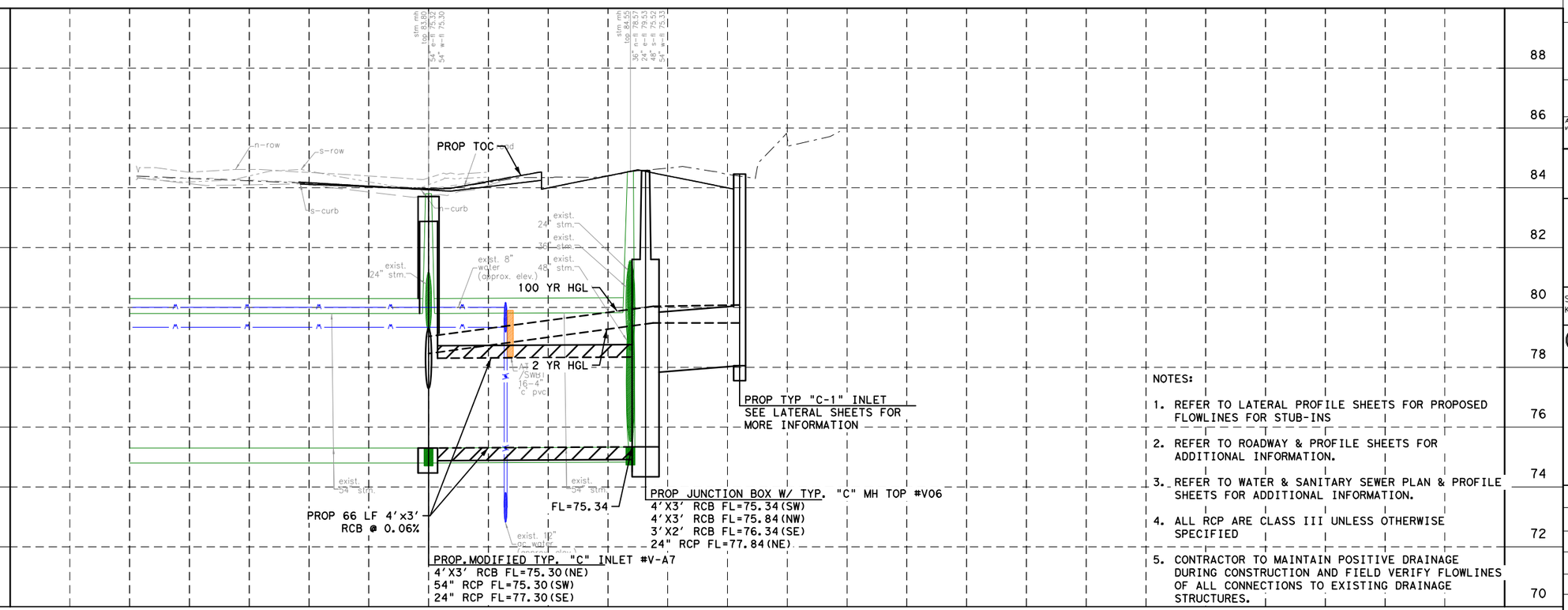
SURVEYED BY:
KUO & ASSOCIATES, INC.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
PINCAY OAKS DRIVE
DRAINAGE PLAN
STA 0+00 TO END

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 373 OF 718	



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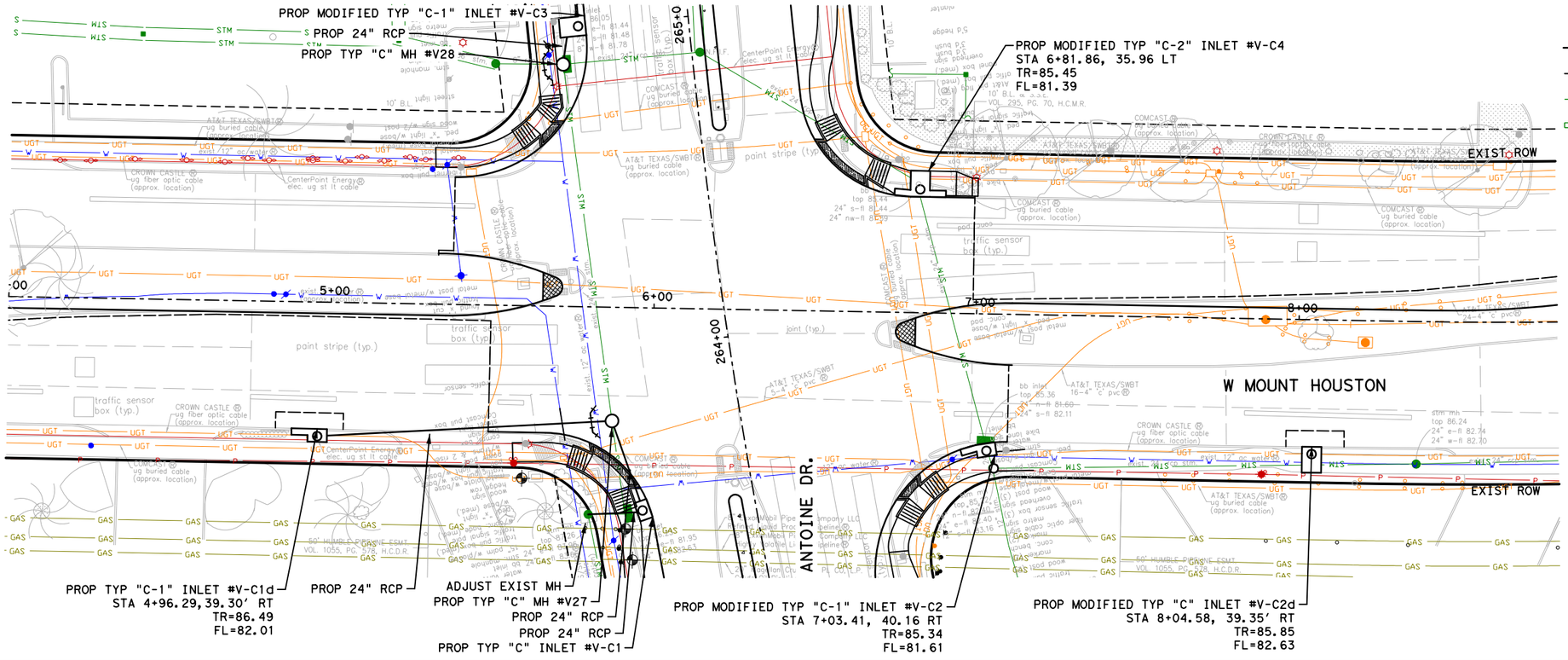

LEGEND:

- PROP STORM SEWER
- PROP ROADWAY FACE OF CURB
- EXIST STORM SEWER
- EXIST CULVERT
- PROPOSED INLET
- PROP MANHOLE
- EXIST INLET
- EXIST MANHOLE

N

0' 20' 40'

SCALE IN FEET

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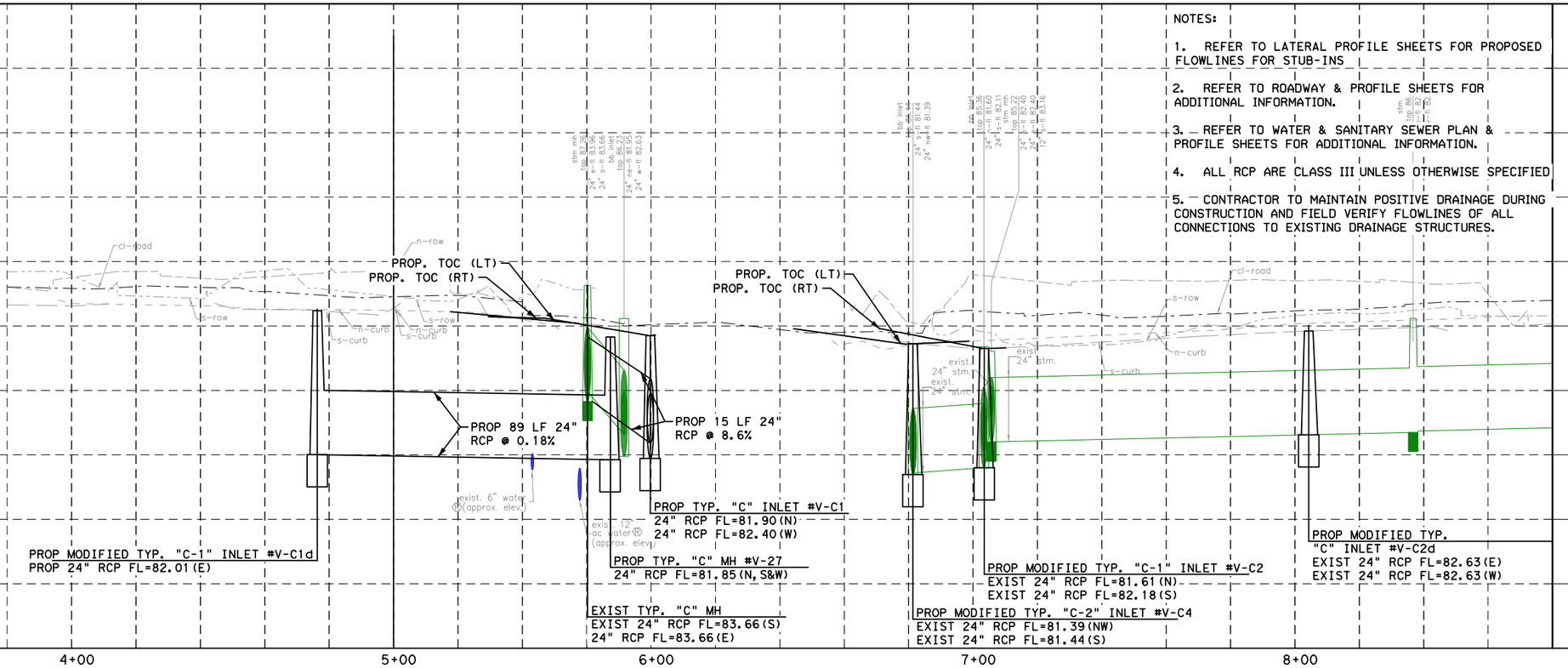

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713-782-0042
www.vs-eng.com

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131531
10/23/2025
95% SUBMITTAL
VOGLER & SPENCER ENGINEERING
Texas Registered Engineering Firm F-148

SURVEYED BY:
KUO & ASSOCIATES, INC.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
WEST MOUNT HOUSTON DRAINAGE PLAN & PROFILE STA 5+20 TO STA 10+00

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 374 OF 718	

Plotted on: 10/23/2025 1:45:13 PM Jovi Ledo

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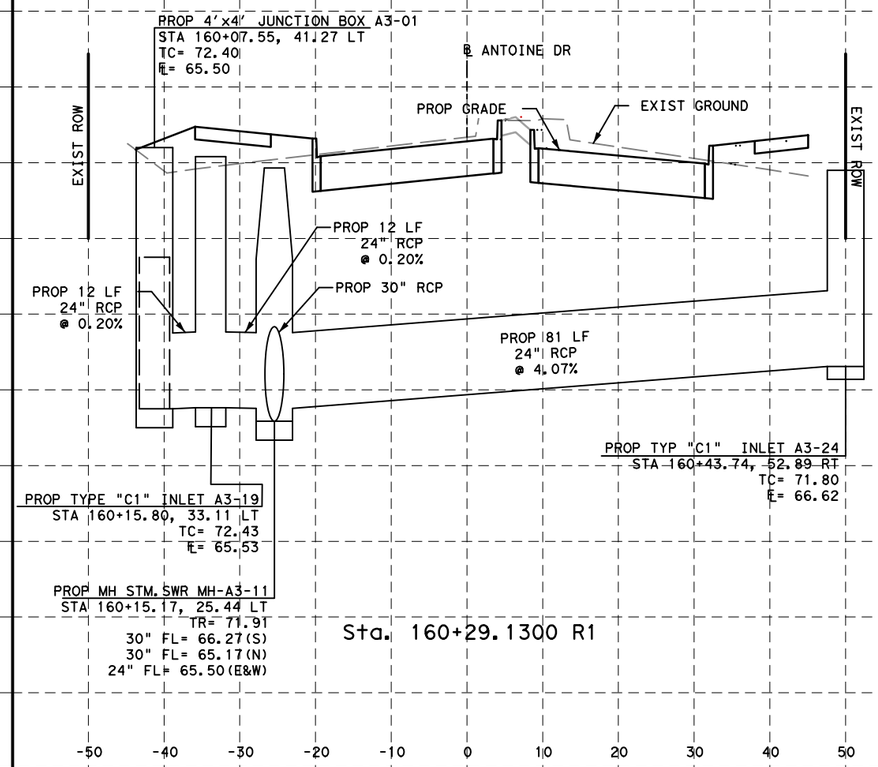

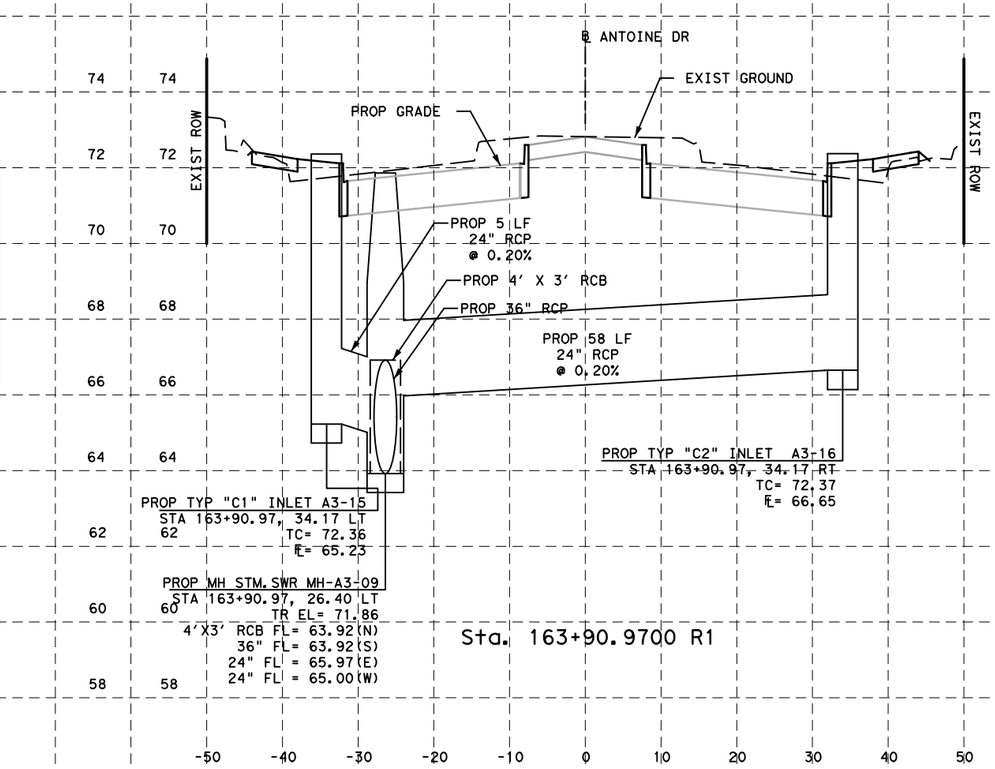

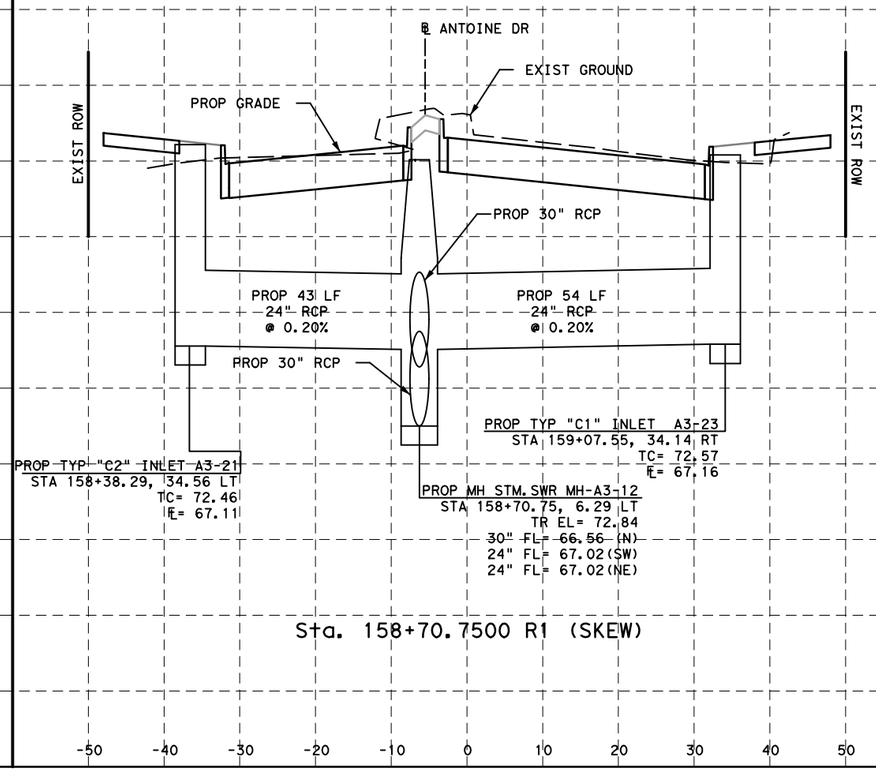

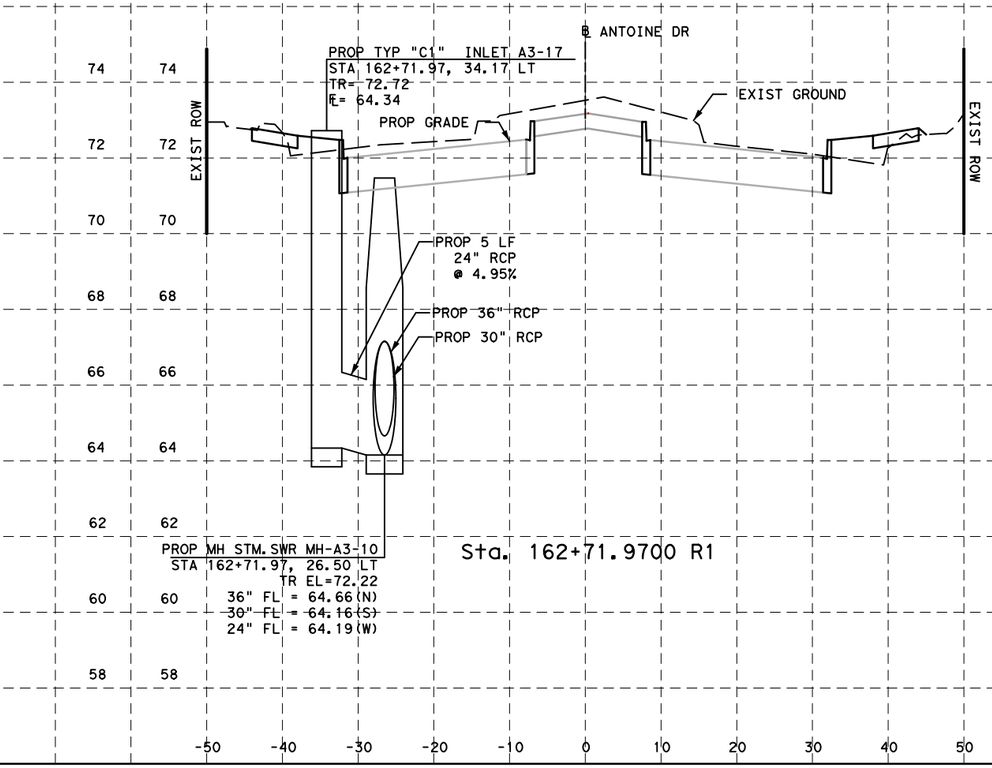

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DESIGN ENGINEER NAME
FCM ENGINEERS, P.C.
ADDRESS:
3300 S. Gessner Rd.
TEL No.: 713-706-4412
TX FIRM No.: F-13481

SURVEYED BY:
KUO & ASSOCIATES, INC.

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FCM ENGINEERING
Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM SEWER LATERALS

SHEET 1 OF 16

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 375 718	

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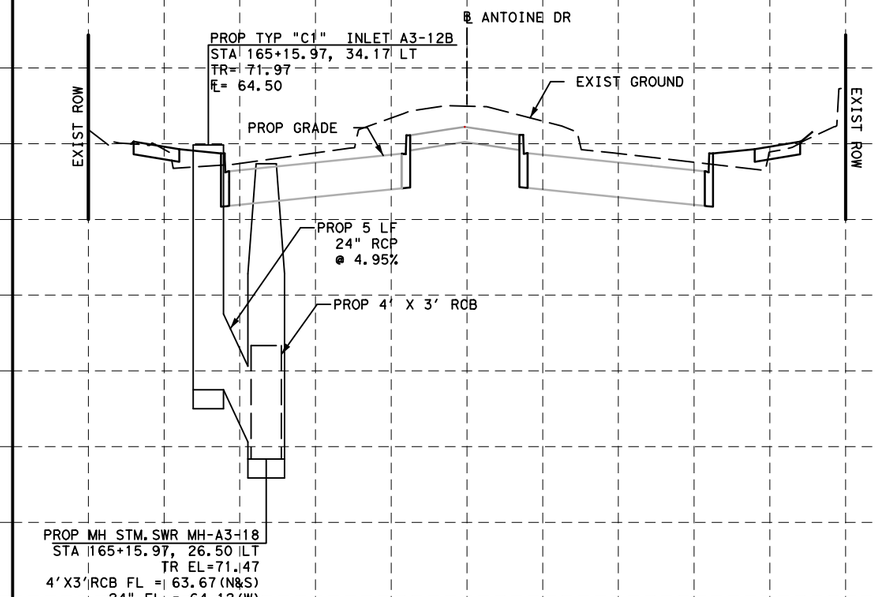

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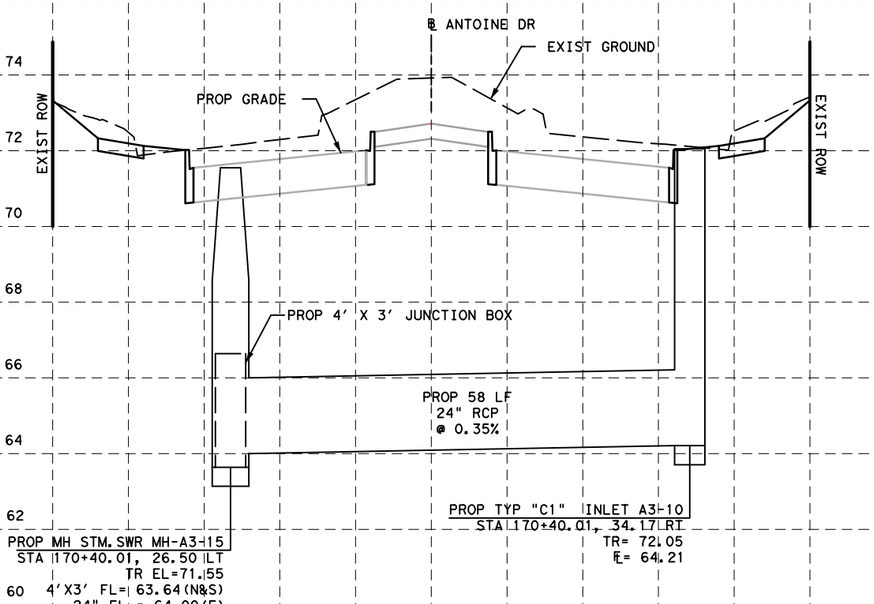

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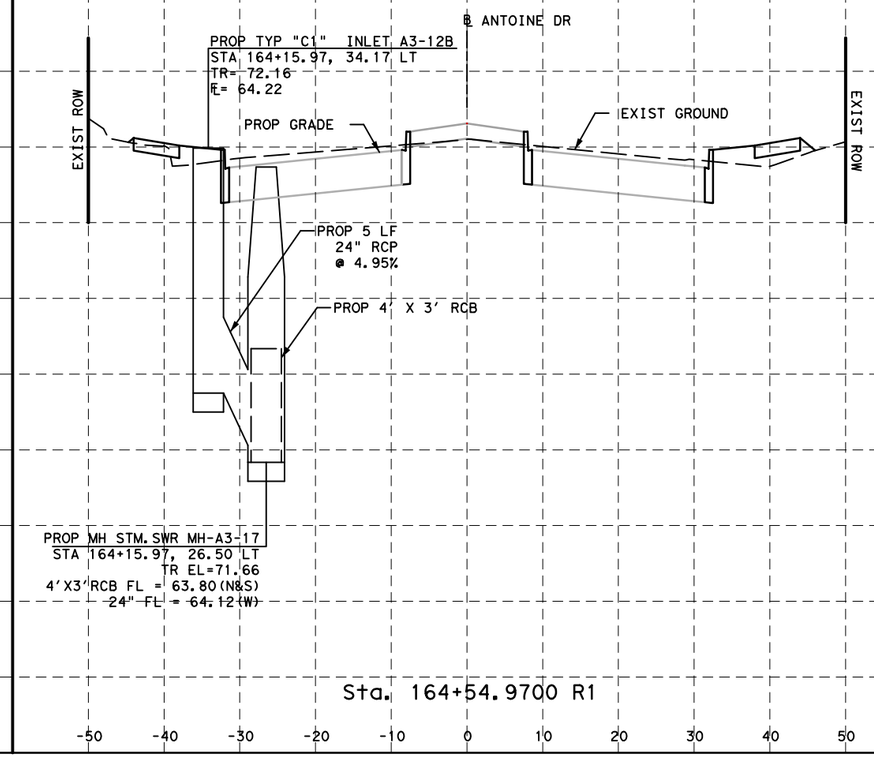

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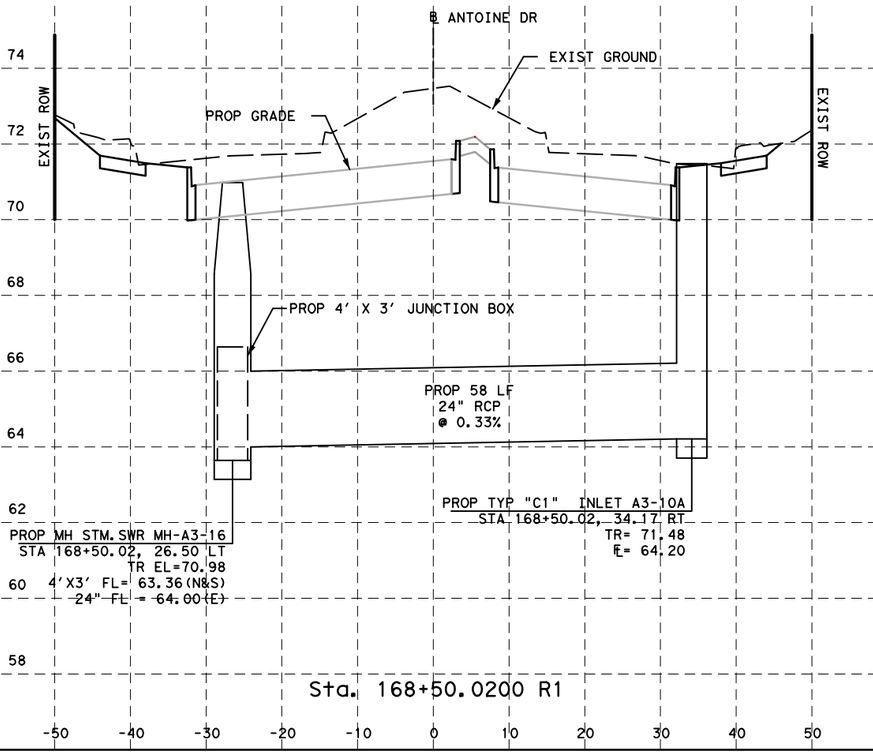

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FCM

DESIGN ENGINEER NAME
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ADDRESS:
3300 S. Gessner Rd.
TEL No.: 713-706-4412
TX FIRM No.: F-13481

SURVEYED BY:
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95% SUBMITTAL

FCM ENGINEERING
Texas Registered Engineering Firm F-13481

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM SEWER LATERALS

SHEET 2 OF 16

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 376 718	

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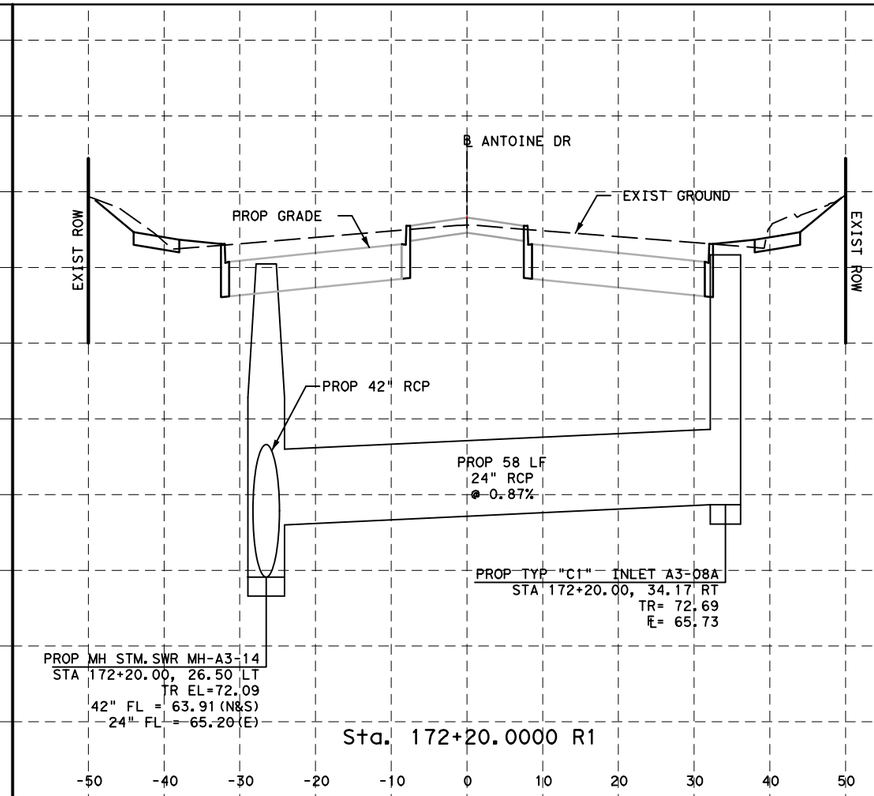
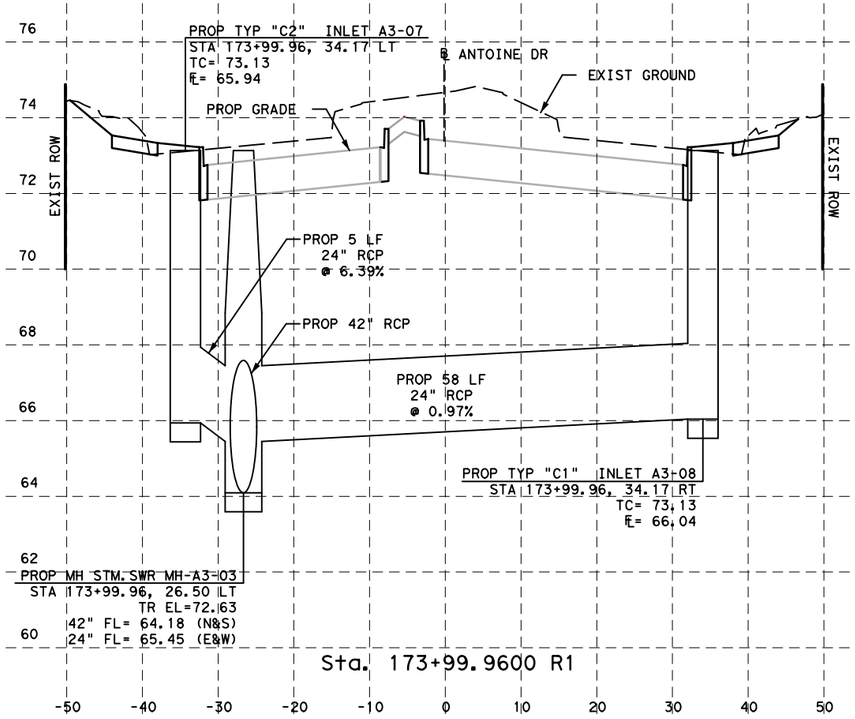
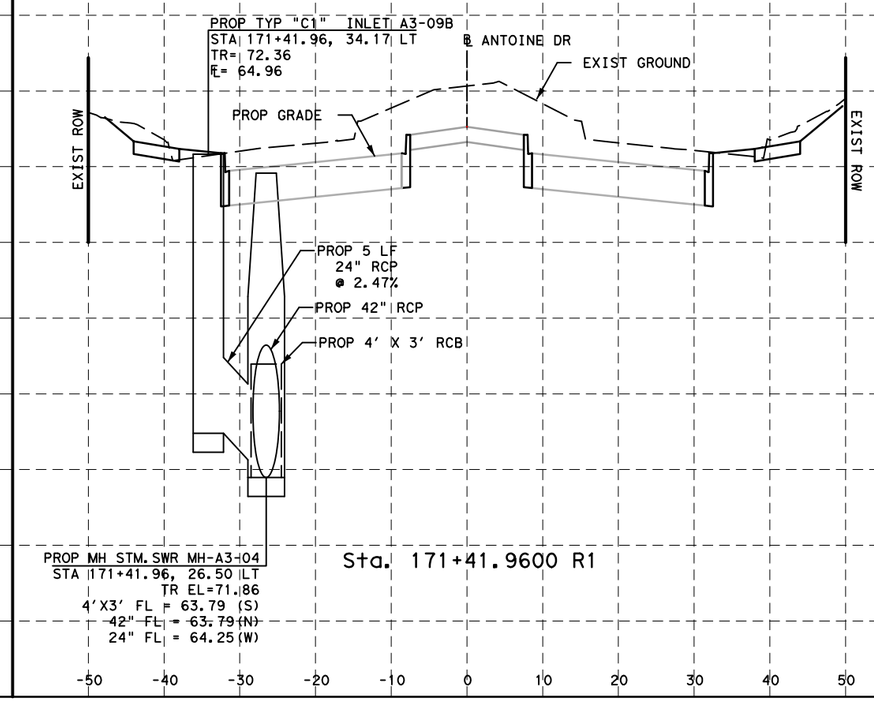
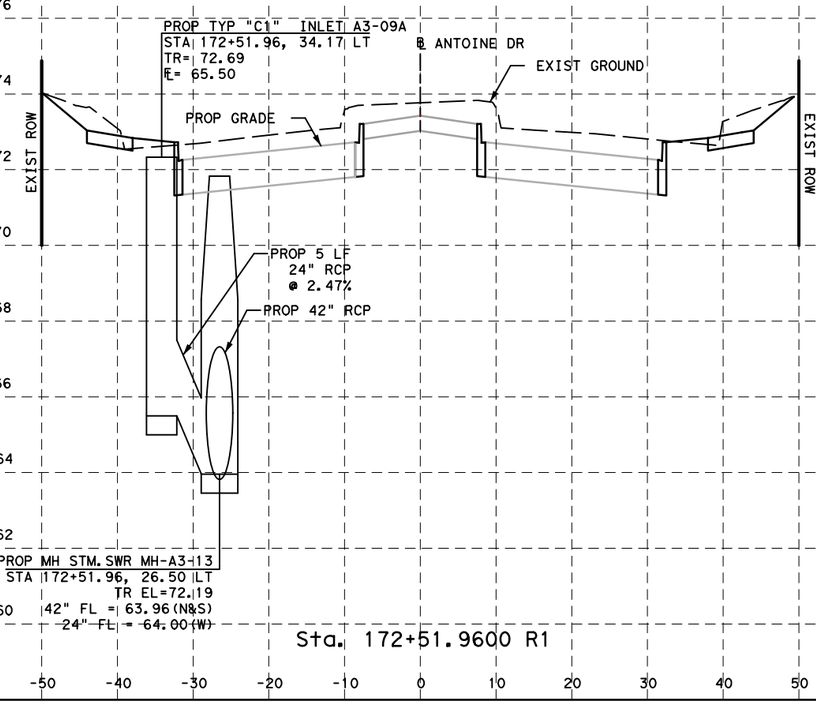
Plot Driver:$PLTDRVL$

Design Filename: $FILEL$









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VERIFICATION OF PRIVATE UTILITY LINES

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DESIGN ENGINEER NAME
FCM ENGINEERS, P.C.
ADDRESS:
3300 S. Gessner Rd.
TEL No.: 713-706-4412
TX FIRM No.: F-13481

SURVEYED BY:
KUO & ASSOCIATES, INC.

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

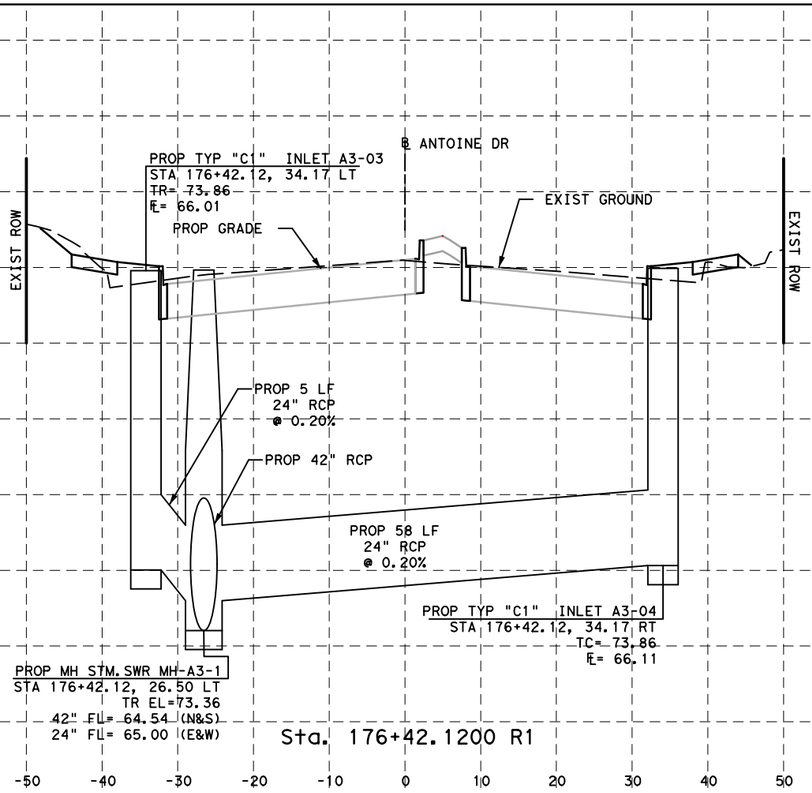
ANTOINE DRIVE

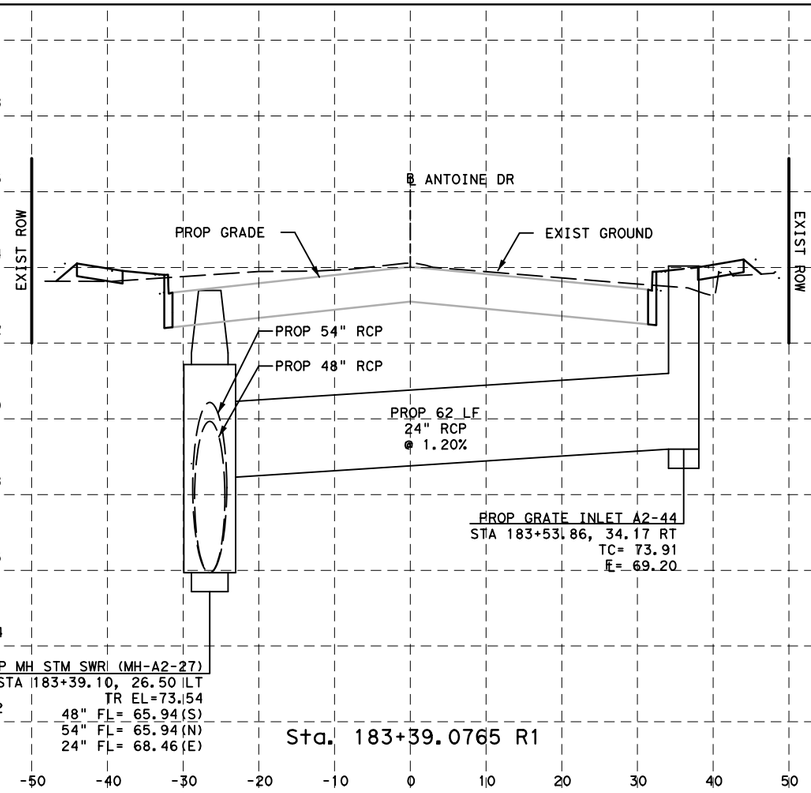
STORM SEWER LATERALS

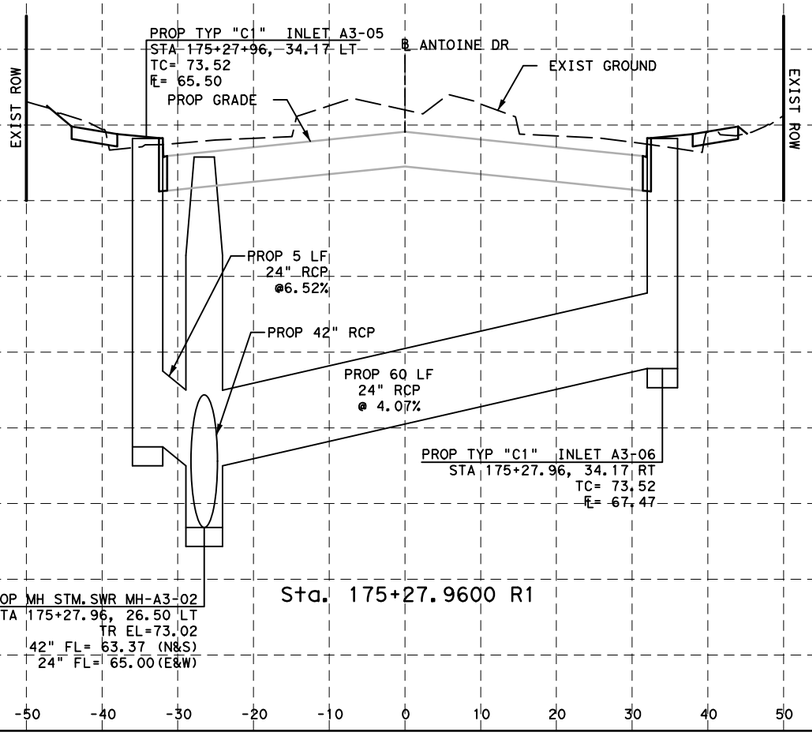
SHEET 3 OF 16

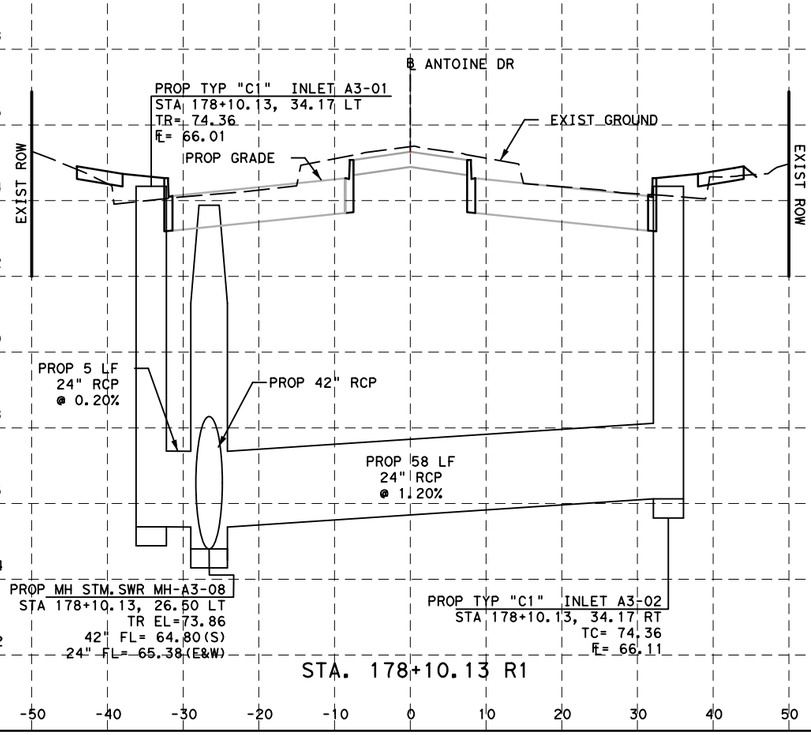
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 377 718	

Plotted on: $DATE$ $TIME$ $USER$
Pen Table:$PENTBL$
Plot Driver:$PLTDRVL$
Design Filename: $FILEL$









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DESIGN ENGINEER NAME
FCM ENGINEERS, P.C.
ADDRESS:
3300 S. Gessner Rd.
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TX FIRM No.: F-13481

SURVEYED BY:
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM SEWER LATERALS

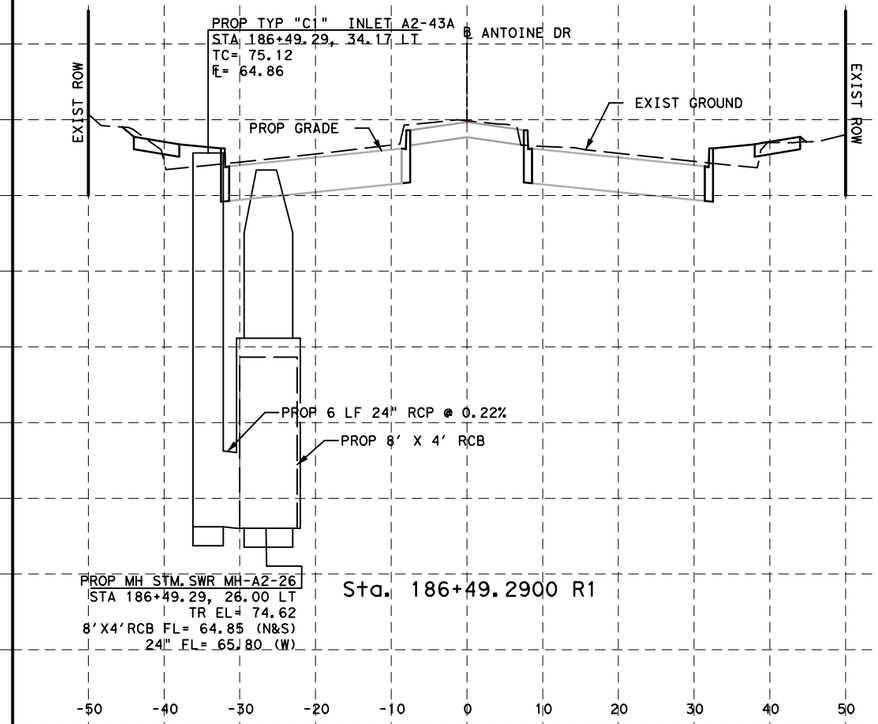
SHEET 4 OF 16

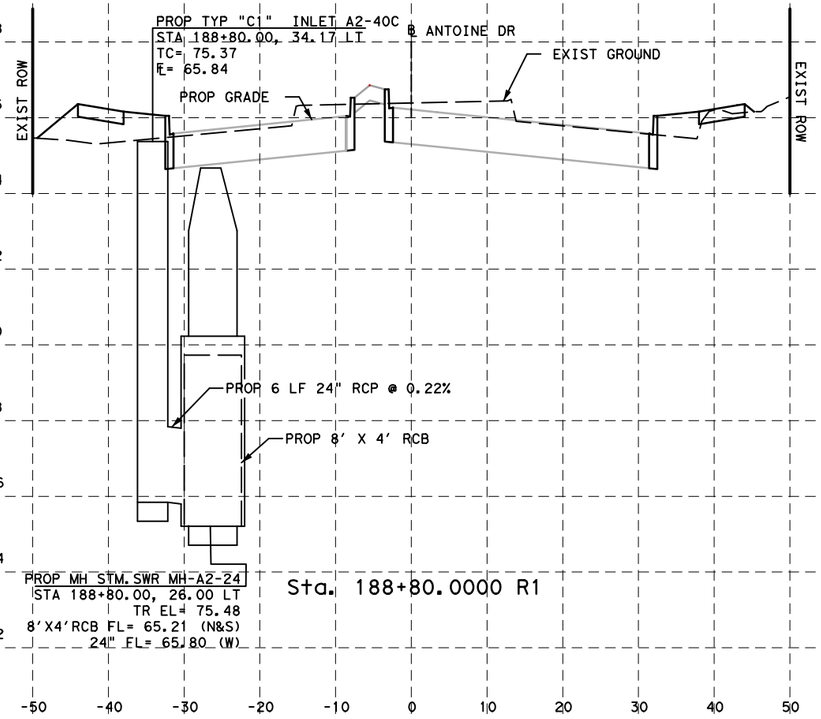
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 378 718	

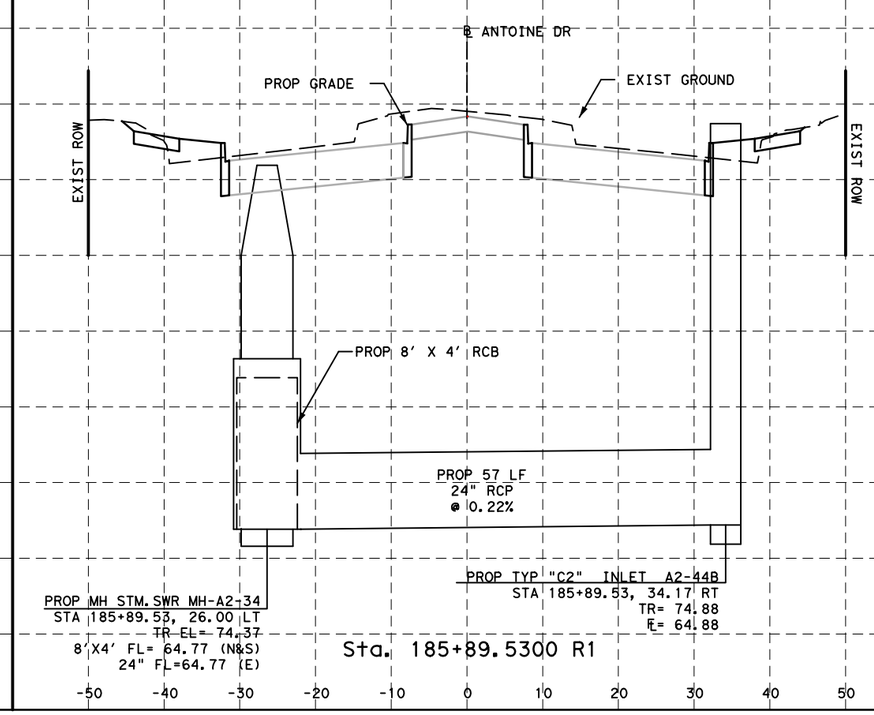
Plotted on: $DATE$ $TIME$ $USER$

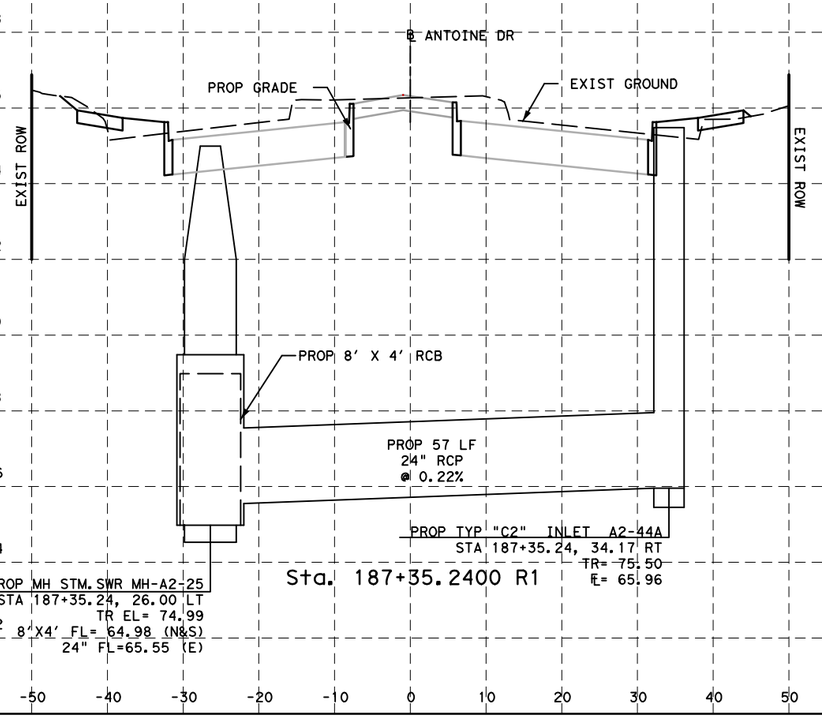
Pen Table:$PENTBL$
Plot Driver:$PLTDRVL$

Design Filename: $FILEL$









Plotted on: $DATE$ $TIME$ $USER$

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Plot Driver:$PLTDRVL$

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TX FIRM No.: F-13481

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KUO & ASSOCIATES, INC.

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON

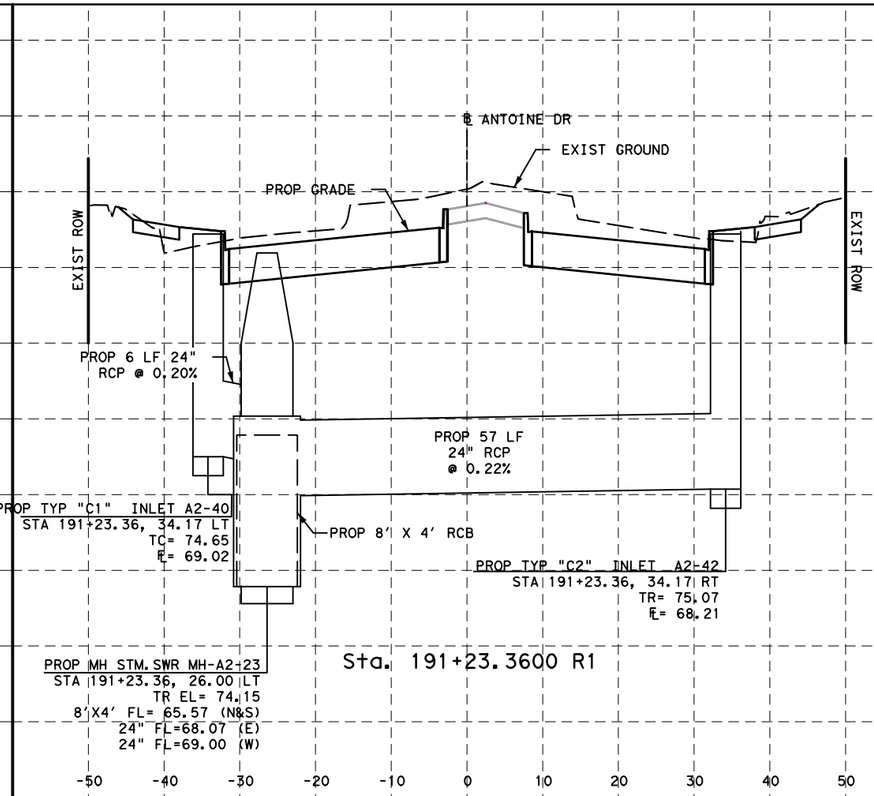
HOUSTON PUBLIC WORKS

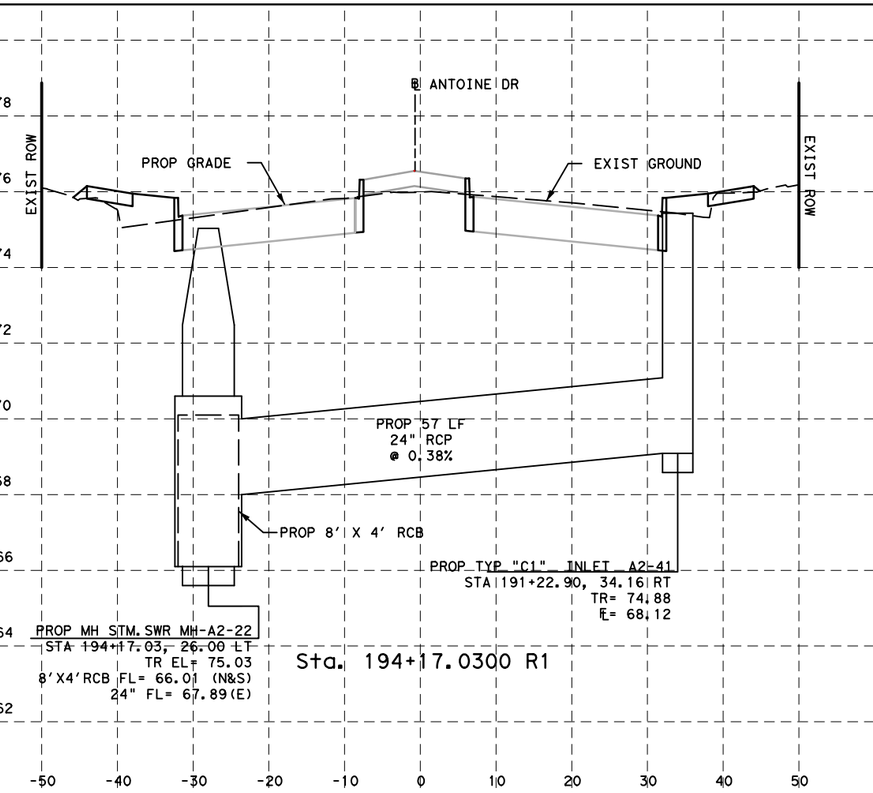
ANTOINE DRIVE

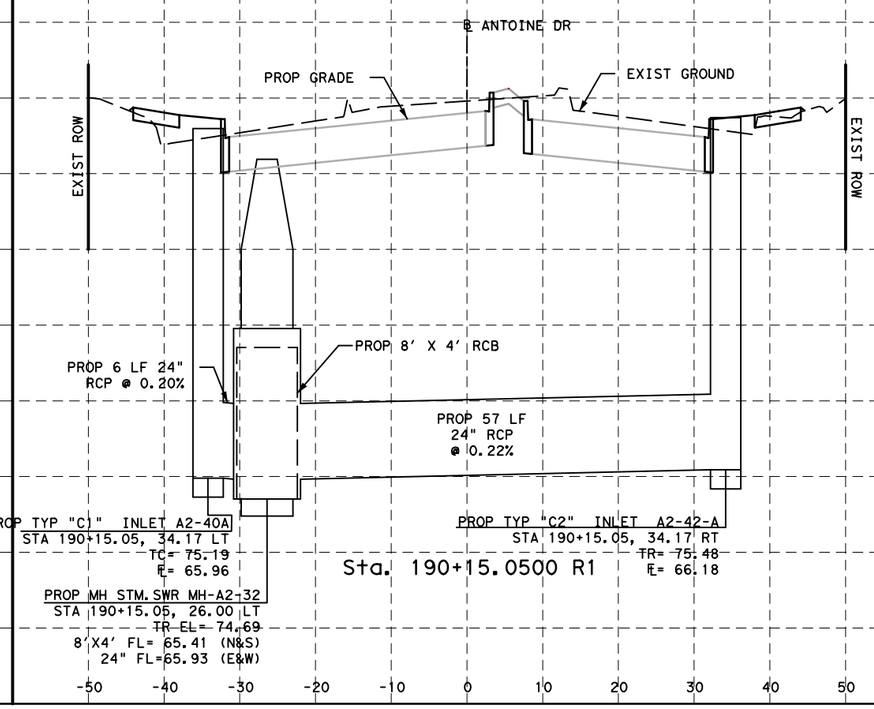
STORM SEWER LATERALS

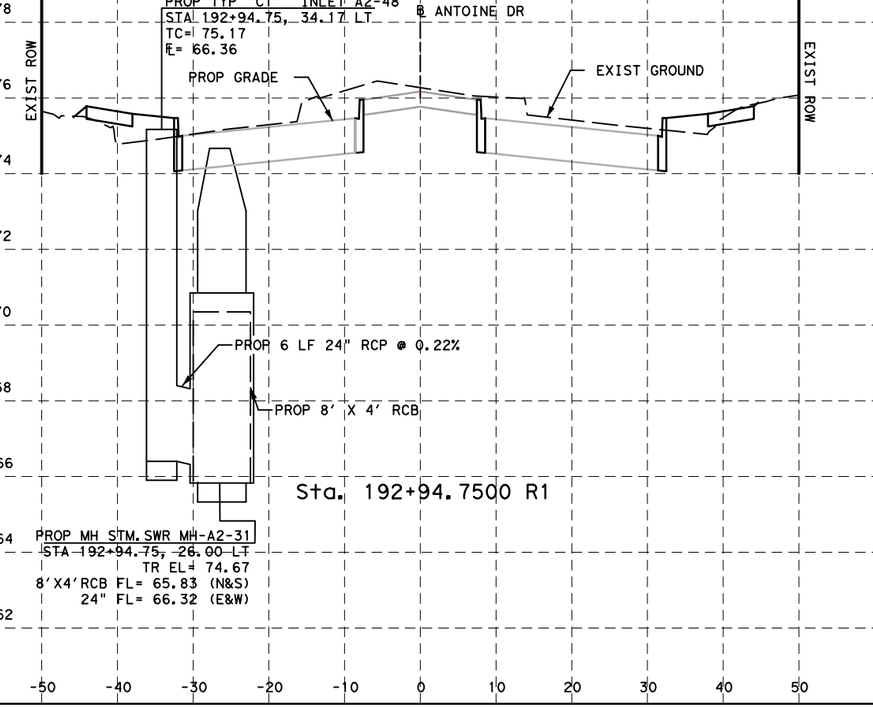
SHEET 5 OF 16

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 379 718	









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DESIGN ENGINEER NAME
FCM ENGINEERS, P.C.
ADDRESS:
3300 S. Gessner Rd.
TEL No.: 713-706-4412
TX FIRM No.: F-13481

SURVEYED BY:
KUO & ASSOCIATES, INC.

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM SEWER LATERALS

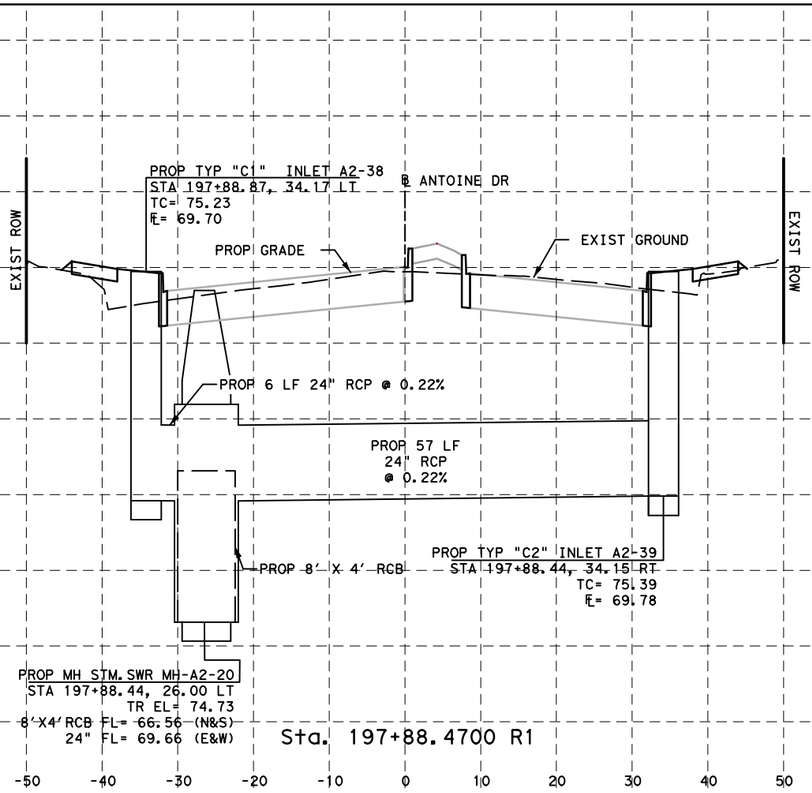
SHEET 6 OF 16

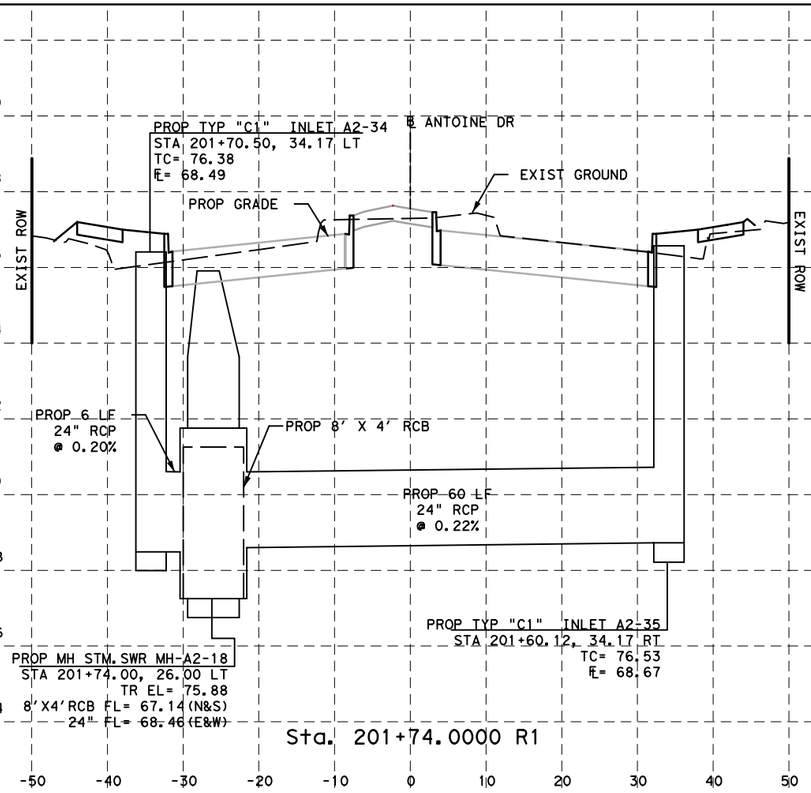
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 380 718	

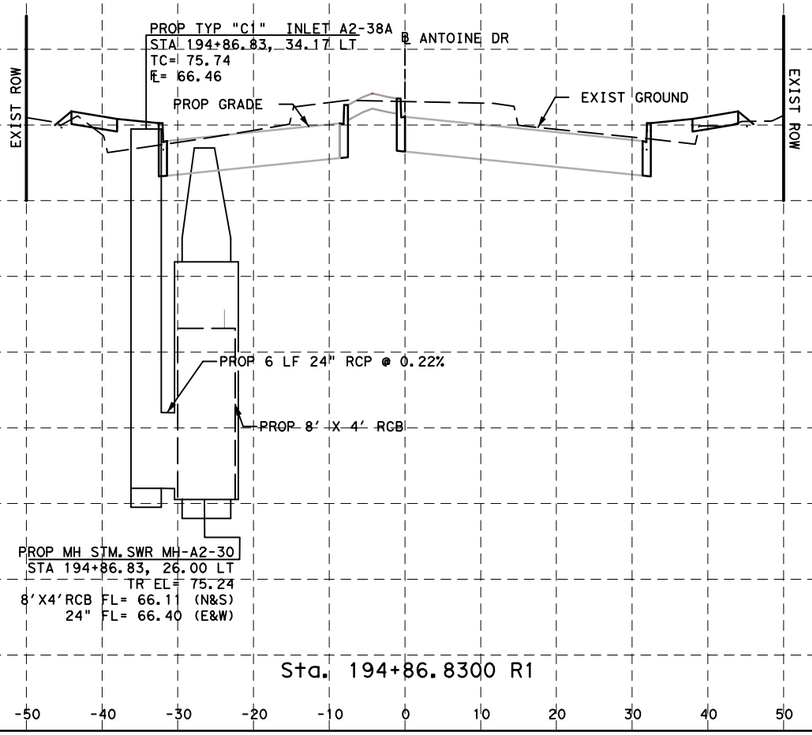
Plotted on: $DATE$ $TIME$ $USER$

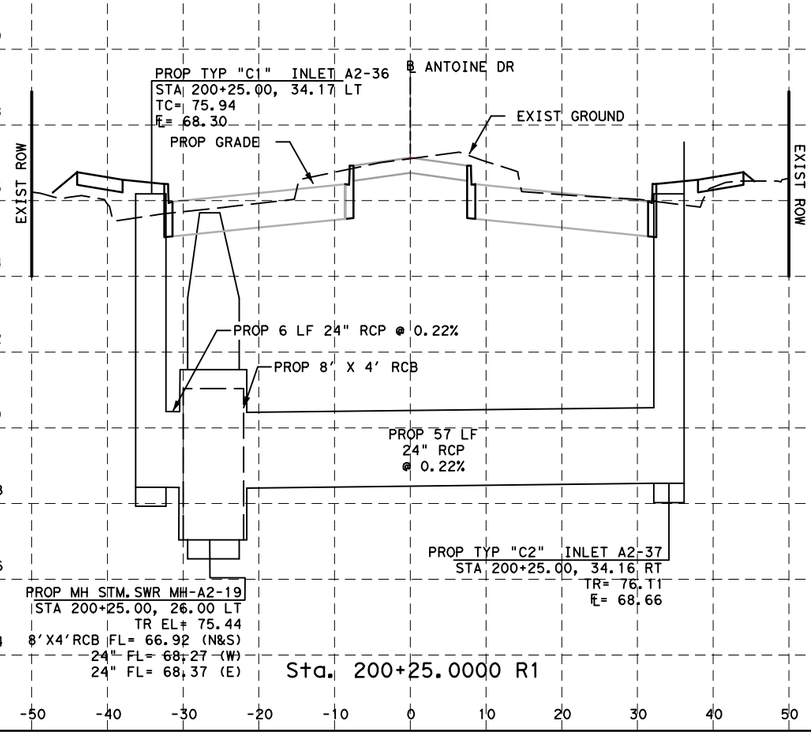
Pen Table:$PENTBL$
Plot Driver:$PLTDRVL$

Design Filename: $FILEL$









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DESIGN ENGINEER NAME
FCM ENGINEERS, P.C.
ADDRESS:
3300 S. Gessner Rd.
TEL No.: 713-706-4412
TX FIRM No.: F-13481

SURVEYED BY:
KUO & ASSOCIATES, INC.

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM SEWER LATERALS

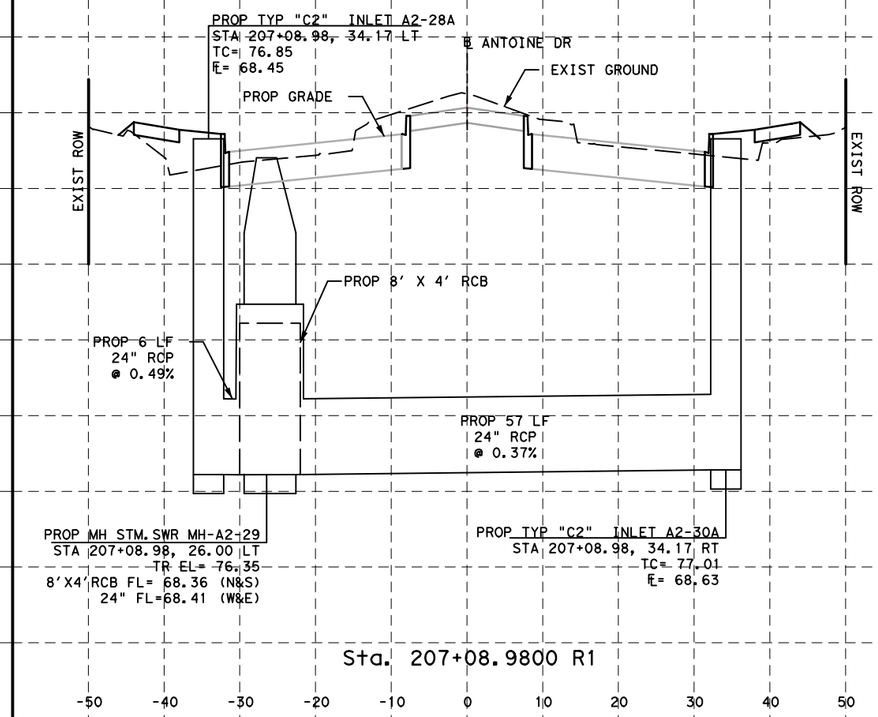
SHEET 7 OF 16

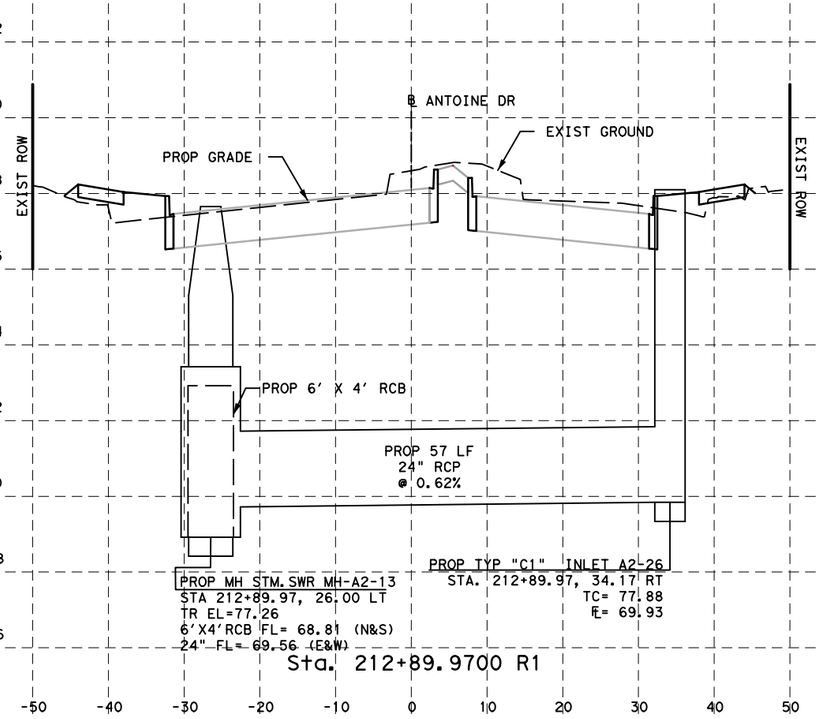
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 381 718	

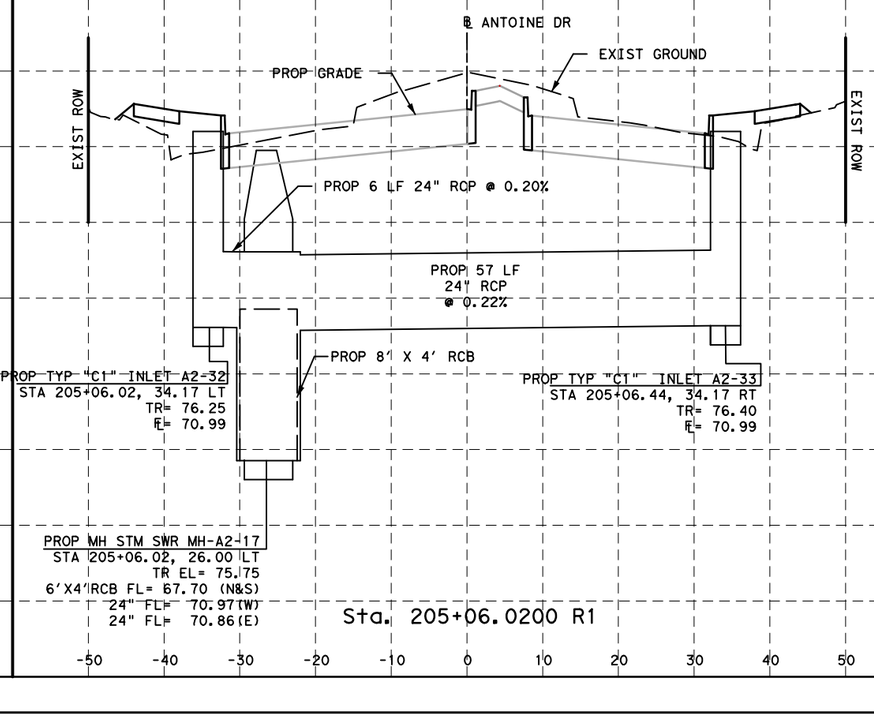
Plotted on: $DATE$ $TIME$ $USER$

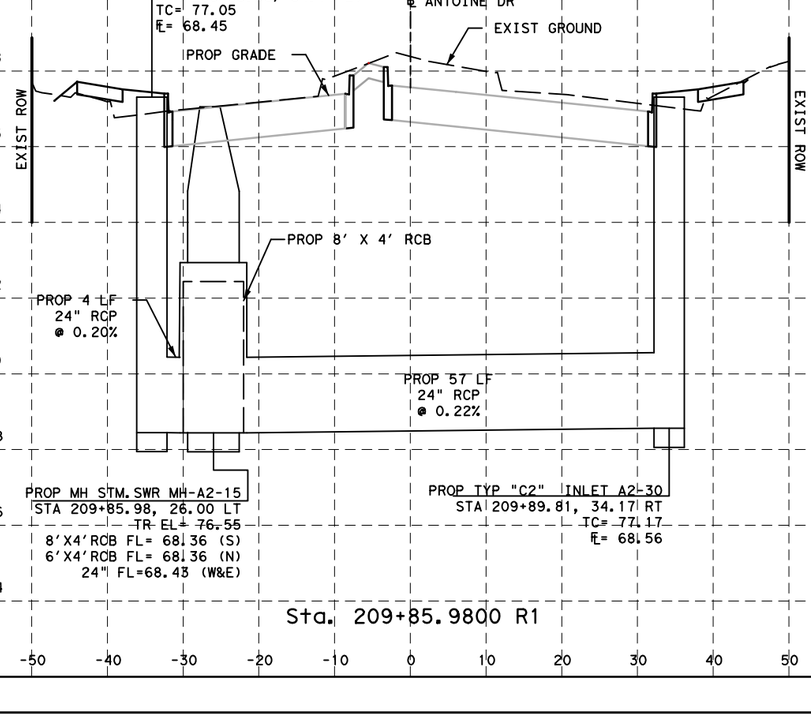
Pen Table:$PENTBL$
Plot Driver:$PLTDRVL$

Design Filename:$FILEL$









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DESIGN ENGINEER NAME
FCM ENGINEERS, P.C.
ADDRESS:
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TX FIRM No.: F-13481

SURVEYED BY:
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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM SEWER LATERALS

SHEET 8 OF 16

WBS NUMBER	N-100030-0GEC-3
DRAWING SCALE	AS NOTED
CITY OF HOUSTON PM	ROWAIDAH AYOUB
SHEET NO.	382 718

FOR CITY OF HOUSTON USE ONLY

Plotted on: $DATE$ $TIME$ $USER$
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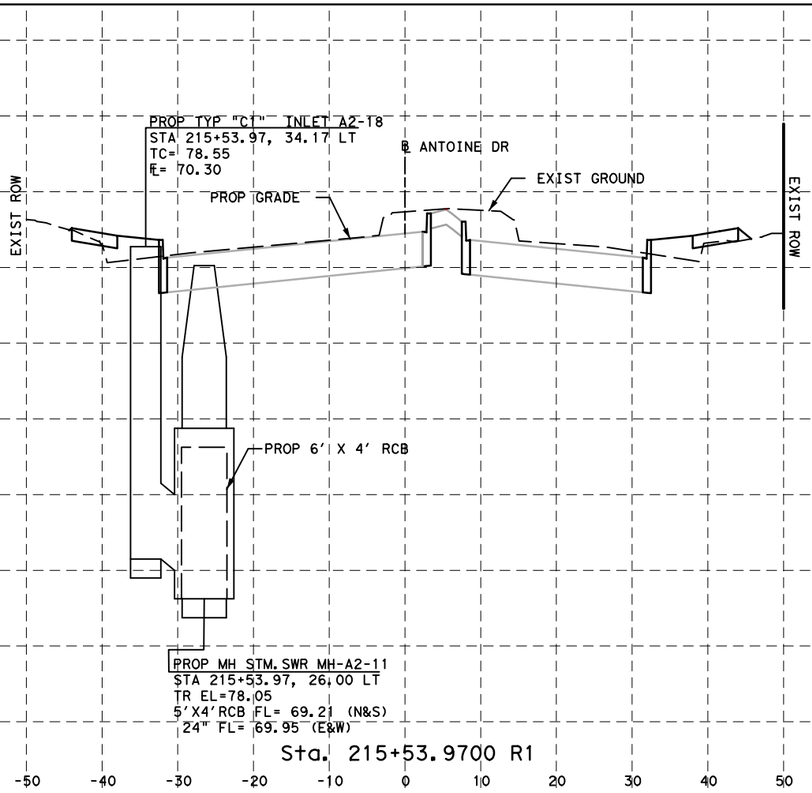
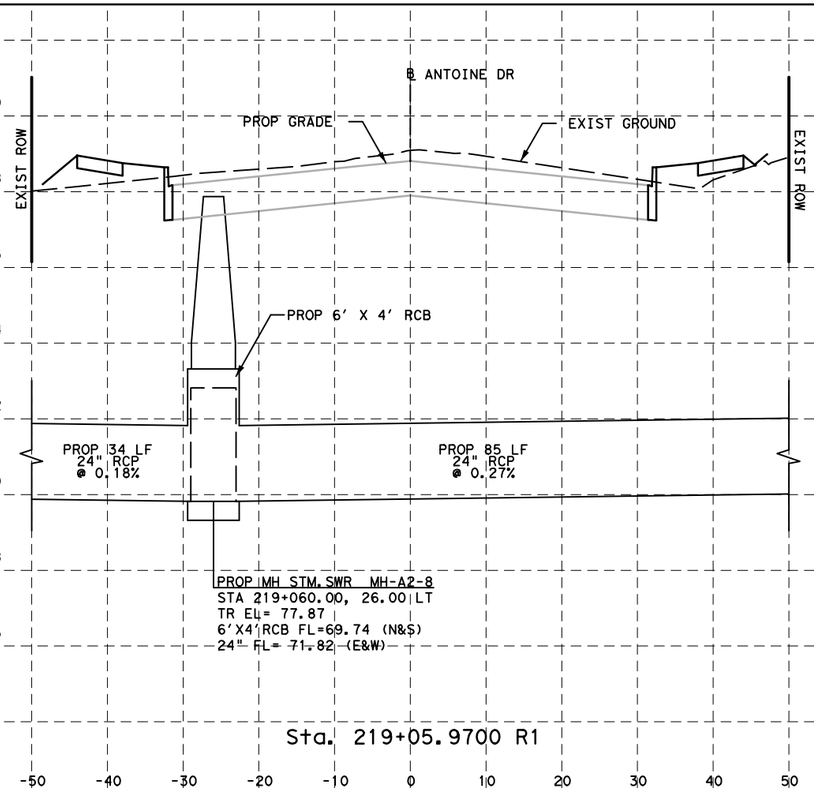
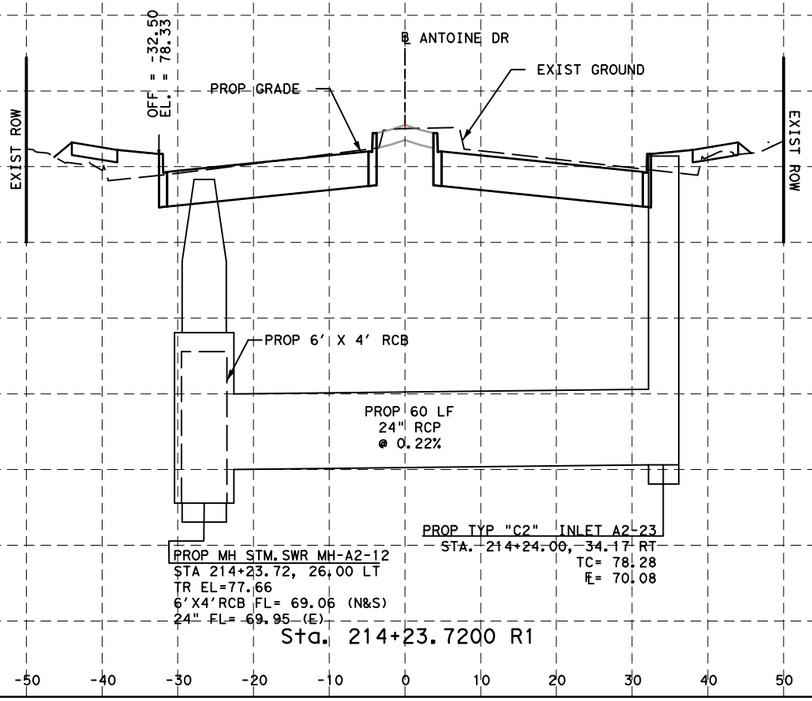
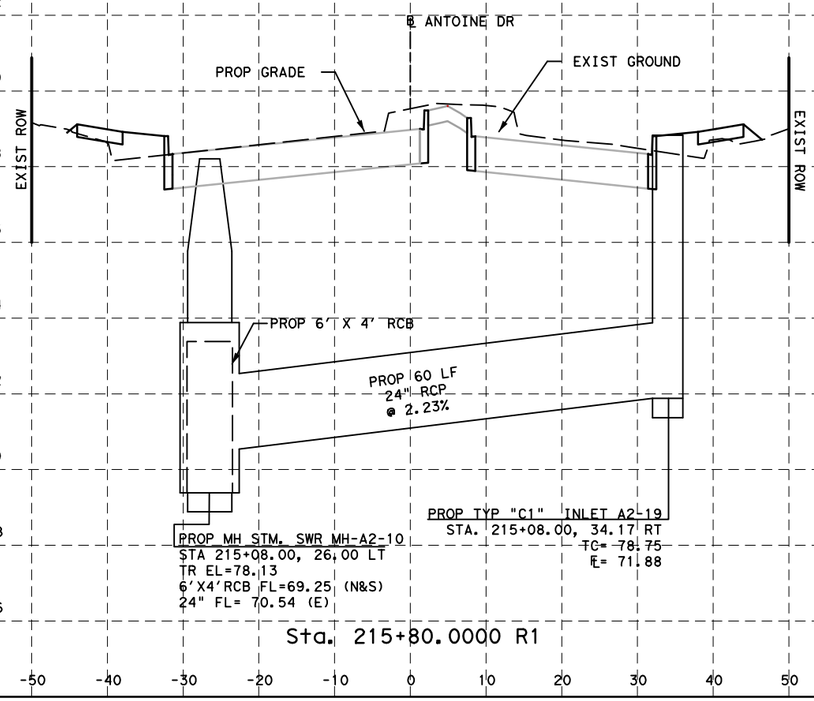
Plot Driver:$PLTDRVL$
Design Filename:$FILEL$









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DESIGN ENGINEER NAME
FCM ENGINEERS, P.C.
ADDRESS:
3300 S. Gessner Rd.
TEL No.: 713-706-4412
TX FIRM No.: F-13481

SURVEYED BY:
KUO & ASSOCIATES, INC.

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108363
10/21/2025
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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM SEWER LATERALS

SHEET 9 OF 16

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 383 718	

Plotted on: $DATE$ $TIME$ $USER$
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Plot Driver:$PLTDRVL$
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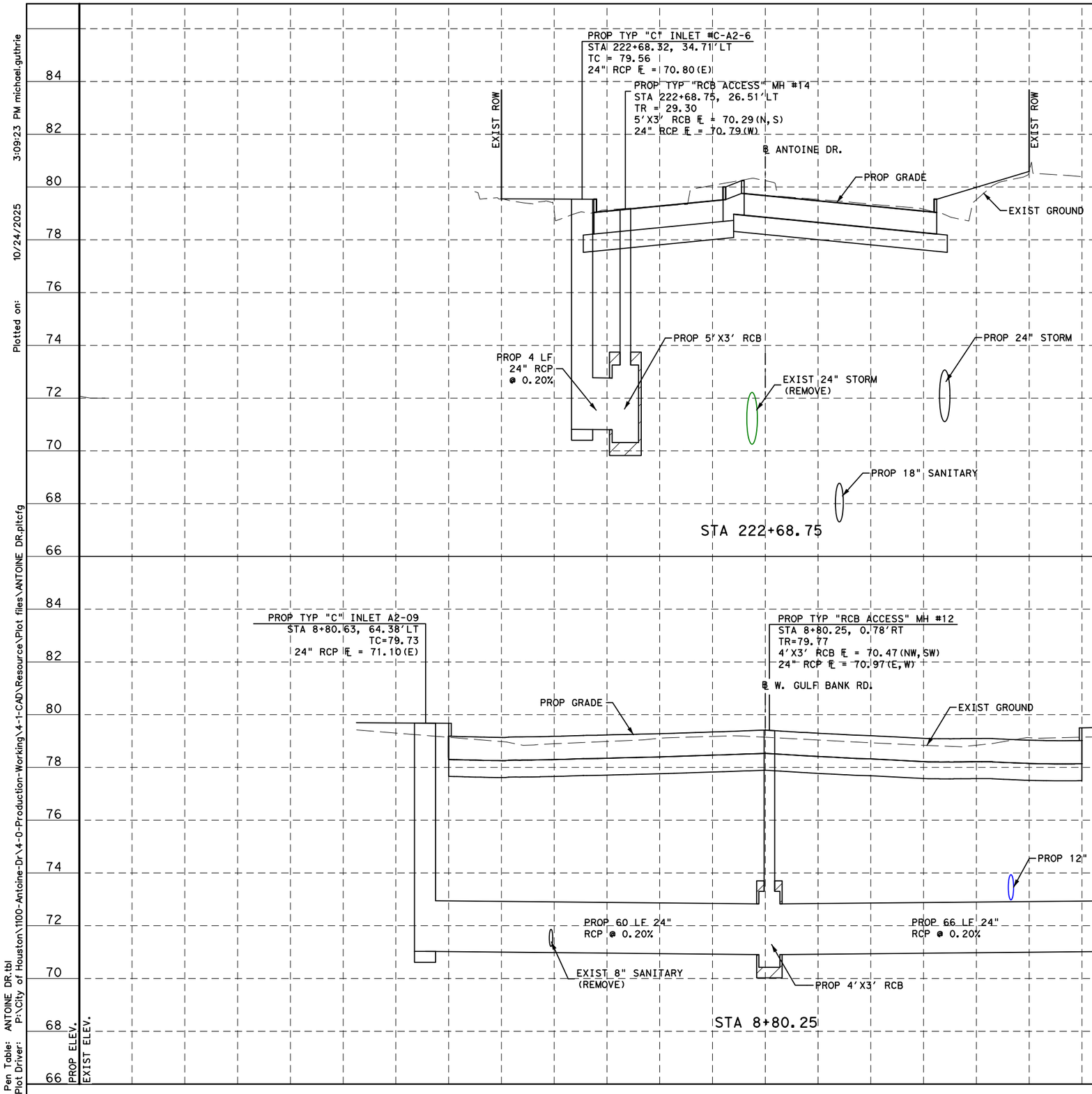

NOTES:

1. SEE STORM SEWER COMPUTATIONS FOR MORE INFORMATION.
2. SEE DRAINAGE MISC SEWER DETAILS FOR PIPE COLLAR, PIPE JUNCTION AND BENDING DETAILS.
3. PIPE LENGTHS SHOWN ARE PAY LENGTHS.
4. PIPES ARE CLASS III, UNLESS NOTED.
5. CONTRACTOR TO FIELD VERIFY EXISTING PIPE CONNECTION FLOWLINES AT TIE-IN LOCATIONS. IF DIFFERENT THAN SHOWN, CONTRACTOR TO MAINTAIN DESIGNED SLOPES AS MINIMUM. SLOPES MAY BE STEEPENED.

HORZ 0' 10' 20'
VERT 0' 2' 4'
SCALE IN FEET

No.	DATE	REVISIONS	APP.

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

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KUO & ASSOCIATES, INC.

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PATRICK W. PHILLIPS
92917
10/24/2025
95% SUBMITTAL
GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM SEWER LATERALS

SHEET 10 OF 16

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 384 OF 718	

Plotted on: 10/24/2025 3:09:23 PM michael.guthrie
Pen Table: ANTOINE DR.tbl
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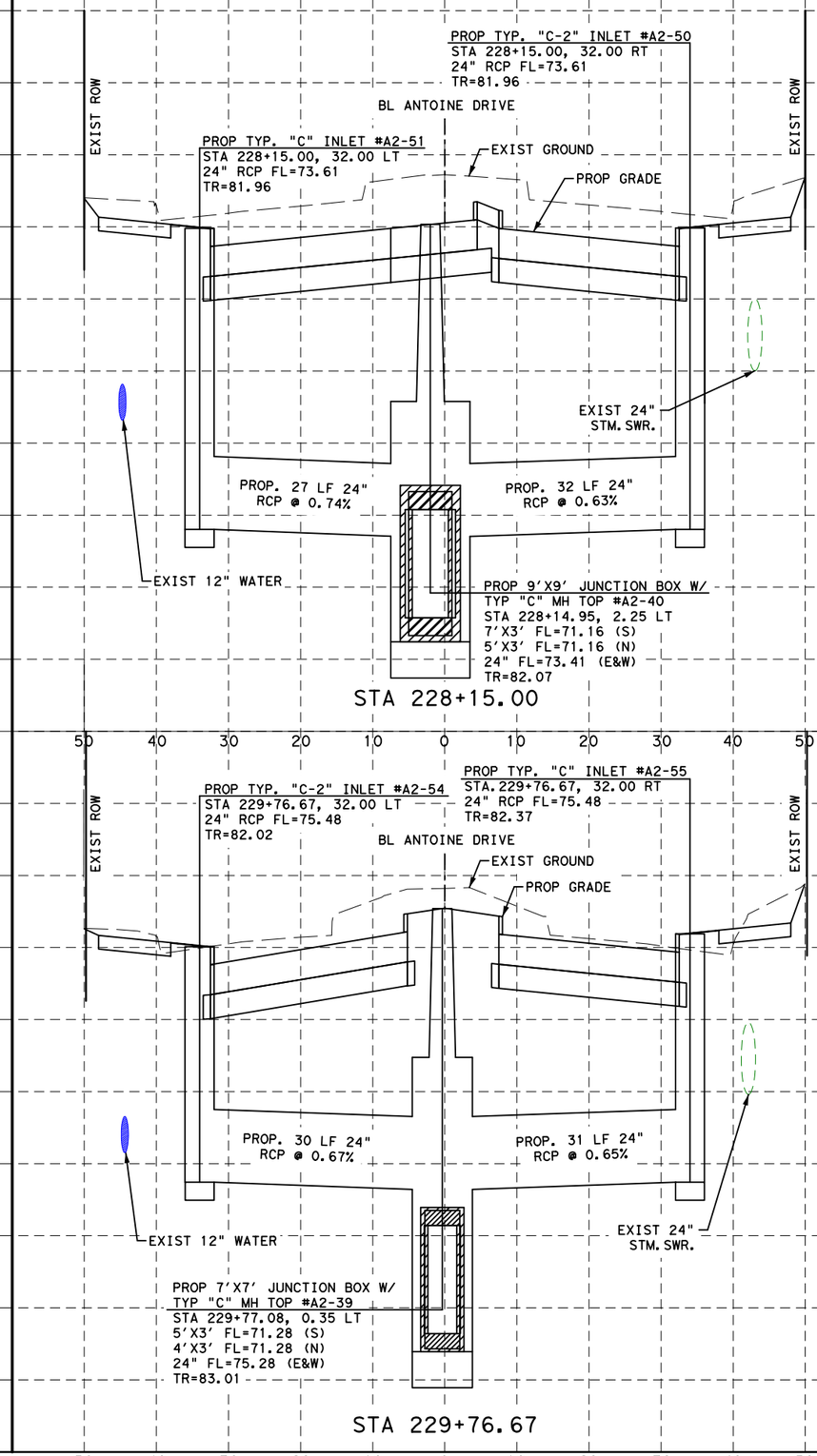

NOTES:

1. REFER TO DRAINAGE PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
2. REFER TO WATER AND SANITARY SEWER PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.

No.	DATE	REVISIONS	APP.

0' 20' 40'
SCALE IN FEET

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VOGLER & SPENCER ENGINEERING
777 North Eldridge Parkway, Suite 500
Houston, Texas 77079
713-783-0042
www.vs-eng.com

SURVEYED BY:
KUO & ASSOCIATES, INC.

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JOEL OLSHEFSKI
131531
10/23/2025
95% SUBMITTAL
VOGLER & SPENCER ENGINEERING
Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM SEWER LATERALS

SHEET 11 OF 16

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 385 OF 718	

Plotted on: 10/23/2025 1:45:25 PM Jovi edo
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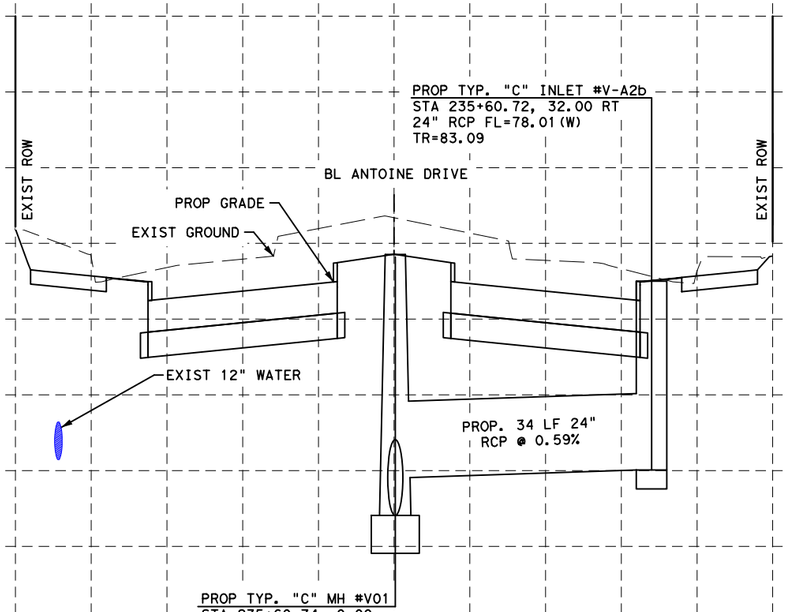

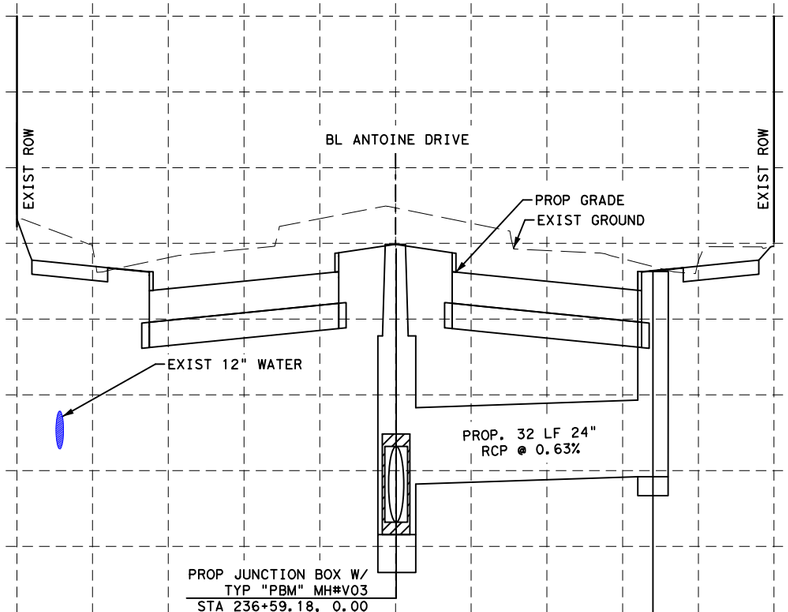

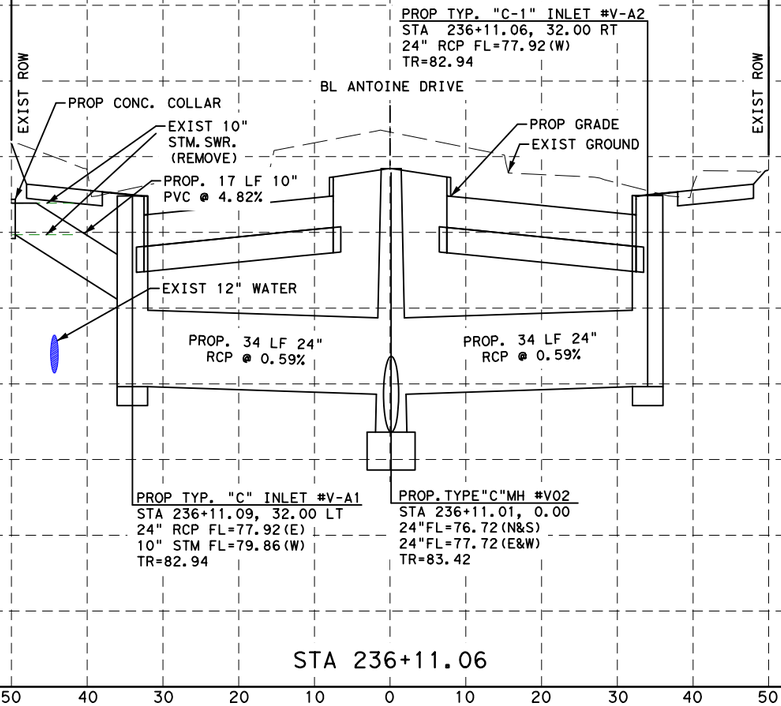

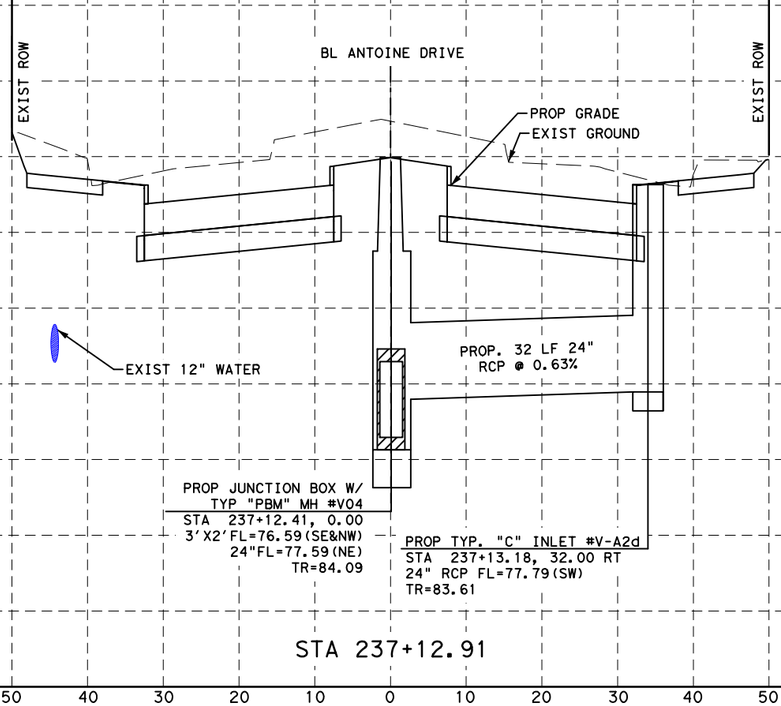

NOTES:

1. REFER TO DRAINAGE PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
2. REFER TO WATER AND SANITARY SEWER PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.

No.	DATE	REVISIONS	APP.

0' 20' 40'
SCALE IN FEET

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777 North Eldridge Parkway, Suite 500
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Texas Registered Engineering Firm F-148

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM SEWER LATERALS

SHEET 12 OF 16

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 386 OF 718	

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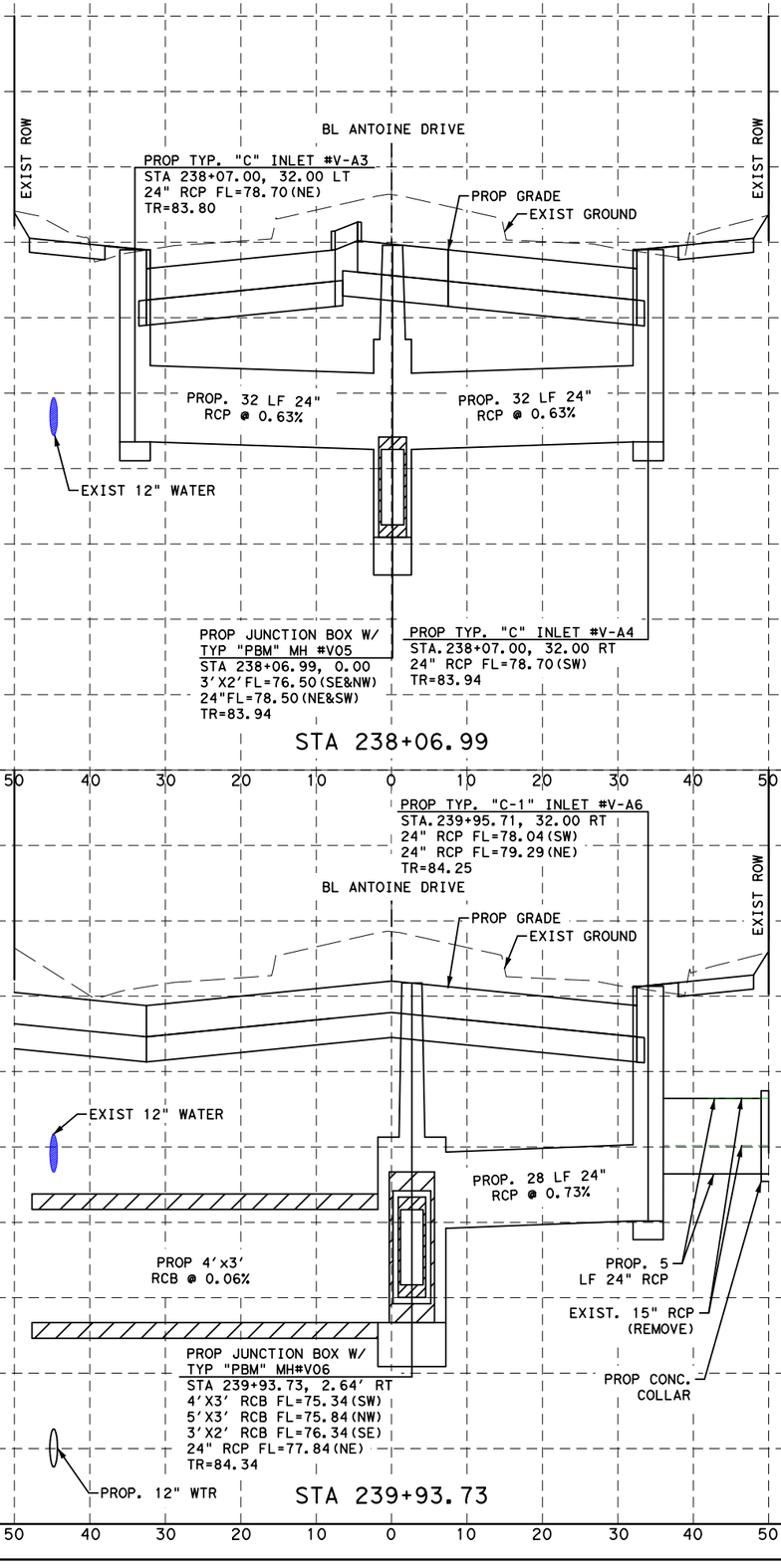

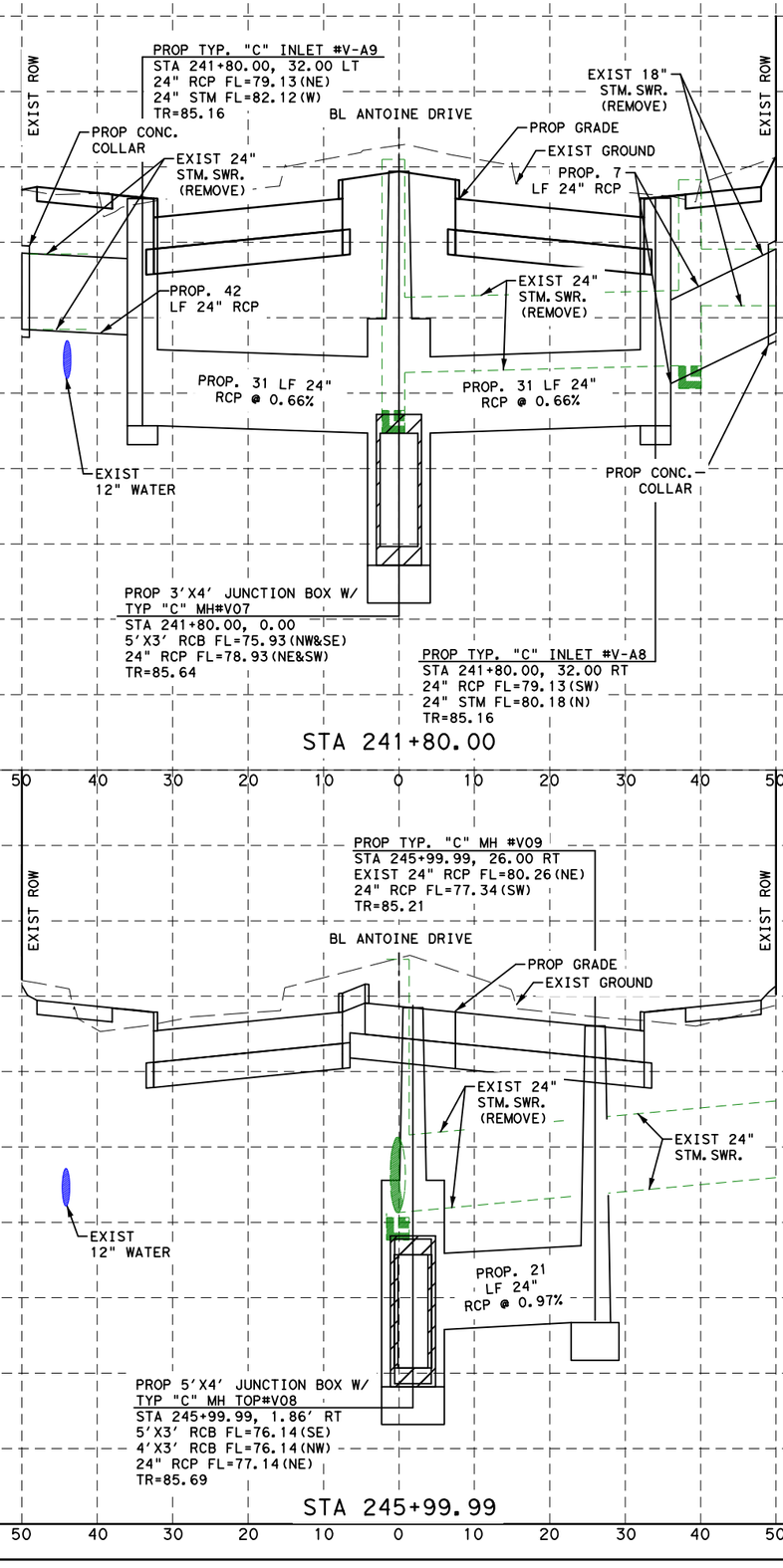

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM SEWER LATERALS

SHEET 13 OF 16

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 387 OF 718	

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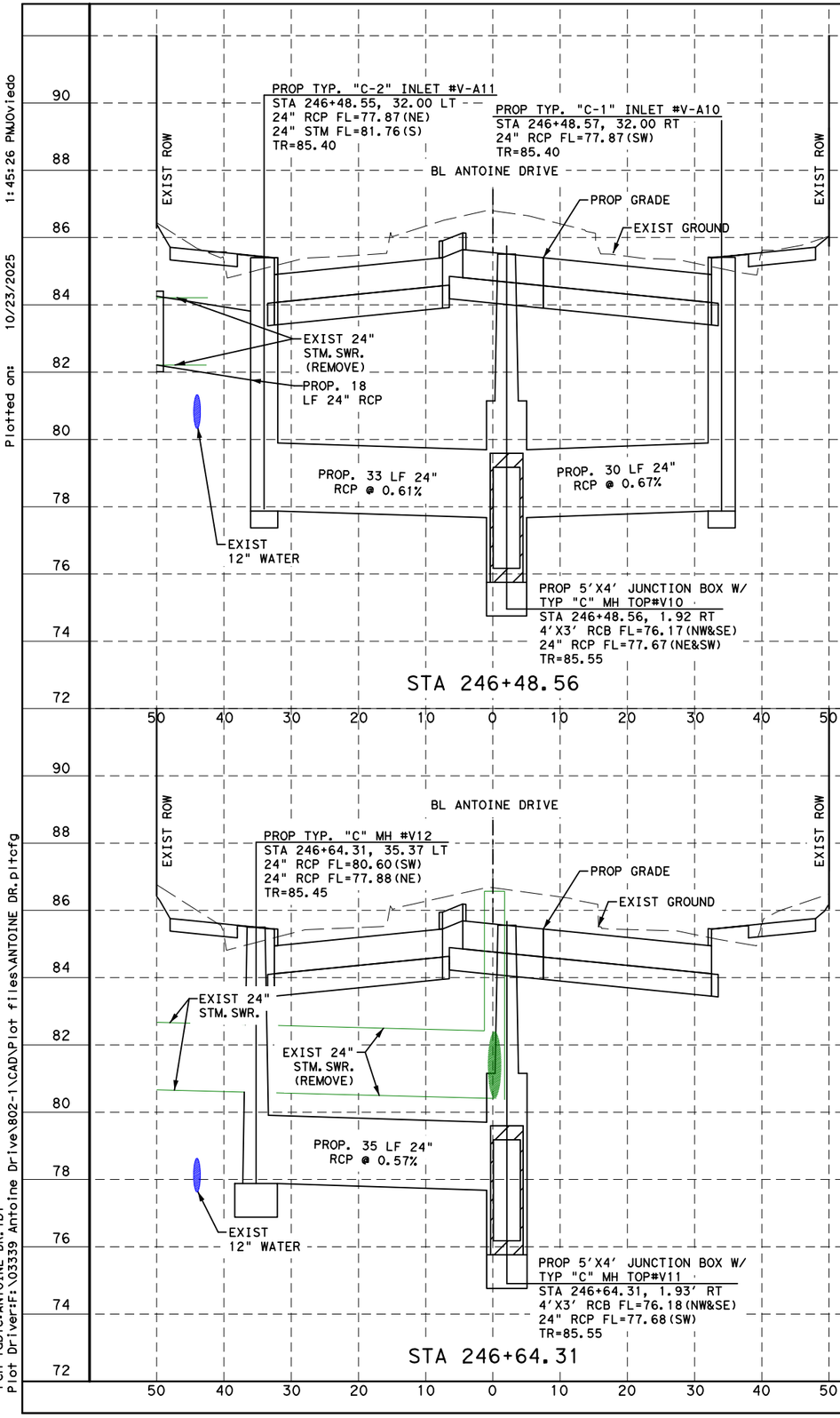

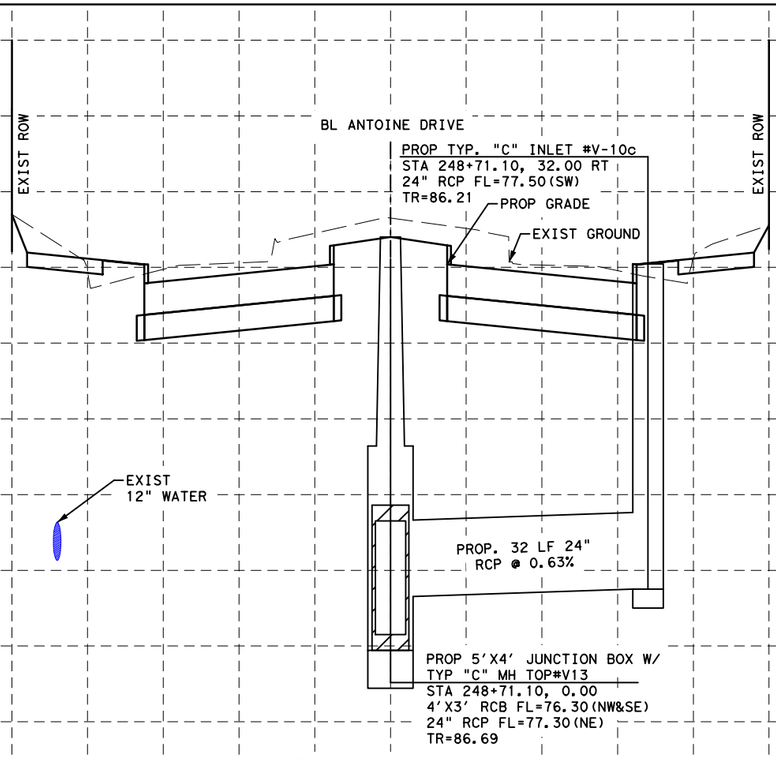

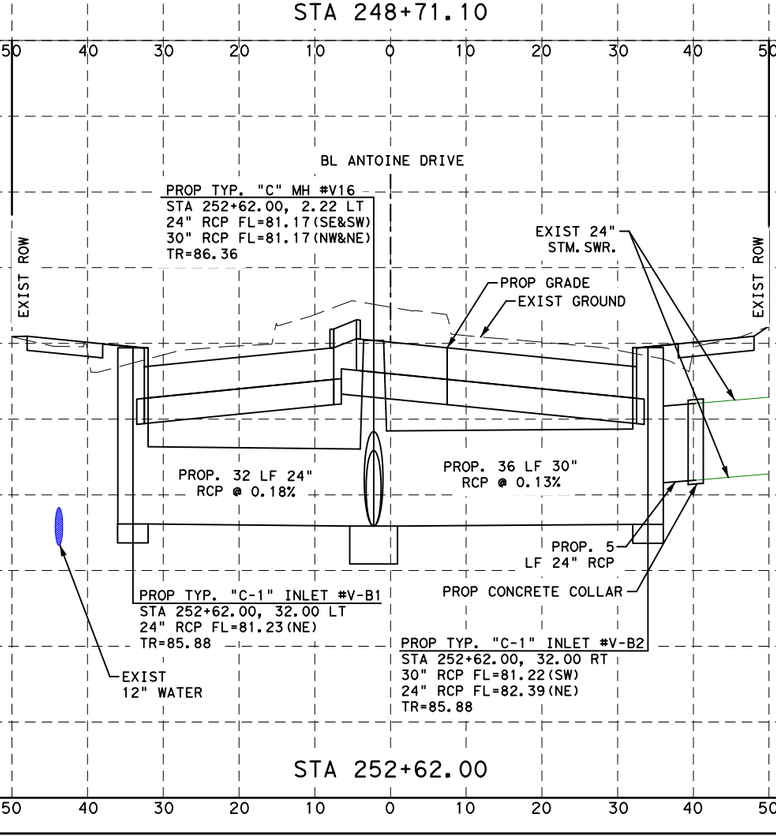

NOTES:

1. REFER TO DRAINAGE PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.
2. REFER TO WATER AND SANITARY SEWER PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.

No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM SEWER LATERALS

SHEET 14 OF 16

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 388 OF 718	

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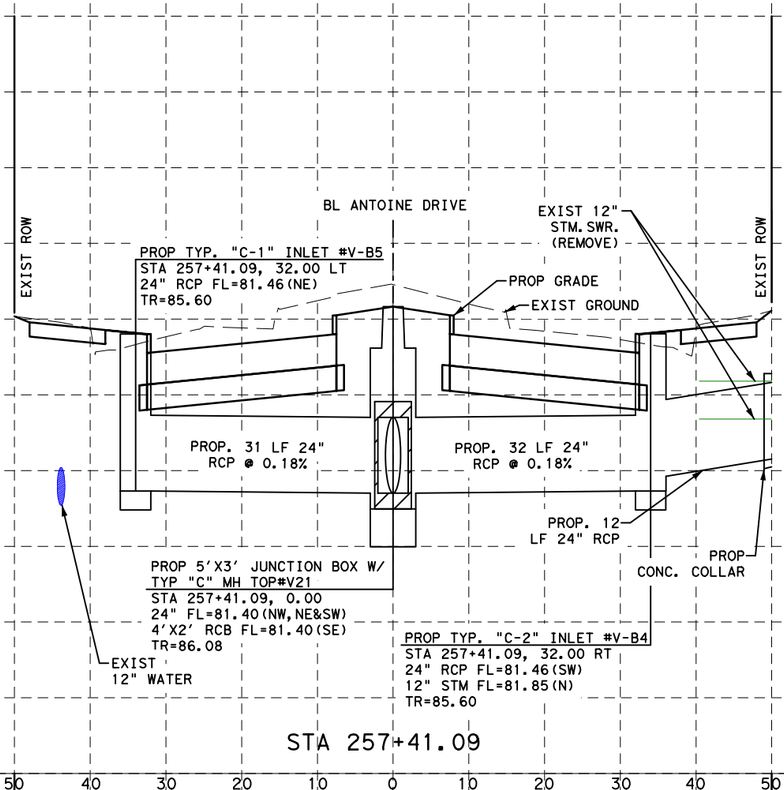

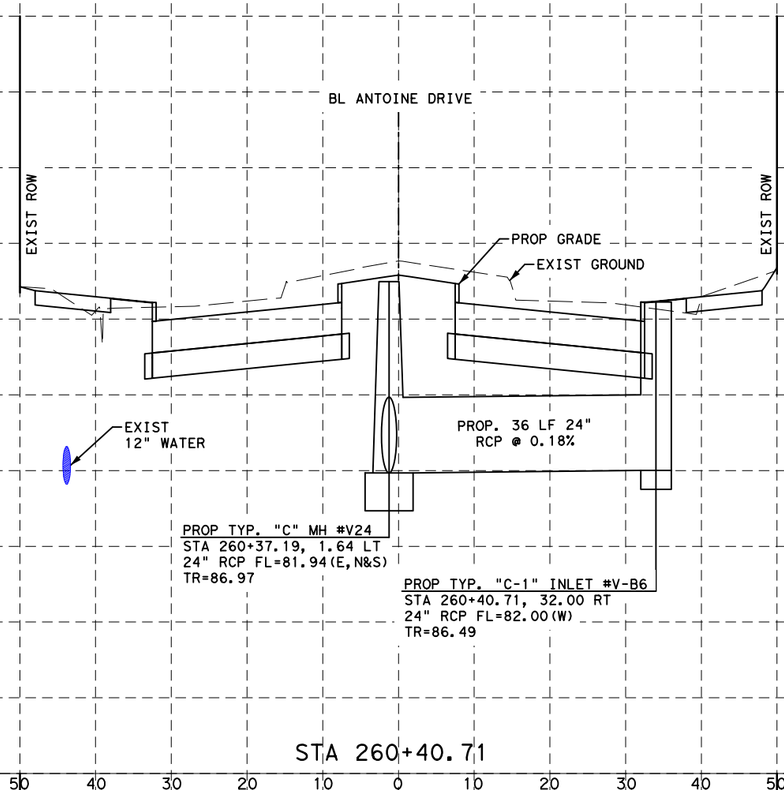

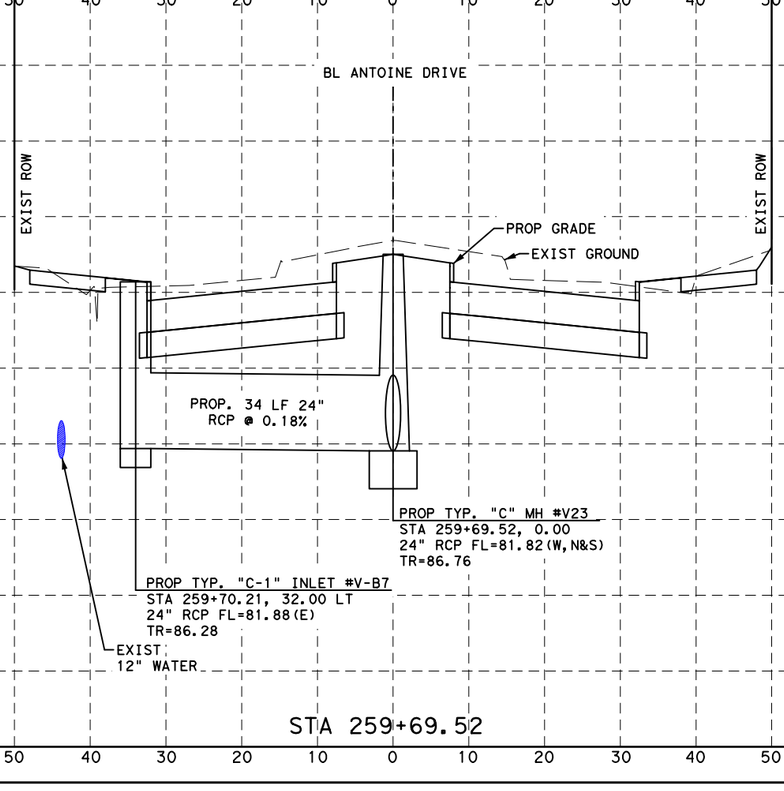

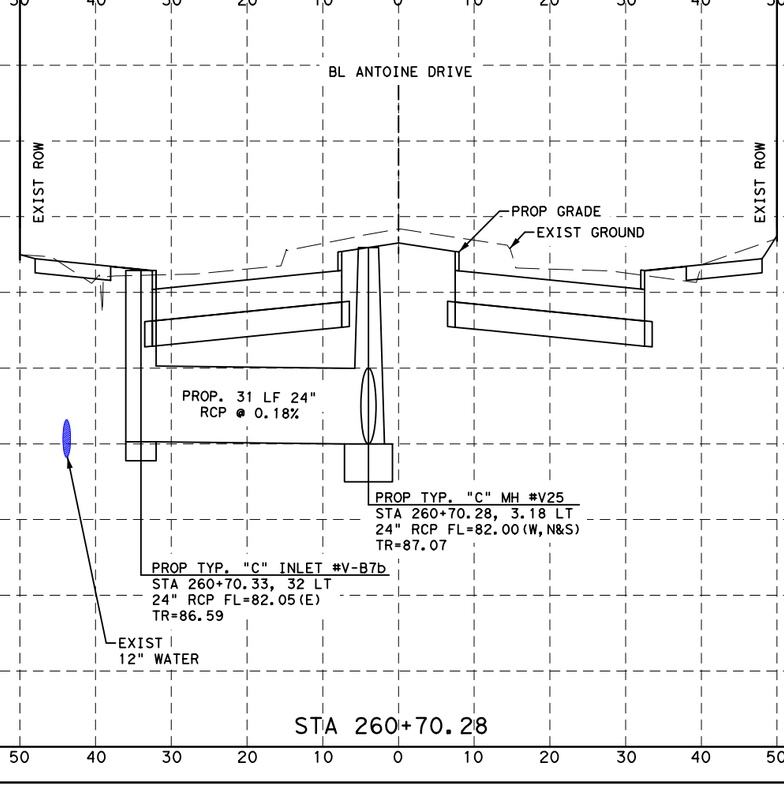

NOTES:

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2. REFER TO WATER AND SANITARY SEWER PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION.

No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM SEWER LATERALS

SHEET 15 OF 16

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 389 OF 718	

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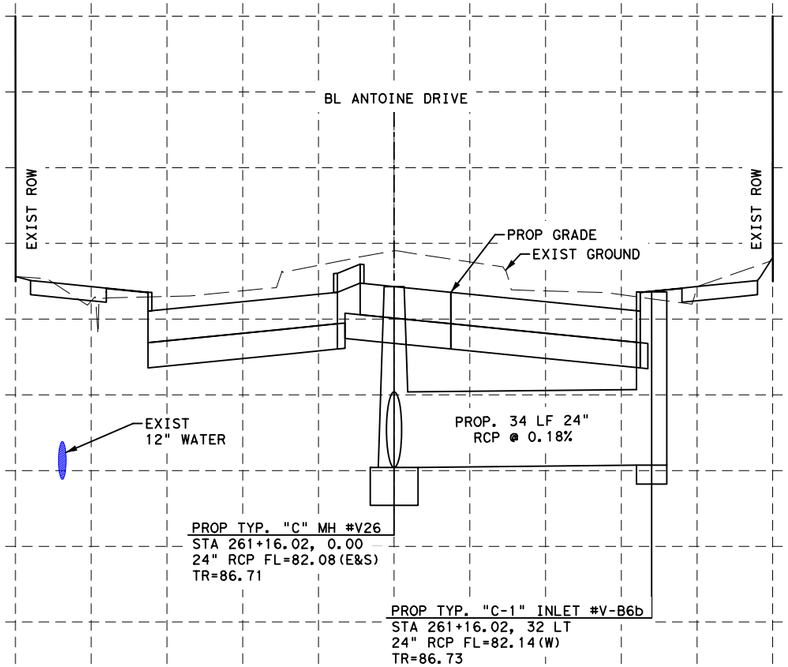

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No.	DATE	REVISIONS	APP.

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SCALE IN FEET

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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM SEWER LATERALS

SHEET 16 OF 16

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 390 OF 718	

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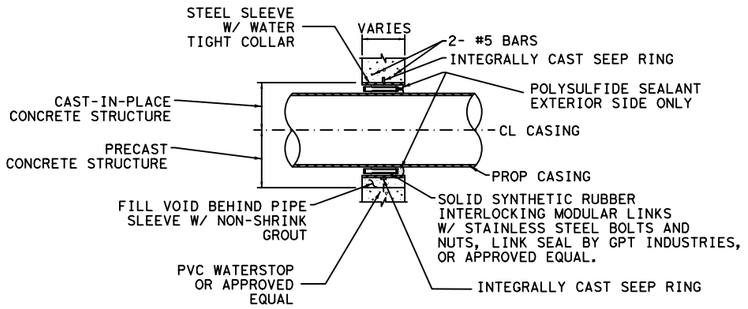
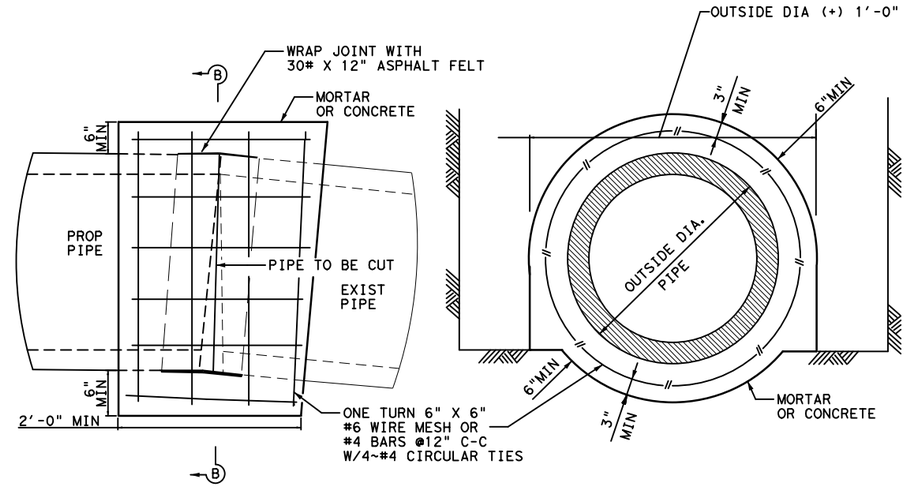


TYPICAL WALL PENETRATION DETAIL

N.T.S

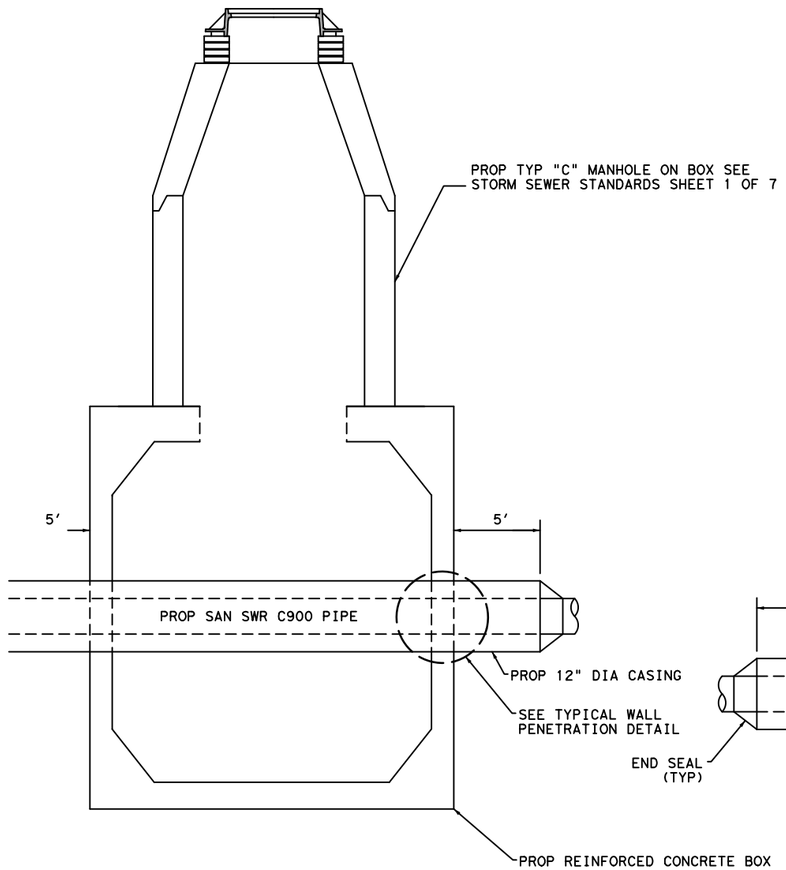


ELEVATION

SECTION B-B

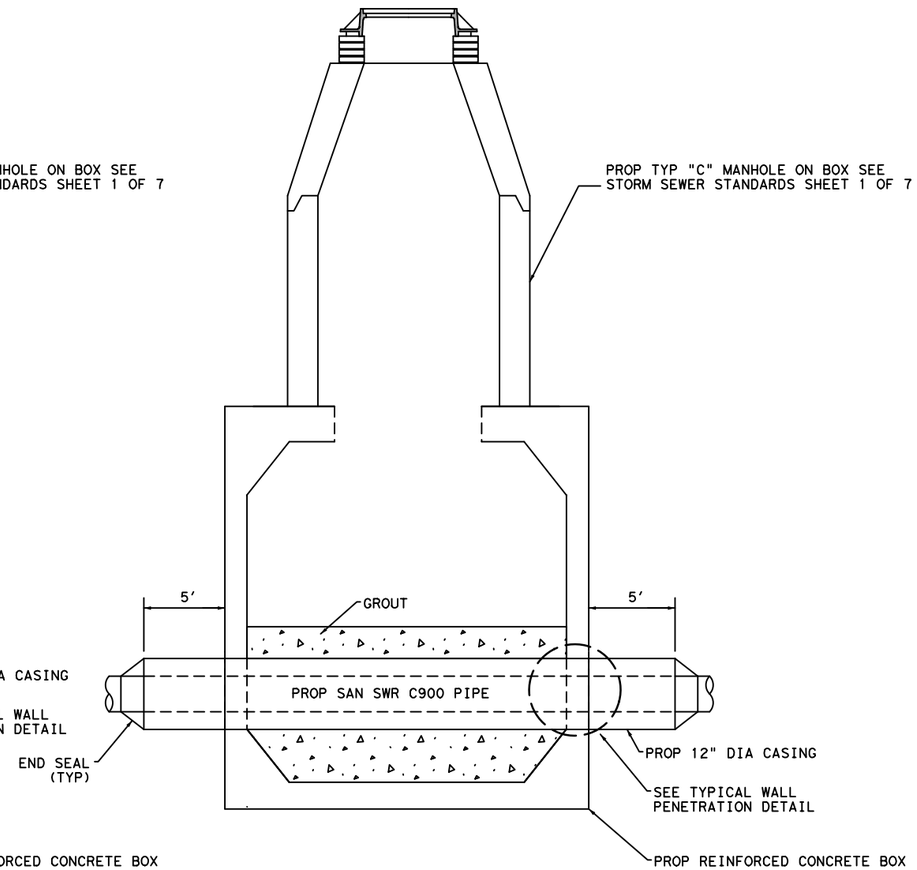
PIPE COLLAR DETAIL

FOR HORIZONTAL OR VERTICAL PLACEMENT



CONFLICT MANHOLE

N.T.S



BOX CROSSING DETAIL

N.T.S

NOTES:

1. ALL OPENINGS AT PIPE SHALL BE SEALED WITH LINK SEAL WITH STAINLESS STEEL BOLTS AND NUTS, BY GPT INDUSTRIES OR APPROVED EQUAL. ANY REMAINING VOIDS MAY BE FILLED WITH ELASTOMETRIC GROUT (TYPE 3 CEMENT).
2. SPACERS SHALL BE USED BETWEEN MAIN PIPE AND CASING.

Texas Department of Transportation

Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY, #400
HOUSTON, TX 77079

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

MISCELLANEOUS DRAINAGE DETAILS

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 391 OF 718	

No.	DATE	REVISIONS	APP.

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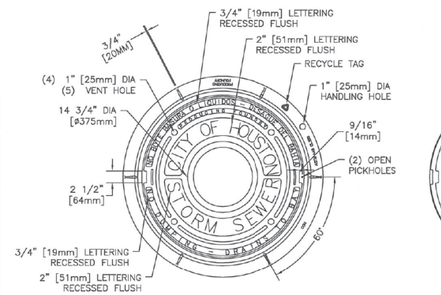
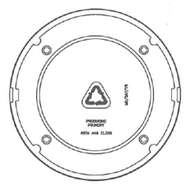
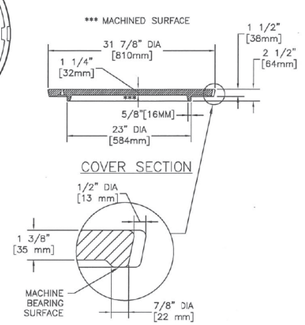
No.	DATE	REVISIONS	APP:

02084-02



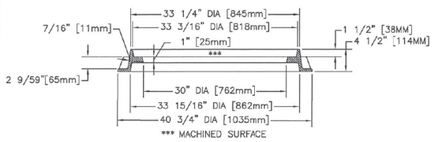


BOTTOM VIEW OF COVER



COVER SECTION

OPEN PICKHOLE DETAIL



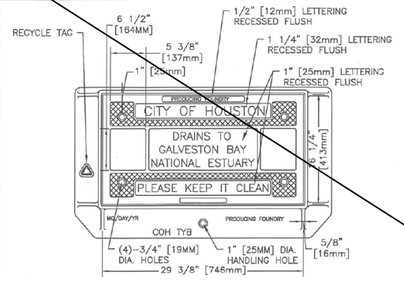
FRAME SECTION

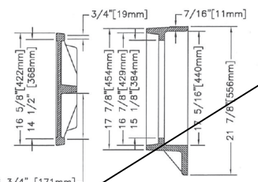
NOTES:

1. APPROXIMATE WEIGHTS.
   FRAME – 170 LBS (77KGS)
   COVER – 270 LBS (123KGS)
   UNIT – 440 LBS (200KGS)
2. MATERIALS – GRAY IRON ASTM A48 CL35B
3. CASTING TO MEET M306 PROOF LOAD SPECIFICATION
4. EJIW V-1420 ASY OR APPROVED EQUAL

STORM SEWER MANHOLE FRAME AND COVER
NTS

02084-03

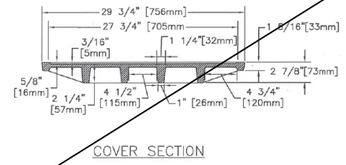




COVER SECTION FRAME SECTION

NOTES:

1. APPROXIMATE WEIGHTS.
   FRAME – 125 LBS (57KGS)
   COVER – 130 LBS (59KGS)
   UNIT – 225 LBS (116KGS)
2. MATERIALS – GRAY IRON ASTM A48 CL35B
3. CASTING TO MEET M306 FROOF LOAD SPECIFICATION
4. EJIW V-4241 ASY OR APPROVED EQUAL



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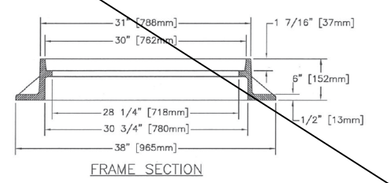
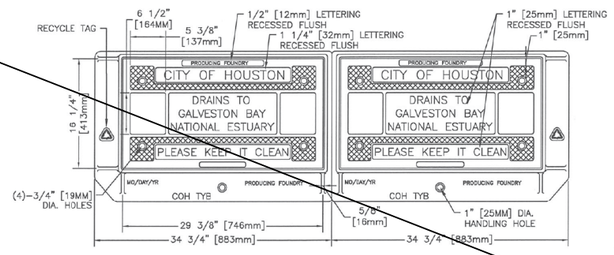
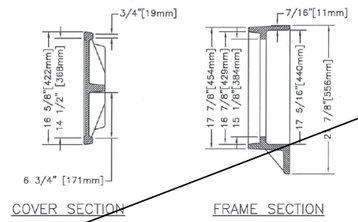


FRAME SECTION

STORM SEWER TYPE "B" INLET ASSEMBLY
NTS

02084-04

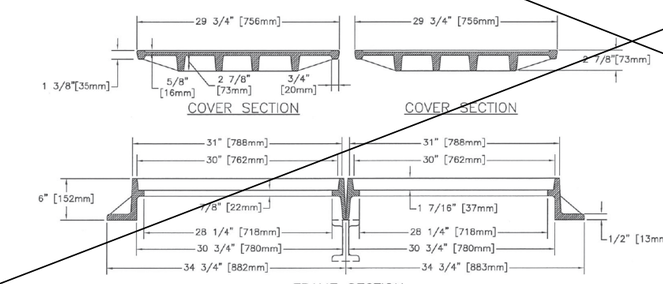




COVER SECTION FRAME SECTION

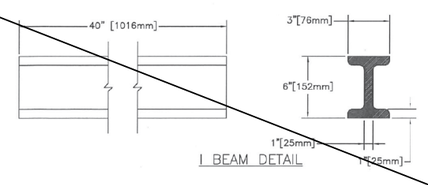
NOTES:

1. APPROXIMATE WEIGHTS.
   FRAME – 125 LBS (57KGS)
   COVER – 120 LBS (55KGS)
   I BEAM – 107 LBS (49KGS)
   UNIT – 597 LBS (271KGS)
2. MATERIALS – GRAY IRON ASTM A48 CL35B
3. CASTING TO MEET M306 PROOF LOAD SPECIFICATION
4. EJIW V-4243 ASY OR APPROVED EQUAL



COVER SECTION COVER SECTION

FRAME SECTION



I BEAM DETAIL

STORM SEWER TYPE "BB" INLET DOUBLE ASSEMBLY
NTS

FIRM INFORMATION | ENGINEER'S SEAL

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STORM SEWER
02084-02 THROUGH 04

APPROVED BY:	APPROVED BY:
CITY ENGINEER	DEPUTY DIRECTOR
APPROVED BY:	
DIRECTOR	

EFFECTIVE DATE: JUL-01-2019

FOR CITY OF HOUSTON USE ONLY

SHEET NO.

Texas Department of Transportation

Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY, #400
HOUSTON, TX 77079

SURVEYED BY:
KUO & ASSOCIATES, INC.

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KARAM QADDO
125611
10/24/2025
GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM SEWER STANDARDS

SHEET 1 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 392 OF 718	

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Plot Driver: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Resource\Plot files\ANTOINE DR.pltcfg
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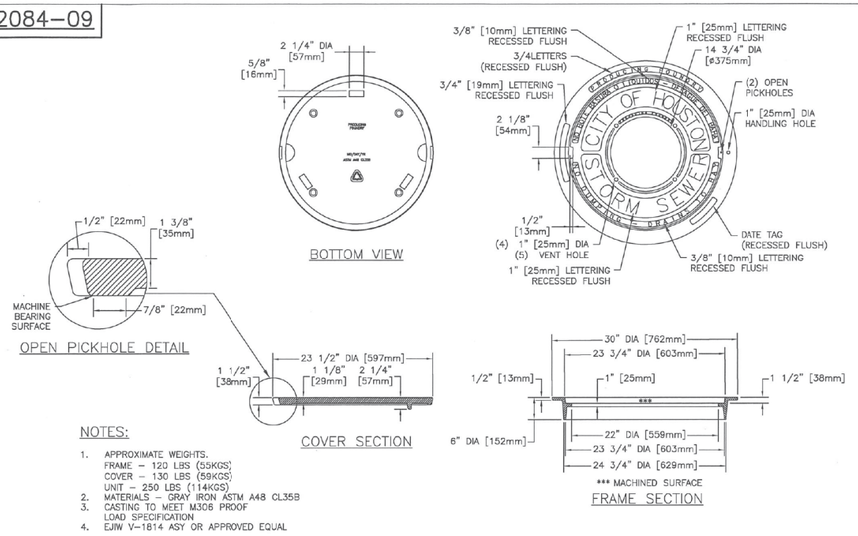
No.	DATE	REVISIONS	APP:

02084-09

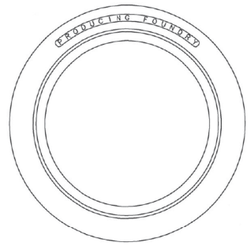


NOTES:

1. APPROXIMATE WEIGHTS.
   FRAME – 120 LBS (55KGS)
   COVER – 130 LBS (59KGS)
   UNIT – 250 LBS (114KGS)
2. MATERIALS – GRAY IRON ASTM A48 CL35B
3. CASTING TO MEET M306 PROOF LOAD SPECIFICATION
4. EJIW V-1814 ASY OR APPROVED EQUAL

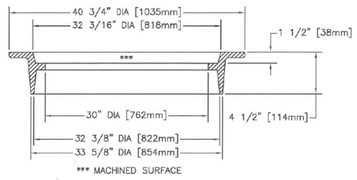
STORM SEWER TYPE "C-1, C-2, C-2A" AND "H-2" INLET FRAME AND COVER
NTS

02084-10



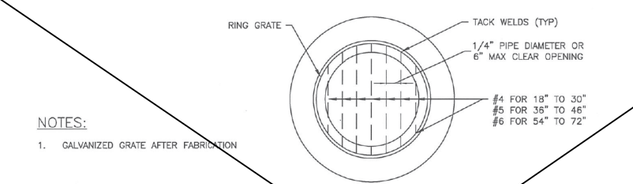
NOTES:

1. APPROXIMATE WEIGHTS.
   FRAME – 190 LBS (86KGS)
2. MATERIALS – GRAY IRON ASTM A48 CL35B
3. CASTING TO MEET M306 PROOF LOAD SPECIFICATION
4. EJIW V-1816 ASY OR APPROVED EQUAL



32" INVERTED MANHOLE FRAME
NTS

02084-11

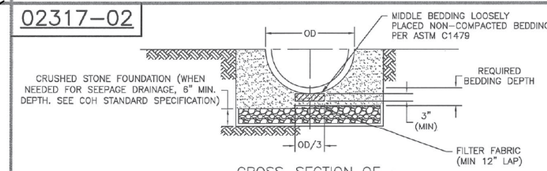


NOTES:

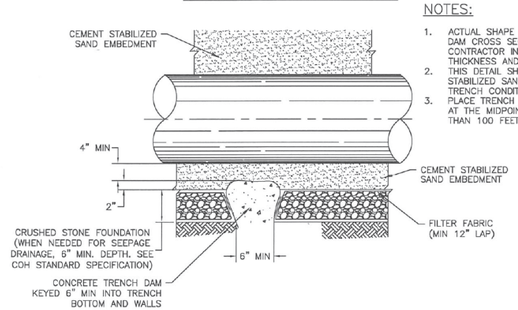
1. GALVANIZED GRATE AFTER FABRICATION

STORM SEWER RING GRATE FOR OPEN END OF 18" TO 72" RCP STUBS TO DITCH
NTS

02317-02



CROSS-SECTION OF CRUSHED STONE FOUNDATION



LONGITUDINAL SECTION ALONG PIPE ℄ AT FOUNDATION TRENCH DAM

NOTES:

1. ACTUAL SHAPE OF CONCRETE TRENCH DAM CROSS SECTION MAY BE DETERMINED BY CONTRACTOR IN FIELD, MEETING MINIMUM THICKNESS AND KEY DEPTH REQUIREMENTS.
2. THIS DETAIL SHALL BE USED WITH CEMENT STABILIZED SAND EMBEDMENT, IN WET STABLE TRENCH CONDITIONS.
3. PLACE TRENCH DAMS IN CLASS I EMBEDMENTS AT THE MIDPOINT OF LINE SEGMENTS LONGER THAN 100 FEET BETWEEN MANHOLES.

SANITARY OR STORM SEWER CRUSHED STONE FOUNDATION FOR WET STABLE TRENCH
NTS

FIRM INFORMATION | ENGINEER'S SEAL

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STORM SEWER
02084-09 THROUGH 11
AND 02317-02

APPROVED BY: CITY ENGINEER | APPROVED BY: DEPUTY DIRECTOR

APPROVED BY: DIRECTOR

EFFECTIVE DATE: JUL-01-2019

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125611
10/24/2025
Date

GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM SEWER STANDARDS

SHEET 2 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 393 OF 718	

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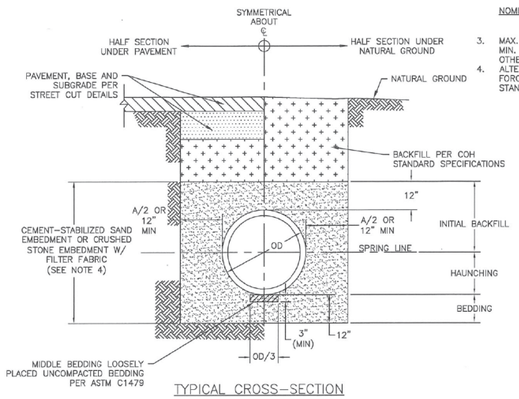
02317-03

NOTES:

1. THIS DETAIL MAY BE USED ONLY FOR DRY STABLE TRENCH CONDITIONS PER COH STANDARD. SEE COH STANDARD SPECIFICATION FOR REQUIREMENTS IN OTHER CONDITIONS.
2. MIN. TRENCH WIDTH SHALL BE PIPE OD PLUS AN ALLOWANCE "A" FOR THE NOMINAL PIPE SIZE:

NOMINAL PIPE SIZE	"A"
18" TO 30"	24"
OVER 30"	36"

3. MAX. TRENCH WIDTH SHALL BE NOT GREATER THAN MIN. TRENCH WIDTH PLUS 24 INCHES, UNLESS OTHERWISE NOTED.
4. ALTERNATIVE EMBEDMENT BACKFILL MATERIALS FOR FORCE MAINS MAY BE ALLOWED. SEE COH STANDARD SPECIFICATIONS.



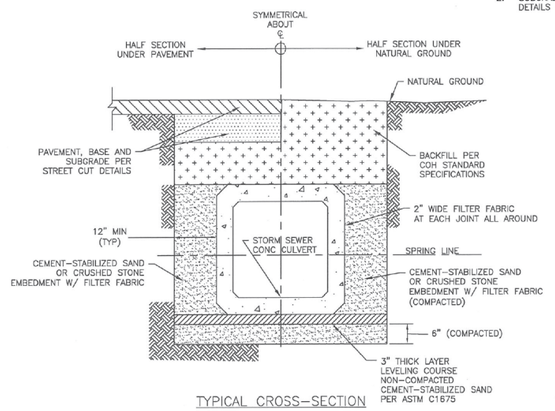
TYPICAL CROSS-SECTION

SANITARY OR STORM SEWER BEDDING AND BACKFILL FOR DRY STABLE TRENCH
NTS

02317-05

NOTES:

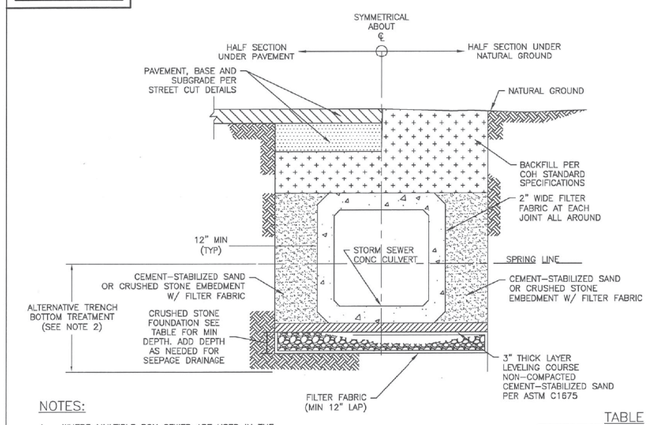
1. WHERE MULTIPLE BOX SEWER ARE USED IN THE SAME TRENCH, MIN. OUTSIDE TO OUTSIDE BOX SEWER SEPERATION SHALL BE 6".
2. SUBGRADE AND PAVEMENT FOR STREET CUT DETAILS – 02951.



TYPICAL CROSS-SECTION

PRECAST CONCRETE BOX STORM SEWER BEDDING AND BACKFILL FOR DRY STABLE TRENCH
NTS

02317-06



NOTES:

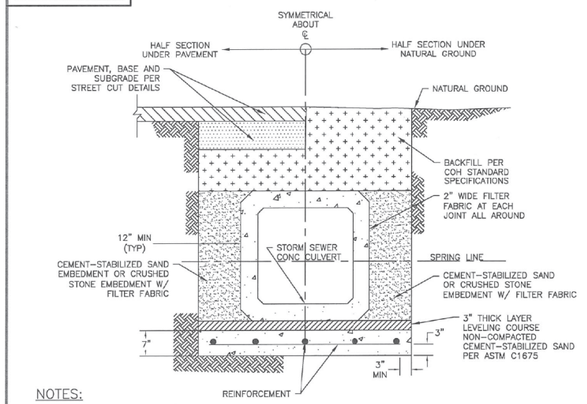
1. WHERE MULTIPLE BOX SEWER ARE USED IN THE SAME TRENCH, MIN. OUTSIDE TO OUTSIDE BOX SEWER SEPERATION SHALL BE 6".
2. ALTERNATIVE TRENCH BOTTOM TREATMENT MAY BE USED AS APPROVED BY THE CITY OF ENGINEERS AND AS PAID FOR IN THE PROPOSAL.

TABLE

CULVERT SIZE (FT)	FOUNDATION DEPTH(INCHES)
3' X 2' TO 6' X 6'	12
6' X 6' AND LARGER	18

PRECAST CONCRETE BOX STORM SEWER BEDDING AND BACKFILL FOR WET STABLE TRENCH
NTS

02317-07



NOTES:

1. WHERE MULTIPLE BOX SEWER ARE USED IN THE SAME TRENCH, MIN OUTSIDE TO OUTSIDE BOX SEWER SEPERATION SHALL BE 6".
2. REINFORCED CONCRETE SLAB PIPE BEDDING TO BE PLACED IN DRY TRENCH ONLY.
3. CONCRETE IN SLAB TO REACH MIN COMPRESSIVE STRENGTH OF 1000 PSI BASED ON MAX DESIGN BEFORE PIPE IS LAID.
4. PRECAST SEAL SLAB MAYBE USED AS APPROVED BY CITY ENGINEER.

PRECAST CONCRETE BOX STORM SEWER BEDDING AND BACKFILL WITH SEAL SLAB
NTS

No.	DATE	REVISIONS	APP.

FIRM INFORMATION | ENGINEER'S SEAL

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STORM SEWER
02317-03 THROUGH 07

APPROVED BY: CITY ENGINEER | APPROVED BY: DEPUTY DIRECTOR

APPROVED BY: DIRECTOR

EFFECTIVE DATE: JUL-01-2019

FOR CITY OF HOUSTON USE ONLY

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HOUSTON, TX 77079

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Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM SEWER STANDARDS

SHEET 3 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 394 OF 718	

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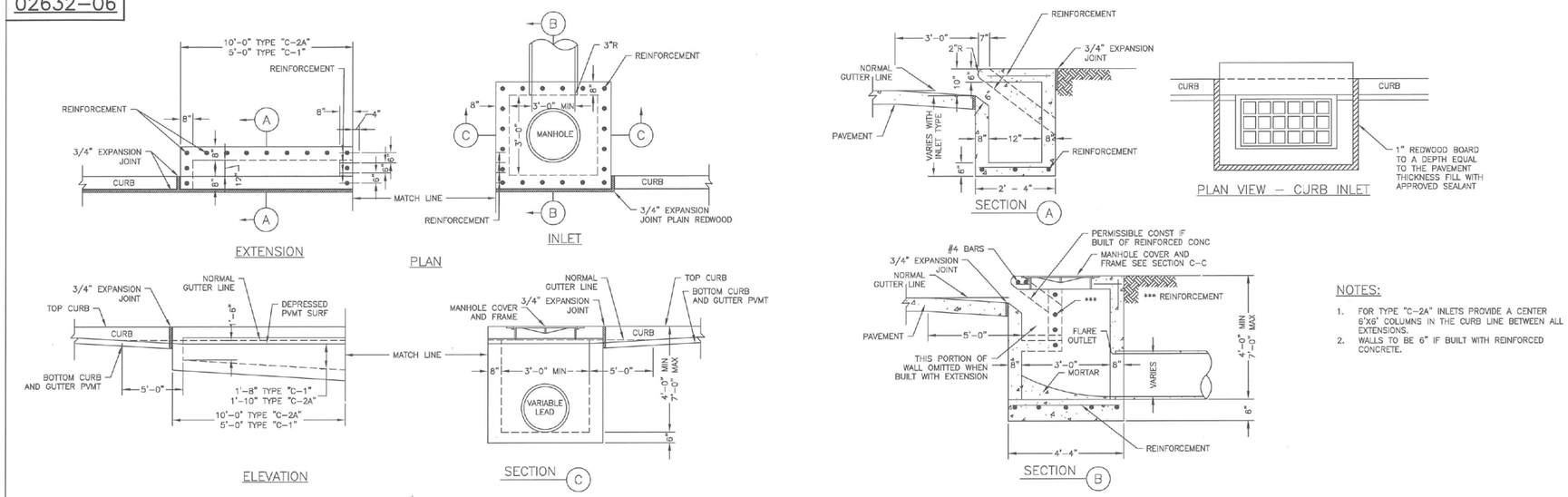
02632-06

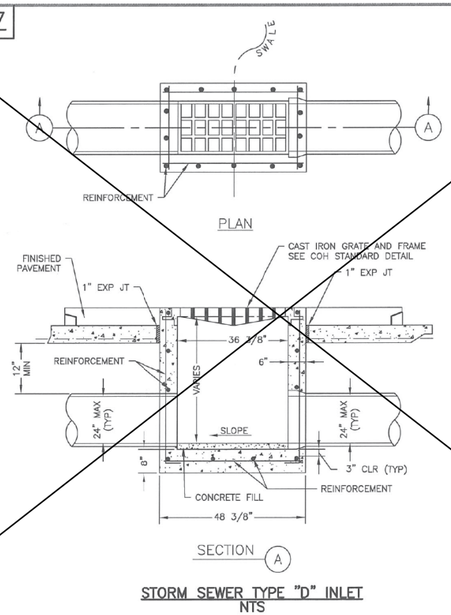


NOTES:

1. FOR TYPE "C-2A" INLETS PROVIDE A CENTER 6'X6' COLUMNS IN THE CURB LINE BETWEEN ALL EXTENSIONS.
2. WALLS TO BE 6" IF BUILT WITH REINFORCED CONCRETE.

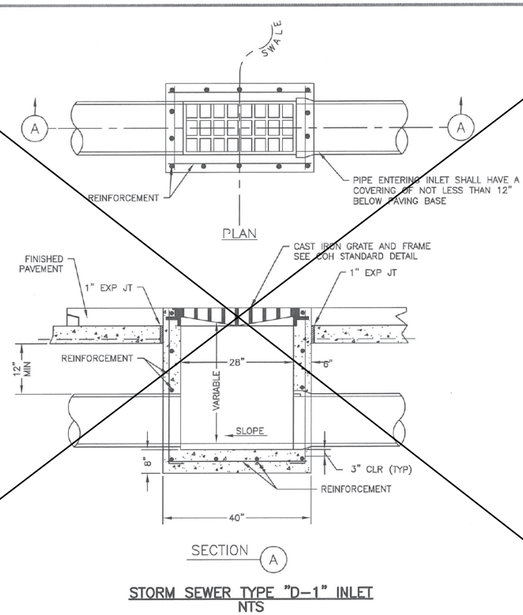
STORM SEWER TYPE "C-1", "C-2" AND "C-2A" INLET
NTS

02632-07



STORM SEWER TYPE "D" INLET
NTS

02632-08



STORM SEWER TYPE "D-1" INLET
NTS

FIRM INFORMATION

ENGINEER'S SEAL

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STORM SEWER
02632-06 THROUGH 08

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM SEWER STANDARDS

SHEET 4 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
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No.	DATE	REVISIONS	APP.

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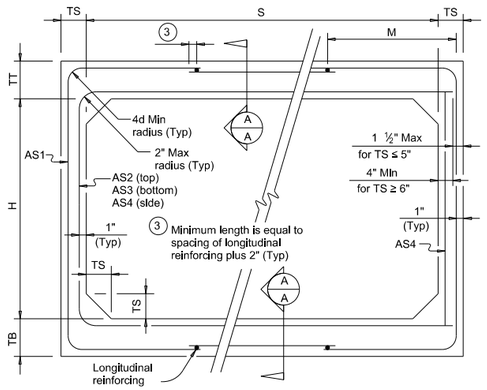
BOX DATA

SECTION DIMENSIONS					Fill Height	M (Min)	REINFORCING (sq. in. / ft.) (2)							(1) Lift Weight
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	(ft.)	(in.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	(tons)
3	2	7	6	4	< 2	-	0.17	0.25	0.16	0.10	0.17	0.17	0.14	3.3
3	2	4	4	4	2 < 3	31	0.13	0.19	0.18	0.10	-	-	-	2.4
3	2	4	4	4	3 - 5	31	0.10	0.11	0.12	0.10	-	-	-	2.4
3	2	4	4	4	10	31	0.10	0.10	0.10	0.10	-	-	-	2.4
3	2	4	4	4	15	31	0.10	0.13	0.13	0.10	-	-	-	2.4
3	2	4	4	4	20	31	0.11	0.17	0.17	0.10	-	-	-	2.4
3	2	4	4	4	25	31	0.14	0.21	0.21	0.10	-	-	-	2.4
3	2	4	4	4	30	31	0.17	0.25	0.25	0.10	-	-	-	2.4
3	2	4	4	4	35	31	0.20	0.29	0.30	0.10	-	-	-	2.4
3	3	7	6	4	< 2	-	0.17	0.27	0.17	0.10	0.17	0.17	0.14	3.7
3	3	4	4	4	2 < 3	31	0.10	0.22	0.21	0.10	-	-	-	2.8
3	3	4	4	4	3 - 5	31	0.10	0.14	0.14	0.10	-	-	-	2.8
3	3	4	4	4	10	31	0.10	0.11	0.11	0.10	-	-	-	2.8
3	3	4	4	4	15	31	0.10	0.14	0.15	0.10	-	-	-	2.8
3	3	4	4	4	20	31	0.10	0.18	0.19	0.10	-	-	-	2.8
3	3	4	4	4	25	31	0.10	0.23	0.23	0.10	-	-	-	2.8
3	3	4	4	4	30	31	0.12	0.27	0.28	0.10	-	-	-	2.8
3	3	4	4	4	35	31	0.14	0.32	0.32	0.10	-	-	-	2.8

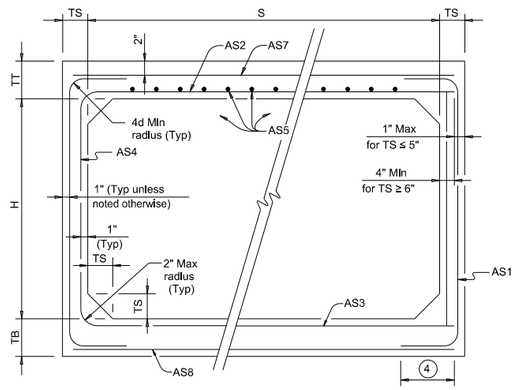
(1) For box length = 8'-0"

(2) AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.



CORNER OPTION "A" CORNER OPTION "B"

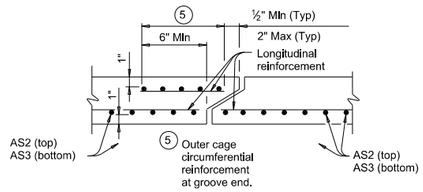
FILL HEIGHT 2 FT AND GREATER



CORNER OPTION "A" CORNER OPTION "B"

FILL HEIGHT LESS THAN 2 FT

(4) Length is equal to spacing of longitudinal reinforcing plus 2", (10" Min) (Typ)



SECTION A-A

(Showing top and bottom slab joint reinforcement.)

MATERIAL NOTES:
Provide 0,03 sq. in./ft. minimum longitudinal reinforcement at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcement is used.
Provide Class H concrete (f'c = 5,000 psi).

GENERAL NOTES:
Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information or details not shown.
See Box Culverts Precast Miscellaneous Details (SCP-MD) standard sheet for details and notes not shown.
In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Submit shop plans for alternate designs in accordance with Item "Precast Concrete Structural Members (Fabrication)."

HL93 LOADING

Texas Department of Transportation — Bridge Division Standard

SINGLE BOX CULVERTS PRECAST
3'-0" SPAN

SCP-3

FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	—	–	——	———
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No.	DATE	REVISIONS	APP.

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713-783-0042
www.vs-engr.com

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Texas Registered Engineering Firm F-148

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TXDOT SINGLE BOX CULVERT PRECAST 3'-0" SPAN DETAIL

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
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ROWAIDAH AYOUB	
SHEET NO. 396 OF 718	

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FILE:

BOX DATA

SECTION DIMENSIONS					Fill Height	M (Min)	REINFORCING (sq. in. / ft.) (2)							(1) Lift Weight
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	(ft.)	(in.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	(tons)
4	2	7.5	6	5	< 2	-	0.18	0.27	0.15	0.12	0.18	0.18	0.14	4.5
4	2	5	5	5	2 < 3	38	0.18	0.19	0.17	0.12	–	–	–	3.6
4	2	5	5	5	3 – 5	38	0.13	0.13	0.13	0.12	–	–	–	3.6
4	2	5	5	5	10	38	0.12	0.12	0.12	0.12	–	–	–	3.6
4	2	5	5	5	15	38	0.14	0.16	0.16	0.12	–	–	–	3.6
4	2	5	5	5	20	38	0.18	0.20	0.21	0.12	–	–	–	3.6
4	2	5	5	5	25	38	0.23	0.25	0.25	0.12	–	–	–	3.6
4	2	5	5	5	30	38	0.28	0.30	0.30	0.12	–	–	–	3.6
4	3	7.5	6	5	< 2	-	0.18	0.31	0.18	0.12	0.18	0.18	0.14	5.0
4	3	5	5	5	2 < 3	38	0.15	0.23	0.20	0.12	–	–	–	4.1
4	3	5	5	5	3 – 5	38	0.12	0.16	0.16	0.12	–	–	–	4.1
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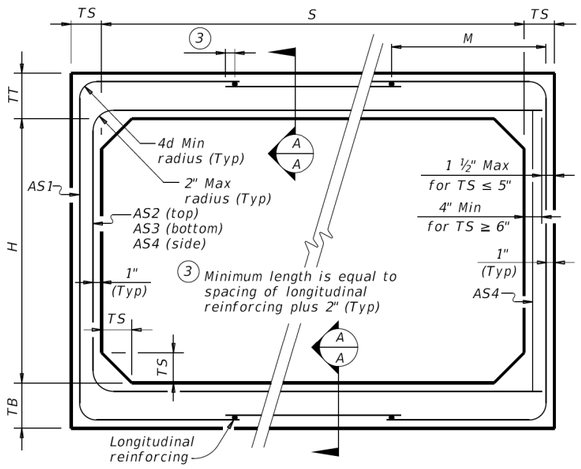
4	3	5	5	5	15	38	0.12	0.18	0.18	0.12	–	–	–	4.1
4	3	5	5	5	20	38	0.14	0.23	0.24	0.12	–	–	–	4.1
4	3	5	5	5	25	38	0.17	0.29	0.29	0.12	–	–	–	4.1
4	3	5	5	5	30	38	0.21	0.35	0.35	0.12	–	–	–	4.1
4	4	7.5	6	5	< 2	-	0.18	0.33	0.20	0.12	0.18	0.18	0.14	5.5
4	4	5	5	5	2 < 3	38	0.12	0.26	0.23	0.12	–	–	–	4.6
4	4	5	5	5	3 – 5	38	0.12	0.18	0.18	0.12	–	–	–	4.6
4	4	5	5	5	10	38	0.12	0.15	0.15	0.12	–	–	–	4.6
4	4	5	5	5	15	38	0.12	0.19	0.20	0.12	–	–	–	4.6
4	4	5	5	5	20	38	0.12	0.25	0.25	0.12	–	–	–	4.6
4	4	5	5	5	25	38	0.14	0.31	0.31	0.12	–	–	–	4.6
4	4	5	5	5	30	38	0.17	0.37	0.37	0.12	–	–	–	4.6

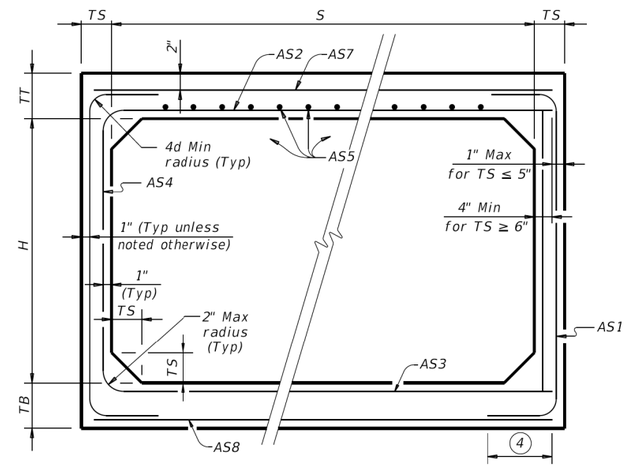
(1) For box length = 8'-0"

(2) AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.



CORNER OPTION "A" CORNER OPTION "B"

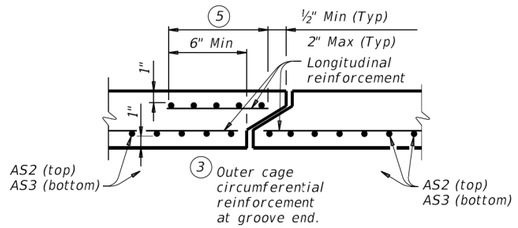
FILL HEIGHT 2 FT AND GREATER



CORNER OPTION "A" CORNER OPTION "B"

FILL HEIGHT LESS THAN 2 FT

(4) Length is equal to spacing of longitudinal reinforcing plus 2". (10" Min) (Typ)



SECTION A-A

(Showing top and bottom slab joint reinforcement.)

MATERIAL NOTES:

Provide 0.03 sq. in./ft. minimum longitudinal reinforcement at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcement is used.

Provide Class H concrete (f`c = 5,000 psi).

GENERAL NOTES:

Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information or details not shown.

See Box Culverts Precast Miscellaneous Details (SCP-MD) standard sheet for details and notes not shown.

In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Submit shop plans for alternate designs in accordance with Item "Precast Concrete Structural Members (Fabrication)."

HL93 LOADING

Texas Department of Transportation

Bridge Division Standard

SINGLE BOX CULVERTS PRECAST

4'-0" SPAN

SCP-4

FILE: CD-SCP04-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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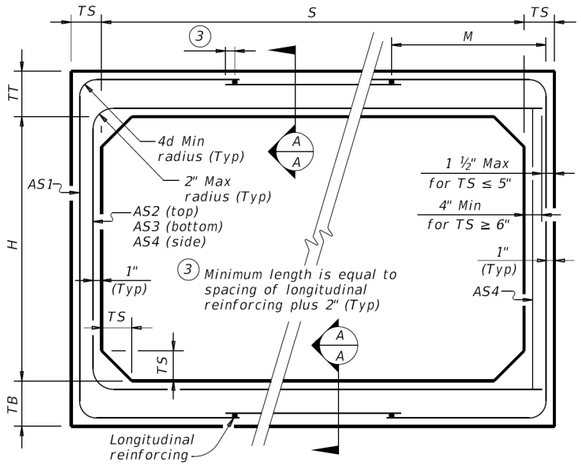
DATE:
FILE:

BOX DATA

SECTION DIMENSIONS					Fill Height	M (Min)	REINFORCING (sq. in. / ft.) (2)							(1) Lift Weight
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	(ft.)	(in.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	(tons)
5	2	8	7	6	< 2	-	0.19	0.27	0.18	0.14	0.19	0.19	0.17	6.0
5	2	6	6	6	2 < 3	44	0.22	0.20	0.16	0.14	–	–	–	5.1
5	2	6	6	6	3 – 5	44	0.16	0.14	0.14	0.14	–	–	–	5.1
5	2	6	6	6	10	36	0.15	0.14	0.14	0.14	–	–	–	5.1
5	2	6	6	6	15	36	0.20	0.18	0.18	0.14	–	–	–	5.1
5	2	6	6	6	20	36	0.26	0.23	0.24	0.14	–	–	–	5.1
5	2	6	6	6	25	36	0.33	0.29	0.29	0.14	–	–	–	5.1
5	2	6	6	6	30	36	0.39	0.34	0.35	0.14	–	–	–	5.1
5	3	8	7	6	< 2	-	0.19	0.31	0.21	0.14	0.19	0.19	0.17	6.6
5	3	6	6	6	2 < 3	45	0.18	0.24	0.19	0.14	–	–	–	5.7
5	3	6	6	6	3 – 5	36	0.14	0.17	0.16	0.14	–	–	–	5.7
5	3	6	6	6	10	36	0.14	0.16	0.17	0.14	–	–	–	5.7
5	3	6	6	6	15	35	0.16	0.21	0.22	0.14	–	–	–	5.7
5	3	6	6	6	20	35	0.21	0.27	0.28	0.14	–	–	–	5.7
5	3	6	6	6	25	35	0.26	0.34	0.34	0.14	–	–	–	5.7
5	3	6	6	6	30	35	0.31	0.41	0.41	0.14	–	–	–	5.7
5	4	8	7	6	< 2	-	0.19	0.33	0.24	0.14	0.19	0.19	0.17	7.2
5	4	6	6	6	2 < 3	45	0.16	0.27	0.22	0.14	–	–	–	6.3
5	4	6	6	6	3 – 5	45	0.14	0.19	0.18	0.14	–	–	–	6.3
5	4	6	6	6	10	36	0.14	0.18	0.18	0.14	–	–	–	6.3
5	4	6	6	6	15	35	0.14	0.23	0.24	0.14	–	–	–	6.3
5	4	6	6	6	20	35	0.17	0.30	0.31	0.14	–	–	–	6.3
5	4	6	6	6	25	35	0.21	0.37	0.38	0.14	–	–	–	6.3
5	4	6	6	6	30	35	0.25	0.44	0.45	0.14	–	–	–	6.3
5	5	8	7	6	< 2	-	0.19	0.35	0.26	0.14	0.19	0.19	0.17	7.8
5	5	6	6	6	2 < 3	45	0.14	0.29	0.24	0.14	–	–	–	6.9
5	5	6	6	6	3 – 5	45	0.14	0.21	0.20	0.14	–	–	–	6.9
5	5	6	6	6	10	45	0.14	0.19	0.20	0.14	–	–	–	6.9
5	5	6	6	6	15	36	0.14	0.24	0.25	0.14	–	–	–	6.9
5	5	6	6	6	20	35	0.15	0.31	0.32	0.14	–	–	–	6.9
5	5	6	6	6	25	35	0.18	0.38	0.39	0.14	–	–	–	6.9
5	5	6	6	6	30	35	0.21	0.46	0.47	0.14	–	–	–	6.9

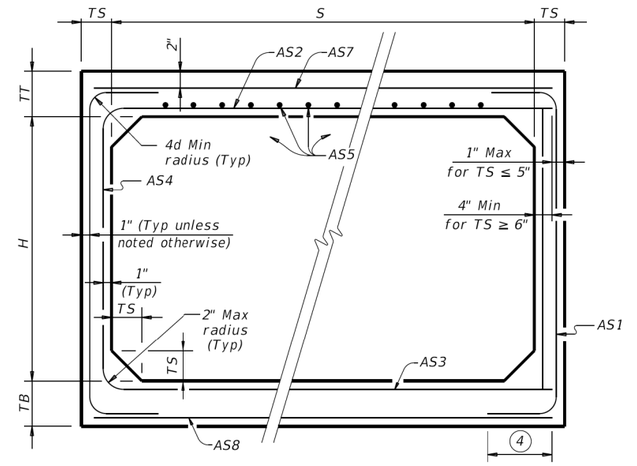
(1) For box length = 8'-0"

(2) AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.



CORNER OPTION "A" CORNER OPTION "B"

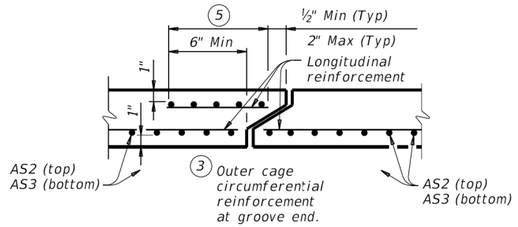
FILL HEIGHT 2 FT AND GREATER



CORNER OPTION "A" CORNER OPTION "B"

FILL HEIGHT LESS THAN 2 FT

(4) Length is equal to spacing of longitudinal reinforcing plus 2". (10" Min) (Typ)



SECTION A-A

(Showing top and bottom slab joint reinforcement.)

MATERIAL NOTES:

Provide 0.03 sq. in./ft. minimum longitudinal reinforcement at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcement is used.

Provide Class H concrete (f`c = 5,000 psi).

GENERAL NOTES:

Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information or details not shown.

See Box Culverts Precast Miscellaneous Details (SCP–MD) standard sheet for details and notes not shown.

In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Submit shop plans for alternate designs in accordance with Item "Precast Concrete Structural Members (Fabrication)."

HL93 LOADING

Texas Department of Transportation

Bridge Division Standard

SINGLE BOX CULVERTS PRECAST

5'-0" SPAN

SCP-5

FILE: CD-SCP05-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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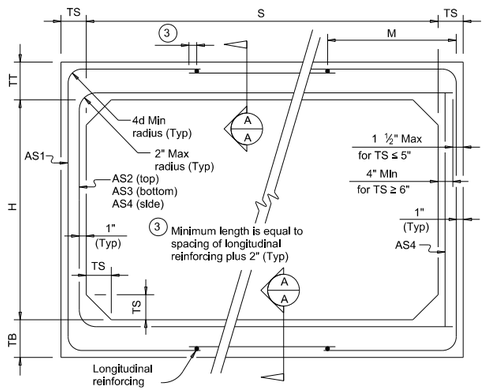
BOX DATA

SECTION DIMENSIONS					Fill Height	M (Min)	REINFORCING (sq. in. / ft.) (2)							(1) Lift Weight
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	(ft.)	(in.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	(tons)
6	2	8	7	7	< 2	-	0.23	0.27	0.19	0.17	0.19	0.19	0.17	7.2
6	2	7	7	7	2 < 3	43	0.25	0.21	0.17	0.17	-	-	-	6.8
6	2	7	7	7	3 - 5	43	0.20	0.17	0.17	0.17	-	-	-	6.8
6	2	7	7	7	10	39	0.20	0.17	0.17	0.17	-	-	-	6.8
6	2	7	7	7	15	39	0.26	0.20	0.20	0.17	-	-	-	6.8
6	2	7	7	7	20	39	0.34	0.26	0.26	0.17	-	-	-	6.8
6	2	7	7	7	25	39	0.43	0.32	0.32	0.17	-	-	-	6.8
6	2	7	7	7	30	39	0.52	0.38	0.39	0.17	-	-	-	6.8
6	3	8	7	7	< 2	-	0.20	0.31	0.22	0.17	0.19	0.19	0.17	7.9
6	3	7	7	7	2 < 3	43	0.21	0.24	0.19	0.17	-	-	-	7.5
6	3	7	7	7	3 - 5	39	0.17	0.18	0.17	0.17	-	-	-	7.5
6	3	7	7	7	10	39	0.17	0.18	0.19	0.17	-	-	-	7.5
6	3	7	7	7	15	38	0.22	0.24	0.24	0.17	-	-	-	7.5
6	3	7	7	7	20	38	0.28	0.31	0.31	0.17	-	-	-	7.5
6	3	7	7	7	25	38	0.35	0.38	0.39	0.17	-	-	-	7.5
6	3	7	7	7	30	38	0.42	0.46	0.46	0.17	-	-	-	7.5
6	4	8	7	7	< 2	-	0.19	0.34	0.25	0.17	0.19	0.19	0.17	8.6
6	4	7	7	7	2 < 3	43	0.19	0.27	0.21	0.17	-	-	-	8.2
6	4	7	7	7	3 - 5	39	0.17	0.21	0.19	0.17	-	-	-	8.2
6	4	7	7	7	10	39	0.17	0.20	0.21	0.17	-	-	-	8.2
6	4	7	7	7	15	38	0.18	0.27	0.27	0.17	-	-	-	8.2
6	4	7	7	7	20	38	0.24	0.34	0.35	0.17	-	-	-	8.2
6	4	7	7	7	25	38	0.29	0.43	0.42	0.17	-	-	-	8.2
6	4	7	7	7	30	38	0.35	0.51	0.52	0.17	-	-	-	8.2
6	5	8	7	7	< 2	-	0.19	0.37	0.28	0.17	0.19	0.19	0.17	9.3
6	5	7	7	7	2 < 3	43	0.17	0.30	0.24	0.17	-	-	-	8.9
6	5	7	7	7	3 - 5	43	0.17	0.23	0.21	0.17	-	-	-	8.9
6	5	7	7	7	10	39	0.17	0.22	0.23	0.17	-	-	-	8.9
6	5	7	7	7	15	38	0.17	0.28	0.29	0.17	-	-	-	8.9
6	5	7	7	7	20	38	0.20	0.37	0.38	0.17	-	-	-	8.9
6	5	7	7	7	25	38	0.25	0.45	0.46	0.17	-	-	-	8.9
6	5	7	7	7	30	38	0.30	0.54	0.55	0.17	-	-	-	8.9
6	6	8	7	7	< 2	-	0.19	0.38	0.30	0.17	0.19	0.19	0.17	10
6	6	7	7	7	2 < 3	52	0.17	0.32	0.26	0.17	-	-	-	9.6
6	6	7	7	7	3 - 5	52	0.17	0.24	0.22	0.17	-	-	-	9.6
6	6	7	7	7	10	43	0.17	0.23	0.24	0.17	-	-	-	9.6
6	6	7	7	7	15	39	0.17	0.29	0.31	0.17	-	-	-	9.6
6	6	7	7	7	20	39	0.18	0.38	0.39	0.17	-	-	-	9.6
6	6	7	7	7	25	38	0.23	0.46	0.48	0.17	-	-	-	9.6
6	6	7	7	7	30	38	0.27	0.55	0.57	0.17	-	-	-	9.6

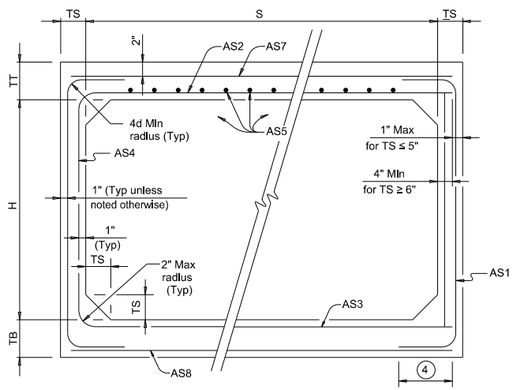
(1) For box length = 8'-0"

(2) AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.



CORNER OPTION "A" CORNER OPTION "B"

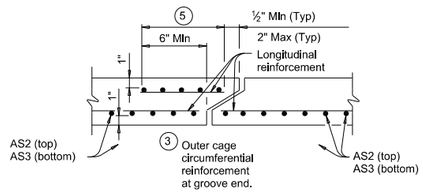
FILL HEIGHT 2 FT AND GREATER



CORNER OPTION "A" CORNER OPTION "B"

FILL HEIGHT LESS THAN 2 FT

(4) Length is equal to spacing of longitudinal reinforcing plus 2", (10" Min) (Typ)



SECTION A-A

(Showing top and bottom slab joint reinforcement.)

MATERIAL NOTES:
Provide 0.03 sq. in./ft. minimum longitudinal reinforcement at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcement is used.
Provide Class H concrete (f'c = 5,000 psi).

GENERAL NOTES:
Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information or details not shown.
See Box Culverts Precast Miscellaneous Details (SCP-MD) standard sheet for details and notes not shown.
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HL93 LOADING

Texas Department of Transportation — Bridge Division Standard

SINGLE BOX CULVERTS PRECAST
6'-0" SPAN

SCP-6

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TXDOT SINGLE BOX CULVERT PRECAST 6'-0" SPAN DETAIL

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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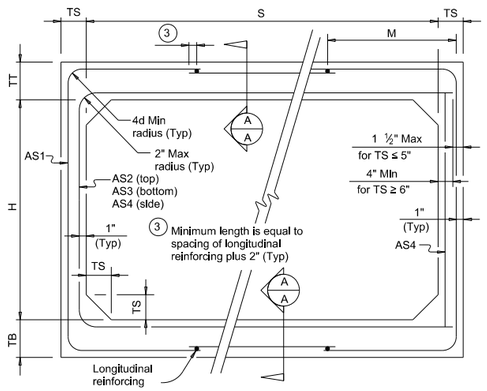
BOX DATA

SECTION DIMENSIONS					Fill Height	M (Min)	REINFORCING (sq. in. / ft.) ②							① Lift Weight
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	(ft.)	(in.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	(tons)
7	3	8	8	8	< 2	-	0.23	0.31	0.22	0.19	0.19	0.19	0.19	9.6
7	3	8	8	8	2 < 3	47	0.27	0.25	0.24	0.19	-	-	-	9.6
7	3	8	8	8	3 - 5	43	0.19	0.19	0.19	0.19	-	-	-	9.6
7	3	8	8	8	10	43	0.21	0.20	0.21	0.19	-	-	-	9.6
7	3	8	8	8	15	43	0.28	0.26	0.27	0.19	-	-	-	9.6
7	3	8	8	8	20	43	0.36	0.34	0.35	0.19	-	-	-	9.6
7	3	8	8	8	25	43	0.45	0.42	0.43	0.19	-	-	-	9.6
7	3	8	8	8	30	43	0.54	0.50	0.51	0.19	-	-	-	9.6
7	4	8	8	8	< 2	-	0.21	0.34	0.25	0.19	0.19	0.19	0.19	10.4
7	4	8	8	8	2 < 3	43	0.23	0.28	0.28	0.19	-	-	-	10.4
7	4	8	8	8	3 - 5	43	0.19	0.22	0.19	0.19	-	-	-	10.4
7	4	8	8	8	10	43	0.19	0.23	0.23	0.19	-	-	-	10.4
7	4	8	8	8	15	41	0.24	0.30	0.30	0.19	-	-	-	10.4
7	4	8	8	8	20	41	0.31	0.38	0.39	0.19	-	-	-	10.4
7	4	8	8	8	25	41	0.38	0.47	0.48	0.19	-	-	-	10.4
7	4	8	8	8	30	41	0.46	0.57	0.57	0.19	-	-	-	10.4
7	5	8	8	8	< 2	-	0.19	0.36	0.27	0.19	0.19	0.19	0.19	11.2
7	5	8	8	8	2 < 3	47	0.21	0.31	0.31	0.19	-	-	-	11.2
7	5	8	8	8	3 - 5	43	0.19	0.24	0.21	0.19	-	-	-	11.2
7	5	8	8	8	10	43	0.19	0.25	0.26	0.19	-	-	-	11.2
7	5	8	8	8	15	41	0.21	0.32	0.33	0.19	-	-	-	11.2
7	5	8	8	8	20	41	0.27	0.41	0.42	0.19	-	-	-	11.2
7	5	8	8	8	25	41	0.33	0.51	0.52	0.19	-	-	-	11.2
7	5	8	8	8	30	41	0.40	0.61	0.62	0.19	-	-	-	11.2
7	6	8	8	8	< 2	-	0.19	0.38	0.30	0.19	0.19	0.19	0.19	12.0
7	6	8	8	8	2 < 3	59	0.19	0.33	0.34	0.19	-	-	-	12.0
7	6	8	8	8	3 - 5	47	0.19	0.25	0.23	0.19	-	-	-	12.0
7	6	8	8	8	10	43	0.19	0.26	0.27	0.19	-	-	-	12.0
7	6	8	8	8	15	41	0.19	0.34	0.35	0.19	-	-	-	12.0
7	6	8	8	8	20	41	0.24	0.43	0.45	0.19	-	-	-	12.0
7	6	8	8	8	25	41	0.29	0.53	0.55	0.19	-	-	-	12.0
7	6	8	8	8	30	41	0.35	0.64	0.65	0.19	-	-	-	12.0
7	7	8	8	8	< 2	-	0.19	0.40	0.33	0.19	0.19	0.19	0.19	12.8
7	7	8	8	8	2 < 3	59	0.19	0.36	0.37	0.19	-	-	-	12.8
7	7	8	8	8	3 - 5	59	0.19	0.27	0.25	0.19	-	-	-	12.8
7	7	8	8	8	10	47	0.19	0.27	0.29	0.19	-	-	-	12.8
7	7	8	8	8	15	43	0.19	0.35	0.37	0.19	-	-	-	12.8
7	7	8	8	8	20	43	0.22	0.44	0.46	0.19	-	-	-	12.8
7	7	8	8	8	25	43	0.27	0.54	0.57	0.19	-	-	-	12.8
7	7	8	8	8	30	41	0.32	0.65	0.67	0.19	-	-	-	12.8

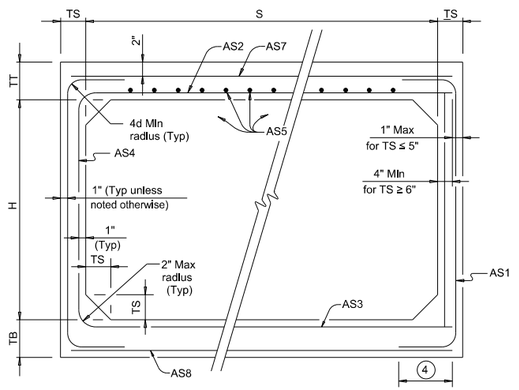
① For box length = 8'-0"

② AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.



CORNER OPTION "A" CORNER OPTION "B"

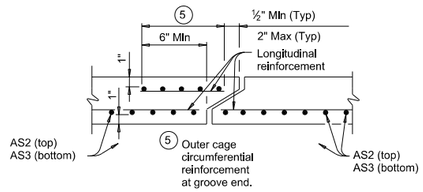
FILL HEIGHT 2 FT AND GREATER



CORNER OPTION "A" CORNER OPTION "B"

FILL HEIGHT LESS THAN 2 FT

④ Length is equal to spacing of longitudinal reinforcing plus 2", (10" Min) (Typ)



SECTION A-A

(Showing top and bottom slab joint reinforcement.)

MATERIAL NOTES:
Provide 0.03 sq. in./ft. minimum longitudinal reinforcement at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcement is used.
Provide Class H concrete (f'c = 5,000 psi).

GENERAL NOTES:
Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information or details not shown.
See Box Culverts Precast Miscellaneous Details (SCP-MD) standard sheet for details and notes not shown.
In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Submit shop plans for alternate designs in accordance with Item "Precast Concrete Structural Members (Fabrication)."

HL93 LOADING

Texas Department of Transportation — Bridge Division Standard

SINGLE BOX CULVERTS PRECAST 7'-0" SPAN

SCP-7

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TXDOT SINGLE BOX CULVERT PRECAST 7'-0" SPAN DETAIL

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
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SHEET NO. 400 OF 718	

Design Filename: F:\03339 Antoine Drive\802-1\CAD\Plan Production_Details\XX-TXDOT Single Box Culverts Precast 7 Span.dgn

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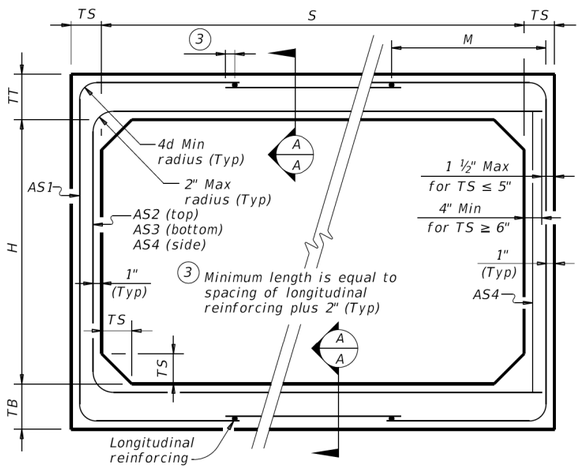
BOX DATA

SECTION DIMENSIONS					Fill Height	M (Min)	REINFORCING (sq. in. / ft.) (2)							(1) Lift Weight
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	(ft.)	(in.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	(tons)
8	3	8	8	8	< 2	-	0.31	0.35	0.25	0.19	0.19	0.19	0.19	10.4
8	3	8	8	8	2 < 3	55	0.35	0.29	0.28	0.19	–	–	–	10.4
8	3	8	8	8	3 – 5	50	0.28	0.23	0.24	0.19	–	–	–	10.4
8	3	8	8	8	10	45	0.29	0.25	0.26	0.19	–	–	–	10.4
8	3	8	8	8	15	45	0.39	0.33	0.34	0.19	–	–	–	10.4
8	3	8	8	8	20	45	0.51	0.43	0.44	0.19	–	–	–	10.4
8	3	8	8	8	25	45	0.63	0.53	0.54	0.19	–	–	–	10.4
8	4	8	8	8	< 2	-	0.27	0.38	0.29	0.19	0.19	0.19	0.19	11.2
8	4	8	8	8	2 < 3	50	0.31	0.34	0.32	0.19	–	–	–	11.2
8	4	8	8	8	3 – 5	50	0.25	0.27	0.27	0.19	–	–	–	11.2
8	4	8	8	8	10	45	0.26	0.28	0.29	0.19	–	–	–	11.2
8	4	8	8	8	15	41	0.34	0.37	0.38	0.19	–	–	–	11.2
8	4	8	8	8	20	41	0.44	0.48	0.49	0.19	–	–	–	11.2
8	5	8	8	8	< 2	-	0.24	0.40	0.32	0.19	0.19	0.19	0.19	12.0
8	5	8	8	8	2 < 3	50	0.28	0.37	0.35	0.19	–	–	–	12.0
8	5	8	8	8	3 – 5	45	0.23	0.29	0.30	0.19	–	–	–	12.0
8	5	8	8	8	10	45	0.23	0.31	0.32	0.19	–	–	–	12.0
8	5	8	8	8	15	41	0.30	0.41	0.42	0.19	–	–	–	12.0
8	5	8	8	8	20	41	0.39	0.52	0.54	0.19	–	–	–	12.0
8	6	8	8	8	< 2	-	0.22	0.42	0.35	0.19	0.19	0.19	0.19	12.8
8	6	8	8	8	2 < 3	50	0.25	0.40	0.38	0.19	–	–	–	12.8
8	6	8	8	8	3 – 5	50	0.21	0.32	0.33	0.19	–	–	–	12.8
8	6	8	8	8	10	45	0.22	0.33	0.34	0.19	–	–	–	12.8
8	6	8	8	8	15	41	0.28	0.43	0.45	0.19	–	–	–	12.8
8	6	8	8	8	20	41	0.36	0.55	0.57	0.19	–	–	–	12.8
8	7	8	8	8	< 2	-	0.20	0.44	0.37	0.19	0.19	0.19	0.19	13.6
8	7	8	8	8	2 < 3	55	0.23	0.43	0.41	0.19	–	–	–	13.6
8	7	8	8	8	3 – 5	55	0.19	0.34	0.35	0.19	–	–	–	13.6
8	7	8	8	8	10	50	0.20	0.34	0.36	0.19	–	–	–	13.6
8	7	8	8	8	15	41	0.26	0.45	0.47	0.19	–	–	–	13.6
8	7	8	8	8	20	41	0.33	0.57	0.60	0.19	–	–	–	13.6
8	8	8	8	8	< 2	-	0.20	0.45	0.40	0.19	0.19	0.19	0.19	14.4
8	8	8	8	8	2 < 3	65	0.21	0.45	0.44	0.19	–	–	–	14.4
8	8	8	8	8	3 – 5	65	0.19	0.36	0.38	0.19	–	–	–	14.4
8	8	8	8	8	10	55	0.19	0.35	0.38	0.19	–	–	–	14.4
8	8	8	8	8	15	45	0.24	0.46	0.49	0.19	–	–	–	14.4
8	8	8	8	8	20	45	0.31	0.59	0.62	0.19	–	–	–	14.4

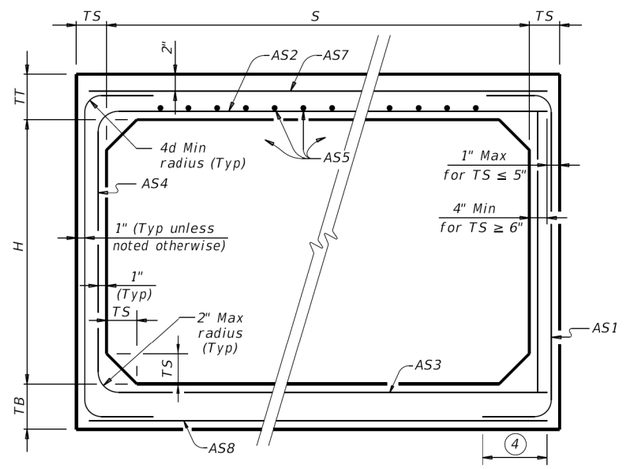
(1) For box length = 8'-0"

(2) AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.



CORNER OPTION "A" CORNER OPTION "B"

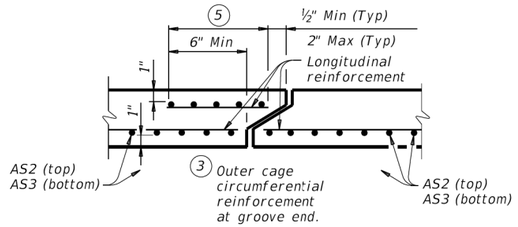
FILL HEIGHT 2 FT AND GREATER



CORNER OPTION "A" CORNER OPTION "B"

FILL HEIGHT LESS THAN 2 FT

(4) Length is equal to spacing of longitudinal reinforcing plus 2". (10" Min) (Typ)



SECTION A-A

(Showing top and bottom slab joint reinforcement.)

MATERIAL NOTES:

Provide 0.03 sq. in./ft. minimum longitudinal reinforcement at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcement is used.

Provide Class H concrete (f`c = 5,000 psi).

GENERAL NOTES:

Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information or details not shown.

See Box Culverts Precast Miscellaneous Details (SCP-MD) standard sheet for details and notes not shown.

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HL93 LOADING

Texas Department of Transportation

Bridge Division Standard

SINGLE BOX CULVERTS PRECAST

8'-0" SPAN

SCP-8

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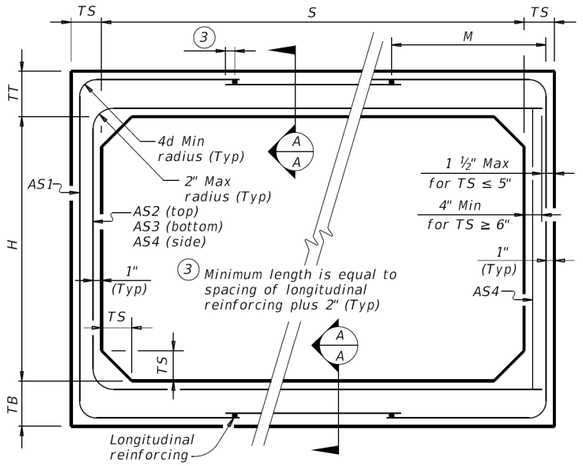
BOX DATA

SECTION DIMENSIONS					Fill Height	M (Min)	REINFORCING (sq. in. / ft.) (2)							(1) Lift Weight
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	(ft.)	(in.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	(tons)
10	4	10	10	10	< 2	-	0.33	0.34	0.27	0.24	0.24	0.24	0.24	16.5
10	4	10	10	10	2 < 3	58	0.38	0.35	0.30	0.24	–	–	–	16.5
10	4	10	10	10	3 – 5	53	0.31	0.28	0.27	0.24	–	–	–	16.5
10	4	10	10	10	10	52	0.36	0.32	0.33	0.24	–	–	–	16.5
10	4	10	10	10	15	52	0.47	0.42	0.43	0.24	–	–	–	16.5
10	4	10	10	10	20	52	0.61	0.54	0.55	0.24	–	–	–	16.5
10	4	10	10	10	25	52	0.75	0.67	0.68	0.24	–	–	–	16.5
10	5	10	10	10	< 2	-	0.30	0.36	0.30	0.24	0.24	0.24	0.24	17.5
10	5	10	10	10	2 < 3	58	0.35	0.39	0.34	0.24	–	–	–	17.5
10	5	10	10	10	3 – 5	52	0.28	0.31	0.30	0.24	–	–	–	17.5
10	5	10	10	10	10	52	0.33	0.35	0.36	0.24	–	–	–	17.5
10	5	10	10	10	15	47	0.42	0.46	0.47	0.24	–	–	–	17.5
10	5	10	10	10	20	47	0.55	0.59	0.61	0.24	–	–	–	17.5
10	5	10	10	10	25	47	0.68	0.73	0.75	0.24	–	–	–	17.5
10	6	10	10	10	< 2	-	0.28	0.38	0.33	0.24	0.24	0.24	0.24	18.5
10	6	10	10	10	2 < 3	58	0.32	0.42	0.37	0.24	–	–	–	18.5
10	6	10	10	10	3 – 5	53	0.26	0.34	0.33	0.24	–	–	–	18.5
10	6	10	10	10	10	52	0.30	0.38	0.39	0.24	–	–	–	18.5
10	6	10	10	10	15	47	0.39	0.49	0.51	0.24	–	–	–	18.5
10	6	10	10	10	20	47	0.50	0.63	0.65	0.24	–	–	–	18.5
10	6	10	10	10	25	47	0.61	0.78	0.80	0.24	–	–	–	18.5
10	7	10	10	10	< 2	-	0.25	0.40	0.36	0.24	0.24	0.24	0.24	19.5
10	7	10	10	10	2 < 3	58	0.30	0.45	0.40	0.24	–	–	–	19.5
10	7	10	10	10	3 – 5	58	0.24	0.36	0.35	0.24	–	–	–	19.5
10	7	10	10	10	10	52	0.28	0.40	0.42	0.24	–	–	–	19.5
10	7	10	10	10	15	47	0.36	0.52	0.54	0.24	–	–	–	19.5
10	7	10	10	10	20	47	0.46	0.67	0.69	0.24	–	–	–	19.5
10	7	10	10	10	25	47	0.56	0.82	0.85	0.24	–	–	–	19.5
10	8	10	10	10	< 2	-	0.24	0.41	0.38	0.24	0.24	0.24	0.24	20.5
10	8	10	10	10	2 < 3	64	0.27	0.47	0.43	0.24	–	–	–	20.5
10	8	10	10	10	3 – 5	58	0.24	0.38	0.38	0.24	–	–	–	20.5
10	8	10	10	10	10	52	0.26	0.42	0.44	0.24	–	–	–	20.5
10	8	10	10	10	15	47	0.34	0.54	0.57	0.24	–	–	–	20.5
10	8	10	10	10	20	47	0.43	0.69	0.72	0.24	–	–	–	20.5
10	9	10	10	10	< 2	-	0.24	0.42	0.41	0.24	0.24	0.24	0.24	21.5
10	9	10	10	10	2 < 3	70	0.26	0.50	0.46	0.24	–	–	–	21.5
10	9	10	10	10	3 – 5	64	0.24	0.40	0.40	0.24	–	–	–	21.5
10	9	10	10	10	10	58	0.25	0.43	0.46	0.24	–	–	–	21.5
10	9	10	10	10	15	52	0.32	0.56	0.59	0.24	–	–	–	21.5
10	9	10	10	10	20	47	0.40	0.71	0.75	0.24	–	–	–	21.5
10	10	10	10	10	< 2	-	0.24	0.44	0.44	0.24	0.24	0.24	0.24	22.5
10	10	10	10	10	2 < 3	79	0.25	0.52	0.48	0.24	–	–	–	22.5
10	10	10	10	10	3 – 5	70	0.24	0.42	0.43	0.24	–	–	–	22.5
10	10	10	10	10	10	64	0.24	0.44	0.48	0.24	–	–	–	22.5
10	10	10	10	10	15	52	0.30	0.57	0.61	0.24	–	–	–	22.5
10	10	10	10	10	20	52	0.38	0.73	0.77	0.24	–	–	–	22.5

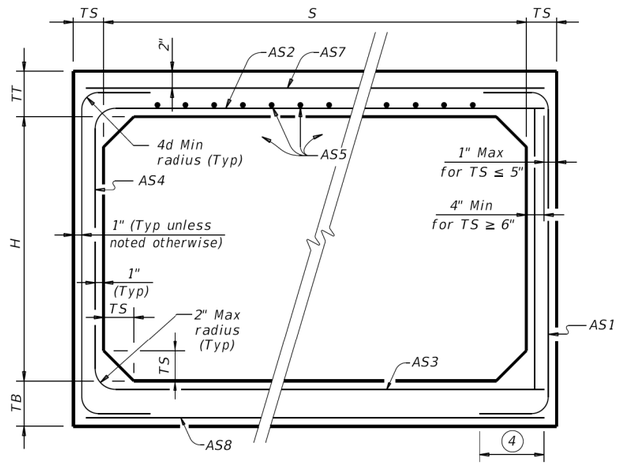
(1) For box length = 8'-0"

(2) AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.



CORNER OPTION "A" CORNER OPTION "B"

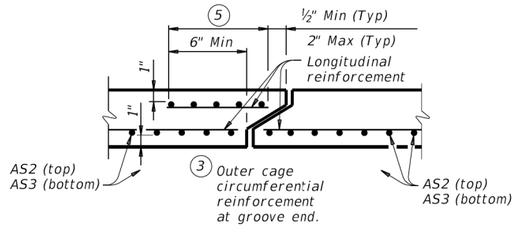
FILL HEIGHT 2 FT AND GREATER



CORNER OPTION "A" CORNER OPTION "B"

FILL HEIGHT LESS THAN 2 FT

(4) Length is equal to spacing of longitudinal reinforcing plus 2". (10" Min) (Typ)



SECTION A-A

(Showing top and bottom slab joint reinforcement.)

MATERIAL NOTES:

Provide 0.03 sq. in./ft. minimum longitudinal reinforcement at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcement is used.

Provide Class H concrete (f`c = 5,000 psi).

GENERAL NOTES:

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HL93 LOADING

Texas Department of Transportation

Bridge Division Standard

SINGLE BOX CULVERTS PRECAST

10'-0" SPAN

SCP-10

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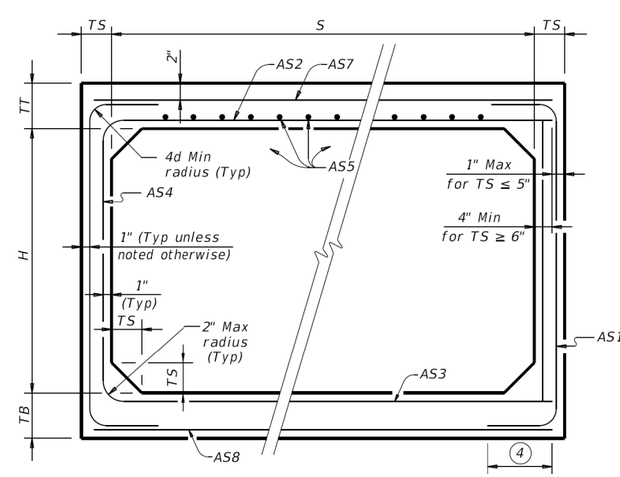
BOX DATA

SECTION DIMENSIONS					Fill Height	M (Min)	REINFORCING (sq. in. / ft.) (2)							(1) Lift Weight
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	(ft.)	(in.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	(tons)
12	4	12	12	12	< 2	-	0.38	0.31	0.29	0.29	0.29	0.29	0.29	22.8
12	4	12	12	12	2 < 3	73	0.44	0.37	0.30	0.29	–	–	–	22.8
12	4	12	12	12	3 – 5	66	0.37	0.30	0.29	0.29	–	–	–	22.8
12	4	12	12	12	10	66	0.44	0.34	0.35	0.29	–	–	–	22.8
12	4	12	12	12	15	59	0.60	0.46	0.48	0.29	–	–	–	22.8
12	4	12	12	12	20	59	0.78	0.60	0.61	0.29	–	–	–	22.8
12	4	12	12	12	25	59	0.97	0.74	0.75	0.29	–	–	–	22.8
12	5	12	12	12	< 2	-	0.34	0.33	0.29	0.29	0.29	0.29	0.29	24.0
12	5	12	12	12	2 < 3	66	0.41	0.40	0.33	0.29	–	–	–	24.0
12	5	12	12	12	3 – 5	61	0.34	0.33	0.30	0.29	–	–	–	24.0
12	5	12	12	12	10	59	0.41	0.38	0.39	0.29	–	–	–	24.0
12	5	12	12	12	15	59	0.55	0.51	0.52	0.29	–	–	–	24.0
12	5	12	12	12	20	59	0.71	0.66	0.67	0.29	–	–	–	24.0
12	5	12	12	12	25	59	0.88	0.81	0.82	0.29	–	–	–	24.0
12	6	12	12	12	< 2	-	0.32	0.36	0.32	0.29	0.29	0.29	0.29	25.2
12	6	12	12	12	2 < 3	66	0.38	0.43	0.36	0.29	–	–	–	25.2
12	6	12	12	12	3 – 5	59	0.32	0.36	0.33	0.29	–	–	–	25.2
12	6	12	12	12	10	59	0.38	0.41	0.42	0.29	–	–	–	25.2
12	6	12	12	12	15	53	0.51	0.55	0.57	0.29	–	–	–	25.2
12	6	12	12	12	20	53	0.65	0.71	0.72	0.29	–	–	–	25.2
12	6	12	12	12	25	53	0.81	0.87	0.89	0.29	–	–	–	25.2
12	7	12	12	12	< 2	-	0.30	0.39	0.35	0.29	0.29	0.29	0.29	26.4
12	7	12	12	12	2 < 3	66	0.35	0.46	0.39	0.29	–	–	–	26.4
12	7	12	12	12	3 – 5	59	0.29	0.38	0.36	0.29	–	–	–	26.4
12	7	12	12	12	10	59	0.36	0.43	0.45	0.29	–	–	–	26.4
12	7	12	12	12	15	53	0.47	0.58	0.61	0.29	–	–	–	26.4
12	7	12	12	12	20	53	0.61	0.75	0.77	0.29	–	–	–	26.4
12	8	12	12	12	< 2	-	0.29	0.41	0.38	0.29	0.29	0.29	0.29	27.6
12	8	12	12	12	2 < 3	66	0.33	0.49	0.42	0.29	–	–	–	27.6
12	8	12	12	12	3 – 5	59	0.29	0.41	0.38	0.29	–	–	–	27.6
12	8	12	12	12	10	59	0.34	0.46	0.48	0.29	–	–	–	27.6
12	8	12	12	12	15	53	0.44	0.61	0.64	0.29	–	–	–	27.6
12	8	12	12	12	20	53	0.57	0.78	0.81	0.29	–	–	–	27.6
12	8	12	12	12	25	53	0.69	0.96	0.99	0.29	–	–	–	27.6

BOX DATA

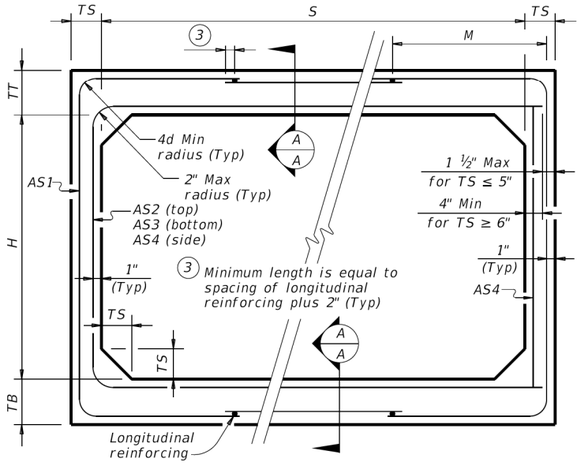
SECTION DIMENSIONS					Fill Height	M (Min)	REINFORCING (sq. in. / ft.) (2)							(1) Lift Weight
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	(ft.)	(in.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	(tons)
12	9	12	12	12	< 2	–	0.29	0.43	0.40	0.29	0.29	0.29	0.29	28.8
12	9	12	12	12	2 < 3	66	0.30	0.51	0.45	0.29	–	–	–	28.8
12	9	12	12	12	3 – 5	66	0.29	0.43	0.41	0.29	–	–	–	28.8
12	9	12	12	12	10	59	0.32	0.47	0.51	0.29	–	–	–	28.8
12	9	12	12	12	15	53	0.42	0.63	0.67	0.29	–	–	–	28.8
12	9	12	12	12	20	53	0.53	0.81	0.85	0.29	–	–	–	28.8
12	9	12	12	12	25	53	0.69	0.96	0.99	0.29	–	–	–	28.8
12	10	12	12	12	< 2	–	0.29	0.45	0.43	0.29	0.29	0.29	0.29	30.0
12	10	12	12	12	2 < 3	73	0.29	0.54	0.48	0.29	–	–	–	30.0
12	10	12	12	12	3 – 5	66	0.29	0.45	0.43	0.29	–	–	–	30.0
12	10	12	12	12	10	59	0.31	0.49	0.53	0.29	–	–	–	30.0
12	10	12	12	12	15	53	0.40	0.65	0.70	0.29	–	–	–	30.0
12	10	12	12	12	20	53	0.51	0.84	0.88	0.29	–	–	–	30.0
12	10	12	12	12	25	53	0.62	1.03	1.07	0.29	–	–	–	30.0
12	11	12	12	12	< 2	–	0.29	0.47	0.45	0.29	0.29	0.29	0.29	31.2
12	11	12	12	12	2 < 3	80	0.29	0.56	0.51	0.29	–	–	–	31.2
12	11	12	12	12	3 – 5	73	0.29	0.47	0.46	0.29	–	–	–	31.2
12	11	12	12	12	10	66	0.29	0.51	0.55	0.29	–	–	–	31.2
12	11	12	12	12	15	59	0.38	0.67	0.72	0.29	–	–	–	31.2
12	11	12	12	12	20	53	0.48	0.85	0.91	0.29	–	–	–	31.2
12	11	12	12	12	25	53	0.59	1.05	1.10	0.29	–	–	–	31.2
12	12	12	12	12	< 2	–	0.29	0.49	0.48	0.33	0.29	0.29	0.29	32.4
12	12	12	12	12	2 < 3	93	0.29	0.59	0.53	0.29	–	–	–	32.4
12	12	12	12	12	3 – 5	80	0.29	0.49	0.48	0.29	–	–	–	32.4
12	12	12	12	12	10	73	0.29	0.52	0.58	0.29	–	–	–	32.4
12	12	12	12	12	15	59	0.37	0.69	0.74	0.29	–	–	–	32.4
12	12	12	12	12	20	59	0.46	0.87	0.93	0.29	–	–	–	32.4



CORNER OPTION "A" CORNER OPTION "B"

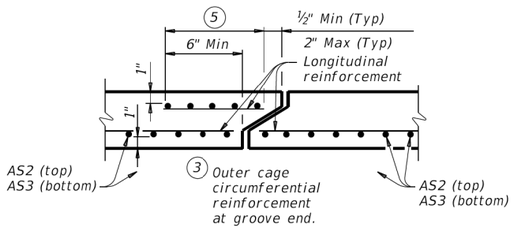
FILL HEIGHT LESS THAN 2 FT

(4) Length is equal to spacing of longitudinal reinforcing plus 2". (10" Min) (Typ)



CORNER OPTION "A" CORNER OPTION "B"

FILL HEIGHT 2 FT AND GREATER



SECTION A-A

(Showing top and bottom slab joint reinforcement.)

(1) For box length = 8'-0"

(2) AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.

MATERIAL NOTES:

Provide 0.03 sq. in./ft. minimum longitudinal reinforcement at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcement is used.

Provide Class H concrete (f`c = 5,000 psi).

GENERAL NOTES:

Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information or details not shown.

See Box Culverts Precast Miscellaneous Details (SCP-MD) standard sheet for details and notes not shown.

In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Submit shop plans for alternate designs in accordance with Item "Precast Concrete Structural Members (Fabrication)."

HL93 LOADING

Texas Department of Transportation | Bridge Division Standard

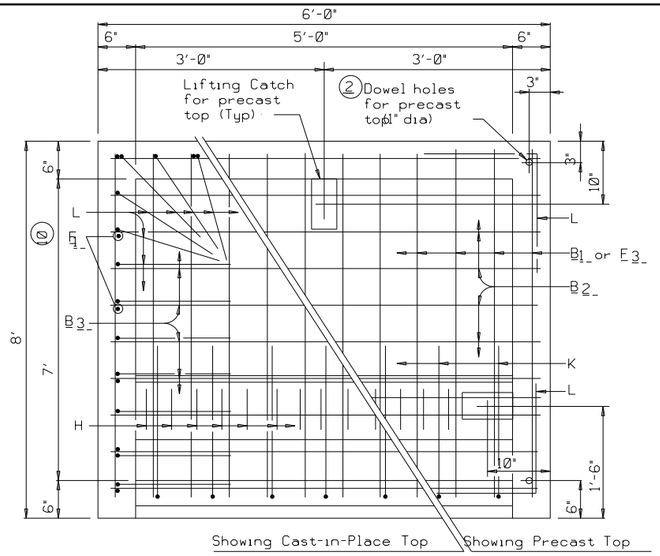
SINGLE BOX CULVERTS PRECAST

12'-0" SPAN

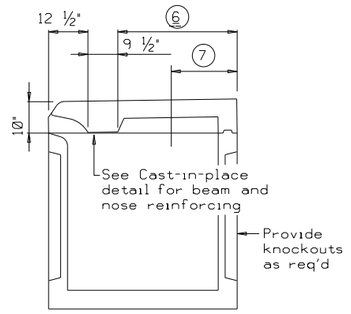
SCP-12

FILE: CD-SCP12-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.
403				

DATE:
FILE:

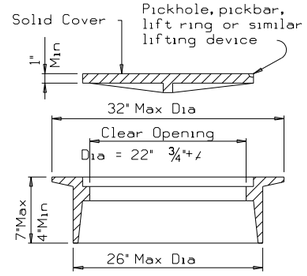


PLAN



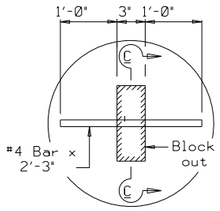
PREFABRICATED INLET

(6) For reinforcing steel and dimensions not shown, see fabricators shop drawings. Structure shall be of the size required to accommodate size of pipe shown elsewhere in the plans. Length of inlet = 6'-0"

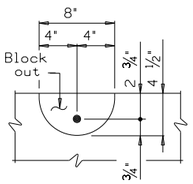


RING AND COVER DETAILS

EJIW No V-1418 or Neenah No R5900-FTX

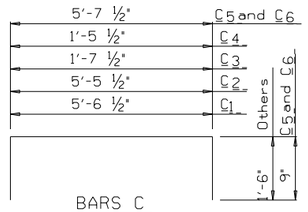


PLAN

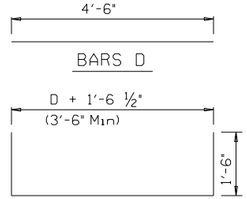


SECTION C-C

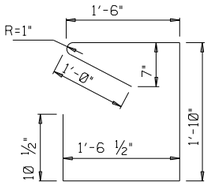
LIFTING CATCH



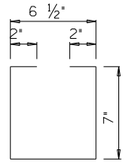
BARS C



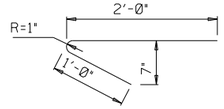
BARS E



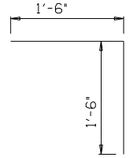
BARS G



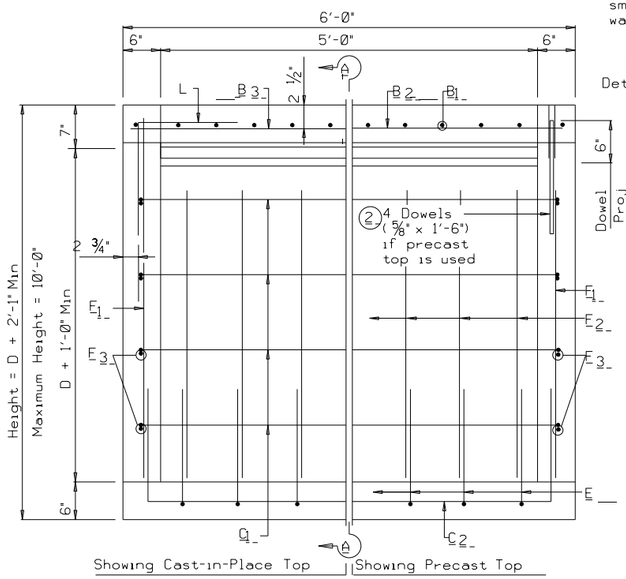
BARS H



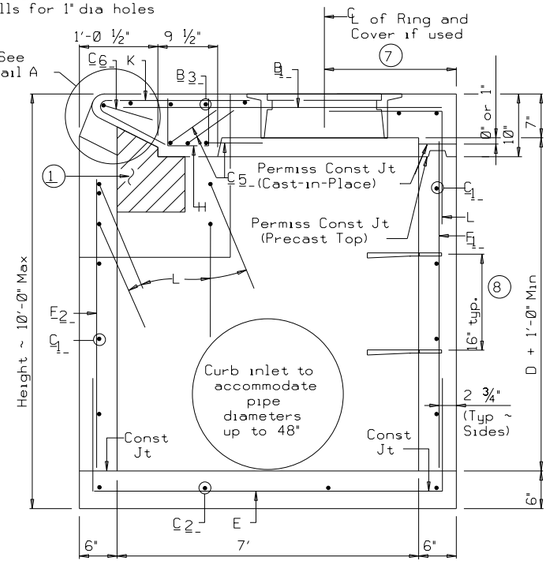
BARS K



BARS L



(2) If precast top is used, provide 4 ~ ⅝" dia x 1'-6" smooth bars in inlet walls for 1" dia holes

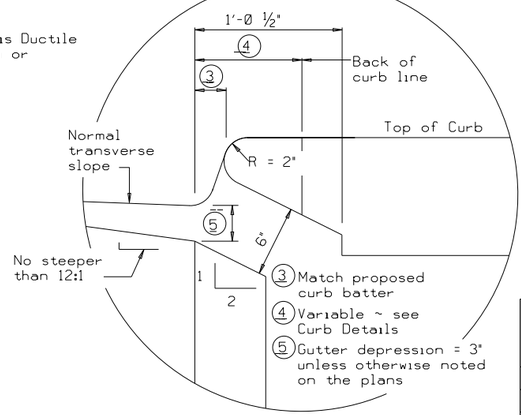


SECTION A-A

(1) Block out to accommodate extension if used and to place 4 Bars L

(7) 1'-6" Min, 1'-9" Max Adjust placement of Ring and Cover as necessary to avoid conflict with Bars H.

(8) Ladder rung is Ductile Iron, Aluminum or Cast Iron.



DETAIL A

INSTALL A 3 FT.(HORIZ.) x 6 IN.(VERT.) OPENING ON THE BACK OF THE INLET WHEN SPECIFIED ELSEWHERE ON THE PLANS. MOVE STEPS AS NEEDED. NO REINFORCING ON OPENING/ON 2 IN. ADJACENT TO OPENING.

DESIGNERS:
CLARIFY FLOWLINE OF OPENING AND INCLUDE OPENING IN HYDRAULIC CALCULATIONS.

D = Diameter
R = Radius

REINF STEEL

Bar	Size	Spacing
B_1	#4	6"
B_2	#5	6"
B_3	#4	6"
G_{1-2}	#4	12"
C_{3-4}	#4	(9)
C_5	#6	(9)
C_6	#4	(9)
D	#4	(9)
E	#4	12"
F_{1-3}	#4	12"
G	#4	6"
H	#3	4"
K	#4	9"
L	#4	6"

(9) As shown

GENERAL NOTES:

No alternate designs nor alternate details shall be permitted for precast or cast in place inlets.

Quantities shown herein are for Contractor's information only. Unless otherwise shown in the plans, payment will be made for each inlet of the type specified and for each extension. Each five foot curb opening of extension is considered "one extension" regardless of whether placed monolithically or precast. Extension length shall be in multiples of 5 feet.

Engineer has the option of specifying cast-in-place top with ring and cover or removable precast top as specified elsewhere in plans. Shop drawings are required for Precast Inlets.

In areas of conflict between reinforcing steel, blockouts, pipes, anchor bolts or other reinforcing steel, the reinforcement shall be bent or adjusted to clear as directed by the Engineer.

Ring and cover shall conform to the requirements of AASHTO M306, "Standard Specification for Drainage Structure Castings". Materials shall conform to ASTM A48, Class 35B for gray iron castings or ASTM A536, Grade 65-45-12 for ductile iron castings. Aluminum alloy castings shall not be permitted.

No.	DATE	REVISIONS	APP.

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713-782-0042
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Texas Registered Engineering Firm F-148

SURVEYED BY:
KUO & ASSOCIATES, INC.

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

ANTOINE DRIVE

MODIFIED TYP C INLET DETAIL (#V-C3 & #V-C4)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 404 OF 718	

Plotted on: 10/21/2025 1:42:44 PM JOviedo
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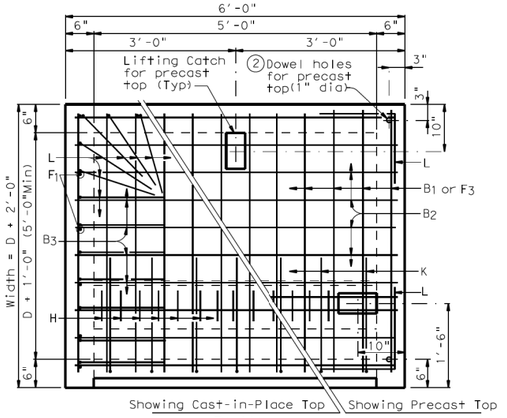
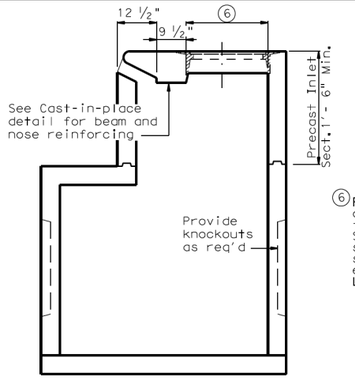


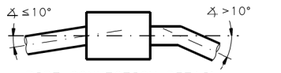
PLAN

② If precast top is used, provide 4 ~ ⅝" dia x 1'-6" smooth bars in inlet walls for 1" dia holes



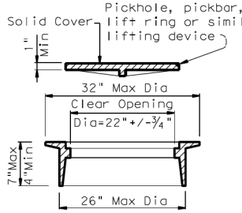
PREFABRICATED INLET

⑥ For reinforcing steel and dimensions not shown, see fabricator's shop drawings. Structure shall be of the size required to accommodate size of pipe shown elsewhere in the plans. Length of inlet = 5'-0"



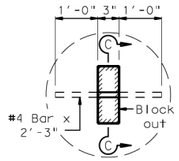
PIPE CONNECTION DETAIL

Connecting pipes should enter within 10° of normal to inlet wall. If necessary, pipe elbow or curved approach alignment should be used to stay within this limit.

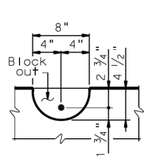


RING AND COVER DETAILS

EJIW No V-1814 or Neenah No R5900 FTX



PLAN

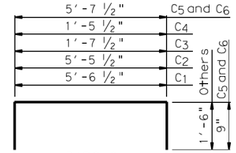


SECTION C-C

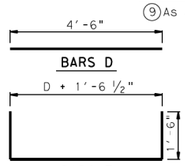
LIFTING CATCH

REINF STEEL		
Bar	Size	Spacing
B1	#4	6"
B2	#5	6"
B3	#4	6"
C1-2	#4	12"
C3-4	#4	⑨
C5	#6	⑨
C6	#4	⑨
D	#4	⑨
E	#4	12"
F1-5	#4	12"
G	#4	6"
H	#3	4"
K	#4	9"
L	#4	6"

⑨ As shown

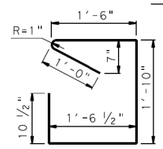


BARS C

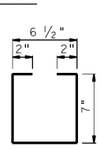


BARS D

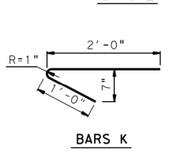
BARS E



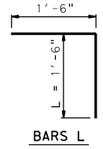
BARS G



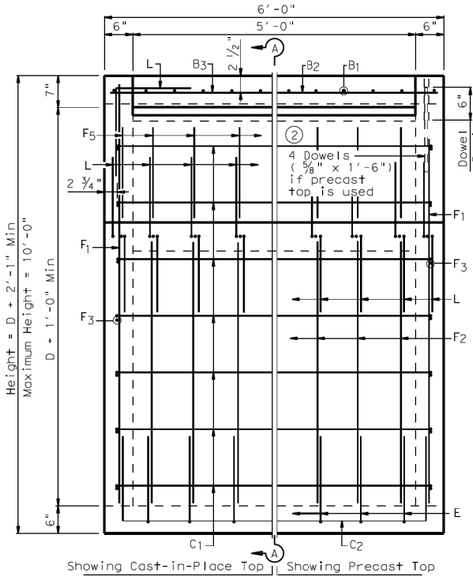
BARS H



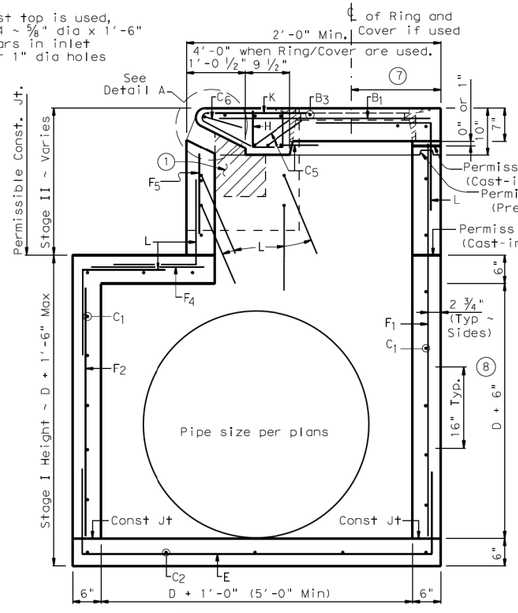
BARS K



BARS L

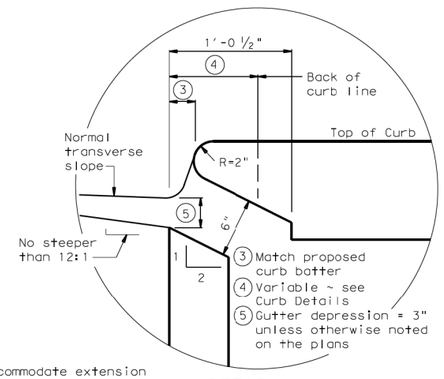


ELEVATION



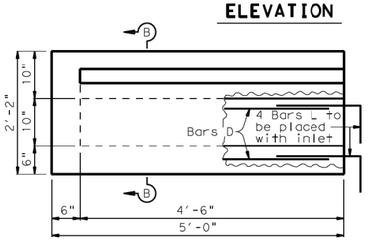
SECTION A-A

⑦ 1'- 7" Usual, Adjust placement of Ring and Cover as necessary to avoid conflict with Bars H.

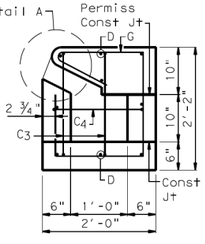


DETAIL A

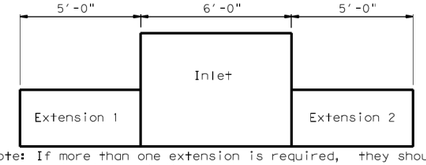
① Block out to accommodate extension if used and to place 4 Bars L



EXTENSION ELEVATION



SECTION B-B



Note: If more than one extension is required, they should be located as indicated above. No slope is required in flowline of extension.

EXTENSION PLACEMENT

INSTALL A 3 FT. (HORIZ.) x 6 IN. (VERT.) OPENING ON THE BACK OF THE INLET WHEN SPECIFIED ELSEWHERE ON THE PLANS. MOVE STEPS AS NEEDED. NO REINFORCING ON OPENING/ON 2 IN. ADJACENT TO OPENING.

DESIGNERS: CLARIFY FLOWLINE OF OPENING AND INCLUDE OPENING IN HYDRAULIC CALCULATIONS.

D = Diameter
R = Radius

GENERAL NOTES:

No alternate designs nor alternate details shall be permitted for precast or cast in place inlets.

Quantities shown herein are for Contractor's information only. Unless otherwise shown in the plans, payment will be made for each inlet of the type specified and for each extension. Each five foot curb opening of extension is considered "one extension" regardless of whether placed monolithically or precast. Extension length shall be in multiples of 5 feet.

Engineer has the option of specifying cast-in-place top with ring and cover or removable precast top as specified elsewhere in plans. Shop drawings will be required for precast construction of inlets.

In areas of conflict between reinforcing steel, blockouts, pipes, anchor bolts or other reinforcing steel, the reinforcement shall be bent or adjusted to clear as directed by the Engineer.

Ring and cover shall conform to the requirements of AASHTO M306, "Standard Specification for Drainage Structure Castings". Materials shall conform to ASTM A48, Class 35B for gray iron castings or ASTM A536, Grade 65-45-12 for ductile iron castings. Aluminum alloy castings shall not be permitted.

Texas Department of Transportation
Houston District

CURB INLET TYPE C1
(WITH OR WITHOUT EXTENSION)

HIL-C1

FILE: STD02.DGN	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT	STD#
©TxDOT Feb 2010	DIST	FED REG	PROJECT NO.		SHEET
REVISIONS 2/2010 Note for alternate design and opening on the back of inlet. 10/2016 Removed ladder rung and wordings.	HOUS	6			
	COUNTY		CONTROL	SECT	JOB	HIGHWAY

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131531
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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TXDOT CURB INLET TYPE C1
DETAIL HIL-C1
(#V-A13)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 405 OF 718	

No.	DATE	REVISIONS	APP:

STDD2.DGN

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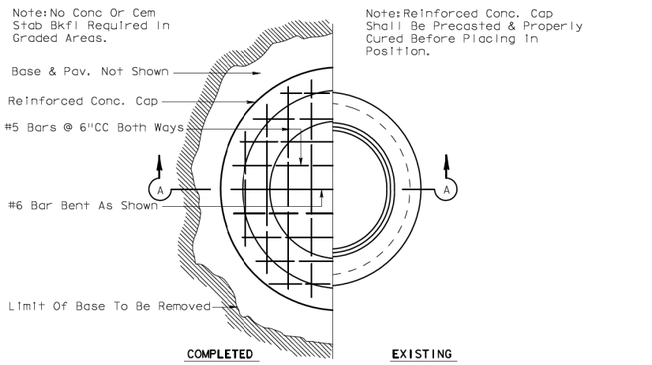
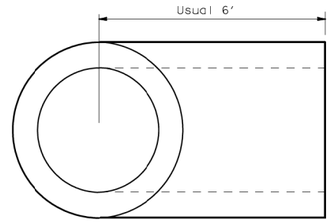
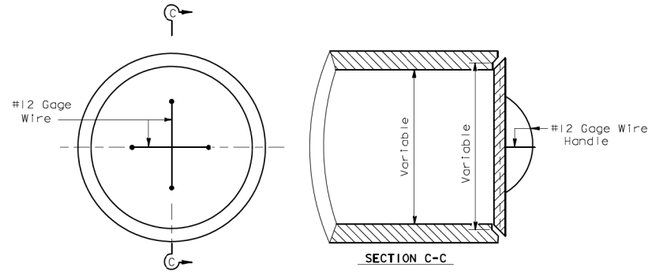


DETAIL SHOWING METHOD OF CAPPING ABANDONED MANHOLES OR INLETS (GRADED OR PAVED AREAS)



Note: Jointing Material Shall Conform To Requirements Of Item "Reinforced Concrete Pipe." Material For Tees Shall Conform To Requirements Of Item "Reinforced Concrete Pipe." Payment For Tee To Be In Accordance With Item "Reinforced Concrete Pipe."

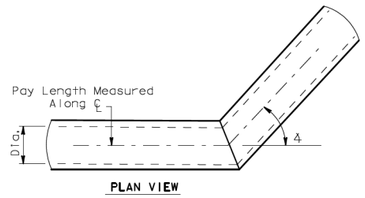
PRECAST STORM SEWER TEE



Note: The Price Of Plug Shall Be Subsidiary To The Unit Bid Price For Pipe Sewer Or RCP. Mortar Joints To Be Used As Directed By The Engineer. Removal Of The Existing Plugs For Storm Sewer Or RCP Conns. Shall Be Considered Incidental To Item "Excavation And Backfill For Structures."

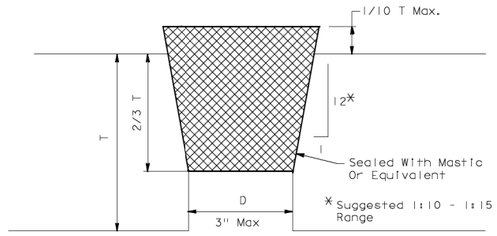
Concrete Plug For End Of Pipe Culvert Or Sewer

CONCRETE PLUG FOR PIPE



BENDING DETAIL

Note: Bending Of Proposed Pipe Sewer Or RCP In A Vertical & /Or Horizontal Plane Shall Be Accomplished By The Use Of A "Pipe Collar" Or A "Precast Elbow", As Approved By The Engineer.
Price Of "Pipe Collar" Or, "Precast Elbow" Shall Be Subsidiary To The Unit Prices Bid For Item Reinforced Concrete Pipe.
Pay Length Measurement To Be Along Horizontal ℄ & Horizontal Plane Of Pipes.

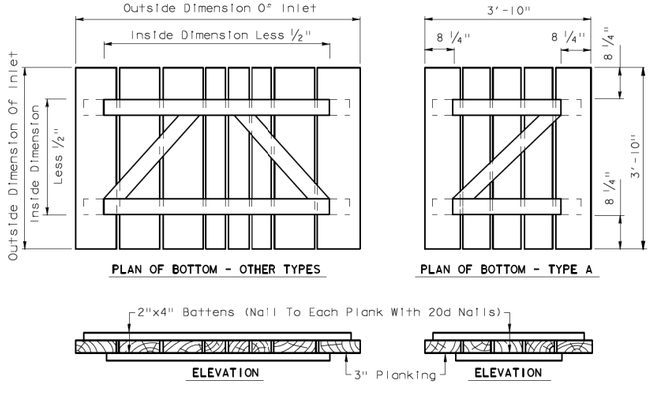


T = Wall Thickness On Top Of Box Or Pipe
D = Diameter Of Lifting Hole

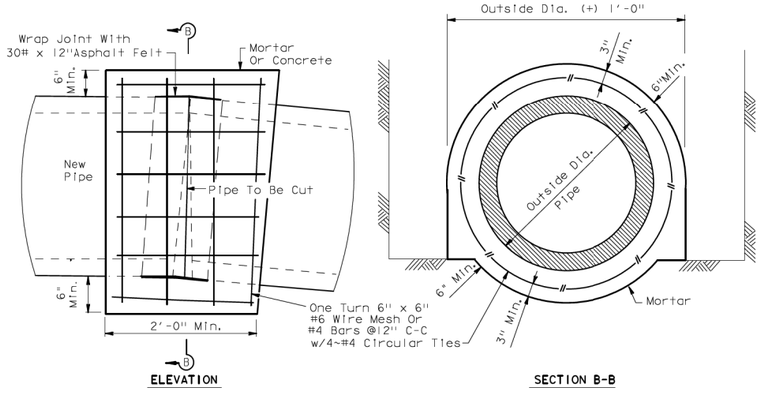
Minimum Length Of Plug Is 2/3 T +/-
Minimum Diameter At Bottom Of Plug = D - 1/8"
Maximum 1/10 T Of Plug Not Seated In Lifting Hole

Note: The Plug Shall Be Cast With The Same Taper As The Lifting Hole.

DETAIL OF PLUG FOR LIFTING HOLES IN RCB AND RCP



TEMPORARY COVERS FOR ALL TYPES OF INLETS



PIPE COLLAR DETAIL

For Horizontal Or Vertical Placement

d = Diameter
R = Radius

Texas Department of Transportation
Houston District (Bridge)

MISCELLANEOUS SEWER DETAILS

MSD

FILE: STDDII.DGN	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK:
© TxDOT Mar 2004	DISTRICT	FED REG	PROJECT NO.	SHEET
REVISIONS	HOUS	6		
	COUNTY		CONTROL SECT JOB	HIGHWAY

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TXDOT MISCELLANEOUS SEWER DETAILS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 406 OF 718	

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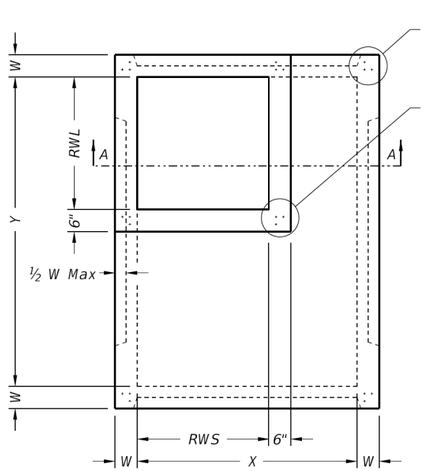
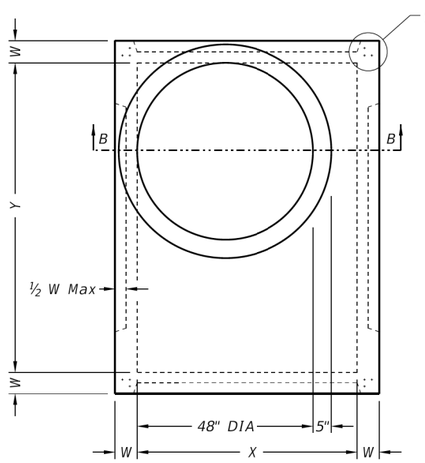


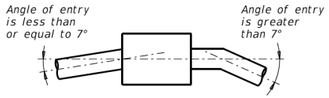
PLAN VIEW "A"

SQUARE REDUCED RISER OPTION



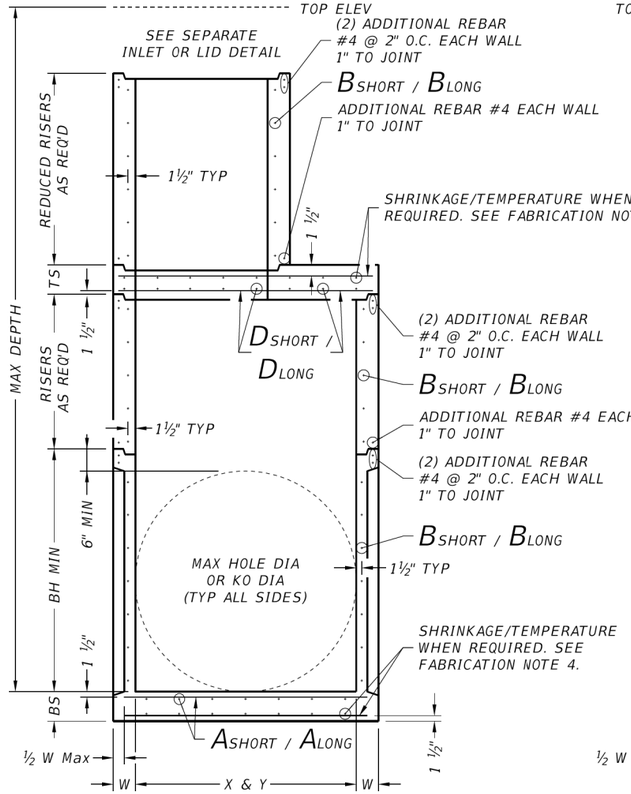
PLAN VIEW "B"

ROUND REDUCED RISER OPTION



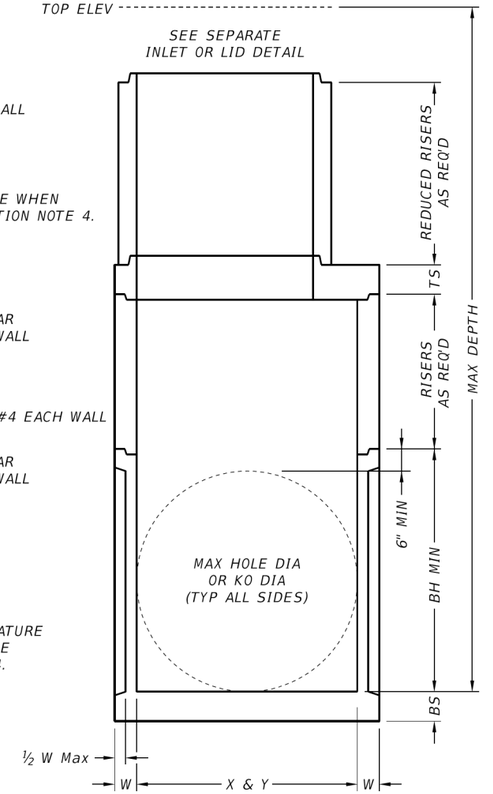
PIPE CONNECTION DETAIL

Connect pipes within 7° of normal to PB wall. If necessary, use pipe elbow or curved approach alignment to stay within this limit.



SECTION A-A

SQUARE REDUCED RISER OPTION



SECTION B-B

ROUND REDUCED RISER OPTION

FABRICATION NOTES:

1. Provide Class "H" concrete in accordance with Item 421 and having a minimum compressive strength of 5,000 psi.
2. Provide Grade 60 reinforcing steel or equivalent area of WWR.
3. Provide typical clear cover of 1 ½" to reinforcing steel at interior or exterior walls.
4. Walls or slabs with a thickness of 8" or greater require shrinkage and temperature reinforcing steel. Provide steel area = 0.11 in²/ft each way.
5. No substitution is allowed for vertical and horizontal #4 bars in corners.
6. Manufacture base and risers to nearest 3" increment.
7. Design tongue and groove joints for full closure on both shoulders. Minimum spigot depth is ¾".
8. Provide lifting devices in conformance with Manufacturer's recommendations.
9. See sheet PDD for sizes, dimensions, and reinforcing steel not shown.

INSTALLATION NOTES:

1. If required elsewhere. Inverts (benching) to be provided by Contractor. Concrete or mortar used for invert is subsidiary to specified inlet or manhole.
2. Seal tongue and groove joints with preformed or bulk mastic in conformance with Manufacturer's recommendations. Tongue and groove joints may be grouted no more than 1" between each section, or ½ the joint depth, whichever is greater.
3. Do not grout rubber gasket joints without Manufacturer's recommendation.
4. For rigid pipe, cut hole in thin wall panel (KO) 4" Max, 2" Min larger than pipe OD.
5. For flexible pipe, consult boot/seal Manufacturer's specification for placement tolerance and hole size. Center pipe in hole and install boot/seal per Manufacturer's specification.

GENERAL NOTES:

1. Precast Base consists of base slab, base unit, risers (as required), reducing slab (as required), and reduced risers (as required). See sheet PDD for sizes.
2. Designed according to ASTM C913.
3. Payment for precast base is subsidiary to the specified inlet, per Item 465, "Junction Boxes, Manholes, and Inlets."

Cover dimensions are clear dimensions, unless noted otherwise.

HL93 LOADING

Texas Department of Transportation — Bridge Division Standard

PRECAST BASE

PB

FILE: CD-PB-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS				
	DIST	COUNTY		SHEET NO.

DATE:
FILE:

No.	DATE	REVISIONS	APP:

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TXDOT PRECAST BASE DETAIL

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 407 OF 718	

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	Size	MAX DEPTH = 15 ft. to top of BASE SLAB										MAX DEPTH = 25 ft. to top of BASE SLAB										Min Height (See Gen Note 3)	Max HOLE DIA (See Fab Note 2)	Max KO DIA (See Fab Note 2)
		Base Slab			Base Unit or Riser Walls			Below Grade Slab (w/PJB) Reducing Slab (w/PB)				Base Slab			Base Unit or Riser Walls			Below Grade Slab (w/PJB) Reducing Slab (w/PB)						
		Short Span Reinf Steel Area	Long Span Reinf Steel Area	Thickness	Short Span Reinf Steel Area	Long Span Reinf Steel Area	Thickness	Reduced Riser Size	Short Span Reinf Steel Area	Long Span Reinf Steel Area	Thickness	Short Span Reinf Steel Area	Long Span Reinf Steel Area	Thickness	Short Span Reinf Steel Area	Long Span Reinf Steel Area	Thickness	Reduced Riser Size	Short Span Reinf Steel Area	Long Span Reinf Steel Area	Thickness			
	X x Y	Ashort	Along	BS	Bshort	Blong	W	RWSxRWL or ID	Dshort	Dlong	TS	Ashort	Along	BS	Bshort	Blong	W	RWSxRWL or ID	Dshort	Dlong	TS	BH MIN	HOLE DIA	KO DIA
	ft.	in^2/ft	in^2/ft	in.	in^2/ft	in^2/ft	in.	ft. **	in^2/ft	in^2/ft	in.	in^2/ft	in^2/ft	in.	in^2/ft	in^2/ft	in.	ft. **	in^2/ft	in^2/ft	in.	ft.	in.	in.
Precast Junction Box (PJB)	3x3	0.23	0.23	6	0.19	0.19	6	N/A	0.37	0.37	9	0.29	0.29	6	0.24	0.24	6	N/A	0.37	0.37	9	3.5	36	36
	4x4	0.29	0.29	6	0.24	0.24	6	N/A	0.41	0.41	9	0.47	0.47	6	0.38	0.38	6	N/A	0.41	0.41	9	4.5	48	48
	3x5	0.29	0.18	6	0.19	0.35	6	N/A	0.48	0.48	9	0.39	0.18	6	0.23	0.59	6	N/A	0.48	0.48	9	3.5	36/60	36/60
	4x5	0.36	0.18	6	0.22	0.34	6	N/A	0.42	0.42	9	0.53	0.26	6	0.39	0.59	6	N/A	0.42	0.42	9	4.5	48/60	48/60
	5x5	0.36	0.36	6	0.34	0.34	6	N/A	0.43	0.43	9	0.62	0.62	6	0.59	0.59	6	N/A	0.43	0.43	9	5.5	60	60
	5x6	0.27	0.27	9	0.34	0.45	6	N/A	0.48	0.48	9	0.47	0.45	9	0.38	0.54	8	N/A	0.48	0.48	9	5.5	60/72	60/72
	6x6	0.27	0.27	9	0.45	0.45	6	N/A	0.56	0.56	9	0.52	0.52	9	0.54	0.54	8	N/A	0.56	0.56	9	6.5	72	72
	8x8	0.46	0.46	9	0.51	0.51	8	N/A	0.45	0.45	12	0.87	0.87	9	0.59	0.59	10	N/A	0.45	0.45	12	8.5	96	72
Precast Base (PB)	3x3	0.23	0.23	6	0.19	0.19	6	N/A	N/A	N/A	N/A	0.29	0.29	6	0.24	0.24	6	N/A	N/A	N/A	N/A	3.5	36	36
	4x4	0.29	0.29	6	0.24	0.24	6	N/A	N/A	N/A	N/A	0.47	0.47	6	0.38	0.38	6	N/A	N/A	N/A	N/A	4.5	48	48
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	4x5	0.36	0.18	6	0.22	0.34	6	48"	0.39	0.39	9	0.53	0.26	6	0.39	0.59	6	48"	0.47	0.47	9	4.5	48/60	48/60
	4x5	0.36	0.18	6	0.22	0.34	6	3x5	0.33	0.40	9	0.53	0.26	6	0.39	0.59	6	3x5	0.48	0.48	9	4.5	48/60	48/60
	5x5	0.36	0.36	6	0.34	0.34	6	3x3	0.34	0.34	9	0.62	0.62	6	0.59	0.59	6	3x3	0.53	0.53	9	5.5	60	60
	5x5	0.36	0.36	6	0.34	0.34	6	4x4	0.36	0.36	9	0.62	0.62	6	0.59	0.59	6	4x4	0.64	0.64	9	5.5	60	60
	5x5	0.38	0.38	6	0.34	0.34	6	48"	0.36	0.36	9	0.62	0.62	6	0.59	0.59	6	48"	0.64	0.64	9	5.5	60	60
	5x5	0.36	0.36	6	0.34	0.34	6	3x5	0.34	0.40	9	0.62	0.62	6	0.59	0.59	6	3x5	0.53	0.53	9	5.5	60	60
	5x6	0.31	0.31	9	0.34	0.45	6	3x3	0.34	0.34	9	0.47	0.45	9	0.38	0.54	8	3x3	0.61	0.50	9	5.5	60/72	60/72
	5x6	0.27	0.27	9	0.34	0.45	6	4x4	0.36	0.45	9	0.47	0.45	9	0.38	0.54	8	4x4	0.74	0.57	9	5.5	60/72	60/72
	5x6	0.29	0.29	9	0.34	0.45	6	48"	0.36	0.45	9	0.47	0.45	9	0.38	0.54	8	48"	0.74	0.57	9	5.5	60/72	60/72
	5x6	0.29	0.29	9	0.34	0.45	6	3x5	0.45	0.45	9	0.47	0.45	9	0.38	0.54	8	3x5	0.61	0.61	9	5.5	60/72	60/72
	6x6	0.29	0.29	9	0.45	0.45	6	3x3	0.41	0.41	9	0.52	0.52	9	0.54	0.54	8	3x3	0.74	0.74	9	6.5	72	72
	6x6	0.27	0.27	9	0.45	0.45	6	4x4	0.45	0.45	9	0.52	0.52	9	0.54	0.54	8	4x4	0.87	0.87	9	6.5	72	72
	6x6	0.29	0.29	9	0.45	0.45	6	48"	0.45	0.45	9	0.52	0.52	9	0.54	0.54	8	48"	0.87	0.87	9	6.5	72	72
	6x6	0.29	0.29	9	0.45	0.45	6	3x5	0.45	0.45	9	0.52	0.52	9	0.54	0.54	8	3x5	0.87	0.87	9	6.5	72	72
	8x8	0.52	0.52	9	0.51	0.51	8	3x3	0.61	0.61	12	0.91	0.91	9	0.70	0.70	10	3x3	0.85	0.85	12	8.5	96	72
	8x8	0.52	0.52	9	0.51	0.51	8	4x4	0.70	0.70	12	0.87	0.87	9	0.70	0.70	10	4x4	1.01	1.01	12	8.5	96	72
	8x8	0.52	0.52	9	0.51	0.51	8	48"	0.70	0.70	12	0.87	0.87	9	0.70	0.70	10	48"	1.01	1.01	12	8.5	96	72
	8x8	0.52	0.52	9	0.51	0.51	8	3x5	0.70	0.85	12	0.87	0.87	9	0.70	0.70	10	3x5	1.01	1.01	12	8.5	96	72

** Unless otherwise indicated.

FABRICATION NOTES:
1. Maximum spacing of reinforcement is 8".
2. At manufacturer's option, provide cast or cored holes or thin wall panels (KO) to the maximum diameter shown for each. When no penetration is required, it is acceptable to provide a wall with no sectional reduction.

GENERAL NOTES:
1. Precast Junction Box consists of base slab, base unit, risers (as required), and below grade slab. See sheet PJB for details.
2. Precast Base consists of base slab, base unit, risers (as required), reducing slab (as required), and reduced risers (as required). See sheet PB for details.
3. Min Height shown is for stock base units. Use stock base units whenever practical. Smaller height base units can be used in special installation circumstances, when noted elsewhere in the plans. Absolute minimum height of base units is 2'-6".

HL93 LOADING

Texas Department of Transportation | Bridge Division Standard

DESIGN DATA FOR PRECAST BASE AND JUNCTION BOX

PDD

FILE: CD-PDD-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.

DATE:
FILE:

No.	DATE	REVISIONS	APP:

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777 North Eldridge Parkway, Suite 500
Houston, Texas 77079
713.782.0042
www.vs-eng.com

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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TXDOT DESIGN DATA FOR PRECAST BASE AND JUNCTION BOX

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 408 OF 718	

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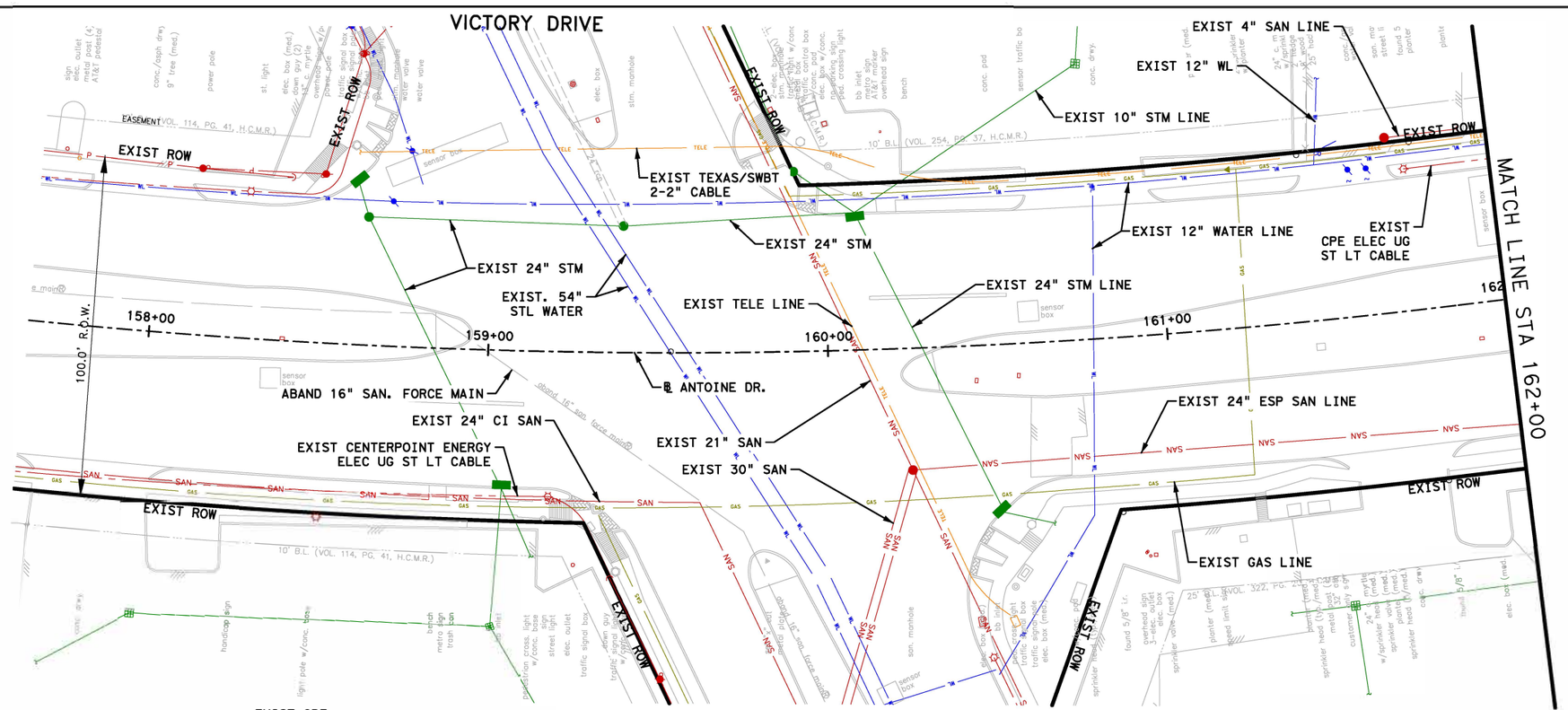

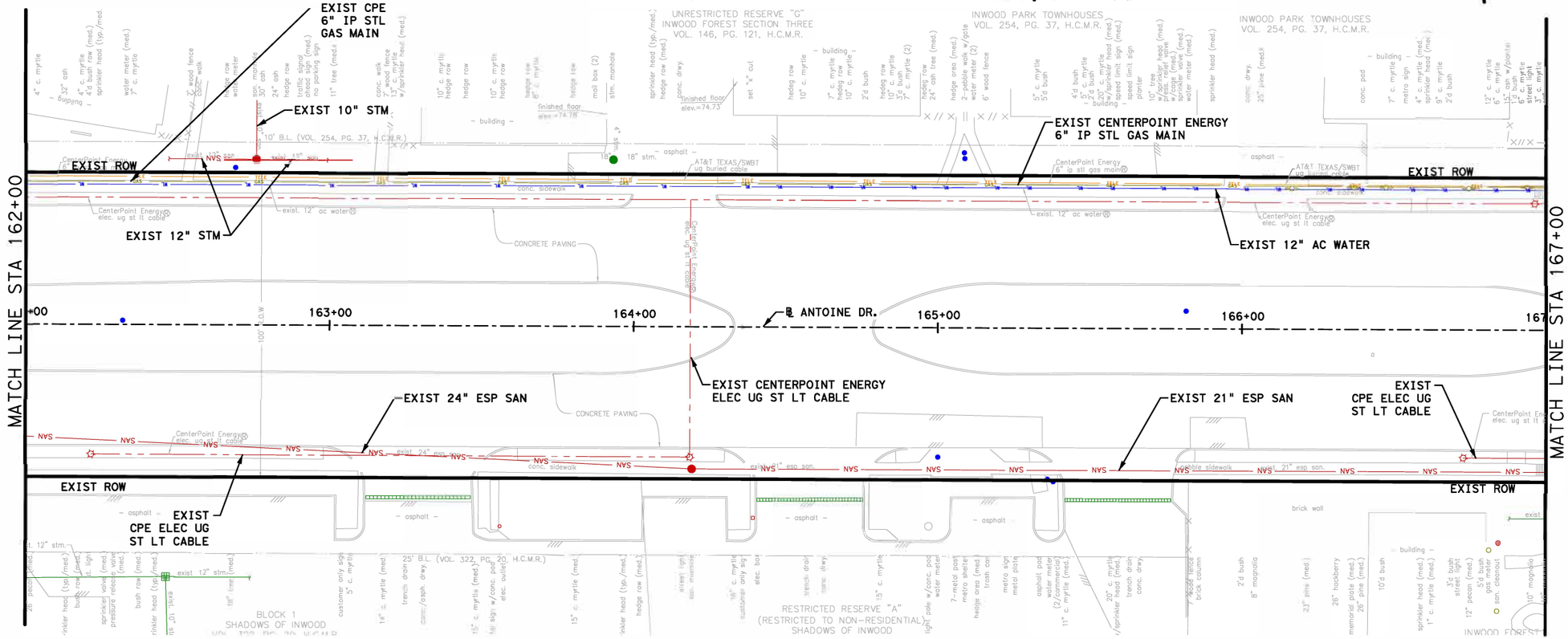

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

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VERIFICATION OF PRIVATE UTILITY LINES

Date

CenterPoint Energy natural gas utilities shown. (Gas service lines are not shown). This signature not be used for conflict verification.

Signature valid for six months.

Date

CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY. (TN's signature verifies existing underground facilities - not to be used for conflict verification)

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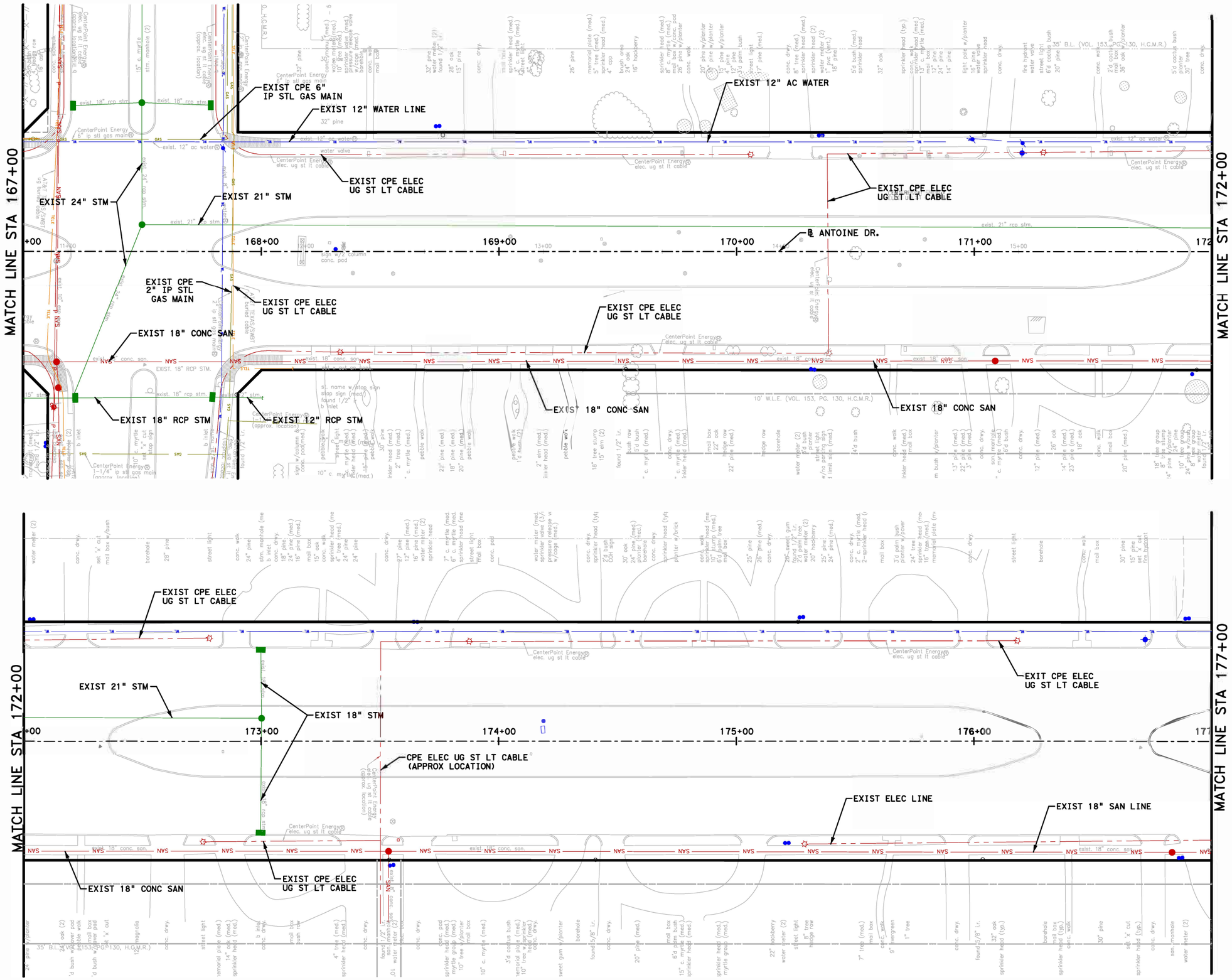
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

EXISTING UTILITY LAYOUTS STA 157+65 TO STA 167+00

SHEET 1 OF 15

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 409 OF 718	



0' 20' 40'
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

EXISTING UTILITY LAYOUT
STA 167+00 TO STA 177+00

SHEET 2 OF 15

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-OGEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 410 OF 718	

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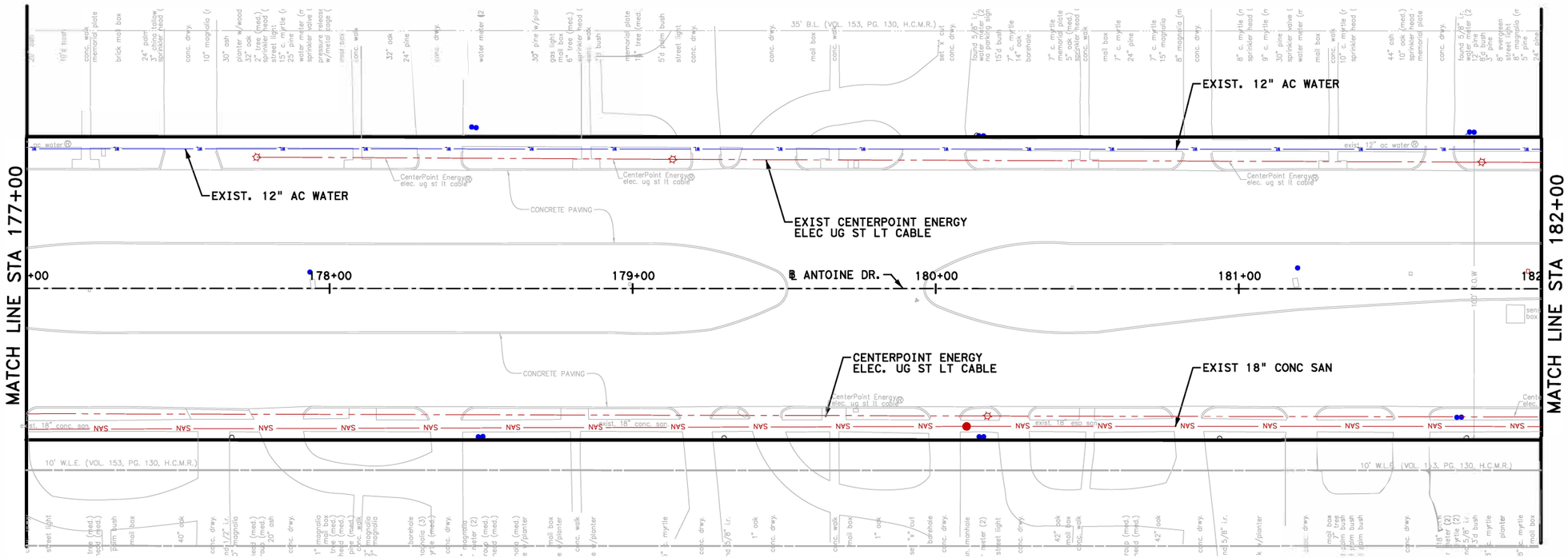

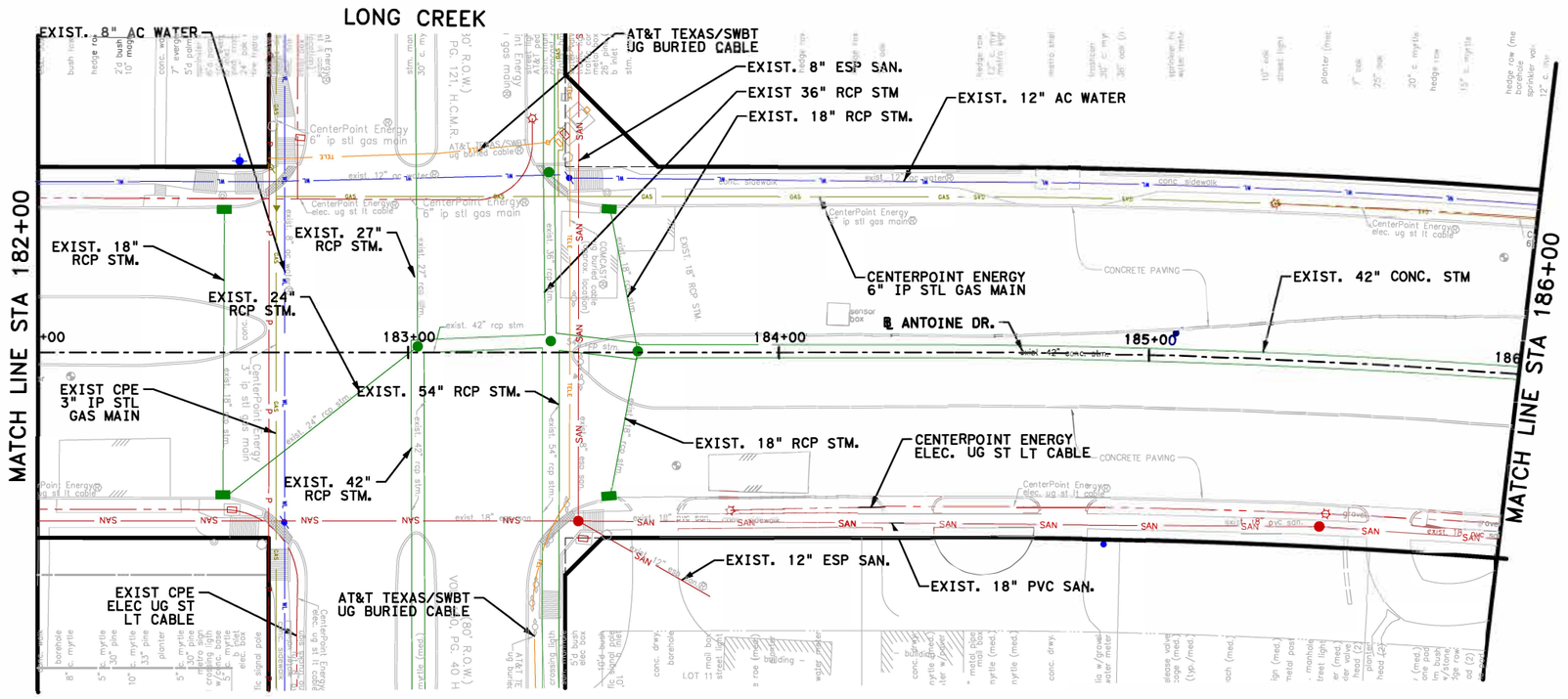

0' 20' 40'
SCALE IN FEET

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Date

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Signature valid for six months.

Date

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CITY OF HOUSTON
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ANTOINE DRIVE

EXISTING UTILITY LAYOUT
STA 177+00 TO STA 186+00

SHEET 3 OF 15

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 411 OF 718	

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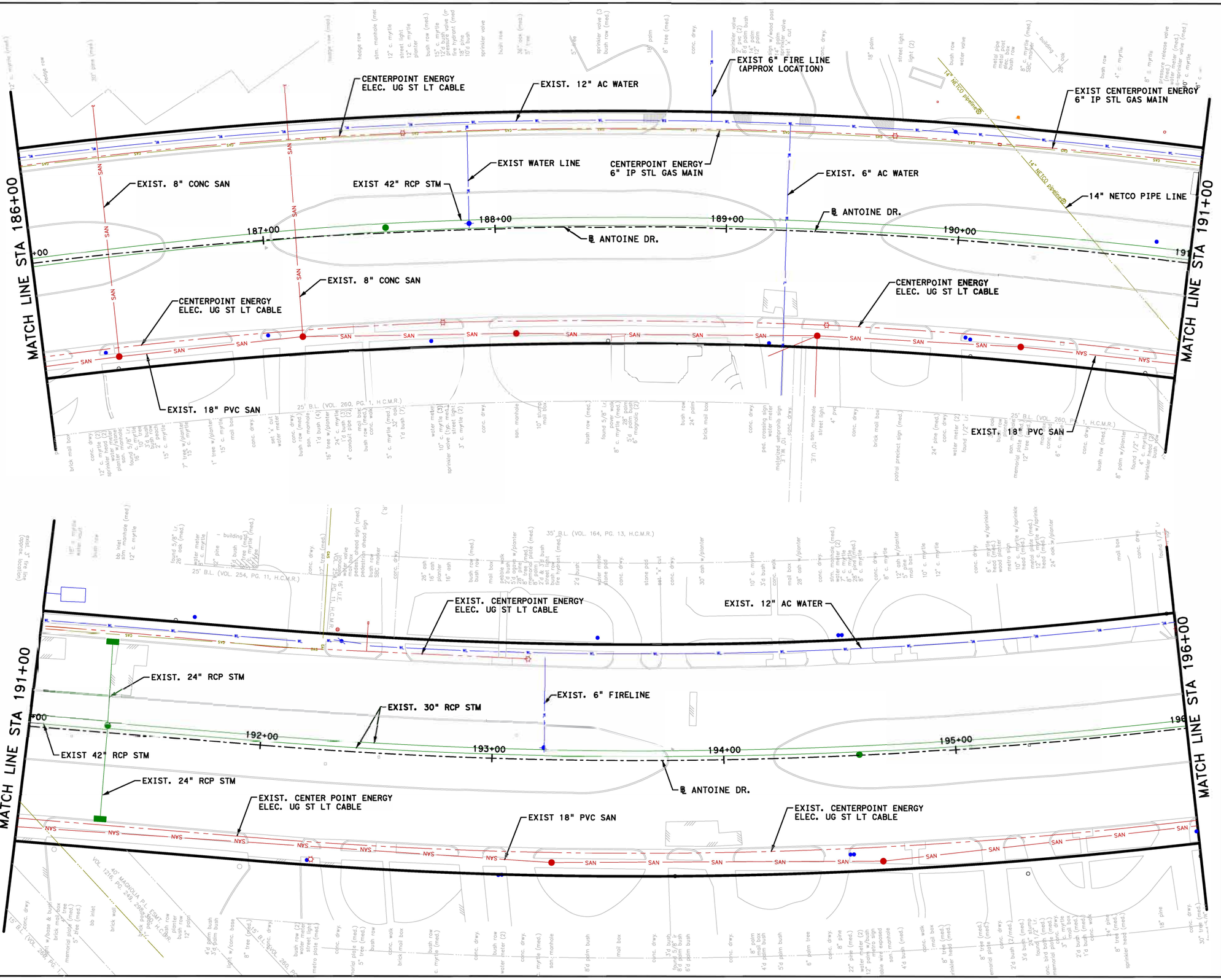

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

EXISTING UTILITY LAYOUT STA 186+00 TO STA 196+00

SHEET 4 OF 15

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 412 OF 718	

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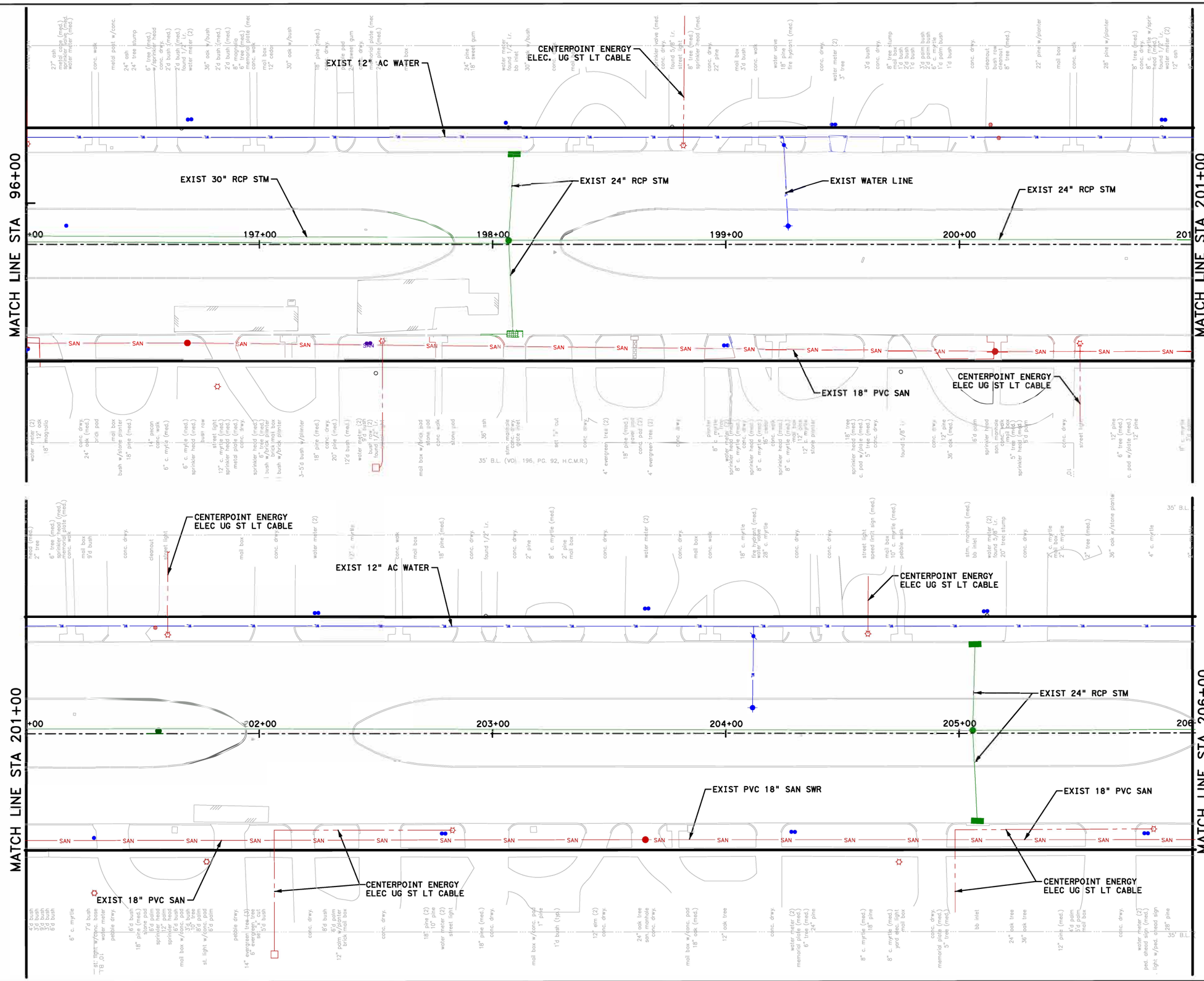

0' 20' 40'
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

EXISTING UTILITY LAYOUT STA 196+00 TO STA 206+00

SHEET 5 OF 15

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 413 OF 718	

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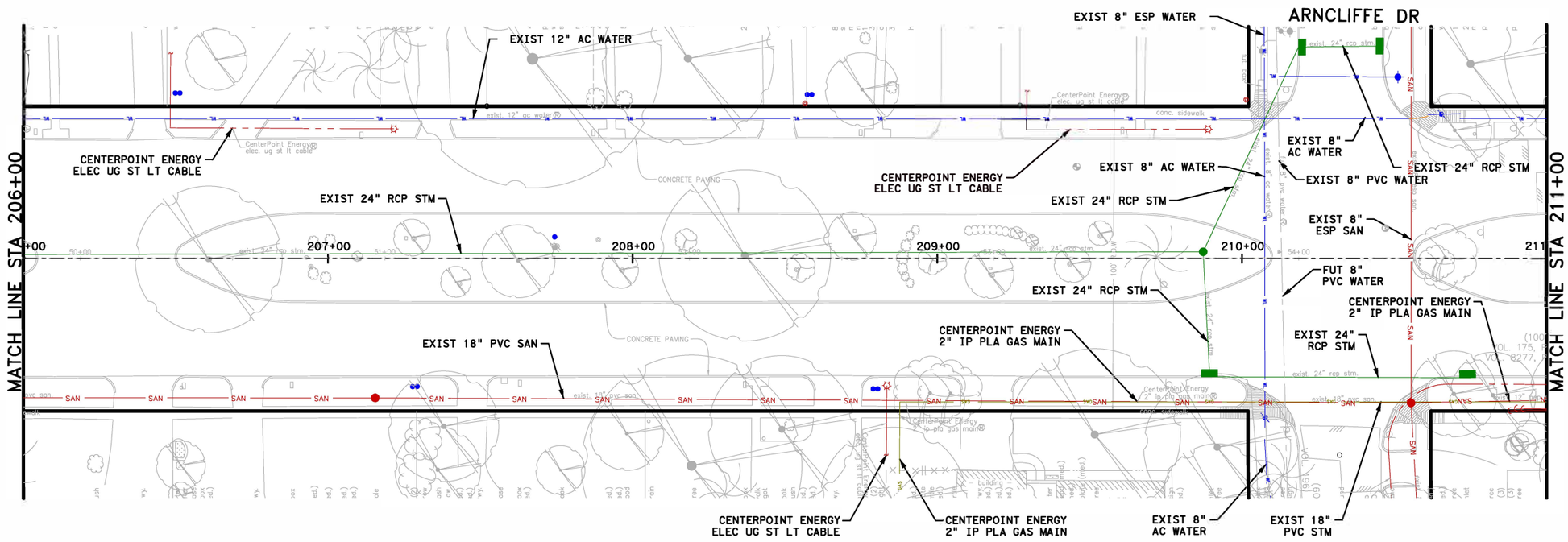

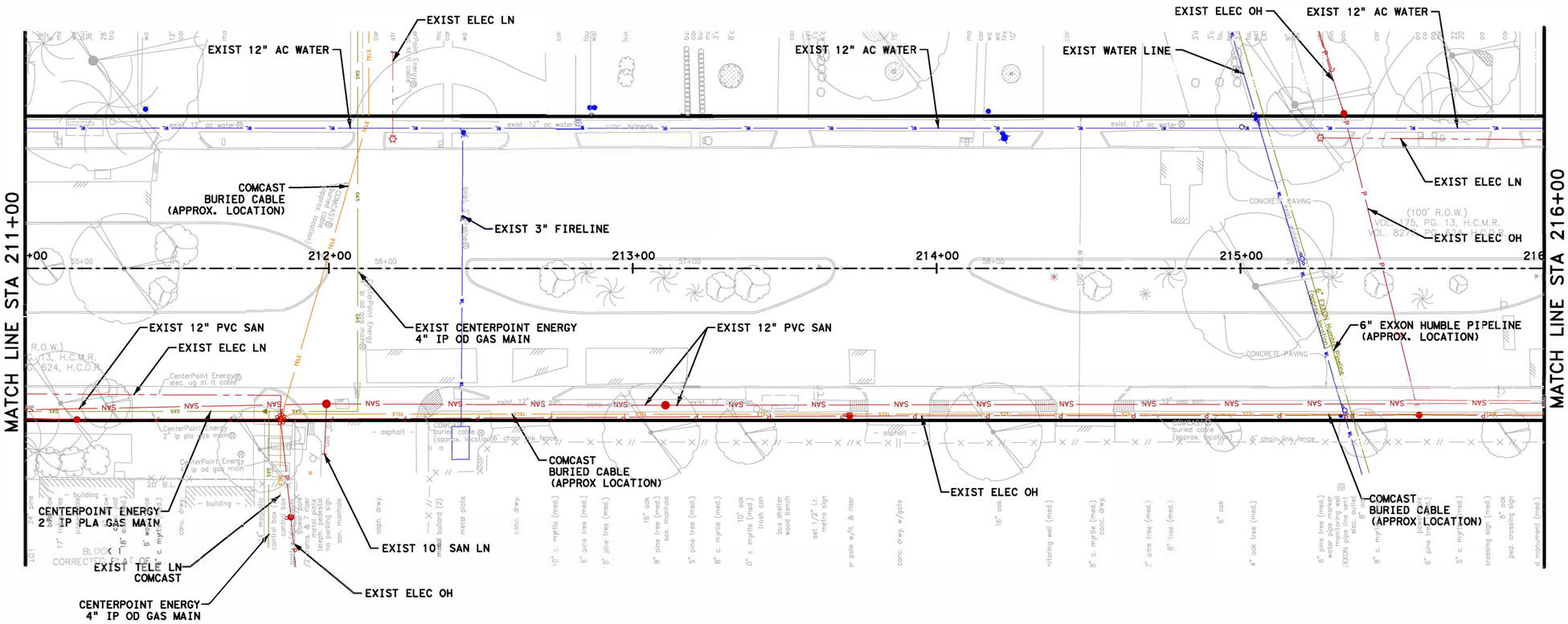

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Signature vall dfor six months.

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EXISTING UTILITY LAYOUT STA 206+00 TO STA 216+00

SHEET 6 OF 15

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 414 OF 718	

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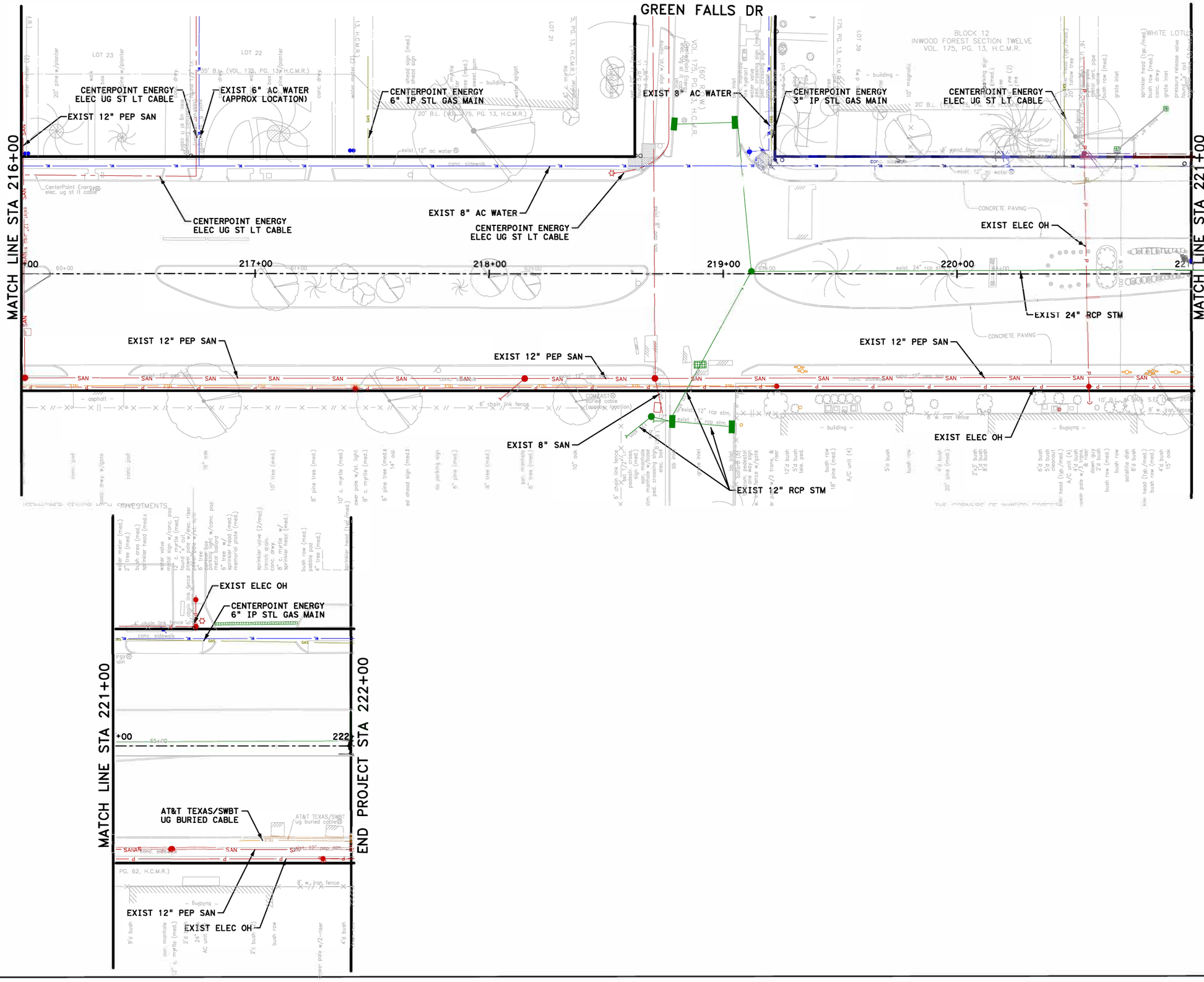

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

EXISTING UTILITY LAYOUT STA 216+00 TO STA 222+00

SHEET 7 OF 15

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-OGEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 415 OF 718	

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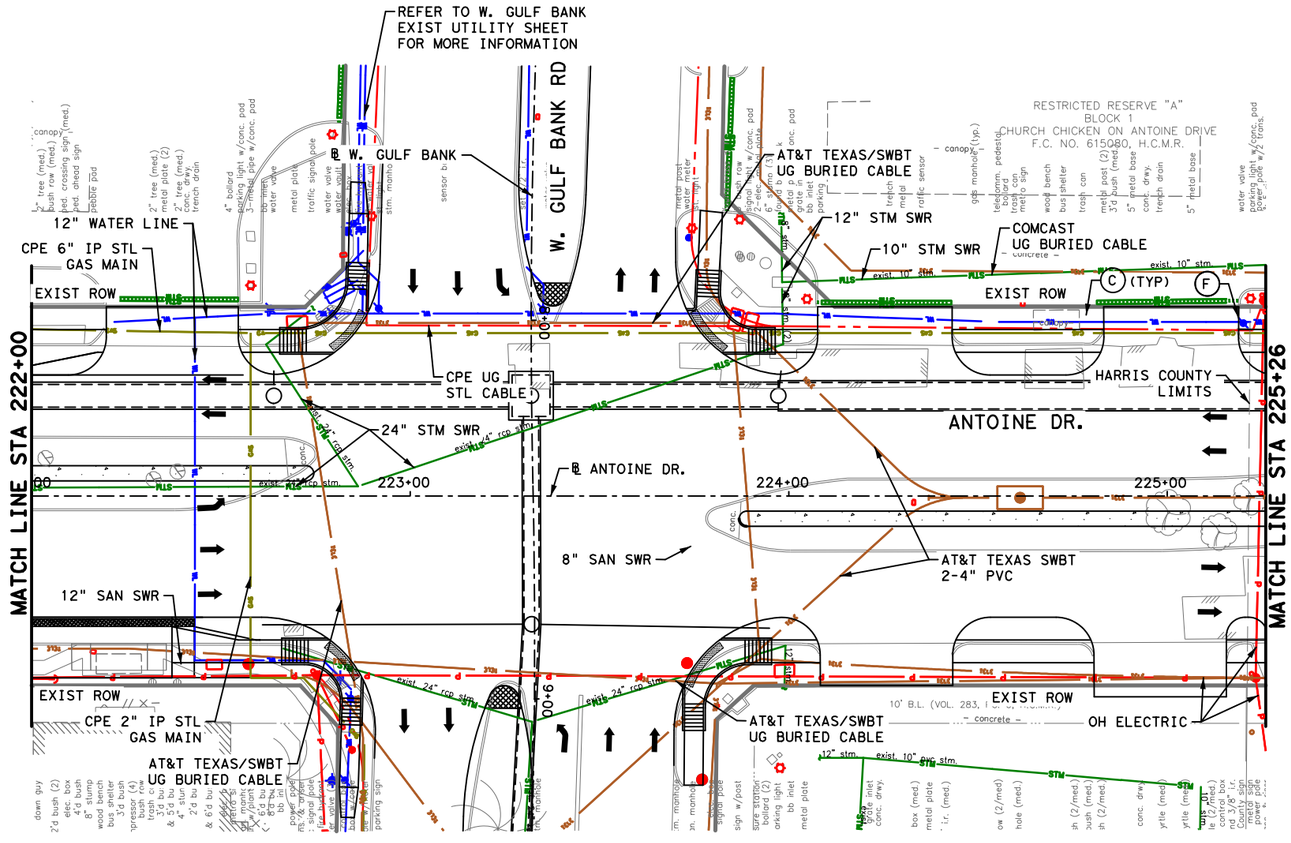

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SCALE IN FEET

No.	DATE	REVISIONS	APP.

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Approved for AT&T Texas/SWBT underground conduit facilities only. Date
Note: The AT&T electronic Signature is valid for one year.

Texas Department of Transportation

Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

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License No. 125611
10/24/2025
Date

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Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

EXISTING UTILITY LAYOUT
STA 222+00 TO STA 225+26

SHEET 8 OF 15

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 416 OF 718	

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Plot Driver:F:\03339 Antoine Drive\802-1\CAD\Plot files\ANTOINE DR.pltcfg

MATCHLINE STA 225+26

OH ELEC

6" CNP GAS

14" SAN SWR FM

ATT UG BURIED CABLE

ATT UG BURIED CABLE

OH ELEC

24" STM SWR

24" STM SWR

EXIST ROW

12" WATER

COMCAST UG BURIED CABLE

VERIZON UG BURIED CABLE

BL ANTOINE DR.

ANTOINE DR.

226+00

227+00

228+00

229+00

MATCHLINE STA 229+75

CROWN CASTLE UG BURIED CABLE

EXIST ROW

MATCHLINE STA 229+75

12" WATER

ATT UG BURIED CABLE

COMCAST UG BURIED CABLE

VERIZON UG BURIED CABLE

18" STM SWR OH ELEC

EXIST ROW

24" STM SWR

30" STM SWR

8" WATER

36" STM SWR

24" STM SWR

ATT UG BURIED CABLE

230+00

231+00

232+00

233+00

234+00

24" STM SWR

ATT UG BURIED CABLE

CROWN CASTLE UG BURIED CABLE

ATT UG BURIED CABLE

18" STM SWR

EXIST ROW

EXIST ROW

MATCHLINE STA 234+25

0' 20' 40'
SCALE IN FEET

NOTICE:

FOR YOUR SAFETY,YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED.THIS SIGNATURE DOES NOT FULFILL YOUR OBLIGATION TO CALL 811

VERIFICATION OF PRIVATE UTILITY LINES

Date

CenterPoint Energy natural gas utilities shown.(Gas service lines are not shown).This signature not be used for conflict verification.

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Date

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valid for one year.

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VOGLER & SPENCER ENGINEERING
777 North Eldridge Parkway, Suite 500
Houston, Texas 77079
713-782-0042
www.vs-eng.com

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10/23/2025
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Texas Registered Engineering Firm F-148

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

EXISTING UTILITY LAYOUT STA 225+26 TO STA 234+25

SHEET 9 OF 15

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 417 OF 718	

No.	DATE	REVISIONS	APP.

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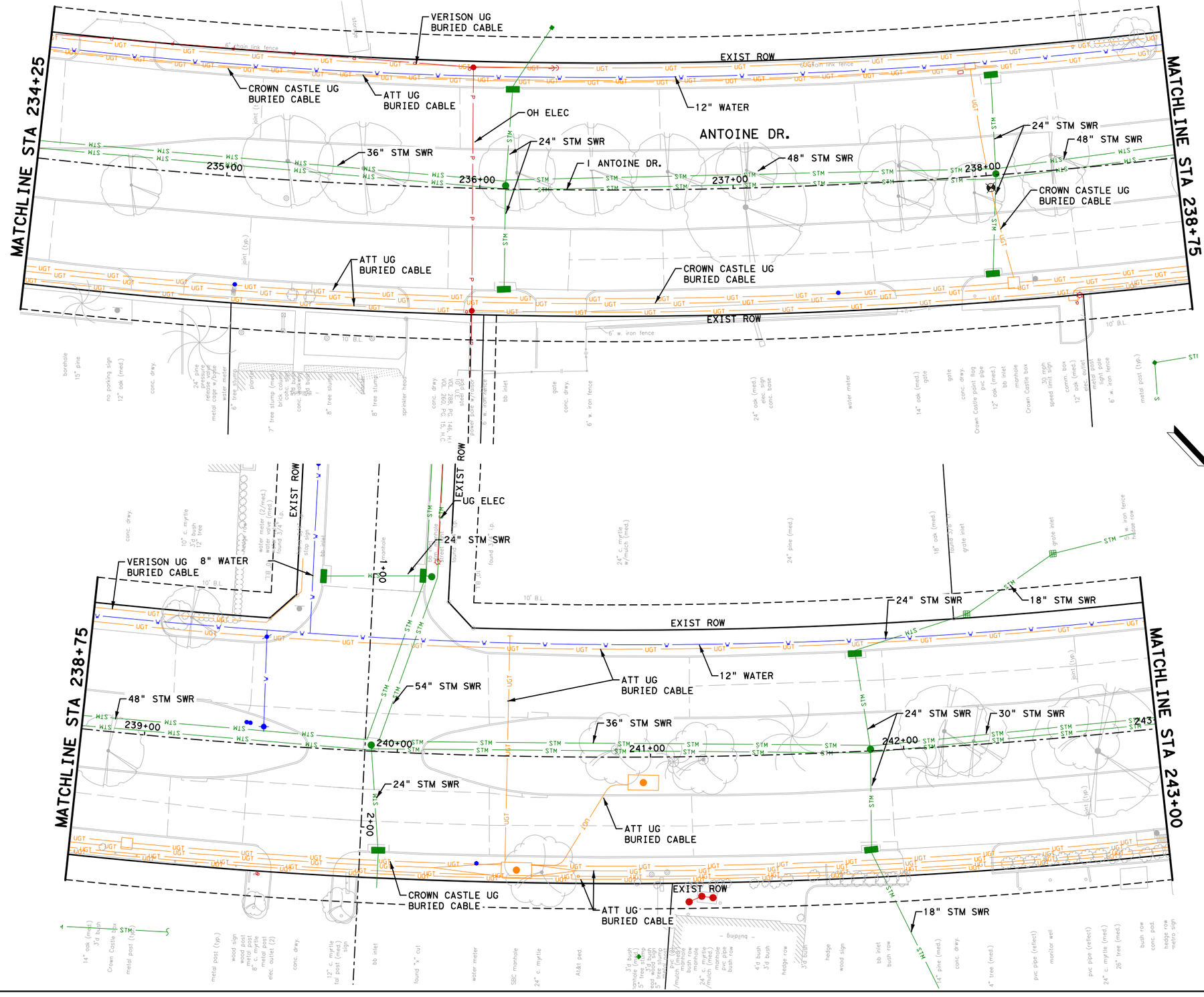

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

EXISTING UTILITY LAYOUT
STA 234+25 TO STA 243+00

SHEET 10 OF 15

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 418 OF 718	

No.	DATE	REVISIONS	APP.

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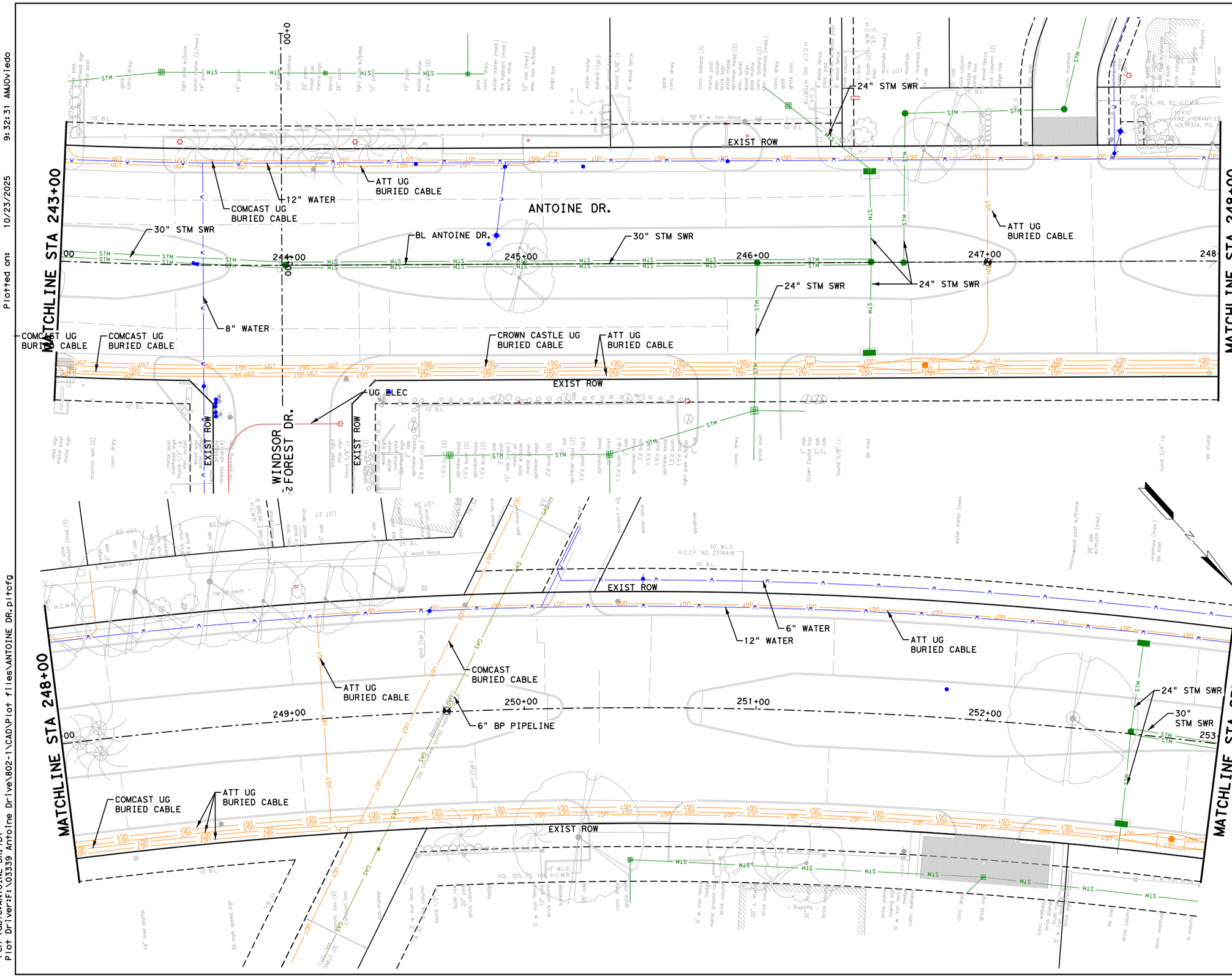

0' 20' 40'
SCALE IN FEET

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Texas Registered Engineering Firm F-148

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

EXISTING UTILITY LAYOUT STA 243+00 TO STA 253+00

SHEET 11 OF 15

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 419 OF 718	

No.	DATE	REVISIONS	APP.

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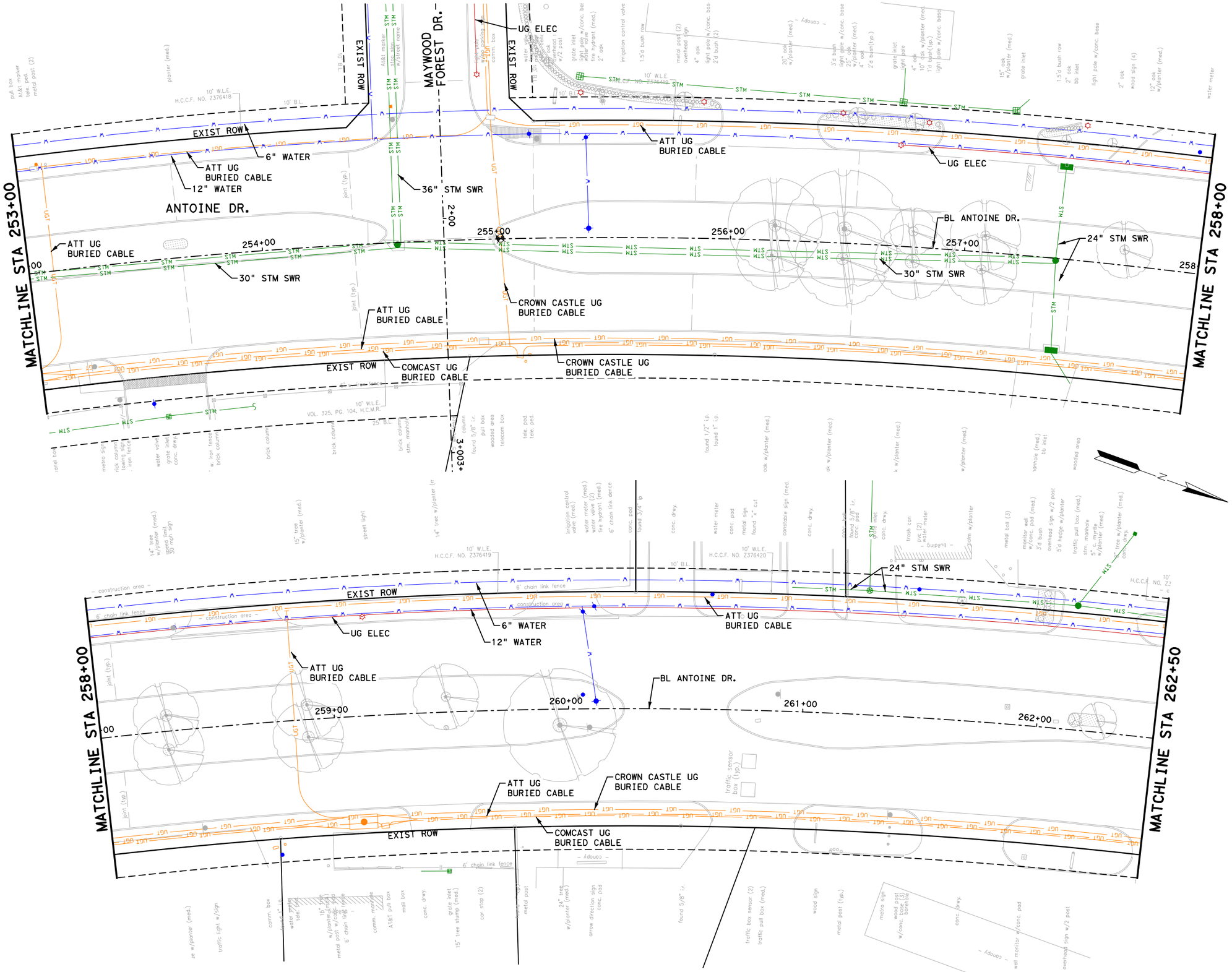

No.	DATE	REVISIONS	APP.

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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

EXISTING UTILITY LAYOUT
STA 253+00 TO STA 262+50

SHEET 12 OF 15

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 420 OF 718	

Plotted on: 10/23/2025 9:32:31 AM
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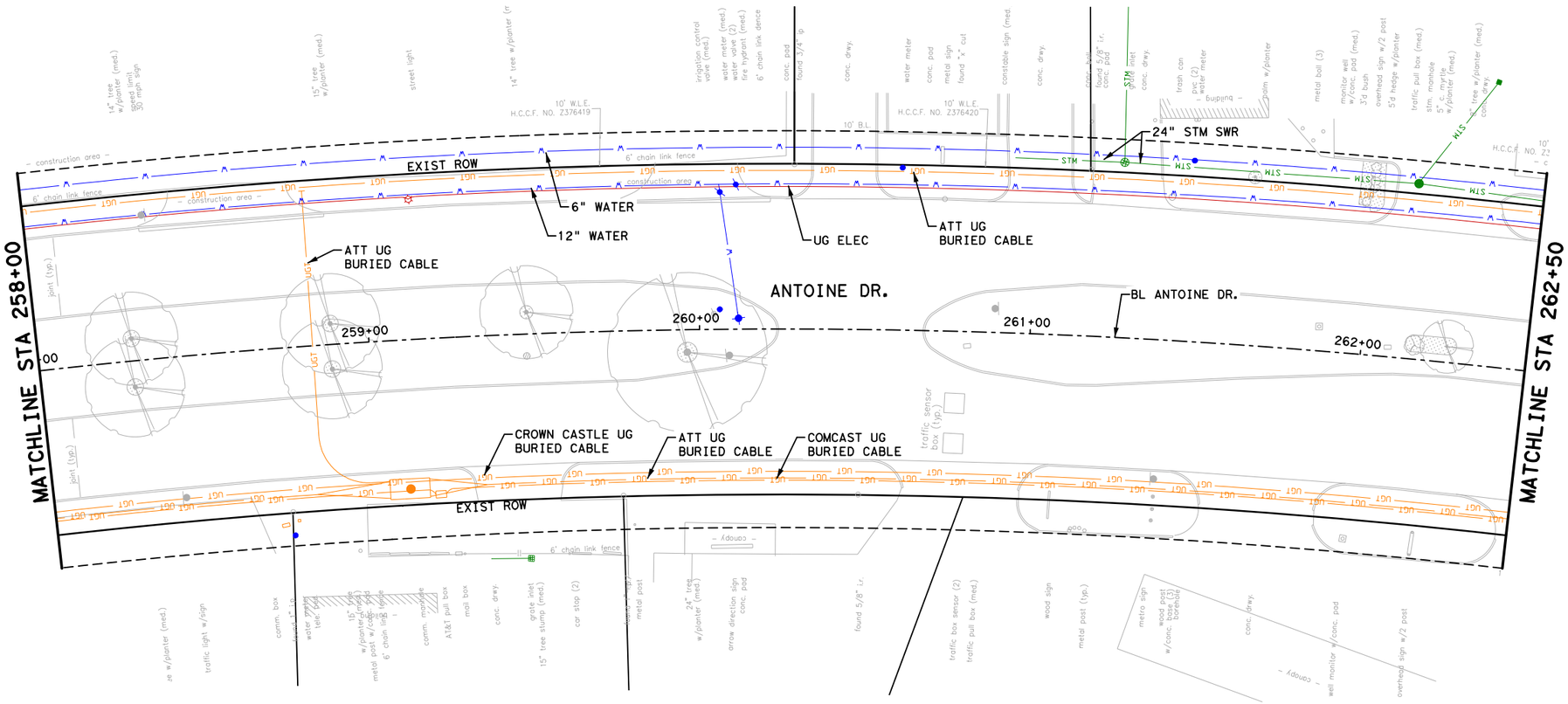

0′ 20′ 40′
SCALE IN FEET

No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

EXISTING UTILITY LAYOUT
STA 258+00 TO STA 262+50

SHEET 13 OF 15

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 421 OF 718	

Plotted on: 10/23/2025 9:32:32 AM Oviedo
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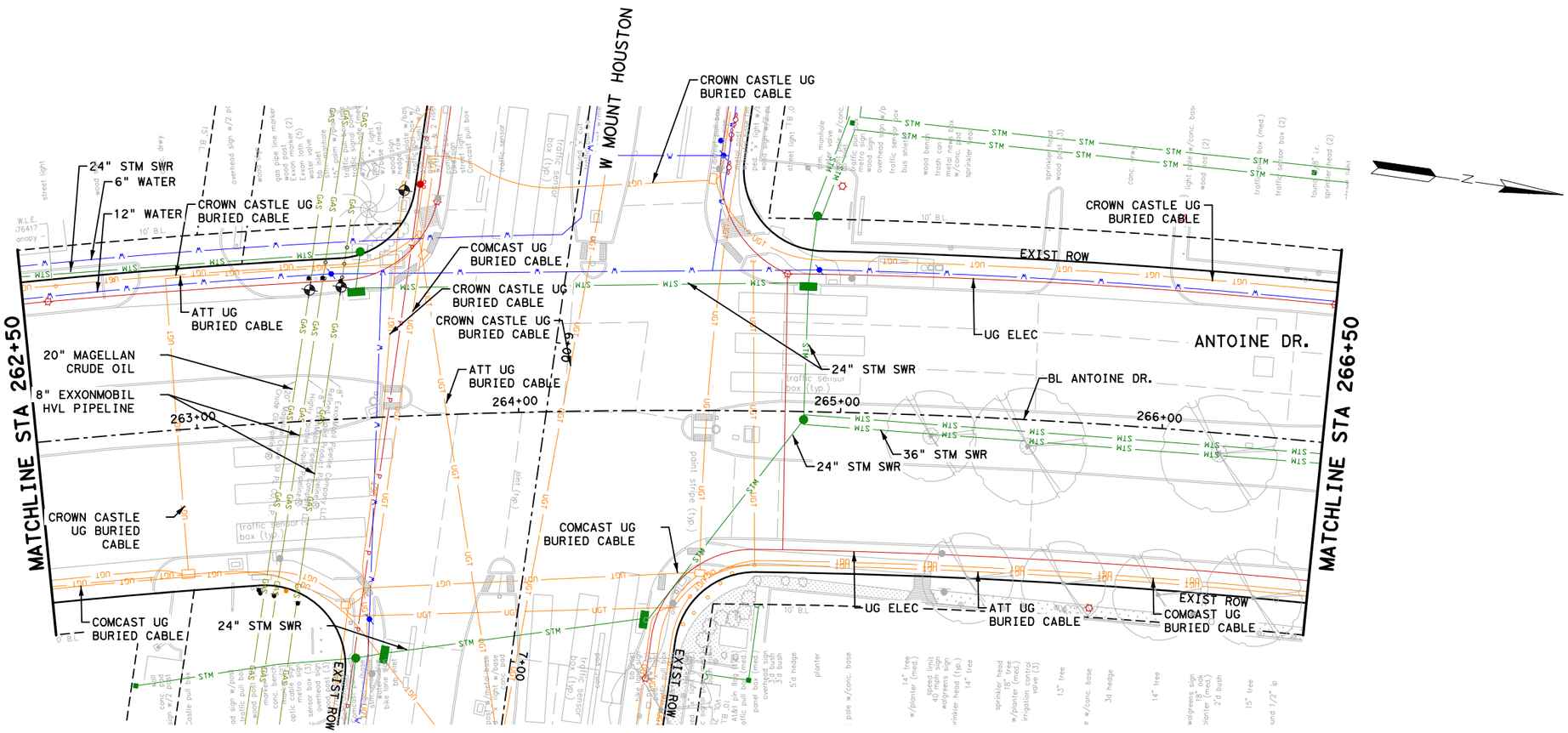

0′ 20′ 40′
SCALE IN FEET

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or
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Texas Registered Engineering Firm F-148

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

EXISTING UTILITY LAYOUT
STA 262+50 TO STA 266+50

SHEET 14 OF 15

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 422 OF 718	

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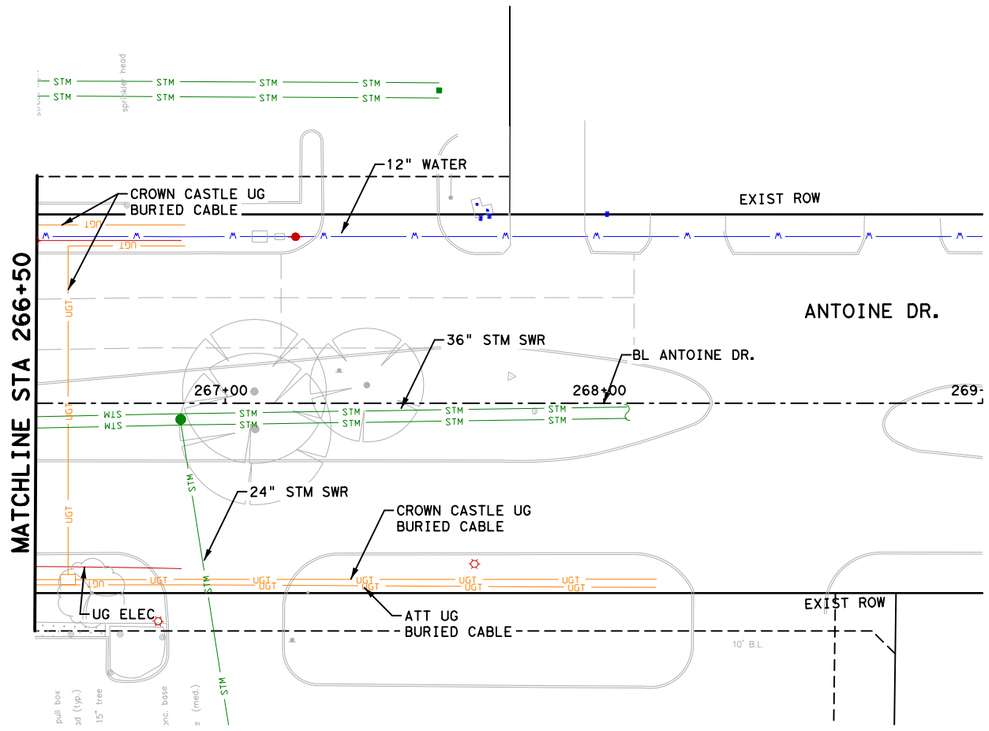
MATCHLINE STA 266+50
STM
STM
STM
STM
STM
STM
STM
STM
sprinkler head
12" WATER
CROWN CASTLE UG
BURIED CABLE
UGT
UGT
UGT
EXIST ROW
ANTOINE DR.
36" STM SWR
BL ANTOINE DR.
267+00
268+00
269+
STM
STM
STM
STM
STM
STM
STM
STM
24" STM SWR
CROWN CASTLE UG
BURIED CABLE
UGT
UGT
UGT

RESTRICTED RESERVE "A"
BLOCK 1
CHURCH CHICKEN ON ANTOINE DRIVE
F.C. NO. 615080, H.C.M.R.

UNRESTRICTED RESERVE
THE CORNERS AT INWOOD
VOL. 283, PG. 6, H.C.

COMCAST UG BURIED CABLE
CPE UG STL LT CABLE
8" SAN SWR
EXIST ROW
AT&T TEXAS/SWBT UG BURIED CABLE
14" SAN SWR FORCE MAIN
℄ W. GULF BANK
12" WATER LINE
8" WATER LINE
EXIST ROW
12" WATER LINE
CPE UG STL LT CABLE
℄ ANTOINE DR.
24+00
23+00
6" SAN SWR
10" SAN SWR
AT&T TEXAS/SWBT UG BURIED CABLE
4" SAN SWR
EXIST ROW
AT&T TEXAS/SWBT 3-4" GIP
W. GULF BANK RD
24" STM SWR
9+00
10+00
24" STM SWR
AT&T TEXAS/SWBT 1-4" GIP
AT&T TEXAS/SWBT 3-4" PVC
OH ELECTRIC
EXIST ROW
AT&T TEXAS/SWBT UG BURIED CABLE
CPE 2" IP STL GAS MAIN
MATCH LINE STA 10+50
REFER TO ANTOINE EXIST UTILITY LAYOUT FOR MORE INFORMATION

MATCH LINE STA 10+50
12" STM SWR
OH ELECTRIC
10" SAN SWR
AT&T TEXAS/SWBT 2-4" GIP
24" STM SWR
℄ W. GULF BANK
11+00
12+00
AT&T TEXAS/SWBT 3-4" PVC
AT&T TEXAS/SWBT 2-4" PVC
CPE UG STL LT CABLE
12" WATER LINE
CPE 2" IP STL GAS MAIN
AT&T TEXAS/SWBT UG BURIED CABLE
10" STM SWR
6" SAN SWR
12" STM SWR
W. GULF BANK RD
13+00
27" STM SWR
14+00
CPE UG STL LT CABLE
AT&T TEXAS/SWBT UG BURIED CABLE
8" SAN SWR
24" STM SWR
30" STM SWR
24" STM SWR
12" STM SWR

0′ 20′ 40′
SCALE IN FEET

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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125611
10/24/2025
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Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
W. GULF BANK
EXISTING UTILITY LAYOUT
STA 10+50 TO END PROJECT

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 424 OF 718	

No.	DATE	REVISIONS	APP.

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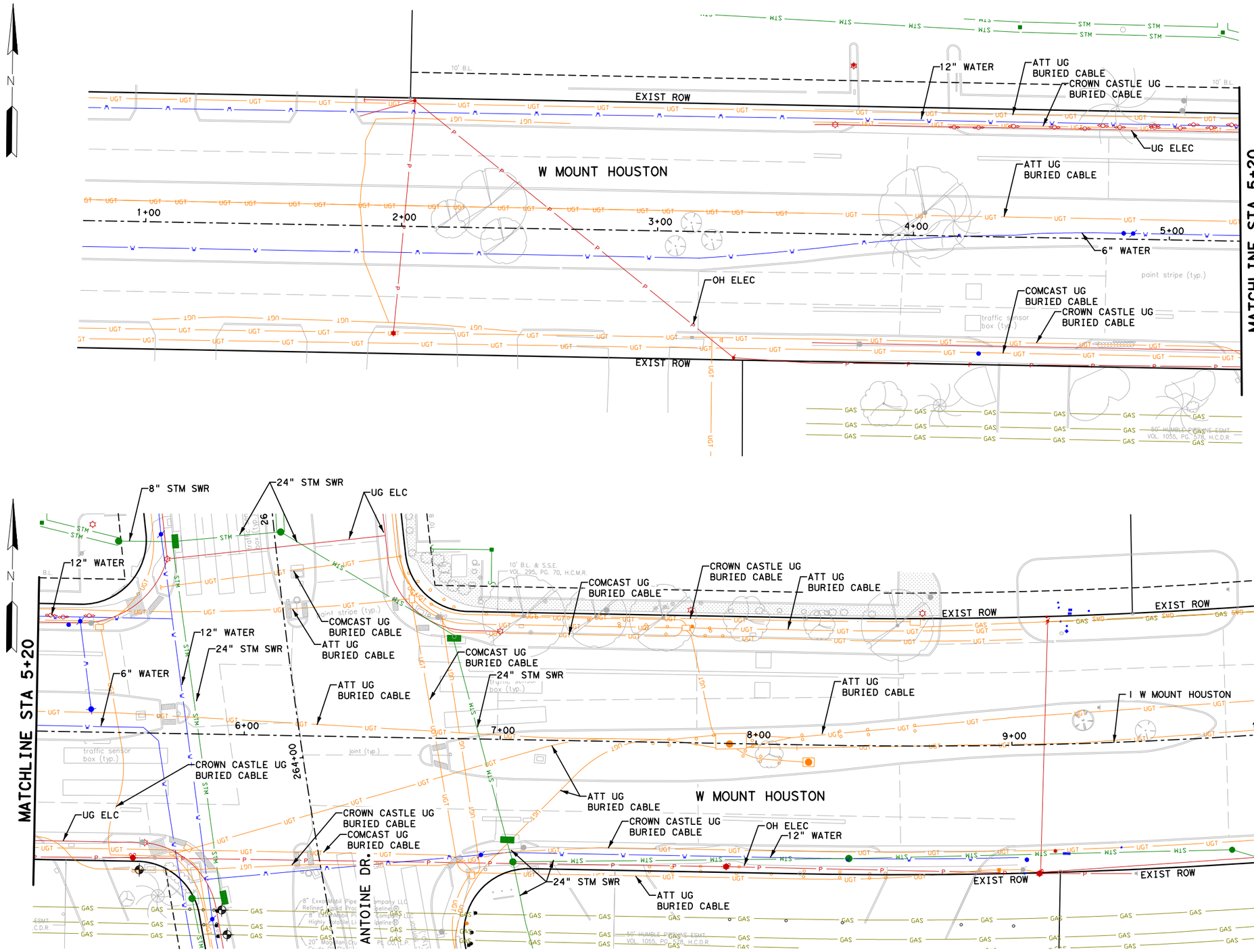

0′ 20′ 40′
SCALE IN FEET

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www.vs-eng.com

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Texas Registered Engineering Firm F-148

SURVEYED BY:
KUO & ASSOCIATES, INC.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WEST MOUNT HOUSTON
EXISTING UTILITY LAYOUT
STA 0+00 TO STA 10+00

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 425 OF 718	

Plotted on: 10/23/2025 9:32:33 AM Oviedo

Pen Table: ANTOINE DR.tbl
Plot Driver: F:\03339 Antoine Drive\802-1\CAD\Plot files\ANTOINE DR.pltcfg

Design Filename: F:\03339 Antoine Drive\802-1\CAD\Plan Production_Existing Utility Layout-W Mt Houston Road.dgn

Plotted on: 10/23/2025 2:18:54 PM GEO
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Design Filename: Y:\2017012 Antoine North Paving and Drainage\MicroStation\95% SET-CAD DESIGN FILES _03_07_2025\P&P Sheets\San Swe\001-P&P_Antoine_SAN.dgn

1-12" X 45° BEND, RJ
1-12" X 22.5° BEND, RJ
1-12" CUT, PLUG & ABANDON
1- 12" WET CONNECTION
1-12" GV & BOX

2-12" X 45° BEND, RJ
1- 12" WET CONNECTION
1-12" CUT, PLUG & ABANDON
1-12" GV & BOX

1-12" X 12" TEE, RJ
2 -12" GV & BOX

1-12"X12" TEE, RJ
2-12" GV & BOX
2-12" X 90° BENDS, RJ
1-12" CUT, PLUG & ABANDON

1-6"X12" TEE, RJ
1-6" GV & BOX
1-6" FH LEAD, RJ
1-FH (3' BOC)

1-12"X12" TEE, RJ
2-12" GV & BOX

1-12"X 45° BEND, RJ
1-12" CUT, PLUG & ABANDON
1-12" WET CONNECTION
1-12" GV & BOX

EXIST ROW
EASEMENT
VICTORY DR
ANTOINE DR.
CONCRETE PAVING
SEE NOTE 5
PROP STM SWR (SEE NOTE 3)
PROP SAN SWR 5' DIA (MH F2) W/VENT STA 160+52.91, 15.06 RT MH RIM EL=71.69
PROP 99 LF 12" WATER LINE
ABANDON EXIST 12" WATER LINE & TRANSFER SERVICE CONNECTION TO PROP 12" WATER LINE
MATCH LINE STA 162+00
PROP 32 LF 24" SAN SWR
PROP SAN SWR 6' DIA (MH F1) STA 160+23.76, 35.78 RT MH RIM EL=71.96
NW161001 REMOVE & DISPOSE EXIST SAN SWR MH
PROP 149 LF 24" SAN SWR
ABANDON EXISTING 24" SAN SWR IN PLACE
158+00
159+00
160+00
161+00
162+00
9'
13'
3' BOC (TYP)

LEGEND

- SAN — PROPOSED SAN SWR
- W — PROPOSED WATER LINE
- WL — EXISTING WATER LINE
- SAN — EXIST SAN SWR
- RESTRAINED JOINTS PIPE
- CRITICAL LOCATION
- ABANDON EXIST SAN SWR
- 6" SAN SWR LEAD WITH STACK

NOTE:
REFER TO SHEET 15 OF 16 FOR WATER AND SANITARY NOTES.

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

NOTICE:
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VERIFICATION OF PRIVATE UTILITY LINES

Date

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Date

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ADDRESS:
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TEL.No.: 713-706-4412

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WATER & SANITARY IMPROVEMENTS BEGIN TO STA 162+00

SHEET 1 OF 16

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 426 OF 718	

VPT STA = 157+57.50(W)
EL = 72.67'

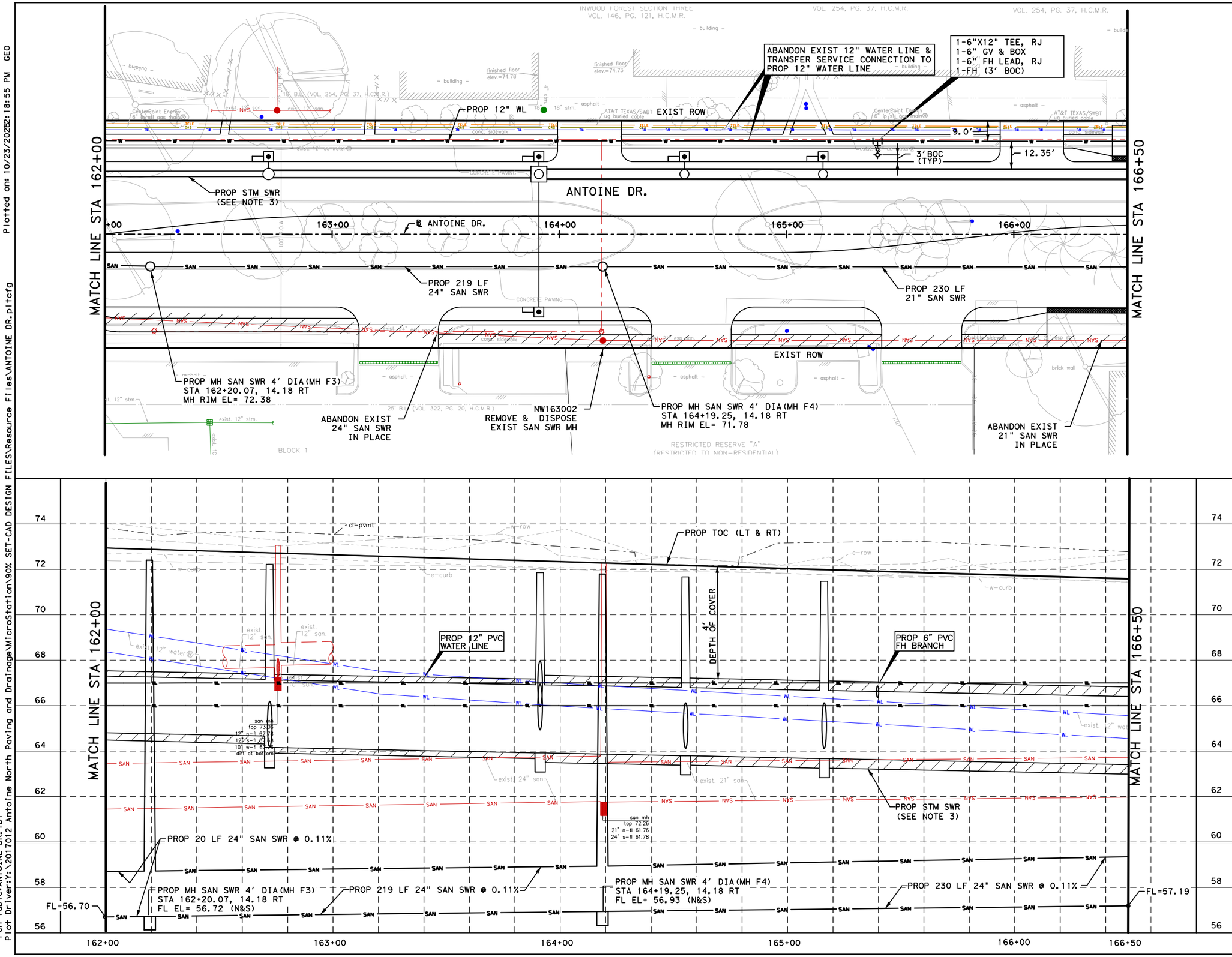
VPT STA = 158+72.50(W)
EL = 72.54'

72.6

(-)0.52 %
(+)0.30 %

PROP TOC (LT & RT)
PROP 12" PVC WATER LINE
PROP 12" PVC
PROP 6" PVC WATER LINE
PROP STM SWR (SEE NOTE 3)
2' MIN CLR
DEPTH OF OVER 4'
PROP SAN SWR 6' DIA (MH F1) STA 160+23.76, 35.78 RT FL EL= 56.52 (N)
PROP 32 LF 24" SAN SWR @ 0.11%
PROP SAN SWR 5' DIA (MH F2) W/VENT STA 160+52.91, 15.06 RT FL EL= 56.54 (N&S)
PROP 149 LF 24" SAN SWR @ 0.11%
FL=56.70
MATCH LINE STA 162+00

74
72
70
68
66
64
62
60
58
56
158+00
159+00
160+00
161+00
162+00



LEGEND

- PROPOSED SAN SWR
- PROPOSED WATER LINE
- EXISTING WATER LINE
- EXIST SAN SWR
- RESTRAINED JOINTS PIPE
- CRITICAL LOCATION
- ABANDON EXIST SAN SWR
- 6" SAN SWR LEAD WITH STACK

NOTE:
REFER TO SHEET 15 OF 16 FOR WATER AND SANITARY NOTES.

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

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Texas Registered Engineering Firm F-13481

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WATER & SANITARY IMPROVEMENTS STA 162+00 TO STA 166+50

SHEET 2 OF 16

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-OGEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 427 OF 718	

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Design Filename: Y:\2017012 Antoine North Paving and Drainage\Microstation\95% SET-CAD DESIGN FILES_03_07_2025\P&P Sheets\San Swe\003-P&P_Antoine_SAN.dgn

PROP DROP MH SAN SWR
4' DIA (MH F36)
STA 167+14.06, 86.00 LT
MH RIM EL= 71.28

DEEP FOREST DR.

EXIST ROW

SEE NOTE 5

PROP 14 LF 8" WL

1-8"X12" CROSS, RJ
4-8"X45° BENDS, RJ
3-8" GV & BOX
1-8" WET CONNECTION
1-8" CUT, PLUG & ABANDON
1-8" PLUG & CLAMP

1-6"X12" TEE, RJ
1-6" GV & BOX
1-6" FH LEAD, RJ
1-FH (3' BOC)

ABANDON EXIST 12" WATER LINE & TRANSFER SERVICE CONNECTION TO PROP 12" WATER LINE

PROP 12" WL

9'

12.0'

3' BOC (TYP)

MATCH LINE STA 166+50

MATCH LINE STA 171+00

PROP 102 LF 10" SAN SWR

ANTOINE DR.

PROP STM SWR (SEE NOTE 3)

℄ ANTOINE DR.

167+00 168+00 169+00 170+00 171

PROP 63 LF 24" SAN SWR

PROP 8" PVC 86 LF WL

PROP 43 LF 10" SAN SWR LINE

PROP DROP MH SAN SWR
4' DIA (MH F5)
STA 167+13.89, 14.32 RT
MH RIM EL= 70.68

PROP 387 LF 21" SAN SWR

CONCRETE PAVING

EXIST ROW

ABANDON EXIST 21" SAN SWR IN PLACE

NW163003
REMOVE & DISPOSE EXIST SAN SWR MH

NW163004
EXIST SAN SWR MH TO REMAIN IN PLACE

MAPLE HILL DR.

2-8"X 45° BENDS, RJ
1-8" GV & BOX
1-8" WET CONNECTION
1-8" CUT, PLUG & ABANDON

10' W.L.E. (VOL. 153, PG. 130, H.C.M.R.)

ABANDON EXIST 18" SAN SWR IN PLACE

LEGEND

- SAN — PROPOSED SAN SWR
- W — PROPOSED WATER LINE
- WL — EXISTING WATER LINE
- SAN — EXIST SAN SWR
- RESTRAINED JOINTS PIPE
- CRITICAL LOCATION
- ABANDON EXIST SAN SWR
- 6" SAN SWR LEAD WITH STACK

NOTE:
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HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

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VERIFICATION OF PRIVATE UTILITY LINES

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WATER & SANITARY IMPROVEMENTS
STA 166+50 TO STA 171+00

SHEET 3 OF 16

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 428 OF 718	

74 72 70 68 66 64 62 60 58 56

166+50 167+00 168+00 169+00 170+00 171+00

MATCH LINE STA 166+50

MATCH LINE STA 171+00

cl-pvmt

w-row

e-row

PROP TOC (LT & RT)

PROP 6" PVC FH BRANCH

PROP 12" PVC WATER LINE

5' DEPTH OF COVER

LIMITS OF PROP 12" PVC WATER LINE W/ RESTRAINED JOINTS

PROP 8" PVC WATER LINE

2'MIN CLR

2'MIN CLR

2'MIN CLR

PROP STM SWR (SEE NOTE 3)

PROP 63 LF 24" SAN SWR @ 0.11%

PROP DROP MH SAN SWR
4' DIA (MH F5)
STA 167+13.89, 14.32 RT
21" FL EL= 57.50 (N)
24" FL EL= 57.25 (S)
10" FL EL= 58.66, 62.00 (E)
10" FL EL= 58.66 (W)

PROP 387 LF 21" SAN SWR @ 0.13%

FL=57.19

FL=58.00

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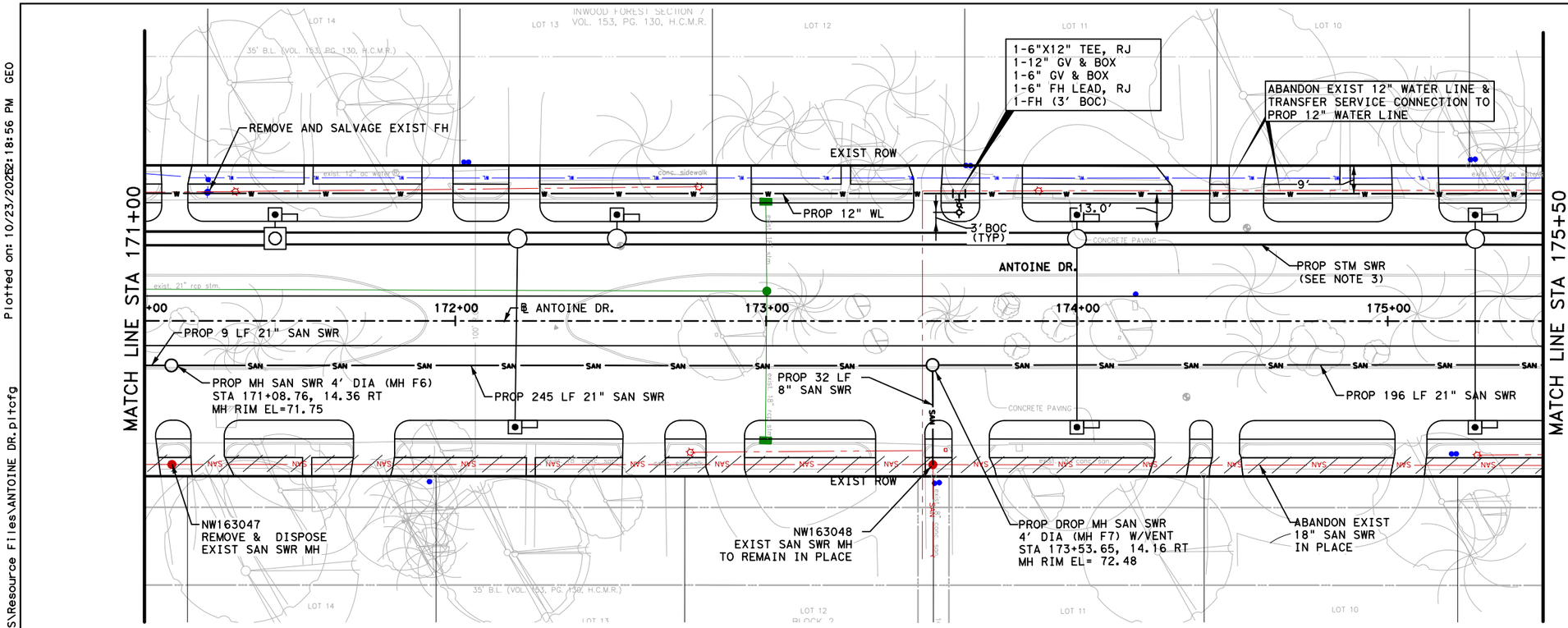
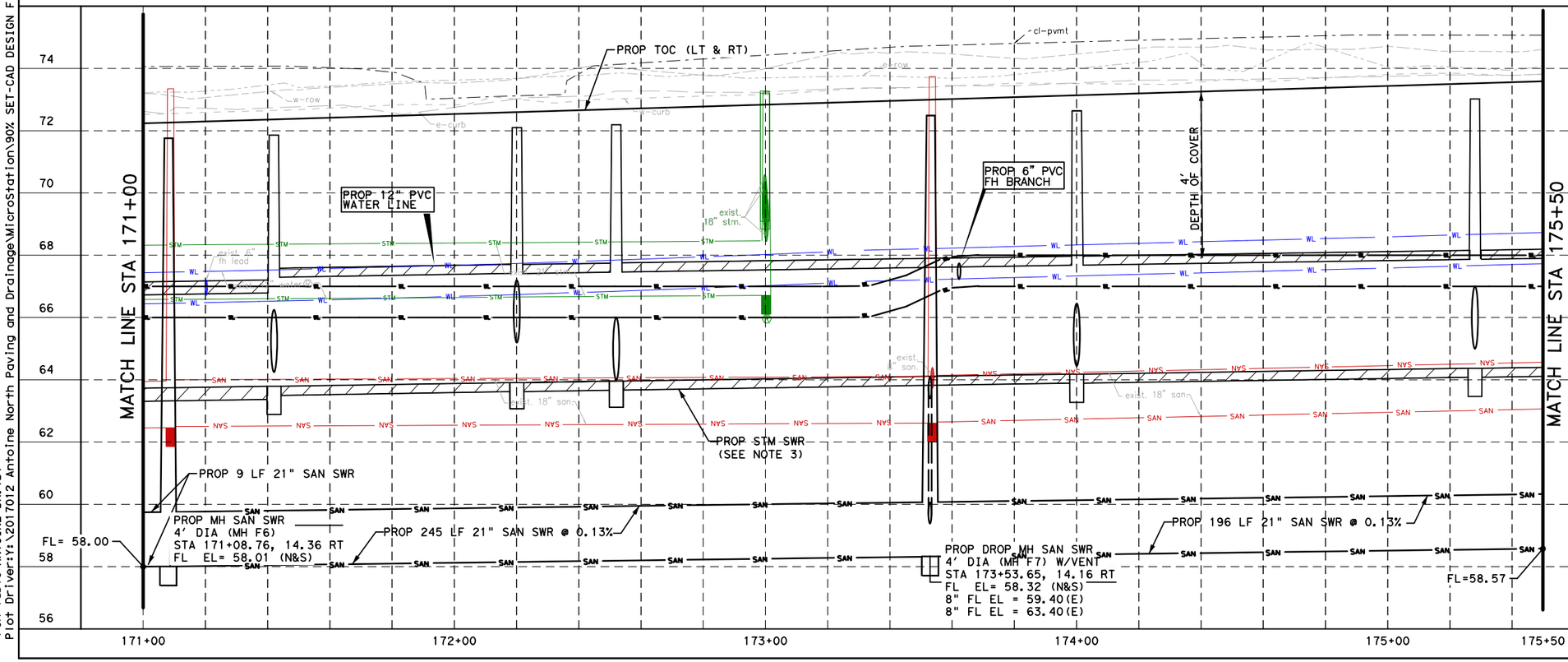


LEGEND

- SAN — PROPOSED SAN SWR
- W — PROPOSED WATER LINE
- WL — EXISTING WATER LINE
- SAN — EXIST SAN SWR
- RESTRAINED JOINTS PIPE
- CRITICAL LOCATION
- ABANDON EXIST SAN SWR
- 6" SAN SWR LEAD WITH STACK

NOTE:
REFER TO SHEET 15 OF 16 FOR WATER AND SANITARY NOTES.

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET



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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WATER & SANITARY IMPROVEMENTS STA 171+00 TO STA 175+50

SHEET 4 OF 16

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 429 OF 718	

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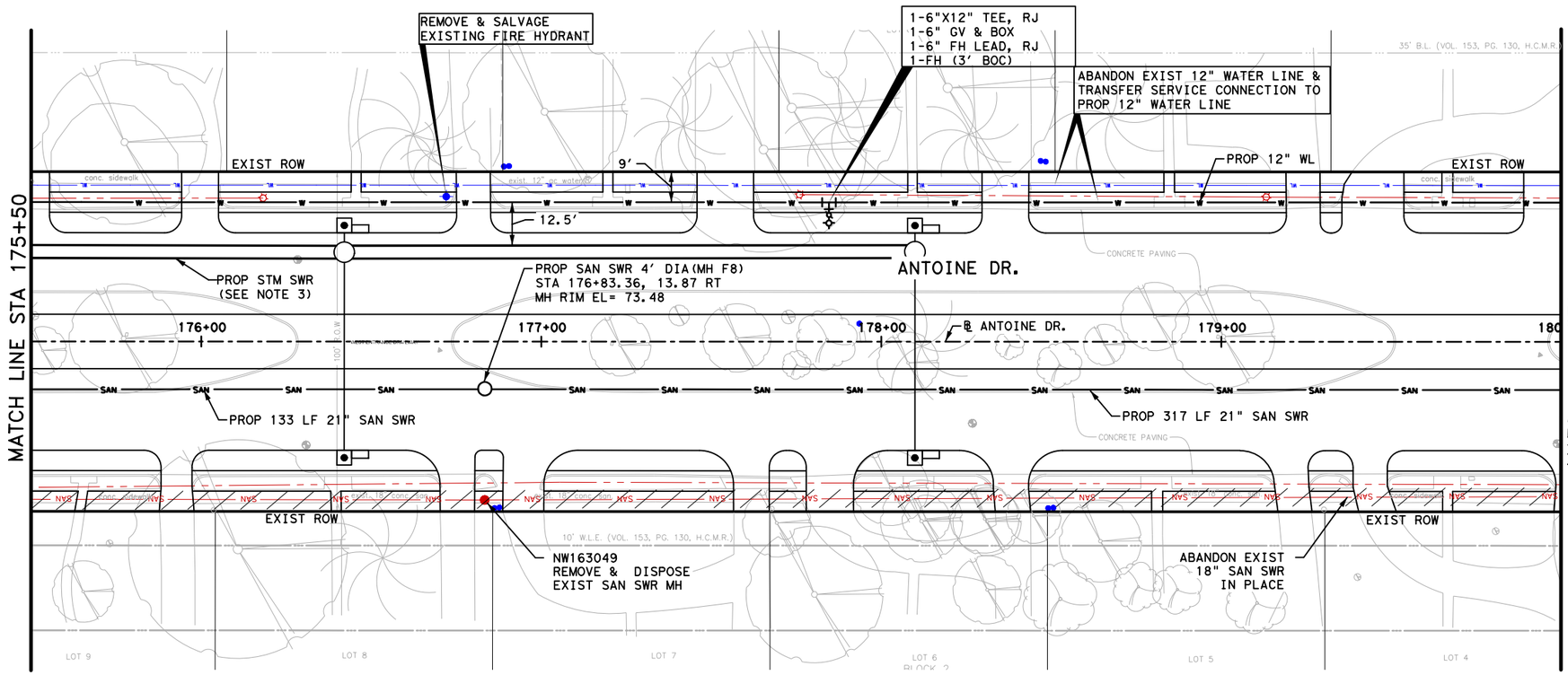

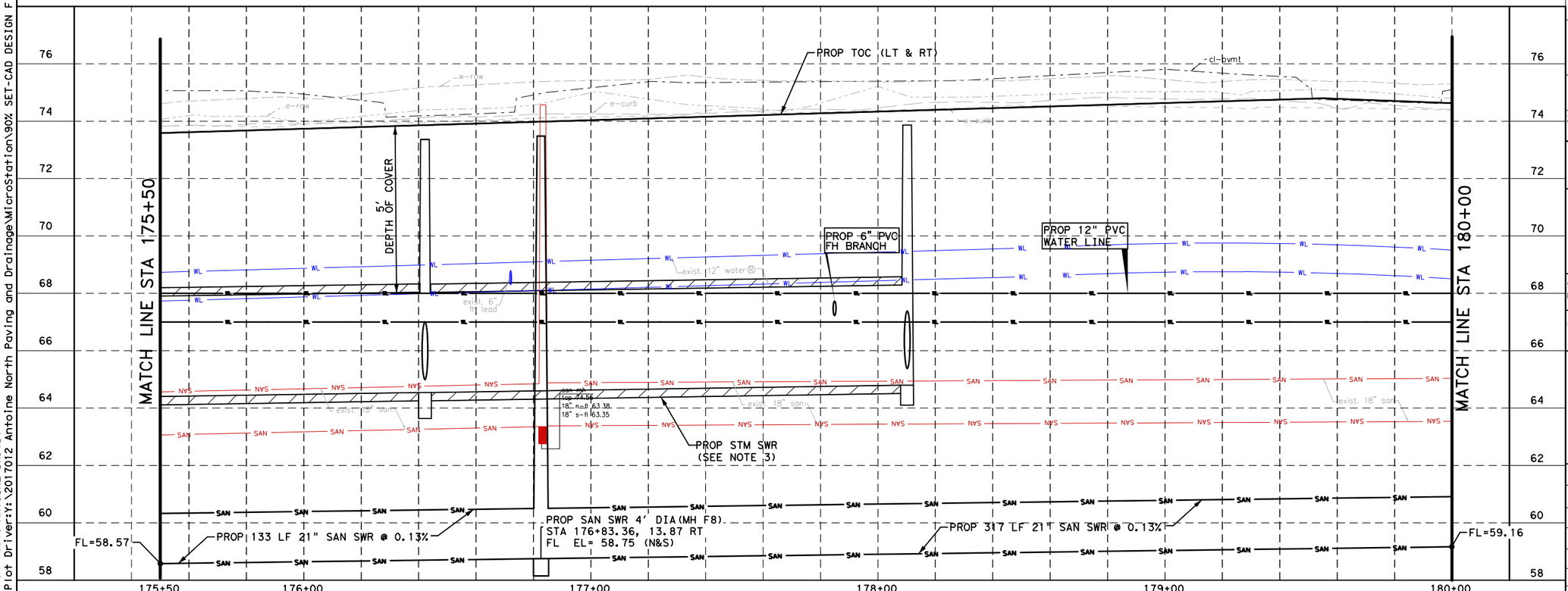

LEGEND

- SAN — PROPOSED SAN SWR
- W — PROPOSED WATER LINE
- WL — EXISTING WATER LINE
- SAN — EXIST SAN SWR
- RESTRAINED JOINTS PIPE
- CRITICAL LOCATION
- ABANDON EXIST SAN SWR
- 6" SAN SWR LEAD WITH STACK

NOTE:
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SCALE IN FEET

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WATER & SANITARY IMPROVEMENTS STA 175+50 TO STA 180+00

SHEET 5 OF 16

WBS NUMBER	N-100030-0GEC-3
DRAWING SCALE	AS NOTED
CITY OF HOUSTON PM	ROWAIDAH AYOUB
SHEET NO.	430 OF 718

FOR CITY OF HOUSTON USE ONLY

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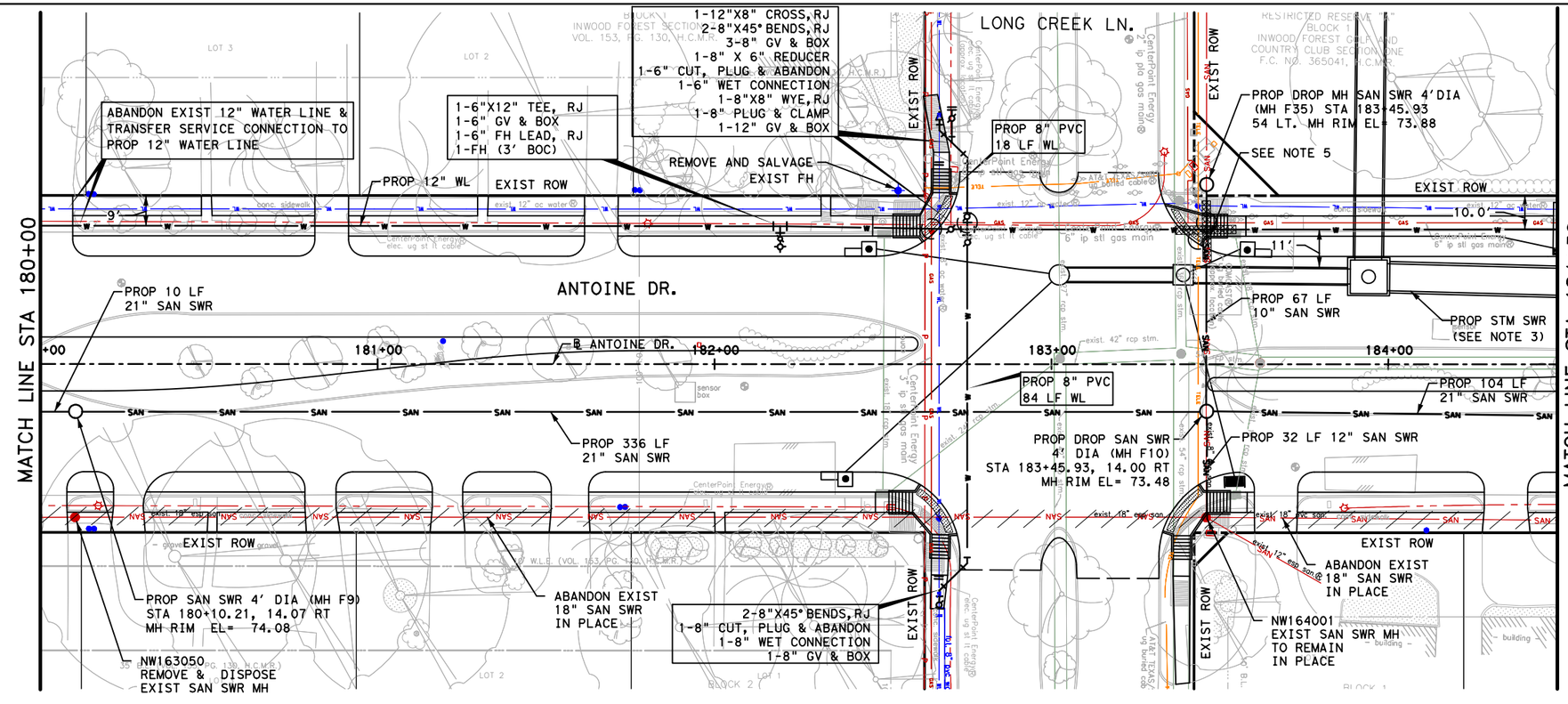

LEGEND

- PROPOSED SAN SWR
- PROPOSED WATER LINE
- EXISTING WATER LINE
- EXIST SAN SWR
- RESTRAINED JOINTS PIPE
- CRITICAL LOCATION
- ABANDON EXIST SAN SWR
- 6" SAN SWR LEAD WITH STACK

NOTE:
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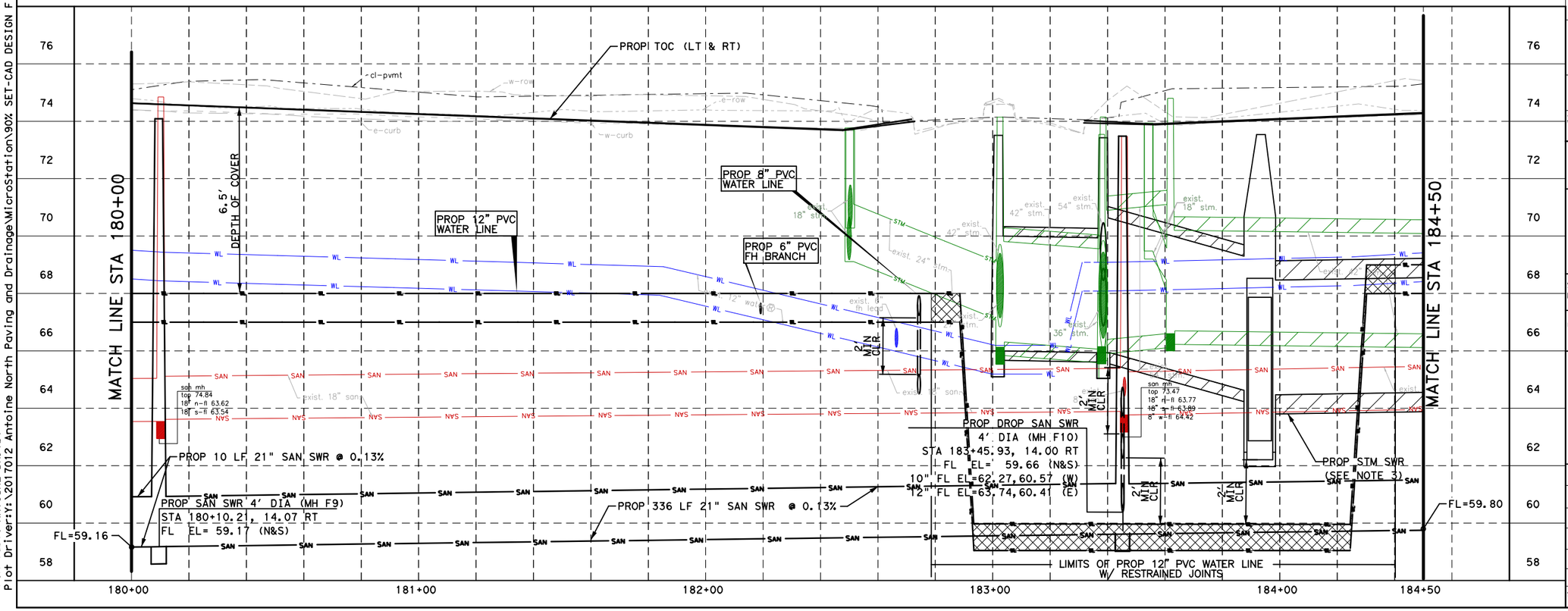
HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET



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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WATER & SANITARY IMPROVEMENTS STA 180+00 TO STA 184+50

SHEET 6 OF 16

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 431 OF 718	

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ABANDON EXIST 12" WATER LINE & TRANSFER SERVICE CONNECTION TO PROP 12" WATER LINE

1-6"X12" TEE, RJ
1-6" GV & BOX
1-6" FH LEAD, RJ
1-FH (3' BOC)

1-12"X6" TEE, RJ
1-12" GV & BOX
1-6" GV & BOX
1-6" CUT, PLUG & ABANDON
1-6" WET CONNECTION
2-6"X 45° BENDS, RJ

PROP DROP SAN SWR (MH F34)
4' DIA MH
STA 186+32, 55.00 RT
MH RIM EL= 75.06

PROP DROP SAN SWR (MH F33)
4' DIA MH
STA 187+14, 55.00 RT
MH RIM EL= 75.40

SEE NOTE 5

SEE NOTE 5

PROP 12" WL

EXIST ROW

EXIST ROW

MATCH LINE STA 184+50

MATCH LINE STA 189+00

10.0'

9.5'

PROP 70 LF
8" SAN SWR

PROP 70 LF
8" SAN SWR

ANTOINE DR.

PROP STM SWR
(SEE NOTE 3)

REMOVE & SALVAGE
EXIT FH

185+00

186+00

187+00

℄ ANTOINE DR.

188+00

PROP 84 LF
21" SAN SWR

PROP 81 LF
21" SAN SWR

PROP 94 LF
21" SAN SWR

PROP 92 LF
21" SAN SWR

EXIST ROW

EXIST ROW

PROP 97 LF
21" SAN SWR

PROP SAN SWR
4' DIA (MH F11)
STA 185+48.33, 14.00'RT
MH RIM EL= 74.21

PROP SAN SWR
4' DIA (MH F12)
STA 186+32.93, 14.00'RT
MH RIM EL= 74.56

PROP SAN SWR
4' DIA (MH F13)
STA 187+14.27, 14.00'RT
MH RIM EL= 74.90

PROP SAN SWR
4' DIA (MH F14) W/VENT
STA 188+08.25, 14.00'RT
MH RIM EL= 75.30

NW164096A
REMOVE & DISPOSE
EXIST SAN SWR MH

NW164002
REMOVE & DISPOSE
EXIST SAN SWR MH

NW164008
REMOVE & DISPOSE
EXIST SAN SWR MH

NW164029A
REMOVE & DISPOSE
EXIST SAN SWR MH

ABANDON EXIST
18" SAN SWR
IN PLACE

LEGEND

- SAN — PROPOSED SAN SWR
- W — PROPOSED WATER LINE
- WL — EXISTING WATER LINE
- SAN — EXIST SAN SWR
- RESTRAINED JOINTS PIPE
- CRITICAL LOCATION
- ABANDON EXIST SAN SWR
- 6" SAN SWR LEAD WITH STACK

NOTE:
REFER TO SHEET 15 OF 16 FOR WATER AND SANITARY NOTES.

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

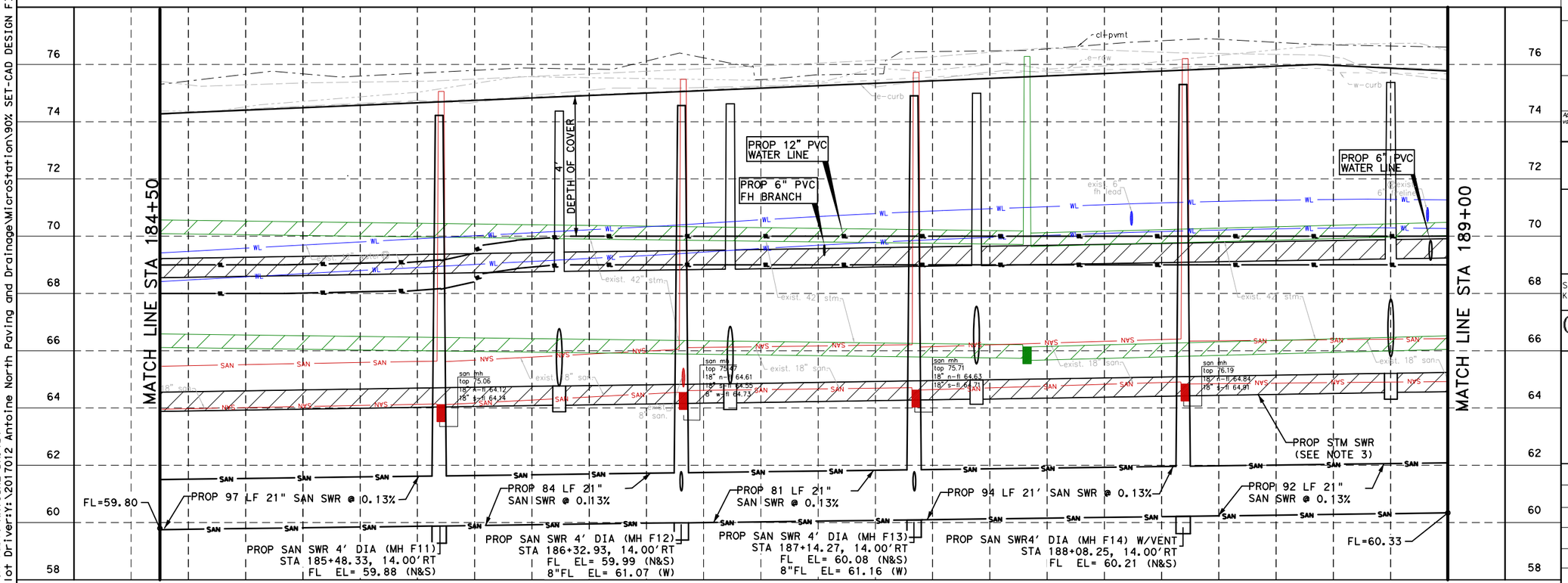
ANTOINE DRIVE

WATER & SANITARY IMPROVEMENTS STA 184+50 TO STA 189+00

SHEET 7 OF 16

WBS NUMBER	N-100030-0GEC-3
DRAWING SCALE	AS NOTED
CITY OF HOUSTON PM	ROWAIDAH AYOUB
SHEET NO.	432 OF 718

FOR CITY OF HOUSTON USE ONLY



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Design Filename: Y:\2017012 Antoine North Paving and Drainage\MicroStation\95% SET-CAD DESIGN FILES _03_07_2025\P&P Sheets\San Swe\008-P&P_Antoine_SAN.dgn

MATCH LINE STA 189+00

MATCH LINE STA 193+50

1-12"X6" TEE,RJ
1-12" GV & BOX
1-6" GV & BOX

1-12"X 6" TEE,RJ
1-12" GV & BOX
1-6" GV & BOX
1-6"X 90° BEND, RJ
1-6"X 3" REDUCER
1-3" WET CONNECTION

1-6"X12" TEE, RJ
1-6" GV & BOX
1-6" FH LEAD, RJ
1-FH (3' BOC)

ABANDON EXIST 12" WATER LINE & TRANSFER SERVICE CONNECTION TO PROP 12" WATER LINE

PROP 40 LF 21" SAN SWR

PROP 6" PVC 68 LF WL

SEE NOTE 5

PROP 88 LF 21" SAN SWR

3'BOC (TYP)

PROP STM SWR (SEE NOTE 3)

REMOVE & SALVAGE EXIST FH

PROP DROP SAN SWR, 4' DIA (MH F15)
STA 189+41.02, 14.00 RT
MH RIM EL= 72.22

PROP SAN SWR 4' DIA (MH F16)
STA 190+30.86, 14.00 RT
MH RIM EL= 74.92

PROP 297 LF 21" SAN SWR

PROP 24 LF 21" SAN SWR @ 0.13%

PROP SAN SWR 4' DIA (MH F17)
STA 193+26.54, 14.00 RT
MH RIM EL= 75.10

PROP 32 LF 8" SAN SWR

NW164034
REMOVE & DISPOSE
EXIST SAN SWR MH

NW164029
EXIST SAN SWR MH
TO REMAIN IN PLACE

NW164035
REMOVE & DISPOSE
EXIST SAN SWR MH

2-6"X 45° BEND, RJ
1-6" CUT PLUG & ABANDON
1-6" WET CONNECTION

LEGEND

- SAN — PROPOSED SAN SWR
- W — PROPOSED WATER LINE
- WL — EXISTING WATER LINE
- SAN — EXIST SAN SWR
- RESTRAINED JOINTS PIPE
- CRITICAL LOCATION
- ABANDON EXIST SAN SWR
- 6" SAN SWR LEAD WITH STACK

NOTE:
REFER TO SHEET 15 OF 16 FOR WATER AND SANITARY NOTES.

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

NOTICE:
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VERIFICATION OF PRIVATE UTILITY LINES

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WATER & SANITARY PLAN AND PROFILE STA 189+00 TO STA 193+50

SHEET 8 OF 16

WBS NUMBER	N-100030-OGEC-3
DRAWING SCALE	AS NOTED
CITY OF HOUSTON PM	ROWAIDAH AYOUB
SHEET NO.	433 OF 718

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ABANDON EXIST 12" WATER LINE & TRANSFER SERVICE CONNECTION TO PROP 12" WATER LINE

1-6"X12" TEE, RJ
1-6" GV & BOX
1-6" FH LEAD, RJ
1-FH (3' BOC)

EXIST ROW

PROP 12" WL

3'BOC (TYP)

ANTOINE DR.

℄ ANTOINE DR.

MATCH LINE STA 193+50

MATCH LINE STA 198+00

PROP STM SWR (SEE NOTE 3)

PROP 119 LF 21" SAN SWR @ 0.13%

NW164036A
REMOVE & DISPOSE EXIST SAN SWR MH

PROP SAN SWR
4' DIA (MH F18)
STA 194+66.39, 13.94 RT
MH RIM EL= 75.11

ABANDON EXIST 18" SAN SWR IN PLACE

PROP 205 LF 21" SAN SWR @ 0.13%

NW164036
REMOVE & DISPOSE EXIST SAN SWR MH

PROP SAN SWR
4' DIA (MH F19)
STA 196+69.12, 13.91 RT
MH RIM EL= 75.38

PROP 131 LF 21" SAN SWR @ 0.13%

EXIST ROW

LEGEND

- PROPOSED SAN SWR
- PROPOSED WATER LINE
- EXISTING WATER LINE
- EXIST SAN SWR
- RESTRAINED JOINTS PIPE
- CRITICAL LOCATION
- ABANDON EXIST SAN SWR
- 6" SAN SWR LEAD WITH STACK

NOTE:
REFER TO SHEET 15 OF 16 FOR WATER AND SANITARY NOTES.

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WATER & SANITARY IMPROVEMENTS STA 193+50 TO STA 198+00

SHEET 9 OF 16

WBS NUMBER	N-100030-0GEC-3
DRAWING SCALE	AS NOTED
CITY OF HOUSTON PM	ROWAIDAH AYOUB
SHEET NO.	434 OF 718

FOR CITY OF HOUSTON USE ONLY

78 76 74 72 70 68 66 64 62 60

MATCH LINE STA 193+50

MATCH LINE STA 198+00

193+50 194+00 195+00 196+00 197+00 198+00

cl-pvmt
e-row
e-curb

4' DEPTH OF COVER

exist. 12" water ⓦ
exist. 24" stm
exist. 30" stm
exist. 18" san
exist. 36" stm

PROP 12" PVC WATER LINE

PROP 6" PVC FH BRANCH

san mh
top 76.21
unable to open rusty

san mh
top 76.30
18" n-fl 65.98
18" s-fl 65.97

PROP STM SWR (SEE NOTE 3)

PROP 119 LF 21" SAN SWR @ 0.13%

FL=60.92

PROP SAN SWR
4' DIA (MH F18)
STA 194+66.39, 13.94 RT
FL EL= 61.07 (N&S)

PROP 205 LF 21" SAN SWR @ 0.13%

PROP SAN SWR
4' DIA (MH F19)
STA 196+69.12, 13.91 RT
FL EL= 61.34 (N&S)

PROP 131 LF 21" SAN SWR @ 0.13%

FL=61.50

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Design Filename: Y:\2017012 Antoine North Paving and Drainage\MicroStation\95% SET-CAD DESIGN FILES_03_07_2025\P&P Sheets\San Swe\010-P&P_Antoine_SAN.dgn

MATCH LINE STA 198+00

MATCH LINE STA 202+50

REMOVE & SALVAGE EXISTING FH

1-6"X12" TEE, RJ
1-6" GV & BOX
1-6" FH LEAD, RJ
1-FH (3' BOC)

ABANDON EXIST 12" WATER LINE & TRANSFER SERVICE CONNECTION TO PROP 12" WATER LINE

EXIST ROW

PROP 12" WL

3' BOC (TYP)

9'

10'

CONCRETE PAVING

ANTOINE DR.

PROP STM SWR (SEE NOTE 3)

+00

199+00

200+00

℄ ANTOINE DR.

201+00

202+00

PROP 215 LF 21" SAN SWR

PROP 235 LF 21" SAN SWR

EXIST ROW

PROP SAN SWR
4' DIA (MH F20) W/VENT
STA 200+15, 13.93 RT
MH RIM EL= 75.57

NW164037
REMOVE & DISPOSE
EXIST SAN SWR MH

ABANDON EXIST
18" SAN SWR
IN PLACE

LEGEND

- SAN — PROPOSED SAN SWR
- W — PROPOSED WATER LINE
- WL — EXISTING WATER LINE
- SAN — EXIST SAN SWR
- RESTRAINED JOINTS PIPE
- CRITICAL LOCATION
- ABANDON EXIST SAN SWR
- 6" SAN SWR LEAD WITH STACK

NOTE:
REFER TO SHEET 15 OF 16 FOR WATER AND SANITARY NOTES.

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

78 76 74 72 70 68 66 64 62 60

198+00 199+00 200+00 201+00 202+00 202+50

DEPTH OF COVER 4'

2' MIN CLR

PROP 12" PVC WATERLINE

PROP 6" PVC FH BRANCH

san mh
top 76.52
18" i-fl 66.48
18" i-fl 66.50

PROP STM SWR (SEE NOTE 3)

PROP 215 LF 21" SAN SWR @ 0.13%

FL=61.50

PROP SAN SWR 4' DIA (MH F20) W/VENT
STA 200+15, 13.93 RT
FL EL=61.78 (N&S)

PROP 235 LF 21" SAN SWR @ 0.13%

FL=62.09

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WATER & SANITARY IMPROVEMENTS STA 198+00 TO STA 202+50

SHEET 10 OF 16

WBS NUMBER	N-100030-0GEC-3
DRAWING SCALE	AS NOTED
CITY OF HOUSTON PM	ROWAIDAH AYOUB
SHEET NO.	435 OF 718

FOR CITY OF HOUSTON USE ONLY

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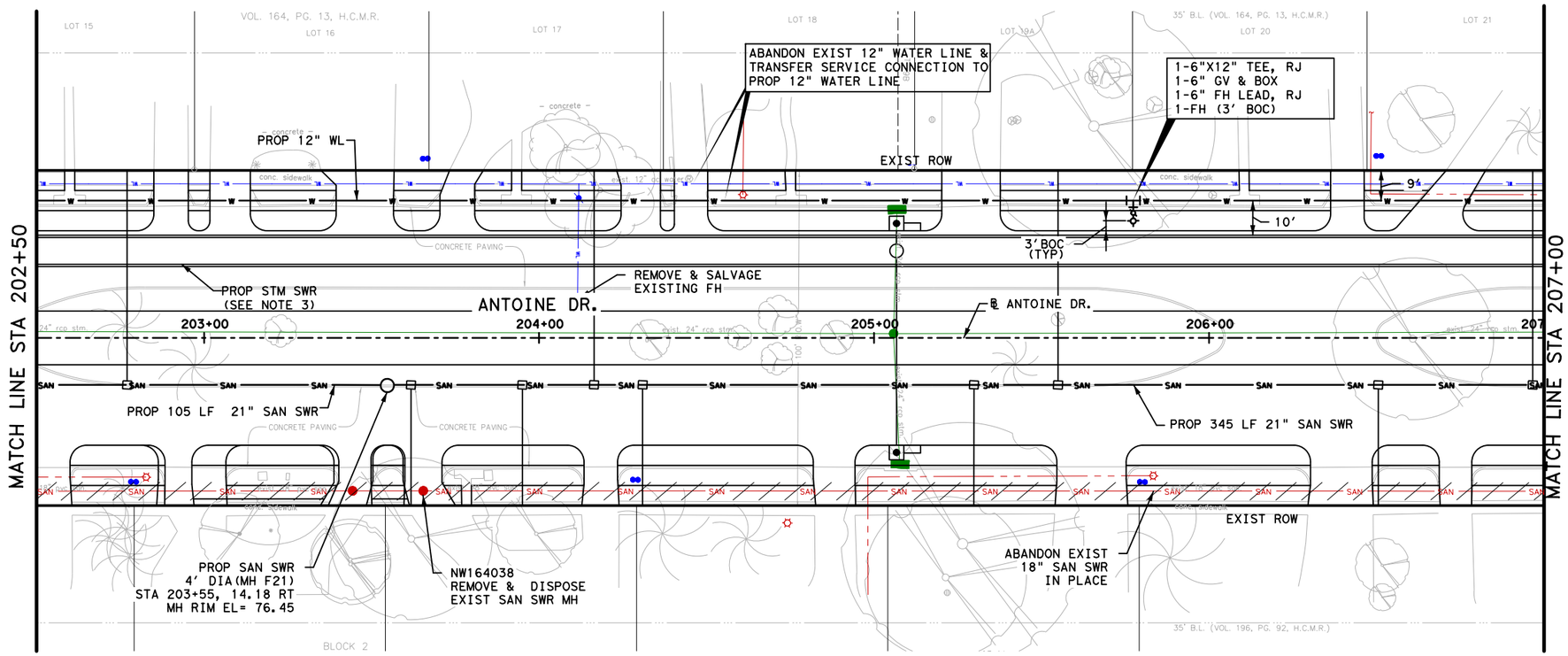


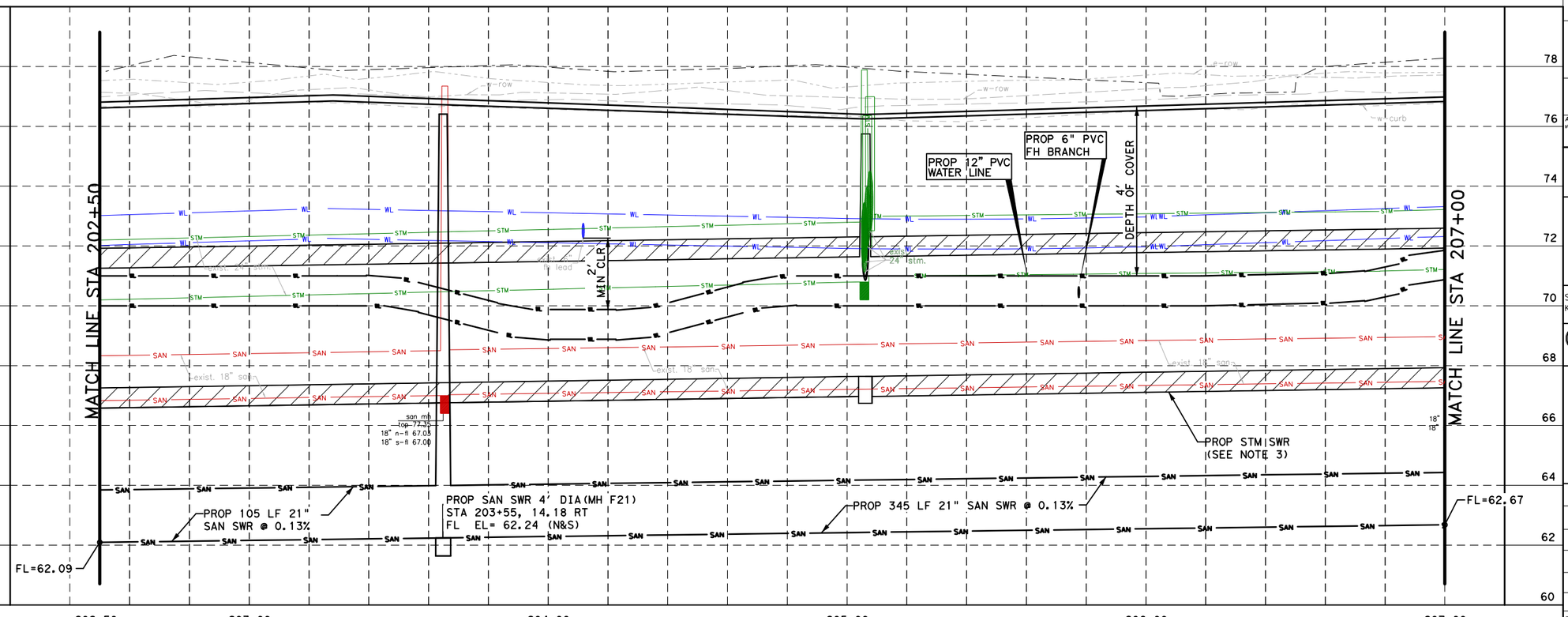
LEGEND

- SAN — PROPOSED SAN SWR
- W — PROPOSED WATER LINE
- WL — EXISTING WATER LINE
- SAN — EXIST SAN SWR
- RESTRAINED JOINTS PIPE
- CRITICAL LOCATION
- ABANDON EXIST SAN SWR
- 6" SAN SWR LEAD WITH STACK

NOTE:
REFER TO SHEET 15 OF 16 FOR WATER AND SANITARY NOTES.

N

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET



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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WATER & SANITARY IMPROVEMENTS STA 202+50 TO STA 207+00

SHEET 11 OF 16

WBS NUMBER	N-100030-0GEC-3
DRAWING SCALE	AS NOTED
CITY OF HOUSTON PM	ROWAIDAH AYOUB
SHEET NO.	436 OF 718

FOR CITY OF HOUSTON USE ONLY

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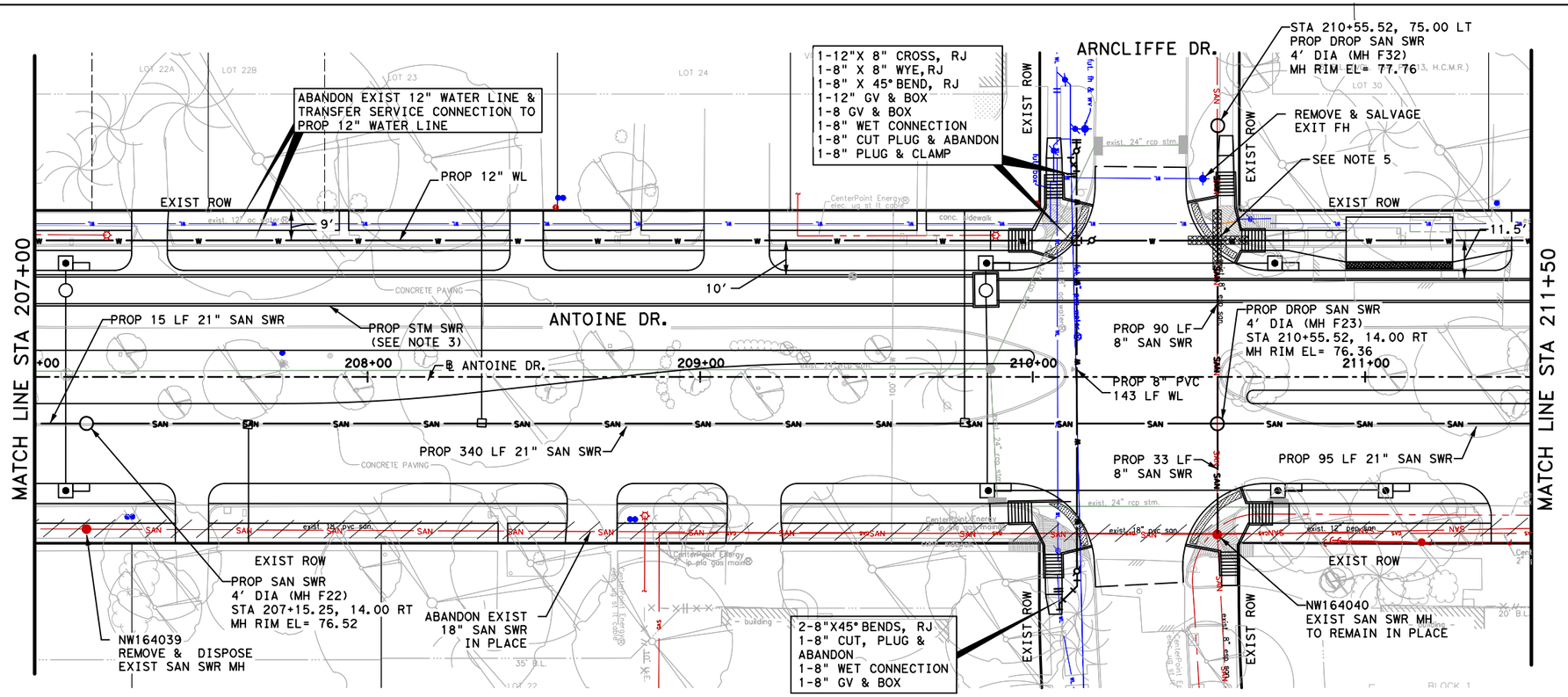

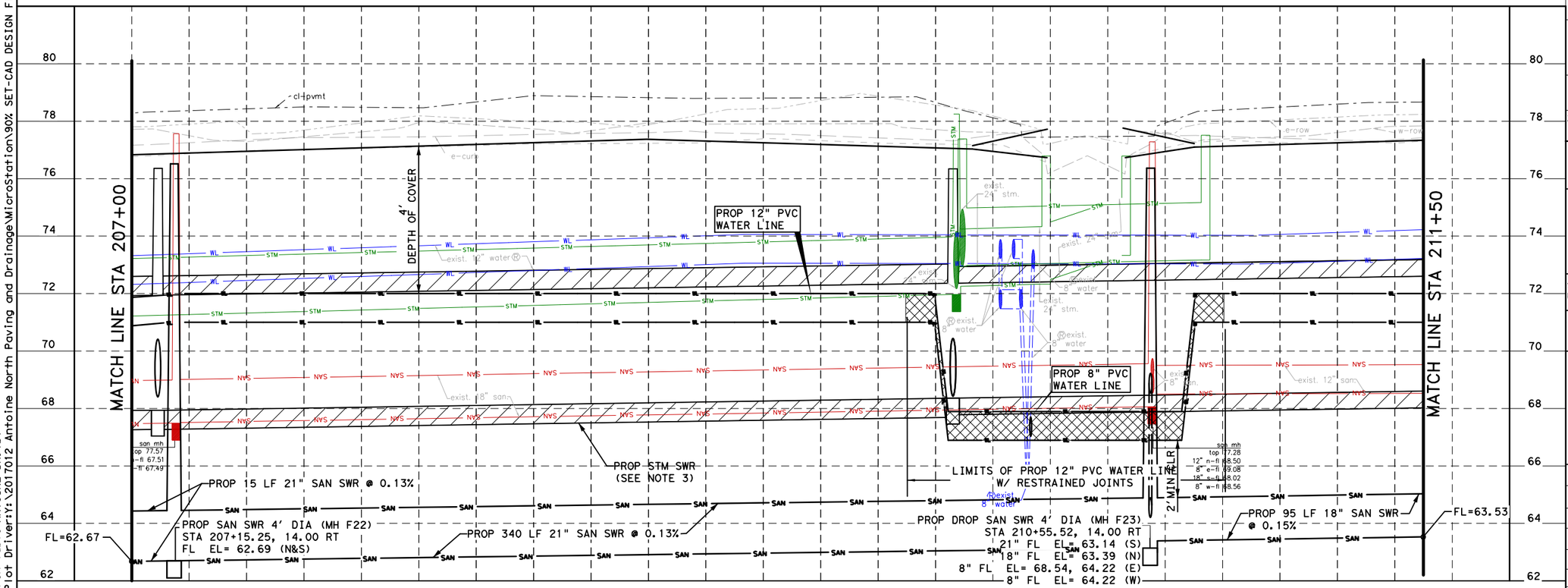

LEGEND

- SAN — PROPOSED SAN SWR
- W — PROPOSED WATER LINE
- WL — EXISTING WATER LINE
- SAN — EXIST SAN SWR
- RESTRAINED JOINTS PIPE
- CRITICAL LOCATION
- ABANDON EXIST SAN SWR
- 6" SAN SWR LEAD WITH STACK

NOTE:
REFER TO SHEET 15 OF 16 FOR WATER AND SANITARY NOTES.

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

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0' 40' 80'
SCALE IN FEET

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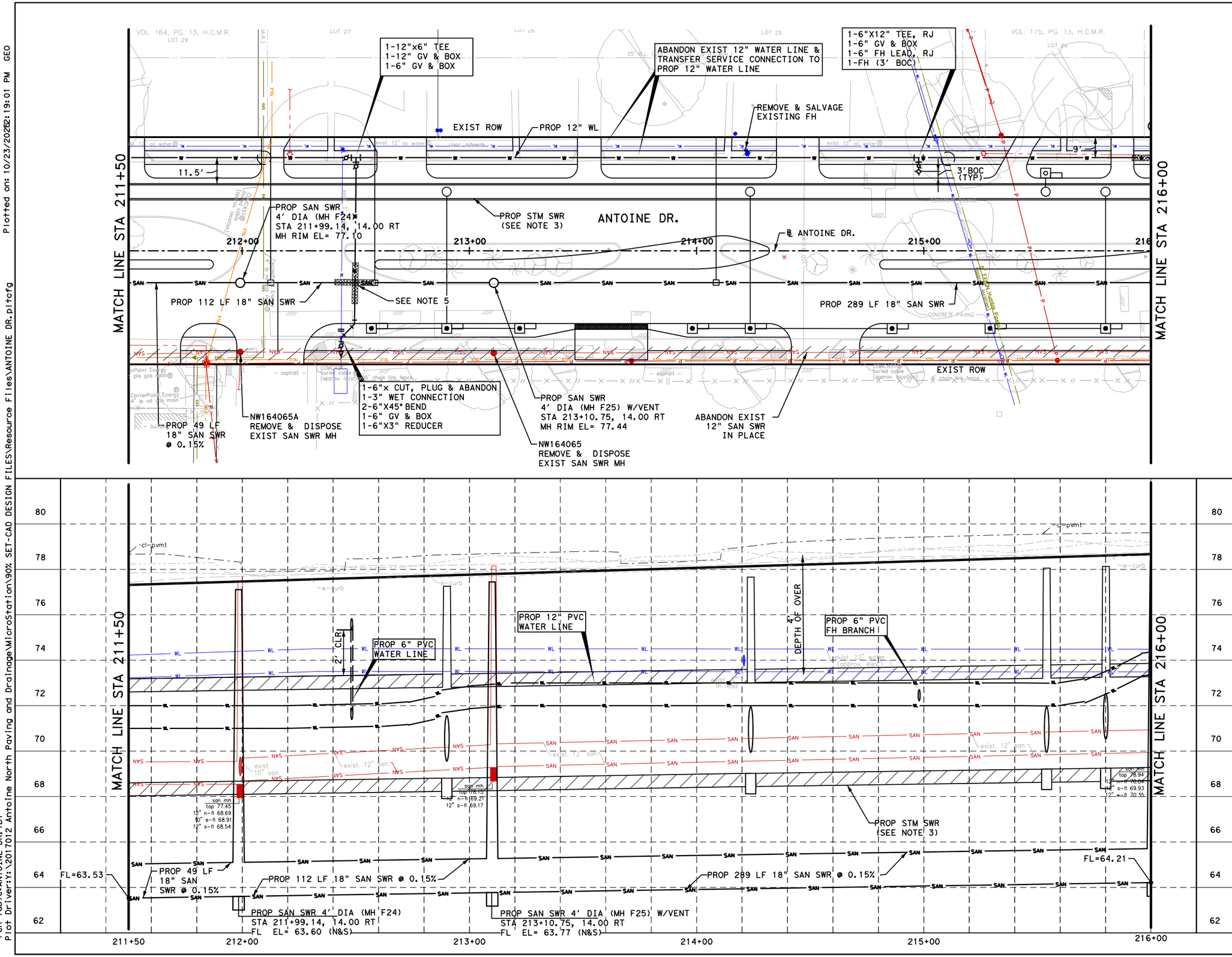
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WATER & SANITARY IMPROVEMENTS STA 207+00 TO STA 211+50

SHEET 12 OF 16

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 437 OF 718	



LEGEND

- PROPOSED SAN SWR
- PROPOSED WATER LINE
- EXISTING WATER LINE
- EXIST SAN SWR
- RESTRAINED JOINTS PIPE
- CRITICAL LOCATION
- ABANDON EXIST SAN SWR
- 6" SAN SWR LEAD WITH STACK

NOTE:
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HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WATER & SANITARY IMPROVEMENTS STA 211+50 TO STA 216+00

SHEET 13 OF 16

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-OGEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 438 OF 718	

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Plotted on: 10/23/2025 2:19:02 PM GEO
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PROP DROP SAN SWR
4' DIA (MH F31)
STA 216+00.14, 55.00 LT
MH RIM EL= 78.81

SEE NOTE 5

1-12" X6" TEE, RJ
1-12" GV & BOX
1- 6" GV & BOX
1- 6" WET CONNECTION
1- 6" CUT, PLUG & ABANDON

ABANDON EXIST 12" WATER LINE & TRANSFER SERVICE CONNECTION TO PROP 12" WATER LINE

PROP DROP SAN SWR
4' DIA (MH F30)
STA 218+70, 72.00 LT
MH RIM EL= 78.23

PROP 12" WL

SEE NOTE 5

GREEN FALLS DR.

1-8" x 45° WYE, RJ
2-8" GV & BOX
1-8" PLUG & CLAMP
1-8" x45° BENDS, RJ
1-8" CUT PLUG &ABANDON
1-8" WET CONNECTION
1-12"X8" TEE

REMOVE & SALVAGE EXISTING FH

MATCH LINE STA 216+00

MATCH LINE STA 220+50

PROP 69 LF
12" SAN SWR

PROP STM SWR
(SEE NOTE 3)

ANTOINE DR.

PROP 84 LF
8" SAN SWR

℄ ANTOINE DR.

PROP 56 LF 18" SAN SWR

PROP 215 LF 18" SAN SWR

PROP 179 LF 18" SAN SWR

PROP SAN SWR
4' DIA (MH F26)
STA 216+01.52, 14.00 RT
MH RIM EL= 78.21

NW164066
REMOVE & DISPOSE
EXIST SAN SWR MH

PROP SAN SWR
4' DIA (MH F27)
STA 218+15.12, 14.00 RT
MH RIM EL= 78.00

NW164073A
REMOVE & DISPOSE
EXIST SAN SWR MH

PROP SAN SWR
4' DIA (MH F28)
STA 218+70.78, 14.00 RT
MH RIM EL= 77.82

NW164073
REMOVE & DISPOSE
EXIST SAN SWR MH

ABANDON EXIST
12" SAN SWR
IN PLACE

LEGEND

- PROPOSED SAN SWR
- PROPOSED WATER LINE
- EXISTING WATER LINE
- EXIST SAN SWR
- RESTRAINED JOINTS PIPE
- CRITICAL LOCATION
- ABANDON EXIST SAN SWR
- 6" SAN SWR LEAD WITH STACK

NOTE:
REFER TO SHEET 15 OF 16 FOR WATER AND SANITARY NOTES.

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

PROP 6" PVC WATER LINE

PROP 12" PVC WATER LINE

DEPTH OF COVER 4'

2'MIN CLR

PROP 8" PVC WATER LINE

PROP 12" PVC WATER LINE

PROP STM SWR
(SEE NOTE 3)

PROP 214 LF 18" SAN SWR @ 0.15%

PROP 56 LF 18"
SAN SWR @ 0.15%

PROP 179 LF 18" SAN SWR @ 0.15%

FL=64.87

PROP SAN SWR 4' DIA (MH F26)
STA 216+01.52, 14.00 RT
FL EL= 64.21 (N&S)
12" FL EL= 64.71 (W)

PROP SAN SWR 4' DIA (MH F27)
STA 218+15.12, 14.00 RT
FL EL= 64.53 (N&S)

LIMITS OF PROP 12" PVC WATER LINE W/ RESTRAINED JOINTS

PROP SAN SWR 4' DIA (MH F28)
STA 218+70.78, 14.00 RT
FL EL= 64.61 (N&S)
8" FL EL= 65.44 (W)

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TEL.No.: 713-706-4412

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KUO & ASSOCIATES, INC.

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FRANK C. MBACHU
108363
10/21/2025
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FCM ENGINEERING
Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WATER & SANITARY IMPROVEMENTS STA 216+00 TO STA 220+50

SHEET 14 OF 16

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 439 OF 718	

Plotted on: 10/23/2025 2:19:02 PM GEO
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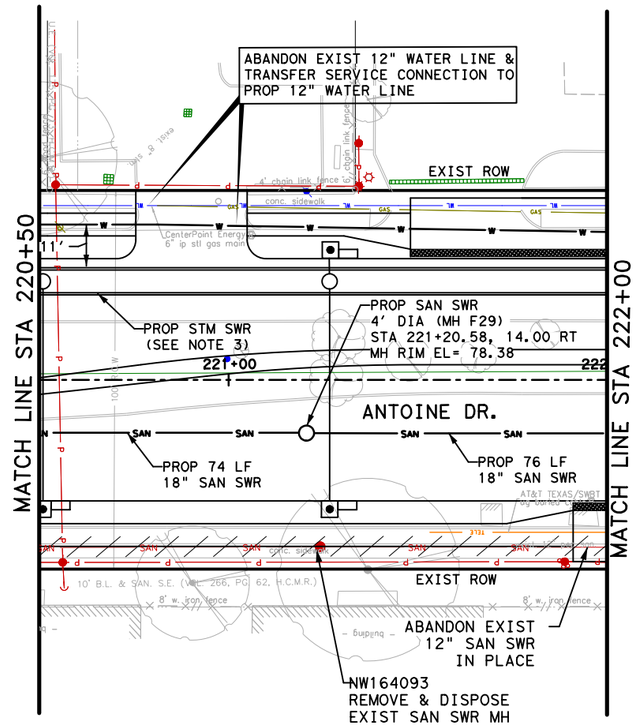
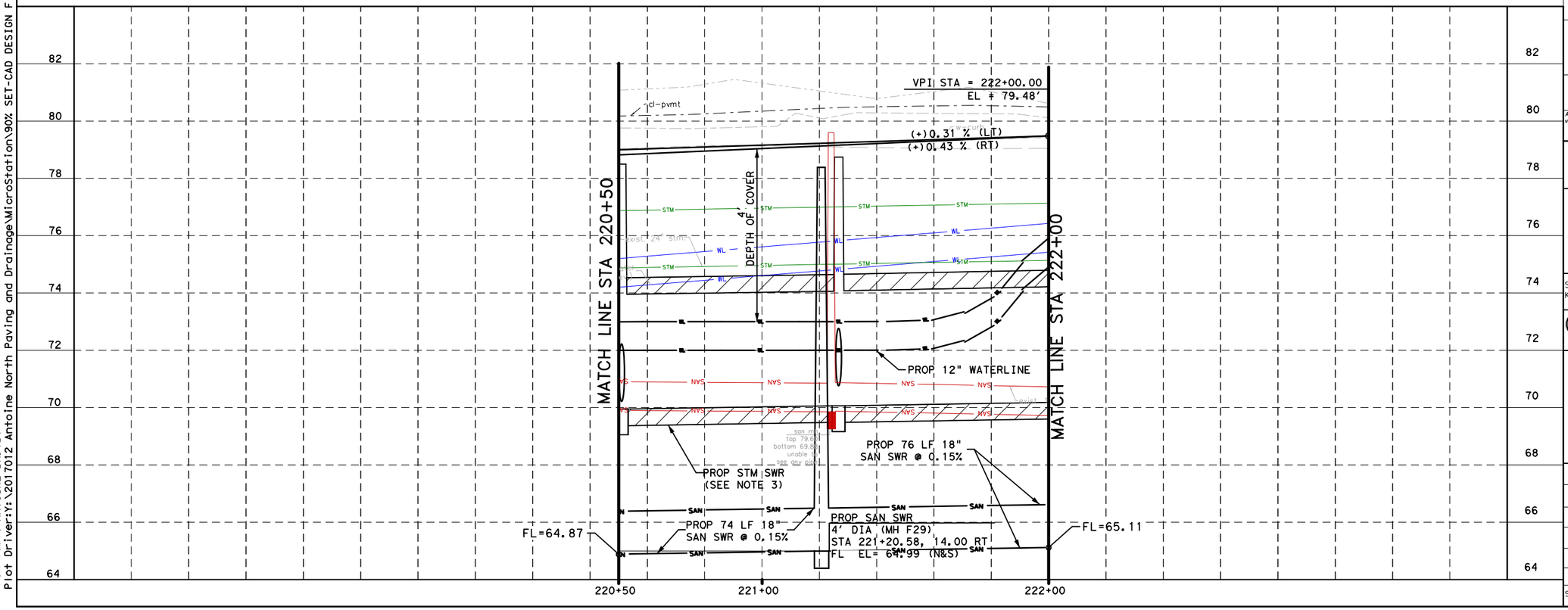
NOTES

1. MAINTAIN WATER SERVICES TO ALL CUSTOMER, FIRE HYDRANTS, AND INTERCONNECTIONS AT ALL TIME PROVIDE TEMPORARY CONNECTION AS NECESSARY FOR CONSTRUCTIONS.
2. ALL CONNECTIONS TO EXISTING WATER LINES TO BE MADE WITHIN ROW LIMITS.
3. REFER TO STM SWR SHEETS FOR MORE IMFORMATION.
4. ALL WATER METER BOXES WITHIN SIDEWALK SHALL BE REPLACED WITH CONCRETE BOX PER CITY STANDARDS.
5. PLACE ONE FULL SECTION (MIN. 18') OF PROPOSED SAN SWR/WL CENTERED AT WL/SAN SWR CROSSING PROVIDE RESTRAINED JOINTS ON SS/WL SPACED AT LEAST 9 FT HORIZONTALLY FROM CL OF WL/SS.
6. REMOVE AND REPLACE ONE FULL SECTION OF EXISTING SANITARY SEWER WITH PRESSURE RATED PIPE CENTERED AT STORM SEWER CROSSING. PROVIDE RESTRAINED JOINTS.
7. ADJUST ALL SANITARY SEWER MANHOLES TO GRADE UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.





LEGEND

- PROPOSED SAN SWR
- PROPOSED WATER LINE
- EXISTING WATER LINE
- EXIST SAN SWR
- RESTRAINED JOINTS PIPE
- CRITICAL LOCATION
- ABANDON EXIST SAN SWR
- 6" SAN SWR LEAD WITH STACK

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

NOTICE:
FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS SIGNATURE DOES NOT FULFILL YOUR OBLIGATION TO CALL 811

VERIFICATION OF PRIVATE UTILITY LINES

Date

CenterPoint Energy natural gas utilities shown. (Gas service lines are not shown). This signature not be used for conflict verification.
Signature valid for six months.

Date

CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY. (This signature verifies existing underground facilities - not to be used for conflict verification)
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Approved for AT&T underground conduit facilities only. Signature Date
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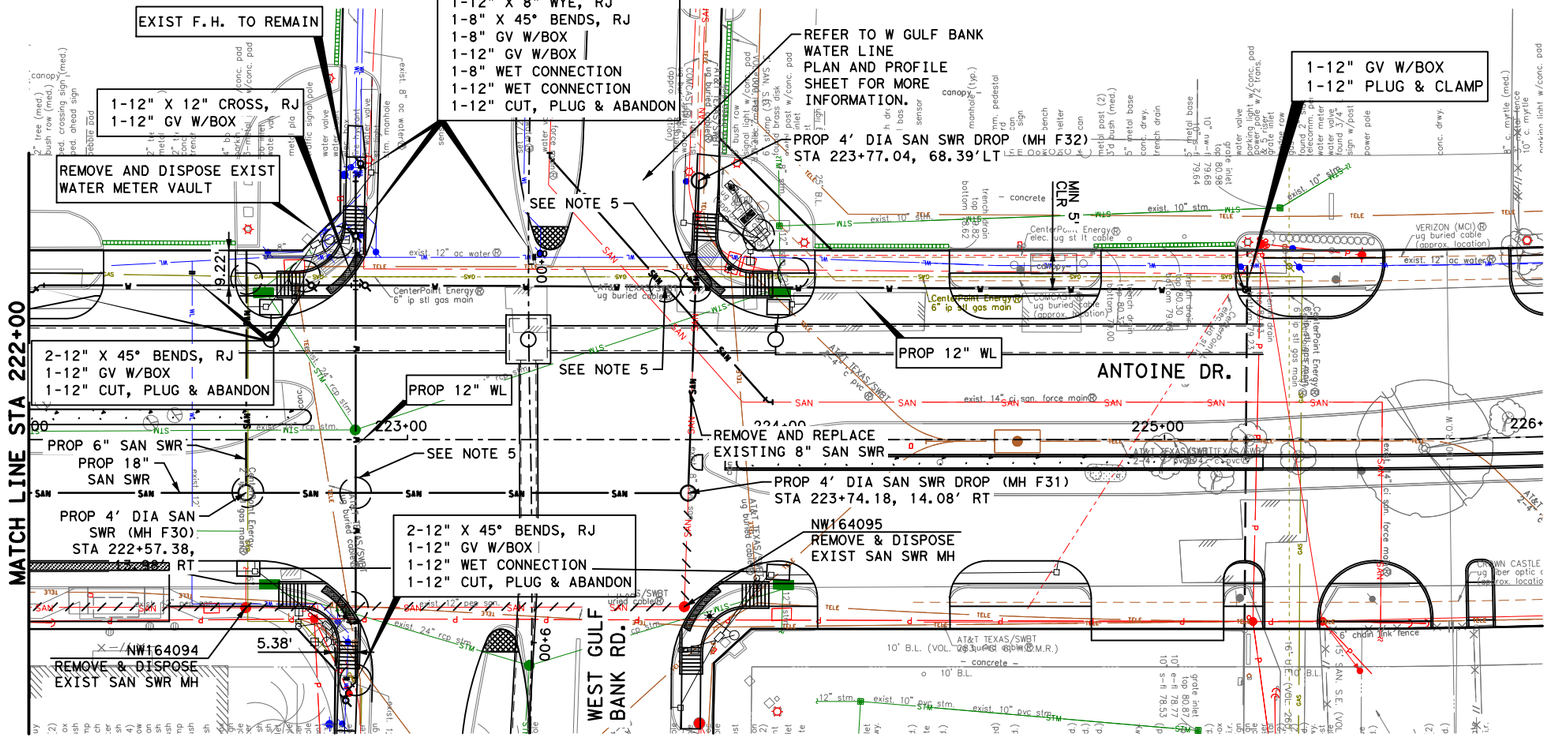
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WATER & SANITARY IMPROVEMENTS STA 220+50 TO 222+00

SHEET 15 OF 16

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 440 OF 718	



LEGEND

- SAN — PROPOSED SAN SWR
- W — PROPOSED WATER LINE
- SAN — EXIST SAN SWR LEADS
- ABANDONED SAN SWR
- D.I.P. W RESTRAINED JOINTS
- CRITICAL LOCATION
- (A) ADJUST TO GRADE
- (B) EXIST WATER LINE TO REMAIN
- (C) EXIST SAN SWR TO REMAIN

NOTES:

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HORZ 0' 40' 80'
VERT 0' 4' 8'
SCALE IN FEET

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Approved for AT&T Texas/SWBT underground conduit facilities only. Date
Note:The AT&T electronic Signature is valid for one year.

Texas Department of Transportation

Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

SURVEYED BY:
KUO & ASSOCIATES, INC.

INTERIM REVIEW ONLY
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KARAM QADDO
125611
10/24/2025
GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WATER LINES PLAN & PROFILE
STA 222+00 TO STA 225+26

SHEET 16 OF 16

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 441 OF 718	

No.	DATE	REVISIONS	APP.

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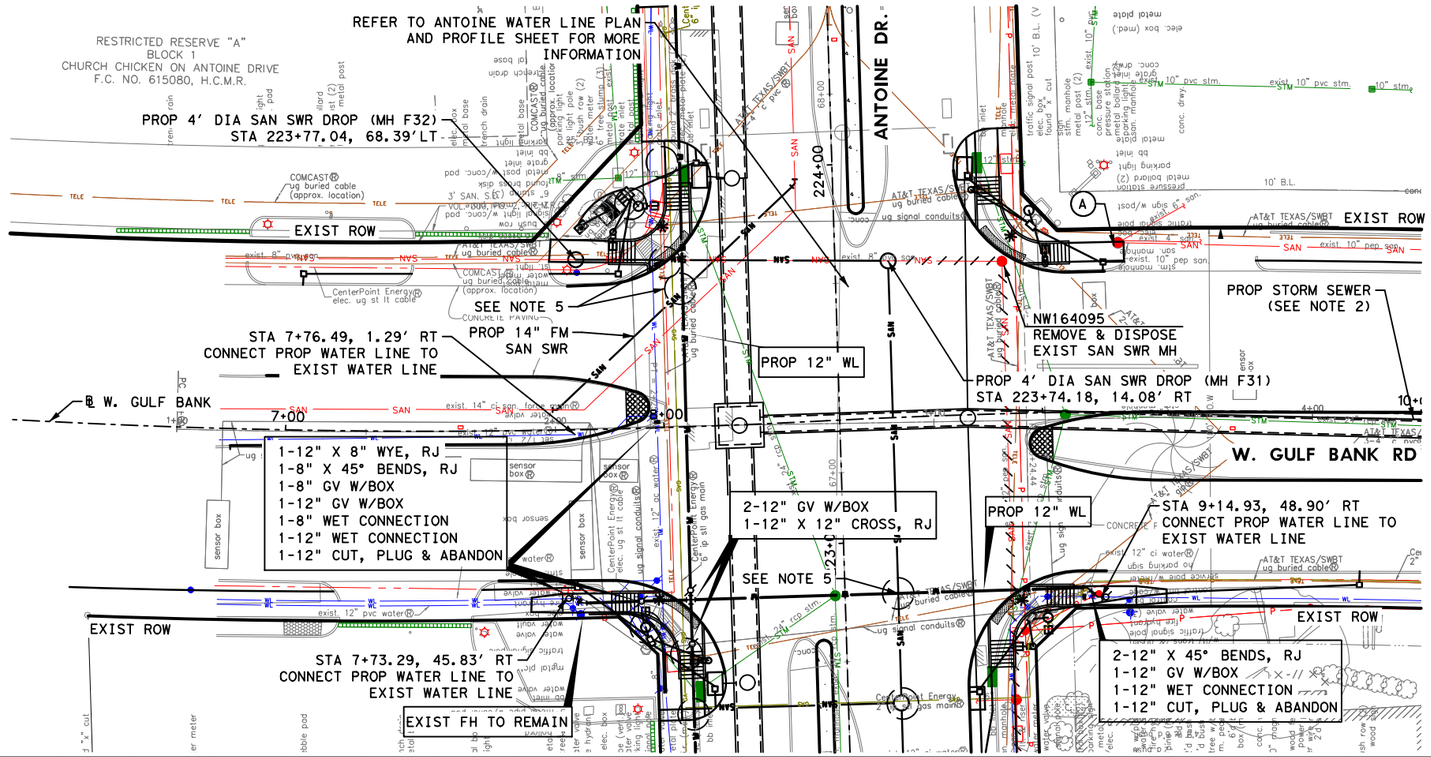

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LEGEND

- SAN — PROPOSED SAN SWR
- W — PROPOSED WATER LINE
- SAN — EXIST SAN SWR LEADS
- ABANDONED SAN SWR
- D.I.P. W RESTRAINED JOINTS
- CRITICAL LOCATION
- (A) ADJUST TO GRADE
- (B) EXIST WATER LINE TO REMAIN
- (C) EXIST SAN SWR TO REMAIN

HORZ 0' 20' 40'
VERT 0' 2' 4'
SCALE IN FEET

No.	DATE	REVISIONS	APP.

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY, #400
HOUSTON, TX 77079

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GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

W. GULF BANK
WATER LINE PLAN & PROFILE
BEGIN PROJECT TO STA 10+00.00

SHEET 1 OF 1

WBS NUMBER	N-100030-0GEC-3
DRAWING SCALE	AS NOTED
CITY OF HOUSTON PM	ROWAIDAH AYOUB
SHEET NO. 442 OF 718	

FOR CITY OF HOUSTON USE ONLY

Plotted on: 10/24/2025 3:10:15 PM michael.guthrie
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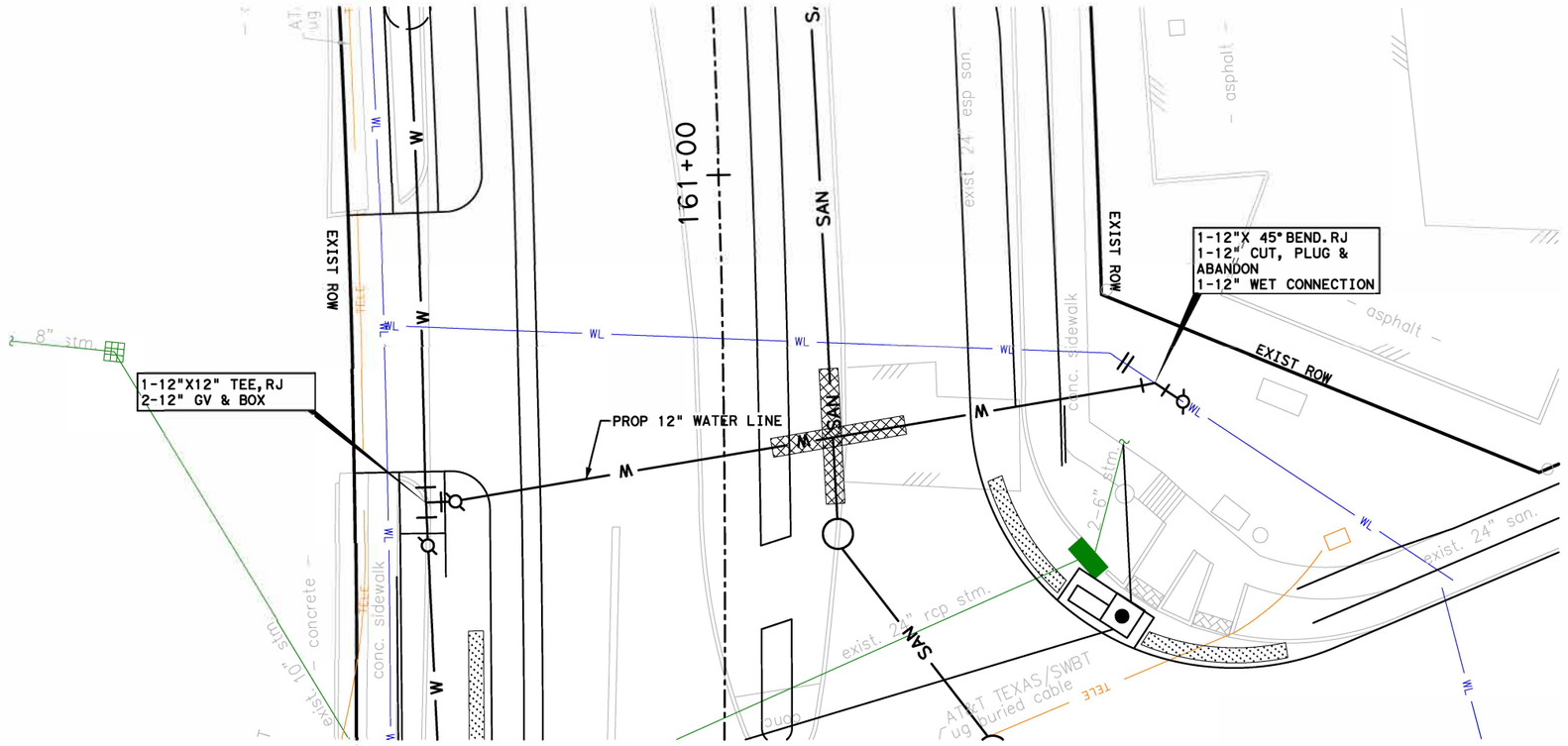

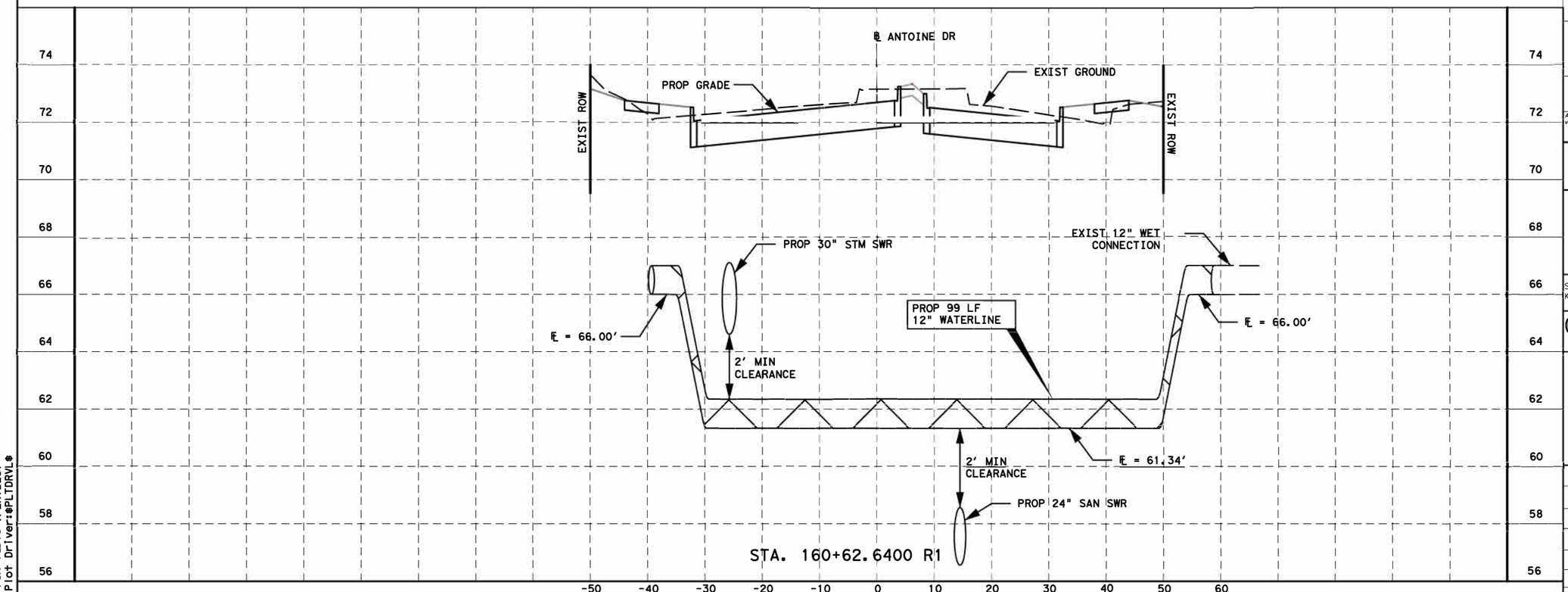

LEGEND

- SAN — PROPOSED SAN SWR
- W — PROPOSED WATER LINE
- WL — EXISTING WATER LINE
- SAN — EXIST SAN SWR
- RESTRAINED JOINTS PIPE
- CRITICAL LOCATION
- ABANDON EXIST SAN SWR
- 6" SAN SWR LEAD WITH STACK

N

HORZ 0' 10' 20'
VERT 0' 2' 4'
SCALE IN FEET

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FCM

DESIGN ENGINEER NAME
FCM ENGINEERS, P.C.
ADDRESS:
3300 S. Gessner Rd.
TEL.No.: 713-706-4412
TX FIRM No.: F-13481

SURVEYED BY:
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FRANK C. MBACHU
108363
10/03/2025
Date

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FCM ENGINEERING
Texas Registered Engineering Firm F-13481

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WATER AND SANITARY LATERALS

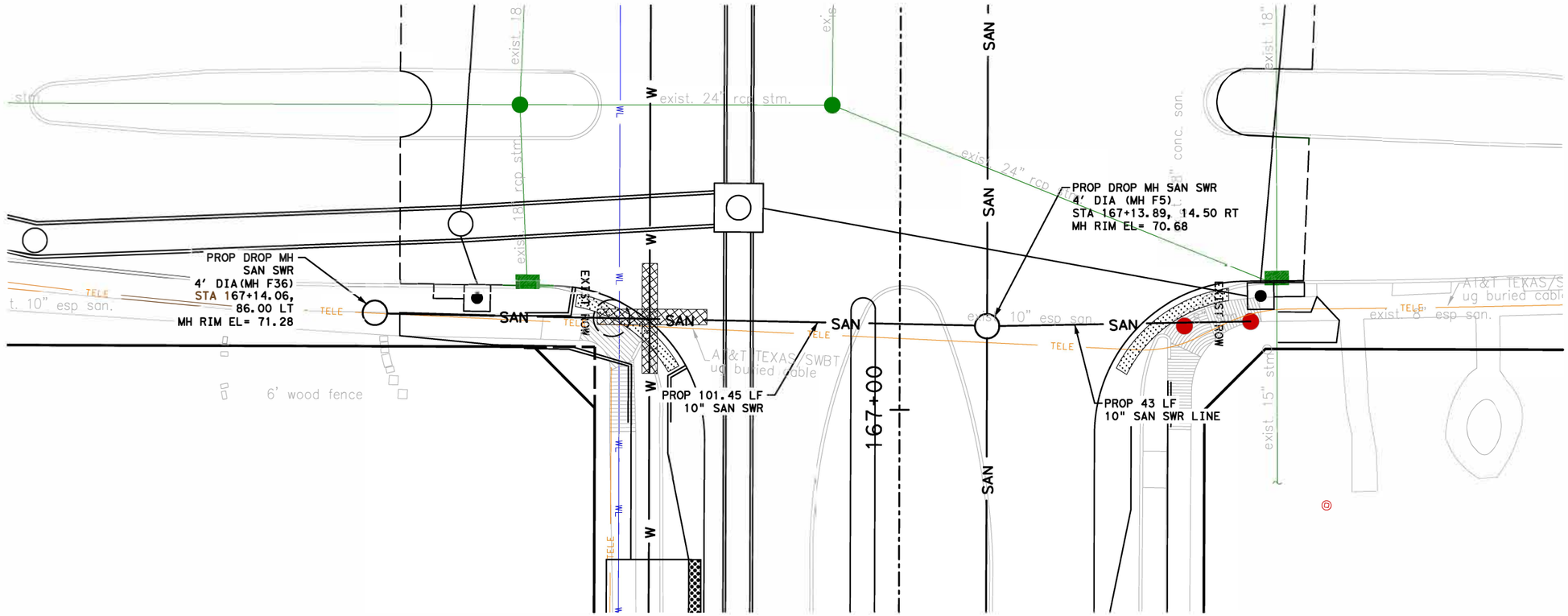
SHEET 1 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 443 OF 718	

Pen Tables: $PENTBLS$
Plot Driver: $PLTDRVL$

Design Filename: $FILEL$

Plotted on: $DATE$ $TIME$ $USER$



LEGEND

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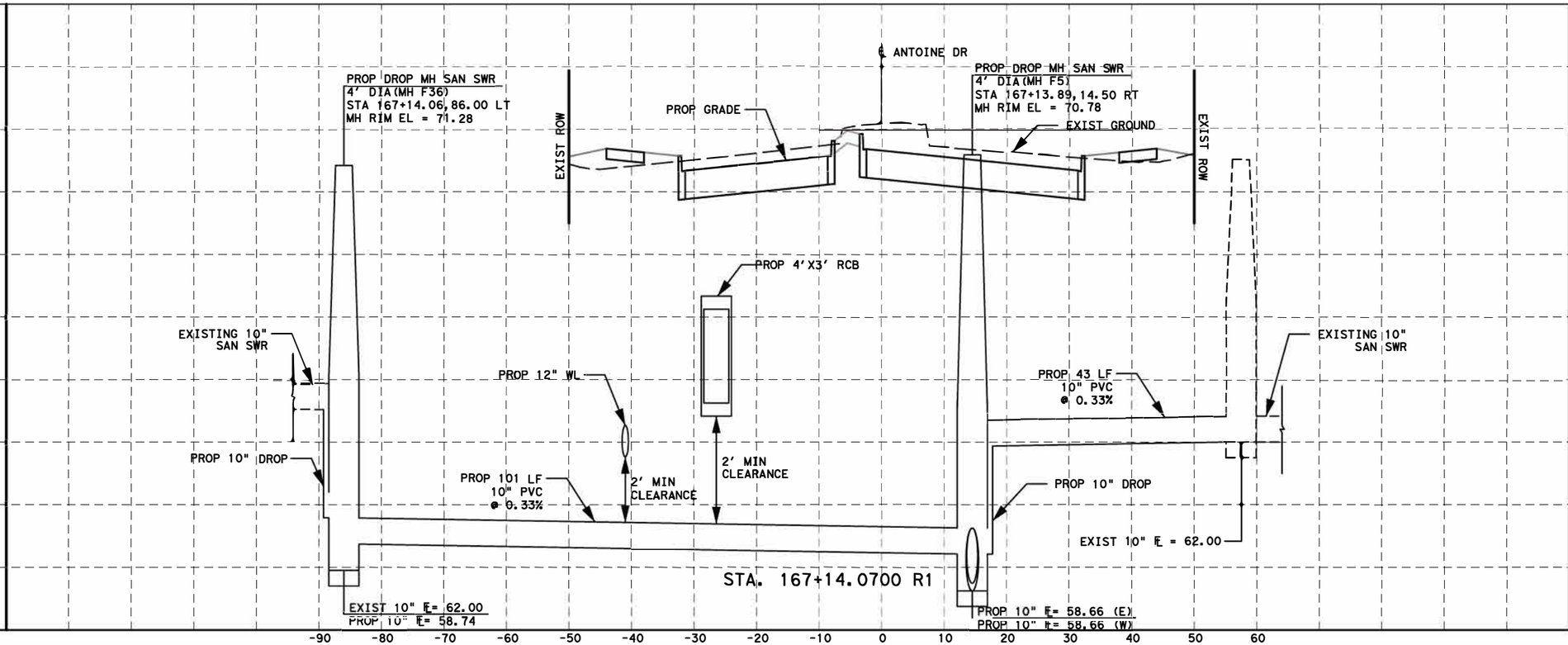
- W — PROPOSED WATER LINE
- WL — EXISTING WATER LINE
- SAN — EXIST SAN SWR
- RESTRAINED JOINTS PIPE
- CRITICAL LOCATION
- SAN — ABANDON EXIST SAN SWR
- 6" SAN SWR LEAD WITH STACK

N

HORZ 0' 10' 20'
VERT 0' 2' 4'
SCALE IN FEET



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TX FIRM No.: F-13481

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WATER AND SANITARY LATERALS

SHEET 2 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 444 OF 718	

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Plot Driver:$PLTDRVL$

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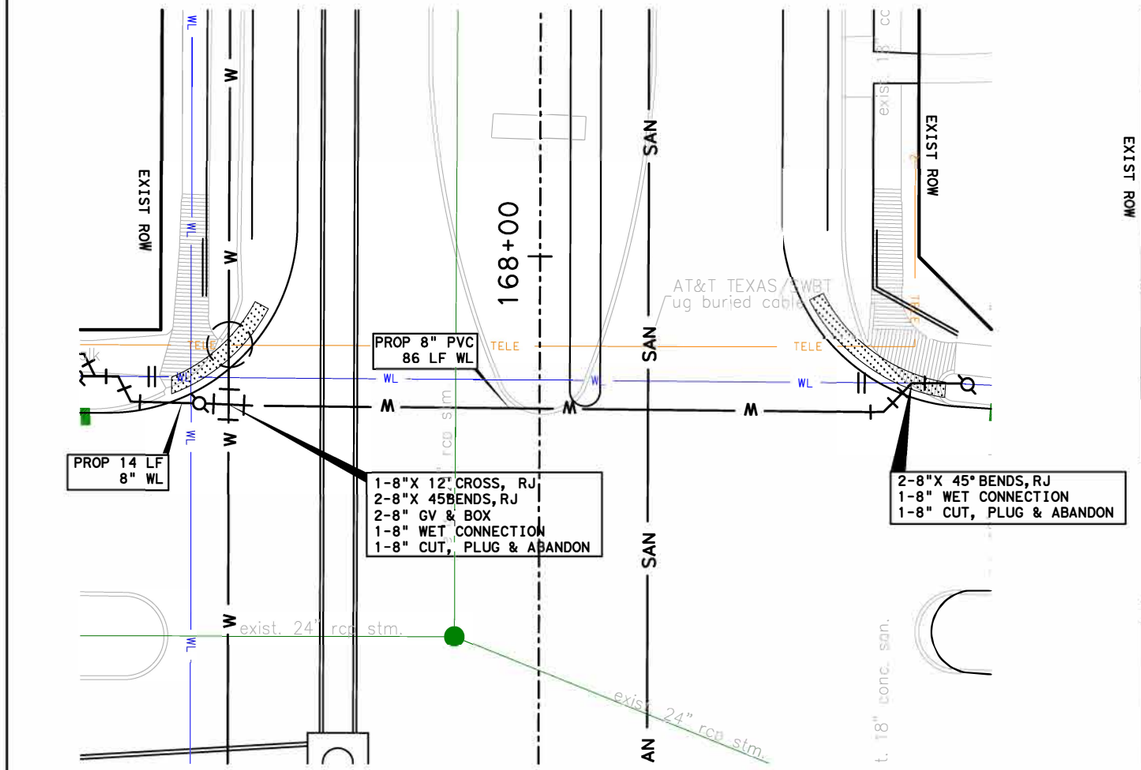

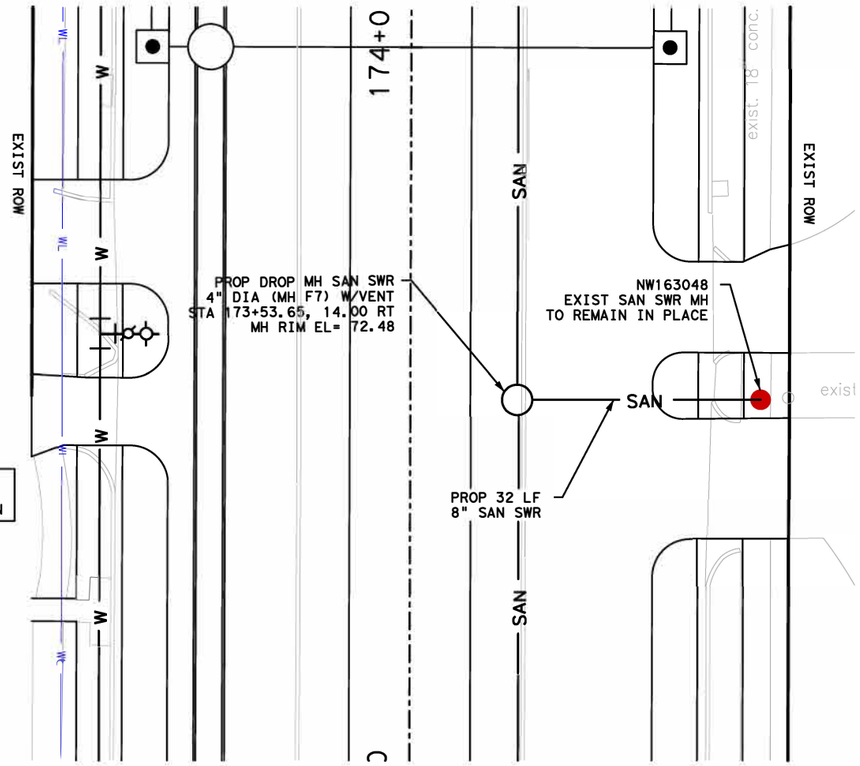

LEGEND

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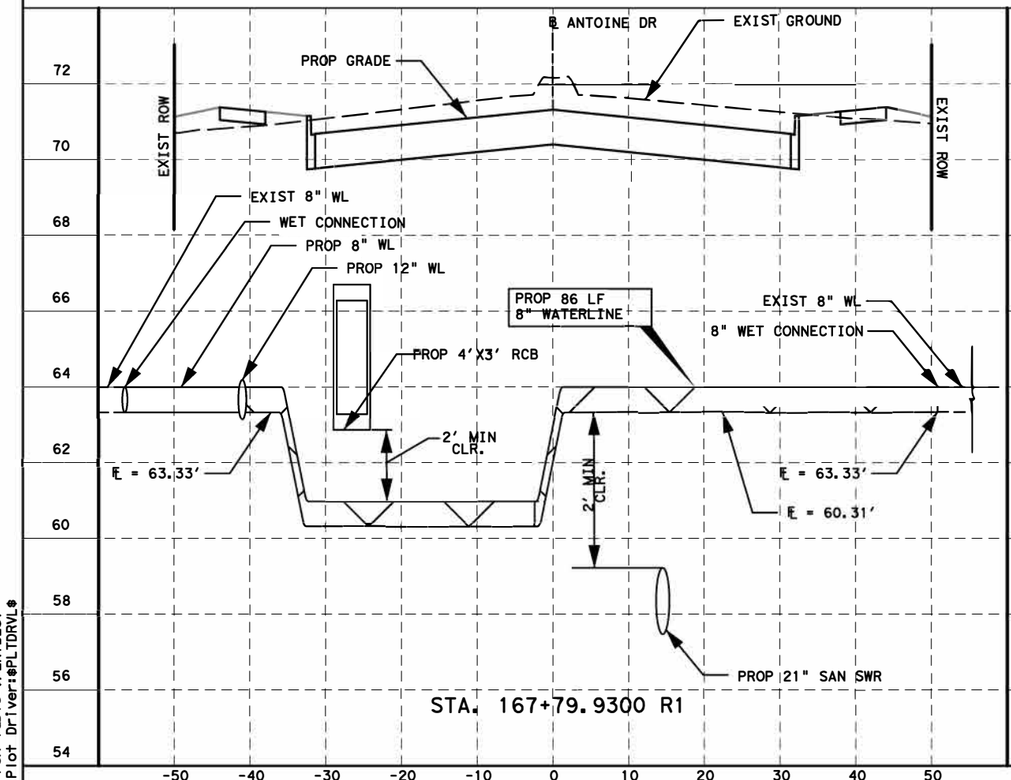
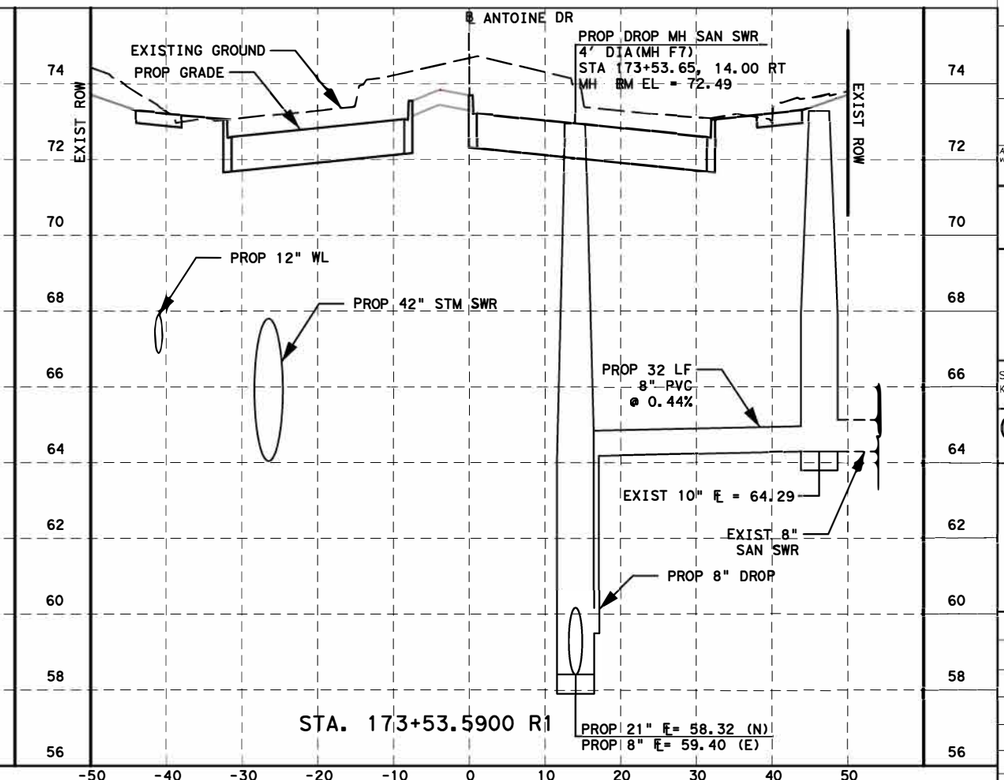
- W — PROPOSED WATER LINE
- WL — EXISTING WATER LINE
- SAN — EXIST SAN SWR
- RESTRAINED JOINTS PIPE
- CRITICAL LOCATION
- SAN — ABANDON EXIST SAN SWR
- 6" SAN SWR LEAD WITH STACK

N

HORZ 0' 10' 20'
VERT 0' 2' 4'
SCALE IN FEET





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DESIGN ENGINEER NAME
FCM ENGINEERS, P.C.
ADDRESS:
1300 S. Gessner Rd.
TEL.No.: 713-706-4412
TX FIRM No.: F-13481

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WATER AND SANITARY LATERALS

SHEET 3 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 445 OF 718	

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Plot Driver: $PLTDRVR$

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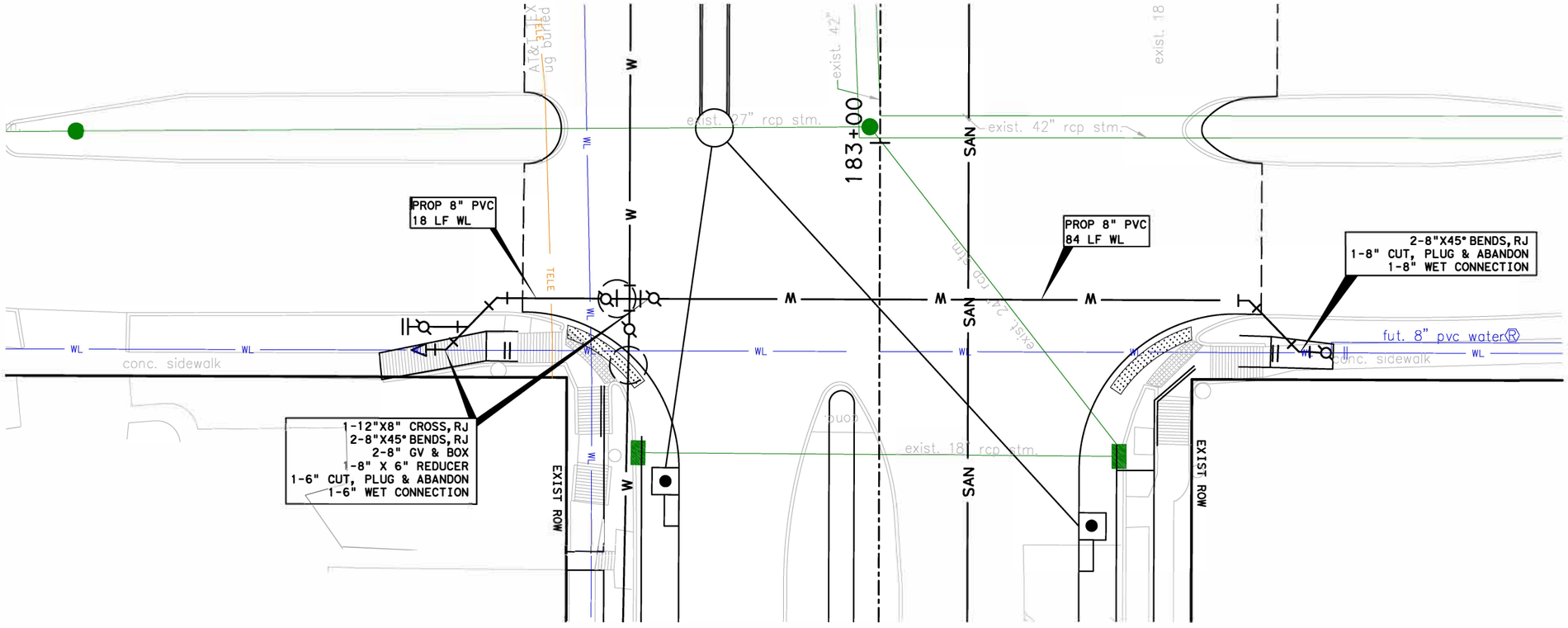
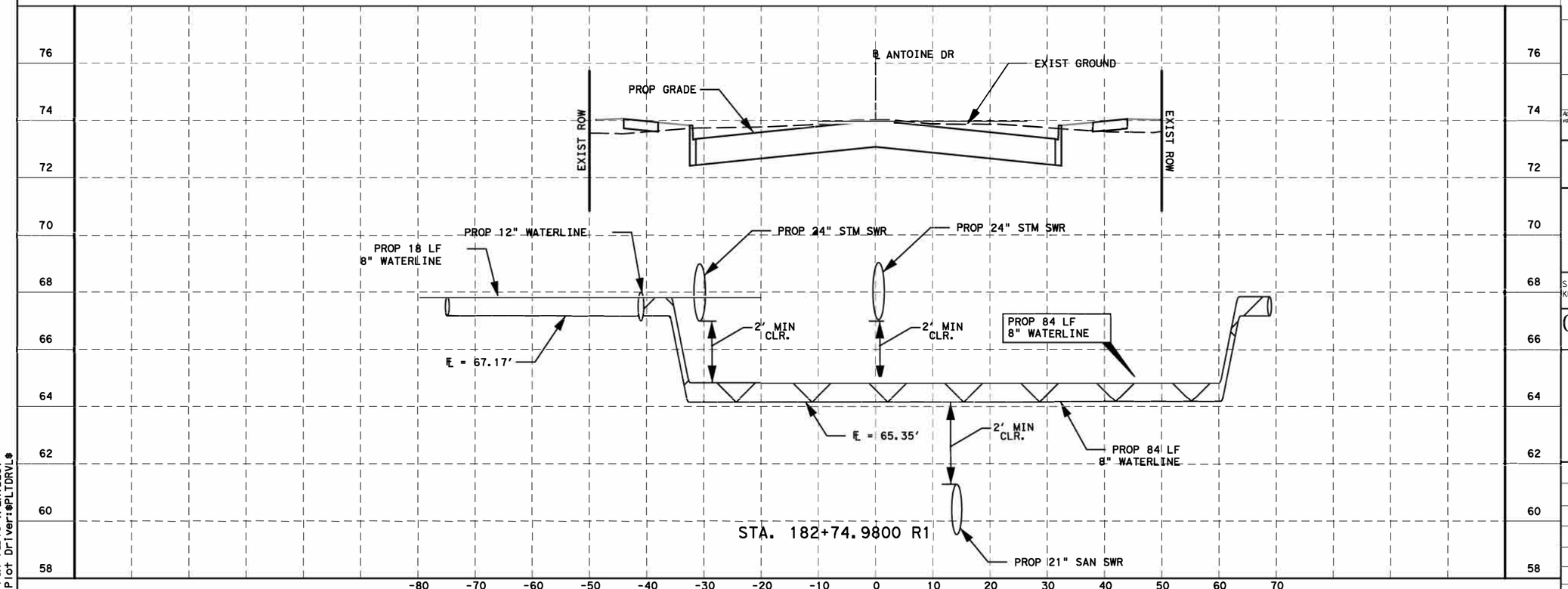


LEGEND

- PROPOSED SAN SWR
- PROPOSED WATER LINE
- EXISTING WATER LINE
- EXIST SAN SWR
- RESTRAINED JOINTS PIPE
- CRITICAL LOCATION
- ABANDON EXIST SAN SWR
- 6" SAN SWR LEAD WITH STACK

N

HORZ 0' 10' 20'
VERT 0' 2' 4'
SCALE IN FEET



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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

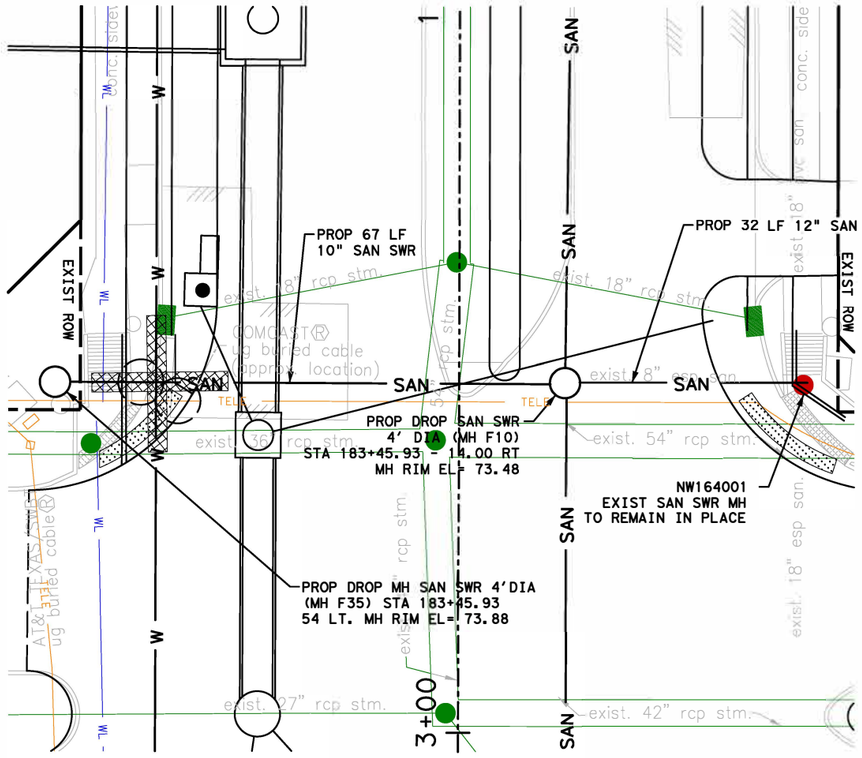
WATER AND SANITARY LATERALS

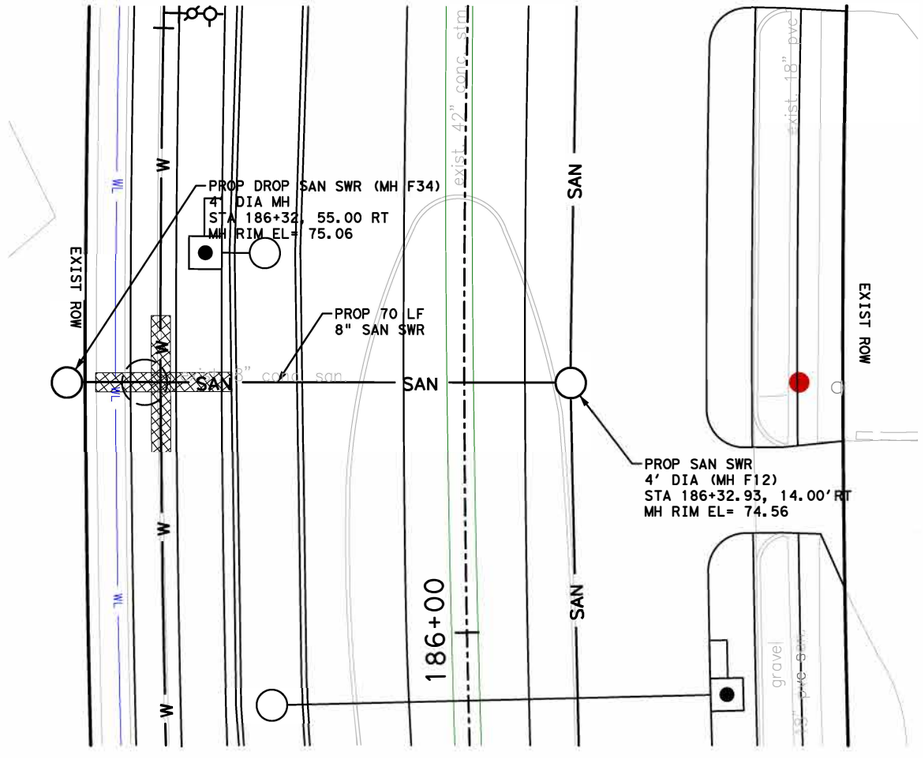
SHEET 4 OF 12

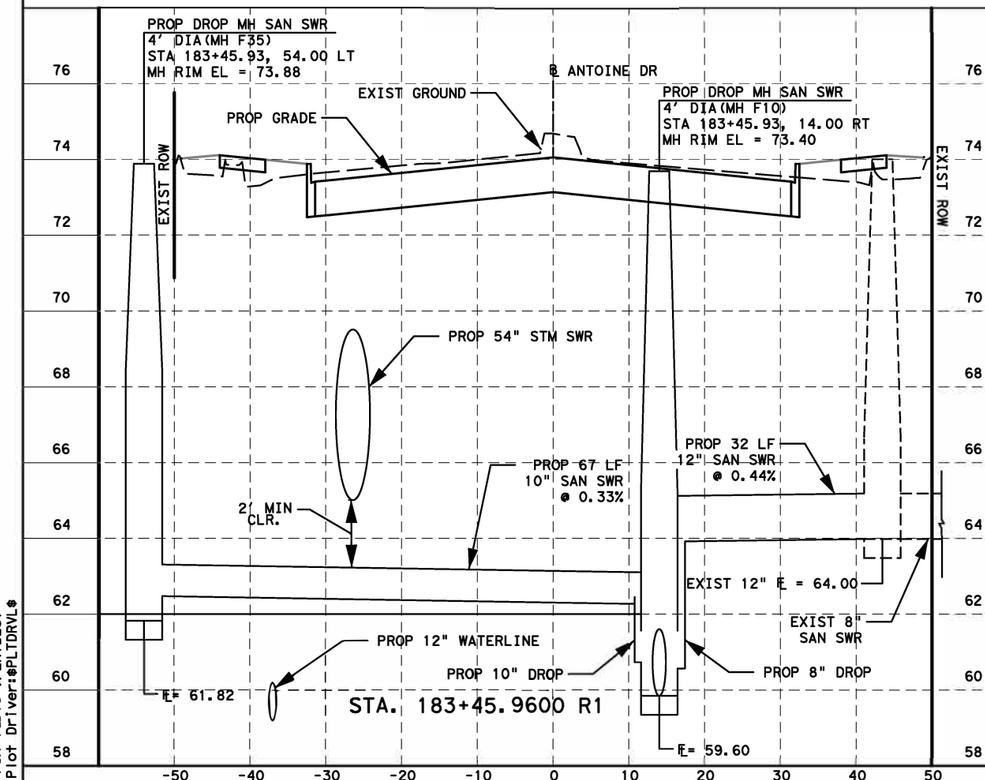
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 446 OF 718	

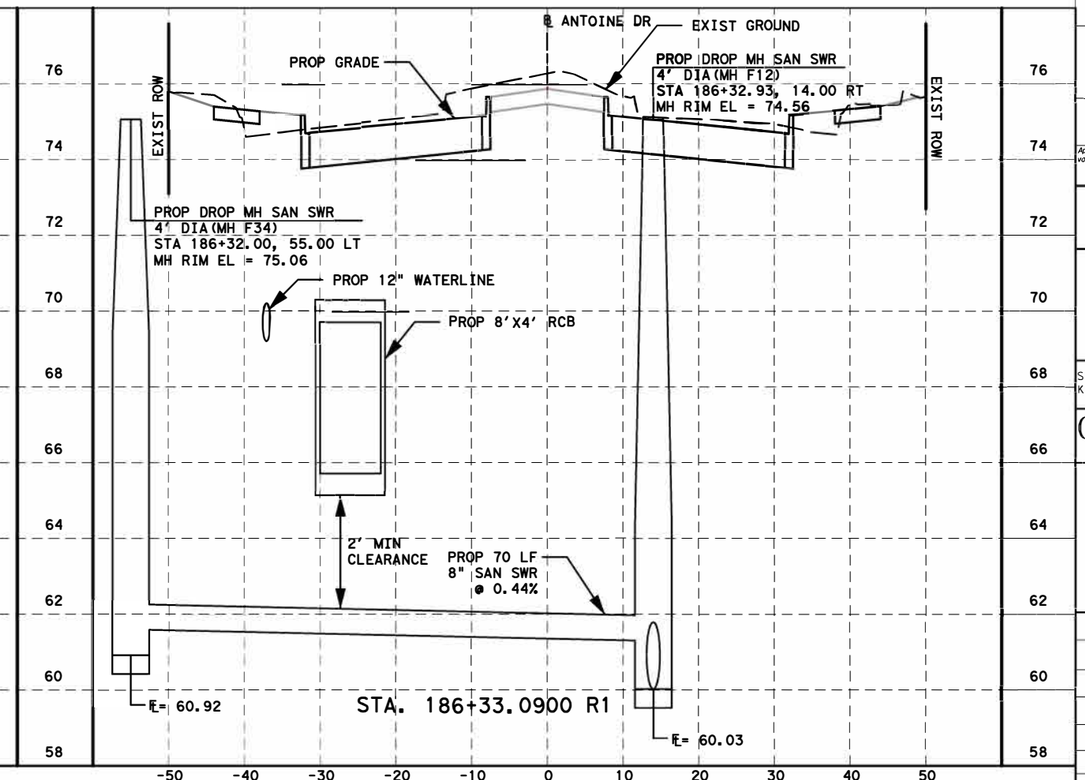
Pen Tables:$PENTBLS$
Plot Driver:$PLTDRVL$

Design Filename: $FILEL$









LEGEND

- SAN — PROPOSED SAN SWR
- W — PROPOSED WATER LINE
- WL — EXISTING WATER LINE
- SAN — EXIST SAN SWR
- RESTRAINED JOINTS PIPE
- CRITICAL LOCATION
- SAN — ABANDON EXIST SAN SWR
- 6" SAN SWR LEAD WITH STACK

N

HORZ 0' 10' 20'
VERT 0' 2' 4'
SCALE IN FEET

NOTICE:

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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DESIGN ENGINEER NAME
FCM ENGINEERS, P.C.
ADDRESS:
3300 S. Gessner Rd.
TEL.No.: 713-706-4412
TX FIRM No.: F-13481

SURVEYED BY:
KUO & ASSOCIATES, INC.

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WATER AND SANITARY LATERALS

SHEET 5 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 447 OF 718	

Plotted on: $DATE$ $TIME$ $USER$

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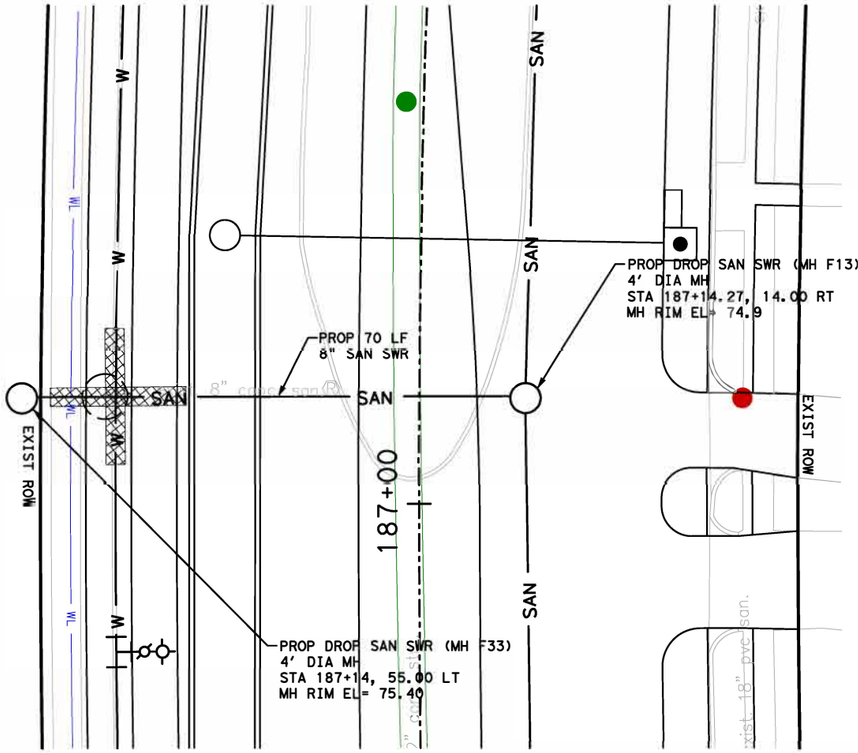
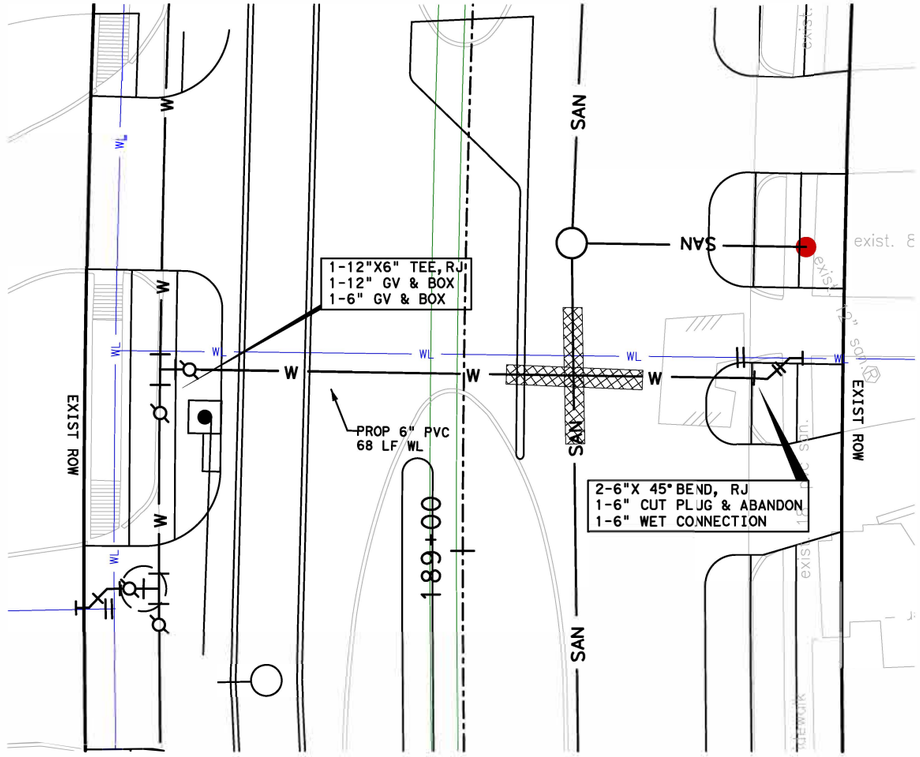
Plot Driver:$PLTDRVL$

Design Filename: $FILEL$





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- W — PROPOSED WATER LINE
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- SAN — EXIST SAN SWR
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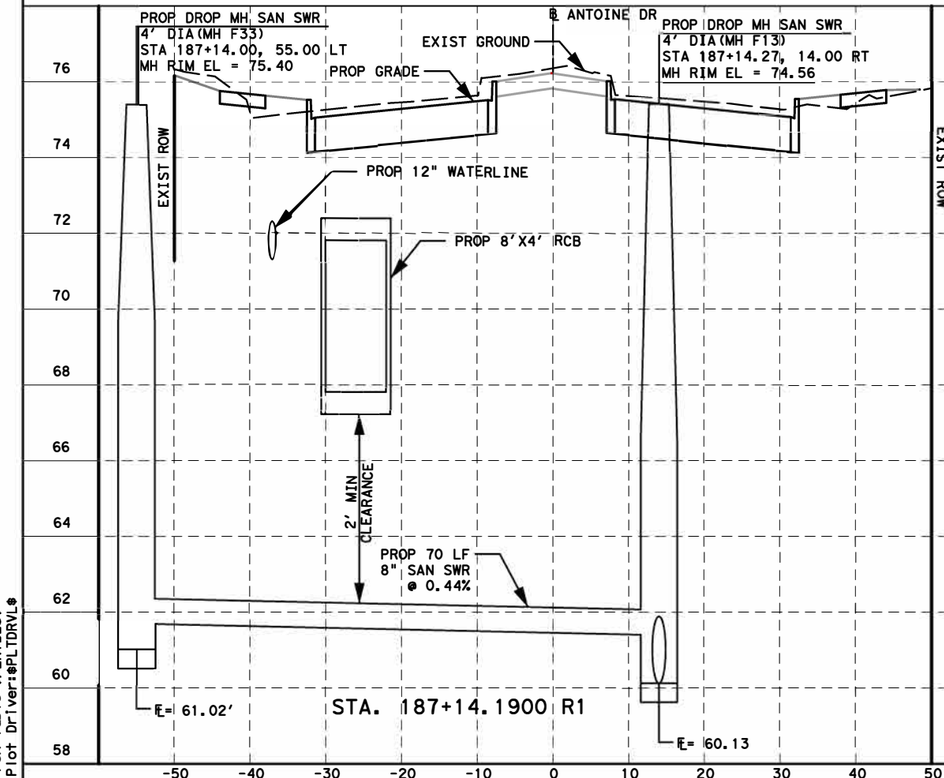
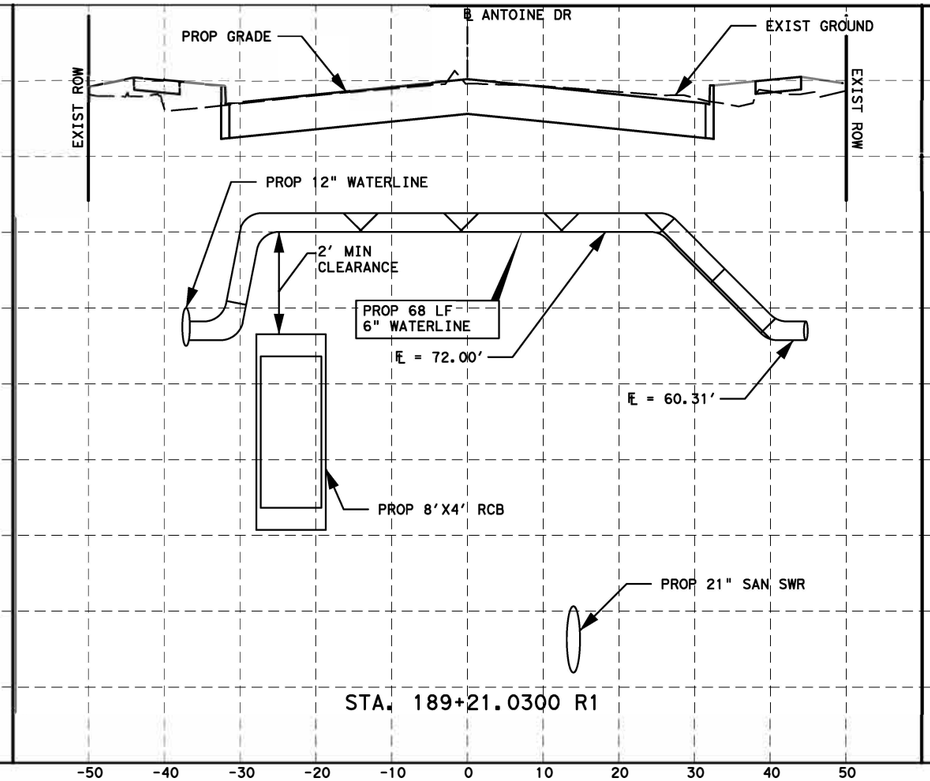
- CRITICAL LOCATION
- SAN — ABANDON EXIST SAN SWR
- 6" SAN SWR LEAD WITH STACK

N

HORZ 0' 10' 20'
VERT 0' 2' 4'
SCALE IN FEET





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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

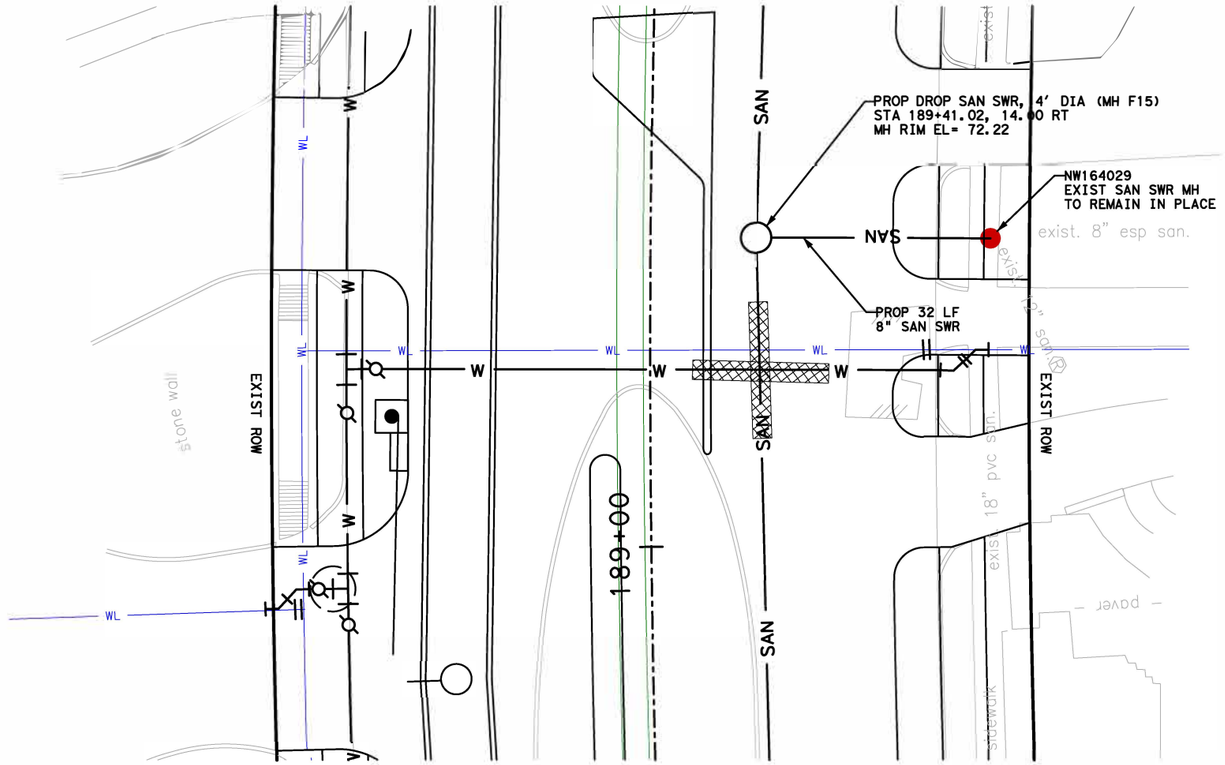
ANTOINE DRIVE

WATER AND SANITARY LATERALS

SHEET 6 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 448 OF 718	

Plotted on: $DATE$ $TIME$ $USER$
Pen Tables:$PENTBLS$
Plot Driver:$PLTDRVL$
Design Filename: $FILEL$



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- ABANDON EXIST SAN SWR
- 6" SAN SWR LEAD WITH STACK

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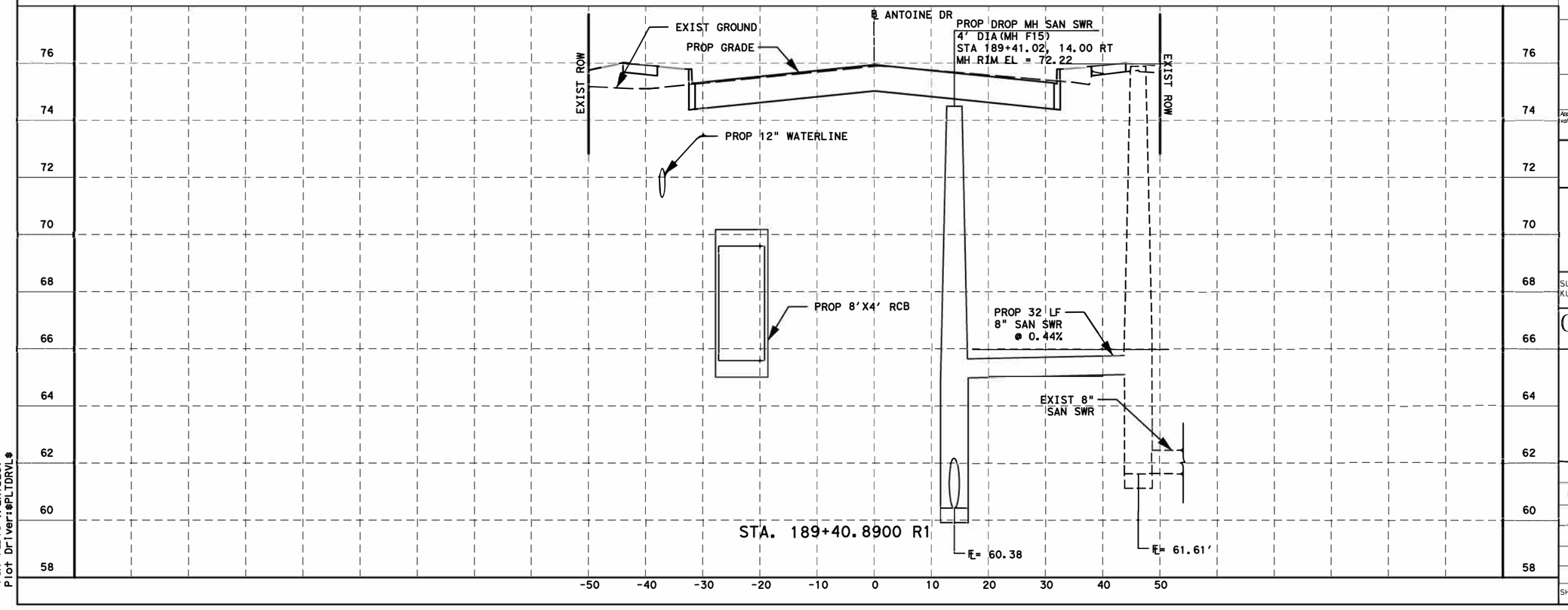
HORZ 0' 10' 20'
VERT 0' 2' 4'
SCALE IN FEET



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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

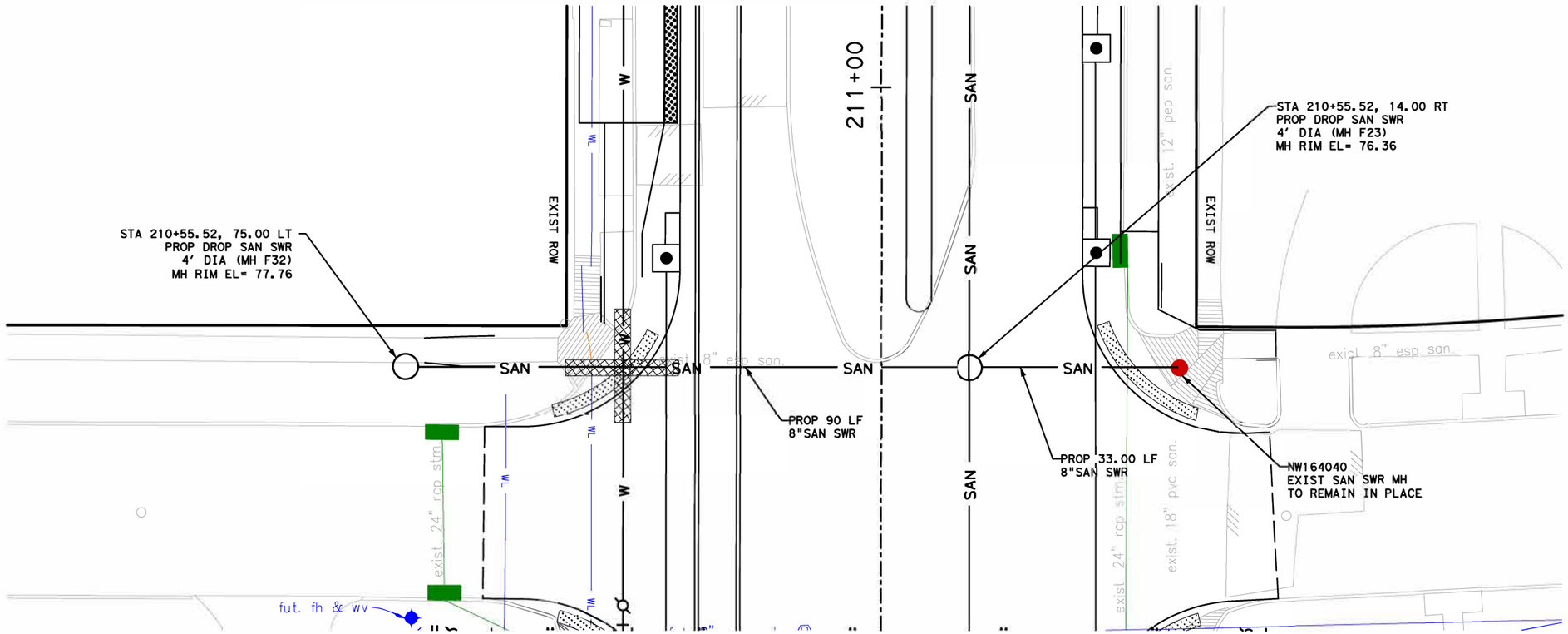
WATER AND SANITARY LATERALS

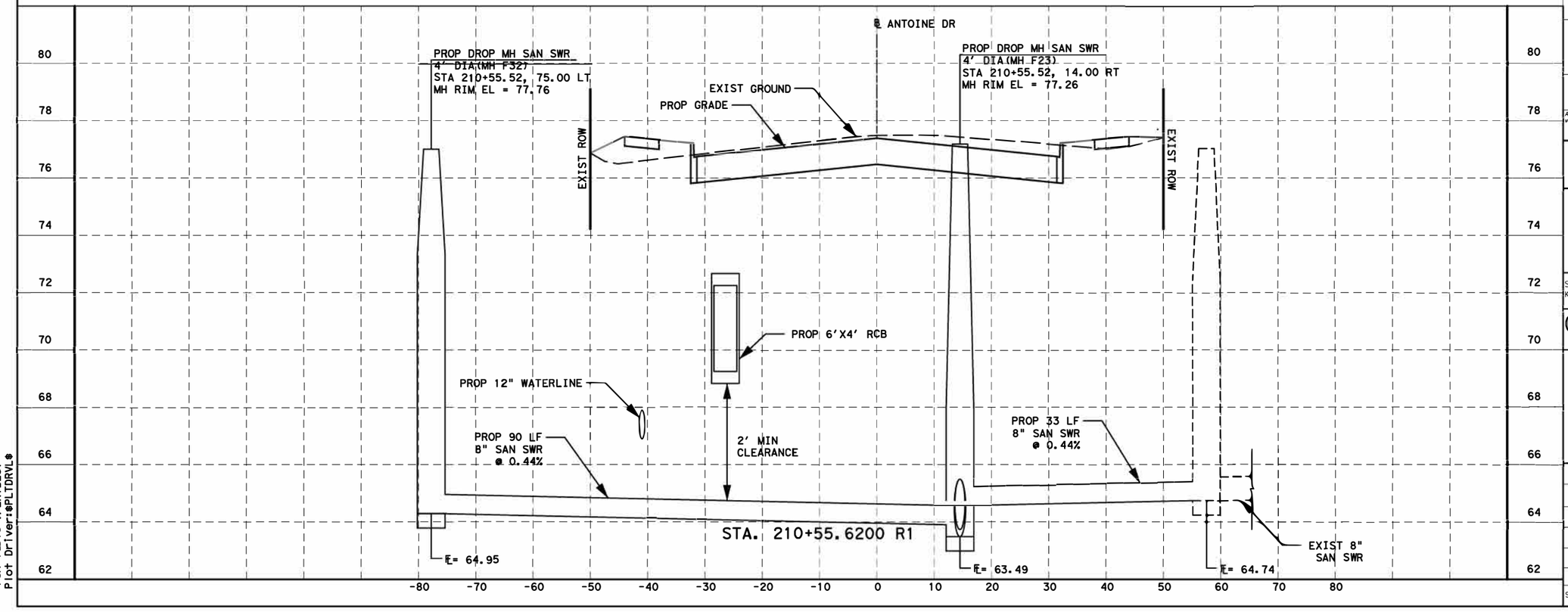
SHEET 7 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 449 OF 718	

Plotted on: $DATE$ $TIME$ $USER$
Pen Tables:$PENTBLS$
Plot Drivers:$PLTDRVL$
Design Filenames:$FILEL$

Plotted on: $DATE$ $TIME$ $USER$





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- WL — EXISTING WATER LINE
- SAN — EXIST SAN SWR
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TEL.No.: 713-706-4412
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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WATER AND SANITARY LATERALS

SHEET 8 OF 12

WBS NUMBER	N-100030-0GEC-3
DRAWING SCALE	AS NOTED
CITY OF HOUSTON PM	ROWAIDAH AYOUB
SHEET NO.	450 OF 718

FOR CITY OF HOUSTON USE ONLY

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Plot Driver:$PLTDRVL$

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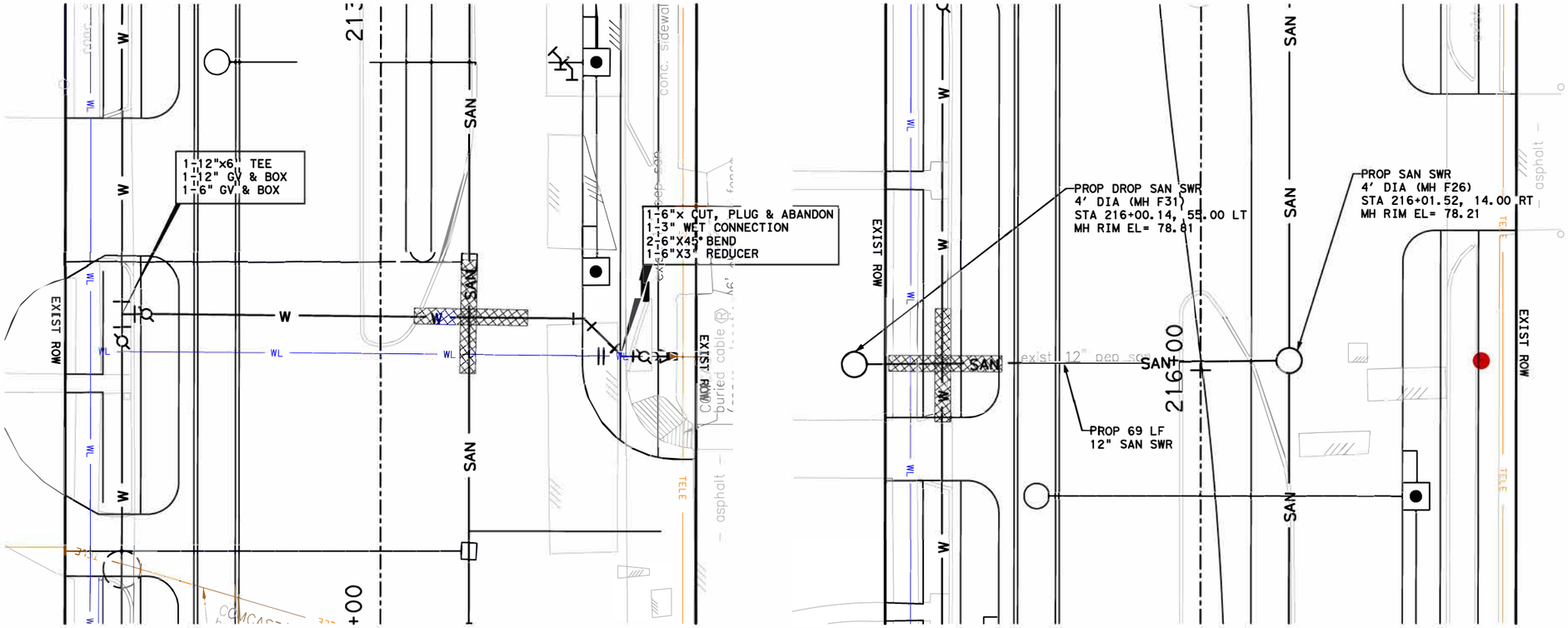

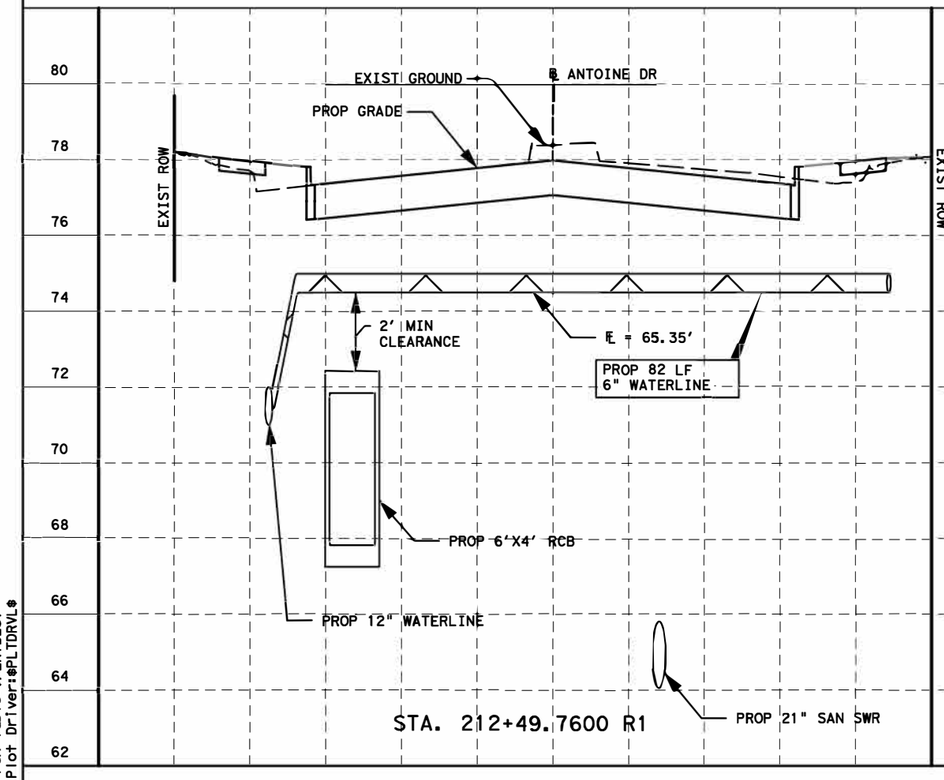

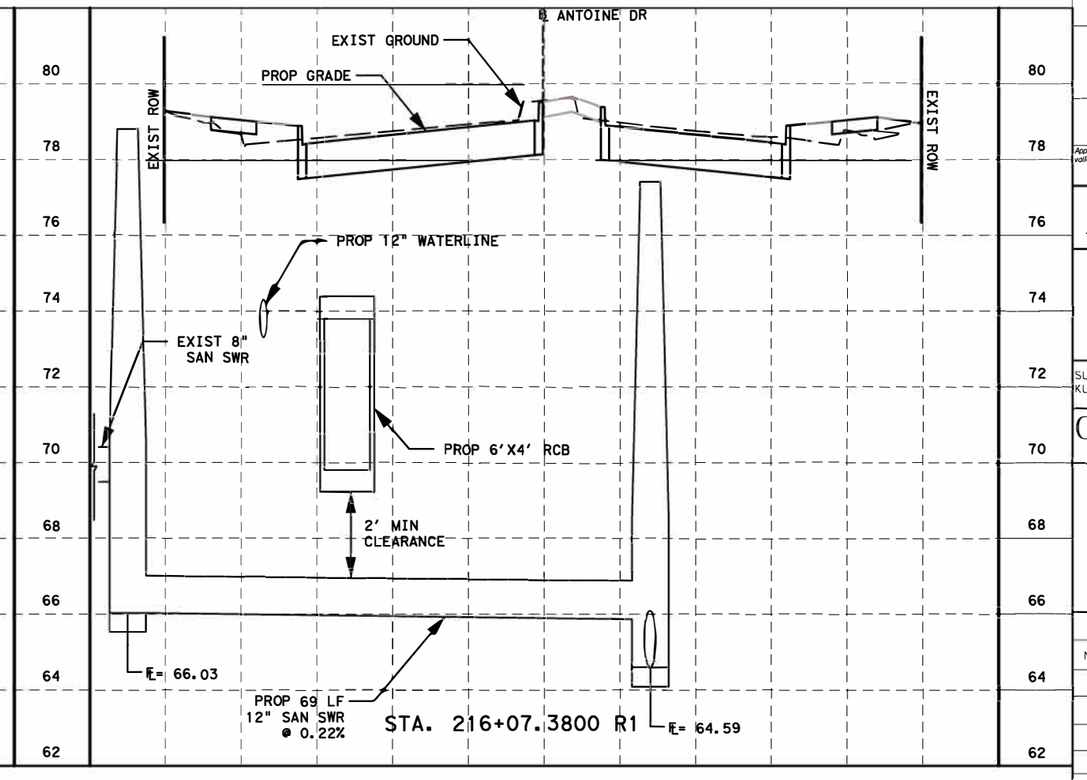

LEGEND

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- W — PROPOSED WATER LINE
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- SAN — EXIST SAN SWR
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- CRITICAL LOCATION
- ABANDON EXIST SAN SWR
- 6" SAN SWR LEAD WITH STACK

N

HORZ 0' 10' 20'
VERT 0' 2' 4'
SCALE IN FEET

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DESIGN ENGINEER NAME
FCM ENGINEERS, P.C.
ADDRESS:
3300 S. Gessner Rd.
TEL.No.: 713-706-4412
TX FIRM No.: F-13481

SURVEYED BY:
KUO & ASSOCIATES, INC.

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108363
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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

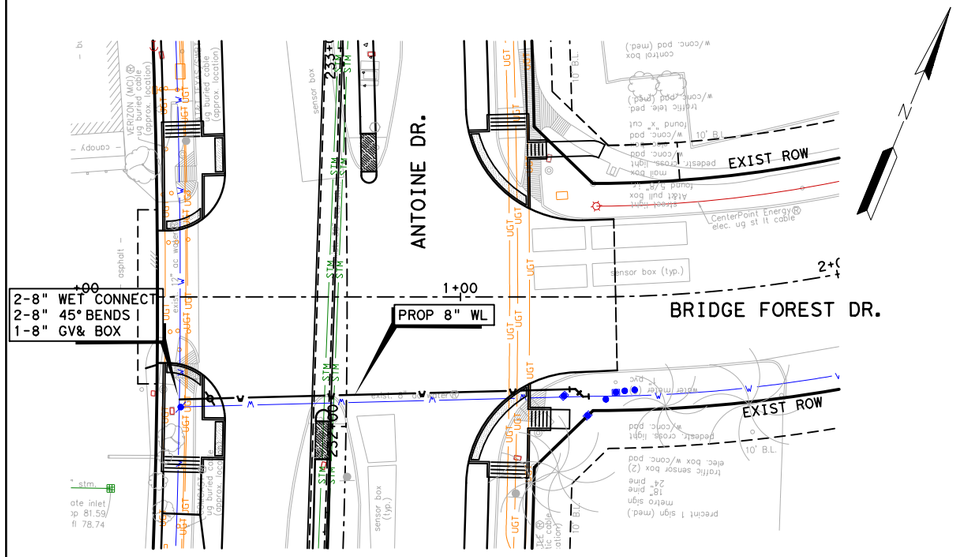
WATER AND SANITARY LATERALS

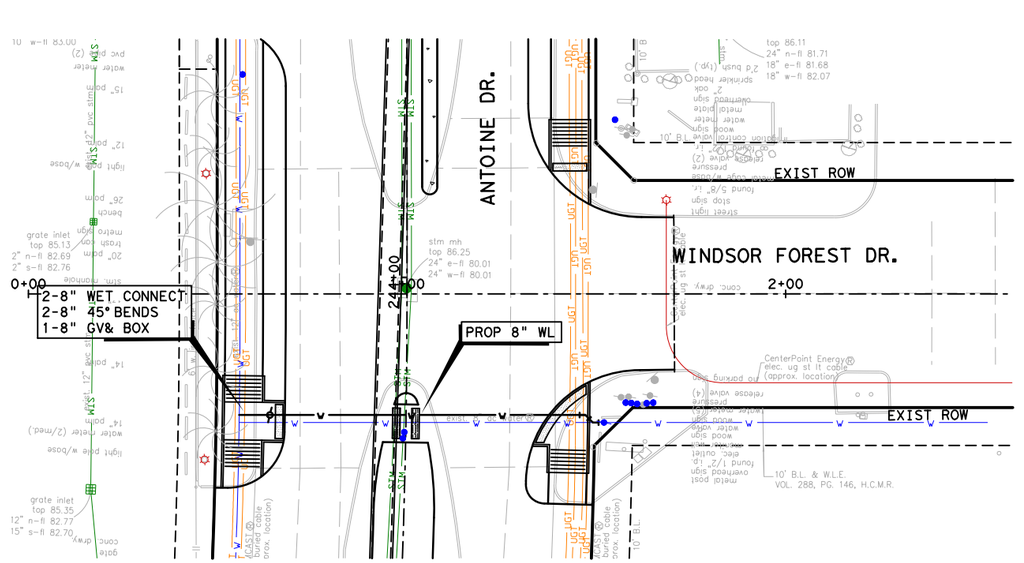
SHEET 9 OF 12

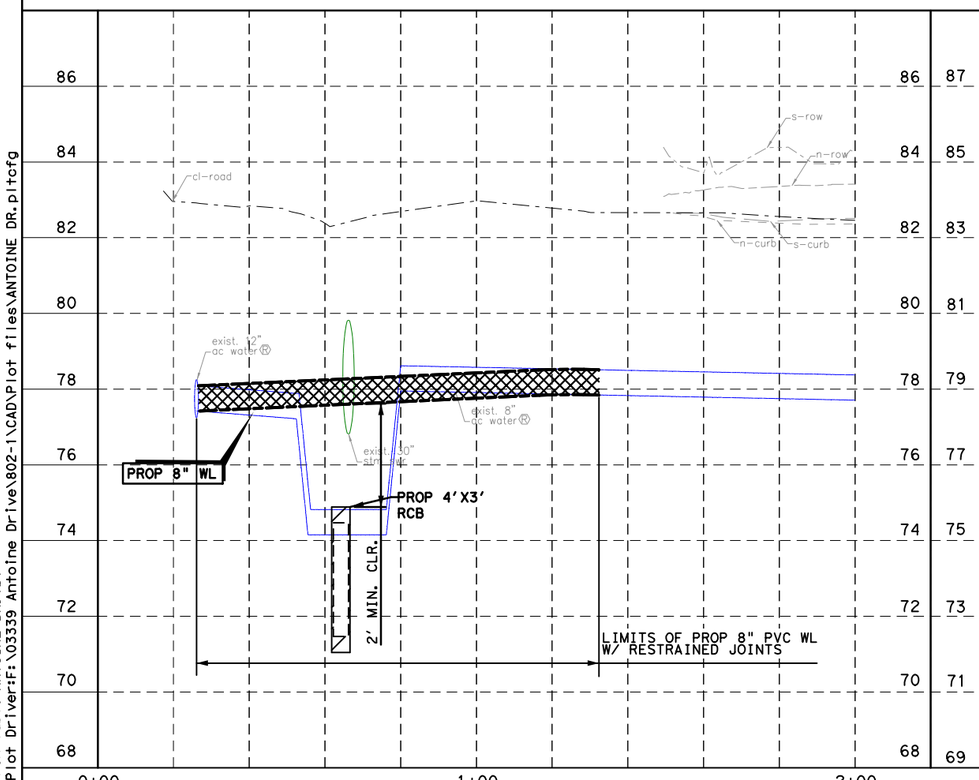
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 451 OF 718	

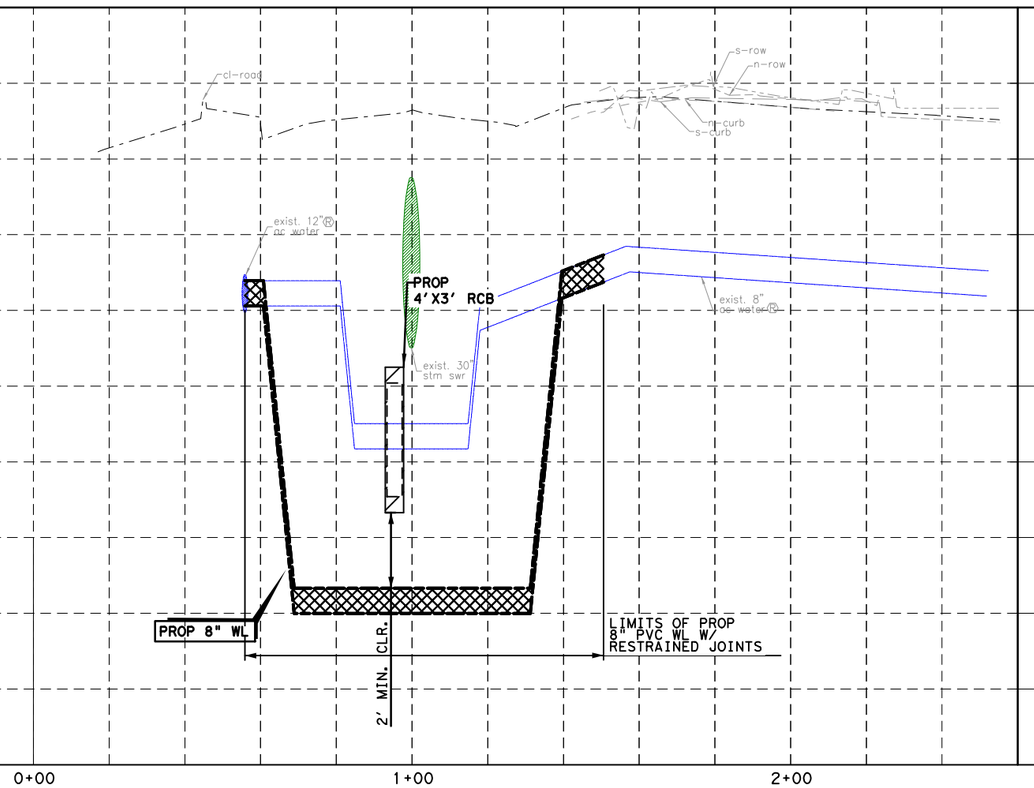
Pen Tables: $PENTBLS$
Plot Driver: $PLTDRVL$

Design Filename: $FILEL$









0' 20' 40'
SCALE IN FEET

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777 North Eldridge Parkway, Suite 500
Houston, Texas 77079
713-782-0042
www.vs-eng.com

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Date
131531
10/23/2025
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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WATER CROSSING

SHEET 10 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 452 OF 718	

No.	DATE	REVISIONS	APP.

Plotted on: 10/23/2025 3:52:54 PM
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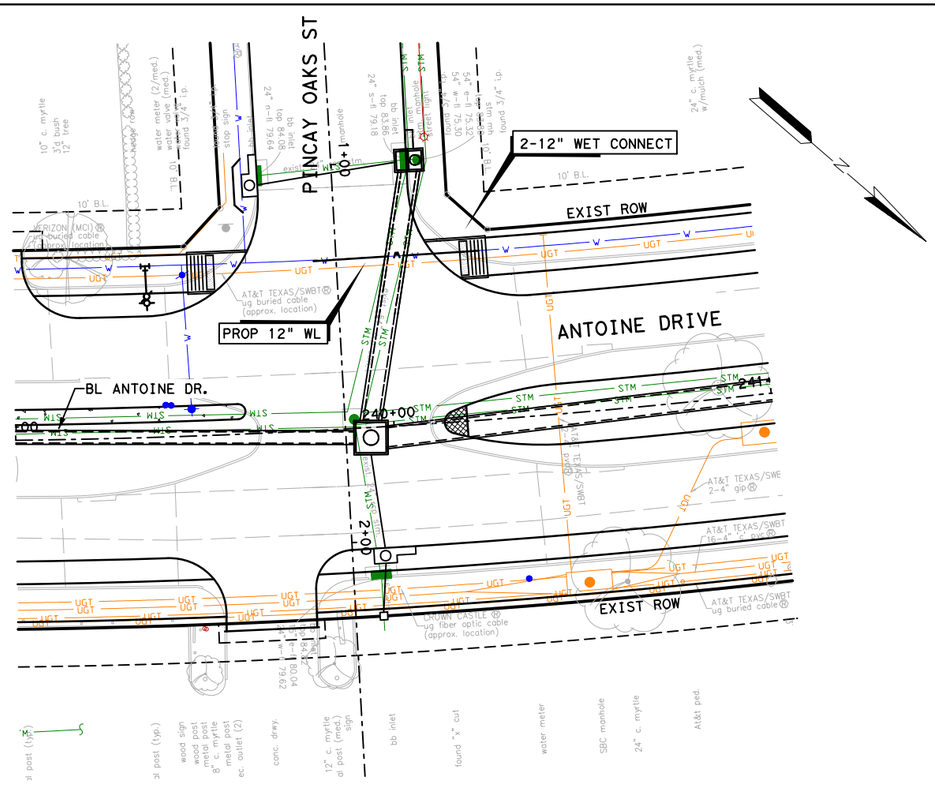
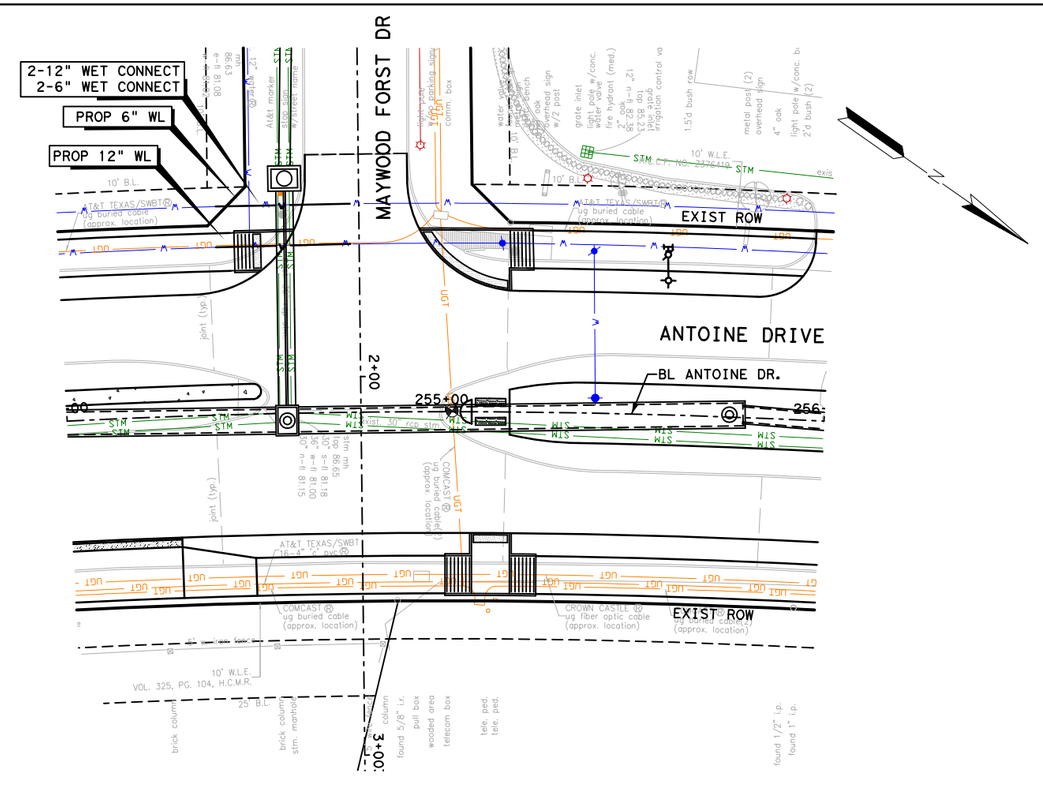
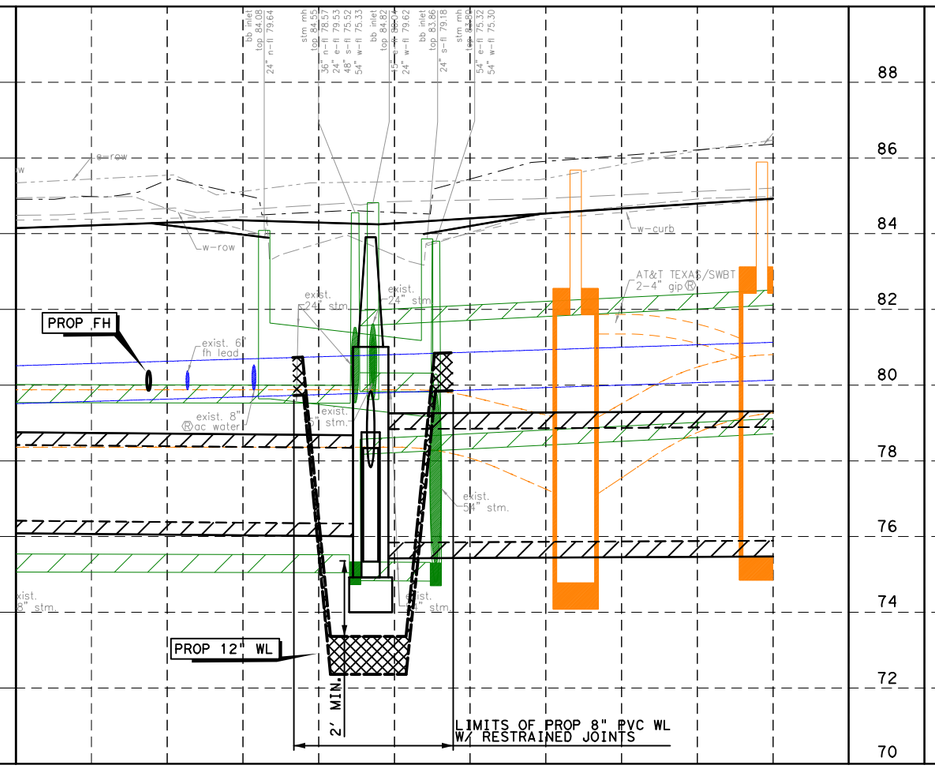
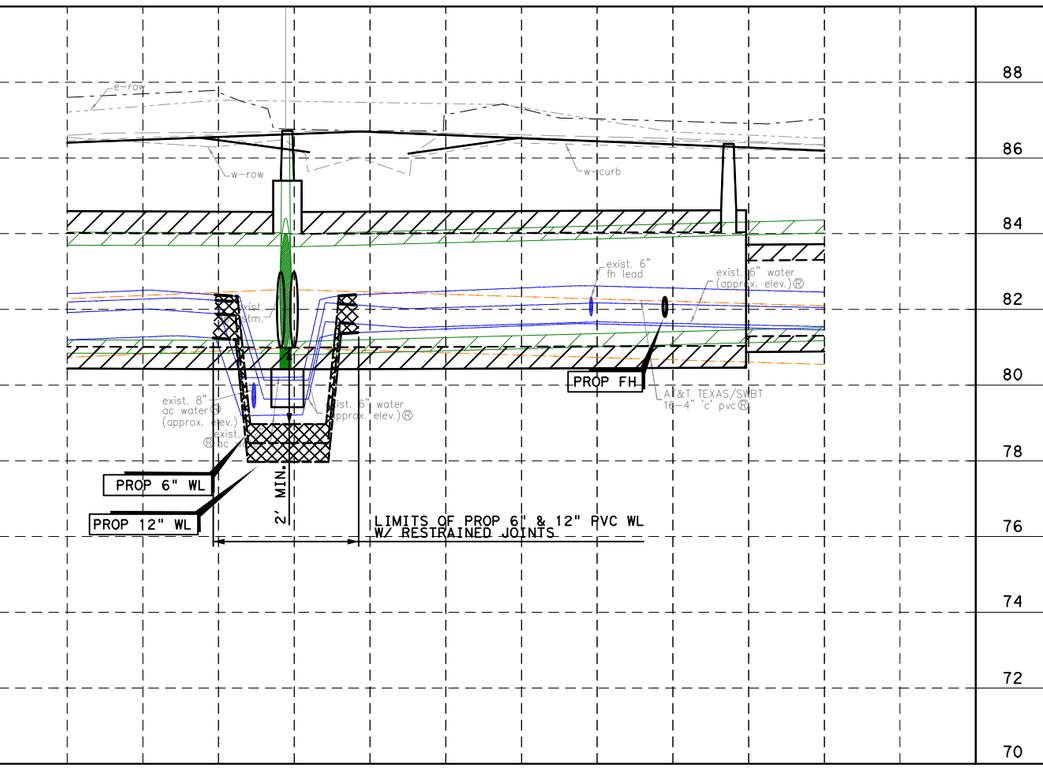
Plotted on: 10/23/2025 3:52:55 PM ovi1edo









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713-782-0042
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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WATER CROSSING

SHEET 11 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 453 OF 718	

No.	DATE	REVISIONS	APP:

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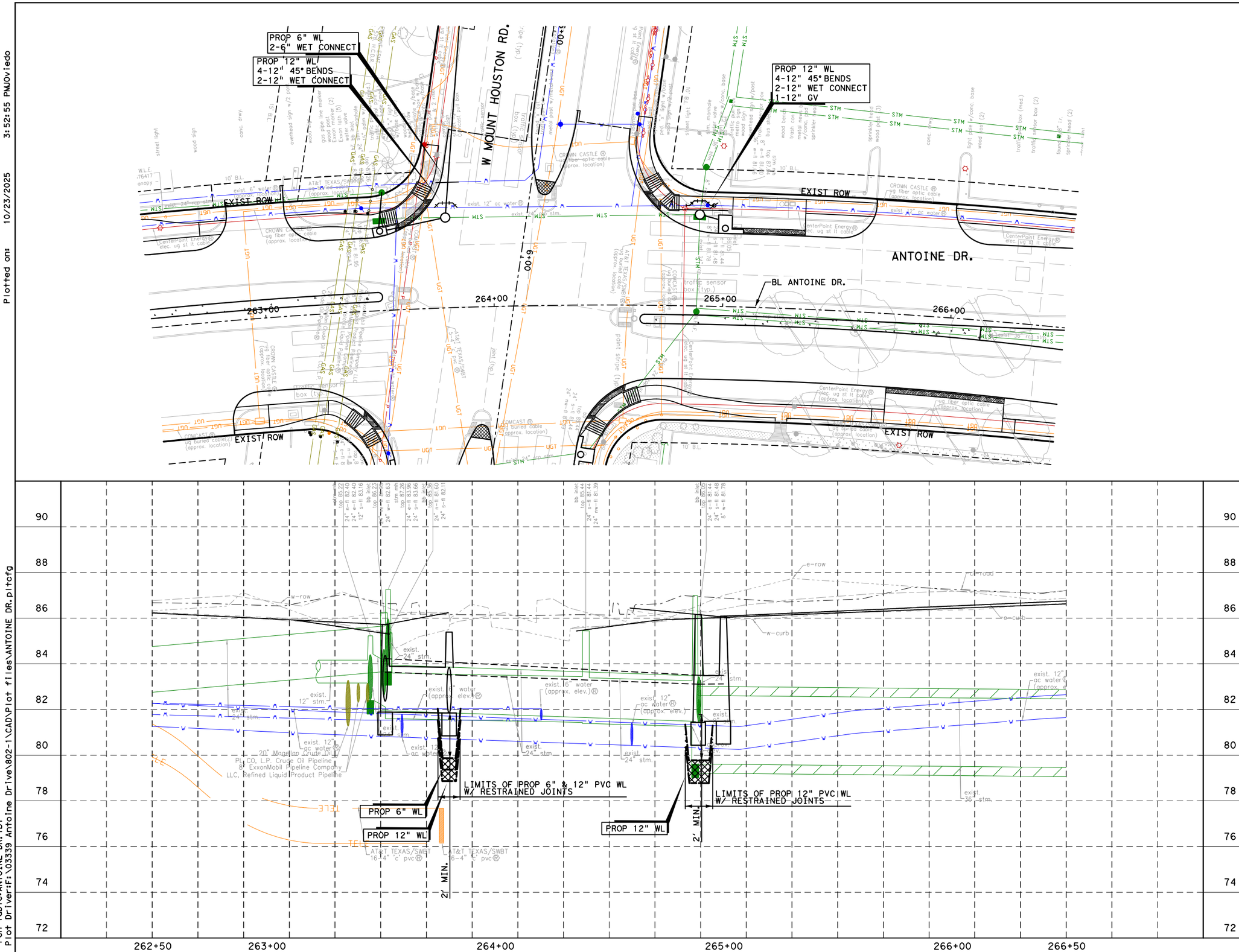

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WATER CROSSING

SHEET 12 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
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ROWAIDAH AYOUB	
SHEET NO. 454 OF 718	

No.	DATE	REVISIONS	APP.

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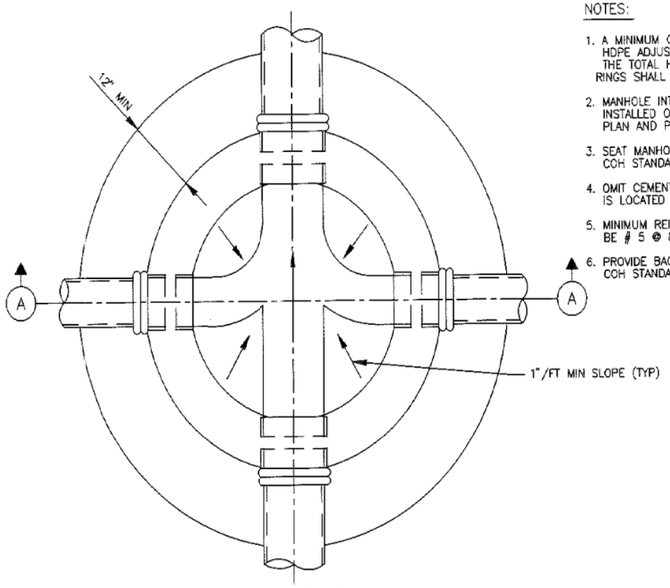
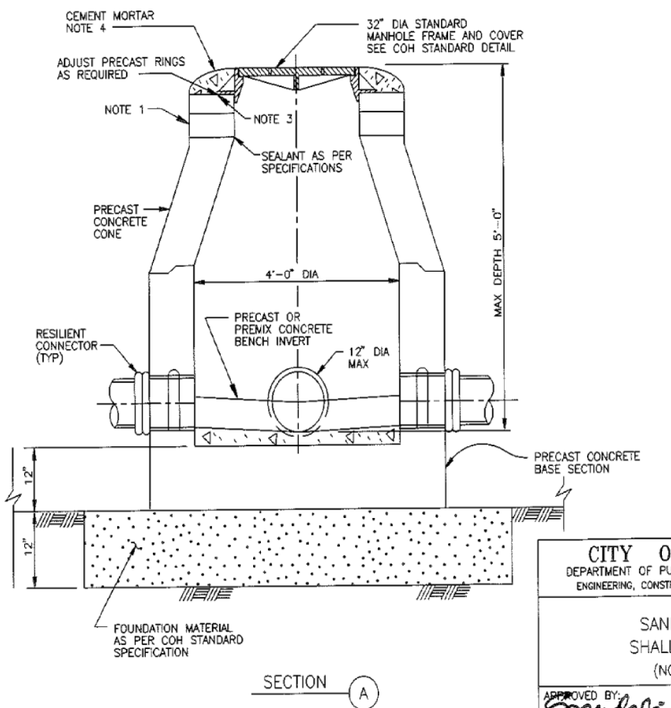
Plotted on: 10/24/2025 3:10:16 PM michael.guthrie

NOTES:

1. A MINIMUM OF 3" PRECAST CONCRETE OR HDPE ADJUSTMENT RING SHALL BE PROVIDED. THE TOTAL HEIGHT OF THE ADJUSTMENT RINGS SHALL NOT EXCEED 12".
2. MANHOLE INTERSECTING PIPES SHALL BE INSTALLED ONLY WHEN CALLED FOR IN PLAN AND PROFILE DRAWING.
3. SEAT MANHOLE FRAME IN SEALANT PER COH STANDARD SPECIFICATION.
4. OMIT CEMENT MORTAR WHEN MANHOLE IS LOCATED IN PAVED AREAS.
5. MINIMUM REINFORCING IN THE BASE BE # 5 @ 8 EW.
6. PROVIDE BACKFILL MATERIAL AS PER COH STANDARD SPECIFICATION.



FOUNDATION PLAN

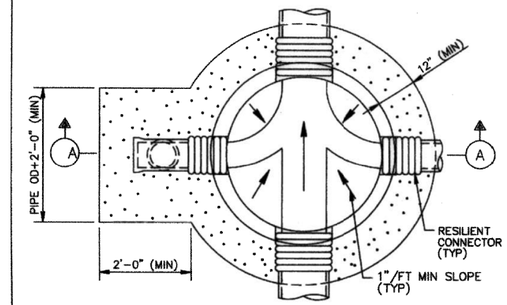


SECTION (A)

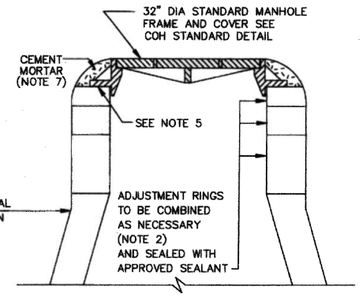
CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION	
SANITARY SEWER SHALLOW MANHOLE (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002	DWG NO: 02082-01

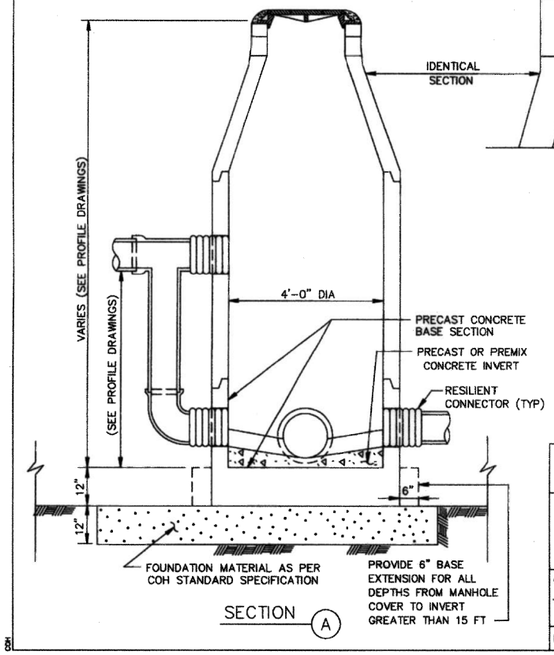
NOTES:

1. DEPTH OF MANHOLE DETERMINES SECTIONS REQUIRED.
2. PRECAST CONCRETE RINGS SHALL BE PROVIDED FOR A COMBINED ADJUSTMENT HEIGHT OF AT LEAST 12". THE TOTAL HEIGHT OF THE ADJUSTMENT RINGS SHALL NOT EXCEED 1'-6".
3. MANHOLE WALL THICKNESS FOR DEPTH EXCEEDING 12'-0" SHALL BE DETERMINED TO MEET LOADING CONDITIONS. MIN THICKNESS 5".
4. MANHOLE DROP AND INTERSECTING PIPES SHALL BE INSTALLED ONLY WHEN CALLED FOR IN PLAN AND PROFILE DRAWING.
5. SEAT MANHOLE FRAME IN SEALANT PER COH STANDARD SPECIFICATION.
6. ECCENTRIC PRECAST CONCRETE MANHOLE MAY BE USED.
7. OMIT CEMENT MORTAR WHEN MANHOLE IS LOCATED IN PAVED AREAS.
8. MIN REINFORCING IN THE PRECAST CONCRETE BASE SHALL BE # 5 @ 8 EW.



FOUNDATION PLAN





SECTION (A)

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
SANITARY SEWER 4'-0" DIAMETER PRECAST CONCRETE MANHOLE (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JULY-01-2010	DWG NO: 02082-02

No.	DATE	REVISIONS	APP.

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

SURVEYED BY:
KUO & ASSOCIATES, INC.

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Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

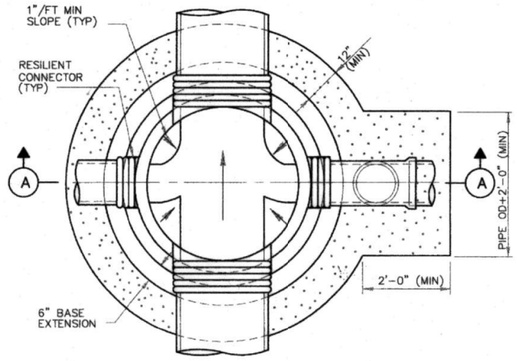
ANTOINE DRIVE

SANITARY SEWER STANDARD DETAILS

SHEET 1 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 455 OF 718	

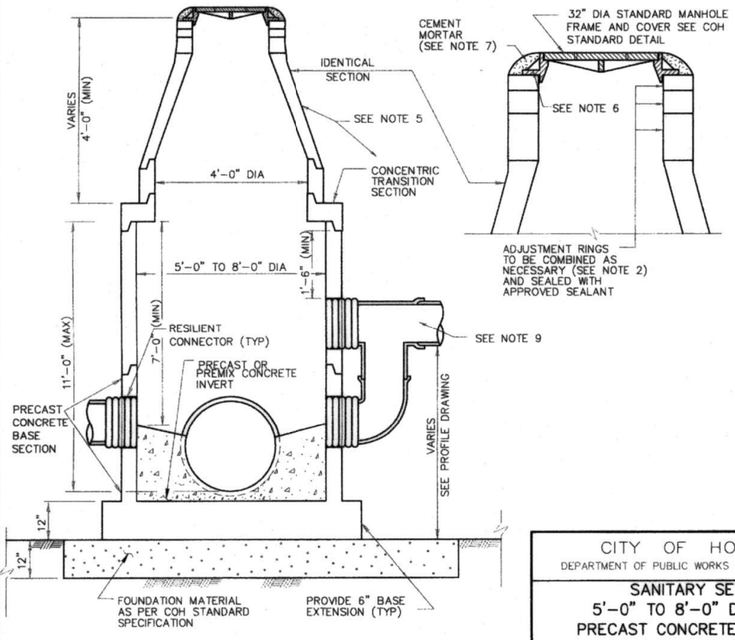
Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Water\W GULF BANK\STANDARDS\SAN_STD 01.dgn



FOUNDATION PLAN

NOTES:

1. DEPTH OF MANHOLE DETERMINES SECTIONS REQUIRED.
2. PRECAST CONCRETE RINGS SHALL BE PROVIDED FOR A COMBINED ADJUSTMENT HEIGHT OF AT LEAST 12". THE TOTAL HEIGHT OF THE ADJUSTMENT RINGS SHALL NOT EXCEED 1'-6".
3. MANHOLE WALL THICKNESS FOR DEPTH EXCEEDING 12'-0" SHALL BE DETERMINED TO MEET LOADING CONDITIONS. MIN THICKNESS 5".
4. MANHOLE DROP AND INTERSECTING PIPES SHALL BE INSTALLED ONLY WHEN CALLED FOR IN PLAN AND PROFILE DRAWING.
5. ALTERNATE ECCENTRIC CONE AND/OR TRANSITION SECTION MAY BE USED.
6. SEAT MANHOLE FRAME IN SEALANT PER COH STANDARD SPECIFICATION.
7. OMIT CEMENT MORTAR WHEN MANHOLE IS LOCATED IN PAVED AREAS.
8. MIN REINFORCING IN THE PRECAST CONCRETE BASE SHALL BE # 5 @ 8 EW.
9. WHERE DIMENSIONAL RESTRICTIONS DICTATE, THE MANHOLE BASE HEIGHT SHALL BE ADJUSTED TO HAVE THE UPPER INLET PIPE OF THE DROP ENTER INTO THE 4'-0" DIAMETER RISER SECTION.



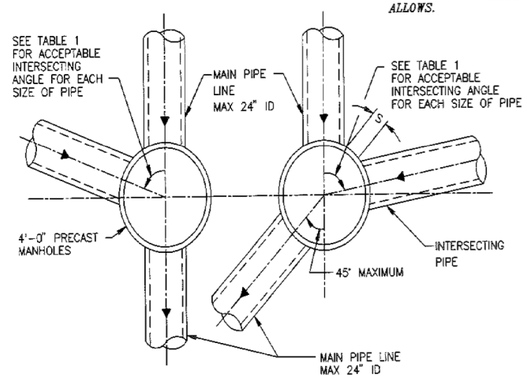
SECTION (A)

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
SANITARY SEWER 5'-0" TO 8'-0" DIAMETER PRECAST CONCRETE MANHOLE (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JULY-01-2010	DWG NO: 02082-03

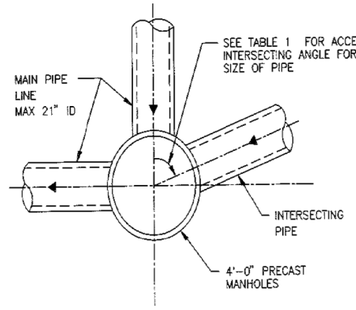
NOTES ON USE OF STANDARD DETAIL 02082-02

NOTES TO SPECIFIER:

1. *"-" INDICATES THAT A SPECIAL DESIGN OR THE NEXT LARGER MANHOLE SIZE SHALL BE USED.*
2. *TABLE 1 IS BASED ON A MIN SEPARATION DISTANCE "S" OF 15.5" OR INTERSECTION PIPE OD/2, WHICHEVER IS GREATER, BETWEEN MAIN AND INTERSECTING PIPES ALONG THE MANHOLE INSIDE WALL ARC.*
3. *PIPE WALL THICKNESS USED IN TABLE 1 ARE BASED ON RCP. THE DESIGN ENGINEER MAY CALCULATE TO SEE IF THINNER WALL PIPES CAN MEET THE SEPARATION CRITERIA FOR ANGLES SMALLER THAN THE TABLE ALLOWS.*



MAX 24" ID MAIN PIPE ALLOWED FOR STRAIGHT THROUGH TO 45° DEFLECTION



MAX 21" ID MAIN PIPE ALLOWED FOR 45° TO 90° DEFLECTION

TABLE 1

MIN ANGLE AND INTERSECTING PIPE SIZES FOR A 4'-0" DIA MANHOLE

INTERSECTING PIPE SIZE (INCHES)	MIN INTERSECTING ANGLE IN DEGREES FOR FOR VARIOUS MAIN PIPE SIZES IN INCHES							
	6"	8"	10"	12"	15"	18"	21"	24"
6	55	58	60	65	70	75	80	85
8		60	63	68	73	77	82	87
10			66	71	75	80	85	90
12				76	80	85	90	–
15					85	90	–	–
18						–	–	–
21							–	–
24								–

NOT APPLICABLE UNLESS HYDRAULICS DICTATE (INTERSECTING PIPE > MAIN PIPE)

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION	
SANITARY SEWER 4'-0" DIAMETER PRECAST CONCRETE MANHOLE NOTES (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002	DWG NO: 02082N-02

No.	DATE	REVISIONS	APP.

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

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Date
125611
10/24/2025
or
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Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

SANITARY SEWER
STANDARD DETAILS

SHEET 2 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 456 OF 718	

Pen Table: ANTOINE DR.tbl
Plot Driver: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Resource\Plot files\ANTOINE DR.pltcfg
Plotted on: 10/24/2025 3:10:22 PM michael.guthrie
Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Water\W GULF BANK\STANDARDS\SAN_STD 02.dgn

Plotted on: 10/24/2025 3:10:27 PM michael.guthrie
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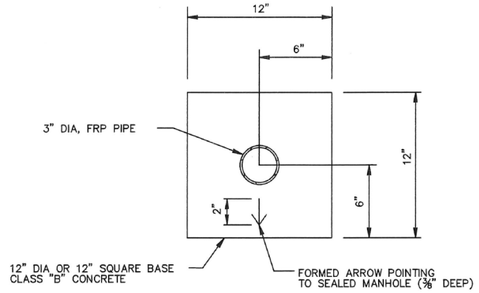
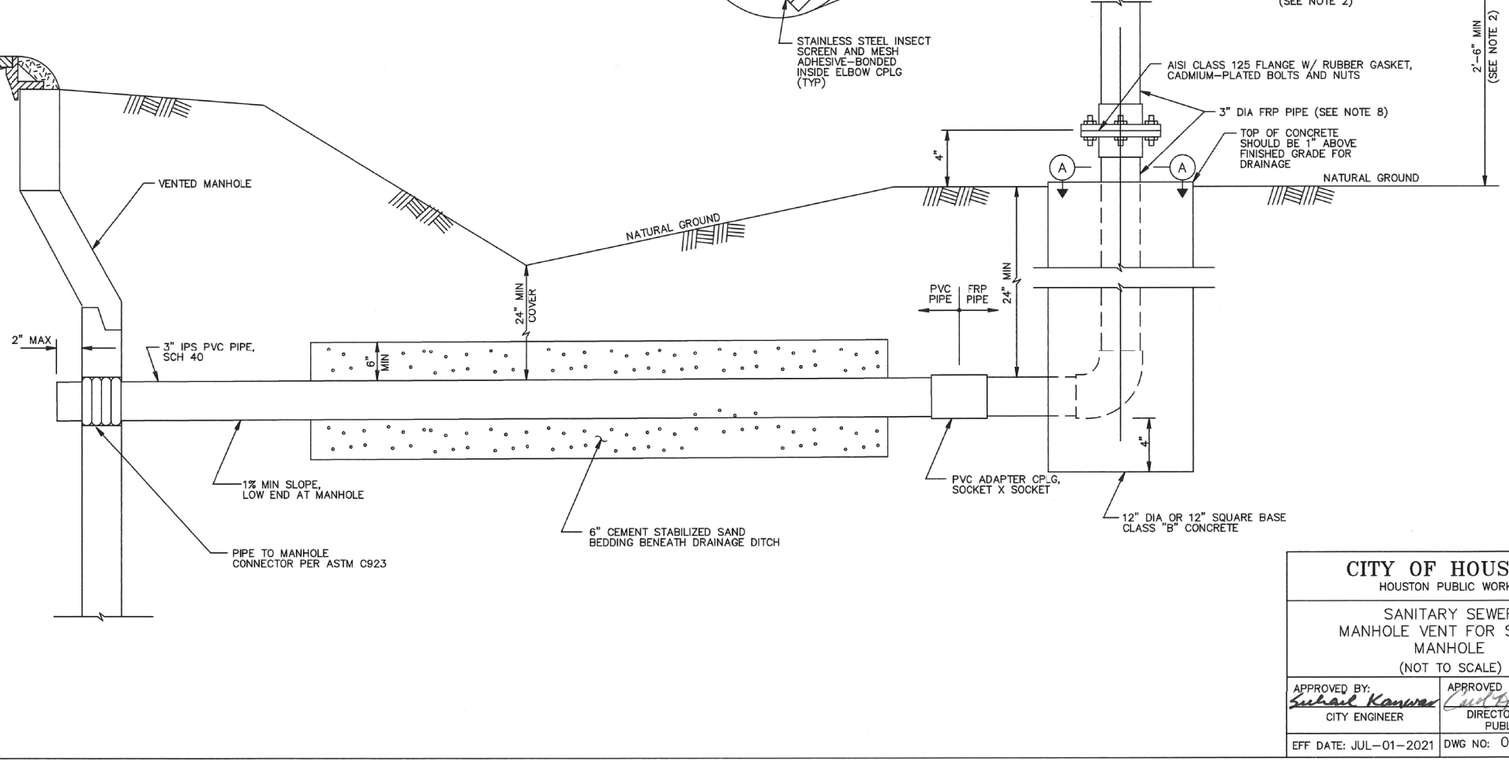


SECTION (A)
CONCRETE FOUNDATION
(SEE NOTE 8)

NOTES:

1. INSTALL AT LOCATION AND BASED ON 0.2 PERCENT FLOOD ELEVATION SHOWN ON PLAN AND PROFILE DWGS.
2. MINIMUM VENT HEIGHT ELEVATION IS TO BE 2'-6" ABOVE THE NATURAL GROUND OR AS REQUIRED BY CHAPTER 19 SECTION 19-33 OF THE CITY OF HOUSTON CODE OF ORDINANCES, WHICHEVER IS HIGHER.
3. WHEN FLOODPROOFED VENTS ARE SPECIFIED BY THE EOR, REFER TO THE CONTRACT DOCUMENTS FOR CONSTRUCTION REQUIREMENTS.
4. DRAIN TO VENTED (ADJACENT) MH AT MIN 1% SLOPE. CONNECT TO MANHOLE WITH SPECIFIED CONNECTOR.
5. WHEN VENT CROSSES DRAINAGE DITCH, PROVIDE CEMENT STABILIZED SAND BEDDING
6. THE VENT IS TO BE INSTALLED WITHIN THE RIGHT OF WAY.
7. SEE COH STANDARD SPECIFICATIONS FOR PROTECTIVE COATING REQUIREMENTS FOR EXPOSED FRP PIPE.
8. THIS STANDARD DETAIL SETS THE MINIMUM REQUIREMENTS FOR THE MANHOLE VENT'S CONCRETE FOUNDATION AND VENT PIPE SIZE. THE EOR IS RESPONSIBLE FOR THE ADEQUACY AND DESIGN OF THE CONCRETE FOUNDATION AND VENT PIPE SIZE AND SHALL PROVIDE CONSTRUCTION DETAILS IN THE DRAWINGS.



CITY OF HOUSTON
HOUSTON PUBLIC WORKS

SANITARY SEWER
MANHOLE VENT FOR SEALED MANHOLE
(NOT TO SCALE)

APPROVED BY:	APPROVED BY:
CITY ENGINEER	DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2021	DWG NO: 02082-06

No.	DATE	REVISIONS	APP:

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SURVEYED BY:
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State
125611
10/24/2025
Date
95% SUBMITTAL
GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

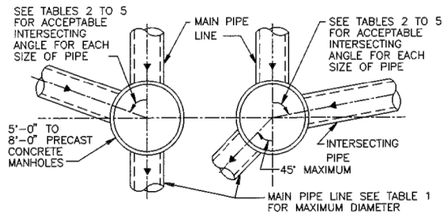
ANTOINE DRIVE

SANITARY SEWER
STANDARD DETAILS

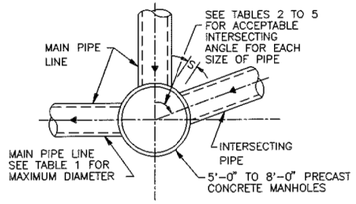
SHEET 3 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 457 OF 718	

Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Water\W GULF BANK\STANDARDS\SAN_STD 03.dgn



FOR MAIN PIPES FROM STRAIGHT THROUGH TO 45° DEFLECTION



FOR MAIN PIPE WITH 45° TO 90° DEFLECTION

NOTES ON USE OF STANDARD DETAIL 02082-03

TABLE 1

MAXIMUM MAIN PIPE DIAMETER (I D) IN INCHES

MANHOLE DIAMETER (FT)	STRAIGHT THROUGH TO 45° DEFLECTION	WITH 90° DEFLECTION	TABLE TO BE USED
5	36	27	2
6	42	33	3
7	48	36	4
8	60	42	5

TABLE 2

MINIMUM ANGLE AND INTERSECTING PIPE ID SIZES FOR 5'-0" DIA MANHOLE

INTERSECTING PIPE ID SIZES (INCHES)	MINIMUM INTERSECTING ANGLE IN DEGREES FOR VARIOUS MAIN PIPE ID SIZES IN INCHES										
	8"	10"	12"	15"	18"	21"	24"	27"	30"	33"	36"
8	49	50	54	58	61	66	69	73	77	82	86
10		53	57	61	64	68	71	76	79	84	88
12			61	65	68	72	75	80	83	88	–
15				68	71	75	79	83	87	–	–
18					75	79	82	87	90	–	–
21						83	86	90	–	–	–
24							90	–	–	–	–
27								–	–	–	–
30									–	–	–
33										–	–
36											–

TABLE 3

MINIMUM ANGLE AND INTERSECTING PIPE ID SIZES FOR 6'-0" DIA MANHOLE

INTERSECTING PIPE ID SIZES (INCHES)	MINIMUM INTERSECTING ANGLE IN DEGREES FOR VARIOUS MAIN PIPE ID SIZES IN INCHES											
	8"	10"	12"	15"	18"	21"	24"	27"	30"	33"	36"	42"
8	40	42	45	49	51	54	57	61	63	67	70	78
10		44	47	50	53	56	59	62	65	69	72	79
12			50	54	56	60	62	66	68	72	75	83
15				57	59	62	65	69	71	75	78	85
18					62	65	68	71	74	78	81	88
21						68	71	74	77	81	84	–
24							74	77	80	84	87	–
27								83	85	89	–	–
30									–	–	–	–
33										–	–	–
36											–	–
42												–

TABLE 4

MINIMUM ANGLE AND INTERSECTING PIPE ID SIZES FOR 7'-0" DIA MANHOLE

INTERSECTING PIPE ID SIZES (INCHES)	MINIMUM INTERSECTING ANGLE IN DEGREES FOR VARIOUS MAIN PIPE ID SIZES IN INCHES												
	8"	10"	12"	15"	18"	21"	24"	27"	30"	33"	36"	42"	48"
8	35	36	39	42	44	47	49	52	54	57	59	65	71
10		38	40	43	45	48	50	53	55	59	61	67	73
12			43	46	48	51	53	56	58	61	64	70	76
15				48	50	53	55	58	61	64	66	72	78
18					58	56	58	61	63	66	69	74	81
21						58	60	63	66	69	71	77	83
24							63	66	68	71	74	79	86
27								70	72	76	78	84	90
30									78	81	83	89	–
33										86	88	–	–
36											–	–	–
42												–	–
48													–

TABLE 5

MINIMUM ANGLE AND INTERSECTING PIPE ID SIZES FOR 8'-0" DIA MANHOLE

INTERSECTING PIPE ID SIZES (INCHES)	MINIMUM INTERSECTING ANGLE IN DEGREES FOR VARIOUS MAIN PIPE ID SIZES IN INCHES														
	8"	10"	12"	15"	18"	21"	24"	27"	30"	33"	36"	42"	48"	54"	60"
8	30	32	34	36	38	41	43	45	47	50	52	56	61	67	74
10		33	35	38	40	42	44	46	48	51	53	58	63	68	77
12			38	40	42	44	46	49	51	53	55	60	65	71	79
15				42	44	47	48	51	53	56	58	62	67	73	81
18					46	49	51	53	55	58	66	64	70	75	83
21						51	53	55	57	60	62	67	72	77	85
24							55	57	59	62	64	69	74	79	89
27								61	63	66	68	73	78	83	–
30									67	70	72	77	82	87	–
33										74	76	81	86	–	–
36											81	86	–	–	–
42												–	–	–	–
48													–	–	–
54														–	–
60															–

* NOT APPLICABLE
(INTERSECTING PIPE GREATER THAN MAIN PIPE)

NOTES TO SPECIFIER:

1. "–" INDICATES THAT A SPECIAL DESIGN OR THE NEXT LARGER MANHOLE SIZE SHALL BE USED.
2. TABLES 2 TO 5 ARE BASED ON A MIN SEPARATION DISTANCE "S" OF 15.5" OR INTERSECTION PIPE OD/2, WHICHEVER IS GREATER, BETWEEN MAIN AND INTERSECTING PIPES ALONG THE MANHOLE INSIDE WALL ARC.
3. PIPE WALL THICKNESS USED IN TABLES 2 TO 5 ARE BASED ON RCP. THE DESIGN ENGINEER MAY CALCULATE TO SEE IF THINNER WALL PIPES CAN MEET THE SEPARATION CRITERIA FOR ANGLES SMALLER THAN THE TABLES ALLOW.
4. LIMITATIONS TO BASE HEIGHT ARE BASED ON RESISTING BUOYANT UPLIFT FORCES BASED ON WATER AT GROUND SURFACE AND A SAFETY FACTOR OF 1.20.
5. A SPECIAL DESIGN IS REQUIRED IF MANHOLE ID IS GREATER THAN 8 FT.

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
ENGINEERING, CONSTRUCTION AND REAL ESTATE GROUP

SANITARY SEWER
5'-0" TO 8'-0" DIAMETER
PRECAST CONCRETE MANHOLE NOTES
(NOT TO SCALE)

APPROVED BY:	APPROVED BY:
CITY ENGINEER	DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002	DWG NO: 02082N-03

No.	DATE	REVISIONS	APP:

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11750 KATY FREEWAY, #400
HOUSTON, TX 77079

SURVEYED BY:
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on 10/24/2025
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Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

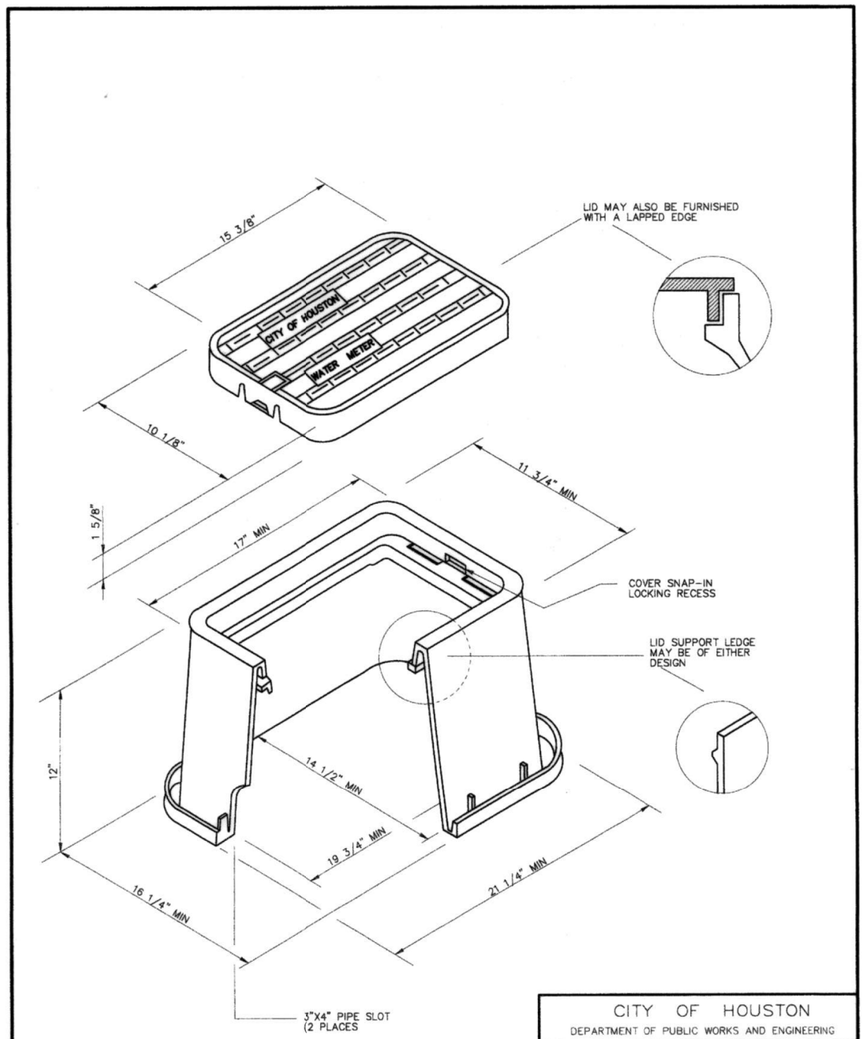
ANTOINE DRIVE

SANITARY SEWER STANDARD DETAILS

SHEET 4 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 458 OF 718	

Pen Table: ANTOINE DR.tbl
Plot Driver: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Resource\Plot files\ANTOINE DR.pltcfg
Plotted on: 10/24/2025 3:10:32 PM michael.guthrie
Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Water\W GULF BANK\STANDARDS\SAN_STD 04.dgn



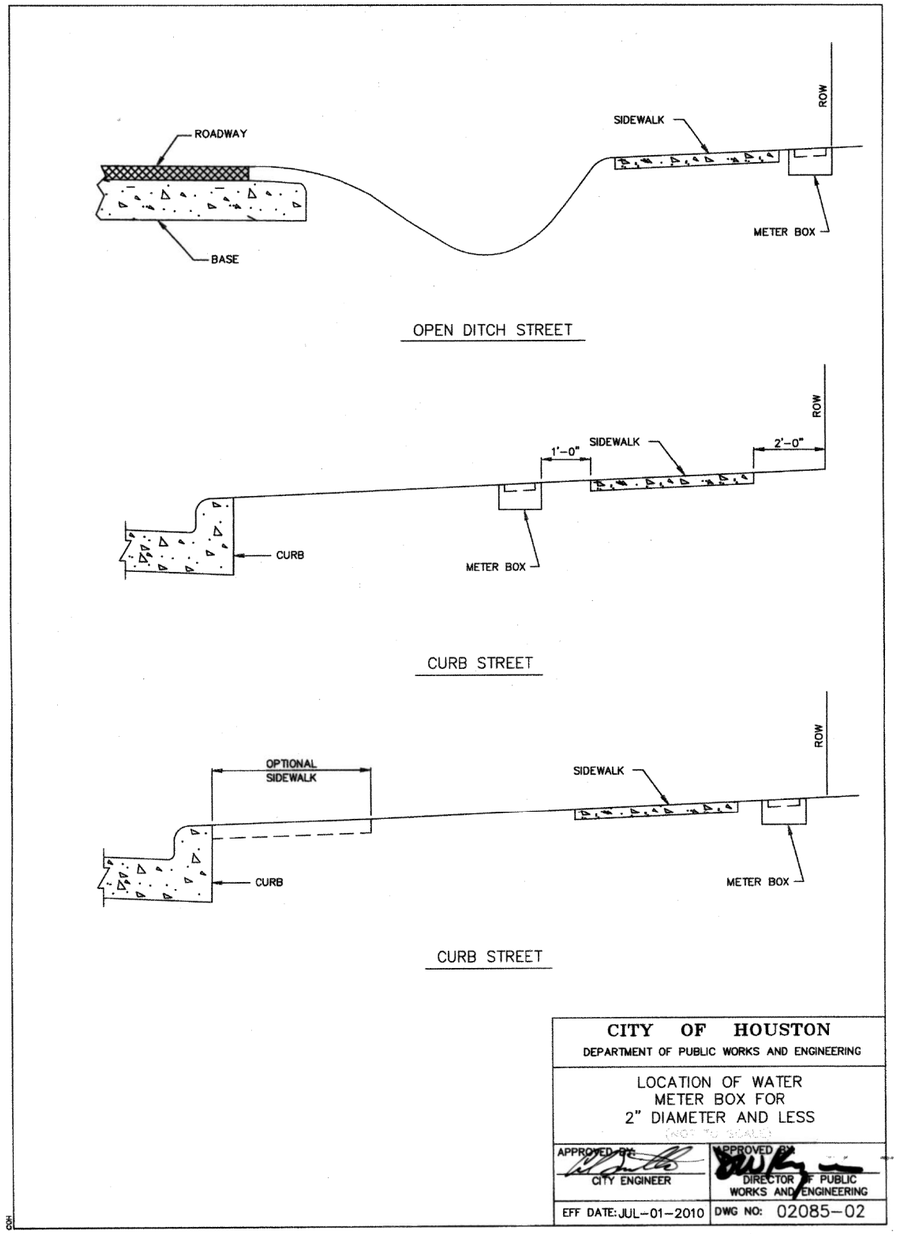
NOTE

1. LID MUST BE ABLE TO ACCEPT THE CITY'S AMR TRANSMITTING ENDPOINT.

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

STANDARD PLASTIC METER BOX FOR ⅝" AND 1" METERS
(NOT TO SCALE)

APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2010	DWG NO: 02085-01



OPEN DITCH STREET

CURB STREET

CURB STREET

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

LOCATION OF WATER METER BOX FOR 2" DIAMETER AND LESS
(NOT TO SCALE)

APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2010	DWG NO: 02085-02

No.	DATE	REVISIONS	APP.

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

SURVEYED BY:
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Texas 125611
10/24/2025
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Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WATER STANDARD DETAILS

SHEET 1 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 459 OF 718	

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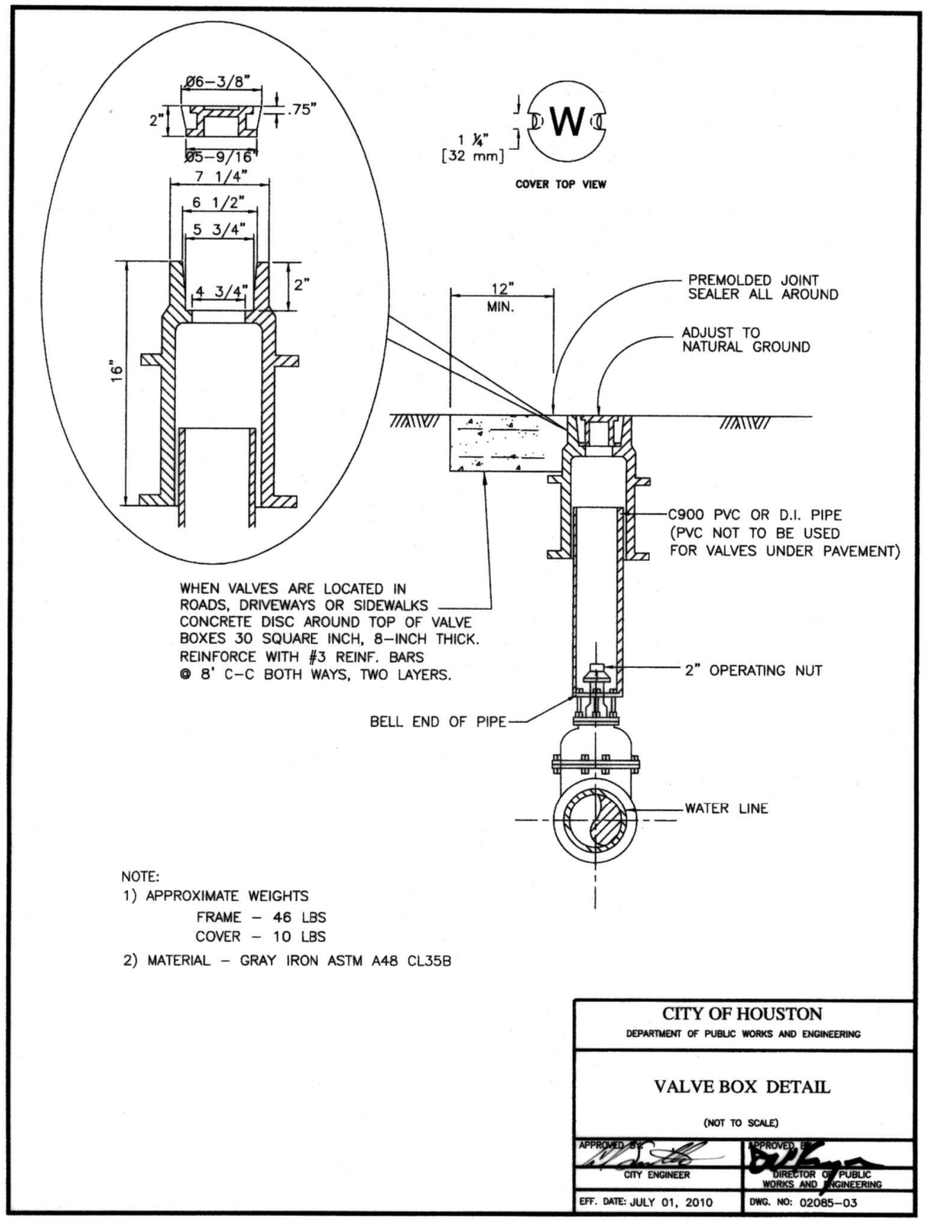
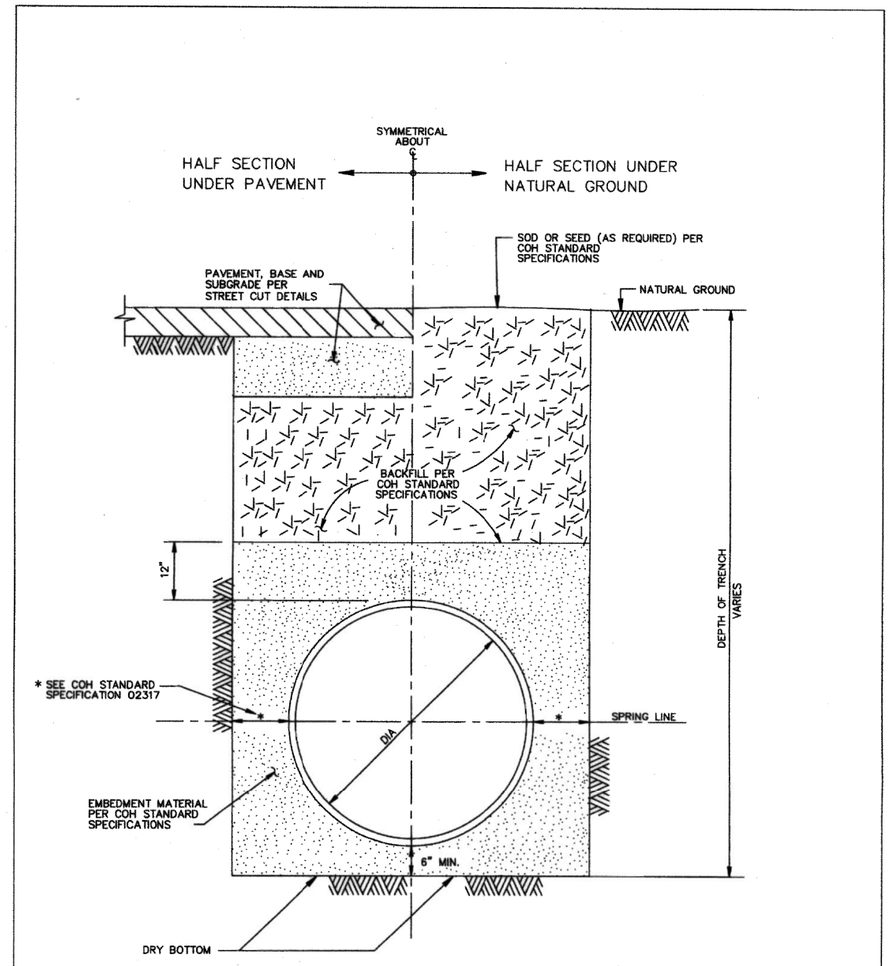


NOTE:
1) APPROXIMATE WEIGHTS
FRAME – 46 LBS
COVER – 10 LBS
2) MATERIAL – GRAY IRON ASTM A48 CL35B

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
VALVE BOX DETAIL (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF. DATE: JULY 01, 2010	DWG. NO: 02085-03



CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
WATER DISTRIBUTION MAIN BEDDING AND BACKFILL FOR OPEN CUT TRENCHES (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2010	DWG NO: 02317-04

No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WATER STANDARD DETAILS

SHEET 2 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 460 OF 718	

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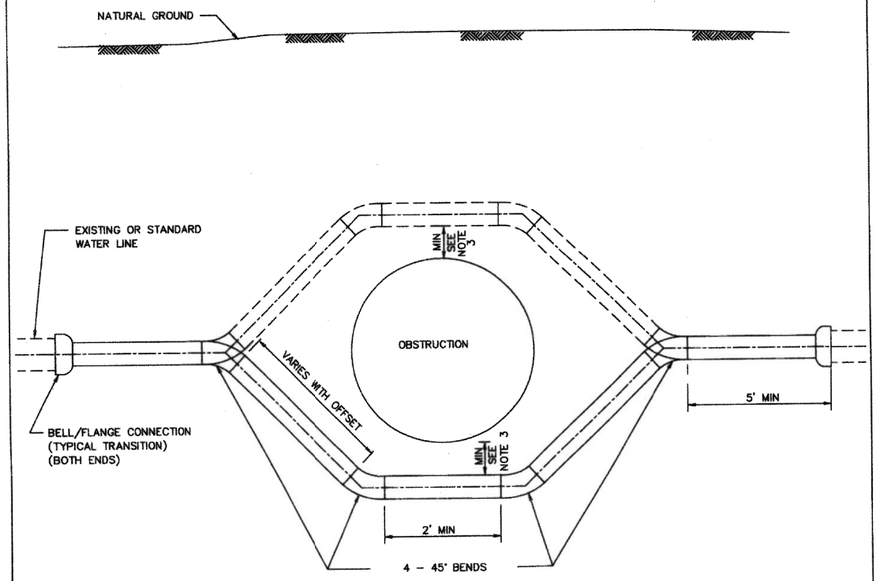
Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Water\W GULF BANK\STANDARDS\WL_STD 03.dgn

NOTE:

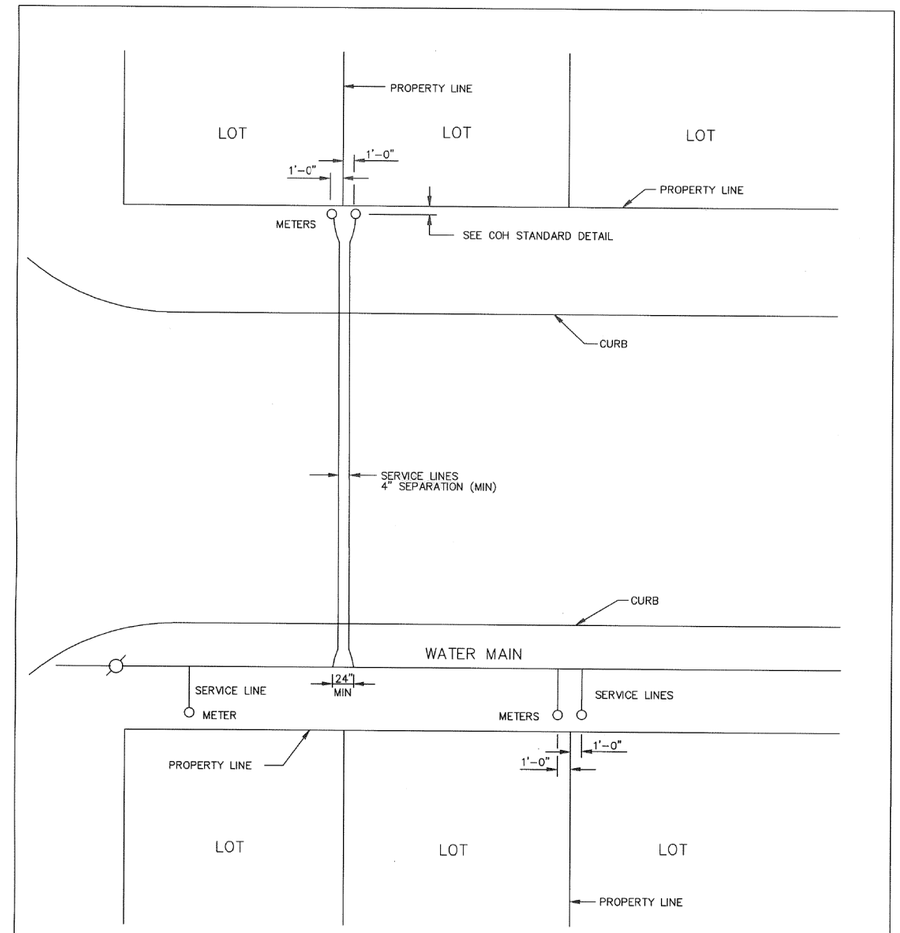
1. MATERIALS AND COATINGS TO BE IN ACCORDANCE WITH WATER LINE STANDARD SPECIFICATIONS.
2. RESTRAIN EXISTING PIPING BEYOND STEEL SECTION AS REQUIRED TO PREVENT MOVEMENT.
3. AS PER DESIGN GUIDELINE.



PIPE OFFSET ALTERNATES

1. DUCTILE IRON PIPE PRESSURE 250 PSI WITH APPROVED RESTRAINED JOINTS.
2. PVC PIPE WITH INTEGRAL RESTRAINED JOINT SYSTEM, OR DUCTILE – IRON RESTRINED JOINT FITTINGS, EPOXY LINED AND COATED. USE 250 PSI AWWA C900 DR 14 FOR PVC RESTRAINED JOINTS.
3. PVC NOT ALLOWED FOR GREATER THAN 20 FT OF COVER OR FOR DIAMETER LARGER THAN 20 IN.
4. USE ONLY DUCTILE IRON AND PVC PRODUCTS LISTED ON OCE DIVISION APPROVED PRODUCTS LIST AND IN ACCORDANCE WITH CITY STANDARD SPECIFICATIONS.

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
TYPICAL STEEL PIPE OFFSET SECTION FOR WATER LINES (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JULY-01-2010	DWG NO: 02511-01



GENERAL NOTES:

1. TWO SERVICE LINES MAY BE INSTALLED IN SAME TRENCH PROVIDING 4" CLEARANCE IS MAINTAINED.
2. ONE METER PER SERVICE LINE

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
TYPICAL 3/4" THROUGH 2" SERVICE ARRANGEMENTS (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2016	DWG NO: 02512-01

No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WATER STANDARD DETAILS

SHEET 3 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 461 OF 718	

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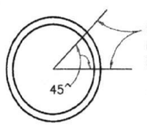
No.	DATE	REVISIONS	APP.

PIPE TAPPING SCHEDULE

WATER MAIN TYPE AND DIAMETER	SERVICE SIZE			
	3/4"	1"	1 1/2"	2"
4" CAST IRON OR DUCTILE IRON	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
4" ASBESTOS (EXISTING) CEMENT	WBSS	WBSS	DSS, WBSS	DSS, WBSS
4" PVC (AWWA C900)	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
6" AND 8" CAST IRON OR DUCTILE IRON	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
6" AND 8" ASBESTOS (EXISTING) CEMENT	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
6" AND 8" CAST IRON OR DUCTILE IRON	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
6" AND 8" PVC (AWWA C900)	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
12" CAST IRON OR DUCTILE IRON	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
12" ASBESTOS (EXISTING) CEMENT	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
12" PVC (AWWA C900)	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
16" AND UP CAST IRON OR DUCTILE IRON	DWBSS	DWBSS	DWBSS	DWBSS
16" AND UP ASBESTOS (EXISTING) CEMENT	DWBSS	DWBSS	DWBSS	DWBSS
16" AND UP PVC (AWWA C900)	DWBSS	DWBSS	DWBSS	DWBSS

DSS - DUAL STRAP SADDLES
WBSS - WIDE BAND STRAP SADDLES
DWBSS - DUAL WIDE BAND STRAP SADDLES



SERVICE TAPS TO BE MADE IN THIS ZONE EXCEPT FOR PVC FASTTAP

BLOW-OFF & CHLORINATION TAPS ARE MADE IN VERTICAL POSITION



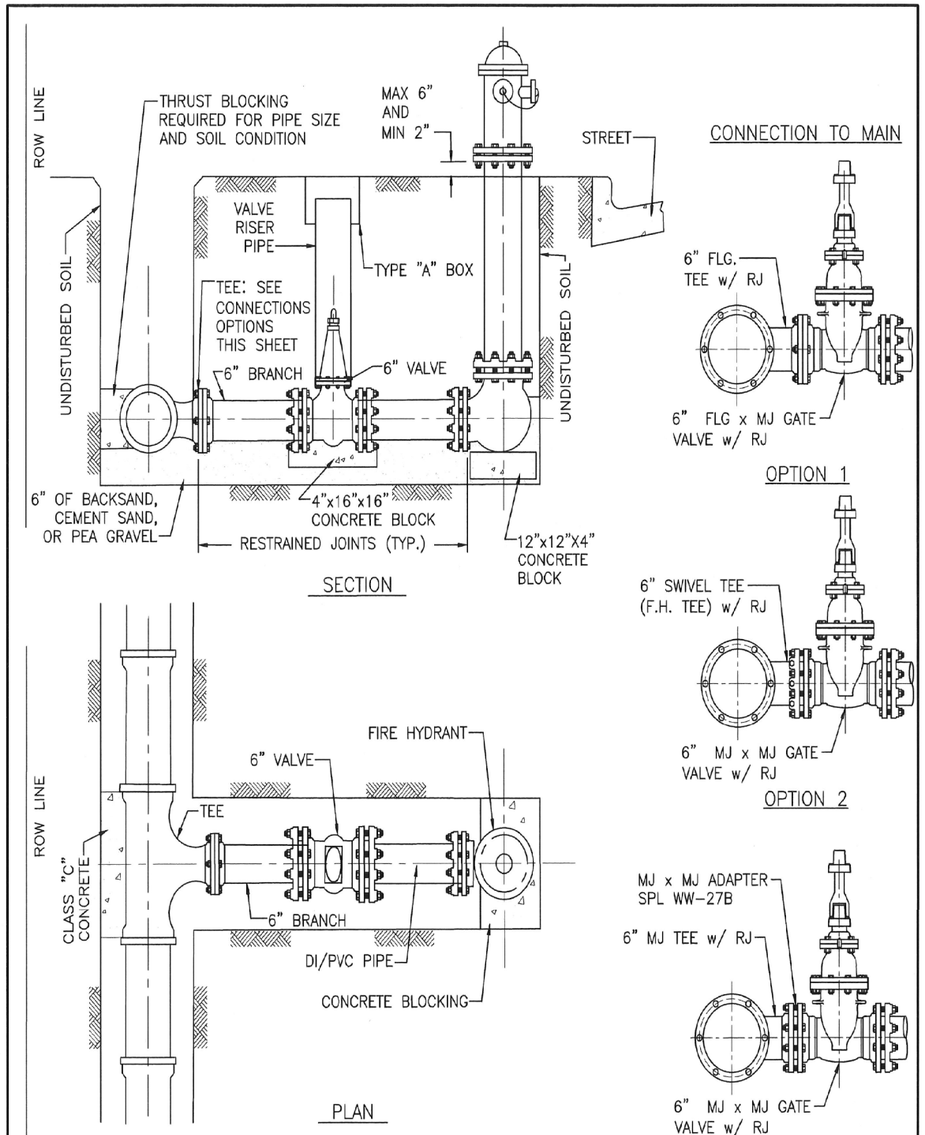
WIDE BAND SINGLE SADDLE OR DUAL SADDLES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

SERVICE TAPS

(NOT TO SCALE)

APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2010	DWG NO: 02512-02



NOTES:

1. LOCATE FIRE HYDRANTS AT POINT OF CURVATURE (PC) OR POINT OF TANGENCY (PT) OF THE INTERSECTION CURB RADIUS, 3 FEET BEHIND CURB OR PROJECTED FUTURE CURB.
2. ON OPEN-DITCH ROADWAYS, SET THE FIRE HYDRANTS WITH IN 5 FEET OF RIGHT-OF-WAY LINES.
3. FIRE HYDRANT STEAMER NOZZLE SHALL FACE THE STREET.
4. LOCATE HYDRANT VALVE IMMEDIATELY ADJACENT TO WATER LINE.
5. ALL PIPING TO BE RESTRAINED JOINTS.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STANDARD FIRE HYDRANT DETAIL

(NOT TO SCALE)

APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF HOUSTON PUBLIC WORKS
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

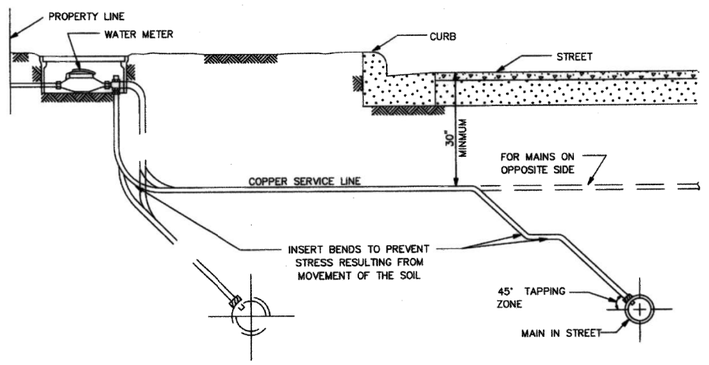
WATER STANDARD DETAILS

SHEET 4 OF 5

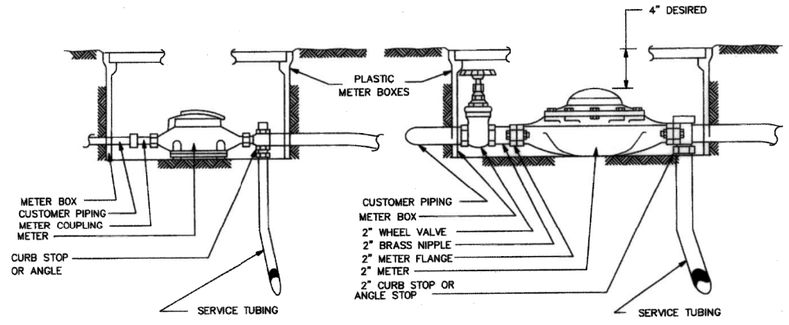
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 462 OF 718	

NOTES:

1 1/2" METER SET IS SAME AS 2" EXCEPT WHEEL VALVE IS NOT REQUIRED.



TYPICAL SECTION SERVICE LINE



5/8", 3/4" AND 1" METER SET

2" METER SET

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

TYPICAL METER SETTINGS

(NOT TO SCALE)

APPROVED BY: CITY ENGINEER

APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: JULY-01-2010 DWG NO: 02526-01

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

WATER STANDARD DETAILS

SHEET 5 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 463 OF 718	

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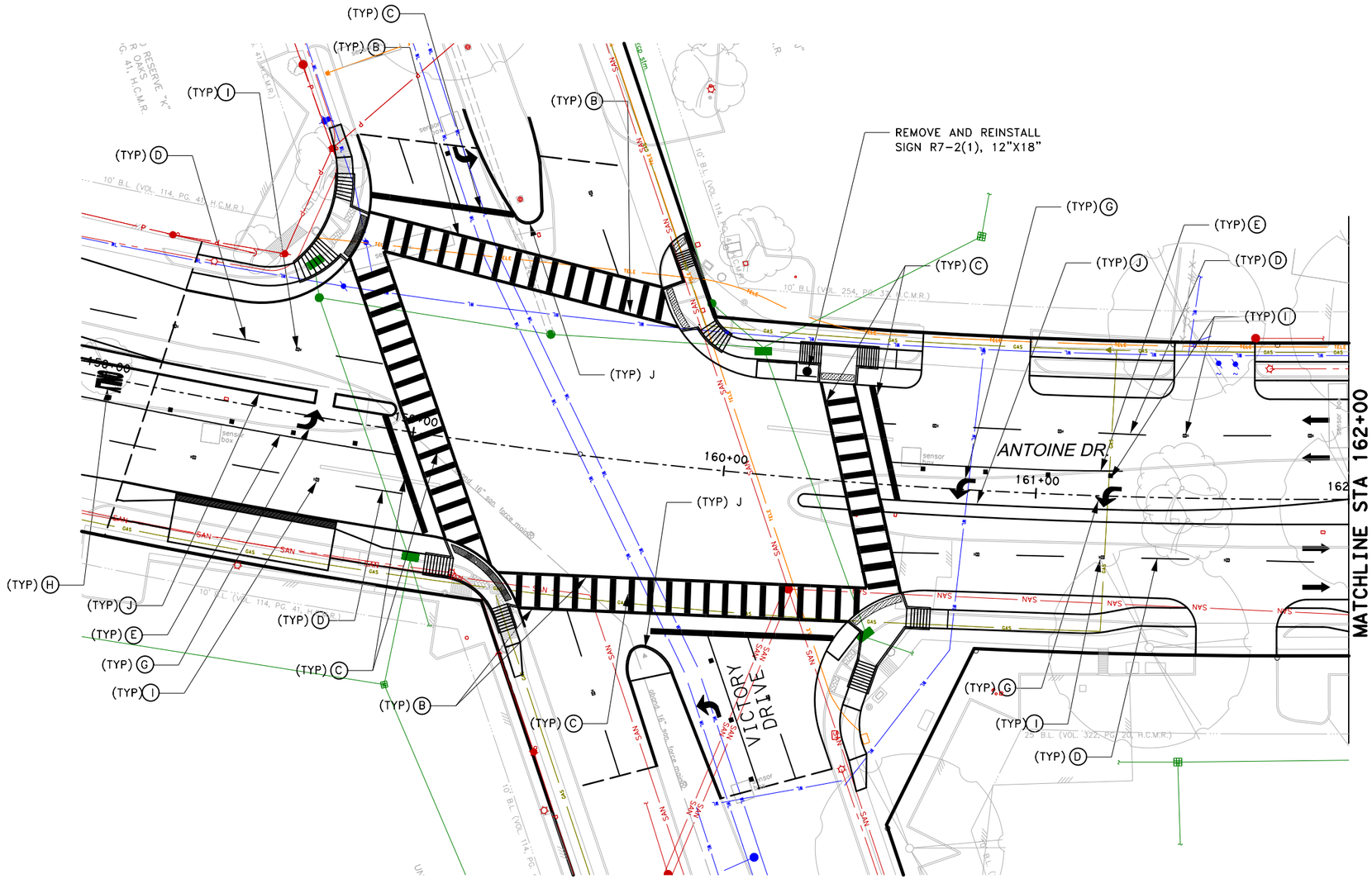

LEGEND

- (A) PAV MRK (W) (4") (SLD)
- (B) PAV MRK (W) (12") (SLD)
- (C) PAV MRK (W) (24") (SLD)
- (D) PAV MRK (W) (4") (BRK)
- (E) PAV MRK (W) (6") (SLD)
- (F) PREFAB PAV MRK TY C (GRN) (SLD) (BLOCK)
- (G) REFL PAV MRK (W) ARROW
- (H) REFL PAV MRK (W) WORD
- (I) RAIS PAV MRK TY II-C-R
- (J) PAV MRK (Y) (6") CURB

0' 20' 40'
SCALE IN FEET

NOTES

1. REFER TO SUMMARY OF SMALL SIGNS FOR ADDITIONAL INFORMATION.
2. REFER TO SIGN AND PAVEMENT MARKING STANDARD FOR ADDITIONAL INFORMATION.
3. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL FIELD VERIFY EXIST TRAFFIC AND STREET SIGNS THAT THE PROJECT WILL AFFECT TO DOCUMENT WHAT SIGNS EXIST AND THEIR LOCATION.
4. THE CONTRACTOR WILL BE RESPONSIBLE FOR SAFE-GUARDING EXISTING SIGNS SO THAT THEY EITHER CONTINUE TO REMAIN VISIBLE AND UPRIGHT IN THE FIELD OR ARE COLLECTED AND STORED IN A SECURED AREA WHEN TEMPORARY SIGHS ARE USED IN LIEU OF THE EXISTING SIGHS.
5. CONTRACTOR SHALL INSTALL ALL PERMANENT SIGHS, POST, AND HARDWARE AS SHOWN ON PLANS AND STANDARD DETAILS.
6. REMOVAL OF EXISTING SIGHS SHALL BE INCIDENTAL.

NOTES

7. METRO SIGNS (BUS STOP) WILL BE INSTALLED BY METRO.
8. DOUBLE REFLECTORS BLUE TRAFFIC MARKERS SHALL BE PLACED 6-INCHES OFFSET OF THE CENTERLINE OF ALL FIRE HYDRANT LOCATION BY THE PAVING CONTRACTOR. HYDRANT LOCATED AT INTERSECTION SHALL HAVE A BUTTON PLACED ON EACH STREET

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DESIGN ENGINEER NAME
FCM ENGINEERS, P.C.
ADDRESS:
3300 S. Gessner Rd.
TEL.No.: 713-706-4412

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

SIGNING AND PAVEMENT MARKING STA 160+00 TO STA 168+50

SHEET 1 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 464 OF 718	

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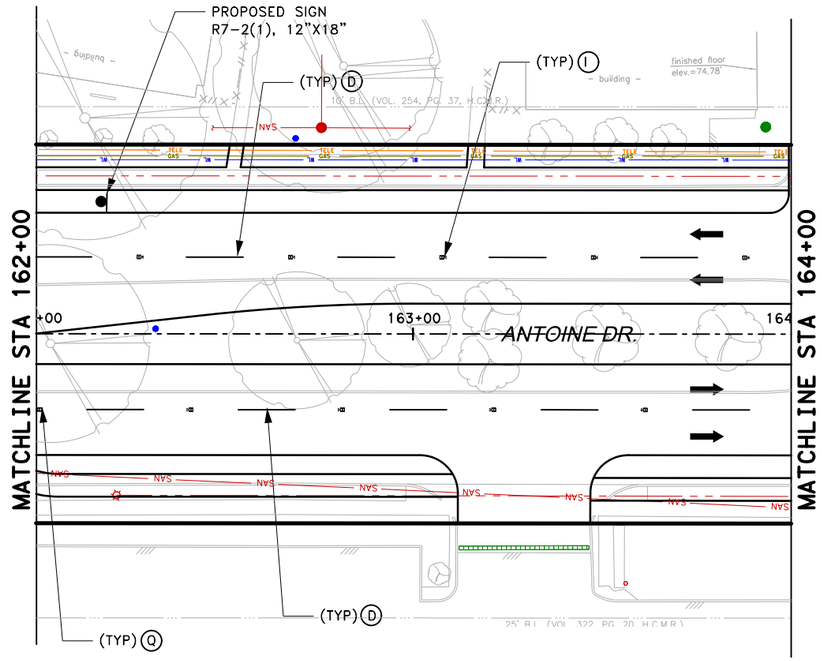
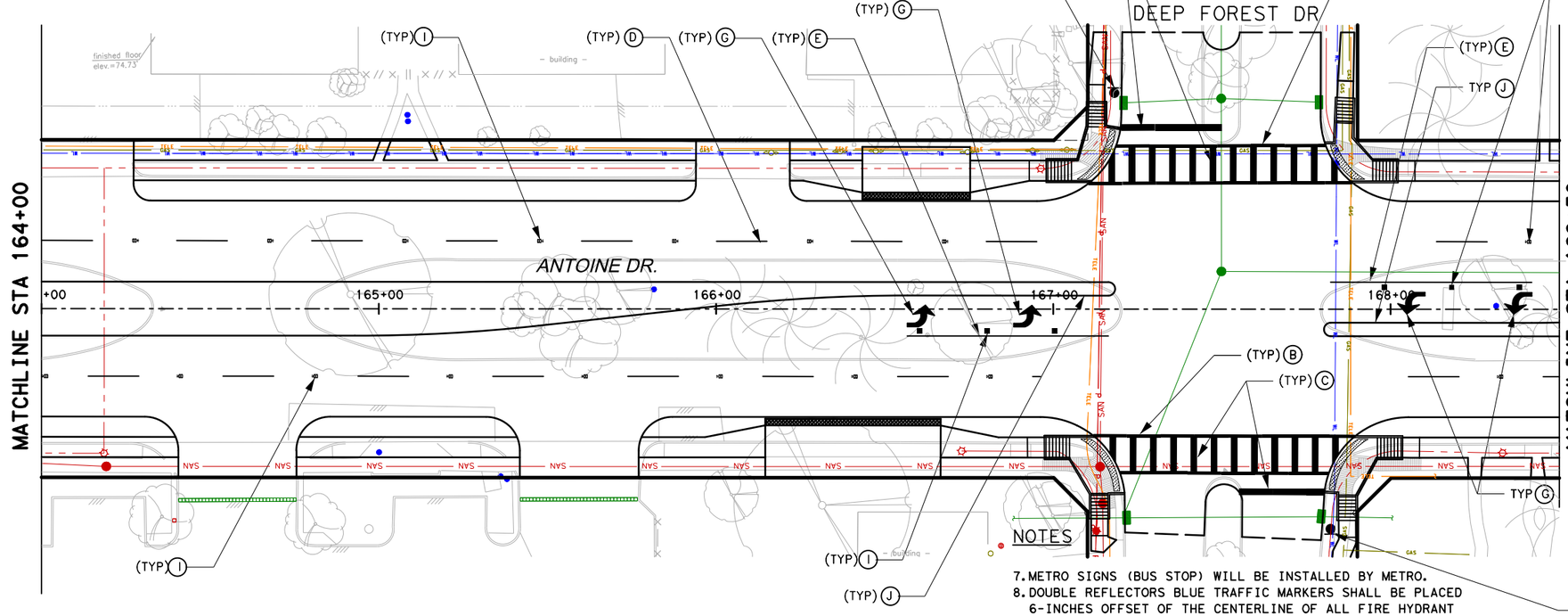


D3	ANTONIE	DR 7300
D3	DEEP FOREST	DR 5800

PROPOSED STOP SIGN
R1-1, 36"X36"
(SEE NOTE 7)



D3	MAPLE HILL	DR 5700 NO OUTLET
D3	ANTONIE	DR 7400

PROPOSED STOP SIGN
R1-1, 36"X36"
(SEE NOTE 7)

NOTES

7. METRO SIGNS (BUS STOP) WILL BE INSTALLED BY METRO.
8. DOUBLE REFLECTORS BLUE TRAFFIC MARKERS SHALL BE PLACED 6-INCHES OFFSET OF THE CENTERLINE OF ALL FIRE HYDRANT LOCATION BY THE PAVING CONTRACTOR. HYDRANT LOCATED AT INTERSECTION SHALL HAVE A BUTTON PLACED ON EACH STREET

LEGEND

- (A) PAV MRK (W) (4") (SLD)
- (B) PAV MRK (W) (12") (SLD)
- (C) PAV MRK (W) (24") (SLD)
- (D) PAV MRK (W) (4") (BRK)
- (E) PAV MRK (W) (6") (SLD)
- (F) PREFAB PAV MRK TY C (GRN) (SLD) (BLOCK)
- (G) REFL PAV MRK (W) ARROW
- (H) REFL PAV MRK (W) WORD
- (I) RAIS PAV MRK TY II-C-R
- (J) PAV MRK (Y) (6") CURB

0' 20' 40'
SCALE IN FEET

NOTES

1. REFER TO SUMMARY OF SMALL SIGNS FOR ADDITIONAL INFORMATION.
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5. CONTRACTOR SHALL INSTALL ALL PERMANENT SIGHS, POST, AND HARDWARE AS SHOWN ON PLANS AND STANDARD DETAILS.
6. REMOVAL OF EXISTING SIGHS SHALL BE INCIDENTAL.

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TEL.No.: 713-706-4412

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

SIGNING AND PAVEMENT MARKING STA 162+00 TO STA 168+50

SHEET 2 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 465 OF 718	

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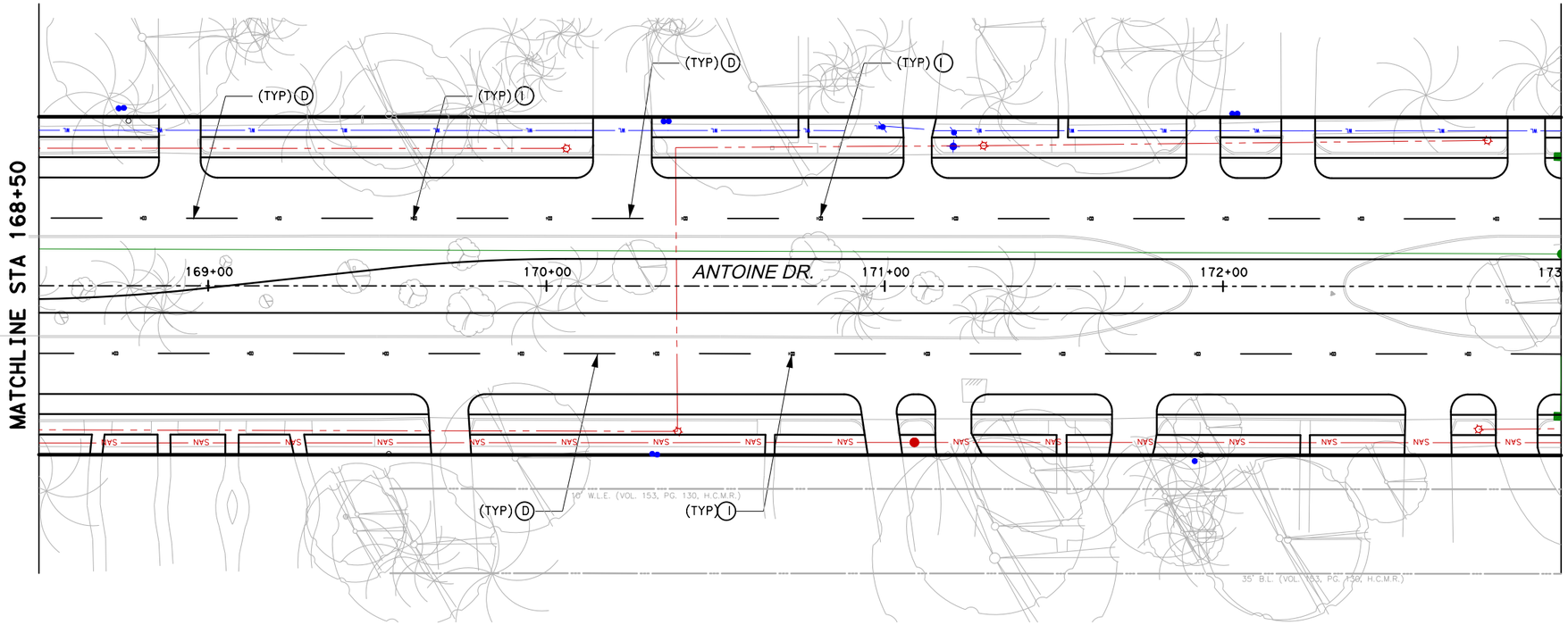

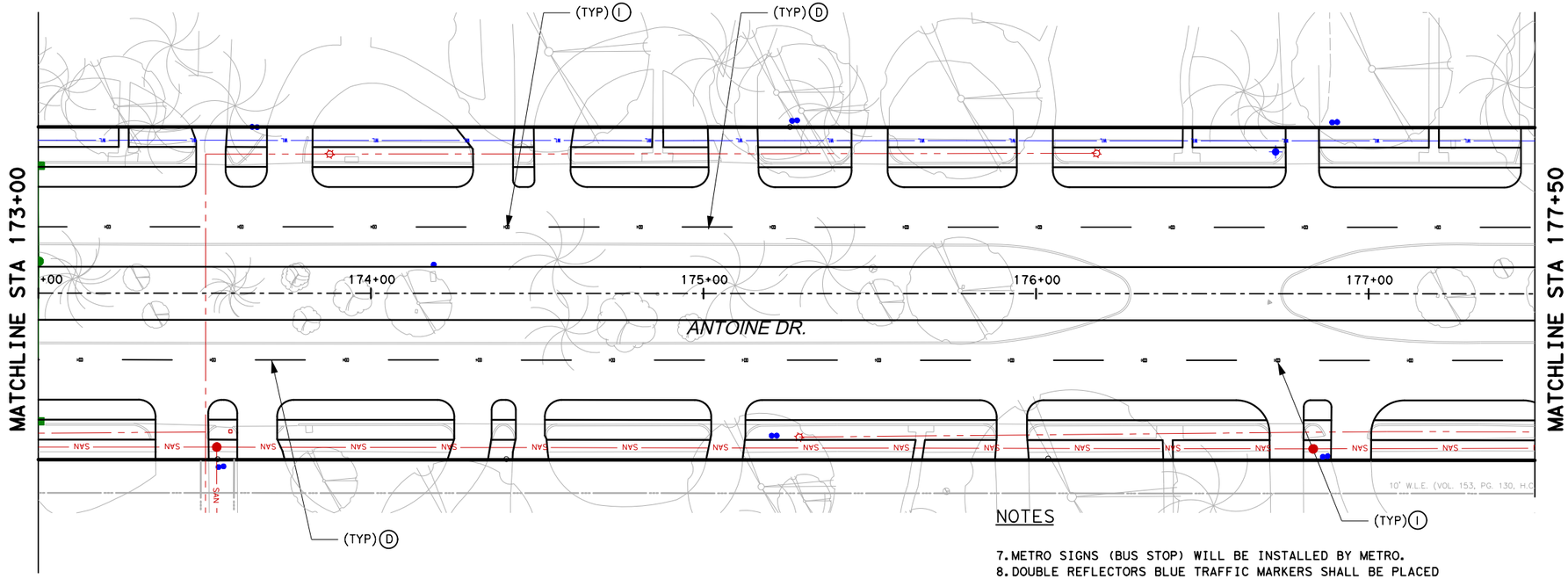

LEGEND

- (A) PAV MRK (W) (4") (SLD)
- (B) PAV MRK (W) (12") (SLD)
- (C) PAV MRK (W) (24") (SLD)
- (D) PAV MRK (W) (4") (BRK)
- (E) PAV MRK (W) (6") (SLD)
- (F) PREFAB PAV MRK TY C (GRN)(SLD)(BLOCK)
- (G) REFL PAV MRK (W) ARROW
- (H) REFL PAV MRK (W) WORD
- (I) RAIS PAV MRK TY II-C-R
- (J) PAV MRK (Y)(6") CURB

0′ 20′ 40′
SCALE IN FEET

NOTES

1. REFER TO SUMMARY OF SMALL SIGNS FOR ADDITIONAL INFORMATION.
2. REFER TO SIGN AND PAVEMENT MARKING STANDARD FOR ADDITIONAL INFORMATION.
3. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL FIELD VERIFY EXIST TRAFFIC AND STREET SIGNS THAT THE PROJECT WILL AFFECT TO DOCUMENT WHAT SIGNS EXIST AND THEIR LOCATION.
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NOTES

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8. DOUBLE REFLECTORS BLUE TRAFFIC MARKERS SHALL BE PLACED 6-INCHES OFFSET OF THE CENTERLINE OF ALL FIRE HYDRANT LOCATION BY THE PAVING CONTRACTOR. HYDRANT LOCATED AT INTERSECTION SHALL HAVE A BUTTON PLACED ON EACH STREET

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DESIGN ENGINEER NAME
FCM ENGINEERS, P.C.
ADDRESS:
3300 S. Gessner Rd.
TEL.No.: 713-706-4412

SURVEYED BY:
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

SIGNING AND PAVEMENT MARKING STA 168+50 TO STA 177+50

SHEET 3 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 466 OF 718	

Plotted on: 10/23/2025 2:09:20 PM GEO
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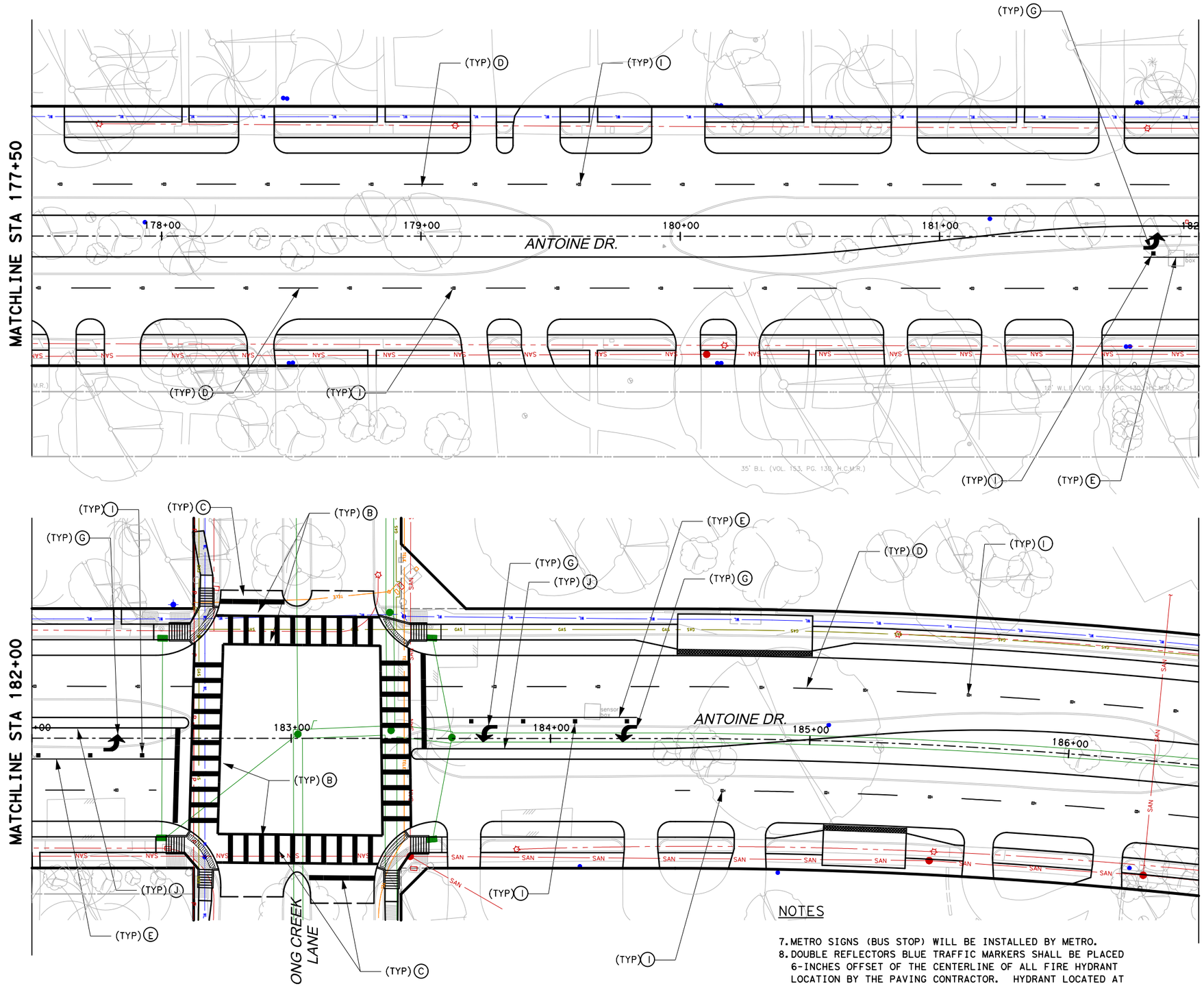

LEGEND

- (A) PAV MRK (W) (4") (SLD)
- (B) PAV MRK (W) (12") (SLD)
- (C) PAV MRK (W) (24") (SLD)
- (D) PAV MRK (W) (4") (BRK)
- (E) PAV MRK (W) (6") (SLD)
- (F) PREFAB PAV MRK TY C (GRN)(SLD)(BLOCK)
- (G) REFL PAV MRK (W) ARROW
- (H) REFL PAV MRK (W) WORD
- (I) RAIS PAV MRK TY II-C-R
- (J) PAV MRK (Y)(6") CURB

0′ 20′ 40′
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

SIGNING AND PAVEMENT MARKING STA 177+50 TO STA 186+50

SHEET 4 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 467 OF 718	

Plotted on: 10/23/2025 2:09:21 PM GEO
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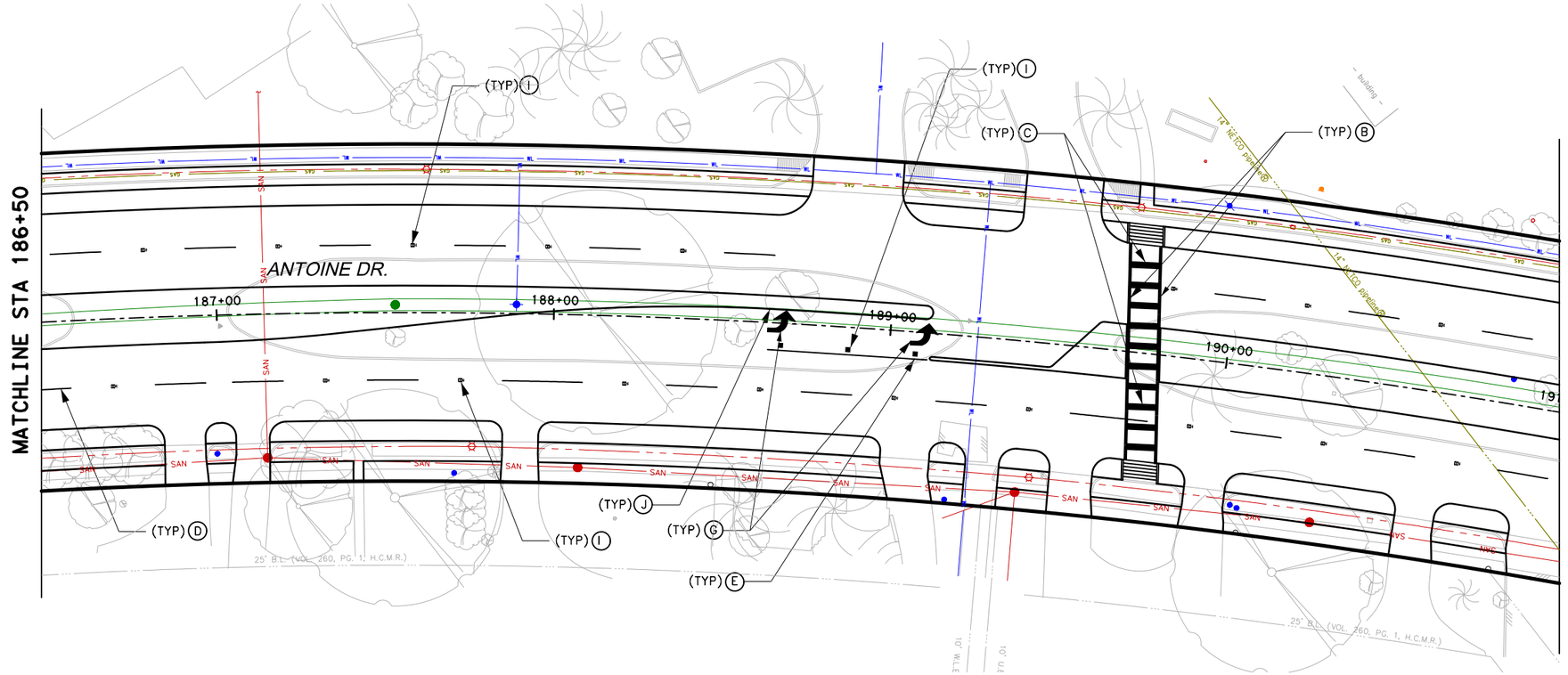

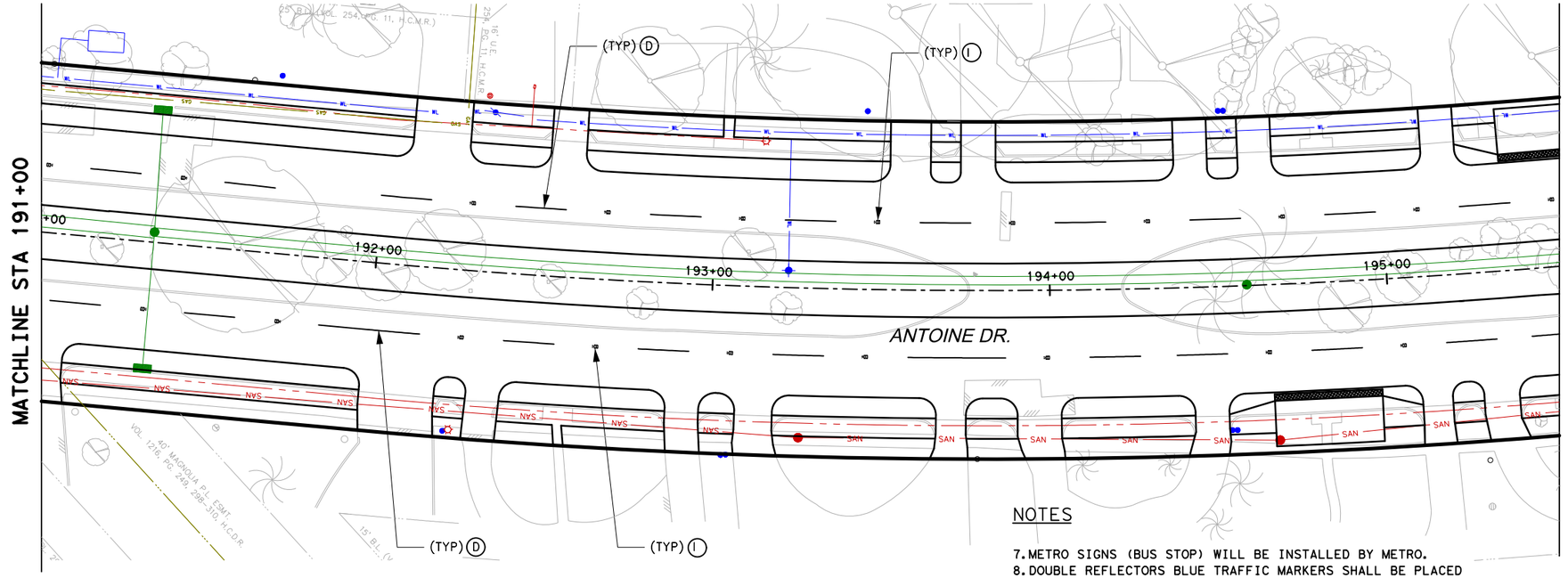

LEGEND

- (A) PAV MRK (W) (4") (SLD)
- (B) PAV MRK (W) (12") (SLD)
- (C) PAV MRK (W) (24") (SLD)
- (D) PAV MRK (W) (4") (BRK)
- (E) PAV MRK (W) (6") (SLD)
- (F) PREFAB PAV MRK TY C (GRN)(SLD)(BLOCK)
- (G) REFL PAV MRK (W) ARROW
- (H) REFL PAV MRK (W) WORD
- (I) RAIS PAV MRK TY II-C-R
- (J) PAV MRK (Y)(6") CURB

0′ 20′ 40′
SCALE IN FEET

NOTES

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

SIGNING AND PAVEMENT MARKING STA 186+50 TO STA 195+50

SHEET 5 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 468 OF 718	

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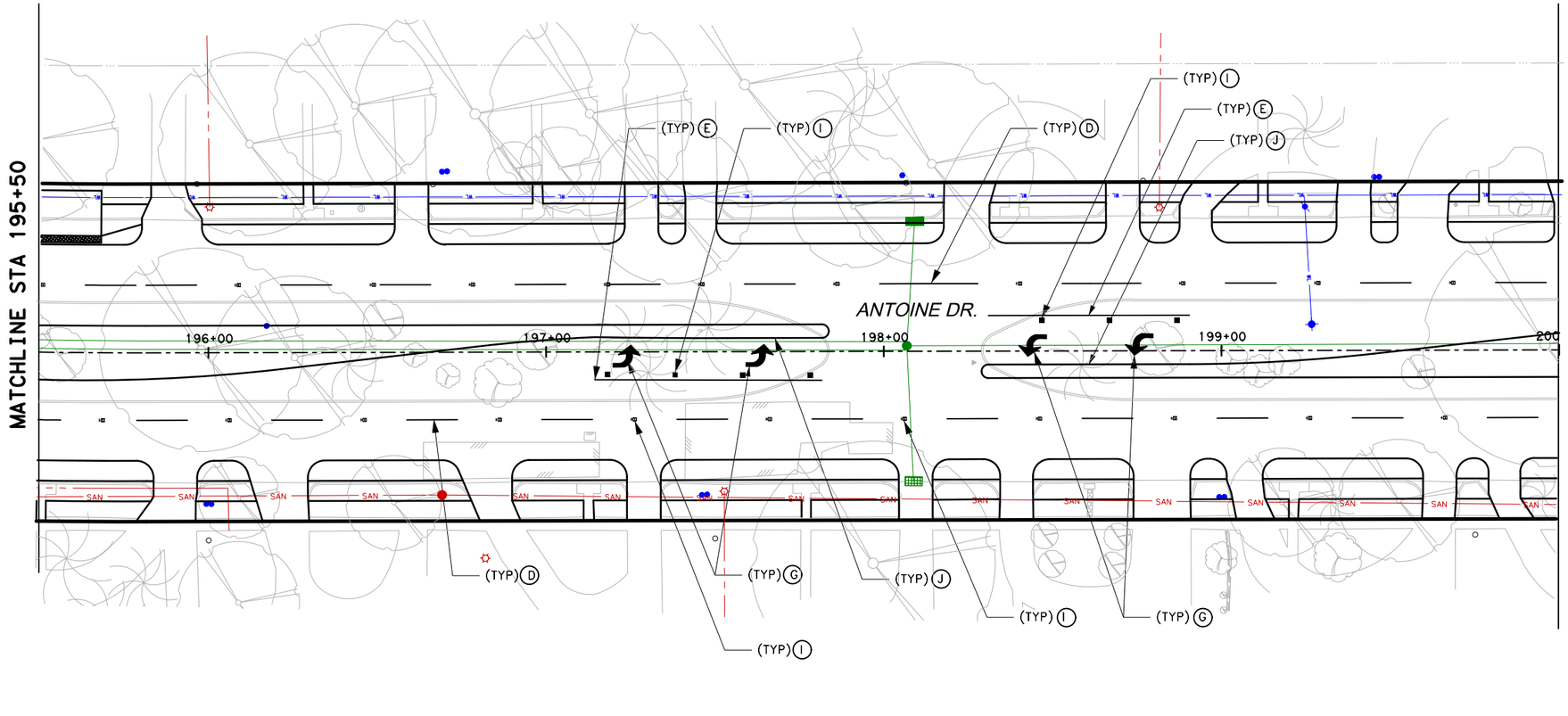

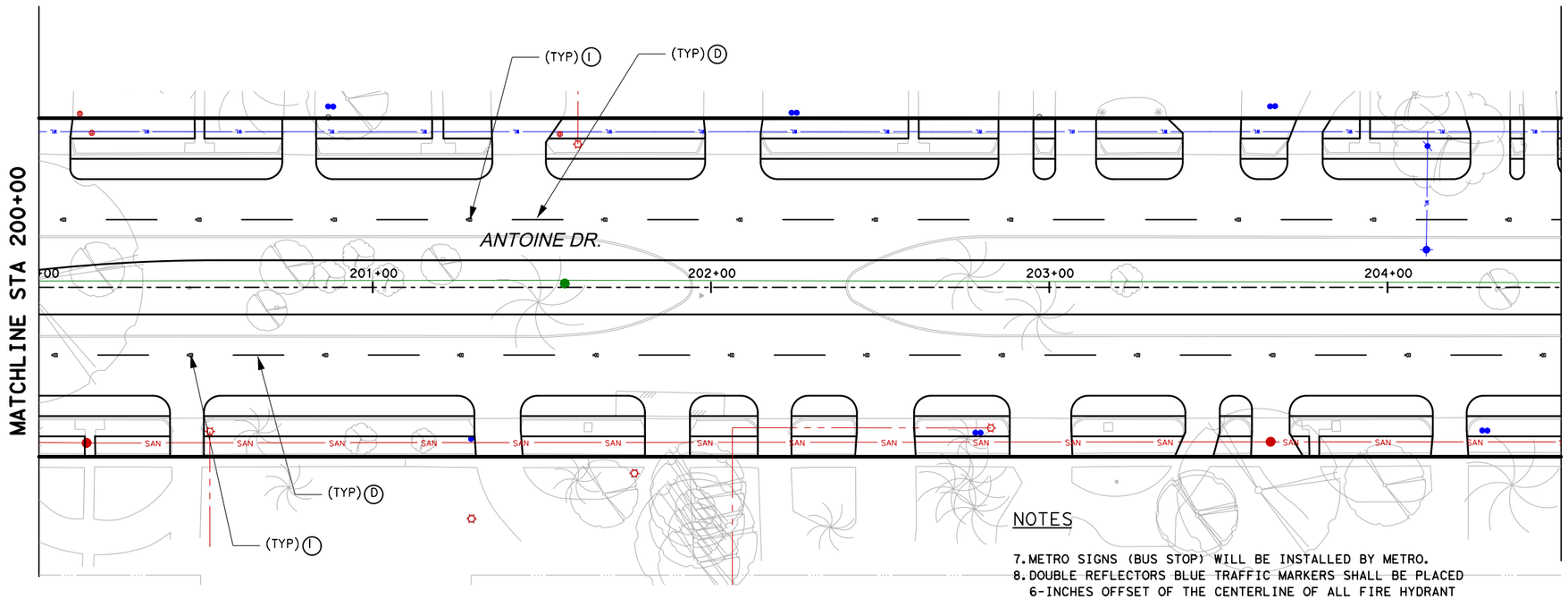

LEGEND

- (A) PAV MRK (W) (4") (SLD)
- (B) PAV MRK (W) (12") (SLD)
- (C) PAV MRK (W) (24") (SLD)
- (D) PAV MRK (W) (4") (BRK)
- (E) PAV MRK (W) (6") (SLD)
- (F) PREFAB PAV MRK TY C (GRN)(SLD)(BLOCK)
- (G) REFL PAV MRK (W) ARROW
- (H) REFL PAV MRK (W) WORD
- (I) RAIS PAV MRK TY II-C-R
- (J) PAV MRK (Y)(6") CURB

N

0' 20' 40'
SCALE IN FEET

NOTES

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FCM ENGINEERS, P.C.
ADDRESS:
3300 S. Gessner Rd.
TEL.No.: 713-706-4412

SURVEYED BY:
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

SIGNING AND PAVEMENT MARKING STA 195+50 TO STA 204+50

SHEET 6 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 469 OF 718	

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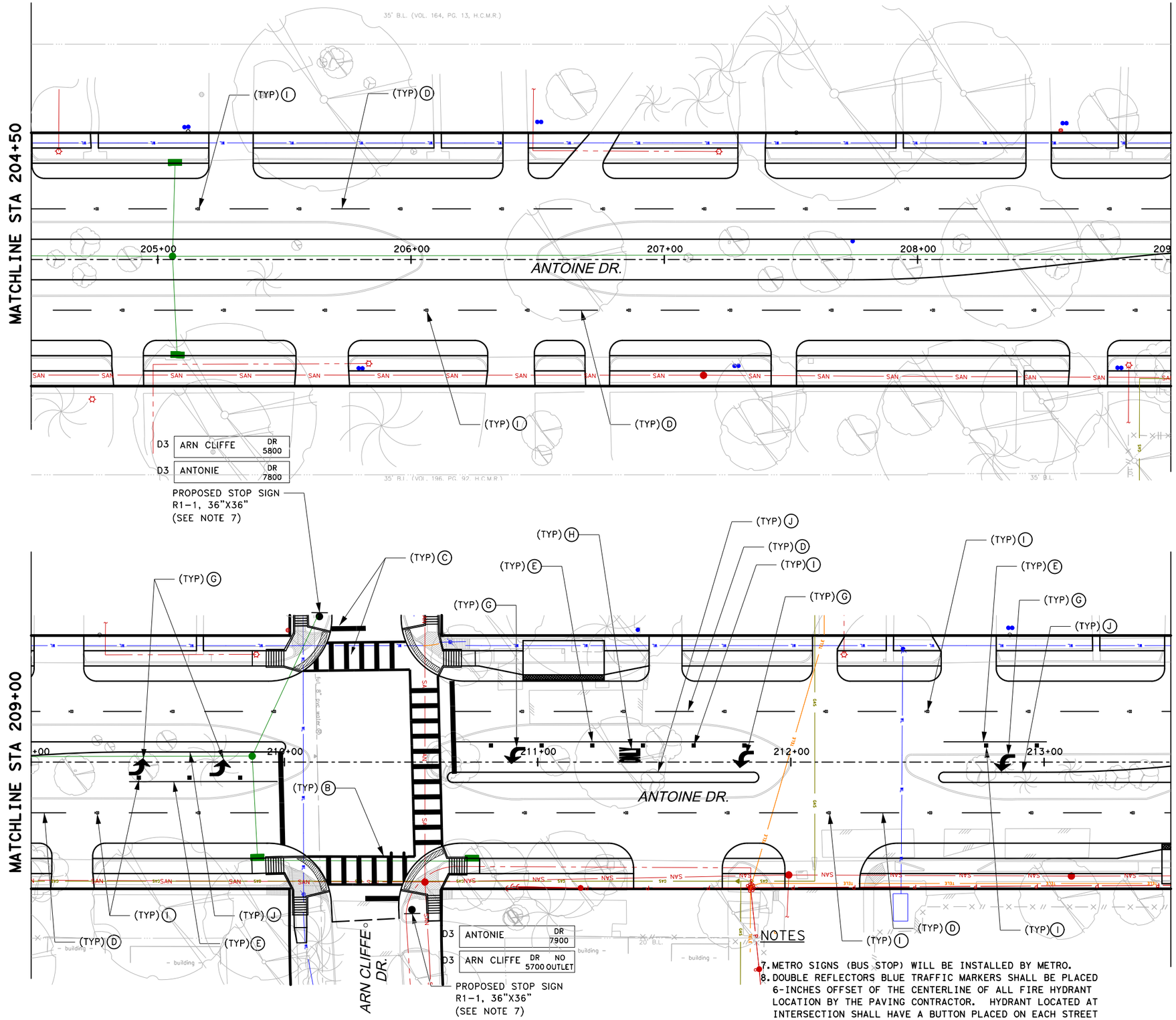

LEGEND

- (A) PAV MRK (W) (4") (SLD)
- (B) PAV MRK (W) (12") (SLD)
- (C) PAV MRK (W) (24") (SLD)
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- (E) PAV MRK (W) (6") (SLD)
- (F) PREFAB PAV MRK TY C (GRN)(SLD)(BLOCK)
- (G) REFL PAV MRK (W) ARROW
- (H) REFL PAV MRK (W) WORD
- (I) RAIS PAV MRK TY II-C-R
- (J) PAV MRK (Y)(6") CURB

0' 20' 40'
SCALE IN FEET

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3300 S. Gessner Rd.
TEL.No.: 713-706-4412

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

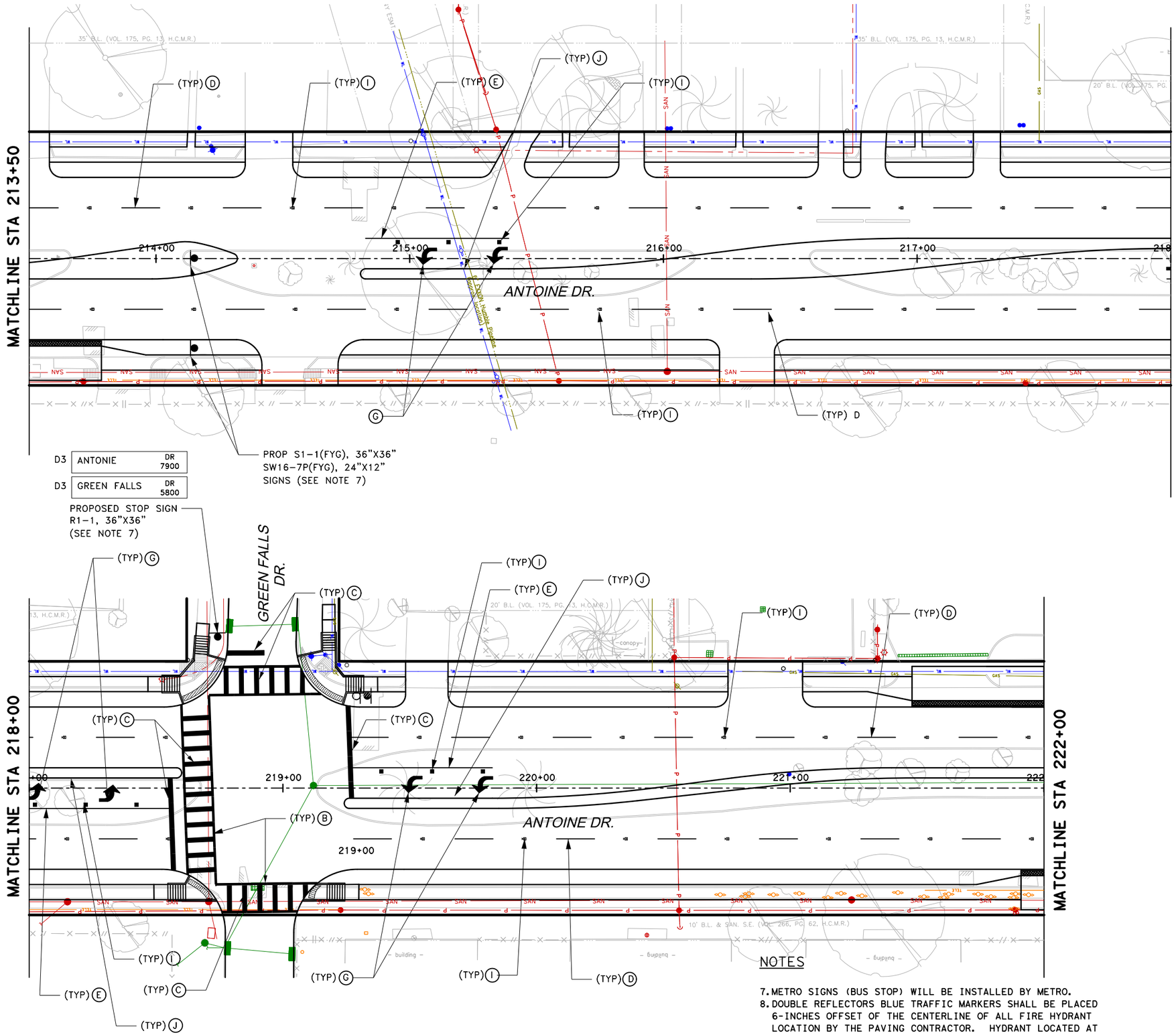
ANTOINE DRIVE

SIGNING AND PAVEMENT MARKING
STA 204+50 TO STA 213+50

SHEET 7 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 470 OF 718	

Design Filename: Y:\2017012 Antoine North Paving and Drainage\MicroStation\95% SET-CAD DESIGN FILES_03_07_2025\HARRIS SIGNING & PAVING MARKING\HARRY FINAL SUBMITTELS\007-PROP-PVMT MARKI



LEGEND

- (A) PAV MRK (W) (4") (SLD)
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- (C) PAV MRK (W) (24") (SLD)
- (D) PAV MRK (W) (4") (BRK)
- (E) PAV MRK (W) (6") (SLD)
- (F) PREFAB PAV MRK TY C (GRN)(SLD)(BLOCK)
- (G) REFL PAV MRK (W) ARROW
- (H) REFL PAV MRK (W) WORD
- (I) RAIS PAV MRK TY II-C-R
- (J) PAV MRK (Y)(6") CURB

0' 20' 40'
SCALE IN FEET

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TEL.No.: 713-706-4412

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

SIGNING AND PAVEMENT MARKING STA 213+50 TO STA 222+00

SHEET 8 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 471 OF 718	

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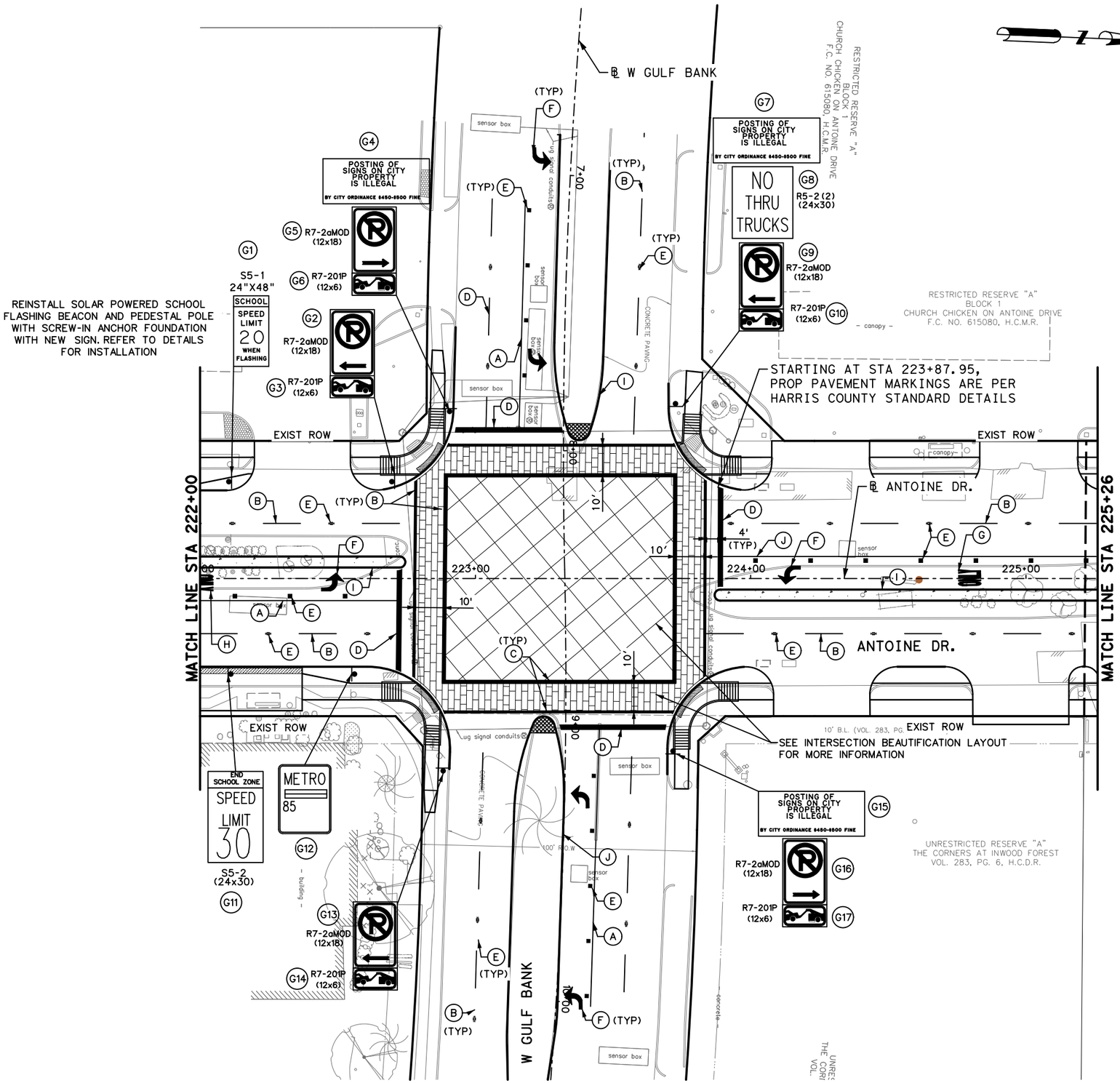

LEGEND

- PROPOSED LANE
- EXISTING LANE
- RIGHT-OF-WAY
- PROP CURB
- (A) PAV MRK (W) (6") (SLD)
- (B) PAV MRK (W) (4") (BRK)
- (C) PAV MRK (W) (12") (SLD)
- (D) PAV MRK (W) (24") (SLD)
- (E) RAIS PAV MRK TY II-C-R
- (F) REFL PAV MRK (W) ARROW
- (G) REFL PAV MRK (W) WORD
- (H) REFL PAV MRK TYP C PREFORM SYMBOL (BICYCLE GREEN)
- (I) PAV MRK (Y) (6") CURB
- (J) PAV MRK (W) (8") SLD
- (K) NON-REFLECTORIZED WHITE RAISED TRAFFIC BUTTONS

NOTES:

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0′ 20′ 40′
SCALE IN FEET

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY, #400
HOUSTON, TX 77079

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

SIGNING & PAVEMENT MARKINGS

SHEET 9 OF 18

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CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 472 OF 718	

Plotted on: 10/23/2025 9:37:04 AMJOviedo
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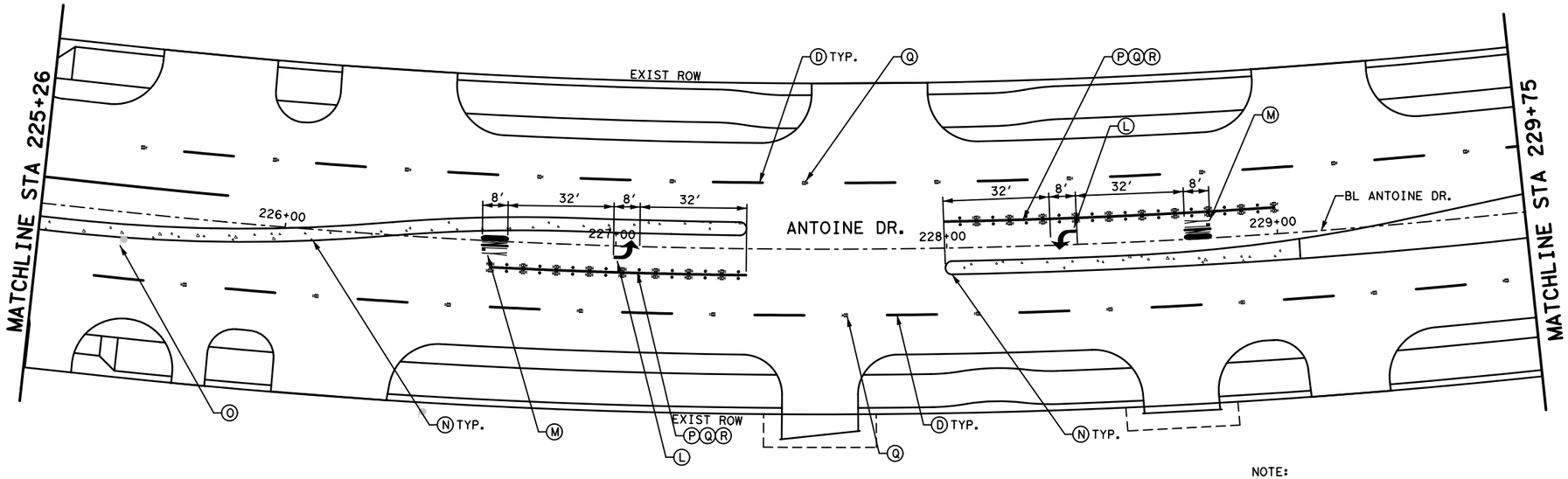
LEGEND

- PROPOSED LANE
- EXISTING LANE
- RIGHT-OF-WAY
- PROP CURB
- (A) PAV MRK (W) (4") (SLD)
- (B) PAV MRK (W) (12") (SLD)
- (C) PAV MRK (W) (24") (SLD)
- (D) PAV MRK (W) (4") (BRK)
- (E) PAV MRK (W) (6") (SLD)
- (F) REFL PAV MRK TY I (Y)(4")(BRK)
- (G) REFL PAV MRK TY I (Y)(4")(DBL SLD)
- (H) RAIS PAV MRK TY II-A-A
- (I) RAIS PAV MRK TY I-C
- (J) PREFAB PAV MRK TY C (GRN)(SLD)(BLOCK)
- (K) REFL PAV MRK (W) SHARROW
- (L) REFL PAV MRK (W) ARROW
- (M) REFL PAV MRK (W) WORD
- (N) REFL PAV MRK TY II (Y)(12")(SLD)
- (O) REMOVE EXIST SIGN
- (P) PAV MRK (W) (8") (SLD)
- (Q) REFL PAV MRK TY II-C-R (W)
- (R) NON REFL RAISED BUTTON (W)
- (S) REFL PAV MARK TY II A-A @ 20' C-C

No.	DATE	REVISIONS	APP:



NOTE:

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7. HARRIS COUNTY SIGNAGE AND PAVEMENT MARKINGS DETAILS SHALL BE UTILIZED WITHIN HARRIS COUNTY LIMITS.

0' 20' 40'
SCALE IN FEET

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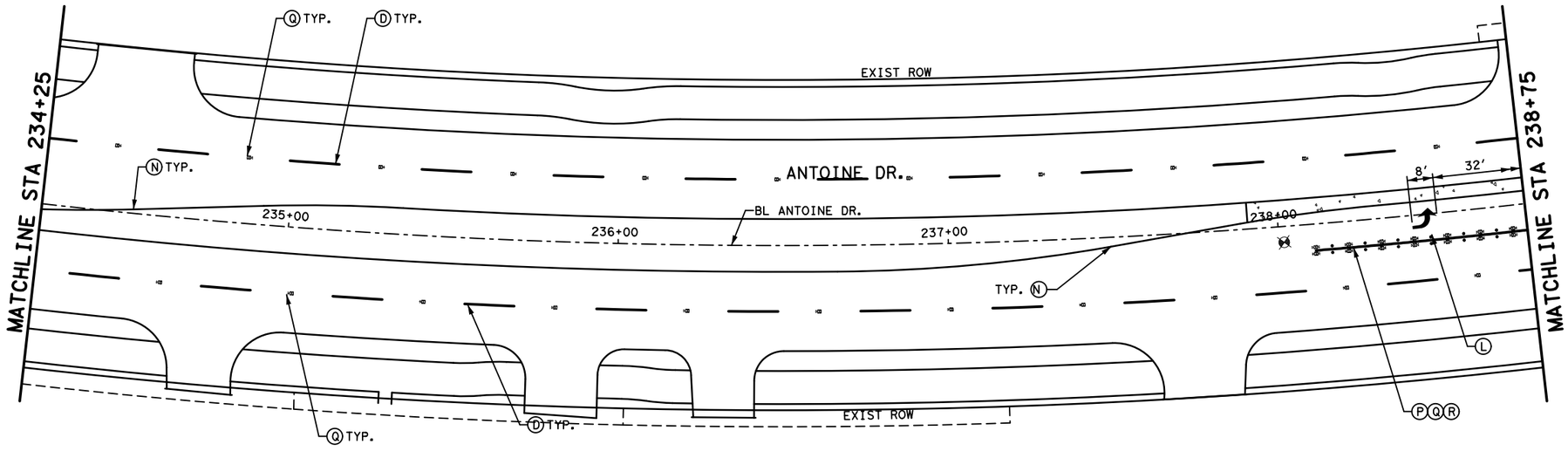
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

SIGNING & PAVEMENT MARKING STA 225+26 TO STA 229+75

SHEET 10 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 473 OF 718	



LEGEND

- PROPOSED LANE
- EXISTING LANE
- RIGHT-OF-WAY
- PROP CURB
- (A) PAV MRK (W) (4") (SLD)
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- (D) PAV MRK (W) (4") (BRK)
- (E) PAV MRK (W) (6") (SLD)
- (F) REFL PAV MRK TY I (Y)(4")(BRK)
- (G) REFL PAV MRK TY I (Y)(4")(DBL SLD)
- (H) RAIS PAV MRK TY II-A-A
- (I) RAIS PAV MRK TY I-C
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- (K) REFL PAV MRK (W) SHARROW
- (L) REFL PAV MRK (W) ARROW
- (M) REFL PAV MRK (W) WORD
- (N) REFL PAV MRK TY II (Y)(12")(SLD)
- (O) REMOVE EXIST SIGN
- (P) PAV MRK (W) (8") (SLD)
- (Q) REFL PAV MRK TY II-C-R (W)
- (R) NON REFL RAISED BUTTON (W)
- (S) REFL PAV MARK TY II A-A @ 20' C-C

No.	DATE	REVISIONS	APP.

0' 20' 40'
SCALE IN FEET

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Texas Registered Engineering Firm F-748

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

SIGNING & PAVEMENT MARKING STA 234+25 TO STA 238+75

SHEET 11 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 474 OF 718	

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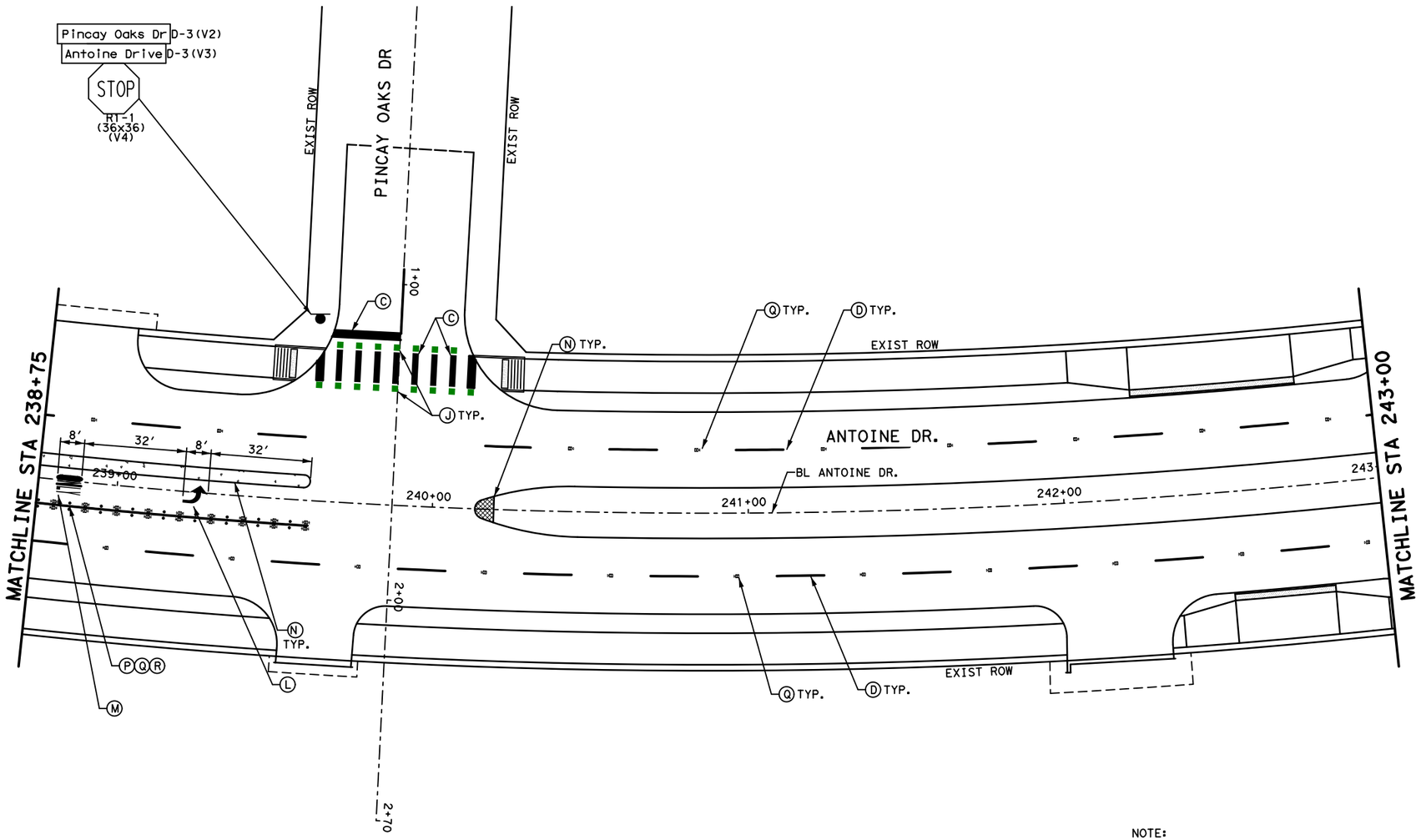

LEGEND

- PROPOSED LANE
- EXISTING LANE
- RIGHT-OF-WAY
- PROP CURB
- (A) PAV MRK (W) (4") (SLD)
- (B) PAV MRK (W) (12") (SLD)
- (C) PAV MRK (W) (24") (SLD)
- (D) PAV MRK (W) (4") (BRK)
- (E) PAV MRK (W) (6") (SLD)
- (F) REFL PAV MRK TY I (Y)(4")(BRK)
- (G) REFL PAV MRK TY I (Y)(4")(DBL SLD)
- (H) RAIS PAV MRK TY II-A-A
- (I) RAIS PAV MRK TY I-C
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- (K) REFL PAV MRK (W) SHARROW
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- (M) REFL PAV MRK (W) WORD
- (N) REFL PAV MRK TY II (Y)(12")(SLD)
- (O) REMOVE EXIST SIGN
- (P) PAV MRK (W) (8") (SLD)
- (Q) REFL PAV MRK TY II-C-R (W)
- (R) NON REFL RAISED BUTTON (W)
- (S) REFL PAV MARK TY II A-A @ 20' C-C

No.	DATE	REVISIONS	APP:

0' 20' 40'
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

SIGNING & PAVEMENT MARKING
STA 238+75 TO STA 243+00

SHEET 12 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 475 OF 718	

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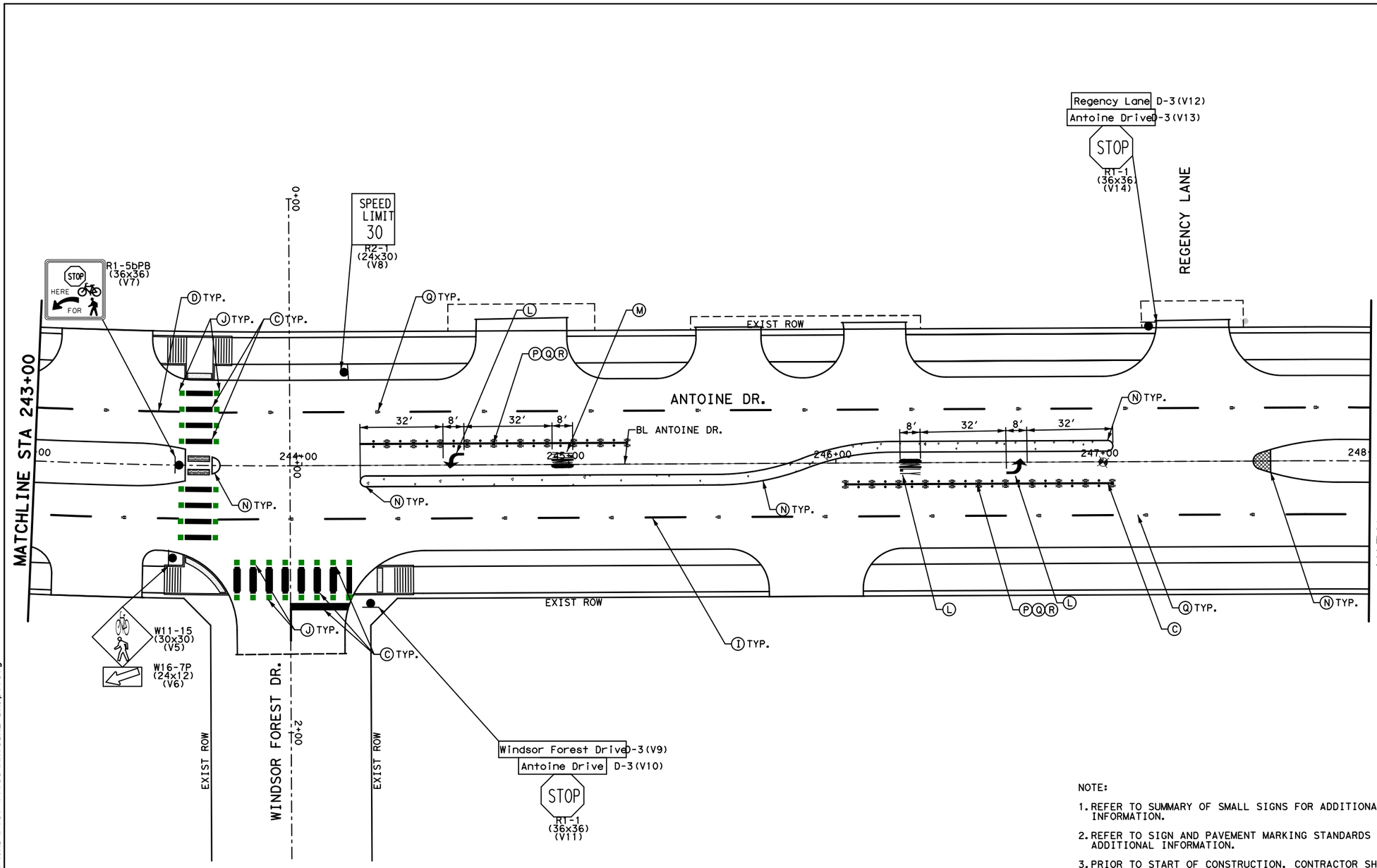

LEGEND

- PROPOSED LANE
- EXISTING LANE
- RIGHT-OF-WAY
- PROP CURB
- (A) PAV MRK (W) (4") (SLD)
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- (S) REFL PAV MARK TY II A-A @ 20' C-C

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

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SIGNING & PAVEMENT MARKING STA 243+00 TO STA 248+00

SHEET 13 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 476 OF 718	

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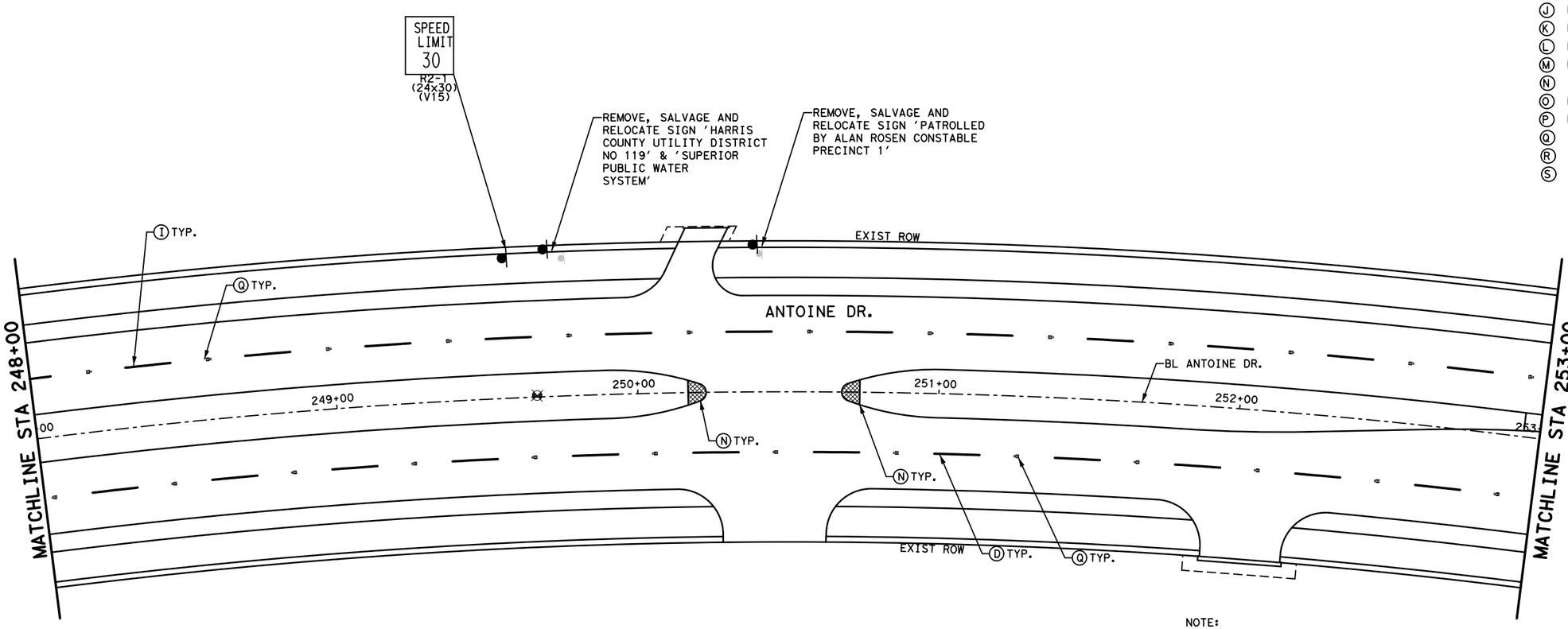
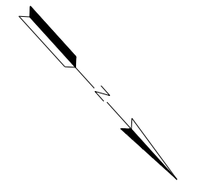
No.	DATE	REVISIONS	APP'D





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SIGNING & PAVEMENT MARKING STA 248+00 TO STA 253+00

SHEET 14 OF 18

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DRAWING SCALE	
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CITY OF HOUSTON PM	
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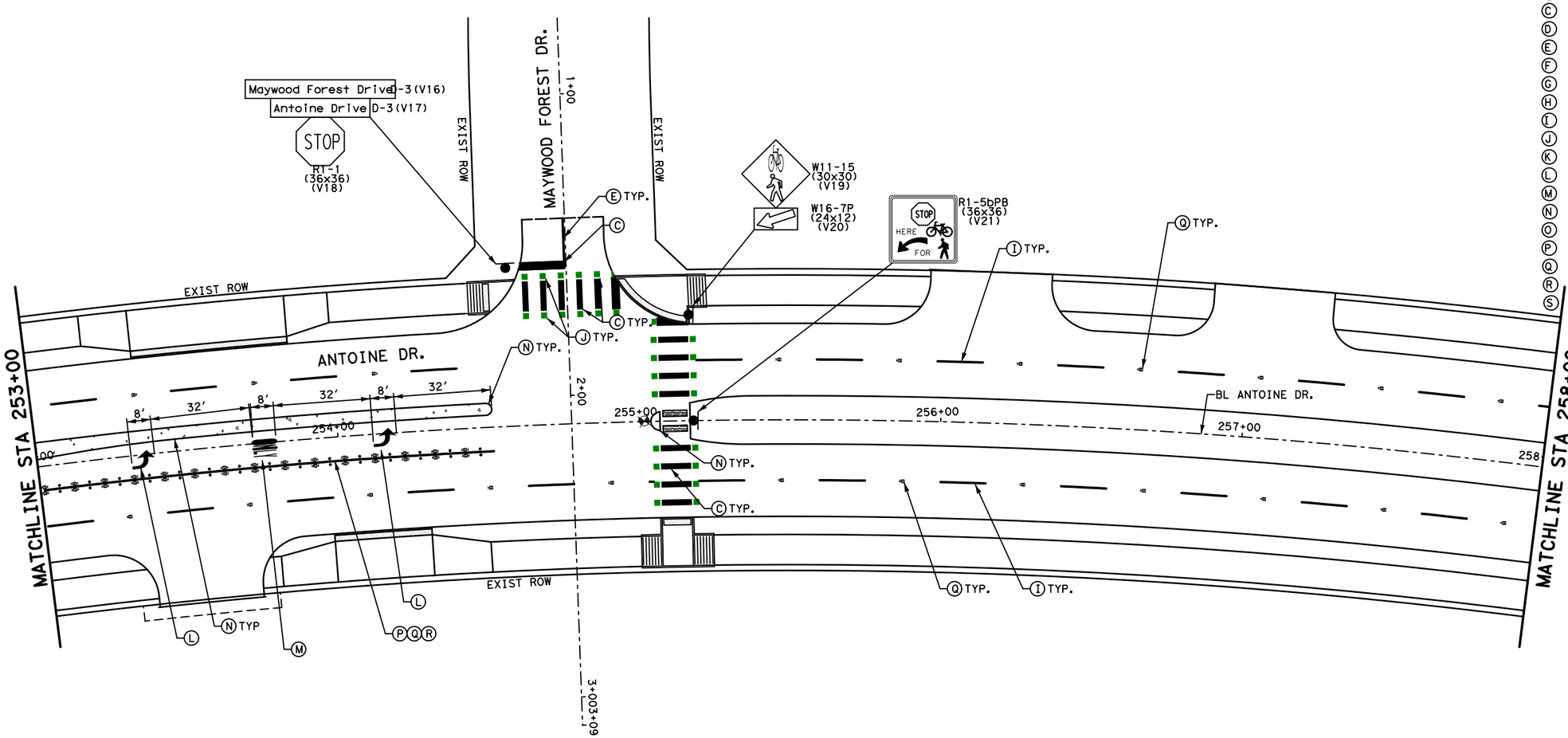

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SIGNING & PAVEMENT MARKING STA 253+00 TO STA 258+00

SHEET 15 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 478 OF 718	

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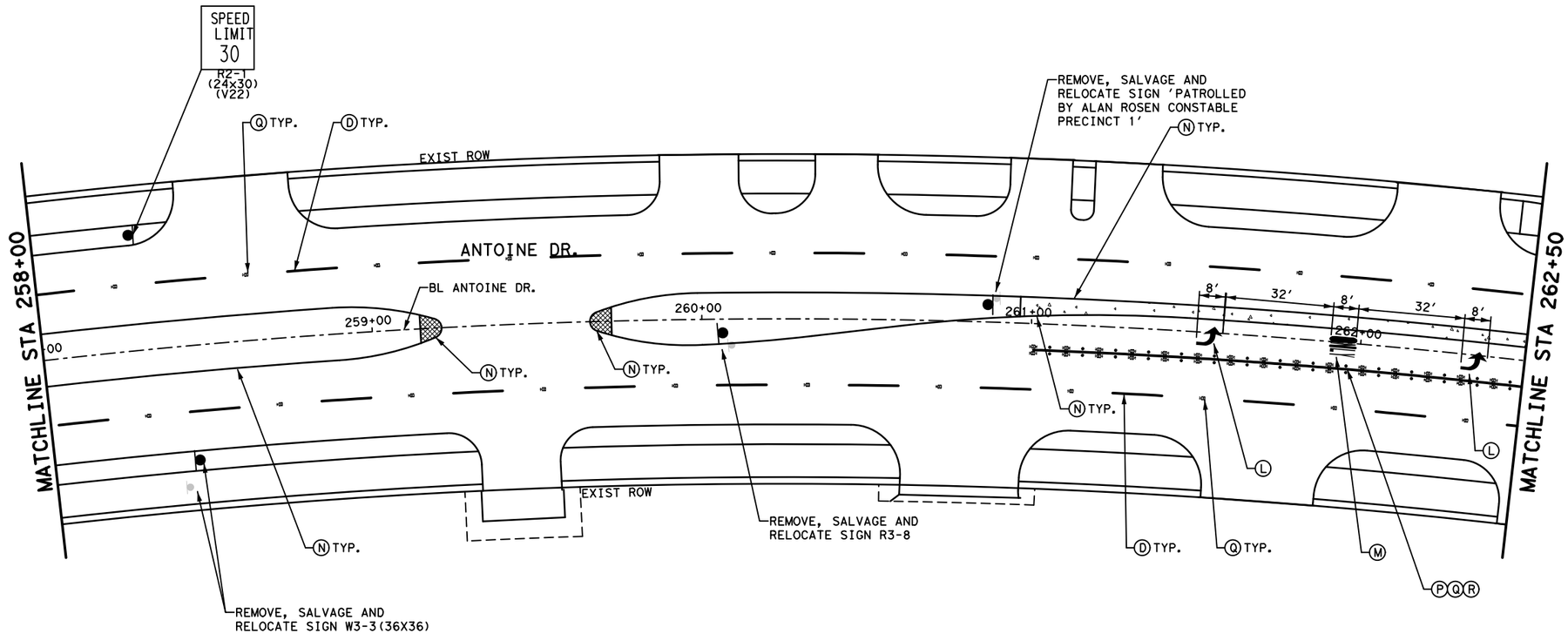

LEGEND

- PROPOSED LANE
- EXISTING LANE
- RIGHT-OF-WAY
- PROP CURB
- (A) PAV MRK (W) (4") (SLD)
- (B) PAV MRK (W) (12") (SLD)
- (C) PAV MRK (W) (24") (SLD)
- (D) PAV MRK (W) (4") (BRK)
- (E) PAV MRK (W) (6") (SLD)
- (F) REFL PAV MRK TY I (Y)(4")(BRK)
- (G) REFL PAV MRK TY I (Y)(4")(DBL SLD)
- (H) RAIS PAV MRK TY II-A-A
- (I) RAIS PAV MRK TY I-C
- (J) PREFAB PAV MRK TY C (GRN)(SLD)(BLOCK)
- (K) REFL PAV MRK (W) SHARROW
- (L) REFL PAV MRK (W) ARROW
- (M) REFL PAV MRK (W) WORD
- (N) REFL PAV MRK TY II (Y)(12")(SLD)
- (O) REMOVE EXIST SIGN
- (P) PAV MRK (W) (8") (SLD)
- (Q) REFL PAV MRK TY II-C-R (W)
- (R) NON REFL RAISED BUTTON (W)
- (S) REFL PAV MARK TY II A-A @ 20' C-C

No.	DATE	REVISIONS	APP'D

0' 20' 40'
SCALE IN FEET

NOTE:

1. REFER TO SUMMARY OF SMALL SIGNS FOR ADDITIONAL INFORMATION.
2. REFER TO SIGN AND PAVEMENT MARKING STANDARDS FOR ADDITIONAL INFORMATION.
3. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL FIELD VERIFY EXIST TRAFFIC AND STREET SIGNS THAT THE PROJECT WILL AFFECT TO DOCUMENT WHAT SIGNS EXIST AND THEIR LOCATION.
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7. METRO SIGNS (BUS STOP) WILL BE INSTALLED BY METRO.
8. DOUBLE REFLECTORS BLUE TRAFFIC MARKERS SHALL BE PLACED 6-INCHES OFFSET OF THE CENTERLINE OF ALL FIRE HYDRANT LOCATION BY THE PAVING CONTRACTOR. HYDRANT LOCATED AT INTERSECTION SHALL HAVE A BUTTON PLACED ON EACH STREET.
7. HARRIS COUNTY SIGNAGE AND PAVEMENT MARKINGS DETAILS SHALL BE UTILIZED WITHIN HARRIS COUNTY LIMITS.

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10/23/2025
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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

SIGNING & PAVEMENT MARKING STA 258+00 TO STA 262+50

SHEET 16 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 479 OF 718	

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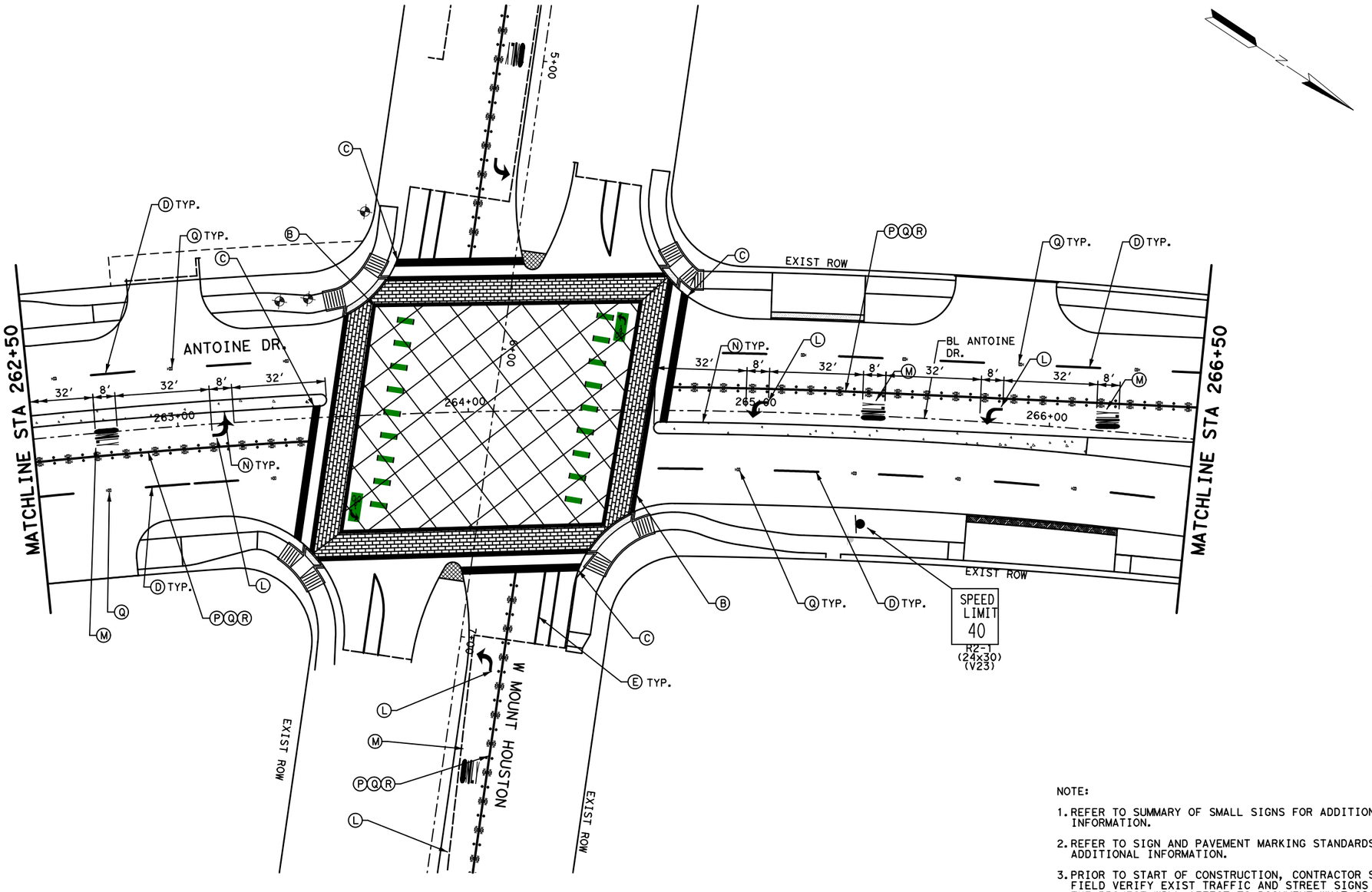

LEGEND

- PROPOSED LANE
- EXISTING LANE
- RIGHT-OF-WAY
- PROP CURB
- (A) PAV MRK (W) (4") (SLD)
- (B) PAV MRK (W) (12") (SLD)
- (C) PAV MRK (W) (24") (SLD)
- (D) PAV MRK (W) (4") (BRK)
- (E) PAV MRK (W) (6") (SLD)
- (F) REFL PAV MRK TY I (Y)(4")(BRK)
- (G) REFL PAV MRK TY I (Y)(4")(DBL SLD)
- (H) RAIS PAV MRK TY II-A-A
- (I) RAIS PAV MRK TY I-C
- (J) PREFAB PAV MRK TY C (GRN)(SLD)(BLOCK)
- (K) REFL PAV MRK (W) SHARROW
- (L) REFL PAV MRK (W) ARROW
- (M) REFL PAV MRK (W) WORD
- (N) REFL PAV MRK TY II (Y)(12")(SLD)
- (O) REMOVE EXIST SIGN
- (P) PAV MRK (W) (8") (SLD)
- (Q) REFL PAV MRK TY II-C-R (W)
- (R) NON REFL RAISED BUTTON (W)
- (S) REFL PAV MARK TY II A-A @ 20' C-C

No.	DATE	REVISIONS	APP.

NOTES:

1. COLOR ELECTION TO BE MADE IN FIELD BY NEARBY NORTHWEST MANAGEMENT DISTRICT USING TEMPORARY 6'X6' CONCRETE PADS. (FRENCH GRAY, CHARCOAL & DARK GRAY CONIDERED AT THIS TIME)
2. SEE SPECIFICATION 02750, 02760, 3360 FOR INTEGRALLY COLORED CONCRETE AND STAMPED IMPRINTED CONCRETE PAVEMENT.
3. SAWCUTS SHALL BE 1/4" DEPTH TO A 10' GRID.

0' 20' 40'
SCALE IN FEET

NOTE:

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7. HARRIS COUNTY SIGNAGE AND PAVEMENT MARKINGS DETAILS SHALL BE UTILIZED WITHIN HARRIS COUNTY LIMITS.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

SIGNING & PAVEMENT MARKING STA 262+50 TO STA 266+50

SHEET 17 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 480 OF 718	

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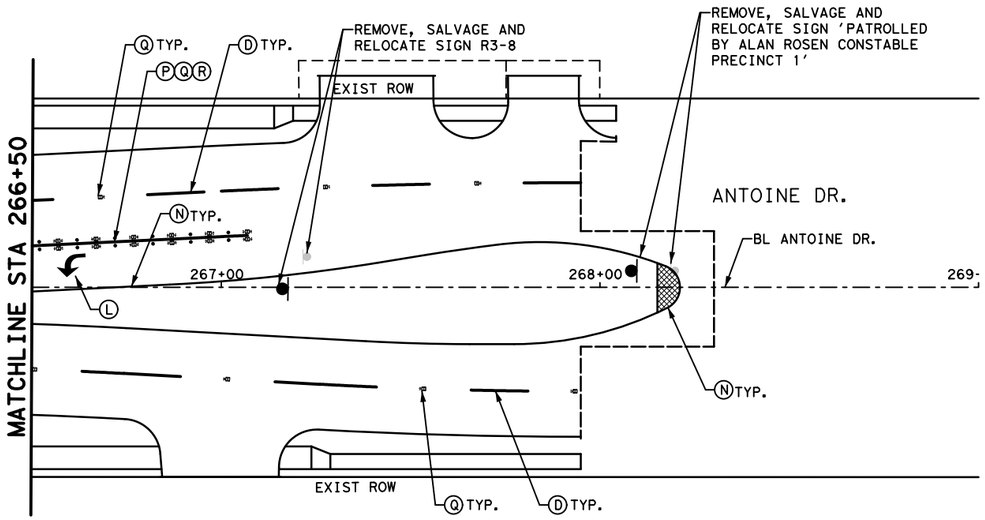

LEGEND

- PROPOSED LANE
- EXISTING LANE
- RIGHT-OF-WAY
- PROP CURB
- (A) PAV MRK (W) (4") (SLD)
- (B) PAV MRK (W) (12") (SLD)
- (C) PAV MRK (W) (24") (SLD)
- (D) PAV MRK (W) (4") (BRK)
- (E) PAV MRK (W) (6") (SLD)
- (F) REFL PAV MRK TY I (Y)(4")(BRK)
- (G) REFL PAV MRK TY I (Y)(4")(DBL SLD)
- (H) RAIS PAV MRK TY II-A-A
- (I) RAIS PAV MRK TY I-C
- (J) PREFAB PAV MRK TY C (GRN)(SLD)(BLOCK)
- (K) REFL PAV MRK (W) SHARROW
- (L) REFL PAV MRK (W) ARROW
- (M) REFL PAV MRK (W) WORD
- (N) REFL PAV MRK TY II (Y)(12")(SLD)
- (O) REMOVE EXIST SIGN
- (P) PAV MRK (W) (8") (SLD)
- (Q) REFL PAV MRK TY II-C-R (W)
- (R) NON REFL RAISED BUTTON (W)
- (S) REFL PAV MARK TY II A-A @ 20' C-C

No.	DATE	REVISIONS	APP:

N

0' 20' 40'
SCALE IN FEET

NOTE:

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

SIGNING & PAVEMENT MARKING STA 266+50 TO END

SHEET 18 OF 18

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 481 OF 718	

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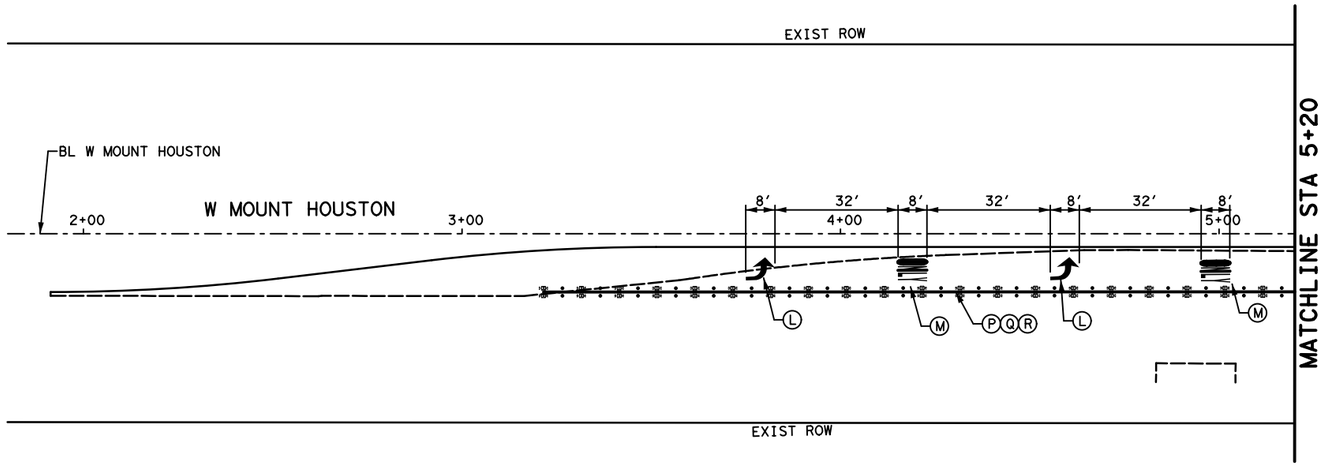

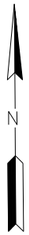

LEGEND

- PROPOSED LANE
- EXISTING LANE
- RIGHT-OF-WAY
- PROP CURB
- (A) PAV MRK (W) (4") (SLD)
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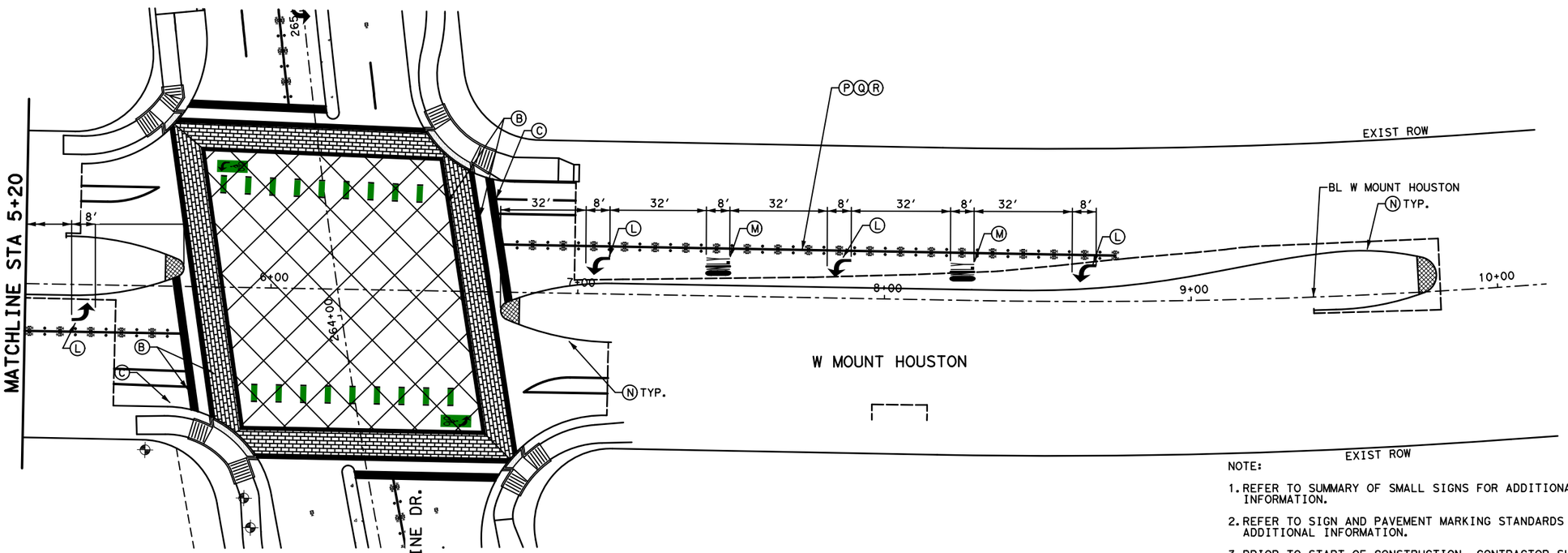
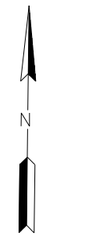
- (S) REFL PAV MARK TY II A-A @ 20′ C-C

No.	DATE	REVISIONS	APP:





0′ 20′ 40′
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

SIGNING & PAVEMENT MARKING STA 1+80 TO STA 10+00

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 482 OF 718	

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No.	DATE	REVISIONS	APP.

SUMMARY OF SMALL SIGNS

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN TEXT	DIMENSIONS	SQUARE POST	SIGNAL MOUNT	ROUND POST (PERMISSION NDED FROM CITY TRAFFIC ENGINEER)	NUMBER OF POSTS (1 OR 2)	SIGN AREA SQ.FT (FOR INFORMATION ONLY, NOT INTENDED FOR BID)	SIGN POST SIZE (TABLE A)
FCM SHEET 1	R2-7	Straignt only	12"x18"	2				1	1.5	
FCM SHEET 2	R1-1	Intersection Stop Sign	36"x36"	2				1	9	
FCM SHEET 2	R1-1	Intersection Stop Sign	36"x36"	2				1	9	
FCM SHEET 7	R1-1	Intersection Stop Sign	36"x36"	2				1	9	
FCM SHEET 7	R1-1	Intersection Stop Sign	36"x36"	2				1	9	
FCM SHEET 8	S1-1 (FYG)	School Sign	36"x36"	3				1	9	
FCM SHEET 8	SW16-7P (FYG	Arrow Sign	24"x12"	3				1	2	
FCM SHEET 8	R1-1	Intersection Stop Sign	36"x36"	2				1	9	
GAUGE SHEET 1	G1	S5-1	SPEED LIMIT END SCHOOL ZONE	24X48	1			1	8	
GAUGE SHEET 1	G2	R7-2aMOD	NO PARKING	12X18	1			1	1.5	
GAUGE SHEET 1	G3	R7-201P	TOW AWAY	12X6					0.5	
GAUGE SHEET 1	G4		POSTING OF SIGNS ON CITY PROPERTY IS ILLEGAL		1			1		
GAUGE SHEET 1	G5	R7-2aMOD	NO PARKING	12X18					1.5	
GAUGE SHEET 1	G6	R7-201P	TOW AWAY	12X6					6	
GAUGE SHEET 1	G7		POSTING OF SIGNS ON CITY PROPERTY IS ILLEGAL		1			1		
GAUGE SHEET 1	G8	R5-2(2)	NO THRU TRUCKS	24X30					5	
GAUGE SHEET 1	G9	R7-2aMOD	NO PARKING	12X18					1.5	
GAUGE SHEET 1	G10	R7-201P	TOW AWAY	12X6					6	
GAUGE SHEET 1	G11	S5-2	SPEED LIMIT END SCHOOL ZONE	24X30	1			1	5	
GAUGE SHEET 1	G12	METRO	METRO		1			1		
GAUGE SHEET 1	G13	R7-2aMOD	NO PARKING	12X18	1			1	1.5	
GAUGE SHEET 1	G14	R7-201P	TOW AWAY	12X6					0.5	
GAUGE SHEET 1	G15		POSTING OF SIGNS ON CITY PROPERTY IS ILLEGAL		1			1		
GAUGE SHEET 1	G16	R7-2aMOD	NO PARKING	12X18					1.5	
GAUGE SHEET 1	G17	R7-201P	TOW AWAY	12X6					6	
VSE SHEET 2	V1	R2-1	24X30	1	-	-	1	0.55	5	
VSE SHEET 4	V2	D-3	Variesx8	-	-	-	-		VARIES	
VSE SHEET 4	V3	D-3	Variesx8	-	-	-	-		VARIES	
VSE SHEET 4	V4	R1-1	36X36	1	-	-	1	1	9	
VSE SHEET 5	V5	W11-15	30X30	1	-	-	1		6.3	
VSE SHEET 5	V6	W16-7P	24X12	1	-	-	1	1	2	
VSE SHEET 5	V7	R1-5bPB	36X36	1	-	-	1	1	9	
VSE SHEET 5	V8	R2-1	24X30	1	-	-	1	0.55	VARIES	
VSE SHEET 5	V9	D-3	Variesx8	-	-	-	-		VARIES	
VSE SHEET 5	V10	D-3	Variesx8	-	-	-	-		VARIES	
VSE SHEET 5	V11	R1-1	36X36	1	-	-	1	1	9	
VSE SHEET 5	V12	D-3	Variesx8	-	-	-	-		VARIES	
VSE SHEET 5	V13	D-3	Variesx8	-	-	-	-		VARIES	
VSE SHEET 5	V14	R1-1	36X36	1	-	-	1	1	9	
VSE SHEET 6	V15	R2-1	24X30	1	-	-	1	0.55	5	
VSE SHEET 7	V16	D-3	Variesx8	-	-	-	-		VARIES	
VSE SHEET 7	V17	D-3	Variesx8	-	-	-	-		VARIES	
VSE SHEET 7	V18	R1-1	36X36	1	-	-	1	1	9	
VSE SHEET 7	V19	W11-15	30X30	1	-	-	1		6.3	
VSE SHEET 7	V20	W16-7P	24X12	1	-	-	1	1	2	
VSE SHEET 7	V21	R1-5bPB	36X36	1	-	-	1	1	9	
VSE SHEET 8	V22	R2-1	24X30	1	-	-	1	0.55	5	
VSE SHEET	V23	R2-1	24X30	1	-	-	1	0.55	5	

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TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

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HOUSTON PUBLIC WORKS

ANTOINE DRIVE

SUMMARY OF SMALL SIGNS

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 483 OF 718	

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No.	DATE	REVISIONS	APP:

DESCRIPTION AND APPLICATION OF PAVEMENT MARKING LINES

LINE SERIES	COLOR	DESCRIPTION	WIDTH (INCHES)	TYPICAL APPLICATIONS
WB	WHITE	BROKEN (10' STRIPE W/30' GAP)	4"	LANE LINES BETWEEN TRAVEL LANES IN THE SAME DIRECTION WHERE CHANGING OF LANES IS PERMITTED.
WS	WHITE	SOLID	4"	EDGE LINES TO DELINEATE THE RIGHT EDGE OF THE ROADWAY.
			6"	LEFT EDGE OF BICYCLE LANE AND LANE LINES BETWEEN TRAVEL LANES IN THE SAME DIRECTION WHERE CHANGING OF LANES IS DISCOURAGED.
			12"	PERPENDICULAR CROSSWALK LINES.
			24"	STOP BARS AT INTERSECTIONS (SIGNALIZED AND UNSIGNALIZED).
				HATCHING AT HIGH VISIBILITY CROSSWALKS.
			12", 24"	DIAGONAL HATCHING USED IN GORES BETWEEN SAME DIRECTION OF TRAVEL LANES.
WG	WHITE	GUIDE (2' STRIPE W/6' GAP)	6"	GUIDE LINES THROUGH INTERSECTIONS.
				TAPER LINES FOR TURN LANES.
				GUIDE LINES FOR BICYCLE LANES.
YS	YELLOW	SOLID	4"	EDGE LINES TO DELINEATE THE LEFT EDGE OF A DIVIDED ROADWAY, A ONE-WAY ROAD, OR RAMP.
			6"	BIDIRECTIONAL BICYCLE LANE PAVEMENT MARKING.
			12", 24"	DIAGONAL HATCHING USED IN GORES BETWEEN OPPOSING DIRECTION OF TRAVEL LANES.
YDS	YELLOW	DOUBLE SOLID	4" – (4") – 4" (GAP)	CENTERLINE THAT SEPARATES OPPOSING TRAVEL LANES AND DELINEATION OF MEDIAN ISLANDS.
YDB	YELLOW	DOUBLE BROKEN	4" – (4") – 4" (GAP)	DEFINES THE EDGES OF CENTER REVERSIBLE LANES THAT ARE USED AS TWLTLS DURING INTERMITTENT PERIODS.
YB	YELLOW	BROKEN (10' STRIPE W/30' GAP)	4"	SEPARATES TRAVEL LANES IN OPPOSITE DIRECTIONS WHERE PASSING IS PERMITTED IN BOTH DIRECTIONS OF TRAVEL.
YB (BIKE)	YELLOW	BROKEN (3' STRIPE W/9' GAP)	4"	SEPARATES BICYCLE TRAVEL LANES IN OPPOSITE DIRECTIONS WHERE PASSING IS PERMITTED IN BOTH DIRECTIONS OF TRAVEL.
YSB	YELLOW	SOLID & BROKEN BROKEN (10' STRIPE W/30' GAP)	4" – (4") – 4" (GAP)	SEPARATES TRAVEL LANES IN OPPOSITE DIRECTIONS WHERE PASSING IS PERMITTED IN ONE DIRECTION AND PROHIBITED IN THE OPPOSITE DIRECTION.
				USED FOR EDGE OF TWO-WAY LEFT TURN LANES (TWLTL).
BICYCLE GREEN	GREEN	SOLID COLORED PAVEMENT	VARIES	PED/BIKE CROSSING
				VEHICLE / BIKE/ CONFLICT AREA
YIELD LINE	WHITE	TRIANGLE	16" x 24"	MID-BLOCK CROSSING.

DESCRIPTION AND APPLICATION OF REFLECTIVE RAISED PAVEMENT MARKERS (RPM)

RRPM TYPES	COLOR	COH SPEC. SEC. 02764 EQUIVALENT	DESCRIPTION
C	CLEAR	TYPE I-C	APPROACH FACE THAT REFLECTS WHITE LIGHT, AND THE OTHER SIDE DOES NOT REFLECT.
R	CLEAR & RED	TYPE II-C-R	APPROACH FACE THAT REFLECTS WHITE LIGHT, AND THE OTHER SIDE REFLECTS RED LIGHT.
A	AMBER & AMBER	TYPE II-A-A	APPROACH FACE AND THE OTHER SIDE BOTH REFLECT AMBER LIGHT.

LINE STYLE DESIGNATION : YSB4 – A40/A40

- COLOR
- PATTERN
- WIDTH OF STRIPE
- RPM SPACING
- RPM TYPE
- RPM SPACING
- RPM TYPE

GENERAL PAVEMENT MARKING NOTES:

1. PRIOR TO START OF CONSTRUCTION, ALL EXISTING PAVEMENT MARKINGS WITHIN THE AREA OF CONSTRUCTION SHALL BE INVENTORIED AND DOCUMENTED JOINTLY BY THE CITY INSPECTOR AND THE CONTRACTOR. THIS DOCUMENT WILL BE JOINTLY SIGNED BY BOTH PARTIES REFLECTING ALL EXISTING PAVEMENT MARKINGS AND LANE CONFIGURATIONS WILL BE DUPLICATED AGAIN. THIS REVIEW CAN BE DONE IN CONJUNCTION WITH SIGN INVENTORY. THE CONTRACTOR IS HELD ACCOUNTABLE FOR EXISTING AND TEMPORARY CONSTRUCTION PAVEMENT MARKINGS THROUGHOUT THE PROJECT AND AT THE PROJECT'S COMPLETION.
2. ALL PAVEMENT MARKINGS SHALL CONFORM TO CITY OF HOUSTON STANDARDS AND SPECIFICATIONS AND GENERAL GUIDELINES OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).
3. THE PERMANENT PAVEMENT MARKINGS MAY BE MODIFIED AS DIRECTED BY THE CITY TRAFFIC ENGINEER.
4. THE DESIGN SPEED FOR THE ROAD IS: _____. THE POSTED SPEED LIMIT IS: _____.
5. ALL LANE DIMENSIONS ARE FROM CENTER OF LANE LINE, CENTER OF DOUBLE LANE LINE, FACE OF CURB, OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
6. THE PAVEMENT MARKING DRWWINGS ARE SCHEMATIC ONLY. THE CONTRACTOR SHALL FOLLOW ALL DIMENSIONS, DETAILS, AND STANDARDS WHEN INSTALLING PAVEMENT MARKINGS AND SYMBOLS.
7. THE FINAL LONGITUDINAL STRIPINGS SHALL BE 60 MIL (0.060") THICK HOT-SPRAYED THERMOPLASTIC PLACED OVER THE TEMPORARY STRIPING WITHIN 14 TO 30 CALENDAR DAYS AFTER COMPLETION OF THE FINAL PAVEMENT SURFACE, OR AS DIRECTED BY THE CITY TRAFFIC ENGINEER. ALL OTHER PAVEMENT MARKINGS SHALL BE APPLIED AT THE SAME TIME. TEMPORARY STRIPING SHALL BE WATER BASED PAINT.
8. ALL FINAL TRANSVERSE MARKINGS SHALL BE 90 MIL (0.090") HOT-SPRAYED THERMOPLASTIC. ALL PAVEMENT ARROWS AND LEGENDS SHALL ALSO BE 90 MIL (0.090") HOT-SPRAYED THERMOPLASTIC. PREFORMED THERMOPLASTIC APPLICATIONS MAY BE USED IF ONLY APPROVED BY THE CITY TRAFFIC ENGINEER.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT AND INSTALLATION OF PAVEMENT MARKINGS OF FINAL SURFACE COURSE FOLLOWING CONTROL POINTS THAT HAVE BEEN SET NO MORE THAN 50 FEET APART ALONG THE LINES TO BE IMPLEMENTED. IN TANGENT SECTIONS OF A ROAD WHERE THE PAVEMENT MARKING PATTERN DOES NOT CHANGE, CON'ROL POINTS CAN BE SET AT 200 FEET SPACING. THE LAYOUT AND INSPECTION OF ALL PAVEMENT MARKINGS SHALL BE APPROVED BY CITY OF HOUSTON REPRESENTATIVE PRIOR TO THE APPLICATION OF MATERIALS.
10. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE FINAL SURFACE COURSE IS PLACED SO THAT THE STRIPING IS OFFSET NO MORE THAN ONE FOOT CLEAR OF THE CONSTRUCTION JOINT, UNLESS OTHERWISE DIRECTED BY THE CITY TRAFFIC ENGINEER.
11. ALL RAISED PAVEMENT MARKERS (RPMS) SHALL BE INSTALLED SO THAT THE REFLECTIVE FACE OF EACH MARKER IS FACING THE DIRECTION OF TRAFFIC AND IS PERPENDICULAR TO THE DIRECTION OF TRAFFIC FLOW. TYPE C PAVEMENT MARKERS SHALL BE INSTALLED SO THAT THE CLEAR FACE OF EACH MARKER IS FACING THE APPROACHING TRAFFIC FLOW AND PERPENDICULAR TO THE DIRECTION OF TRAFFIC FLOW.
12. ALL REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL BE ACCOMPLISHED IN ACCORDANCE TO CITY OF HOUSTON STANDARD SPECIFICATION 02762. APPLYING OVER EXISTING PAVEMENT MARKNGS DOES NOT CONSTITUTE AS APPROVED OBLITERATION METHOD.
13. THE ENGINEER OF RECORD SHALL BE REQUIRED TO PRODUCE AS-BUILT OF PAVEMENT MARKING PLANS WITHIN 30 DAYS AFTER COMPLETION OF PAVEMENT MARKING IMPLEMENTATION.
14. BLUE RPMS MAY BE PLACED ADJACENT TO FIRE HYDRANTS WITH THE APPROVAL OF THE CITY TRAFFIC ENGINEER.
15. FOR ALL CONSTRUCTION, ALL PAVEMENT MARKINGS AND SIGNING SHALL BE INSTALLED AND SHALL BE PAID BY THE PROJECT OWNER/DEVELOPER.
16. FINAL INSPECTION AND ACCEPTANCE OF PAVEMENT MARKINGS SHALL BE PERFORMED BY TRANSPORTATION & DRAINAGE OPERATION REPRESENTATIVE (713-803-3054).

APPROVED BY:	APPROVED BY:
Docusigned by: Salud Lauvar	Docusigned by: Ladling Nguyen
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: Docusigned by: Carol Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 02760-01

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

PAVEMENT MARKINGS GENERAL NOTES AND LEGENDS

FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE

NOT TO SCALE

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TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PAVEMENT MARKING GENERAL NOTES AND LEGENDS

SHEET 1 OF 6

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SHEET NO. 484 OF 718	

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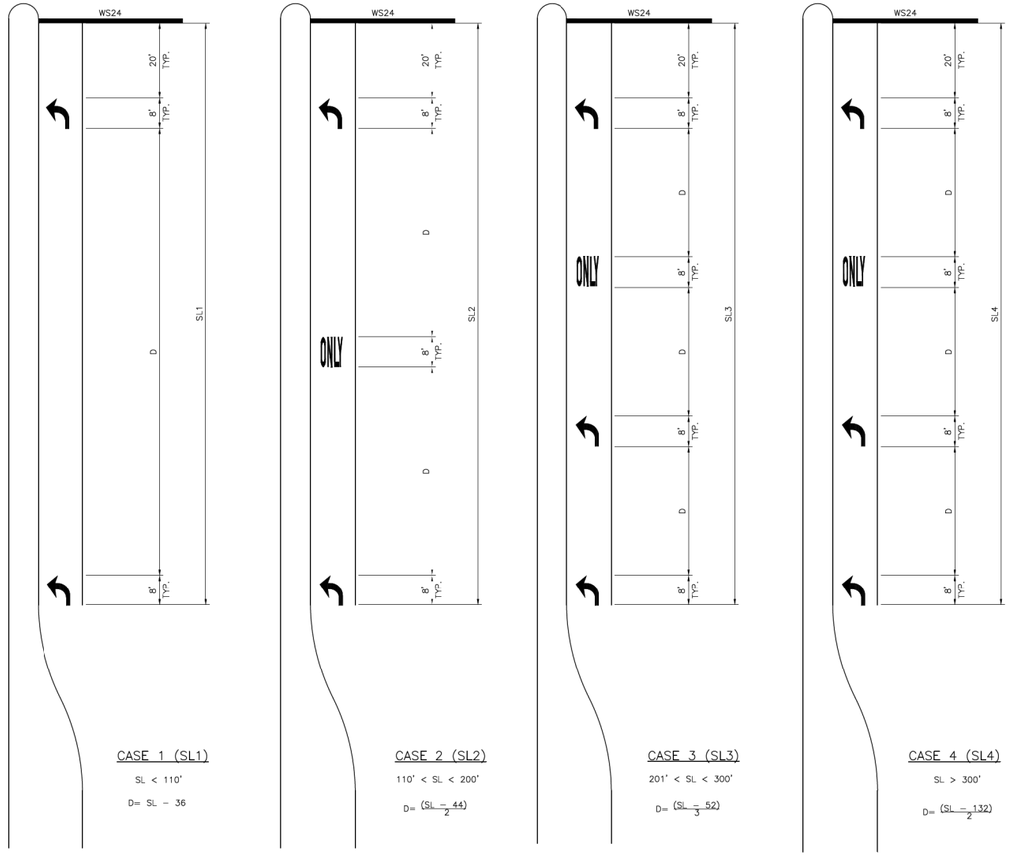

CASE 1 (SL1)
SL < 110'
D= SL – 36

CASE 2 (SL2)
110' < SL < 200'
D= (SL – 44)/2

CASE 3 (SL3)
201' < SL < 300'
D= (SL – 52)/3

CASE 4 (SL4)
SL > 300'
D= (SL – 132)/2

KEY (FOR TURN LANES ONLY):

SL – STORAGE LENGTH (FEET)

D – DISTANCE BETWEEN ARROWS AND/OR WORDS (FEET)

GENERAL NOTES:

1. ALL CASES AND DETAILS ALSO APPLY TO RIGHT–TURN LANES.
2. FOR DUAL–TURN LANES, DIMENSIONS SHALL BE THE SAME FOR EACH LANE.
3. SL DIMENSION IS FROM BACK OF STOP LINE TO END OF TURN LANE.
   NOTE: DO NOT INCLUDE TAPER LENGTH.
4. PAVEMENT ARROWS AND "ONLY" LEGEND MARKINGS ARE TYPICALLY USED AT ALL SIGNALIZED INTERSECTIONS AND AT ALL UNSIGNALIZED INTERSECTIONS THAT HAVE TURN LANES.
5. MINIMUM SL= 100'. SL MAY BE LESS THAN 100 FEET ONLY BY APPROVAL OF THE CITY TRAFFIC ENGINEER.

APPROVED BY:	APPROVED BY:
DocuSigned by: Suhail Kanwar 9EF8B0C6441F5478...	DocuSigned by: HARING NGUYEN 35A29EFDA7584CD...
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: DocuSigned by: Carol Haddock 4A5C41DE1BD4D...	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV–27–2023	DWG NO: 02760–02

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

LEFT/RIGHT–TURN "ONLY" AND ARROW SPACING

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

LEFT/RIGHT-TURN "ONLY" AND ARROW SPACING

SHEET 2 OF 6

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DocuSigned by: Suhail Kanwar	DocuSigned by: HANG NGUYEN
CITY ENGINEER	CITY TRAFFIC ENGINEER

APPROVED BY:
DocuSigned by: Carol Haddock
DIRECTOR OF HOUSTON PUBLIC WORKS

EFF DATE: NOV-27-2023	DWG NO: 02760-03

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

STANDARD PAVEMENT MARKING – (WORDS)

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STANDARD PAVEMENT MARKING (WORDS)

SHEET 3 OF 6

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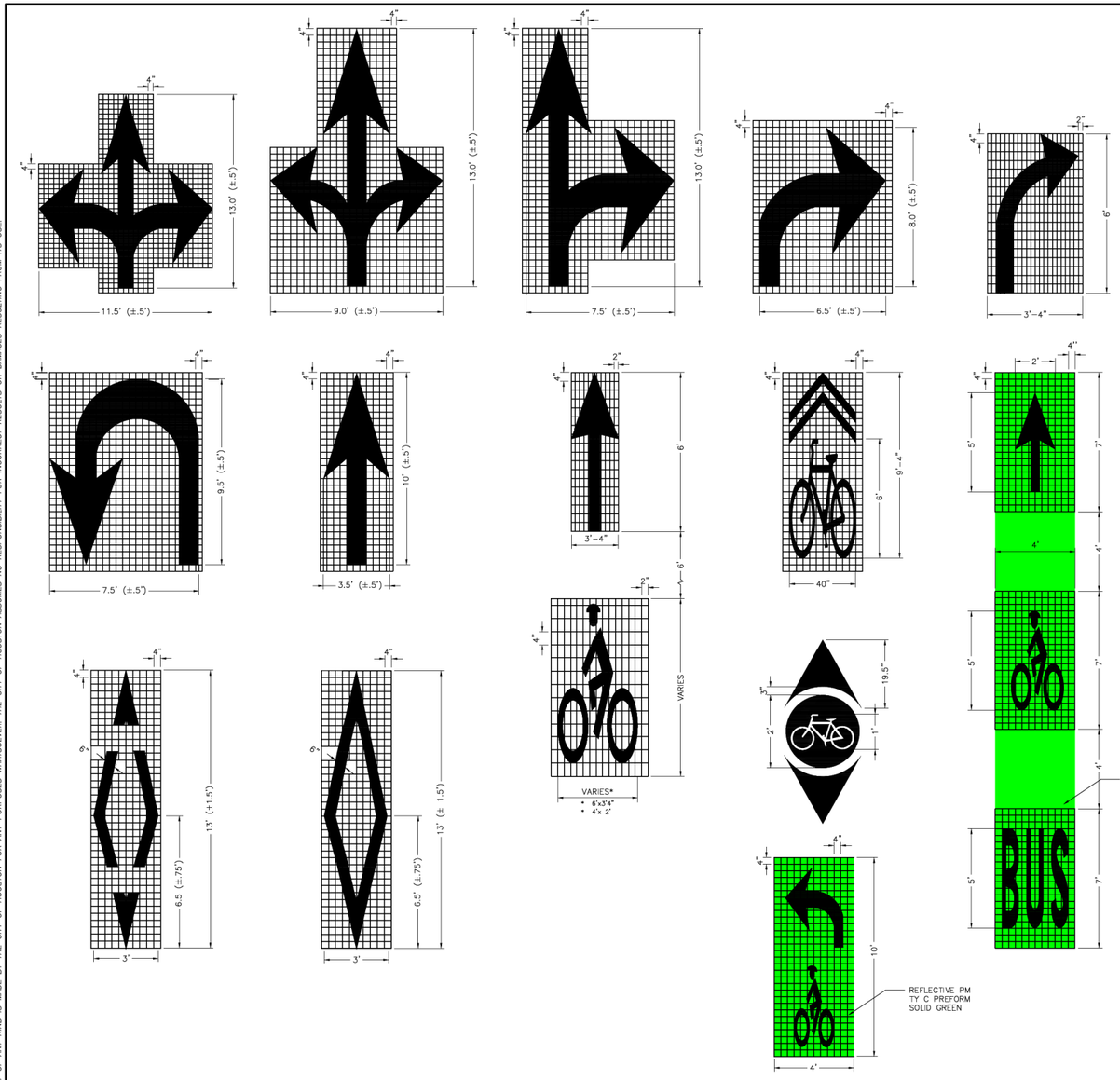

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NOTES FOR PAVEMENT MARKINGS "SYMBOLS" AND "ARROWS":

1. MINIMUM 8 FOOT WHITE MARKINGS SHALL BE USED, UNLESS OTHERWISE NOTED. IF MESSAGE CONSISTS OF MORE THAN ONE WORD, IT SHOULD BE PLACED WITH FIRST WORD NEAREST THE DRIVER.
2. THESE DETAILS ARE STANDARD SIZE FOR NORMAL INSTALLATION; SIZES MAY BE REDUCED APPROXIMATELY ONE-THIRD DEPENDING ON CONDITIONS. SPECIAL PERMISSION NEEDED BY CITY TRAFFIC ENGINEER FOR REDUCTION BELOW ONE-THIRD OF STANDARD SIZES.
3. THE LONGITUDINAL SPACE BETWEEN MARKINGS SHOULD BE 30 FEET, OR AS INDICATED ON THE PLANS.
4. MARKINGS CONSIDERED APPROPRIATE FOR USE WHEN WARRANTED INCLUDE THE FOLLOWING:

   A. REGULATOR
      STOP
      RIGHT (LEFT) TURN ONLY, SYMBOL ARROWS.

   B. WARNING
      STOP AHEAD
      SIGNAL AHEAD
      SCHOOL
      SCHOOL X-ING
      PED X-ING
      R X R (SEE SHEET 02760-08 DETAILS
      OTHER WORDS OR SYMBOLS MAY BE NECESSARY UNDER CERTAIN CONDITIONS. SPECIAL PERMISSION NEEDED BY CITY TRAFFIC ENGINEER FOR SPECIAL CONDITIONS.
5. UNCONTROLLED USE OF PAVEMENT MARKINGS CAN RESULT IN DRIVER CONFUSION. WORD AND SYMBOL MARKINGS SHOULD BE NO MORE THAN THREE LINES.
6. THE WORD "STOP" SHALL NOT BE USED ON THE PAVEMENT UNLESS ACCOMPANIED BY A STOP LINE AND STOP SIGN. THE WORD "STOP" SHALL NOT BE PLACED ON THE PAVEMENT IN ADVANCE TO A STOP LINE, UNLESS EVERY VEHICLE IS REQUIRED TO STOP AT ALL TIMES (ALL-WAY STOP).
7. PAVEMENT MARKINGS SHOULD GENERALLY BE NO MORE THAN ONE LANE IN WIDTH, WITH SCHOOL MESSAGES BEING THE EXCEPTION. FOR DETAILS OF SCHOOL AND SCHOOL CROSSING PAVEMENT MARKINGS, REFER TO PART VII OF THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
8. SPACING BETWEEN STANDARD SIZE LETTERS SHOULD BE 4 INCHES (MIN). THE WIDTH OF NON-STANDARD SIZE LETTERS MAY VARY DEPENDING ON THE WIDTH OF THE TRAVEL LANES. APPROVAL BY CITY TRAFFIC ENGINEER. SPECIAL PERMISSION NEEDED FOR NON-STANDARD SIZE "LETTER" AND/OR "ARROWS".
9. LANE-USE ARROW MARKINGS MAY BE USED TO CONVEY EITHER GUIDANCE OR MANDATORY MESSAGES. SINGLE TURN ARROWS USED TO CONVEY A MANDATORY MOVEMENT MUST BE ACCOMPANIED STANDARD SIGNS AND THE PAVEMENT MARKING WORD "ONLY".
10. PAVEMENT MARKINGS ARE TO BE LOCATED AS SPECIFIED IN THE DESIGN PLANS.

APPROVED BY:	APPROVED BY:
DocuSigned by: Salad Kauwar	DocuSigned by: KHANG NGUYEN
CITY ENGINEER	CITY TRAFFIC ENGINEER

APPROVED BY: DocuSigned by: Carol Haddock
DIRECTOR OF HOUSTON PUBLIC WORKS

EFF DATE: NOV-27-2023 | DWG NO: 02760-04

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

STANDARD PAVEMENT MARKING - SYMBOLS

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STANDARD PAVEMENT MARKINGS (SYMBOLS)

SHEET 4 OF 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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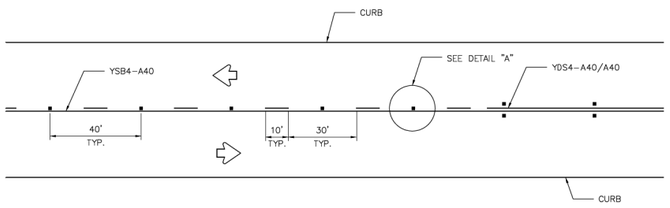
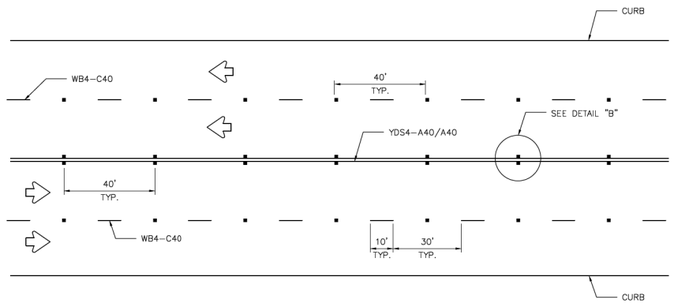
CENTERLINE & FOR ALL TWO LANE STREETS WITH PASSING ZONE

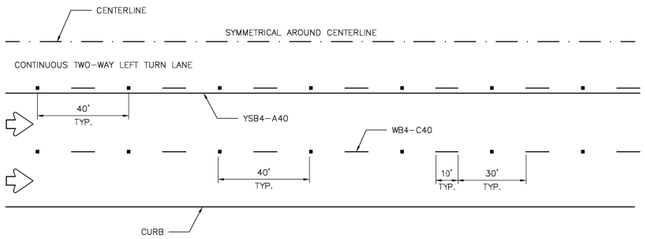


CENTERLINE & LANE LINES FOR FOUR LANE TWO-WAY STREETS

RRPM TYPE C, CLEAR FACE TOWARD NORMAL TRAFFIC, SHALL BE PLACED ON 40-FOOT CENTERS.

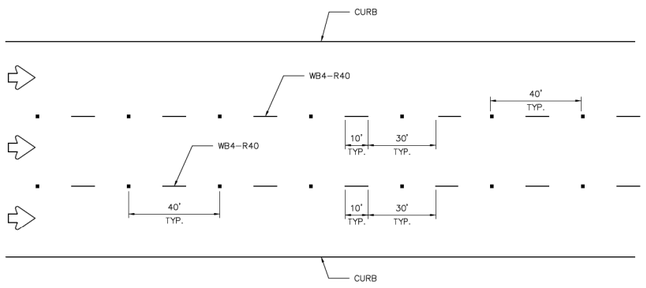


CENTERLINE & LANE LINES FOR TWO-WAY LEFT TURN LANE



LANE LINES FOR ONE-WAY MULTILANE STREET

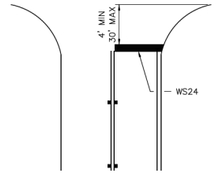
RRPM TYPE R SHALL HAVE CLEAR FACE TOWARD NORMAL TRAFFIC AND RED FACE TOWARD WRONG-WAY TRAFFIC.



GENERAL NOTES:

1. EDGELINE ADJACENT TO CURB AND GUTTER IS NOT REQUIRED IN ALL CASES, HOWEVER SHALL BE PLACED AS DIRECTED BY CITY TRAFFIC ENGINEER.
2. THE TRAVELED WAY INCLUDES ONLY THAT PORTION OF THE ROADWAY USED FOR VEHICULAR TRAVEL AND NOT THE PARKING LANES, SIDEWALKS, BERMS AND SHOULDERS. THE TRAVELED WAYS SHALL BE MEASURED FROM THE INSIDE OF EDGELINE TO INSIDE OF EDGELINE OF A TWO LANE ROADWAY.
3. ALL RAISED PAVEMENT MARKERS PLACED IN BROKEN LINES SHALL BE PLACED IN LINE WITH AND MIDWAY BETWEEN THE STRIPES.
4. ON CONCRETE PAVEMENTS THE RAISED PAVEMENT MARKERS SHOULD BE PLACED TO ONE SIDE OF THE LONGITUDINAL JOINTS.
5. ALL PAVEMENT MARKING MATERIAL SHALL MEET THE REQUIRED MATERIAL SPECIFICATIONS AS SPECIFIED BY CITY OF HOUSTON STANDARD SPECIFICATIONS.

GUIDE FOR PLACEMENT OF STOP LINES & CENTERLINE



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DocuSigned by: Suhail Kauwar	DocuSigned by: KHANG NGUYEN
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: DocuSigned by: Carl Stahlbock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 02760-05

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

STANDARD PAVEMENT MARKINGS WITH REFLECTIVE RAISED PAVEMENT MARKERS FOR POSITION GUIDANCE

	FOR CITY OF HOUSTON USE ONLY
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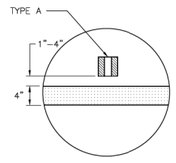
NOT TO SCALE	

DETAIL "A"



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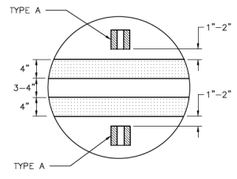
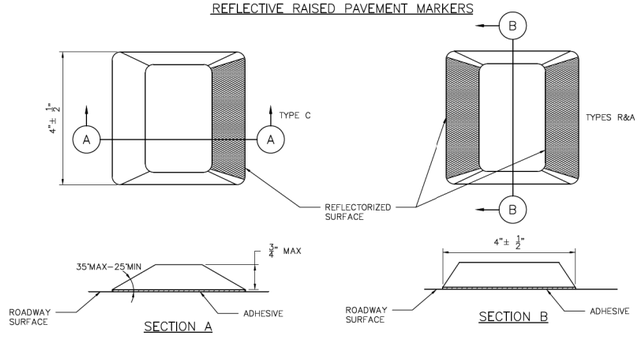


REFLECTIVE RAISED PAVEMENT MARKERS



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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STANDARD PAVEMENT MARKINGS WITH REFLECTIVE RAISED PAVEMENT MARKERS FOR POSITION GUIDANCE

SHEET 5 OF 6

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N-100030-0GEC-3	
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SHEET NO. 488 OF 718	

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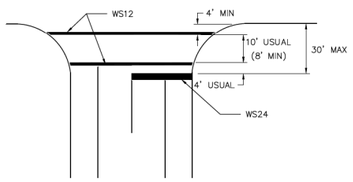
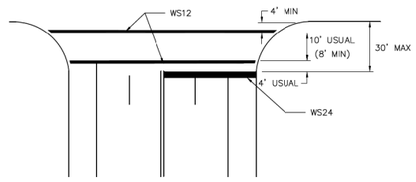
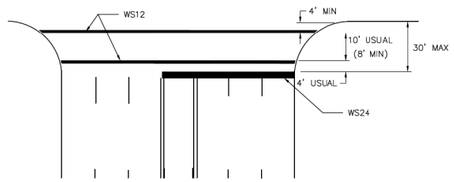
TWO LANES WITH SHOULDERS



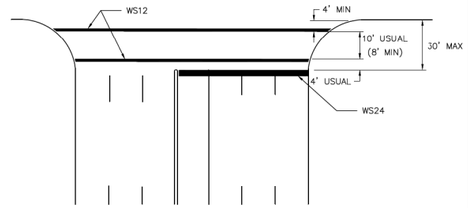
FOUR LANES WITH SHOULDERS



MULTI – LANES



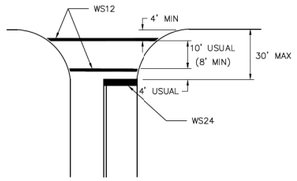
MULTI – LANE WITH MEDIAN



NOTES:

1. CROSSWALKS AND STOP LINES SHALL BE WHITE.
2. "D" IS EQUAL TO ONE HALF THE WIDTH OF TRAVEL LANE.

TWO LANES



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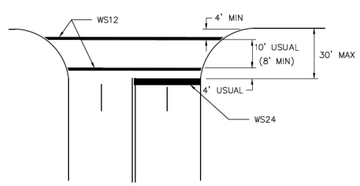
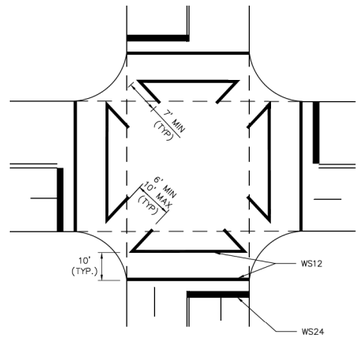
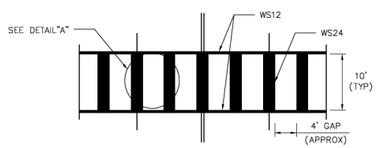


EXCLUSIVE PEDESTRIAN PHASE

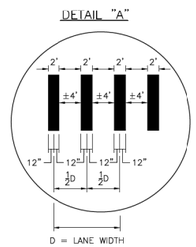


HIGH VISIBILITY
CRCSSWALK DETAIL

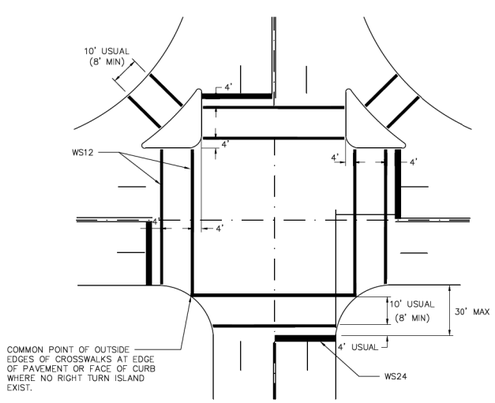


TYPICALLY USED AT SIGNALIZED AND NON-SIGNALIZED CROSSINGS ON COLLECTOR AND ARTERIAL ROADWAYS AND AT LOCATIONS REQUIRING EXTRA EMPHASIS.

DETAIL "A"



INTERSECTION WITH RIGHT – TURN ISLANDS



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DocuSigned by: Sukul Kanwar	DocuSigned by: KELLING NGUYEN
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: DocuSigned by: Carol Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 02760-12

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TYPICAL CROSSWALK DETAILS

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TYPICAL CROSSWALK DETAILS

SHEET 6 OF 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
AS NOTED	
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ROWAIDAH AYOUB	
SHEET NO. 489 OF 718	

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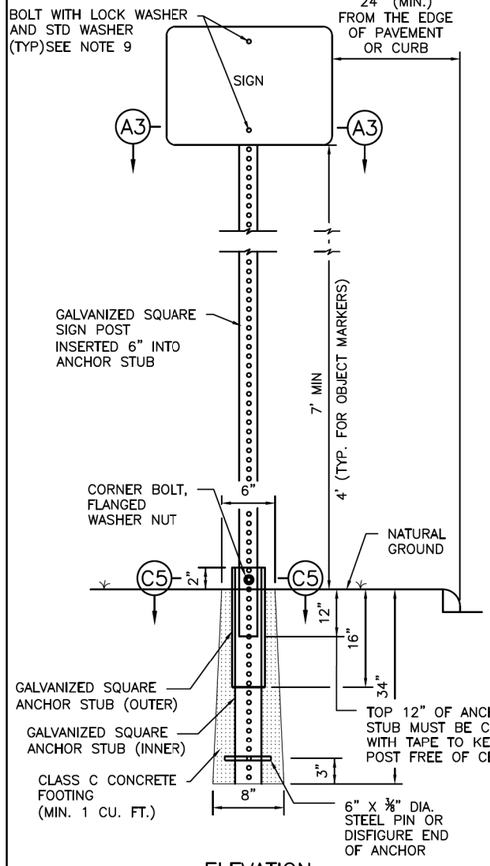
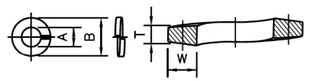


ELEVATION

TYPICAL GROUND SIGN INSTALLATION
PERFORATED SQUARE METAL TUBING

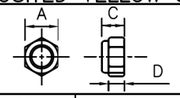
TABLE A	
GALVANIZED SQUARE SIGN POST (PERFORATED)	1-3/4"x1-3/4" (14 GAUGE)
GALVANIZED SQUARE ANCHOR STUB (PREFORATAED) (INNER)	2"x2"x36" (14 GAUGE)
GALVANIZED SQUARE ANCHOR STUB (PERFORATED) (OUTER)	2 1/4" x 2 1/4" x 18" (14 GAUGE)



NOMINAL WASHER SIZE	A INSIDE DIAMETER MAX	A INSIDE DIAMETER MIN	B OUTSIDE DIAMETER MAX	T MEAN SECTION (THICKNESS)	W SECTION WIDTH
5/16"	0.332"	0.314"	0.583"	0.078"	0.125"

DIMENSIONS: ASME B18.21.1
MATERIAL: ALLOY STEEL PER ASME B18.21.1
FINISH: MECHANICAL ZINC PER ASTM B695, CLASS 5, TYPE 2 (YELLOW)

5/16" SPLIT LOCK WASHER, HIGH ALLOY MECHANICAL DEPOSITED YELLOW SINK



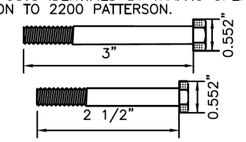
SIZE	C THICKNESS MAX	C THICKNESS MIN	A WIDTH ACROSS FLATS MAX	A WIDTH ACROSS FLATS MIN	D HEX HEIGHT MIN
0.313"	0.359"	0.329"	0.502"	0.489"	0.250"

DIMENSIONS: ASME B18.16.6
MATERIAL: CARBON STEEL, GRADE 8 PER ASME B18.16.6, NYLON 6/6
THREAD REQUIREMENTS: ASME B1.1 UNC & UNF CLASS 2B

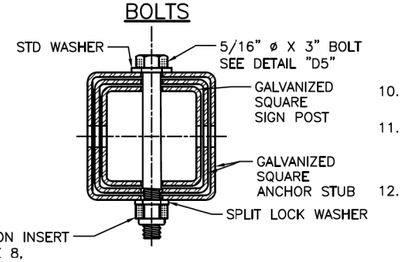
HEX NYLON INSERT LOCKNUTS (NE), GRADE 8, YELLOW ZINC PLATED

NOTES:

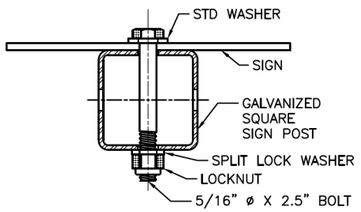
1. THE EXISTING SIGNS LOCATED ON PUBLIC CONSTRUCTION SITE ARE THE PROPERTY OF THE CITY OF HOUSTON. THROUGHOUT THE PERIOD OF THE CONTRACT, THE CONTRACTOR SHALL PROTECT THESE SIGNS SUCH THAT THEY ARE NOT DAMAGED IN THE COURSE OF CONSTRUCTION ACTIVITY. SUCH PROTECTION SHALL INCLUDE THE PERIOD AFTER SIGNS ARE REMOVED FROM INSTALLATION AND STORED BY THE CONTRACTOR OR DELIVERED TO THE TRAFFIC OPERATIONS CENTER (2200 PATTERSON). THE GENERAL TRAFFIC SUPERINTENDENT (832-395-6771) MUST BE NOTIFIED 48 HOURS IN ADVANCE PRIOR TO DELIVERY.
2. AFTER SIGNS ARE REMOVED FROM INSTALLATION AND ARE BEING STORED BY THE CONTRACTOR, THE CONTRACTOR SHALL CONTACT THE TRAFFIC OPERATIONS DIVISION OF HOUSTON PUBLIC WORKS (832-395-6771) AND ARRANGE FOR A CONVENIENT TIME TO DELIVER ONLY CITY SIGNS AND POSTS IDENTIFIED BY TRAFFIC OPERATIONS DIVISION TO 2200 PATTERSON.
3. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SIGNS WITHIN THE AREA OF CONSTRUCTION WILL BE INVENTORIED AND DOCUMENTED JOINTLY BY THE CITY INSPECTOR AND THE CONTRACTOR. THIS DOCUMENT WILL BE JOINTLY SIGNED BY BOTH PARTIES REFLECTING THE SIGN TYPE, SIGN SIZE, SIGN CONDITION, SIGN LOCATION, REFLECTIVITY ADEQUACY, ETC. THE CONTRACTOR IS HELD ACCOUNTABLE FOR THESE SIGNS THROUGHOUT THE PROJECT AND AT THE PROJECTS COMPLETION.
4. ALL GROUND MOUNTED STOP SIGNS, WARNING SIGNS, AND OTHER REGULATORY SIGNS SHALL USE AT A MINIMUM HIGH INTENSITY PRISMATIC REFLECTIVE SHEETING.
5. ALL OVERHEAD SIGNS SHALL USE DIAMOND GRADE REFLECTIVE SHEETING.
6. ALL OTHER SIGNS SHALL USE SUPER ENGINEER GRADE SHEETING.
7. ALL BLANKS TO BE INSTALLED SHALL BE ALUMINUM ALLOY 6061-T-6 OR 5052-H38 IN ACCORDANCE WITH ASTM B209.
8. ALL HOLES SHALL BE ⅜" DIAMETER DRILLED OR PUNCHED AS SHOWN ON EACH BLANK DETAIL AND SHALL BE FREE OF BURRS AND / OR ROUGH EDGES. WHERE NON-STANDARD ORIENTATION OF SIGN IS USED, ENLARGE HOLE IN SIGN POST AT SIGN CONNECTION NOT GREATER THAN 11/16" IN DIAMETER.
9. BOLT SIZE REQUIREMENTS FOR SIGN CONNECTION:
   - 9.1. STANDARD ORIENTATION = 5/16" DIA X 2 1/2" BOLT
   - 9.2. NON STANDARD ORIENTATION = 5/16" DIA X 3" BOLT
10. SIGN BLANK CORNERS TO BE ROUNDED AS SHOWN ON EACH DETAIL ON SHEET 01554-06.
11. ALL SIGN BLANKS ARE TO BE ETCHED, DEGREASED, AND HAVE A COATING MEETING THE REQUIREMENTS OF ASTM B449, CLASS 2, OR ASTM B921, CLASS 2. PRIOR TO APPLICATION OF LEGENDS.
12. ALL SIGNS SHALL BE MANUFACTURED AND INSTALLED IN CONFORMANCE TO THE LATEST TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) AND STANDARD HIGHWAY SIGNS LATEST EDITION.



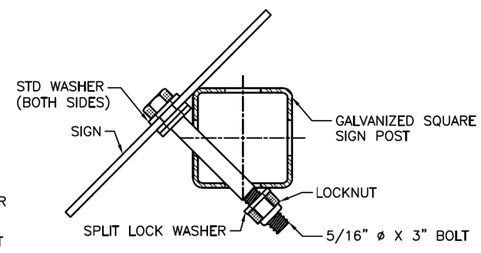
SECTION D5
BOLTS



SECTION C5
CORNER BOLT



STANDARD ORIENTATION



NON-STANDARD ORIENTATION

SECTION A3: SIGN CONNECTION DETAILS

CITY OF HOUSTON HOUSTON PUBLIC WORKS STANDARD	
GENERAL NOTES AND GROUND MOUNTING SIGN (SCALE: NOT TO SCALE)	
APPROVED BY:	
DocuSigned by: Suhail Kanwar 9EF8B0C641F5478... CITY ENGINEER	DocuSigned by: Carol Haddock A93C410B72B3463... DIRECTOR OF HPW
DocuSigned by: KHANG NGUYEN 95A29EFDA75B4CD... CITY TRAFFIC ENGINEER	
EFF DATE: NOV-27-2023	DWG NO: 01554-01

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

GENERAL NOTES AND GROUND MOUNTING SIGN

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
AS NOTED	
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SHEET NO. 490 OF 718	

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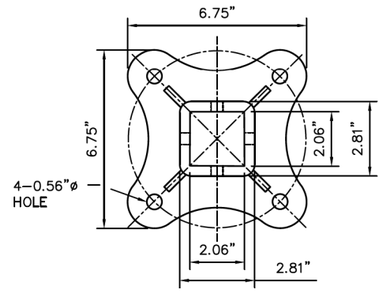
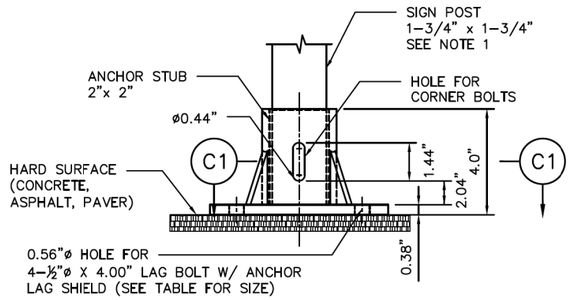




TOP VIEW

SIDE VIEW

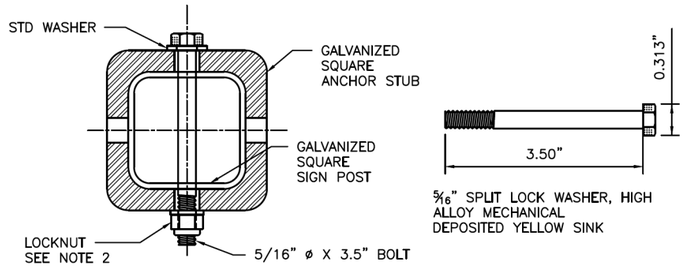
TYPICAL HARD SURFACE INSTALLATION GALVANIZED SIGN BASE

NOTES:

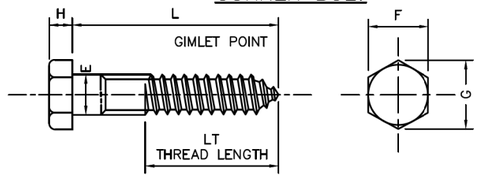
1. REFER TO COH STD DWG 01554–01 FOR SIGN AND POST REQUIREMENTS.
2. REFER TO DETAIL "C5" ON COH STD DWG 01554–01 FOR NUT AND BOLT REQUIREMENTS.

BASE PLATE NOTES:

1. MATERIAL: ASTM A–536 GRADE 65–45–12 DUCTILE IRON
2. HOT DIP GALVANIZE PER ASTM A–153
3. ALL DIMENSIONS ARE IN INCHES



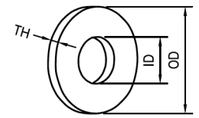
SECTION C1
CORNER BOLT



DIAMETER	E		F		G		H		L	LT
	BODY DIAMETER		WIDTH ACROSS FLATS		WIDTH ACRSS CORNERS		HEIGHT		LENGTH	THREAD LENGTH
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN		
1/2"	0.515"	0.482"	0.750"	0.725"	0.866"	0.826"	0.364"	0.302"	4.00"	3.84"

MATERIAL:PER A307 GRADE A
COATING: HOT DIP ZINC PER ASTM F2329 OR IN ACCORDANCE WITH CLASS C OF ASTM A153 AND CLASS D FOR ⅜" DIAMETER AND LESS

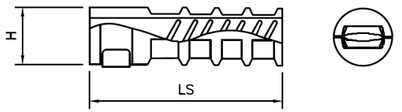
4" HEX LAG SCREWS, HOT DIPPED GALVANIZED



SAE FLAT WASHERS									
SIZE	ID			OD			THICKNESS – TH		
	BASIC	TOLERANCE		BASIC	TOLERANCE		BASIC	MAX	MIN
		PLUS	MINUS		PLUS	MINUS			
1/2"	0.531	0.015"	0.005"	1.062"	0.030"	0.007"	0.95"	0.121"	0.74"

DIMENSIONS: ASME B18.21.1, TYPE A PLAIN WASHERS
MATERIAL: CARBON STEEL
FINISH: Fe/Zn 3AT PER ASTM F1941

1/2" FLAT WASHERS, LOW CARBON, SAE, ZINC PLATED



TH	LS	H	L
LAG THREAD SIZE	LENGTH OF SHIELD	DRILLED HOLE SIZE	BOLT LENGTH REQ
	NOMINAL		
1/2"	3.00"	0.75"	4.00"

ANCHOR LAG SHIELD – ZINC ALLOY

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

SIGN BASE
HARD SURFACE
MOUNTING DETAILS
(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Suhail Kanwar — CITY ENGINEER
DocuSigned by: KHANG NGUYEN — CITY TRAFFIC ENGINEER
DocuSigned by: Carol Haddock — DIRECTOR OF HPW

EFF DATE: NOV–27–2023 | DWG NO: 01554–02

Texas Department of Transportation ©2026

Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY, #400
HOUSTON, TX 77079

SURVEYED BY:
KUO & ASSOCIATES, INC.

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GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

SIGN BASE HARD SURFACE MOUNTING DETAILS

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N–100030–0GEC–3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 491 OF 718	

No.	DATE	REVISIONS	APP.

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Plotted on: 10/24/2025 3:11:33 PM michael.guthrie
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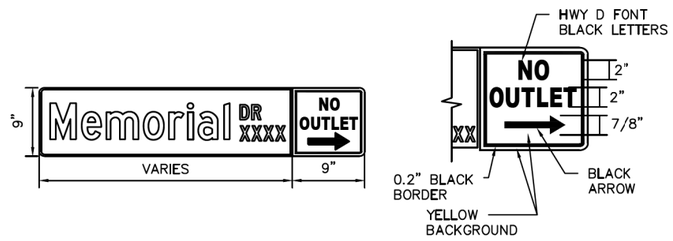
DocuSign Envelope ID: CB71C116-B716-4899-A5EE-0D2F2CC55AF6

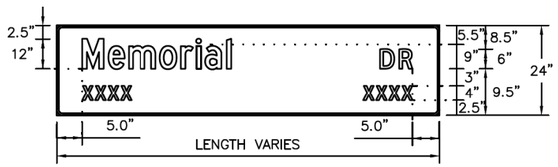
POST MOUNTED STREET NAME SIGN W/ NO OUTLET SIGN



D3 – POST MOUNTED STREET NAME SIGN



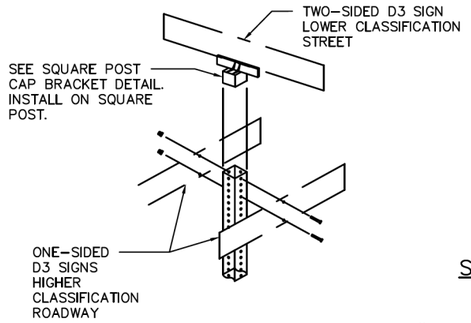
OVERHEAD STREET NAME SIGN DETAIL



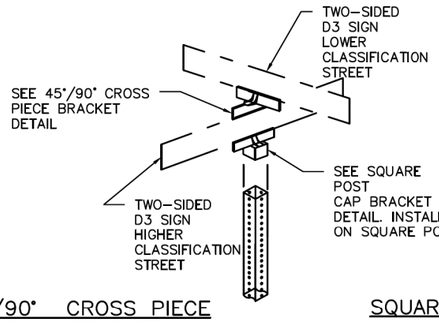
D3 – STREET NAME SIGN

	POST–MOUNTED SIGN	OVERHEAD SIGN
HEIGHT	9"	24"
LENGTH	30" MIN 48" MAX 6" INCREMENTS OF LENGTH	10" MAX 2' INCREMENT OF LENGTH
THICKNESS	0.125"	0.080"
SUBSTREATE	ALLUMINUM ALLOY, 5052–H38 (ASTM B–209)	
SIGN FACE MATERIALS	GREEN FILM OVER DIAMOND GRADE VIP SHEETING	
LEGENDS AND SYMBOLS	HIGHWAY GOTHIC SERIES D (USUAL) HIGHWAY GOTHIC SERIES C OR B FOR MAXIMUM LENGTH SIGN BLACK	
COLOR	LETTERS–WHITE REFLECTIVE BORDER–WHITE REFLECTIVE BACKGROUND–GREEN REFLECTIVE	

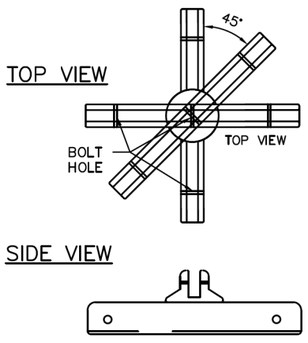
D3 SIGNS GREATER THAN 42" PLATES IN LENGTH



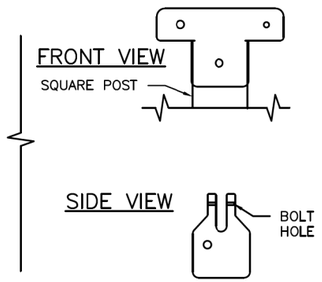
D3 SIGNS LESS THAN OR EQUAL TO 42" PLATES IN LENGTH



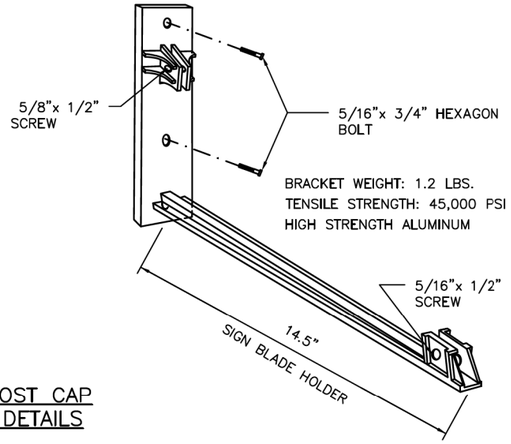
45°/90° CROSS PIECE SIGN BRACKET



SQUARE POST CAP BRACKET DETAILS



SIGNAL POLE MOUNTING DETAIL



NOTES:

1. TYPICAL SIGN PLATE SHOULD BE 30" MAX.
2. LONGER SIGN PLATE MUST BE APPROVED BY THE CITY TRAFFIC ENGINEER.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

STREET NAME SIGN AND SIGN MOUNTING

(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Suhail Kanwar 9EF8B0C641F5478...
CITY ENGINEER

DocuSigned by: KHANG NGUYEN 95A29EFDA75B4CD...
CITY TRAFFIC ENGINEER

DocuSigned by: Carol Haddock A93C410B72B3463...
DIRECTOR OF HPW

EFF DATE: NOV–27–2023 | DWG NO: 01554–03

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TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY, #400
HOUSTON, TX 77079

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Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STREET NAME SIGN AND SIGN MOUNTING

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N–100030–0GEC–3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 492 OF 718	

No.	DATE	REVISIONS	APP:

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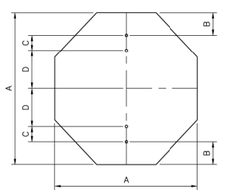
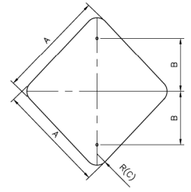


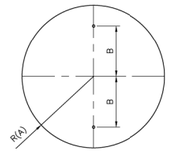
OCTAGONAL

A	B	C	D	T
24	3	3	12	0.08
36	3	3	24	0.08



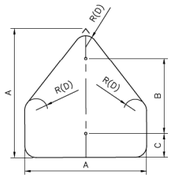
DIAMOND

A	B	C	T
24	12	1 1/2	0.08
30	15	1 1/2	0.08
36	18	1 1/2	0.08



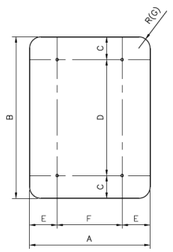
CIRCLE

A	B	T
15	15	0.08
18	12	0.08



PENTAGON (SCHOOL)

A	B	C	D	T
36	24	3	1 1/2	0.08

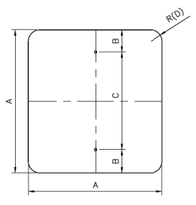


VERTICAL RECTANGLE

A	B	C	D	E	F	G	T
36	48	6	36	6	24	1 1/2	0.08
48	60	6	48	9	30	1 1/2	0.08
18	30	3	24	–	–	1 1/2	0.08

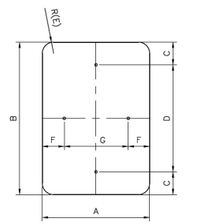
NOTES:

1. A 30" LONG OR GREATER PLATE SHALL BE USED WHEN A "NO OUTLET" SUPPLEMENT IS REQUIRED.
2. THE CITY OF HOUSTON "STOP" AND "YIELD" SIGNS SHALL BE A MINIMUM 36". SPECIAL PERMISSION FROM THE CITY TRAFFIC ENGINEER IS REQUIRED FOR LESS THAN 35" SIGNS.
3. ALL PUNCHED HOLES ARE 3/8"x 1/2" OVAL.
4. ALL CORNER RADII ARE 1 1/2".
5. ALL DIMENSIONS ARE IN INCHES.
6. T = THICKNESS



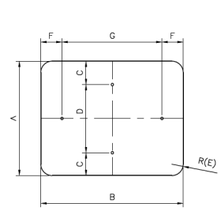
SQUARE (A)

A	B	C	D	T
18	3	12	1 1/2	0.08
24	3	18	1 1/2	0.08
36	3	30	1 1/2	0.08



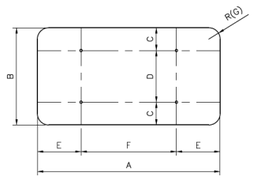
VERTICAL/HORIZONTAL RECTANGLE

A	B	C	D	E	F	G	T
12	18	1 1/2	15	1 1/2	1 1/2	9	0.08
12	36	3	30	1 1/2	1 1/2	9	0.08
18	24	3	18	1 1/2	1 1/2	15	0.08
24	30	3	24	1 1/2	3	18	0.08
24	36	3	30	1 1/2	3	18	0.08
24	48	3	36	1 1/2	3	18	0.08
30	36	3	30	1 1/2	3	24	0.08



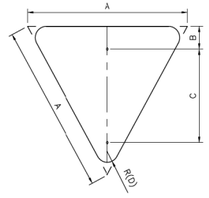
HORIZONTAL/VERTICAL RECTANGLE

A	B	C	D	E	F	G	T
12	6	–	–	1 1/2	1	4	0.08
18	6	–	–	1 1/2	1	4	0.08
12	9	1	10	1 1/2	–	–	0.08
24	12	1 1/2	9	1 1/2	2	8	0.08
24	18	3	12	1 1/2	2	14	0.08
30	24	3	18	1 1/2	3	18	0.08
36	12	1 1/2	9	1 1/2	2	8	0.08



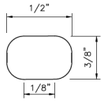
HORIZONTAL RECTANGLE

A	B	C	D	E	F	G	T
36	24	3	18	6	24	1 1/2	0.08
48	24	3	18	9	30	1 1/2	0.08
48	36	6	24	9	30	1 1/2	0.08
60	24	3	18	12	36	1 1/2	0.08
60	36	6	24	12	36	1 1/2	0.08



EQUILATERAL TRIANGLE

A	B	C	D	T
36	3	21	1 1/2	0.08



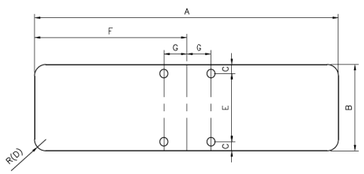


TABLE – D3 SIGNS (BRACKETS)

A	B	C	D	E	F	G	T
30	9	5/16	1 1/2	8 3/8	15	1 3/4	0.125
36	9	5/16	1 1/2	8 3/8	18	1 3/4	0.125
42	9	5/16	1 1/2	8 3/8	21	1 3/4	0.125
48	9	5/16	1 1/2	8 3/8	24	1 3/4	0.125

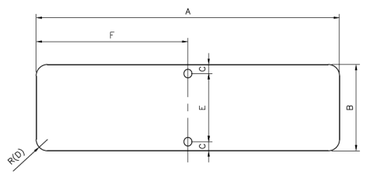


TABLE – D3 SIGNS

A	B	C	D	E	F	T
30	9	1 1/2	1 1/2	6	15	0.125
36	9	1 1/2	1 1/2	6	18	0.125
42	9	1 1/2	1 1/2	6	21	0.125
48	9	1 1/2	1 1/2	6	24	0.125

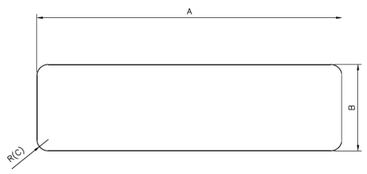


TABLE – D1 SIGNS

A	B	C	T
60	24	1 1/2	0.08
72	24	1 1/2	0.08
84	24	1 1/2	0.08
96	24	1 1/2	0.08

APPROVED BY:	APPROVED BY:
DocuSigned by: Sohail Kauwar	DocuSigned by: HANG NGUYEN
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: DocuSigned by: Carol Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 01554-06

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

GROUND MOUNTED SIGN SIZES

	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	
NOT TO SCALE	

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HOUSTON, TX 77079

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

GROUND MOUNTED SIGN SIZES

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 493 OF 718	

No.	DATE	REVISIONS	APP.

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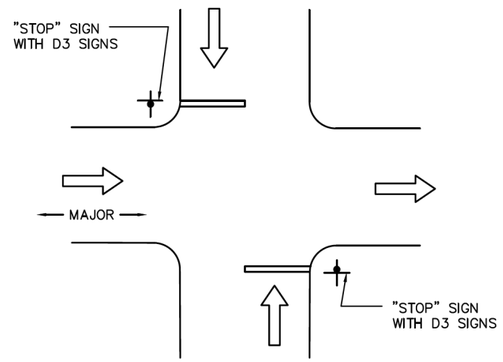
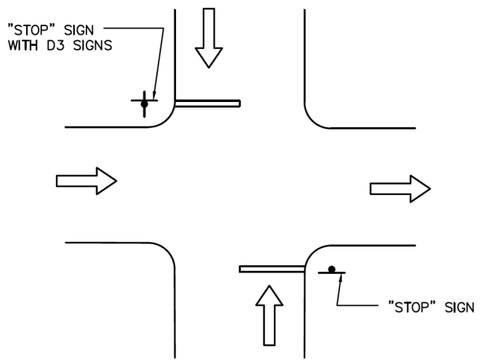
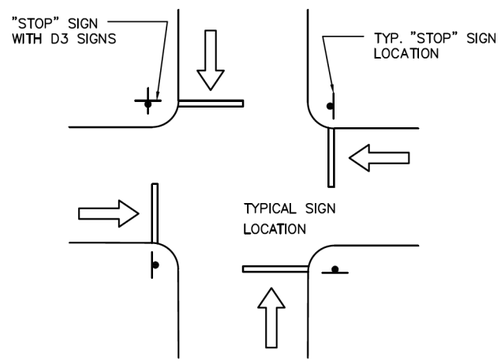
TYPICAL SIGN PLACEMENT



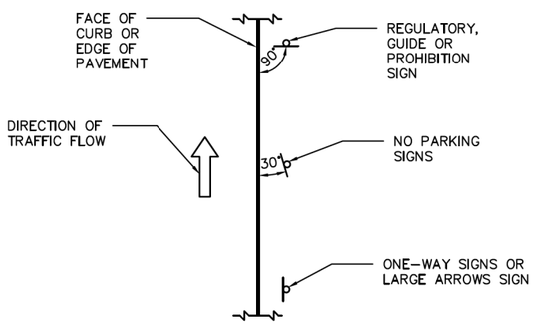
TWO–WAY STOP
AND ONE–WAY OPERATION
ON MAJOR/LOCAL INTERSECTION



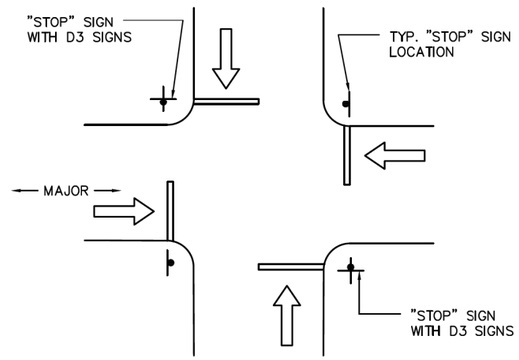
TWO–WAY STOP
AND ONE–WAY OPERATION
ON LOCAL/LOCAL INTERSECTION



FOUR–WAY STOP CONTROL
ON LOCAL/LOCAL INTERSECTION



MAST ARM INSTALLATION
REFER TO TRAFFIC SIGNAL DETAILS
FOR ADDITIONAL INFORMATION.



FOUR–WAY STOP CONTROL
ON MAJOR/LOCAL INTERSECTION

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD
TYPICAL SIGN PLACEMENT
(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Suhail Kanwar 9CF8B0C641F5478...
CITY ENGINEER

DocuSigned by: Carol Haddock A93C410D72B3453...
DIRECTOR OF HPW

DocuSigned by: KHANG NGUYEN 95A29EFDA75B4CD...
CITY TRAFFIC ENGINEER

EFF DATE: NOV–27–2023 | DWG NO: 01554–07

Texas Department of Transportation ©2026

Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY, #400
HOUSTON, TX 77079

SURVEYED BY:
KUO & ASSOCIATES, INC.

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95% SUBMITTAL
GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TYPICAL SIGN PLACEMENT

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N–100030–0GEC–3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 494 OF 718	

No.	DATE	REVISIONS	APP:

Pen Table: ANTOINE DR.tbl
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Plotted on: 10/24/2025 3:11:41 PM michael.guthrie
Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Sign-Pvmt Markings\W GULF BANK\STANDARDS\SIGN_STD 05.dgn

DocuSign Envelope ID: CB71C116-B716-4899-A5EE-0D2F2CC55AF6

REGULATORY SIGNS		
SIGN	SIGN DESIGNATION	SIZE (IN.)
STOP	R1-1	36x36
YIELD	R1-2	36x36x36
ALL WAY PLAQUE	R1-3P	18x6
YIELD HERE TO PEDISTRIANS	R1-5a	36x48
EXCEPT RIGHT TURN (PLAQUE)	R1-10P(1)	24x18
EXCEPT BUSES (PLAQUE)	R1-10P(2)	24x18
SPEED LIMIT	R2-1	30x36
MINIMUM SPEED LIMIT (PLAQUE)	R2-4P	24x30
NO RIGHT TURNS	R3-1	36x36
NO LEFT TURNS	R3-2	36x36
NO U-TURNS	R3-4	36x36
LEFT/RIGHT TURN ONLY	R3-5	30x36
THRU ONLY	R3-5a	30x36
LEFT TURN/THRU	R3-6	30x36
LEFT/RIGHT LANE MUST TURN LEFT/RIGHT	R3-7	36x36
ADVANCE INTERSECTION LANE CONTROL (VARIES)	R3-8	VARIESx30
TWO-WAY LEFT TURN ONLY (OVERHEAD)	R3-9a	30x36
TWO-WAY LEFT TURN LANE (POST MOUNTED)	R3-9b	24x36
BEGIN	R3-9cP	30x12
END	R3-9dP	30x12
REVERSIBLE LANE CONTROL (SYMBOL)	R3-9e	108x48
REVERSIBLE LANE CONTROL (POST MOUNTED)	R3-9f	36x54
ADVANCE REVERSIBLE LANE CONTROL TRANSITION	R3-9g,9h	108x36
END REVERSIBLE LANE	R3-9i	108x48
BIKE LANE	R3-17	24x18
SLOWER TRAFFIC KEEP RIGHT	R4-3	24x30
BEGIN RIGHT TURN LANE YIELD TO BIKES	R4-4	36x30
KEEP RIGHT	R4-7	24x30
KEEP LEFT	R4-8	24x30
DO NOT DRIVE ON SHOULDER	R4-17	24x30
DO NOT PASS ON SHOULDER	R4-18	24x30
DO NOT ENTER	R5-1	36x36
WRONG WAY	R5-1a	42x30
NO TRUCKS (SYMBOL)	R5-2(1)	24x24
NO THRU TRUCKS (TEXT)	R5-2(2)	24x30
ONE WAY (LONG)	R6-1	54x18
ONE WAY	R6-2	30x36
ROUNDABOUT DIRECTIONAL (2 CHEVRONS)	R6-4	30x24
ROUNDABOUT CIRCULATION (PLAQUE)	R6-5P	30x30
BEGIN ONE WAY	R6-6	30x36
END ONE WAY	R6-7	30x36
PARKING RESTRICTION (ARROW)	R7-2(1)	12x18
PARKING RESTRICTION (TO CORNER)	R7-2(2)	12x18
PARKING RESTRICTION (BUS ZONE)	R7-2(3)	12x18

REGULATORY SIGNS		
SIGN	SIGN DESIGNATION	SIZE (IN.)
PARKING RESTRICTION (VALET ZONE)	R7-2(4)	12x18
PARKING RESTRICTION (PEAK PERIOD)	R7-2(5)	12x18
PARKING RESTRICTION (EMERGENCY VEH. ONLY)	R7-2(6)	12x18
PARKING RESTRICTION (TAXI ZONE)	R7-2(7)	12x18
PARKING RESTRICTION (NO STOPPING OR STANDING)	R7-2(8)	12x18
PARKING RESTRICTION (JITNEY STOP)	R7-2(9)	12x18
PARKING RESTRICTION (PED-CAB ZONE)	R7-2(10)	12x18
PARKING RESTRICTION (LIMO ZONE)	R7-2(11)	12x18
PARKING RESTRICTION (COMMERCIAL VEH. ZONE)	R7-2(12)	12x18
PARKING RESTRICTION (FED/CITY AUTHORIZED VEH. ONLY)	R7-2(13)	12x18
PARKING RESTRICTION (U.S. MARSHAL PARKING ONLY)	R7-2(14)	12x18
PARKING RESTRICTION (EMERGENCY)	R7-2(15)	12x18
PARKING TIME LIMIT (VARIES)	R7-108	12x18
HANDICAPPED PARKING	R7-8T	12x18
TOW AWAY ZONE (PLAQUE)	R7-201P	12x6
PARKING METER (COH)	R7-110	12x18
ON TRACKS (PLAQUE)	R8-3eP	24x18
CROSS ONLY AT CROSSWALKS (SYMBOL)	R9-2	12x18
NO PEDESTRIAN CROSSING (SYMBOL)	R9-3	18x18
NO PEDESTRIAN CROSSING	R9-3a	12x18
PEDESTRIAN CROSSING	R9-8	36x18
SIDEWALK CLOSED	R9-9	24x12
SIDEWALK CLOSED-USE OTHER SIDE	R9-10	24x12
SIDEWALK CLOSED CROSS HERE	R9-11a	24x12
PUSH BUTTON FOR PEDESTRIAN CROSSING	R10-3e	9x15
LEFT ON GREEN ARROW ONLY	R10-5	30x36
STOP HERE ON RED	R10-6	24x36
DO NOT BLOCK INTERSECTION	R10-7	24x30
LEFT/RIGHT TURN SIGNAL	R10-10	30x36
NO TURN ON ROAD (TEXT)	R10-11a	36x48
LEFT TURN YIELD ON GREEN	R10-12	30x36
CROSSWALK, STOP ON RED	R10-23	24x30
KEEP OFF MEDIAN	R11-1	24x30
ROAD CLOSED	R11-2	48x30
ROAD CLOSED LOCAL TRAFFIC ONLY	R11-3a	60x30
BRIDGE OUT LOCAL TRAFFIC ONLY	R11-3b	60x30
ROAD CLOSED TO THRU TRAFFIC	R11-4	60x30
WEIGHT LIMIT XX TONS	R12-1	24x30
AXLE WEIGHT LIMIT XX TONS/LBS	R12-2	24x30
NO TRUCKS OVER XX TONS/LBS EMPTY WEIGHT	R12-3	24x36
WEIGHT LIMIT XX TONS PER AXLE XX TONS GROSS	R12-4	36x24
LOAD ZONED BRIDGE	R12aT	VARIESx36
TRUCK ROUTE	R14-1	24x18
GRADE CROSSING (CROSSBUCK)	R15-1	48x9
NUMBER OF TRACKS (PLAQUE)	R15-2P	27x18

REGULATORY SIGNS		
SIGN	SIGN DESIGNATION	SIZE (IN.)
RIGHT ANGLE TURN	CW1-1	36X36
HORIZONTAL CURVE	CW1-2	36X36
REVERSE RIGHT ANGLE TURNS	CW1-3	36X36
REVERSE HORIZONTAL CURVES	CW1-4	36X36
REVERSE CURVE (2 LANES)	CW1-4b	36X36
REVERSE CURVE (MORE THAN 2 LANES)	CW1-4c	36X36
ONE-DIRECTION LARGE ARROW	CW1-6	48X24
UPWARD SLOPING ARROW	CW1-6aT	36X36
CHEVRON	CW1-8	18X24
STOP AHEAD	CW3-1	36X36
SIGNAL AHEAD	CW3-3	36X36
BE PREPARED TO STOP	CW3-4	36X36
ROAD NARROWS	CW5-1	36X36
NARROW BRIDGE	CW5-2	36X36
TWO-WAY TRAFFIC FLOW	CW6-3	36X36
TWO-WAY TRAFFIC	CW6-4	12X18
BUMP	CW8-1	36X36
DIP	CW8-2	36X36
SOFT SHOULDER	CW8-4	36X36
TRUCK CROSSING	CW8-6	36X36
ROUGH ROAD	CW8-8	36X36
UNEVEN LANES	CW8-11	36X36
LEFT LANE ENDS	CW9-1(1)	36X36
RIGHT LANE ENDS	CW9-1(2)	36X36
DOUBLE ARROW	CW12-1	30X30
ADVISORY SPEED (PLAQUE)	CW13-1P	24X24
XX FEET (PLAQUE)	CW16-2P	24X18
AHEAD (PLAQUE)	CW16-3	24X12
ROAD WORK AHEAD	CW20-1	36X36
DETOUR AHEAD	CW20-2	36X36
ROAD CLOSED AHEAD	CW20-3	36X36
ONE LANE ROAD	CW20-4	36X36
LEFT LANE CLOSED	CW20-5(1)	36X36
RIGHT LANE CLOSED	CW20-5(2)	36X36
FLAGGER (SYMBOL)	CW20-7	36X36
NARROW LANES AHEAD	CW20-8T	36X36
SHOULDER WORK AHEAD	CW21-5	36X36
UTILITY WORK AHEAD	CW21-7	36X36
DOUBLE REVERSE CURVE (1 LANE)	CW24-1	36X36
DOUBLE REVERSE CURVE (2 LANE)	CW24-1a	36X36
DOUBLE REVERSE CURVE (3 LANE)	CW24-1b	36X36
END ROAD WORK	G20-2	36X18
DETOUR WITH ARROWS	M4-9	30X24
END DETOUR	M4-8a	24X18
PEDESTRIAN DETOUR	M4-9b	30X24
DETOUR	M4-10	48X18

APPROVED BY:	APPROVED BY:
Signed by: Sukul Kanwar	Signed by: HONG NGUYEN
CITY ENGINEER	CITY TRAFFIC ENGINEER

APPROVED BY: Signed by: Carol Haddock

DIRECTOR OF HOUSTON PUBLIC WORKS

EFF DATE: NOV-27-2023	DWG NO: 01554-08

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TYPICAL CITY OF HOUSTON SIGNS

SHEET 1 OF 2

FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE

NOT TO SCALE

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No.	DATE	REVISIONS	APP'D

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TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY, #400
HOUSTON, TX 77079

SURVEYED BY:
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Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TYPICAL CITY OF HOUSTON SIGNS

SHEET 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 495 OF 718	

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WARNING SIGNS		
SIGN	SIGN DESIGNATION	SIZE (IN.)
RIGHT ANGLE TURN CURVE	W1-1	30x30
RIGHT ANGLE TURN WITH SPEED LIMIT	W1-1a	36x36
HORIZONTAL CURVE	W1-2	30x30
HORIZONTAL CURVE WITH SPEED LIMIT	W1-2a	36x36
REVERSE RIGHT ANGLE TURN	W1-3	30x30
REVERSE HORIZONTAL CURVE	W1-4	30x30
WINDING ROAD	W1-5	30x30
ONE DIRECTION LARGE ARROW	W1-6	48x24
TWO DIRECTION LARGE ARROW	W1-7	48x24
CHEVRON ALIGNMNET	W1-8	18x24
HAIRPIN CURVE	W1-11	30x30
TRUCK ROLLOVER	W1-13	36x36
CROSS ROAD	W2-1	30x30
SIDE STREET T-INTERSECTION (SYMBOL)	W2-2	30x30
T- INTERSECTION (SYMBOL)	W2-4	30x30
Y- INTERSECTION (SYMBOL)	W2-5	30x30
ROUNDABOUT (SYMBOL)	W2-6	30x30
STOP AHEAD	W3-1	30x30
SIGNAL AHEAD	W3-3	30x30
REDUCED SPEED LIMIT AHEAD	W3-5	36x36
MERGE	W4-1	36x36
LANE ENDS	W4-2	36x36
ADDED LANE	W4-3	36x36
CROSS TRAFFIC DOES NOT STOP (PLAQUE)	W4-4P	24x12
ROAD NARROWS	W5-1	36x36
NARROW BRIDGE	W5-2	36x36
DIVIDED HIGHWAY	W6-1	36x36
DIVIDED HIGHWAY ENDS	W6-2	36x36
TWO WAY TRAFFIC (SYMBOL)	W6-3	36x36
BUMP	W8-1	30x30
DIP	W8-2	30x30
PAVEMENT ENDS	W8-3	36x36
SOFT SHOULDER	W8-4	36x36
TRUCK CROSSING	W8-6	36x36
LOOSE GRAVEL	W8-7	36x36
ROUGH ROAD	W8-8	36x36
UNEVEN LANES	W8-11	36x36
WATCH FOR ICE ON BRIDGE	W8-13T	36x36
SHOULDER DROP-OFF (SYMBOL)	W8-17	30x30
SHOULDER DROP-OFF (PLAQUE)	W8-17P	24x18

WARNING SIGNS		
SIGN	SIGN DESIGNATION	SIZE (IN.)
FLOOD GAUGE	W8-19	12X72
NO SHOULDER	W8-23	36x36
SHOULDER ENDS	W8-25	36x36
LEFT LANE ENDS	W9-1(1)	36x36
RIGHT LANE ENDS	W9-1(2)	36x36
LANE ENDS MERGE LEFT	W9-2(1)	36x36
LANE ENDS MERGE RIGHT	W9-2(2)	36x36
GRADE CROSSING ADVANCE WARNING	W10-1	30 DIA
NO TRAIN HORN	W10-9	36x36
NO TRAIN HORN (PLAQUE)	W10-9P	30x24
BICYCLE	W11-1	30x30
PEDESTRIAN	W11-2	36x36
EMERGENGY VEHICLE	W11-8	30x30
HANDICAPPED	W11-9	30x30
TRUCK	W11-10	30x30
EMERGENGY SIGNAL AHEAD (PLAQUE)	W11-12P	36x30
BICYCLE/PEDES"RIAN	W11-15	30x30
TRAIL CROSSING (PLAQUE)	W11-15P	24x18
DOUBLE ARROW	W12-1	30x30
LOW CLEARANCE WITH ARROWS	W12-2	36x36
LOW CLEARANCE	W12-2a	78x24
LOADED ZONED BRIDGE	W12-5T	36x36
ADVISORY SPEED (PLAQUE)	W13-1P	18x18
NO OUTLET	W14-2	24x24
NO OUTLET WITH ARROW	W14-2a	36x6
SHARE THE ROAD (PLAQUE)	W16-1P	18x24
XX FEET (PLAQUE)	W16-2P	24x18
NEXT XX FEET (PLAQUE)	W16-4P	30x24
SUPPLEMENTAL LEFT ARROW (PLAQUE)	W16-5P(1)	24x18
SUPPLEMENTAL RIGHT ARROW (PLAQUE)	W16-5P(2)	24x18
DIAGONAL ARROW (PLAQUE)	W16-7P	24x12
AHEAD (PLAQUE)	W16-9P	24x12
WHEN FLASHING (PLAQUE)	W16-13P	24x18
ROUNDABOUT (PLAQUE)	W16-17	24x12
SPEED HUMP	W17-1	30x30
TYPE 3 OBJECT MARKER (LEFT)	OM3-L	12x36
TYPE 3 OBJECT MARKER (RIGHT)	OM3-R	12x36
TYPE 3 OBJECT MARKER (CENTER)	OM3-C	12x36
TYPE 4 OBJECT MARKER	OM4-1	18x18

BICYCLE SIGNS		
SIGN	SIGN DESIGNATION	SIZE (IN.)
STOP	R1-1	18x18
STREET NAME	D3-1	VARIESx6
YIELD	R1-2	18x18x18
TO REQUEST GREEN WAIT ON SYMBOL	R10-22	12x18
YIELD TO PEDESTRIAN	R9-6	18x18
NO PARKING BIKE LANE	R7-9	12x18
BIKE ROUTE	D11-1	24x18
BIKE ROUTE TO DOWNTOWN	D11-1c	24x18
BIKE SIGN AUXILARY SIGNS	M4-1, M4-14	12x6
BICYCLE ROUTE ROUTE ARROW SIGNS	M5-1,2; M6-1,2,3,4,5,6,7	12x9
WALK YOUR BIKE (CUSTOM SIGN)	R9-8 CoH	12x18
YIELD TO PED/BIKE (CUSTOM SIGN)	R1-5PB	36x36
TURNING VEHICLES YIELD TO PED/BIKE (CUSTOM SIGN)	R10-15PB	36x36
STOP FOR PED/BIKE (CUSTOM SIGN)	R1-5PBb	36x36
TURNING VEHICLES STOP FOR PED/BIKE (CUSTOM SIGN)	R10-15PBa	36x36
CROSSWALK STOP ON RED (CUSTOM SIGN)	R10-23 (CoH)	42x30
PEDESTRAIN CROSSING (CUSTOM SIGN)	W11-2 (HAWK)	48x30
LOOK BOTH WAYS (CUSTOM SIGN)	W4-4Pa (BIKE) W4-4Pb (BIKE)	VARIES
TURN WIDE (CUSTOM SIGN)	R3-8 (BIKE)	30x36
BIKE MERGE AHEAD (CUSTOM SIGN)	W11-1 (MERGE)	36x36

SCHOOL SIGNS		
SIGN	SIGN DESIGNATION	SIZE (IN.)
SCHOOL	S1-1(FYG)	36x36
X:XX TO X:XX AM AND PM (PLAQUE)	S4-1P	24x10
SCHOOL (PLAQUE)	S4-3P(FYG)	24x8
WHEN FLASHING (PLAQUE)	S4-4P	24x10
REDUCED SCHOOL SPEED LIMIT AHEAD	S4-5a(FYG)	36x36
SCHOOL SPEED LIMIT XX WHEN FLASHING	S5-1(FYG)	24x48
END SCHOOL ZONE	S5-2	24x30
END SCHOOL ZONE (PLAQUE)	S5-2aTP	24x10
CELL PHONE USE PROHIBITED	S7-1T	24x18
TURN ARROW (PLAQUE)	SW16-3P(FYG)	24x12
ADVANCE TURN ARROW (PLAQUE)	SW16-8P(FYG)	24x12
DIAGONAL ARROW (PLAQUE)	SW16-7P(FYG)	24x12
AHEAD (PLAQUE)	S16-9P(FYG)	24x12
FYG- FLUORESCENT YELLOW-GREEN BACKGROUND COLOR		

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APPROVED BY:
DocuSigned by: Suhail Kanuar
CITY ENGINEER

APPROVED BY:
DocuSigned by: KARING HAUKEN
CITY TRAFFIC ENGINEER

APPROVED BY:
DocuSigned by: Carol Haddock
DIRECTOR OF HOUSTON PUBLIC WORKS

EFF DATE: NOV-27-2023

DWG NO: 01554-09

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TYPICAL CITY OF HOUSTON SIGNS

SHEET 2 OF 2

FOR CITY OF HOUSTON USE ONLY

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No.	DATE	REVISIONS	APP.

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TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
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10/24/2025
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TYPICAL CITY OF HOUSTON SIGNS

SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
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CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 496 OF 718	

Pen Table: ANTOINE DR.tbl
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Plotted on: 10/24/2025 3:11:47 PM michael.guthrie
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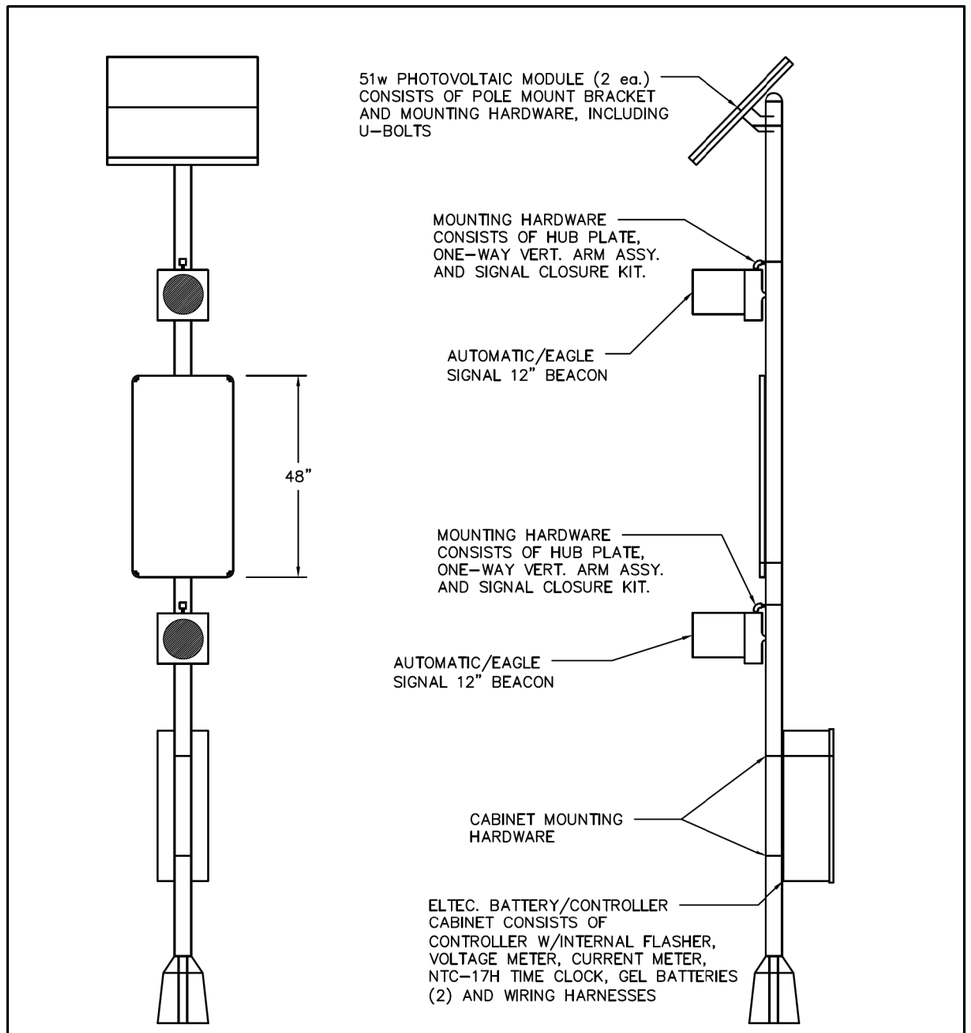

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APPROVED BY:

CITY ENGINEER	CITY TRAFFIC ENGINEER	DIRECTOR OF HPW
DocuSigned by: Suhail Kanwar 9EF8B0C541F5478...	DocuSigned by: KHANG NGUYEN 95A29EFDA75B4CD...	DocuSigned by: Carol Haddock A93C410B72B3453...

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

SOLAR POWERED SCHOOL ZONE FLASHING BEACON

(SCALE: NOT TO SCALE)

EFF DATE: NOV-27-2023 | DWG NO: 16712-03

No.	DATE	REVISIONS	APP:

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

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Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

SOLAR POWERED SCHOOL ZONE FLASHING BEACON

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 497 OF 718	

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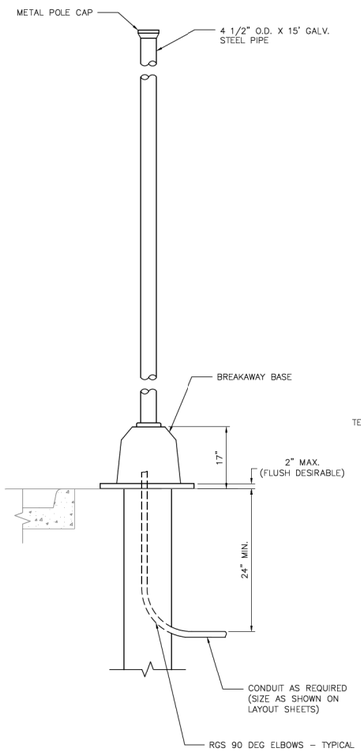
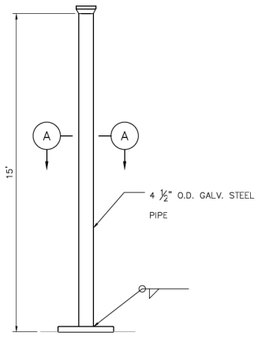
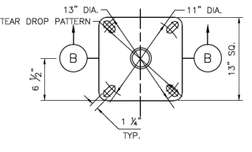




PEDESTAL POLE



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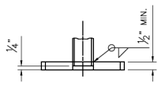

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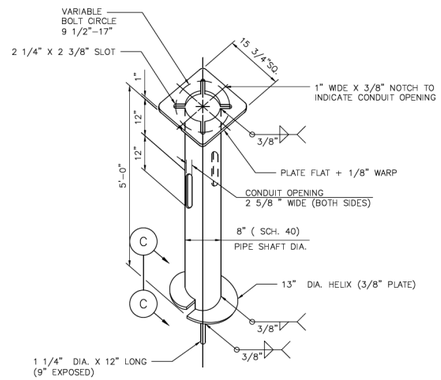
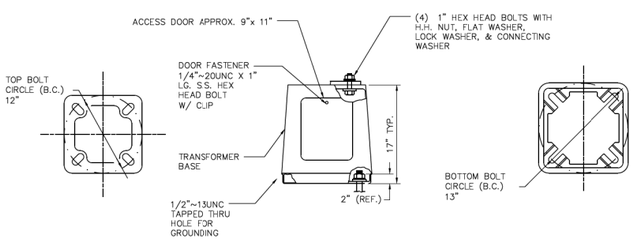
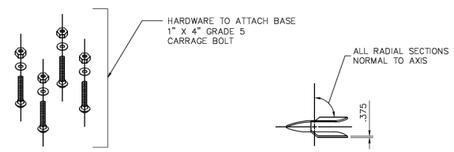


SCREW ANCHOR FOUNDATION DETAIL

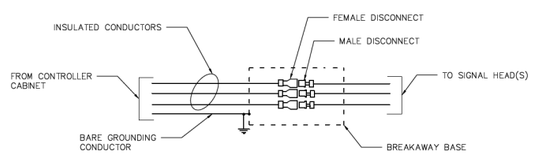


TOP PLAN ELEVATION BOTTOM PLAN

BREAKAWAY BASE DETAILS



HARDWARE DETAIL VIEW C



BREAKAWAY IN–LINE FUSE HOLDERS

NOTES:

1. DETAILS DEPICTED ON THIS SHEET SHOW A TYPICAL PEDESTAL POLE ASSEMBLY WITH SCREW–IN ANCHOR FOUNDATION TO BE UTILIZED FOR SCHOOL ZONE FLASHERS ONLY.
2. THE PEDESTAL POLE ASSEMBLY DEPICTED ON THIS SHEET IS DESIGNED FOR SIGNAL HEADS WHERE ELECTRICAL POWER IS NEEDED WITH A BREAKAWAY POLE.
3. PROVIDE BREAKAWAY FUSE HOLDER WITH DOUBLE–POLE HOUSING. ENSURE FUSE HOLDER IS POLARIZED, WATER–RESISTANT, UL RECOGNIZED, AND RATED FOR 30A MAXIMUM CURRENT CAPACITY AT 600V OR LESS. PROVIDE BREAKAWAY FUSE HOLDER FROM MANUFACTURERS PRE–QUALIFIED BY TXDOT TRAFFIC OPERATIONS DIVISION. SEE https://www.txdot.gov/business/resources/materials/material–producer–list.html FOR LIST OF PRE–QUALIFIED MANUFACTURERS. CATEGORY IS ROADWAY ILLUMINATION AND ELECTRICAL SUPPLIES. PROVIDE 10 AMP TIME DELAY FUSES.
4. UNLESS OTHERWISE SHOWN ON THE PLANS, PROVIDE POLE SHAFT AND BREAKAWAY BASE IN ACCORDANCE WITH THE REQUIREMENTS LISTED IN TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT) STANDARD SPECIFICATION ITEM "PEDESTAL POLE ASSEMBLIES".
5. SEE TxDOT SPECIAL SPECIFICATION 4923 (SS 4923),"SCREW–IN TYPE ANCHOR FOUNDATIONS" FOR FURTHER REQUIREMENTS.
6. PROVIDE SIGNAL HEADS AND MOUNTING AS SHOWN ELSEWHERE ON THE PLANS.
7. CONDUIT IN FOUNDATION AND WITHIN 6 IN. OF FOUNDATION IS SUBSIDIARY TO STANDARD SPECIFICATION ITEM, "PEDESTAL POLE ASSEMBLIES".
8. POLE SHAFT SHALL BE ONE PIECE. ALUMINUM CONDUIT WILL NOT DEVELOP THE NECESSARY STRENGTH AND WILL NOT BE ALLOWED. IN HIGH WINDS, USE A POLE AND BASE COLLAR ASSEMBLY TO ADD STRENGTH AND PREVENT LOOSENING ON CONNECTION.
9. PER MANUFACTURER'S RECOMMENDATIONS, ENGAGE ALL THREADS ON THE PEDESTAL POLE BASE AND PIPE UNLESS THE PIPE IS FULLY SEATED INTO BASE.
10. PROVIDE NON–FUSED WATERTIGHT BREAKAWAY ELECTRICAL CONNECTORS FOR BREAKAWAY POLES.(BUSSMANN HET, LITTELFUSE LET, FERRAZ–SHAWMUT FEBN, OR APPROVED EQUAL).

APPROVED BY:	APPROVED BY:
Sohail Kauwar	Kelling Nguyen
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: Carol Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV–27–2023	DWG NO: 02582–04

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

PEDESTAL POLE WITH SCREW–IN ANCHOR FOUNDATION
(FOR SCHOOL ZONE FLASHERS ONLY)

FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE
NOT TO SCALE

No.	DATE	REVISIONS	APP'D

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HOUSTON, TX 77079

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Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PEDESTAL POLE WITH SCREW–IN ANCHOR FOUNDATION (FOR SCHOOL ZONE FLASHERS ONLY)

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N–100030–0GEC–3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 498 OF 718	

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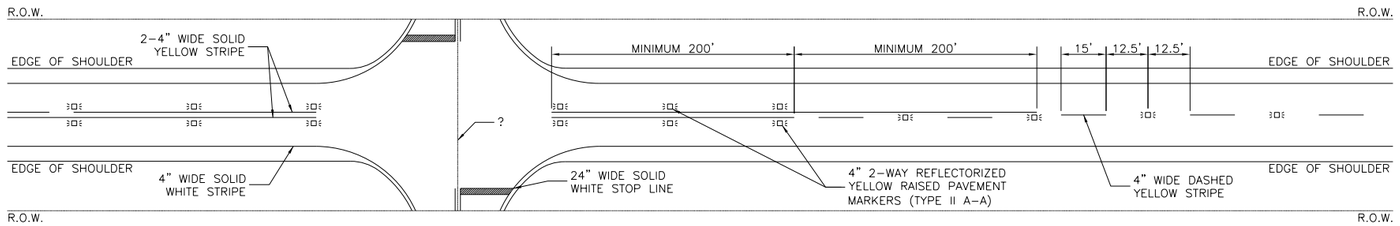
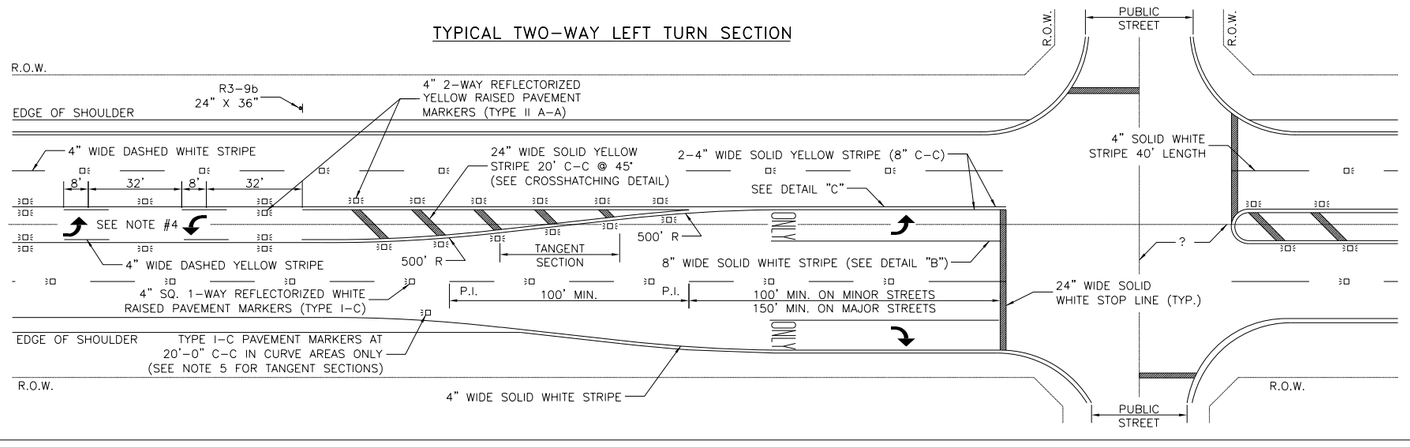
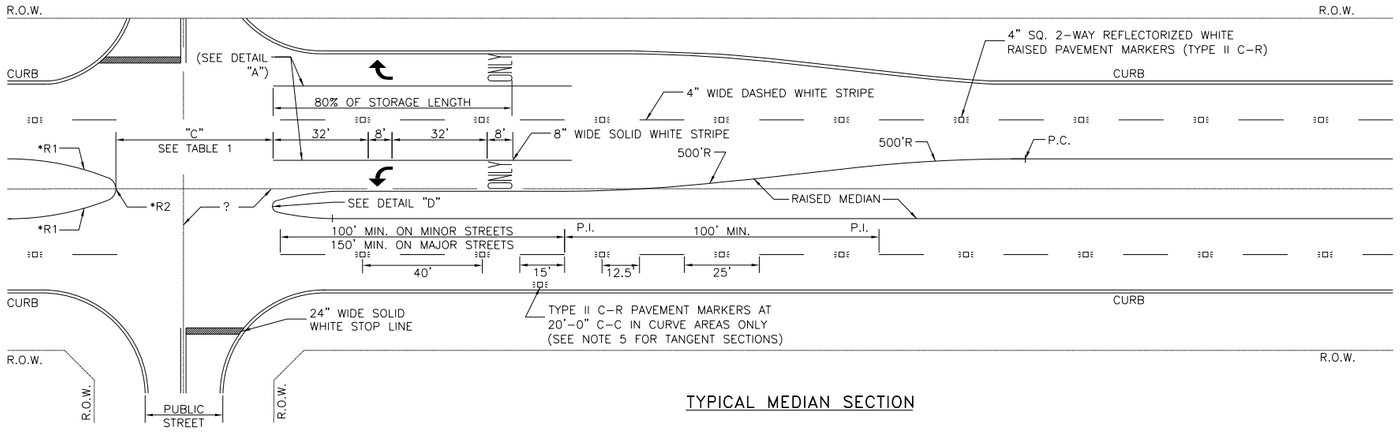


TYPICAL TWO LANE TWO-WAY ROAD



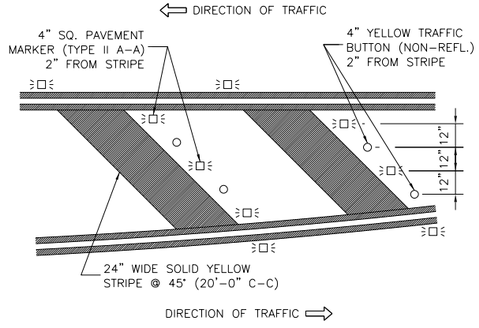


TYPICAL MEDIAN SECTION

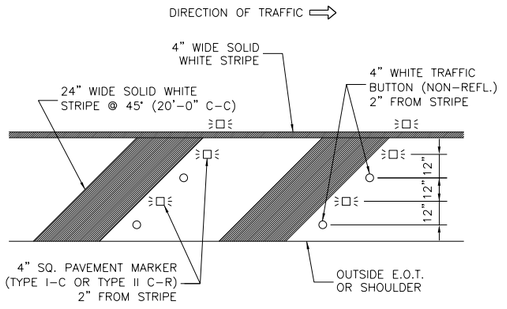
NOTES:

1. ALL PAVEMENT MARKINGS SHALL CONFORM TO THE LATEST EDITION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (TMUTCD).
2. ALL TRAFFIC BUTTONS AND MARKERS SHALL BE INSTALLED ADJACENT TO STRIPES (APPROXIMATELY 2").
3. LEFT TURN STORAGE BAYS SHALL BE A MIN. OF 100' ON MINOR STREETS AND A MIN. 150' ON MAJOR STREETS.
4. REPEAT ARROWS AT APPROXIMATELY 1000' INTERVALS WITHIN TWO-WAY LEFT TURN SECTION.
5. WITHIN A TANGENT SECTION THE TYPE I-C PAVEMENT MARKERS SHALL BE PLACED AT 40' C-C ON ROADWAYS WITHOUT CURB AND GUTTERS.
6. WHEN PAVEMENT MARKINGS EXTEND INTO OR CONTINUE THROUGH AN INTERSECTION AREA, THEY SHALL BE THE SAME COLOR AND AT LEAST THE SAME WIDTH AS THE LINE MARKINGS THEY EXTEND.
7. WHEN CROSSWALK MARKINGS ARE USED WITHIN AN ESTABLISHED SCHOOL ZONE AREA, CONTINENTAL TYPE MARKINGS SHALL BE USED.
8. ADDITIONAL SET OF "WORD" AND "ARROW" PAVEMENT MARKINGS SHALL BE USED WHEN TURN LANE STORAGE LENGTH IS 160 FEET OR GREATER.

CROSSHATCHING DETAIL



OUTSIDE EDGE CROSSHATCHING DETAIL



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5			

HARRIS COUNTY ENGINEERING DEPARTMENT

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ENGINEER: NAME
P.E. SERIAL No. NUMBER
DATE: / /

PROJECT TITLE:

SHEET DESCRIPTION: PAVEMENT MARKING DETAILS (1 OF 2)

TRAFFIC STANDARD: PM

DRAWN BY: JDZ

DATE: 8/18/17

CK'D BY: BSH

SCALE: NONE

SHEET NO: /

No.	DATE	REVISIONS	APP.

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777 North Eldridge Parkway, Suite 500
Houston, Texas 77079
713-782-0042
www.vs-eng.com

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P.E. 131531
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

HCED PAVEMENT MARKING DETAILS (1 OF 2)

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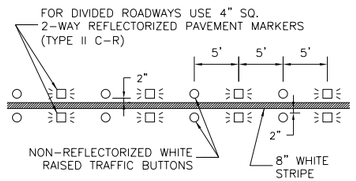
DETAIL "A"
(FOR DIVIDED ROADWAYS)



DETAIL "B"
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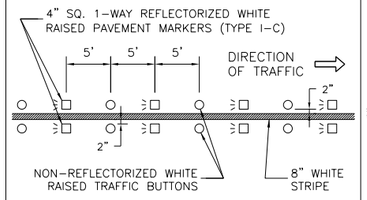
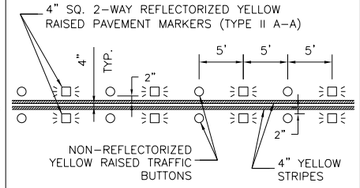
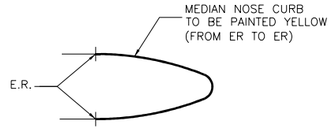


DETAIL "C"

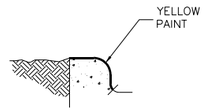


DETAIL "D"

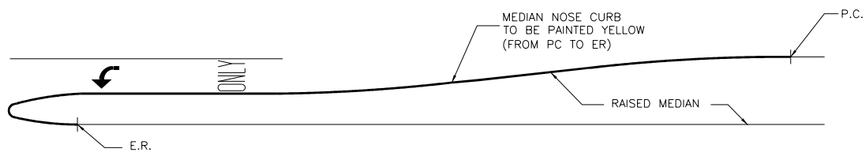
* PAINT FROM THE BACK OF CURB TO THE GUTTER LINE



TYPICAL MEDIAN NOSE



TYPICAL CURB SECTION



RAISED MEDIAN WITH TURN BAY

PAVEMENT MARKER LEGEND

SYMBOL	DESCRIPTION
⋮□⋮	4" x 4" REFLECTORIZED RAISED PAVEMENT MARKER
□⋮	INDICATED DIRECTION OF TRAFFIC FLOW
○	NON-REFLECTIVE 4" DIA. RAISED TRAFFIC BUTTON

RADIUS DIMENSIONS

MEDIAN	*R1	*R2
≤10'	N/A	W/2
>10' ≤40'	90°	W/5
>40'	N/A	N/A

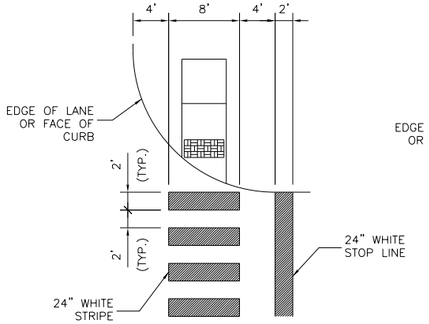
TABLE 1
TYPICAL MEDIAN OPENING "C"

MEDIAN INTERRUPTION	(1) NO LTB	(1) 1 LTB	(1) 2 LTB
PRIVATE DRIVE	45'	52.5'	60'
UNDIVIDED STREET <40'	45'	52.5' (2)	60'
44'	50'	55' (2)	60'
DIVIDED STREET	D+22'	D+22'	D+22'

NOTES:
(1) LTB = LEFT TURN BAY
(2) DISTANCE FROM CENTERLINE OF OPENING TO MEDIAN NOSE WITH LEFT TURN LANE IS 30' FOR RIGHT ANGLE INTERSECTIONS, FOR INTERSECTIONS OTHER THAN 90°, APPLY DESIGN VEHICLE TURNING TEMPLATE TO DETERMINE DIMENSION TO MEDIAN NOSE CUT OFF.
(3) D = WIDTH OF DIVIDED STREET

TYPICAL CROSSWALK PLACEMENT

CONTINENTAL TYPE



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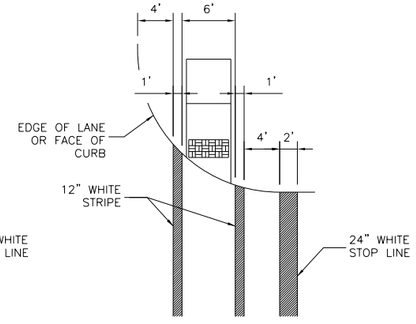
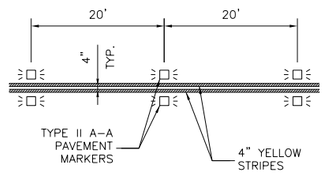
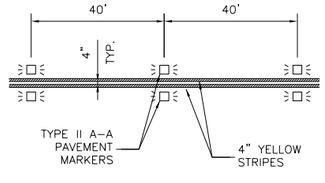


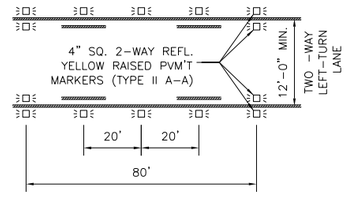
CENTER LINE DETAIL CURVE SECTION



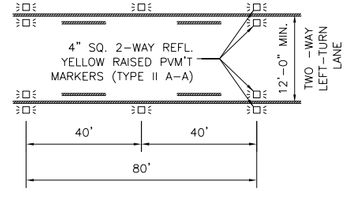
CENTER LINE DETAIL TANGENT SECTION



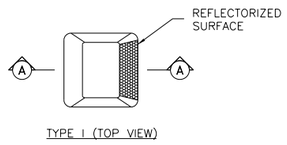
TWO-WAY LEFT TURN CURVE SECTION



TWO-WAY LEFT TURN TANGENT SECTION



RAISED PAVEMENT MARKERS



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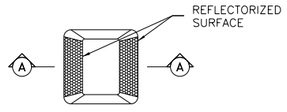

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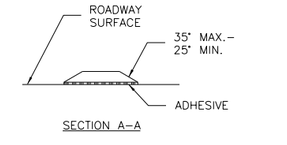

SECTION A-A

NO.	REVISIONS	DATE	NAME
1			
2			
3			
4			
5			

HARRIS COUNTY ENGINEERING DEPARTMENT

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ENGINEER: NAME
P.E. SERIAL No. NUMBER
DATE: / /

PROJECT TITLE:
SHEET DESCRIPTION: PAVEMENT MARKING DETAILS (2 OF 2)
TRAFFIC STANDARD: PM
DRAWN BY: JDZ
DATE: 8/18/17
CK'D BY: BSH
SCALE: NONE
SHEET NO: /

No.	DATE	REVISIONS	APP.

Texas Department of Transportation ©2025

VOGLER & SPENCER ENGINEERING
777 North Eldridge Parkway, Suite 500
Houston, Texas 77079
713-782-0042
www.vs-eng.com

SURVEYED BY:
KUO & ASSOCIATES, INC.

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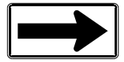
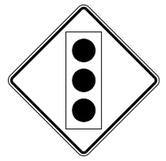
JOEL OLSHEFSKI
131531
10/21/2025
95% SUBMITTAL
VOGLER & SPENCER ENGINEERING
Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

HCED PAVEMENT MARKING DETAILS (2 OF 2)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 500 OF 718	

	 * MINIMUM SIZE OF 36X36 SHALL BE USED FOR STOP SIGNS THAT FACE MULTI-LANE APPROACHES										
TMUTCD/SHSD ID	R1-1	R1-2	R1-3P	R2-1	R3-4	R3-5R (L)	R3-7L (R)	R3-8	R4-7	R6-1R, R6-1L	R6-2R (L)
LOCAL	30x30*	30x30	18X6	24x30	24x24	30x36	30x30	Varies x 30	24x30	36x12	24x30
COLLECTOR	36x36	36x36	18X6	24x30	30x30	30x36	36x36	Varies x 30	24x30	36x12	30x36
THOROUGHFARE	36x36	36x36	18X6	24x30	30x30	30x36	36x36	Varies x 36	24x30	36x12	30x36
				 * SIGNALIZED LOCATIONS ONLY WHERE APPROVED BY HCED							
TMUTCD/SHSD ID	NO PARKING (ALL TYPES)	R8-8	R10-6R (L)	R10-17T	W1-1R (L)	W1-2R (L)	W1-3R (L)	W1-4R (L)	W1-6R (L), W1-7	W1-7T	W1-8R (L)
LOCAL	18x24	24x30	24x36	30x30	30x30	30x30	30x30	30x30	48x24	48x24	18x24
COLLECTOR	18X24	24x30	24x36	30X30	36x36	36x36	36x36	36x36	48x24	48x24	18x24
THOROUGHFARE	18X24	24x30	24x36	30X30	36x36	36x36	36x36	36x36	48x24	48x24	30x36
											
TMUTCD/SHSD ID	W2-1	W2-2R (L)	W3-1	W3-3	W4-2R (L)	W6-2	W6-3	W8-13aT	W9-1R (L)	W9-2R (L)	W10-1
LOCAL	30x30	30x30	30x30	30x30	36x36	36x36	36x36	36x36	36x36	36x36	30 dia.
COLLECTOR	30x30	30x30	30x30	30x30	36x36	36x36	36x36	36x36	36x36	36x36	30 dia.
THOROUGHFARE	36x36	36x36	36x36	36x36	36x36	36x36	36x36	36x36	36x36	36x36	30 dia.
											
TMUTCD/SHSD ID	W11-1 through W11-12	W13-1P	W14-1	W14-2	W16-2aP	W16-7PL (PR)	W16-9	S1-1	S4-3P		I-3
LOCAL	30x30	18x18	30x30	24x24	24x12	30x18	24x12	36x36	24x8	24x36	VARIES X 18
COLLECTOR	36x36	18x18	36x36	24x24	24x12	30X18	24x12	36x36	24x8	24x36	VARIES X 18
THOROUGHFARE	36x36	18x18	36x36	N/A	24X12	30x18	24X12	36x36	24x8	24x36	VARIES X 30
		No border, White on Green									
TMUTCD/SHSD ID	OM-3R, OM-3L	GROUND MOUNTED STREET NAME SIGN		TYPES D-DY, D-DW							
LOCAL	12X36	VARIES X 8		36" TALL							
COLLECTOR	12X36	VARIES X 8		36" TALL							
THOROUGHFARE	12X36	VARIES X 8		36" TALL							

NO.	REVISIONS	DATE	NAME

HARRIS COUNTY
ENGINEERING DEPARTMENT

TEDSI INFRASTRUCTURE GROUP
TEDSI TBPE F-1640
Consulting Engineers
738 Hwy 6 South, Suite 430
Houston, Texas 77079
(832) 619-1000

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M. R. NEELAPU
107595
8/22/2024
DATE

PROJECT TITLE: TRAFFIC SIGNALS ON ANTOINE DRIVE		
DRAWN BY: BSH	SHEET DESCRIPTION: SMALL SIGN DETAILS	JOB NO: 2024-2161-01
CK'D BY: BSH		FILE NAME: SSD
SCALE: NONE		FILE NO:
DATE: 7/9/15	APPROVED BY: 501	SHT NO: / 718

pw:\\tedsi-pw.bentley.com:tedsi-pw-01\Documents\Projects\2024\2024-2161-01 - Antoine Drive Signals\6.0 TEDSIDesign\6.08 CADD\6.08.01Sheet Files\Standard Details\HC_DETAILS_TRAFFIC.dgn
8/22/2024

TRAFFIC SIGNAL GENERAL NOTES:

1. ALL EQUIPMENT / MATERIALS AND CONSTRUCTION SHALL MEET OR EXCEED THE REQUIREMENTS CONTAINED IN THE CURRENT CITY OF HOUSTON STANDARD SPECIFICATIONS AND STANDARD DRAWINGS, THE PROJECT SPECIFIC SPECIFICATIONS AND THE PLANS.

2. ALL ELECTRICAL WORK SHALL BE IN CONFORMANCE WITH THE PROVISIONS AND REQUIREMENTS OF THE CITY ELECTRICAL CODE.

3. ALL SIGNS SHALL BE MANUFACTURED IN ACCORDANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

4. THE CONTRACTOR SHALL ARRANGE THE INSTALLATION OF SIGNALS, POLES AND CONDUIT SO AS TO PERMIT THE CONTINUOUS MOVEMENT OF TRAFFIC IN ALL DIRECTIONS AT ALL TIMES. THE CONTRACTOR SHALL NOT CLOSE MORE THAN ONE LANE OF A ROADWAY AT ONE TIME WITHOUT PRIOR APPROVAL OF THE CITY.

5. THE CONTRACTOR SHALL CLEAN UP AND REMOVE FROM THE WORK AREA ALL LOOSE MATERIAL RESULTING FROM CONTRACT OPERATIONS EACH DAY PRIOR TO WORK BEING SUSPENDED FOR THAT DAY.

6. THE CONTRACTOR SHALL CONTACT THE ENGINEER AND/OR THE APPROVED CITY OF HOUSTON REPRESENTATIVE TO ARRANGE FOR METER AND ELECTRICAL SERVICE CONNECTION FROM THE POWER COMPANY.

7. ALL PEDESTRIAN PUSH BUTTON ASSEMBLIES SHALL MEET ADA REQUIREMENTS. THE SIGNS THAT SHALL BE USED ARE IDENTIFIED IN THE TMUTCD AS R10-3E. CITY OF HOUSTON STANDARDS FOR PEDESTRIAN FACILITIES SHALL BE MET IN ADDITION TO ANY TEXAS ACCESSIBILITY STANDARDS BY THE TEXAS DEPARTMENT OF LICENSING AND REGULATION (TDLR).

8. PEDESTRIANS PUSH BUTTONS SHALL BE SEPARATED BY A MINIMUM OF 10 FEET. EXCEPTIONS ONLY AS SPECIFIED BY THE ENGINEER WITH AUTHORIZATION FROM THE APPROVED CITY OF HOUSTON REPRESENTATIVE.

9. OVERHEAD STREET NAME SIGNS SHALL BE INSTALLED SUCH THAT THE BOTTOM OF THE SIGN IS NO LESS THAN 17 FEET ABOVE THE ROADWAY PAVEMENT OR NO LESS THAN 16 FEET ABOVE THE FINISHED GRADE BEYOND THE SHOULDER.

10. THE LOCATION OF EACH NEW POLE FOUNDATION, PULL BOX, CONTROLLER CABINET FOUNDATION, UPS CABINET FOUNDATION AND ELECTRIC SERVICE PEDESTAL FOUNDATION SHALL BE MARKED IN THE FIELD AS SHOWN ON THE PLANS. THE EXACT LOCATION SHALL BE APPROVED BY THE ENGINEER AND/OR THE APPROVED CITY OF HOUSTON REPRESENTATIVE PRIOR TO BEGINNING INSTALLATION OF THE FOUNDATION.

11. NO POLES SHALL BE LOCATED IN WHEELCHAIR RAMPS OR SUCH THAT THEY ARE AN OBSTRUCTION TO PEDESTRIANS OR WHEELCHAIRS.

12. THE TOP OF THE POLE FOUNDATION SHALL BE LEVELED WITH THE FINISHED GRADE. IF THE SLOPE OR SHOULDER DROPS OFF FROM FINISHED GRADE, THE CONTRACTOR SHALL GRADE AROUND POLE FOUNDATION. THE TOP OF THE FOUNDATION SHALL EXTEND NO MORE THAN 4 INCHES ABOVE SURROUNDING GRADE. GROUTING SHALL BE USED TO FILL ANY GAP BETWEEN THE POLE BASE AND FOUNDATION.

13. POLES SHALL BE LOCATED SUCH THAT ALL PORTIONS OF THE POLES AND ATTACHED EQUIPMENT HAVE CLEARANCES FROM OVERHEAD UTILITIES IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL UTILITY AND THE NATIONAL ELECTRICAL SAFETY CODE (NESC).

14. ALL CONCRETE USED FOR TRAFFIC SIGNAL POLE AND CABINET FOUNDATIONS SHALL BE CLASS 'A' (REFER TO THE CITY OF HOUSTON SPECIFICATION FOR CONCRETE).

15. MAST ARM AND STRAIN POLES SHALL NOT BE INSTALLED ON THE FOUNDATIONS LESS THAN SEVEN DAYS AFTER THE PLACEMENT OF THE CONCRETE FOR THE FOUNDATION.

16. ANCHOR BOLTS FOR SIGNAL POLES SHALL BE SET SO THAT TWO ARE IN COMPRESSION AND TWO ARE IN TENSION. PRIOR TO THE INSTALLATION OF THE NUT, THE THREADS OF THE ANCHOR BOLT SHALL BE COATED WITH PIPE JOINT COMPOUND.

17. ALL UNDERGROUND CONSTRUCTION (CONDUIT, FOUNDATIONS AND PULL BOXES) FOR THE INTERSECTION SHALL BE COMPLETED PRIOR TO THE INSTALLATION OF POLES, SIGNALS AND CABINETS. THE CONTRACTOR SHALL NOT PROCEED TO ABOVE GROUND WORK UNTIL THE ENGINEER AND/OR APPROVED CITY OF HOUSTON REPRESENTATIVE HAD CONFIRMED THAT THE MATERIALS FOR A COMPLETE INSTALLATION ARE AVAILABLE.

18. UNDERGROUND CONDUIT FOR SIGNAL CABLE SHALL BE EITHER RIGID STEEL, HOT-DIPPED GALVANIZED CONDUIT OR SCHEDULE 80 ELECTRICAL PVC CONDUIT OF THE DIAMETER SHOWN ON THE PLANS, UNLESS OTHERWISE NOTED. ALL COUPLINGS AND CONNECTIONS SHALL BE TIGHT AND WATERPROOF.

19. ALL ABOVE GROUND CONDUIT FOR SIGNAL CABLE AND INTERCONNECT MEDIA SHALL BE HOT DIPPED GALVANIZED STEEL RIGID METAL CONDUIT OF THE DIAMETERS SHOWN ON THE PLANS, UNLESS OTHERWISE NOTED. ALL COUPLINGS AND CONNECTIONS SHALL BE TIGHT AND WATERPROOF.

20. ONLY NEW CONDUIT AND CABLE SHALL BE INSTALLED.

21. CONDUIT INSTALLED UNDER EXISTING PAVED DRIVEWAYS, ROADWAYS OR SIDEWALKS, WHICH ARE NOT SCHEDULED TO BE RECONSTRUCTED AS PART OF THIS PROJECT, SHALL BE INSTALLED BY MEANS OF BORING. THE CONTRACTOR SHALL NOT CUT OPEN ANY STREET OR DRIVEWAY FOR CONDUIT INSTALLATION WITHOUT THE PRIOR APPROVAL OF THE ENGINEER AND/OR THE APPROVED CITY OF HOUSTON REPRESENTATIVE.

22. CONDUIT NOT PLACED UNDER PAVED DRIVEWAYS, ROADWAY PAVEMENT OR SIDEWALK MAY BE PLACED BY CUTTING A TRENCH, INSTALLING THE CONDUIT AND BACKFILLING. ANY TRENCHING FOR CONDUIT WIDER THAN THREE (3) INCHES SHALL BE RESODDED.

23. PULL BOXES SHALL NOT BE INSTALLED WITHIN CONCRETE CURB ACCESS RAMPS. IN ADDITION, ANY PULL BOXES INSTALLED BEHIND CURBS SHALL BE INSTALLED BETWEEN THE CURB AND THE PROPOSED / FUTURE SIDEWALK OR BEYOND THE PROPOSED / FUTURE SIDEWALK. AN EXCEPTION TO THIS NOTE WOULD BE PULL BOXES INSTALLED IN A MEDIAN. ANY PULL BOXES INSTALLED ALONG AN UNCURBED ROADWAY SHALL BE INSTALLED ADJACENT TO, BUT NOT WITHIN, THE SHOULDER. DRAINAGE AREAS SHOULD BE AVOIDED WHEN PLACING JUNCTION BOXES.

24. A 5/8 IN. X 10 FT. GROUND ROD SHALL BE INSTALLED IN THE NO. 7 PULL BOX LOCATED ON EACH CORNER. TWO GROUND ROD CLAMPS SHALL BE FURNISHED FOR GROUNDING THE GROUND WIRE.

25. ALL CONDUITS SHALL BE CLEANED BY COMPRESSED AIR AND A PROPERLY SIZED CONDUIT PISTON OR MANDREL SHALL BE PULLED THROUGH THE CONDUIT PRIOR TO CABLE INSTALLATION.

26. WHEN PULLING TRAFFIC SIGNAL SYSTEM CABLES THROUGH CONDUIT, THE CABLES SHALL BE LUBRICATED WITH A LUBRICANT NORMALLY USED FOR THIS PURPOSE. ANY ABRASION TO ANY CONDUCTOR INSULATION WHICH OCCURS WHILE PULLING CABLE FOR THE TRAFFIC SIGNAL SYSTEM WILL BE CAUSE FOR THE IMMEDIATE REJECTION OF THE CABLE. IF THIS OCCURS, THE CONTRACTOR SHALL REMOVE AND REPLACE THE ENTIRE CABLE RUN AT THEIR EXPENSE.

27. A MINIMUM OF THREE (3) FEET OF EACH WIRE AND CABLE MEASURED FROM THE TOP OF THE PULL BOX SHALL BE LEFT IN EACH PULL BOX AND AT EACH POLE BASE.

28. ALL CABLES SHALL BE STRIPPED, FORMED AND TERMINATED IN A NEAT AND UNIFORM MANNER WHETHER IN THE SIGNAL HEAD OR CONTROLLER CABINET. ALL CABLE SHALL BE BROUGHT INTO THE TERMINAL HOUSING OF SIGNALS AND/OR CONTROLLER CABINETS AND A SUFFICIENT LENGTH OF CABLE SHALL BE LEFT SO THAT ALL TERMINAL CONNECTIONS MAY BE MADE WITHOUT THE NECESSITY OF SPLICING THE CABLE.

29. THE HIGH VOLTAGE CABLES SHOULD BE SEPARATED FROM THE LOW VOLTAGE CABLES AS MUCH AS POSSIBLE.

30. NO LOOP DETECTOR SHALL BE CUT IN A PARALLEL EXPANSION JOINT. LOOPS CUT ACROSS EXPANSION JOINTS SHALL HAVE A SLACK IN THE CABLE FOR EXPANSION.

31. ALL VEHICLE ROADWAY DETECTION LOOP CABLES SHALL BE #14 AWG IMSA 51-5-1985 CABLE. LEAD-IN CABLES SHALL BE #16 AWG IMSA 50-2-1984 CABLE. NO SPLICES SHALL BE ALLOWED IN THE ROADWAY DETECTION LOOP CABLE EXCEPT AT THE PULL BOX ADJACENT TO LOOP. THE DETECTOR LEAD-IN CABLE SHALL NOT BE SPLICED.

32. DETECTION LOOP SAW CUTS SHALL BE FLUSHED WITH WATER UNDER PRESSURE AND THEN DRIED WITH AIR UNDER PRESSURE.

33. THERE SHALL BE NO SPLICING IN CONDUCTORS EXCEPT FOR THE NECESSARY SPLICE BETWEEN ROADWAY LOOP WIRE AND DETECTOR LEAD-IN CABLE IN THE PULL BOX ADJACENT TO THE DETECTOR. THESE SPLICES SHALL BE WATERPROOF AND SHALL BE IN COMPLIANCE WITH THE CITY OF HOUSTON STANDARD DRAWINGS FOR TRAFFIC SIGNAL CONSTRUCTION. THESE SPLICES SHALL BE MADE BY THE CONTRACTOR. DO NOT GROUND THE CABLE SHIELD AT THE PULL BOX.

34. TWO #10 AWG-XHHW CONDUCTORS SHALL BE INSTALLED FROM EACH LUMINAIRE TO THE CONTROLLER CABINET, LEAVING THREE FEET OF SLACK FOR EACH CONDUCTOR (MEASURED FROM THE TOP OF THE PULL BOX) IN EACH PULL BOX. ROUTE FOUR CONDUCTORS TO THE LUMINAIRE WITH THE PHOTOELECTRIC CELL. AN IN-LINE FUSE SHALL BE INSTALLED FOR EACH LUMINAIRE IN THE ASSOCIATED PULL BOX.

35. THE EMERGENCY VEHICLE PRE-EMPTION SENSOR CABLE SHALL BE OPTICOM DETECTOR CABLE MODEL NO. 138. THE CABLE SHALL NOT BE SPLICED.

36. ALL VEHICLE AND PEDESTRIAN INDICATIONS SHALL BE LED.

37. THE CONTRACTOR SHALL BAG ALL NEWLY INSTALLED VEHICULAR AND/OR PEDESTRIAN TRAFFIC SIGNAL HEADS WITH BURLAP OR OTHER APPROVED MATERIAL UNTIL THE FINAL INSPECTION AND ACCEPTANCE BY THE CITY TRAFFIC ENGINEER AND/OR APPROVED CITY OF HOUSTON REPRESENTATIVE. THE BURLAP OR OTHER APPROVED MATERIAL/DEVICE SHALL COMPLETELY COVER THE TRAFFIC SIGNAL HEAD AND SHALL OBSCURE THE VIEW OF THE TRAFFIC SIGNAL INDICATIONS SO THAT THEY CANNOT BE SEEN UNTIL THE TRAFFIC SIGNAL IS PLACED IN OPERATION. DURING CONSTRUCTION, THE TRAFFIC SIGNAL WILL BE DE-ENERGIZED WHILE NOT IN USE FOR TESTING.

38. THE TRAFFIC SIGNAL OPERATION AT EXISTING SIGNALIZED INTERSECTIONS SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT.

39. ALL STRIPING AND PAVEMENT MARKINGS ARE TO BE DONE UNDER THIS CONTRACT AND SHALL BE IN PLACE PRIOR TO THE ACTIVATION OF THE TRAFFIC SIGNAL. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL STOP LINES PRIOR TO THE INSTALLATION OF LOOP DETECTORS.

40. ALL CROSSWALK MARKINGS SHALL BE 10-FT. WIDE FOLLOWING CITY OF HOUSTON STANDARD DETAILS

41. ALL CONSTRUCTION SIGNING AND CONSTRUCTION TRAFFIC CONTROL DEVICES SHALL BE IN CONFORMANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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FCM Engineers, PC
TX FIRM No.: F-13481

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143103
10/23/2025
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
PROPOSED TRAFFIC SIGNAL
GENERAL NOTES

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
N.T.S	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 502 OF 718	

ITEM NO.	SPEC SECTION	DESCRIPTION	UNITS	VICTORY DR	LONG CREEK DR	ARNCLIFFE DR	EAGLE DR	QUANTITY
1	01270S	FURNISH AND INSTALL A TRAFFIC SIGNAL, COMPLETE IN PLACE	EA	1	1	1	1	4
2	02893-07	PEDESTAL POLE ASSEMBLY WITH FOUNDATION (15' POLE)	EA	5	4	1	1	11
3	02582	30-FOOT GALVANIZED MAST ARM POLE WITH FOUNDATION (INCLUDING LUMINAIRE ARM AND 106 WATT LED LUMINAIRE AND PHOTOCELL)	EA		1			1
4	02582	35-FOOT GALVANIZED MAST ARM POLE WITH FOUNDATION (INCLUDING LUMINAIRE ARM AND 106 WATT LED LUMINAIRE AND PHOTOCELL)	EA		1		1	2
5	02582	40-FOOT GALVANIZED MAST ARM POLE WITH FOUNDATION (INCLUDING LUMINAIRE ARM AND 106 WATT LED LUMINAIRE AND PHOTOCELL)	EA	2	1	2		5
6	02582	45-FOOT GALVANIZED MAST ARM POLE WITH FOUNDATION (INCLUDING LUMINAIRE ARM AND 106 WATT LED LUMINAIRE AND PHOTOCELL)	EA	1	1		1	3
7	02582	55-FOOT GALVANIZED MAST ARM POLE WITH FOUNDATION (INCLUDING LUMINAIRE ARM AND 106 WATT LED LUMINAIRE AND PHOTOCELL)	EA	1				1
8	02893-14	ELECTRICAL SERVICE PEDESTAL ASSEMBLY - ("SQUARE D" BREAKERS INCLUDED)	EA	1	1	1	1	4
9	02893	OVERHEAD STREET NAME SIGNS	EA	4	4			8
10	02893	SIGN, LEFT TURN YIELD ON GREEN BALL (R10-12)	EA		2			2
11	02893	SIGN, LEFT TURN YIELD ON FLASHING YELLOW ARROW (R10-17T)	EA		4			4
12	02893	SIGN, "LEFT TURN ON GREEN ARROW ONLY", R10-5 (30"X36")	EA	8				8
13	02893	SIGN, "STOP HERE ON RED", R10-6L (24"X36") WITH SQUARE SIGN POST	EA			2	2	4
14	02893	SIGN, PEDESTRIAN PUSH BUTTON WITH SIGN	EA	8	8			16
15	02893	SIGN, CROSSWALK STOP ON RED	EA			2	2	4
16	02893	SIGN, PEDESTRIANS CROSSING	EA			2	2	4
17	02893	SIGN, TURNING VEHICLES STOP FOR PEDESTRIANS	EA			2	2	4
18	16710	TYPE "B" PULL BOX WITH APRON, GRAVEL AND GROUND ROD	EA	5	7	4	4	20
19	16710	TYPE "C" PULL BOX WITH APRON, GRAVEL AND GROUND ROD	EA	1	1	1	1	4
20	16711	CONDUIT, 2-IN SCH 80 PVC TRENCH (INCLUDES BOND WIRE AND PULL TAPE)	LF	200	255	40	10	505
21	16711	CONDUIT, 2-IN SCH 80 PVC BORE (INCLUDES BOND WIRE AND PULL TAPE)	LF	135	105		80	320
22	16711	CONDUIT, 3-IN SCH 80 PVC TRENCH (INCLUDES BOND WIRE AND PULL TAPE)	LF	155	335	45	30	565
23	16711	CONDUIT, 3-IN SCH 80 PVC BORE (INCLUDES BOND WIRE AND PULL TAPE)	LF	715	580	85	165	1545
24	16711	CONDUIT, 4-IN SCH 80 PVC TRENCH (INCLUDES BOND WIRE AND PULL TAPE)	LF	50	20	50	55	175
25	16711	CONDUIT, 4-IN SCH 80 PVC BORE (INCLUDES BOND WIRE AND PULL TAPE)	LF	150	115			265
26	16715	4-SECTION HORIZONTAL VEHICLE SIGNAL HEAD ASSEMBLY (YELLOW) (R<Y<Y<G<) (INCLUDING BACK PLATES)	EA		2			2
27	16715	4-SECTION VERTICAL VEHICLE SIGNAL HEAD ASSEMBLY (YELLOW) (R<Y<Y<G<) (INCLUDING BACK PLATES)	EA		2			2
28	16715	3-SECTION VEHICLE SIGNAL HEAD ASSEMBLY (RGY) (HORIZONTAL) (H3)	EA	8	8			16
29	16715	3-SECTION VEHICLE SIGNAL HEAD ASSEMBLY (<R<G<Y) (VERTICAL) (V3L)	EA	4				4
30	16715	3-SECTION VEHICLE SIGNAL HEAD ASSEMBLY (<R<G<Y) (HORIZONTAL) (H3L)	EA	4				4
31	16715	3-SECTION VEHICLE SIGNAL HEAD ASSEMBLY (HAWK)	EA			6	6	12
32	16719	LED PEDESTRIAN SIGNAL HEAD ASSEMBLY (SYMBOLIC) (COUNTDOWN)	EA	8	8	2	2	20
33	16720	TRAFFIC SIGNAL CABLES, 3/C-#14 AWG SOLID CABLE	LF	1480	1130	165	190	2965
34	16720	TRAFFIC SIGNAL CABLES, 5/C-#14 AWG SOLID CABLE	LF	1480	1130	165	190	2965
35	16720	TRAFFIC SIGNAL CABLES, 7/C-#14 AWG SOLID CABLE	LF	2915	1720	745	830	6210
36	16720	#8 AWG SOLID COPPER BARE WIRE	LF	1290	1300	285	330	3205
37	16720	#4 AWG XHHW	LF	375	1205	140	1000	2720
38	16720	#10 AWG XHHW LUMINAIRE WIRE	LF	2365	1210	540	510	4625
39	16720	#12 AWG XHHW LUMINAIRE GROUND	LF	645	445	235	230	1555
40	16724	EMERGENCY VEHICLE PREEMPTION SYSTEM	EA	1	1			2
41	16730	ITS CONTROLLER CABINET ASSEMBLY (MODEL 340) (TYPE 2070L) INCLUDING FOUNDATION AND APRON	EA	1	1			2
42	16730	ITS CONTROLLER CABINET ASSEMBLY (MODEL 346) (TYPE 2070L) INCLUDING FOUNDATION AND APRON	EA			1	1	2
43	16732	UNINTERRUPTIBLE POWER SUPPLY	EA	1	1	1	1	4
44	16750	ACCESSIBLE PEDESTRIAN PUSH BUTTON STATION	EA	8	8	2	2	20
45	2893	REMOVE AND SALVAGE EXISTING TRAFFIC SIGNAL SYSTEM (INCLUDING FOUNDATIONS AND SIGNS)	EA	1	1			2
46	16742	VIDEO IMAGING VEHICLE DETECTION SYSTEM	EA	1	1			2
47	2893	TEMPORARY TRAFFIC SIGNAL	LS	1	1			2

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FCM Engineers, PC
TX FIRM No.: F-13481

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16200 Park Row, Suite 200
Houston, TX 77084 TBPE • 2263

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KIRAN RAVI
Engineer
143103
10/23/2025
Date
95% SUBMITTAL
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED TRAFFIC SIGNAL QUANTITIES

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
N.T.S	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 503 OF 718	

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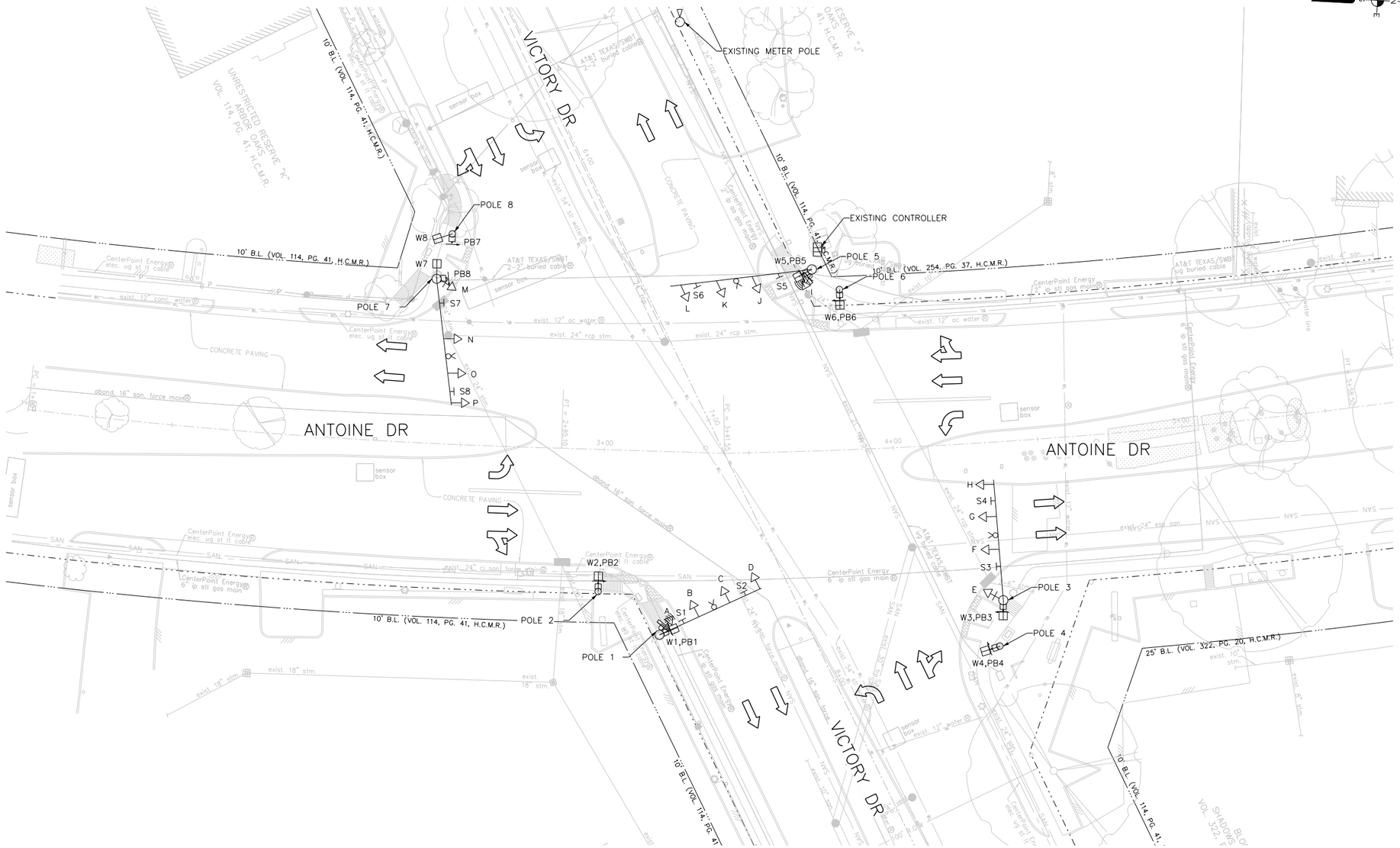
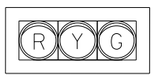


0 10 20 40

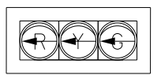
LEGEND

- EXISTING SIGNAL POLE
- EXISTING MAST ARM MOUNTED SIGNAL HEAD
- EXISTING POLE MOUNTED SIGNAL HEAD
- EXISTING DETECTION RADAR
- EXISTING MAST ARM MOUNTED SIGN
- EXISTING POLE MOUNTED SIGN
- TRAFFIC FLOW ARROW
- EXISTING CONTROLLER CABINET
- EXISTING PRE-EMPT SENSOR

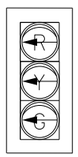
EXISTING SIGNAL HEAD DETAILS



B,C,F,G,J,K,N,O



D,H,L,P



A,E,I,M

EXISTING PEDESTRIAN SIGN AND SIGNAL HEAD DETAILS



PB2,PB3,PB4, PB6,PB8



PB1,PB5,PB7



W1,W2,W3,W4, W5,W6,W7,W8

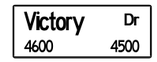
EXISTING SIGNS



S2,S4,S6,S8



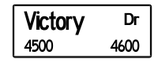
S1



S3



S5



S7

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Engineer
143103
10/23/2025
Date
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KUO & ASSOCIATES, INC.

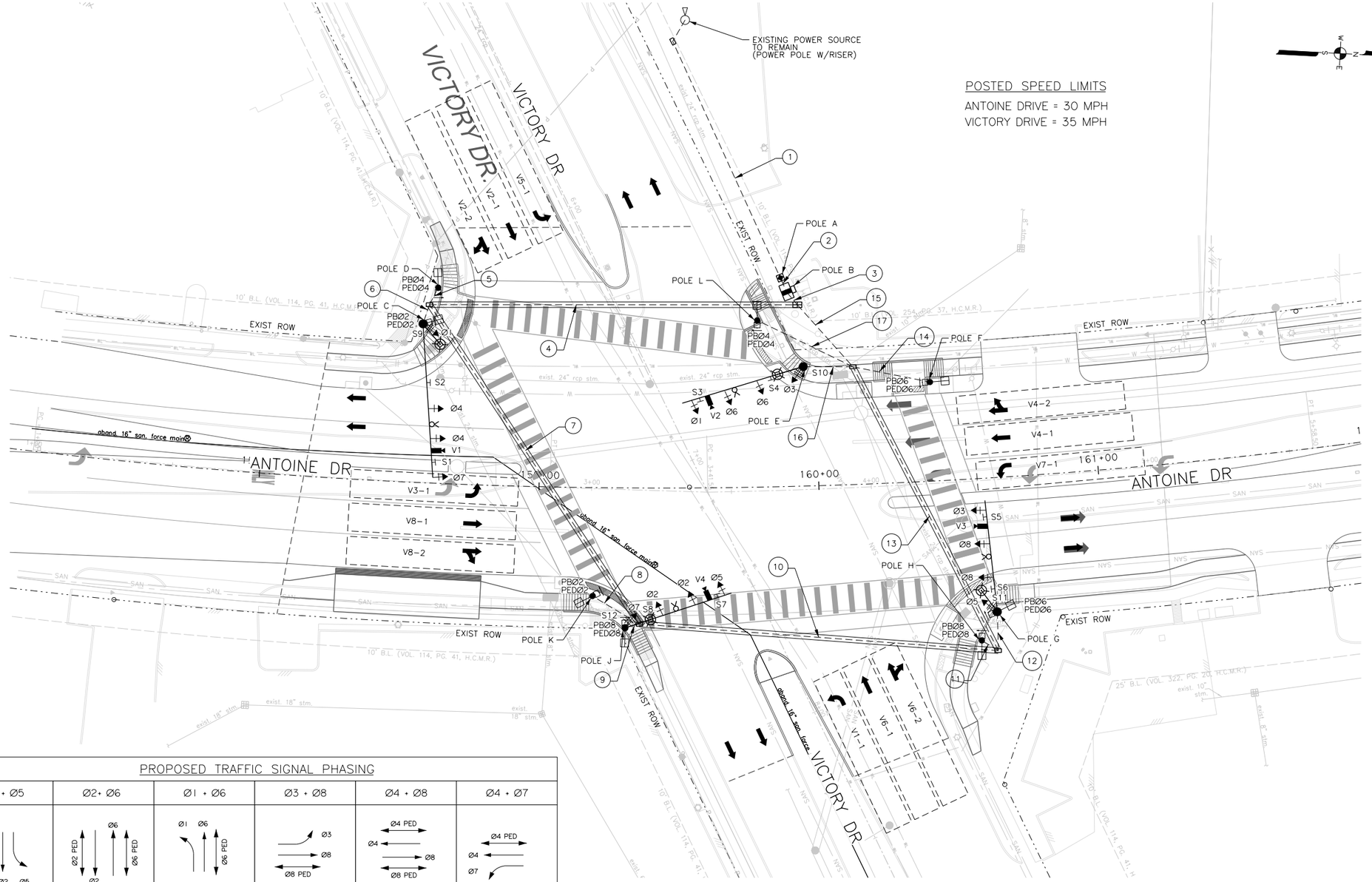
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

EXISTING SIGNAL LAYOUT
ANTOINE DRIVE AT
VICTORY DRIVE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 504 OF 718	

31283C-ii-EX-SGNL01.dgn



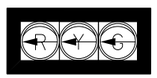
PROPOSED TRAFFIC SIGNAL PHASING

Ø2 + Ø5	Ø2+ Ø6	Ø1 + Ø6	Ø3 + Ø8	Ø4 + Ø8	Ø4 + Ø7
Ø2 PED, Ø2, Ø5	Ø6, Ø2 PED, Ø6 PED, Ø2	Ø1, Ø6, Ø6 PED	Ø3, Ø8, Ø8 PED	Ø4 PED, Ø4, Ø8, Ø8 PED	Ø4 PED, Ø4, Ø7

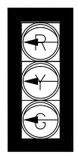
PROPOSED SIGNAL HEAD DETAILS



Ø2,Ø4,Ø6,Ø8



Ø1,Ø3,Ø5,Ø7



Ø1,Ø3,Ø5,Ø7

PROPOSED PEDESTRIAN SIGN AND SIGNAL HEAD DETAILS



Ø2,Ø4, Ø6,Ø8

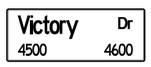


Ø2,Ø4, Ø6,Ø8

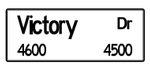


2-PEDØ2
2-PEDØ4
2-PEDØ6
2-PEDØ8

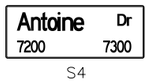
PROPOSED SIGNS



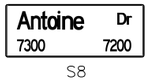
S2



S6



S4



S8



R10-5
30"X36"

S1,S3,S5,S7,S9, S10,S11,S12

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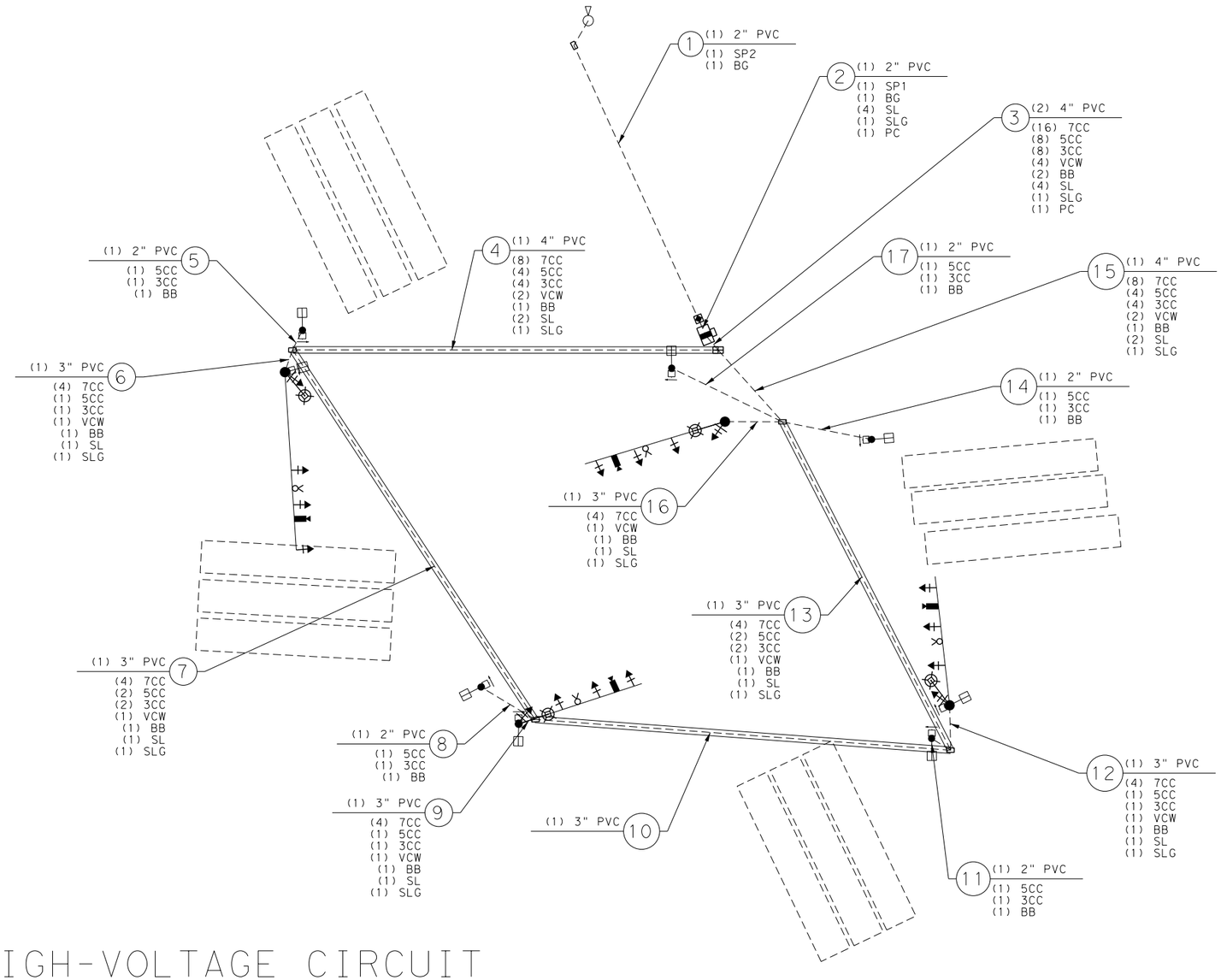
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
PROPOSED SIGNAL LAYOUT
ANTOINE DRIVE AT
VICTORY DRIVE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 505 OF 718	

31283C•12•PR•SGNL01.dgn



HIGH-VOLTAGE CIRCUIT

(X)Y"C = NUMBER, SIZE AND TYPE OF CONDUIT
CC = 14 AWG SOLID CONDUCTOR CABLE
BB = BARE BOND #8 AWG SOLID
BG = BARE GROUND #8 AWG SOLID
SP = SIGNAL POWER (SEE NOTES BELOW)
SL = STREET LIGHT, 2#10 AWG XHHW
SLG = STREET LIGHT GROUND, 12 AWG XHHW
VCW = VIVDS COMMUNCATIONS WIRE, 18 AWG COAXIAL CABLE
PC = PHOTO CELL, 2#10 AWG XHHW

NOTES:
SP1 SHALL CONSIST OF 6-#4 AWG XHHW, WHICH CONSISTS OF:
2 - WHITE
1 - BLACK
1 - RED
2 - GREEN

SP2 SHALL CONSISTS OF 3-#4 AWG XHHW WIRE WITH GROUND

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
PROPOSED CABLE SCHEMATIC
HIGH VOLTAGE
VICTORY DRIVE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
N.T.S	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 506 OF 718	

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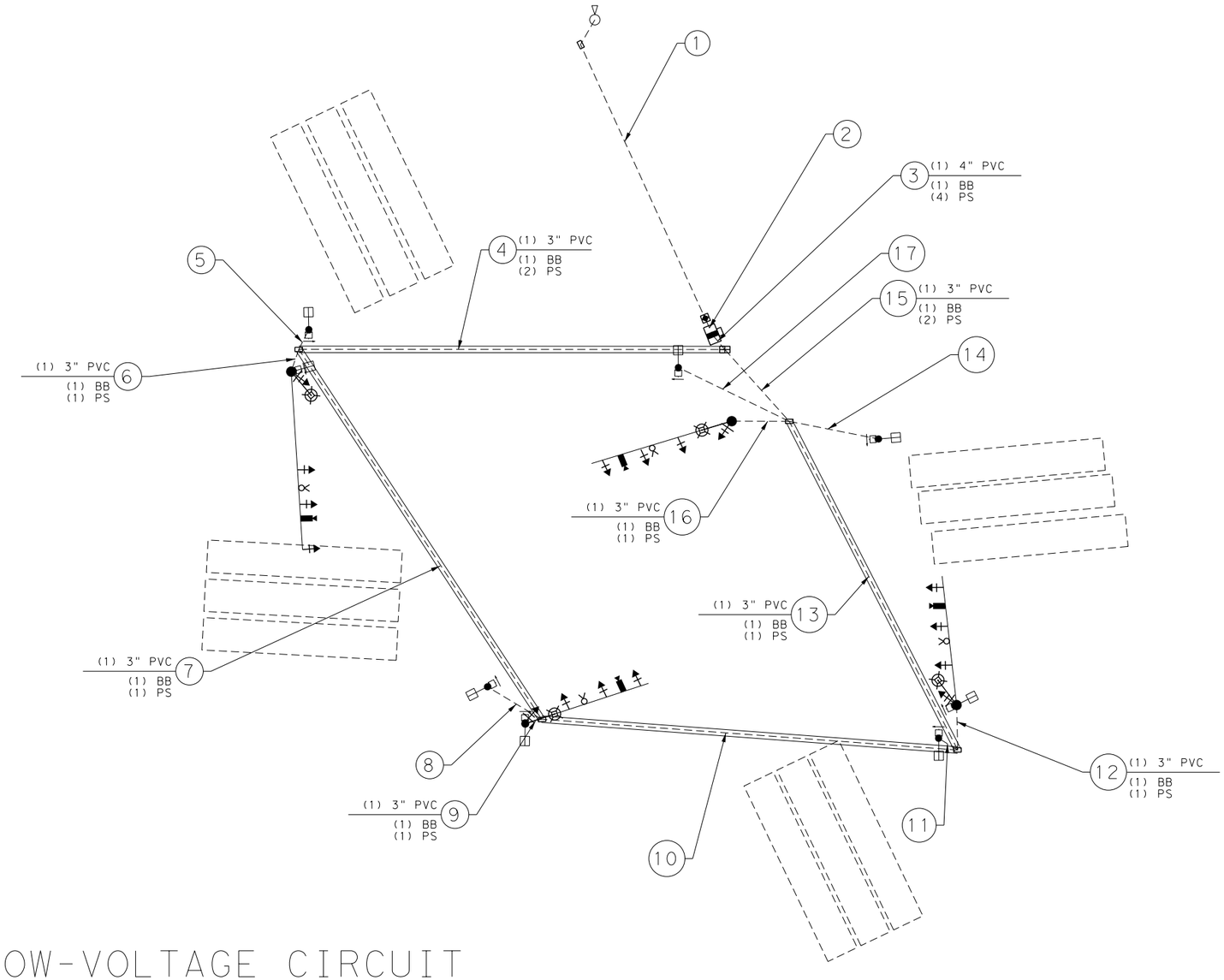

LOW-VOLTAGE CIRCUIT

(X)Y"C = NUMBER, SIZE AND TYPE OF CONDUIT
PS = PRE-EMPTION SENSOR, OPTICOM CABLE
BB = BARE BOND #8 AWG SOLID

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED CABLE SCHEMATIC
LOW VOLTAGE

VICTORY DRIVE

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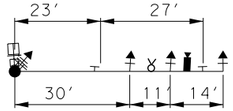
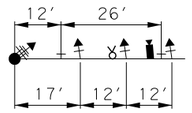
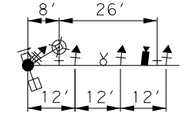
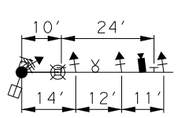
N-100030-0GEC-3	
DRAWING SCALE	
N.T.S	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 507 OF718	

31283C•14•PR•SGNLCBL02.dgn

PROPOSED POLE SCHEDULE

POLE NUMBER	POLE TYPE	MAST ARM		SIGNALS		LUMINAIRE TYPE	PED PB TYPE/SIGN	REMARKS	LOCATION	STANDARDS
		SIGNAL	LUMIN	MOUNTING	FACE					
(C) 	TYPE 2	55′	1	3-ASTROBRAC 1-SIDE OF POLE 1-PED	2 - H3 1 - H3L 1 - V3L 1 - CDP	106 WATT SYSTEM MAX, LED COBRA HEAD, CONTROL NODE WITH 10 YEAR SERVICE	1 - POLARA NAVIGATOR R10-3E(L)	VIDEO DETECTION CAMERA PRE-EMPTION SENSOR STREET NAME SIGN 2- R10-5 SIGN	AT APPROX. STA. 158+56 56.8′ LT ℄ ANTOINE DR	02893-01 02582-01 02582-02 02582-03 02465-01 01554-11 16742-01
(E) 	TYPE 2	45	1	3-ASTROBRAC 1-SIDE OF POLE 1-PED	2 - H3 1 - H3L 1 - V3L 1 - CDP	106 WATT SYSTEM MAX, LED COBRA HEAD, CONTROL NODE WITH 10 YEAR SERVICE	-	VIDEO DETECTION CAMERA PRE-EMPTION SENSOR STREET NAME SIGN 2- R10-5 SIGN	AT APPROX. STA. 159+96 42.6′ LT ℄ ANTOINE DR	02893-01 02582-01 02582-02 02582-03 02465-01 01554-11 16742-01
(G) 	TYPE 2	40′	1	3-ASTROBRAC 1-SIDE OF POLE 1-PED	2 - H3 1 - H3L 1 - V3L 1 - CDP	106 WATT SYSTEM MAX, LED COBRA HEAD, CONTROL NODE WITH 10 YEAR SERVICE	1 - POLARA NAVIGATOR R10-3E(L)	VIDEO DETECTION CAMERA PRE-EMPTION SENSOR STREET NAME SIGN 2- R10-5 SIGN	AT APPROX. STA. 160+60 47.9′ RT ℄ ANTOINE DR	02893-01 02582-01 02582-02 02582-03 02465-01 01554-11 16742-01
(J) 	TYPE 2	40′	1	3-ASTROBRAC 1-SIDE OF POLE 1-PED	2 - H3 1 - H3L 1 - V3L 1 - CDP	106 WATT SYSTEM MAX, LED COBRA HEAD, CONTROL NODE WITH 10 YEAR SERVICE	1 - POLARA NAVIGATOR R10-3E(L)	VIDEO DETECTION CAMERA PRE-EMPTION SENSOR STREET NAME SIGN 2- R10-5 SIGN	AT APPROX. STA. 159+31 50′ RT ℄ ANTOINE DR	02893-01 02582-01 02582-02 02582-03 02465-01 01554-11 16742-01
(D) (F) (H) (K)	PED POLE 15′	-	-	1 - PED	1 - CDP	-	1 - POLARA NAVIGATOR R10-3E(R)	-	AT APPROX. POLE D STA.158+61,69.9′ LT, ℄ ANTOINE DR POLE F STA.160+42,35′ LT, ℄ ANTOINE DR POLE H STA.160+54,57.8′ RT, ℄ ANTOINE DR POLE K STA.159+19,38.7′ RT, ℄ ANTOINE DR	02893-01 02582-01 02582-04 02465-02
(L)	PED POLE 15′	-	-	1 - PED	1 - CDP	-	1 - POLARA NAVIGATOR R10-3E(L)	-	AT APPROX. POLE K STA.159+79,59.6′ LT, ℄ ANTOINE DR	02893-01 02582-01 02582-04 02465-02

TRAFFIC SIGNAL CONTROLLER

CABINET	TYPE	CONTROLLER	AUX CONTROL	REMARKS	LOCATION	STANDARDS
(A) 	UL TYPE 3R	METERED SERVICE PEDESTAL WITH 30 AMP & 60 AMP BREAKERS W/ PHOTO CELL	-	-	AT APPROX. STA. 159+88, 73′ LT (TO CENTER OF THE PEDESTAL) ℄ ANTOINE DR	02893-02
(B) 	TYPE 340 ITS	2070 LX CONTROLLER UNIT W/ 2070-1C CPU MODULE W/ GPS SERIAL COMMUNICATIONS MODULE AND BATTERY BACK UP SYSTEM / UPS	-	STANDARD SPECIFICATION 16730, 16731,16732, 16733,16734 & 16785	AT APPROX. STA. 159+91, 69′ LT (TO CENTER OF THE CABINET) ℄ ANTOINE DR	16730-01 16730-02 16730-03

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HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED POLE SCHEDULE

VICTORY DRIVE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
N.T.S	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 508 OF 718	

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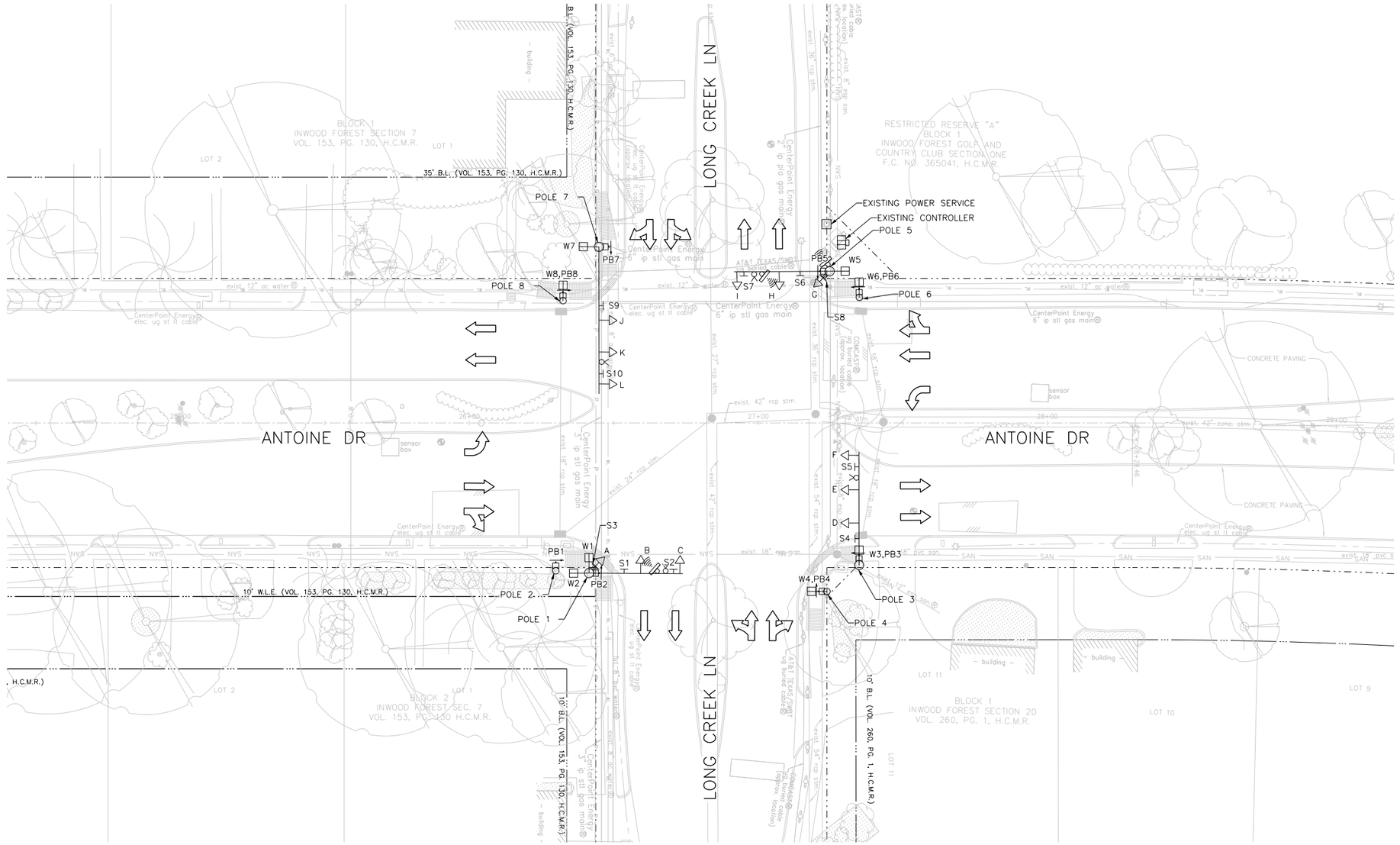
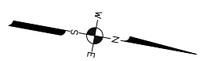


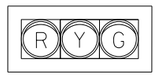


0 10 20 40

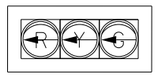
LEGEND

- EXISTING SIGNAL POLE
- EXISTING MAST ARM MOUNTED SIGNAL HEAD
- EXISTING POLE MOUNTED SIGNAL HEAD
- EXISTING DETECTION RADAR
- EXISTING MAST ARM MOUNTED SIGN
- EXISTING POLE MOUNTED SIGN
- TRAFFIC FLOW ARROW
- EXISTING CONTROLLER CABINET
- EXISTING PRE-EMPT SENSOR

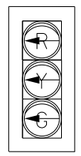
EXISTING SIGNAL HEAD DETAILS



B,C,D,E,H,I,J,K



F,L



A,G

EXISTING PEDESTRIAN SIGN AND SIGNAL HEAD DETAILS



PB1,PB4,
PB7,PB8



PB2,PB3,
PB5,PB6

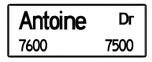


W1,W2,W3,W4,
W5,W6,W7,W8

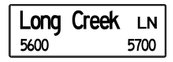
EXISTING SIGNS



S3,S5,S8,S10



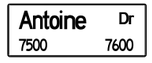
S1



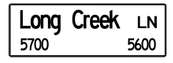
S4



S2,S7



S6



S9

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EXISTING SIGNAL LAYOUT
ANTOINE DRIVE AT
LONG CREEK LANE

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DRAWING SCALE	
1"=20'	
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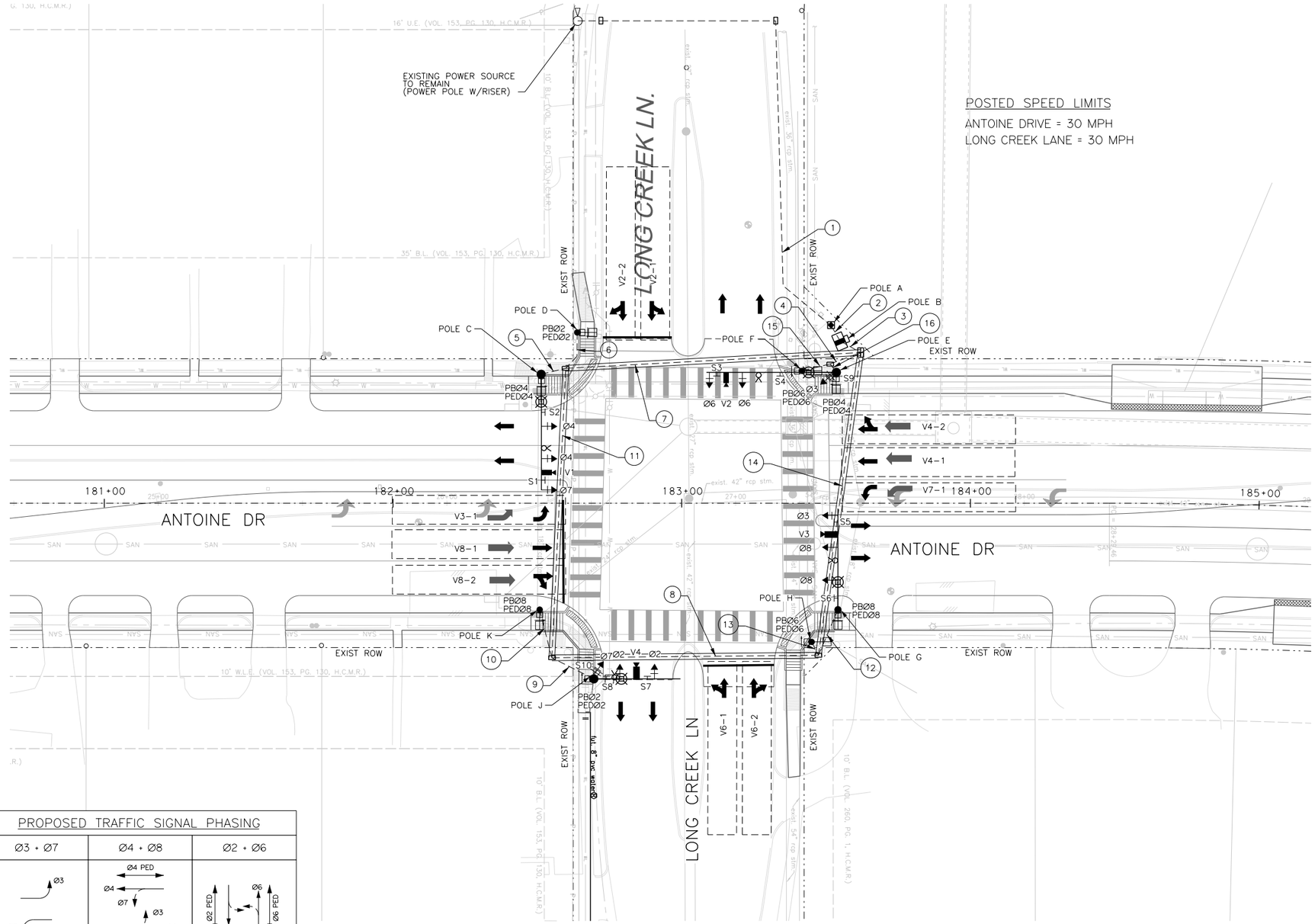
ROWAIDAH AYOUB	
SHEET NO. 509 OF 718	

3128 3C•21•EX•SGNL02.dgn



POSTED SPEED LIMITS

ANTOINE DRIVE = 30 MPH
LONG CREEK LANE = 30 MPH

0 10 20 40

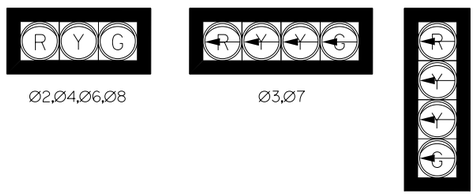
LEGEND

- TRAFFIC SIGNAL POLE W/ MAST ARM
- PEDESTAL POLE
- MAST ARM MOUNTED SIGNAL HEAD
- POLE MOUNTED SIGNAL HEAD
- WIMAX
- MAST ARM MOUNTED SIGN
- POLE MOUNTED SIGN
- CONTROLLER CABINET
- PEDESTAL METER SERVICE
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PULL BOX – TYPE B
- PULL BOX – TYPE C
- LUMINAIRE W/ PHOTO CELL
- CONDUIT TRENCH
- CONDUIT BORE
- VIVDS

PROPOSED TRAFFIC SIGNAL PHASING

Ø3 + Ø7	Ø4 + Ø8	Ø2 + Ø6

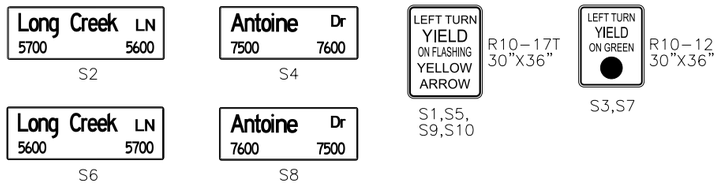
PROPOSED SIGNAL HEAD DETAILS



PROPOSED PEDESTRIAN SIGN AND SIGNAL HEAD DETAILS



PROPOSED SIGNS



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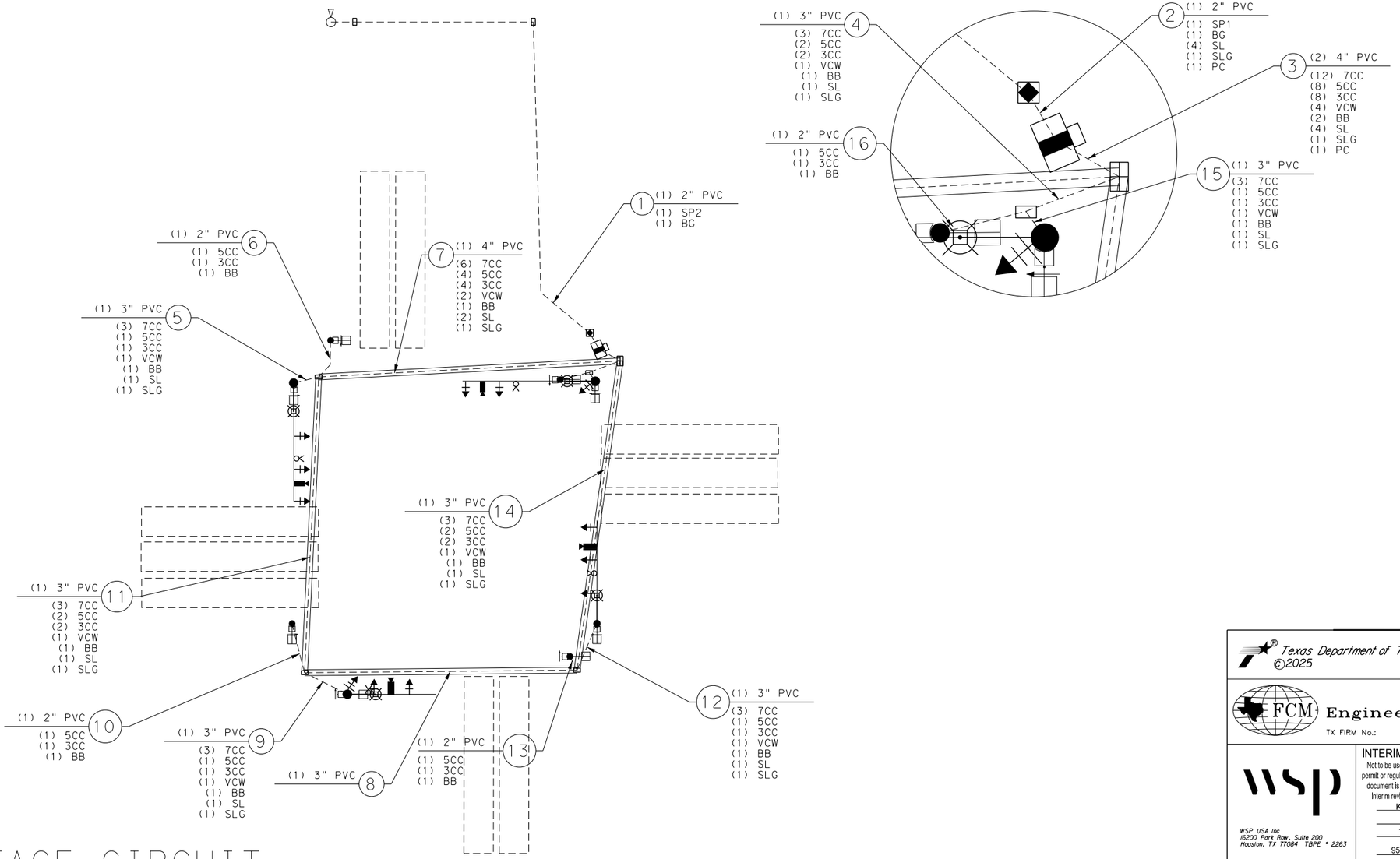
KUO & ASSOCIATES, INC.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
PROPOSED SIGNAL LAYOUT
ANTOINE DRIVE AT
LONG CREEK LANE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 510 OF 718	

31283C-22-PR-SGNL02.dgn



HIGH-VOLTAGE CIRCUIT

(X)Y"C = NUMBER, SIZE AND TYPE OF CONDUIT
CC = 14 AWG SOLID CONDUCTOR CABLE
BB = BARE BOND #8 AWG SOLID
BG = BARE GROUND #8 AWG SOLID
SP = SIGNAL POWER (SEE NOTES BELOW)
SL = STREET LIGHT, 2#10 AWG XHHW
SLG = STREET LIGHT GROUND, 12 AWG XHHW
VCW = VIVDS COMMUNCATIONS WIRE, 18 AWG COAXIAL CABLE
PC = PHOTO CELL, 2#10 AWG XHHW

NOTES:
SP1 SHALL CONSIST OF 6-#4 AWG XHHW, WHICH CONSISTS OF:
2 - WHITE
1 - BLACK
1 - RED
2 - GREEN

SP2 SHALL CONSISTS OF 3-#4 AWG XHHW WIRE WITH GROUND

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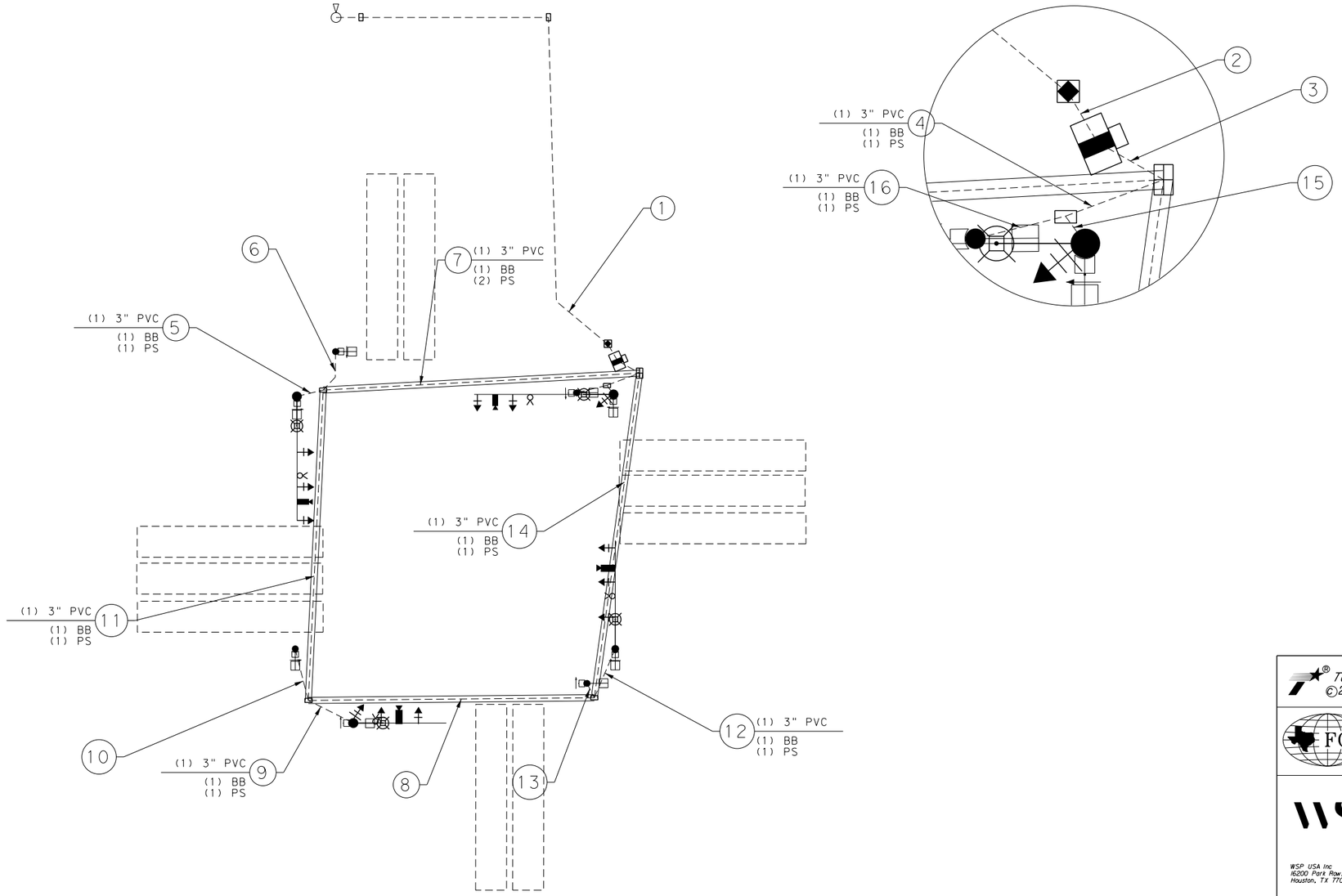
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
PROPOSED CABLE SCHEMATIC
HIGH VOLTAGE

LONG CREEK LANE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
N.T.S	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 511 OF 718	

31283C•23•PR•SGNLCBL03.dgn



LOW-VOLTAGE CIRCUIT

(X)Y"C = NUMBER, SIZE AND TYPE OF CONDUIT
PS = PRE-EMPTION SENSOR, OPTICOM CABLE
BB = BARE BOND #8 AWG SOLID

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

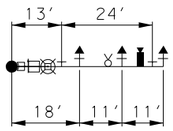
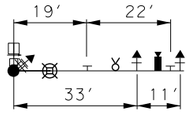
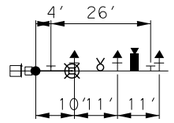
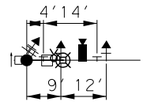
PROPOSED CABLE SCHEMATIC
LOW VOLTAGE

LONG CREEK LANE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
N.T.S	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 512 OF 718	

31283C-24-PR-SGNLCBL04.dgn

PROPOSED POLE SCHEDULE

POLE NUMBER	POLE TYPE	MAST ARM		SIGNALS		LUMINAIRE TYPE	PED PB TYPE/SIGN	REMARKS	LOCATION	STANDARDS
		SIGNAL	LUMIN	MOUNTING	FACE					
(C) 	TYPE 2	40′	1	3-ASTROBRAC 1-PED	2 - H3 1 - H4LF 1 - CDP	106 WATT SYSTEM MAX, LED COBRA HEAD, CONTROL NODE WITH 10 YEAR SERVICE	1 - POLARA NAVIGATOR R10-3E(R)	VIDEO DETECTION CAMERA PRE-EMPTION SENSOR STREET NAME SIGN R10-17T SIGN	AT APPROX. STA. 182+51 44.6′ LT ℄ ANTOINE DR	02893-01 02582-01 02582-02 02582-03 02465-01 01554-11 16742-01
(E) 	TYPE 2	45′	1	2-ASTROBRAC 1-SIDE OF POLE 1-PED	2 - H3 1 - V4LF 1 - CDP	106 WATT SYSTEM MAX, LED COBRA HEAD, CONTROL NODE WITH 10 YEAR SERVICE	1 - POLARA NAVIGATOR R10-3E(L)	VIDEO DETECTION CAMERA PRE-EMPTION SENSOR STREET NAME SIGN R10-12 SIGN R10-17T SIGN	AT APPROX. STA. 183+53 45.3′ LT ℄ ANTOINE DR	02893-01 02582-01 02582-02 02582-03 02465-01 01554-11 16742-01
(G) 	TYPE 1	35′	1	3-ASTROBRAC 1-PED	2 - H3 1 - H4LF 1 - CDP	106 WATT SYSTEM MAX, LED COBRA HEAD, CONTROL NODE WITH 10 YEAR SERVICE	1 - POLARA NAVIGATOR R10-3E(L)	VIDEO DETECTION CAMERA PRE-EMPTION SENSOR STREET NAME SIGN R10-17T SIGN	AT APPROX. STA. 183+54 36.9′ RT ℄ ANTOINE DR	02893-01 02582-01 02582-02 02582-03 02465-01 01554-11 16742-01
(J) 	TYPE 1	30′	1	2-ASTROBRAC 1-SIDE OF POLE 1-PED	2 - H3 1 - V4LF 1 - CDP	106 WATT SYSTEM MAX, LED COBRA HEAD, CONTROL NODE WITH 10 YEAR SERVICE	1 - POLARA NAVIGATOR R10-3E(L)	VIDEO DETECTION CAMERA PRE-EMPTION SENSOR STREET NAME SIGN R10-12 SIGN R10-17T SIGN	AT APPROX. STA. 182+69 60.9′ RT ℄ ANTOINE DR	02893-01 02582-01 02582-02 02582-03 02465-01 01554-11 16742-01
(D) (H) 	PED POLE 15′	-	-	1 - PED	1 - CDP	-	1 - POLARA NAVIGATOR R10-3E(L)	-	AT APPROX. POLE D STA.182+63,59.1′ LT, ℄ ANTOINE DR POLE H STA.183+44,48′ RT, ℄ ANTOINE DR	02893-01 02582-01 02582-04 02465-02
(F) (K) 	PED POLE 15′	-	-	1 - PED	1 - CDP	-	1 - POLARA NAVIGATOR R10-3E(R)	-	AT APPROX. POLE F STA.183+42,45.8′ LT, ℄ ANTOINE DR POLE K STA.182+50,36.9′ RT, ℄ ANTOINE DR	02893-01 02582-01 02582-04 02465-02

TRAFFIC SIGNAL CONTROLLER

CABINET	TYPE	CONTROLLER	AUX CONTROL	REMARKS	LOCATION	STANDARDS
(A) 	UL TYPE 3R	METERED SERVICE PEDESTAL WITH 30 AMP & 60 AMP BREAKERS W/ PHOTO CELL	-	-	AT APPROX. STA. 183+52, 59.5′ LT (TO CENTER OF THE PEDESTAL) ℄ ANTOINE DR	02893-02
(B) 	TYPE 340 ITS	2070 LX CONTROLLER UNIT W/ 2070-1C CPU MODULE W/ GPS SERIAL COMMUNICATIONS MODULE AND BATTERY BACK UP SYSTEM / UPS	-	STANDARD SPECIFICATION 16730, 16731,16732, 16733,16734 & 16785	AT APPROX. STA. 183+54, 55′ LT (TO CENTER OF THE CABINET) ℄ ANTOINE DR	16730-01 16730-02 16730-03

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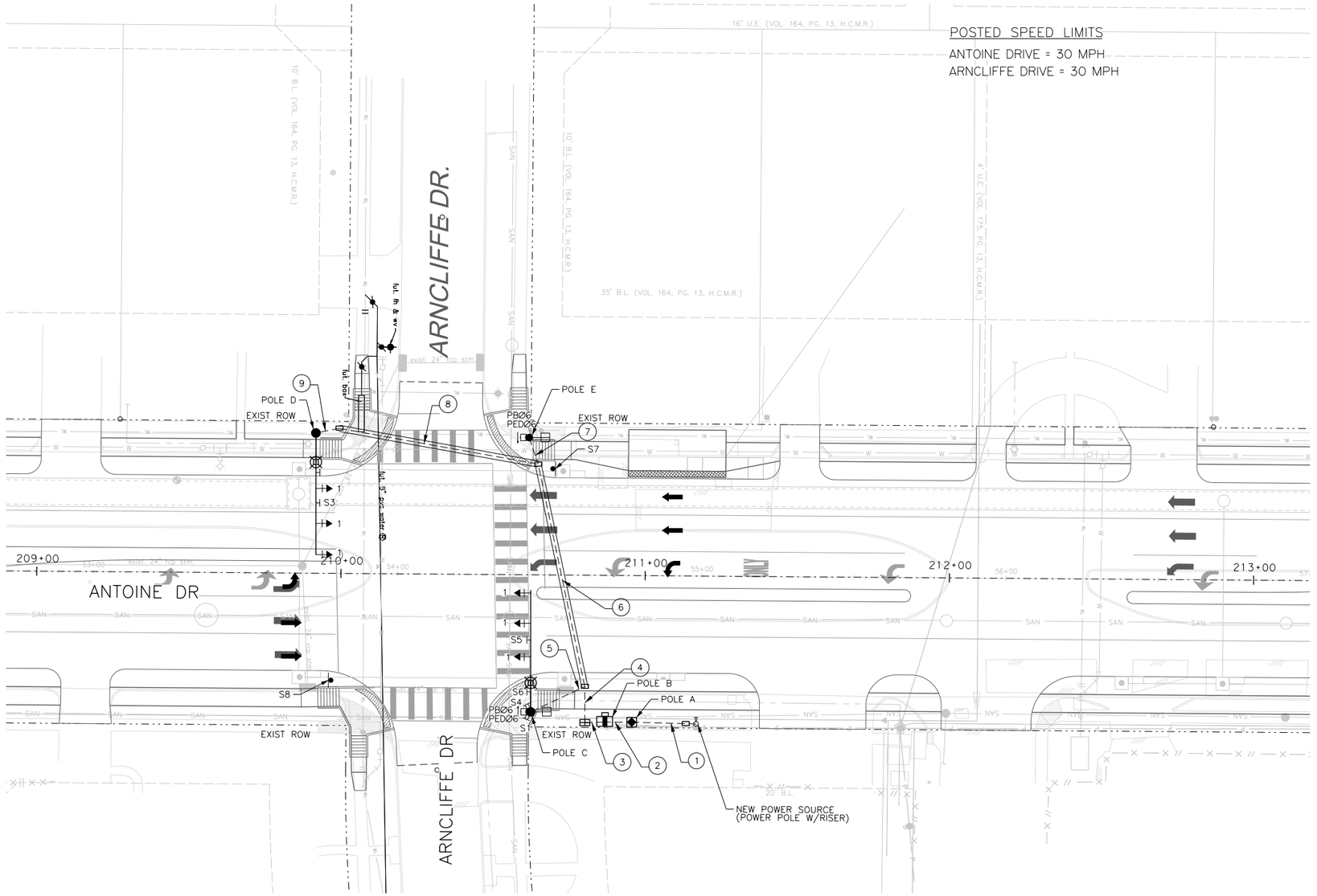
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

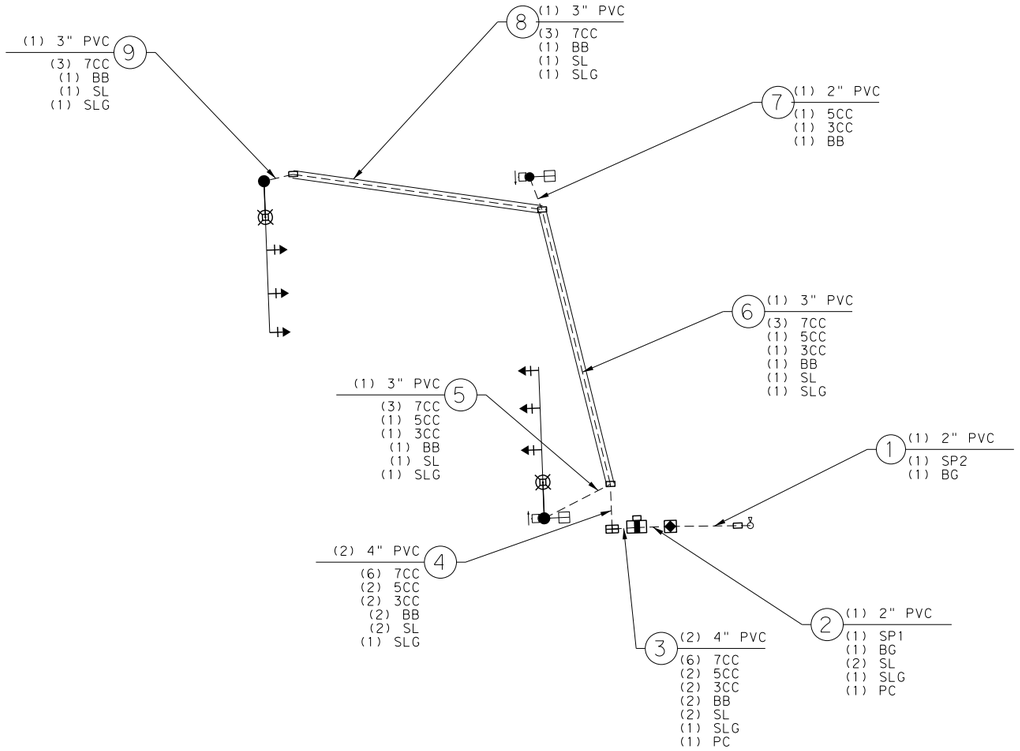
ANTOINE DRIVE

PROPOSED POLE SCHEDULE

LONG CREEK LANE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
N.T.S	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 513 OF 718	


ARNCLIFFE DR.
ARNCLIFFE DR
ANTOINE DR
16' U.E. (VOL. 164, PG. 13, H.C.M.R.)
10' B.L. (VOL. 164, PG. 13, H.C.M.R.)
35' B.L. (VOL. 164, PG. 13, H.C.M.R.)
4' U.E. (VOL 175, PG. 13, H.C.M.R.)
20' B.L.
POSTED SPEED LIMITS
ANTOINE DRIVE = 30 MPH
ARNCLIFFE DRIVE = 30 MPH
POLE D
EXIST ROW
POLE E
PBØ6
PEDØ6
EXIST ROW
S7
S3
S5
S8
S6
S4
S1
EXIST ROW
POLE C
POLE B
POLE A
NEW POWER SOURCE
(POWER POLE W/RISER)
209+00
210+00
211+00
212+00
213+00
exist. 24" rcp strm
exist. 30" rcp strm
exist. 24" rcp strm
exist. 36" rcp strm
exist. 54" rcp strm
exist. 8" w
exist. 6" w
exist. 6" ss
exist. 8" ss
exist. 12" ss
exist. 8" ss
exist. 6" ss
exist. 8" ss
exist. 8" ss
exist. 8



HIGH-VOLTAGE CIRCUIT

(X)Y"C = NUMBER, SIZE AND TYPE OF CONDUIT
CC = 14 AWG SOLID CONDUCTOR CABLE
BB = BARE BOND #8 AWG SOLID
BG = BARE GROUND #8 AWG SOLID
SP = SIGNAL POWER (SEE NOTES BELOW)
SL = STREET LIGHT, 2#10 AWG XHHW
SLG = STREET LIGHT GROUND, 12 AWG XHHW
PC = PHOTO CELL, 2#10 AWG XHHW

NOTES:
SP1 SHALL CONSIST OF 6-#4 AWG XHHW, WHICH CONSISTS OF:
2 - WHITE
1 - BLACK
1 - RED
2 - GREEN

SP2 SHALL CONSISTS OF 3-#4 AWG XHHW WIRE WITH GROUND

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

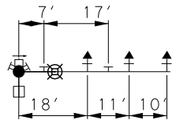
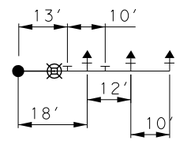
ANTOINE DRIVE
PROPOSED CABLE SCHEMATIC
HIGH VOLTAGE

ARNCLIFFE DR PHB

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
N.T.S	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 515 OF 718	

31283C•32•PR•SGNLCBL03.dgn

PROPOSED POLE SCHEDULE

POLE NUMBER	POLE TYPE	MAST ARM		SIGNALS		LUMINAIRE TYPE	PED PB TYPE/SIGN	REMARKS	LOCATION	STANDARDS
		SIGNAL	LUMIN	MOUNTING	FACE					
(C) 	TYPE 2	40′	1	3-ASTROBRAC 1-PED	3 - HAWK 1 - CDP	106 WATT SYSTEM MAX, LED COBRA HEAD, CONTROL NODE WITH 10 YEAR SERVICE	1 - POLARA NAVIGATOR R10-3E(L)	R10-23 SIGN S1-1 SIGN R10-15aR SIGN R10-15aL SIGN	AT APPROX. STA. 210+63 45′ RT ℄ ANTOINE DR	02893-01 02582-01 02582-02 02582-03 02465-01 01554-11 16742-01
(D) 	TYPE 2	40′	1	3-ASTROBRAC	3 - HAWK	106 WATT SYSTEM MAX, LED COBRA HEAD, CONTROL NODE WITH 10 YEAR SERVICE	-	R10-23 SIGN S1-1 SIGN	AT APPROX. STA. STA. 209+91 46′ LT ℄ ANTOINE DR	02893-01 02582-01 02582-02 02582-03 02465-01 01554-11 16742-01
(E)	PED POLE 15′	-	-	1 - PED	1 - CDP	-	1 - POLARA NAVIGATOR R10-3E(R)	-	AT APPROX. STA. STA. 210+61 45′ LT ℄ ANTOINE DR	02893-01 02582-01 02582-04 02465-02

TRAFFIC SIGNAL CONTROLLER

CABINET	TYPE	CONTROLLER	AUX CONTROL	REMARKS	LOCATION	STANDARDS
(A) 	UL TYPE 3R	METERED SERVICE PEDESTAL WITH 30 AMP & 60 AMP BREAKERS W/ PHOTO CELL	-	-	AT APPROX. STA. 210+96, 48′ RT (TO CENTER OF THE PEDESTAL) ℄ ANTOINE DR	02893-02
(B) 	TYPE 346 ITS	2070 LX CONTROLLER UNIT W/ 2070-1C CPU MODULE W/ GPS SERIAL COMMUNICATIONS MODULE AND BATTERY BACK UP SYSTEM / UPS	-	STANDARD SPECIFICATION 16730, 16731,16732, 16733,16734 & 16785	AT APPROX. STA. 210+87, 48′RT(TO CENTER OF THE CABINET) ℄ ANTOINE DR	16730-01 16730-02 16730-03

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

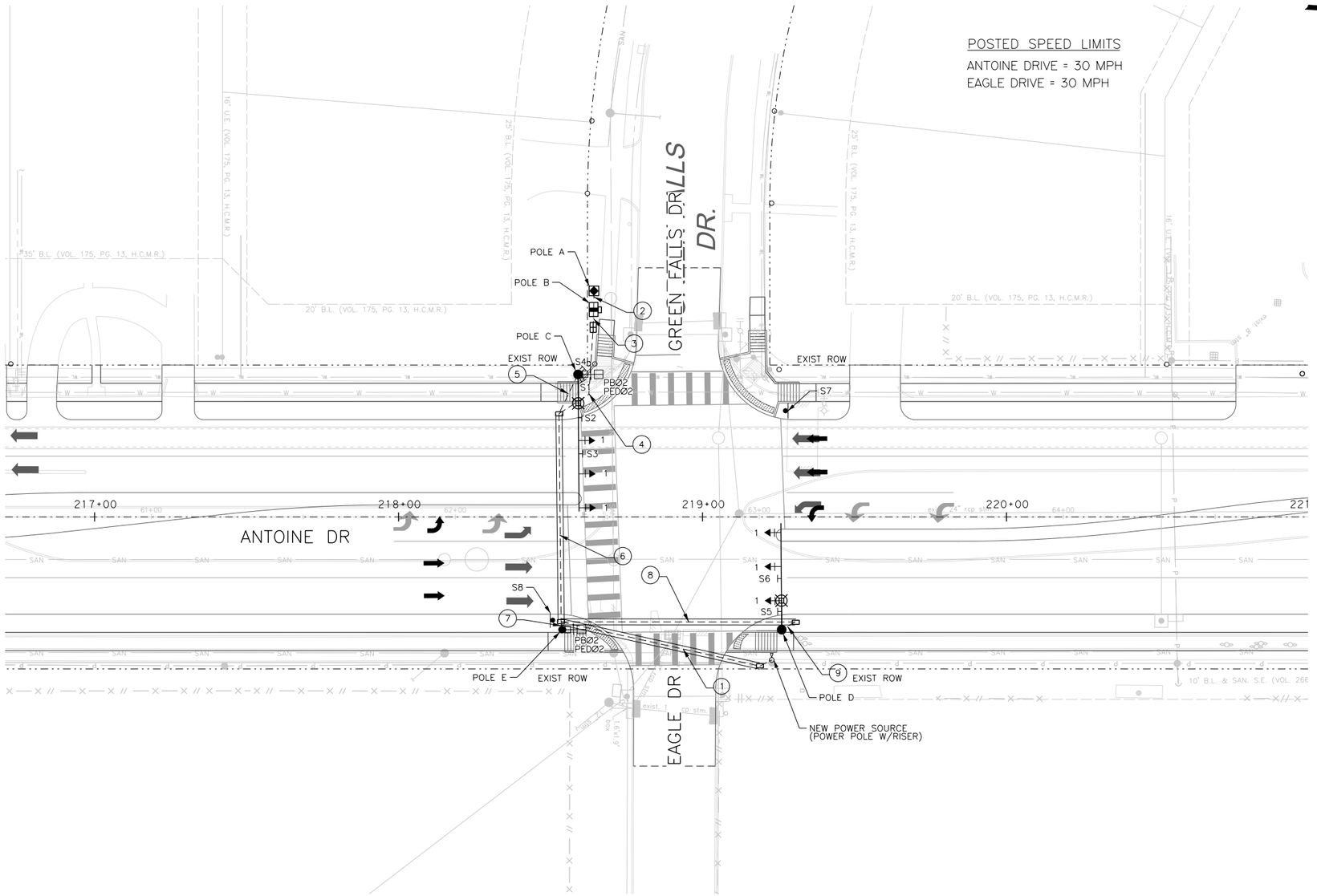
ANTOINE DRIVE

PROPOSED POLE SCHEDULE

ARNCLIFFE DR

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
N.T.S	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 516 OF 718	

31283C•33•PPR•SGNLPL03.dgn



0 10 20 40

LEGEND

- TRAFFIC SIGNAL POLE W/ MAST ARM
- PEDESTAL POLE
- MAST ARM MOUNTED SIGNAL HEAD
- POLE MOUNTED SIGNAL HEAD
- WIMAX
- MAST ARM MOUNTED SIGN
- POLE MOUNTED SIGN
- CONTROLLER CABINET
- PEDESTAL METER SERVICE
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PULL BOX – TYPE B
- PULL BOX – TYPE C
- LUMINAIRE W/ PHOTO CELL
- CONDUIT TRENCH
- CONDUIT BORE
- VIVDS

PROPOSED SIGNAL HEAD DETAILS



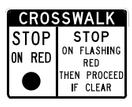
1

PROPOSED PEDESTRIAN SIGN AND SIGNAL HEAD DETAILS



Ø2 Ø2 2-PEDØ2

PROPOSED SIGNS



S3,S6
R10-23(COH)
42"X30"



S2,S5
S1-1
36"X36"



S1
R10-15qL
30"X30"



S4
R10-15qR
30"X30"



S7,S8
R10-6L
24"X36"

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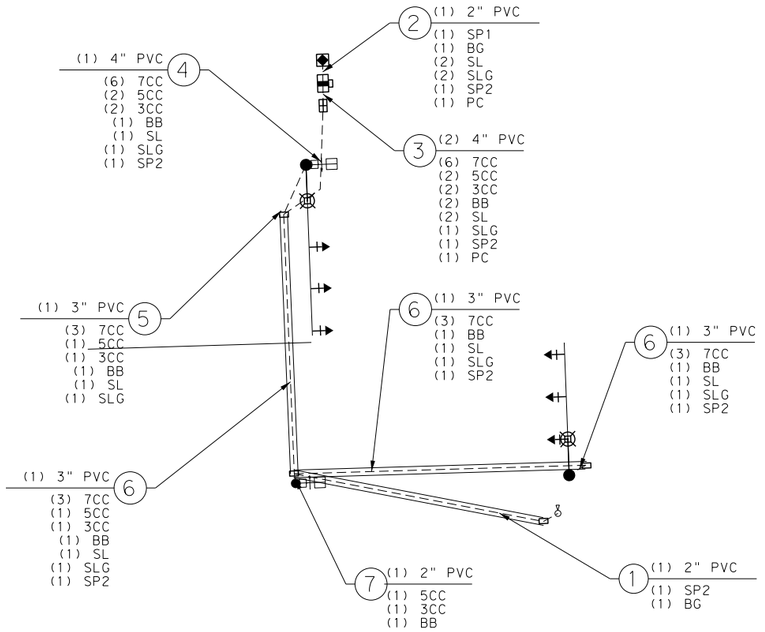
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
PROPOSED SIGNAL LAYOUT
ANTOINE DRIVE AT
EAGLE DRIVE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 517 OF 718	

312830+41+PR+SGNL03.dgn



HIGH-VOLTAGE CIRCUIT

(X)Y"C = NUMBER, SIZE AND TYPE OF CONDUIT
CC = 14 AWG SOLID CONDUCTOR CABLE
BB = BARE BOND #8 AWG SOLID
BG = BARE GROUND #8 AWG SOLID
SP = SIGNAL POWER (SEE NOTES BELOW)
SL = STREET LIGHT, 2#10 AWG XHHW
SLG = STREET LIGHT GROUND, 12 AWG XHHW
PC = PHOTO CELL,2#10 AWG XHHW

NOTES:
SP1 SHALL CONSIST OF 6-#4 AWG XHHW, WHICH CONSISTS OF:
2 - WHITE
1 - BLACK
1 - RED
2 - GREEN

SP2 SHALL CONSISTS OF 3-#4 AWG XHHW WIRE WITH GROUND

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

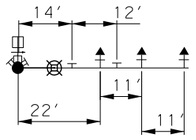
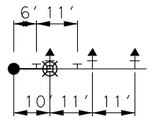
ANTOINE DRIVE
PROPOSED CABLE SCHEMATIC
HIGH VOLTAGE

EAGLE DR PHB

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
N.T.S	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 518 OF 718	

31283C•42•PPR•SGNLCBL04.dgn

PROPOSED POLE SCHEDULE

POLE NUMBER	POLE TYPE	MAST ARM		SIGNALS		LUMINAIRE TYPE	PED PB TYPE/SIGN	REMARKS	LOCATION	STANDARDS
		SIGNAL	LUMIN	MOUNTING	FACE					
(C) 	TYPE 2	45′	1	3-ASTROBRAC 1-PED	3 - HAWK 1 - CDP	106 WATT SYSTEM MAX, LED COBRA HEAD, CONTROL NODE WITH 10 YEAR SERVICE	1 - POLARA NAVIGATOR R10-3E(L)	R10-23 SIGN S1-1 SIGN	AT APPROX. STA. 218+60 46.8′ LT ℄ ANTOINE DR	02893-01 02582-01 02582-02 02582-03 02465-01 01554-11 16742-01
(D) 	TYPE 1	35′	1	3-ASTROBRAC	3 - HAWK	106 WATT SYSTEM MAX, LED COBRA HEAD, CONTROL NODE WITH 10 YEAR SERVICE	-	R10-23 SIGN S1-1 SIGN R10-15aR SIGN R10-15aL SIGN	AT APPROX. STA. 219+26 37′ RT ℄ ANTOINE DR	02893-01 02582-01 02582-02 02582-03 02465-01 01554-11 16742-01
(E)	PED POLE 15′	-	-	1 - PED	1 - CDP	-	1 - POLARA NAVIGATOR R10-3E(R)	-	AT APPROX. STA. 218+54 37′ RT ℄ ANTOINE DR	02893-01 02582-01 02582-04 02465-02

TRAFFIC SIGNAL CONTROLLER

CABINET	TYPE	CONTROLLER	AUX CONTROL	REMARKS	LOCATION	STANDARDS
(A) 	UL TYPE 3R	METERED SERVICE PEDESTAL WITH 30 AMP & 60 AMP BREAKERS W/ PHOTO CELL	-	-	AT APPROX. STA. 218+64, 74.5′ LT (TO CENTER OF THE PEDESTAL) ℄ ANTOINE DR	02893-02
(B) 	TYPE 346 ITS	2070 LX CONTROLLER UNIT W/ 2070-1C CPU MODULE W/ GPS SERIAL COMMUNICATIONS MODULE AND BATTERY BACK UP SYSTEM / UPS	-	STANDARD SPECIFICATION 16730, 16731,16732, 16733,16734 & 16785	AT APPROX. STA. 218+64, 68′ LT (TO CENTER OF THE CABINET) ℄ ANTOINE DR	16730-01 16730-02 16730-03

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TX FIRM No.: F-13481

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Houston, TX 77084 TBPE • 2263

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143103
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SURVEYED BY:
KUO & ASSOCIATES, INC.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED POLE SCHEDULE

EAGLE DR

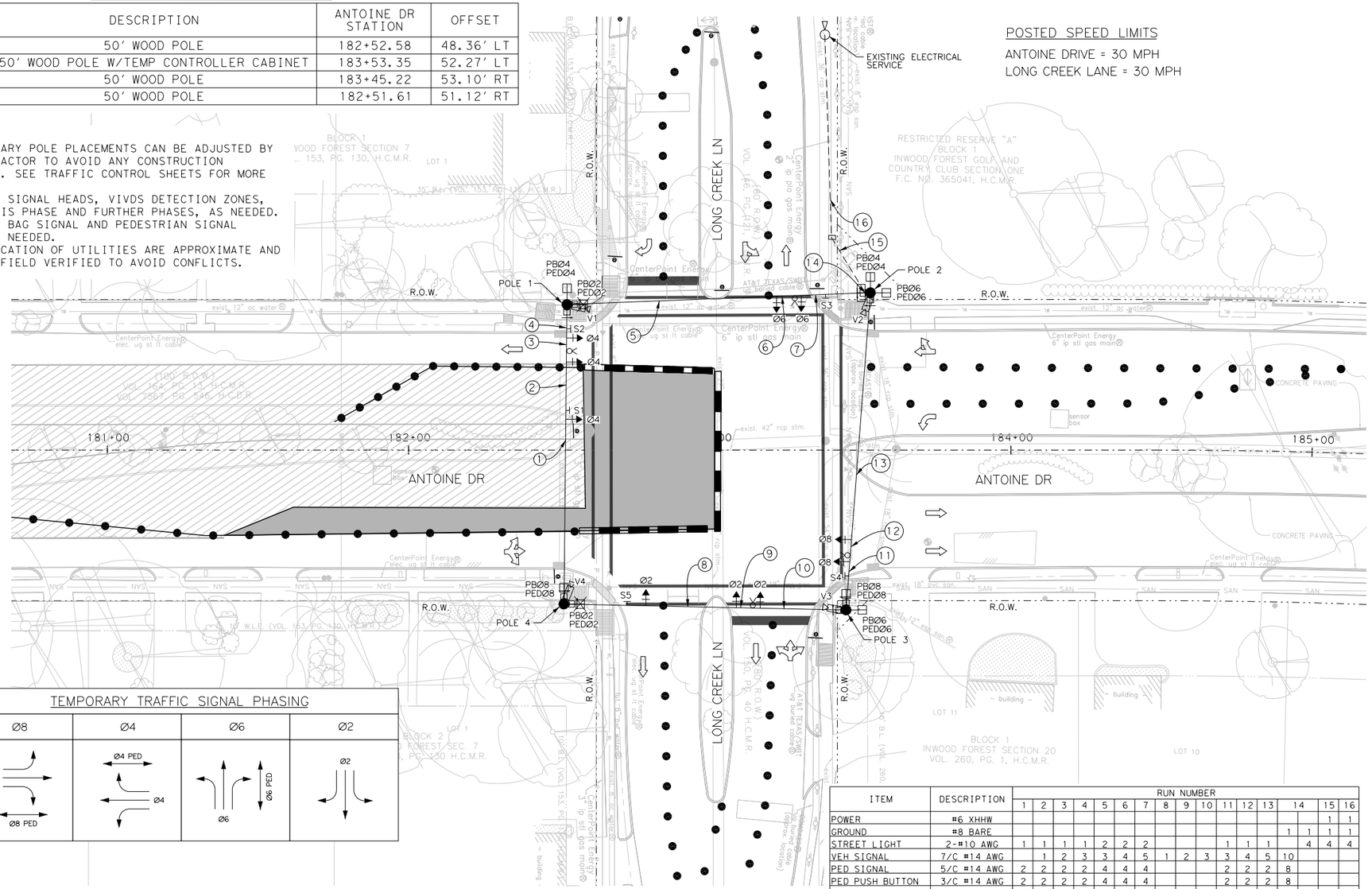
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
N.T.S	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 519 OF 718	

31283C•43•PR•SGNLPL04.dgn

POLE AND CONTROLLER SCHEDULE

POLE NO.	DESCRIPTION	ANTOINE DR STATION	OFFSET
1	50' WOOD POLE	182+52.58	48.36' LT
2	50' WOOD POLE W/TEMP CONTROLLER CABINET	183+53.35	52.27' LT
3	50' WOOD POLE	183+45.22	53.10' RT
4	50' WOOD POLE	182+51.61	51.12' RT

NOTES:
1) TEMPORARY POLE PLACEMENTS CAN BE ADJUSTED BY THE CONTRACTOR TO AVOID ANY CONSTRUCTION CONFLICTS. SEE TRAFFIC CONTROL SHEETS FOR MORE DETAILS.
2) ADJUST SIGNAL HEADS, VIVDS DETECTION ZONES, DURING THIS PHASE AND FURTHER PHASES, AS NEEDED. REMOVE OR BAG SIGNAL AND PEDESTRIAN SIGNAL HEADS, AS NEEDED.
3) THE LOCATION OF UTILITIES ARE APPROXIMATE AND SHALL BE FIELD VERIFIED TO AVOID CONFLICTS.



POSTED SPEED LIMITS

ANTOINE DRIVE = 30 MPH
LONG CREEK LANE = 30 MPH

0 10 20 40

LEGEND

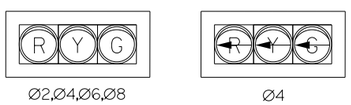
- TEMP WOOD POLE W/SPAN WIRE
- TEMP TRAFFIC SIGNAL HEAD
- TEMP SIGN
- TEMP POLE MOUNT CONTROLLER CABINET
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- LUMINAIRE W/ PHOTO CELL
- CONDUIT
- TEMP VIVDS
- TEMPORARY TRAFFIC FLOW ARROW
- BAGGED PEDESTRIAN SIGNAL HEAD

TEMPORARY TRAFFIC SIGNAL PHASING

Ø8	Ø4	Ø6	Ø2
Ø8 Ø8 PED	Ø4 PED Ø4	Ø6 Ø6 PED	Ø2

ITEM	DESCRIPTION	RUN NUMBER															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
POWER	#6 XHHW															1	1
GROUND	#8 BARE														1	1	1
STREET LIGHT	2-#10 AWG	1	1	1	1	2	2	2				1	1	1	4	4	4
VEH SIGNAL	7/C #14 AWG		1	2	3	3	4	5	1	2	3	3	4	5	10		
PED SIGNAL	5/C #14 AWG	2	2	2	2	4	4	4				2	2	2	8		
PED PUSH BUTTON	3/C #14 AWG	2	2	2	2	4	4	4				2	2	2	8		
VIVDS	COAX CABLE	1	1	1	1	2	2	2				1	1	1	4		
OPTICOM EVP	CABLE			1	1	1	2	2		1	1	1	2	2	4		
CONDUIT	2 IN PVC																
	3 IN PVC															1	1
	4 IN PVC														1		

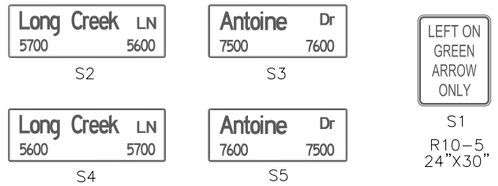
TEMPORARY SIGNAL HEAD DETAILS



TEMPORARY PEDESTRIAN SIGN AND SIGNAL HEAD DETAILS



TEMPORARY SIGNS



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10/22/2025
Date
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SURVEYED BY:
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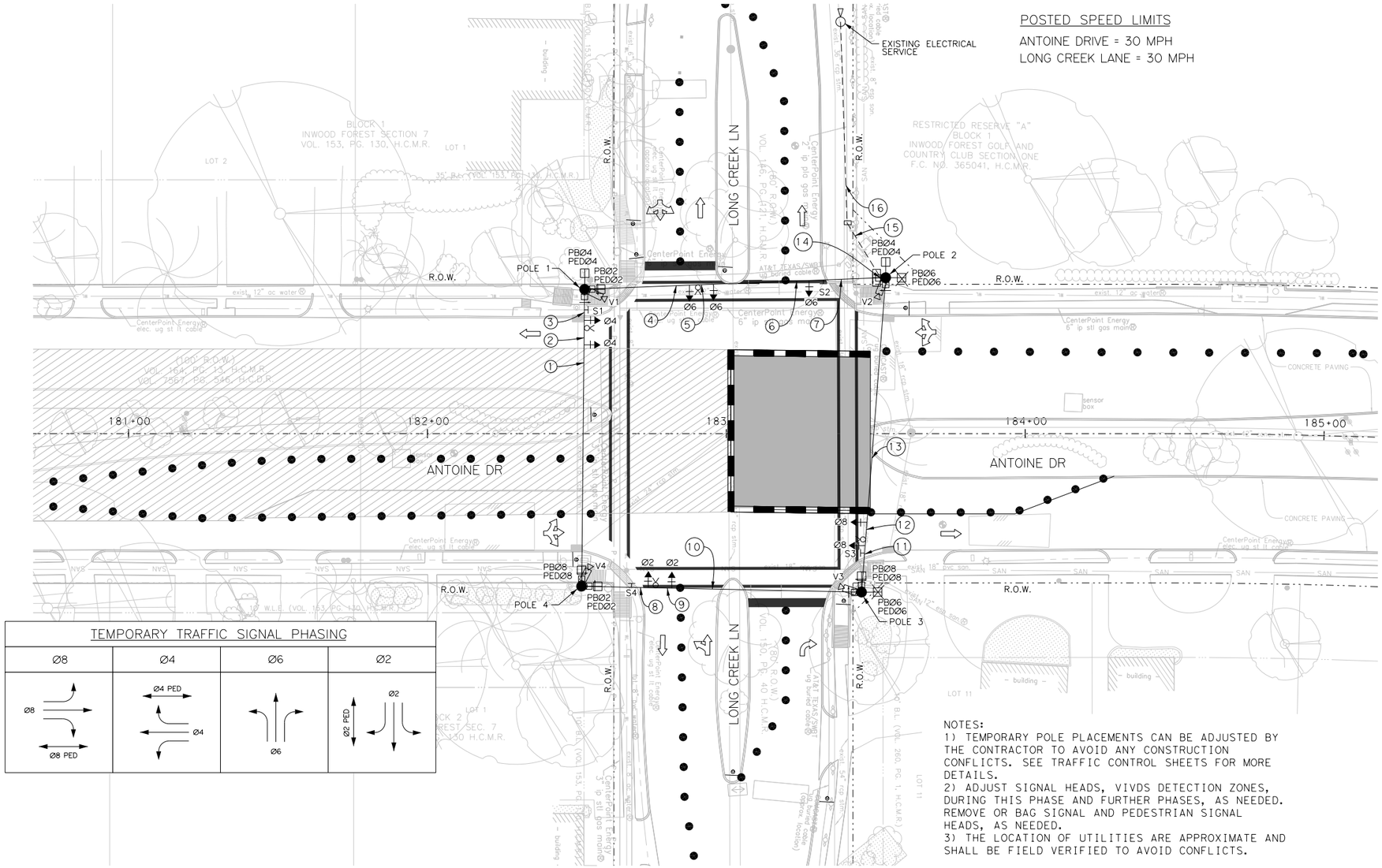
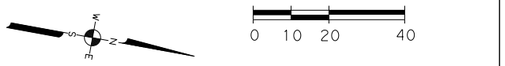
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
TEMPORARY SIGNAL LAYOUT
ANTOINE DRIVE AT
LONG CREEK LANE
PH 2 ST 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
1"=40'	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 520 OF 718	

31283C-TM-SGNL12.dgn





LEGEND

- TEMP WOOD POLE W/SPAN WIRE
- TEMP TRAFFIC SIGNAL HEAD
- TEMP SIGN
- TEMP POLE MOUNT CONTROLLER CABINET
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- LUMINAIRE W/ PHOTO CELL
- CONDUIT
- TEMP VIVDS
- TEMPORARY TRAFFIC FLOW ARROW
- BAGGED PEDESTRIAN SIGNAL HEAD

TEMPORARY TRAFFIC SIGNAL PHASING

Ø8	Ø4	Ø6	Ø2
Ø8 Ø8 PED	Ø4 PED Ø4	Ø6	Ø2 PED Ø2

NOTES:
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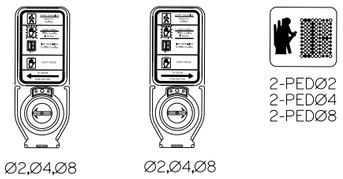
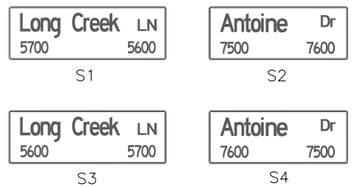
TEMPORARY SIGNAL HEAD DETAILS



TEMPORARY PEDESTRIAN SIGN AND SIGNAL HEAD DETAILS



TEMPORARY SIGNS



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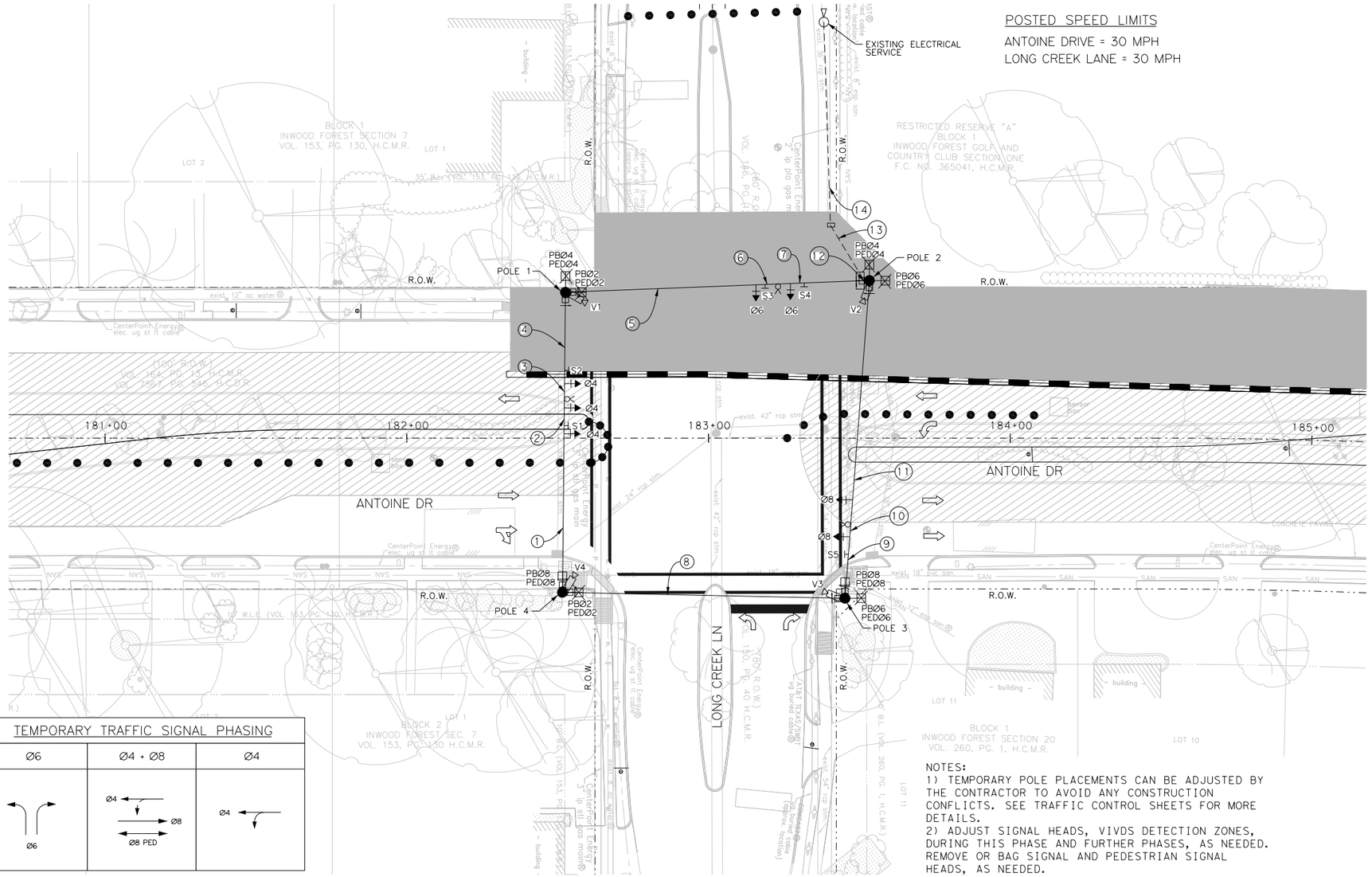
KUO & ASSOCIATES, INC.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
TEMPORARY SIGNAL LAYOUT ANTOINE DRIVE AT LONG CREEK LANE PH 2 ST 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
1"=40'	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 521 OF 718	

3128JC • TM • SGNL13. dgn



LEGEND

- TEMP WOOD POLE W/SPAN WIRE
- TEMP TRAFFIC SIGNAL HEAD
- TEMP SIGN
- TEMP POLE MOUNT CONTROLLER CABINET
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- LUMINAIRE W/ PHOTO CELL
- CONDUIT
- TEMP VIVDS
- TEMPORARY TRAFFIC FLOW ARROW
- BAGGED PEDESTRIAN SIGNAL HEAD

0 10 20 40

TEMPORARY TRAFFIC SIGNAL PHASING

Ø6	Ø4 + Ø8	Ø4
Ø6	Ø4, Ø8, Ø8 PED	Ø4

NOTES:
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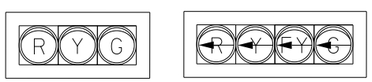
TEMPORARY SIGNAL HEAD DETAILS



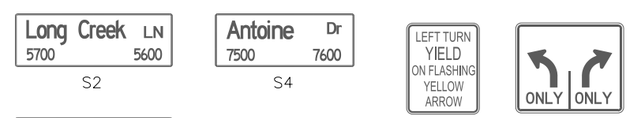
Ø4,Ø6,Ø8 Ø4

TEMPORARY PEDESTRIAN SIGN AND SIGNAL HEAD DETAILS



Ø8 Ø8 2-PEDØ8

TEMPORARY SIGNS



S2 S4 S1 S3

Long Creek LN 5600 5700 S5

R10-17T 24"X30" R3-8LR 42"X30"

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Houston, TX 77084 TBPE # 2263

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KUO & ASSOCIATES, INC.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
TEMPORARY SIGNAL LAYOUT
ANTOINE DRIVE AT
LONG CREEK LANE
PH 4 ST 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
1"=40'	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 522 OF 718	

31283C•TM•SGNL14.dgn

POLE AND CONTROLLER SCHEDULE

POLE NO.	DESCRIPTION	ANTOINE DR STATION	OFFSET
1	50' WOOD POLE	158+55.34	54.34' LT
2	50' WOOD POLE W/TEMP CONTROLLER CABINET	159+99.00	57.20' LT
3	50' WOOD POLE	160+53.16	55.48' RT
4	50' WOOD POLE	159+13.37	48.35' RT

NOTES:
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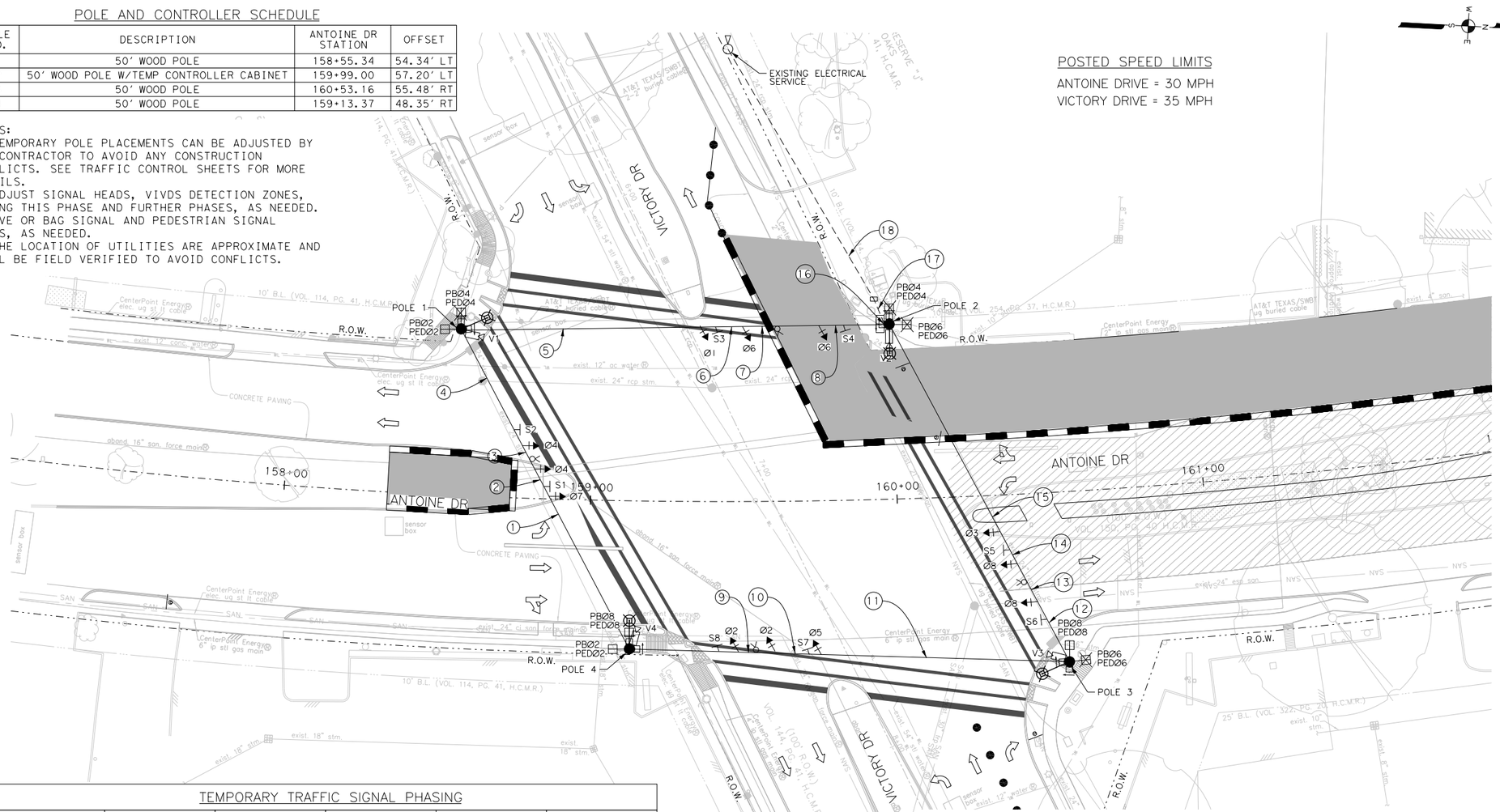


LEGEND

- TEMP WOOD POLE W/SPAN WIRE
- TEMP TRAFFIC SIGNAL HEAD
- TEMP SIGN
- TEMP POLE MOUNT CONTROLLER CABINET
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- LUMINAIRE W/ PHOTO CELL
- CONDUIT
- TEMP VIVDS
- TEMPORARY TRAFFIC FLOW ARROW
- BAGGED PEDESTRIAN SIGNAL HEAD

TEMPORARY TRAFFIC SIGNAL PHASING

Ø2 + Ø5	Ø2+ Ø6	Ø1 + Ø6	Ø3 + Ø8	Ø4 + Ø8	Ø4 + Ø7
Ø2 PED; Ø2 Ø5	Ø2 PED; Ø6; Ø2	Ø1 Ø6	Ø3; Ø8; Ø8 PED	Ø4; Ø8; Ø8 PED	Ø4; Ø7

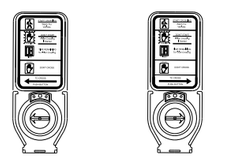
ITEM	DESCRIPTION	RUN NUMBER 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		17	18
POWER	#6 XHHW																		1	1
GROUND	#8 BARE																1	1	1	1
STREET LIGHT	2-#10 AWG	1	1	1	1	2	2	2	2				1	1	1	1		4	4	4
VEH SIGNAL	7/C #14 AWG		1	2	3	3	4	5	6	1	2	3	3	4	5	6	12			
PED SIGNAL	5/C #14 AWG	2	2	2	2	4	4	4	4				2	2	2	2	8			
PED PUSH BUTTON	3/C #14 AWG	2	2	2	2	4	4	4	4				2	2	2	2	8			
VIVDS	COAX CABLE	1	1	1	1	2	2	2	2				1	1	1	1	4			
OPTICOM EVP	CABLE			1	1	1	1	2	2	1	1	1	1	2	2	2	4			
CONDUIT	2 IN PVC																			
	3 IN PVC																		1	1	1
	4 IN PVC																1			

TEMPORARY SIGNAL HEAD DETAILS

R Y G — Ø2,Ø4,Ø6,Ø8

R Y G — Ø1,Ø3,Ø5,Ø7

TEMPORARY PEDESTRIAN SIGN AND SIGNAL HEAD DETAILS



Ø2,Ø4,Ø6,Ø8 Ø2,Ø4,Ø6,Ø8

2-PEDØ2
~~2-PEDØ4~~
~~2-PEDØ6~~
2-PEDØ8

TEMPORARY SIGNS

Victory Dr 4500 4600 — S2	Victory Dr 4600 4500 — S6	LEFT ON GREEN ARROW ONLY — S1,S3,S5,S7 R10-5 24"X30"
Antoine Dr 7200 7300 — S4	Antoine Dr 7300 7200 — S8	

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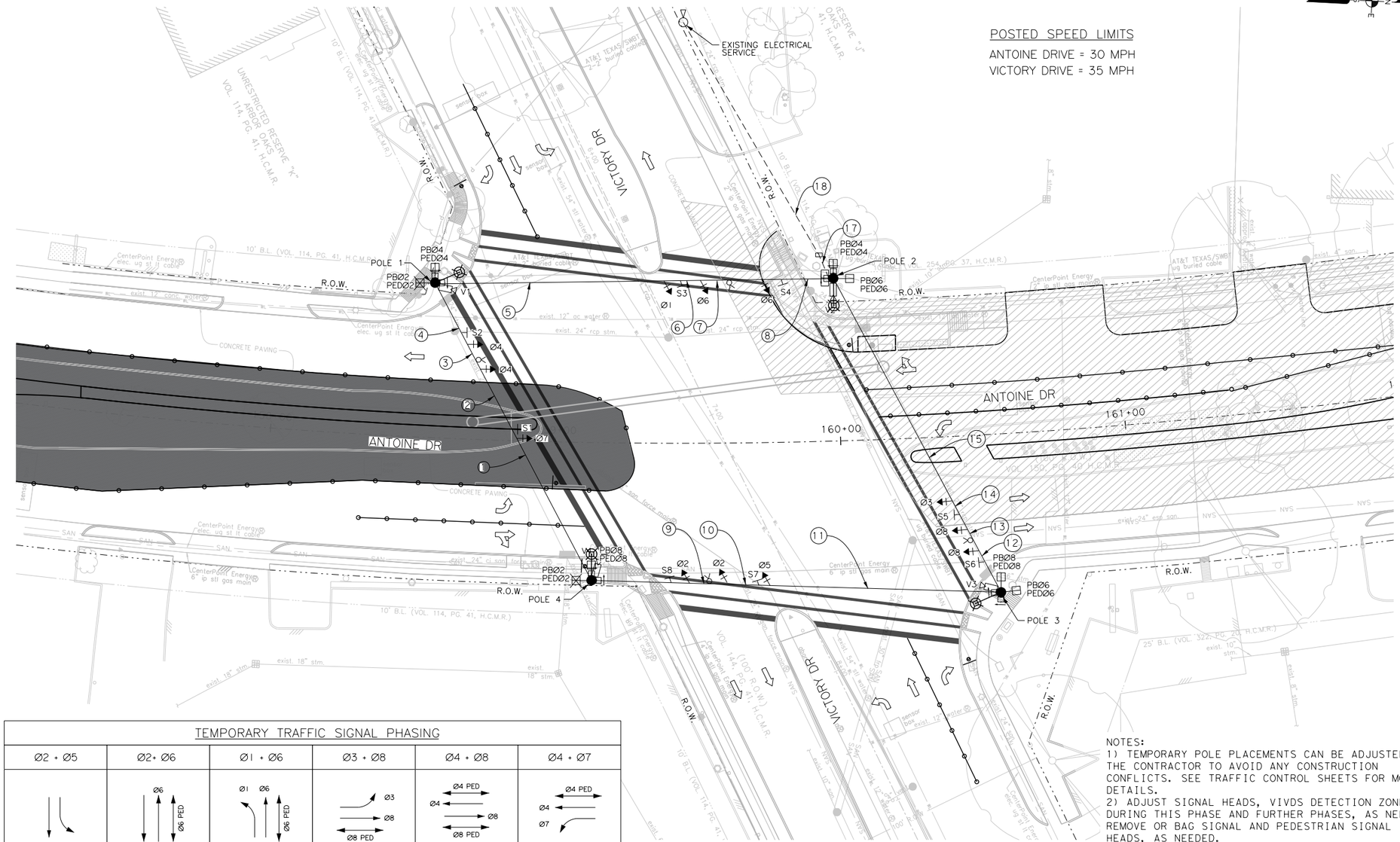
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
TEMPORARY SIGNAL LAYOUT
ANTOINE DRIVE AT
VICTORY DRIVE
PH 4 ST 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
1"=40'	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 523 OF 718	

31283c•TM•SGNL01.dgn



POSTED SPEED LIMITS

ANTOINE DRIVE = 30 MPH
VICTORY DRIVE = 35 MPH

0 10 20 40

LEGEND

- TEMP WOOD POLE W/SPAN WIRE
- TEMP TRAFFIC SIGNAL HEAD
- TEMP SIGN
- TEMP POLE MOUNT CONTROLLER CABINET
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- LUMINAIRE W/ PHOTO CELL
- CONDUIT
- TEMP VIVDS
- TEMPORARY TRAFFIC FLOW ARROW
- BAGGED PEDESTRIAN SIGNAL HEAD

TEMPORARY TRAFFIC SIGNAL PHASING

Ø2 + Ø5	Ø2+ Ø6	Ø1 + Ø6	Ø3 + Ø8	Ø4 + Ø8	Ø4 + Ø7
Ø2 Ø5	Ø6 Ø6 PED Ø2	Ø1 Ø6 Ø6 PED	Ø3 Ø8 Ø8 PED	Ø4 PED Ø4 Ø8 Ø8 PED	Ø4 PED Ø4 Ø7

NOTES:
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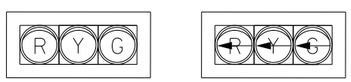
TEMPORARY SIGNAL HEAD DETAILS



Ø2,Ø4,Ø6,Ø8 Ø1,Ø3,Ø5,Ø7

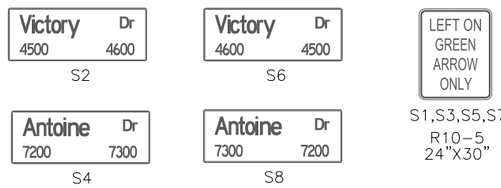
TEMPORARY PEDESTRIAN SIGN AND SIGNAL HEAD DETAILS



Ø2,Ø4,Ø6,Ø8 Ø2,Ø4,Ø6,Ø8

~~2-PEDØ2~~
~~2-PEDØ4~~
2-PEDØ6
2-PEDØ8

TEMPORARY SIGNS



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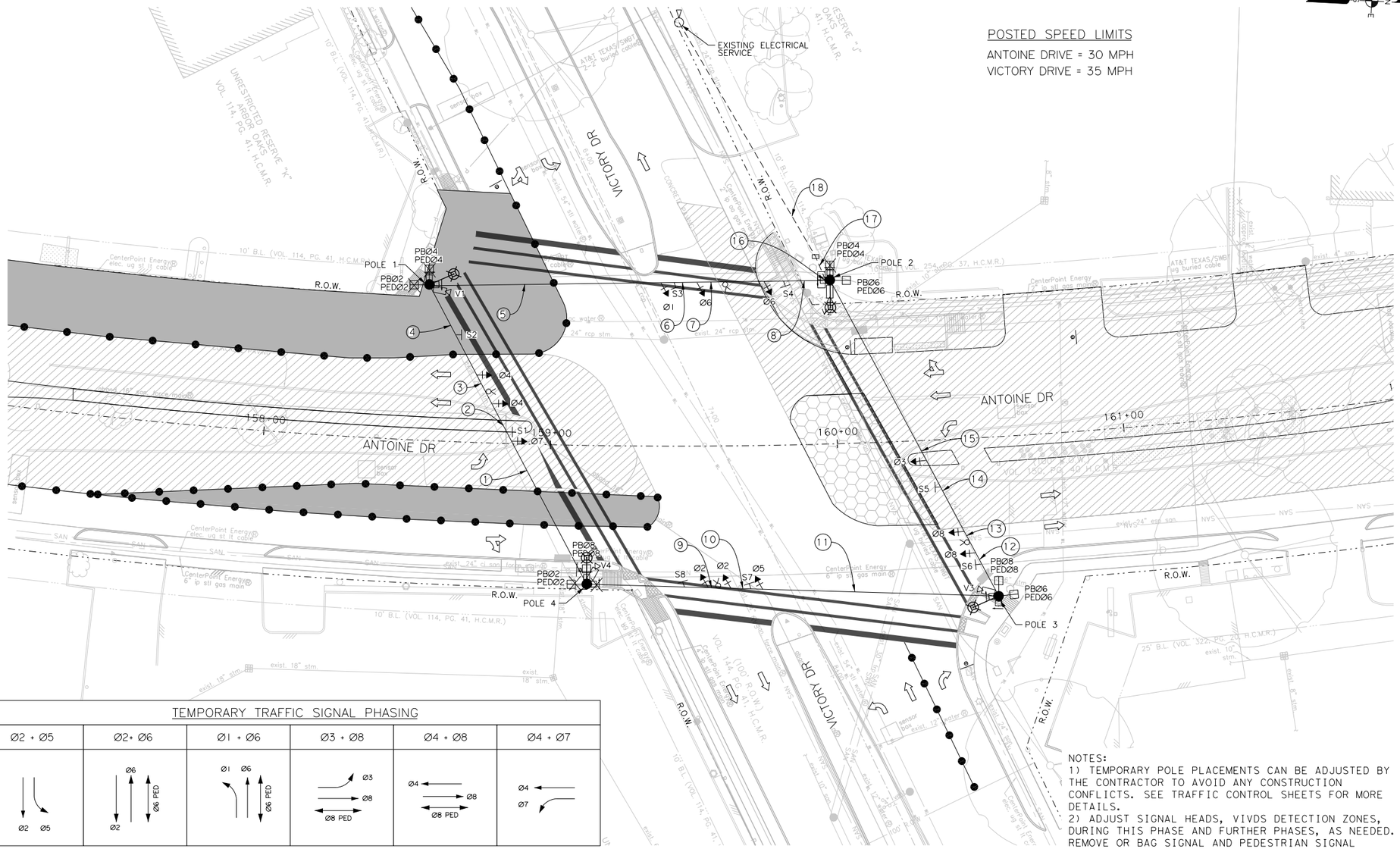
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
TEMPORARY SIGNAL LAYOUT
ANTOINE DRIVE AT
VICTORY DRIVE
PH 4 ST 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
1"=40'	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 524 OF 718	

312830 • TM • SDNL002. dgn

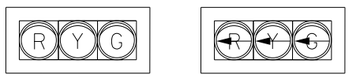


TEMPORARY TRAFFIC SIGNAL PHASING

Ø2 + Ø5	Ø2 + Ø6	Ø1 + Ø6	Ø3 + Ø8	Ø4 + Ø8	Ø4 + Ø7
Ø2 Ø5	Ø6 Ø6 PED Ø2	Ø1 Ø6 Ø6 PED	Ø3 Ø8 Ø8 PED	Ø4 Ø8 Ø8 PED	Ø4 Ø7

NOTES:
1) TEMPORARY POLE PLACEMENTS CAN BE ADJUSTED BY THE CONTRACTOR TO AVOID ANY CONSTRUCTION CONFLICTS. SEE TRAFFIC CONTROL SHEETS FOR MORE DETAILS.
2) ADJUST SIGNAL HEADS, VIVDS DETECTION ZONES, DURING THIS PHASE AND FURTHER PHASES, AS NEEDED. REMOVE OR BAG SIGNAL AND PEDESTRIAN SIGNAL HEADS, AS NEEDED.
3) THE LOCATION OF UTILITIES ARE APPROXIMATE AND SHALL BE FIELD VERIFIED TO AVOID CONFLICTS.

TEMPORARY SIGNAL HEAD DETAILS



Ø2,Ø4,Ø6,Ø8

Ø1,Ø3,Ø5,Ø7

TEMPORARY PEDESTRIAN SIGN AND SIGNAL HEAD DETAILS



Ø2,Ø4,Ø6,Ø8



Ø2,Ø4,Ø6,Ø8



~~2-PEDØ2~~
~~2-PEDØ4~~
2-PEDØ6
2-PEDØ8

TEMPORARY SIGNS



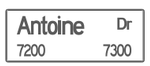
S2



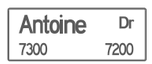
S6



S1,S3,S5,S7
R10-5
24"X30"



S4



S8

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FCM Engineers, PC
TX FIRM No.: F-13481

WSP USA Inc.
16200 Park Row, Suite 200
Houston, TX 77084 TBPE • 2263

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TEMPORARY SIGNAL LAYOUT
ANTOINE DRIVE AT

VICTORY DRIVE
PH 4 ST 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
1"=40'	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 525 OF 718	

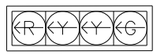
3128Ø3C • TM-SGNL Ø3. dgn

EXISTING SPEED LIMITS

WEST GULF BANK ROAD = 40 MPH
ANTOINE DRIVE = 35 MPH

EXISTING SIGNAL HEADS

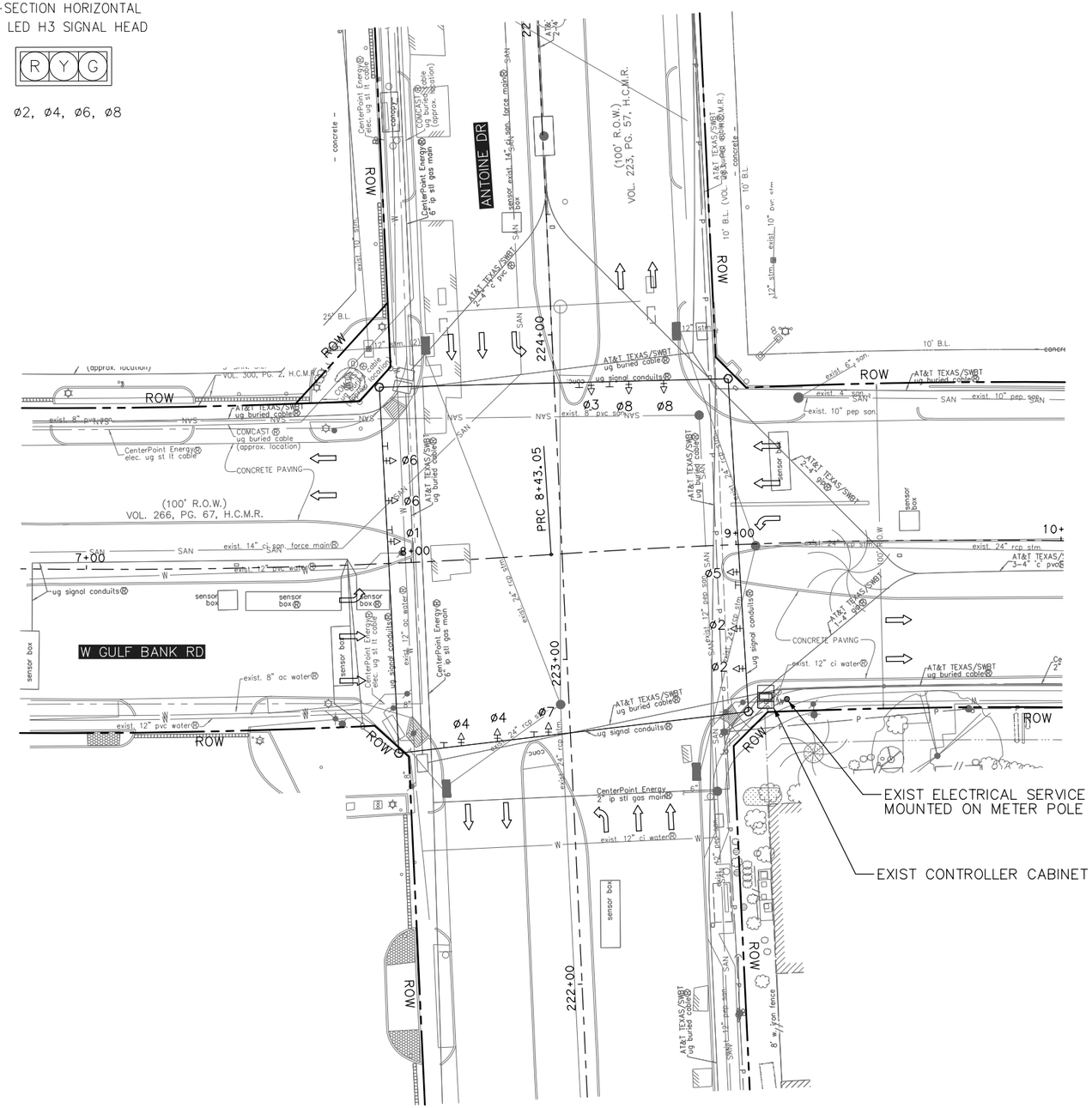
4-SECTION HORIZONTAL
12" LED H4LF SIGNAL HEAD



ø1, ø3, ø5, ø7

3-SECTION HORIZONTAL
12" LED H3 SIGNAL HEAD

ø2, ø4, ø6, ø8



LEGEND

- VEHICLE SIGNAL HEAD
- SIGNAL POLE AND SPANWIRE
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- MAST ARM SIGN
- CONTROLLER CABINET

N

0' 20' 40'
SCALE IN FEET

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tei Planning + Design
TEXAS PE FIRM REG. # 3158
712 MAIN ST. #950
HOUSTON, TX 77002

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P.E. Serial No. 145538
Firm: TEI PLANNING + DESIGN
Firm No.: F-3158
Date: 10/16/2025

SURVEYED BY:
KUO & ASSOCIATES, INC.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ANTOINE DRIVE AT
WEST GULF BANK ROAD
TRAFFIC SIGNAL
EXISTING LAYOUT

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 526 OF 718	

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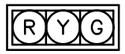
Design Filename:E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\04 Design\02 Plansheets\Existing Layout.dgn

PROPOSED SIGNAL HEAD SCHEDULE

3-SECTION HORIZONTAL
12" LED H3 SIGNAL HEAD



ø2, ø4, ø6, ø8

3-SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD



ø1, ø3, ø5, ø7

3-SECTION VERTICAL
12" LED V3L SIGNAL HEAD



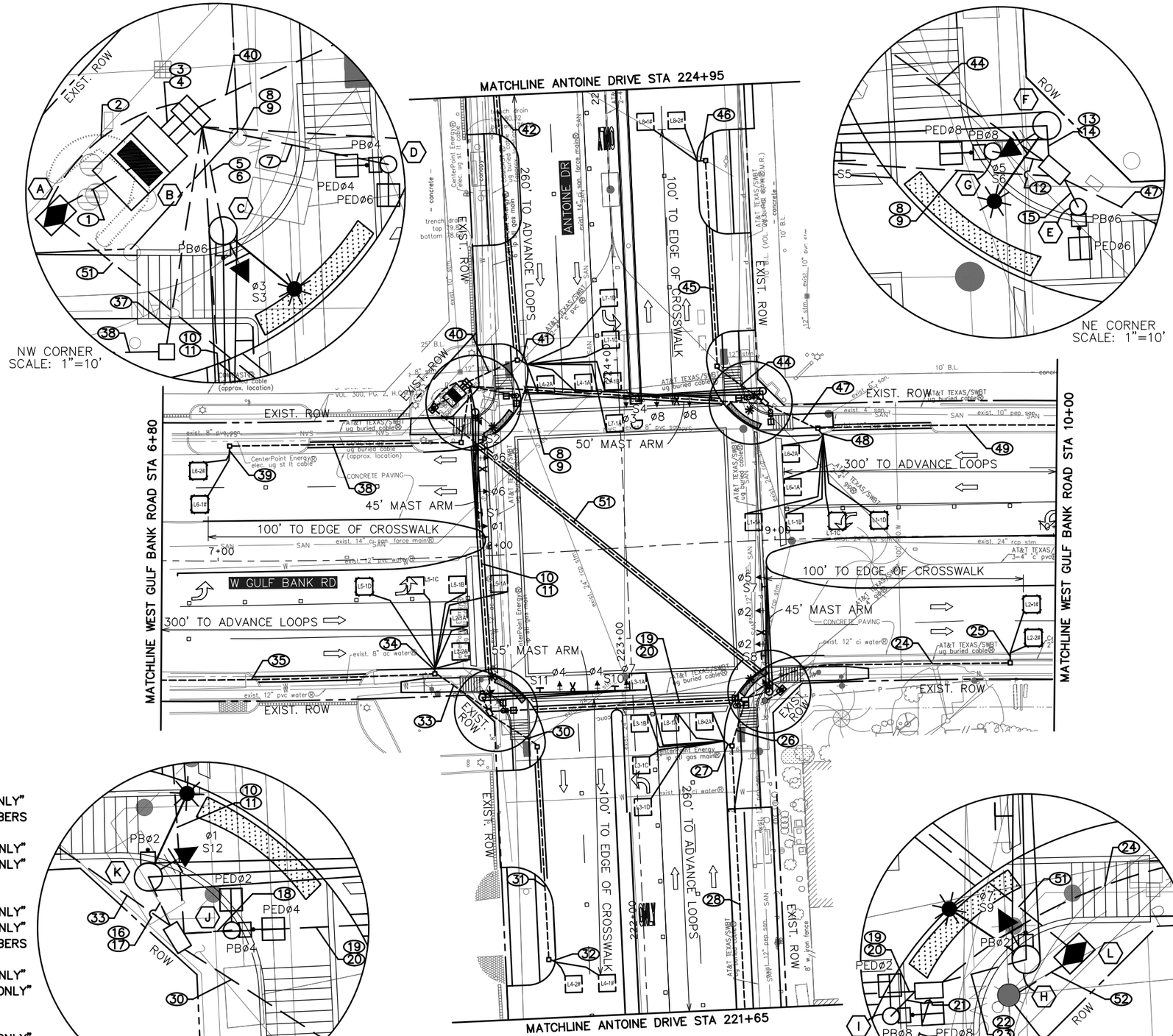
ø1, ø3, ø5, ø7

NOTE: LUMINAIRES ARE TO BE ALIGNED WITH THE MAST ARM ON THE SAME POLE. LUMINAIRES SHOW ON ANGLE IN DRAWING FOR CLARITY.

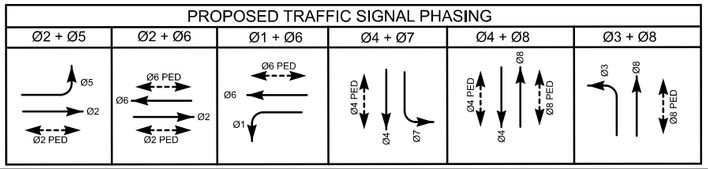
PROPOSED SIGN SCHEDULE

S1 = R10-5 "LEFT TURN ON GREEN ARROW ONLY"
S2 = STREET NAME "Antoine Dr", BLOCK NUMBERS 7900 AND 8000
S3 = R10-5 "LEFT TURN ON GREEN ARROW ONLY"
S4 = R10-5 "LEFT TURN ON GREEN ARROW ONLY"
S5 = STREET NAME "W Gulf Bank Rd" BLOCK NUMBERS 5800 and 5700
S6 = R10-5 "LEFT TURN ON GREEN ARROW ONLY"
S7 = R10-5 "LEFT TURN ON GREEN ARROW ONLY"
S8 = STREET NAME "Antoine Dr", BLOCK NUMBERS 8000 AND 7900
S9 = R10-5 "LEFT TURN ON GREEN ARROW ONLY"
S10 = R10-5 "LEFT TURN ON GREEN ARROW ONLY"
S11 = STREET NAME "W Gulf Bank Rd", BLOCK NUMBERS 5700 AND 5800
S12 = R10-5 "LEFT TURN ON GREEN ARROW ONLY"

DESIGN SPEEDS FOR
LOOP DETECTOR SET BACK
WEST GULF BANK ROAD = 40 MPH
ANTOINE DRIVE = 35 MPH



PROPOSED TRAFFIC SIGNAL PHASING



LEGEND

- SIGNAL HEAD
- OPTICOM
- POLE W/ MAST ARM
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- PULL BOX – TYPE A
- PULL BOX – TYPE B
- PULL BOX – TYPE C
- CONDUIT (TRENCH)
- CONDUIT (BORE)
- LUMINAIRE
- MAST ARM SIGN
- CONTROLLER CABINET WITH BBU
- ELECTRICAL SERVICE
- PRE-FORMED DETECTION LOOPS
- SAW-CUT DETECTION LOOPS

N

0' 20' 40'
SCALE IN FEET

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HOUSTON, TX 77002

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Firm No.: F-3158
Date: 10/16/2025

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KUO & ASSOCIATES, INC.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ANTOINE DRIVE AT
WEST GULF BANK ROAD
TRAFFIC SIGNAL
PROPOSED SIGNAL LAYOUT
SHEET 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 527 OF 718	

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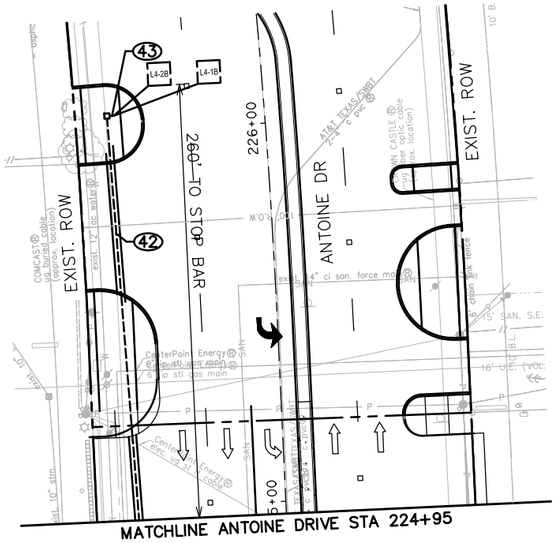
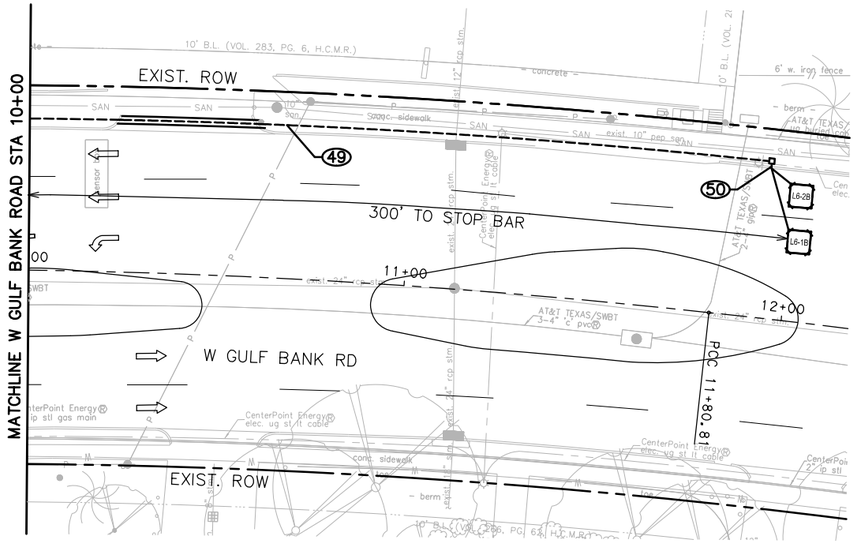
Design Filename:E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\04 Design\02 Plansheets\Proposed Layout.dgn

DESIGN SPEEDS FOR
LOOP DETECTOR SET BACK

WEST GULF BANK ROAD = 40 MPH
ANTOINE DRIVE = 35 MPH



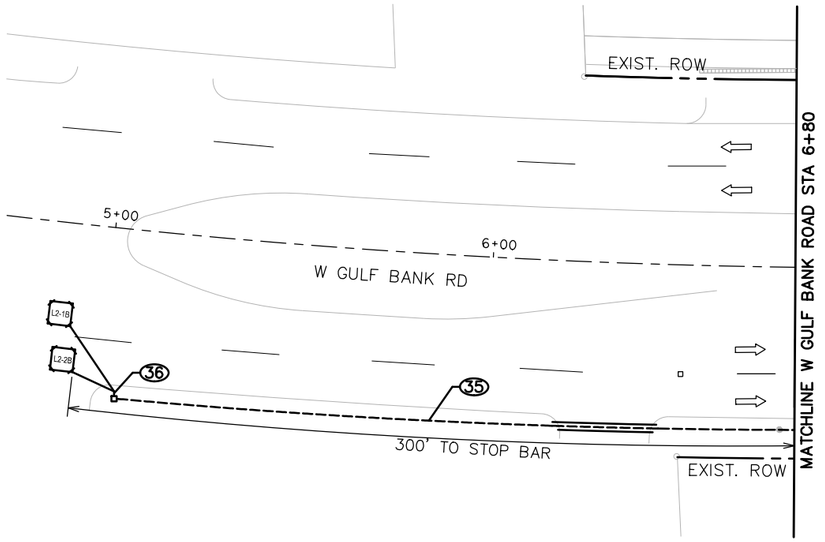


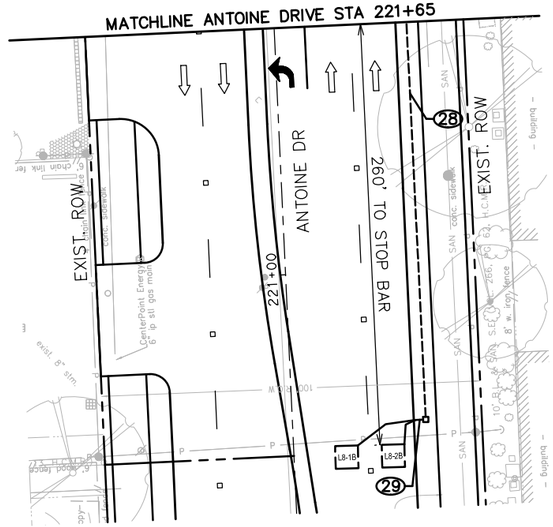
LEGEND

- SIGNAL HEAD
- OPTICOM
- POLE W/ MAST ARM
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- PULL BOX – TYPE A
- PULL BOX – TYPE B
- PULL BOX – TYPE C
- CONDUIT (TRENCH)
- CONDUIT (BORE)
- LUMINAIRE
- MAST ARM SIGN
- CONTROLLER CABINET WITH BBU
- ELECTRICAL SERVICE

N

0′ 20′ 40′
SCALE IN FEET





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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ANTOINE DRIVE AT WEST GULF BANK ROAD TRAFFIC SIGNAL PROPOSED SIGNAL LAYOUT SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 528 OF 718	

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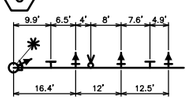
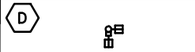
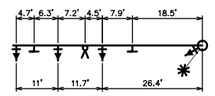
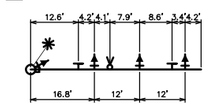
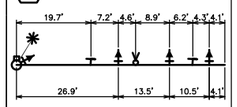
POLE SCHEDULE

POLE NUMBER	POLE TYPE	ATTACHMENTS		SIGNALS		LUMINAIRE TYPE	PED PB TYPE/SIGN	REMARKS	LOCATION	STANDARDS
		STRAIN	LUMIN	MTG.	FACE					
(C) 	TYPE 2	45' MAST ARM	YES	3–ASTROBRAC 1–SIDE OF POLE 1–PED	2–H3 1–H3L 1–V3L	106 WATT SYSTEM MAX LED COBRA HEAD LUMINAIRE	POLARA NAVIGATOR R10–3e(R)	SIGN 1 – R10–5 SIGN 2 – STREET NAME SIGN 3 – R10–5 PRE–EMPT SENSOR	STA 223+83.5 OFF 51.7' LT	02893–01 02582–01 02582–02 02582–03 02465–01 02465–02 01554–11
(D) 	15' PED POLE	–	–	2–PED	2–CDP	–	POLARA NAVIGATOR R10–3e(R)	–	STA 223+88.8 OFF 36.6' LT	02893–01 02465–02 02582–01
(E) 	15' PED POLE	–	–	1–PED	1–CDP	–	POLARA NAVIGATOR R10–3e(L)	–	STA 223+79.0 OFF 54.1' RT	02893–01 02465–02 02582–01
(F) 	TYPE 2	50' MAST ARM	YES	3–ASTROBRAC 1–SIDE OF POLE	2–H3 1–H3L 1–V3L	106 WATT SYSTEM MAX LED COBRA HEAD LUMINAIRE	–	SIGN 4 – R10–5 SIGN 5 – STREET NAME SIGN 6 – R10–5 PRE–EMPT SENSOR	STA 223+86.4 OFF 51.6' RT	02893–01 02582–01 02582–02 02582–03 02465–01 01554–11
(G) 	15' PED POLE	–	–	1–PED	1–CDP	–	POLARA NAVIGATOR R10–3e(R)	–	STA 223+84.3 OFF 46.7' RT	02893–01 02465–02 02582–01
(H) 	TYPE 2	45' MAST ARM	YES	3–ASTROBRAC 1–SIDE OF POLE	2–H3 1–H3L 1–V3L	106 WATT SYSTEM MAX LED COBRA HEAD LUMINAIRE	POLARA NAVIGATOR R10–3e(R)	SIGN 7 – R10–5 SIGN 8 – STREET NAME SIGN 9 – R10–5 PRE–EMPT SENSOR	STA 222+78.5 OFF 49.0' RT	02893–01 02582–01 02582–02 02582–03 02465–01 02465–02 01554–11
(I) 	15' PED POLE	–	–	2–PED	2–CDP	–	POLARA NAVIGATOR R10–3e(R)	–	STA 222+74.0 OFF 36.7' RT	02893–01 02465–02 02582–01
(J) 	15' PED POLE	–	–	2–PED	2–CDP	–	POLARA NAVIGATOR R10–3e(R)	–	STA 222+76.1 OFF 46.7' LT	02893–01 02465–02 02582–01
(K) 	TYPE 2	55' MAST ARM	YES	3–ASTROBRAC 1–SIDE OF POLE	2–H3 1–H3L 1–V3L	106 WATT SYSTEM MAX LED COBRA HEAD LUMINAIRE	POLARA NAVIGATOR R10–3e(L)	SIGN 10 – R10–5 SIGN 11 – STREET NAME SIGN 12 – R10–5 PRE–EMPT SENSOR	STA 222+81.3 OFF 53.9' LT	02893–01 02582–01 02582–02 02582–03 02465–01 02465–02 01554–11

TRAFFIC SIGNAL CONTROLLER

CABINET	TYPE	CONTROLLER	AUX. CONTROL	REMARKS	LOCATION	STANDARDS
(A) 	UL TYPE 3R	METERED SERVICE PEDESTAL WITH 30 AMP & 60 AMP CIRCUIT BREAKERS STREET LIGHTS PHOTOCELL TO ADD TO SERVICE PANEL	–	–	STA 223+85.6 OFF 66.7' LT (CENTER)	02893–02
(B) 	TYPE 340 ITS	2070LX CONTROLLER WITH 2070–1C CPU MODULE, GPS SERIAL COMMUNICATIONS MODULE, AND UPS BBS	–	– STANDARD SPECS 16730, 16731 – UNINTERRUPTED POWER SUPPLY STANDARD SPEC 16732 GPS SERIAL COMMUNICATION MODULE STANDARD SPEC 16785 – CELLULAR COMMUNICATION COMMUNICATION INSTALLATION DETAILS	STA 223+89.9 OFF 58.9' LT (CENTER)	16730–03
(L) 	UL TYPE 3R	METERED SERVICE PEDESTAL WITH 30 AMP & 60 AMP CIRCUIT BREAKERS STREET LIGHTS PHOTOCELL TO ADD TO SERVICE PANEL	–	–	STA 222+78.9 OFF 53.4' RT (CENTER)	02893–02

DETECTION ZONES		
ITEM BY DIRECTION	LOCATION	OFFSET
EASTBOUND PH 5 CALL ZONE L5–1A LEADING EDGE (6'x6') PH 5 CALL ZONE L5–1B LEADING EDGE (6'X6') PH 2 CALL ZONE L2–1A LEADING EDGE (6'x6') PH 2 CALL ZONE L2–2A LEADING EDGE (6'x6') PH 5 CALL ZONE L5–1C LEADING EDGE (6'x6') PH 5 CALL ZONE L5–1D LEADING EDGE (6'x6') PH 2 CALL ZONE L2–1# LEADING EDGE (6'x6') PH 2 CALL ZONE L2–2# LEADING EDGE (6'x6') PH 2 CALL ZONE L2–1B LEADING EDGE (6'x6') PH 2 CALL ZONE L2–2B LEADING EDGE (6'x6')	4' DOWNSTREAM OF STOP LINE 9' UPSTREAM OF STOP LINE 18' UPSTREAM OF STOP LINE 27' UPSTREAM OF STOP LINE 195' DOWNSTREAM OF STOP LINE 300' UPSTREAM OF STOP LINE	CENTERED IN LANE
WESTBOUND PH 1 CALL ZONE L1–1A LEADING EDGE (6'x6') PH 1 CALL ZONE L1–1B LEADING EDGE (6'X6') PH 6 CALL ZONE L6–1A LEADING EDGE (6'x6') PH 6 CALL ZONE L6–2A LEADING EDGE (6'x6') PH 1 CALL ZONE L1–1C LEADING EDGE (6'x6') PH 1 CALL ZONE L1–1D LEADING EDGE (6'x6') PH 6 CALL ZONE L6–1# LEADING EDGE (6'x6') PH 6 CALL ZONE L6–2# LEADING EDGE (6'x6') PH 6 CALL ZONE L6–1B LEADING EDGE (6'x6') PH 6 CALL ZONE L6–2B LEADING EDGE (6'x6')	4' DOWNSTREAM OF STOP LINE 9' UPSTREAM OF STOP LINE 18' UPSTREAM OF STOP LINE 27' UPSTREAM OF STOP LINE 195' DOWNSTREAM OF STOP LINE 300' UPSTREAM OF STOP LINE	CENTERED IN LANE
NORTHBOUND PH 3 CALL ZONE L3–1A LEADING EDGE (6'x6') PH 3 CALL ZONE L3–1B LEADING EDGE (6'X6') PH 8 CALL ZONE L8–1A LEADING EDGE (6'x6') PH 8 CALL ZONE L8–2A LEADING EDGE (6'x6') PH 3 CALL ZONE L3–1C LEADING EDGE (6'x6') PH 3 CALL ZONE L3–1D LEADING EDGE (6'x6') PH 8 CALL ZONE L8–1# LEADING EDGE (6'x6') PH 8 CALL ZONE L8–2# LEADING EDGE (6'x6') PH 8 CALL ZONE L8–1B LEADING EDGE (6'x6') PH 8 CALL ZONE L8–2B LEADING EDGE (6'x6')	4' DOWNSTREAM OF STOP LINE 9' UPSTREAM OF STOP LINE 18' UPSTREAM OF STOP LINE 27' UPSTREAM OF STOP LINE 206' DOWNSTREAM OF STOP LINE 260' UPSTREAM OF STOP LINE	CENTERED IN LANE
SOUTHBOUND PH 7 CALL ZONE L7–1A LEADING EDGE (6'x6') PH 7 CALL ZONE L7–1B LEADING EDGE (6'X6') PH 4 CALL ZONE L1–1A LEADING EDGE (6'x6') PH 4 CALL ZONE L2–2A LEADING EDGE (6'x6') PH 4 CALL ZONE L1–1# LEADING EDGE (6'x6') PH 4 CALL ZONE L2–2# LEADING EDGE (6'x6') PH 7 CALL ZONE L7–1C LEADING EDGE (6'x6') PH 7 CALL ZONE L7–1D LEADING EDGE (6'x6') PH 4 CALL ZONE L1–1B LEADING EDGE (6'x6') PH 4 CALL ZONE L2–2B LEADING EDGE (6'x6')	4' DOWNSTREAM OF STOP LINE 9' UPSTREAM OF STOP LINE 18' UPSTREAM OF STOP LINE 27' UPSTREAM OF STOP LINE 206' DOWNSTREAM OF STOP LINE 260' UPSTREAM OF STOP LINE	CENTERED IN LANE

NOTE:
1. STATION AND OFFSET BASED ON ANTOINE DRIVE CENTERLINE.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ANTOINE DRIVE AT WEST GULF BANK ROAD TRAFFIC SIGNAL POLE SCHEDULE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N–100030–0GEC–3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 529 OF 718	

Pen Table:TEI*Color.tbl
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HIGH VOLTAGE CIRCUIT

(X)Y"C = NUMBER, SIZE, AND TYPE OF CONDUIT
(X) = NUMBER OF CABLES (SIGNAL)
CC = #14 AWG SOLID CONDUCTOR CABLE
SL = STREET LIGHTING, 2–#10 AWG XHHW
BB = BARE BOND #8 AWG SOLID
BG = BARE GROUND, #8 AWG SOLID
SLG = STREET LIGHT GROUNDING FOR LUMINAIRE #12 AWG XHHW
SP = SIGNAL POWER (SEE NOTES BELOW)
PC = PHOTO CELL, #10 AWG XHHW

NOTE:
SP1 SHALL CONSIST OF: 6 – #4 AWG XHHW
2 – WHITE,
1 – BLACK
1 – RED,
2 – GREEN

SP2 SHALL CONSIST OF: 3 – #4 AWG XHHW

NW CORNER
SCALE: 1"=10'

(2) 4" PVC
(16) 7CC
(8) 5CC
(8) 3CC
(2) BB

(1) 2" PVC
(4) SL
(1) SLG
(1) BB

(1) 2" PVC
(1) SP1
(1) BG

(1) 2" PVC
(2) 5CC
(1) 3CC
(1) BB

(1) 3" PVC
(4) 7CC
(1) 3CC
(1) SL
(1) SLG
(1) BB

NE CORNER
SCALE: 1"=10'

(1) 3" PVC
(4) 7CC
(1) SL
(1) SLG
(1) BB

(1) 2" PVC
(1) 5CC
(1) 3CC
(1) BB

(1) 2" PVC
(1) 5CC
(1) 3CC
(1) BB

ANTOINE DR

(1) 4" PVC
(4) 7CC
(2) 5CC
(2) 3CC
(1) SL
(1) SLG
(1) BB

(1) 3" PVC
(1) SP1
(4) SL
(1) SLG
(1) BB

W GULF BANK RD

(1) 4" PVC
(4) 7CC
(2) 5CC
(2) 3CC
(1) SL
(1) SLG
(1) BB

SW CORNER
SCALE: 1"=10'

(1) 4" PVC
(8) 7CC
(4) 5CC
(4) 3CC
(2) SL
(1) SLG
(1) BB

(1) 2" PVC
(2) 5CC
(1) 3CC
(1) BB

(1) 3" PVC
(4) 7CC
(1) 3CC
(1) SL
(1) SLG
(1) BB

SE CORNER
SCALE: 1"=10'

(1) 2" PVC
(2) 5CC
(1) 3CC
(1) BB

(1) 3" PVC
(4) 7CC
(1) 3CC
(1) SL
(1) SLG
(1) BB

(1) 2" PVC
(1) SP2
(1) BB

LEGEND

- SIGNAL HEAD
- OPTICOM
- POLE W/ MAST ARM
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- PULL BOX – TYPE A
- PULL BOX – TYPE B
- PULL BOX – TYPE C
- CONDUIT (TRENCH)
- CONDUIT (BORE)
- LUMINAIRE
- MAST ARM SIGN
- CONTROLLER CABINET WITH BBU
- ELECTRICAL SERVICE

N

0′ 20′ 40′
SCALE IN FEET

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TEXAS PE FIRM REG. # 3158
712 MAIN ST, #950
HOUSTON, TX 77002

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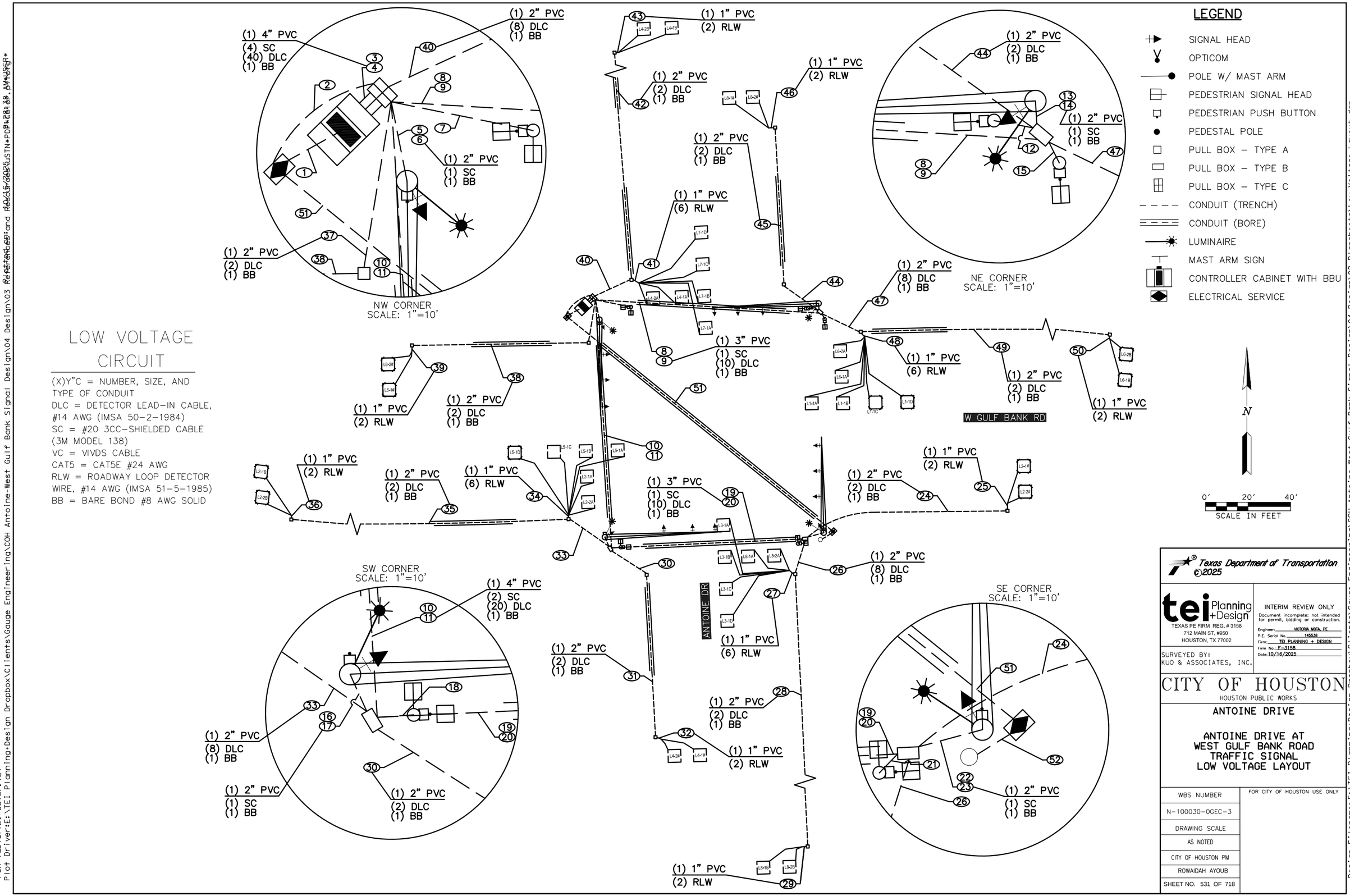
Engineer: VICTORIA MOTA, PE
P.E. Serial No. 145538
Firm: TEI PLANNING + DESIGN
Firm No.: F-3158
Date: 10/16/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ANTOINE DRIVE AT WEST GULF BANK ROAD TRAFFIC SIGNAL HIGH VOLTAGE LAYOUT

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 530 OF 718	



LOW VOLTAGE CIRCUIT

(X)Y"C = NUMBER, SIZE, AND TYPE OF CONDUIT
DLC = DETECTOR LEAD-IN CABLE, #14 AWG (IMSA 50-2-1984)
SC = #20 3CC-SHIELDED CABLE (3M MODEL 138)
VC = VIVDS CABLE
CAT5 = CAT5E #24 AWG
RLW = ROADWAY LOOP DETECTOR WIRE, #14 AWG (IMSA 51-5-1985)
BB = BARE BOND #8 AWG SOLID

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712 MAIN ST. #950
HOUSTON, TX 77002

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Firm: TEI PLANNING + DESIGN
Firm No.: F-3158
Date: 10/16/2025

SURVEYED BY:
KUO & ASSOCIATES, INC.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ANTOINE DRIVE AT WEST GULF BANK ROAD TRAFFIC SIGNAL LOW VOLTAGE LAYOUT

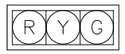
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 531 OF 718	

Pen Table:TEI*Color.tbl
Plot Driver:E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\04 Design\03 References and Resources\USTN*PDP*08:38 AM*USER*

Design Filename: E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\04 Design\02 Plansheets\Low Voltage Layout.dgn

SIGNAL HEAD SCHEDULE

3-SECTION HORIZONTAL
12" LED H3 SIGNAL HEAD



ø2, ø4, ø6, ø8

3-SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD



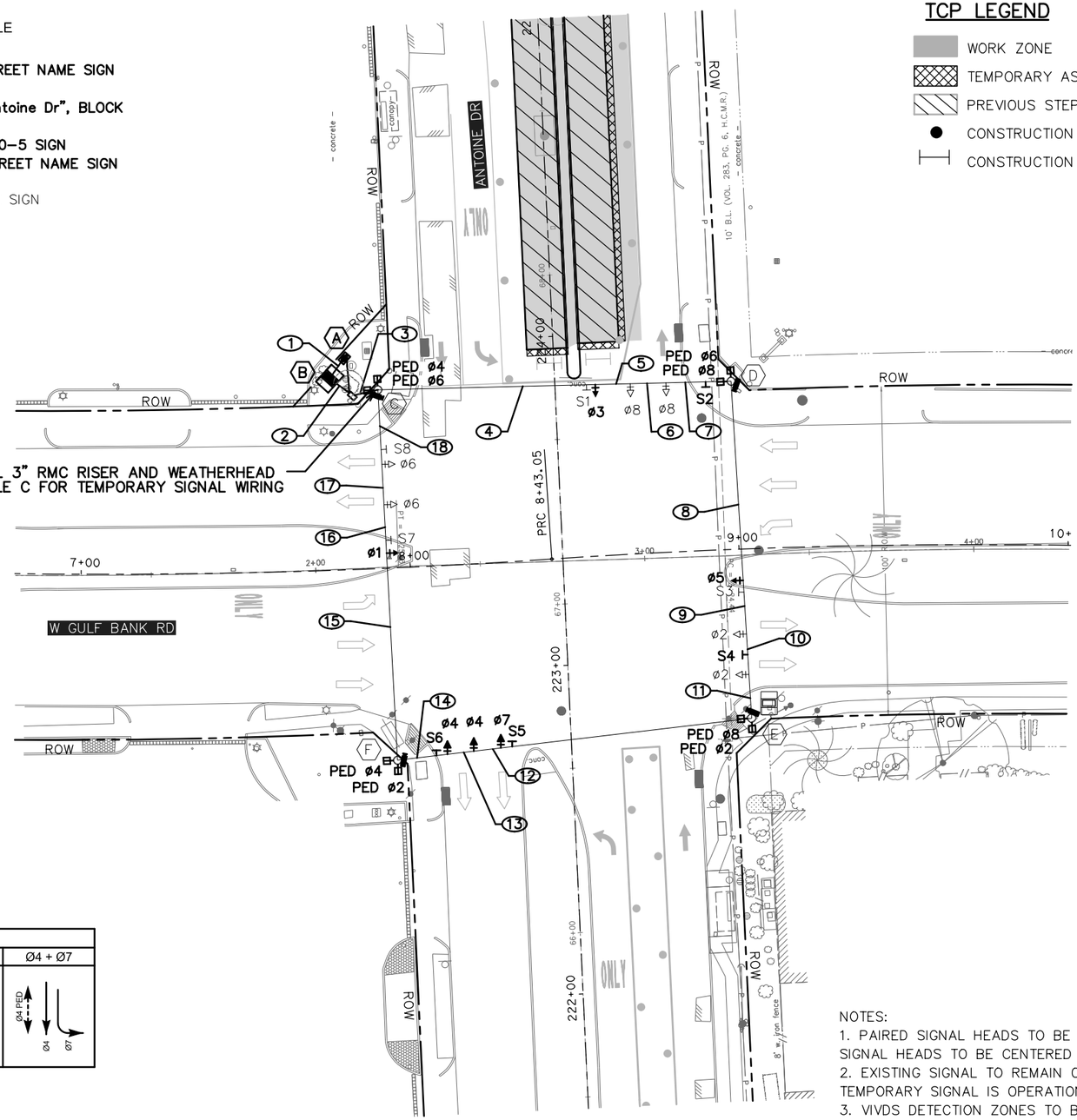
ø1, ø3, ø5, ø7

SIGN SCHEDULE

S1 = EXISTING R10-5 SIGN
S2 = RELOCATE EXISTING STREET NAME SIGN
S3 = EXISTING R10-5 SIGN
S4 = ADD STREET NAME "Antoine Dr", BLOCK NUMBERS 8000 AND 7900
S5 = RELOCATE EXISTING R10-5 SIGN
S6 = RELOCATE EXISTING STREET NAME SIGN
S7 = EXISTING R10-5 SIGN
S8 = EXISTING STREET NAME SIGN

POLE AND CABINET SCHEDULE

- (A) PROPOSED ELECTRICAL SERVICE
- (B) PROPOSED TEMPORARY SIGNAL CABINET
- (C) EXISTING POLE W/ PROPOSED PED ø4 AND PED ø6 AND VIVDS
- (D) EXISTING POLE W/ PROPOSED PED ø6 AND PED ø8 AND VIVDS
- (E) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø8 AND VIVDS
- (F) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø4 AND VIVDS



PHASE 1 STEP 2 TRAFFIC SIGNAL PHASING					
ø2 + ø5	ø2 + ø6	ø1 + ø6	ø3 + ø8	ø4 + ø8	ø4 + ø7
ø5, ø2, ø2 PED	ø6 PED, ø6, ø2, ø2 PED	ø6 PED, ø6, ø1	ø3, ø8, ø8 PED	ø4 PED, ø4, ø8, ø8 PED	ø4 PED, ø4, ø7

ITEM	RUN NUMBER	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
PED. SIGNAL	5CC #14 AWG SOLID CONDUCTOR CABLE		8	8	4	4	4	4	2	2	2	2				2	2	2	2
VEH. SIGNAL	7CC #14 AWG SOLID CONDUCTOR CABLE		12	12	6	5	4	3	3	2	1		1	2	3	3	4	5	6
GROUND BARE	BARE BOND #8 AWG SOLID	1	1	1															
POWER	SIGNAL POWER (SEE NOTE)	1																	
VIVDS	VIVDS		4	4	2	2	2	2	1	1	1	1				1	1	1	1
CONDUIT	1 INCH PVC				SPAN	SPAN	SPAN	SPAN	SPAN	SPAN	SPAN	SPAN	SPAN	SPAN	SPAN	SPAN	SPAN	SPAN	SPAN
	2 INCH PVC	1																	
	3 INCH PVC		1	1															
	4 INCH PVC																		

TCP LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUS STEP
- CONSTRUCTION BARREL
- CONSTRUCTION BARRICADE

LEGEND

- SIGNAL HEAD
- OPTICOM
- POLE W/ MAST ARM
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- PULL BOX – TYPE A
- PULL BOX – TYPE B
- PULL BOX – TYPE C
- CONDUIT (TRENCH)
- CONDUIT (BORE)
- LUMINAIRE
- MAST ARM SIGN
- CONTROLLER CABINET WITH BBU
- ELECTRICAL SERVICE
- BAGGED SIGNAL HEAD
- BAGGED SIGN
- VIVDS CAMERA

N

0' 20' 40'
SCALE IN FEET

NOTES:
1. PAIRED SIGNAL HEADS TO BE 10' APART. LEFT-TURN SIGNAL HEADS TO BE CENTERED IN APPROACH LANE.
2. EXISTING SIGNAL TO REMAIN OPERATIONAL UNTIL TEMPORARY SIGNAL IS OPERATIONAL.
3. VIVDS DETECTION ZONES TO BE ADJUSTED FOR EACH PHASE.
4. PED PHASE RECALL ACTIVE DURING ALL CONSTRUCTION PHASES.
5. TEMPORARY SIGNAL CABINET TO BE INSTALLED FOR TEMPORARY TRAFFIC SIGNAL.
6. CONTRACTOR TO COORDINATE ELECTRICAL SERVICE FOR TEMPORARY TRAFFIC SIGNAL.

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712 MAIN ST, #950
HOUSTON, TX 77002

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P.E. Serial No. 145538
Firm: TEI PLANNING + DESIGN
Firm No.: F-3158
Date: 10/16/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

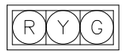
ANTOINE DRIVE AT WEST GULF BANK ROAD TRAFFIC SIGNAL TEMPORARY SIGNAL LAYOUT PHASE 1 STEP 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 532 OF 718	

Pen Table:TEI*Color.tbl
Plot Driver:E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\03 Reference and Resources\TxDOT\USTN*PDP*8.10.07.AM.USER*
Design Filename: E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\04 Design\02 Plansheets\Temporary Signal Layout Sheet 1.dgn

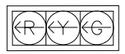
SIGNAL HEAD SCHEDULE

3-SECTION HORIZONTAL
12" LED H3 SIGNAL HEAD



ø2, ø4, ø6, ø8

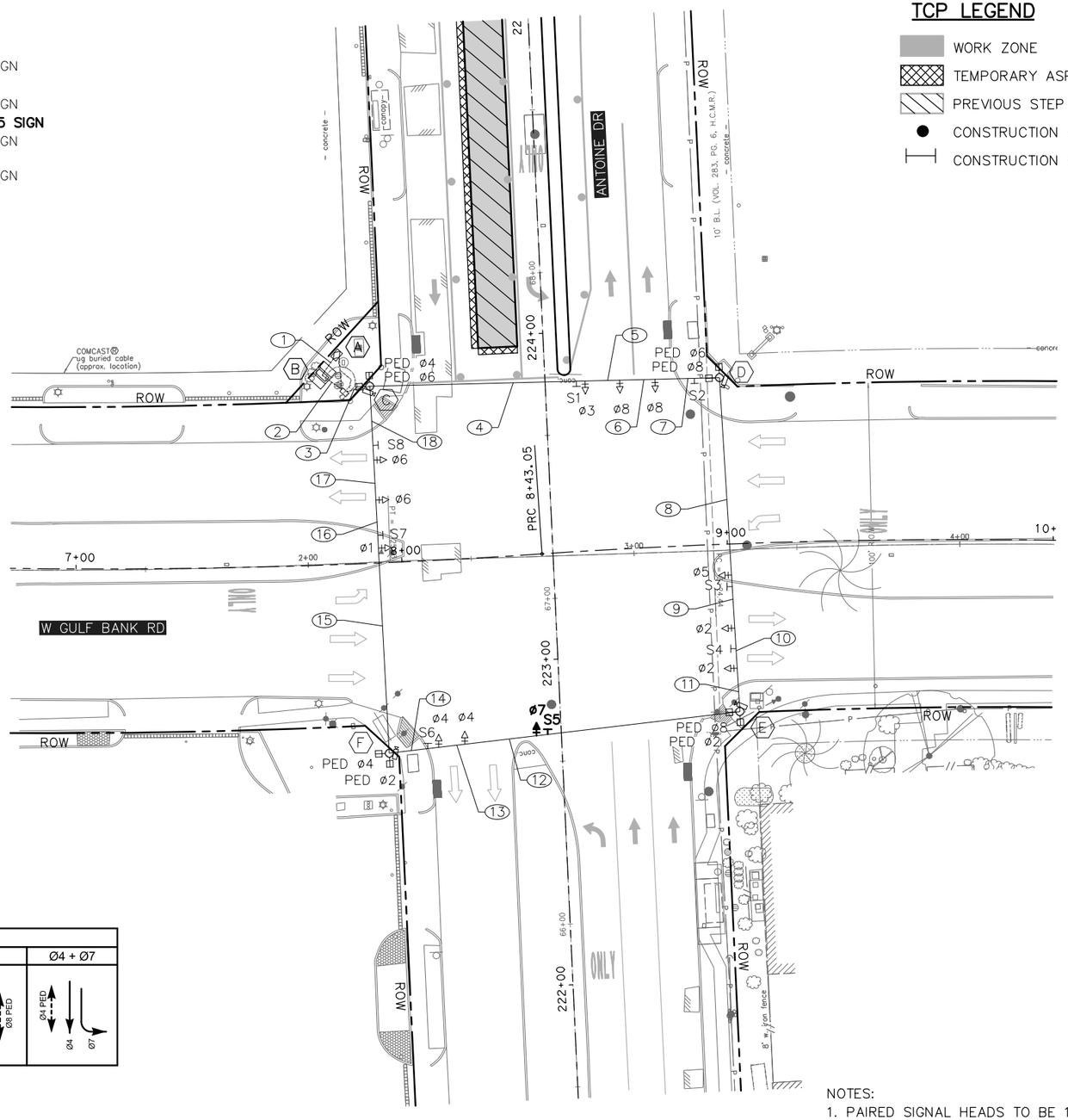
3-SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD

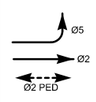
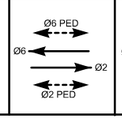
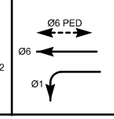
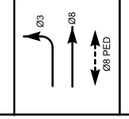
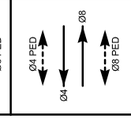


ø1, ø3, ø5, ø7

SIGN SCHEDULE

S1 = EXISTING R10-5 SIGN
S2 = EXISTING STREET NAME SIGN
S3 = EXISTING R10-5 SIGN
S4 = EXISTING STREET NAME SIGN
S5 = RELOCATE EXISTING R10-5 SIGN
S6 = EXISTING STREET NAME SIGN
S7 = EXISTING R10-5 SIGN
S8 = EXISTING STREET NAME SIGN



PHASE 1 STEP 3 TRAFFIC SIGNAL PHASING					
ø2 + ø5	ø2 + ø6	ø1 + ø6	ø3 + ø8	ø4 + ø8	ø4 + ø7
					

POLE AND CABINET SCHEDULE

- (A) PROPOSED ELECTRICAL SERVICE
- (B) PROPOSED TEMPORARY SIGNAL CABINET
- (C) EXISTING POLE W/ PROPOSED PED ø4 AND PED ø6 AND VIVDS
- (D) EXISTING POLE W/ PROPOSED PED ø6 AND PED ø8 AND VIVDS
- (E) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø8 AND VIVDS
- (F) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø4 AND VIVDS

TCP LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUS STEP
- CONSTRUCTION BARREL
- CONSTRUCTION BARRICADE

LEGEND

- SIGNAL HEAD
- OPTICOM
- POLE W/ MAST ARM
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- PULL BOX – TYPE A
- PULL BOX – TYPE B
- PULL BOX – TYPE C
- CONDUIT (TRENCH)
- CONDUIT (BORE)
- LUMINAIRE
- MAST ARM SIGN
- CONTROLLER CABINET WITH BBU
- ELECTRICAL SERVICE
- BAGGED SIGNAL HEAD
- BAGGED SIGN
- VIVDS CAMERA

N

0′ 20′ 40′
SCALE IN FEET

NOTES:
1. PAIRED SIGNAL HEADS TO BE 10' APART.
2. EXISTING SIGNAL TO REMAIN OPERATIONAL UNTIL TEMPORARY SIGNAL IS OPERATIONAL.
3. VIVDS DETECTION ZONES TO BE ADJUSTED FOR EACH PHASE.
4. PED PHASE RECALL ACTIVE DURING ALL CONSTRUCTION PHASES.
5. TEMPORARY SIGNAL CABINET TO BE INSTALLED FOR TEMPORARY TRAFFIC SIGNAL.
6. CONTRACTOR TO COORDINATE ELECTRICAL SERVICE FOR TEMPORARY TRAFFIC SIGNAL.

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Firm No.: F-3158
Date: 10/16/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

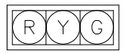
ANTOINE DRIVE AT WEST GULF BANK ROAD TRAFFIC SIGNAL TEMPORARY SIGNAL LAYOUT PHASE 1 STEP 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 533 OF 718	

Pen Table:TEI*Color.tbl
Plot Driver:E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\03 Reference\Signal and Roadway Plans*.*
Design Filename: E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\04 Design\02 Plansheets\Temporary Signal Layout Sheet 2.dgn

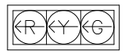
SIGNAL HEAD SCHEDULE

3-SECTION HORIZONTAL
12" LED H3 SIGNAL HEAD



ø2, ø4, ø6, ø8

3-SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD

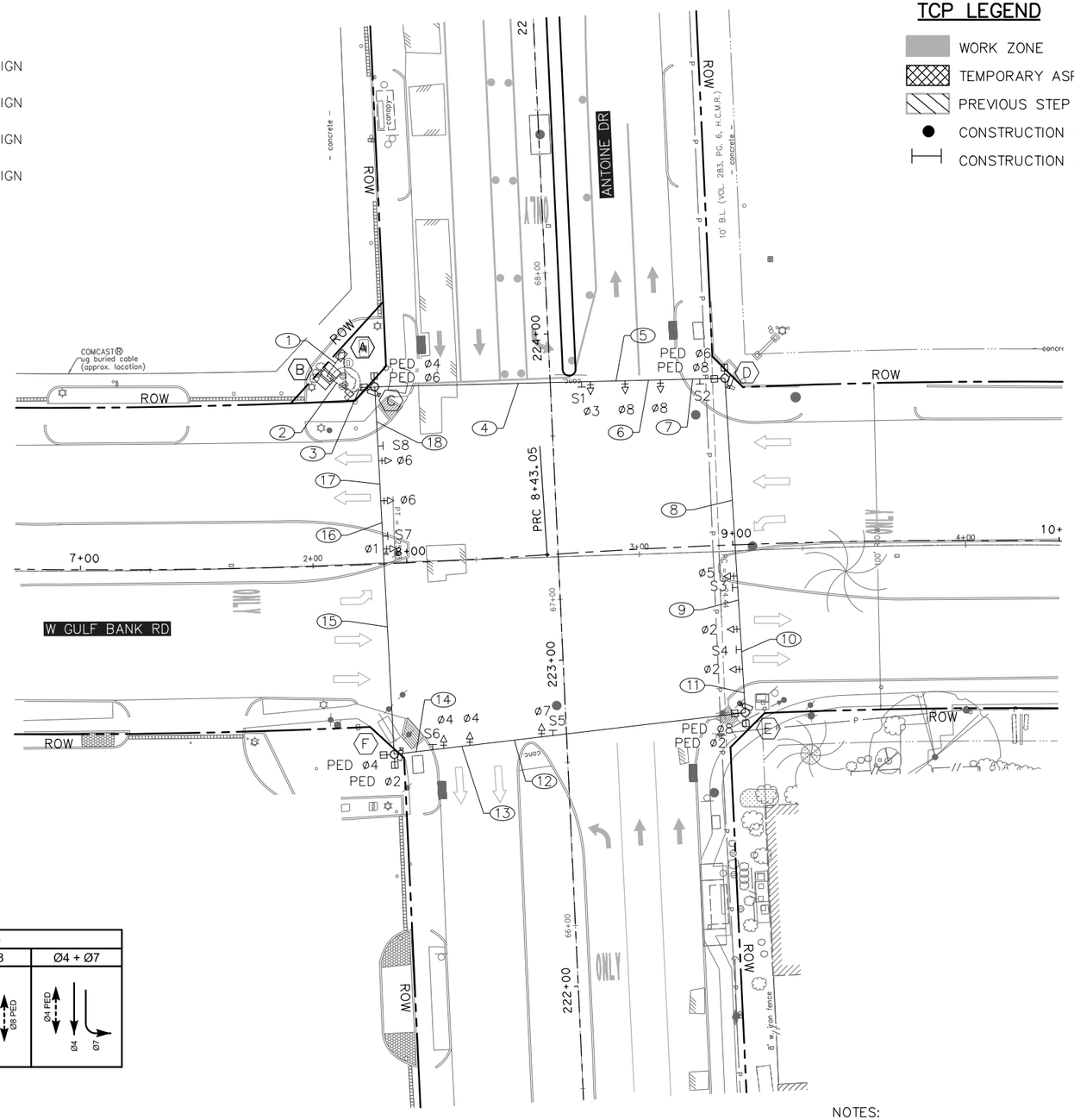


ø1, ø3, ø5, ø7

NOTE:
NO CHANGE FROM PHASE 1, STEP 3 LAYOUT.

SIGN SCHEDULE

S1 = EXISTING R10-5 SIGN
S2 = EXISTING STREET NAME SIGN
S3 = EXISTING R10-5 SIGN
S4 = EXISTING STREET NAME SIGN
S5 = EXISTING R10-5 SIGN
S6 = EXISTING STREET NAME SIGN
S7 = EXISTING R10-5 SIGN
S8 = EXISTING STREET NAME SIGN



TCP LEGEND

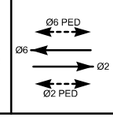
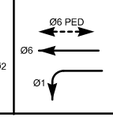
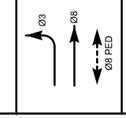
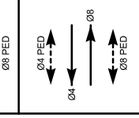
- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUS STEP
- CONSTRUCTION BARREL
- CONSTRUCTION BARRICADE

LEGEND

- SIGNAL HEAD
- OPTICOM
- POLE W/ MAST ARM
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- PULL BOX – TYPE A
- PULL BOX – TYPE B
- PULL BOX – TYPE C
- CONDUIT (TRENCH)
- CONDUIT (BORE)
- LUMINAIRE
- MAST ARM SIGN
- CONTROLLER CABINET WITH BBU
- ELECTRICAL SERVICE
- BAGGED SIGNAL HEAD
- BAGGED SIGN
- VIVDS CAMERA

N

0′ 20′ 40′
SCALE IN FEET

PHASE 1 STEP 4-10 TRAFFIC SIGNAL PHASING					
Ø2 + Ø5	Ø2 + Ø6	Ø1 + Ø6	Ø3 + Ø8	Ø4 + Ø8	Ø4 + Ø7
					

POLE AND CABINET SCHEDULE

- (A) PROPOSED ELECTRICAL SERVICE
- (B) PROPOSED TEMPORARY SIGNAL CABINET
- (C) EXISTING POLE W/ PROPOSED PED ø4 AND PED ø6 AND VIVDS
- (D) EXISTING POLE W/ PROPOSED PED ø6 AND PED ø8 AND VIVDS
- (E) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø8 AND VIVDS
- (F) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø4 AND VIVDS

NOTES:
1. PAIRED SIGNAL HEADS TO BE 10' APART.
2. EXISTING SIGNAL TO REMAIN OPERATIONAL UNTIL TEMPORARY SIGNAL IS OPERATIONAL.
3. VIVDS DETECTION ZONES TO BE ADJUSTED FOR EACH PHASE.
4. PED PHASE RECALL ACTIVE DURING ALL CONSTRUCTION PHASES.
5. TEMPORARY SIGNAL CABINET TO BE INSTALLED FOR TEMPORARY TRAFFIC SIGNAL.
6. CONTRACTOR TO COORDINATE ELECTRICAL SERVICE FOR TEMPORARY TRAFFIC SIGNAL.

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tei Planning + Design
TEXAS PE FIRM REG. # 3158
712 MAIN ST, #950
HOUSTON, TX 77002

SURVEYED BY:
KUO & ASSOCIATES, INC.

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Engineer: VICTORIA MOTA, PE
P.E. Serial No. 145538
Firm: TEI PLANNING + DESIGN
Firm No.: F-3158
Date: 10/16/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ANTOINE DRIVE AT WEST GULF BANK ROAD TRAFFIC SIGNAL TEMPORARY SIGNAL LAYOUT PHASE 1 STEP 4-10

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 534 OF 718	

Pen Table:TEI*Color.tbl
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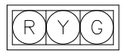
Design Filename: E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\04 Design\02 Plansheets\Temporary Signal Layout Sheet 3.dgn

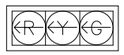
SIGNAL HEAD SCHEDULE

3-SECTION HORIZONTAL
12" LED H3 SIGNAL HEAD



ø2, ø4, ø6, ø8

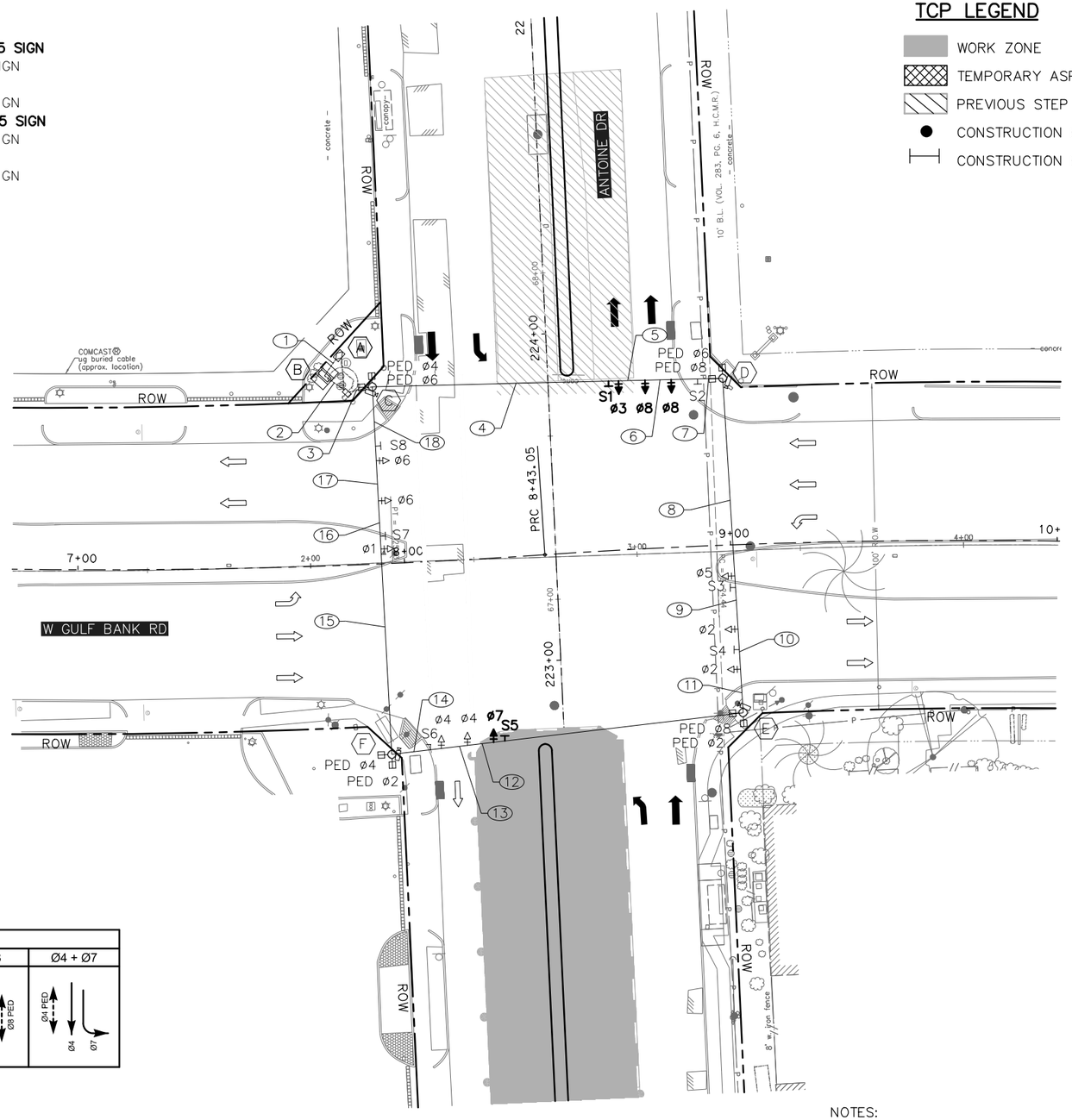
3-SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD



ø1, ø3, ø5, ø7

SIGN SCHEDULE

S1 = RELOCATE EXISTING R10-5 SIGN
S2 = EXISTING STREET NAME SIGN
S3 = EXISTING R10-5 SIGN
S4 = EXISTING STREET NAME SIGN
S5 = RELOCATE EXISTING R10-5 SIGN
S6 = EXISTING STREET NAME SIGN
S7 = EXISTING R10-5 SIGN
S8 = EXISTING STREET NAME SIGN



TCP LEGEND

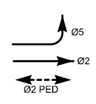
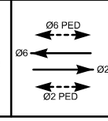
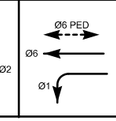
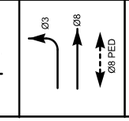
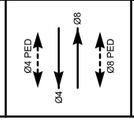
- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUS STEP
- CONSTRUCTION BARREL
- CONSTRUCTION BARRICADE

LEGEND

- SIGNAL HEAD
- OPTICOM
- POLE W/ MAST ARM
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- PULL BOX – TYPE A
- PULL BOX – TYPE B
- PULL BOX – TYPE C
- CONDUIT (TRENCH)
- CONDUIT (BORE)
- LUMINAIRE
- MAST ARM SIGN
- CONTROLLER CABINET WITH BBU
- ELECTRICAL SERVICE
- BAGGED SIGNAL HEAD
- BAGGED SIGN
- VIVDS CAMERA

N

0′ 20′ 40′
SCALE IN FEET

PHASE 2 STEP 5 TRAFFIC SIGNAL PHASING					
Ø2 + Ø5	Ø2 + Ø6	Ø1 + Ø6	Ø3 + Ø8	Ø4 + Ø8	Ø4 + Ø7
					

POLE AND CABINET SCHEDULE

- (A) PROPOSED ELECTRICAL SERVICE
- (B) PROPOSED TEMPORARY SIGNAL CABINET
- (C) EXISTING POLE W/ PROPOSED PED ø4 AND PED ø6 AND VIVDS
- (D) EXISTING POLE W/ PROPOSED PED ø6 AND PED ø8 AND VIVDS
- (E) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø8 AND VIVDS
- (F) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø4 AND VIVDS

NOTES:
1. PAIRED SIGNAL HEADS TO BE 10' APART.
2. EXISTING SIGNAL TO REMAIN OPERATIONAL UNTIL TEMPORARY SIGNAL IS OPERATIONAL.
3. VIVDS DETECTION ZONES TO BE ADJUSTED FOR EACH PHASE.
4. PED PHASE RECALL ACTIVE DURING ALL CONSTRUCTION PHASES.
5. TEMPORARY SIGNAL CABINET TO BE INSTALLED FOR TEMPORARY TRAFFIC SIGNAL.
6. CONTRACTOR TO COORDINATE ELECTRICAL SERVICE FOR TEMPORARY TRAFFIC SIGNAL.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

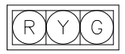
ANTOINE DRIVE AT WEST GULF BANK ROAD TRAFFIC SIGNAL TEMPORARY SIGNAL LAYOUT PHASE 2 STEP 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 535 OF 718	

Design Filename: E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\04 Design\02 Plansheets\Temporary Signal Layout Sheet 4.dgn
Pen Table:TEI*Color.tbl
Plot Driver:E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\03 Reference and Resources\USTN*PDP*8816.prd, AMUSER*

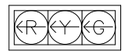
SIGNAL HEAD SCHEDULE

3-SECTION HORIZONTAL
12" LED H3 SIGNAL HEAD



ø2, ø4, ø6, ø8

3-SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD

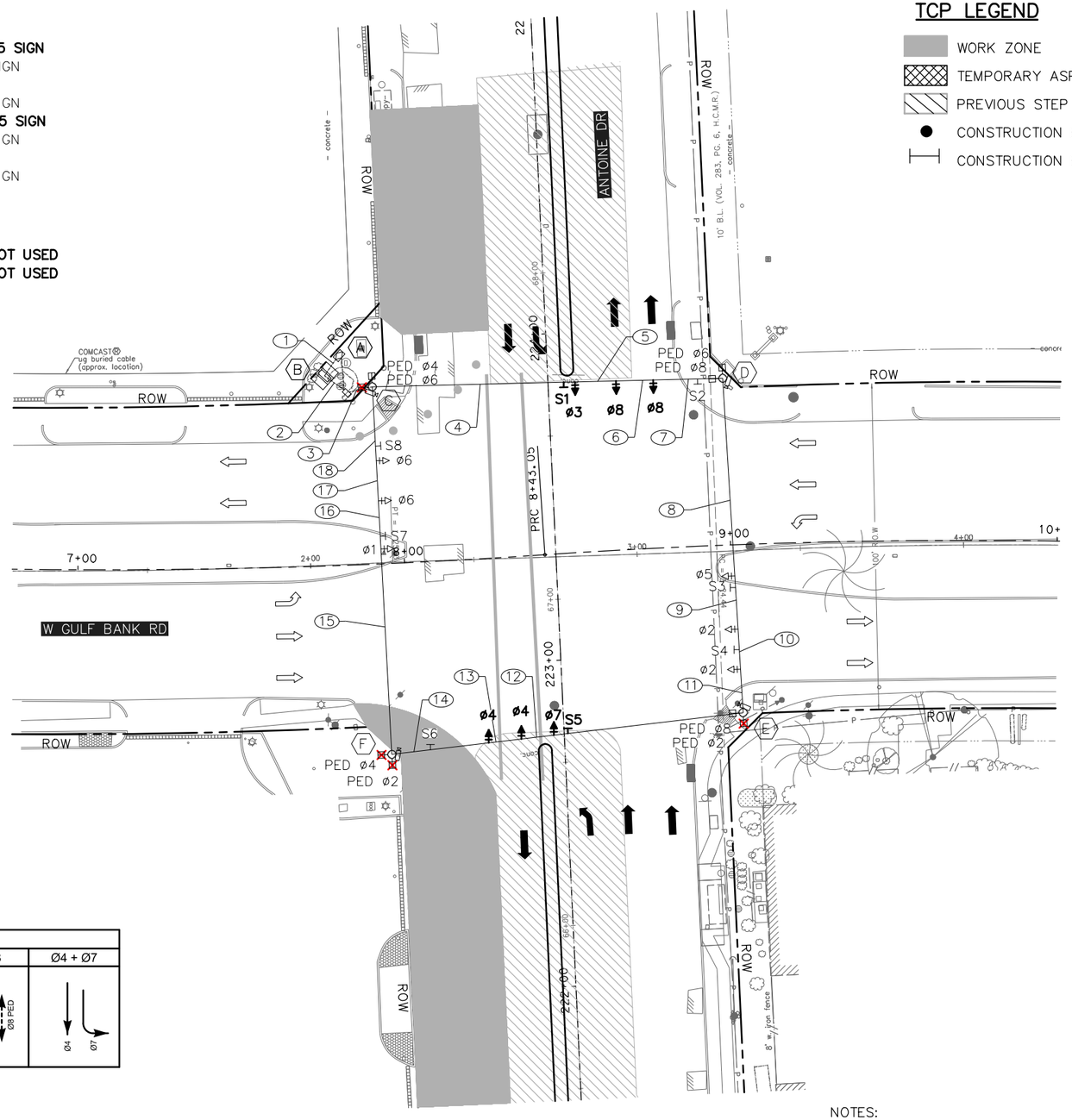


ø1, ø3, ø5, ø7

SIGN SCHEDULE

S1 = RELOCATE EXISTING R10-5 SIGN
S2 = EXISTING STREET NAME SIGN
S3 = EXISTING R10-5 SIGN
S4 = EXISTING STREET NAME SIGN
S5 = RELOCATE EXISTING R10-5 SIGN
S6 = EXISTING STREET NAME SIGN
S7 = EXISTING R10-5 SIGN
S8 = EXISTING STREET NAME SIGN

BAG UNUSED SIGNAL HEADS
PHASE 2 PEDESTRIAN PHASE NOT USED
PHASE 4 PEDESTRIAN PHASE NOT USED



TCP LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUS STEP
- CONSTRUCTION BARREL
- CONSTRUCTION BARRICADE

LEGEND

- SIGNAL HEAD
- OPTICOM
- POLE W/ MAST ARM
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- PULL BOX – TYPE A
- PULL BOX – TYPE B
- PULL BOX – TYPE C
- CONDUIT (TRENCH)
- CONDUIT (BORE)
- LUMINAIRE
- MAST ARM SIGN
- CONTROLLER CABINET WITH BBU
- ELECTRICAL SERVICE
- BAGGED SIGNAL HEAD
- BAGGED SIGN
- VIVDS CAMERA

N

0′ 20′ 40′
SCALE IN FEET

PHASE 3 STEP 1 TRAFFIC SIGNAL PHASING					
Ø2 + Ø5	Ø2 + Ø6	Ø1 + Ø6	Ø3 + Ø8	Ø4 + Ø8	Ø4 + Ø7
Ø5, Ø2	Ø6 PED, Ø6, Ø2	Ø6 PED, Ø6, Ø1	Ø3, Ø8, Ø8 PED	Ø4, Ø8, Ø8 PED	Ø4, Ø7

POLE AND CABINET SCHEDULE

- (A) PROPOSED ELECTRICAL SERVICE
- (B) PROPOSED TEMPORARY SIGNAL CABINET
- (C) EXISTING POLE W/ PROPOSED PED ø4 AND PED ø6 AND VIVDS
- (D) EXISTING POLE W/ PROPOSED PED ø6 AND PED ø8 AND VIVDS
- (E) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø8 AND VIVDS
- (F) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø4 AND VIVDS

NOTES:
1. PAIRED SIGNAL HEADS TO BE 10' APART.
2. EXISTING SIGNAL TO REMAIN OPERATIONAL UNTIL TEMPORARY SIGNAL IS OPERATIONAL.
3. VIVDS DETECTION ZONES TO BE ADJUSTED FOR EACH PHASE.
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6. CONTRACTOR TO COORDINATE ELECTRICAL SERVICE FOR TEMPORARY TRAFFIC SIGNAL.

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HOUSTON, TX 77002

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P.E. Serial No. 145538
Firm: TEI PLANNING + DESIGN
Firm No.: F-3158
Date: 10/16/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

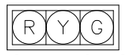
ANTOINE DRIVE AT WEST GULF BANK ROAD TRAFFIC SIGNAL TEMPORARY SIGNAL LAYOUT PHASE 3 STEP 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 536 OF 718	

Pen Table:TEI*Color.tbl
Plot Driver:E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\03 Reference\Signal and Roadway Plans*.tbl
Design Filename: E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\04 Design\02 Plansheets\Temporary Signal Layout Sheet 10_new sheet 5.dgn

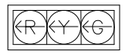
SIGNAL HEAD SCHEDULE

3-SECTION HORIZONTAL
12" LED H3 SIGNAL HEAD



ø2, ø4, ø6, ø8

3-SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD

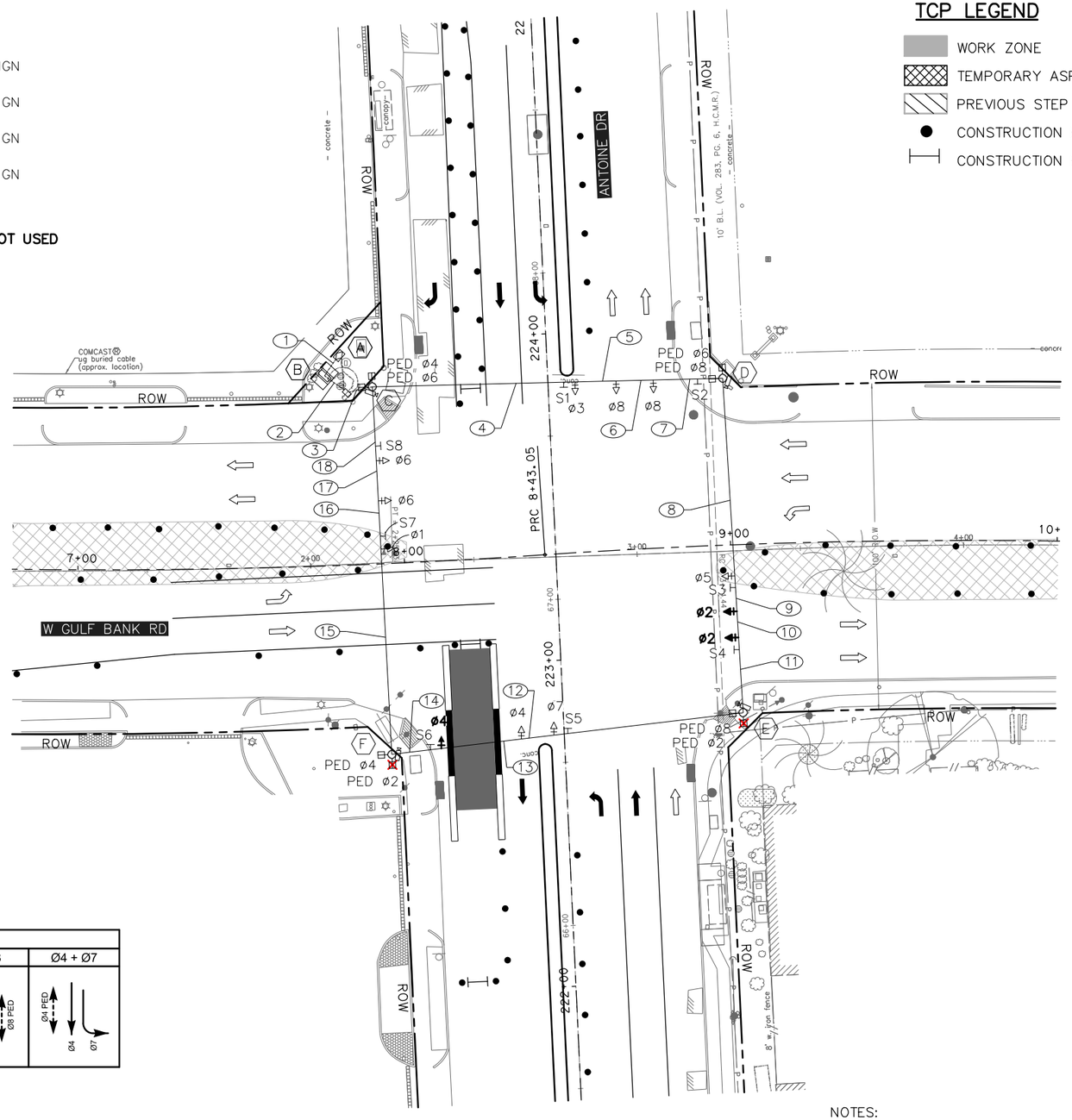


ø1, ø3, ø5, ø7

SIGN SCHEDULE

S1 = EXISTING R10-5 SIGN
S2 = EXISTING STREET NAME SIGN
S3 = EXISTING R10-5 SIGN
S4 = EXISTING STREET NAME SIGN
S5 = EXISTING R10-5 SIGN
S6 = EXISTING STREET NAME SIGN
S7 = EXISTING R10-5 SIGN
S8 = EXISTING STREET NAME SIGN

BAG UNUSED SIGNAL HEADS
PHASE 2 PEDESTRIAN PHASE NOT USED



PHASE 4 STEP 1 TRAFFIC SIGNAL PHASING					
Ø2 + Ø5	Ø2 + Ø6	Ø1 + Ø6	Ø3 + Ø8	Ø4 + Ø8	Ø4 + Ø7
Ø5, Ø2	Ø6 PED, Ø6, Ø2	Ø6 PED, Ø6, Ø1	Ø3, Ø8, Ø8 PED	Ø4 PED, Ø4, Ø8, Ø8 PED	Ø4 PED, Ø4, Ø7

POLE AND CABINET SCHEDULE

(A) PROPOSED ELECTRICAL SERVICE
(B) PROPOSED TEMPORARY SIGNAL CABINET
(C) EXISTING POLE W/ PROPOSED PED ø4 AND PED ø6 AND VIVDS
(D) EXISTING POLE W/ PROPOSED PED ø6 AND PED ø8 AND VIVDS
(E) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø8 AND VIVDS
(F) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø4 AND VIVDS

TCP LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUS STEP
- CONSTRUCTION BARREL
- CONSTRUCTION BARRICADE

LEGEND

- SIGNAL HEAD
- OPTICOM
- POLE W/ MAST ARM
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- PULL BOX – TYPE A
- PULL BOX – TYPE B
- PULL BOX – TYPE C
- CONDUIT (TRENCH)
- CONDUIT (BORE)
- LUMINAIRE
- MAST ARM SIGN
- CONTROLLER CABINET WITH BBU
- ELECTRICAL SERVICE
- BAGGED SIGNAL HEAD
- BAGGED SIGN
- VIVDS CAMERA

N

0′ 20′ 40′
SCALE IN FEET

NOTES:
1. PAIRED SIGNAL HEADS TO BE 10' APART.
2. EXISTING SIGNAL TO REMAIN OPERATIONAL UNTIL TEMPORARY SIGNAL IS OPERATIONAL.
3. VIVDS DETECTION ZONES TO BE ADJUSTED FOR EACH PHASE.
4. PED PHASE RECALL ACTIVE DURING ALL CONSTRUCTION PHASES.
5. TEMPORARY SIGNAL CABINET TO BE INSTALLED FOR TEMPORARY TRAFFIC SIGNAL.
6. CONTRACTOR TO COORDINATE ELECTRICAL SERVICE FOR TEMPORARY TRAFFIC SIGNAL.

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Date: 10/16/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

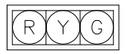
ANTOINE DRIVE AT WEST GULF BANK ROAD TRAFFIC SIGNAL TEMPORARY SIGNAL LAYOUT PHASE 4 STEP 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 537 OF 718	

Pen Table:TEI*Color.tbl
Plot Driver:E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\03 Reference\...
Design Filename: E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\04 Design\02 Plansheets\Temporary Signal Layout Sheet 9_now sheet 6.dgn

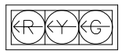
SIGNAL HEAD SCHEDULE

3-SECTION HORIZONTAL
12" LED H3 SIGNAL HEAD



ø2, ø4, ø6, ø8

3-SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD



ø1, ø3, ø7

4-SECTION HORIZONTAL
12" LED H4TL SIGNAL HEAD

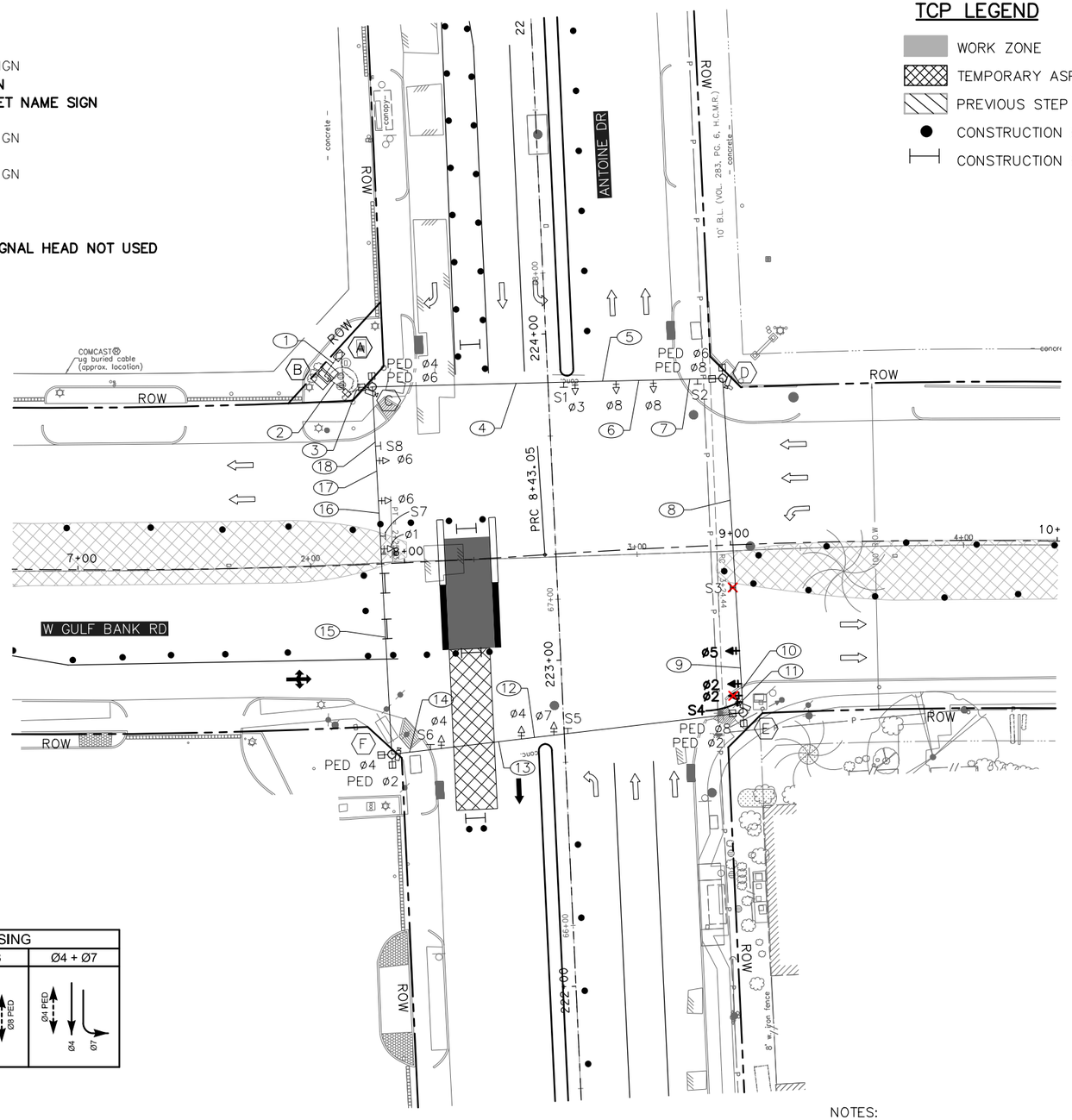


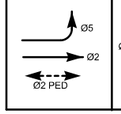
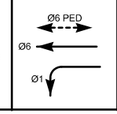
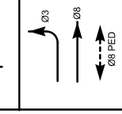
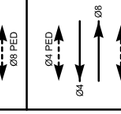
ø5

SIGN SCHEDULE

S1 = EXISTING R10-5 SIGN
S2 = EXISTING STREET NAME SIGN
S3 = BAG EXISTING R10-5 SIGN
S4 = RELOCATE EXISTING STREET NAME SIGN
S5 = EXISTING R10-5 SIGN
S6 = EXISTING STREET NAME SIGN
S7 = EXISTING R10-5 SIGN
S8 = EXISTING STREET NAME SIGN

BAG UNUSED SIGNAL HEADS
PHASE 2 VEHICLE PHASE H3 SIGNAL HEAD NOT USED



PHASE 4 STEP 2 TRAFFIC SIGNAL PHASING				
ø2 + ø5	ø1 + ø6	ø3 + ø8	ø4 + ø8	ø4 + ø7
				

POLE AND CABINET SCHEDULE

- (A) PROPOSED ELECTRICAL SERVICE
- (B) PROPOSED TEMPORARY SIGNAL CABINET
- (C) EXISTING POLE W/ PROPOSED PED ø4 AND PED ø6 AND VIVDS
- (D) EXISTING POLE W/ PROPOSED PED ø6 AND PED ø8 AND VIVDS
- (E) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø8 AND VIVDS
- (F) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø4 AND VIVDS

NOTES:
1. PAIRED SIGNAL HEADS TO BE 10' APART.
2. EXISTING SIGNAL TO REMAIN OPERATIONAL UNTIL TEMPORARY SIGNAL IS OPERATIONAL.
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4. PED PHASE RECALL ACTIVE DURING ALL CONSTRUCTION PHASES.
5. TEMPORARY SIGNAL CABINET TO BE INSTALLED FOR TEMPORARY TRAFFIC SIGNAL.
6. CONTRACTOR TO COORDINATE ELECTRICAL SERVICE FOR TEMPORARY TRAFFIC SIGNAL.

TCP LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUS STEP
- CONSTRUCTION BARREL
- CONSTRUCTION BARRICADE

LEGEND

- SIGNAL HEAD
- OPTICOM
- POLE W/ MAST ARM
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- PULL BOX – TYPE A
- PULL BOX – TYPE B
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- CONDUIT (TRENCH)
- CONDUIT (BORE)
- LUMINAIRE
- MAST ARM SIGN
- CONTROLLER CABINET WITH BBU
- ELECTRICAL SERVICE
- BAGGED SIGNAL HEAD
- BAGGED SIGN
- VIVDS CAMERA

N

0' 20' 40'
SCALE IN FEET

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Firm: TEI PLANNING + DESIGN
Firm No.: F-3158
Date: 10/16/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ANTOINE DRIVE AT WEST GULF BANK ROAD TRAFFIC SIGNAL TEMPORARY SIGNAL LAYOUT PHASE 4 STEP 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 538 OF 718	

Pen Table:TEI*Color.tbl
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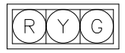
Design Filename: E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\04 Designsheets\Temporary Signal Layout Sheet 8_now sheet 7.dgn

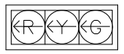
SIGNAL HEAD SCHEDULE

3–SECTION HORIZONTAL
12" LED H3 SIGNAL HEAD



ø2, ø4, ø6, ø8

3–SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD



ø1, ø7

3–SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD



ø5

4–SECTION HORIZONTAL
12" LED H4TL SIGNAL HEAD

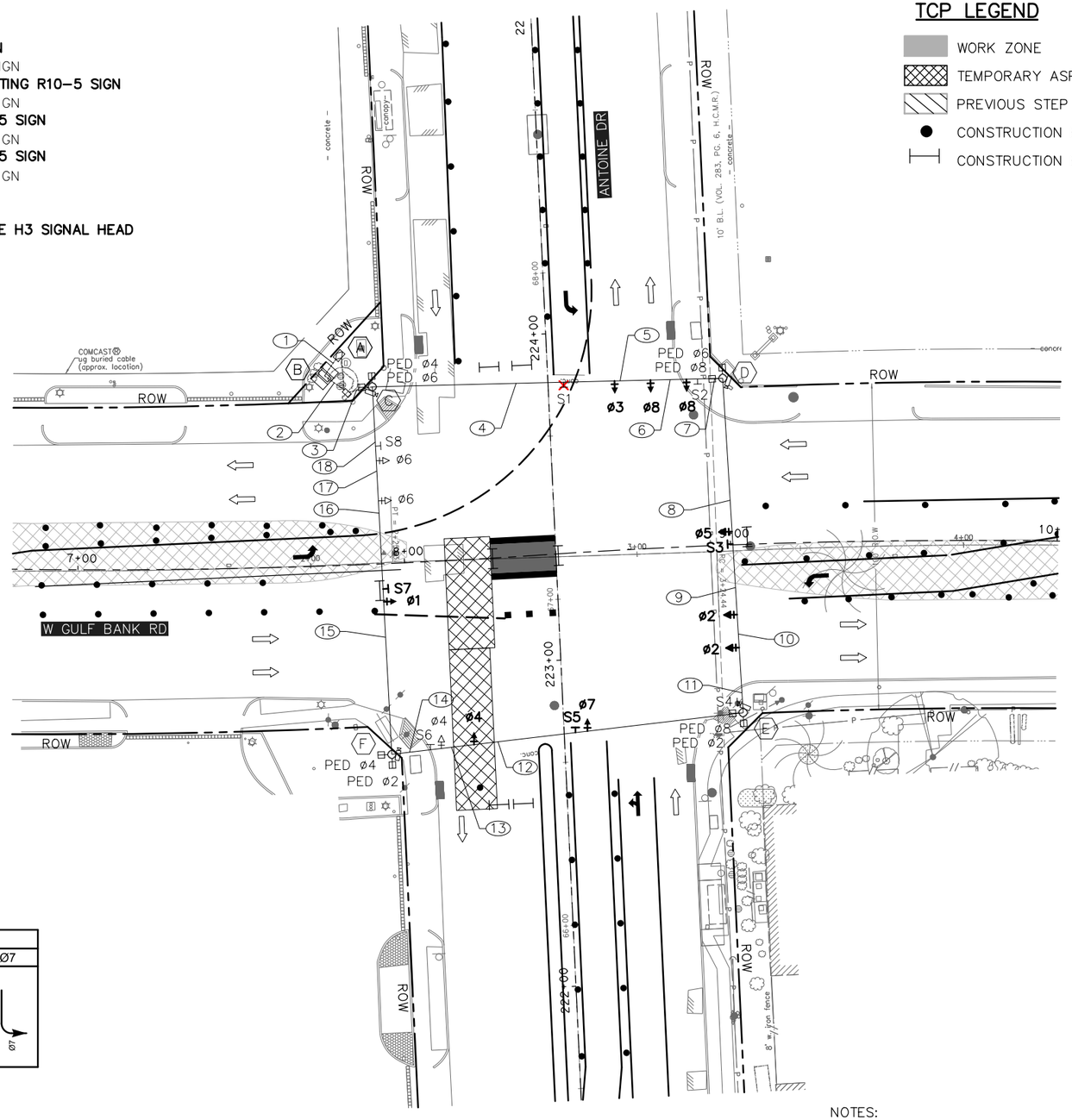


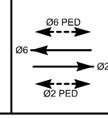
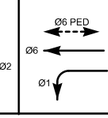
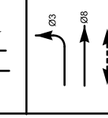
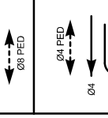
ø3

SIGN SCHEDULE

S1 = BAG EXISTING R10–5 SIGN
S2 = EXISTING STREET NAME SIGN
S3 = UNBAG & RELOCATE EXISTING R10–5 SIGN
S4 = EXISTING STREET NAME SIGN
S5 = RELOCATE EXISTING R10–5 SIGN
S6 = EXISTING STREET NAME SIGN
S7 = RELOCATE EXISTING R10–5 SIGN
S8 = EXISTING STREET NAME SIGN

UNBAG PHASE 2 VEHICLE PHASE H3 SIGNAL HEAD



PHASE 4 STEP 3-1 TRAFFIC SIGNAL PHASING				
Ø2 + Ø5	Ø2 + Ø6	Ø1 + Ø6	Ø3 + Ø8	Ø4 + Ø7
				

POLE AND CABINET SCHEDULE

- (A) PROPOSED ELECTRICAL SERVICE
- (B) PROPOSED TEMPORARY SIGNAL CABINET
- (C) EXISTING POLE W/ PROPOSED PED ø4 AND PED ø6 AND VIVDS
- (D) EXISTING POLE W/ PROPOSED PED ø6 AND PED ø8 AND VIVDS
- (E) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø8 AND VIVDS
- (F) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø4 AND VIVDS

TCP LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUS STEP
- CONSTRUCTION BARREL
- CONSTRUCTION BARRICADE

LEGEND

- SIGNAL HEAD
- OPTICOM
- POLE W/ MAST ARM
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- PULL BOX – TYPE A
- PULL BOX – TYPE B
- PULL BOX – TYPE C
- CONDUIT (TRENCH)
- CONDUIT (BORE)
- LUMINAIRE
- MAST ARM SIGN
- CONTROLLER CABINET WITH BBU
- ELECTRICAL SERVICE
- BAGGED SIGNAL HEAD
- BAGGED SIGN
- VIVDS CAMERA

N

0′ 20′ 40′
SCALE IN FEET

NOTES:
1. PAIRED SIGNAL HEADS TO BE 10' APART.
2. EXISTING SIGNAL TO REMAIN OPERATIONAL UNTIL TEMPORARY SIGNAL IS OPERATIONAL.
3. VIVDS DETECTION ZONES TO BE ADJUSTED FOR EACH PHASE.
4. PED PHASE RECALL ACTIVE DURING ALL CONSTRUCTION PHASES.
5. TEMPORARY SIGNAL CABINET TO BE INSTALLED FOR TEMPORARY TRAFFIC SIGNAL.
6. CONTRACTOR TO COORDINATE ELECTRICAL SERVICE FOR TEMPORARY TRAFFIC SIGNAL.

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tei Planning + Design
TEXAS PE FIRM REG. # 3158
712 MAIN ST, #950
HOUSTON, TX 77002

SURVEYED BY:
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Engineer: VICTORIA MOTA, PE
P.E. Serial No. 145539
Firm: TEI PLANNING + DESIGN
Firm No.: F-3158
Date: 10/16/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ANTOINE DRIVE AT WEST GULF BANK ROAD TRAFFIC SIGNAL TEMPORARY SIGNAL LAYOUT PHASE 4 STEP 3-1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 539 OF 718	

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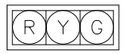
Design Filename: E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\04 Design\02 Plansheets\Temporary Signal Layout Sheet 7_now sheet 8.dgn

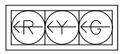
SIGNAL HEAD SCHEDULE

3-SECTION HORIZONTAL
12" LED H3 SIGNAL HEAD



ø2, ø4, ø6, ø8

3-SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD



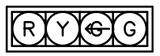
ø5

3-SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD



ø3

4-SECTION HORIZONTAL
12" LED H4TL SIGNAL HEAD

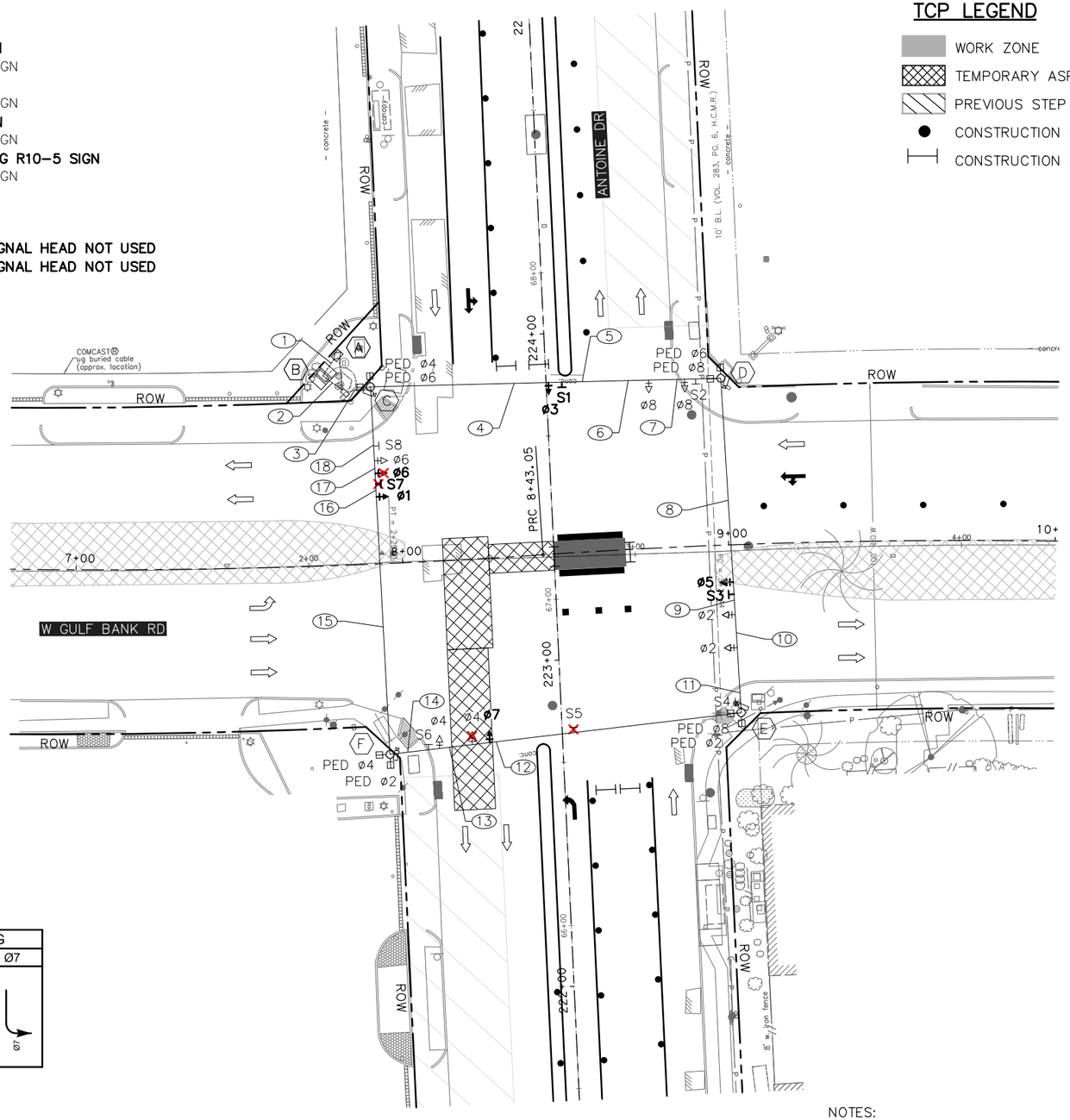


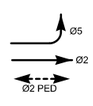
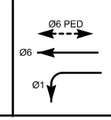
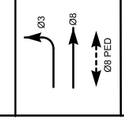
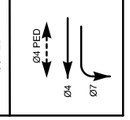
ø1, ø7

SIGN SCHEDULE

S1 = UNBAG EXISTING R10-5 SIGN
S2 = EXISTING STREET NAME SIGN
S3 = RELOCATE R10-5 SIGN
S4 = EXISTING STREET NAME SIGN
S5 = BAG EXISTING R10-5 SIGN
S6 = EXISTING STREET NAME SIGN
S7 = RELOCATE & BAG EXISTING R10-5 SIGN
S8 = EXISTING STREET NAME SIGN

BAG UNUSED SIGNAL HEADS
PHASE 4 VEHICLE PHASE H3 SIGNAL HEAD NOT USED
PHASE 6 VEHICLE PHASE H3 SIGNAL HEAD NOT USED



PHASE 4 STEP 4 TRAFFIC SIGNAL PHASING			
Ø2 + Ø5	Ø1 + Ø6	Ø3 + Ø8	Ø4 + Ø7
			

POLE AND CABINET SCHEDULE

- (A) PROPOSED ELECTRICAL SERVICE
- (B) PROPOSED TEMPORARY SIGNAL CABINET
- (C) EXISTING POLE W/ PROPOSED PED ø4 AND PED ø6 AND VIVDS
- (D) EXISTING POLE W/ PROPOSED PED ø6 AND PED ø8 AND VIVDS
- (E) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø8 AND VIVDS
- (F) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø4 AND VIVDS

TCP LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUS STEP
- CONSTRUCTION BARREL
- CONSTRUCTION BARRICADE

LEGEND

- SIGNAL HEAD
- OPTICOM
- POLE W/ MAST ARM
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- PULL BOX – TYPE A
- PULL BOX – TYPE B
- PULL BOX – TYPE C
- CONDUIT (TRENCH)
- CONDUIT (BORE)
- LUMINAIRE
- MAST ARM SIGN
- CONTROLLER CABINET WITH BBU
- ELECTRICAL SERVICE
- BAGGED SIGNAL HEAD
- BAGGED SIGN
- VIVDS CAMERA

N

0′ 20′ 40′
SCALE IN FEET

NOTES:
1. PAIRED SIGNAL HEADS TO BE 10' APART.
2. EXISTING SIGNAL TO REMAIN OPERATIONAL UNTIL TEMPORARY SIGNAL IS OPERATIONAL.
3. VIVDS DETECTION ZONES TO BE ADJUSTED FOR EACH PHASE.
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6. CONTRACTOR TO COORDINATE ELECTRICAL SERVICE FOR TEMPORARY TRAFFIC SIGNAL.

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Engineer: VICTORIA MOTA, PE
P.E. Serial No. 145538
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Date: 10/16/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ANTOINE DRIVE AT WEST GULF BANK ROAD TRAFFIC SIGNAL TEMPORARY SIGNAL LAYOUT PHASE 4 STEP 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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ROWAIDAH AYOUB	
SHEET NO. 540 OF 718	

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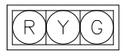
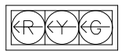
SIGNAL HEAD SCHEDULE

3-SECTION HORIZONTAL
12" LED H3 SIGNAL HEAD



ø2, ø4, ø6, ø8

3-SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD



ø3, ø5

4-SECTION HORIZONTAL
12" LED H4TL SIGNAL HEAD



ø1

3-SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD



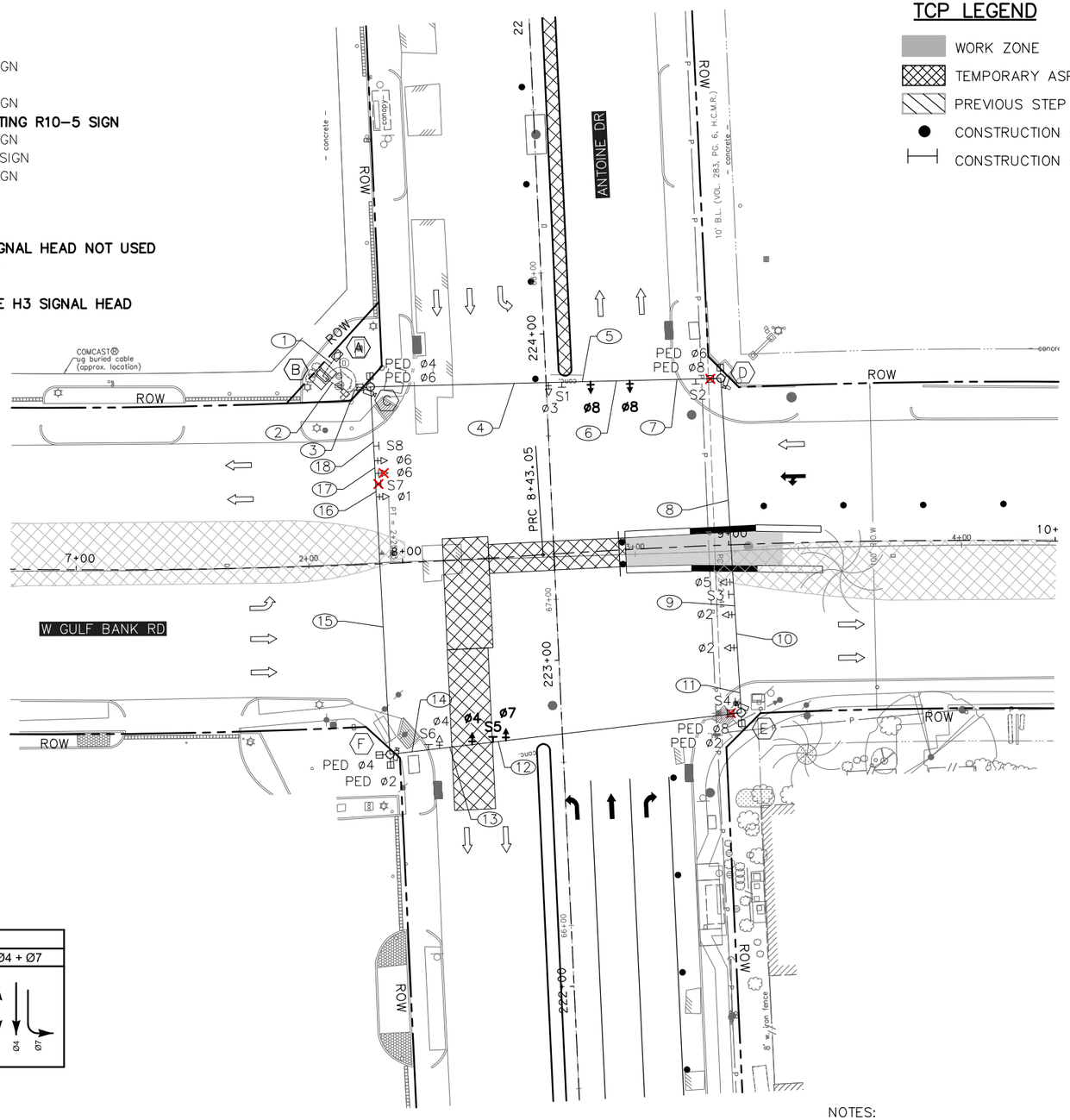
ø7

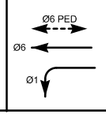
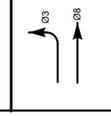
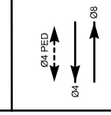
SIGN SCHEDULE

S1 = EXISTING R10-5 SIGN
S2 = EXISTING STREET NAME SIGN
S3 = EXISTING R10-5 SIGN
S4 = EXISTING STREET NAME SIGN
S5 = RELOCATE & UNBAG EXISTING R10-5 SIGN
S6 = EXISTING STREET NAME SIGN
S7 = BAGGED EXISTING R10-5 SIGN
S8 = EXISTING STREET NAME SIGN

BAG UNUSED SIGNAL HEADS
PHASE 6 VEHICLE PHASE H3 SIGNAL HEAD NOT USED
PHASE 8 PED PHASE NOT USED

UNBAG PHASE 4 VEHICLE PHASE H3 SIGNAL HEAD



PHASE 4 STEP 5 TRAFFIC SIGNAL PHASING				
ø2 + ø5	ø1 + ø6	ø3 + ø8	ø4 + ø8	ø4 + ø7
				

POLE AND CABINET SCHEDULE

- (A) PROPOSED ELECTRICAL SERVICE
- (B) PROPOSED TEMPORARY SIGNAL CABINET
- (C) EXISTING POLE W/ PROPOSED PED ø4 AND PED ø6 AND VIVDS
- (D) EXISTING POLE W/ PROPOSED PED ø6 AND PED ø8 AND VIVDS
- (E) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø8 AND VIVDS
- (F) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø4 AND VIVDS

TCP LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUS STEP
- CONSTRUCTION BARREL
- CONSTRUCTION BARRICADE

LEGEND

- SIGNAL HEAD
- OPTICOM
- POLE W/ MAST ARM
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- PULL BOX – TYPE A
- PULL BOX – TYPE B
- PULL BOX – TYPE C
- CONDUIT (TRENCH)
- CONDUIT (BORE)
- LUMINAIRE
- MAST ARM SIGN
- CONTROLLER CABINET WITH BBU
- ELECTRICAL SERVICE
- BAGGED SIGNAL HEAD
- BAGGED SIGN
- VIVDS CAMERA

N

0′ 20′ 40′
SCALE IN FEET

NOTES:
1. PAIRED SIGNAL HEADS TO BE 10' APART.
2. EXISTING SIGNAL TO REMAIN OPERATIONAL UNTIL TEMPORARY SIGNAL IS OPERATIONAL.
3. VIVDS DETECTION ZONES TO BE ADJUSTED FOR EACH PHASE.
4. PED PHASE RECALL ACTIVE DURING ALL CONSTRUCTION PHASES.
5. TEMPORARY SIGNAL CABINET TO BE INSTALLED FOR TEMPORARY TRAFFIC SIGNAL.
6. CONTRACTOR TO COORDINATE ELECTRICAL SERVICE FOR TEMPORARY TRAFFIC SIGNAL.

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TEXAS PE FIRM REG. # 3158
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HOUSTON, TX 77002

SURVEYED BY:
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P.E. Serial No. 145538
Firm: TEI PLANNING + DESIGN
Firm No.: F-3158
Date: 10/16/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ANTOINE DRIVE AT WEST GULF BANK ROAD TRAFFIC SIGNAL TEMPORARY SIGNAL LAYOUT PHASE 4 STEP 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
AS NOTED	
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ROWAIDAH AYOUB	
SHEET NO. 541 OF 718	

Pen Table:TEI*Color.tbl
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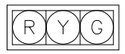
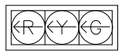
SIGNAL HEAD SCHEDULE

3-SECTION HORIZONTAL
12" LED H3 SIGNAL HEAD



ø2, ø4, ø6, ø8

3-SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD



ø3, ø5, ø7

3-SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD



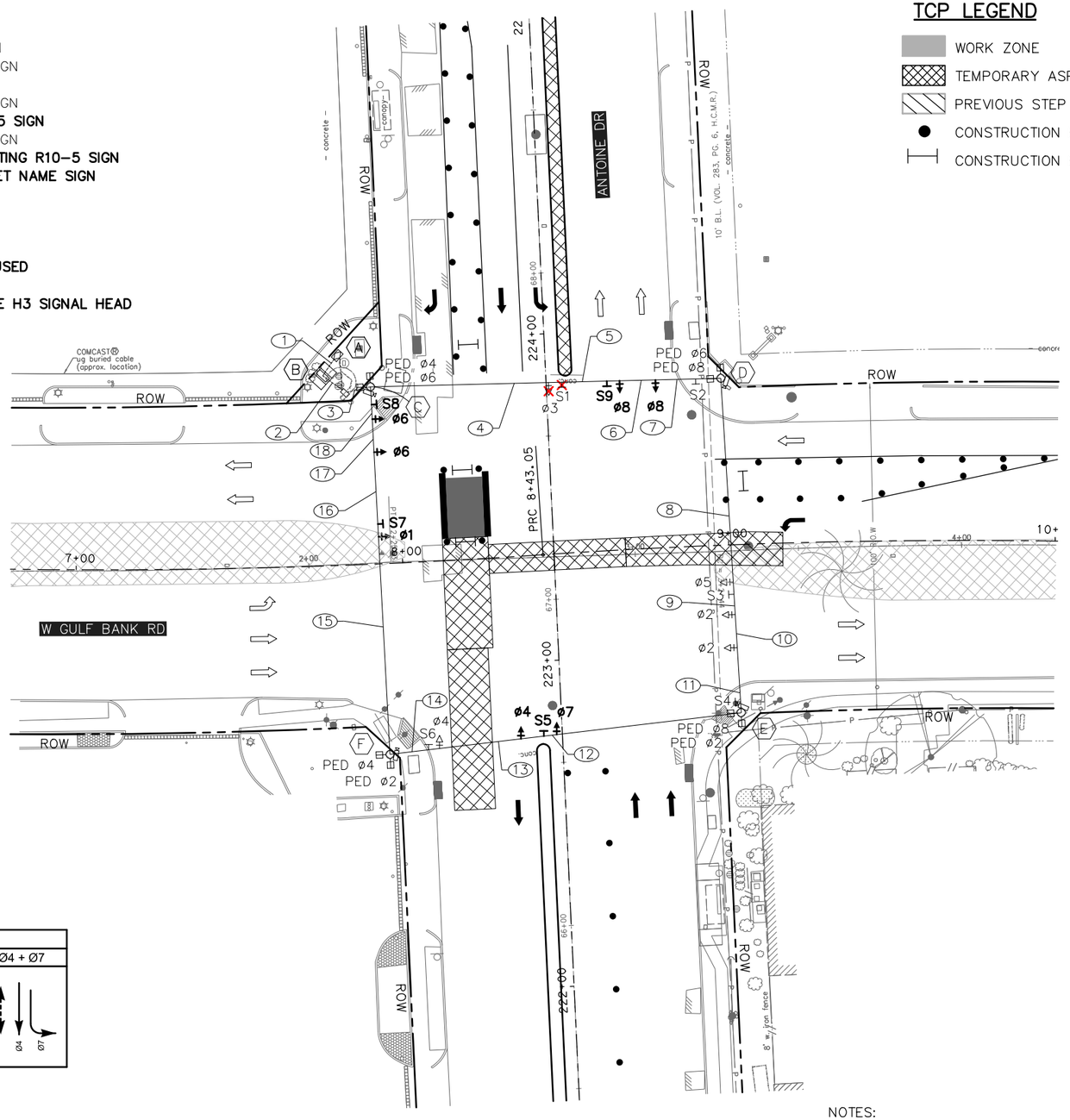
ø1

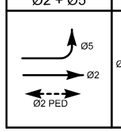
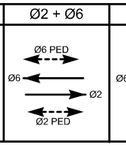
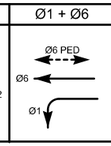
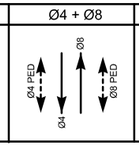
SIGN SCHEDULE

S1 = BAG EXISTING R10-5 SIGN
S2 = EXISTING STREET NAME SIGN
S3 = EXISTING R10-5 SIGN
S4 = EXISTING STREET NAME SIGN
S5 = RELOCATE EXISTING R10-5 SIGN
S6 = EXISTING STREET NAME SIGN
S7 = RELOCATE & UNBAG EXISTING R10-5 SIGN
S8 = RELOCATE EXISTING STREET NAME SIGN
S9 = PROP R3-2 SIGN

BAG UNUSED SIGNAL HEADS
PHASE 3 VEHICLE PHASE NOT USED

UNBAG PHASE 6 VEHICLE PHASE H3 SIGNAL HEAD
UNBAG PHASE 8 PED PHASE



PHASE 4 STEP 7 TRAFFIC SIGNAL PHASING				
ø2 + ø5	ø2 + ø6	ø1 + ø6	ø4 + ø8	ø4 + ø7
				

POLE AND CABINET SCHEDULE

- (A) **PROPOSED ELECTRICAL SERVICE**
- (B) **PROPOSED TEMPORARY SIGNAL CABINET**
- (C) **EXISTING POLE W/ PROPOSED PED ø4 AND PED ø6 AND VIVDS**
- (D) **EXISTING POLE W/ PROPOSED PED ø6 AND PED ø8 AND VIVDS**
- (E) **EXISTING POLE W/ PROPOSED PED ø2 AND PED ø8 AND VIVDS**
- (F) **EXISTING POLE W/ PROPOSED PED ø2 AND PED ø4 AND VIVDS**

TCP LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUS STEP
- CONSTRUCTION BARREL
- CONSTRUCTION BARRICADE

LEGEND

- SIGNAL HEAD
- OPTICOM
- POLE W/ MAST ARM
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- PULL BOX – TYPE A
- PULL BOX – TYPE B
- PULL BOX – TYPE C
- CONDUIT (TRENCH)
- CONDUIT (BORE)
- LUMINAIRE
- MAST ARM SIGN
- CONTROLLER CABINET WITH BBU
- ELECTRICAL SERVICE
- BAGGED SIGNAL HEAD
- BAGGED SIGN
- VIVDS CAMERA

N

0′ 20′ 40′
SCALE IN FEET

NOTES:
1. PAIRED SIGNAL HEADS TO BE 10' APART.
2. EXISTING SIGNAL TO REMAIN OPERATIONAL UNTIL TEMPORARY SIGNAL IS OPERATIONAL.
3. VIVDS DETECTION ZONES TO BE ADJUSTED FOR EACH PHASE.
4. PED PHASE RECALL ACTIVE DURING ALL CONSTRUCTION PHASES.
5. TEMPORARY SIGNAL CABINET TO BE INSTALLED FOR TEMPORARY TRAFFIC SIGNAL.
6. CONTRACTOR TO COORDINATE ELECTRICAL SERVICE FOR TEMPORARY TRAFFIC SIGNAL.

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712 MAIN ST, #950
HOUSTON, TX 77002

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Engineer: VICTORIA MOTA, PE
P.E. Serial No. 145539
Firm: TEI PLANNING + DESIGN
Firm No.: F-3158
Date: 10/16/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ANTOINE DRIVE AT WEST GULF BANK ROAD TRAFFIC SIGNAL TEMPORARY SIGNAL LAYOUT PHASE 4 STEP 7

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 542 OF 718	

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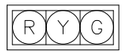
Design Filename: E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\04 Design\02 Plansheets\Temporary Signal Layout Sheet 11.dgn

SIGNAL HEAD SCHEDULE

3-SECTION HORIZONTAL
12" LED H3 SIGNAL HEAD



ø2, ø4, ø6, ø8

3-SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD



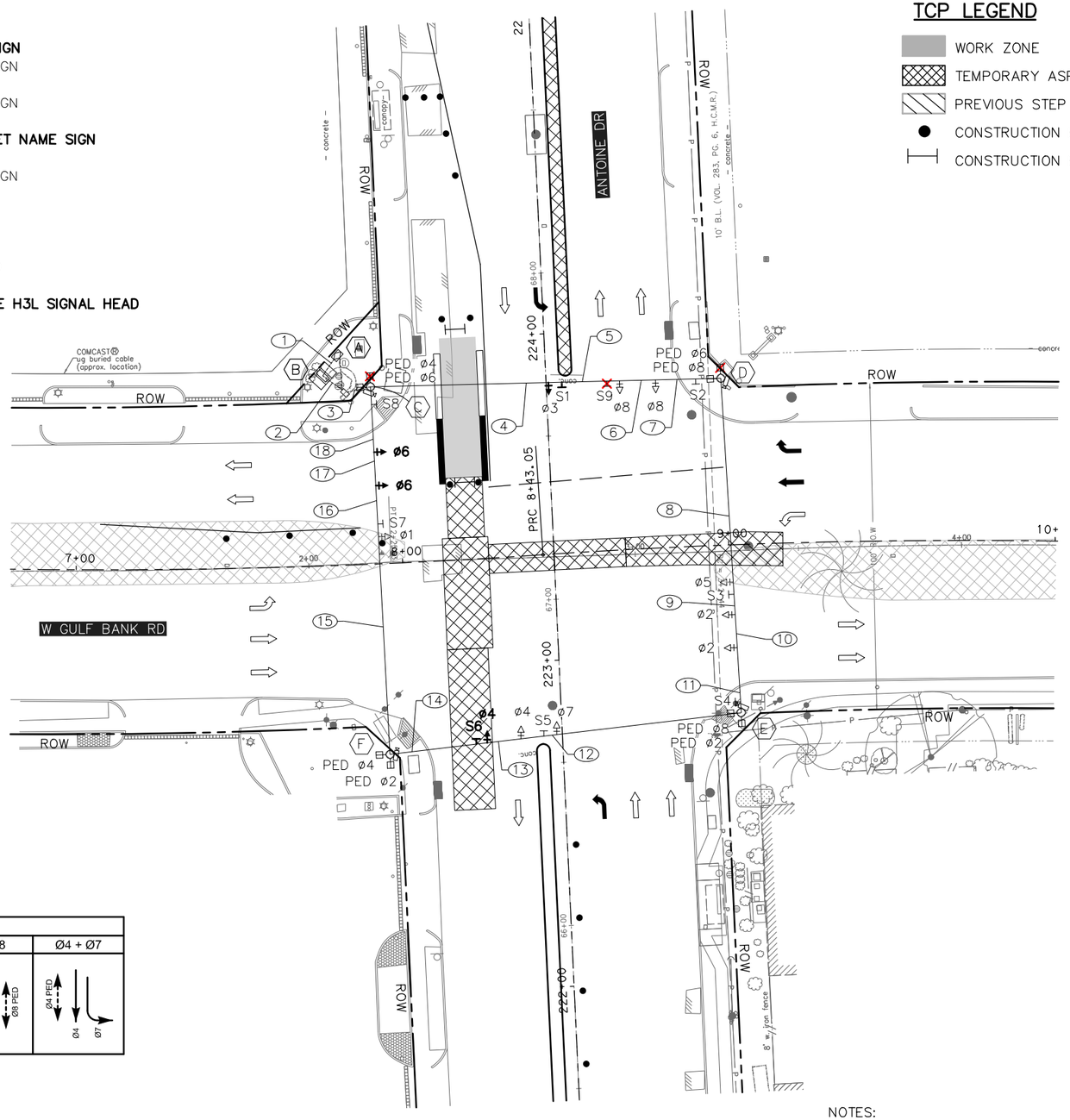
ø1, ø3, ø5, ø7

SIGN SCHEDULE

S1 = UNBAG EXISTING R10-5 SIGN
S2 = EXISTING STREET NAME SIGN
S3 = EXISTING R10-5 SIGN
S4 = EXISTING STREET NAME SIGN
S5 = EXISTING R10-5 SIGN
S6 = RELOCATE EXISTING STREET NAME SIGN
S7 = EXISTING R10-5 SIGN
S8 = EXISTING STREET NAME SIGN
S9 = BAG EXISTING R3-2 SIGN

BAG UNUSED SIGNAL HEADS
PHASE 6 PED PHASE NOT USED

UNBAG PHASE 3 VEHICLE PHASE H3L SIGNAL HEAD



PHASE 4 STEP 8 TRAFFIC SIGNAL PHASING

Ø2 + Ø5	Ø2 + Ø6	Ø1 + Ø6	Ø3 + Ø8	Ø4 + Ø8	Ø4 + Ø7
Ø5, Ø2, Ø2 PED	Ø6, Ø2, Ø2 PED	Ø6, Ø1	Ø3, Ø8, Ø8 PED	Ø4 PED, Ø4, Ø8, Ø8 PED	Ø4 PED, Ø4, Ø7

POLE AND CABINET SCHEDULE

- (A) **PROPOSED ELECTRICAL SERVICE**
- (B) **PROPOSED TEMPORARY SIGNAL CABINET**
- (C) **EXISTING POLE W/ PROPOSED PED ø4 AND PED ø6 AND VIVDS**
- (D) **EXISTING POLE W/ PROPOSED PED ø6 AND PED ø8 AND VIVDS**
- (E) **EXISTING POLE W/ PROPOSED PED ø2 AND PED ø8 AND VIVDS**
- (F) **EXISTING POLE W/ PROPOSED PED ø2 AND PED ø4 AND VIVDS**

NOTES:
1. PAIRED SIGNAL HEADS TO BE 10' APART.
2. EXISTING SIGNAL TO REMAIN OPERATIONAL UNTIL TEMPORARY SIGNAL IS OPERATIONAL.
3. VIVDS DETECTION ZONES TO BE ADJUSTED FOR EACH PHASE.
4. PED PHASE RECALL ACTIVE DURING ALL CONSTRUCTION PHASES.
5. TEMPORARY SIGNAL CABINET TO BE INSTALLED FOR TEMPORARY TRAFFIC SIGNAL.
6. CONTRACTOR TO COORDINATE ELECTRICAL SERVICE FOR TEMPORARY TRAFFIC SIGNAL.

TCP LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUS STEP
- CONSTRUCTION BARREL
- CONSTRUCTION BARRICADE

LEGEND

- SIGNAL HEAD
- OPTICOM
- POLE W/ MAST ARM
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- PULL BOX – TYPE A
- PULL BOX – TYPE B
- PULL BOX – TYPE C
- CONDUIT (TRENCH)
- CONDUIT (BORE)
- LUMINAIRE
- MAST ARM SIGN
- CONTROLLER CABINET WITH BBU
- ELECTRICAL SERVICE
- BAGGED SIGNAL HEAD
- BAGGED SIGN
- VIVDS CAMERA

N

0′ 20′ 40′
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ANTOINE DRIVE AT WEST GULF BANK ROAD TRAFFIC SIGNAL TEMPORARY SIGNAL LAYOUT PHASE 4 STEP 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 543 OF 718	

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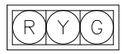
Design Filename: E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\04 Design\02 Plansheets\Temporary Signal Layout Sheet 12.dgn

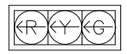
SIGNAL HEAD SCHEDULE

3-SECTION HORIZONTAL
12" LED H3 SIGNAL HEAD



ø2, ø4, ø6, ø8

3-SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD

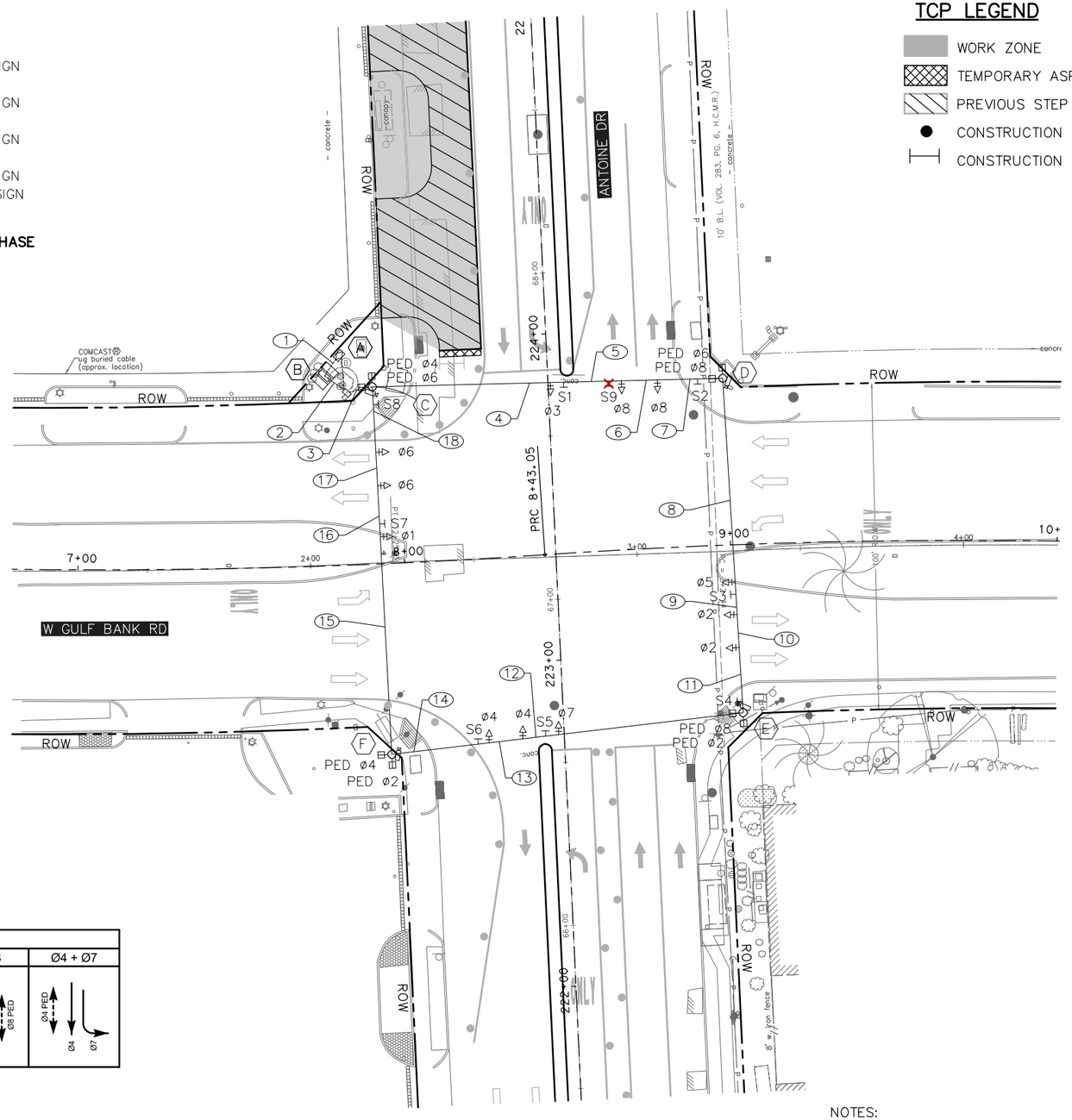


ø1, ø3, ø5, ø7

SIGN SCHEDULE

S1 = EXISTING R10-5 SIGN
S2 = EXISTING STREET NAME SIGN
S3 = EXISTING R10-5 SIGN
S4 = EXISTING STREET NAME SIGN
S5 = EXISTING R10-5 SIGN
S6 = EXISTING STREET NAME SIGN
S7 = EXISTING R10-5 SIGN
S8 = EXISTING STREET NAME SIGN
S9 = BAGGED EXISTING R3-2 SIGN

UNBAG PHASE 6 PEDESTRIAN PHASE



TCP LEGEND

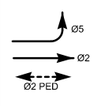
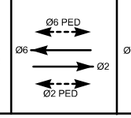
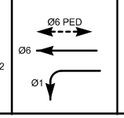
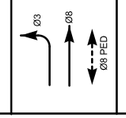
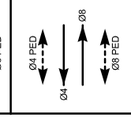
- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUS STEP
- CONSTRUCTION BARREL
- CONSTRUCTION BARRICADE

LEGEND

- SIGNAL HEAD
- OPTICOM
- POLE W/ MAST ARM
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- PULL BOX – TYPE A
- PULL BOX – TYPE B
- PULL BOX – TYPE C
- CONDUIT (TRENCH)
- CONDUIT (BORE)
- LUMINAIRE
- MAST ARM SIGN
- CONTROLLER CABINET WITH BBU
- ELECTRICAL SERVICE
- BAGGED SIGNAL HEAD
- BAGGED SIGN
- VIVDS CAMERA

N

0' 20' 40'
SCALE IN FEET

PHASE 5 STEP 1 TRAFFIC SIGNAL PHASING					
ø2 + ø5	ø2 + ø6	ø1 + ø6	ø3 + ø8	ø4 + ø8	ø4 + ø7
					

POLE AND CABINET SCHEDULE

- (A) PROPOSED ELECTRICAL SERVICE
- (B) PROPOSED TEMPORARY SIGNAL CABINET
- (C) EXISTING POLE W/ PROPOSED PED ø4 AND PED ø6 AND VIVDS
- (D) EXISTING POLE W/ PROPOSED PED ø6 AND PED ø8 AND VIVDS
- (E) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø8 AND VIVDS
- (F) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø4 AND VIVDS

NOTES:
1. PAIRED SIGNAL HEADS TO BE 10' APART.
2. EXISTING SIGNAL TO REMAIN OPERATIONAL UNTIL TEMPORARY SIGNAL IS OPERATIONAL.
3. VIVDS DETECTION ZONES TO BE ADJUSTED FOR EACH PHASE.
4. PED PHASE RECALL ACTIVE DURING ALL CONSTRUCTION PHASES.
5. TEMPORARY SIGNAL CABINET TO BE INSTALLED FOR TEMPORARY TRAFFIC SIGNAL.
6. CONTRACTOR TO COORDINATE ELECTRICAL SERVICE FOR TEMPORARY TRAFFIC SIGNAL.

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HOUSTON, TX 77002

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Firm: TEI PLANNING + DESIGN
Firm No.: F-3158
Date: 10/16/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ANTOINE DRIVE AT WEST GULF BANK ROAD TRAFFIC SIGNAL TEMPORARY SIGNAL LAYOUT PHASE 5 STEP 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 544 OF 718	

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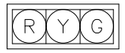
Design Filename: E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\04 Design\02 Plansheets\Temporary Signal Layout Sheet 11_now sheet 13.dgn

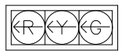
SIGNAL HEAD SCHEDULE

3-SECTION HORIZONTAL
12" LED H3 SIGNAL HEAD



ø2, ø4, ø6, ø8

3-SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD



ø3, ø5, ø7

4-SECTION HORIZONTAL
12" LED H4TL SIGNAL HEAD

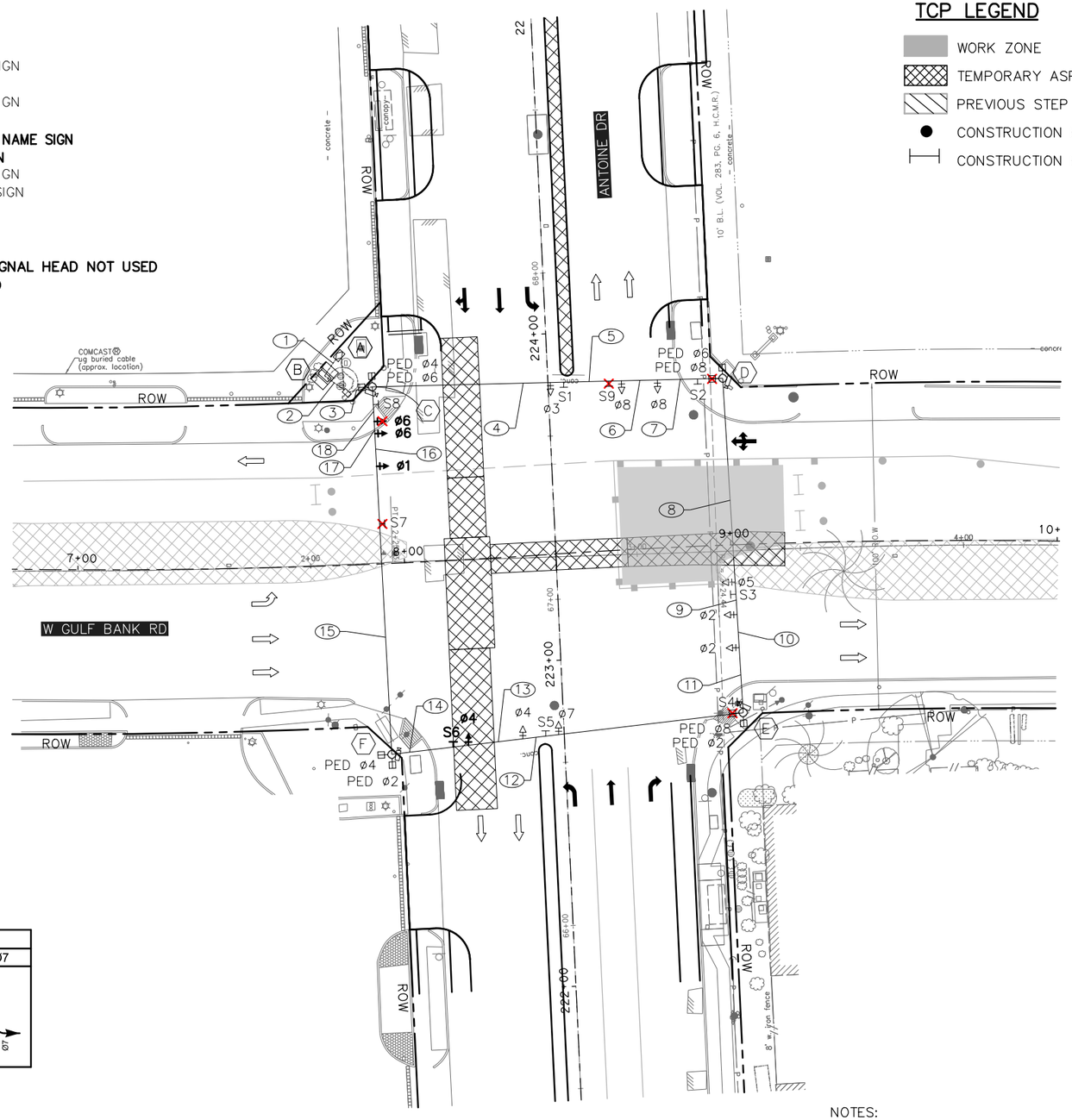


ø1

SIGN SCHEDULE

S1 = EXISTING R10-5 SIGN
S2 = EXISTING STREET NAME SIGN
S3 = EXISTING R10-5 SIGN
S4 = EXISTING STREET NAME SIGN
S5 = EXISTING R10-5 SIGN
S6 = RELOCATE EXISTING STREET NAME SIGN
S7 = BAG EXISTING R10-5 SIGN
S8 = EXISTING STREET NAME SIGN
S9 = BAGGED EXISTING R3-2 SIGN

BAG UNUSED SIGNAL HEADS
PHASE 6 VEHICLE PHASE H3 SIGNAL HEAD NOT USED
PHASE 8 PED PHASE NOT USED



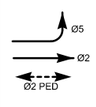
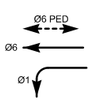
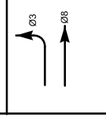
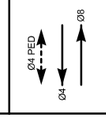
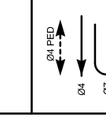
0' 20' 40'
SCALE IN FEET

TCP LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUS STEP
- CONSTRUCTION BARREL
- CONSTRUCTION BARRICADE

LEGEND

- SIGNAL HEAD
- OPTICOM
- POLE W/ MAST ARM
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- PULL BOX – TYPE A
- PULL BOX – TYPE B
- PULL BOX – TYPE C
- CONDUIT (TRENCH)
- CONDUIT (BORE)
- LUMINAIRE
- MAST ARM SIGN
- CONTROLLER CABINET WITH BBU
- ELECTRICAL SERVICE
- BAGGED SIGNAL HEAD
- BAGGED SIGN
- VIVDS CAMERA

PHASE 7 STEP 1 TRAFFIC SIGNAL PHASING				
Ø2 + Ø5	Ø1 + Ø6	Ø3 + Ø8	Ø4 + Ø8	Ø4 + Ø7
				

POLE AND CABINET SCHEDULE

- (A) PROPOSED ELECTRICAL SERVICE
- (B) PROPOSED TEMPORARY SIGNAL CABINET
- (C) EXISTING POLE W/ PROPOSED PED ø4 AND PED ø6 AND VIVDS
- (D) EXISTING POLE W/ PROPOSED PED ø6 AND PED ø8 AND VIVDS
- (E) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø8 AND VIVDS
- (F) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø4 AND VIVDS

NOTES:
1. PAIRED SIGNAL HEADS TO BE 10' APART.
2. EXISTING SIGNAL TO REMAIN OPERATIONAL UNTIL TEMPORARY SIGNAL IS OPERATIONAL.
3. VIVDS DETECTION ZONES TO BE ADJUSTED FOR EACH PHASE.
4. PED PHASE RECALL ACTIVE DURING ALL CONSTRUCTION PHASES.
5. TEMPORARY SIGNAL CABINET TO BE INSTALLED FOR TEMPORARY TRAFFIC SIGNAL.
6. CONTRACTOR TO COORDINATE ELECTRICAL SERVICE FOR TEMPORARY TRAFFIC SIGNAL.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ANTOINE DRIVE AT WEST GULF BANK ROAD TRAFFIC SIGNAL TEMPORARY SIGNAL LAYOUT PHASE 7 STEP 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 545 OF 718	

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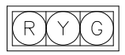
Design Filename: E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\04 Design\02 Plansheets\Temporary Signal Layout Sheet 13_new sheet 14.dgn

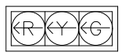
SIGNAL HEAD SCHEDULE

3-SECTION HORIZONTAL
12" LED H3 SIGNAL HEAD



ø2, ø4, ø6, ø8

3-SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD



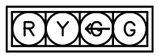
ø3, ø7

4-SECTION HORIZONTAL
12" LED H4TL SIGNAL HEAD



ø1

4-SECTION HORIZONTAL
12" LED H4TL SIGNAL HEAD

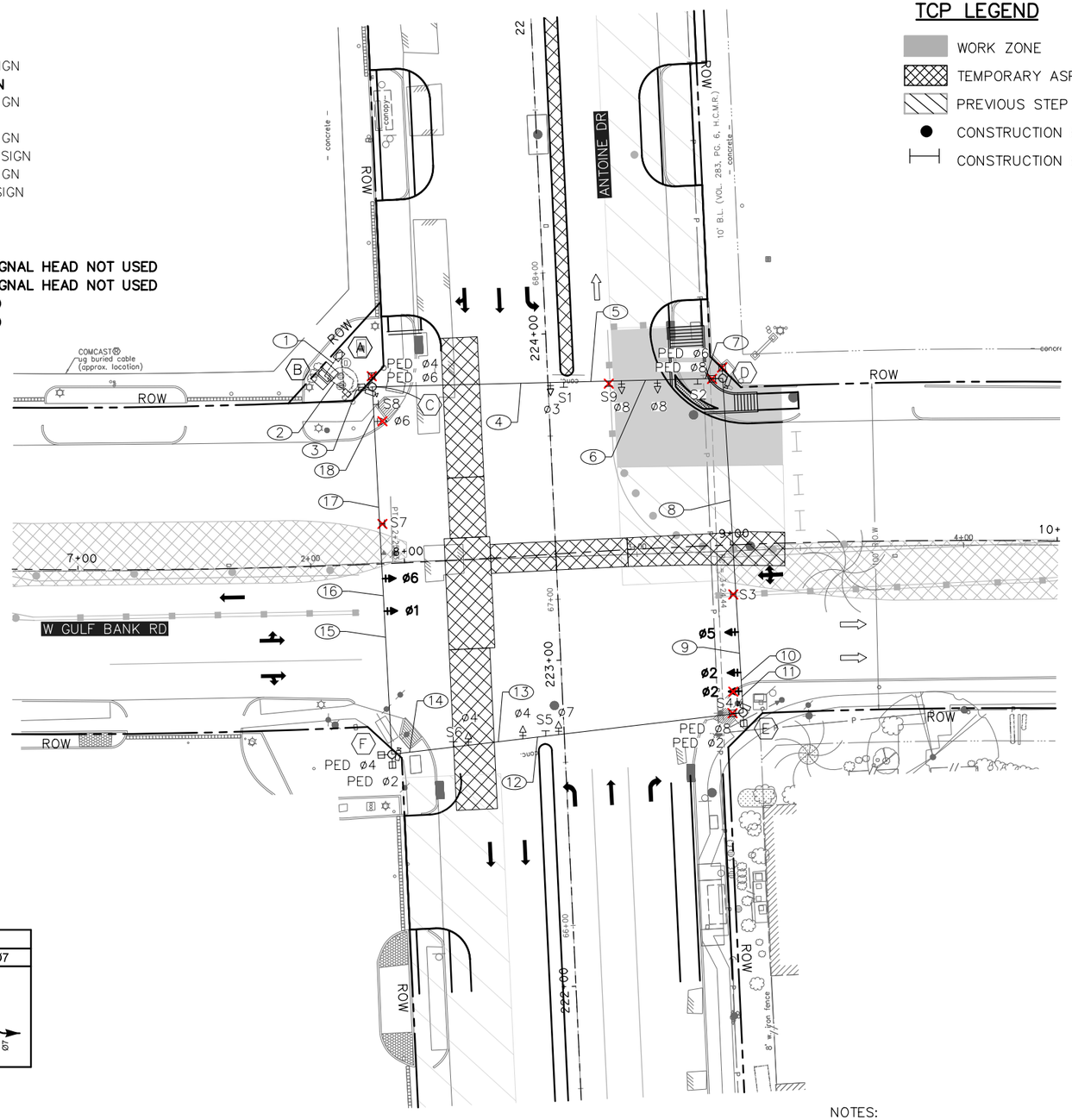


ø5

SIGN SCHEDULE

S1 = EXISTING R10-5 SIGN
S2 = EXISTING STREET NAME SIGN
S3 = BAG EXISTING R10-5 SIGN
S4 = EXISTING STREET NAME SIGN
S5 = EXISTING R10-5 SIGN
S6 = EXISTING STREET NAME SIGN
S7 = BAGGED EXISTING R10-5 SIGN
S8 = EXISTING STREET NAME SIGN
S9 = BAGGED EXISTING R3-2 SIGN

BAG UNUSED SIGNAL HEADS
PHASE 2 VEHICLE PHASE H3 SIGNAL HEAD NOT USED
PHASE 6 VEHICLE PHASE H3 SIGNAL HEAD NOT USED
PHASE 6 PED PHASE NOT USED
PHASE 8 PED PHASE NOT USED



TCP LEGEND

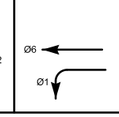
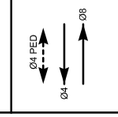
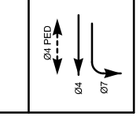
- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUS STEP
- CONSTRUCTION BARREL
- CONSTRUCTION BARRICADE

LEGEND

- SIGNAL HEAD
- OPTICOM
- POLE W/ MAST ARM
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- PULL BOX – TYPE A
- PULL BOX – TYPE B
- PULL BOX – TYPE C
- CONDUIT (TRENCH)
- CONDUIT (BORE)
- LUMINAIRE
- MAST ARM SIGN
- CONTROLLER CABINET WITH BBU
- ELECTRICAL SERVICE
- BAGGED SIGNAL HEAD
- BAGGED SIGN
- VIVDS CAMERA

N

0′ 20′ 40′
SCALE IN FEET

PHASE 7 STEP 2 TRAFFIC SIGNAL PHASING				
Ø2 + Ø5	Ø1 + Ø6	Ø3 + Ø8	Ø4 + Ø8	Ø4 + Ø7
				

POLE AND CABINET SCHEDULE

- (A) **PROPOSED ELECTRICAL SERVICE**
- (B) **PROPOSED TEMPORARY SIGNAL CABINET**
- (C) **EXISTING POLE W/ PROPOSED PED ø4 AND PED ø6 AND VIVDS**
- (D) **EXISTING POLE W/ PROPOSED PED ø6 AND PED ø8 AND VIVDS**
- (E) **EXISTING POLE W/ PROPOSED PED ø2 AND PED ø8 AND VIVDS**
- (F) **EXISTING POLE W/ PROPOSED PED ø2 AND PED ø4 AND VIVDS**

NOTES:
1. PAIRED SIGNAL HEADS TO BE 10' APART.
2. EXISTING SIGNAL TO REMAIN OPERATIONAL UNTIL TEMPORARY SIGNAL IS OPERATIONAL.
3. VIVDS DETECTION ZONES TO BE ADJUSTED FOR EACH PHASE.
4. PED PHASE RECALL ACTIVE DURING ALL CONSTRUCTION PHASES.
5. TEMPORARY SIGNAL CABINET TO BE INSTALLED FOR TEMPORARY TRAFFIC SIGNAL.
6. CONTRACTOR TO COORDINATE ELECTRICAL SERVICE FOR TEMPORARY TRAFFIC SIGNAL.

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TEXAS PE FIRM REG. # 3158
712 MAIN ST, #950
HOUSTON, TX 77002

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Engineer: VICTORIA MOTA, PE
P.E. Serial No. 145538
Firm: TEI PLANNING + DESIGN
Firm No.: F-3158
Date: 10/16/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ANTOINE DRIVE AT WEST GULF BANK ROAD TRAFFIC SIGNAL TEMPORARY SIGNAL LAYOUT PHASE 7 STEP 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 546 OF 718	

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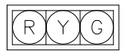
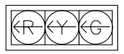
SIGNAL HEAD SCHEDULE

3-SECTION HORIZONTAL
12" LED H3 SIGNAL HEAD



ø2, ø4, ø6, ø8

3-SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD



ø3, ø7

4-SECTION HORIZONTAL
12" LED H4TL SIGNAL HEAD



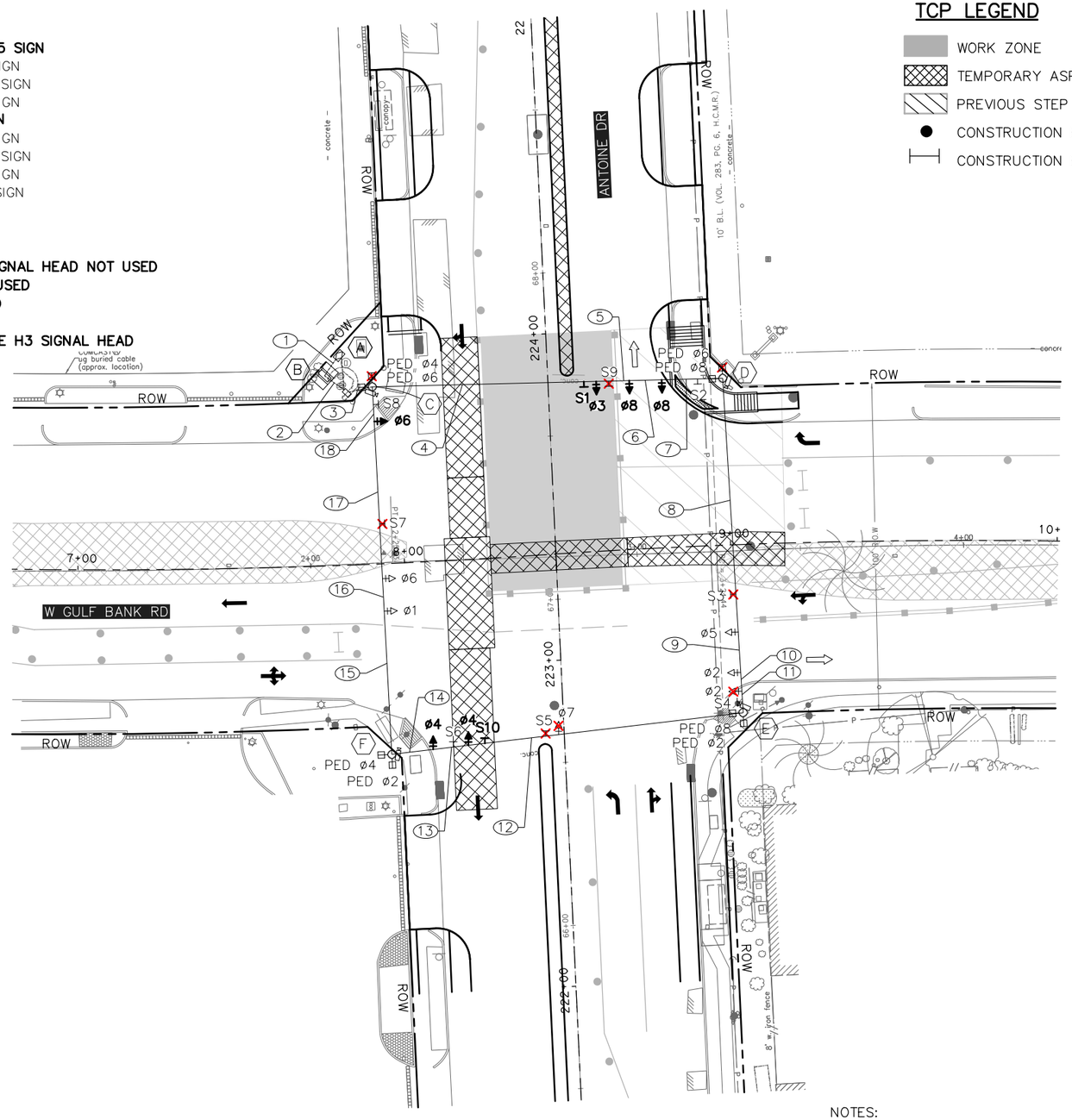
ø1, ø5

SIGN SCHEDULE

S1 = RELOCATE EXISTING R10-5 SIGN
S2 = EXISTING STREET NAME SIGN
S3 = BAGGED EXISTING R10-5 SIGN
S4 = EXISTING STREET NAME SIGN
S5 = BAG EXISTING R10-5 SIGN
S6 = EXISTING STREET NAME SIGN
S7 = BAGGED EXISTING R10-5 SIGN
S8 = EXISTING STREET NAME SIGN
S9 = BAGGED EXISTING R3-2 SIGN
S10 = PROP R3-2 SIGN

BAG UNUSED SIGNAL HEADS
PHASE 2 VEHICLE PHASE H3 SIGNAL HEAD NOT USED
PHASE 7 VEHICLE PHASE NOT USED
PHASE 6 PED PHASE NOT USED

UNBAG PHASE 6 VEHICLE PHASE H3 SIGNAL HEAD
UNBAG PHASE 8 PED PHASE



TCP LEGEND

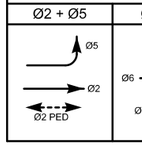
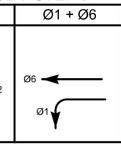
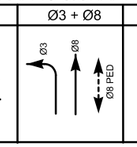
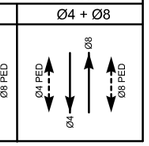
- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUS STEP
- CONSTRUCTION BARREL
- CONSTRUCTION BARRICADE

LEGEND

- SIGNAL HEAD
- OPTICOM
- POLE W/ MAST ARM
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- PULL BOX – TYPE A
- PULL BOX – TYPE B
- PULL BOX – TYPE C
- CONDUIT (TRENCH)
- CONDUIT (BORE)
- LUMINAIRE
- MAST ARM SIGN
- CONTROLLER CABINET WITH BBU
- ELECTRICAL SERVICE
- BAGGED SIGNAL HEAD
- BAGGED SIGN
- VIVDS CAMERA

N

0′ 20′ 40′
SCALE IN FEET

PHASE 7 STEP 3 TRAFFIC SIGNAL PHASING			
Ø2 + Ø5	Ø1 + Ø6	Ø3 + Ø8	Ø4 + Ø8
			

POLE AND CABINET SCHEDULE

- (A) PROPOSED ELECTRICAL SERVICE
- (B) PROPOSED TEMPORARY SIGNAL CABINET
- (C) EXISTING POLE W/ PROPOSED PED ø4 AND PED ø6 AND VIVDS
- (D) EXISTING POLE W/ PROPOSED PED ø6 AND PED ø8 AND VIVDS
- (E) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø8 AND VIVDS
- (F) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø4 AND VIVDS

NOTES:
1. PAIRED SIGNAL HEADS TO BE 10' APART.
2. EXISTING SIGNAL TO REMAIN OPERATIONAL UNTIL TEMPORARY SIGNAL IS OPERATIONAL.
3. VIVDS DETECTION ZONES TO BE ADJUSTED FOR EACH PHASE.
4. PED PHASE RECALL ACTIVE DURING ALL CONSTRUCTION PHASES.
5. TEMPORARY SIGNAL CABINET TO BE INSTALLED FOR TEMPORARY TRAFFIC SIGNAL.
6. CONTRACTOR TO COORDINATE ELECTRICAL SERVICE FOR TEMPORARY TRAFFIC SIGNAL.

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TEXAS PE FIRM REG. # 3158
712 MAIN ST, #950
HOUSTON, TX 77002

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Engineer: VICTORIA MOTA, PE
P.E. Serial No. 145538
Firm: TEI PLANNING + DESIGN
Firm No.: F-3158
Date: 10/16/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ANTOINE DRIVE AT WEST GULF BANK ROAD TRAFFIC SIGNAL TEMPORARY SIGNAL LAYOUT PHASE 7 STEP 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 547 OF 718	

Pen Table:TEI*Color.tbl
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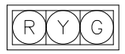
Design Filename: E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\04 Design\02 Plansheets\Temporary Signal Layout Sheet 15_now sheet 16.dgn

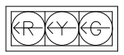
SIGNAL HEAD SCHEDULE

3-SECTION HORIZONTAL
12" LED H3 SIGNAL HEAD



ø2, ø4, ø6, ø8

3-SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD



ø3, ø7

4-SECTION HORIZONTAL
12" LED H4TL SIGNAL HEAD



ø1

3-SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD



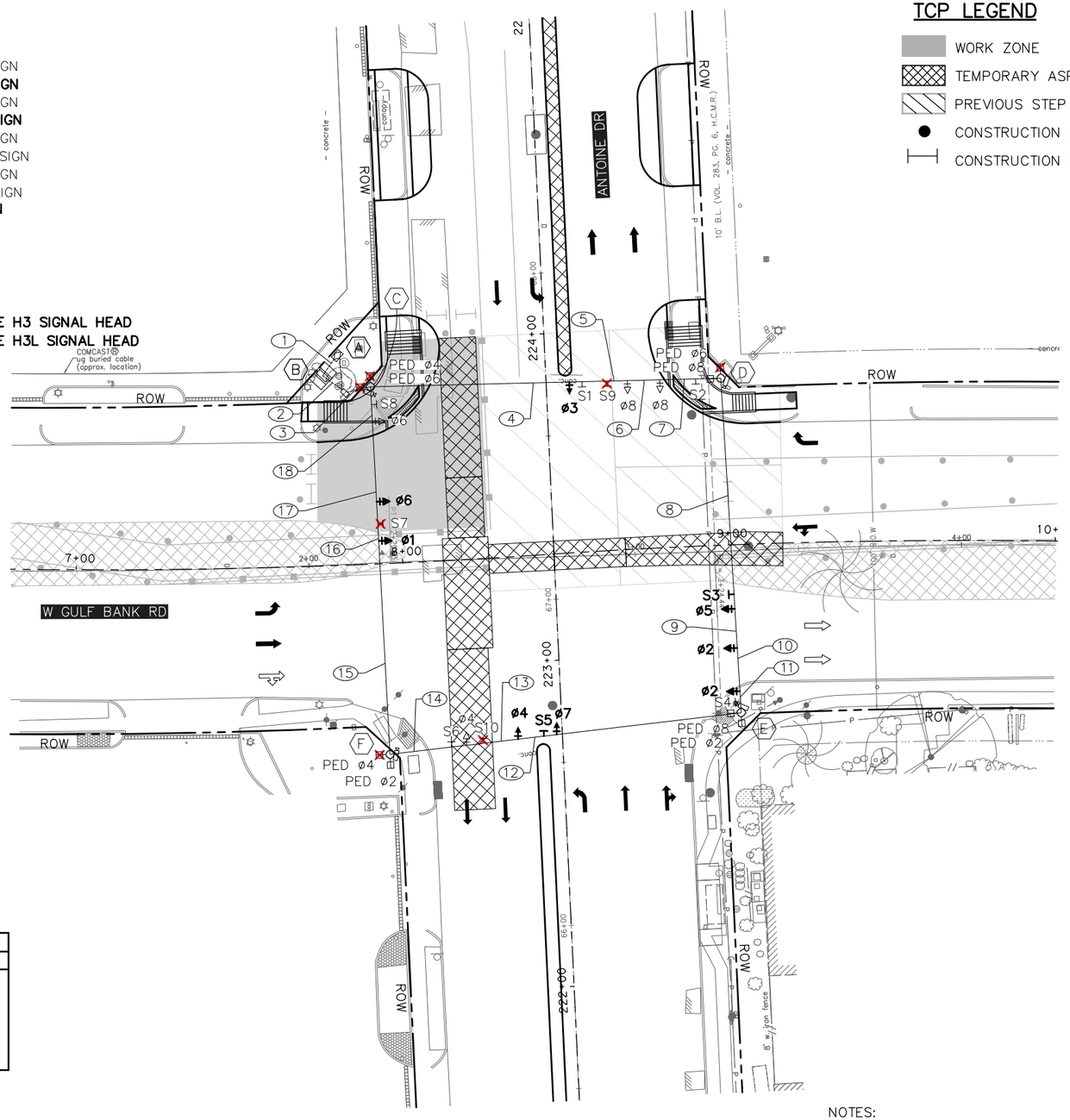
ø5

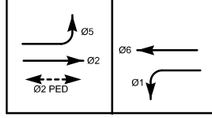
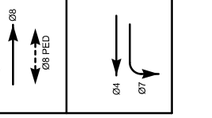
SIGN SCHEDULE

S1 = EXISTING R10-5 SIGN
S2 = EXISTING STREET NAME SIGN
S3 = UNBAG EXISTING R10-5 SIGN
S4 = EXISTING STREET NAME SIGN
S5 = UNBAG EXISTING R10-5 SIGN
S6 = EXISTING STREET NAME SIGN
S7 = BAGGED EXISTING R10-5 SIGN
S8 = EXISTING STREET NAME SIGN
S9 = BAGGED EXISTING R3-2 SIGN
S10 = BAG EXISTING R3-2 SIGN

BAG UNUSED SIGNAL HEADS
PHASE 4 PED PHASE NOT USED
PHASE 6 PED PHASE NOT USED

UNBAG PHASE 2 VEHICLE PHASE H3 SIGNAL HEAD
UNBAG PHASE 7 VEHICLE PHASE H3L SIGNAL HEAD



PHASE 7 STEP 4 TRAFFIC SIGNAL PHASING				
Ø2 + Ø5	Ø1 + Ø6	Ø3 + Ø8	Ø4 + Ø8	Ø4 + Ø7
				

POLE AND CABINET SCHEDULE

- (A) PROPOSED ELECTRICAL SERVICE
- (B) PROPOSED TEMPORARY SIGNAL CABINET
- (C) EXISTING POLE W/ PROPOSED PED ø4 AND PED ø6 AND VIVDS
- (D) EXISTING POLE W/ PROPOSED PED ø6 AND PED ø8 AND VIVDS
- (E) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø8 AND VIVDS
- (F) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø4 AND VIVDS

TCP LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUS STEP
- CONSTRUCTION BARREL
- CONSTRUCTION BARRICADE

LEGEND

- SIGNAL HEAD
- OPTICOM
- POLE W/ MAST ARM
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- PULL BOX – TYPE A
- PULL BOX – TYPE B
- PULL BOX – TYPE C
- CONDUIT (TRENCH)
- CONDUIT (BORE)
- LUMINAIRE
- MAST ARM SIGN
- CONTROLLER CABINET WITH BBU
- ELECTRICAL SERVICE
- BAGGED SIGNAL HEAD
- BAGGED SIGN
- VIVDS CAMERA

N

0′ 20′ 40′
SCALE IN FEET

NOTES:
1. PAIRED SIGNAL HEADS TO BE 10' APART.
2. EXISTING SIGNAL TO REMAIN OPERATIONAL UNTIL TEMPORARY SIGNAL IS OPERATIONAL.
3. VIVDS DETECTION ZONES TO BE ADJUSTED FOR EACH PHASE.
4. PED PHASE RECALL ACTIVE DURING ALL CONSTRUCTION PHASES.
5. TEMPORARY SIGNAL CABINET TO BE INSTALLED FOR TEMPORARY TRAFFIC SIGNAL.
6. CONTRACTOR TO COORDINATE ELECTRICAL SERVICE FOR TEMPORARY TRAFFIC SIGNAL.

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HOUSTON, TX 77002

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Firm No.: F-3158
Date: 10/16/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

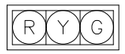
ANTOINE DRIVE AT WEST GULF BANK ROAD TRAFFIC SIGNAL TEMPORARY SIGNAL LAYOUT PHASE 7 STEP 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 548 OF 718	

Pen Table:TEI*Color.tbl
Plot Driver:E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\03 Reference and Resources\TxDOT*PDP*8815.PMP*
Design Filename:E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\04 Design\02 Plansheets\Temporary Signal Layout Sheet 16_now sheet 17.dgn

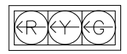
SIGNAL HEAD SCHEDULE

3-SECTION HORIZONTAL
12" LED H3 SIGNAL HEAD



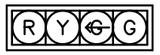
ø2, ø4, ø6, ø8

3-SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD



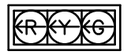
ø3, ø7

4-SECTION HORIZONTAL
12" LED H4TL SIGNAL HEAD



ø5

3-SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD



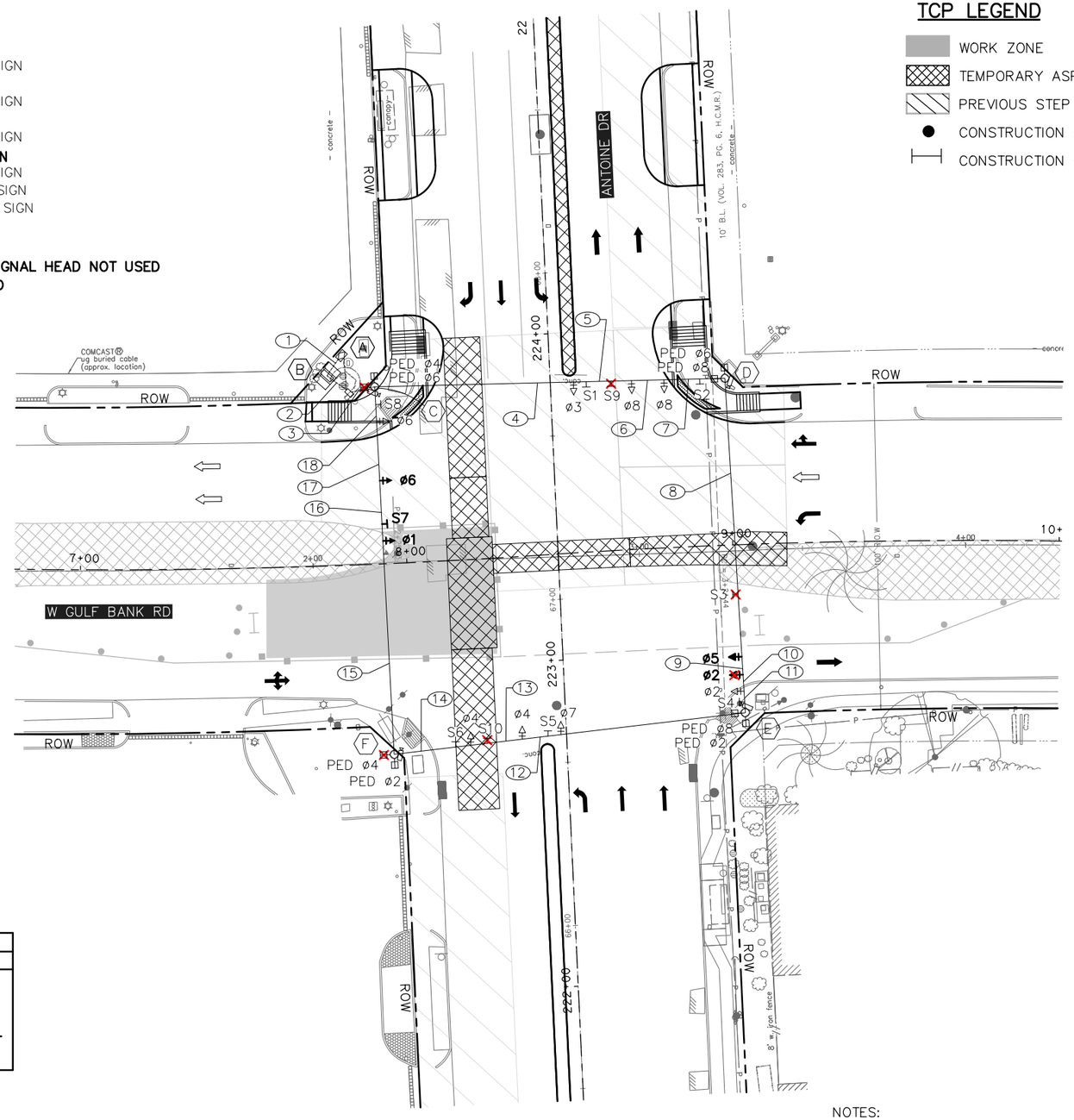
ø1

SIGN SCHEDULE

S1 = EXISTING R10-5 SIGN
S2 = EXISTING STREET NAME SIGN
S3 = BAG EXISTING R10-5 SIGN
S4 = EXISTING STREET NAME SIGN
S5 = EXISTING R10-5 SIGN
S6 = EXISTING STREET NAME SIGN
S7 = UNBAG EXISTING R10-5 SIGN
S8 = EXISTING STREET NAME SIGN
S9 = BAGGED EXISTING R3-2 SIGN
S10 = BAGGED EXISTING R3-2 SIGN

BAG UNUSED SIGNAL HEADS
PHASE 2 VEHICLE PHASE H3 SIGNAL HEAD NOT USED
PHASE 4 PED PHASE NOT USED

UNBAG PHASE 6 PED PHASE



TCP LEGEND

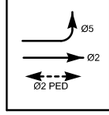
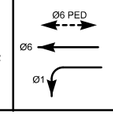
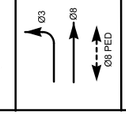
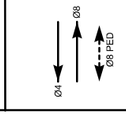
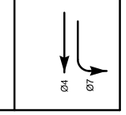
- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUS STEP
- CONSTRUCTION BARREL
- CONSTRUCTION BARRICADE

LEGEND

- SIGNAL HEAD
- OPTICOM
- POLE W/ MAST ARM
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- PULL BOX – TYPE A
- PULL BOX – TYPE B
- PULL BOX – TYPE C
- CONDUIT (TRENCH)
- CONDUIT (BORE)
- LUMINAIRE
- MAST ARM SIGN
- CONTROLLER CABINET WITH BBU
- ELECTRICAL SERVICE
- BAGGED SIGNAL HEAD
- BAGGED SIGN
- VIVDS CAMERA

N

0′ 20′ 40′
SCALE IN FEET

PHASE 7 STEP 5 TRAFFIC SIGNAL PHASING				
Ø2 + Ø5	Ø1 + Ø6	Ø3 + Ø8	Ø4 + Ø8	Ø4 + Ø7
				

POLE AND CABINET SCHEDULE

- (A) **PROPOSED ELECTRICAL SERVICE**
- (B) **PROPOSED TEMPORARY SIGNAL CABINET**
- (C) **EXISTING POLE W/ PROPOSED PED ø4 AND PED ø6 AND VIVDS**
- (D) **EXISTING POLE W/ PROPOSED PED ø6 AND PED ø8 AND VIVDS**
- (E) **EXISTING POLE W/ PROPOSED PED ø2 AND PED ø8 AND VIVDS**
- (F) **EXISTING POLE W/ PROPOSED PED ø2 AND PED ø4 AND VIVDS**

NOTES:
1. PAIRED SIGNAL HEADS TO BE 10' APART.
2. EXISTING SIGNAL TO REMAIN OPERATIONAL UNTIL TEMPORARY SIGNAL IS OPERATIONAL.
3. VIVDS DETECTION ZONES TO BE ADJUSTED FOR EACH PHASE.
4. PED PHASE RECALL ACTIVE DURING ALL CONSTRUCTION PHASES.
5. TEMPORARY SIGNAL CABINET TO BE INSTALLED FOR TEMPORARY TRAFFIC SIGNAL.
6. CONTRACTOR TO COORDINATE ELECTRICAL SERVICE FOR TEMPORARY TRAFFIC SIGNAL.

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TEXAS PE FIRM REG. # 3158
712 MAIN ST, #950
HOUSTON, TX 77002

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Engineer: VICTORIA MOTA, PE
P.E. Serial No. 145538
Firm: TEI PLANNING + DESIGN
Firm No.: F-3158
Date: 10/16/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ANTOINE DRIVE AT WEST GULF BANK ROAD TRAFFIC SIGNAL TEMPORARY SIGNAL LAYOUT PHASE 7 STEP 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 549 OF 718	

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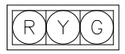
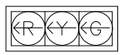
SIGNAL HEAD SCHEDULE

3-SECTION HORIZONTAL
12" LED H3 SIGNAL HEAD



ø2, ø4, ø6, ø8

3-SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD



ø3, ø7

4-SECTION HORIZONTAL
12" LED H4TL SIGNAL HEAD



ø5

4-SECTION HORIZONTAL
12" LED H4TL SIGNAL HEAD

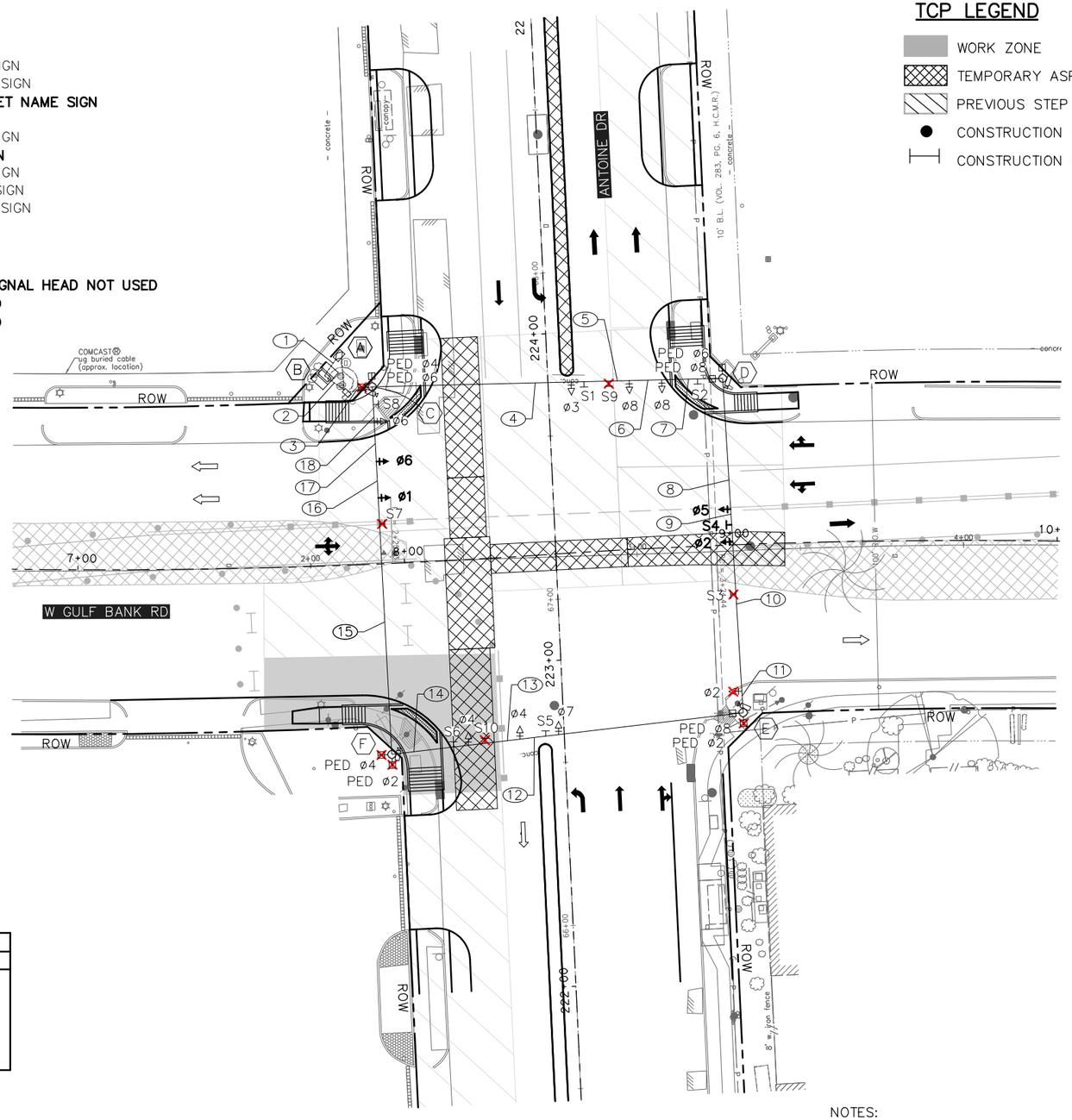


ø1

SIGN SCHEDULE

S1 = EXISTING R10-5 SIGN
S2 = EXISTING STREET NAME SIGN
S3 = BAGGED EXISTING R10-5 SIGN
S4 = RELOCATE EXISTING STREET NAME SIGN
S5 = EXISTING R10-5 SIGN
S6 = EXISTING STREET NAME SIGN
S7 = BAG EXISTING R10-5 SIGN
S8 = EXISTING STREET NAME SIGN
S9 = BAGGED EXISTING R3-2 SIGN
S10 = BAGGED EXISTING R3-2 SIGN

BAG UNUSED SIGNAL HEADS
PHASE 2 VEHICLE PHASE H3 SIGNAL HEAD NOT USED
PHASE 2 PED PHASE NOT USED
PHASE 4 PED PHASE NOT USED



PHASE 7 STEP 6 TRAFFIC SIGNAL PHASING				
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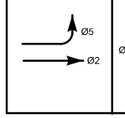	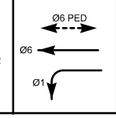	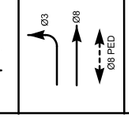	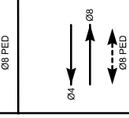	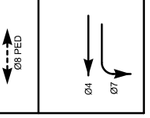

POLE AND CABINET SCHEDULE

- (A) **PROPOSED ELECTRICAL SERVICE**
- (B) **PROPOSED TEMPORARY SIGNAL CABINET**
- (C) **EXISTING POLE W/ PROPOSED PED ø4 AND PED ø6 AND VIVDS**
- (D) **EXISTING POLE W/ PROPOSED PED ø6 AND PED ø8 AND VIVDS**
- (E) **EXISTING POLE W/ PROPOSED PED ø2 AND PED ø8 AND VIVDS**
- (F) **EXISTING POLE W/ PROPOSED PED ø2 AND PED ø4 AND VIVDS**

TCP LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUS STEP
- CONSTRUCTION BARREL
- CONSTRUCTION BARRICADE

LEGEND

- SIGNAL HEAD
- OPTICOM
- POLE W/ MAST ARM
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- PULL BOX – TYPE A
- PULL BOX – TYPE B
- PULL BOX – TYPE C
- CONDUIT (TRENCH)
- CONDUIT (BORE)
- LUMINAIRE
- MAST ARM SIGN
- CONTROLLER CABINET WITH BBU
- ELECTRICAL SERVICE
- BAGGED SIGNAL HEAD
- BAGGED SIGN
- VIVDS CAMERA

N

0' 20' 40'
SCALE IN FEET

NOTES:
1. PAIRED SIGNAL HEADS TO BE 10' APART.
2. EXISTING SIGNAL TO REMAIN OPERATIONAL UNTIL TEMPORARY SIGNAL IS OPERATIONAL.
3. VIVDS DETECTION ZONES TO BE ADJUSTED FOR EACH PHASE.
4. PED PHASE RECALL ACTIVE DURING ALL CONSTRUCTION PHASES.
5. TEMPORARY SIGNAL CABINET TO BE INSTALLED FOR TEMPORARY TRAFFIC SIGNAL.
6. CONTRACTOR TO COORDINATE ELECTRICAL SERVICE FOR TEMPORARY TRAFFIC SIGNAL.

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HOUSTON, TX 77002

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P.E. Serial No. 145538
Firm: TEI PLANNING + DESIGN
Firm No.: F-3158
Date: 10/16/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

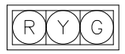
ANTOINE DRIVE AT WEST GULF BANK ROAD TRAFFIC SIGNAL TEMPORARY SIGNAL LAYOUT PHASE 7 STEP 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 550 OF 718	

Pen Table:TEI*Color.tbl
Plot Driver:E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\03 Reference and Resources\USTN*PDP*8158.AMWSP*
Design Filename: E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\04 Design\02 Plansheets\Temporary Signal Layout Sheet 18_now sheet 19.dgn

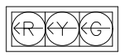
SIGNAL HEAD SCHEDULE

3–SECTION HORIZONTAL
12" LED H3 SIGNAL HEAD



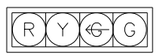
ø2, ø4, ø6, ø8

3–SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD



ø3, ø7

4–SECTION HORIZONTAL
12" LED H4TL SIGNAL HEAD



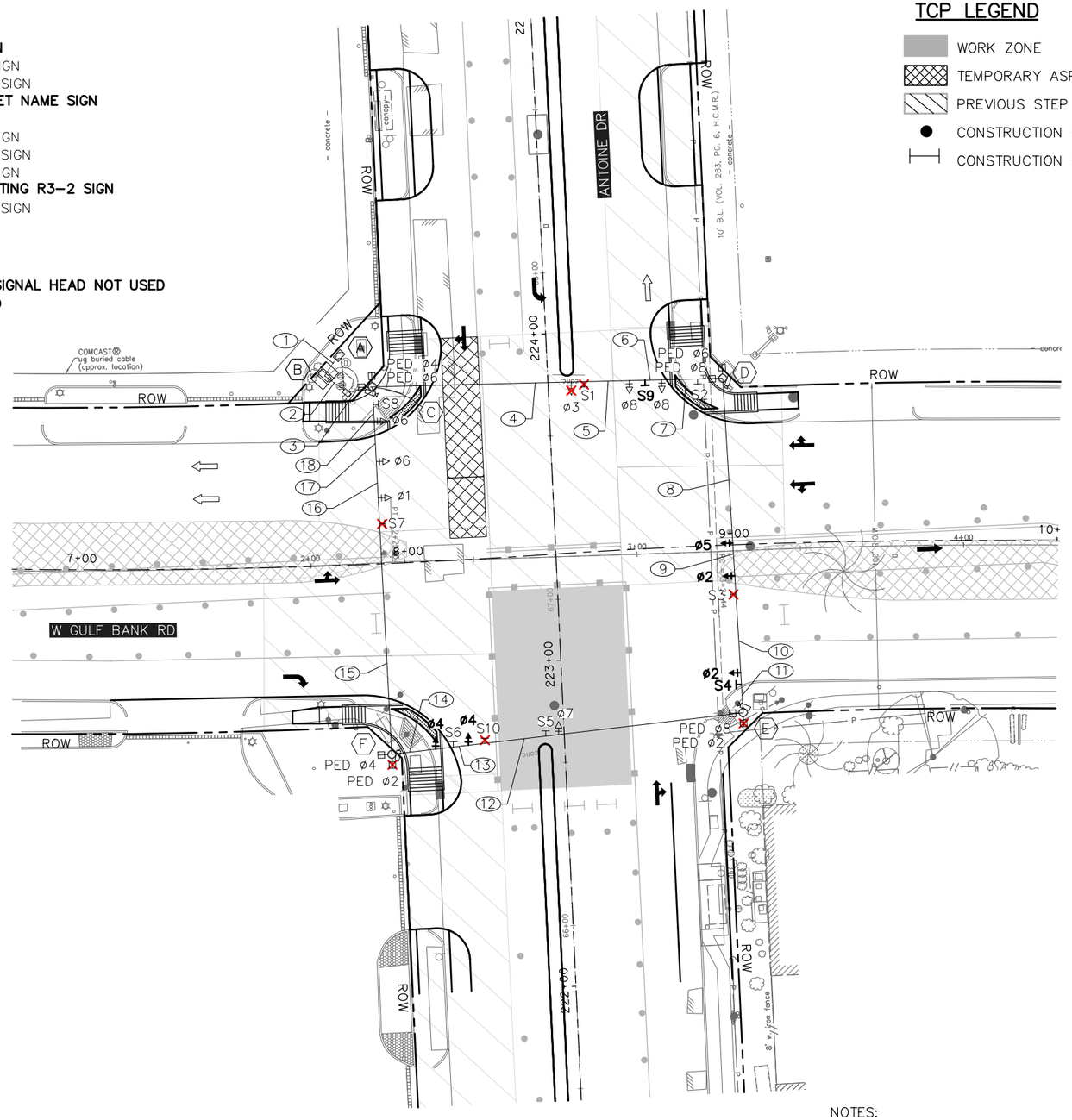
ø1, ø5

SIGN SCHEDULE

S1 = BAG EXISTING R10–5 SIGN
S2 = EXISTING STREET NAME SIGN
S3 = BAGGED EXISTING R10–5 SIGN
S4 = RELOCATE EXISTING STREET NAME SIGN
S5 = EXISTING R10–5 SIGN
S6 = EXISTING STREET NAME SIGN
S7 = BAGGED EXISTING R10–5 SIGN
S8 = EXISTING STREET NAME SIGN
S9 = UNBAG & RELOCATE EXISTING R3–2 SIGN
S10 = BAGGED EXISTING R3–2 SIGN

BAG UNUSED SIGNAL HEADS
PHASE 3 VEHICLE PHASE H3L SIGNAL HEAD NOT USED
PHASE 2 PED PHASE NOT USED

UNBAG PHASE 4 PED PHASE



TCP LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUS STEP
- CONSTRUCTION BARREL
- CONSTRUCTION BARRICADE

LEGEND

- SIGNAL HEAD
- OPTICOM
- POLE W/ MAST ARM
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- PULL BOX – TYPE A
- PULL BOX – TYPE B
- PULL BOX – TYPE C
- CONDUIT (TRENCH)
- CONDUIT (BORE)
- LUMINAIRE
- MAST ARM SIGN
- CONTROLLER CABINET WITH BBU
- ELECTRICAL SERVICE
- BAGGED SIGNAL HEAD
- BAGGED SIGN
- VIVDS CAMERA

N

0′ 20′ 40′
SCALE IN FEET

PHASE 7 STEP 7 TRAFFIC SIGNAL PHASING			
Ø2 + Ø5	Ø1 + Ø6	Ø4 + Ø8	Ø4 + Ø7
Ø5, Ø2	Ø6 PED, Ø6, Ø1	Ø4 PED, Ø4, Ø8, Ø8 PED	Ø4 PED, Ø4, Ø7

POLE AND CABINET SCHEDULE

- (A) **PROPOSED ELECTRICAL SERVICE**
- (B) **PROPOSED TEMPORARY SIGNAL CABINET**
- (C) **EXISTING POLE W/ PROPOSED PED ø4 AND PED ø6 AND VIVDS**
- (D) **EXISTING POLE W/ PROPOSED PED ø6 AND PED ø8 AND VIVDS**
- (E) **EXISTING POLE W/ PROPOSED PED ø2 AND PED ø8 AND VIVDS**
- (F) **EXISTING POLE W/ PROPOSED PED ø2 AND PED ø4 AND VIVDS**

NOTES:
1. PAIRED SIGNAL HEADS TO BE 10' APART.
2. EXISTING SIGNAL TO REMAIN OPERATIONAL UNTIL TEMPORARY SIGNAL IS OPERATIONAL.
3. VIVDS DETECTION ZONES TO BE ADJUSTED FOR EACH PHASE.
4. PED PHASE RECALL ACTIVE DURING ALL CONSTRUCTION PHASES.
5. TEMPORARY SIGNAL CABINET TO BE INSTALLED FOR TEMPORARY TRAFFIC SIGNAL.
6. CONTRACTOR TO COORDINATE ELECTRICAL SERVICE FOR TEMPORARY TRAFFIC SIGNAL.

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712 MAIN ST, #950
HOUSTON, TX 77002

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P.E. Serial No. 145538
Firm: TEI PLANNING + DESIGN
Firm No.: F-3158
Date: 10/16/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

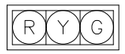
ANTOINE DRIVE AT WEST GULF BANK ROAD TRAFFIC SIGNAL TEMPORARY SIGNAL LAYOUT PHASE 7 STEP 7

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 551 OF 718	

Pen Table:TEI*Color.tbl
Plot Driver:E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\03 Reference and Resources\TEI*Color.tbl
Design Filename: E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\04 Designsheets\Temporary Signal Layout Sheet 19_now sheet 20.dgn

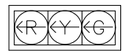
SIGNAL HEAD SCHEDULE

3-SECTION HORIZONTAL
12" LED H3 SIGNAL HEAD



ø2, ø4, ø6, ø8

3-SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD



ø3, ø7

4-SECTION HORIZONTAL
12" LED H4TL SIGNAL HEAD



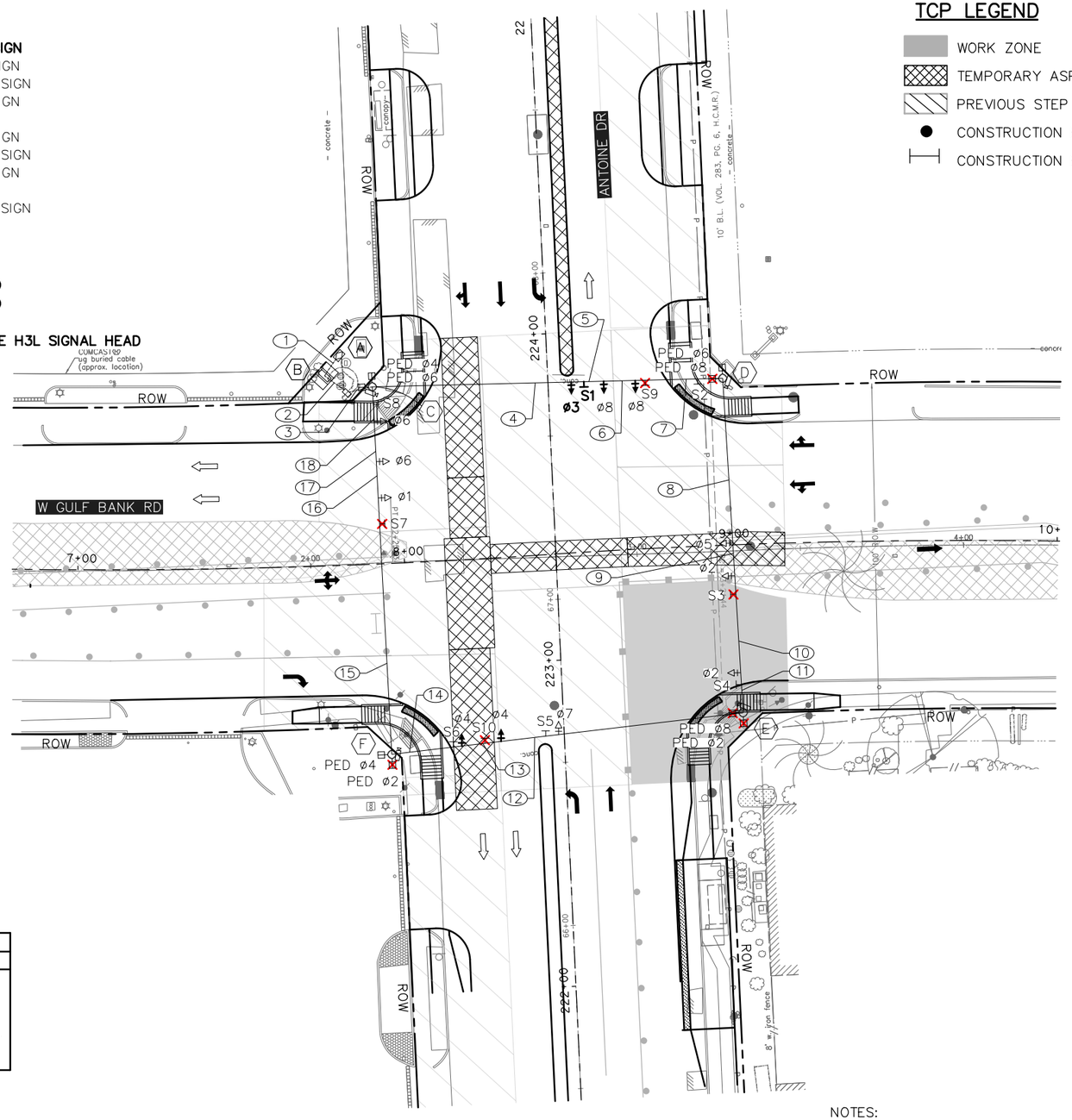
ø1, ø5

SIGN SCHEDULE

S1 = UNBAG EXISTING R10-5 SIGN
S2 = EXISTING STREET NAME SIGN
S3 = BAGGED EXISTING R10-5 SIGN
S4 = EXISTING STREET NAME SIGN
S5 = EXISTING R10-5 SIGN
S6 = EXISTING STREET NAME SIGN
S7 = BAGGED EXISTING R10-5 SIGN
S8 = EXISTING STREET NAME SIGN
S9 = BAG EXISTING R3-2 SIGN
S10 = BAGGED EXISTING R3-2 SIGN

BAG UNUSED SIGNAL HEADS
PHASE 2 PED PHASE NOT USED
PHASE 8 PED PHASE NOT USED

UNBAG PHASE 3 VEHICLE PHASE H3L SIGNAL HEAD



PHASE 7 STEP 8 TRAFFIC SIGNAL PHASING				
Ø2 + Ø5	Ø1 + Ø6	Ø3 + Ø8	Ø4 + Ø8	Ø4 + Ø7
Ø5, Ø2	Ø6 PED, Ø6, Ø1	Ø3, Ø8	Ø4 PED, Ø4, Ø8	Ø4 PED, Ø4, Ø7

POLE AND CABINET SCHEDULE

(A) **PROPOSED ELECTRICAL SERVICE**
(B) **PROPOSED TEMPORARY SIGNAL CABINET**
(C) **EXISTING POLE W/ PROPOSED PED ø4 AND PED ø6 AND VIVDS**
(D) **EXISTING POLE W/ PROPOSED PED ø6 AND PED ø8 AND VIVDS**
(E) **EXISTING POLE W/ PROPOSED PED ø2 AND PED ø8 AND VIVDS**
(F) **EXISTING POLE W/ PROPOSED PED ø2 AND PED ø4 AND VIVDS**

TCP LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUS STEP
- CONSTRUCTION BARREL
- CONSTRUCTION BARRICADE

LEGEND

- SIGNAL HEAD
- OPTICOM
- POLE W/ MAST ARM
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- PULL BOX – TYPE A
- PULL BOX – TYPE B
- PULL BOX – TYPE C
- CONDUIT (TRENCH)
- CONDUIT (BORE)
- LUMINAIRE
- MAST ARM SIGN
- CONTROLLER CABINET WITH BBU
- ELECTRICAL SERVICE
- BAGGED SIGNAL HEAD
- BAGGED SIGN
- VIVDS CAMERA

N

0' 20' 40'
SCALE IN FEET

NOTES:
1. PAIRED SIGNAL HEADS TO BE 10' APART.
2. EXISTING SIGNAL TO REMAIN OPERATIONAL UNTIL TEMPORARY SIGNAL IS OPERATIONAL.
3. VIVDS DETECTION ZONES TO BE ADJUSTED FOR EACH PHASE.
4. PED PHASE RECALL ACTIVE DURING ALL CONSTRUCTION PHASES.
5. TEMPORARY SIGNAL CABINET TO BE INSTALLED FOR TEMPORARY TRAFFIC SIGNAL.
6. CONTRACTOR TO COORDINATE ELECTRICAL SERVICE FOR TEMPORARY TRAFFIC SIGNAL.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ANTOINE DRIVE AT WEST GULF BANK ROAD TRAFFIC SIGNAL TEMPORARY SIGNAL LAYOUT PHASE 7 STEP 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 552 OF 718	

Pen Table:TEI*Color.tbl
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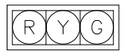
Design Filename: E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\04 Design\02 Plansheets\Temporary Signal Layout Sheet 20_now sheet 21.dgn

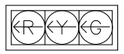
SIGNAL HEAD SCHEDULE

3-SECTION HORIZONTAL
12" LED H3 SIGNAL HEAD



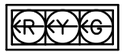
ø2, ø4, ø6, ø8

3-SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD



ø3, ø7

3-SECTION HORIZONTAL
12" LED H3L SIGNAL HEAD



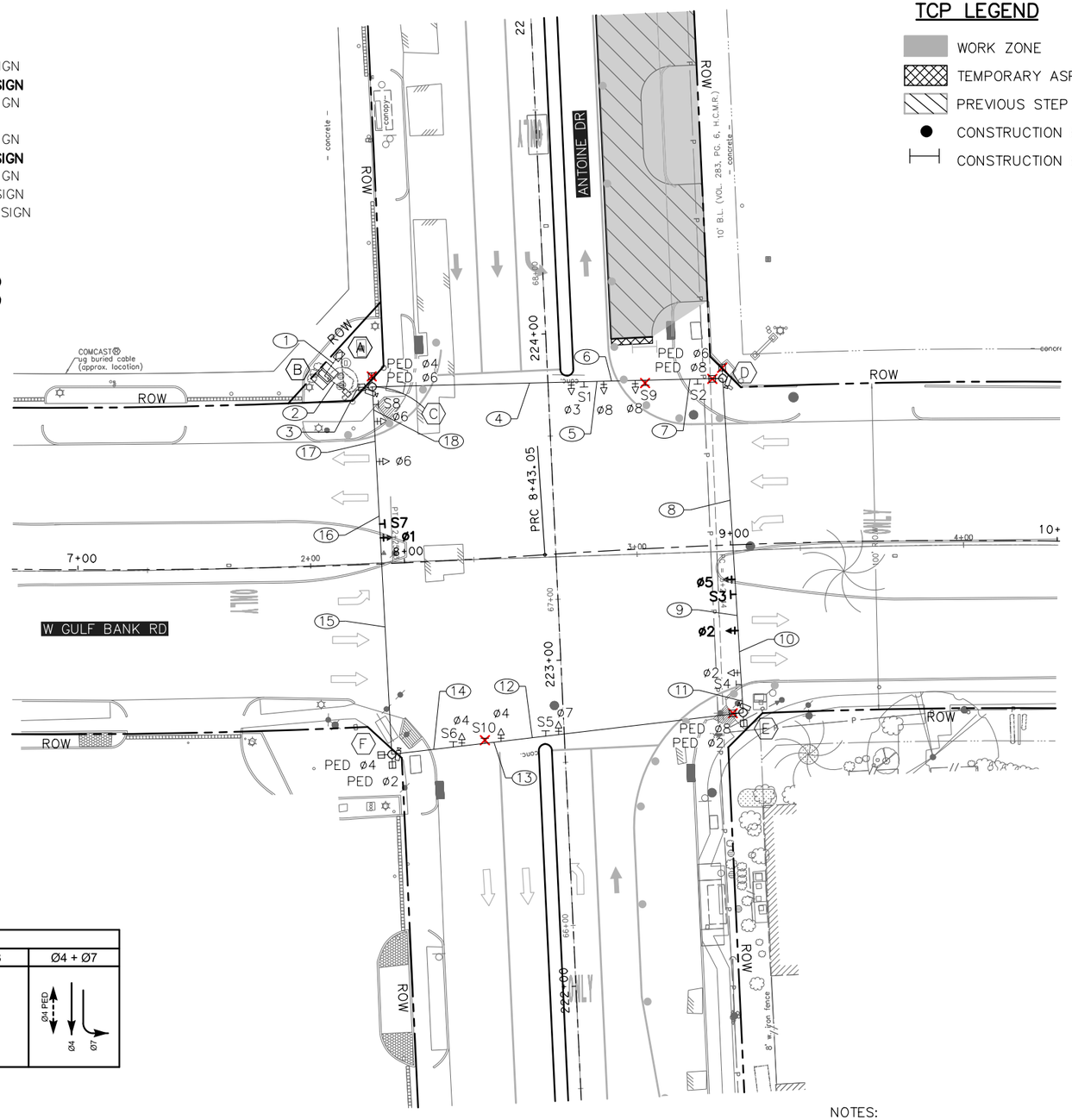
ø1, ø5

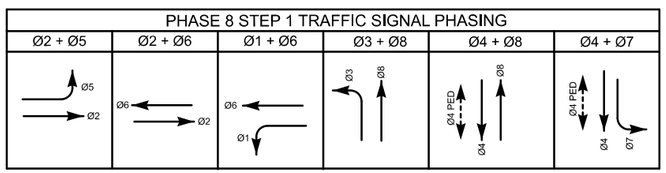
SIGN SCHEDULE

S1 = EXISTING R10-5 SIGN
S2 = EXISTING STREET NAME SIGN
S3 = UNBAG EXISTING R10-5 SIGN
S4 = EXISTING STREET NAME SIGN
S5 = EXISTING R10-5 SIGN
S6 = EXISTING STREET NAME SIGN
S7 = UNBAG EXISTING R10-5 SIGN
S8 = EXISTING STREET NAME SIGN
S9 = BAGGED EXISTING R3-2 SIGN
S10 = BAGGED EXISTING R3-2 SIGN

BAG UNUSED SIGNAL HEADS
PHASE 6 PED PHASE NOT USED
PHASE 8 PED PHASE NOT USED

UNBAG PHASE 2 PED PHASE





POLE AND CABINET SCHEDULE

- (A) PROPOSED ELECTRICAL SERVICE
- (B) PROPOSED TEMPORARY SIGNAL CABINET
- (C) EXISTING POLE W/ PROPOSED PED ø4 AND PED ø6 AND VIVDS
- (D) EXISTING POLE W/ PROPOSED PED ø6 AND PED ø8 AND VIVDS
- (E) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø8 AND VIVDS
- (F) EXISTING POLE W/ PROPOSED PED ø2 AND PED ø4 AND VIVDS

TCP LEGEND

- WORK ZONE
- TEMPORARY ASPHALT
- PREVIOUS STEP
- CONSTRUCTION BARREL
- CONSTRUCTION BARRICADE

LEGEND

- SIGNAL HEAD
- OPTICOM
- POLE W/ MAST ARM
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- PEDESTAL POLE
- PULL BOX – TYPE A
- PULL BOX – TYPE B
- PULL BOX – TYPE C
- CONDUIT (TRENCH)
- CONDUIT (BORE)
- LUMINAIRE
- MAST ARM SIGN
- CONTROLLER CABINET WITH BBU
- ELECTRICAL SERVICE
- BAGGED SIGNAL HEAD
- BAGGED SIGN
- VIVDS CAMERA

N

0′ 20′ 40′
SCALE IN FEET

NOTES:
1. PAIRED SIGNAL HEADS TO BE 10' APART.
2. EXISTING SIGNAL TO REMAIN OPERATIONAL UNTIL TEMPORARY SIGNAL IS OPERATIONAL.
3. VIVDS DETECTION ZONES TO BE ADJUSTED FOR EACH PHASE.
4. PED PHASE RECALL ACTIVE DURING ALL CONSTRUCTION PHASES.
5. TEMPORARY SIGNAL CABINET TO BE INSTALLED FOR TEMPORARY TRAFFIC SIGNAL.
6. CONTRACTOR TO COORDINATE ELECTRICAL SERVICE FOR TEMPORARY TRAFFIC SIGNAL.

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tei Planning + Design
TEXAS PE FIRM REG. # 3158
712 MAIN ST, #950
HOUSTON, TX 77002

SURVEYED BY:
KUO & ASSOCIATES, INC.

INTERIM REVIEW ONLY
Document incomplete; not intended for permit, bidding or construction.
Engineer: VICTORIA MOTA, PE
P.E. Serial No. 145538
Firm: TEI PLANNING + DESIGN
Firm No.: F-3158
Date: 10/16/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ANTOINE DRIVE AT WEST GULF BANK ROAD TRAFFIC SIGNAL TEMPORARY SIGNAL LAYOUT PHASE 8 STEP 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 553 OF 718	

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Plot Driver:E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\03 Reference and Resources\TSTN*PDP*8301.prf, AMMUSER*
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MATERIALS FOR TEMPORARY TRAFFIC SIGNALS
(FOR CONTRACTOR'S INFORMATION ONLY)

SPEC. NO.	ITEM DESCRIPTION		ANTOINE DRIVE AT WEST MOUNT HOUSTON ROAD	ANTOINE DRIVE AT BRIDGE FOREST DRIVE
671	FURNISH AND INSTALL TEMPORARY TRAFFIC SIGNAL SYSTEM	EA	1	1
*	15' LIMINAIRE ARM	EA	4	4
*	400 WATT EQUIVALENT LED LUMINAIRE ON 15' ARM	EA	4	4
*	40' CLASS II WOOD POLE, INCLUDING TWO 8' X 10" SCREW ANCHORS, DOWN GUYS, DOWN GUY COVERS, AMD HARDWARE	EA	4	4
*	ONE-WAY 3-SECTION 12" LED HORIZONTAL SIGNAL HEAD (RAG)	EA	8	8
*	ONE-WAY 4-SECTION 12" LED HORIZONTAL SIGNAL HEAD (<R<R<A<G)	EA	4	2
*	CONTROL CABLE 2/C #14 (IMSA 20-1) (STRANDED) (LUMINAIRES)	LF	450	400
*	CONTROL CABLE 7/C #14 (IMSA 20-1) (STRANDED) (SIGNAL)	LF	2200	1400
*	CONTROL CABLE 1/C #4 XHHW (POWER)	LF	100	115
*	CONTROL CABLE 1/C #8 (BARE)	LF	130	145
*	1/4" SPAN WIRE (HORIZONTAL)	LF	1050	920
*	5/6" SPAN WIRE (CATENARY)	LF	1700	1610
*	FURNISH AND INSTALL STREET NAME SIGN (VARX18") (OVERHEAD) (DIAMOND GRADE)	EA	4	4
*	FURNISH AND INSTALL SIGN, "LEFT TURN SIGNAL" (48"X12") WITH SIGN LIGHT	EA	4	2
*	FURNISH AND INSTALL SIGN, "LEFT TURN YIELD" (24"X30")	EA	-	2
*	COPPER GROUND ROD 5/8" X 8'	EA	4	4
*	FURNISH AND INSTALL 2" GALVANIZED RIGID METAL CONDUIT	LF	100	110
*	FURNISH AND INSTALL 3" GALVANIZED RIGID METAL CONDUIT	LF	30	35
*	FURNISH AND INSTALL POLE MOUNTED CONTROLLER CABINET	EA	1	1
*	3/C #16 (VIDEO POWER)	LF	650	600
*	COAXIAL (RG-59) (VIDEO)	LF	650	600
*	VIDEO DETECTION CAMERA ASSEMBLY	EA	4	4
*	VIDEO DETECTION PROCESSOR SYSTEM	EA	1	1
*	VIDEO DETECTION SET-UP SYSTEM	EA	1	1

* ITEMS INCIDENTAL TO "671 - FURNISH AND INSTALL TEMPORARY TRAFFIC SIGNAL SYSTEM"

NO.	REVISIONS	DATE	NAME

HARRIS COUNTY ENGINEERING DEPARTMENT

HARRIS COUNTY 1836 TEXAS

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M. R. NEELAPU
107595
8/22/2024
DATE

PROJECT TITLE: ANTOINE DRIVE		
DRAWN BY:	SHEET DESCRIPTION: BASIS OF ESTIMATE	JOB NO. 2024-2161-01
CK'D BY:	TEMPORARY TRAFFIC SIGNALS	FILE NAME:
SCALE: N.T.S.		FILE NO:
DATE:	APPROVED BY:	SHT NO. 554 / 718

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8/22/2024

MATERIALS FOR PERMANENT TRAFFIC SIGNALS
(FOR CONTRACTOR'S INFORMATION ONLY)

SPEC. NO.	ITEM DESCRIPTION		ANTOINE DRIVE AT WEST MOUNT HOUSTON ROAD	ANTOINE DRIVE AT BRIDGE FOREST DRIVE
416	FURNISH AND INSTALL REINFORCED CONCRETE DRILLED SHAFT FOUNDATION (CLASS B2) (TYPE 10036) INCLUDING ANCHOR BOLTS	VF	-	30
TXDOT 416	FURNISH AND INSTALL REINFORCED CONCRETE DRILLED SHAFT FOUNDATION (TYPE 48-A) INCLUDING ANCHOR BOLTS	VF	88	44
682	FURNISH AND INSTALL ONE-WAY 3-SECTION 12" LED HORIZONTAL SIGNAL HEAD (RAG)	EA	8	8
682	FURNISH AND INSTALL ONE-WAY 3-SECTION 12" LED HORIZONTAL SIGNAL HEAD (RAG) (BIKE SYMBOL)	EA	2	-
682	FURNISH AND INSTALLONE-WAY 4-SECTION 12" LED HORIZONTAL SIGNAL HEAD (<R<R<A<G) (LEFT TURN SIGNAL)	EA	4	-
682	FURNISH AND INSTALLONE-WAY 4-SECTION 12" LED HORIZONTAL SIGNAL HEAD (<R<A<A<G) (FLASHING YELLOW ARROW SIGNAL)	EA	-	2
683	FURNISH AND INSTALL "LED COUNTDOWN PEDESTRIAN SIGNAL HEAD" ASSEMBLY	EA	8	8
684	CONTROL CABLE 2/C #14 (IMSA 20-1) (STRANDED) (LUMINAIRES)	LF	1155	695
684	CONTROL CABLE 2/C #14 (IMSA 20-1) (STRANDED) (PUSH BUTTONS)	LF	1195	1080
684	CONTROL CABLE 4/C #14 (IMSA 20-1) (STRANDED) (PEDESTRIAN SIGNAL)	LF	1240	1125
684	CONTROL CABLE 7/C #14 (IMSA 20-1) (STRANDED) (SIGNAL)	LF	2155	1300
684	CONTROL CABLE 2/C #14 (IMSA 50-2) (STRANDED) (LOOP DETECTOR)	LF	8125	4845
684	CONTROL CABLE 1/C #4 XHHW (POWER)	LF	915	835
684	CONTROL CABLE 1/C #8 (BARE)	LF	750	760
686	FURNISH AND INSTALL HC 10034 (34') TRAFFIC SIGNAL STEEL STRAIN POLE	EA	-	2
686	FURNISH AND INSTALL HC 30' CLAMP-ON MAST ARM	EA	-	1
686	FURNISH AND INSTALL HC 40' CLAMP-ON MAST ARM	EA	-	1
TXDOT 686	FURNISH AND INSTALL TXDOT LMA 50L-100	EA	2	2
TXDOT 686	FURNISH AND INSTALL TXDOT LMA 55L-100	EA	2	-
686	FURNISH AND INSTALL 10' TXDOT LUMINAIRE ARM WITH 400 WAT EQUIVALENT LED LUMINAIRE FIXTURE WITH SHORTING CAP	EA	2	2
687	FURNISH AND INSTALL 4" X 10' SCH. 80, SPUN ALUMINUM PEDESTAL POLE ASSEMBLY INCLUDING SCREW ANCHOR FOUNDATION	EA	-	6
688	FURNISH AND INSTALL PEDESTRIAN PUSH BUTTON STATION (APS) (RIGHT ARROW, LEFT ARROW, DOUBLE ARROW)	EA	8	8
690	FURNISH AND INSTALL TRAFFIC SIGNAL SYSTEM (ISOLATED)	LS	1	1
**	FURNISH AND INSTALL MAST ARM MOUNTED STREET NAME SIGN (VARX18") (OVERHEAD) (DIAMOND GRADE)	EA	4	4
**	FURNISH AND INSTALL MAST ARM MOUNTED SIGN, "LEFT TURN YIELD ON FLASHING YELLOW ARROW" (R10-17T) (30"X30")	EA	-	2
**	FURNISH AND INSTALL MAST ARM MOUNTED SIGN, "LEFT TURN YIELD" (24"X30")	EA	-	2
**	COPPER GROUND ROD 5/8" X 8'	EA	8	14
**	FURNISH AND INSTALL PULL BOX ASSEMBLY INCLUDING LID AND APRON	EA	24	15
**	FURNISH AND INSTALL GROUND BOX ASSEMBLY INCLUDING LID AND APRON	EA	2	2
**	PHOTOELECTRIC CELL	EA	1	1
**	FURNISH AND INSTALL 1" DIAMETER SCH. 40 CONDUIT	LF	205	75
**	FURNISH AND INSTALL 2" DIAMETER SCH. 40 CONDUIT	LF	1850	1150
**	FURNISH AND INSTALL 3" DIAMETER SCH. 40 CONDUIT	LF	200	155
**	FURNISH AND INSTALL 4" DIAMETER SCH. 40 CONDUIT	LF	200	205
**	FURNISH AND INSTALL METER POLE, SERVICE LOOP AND SAFETY SWITCH [TYPE D(MOD 1) (120/240) 000 (NS) SS (N) SP (O)]	EA	1	1
**	FURNISH AND INSTALL METER POLE, DISCONNECT [TYPE D(MOD 2) (120/240) 70 (NS) SS (E) SP (U)]	EA	1	1
**	SAWCUT AND INSTALL VEHICLE LOOP DETECTORS, INCLUDING LOOP WIRE	LF	4950	3290
**	RADAR PRESENCE DETECTOR INCLUDING CABLE	EA	-	1
692	FURNISH AND INSTALL HC GROUND MOUNTED ITS (HOUSING 3) CABINET ASSEMBLY WITH SIDE MOUNTED BATTERY BACKUP SYSTEM INCLUDING FOUNDATION	EA	1	1
693	FURNISH AND INSTALL HC ATC CONTROLLER UNIT	EA	1	1

** ITEMS INCIDENTAL TO "690 - FURNISH AND INSTALL TRAFFIC SIGNAL SYSTEM (ISOLATED)"

NO.	REVISIONS	DATE	NAME

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M. R. NEELAPU
107595
8/22/2024
DATE

PROJECT TITLE: ANTOINE DRIVE		
DRAWN BY:	SHEET DESCRIPTION: BASIS OF ESTIMATE TRAFFIC SIGNAL	JOB NO: 2024-2161-01
CK'D BY:		FILE NAME:
SCALE: N.T.S.		FILE NO:
DATE:	APPROVED BY:	SHT NO: 555 / 718

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8/22/2024

NOTES FOR TEMPORARY TRAFFIC SIGNALS

1. PROVIDE AND INSTALL TEMPORARY TRAFFIC SIGNALS PRIOR TO REMOVING THE EXISTING SIGNALS AND PRIOR TO THE START OF PHASE 1 STEP 1 CONSTRUCTION. USE EXISTING AND/OR TEMPORARY POLES, CONTROLLER, SIGNAL HEADS AND POWER SOURCE FOR THE TEMPORARY SIGNALS AS SHOWN ON THE PLANS.

2. INSTALL TEMPORARY TRAFFIC SIGNAL ITEMS AS APPLICABLE FOR EACH TEMPORARY SIGNAL INSTALLATION AS SHOWN ON THE PLANS. PROVIDE A MINIMUM OF TWO (2) SIGNAL HEADS FOR EACH APPROACH. PROVIDE EACH SPAN WITH SUFFICIENT SPARE SIGNAL CABLE TO ALLOW FOR ADJUSTMENTS NECESSARY TO LOCATE THE SIGNAL HEADS OVER THE APPROPRIATE LANES DURING EACH PHASE AND STEP OF CONSTRUCTION.

3. MAINTAIN THE EXISTING SIGNAL INSTALLATION UNTIL THE TEMPORARY SIGNAL INSTALLATION IS OPERATIONAL.

4. MAINTAIN THE TEMPORARY SIGNAL INSTALLATION UNTIL THE PERMANENT SIGNAL INSTALLATION IS OPERATIONAL. WRAP THE SIGNAL HEADS WITH DARK PLASTIC OR SUITABLE MATERIAL TO CONCEAL THE SIGNAL FACES FROM THE TIME OF THE INSTALLATION UNTIL PLACING INTO OPERATION. DO NOT USE BURLAP.

5. PROVIDE A UNIFORMED POLICE OFFICER FOR TRAFFIC CONTROL DURING THE "SWITCH OVER" OF SIGNAL INSTALLATIONS AND DURING ANY PERIOD OF TIME THAT A SIGNAL INSTALLATION MAY BE OUT OF SERVICE.

6. ALL EQUIPMENT UTILIZED FOR THE TEMPORARY TRAFFIC SIGNAL INSTALLATION MUST CONFORM TO, AND BE INSTALLED IN ACCORDANCE WITH HARRIS COUNTY'S OR CITY OF HOUSTON'S STANDARDS AND SPECIFICATIONS.

7. INSTALL SIGNALS HORIZONTALLY AT A MINIMUM OF 19 FT. - 0 IN. ABOVE THE ROADWAY.

8. REPLACE PAVEMENT, SIDEWALKS, OR CURBS DAMAGED BY THE CONTRACTOR DURING CONSTRUCTION. SUCH REPAIR IS INCIDENTAL TO "TRAFFIC CONTROL".

9. DETERMINE THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. REPAIR ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION BY THE CONTRACTOR AT NO EXPENSE TO HARRIS COUNTY OR CITY OF HOUSTON.

10. ONCE THE INTEGRITY AND/OR FUNCTION OF THE EXISTING TRAFFIC SIGNAL IS ALTERED BY THE CONTRACTOR, MAINTAIN AND OPERATE THE EXISTING TRAFFIC SIGNAL UNTIL THE TRAFFIC SIGNAL WORK IS ACCEPTED BY HARRIS COUNTY OR CITY OF HOUSTON. DURING CONSTRUCTION OF THE PROPOSED TRAFFIC SIGNAL WORK, MAINTAIN THE CONTINUOUS OPERATION OF THE EXISTING TRAFFIC SIGNAL AND/OR TEMPORARY TRAFFIC SIGNAL FOR EACH OF THE PROPOSED CONSTRUCTION PHASES AND STEPS IN CONFORMANCE WITH THE LATEST TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. ASSUME FULL RESPONSIBILITY FOR THE CONTINUOUS MAINTENANCE AND REPAIR OF THE SIGNAL EQUIPMENT. NO EXTRA COMPENSATION WILL BE ALLOWED FOR THIS WORK.

11. RESPOND IMMEDIATELY (24 HOURS A DAY) TO REPORTED TRAFFIC SIGNAL MALFUNCTIONS AT ANY OF THE INCLUDED SIGNALIZED INTERSECTIONS AFTER ASSUMING RESPONSIBILITY FOR THE MAINTENANCE OF THE SIGNAL EQUIPMENT AS OUTLINED ABOVE.

12. PHASING SEQUENCE AND SIGNAL TIMING DURING CONSTRUCTION WILL BE DETERMINED BY HARRIS COUNTY OR CITY OF HOUSTON SUBJECT TO THE APPROVAL OF THE ENGINEER.

13. REMOVE THE EXISTING SIGNAL SYSTEMS AND THOSE ITEMS DEEMED SALVAGEABLE BY THE HARRIS COUNTY OR CITY OF HOUSTON. STOCKPILE THOSE ITEMS ON THE RIGHT-OF-WAY. DISPOSE OF OTHER ITEMS REMOVED AT NO EXPENSE TO HARRIS COUNTY OR CITY OF HOUSTON. REMOVING AND STOCKPILING EXISTING TRAFFIC SIGNAL EQUIPMENT IS INCIDENTAL TO THE VARIOUS BID ITEMS IN THIS PROJECT.

14. PROVIDE A FULL TIME QUALIFIED TRAFFIC SIGNAL TECHNICIAN RESPONSIBLE FOR THE MAINTENANCE AND/OR REPLACEMENT OF ALL TRAFFIC SIGNAL DEVICES.

15. COORDINATE INSTALLATIONS OF THE TEMPORARY TRAFFIC SIGNAL DURING CONSTRUCTION WITH THE VARIOUS PHASES AND STEPS OF THE PROPOSED ROADWAY CONSTRUCTION.

16. REMOVE EXISTING CONCRETE POLE FOUNDATIONS TO TWO (2) FEET BELOW THE FINISH GRADE. BACKFILL WITH LIKE MATERIAL EQUAL IN COMPOSITION AND DENSITY TO THE SURROUNDING AREA, AND BY REPLACING ANY SURFACING WITH LIKE MATERIAL TO EQUIVALENT CONDITION. THIS WORK IS INCIDENTAL TO ITEM "TRAFFIC CONTROL".

17. COIL SUFFICIENT AMOUNT OF SIGNAL CABLE TO ACCOMMODATE SIGNAL HEAD ADJUSTMENTS DURING THE VARIOUS PHASES/STEPS OF CONSTRUCTION.

18. FOR EACH PHASE/STEP OF THE TRAFFIC CONTROL, BEFORE STARTING OTHER CONSTRUCTION, CONSTRUCT AND MAKE THE TEMPORARY TRAFFIC SIGNALS OPERATIONAL.

19. ENSURE THE TEMPORARY SIGNALS REMAIN OPERATIONAL UNTIL THE "SWITCH OVER" TO NEXT PHASE/SEQUENCE OF CONSTRUCTION. KEEP DOWN TIME, IF ANY, TO A MINIMUM. ACCOMPLISH THE "SWITCH OVER" DURING OFF-PEAK HOURS BETWEEN 9:00 AM AND 3:00 PM.

20. FURNISH 3/8-IN. GALVANIZED DOWN GUYS (HIGH STRENGTH) FOR WOOD POLES. FURNISH 8 FT. – 10 IN. SCREW ANCHORS. FURNISH "SIDEWALK" DOWN-GUYS IF FIELD CONDITIONS DO NOT ALLOW FOR THE STANDARD DOWN-GUY ASSEMBLY.

21. PROVIDE CONTINUOUS CONDUCTORS WITHOUT SPLICES FROM SIGNAL CONTROLLERS TO SIGNAL HEADS. PROVIDE CONTINUOUS CONDUCTORS WITHOUT SPLICES FROM LUMINAIRES TO SERVICE ENCLOSURE.

22. AIM LUMINAIRE ARMS MOUNTED ON TRAFFIC SIGNAL POLES AS SHOWN ON THE DRAWINGS.

23. VIDEO IMAGING VEHICLE DETECTION SYSTEM (VIVDS) WILL BE USED TO DETECT VEHICLES DURING THE VARIOUS PHASES OF CONSTRUCTION. RELOCATE CAMERAS AS NECESSARY. PROVIDE SUFFICIENT AMOUNT OF COAXIAL CABLE AND POWER CONDUCTORS TO ACCOMMODATE ANY ADJUSTMENTS DURING THE VARIOUS PHASES OF CONSTRUCTION. THIS WORK IS INCIDENTAL TO "TRAFFIC CONTROL".

24. FOR SPAN WIRE SIGNALS, ATTACH THE VIVDS COAX AND POWER CABLE TO A 5/16-IN. GALVANIZED SPAN WIRE (HIGH STRENGTH) BETWEEN THE SIGNAL POLES ABOVE THE TRAFFIC SIGNAL CABLE. STRAP THE VIVDS CABLE TO THE SPAN WIRE WITH A UV STABILIZED SS PANDUIT STRAPS (1/4 IN. MINIMUM WIDTH AT 15 IN. MAXIMUM SPACING) THAT IS APPROVED FOR OUTDOOR USE.

25. FOR VIVDS CAMERAS MOUNTED TO LUMINAIRE ARMS, STRAP THE VIVDS COAX AND POWER CABLE TO THE ARM WITH A UV STABILIZED SS PANDUIT STRAPS (1/4 IN. MINIMUM WIDTH AT 8 IN. MAXIMUM SPACING) THAT IS APPROVED FOR OUTDOOR USE.

26. FURNISH VIDEO IMAGING VEHICLE DETECTION SYSTEM (VIVDS) CABLE RECOMMENDED BY MANUFACTURER OR PURCHASE CABLE FROM THE SAME MANUFACTURER THAT SUPPLIED/PROVIDED THE VIVDS EQUIPMENT.

NO.	REVISIONS	DATE	NAME

HARRIS COUNTY
ENGINEERING DEPARTMENT

HARRIS COUNTY TEXAS 1836

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M. R. NEELAPU
107595
8/22/2024
DATE

PROJECT TITLE: ANTOINE DRIVE		
DRAWN BY:	SHEET DESCRIPTION: TEMPORARY TRAFFIC SIGNAL NOTES	JOB NO: 2024-2161-01
CK'D BY:		FILE NAME:
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8/22/2024

EXISTING TRAFFIC SIGNAL SCHEDULE

R A G
A B D E
G H K L

SIGN LIGHT
LEFT TURN SIGNAL
F M

SIGN LIGHT
LEFT TURN SIGNAL
C J

SIGNAL
N P

EXISTING SIGN SCHEDULE TO BE REMOVED

Antoine DR — S1, S3

West Mount Houston RD — S2, S4

W1 - W16

R10-3eLR — PB2, PB5, PB8, PB10

R10-3eL — PB1, PB3, PB4, PB6, PB7, PB9, PB10

R10-3eR — PB11

LEGEND

- SIGNAL POLE WITH MAST ARM
- POLE MOUNTED ELECTRIC SERVICE OR EMERGENCY DISCONNECT
- CONTROLLER CABINET
- HORIZONTAL SIGNAL HEAD
- VERTICAL SIGNAL HEAD
- OVERHEAD SIGN
- SPAN WIRE
- LUMINAIRE
- SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

SPEED LIMIT 40 — EXISTING SIGN TO REMAIN

ONLY — EXISTING SIGN TO REMAIN

SPEED LIMIT 40 — EXISTING SIGN TO REMAIN

TURNING VEHICLES YIELD TO — TO REQUEST GREEN WAIT ON — EXISTING SIGN TO REMAIN

EXISTING GROUND MOUNTED CONROLLER CABINET

EXISTING POLE MOUNTED EMERGENCY DISCONNECT

EXISTING SIGN TO REMAIN — SPEED LIMIT 30

EXISTING SIGN TO REMAIN — BIKE LANE

EXISTING SIGN TO REMAIN — SPEED LIMIT 30

ANTOINE DRIVE

W. MOUNT HOUSTON ROAD

R.O.W.

POLE 1 · POLE 2 · POLE 3 · POLE 4 · POLE 5 · POLE 6 · POLE 7 · POLE 8 · POLE 9 · POLE 10

W1 W2 W3 W4 W5 W6 W7 W8 W9 W10 W11 W12 W13 W14 W15 W16

PB1 PB1T PB2 PB3 PB4 PB5 PB6 PB7 PB8 PB9 PB10

S1 S2 S3 S4

A B C D E F G H K L M N P

EXISTING POWER POLE WITH TRANSFORMER

EXISTING POLE MOUNTED ELECTRICAL SERVICE

EXISTING SIGN TO REMAIN — SPEED LIMIT 30

EXISTING SIGN TO REMAIN — SPEED LIMIT 30

EXISTING SIGN TO REMAIN — SPEED LIMIT 30

EXISTING SIGN TO REMAIN — SPEED LIMIT 30

BASELINE:

THE BASELINE RUNS WEST TO EAST ALONG W. MOUNT HOUSTON ROAD. IT RUNS SOUTH TO NORTH ALONG ANTOINE DRIVE.

POSTED SPEED LIMITS:

40 M.P.H. - SOUTHBOUND ANTOINE DRIVE
30 M.P.H. - NORTHBOUND ANTOINE DRIVE
30 M.P.H. - W. MOUNT HOUSTON ROAD

NO.	REVISIONS	DATE	NAME

HARRIS COUNTY ENGINEERING DEPARTMENT

HARRIS COUNTY 1836 TEXAS

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M. R. NEELAPU
107595
8/22/2024
DATE

PROJECT TITLE: ANTOINE DRIVE AT		
DRAWN BY:	SHEET DESCRIPTION: W. MOUNT HOUSTON ROAD / EXISTING TRAFFIC SIGNAL LAYOUT	JOB NO. 2024-2161-01
CK'D BY:		FILE NAME:
SCALE: 1"=40'		FILE NO:
DATE:	APPROVED BY:	SHT NO. 557 / 718

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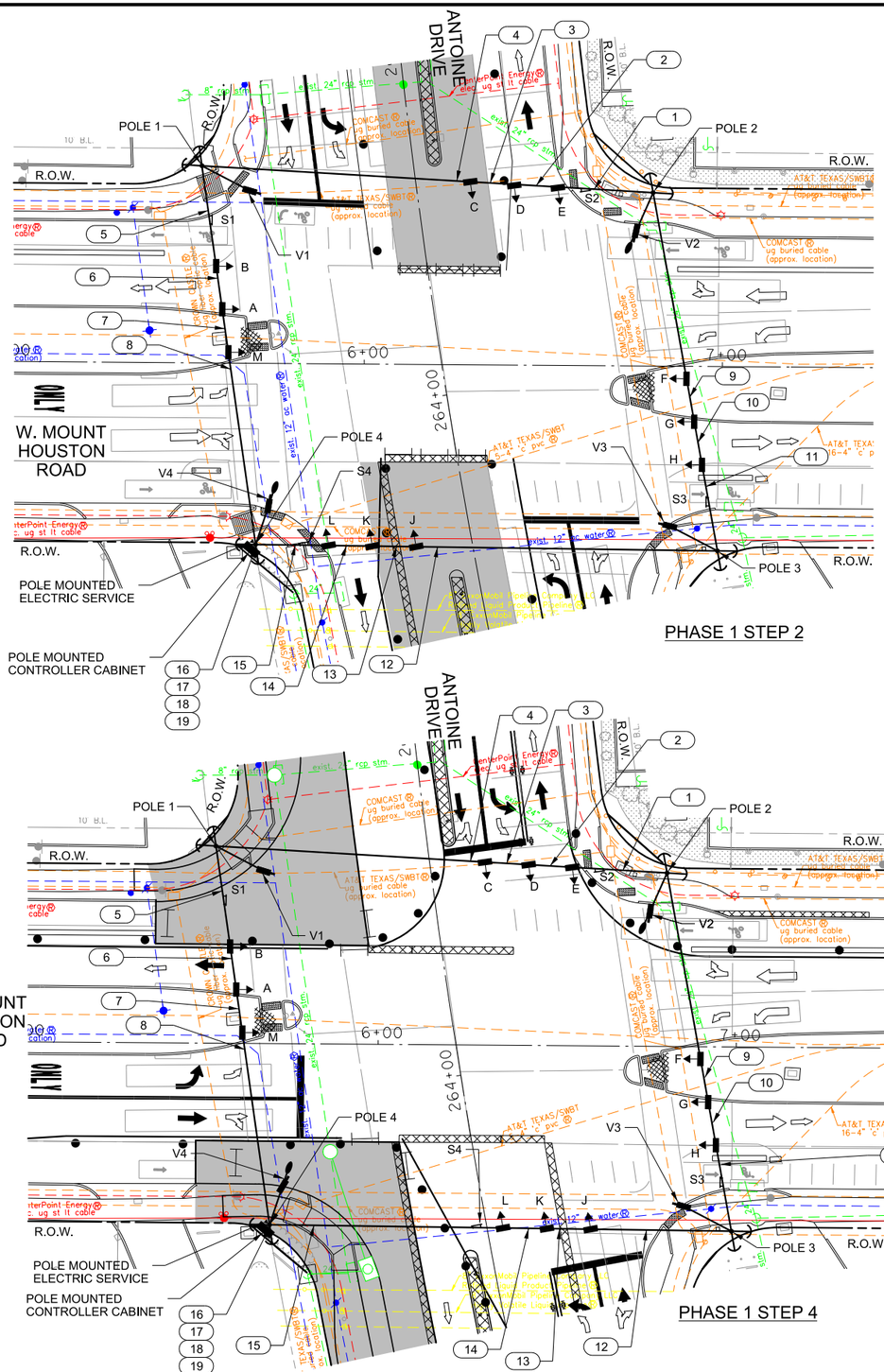
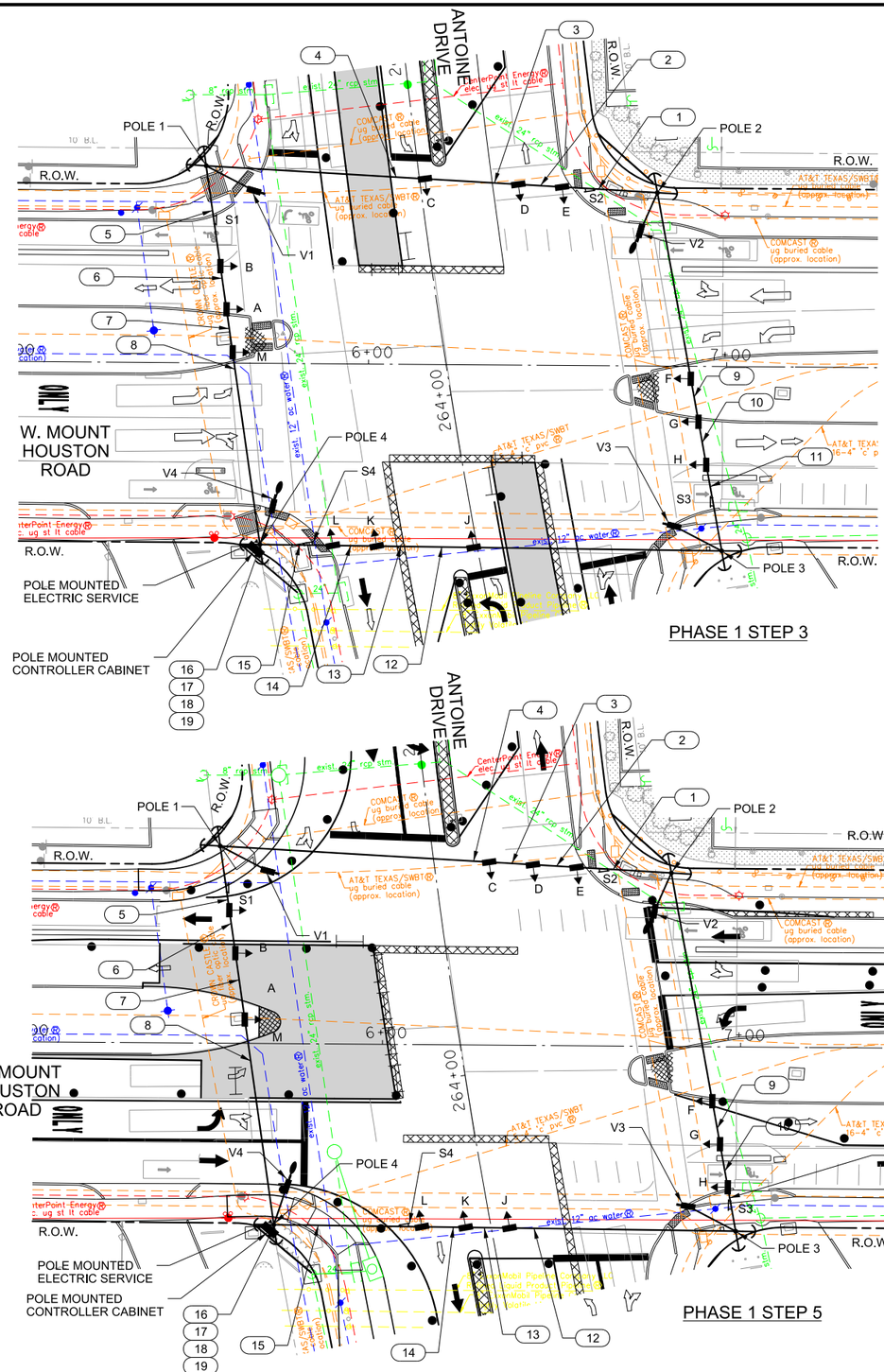
8/22/2024



PHASE 1 STEP 2



PHASE 1 STEP 3

PHASE 1 STEP 4

PHASE 1 STEP 5

LEGEND

- 40' WOOD POLE
- HORIZONTAL SIGNAL HEAD
- OVERHEAD SIGN
- POLE MOUNTED CONTROLLER CABINET
- POLE MOUNTED ELECTRIC SERVICE
- 15' LUMINAIRE ARM
- VIVDS CAMERA
- DETECTION ZONE
- (X) WIRE RUN DESIGNATION
- DIRECTION OF TRAFFIC FLOW
- CONSTRUCTION WORK ZONE

NOTES:

1. ALIGN TRAFFIC SIGNAL HEADS, CAMERAS AND OVERHEAD SIGNS AS NECESSARY FOR THIS PHASE OF CONSTRUCTIONS AS SHOWN ON THIS PLAN.
2. CONTRACTOR SHALL PROVIDE GROUND MOUNTED CONSTRUCTION SIGN AT ALL APPLICABLE CORNERS INDICATING THE CLOSURE OF CROSSWALKS AT THE INTERSECTION DURING CONSTRUCTION.
3. SEE TRAFFIC SIGNAL HEAD, SIGN, CAMERA, CABLE RUN AND PHASING ASSIGNMENT DETAILS IN TEMPORARY TRAFFIC SIGNAL DETAILS PAGE.

NO.	REVISIONS	DATE	NAME

HARRIS COUNTY ENGINEERING DEPARTMENT

HARRIS COUNTY TEXAS 1836

TEDSI INFRASTRUCTURE GROUP
TEDSI
TBPE F-1640
Consulting Engineers
738 Hwy 6 South, Suite 430
Houston, Texas 77079
(832) 619-1000

THIS DOCUMENT IS FOR INTERIM REVIEW AND IS NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.

M. R. NEELAPU
107595
8/22/2024
DATE

PROJECT TITLE: ANTOINE DRIVE AT		
DRAWN BY:	SHEET DESCRIPTION: W. MOUNT HOUSTON ROAD	JOB NO: 2024-2161-01
CK'D BY:	TEMPORARY TRAFFIC SIGNAL LAYOUT	FILE NAME:
SCALE: 1"=40'	(PHASE 1 STEPS 2, 3, 4, 5)	FILE NO.
DATE:	APPROVED BY:	SHT NO. 558 / 718

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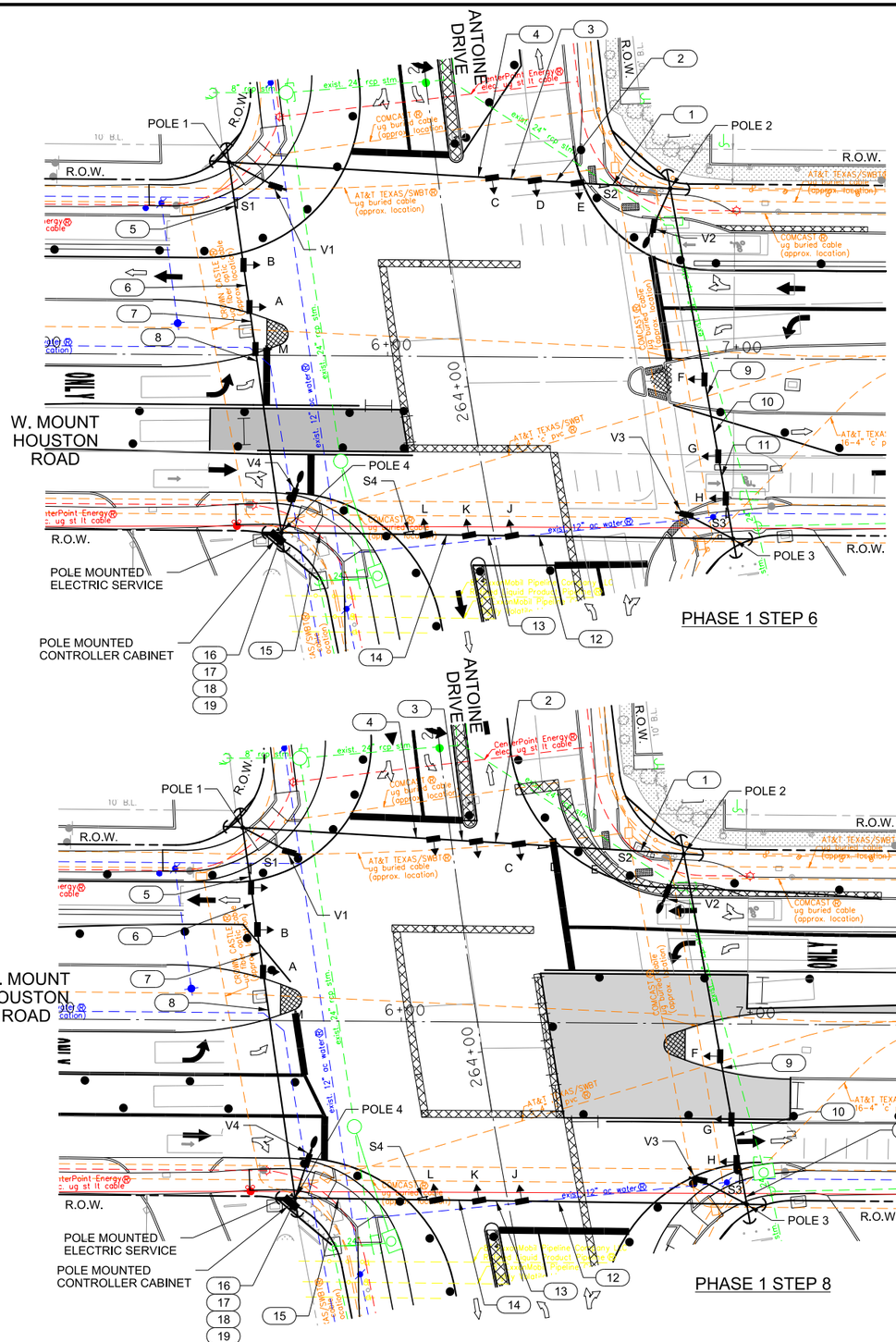

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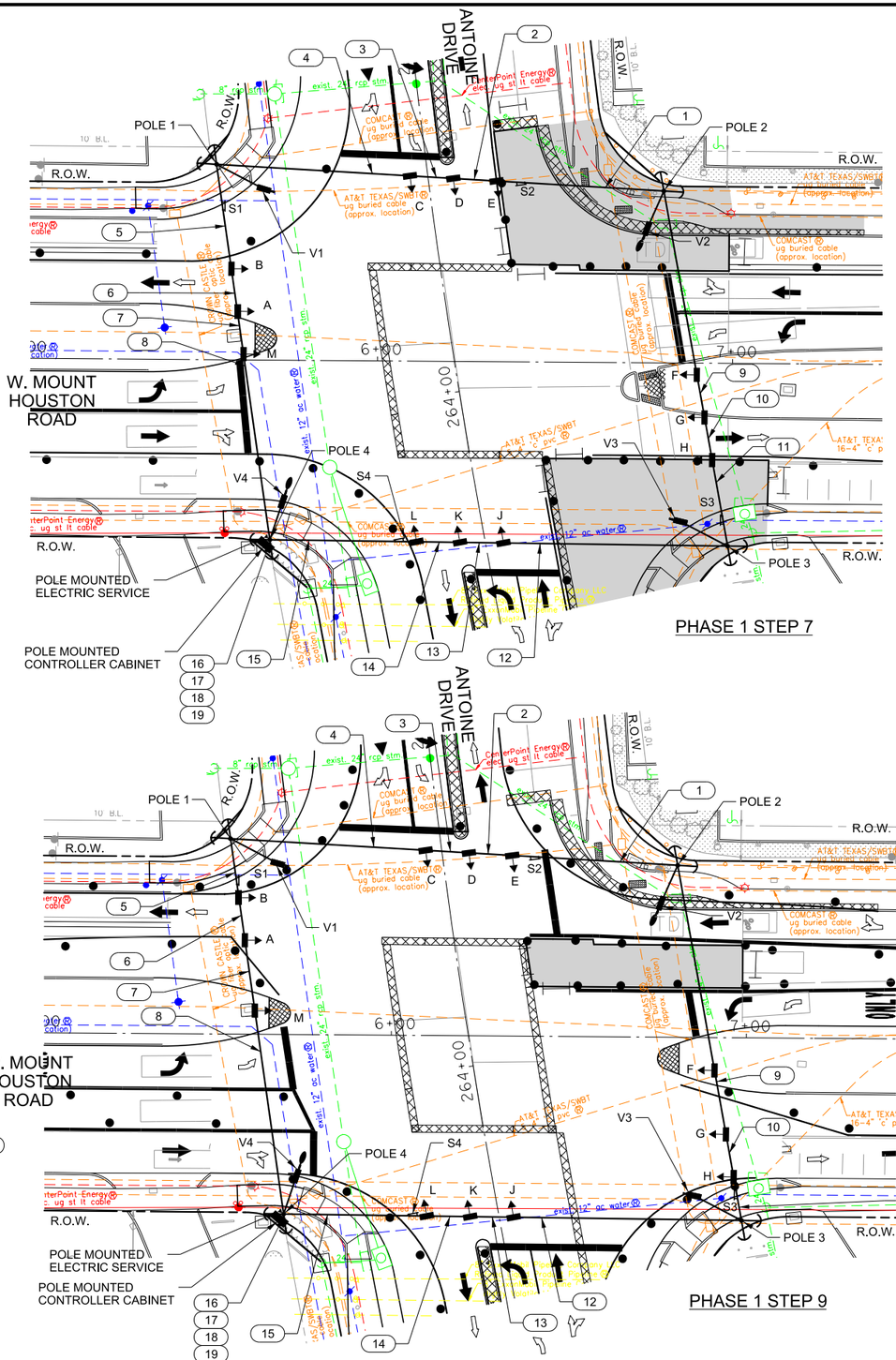

PHASE 1 STEP 7

PHASE 1 STEP 8

PHASE 1 STEP 9

LEGEND

- 40' WOOD POLE
- HORIZONTAL SIGNAL HEAD
- OVERHEAD SIGN
- POLE MOUNTED CONTROLLER CABINET
- POLE MOUNTED ELECTRIC SERVICE
- 15' LUMINAIRE ARM
- VIVDS CAMERA
- DETECTION ZONE
- (X) WIRE RUN DESIGNATION
- DIRECTION OF TRAFFIC FLOW
- CONSTRUCTION WORK ZONE

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DATE:	APPROVED BY:	SHT NO. 559 / 718

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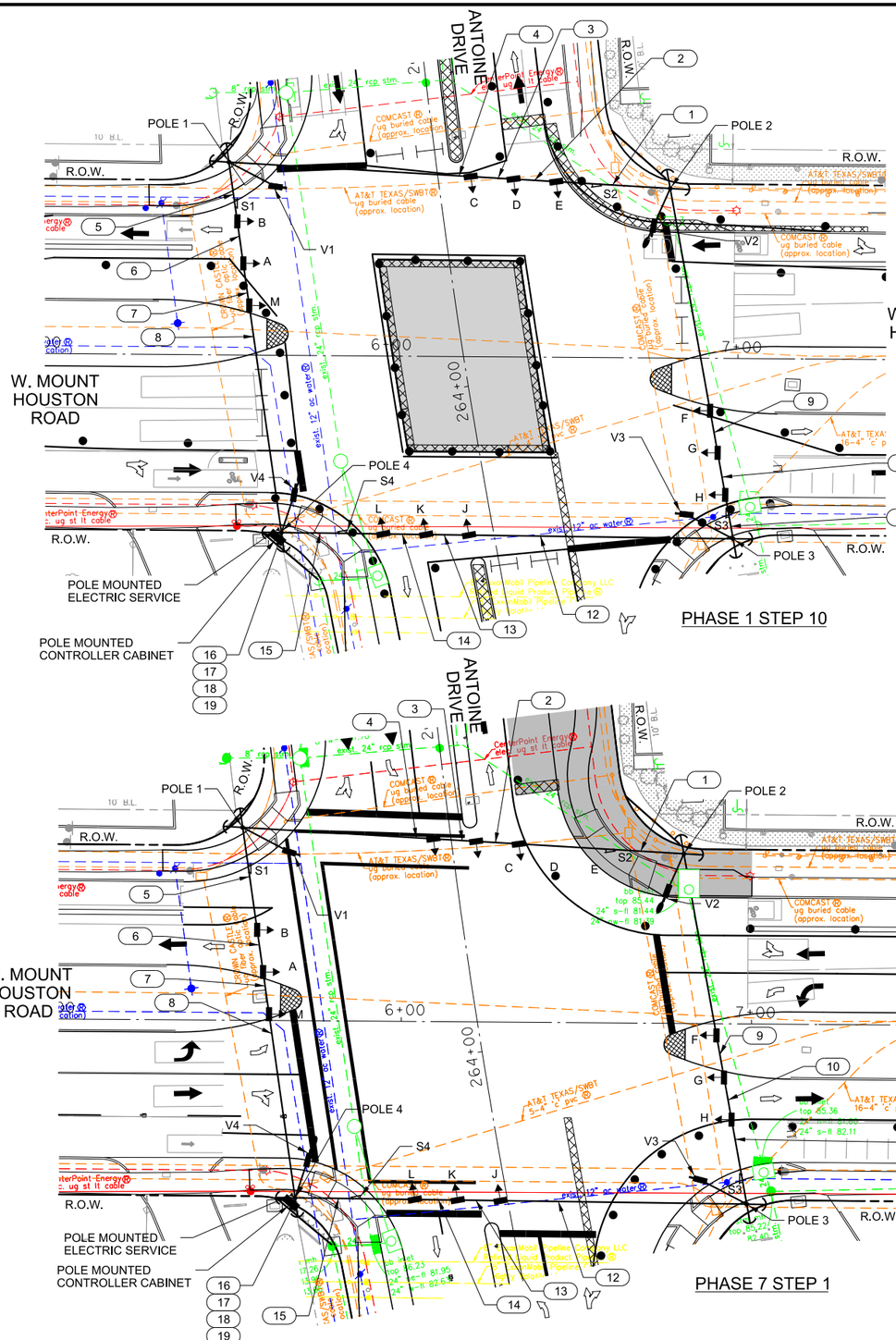
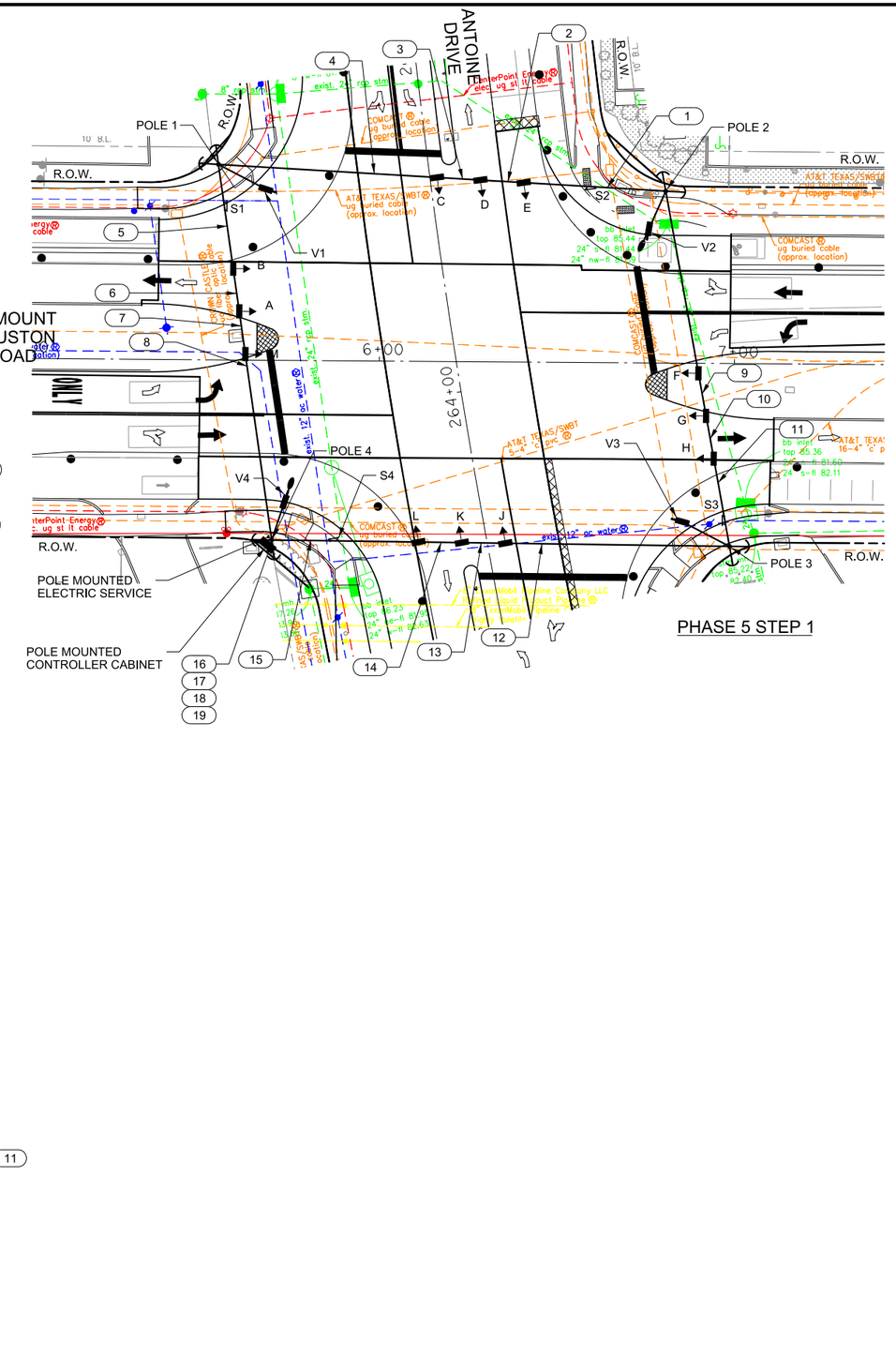


PHASE 1 STEP 10



PHASE 5 STEP 1

PHASE 7 STEP 1

LEGEND

- 40' WOOD POLE
- HORIZONTAL SIGNAL HEAD
- OVERHEAD SIGN
- POLE MOUNTED CONTROLLER CABINET
- POLE MOUNTED ELECTRIC SERVICE
- 15' LUMINAIRE ARM
- VIVDS CAMERA
- DETECTION ZONE
- (X) WIRE RUN DESIGNATION
- DIRECTION OF TRAFFIC FLOW
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CK'D BY:	TEMPORARY TRAFFIC SIGNAL LAYOUT	FILE NAME:
SCALE: 1"=40'	(PH1 ST10, PH5 ST1, PH7 ST1)	FILE NO.
DATE:	APPROVED BY:	SHT NO: 560 / 718

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SIGNAL PHASING DIAGRAM SHALL COMPLY WITH HARRIS COUNTY STANDARD
DETECTION SEQUENCE AND SHALL BE DETERMINED DURING SIGNAL TURN ON

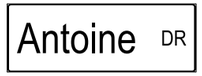
PHASE 1 WESTBOUND LEFT TURN	PHASE 2 EASTBOUND THRU	PHASE 3 NORTHBOUND LEFT TURN	PHASE 4 SOUTHBOUND THRU
PHASE 5 EASTBOUND LEFT TURN	PHASE 6 WESTBOUND THRU	PHASE 7 SOUTHBOUND LEFT TURN	PHASE 8 NORTHBOUND THRU

TEMPORARY SIGNAL HEAD DETAILS		
SIGNAL FACE	DESIGNATION	NOTE
 1 WAY, 3 SECTION 12' LENS HORIZONTAL LED SIGNAL HEAD	A B D E G H K L	
 1 WAY, 4 SECTION 12' LENS HORIZONTAL LED SIGNAL HEAD WITH "LEFT TURN SIGNAL" SIGN AND 48" LED SIGN LIGHT	C F J M	COVER FOLLOWING SIGNAL HEADS WITH BURLAP OR APPROVED EQUAL MATERIAL DURING PHASE 1 STEP 10 C F J M

TEMPORARY OVERHEAD SIGN DETAILS



S2, S4



S1, S3

VIDEO DETECTOR CHART		
CAMERA	PHASE	DET. ZONE
V1	1 AND 6	WBL/ WBT
V2	3 AND 8	NBL/ NBT
V3	2 AND 5	EBL/ EBT
V4	4 AND 7	SBL/ SBT

ELECTRICAL SCHEDULE

ITEM	DESCRIPTION	RUN DESIGNATION																				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
POWER	1/C-#4 XHHW																		2	3			
	#8 (BARE) COPPER																1	1	1	1			
LUM. / SIGN LIGHT	2/C #14 STRANDED	1	1	1	2	2	2	2	3	1	1	1	1	2	2	2		6					
VEH. SIGNAL	7/C-#14 STRANDED		2	1	2	2	4	3	4	1	3	2	2	3	5	4	8						
VIDEO DETECTION	COAXIAL CABLE	1	1	1	1	2	2	2	2				1	1	1	1	4						
	3/C#16	1	1	1	1	2	2	2	2				1	1	1	1	4						
GALVANIZED RIGID METAL CONDUIT	1"																						
	2"																	1	1	1			
	3"																1						
	4"																						

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TBPE F-1640

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107595
8/22/2024
DATE

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DRAWN BY:
CK'D BY:
SCALE: 1"=40'
DATE:
APPROVED BY:
SHEET DESCRIPTION: TEMPORARY TRAFFIC SIGNAL DETAILS
JOB NO: 2024-2161-01
FILE NAME:
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SHT NO: 561 / 718

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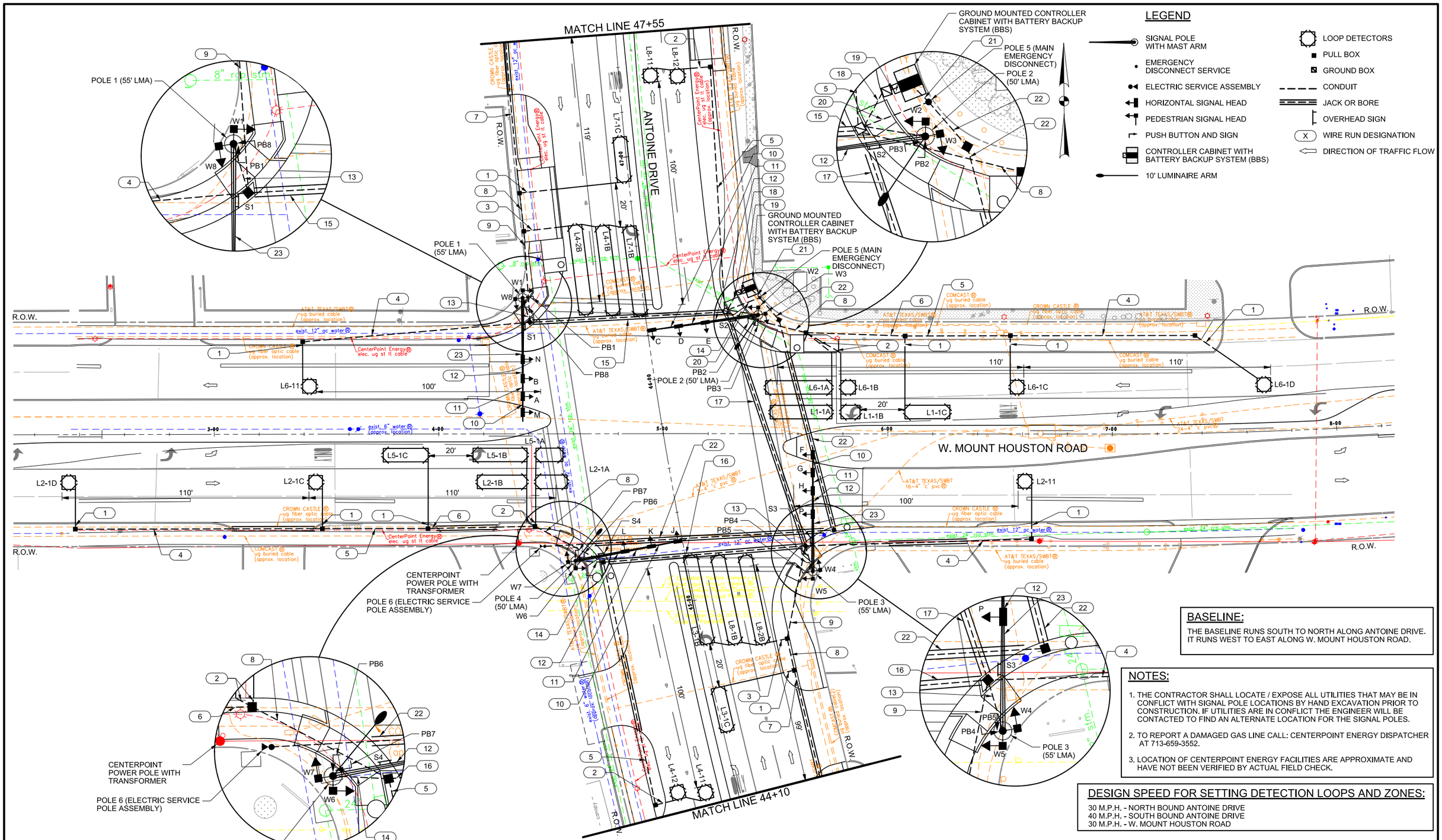

LEGEND

- SIGNAL POLE WITH MAST ARM
- EMERGENCY DISCONNECT SERVICE
- ELECTRIC SERVICE ASSEMBLY
- HORIZONTAL SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD
- PUSH BUTTON AND SIGN
- CONTROLLER CABINET WITH BATTERY BACKUP SYSTEM (BBS)
- 10' LUMINAIRE ARM
- LOOP DETECTORS
- PULL BOX
- GROUND BOX
- CONDUIT
- JACK OR BORE
- OVERHEAD SIGN
- WIRE RUN DESIGNATION
- DIRECTION OF TRAFFIC FLOW

BASELINE:

THE BASELINE RUNS SOUTH TO NORTH ALONG ANTOINE DRIVE. IT RUNS WEST TO EAST ALONG W. MOUNT HOUSTON ROAD.

NOTES:

1. THE CONTRACTOR SHALL LOCATE / EXPOSE ALL UTILITIES THAT MAY BE IN CONFLICT WITH SIGNAL POLE LOCATIONS BY HAND EXCAVATION PRIOR TO CONSTRUCTION. IF UTILITIES ARE IN CONFLICT THE ENGINEER WILL BE CONTACTED TO FIND AN ALTERNATE LOCATION FOR THE SIGNAL POLES.
2. TO REPORT A DAMAGED GAS LINE CALL: CENTERPOINT ENERGY DISPATCHER AT 713-659-3552.
3. LOCATION OF CENTERPOINT ENERGY FACILITIES ARE APPROXIMATE AND HAVE NOT BEEN VERIFIED BY ACTUAL FIELD CHECK.

DESIGN SPEED FOR SETTING DETECTION LOOPS AND ZONES:

30 M.P.H. - NORTH BOUND ANTOINE DRIVE
40 M.P.H. - SOUTH BOUND ANTOINE DRIVE
30 M.P.H. - W. MOUNT HOUSTON ROAD

NO.	REVISIONS	DATE	NAME

HARRIS COUNTY ENGINEERING DEPARTMENT

HARRIS COUNTY 1836 TEXAS

TEDSI INFRASTRUCTURE GROUP
TEDSI TBPE F-1640
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DATE

PROJECT TITLE: ANTOINE DRIVE AT W. MOUNT HOUSTON ROAD		
DRAWN BY:	SHEET DESCRIPTION: PROPOSED TRAFFIC SIGNAL LAYOUT (SHEET 1 OF 3)	JOB NO: 2024-2161-01
CK'D BY:		FILE NAME:
SCALE: 1"=40'		FILE NO:
DATE:	APPROVED BY:	SHT NO: 562 / 718

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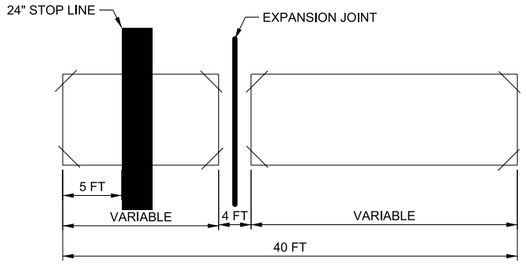
8/22/2024

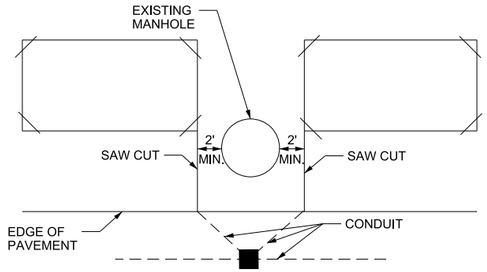
NOTES FOR PERMANENT TRAFFIC SIGNALS

1. CONTRACTOR SHALL CLEAN THE JOBSITE OF ALL DEBRIS, LOOSEN EXCESS EXCAVATED MATERIALS, ETC ACCUMULATED AS A RESULT OF WORK PERFORMED UNDER THIS CONTRACT.
2. EXACT LOCATION OF POLES, CABINET, SIGNAL HEADS AND PULL BOXES SHALL BE DETERMINED IN THE FIELD. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY EXACT LOCATIONS WITH HARRIS COUNTY TRAFFIC AND TRANSPORTATION SECTION, PRIOR TO ANY CONSTRUCTION.
3. ALL CONDUITS UNDER EXISTING ROAD & PAVED DRIVEWAYS SHALL BE BORED OR JACKED.
4. CONTRACTOR SHALL VERIFY LOCATION OF STOP BARS PRIOR TO INSTALLATION OF LOOP DETECTORS.
5. ALL CONDUITS UNDER NATURAL GROUND SHALL BE TRENCHED AND BURIED. CONTRACTOR SHALL BACK-FILL, COMPACT, AND RESTORE TRENCHED AREA TO ORIGINAL CONDITION AND MATCH EXISTING SURFACE CONDITION TO THE DENSITY OF ADJACENT GROUND.
6. ALL CONDUITS SHALL BE SCHEDULE 40 PVC INSTALLED WITH A MINIMUM OF 30" GROUND COVER.
7. LOCATION OF UTILITIES SHOWN IS APPROXIMATE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES (PUBLIC OR PRIVATE) PRIOR TO COMMENCING WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGE CAUSED BY HIS/HER FAILURE TO LOCATE AND PRESERVE THESE UTILITIES, WHETHER UNDERGROUND, ABOVEGROUND OR OVERHEAD. ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR AT HIS/ HER OWN EXPENSE.
8. CALL THE FOLLOWING NUMBERS FOR LOCATION OF UNDERGROUND FACILITIES 72 HOURS PRIOR TO ANY EXCAVATION IN AREA: UTILITIES 713-223-4567(HOUSTON), 1-800-669-8344 (OUTSIDE HOUSTON), PIPELINES 1-800-245-4545 AND 1-800-344-8377. CALL 1-800-DIG-TESS OR 1-800-526-2699 TO LOCATE PRIVATE UTILITIES.
9. ALL CONSTRUCTION SIGNS AND BARRICADES SHALL CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PLACE "SIGNAL WORK AHEAD" (SCW21-4D) AND "END SIGNAL WORK" (SG20-2A) SIGNS PRIOR TO ANY SIGNAL CONSTRUCTION.
10. CONTRACTOR SHALL NOTIFY THE HARRIS COUNTY CONSTRUCTION PROGRAMS DIVISION (AT 713-274-1531) 48 HOURS PRIOR TO COMMENCEMENT OF WORK.
11. ALL PERMANENT SIGNAL HEADS SHALL BE MOUNTED HORIZONTALLY AT A MINIMUM HEIGHT OF 19 FEET ABOVE THE ROADWAY.
12. ALL CABLE FOR LUMINAIRES, DOWNLIGHTS AND FLASHER LIGHTS SHALL BE ROUTED TO THE SERVICE ENCLOSURE. SEE ELECTRICAL DETAIL SHEETS.
13. SIGNAL HEADS SHALL BE WRAPPED WITH DARK PLASTIC OR SUITABLE MATERIAL SO THAT SIGNAL FACE CANNCT BE SEEN FROM THE TIME OF INSTALLATION UNTIL PLACED IN OPERATION. DO NOT USE BURLAP.
14. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF THE SERVICE OUTLET. THE SERVICE OUTLET IS SUBJECT TO RELOCATION TO ANY CORNER AT NO ADDITIONAL COST.
15. THE CONTRACTOR SHALL REPLACE ALL PAVEMENT, SIDEWALKS, OR CURBS DAMAGED BY HIS/HER FORCES DURING CONSTRUCTION. SUCH REPAIRS SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION OF TRAFFIC SIGNAL SYSTEM.
16. THE CONTRACTOR SHALL BE ABLE TO IMMEDIATELY RESPOND AT ANY TIME (24 HOURS A DAY) TO REPORTS OF TRAFFIC SIGNAL MALFUNCTIONS AT THE SIGNALIZED INTERSECTION AS HE/SHE ASSUMES REPONSIBLITY FOR THE MAINTENANCE OF THE SIGNAL EQUIPMENT AS OUTLINED ABOVE.
17. SOME LOOP DETECTORS MAY HAVE TO BE SPLIT TO ACCOMMODATE PAVEMENT EXPANSION JOINTS OR MANHOLES. THE CONTRACTOR MUST MAKE THE NECESSARY ADJUSTMENTS WHEN CUTTING THE LOOP DETECTORS TO ENSURE THAT NO CUTS OCCUR CLOSER THAN 2 FEET TO AN EXPANSION JOINT OR MANHOLE (SEE TO PROPOSED TRAFFIC SIGNAL LAYOUT SHEETS, "PRESENSE DETECTORS PLACEMENT DETAIL").



DETAIL "A"

PRESENCE DETECTORS PLACEMENT DETAIL
(FOR EXPANSION JOINT INSTALLATION)

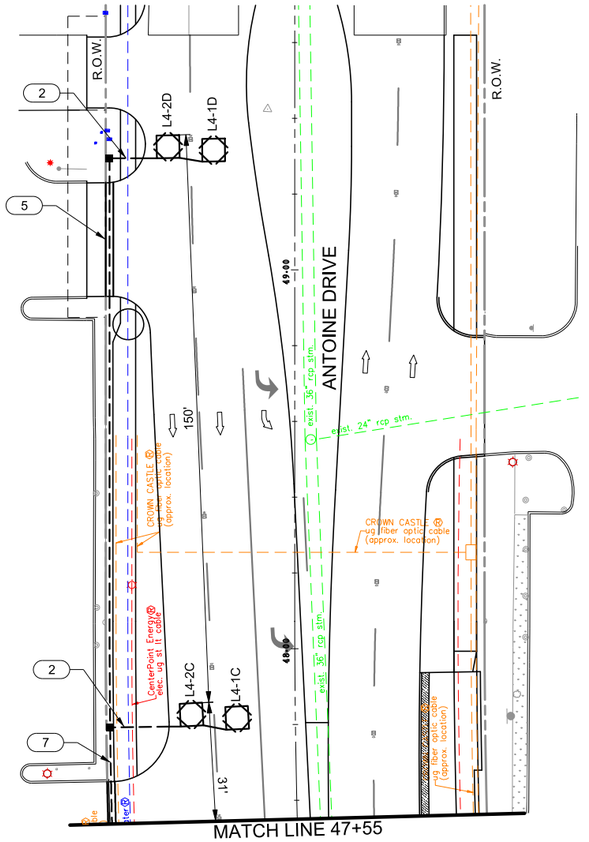


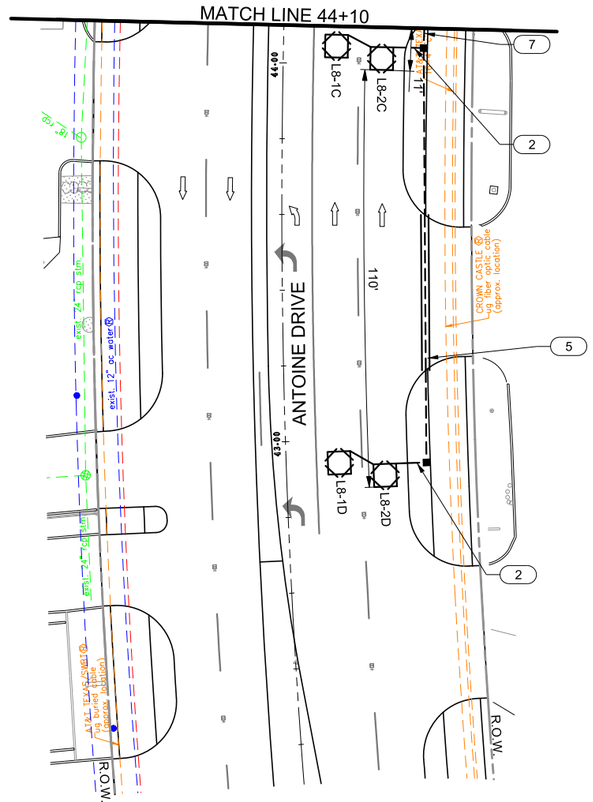
DETAIL "B"

PRESENCE DETECTORS PLACEMENT DETAIL
(FOR MANHOLE INSTALLATION)

LEGEND

- SIGNAL POLE WITH MAST ARM
- EMERGENCY DISCONNECT SERVICE
- ELECTRIC SERVICE ASSEMBLY
- HORIZONTAL SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD
- PUSH BUTTON AND SIGN
- CONTROLLER CABINET WITH BATTERY BACKUP SYSTEM (BBS)
- 10' LUMINAIRE ARM
- LOOP DETECTORS
- PULL BOX
- GROUND BOX
- CONDUIT
- JACK OR BORE
- OVERHEAD SIGN
- (X) WIRE RUN DESIGNATION
- DIRECTION OF TRAFFIC FLOW





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PROJECT TITLE: ANTOINE DRIVE AT W. MOUNT HOUSTON ROAD		JOB NO: 2024-2161-01
DRAWN BY:	SHEET DESCRIPTION: PROPOSED TRAFFIC SIGNAL LAYOUT (SHEET 2 OF 3)	FILE NAME:
CK'D BY:		FILE NO:
SCALE: 1"=40'		SHT NO: 563 / 718
DATE:	APPROVED BY:	

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PROPOSED POLE & CONTROLLER LOCATIONS

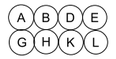
POLE NO.	DESCRIPTION	BASELINE STA. (W. MT. HOUSTON RD.)	OFFSET LOCATION
1	TXDOT 30' POLE WITH 55' MAST ARM (LMA 55-100), PEDESTRIAN SIGNAL HEADS W1, W8 AND APS TYP PUSH BUTTONS PB1, PB8.	4+37.4	60.6' L
2	TXDOT 30' POLE WITH 50' MAST ARM (LMA 50L-100), 10' TXDOT LUMINAIRE, PEDESTRIAN SIGNAL HEADS W2, W3 AND APS TYP PUSH BUTTONS PB2 AND PB3.	5+42.2	52.8' L
3	TXDOT 30' POLE WITH 55' MAST ARM (LMA 55-100), PEDESTRIAN SIGNAL HEADS W4, W5 AND APS TYP PUSH BUTTONS PB4, PB5.	5+66.6	61.4' R
4	TXDOT 30' POLE WITH 50' MAST ARM (LMA 50L-100), 10' TXDOT LUMINAIRE, PEDESTRIAN SIGNAL HEADS W6, W7 AND APS TYP PUSH BUTTONS PB6 AND PB7.	4+60.8	56.6' R
5	ELECTRICAL SERVICE ASSEMBLY WITH METER POLE AND DISCONNECT - TYPE D (MOD 2) (120/240) 70 (NS) SS (E) SP (U)	5+42.9	60.5' L
6	ELECTRICAL SERVICE ASSEMBLY WITH METER POLE, SERVICE LOOP AND SAFETY SWITCH - TYPE D (MOD 1) (120/240) 000 (NS) SS (N) SP (O) SERVICE ADDRESS: XXXX 1/2 ANTOINE DRIVE ESI ID: XXXXXXXXX	4+47.1	50.1' R
CONTROLLER CABINET	HC ATC CONTROLLER AND WIRELESS EQUIPMENT IN A GROUND MOUNTED ITS CABINET (HOUSING 3) WITH SIDE MOUNTED BATTERY BACKUP SYSTEM AND A CONCRETE FOUNDATION	5+38.8	65.7' L

ELECTRICAL SCHEDULE

ITEM	DESCRIPTION	RUN DESIGNATION *																																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
POWER	1/C-#4 XHHW																					2	3												
	#4 (BARE) COPPER																																		
	#8 (BARE) COPPER													1	1	1	1	1	2	3	1	1	1												
LUM. / SIGN LIGHT	2/C #14 STRANDED										1	1	1	1	2	1	1	3			6			1											
PUSH BUTTON	2/C-#14 STRANDED													2	2	2	2	4	8	8															
PED. SIGNAL	4/C-#14 STRANDED													2	2	2	2	4	8	8															
VEH. SIGNAL	7/C-#14 STRANDED										1	3	2	3	2	3	2	5	10	10				3											
LOOP DETECTOR	2-#14 XHHW STRAND	1	2	3																															
	2/C#14L.L.(SHIELDED)				1	2	3	4	5	8					9	7	16	32	32																
VIDEO DETECTION	COAXIAL CABLE																																		
	3/C#16																																		
SCHEDULE 40 PVC CONDUIT	1"	1	1	1																															
	2"				1	1	1	1	1	1											1	1	1	1											
	3"																			1															
	4"													1	1	1	1	1	2	2															

★ ONE 2" SPARE CONDUIT TO BE INSTALLED AND CAPPED FOR FUTURE USE.

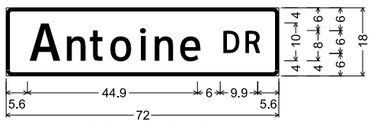
PROPOSED SIGNAL HEAD SCHEDULE

SIGNAL FACE	DESIGNATION
 1 WAY, 3 SECTION 12" LENS HORIZONTAL LED SIGNAL HEAD	
 1 WAY, 4 SECTION 12" LENS HORIZONTAL LED SIGNAL HEAD WITH 'LEFT TURN SIGNAL' SIGN AND 48" LED SIGN LIGHT	
 1 WAY, 3 SECTION 12" LENS HORIZONTAL LED SIGNAL HEAD	
	W1 THROUGH W8
R10-3eL 9"x15" W/ ACCESSIBLE PUSH BUTTON  PB2, PB4, PB6, PB8	R10-3eR 9"x15" W/ ACCESSIBLE PUSH BUTTON  PB1, PB3, PB5, PB7

PROPOSED LOOP DETECTOR CHART

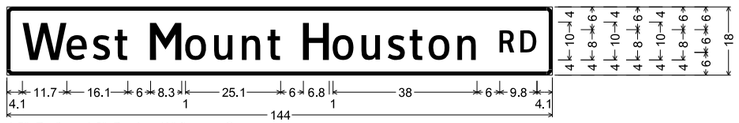
LOOP	SIZE	SETTING	FUNCTION
L1-1A	6'X28'	PRESENCE	CALL & EXTEND Ø1
L1-1B	6'X9'	PRESENCE	CALL & EXTEND Ø1
L1-1C	6'X20'	PRESENCE	CALL & EXTEND Ø1
L2-1A	6'X14'	PRESENCE	CALL & EXTEND Ø2
L2-1B	6'X22'	PRESENCE	CALL & EXTEND Ø2
L2-1C	6'X6'	PULSE	CALL & EXTEND Ø2
L2-1D	6'X6'	PULSE	CALL & EXTEND Ø2
L2-11	6'X6'	PULSE	SYSTEMS LOOPS
L3-1B	6'X40'	PRESENCE	CALL & EXTEND Ø3
L3-1C	6'X20'	PRESENCE	CALL & EXTEND Ø3
L4-1B	6'X40'	PRESENCE	CALL & EXTEND Ø4
L4-2B	6'X40'	PRESENCE	CALL & EXTEND Ø4
L4-1C	6'X6'	PULSE	CALL & EXTEND Ø4
L4-2C	6'X6'	PULSE	CALL & EXTEND Ø4
L4-1D	6'X6'	PULSE	CALL & EXTEND Ø4
L4-2D	6'X6'	PULSE	CALL & EXTEND Ø4
L4-11	6'X6'	PULSE	SYSTEMS LOOPS
L4-12	6'X6'	PULSE	SYSTEMS LOOPS
L5-1A	6'X12'	PRESENCE	CALL & EXTEND Ø5
L5-1B	6'X24'	PRESENCE	CALL & EXTEND Ø5
L5-1C	6'X20'	PRESENCE	CALL & EXTEND Ø5
L6-1A	6'X30'	PRESENCE	CALL & EXTEND Ø6
L6-1B	6'X6'	PRESENCE	CALL & EXTEND Ø6
L6-1C	6'X6'	PULSE	CALL & EXTEND Ø6
L6-1D	6'X6'	PULSE	CALL & EXTEND Ø6
L6-11	6'X6'	PULSE	SYSTEMS LOOPS
L7-1B	6'X40'	PRESENCE	CALL & EXTEND Ø7
L7-1C	6'X20'	PRESENCE	CALL & EXTEND Ø7
L8-1B	6'X40'	PRESENCE	CALL & EXTEND Ø8
L8-2B	6'X40'	PRESENCE	CALL & EXTEND Ø8
L8-1C	6'X6'	PULSE	CALL & EXTEND Ø8
L8-2C	6'X6'	PULSE	CALL & EXTEND Ø8
L8-1D	6'X6'	PULSE	CALL & EXTEND Ø8
L8-2D	6'X6'	PULSE	CALL & EXTEND Ø8
L8-11	6'X6'	PULSE	SYSTEMS LOOPS
L8-12	6'X6'	PULSE	SYSTEMS LOOPS

PROPOSED OVERHEAD SIGN SCHEDULE



1.5" Radius, 1.0" Border, White on Green;
[Antoine] ClearviewHwy-3-W;
[DR] ClearviewHwy-3-W;

S1, S3



1.5" Radius, 1.0" Border, White on, Green;
[W] ClearviewHwy-3-W; [Mount] ClearviewHwy-3-W;
[Houston] ClearviewHwy-3-W; [RD] ClearviewHwy-3-W;

S2, S4

SIGNAL PHASING DIAGRAM SHALL COMPLY WITH HARRIS COUNTY STANDARD DETECTION SEQUENCE AND SHALL BE DETERMINED DURING SIGNAL TURN ON

PHASE 1 WESTBOUND LEFT TURN	PHASE 2 EASTBOUND THRU	PHASE 3 NORTHBOUND LEFT TURN	PHASE 4 SOUTHBOUND THRU
PHASE 5 EASTBOUND LEFT TURN	PHASE 6 WESTBOUND THRU	PHASE 7 SOUTHBOUND LEFT TURN	PHASE 8 NORTHBOUND THRU

ELECTRICAL SERVICE DATA

POLE NO.	ELECTRICAL SERVICE DESCRIPTION (SEE HARRIS COUNTY ELECTRICAL DETAIL)	SERVICE CONDUIT SIZE	SERVICE CONDUCTORS NO./SIZE	SAFETY SWITCH AMPS	MAIN CKT. BKR. POLE/AMP	TWO-POLE CONTACTOR AMPS	PANEL BD/ LOAD CENTER AMP RATING	CITCUIT NO.	BRANCH CKT. BRL. POLE/AMPS	KVA LOAD
5	TY D (MOD 2) (120/240) 070 (NS) SS (E) SP (U)	1 1/4"	3/#4	N/A	2P/70	30	100	SIGNAL LUMINAIRE	1P/50 2P/20	<7.1
6	TY D (MOD 1) (120/240) 000 (NS) SS (N) SP (O)	1 1/4"	3/#4	N/A	N/A	N/A	N/A	N/A	N/A	<7.1

NO.	REVISIONS	DATE	NAME

HARRIS COUNTY ENGINEERING DEPARTMENT

TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
730 Hwy 6 South, Suite 430
Houston, Texas 77079
(832) 619-1000
TBPE F-1640

THIS DOCUMENT IS FOR INTERIM REVIEW AND IS NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.
M. R. NEELAPU
107595
8/22/2024
DATE

PROJECT TITLE: ANTOINE DRIVE AT
DRAWN BY:
CK'D BY:
SCALE: N.T.S.
DATE:
SHEET DESCRIPTION: W. MOUNT HOUSTON ROAD
PROPOSED TRAFFIC SIGNAL LAYOUT
(SHEET 3 OF 3)
APPROVED BY:
JOB NO: 2024-2161-01
FILE NAME:
FILE NO:
SHT NO: 564 / 718

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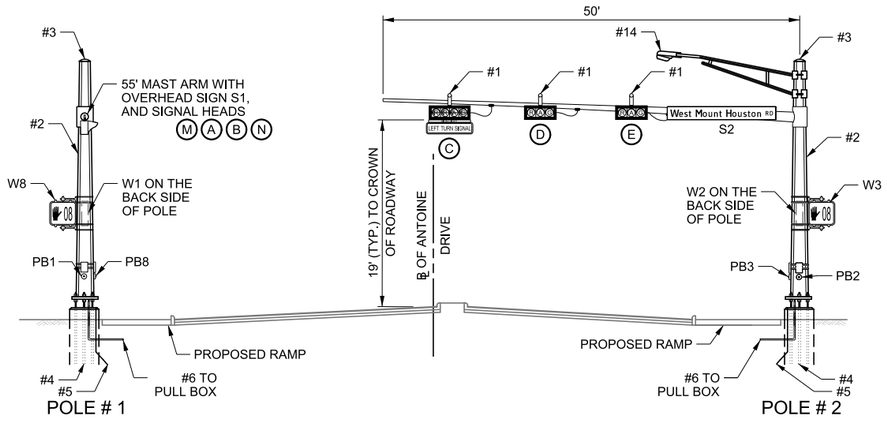
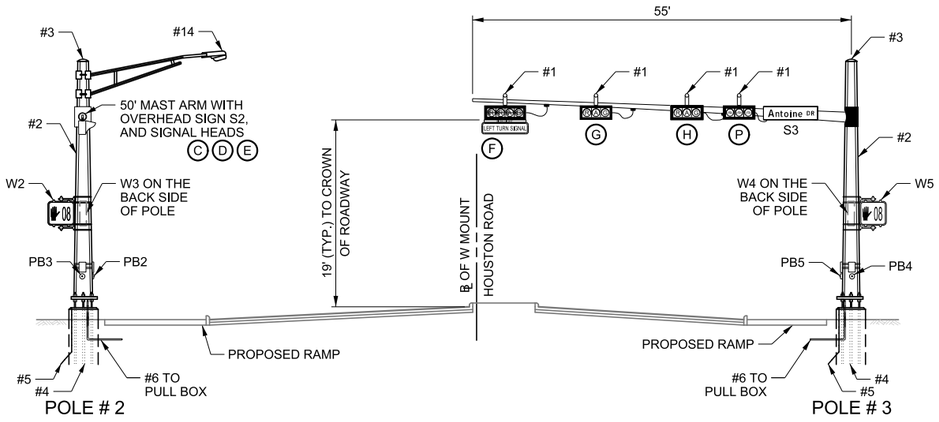
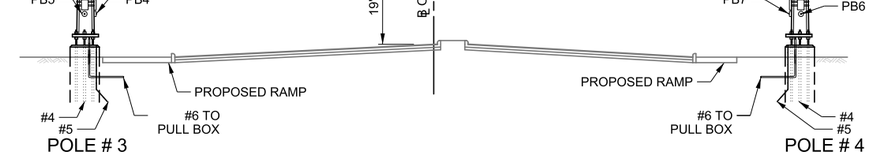
8/22/2024



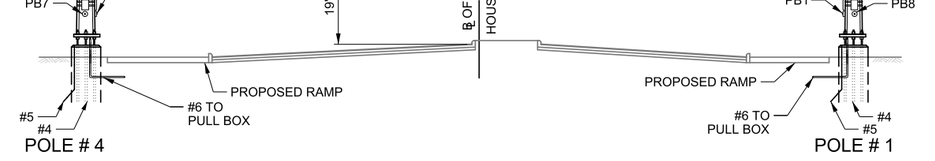
ANTOINE DRIVE (NORTHBOUND VIEW)



W. MOUNT HOUSTON ROAD (EASTBOUND VIEW)

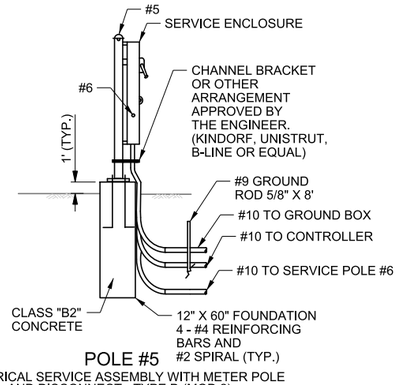


ANTOINE DRIVE (SOUTHBOUND VIEW)



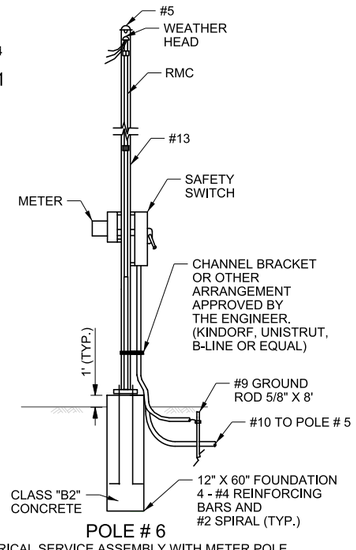
W. MOUNT HOUSTON ROAD (WESTBOUND VIEW)

1. ALL SIGNAL HEADS ON MAST ARM SHALL BE RIGID MOUNTED WITH BRACKET ASSEMBLY.
2. SIGNAL POLE WITH MAST ARM.
3. POLE CAP (TYPICAL ALL POLES).
4. SEE POLE FOUNDATION DETAILS FOR ANCHOR BOLTS.
5. ALL POLES, CONTROLLER AND METER SHALL BE GROUNDED WITH #8 SOLID COPPER WIRE CONNECTED TO 5/8" DIA. X 8' LONG COPPER CLAD STEEL GROUND ROD.
6. SEE PROPOSED TRAFFIC SIGNAL LAYOUT SHEET FOR CONDUITS REQUIRED. ALL CONDUITS SHALL BE SCH.40 PVC CONDUITS INSTALLED MINIMUM 30" UNDERGROUND.
7. ALL HARDWARE SHALL BE GALVANIZED.
8. CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE ALL UTILITIES AND CULVERTS IN THE WAY OF CONSTRUCTION.
9. PHOTOELECTRIC CELL FOR OPERATION OF LUMINAIRE (ENCLOSURE MOUNTED).
10. ALL PEDESTRIAN SIGNALS SHALL BE SYMBOL TYPE.
11. STREET NAME SIGNS, SIGN CLAMPS SHALL BE SUBMITTED TO HARRIS COUNTY FOR APPROVAL.
12. SIGNAL CABLES SHALL ALWAYS ENTER THE RIGHT SIDE OF THE SIGNAL HEAD (ADJACENT TO THE GREEN INDICATION) AND EXIT THE LEFT SIDE (ADJACENT TO THE RED INDICATION) WHEN NECESSARY.
13. ELECTRICAL SERVICE ASSEMBLY (SEE ELECTRICAL DETAIL - SERVICE SUPPORT SP(U) AND SP (O)).
14. 400 WATT EQUIVALENT LED LUMINAIRE ON A 10' ARM MOUNTED NOT HIGHER THAN 35 FEET (TYP.).
15. TOP OF STRAIN POLE FOUNDATION SHALL BE NO LOWER THAN PAVEMENT SURFACE ELEVATION (SEE STANDARDS). TYPICAL STRAIN POLE FOUNDATION SHOULD BE 6" ABOVE CROSS-SECTION CROWN OF MAJOR ROADWAY.



POLE #5

ELECTRICAL SERVICE ASSEMBLY WITH METER POLE AND DISCONNECT - TYPE D (MOD 2)
(120/240) 70 (NS) SS (E) SP (U)



POLE # 6

ELECTRICAL SERVICE ASSEMBLY WITH METER POLE, SERVICE LOOP AND SAFETY SWITCH - TYPE D
(MOD 1) (120/240) 000 (NS) SS (N) SP (O)

NO.	REVISIONS	DATE	NAME

HARRIS COUNTY ENGINEERING DEPARTMENT

HARRIS COUNTY 1836 TEXAS

TEDSI INFRASTRUCTURE GROUP
TEDSI
TBPE F-1640
Consulting Engineers
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M. R. NEELAPU
107595
8/22/2024
DATE

PROJECT TITLE: ANTOINE DRIVE AT W. MOUNT HOUSTON ROAD		
DRAWN BY:	SHEET DESCRIPTION: TRAFFIC SIGNAL ELEVATION	JOB NO: 2024-2161-01
CK'D BY:		FILE NAME:
SCALE: N.T.S.		FILE NO:
DATE:	APPROVED BY:	SHT NO: 565 / 718

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8/22/2024

EXISTING TRAFFIC SIGNAL SCHEDULE

R A G
A B D E
G H K L

W1 - W6

SA
FA
SIGN LIGHT
LEFT TURN YIELD ON FLASHING YELLOW ARROW
C J

EXISTING SIGN SCHEDULE TO BE REMOVED

Antoine DR
S2, S3

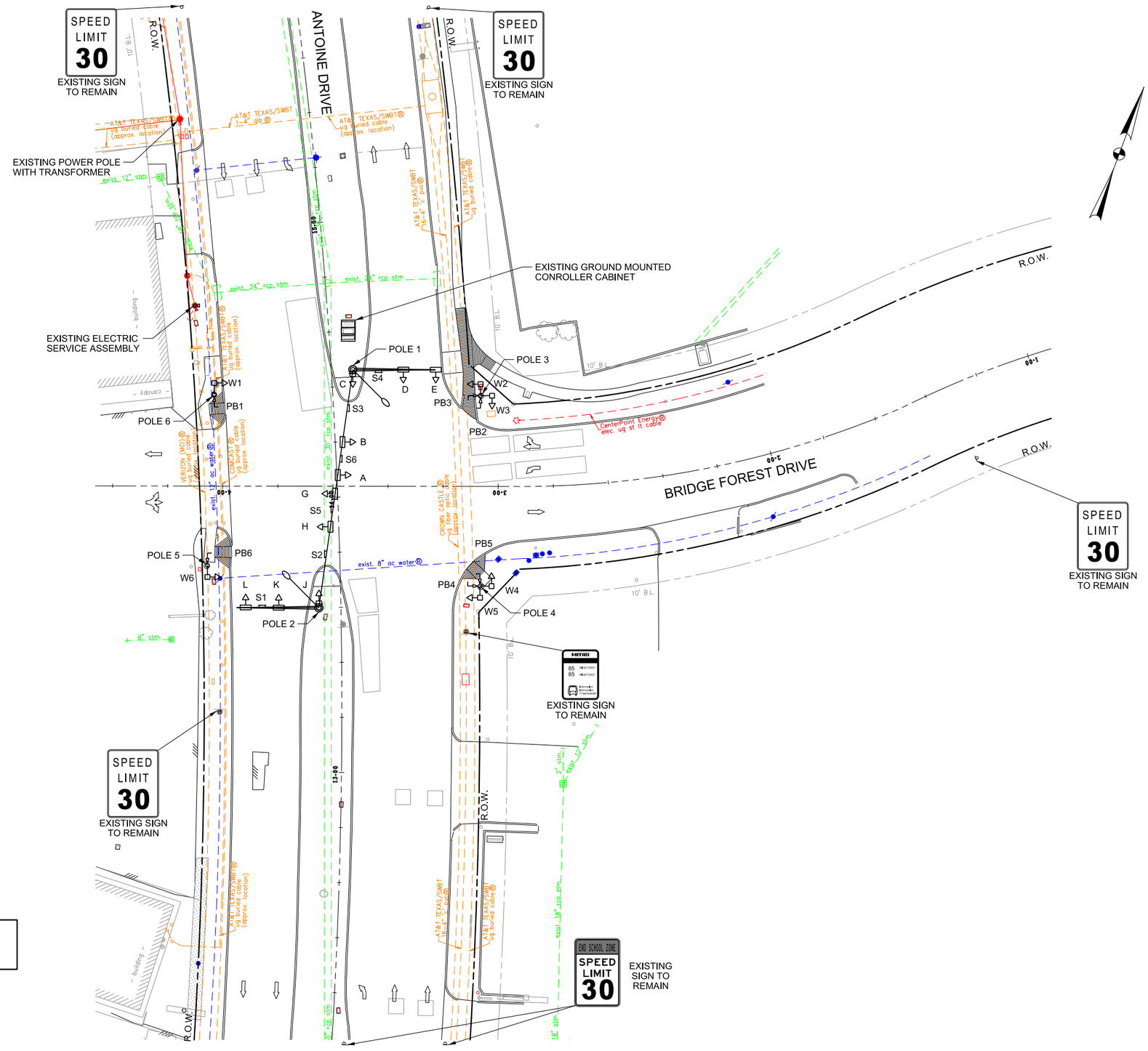
← Bridge Forest DR
S1

LEFT TURN YIELD
S5, S6

Bridge Forest DR →
S4

5' X 7 3/4'
PB2, PB4, PB6

5' X 7 3/4'
PB1, PB3, PB5



LEGEND

- SIGNAL POLE WITH MAST ARM
- ELECTRIC SERVICE ASSEMBLY
- CONTROLLER CABINET
- HORIZONTAL SIGNAL HEAD
- VERTICAL SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD
- PUSH BUTTON AND SIGN
- OVERHEAD SIGN
- SPAN WIRE
- LUMINAIRE
- SIGN ON POST
- DIRECTION OF TRAFFIC FLOW

BASELINE:

THE BASELINE RUNS EAST TO WESST ALONG BRIDGE FOREST DRIVE. IT RUNS SOUTH TO NORTH ALONG ANTOINE DRIVE.

POSTED SPEED LIMITS:

30 M.P.H. - ANTOINE DRIVE
30 M.P.H. - BRIDGE FOREST DRIVE

NO.	REVISIONS	DATE	NAME

HARRIS COUNTY ENGINEERING DEPARTMENT

TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
738 Hwy 6 South, Suite 430
Houston, Texas 77079
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TBPE F-1640

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107595
8/22/2024
DATE

PROJECT TITLE: ANTOINE DRIVE AT BRIDGE FOREST DRIVE		
DRAWN BY:	SHEET DESCRIPTION: EXISTING TRAFFIC SIGNAL LAYOUT	JOB NO: 2024-2161-01
CK'D BY:		FILE NAME:
SCALE: 1"=40'		FILE NO:
DATE:	APPROVED BY:	SHT NO: 566 / 718

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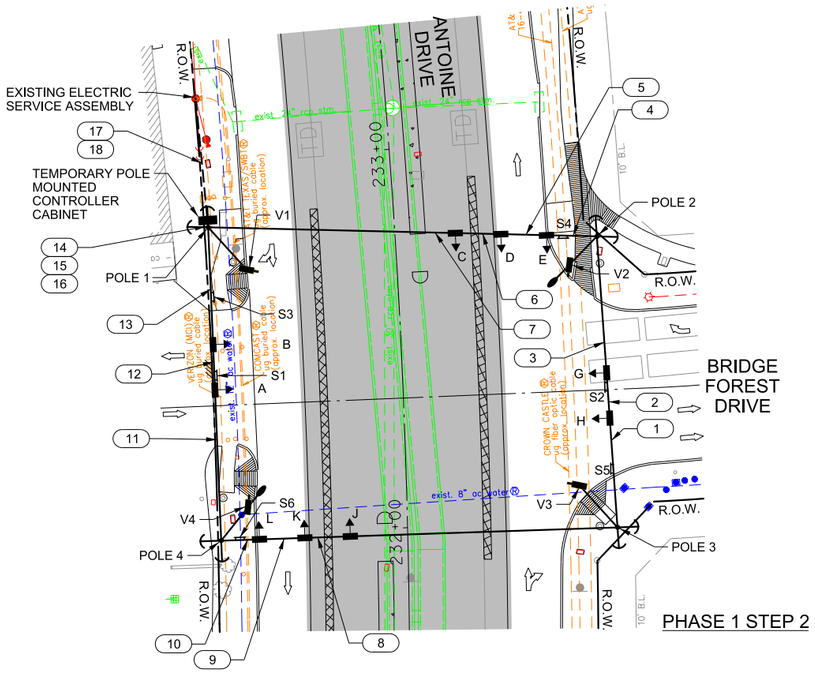
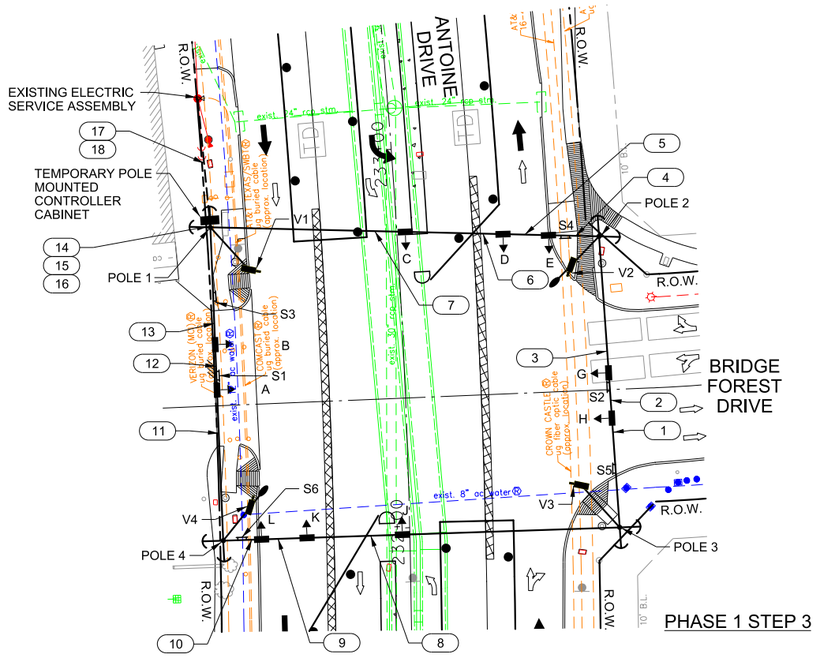
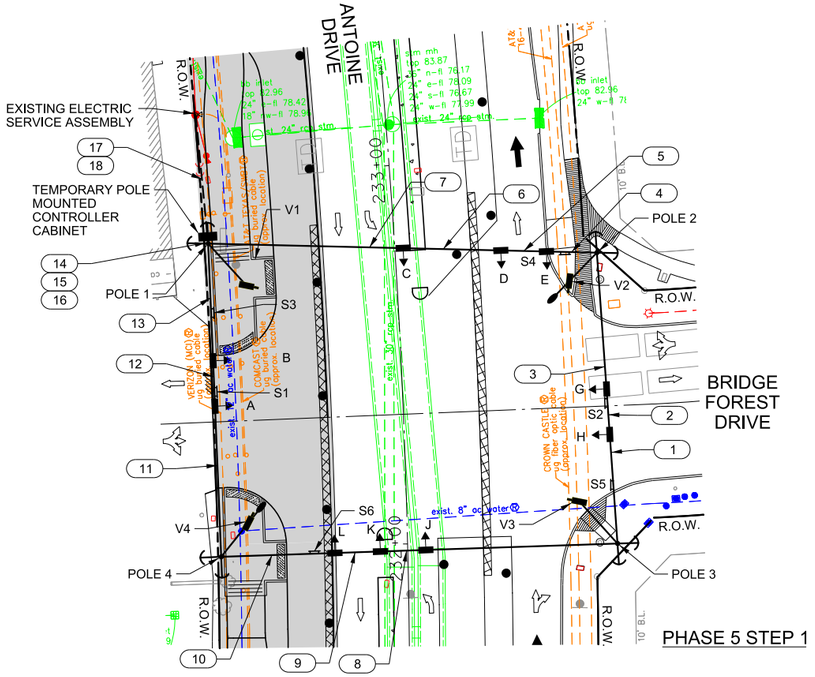
8/22/2024



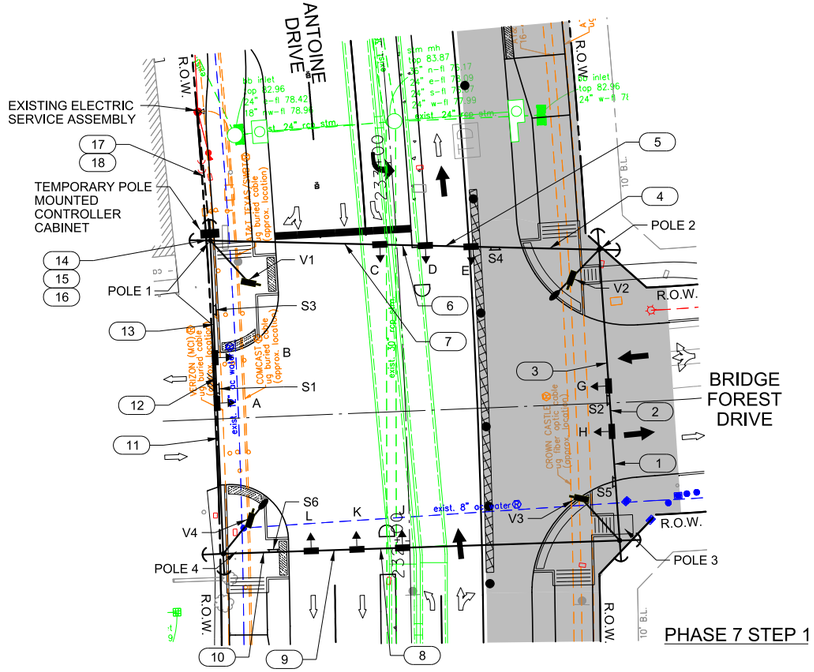
PHASE 1 STEP 2



PHASE 1 STEP 3



PHASE 5 STEP 1



PHASE 7 STEP 1

LEGEND

- 40' WOOD POLE
- HORIZONTAL SIGNAL HEAD
- OVERHEAD SIGN
- POLE MOUNTED CONTROLLER CABINET
- POLE MOUNTED ELECTRIC SERVICE
- 15' LUMINAIRE ARM
- VIVDS CAMERA
- DETECTION ZONE
- (X) WIRE RUN DESIGNATION
- DIRECTION OF TRAFFIC FLOW
- CONSTRUCTION WORK ZONE

NOTES:

1. ALIGN TRAFFIC SIGNAL HEADS, CAMERAS AND OVERHEAD SIGNS AS NECESSARY FOR THIS PHASE OF CONSTRUCTIONS AS SHOWN ON THIS PLAN.
2. CONTRACTOR SHALL PROVIDE GROUND MOUNTED CONSTRUCTION SIGN AT ALL APPLICABLE CORNERS INDICATING THE CLOSURE OF CROSSWALKS AT THE INTERSECTION DURING CONSTRUCTION.
3. SEE TRAFFIC SIGNAL HEAD, SIGN, CAMERA, CABLE RUN AND PHASING ASSIGNMENT DETAILS IN TEMPORARY TRAFFIC SIGNAL DETAILS PAGE.
4. COVER SIGNAL HEADS C AND J WITH BURLAP OR AN APPROVED EQUAL MATERIAL SO THAT SIGNAL FACES CANNOT BE SEEN FROM THE TIME OF INSTALLATION UNTIL PHASE 5 STEP 1.
5. COVER SIGNAL HEADS G AND H WITH BURLAP OR AN APPROVED EQUAL MATERIAL SO THAT SIGNAL FACES CANNOT BE SEEN DURING PHASE 4 STEP 1.

NO.	REVISIONS	DATE	NAME

HARRIS COUNTY ENGINEERING DEPARTMENT

TEDSI INFRASTRUCTURE GROUP
TEDSI
TBPE F-1640
Consulting Engineers
738 Hwy 6 South, Suite 430
Houston, Texas 77079
(832) 619-1000

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M. R. NEELAPU
107595
8/22/2024
DATE

PROJECT TITLE: ANTOINE DRIVE AT		
DRAWN BY:	SHEET DESCRIPTION: BRIDGE FOREST DRIVE	JOB NO: 2024-2161-01
CK'D BY:	TEMPORARY TRAFFIC SIGNAL LAYOUT	FILE NAME:
SCALE: 1"=40'		FILE NO.
DATE:	APPROVED BY:	SHT NO: 567 / 718

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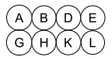
8/22/2024

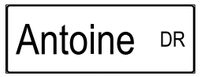
TEMPORARY SIGNAL HEAD DETAILS

SIGNAL FACE	DESIGNATION	NOTE
 1 WAY, 3 SECTION 12' LENS HORIZONTAL LED SIGNAL HEAD		COVER FOLLOWING SIGNAL HEADS WITH BURLAP OR APPROVED EQUAL MATERIAL DURING PHASE 5 STEP 1  DURING PHASE 7 STEP 1 
SA FA  1 WAY, 4 SECTION 12" LENS HORIZONTAL LED SIGNAL HEAD		COVER FOLLOWING SIGNAL HEADS WITH BURLAP OR APPROVED EQUAL MATERIAL DURING PHASE 1 STEP 2 AND PHASE 5 STEP 1  DURING PHASE 1 STEP 2 AND PHASE 7 STEP 1 

TEMPORARY OVERHEAD SIGN DETAILS



S6, S8



S5, S7



24" X 30"
S1, S3



R10-17T
30" X 30"
S2, S4

VIDEO DETECTOR CHART

CAMERA	PHASE	DET. ZONE
V1	6	WBT
V2	8	NBT
V3	2	EBT
V4	4	SBT

SIGNAL PHASING DIAGRAM SHALL COMPLY WITH HARRIS COUNTY STANDARD
DETECTION SEQUENCE AND SHALL BE DETERMINED DURING SIGNAL TURN ON

PHASE 1 WESTBOUND LEFT TURN	PHASE 2 EASTBOUND THRU	PHASE 3 NORTHBOUND LEFT TURN	PHASE 4 SOUTHBOUND THRU
PHASE 5 EASTBOUND LEFT TURN	PHASE 6 WESTBOUND THRU	PHASE 7 SOUTHBOUND LEFT TURN	PHASE 8 NORTHBOUND THRU

ELECTRICAL SCHEDULE

ITEM	DESCRIPTION	RUN DESIGNATION																			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
POWER	1/C-#4 XHHW															2		2					
	#8 (BARE) COPPER															1	1	1	1				
LUM. / SIGN LIGHT	2/C #14 STRANDED				1	1	1	1				1	1	1			2		2				
VEH. SIGNAL	7/C-#14 STRANDED		2	1	1	3	2	3	1	3	2	2	4	3	6								
VIDEO DETECTION	COAXIAL CABLE	1	1	1	2	2	2	2				1	1	1	4								
	3/C#16	1	1	1	2	2	2	2				1	1	1	4								
GALVANIZED RIGID METAL CONDUIT	1"																						
	2"															1	1	1	1				
	3"														1								
	4"																						

NO.	REVISIONS	DATE	NAME

HARRIS COUNTY
ENGINEERING DEPARTMENT

TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
738 Hwy 6 South, Suite 430
Houston, Texas 77079
(832) 619-1000
TEDSI TBPE F-1640

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M. R. NEELAPU
107595
8/22/2024
DATE

PROJECT TITLE: ANTOINE DRIVE AT BRIDGE FOREST DRIVE		
DRAWN BY:	SHEET DESCRIPTION: TEMPORARY TRAFFIC SIGNAL DETAILS	JOB NO: 2024-2161-01
CK'D BY:		FILE NAME:
SCALE: 1"=40'		FILE NO.
DATE:	APPROVED BY:	SHT NO: 568 / 718

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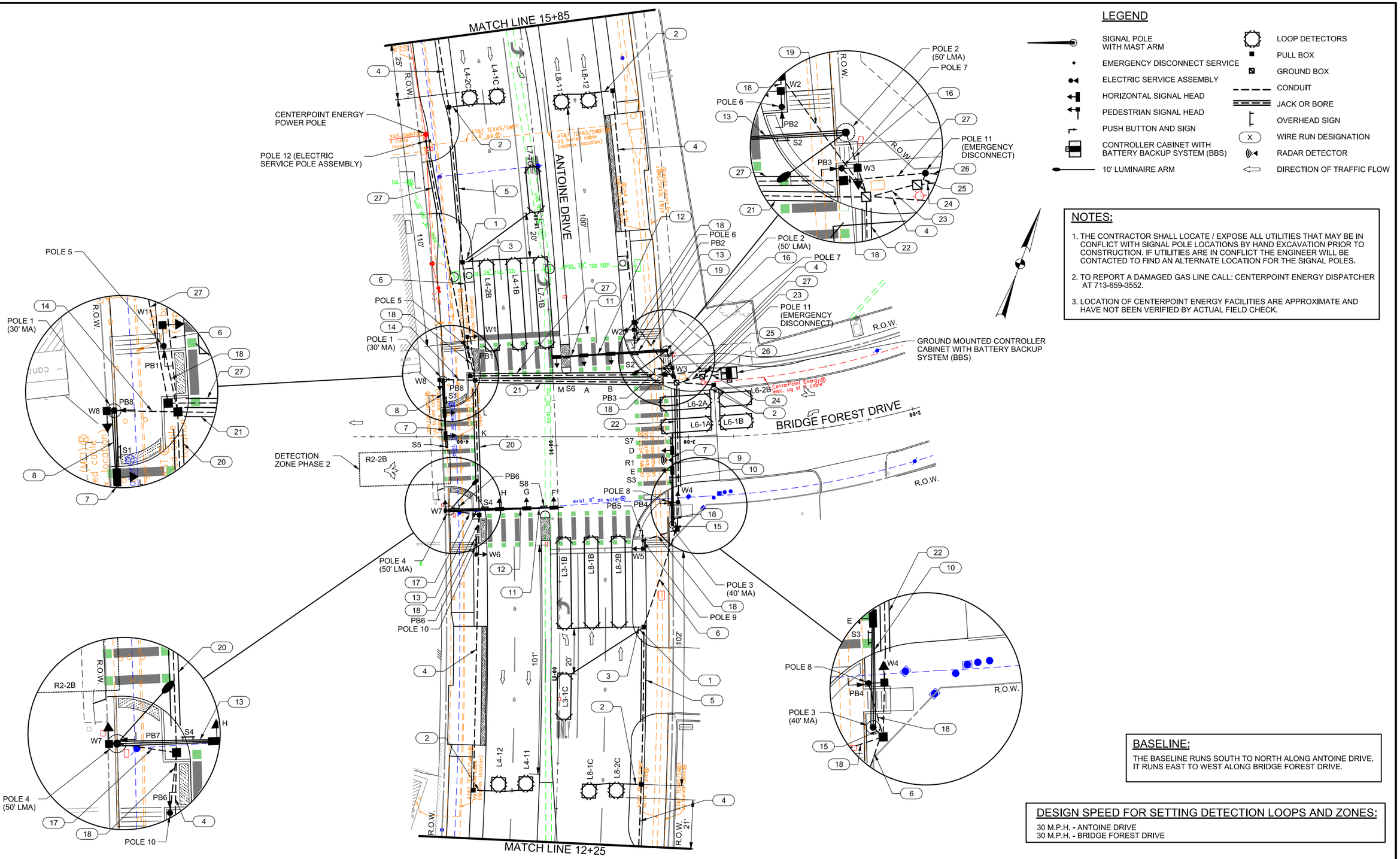
8/22/2024



LEGEND

- SIGNAL POLE WITH MAST ARM
- EMERGENCY DISCONNECT SERVICE
- ELECTRIC SERVICE ASSEMBLY
- HORIZONTAL SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD
- PUSH BUTTON AND SIGN
- CONTROLLER CABINET WITH BATTERY BACKUP SYSTEM (BBS)
- 10' LUMINAIRE ARM
- LOOP DETECTORS
- PULL BOX
- GROUND BOX
- CONDUIT
- JACK OR BORE
- OVERHEAD SIGN
- (X) WIRE RUN DESIGNATION
- RADAR DETECTOR
- DIRECTION OF TRAFFIC FLOW

NOTES:

1. THE CONTRACTOR SHALL LOCATE / EXPOSE ALL UTILITIES THAT MAY BE IN CONFLICT WITH SIGNAL POLE LOCATIONS BY HAND EXCAVATION PRIOR TO CONSTRUCTION. IF UTILITIES ARE IN CONFLICT THE ENGINEER WILL BE CONTACTED TO FIND AN ALTERNATE LOCATION FOR THE SIGNAL POLES.
2. TO REPORT A DAMAGED GAS LINE CALL: CENTERPOINT ENERGY DISPATCHER AT 713-659-3552.
3. LOCATION OF CENTERPOINT ENERGY FACILITIES ARE APPROXIMATE AND HAVE NOT BEEN VERIFIED BY ACTUAL FIELD CHECK.

BASELINE:

THE BASELINE RUNS SOUTH TO NORTH ALONG ANTOINE DRIVE. IT RUNS EAST TO WEST ALONG BRIDGE FOREST DRIVE.

DESIGN SPEED FOR SETTING DETECTION LOOPS AND ZONES:

30 M.P.H. - ANTOINE DRIVE
30 M.P.H. - BRIDGE FOREST DRIVE

NO.	REVISIONS	DATE	NAME

HARRIS COUNTY ENGINEERING DEPARTMENT

TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
738 Hwy 6 South, Suite 430
Houston, Texas 77079
(832) 619-1000
TBPE F-1640

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M. R. NEELAPU
107595
8/22/2024
DATE

PROJECT TITLE: ANTOINE DRIVE AT BRIDGE FOREST DRIVE		JOB NO: 2024-2161-01
DRAWN BY:	SHEET DESCRIPTION: PROPOSED TRAFFIC SIGNAL LAYOUT (SHEET 1 OF 3)	FILE NAME:
CK'D BY:		FILE NO.
SCALE: 1"=40'		SHT NO. 569 / 718
DATE:	APPROVED BY:	

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8/22/2024

NOTES FOR PERMANENT TRAFFIC SIGNALS

1. CONTRACTOR SHALL CLEAN THE JOBSITE OF ALL DEBRIS, LOOSEN EXCESS EXCAVATED MATERIALS, ETC ACCUMULATED AS A RESULT OF WORK PERFORMED UNDER THIS CONTRACT.
2. EXACT LOCATION OF POLES, CABINET, SIGNAL HEADS AND PULL BOXES SHALL BE DETERMINED IN THE FIELD. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY EXACT LOCATIONS WITH HARRIS COUNTY TRAFFIC AND TRANSPORTATION SECTION, PRIOR TO ANY CONSTRUCTION.
3. ALL CONDUITS UNDER EXISTING ROAD & PAVED DRIVEWAYS SHALL BE BORED OR JACKED.
4. CONTRACTOR SHALL VERIFY LOCATION OF STOP BARS PRIOR TO INSTALLATION OF LOOP DETECTORS.
5. ALL CONDUITS UNDER NATURAL GROUND SHALL BE TRENCHED AND BURIED. CONTRACTOR SHALL BACK-FILL, COMPACT, AND RESTORE TRENCHED AREA TO ORIGINAL CONDITION AND MATCH EXISTING SURFACE CONDITION TO THE DENSITY OF ADJACENT GROUND.
6. ALL CONDUITS SHALL BE SCHEDULE 40 PVC INSTALLED WITH A MINIMUM OF 30" GROUND COVER.
7. LOCATION OF UTILITIES SHOWN IS APPROXIMATE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES (PUBLIC OR PRIVATE) PRIOR TO COMMENCING WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGE CAUSED BY HIS/HER FAILURE TO LOCATE AND PRESERVE THESE UTILITIES, WHETHER UNDERGROUND, ABOVEGROUND OR OVERHEAD. ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR AT HIS/ HER OWN EXPENSE.
8. CALL THE FOLLOWING NUMBERS FOR LOCATION OF UNDERGROUND FACILITIES 72 HOURS PRIOR TO ANY EXCAVATION IN AREA: UTILITIES 713-223-4567(HOUSTON), 1-800-669-8344 (OUTSIDE HOUSTON), PIPELINES 1-800-245-4545 AND 1-800-344-8377. CALL 1-800-DIG-TESS OR 1-800-526-2699 TO LOCATE PRIVATE UTILITIES.
9. ALL CONSTRUCTION SIGNS AND BARRICADES SHALL CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PLACE "SIGNAL WORK AHEAD" (SCW21-4D) AND "END SIGNAL WORK" (SG20-2A) SIGNS PRIOR TO ANY SIGNAL CONSTRUCTION.
10. CONTRACTOR SHALL NOTIFY THE HARRIS COUNTY CONSTRUCTION PROGRAMS DIVISION (AT 713-274-1531) 48 HOURS PRIOR TO COMMENCEMENT OF WORK.
11. ALL PERMANENT SIGNAL HEADS SHALL BE MOUNTED HORIZONTALLY AT A MINIMUM HEIGHT OF 19 FEET ABOVE THE ROADWAY.
12. ALL CABLE FOR LUMINAIRES, DOWNLIGHTS AND FLASHER LIGHTS SHALL BE ROUTED TO THE SERVICE ENCLOSURE. SEE ELECTRICAL DETAIL SHEETS.
13. SIGNAL HEADS SHALL BE WRAPPED WITH DARK PLASTIC OR SUITABLE MATERIAL SO THAT SIGNAL FACE CANNOT BE SEEN FROM THE TIME OF INSTALLATION UNTIL PLACED IN OPERATION. DO NOT USE BURLAP.
14. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF THE SERVICE OUTLET. THE SERVICE OUTLET IS SUBJECT TO RELOCATION TO ANY CORNER AT NO ADDITIONAL COST.
15. THE CONTRACTOR SHALL REPLACE ALL PAVEMENT, SIDEWALKS, OR CURBS DAMAGED BY HIS/HER FORCES DURING CONSTRUCTION. SUCH REPAIRS SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION OF TRAFFIC SIGNAL SYSTEM.
16. THE CONTRACTOR SHALL BE ABLE TO IMMEDIATELY RESPOND AT ANY TIME (24 HOURS A DAY) TO REPORTS OF TRAFFIC SIGNAL MALFUNCTIONS AT THE SIGNALIZED INTERSECTION AS HE/SHE ASSUMES REPONSIBLITY FOR THE MAINTENANCE OF THE SIGNAL EQUIPMENT AS OUTLINED ABOVE.
17. SOME LOOP DETECTORS MAY HAVE TO BE SPLIT TO ACCOMMODATE PAVEMENT EXPANSION JOINTS OR MANHOLES. THE CONTRACTOR MUST MAKE THE NECESSARY ADJUSTMENTS WHEN CUTTING THE LOOP DETECTORS TO ENSURE THAT NO CUTS OCCUR CLOSER THAN 2 FEET TO AN EXPANSION JOINT OR MANHOLE (SEE TO PROPOSED TRAFFIC SIGNAL LAYOUT SHEETS, "PRESENSE DETECTORS PLACEMENT DETAIL").

LEGEND

- SIGNAL POLE WITH MAST ARM
- EMERGENCY DISCONNECT SERVICE
- ELECTRIC SERVICE ASSEMBLY
- HORIZONTAL SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD
- PUSH BUTTON AND SIGN
- CONTROLLER CABINET WITH BATTERY BACKUP SYSTEM (BBS)
- 10' LUMINAIRE ARM
- LOOP DETECTORS
- PULL BOX
- GROUND BOX
- CONDUIT
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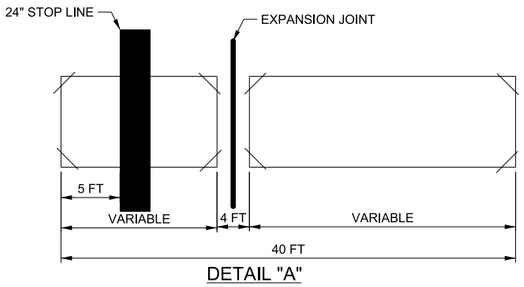
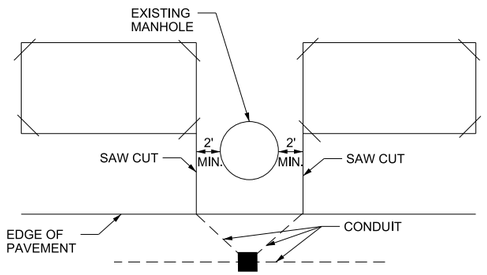


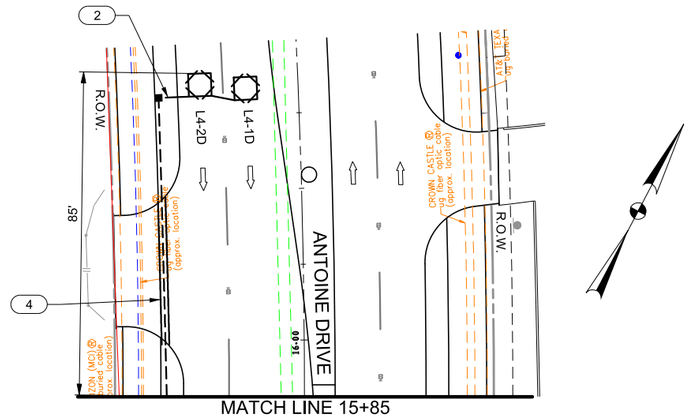
DETAIL "A"

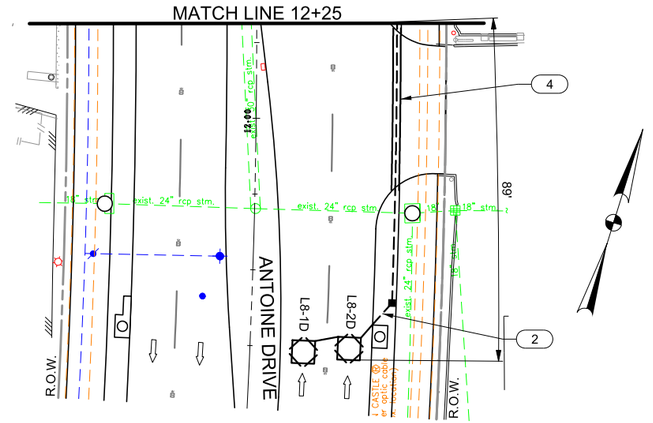
PRESENCE DETECTORS PLACEMENT DETAIL
(FOR EXPANSION JOINT INSTALLATION)



DETAIL "B"

PRESENCE DETECTORS PLACEMENT DETAIL
(FOR MANHOLE INSTALLATION)





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DRAWN BY:	SHEET DESCRIPTION: PROPOSED TRAFFIC SIGNAL LAYOUT (SHEET 2 OF 3)	FILE NAME:
CK'D BY:		FILE NO.
SCALE: 1"=40'		SHT NO. 570 / 718
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8/22/2024

PROPOSED POLE & CONTROLLER LOCATIONS

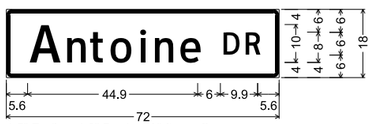
POLE NO.	DESCRIPTION	BASELINE STA. (ANTOINE DR.)	OFFSET LOCATION
1	HC 34' STEEL STRAIN POLE WITH 30' CLAMP-ON MAST ARM, PEDESTRIAN SIGNAL HEAD W8 AND APS TYP PUSH BUTTON PB8.	14+31.9	48.4' L
2	TXDOT 30' POLE WITH 50' MAST ARM (LMA 50L-100) AND 10' TXDOT LUMINAIRE.	14+39.0	50.7' R
3	HC 34' STEEL STRAIN POLE WITH 40' CLAMP-ON MAST ARM AND RADAR DETECTOR R1.	13+64.0	50.2' R
4	TXDOT 30' POLE WITH 50 MAST ARM (LMA 50L-100), 10' TXDOT LUMINAIRE, PEDESTRIAN SIGNAL HEAD W7 AND APS TYP PUSH BUTTON PB7.	13+72.7	48.0' L
5	10' PEDESTRIAN POLE WITH PEDESTRIAN SIGNAL HEAD W1 AND APS TYP PUSH BUTTON PB1.	14+45.8	36.7' L
6	10' PEDESTRIAN POLE WITH PEDESTRIAN SIGNAL HEAD W2 AND APS TYP PUSH BUTTON PB2.	14+45.4	36.9' R
7	10' PEDESTRIAN POLE WITH PEDESTRIAN SIGNAL HEAD W3 AND APS TYP PUSH BUTTON PB3.	14+31.3	49.3' R
8	10' PEDESTRIAN POLE WITH PEDESTRIAN SIGNAL HEAD W4 AND APS TYP PUSH BUTTON PB4.	13+75.6	49.4' R
9	10' PEDESTRIAN POLE WITH PEDESTRIAN SIGNAL HEAD W5 AND APS TYP PUSH BUTTON PB5.	13+57.4	36.9' R
10	10' PEDESTRIAN POLE WITH PEDESTRIAN SIGNAL HEAD W6 AND APS TYP PUSH BUTTON PB6.	13+56.9	36.6' L
11	ELECTRICAL SERVICE ASSEMBLY WITH METER POLE AND DISCONNECT - TYPE D (MOD 2) (120/240) 70 (NS) SS (E) SP (U)	14+29.3	67.7' R
12	ELECTRICAL SERVICE ASSEMBLY WITH METER POLE, SERVICE LOOP AND SAFETY SWITCH - TYPE D (MOD 1) (120/240) 000 (NS) SS (N) SP (O) SERVICE ADDRESS: XXXX 1/2 ANTOINE DRIVE ESI ID: XXXXXXXXX	15+39.8	47.3' L
CONTROLLER CABINET	HC ATC CONTROLLER IN A GROUND MOUNTED ITS CABINET (HOUSING 3) WITH SIDE MOUNTED BATTERY BACKUP SYSTEM AND A CONCRETE FOUNDATION	14+27.8	77.6' R

ELECTRICAL SCHEDULE

ITEM	DESCRIPTION	RUN DESIGNATION																						*		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
POWER	1/C-#4 XHHW																										2	3
	#8 (BARE) COPPER														1	1	1	1	1	1	1	1	1	2	3	1	1	1
LUM. / SIGN LIGHT	2/C #14 STRANDED											1	1	1			2	2			2	2		4		4		
PUSH BUTTON	2/C-#14 STRANDED														1			1	1	1	2	4	2	8	8			
PED. SIGNAL	4/C-#14 STRANDED														1			1	1	1	2	4	2	8	8			
VEH. SIGNAL	7/C-#14 STRANDED							2	1	2	1	1	3	2	1	1	2	2			2	3	1	6	6			
LOOP DETECTOR	2-#14 XHHW STRAND	1	2	3																								
	2/C#14L.L.(SHIELDED)				2	4	8													2	2	10	8	22	22			
RADAR DETECTION	6/C #14 AWG									1	1					1												
SCHEDULE 40 PVC CONDUIT	1"	1	1	1																					1	1	1	1
	2"				1	1	1												1	1					1			
	3"																				1		1		1			
	4"														1	1	1	1				1		2	2			

* ONE 2" SPARE CONDUIT TO BE INSTALLED AND CAPPED FOR FUTURE USE.

PROPOSED OVERHEAD SIGN SCHEDULE



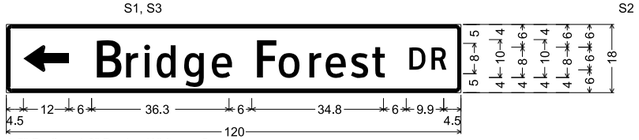
1.5" Radius, 1.0" Border, White on Green;
[Antoine] ClearviewHwy-3-W;
[DR] ClearviewHwy-3-W;

S1, S3



1.5" Radius, 1.0" Border, White on Green;
[Bridge] ClearviewHwy-3-W;
[Forest] ClearviewHwy-3-W; [DR] ClearviewHwy-3-W;
Standard Arrow Custom 12.0" X 7.0" 0°;

S2



1.5" Radius, 1.0" Border, White on Green;
Standard Arrow Custom 12.0" X 7.0" 180°;
[Bridge] ClearviewHwy-3-W;
[Forest] ClearviewHwy-3-W; [DR] ClearviewHwy-3-W;

S4

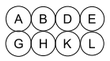


R10-17T
30" X 30"
S6, S8



24" X 30"
S5, S7

PROPOSED SIGNAL HEAD SCHEDULE

SIGNAL FACE	DESIGNATION
 1 WAY, 3 SECTION 12' LENS HORIZONTAL LED SIGNAL HEAD	
SA FA  1 WAY, 4 SECTION 12" LENS HORIZONTAL LED SIGNAL HEAD	
	W1 THROUGH W8
R10-3eL 9"x15" W/ ACCESSIBLE PUSH BUTTON  PB2, PB4, PB6, PB8	R10-3eR 9"x15" W/ ACCESSIBLE PUSH BUTTON  PB1, PB3, PB5, PB7

PROPOSED LOOP DETECTOR CHART

LOOP	SIZE	SETTING	FUNCTION
L3-1B	6'X40'	PRESENCE	CALL & EXTEND Ø3
L3-1C	6'X20'	PRESENCE	CALL & EXTEND Ø3
L4-1B	6'X40'	PRESENCE	CALL & EXTEND Ø4
L4-2B	6'X40'	PRESENCE	CALL & EXTEND Ø4
L4-1C	6'X6'	PULSE	CALL & EXTEND Ø4
L4-2C	6'X6'	PULSE	CALL & EXTEND Ø4
L4-1D	6'X6'	PULSE	CALL & EXTEND Ø4
L4-2D	6'X6'	PULSE	CALL & EXTEND Ø4
L4-11	6'X6'	PULSE	SYSTEMS LOOPS
L4-12	6'X6'	PULSE	SYSTEMS LOOPS
L6-1A	6'X22'	PRESENCE	CALL & EXTEND Ø6
L6-2A	6'X22'	PRESENCE	CALL & EXTEND Ø6
L6-1B	6'X14'	PRESENCE	CALL & EXTEND Ø6
L6-2B	6'X14'	PRESENCE	CALL & EXTEND Ø6
L7-1B	6'X40'	PRESENCE	CALL & EXTEND Ø7
L7-1C	6'X20'	PRESENCE	CALL & EXTEND Ø7
L8-1B	6'X40'	PRESENCE	CALL & EXTEND Ø8
L8-2B	6'X40'	PRESENCE	CALL & EXTEND Ø8
L8-1C	6'X6'	PULSE	CALL & EXTEND Ø8
L8-2C	6'X6'	PULSE	CALL & EXTEND Ø8
L8-1D	6'X6'	PULSE	CALL & EXTEND Ø8
L8-2D	6'X6'	PULSE	CALL & EXTEND Ø8
L8-11	6'X6'	PULSE	SYSTEMS LOOPS
L8-12	6'X6'	PULSE	SYSTEMS LOOPS

RADAR DETECTOR CHART

RADAR	PHASE	DET. ZONE	DET. TYPE
R1	2	R2-2B	PRESENCE

SIGNAL PHASING DIAGRAM SHALL COMPLY WITH HARRIS COUNTY STANDARD DETECTION SEQUENCE AND SHALL BE DETERMINED DURING SIGNAL TURN ON

PHASE 1 WESTBOUND LEFT TURN	PHASE 2 EASTBOUND THRU	PHASE 3 NORTHBOUND LEFT TURN	PHASE 4 SOUTHBOUND THRU
PHASE 5 EASTBOUND LEFT TURN	PHASE 6 WESTBOUND THRU	PHASE 7 SOUTHBOUND LEFT TURN	PHASE 8 NORTHBOUND THRU

ELECTRICAL SERVICE DATA

POLE NO.	ELECTRICAL SERVICE DESCRIPTION (SEE HARRIS COUNTY ELECTRICAL DETAIL)	SERVICE CONDUIT SIZE	SERVICE CONDUCTORS NO./SIZE	SAFETY SWITCH AMPS	MAIN CKT. BKR. POLE/AMP	TWO-POLE CONTACTOR AMPS	PANEL BD/ LOAD CENTER AMP RATING	CITCUIT NO.	BRANCH CKT. BRL. POLE/AMPS	KVA LOAD
12	TY D (MOD 1) (120/240) 000 (NS) SS (N) SP (O)	1 1/4"	3/#4	N/A	N/A	N/A	N/A	N/A	N/A	<7.1
11	TY D (MOD 2) (120/240) 070 (NS) SS (E) SP (U)	1 1/4"	3/#4	N/A	2P/70	30	100	SIGNAL LUMINAIRE	1P/50 2P/20	<7.1

NO.	REVISIONS	DATE	NAME

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TEDSI TBPE F-1640
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107595
8/22/2024
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PROJECT TITLE: ANTOINE DRIVE AT BRIDGE FOREST DRIVE
SHEET DESCRIPTION: PROPOSED TRAFFIC SIGNAL LAYOUT (SHEET 3 OF 3)
DRAWN BY:
CK'D BY:
SCALE: N.T.S.
DATE:
APPROVED BY:
JOB NO. 2024-2161-01
FILE NAME:
FILE NO:
SHT NO. 571 / 718

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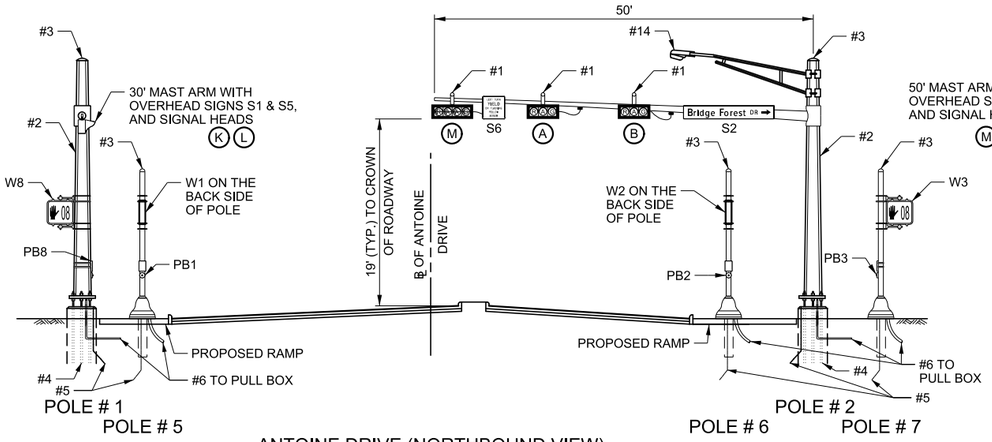
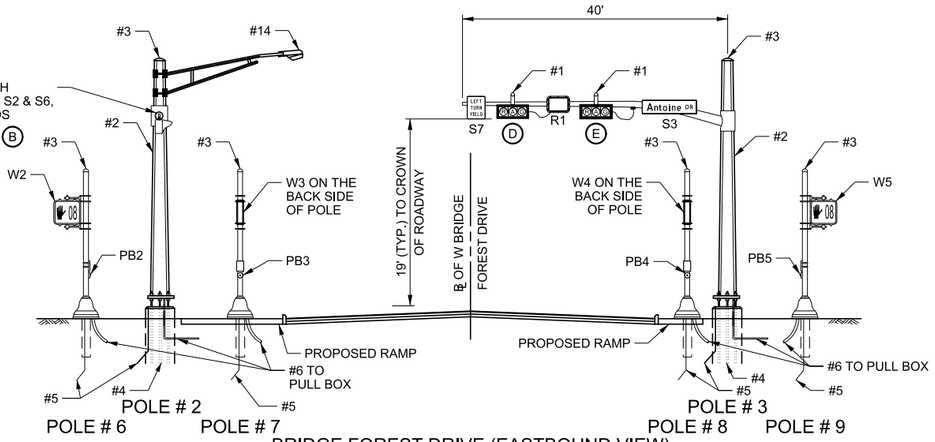
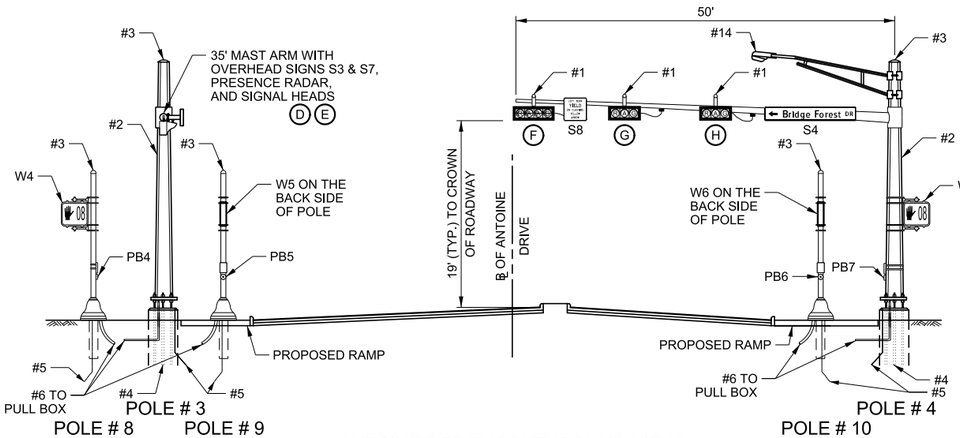


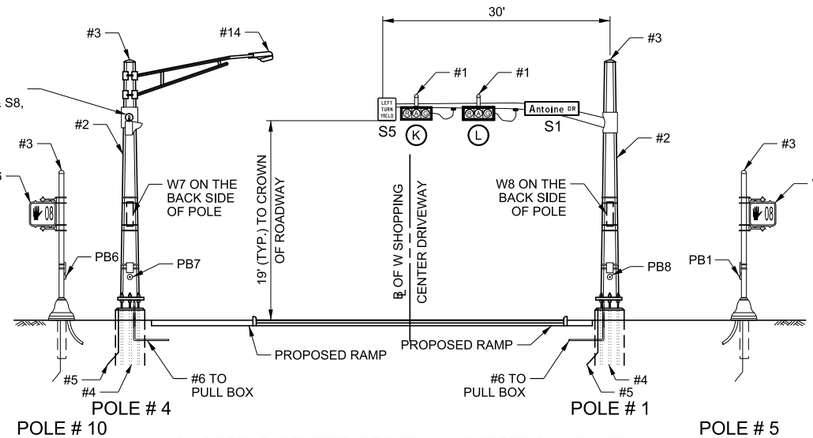
ANTOINE DRIVE (NORTHBOUND VIEW)



BRIDGE FOREST DRIVE (EASTBOUND VIEW)

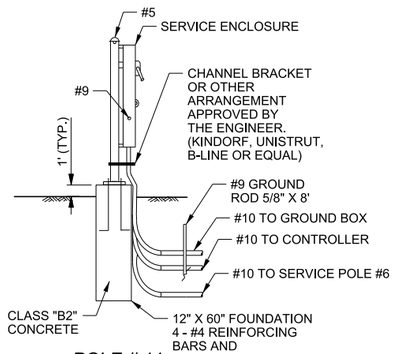


ANTOINE DRIVE (SOUTHBOUND VIEW)



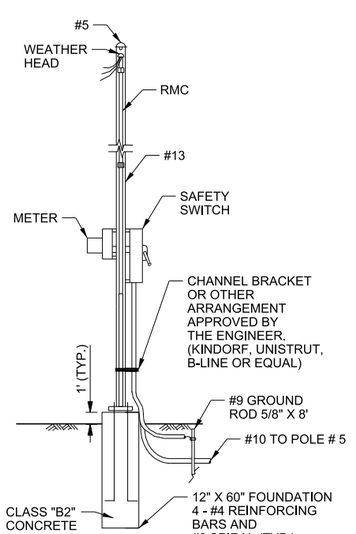
SHOPPING CENTER DRIVEWAY (WESTBOUND VIEW)

1. ALL SIGNAL HEADS ON MAST ARM SHALL BE RIGID MOUNTED WITH BRACKET ASSEMBLY.
2. SIGNAL POLE WITH MAST ARM.
3. POLE CAP (TYPICAL ALL POLES).
4. SEE POLE FOUNDATION DETAILS FOR ANCHOR BOLTS.
5. ALL POLES, CONTROLLER AND METER SHALL BE GROUNDED WITH #8 SOLID COPPER WIRE CONNECTED TO 5/8" DIA. X 8' LONG COPPER CLAD STEEL GROUND ROD.
6. SEE PROPOSED TRAFFIC SIGNAL LAYOUT SHEET FOR CONDUITS REQUIRED. ALL CONDUITS SHALL BE SCH.40 PVC CONDUITS INSTALLED MINIMUM 30" UNDERGROUND.
7. ALL HARDWARE SHALL BE GALVANIZED.
8. CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE ALL UTILITIES AND CULVERTS IN THE WAY OF CONSTRUCTION.
9. PHOTOELECTRIC CELL FOR OPERATION OF LUMINAIRE (ENCLOSURE MOUNTED).
10. ALL PEDESTRIAN SIGNALS SHALL BE SYMBOL TYPE.
11. STREET NAME SIGNS, SIGN CLAMPS SHALL BE SUBMITTED TO HARRIS COUNTY FOR APPROVAL.
12. SIGNAL CABLES SHALL ALWAYS ENTER THE RIGHT SIDE OF THE SIGNAL HEAD (ADJACENT TO THE GREEN INDICATION) AND EXIT THE LEFT SIDE (ADJACENT TO THE RED INDICATION) WHEN NECESSARY.
13. ELECTRICAL SERVICE ASSEMBLY (SEE ELECTRICAL DETAIL - SERVICE SUPPORT SP(U) AND SP (O)).
14. 400 WATT EQUIVALENT LED LUMINAIRE ON A 10' ARM MOUNTED NOT HIGHER THAN 35 FEET (TYP.).
15. TOP OF STRAIN POLE FOUNDATION SHALL BE NO LOWER THAN PAVEMENT SURFACE ELEVATION (SEE STANDARDS). TYPICAL STRAIN POLE FOUNDATION SHOULD BE 6" ABOVE CROSS-SECTION CROWN OF MAJOR ROADWAY.



POLE # 11

ELECTRICAL SERVICE ASSEMBLY WITH METER POLE AND DISCONNECT - TYPE D (MOD 2) (120/240) 70 (NS) SS (E) SP (U)



POLE # 12

ELECTRICAL SERVICE ASSEMBLY WITH METER POLE, SERVICE LOOP AND SAFETY SWITCH - TYPE D (MOD 1) (120/240) 000 (NS) SS (N) SP (O)

NO.	REVISIONS	DATE	NAME

HARRIS COUNTY ENGINEERING DEPARTMENT

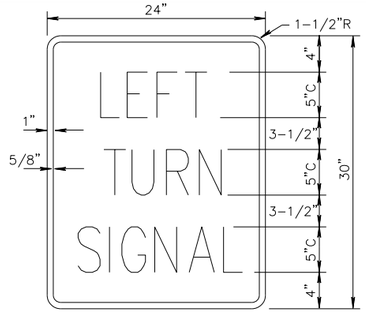
TEDSI INFRASTRUCTURE GROUP
TEDSI
TBPE F-1640
Consulting Engineers
738 Hwy 6 South, Suite 430
Houston, Texas 77079
(832) 619-1000

THIS DOCUMENT IS FOR INTERIM REVIEW AND IS NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.

M. R. NEELAPU
107595
8/22/2024
DATE

PROJECT TITLE: ANTOINE DRIVE AT BRIDGE FOREST DRIVE TRAFFIC SIGNAL ELEVATION		
DRAWN BY:	SHEET DESCRIPTION:	JOB NO. 2024-2161-01
CK'D BY:		FILE NAME:
SCALE: N.T.S.		FILE NO:
DATE:	APPROVED BY:	SHT NO. 572 / 718

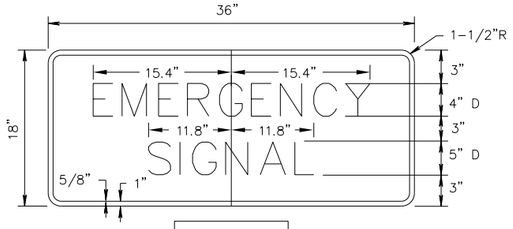
pw:\\tedsi-pw.bentley.com:tedsi-pw-01\Documents\Projects\2024\2024-2161-01 - Antoine Drive Signals\6.0 TEDSI Design\6.08 CADD\6.08.01 Sheet Files\Signal\SHT-Elevation-AntoineBridgeForest.dgn
8/22/2024



R10-10L
24" x 30"

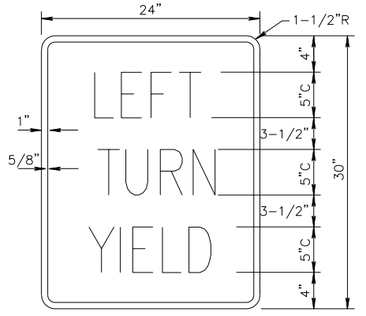
LETTERS – BLACK
BORDER – BLACK
BACKGROUND – WHITE REFLECTIVE
SHEETING – VIP DIAMOND GRADE

NOTE:
NOT FOR SPAN WIRE MOUNTING. ATTACH SIGN TO STAND ALONE POST OR SIGNAL POLE



36" x 18"

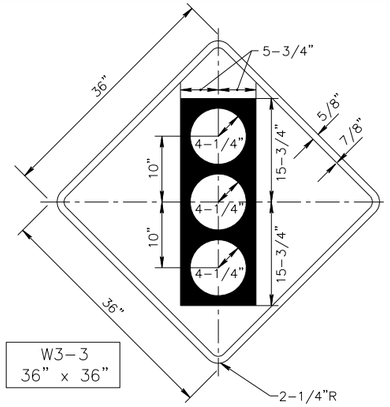
LETTERS – BLACK
BORDER – BLACK
BACKGROUND – WHITE REFLECTIVE
SHEETING – VIP DIAMOND GRADE



24" x 30"

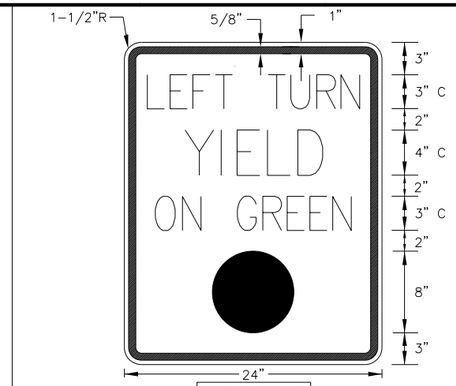
LETTERS – BLACK
BORDER – BLACK
BACKGROUND – WHITE REFLECTIVE
SHEETING – VIP DIAMOND GRADE

NOTE:
NOT FOR SPAN WIRE MOUNTING. ATTACH SIGN TO STAND ALONE POST OR SIGNAL POLE



W3-3
36" x 36"

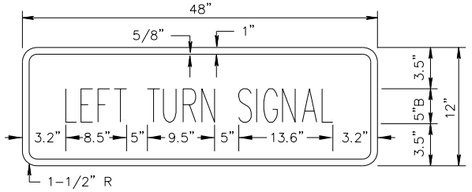
SYMBOL – BLACK
BORDER – BLACK
TOP CIRCLE – RED REFLECTIVE
BOTTOM CIRCLE – GREEN REFLECTIVE
BACKGROUND – YELLOW REFLECTIVE
SHEETING – VIP DIAMOND GRADE

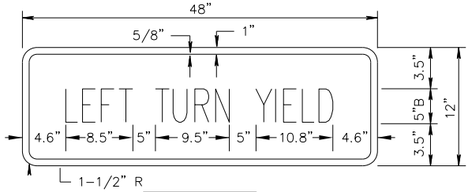


MR10-12
24" x 30"

LETTERS – BLACK
BORDER – BLACK
BACKGROUND – WHITE REFLECTIVE
SHEETING – VIP DIAMOND GRADE

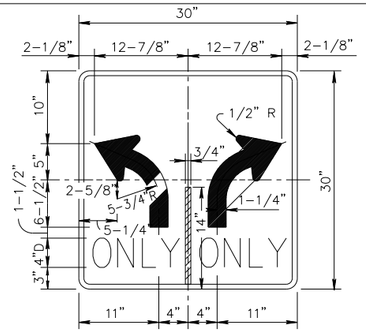
NOTE:
NOT FOR SPAN WIRE MOUNTING. ATTACH SIGN TO STAND ALONE POST OR SIGNAL POLE





48" x 12"

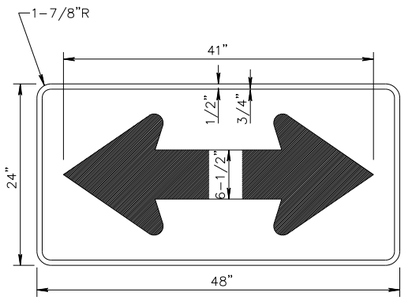
LETTERS – BLACK (SERIES B)
BORDER – BLACK
BACKGROUND – WHITE REFLECTIVE
SHEETING – VIP DIAMOND GRADE



R3-8 L(R)
30" x 30"

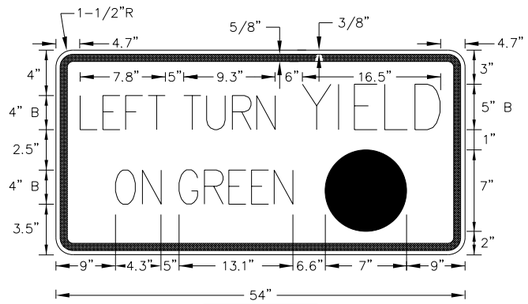
LETTERS – BLACK
BORDER – BLACK
BACKGROUND – WHITE REFLECTIVE
SHEETING – VIP DIAMOND GRADE

NOTE:
NOT FOR SPAN WIRE MOUNTING. ATTACH SIGN TO STAND ALONE POST OR SIGNAL POLE



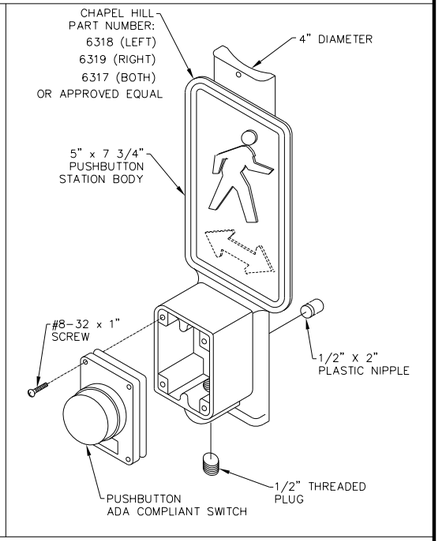
W1-7
48" x 24"

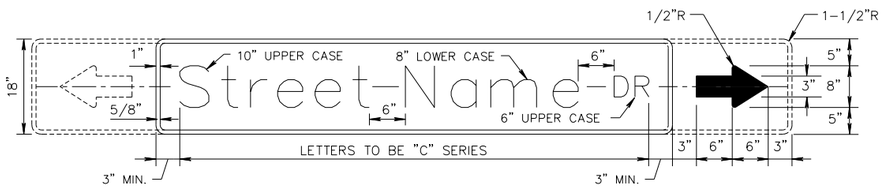
SYMBOL – BLACK
BORDER – BLACK
BACKGROUND – YELLOW REFLECTIVE
SHEETING – VIP DIAMOND GRADE



54" x 18"

LETTERS – BLACK (SERIES B)
BORDER – BLACK
CIRCLE – GREEN REFLECTIVE
BACKGROUND – WHITE REFLECTIVE
SHEETING – VIP DIAMOND GRADE





VARIES x 18"

LETTERS – WHITE REFLECTIVE
BORDER – WHITE REFLECTIVE
BACKGROUND – GREEN REFLECTIVE
(ALL MATERIAL SHALL BE DIAMOND GRADE VIP SHEETING)



GENERAL NOTES:

1.) CONTRACTOR SHALL USE CHAPEL HILL FREE SWINGING SIGN HANGER (PART NO. 7066) OR APPROVED EQUAL.
2.) CONTRACTOR SHALL FURNISH ALL HARDWARE FOR A COMPLETE INSTALLATION.
3.) ALL PARTS SHALL BE CAST ALUMINUM, WITH STAINLESS STEEL CLEVIS ADAPTER, BOLTS, WASHERS AND LOCKNUTS.
4.) ALL STREET NAME SIGNS SHALL HAVE VIP DIAMOND GRADE SHEETING.
5.) CONTRACTOR SHALL FURNISH ONE (1) SIGN HANGER PER STREET NAME SIGN SMALLER THAN 3'–0". SIGNS 3'–0"TO 6'–0" REQUIRE TWO (2) HANGERS. SIGNS LARGER THAN 6'–0" REQUIRE THREE (3) HANGERS.

NO.	REVISIONS	DATE	NAME

HARRIS COUNTY
ENGINEERING DEPARTMENT

HARRIS COUNTY 1836 TEXAS

TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
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(832) 619-1000
TEDSI TBPE F-1640

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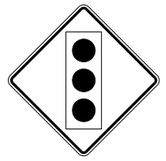
M. R. NEELAPU
107595
8/22/2024
DATE

PROJECT TITLE: TRAFFIC SIGNALS ON ANTOINE DRIVE		
DRAWN BY: BSH	SHEET DESCRIPTION: TRAFFIC SIGNAL SIGN DETAILS	JOB NO: 2024-2161-01
CK'D BY: BSH		FILE NAME: TSS
SCALE: NONE		FILE NO:
DATE: 7/9/15	APPROVED BY:	SHT NO: 573 / 718

pw:\\tedsi-pw.bentley.com:tedsi-pw-01\Documents\Projects\2024\2024-2161-01 - Antoine Drive Signals\6.0 TEDSI Design\6.08 CADD\6.08.01 Sheet Files\Standard Details\HC_DETAILS-TRAFFIC.dgn
8/22/2024

	 * MINIMUM SIZE OF 36X36 SHALL BE USED FOR STOP SIGNS THAT FACE MULTI-LANE APPROACHES										
TMUTCD/SHSD ID	R1-1	R1-2	R1-3P	R2-1	R3-4	R3-5R (L)	R3-7L (R)	R3-8	R4-7	R6-1R, R6-1L	R6-2R (L)
LOCAL	30x30*	30x30	18X6	24x30	24x24	30x36	30x30	Varies x 30	24x30	36x12	24x30
COLLECTOR	36x36	36x36	18X6	24x30	30x30	30x36	36x36	Varies x 30	24x30	36x12	30x36
THOROUGHFARE	36x36	36x36	18X6	24x30	30x30	30x36	36x36	Varies x 36	24x30	36x12	30x36
				 * SIGNALIZED LOCATIONS ONLY WHERE APPROVED BY HCED							
TMUTCD/SHSD ID	NO PARKING (ALL TYPES)	R8-8	R10-6R (L)	R10-17T	W1-1R (L)	W1-2R (L)	W1-3R (L)	W1-4R (L)	W1-6R (L), W1-7	W1-7T	W1-8R (L)
LOCAL	18x24	24x30	24x36	30x30	30x30	30x30	30x30	30x30	48x24	48x24	18x24
COLLECTOR	18X24	24x30	24x36	30X30	36x36	36x36	36x36	36x36	48x24	48x24	18x24
THOROUGHFARE	18X24	24x30	24x36	30X30	36x36	36x36	36x36	36x36	48x24	48x24	30x36
											
TMUTCD/SHSD ID	W2-1	W2-2R (L)	W3-1	W3-3	W4-2R (L)	W6-2	W6-3	W8-13aT	W9-1R (L)	W9-2R (L)	W10-1
LOCAL	30x30	30x30	30x30	30x30	36x36	36x36	36x36	36x36	36x36	36x36	30 dia.
COLLECTOR	30x30	30x30	30x30	30x30	36x36	36x36	36x36	36x36	36x36	36x36	30 dia.
THOROUGHFARE	36x36	36x36	36x36	36x36	36x36	36x36	36x36	36x36	36x36	36x36	30 dia.
											
TMUTCD/SHSD ID	W11-1 through W11-12	W13-1P	W14-1	W14-2	W16-2aP	W16-7PL (PR)	W16-9	S1-1	S4-3P		I-3
LOCAL	30x30	18x18	30x30	24x24	24x12	30x18	24x12	36x36	24x8	24x36	VARIES X 18
COLLECTOR	36x36	18x18	36x36	24x24	24x12	30X18	24x12	36x36	24x8	24x36	VARIES X 18
THOROUGHFARE	36x36	18x18	36x36	N/A	24X12	30x18	24X12	36x36	24x8	24x36	VARIES X 30
		No border, White on Green									
TMUTCD/SHSD ID	OM-3R, OM-3L	GROUND MOUNTED STREET NAME SIGN		TYPES D-DY, D-DW							
LOCAL	12X36	VARIES X 8		36" TALL							
COLLECTOR	12X36	VARIES X 8		36" TALL							
THOROUGHFARE	12X36	VARIES X 8		36" TALL							

NO.	REVISIONS	DATE	NAME

HARRIS COUNTY
ENGINEERING DEPARTMENT

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M. R. NEELAPU
107595
8/22/2024
DATE

PROJECT TITLE: TRAFFIC SIGNALS ON ANTOINE DRIVE		
DRAWN BY: BSH	SHEET DESCRIPTION: SMALL SIGN DETAILS	JOB NO: 2024-2161-01
CK'D BY: BSH		FILE NAME: SSD
SCALE: NONE		FILE NO:
DATE: 7/9/15	APPROVED BY:	SHT NO: 574 / 718

pw:\\tedsi-pw.bentley.com:tedsi-pw-01\Documents\Projects\2024\2024-2161-01- Antoine Drive Signals\6.0 TEDSIDesign\6.08 CADD\6.08.01Sheet Files\Standard Details\HC_DETAILS_TRAFFIC.dgn
8/22/2024

ELECTRICAL SERVICE NOTES

ALL WORK, MATERIALS, SERVICES, AND INCIDENTALS, WHETHER OR NOT SPECIFICALLY SHOWN ON THE PLANS, WHICH MAY BE NECESSARY FOR A COMPLETE AND PROPER ELECTRICAL SERVICE INSTALLATION AS SPECIFIED IN THE PLANS TO OBTAIN ELECTRICAL POWER (EXECEPT EXTENDING PRIMARY LINES TO ELECTRICAL SERVICE) SHALL BE PAID FOR, PERFORMED, FURNISHED AND INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL CONTACT THE UTILITY FOR METERING AND SHALL COMPLY WITH ALL UTILITY REQUIREMENTS.

PRIMARY LINE EXTENSIONS, WHEN REQUIRED, SHALL BE PAID FOR UNDER FORCE ACCOUNT WORK. THE CONTRACTOR SHALL CONSULT WITH THE APPROPRIATE UTILITY TO DETERMINE COSTS AND REQUIREMENTS, AND SHALL COORDINATE THE UTILITY'S WORK AS APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL BE REIMBURSED ONLY THE AMOUNT BILLED BY THE UTILITY. NO ADDITIONAL AMOUNT FOR SUPERVISION OF THE UTILITY'S WORK WILL BE PAID.

MATERIALS SHALL BE NEW AND UNUSED, AND MATERIALS AND INSTALLATION SHALL COMPLY WITH THE APPLICABLE PROVISIONS OF THE NATIONAL ELECTRICAL CODE (NEC) AND NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA) STANDARDS AND SHALL BE UNDERWRITERS LABORATORIES (UL) LISTED. ELECTRICAL SERVICE CONDUITS, CONDUCTORS, DISCONNECTS, CONTACTORS, CIRCUIT BREAKER PANEL SIZES, AND BRANCH CIRCUIT BREAKERS, SHALL BE AS SHOWN IN THE ELECTRICAL SERVICE DATA ELSEWHERE IN THE PLANS. FAULTY FABRICATION OR POOR WORKMANSHIP IN ANY MATERIAL, EQUIPMENT, OR INSTALLATION SHALL BE JUSTIFACATION FOR REJECTION.

THE CONTRACTOR SHALL SUBMIT FOR APPROVAL NO LESS THAN FIVE (5) COPIES OF CATALOG CUT-SHEETS ON ELECTRICAL SERVICE MATERIALS. SUBMITTALS SHALL BE LEGIBLE AND SHALL BE MARKED TO INDICATE WHICH PRODUCT ON A CUT-SHEET IS TO BE SUPPLIED. WHERE MANUFACTURERS PROVIDE WARRANTIES AND GUARANTEES AS A CUSTOMARY TRADE PRACTICE, CONTRACTOR SHALL FURNISH TO THE COUNTY SUCH WARRANTIES OR GUARANTEES.

I. SAFETY SWITCH. A SAFETY SWITCH, PLACED AHEAD OF THE METER, SHALL ONLY BE USED WHEN SPECIFIED BY THE UTILITY AND IS SHOWN ON THE ELECTRICAL SERVICE DATE. THE SWITCH SHALL BE UL LISTED, HEAVY DUTY TYPE, 600 VOLT, UNFUSED, WITH A UL TYPE 3R ENCLOSURE AND EQUIPPED WITH A SOLID NEUTRAL (S/N) ASSEMBLY. THE SWITCH SHALL BE PADLOCKABLE IN THE "ON" POSITION.

II. SERVICE TYPE. ELECTRICAL SERVICE TYPES A, C, D, AND T SHALL BE AS SCHEMATICALLY DETAILED ON ED(4). OTHER SERVICE TYPES SHALL BE AS DETAILED ELSEWHERE ON THE PLANS.

III. BRANCH CIRCUIT BREAKERS. CIRCUIT BREAKERS SHALL BE THERMAL MAGNETIC AND HAVE A MINIMUM INTERRUPTING CAPACITY OF 10,000 AMPS AND A VOLTAGE RATING COMPATIBLE WITH THEIR USE. CIRCUIT BREAKERS SHALL BE SIZED AS SHOWN ON ELECTRICAL SERVICE DATA TABLE. CIRCUIT BREAKERS IN PANELBOARDS AND LOAD CENTERS SHALL BE FULL SIZE AND DESIGNED EXCLUSIVELY FOR THE PANELBOARD OR LOAD CENTER IN USE. TANDEM AND HALF-WIDTH BREAKERS SHALL NOT BE USED. ALL CIRCUIT BREAKERS SHALL BE PERMANENTLY AND CLEARLY MARKED IDENTIFYING THE CIRCUIT OR DEVICE ATTACHED. CIRCUIT BREAKERS SHALL BE UL LISTED TO UL489. CIRCUIT BREAKERS SHALL BE SWITCH DUTY.

IV. CIRCUIT BREAKER PANELBOARD. PANELBOARDS SHALL BE UL LISTED AND SHALL MEET FEDERAL SPECIFICATION W-P-115b, TYPE 1, CLASS 1 REQUIREMENTS. PANELBOARDS SHALL HAVE COPPER BUSSES, A MINIMUM OF 12 ONE-POLE SPACES, AND SHALL BE RATED FOR SERVICE EQUIPMENT. ENCLOSURE SHALL MEET UL TYPE 3R CLASSIFICATION. PANELBOARDS SHALL HAVE A THREADED HUB CONDUIT ENTRY FOR CONDUIT ENTERING THE TOP OF THE ENCLOSURE. CIRCUIT BREAKERS SHALL BE BOLT-IN TYPE ONLY.

V. CIRCUIT BREAKER LOAD CENTER. LOAD CENTERS SHALL BE UL LISTED, AND SHALL MEET FEDERAL SPECIFICATION W-P-115c, TYPE 1, CLASS 2 REQUIREMENTS. LOAD CENTERS SHALL HAVE COPPER BUSSES, A MINIMUM OF 4 ONE-POLE SPACES, AND SHALL BE RATED FOR SERVICE EQUIPMENT. ENCLOSURE SHALL MEET UL TYPE 3R CLASSIFICATION. LOAD CENTERS SHALL HAVE A THREADED HUB CONDUIT ENTRY FOR CONDUIT ENTERING THE TOP OF THE ENCLOSURE. CIRCUIT BREAKERS SHALL BE PLUG-IN TYPE ONLY. LOAD CENTERS FOR TYPE T SERVICES SHALL ACCOMMODATE A MAXIMUM OF 6 ONE-POLE BREAKERS.

EXPLANATION OF ELECTRICAL SERVICE DESCRIPTIVE CODE

ELEC SERV TY D (120/240) 125 (NS) GS (E) PS (X)

SCHEMATIC TYPE

SERVICE VOLTAGE (V / V)

MAIN DISCONNECT AMP RATING
(000 INDICATES NONE)

SS= SAFETY SWITCH AHEAD OF METER
NS= NO SWITCH AHEAD OF METER
AND/OR NO METER REQUIRED

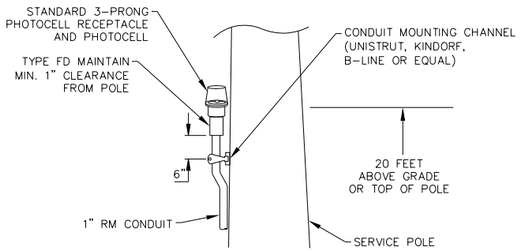
ENCLOSURE TYPE
GS= GALVANIZED STEEL
SS= STAINLESS STEEL
PS= PEDESTAL SERVICE

PHOTOCELL LOCATION
T= TOP OF POLE
E= ENCLOSURE MOUNTED
L= LUMINAIRE MOUNTED
N= NONE

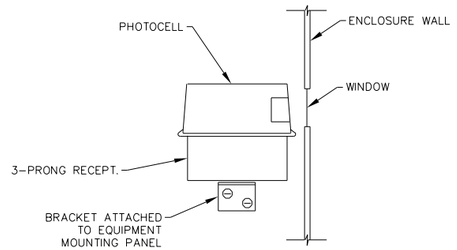
SERVICE SUPPORT TYPE
GC= GRANITE CONCRETE
OC= OTHER CONCRETE
TP= TIMBER POLE
SP= STEEL POLE
SF= STEEL FRAME
OT= POLE BY OTHERS OR PAID FOR SEPARATELY
EX= EXISTING POLE
TS= SWITCH GEAR TO BE PLACED ON TRAFFIC SIGNAL POLE
RT= RECTANGULAR STRUCTURAL TUBING
PS= PEDESTAL SERVICE

O= OVERHEAD SERVICE
U= UNDERGROUND SERVICE

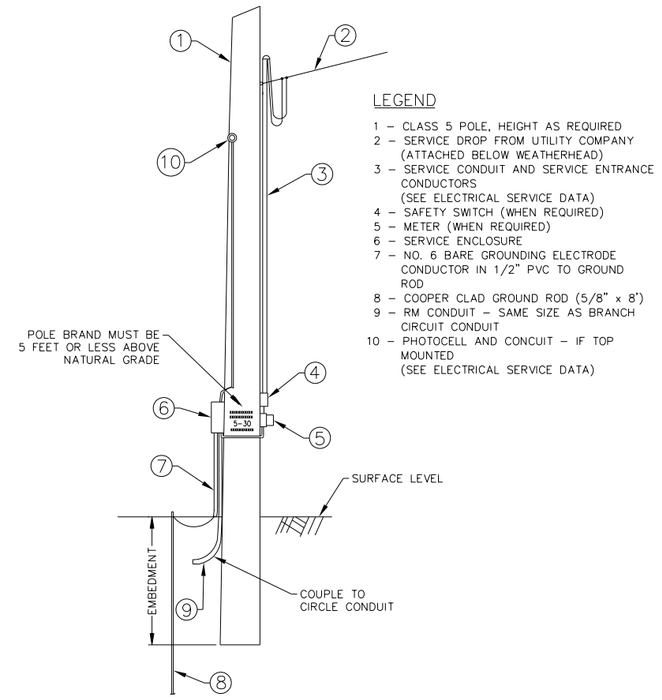
EXAMPLE: ELEC SERV TY D(120/240)070(NS)GS(T)TP(O)



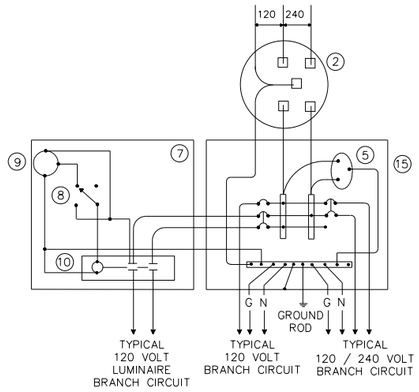
TOP MOUNTED PHOTOCELL



ENCLOSURE MOUNTED PHOTOCELL



SERVICE SUPPORT TYPE TP (O)
(TIMBER POLE, OVERHEAD SERVICE – TYPICAL ARRANGEMENT)



SERVICE SUPPORT TYPE T
120/240 VOLTS – THREE WIRE
(INSTALL PHOTOCELL AND LIGHTING CONTACTORS WHEN SHOWN ON ELECTRICAL SERVICE DATA)

SCHEMATIC LEGEND

1 – SAFETY SWITCH (WHEN REQUIRED)
2 – METER (WHEN REQUIRED)
3 – SERVICE ASSEMBLY ENCLOSURE
4 – MAIN DISCONNECT (SWITCH OR BREAKER, SEE ELECTRICAL SERVICE DATA)
5 – LIGHTNING ARRESTOR
6 – CIRCUIT BREAKER, 15A
7 – AUXILIARY ENCLOSURE
8 – CONTROL STATION ("H-O-A" SWITCH)
9 – PHOTO ELECTRIC CONTROL (ENCLOSURE-MOUNTED SHOWN)
10 – LIGHTING CONTACTOR
11 – POWER DISTRIBUTION TERMINAL BLOCKS
12 – NEUTRAL/GROUND BUS
13 – BRANCH CIRCUIT BREAKER (SEE ELECTRICAL SERVICE DATA)
14 – CIRCUIT BREAKER PANELBOARD (SEE ELECTRICAL SERVICE DATA)
15 – LOAD CENTER (SEE ELECTRICAL SERVICE DATA)

———— POWER WIRING
———— CONTROL WIRING
——N—— NEUTRAL CONDUCTOR (WHEN REQUIRED)
——G—— GROUNDING CONDUCTOR

TIMBER POLE NOTES

1. CONDUIT AND CONDUCTORS ATTACHED TO SERVICE POLE AND UNDERGROUND WITHIN 12 INCHES OF SERVICE POLE SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE SUBSIDIARY TO THE SERVICE POLE.
2. INSTALL PHOTO ELECTRIC CONTROL ON NORTH SIDE OF POLE OR IN SERVICE ENCLOSURE AS REQUIRED. SEE ELECTRICAL SERVICE DATA.
3. ATTACH SERVICE ENCLOSURE WITH GALVANIZED CHANNEL (UNISTRUT, KINDORF, OR EQUAL). GAIN POLE TWO PLACES TO PROVIDE FLAT SURFACES. PAINT ENDS OF CHANNEL WITH ZINC RICH PAINT.
4. POLE SETTING DEPTH SHALL BE IN ACCORDANCE WITH TxDOT ITEM 627 "TREATED TIMBER POLES."
5. POLES TRIMMED FOR EXCESS LENGTH SHALL BE TRIMMED FROM THE TOP END ONLY.

NO.	REVISIONS	DATE	NAME

HARRIS COUNTY ENGINEERING DEPARTMENT

TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
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THIS DOCUMENT IS FOR INTERIM REVIEW AND IS NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.
M. R. NEELAPU
107595
8/22/2024
DATE

PROJECT TITLE: TRAFFIC SIGNALS ON ANTOINE DRIVE		
DRAWN BY: BSH	SHEET DESCRIPTION: ELECTRICAL DETAILS: SERVICE SCHEMATICS AND SUPPORT - TYPE TP (OVERHEAD)	JOB NO: 2024-2161-01
CK'D BY: BSH		FILE NAME: ED-TP
SCALE: NONE		FILE NO:
DATE: 7/9/15	APPROVED BY:	SHT NO: 575 / 718

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8/22/2024

SERVICE ENCLOSURE NOTES:

VI. Service Assembly Enclosures. All service assemblies and enclosures shall be UL Listed for the intended purpose.

A. Shop built or shop assembled service assemblies (all types except Type T and Type D without lighting contactor) shall be built or assembled by a UL Listed Industrial Control Panel shop and shall have a unique serial numbered UL Label with the words "LISTED ENCLOSED INDUSTRIAL CONTROL PANEL". The same or an additional label shall have the name, location, and phone number of the shop, the UL file number of the shop, the shop order or drawing number, date of manufacture or assembly, and the line voltage. The enclosure shall also be labeled "SUITABLE ONLY FOR USE AS SERVICE EQUIPMENT".

B. Conduit entries into the top of all enclosures shall have threaded hubs.

C. All enclosures shall be permanently labeled on the front door "DANGER HIGH VOLTAGE" and the equipment supplied (i.e. LIGHTING, LANDSCAPING, SIGNALS, TRAFFIC MANAGEMENT). Unless otherwise approved by the Engineer, the labeling shall be minimum 1 inch letters and shall be applied by stenciled paint or stick-on decal.

D. Type GS enclosures for service types D, T, and the circuit breaker panelboard of service type C shall be made from pre-galvanized steel sheeting, hot dipped galvanized steel, or powder coat painted steel. Painted enclosures shall be painted inside and outside; galvanized enclosures may be painted. Unless otherwise approved by the engineer, painted enclosures shall be gray, beige, or white. Panelboard/loadcenter enclosures shall be UL type 3R, shall have a dead front trim, and shall have a door with provisions for padlocking. Auxiliary enclosures, when required for illumination or other control equipment, shall be UL type 12 as described in III.E. below for service types A and C.

E. Type GS enclosures for service types A and C shall meet the requirements of type GS in III.D. above for service types D and T except that the enclosure shall be a UL type 12 enclosure conforming to UL 50 and shall meet additional requirements of this paragraph. The enclosure door shall have a rolled lip around all sides of the enclosure opening, a continuous hinge, and a padlock handle. The door shall have a mechanically attached data pocket constructed of either thermoplastic or metal and measuring at least 12 inches by 12 inches. The main disconnect operator shall be flange-mounted, shall interlock the door when in the "on" position, and shall be pad lockable in both the "on" or the "off" positions. Enclosure shall include an equipment mounting panel installed inside the enclosure on collar studs or tapped bosses, and constructed of either 12-gauge steel or 0.10 inch thick aluminum. Enclosure shall be either hot dip galvanized, pre-galvanized sheeting or prime and painted. Paint shall be powder coat paint as show below. Color shall be white or gray. Condensation drainage shall be provided through 0.25 inch drain holes drilled in the bottom of the enclosure at two diagonal opposing corners. The contractor shall place in the service enclosure a laminated copy of the "as built" electrical plans showing the equipment supplied by that electrical service and all applicable wiring diagrams, layouts, and ED and RID standard sheets.

F. Type SS Stainless steel enclosure shall be meet all the requirements above for the respective type GS except that the enclosure shall be UL type 4X conforming to UL 50. Type GS circuit breaker panel housed in a stainless steel UL type 4X enclosure conforming to UL 50 shall be considered complying with the Type SS requirements for Service types D & T.

G. Type PS enclosure shall be as detailed and specified on ED(8).

VII. Powder Coat Paint. Powder coating shall be either a polyester thermosetting resin, a zinc rich primer with a TGIC (triglycidyl isocyanurate) powder overcoating, or a zinc-rich epoxy powder, applied by either electrostatic spray or fluidized bed immersion, high temperature oven cured, high density, low gloss, 4 mil thick (minimum), coating. Adhesion shall meet the 5A or 5B classifications of ASTM D3359. Finish shall be uniform in appearance and free of scratches.

VIII. Main Disconnect. Main disconnect device shall be either a fusible switch or a circuit breaker, as specified in the Electrical Service Data, shall be two pole, and rated for the voltage and amperage specified.

A. Switch shall be UL and NEMA Type HD (heavy duty) flange-mounted in the service assembly enclosure. Switch shall have clips for Class R fuses.

B. Circuit breaker shall be a UL Listed thermal-magnetic circuit breaker flange-mounted in the service assembly enclosure. Circuit breakers shall have a minimum interrupting rating of 14,000 Amps. Contractor shall verify that the available fault current is less than the circuit breaker amps interrupting capacity (AIC) rating and shall provide documentation from the Utility to the Engineer. Documentation shall be submitted at the same time as other electrical submittals. Circuit breaker shall be UL Listed to UL489.

IX. Lightning Arrester. Arresters shall be MOV-type secondary surge arresters rated 650 volts for 240/480 volt services or 175 volts for 120/240 volt services and shall meet ANSI, IEEE, UL, and NEMA standards. Mounting brackets shall be provided for mounting the arresters inside the service assembly enclosures, unless otherwise specified by the Engineer. Lightning arrester leads shall be run as straight and short as practical.

X. Control Circuit. Control circuit protection shall be either a 10 or 15 amp circuit breaker.

XI. Control Station ("H-O-A" Switch). Control station shall be a maintained-contact, three position selector switch in a UL type enclosure. Switch shall be rated 600 volts and shall be fitted with "Hand-Off-Auto" legend.

XII. Photo Electric Control. Photo electric control shall consist of a photocell, internal lightning arrester, and relay or bimetallic switch mounted inside a weatherproof enclosure with standard 3-prong twist lock photocell plug and receptacle. The enclosure shall be made of poly-acrylic with clear acrylic window. Enclosure chassis shall be molded phenolic plastic. The photocell shall have a polyethylene gasket, and shall have a hermetically sealed cadmium sulfide cell. The arrester shall have an enclosed type expulsion arrester rated 2.0 kV spark over with 10,000 amps follow-through. Relay or switch shall be time delay type with normally closed contacts. Photo electric control shall be rated 1800 VA, 105-285 volts.

Enclosure mounted photocells shall be the same as above except that the photocell shall be mounted inside the enclosure. The enclosure shall have two acrylic paned windows, or other material approved by the Engineer, one on each side of the enclosure. Each window shall be rectangular approximately 1 inch by 2 inch, round 2 inch diameter, or as otherwise approved by the Engineer. The photocell shall be mounted in a position to receive light from one window. Top of pole mounted photocells shall be mounted as shown on Electrical Details – Service Enclosure & Notes.

The Contractor shall be responsible for proper operation of the photo-electric control. The Contractor shall move and/or adjust or shield the photocell from stray or ambient nighttime light or shall make any other adjustments required for proper operation. The photocell shall face North when practicable. Unless otherwise shown on the plans, the photocell shall turn on the illumination system at 1.0 +(-) 0.5 footcandle and turn off the illumination system at 2 footcandle higher than turn on.

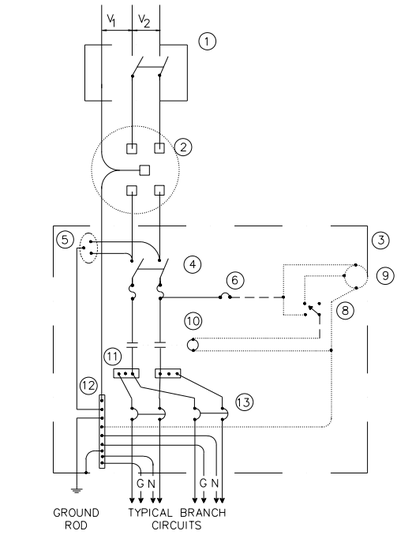
XIII. Lighting Contactor. Lighting contactor shall be a UL Listed lighting contactor, two-pole or multipole as required, electrically held type designed to control high pressure sodium lighting loads, with silver alloy double break contacts rated at 480 volts or 600 volts.

XIV. Power Distribution Terminal Blocks. Power distribution terminal blocks shall be rated for 600 volts and shall be used for line side connections to branch circuit breakers where more than one circuit breaker is required. Lugs on blocks shall be properly sized for conductors being used. Only one conductor shall be placed under each lug.

XV. Neutral/Ground Bus. Neutral/ground bus shall be a factory made bus permanently bonded to the enclosure with properly sized lugs for grounding and neutral conductors.

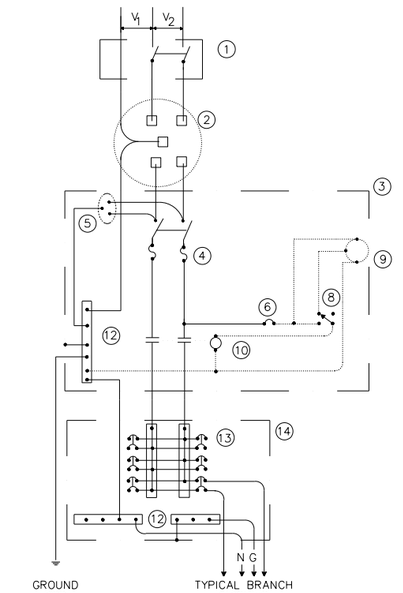
SCHEMATIC LEGEND

1 – Safety Switch (when required)
2 – Meter (when required)
3 – Service Assembly Enclosure
4 – Main Disconnect (Switch or Breaker, (See Electrical Service Data)
5 – Lightning Arrestor
6 – Circuit Breaker, 15A
7 – Auxiliary Enclosure
8 – Control Station ("H-O-A" Switch)
9 – Photo Electric Control (enclosure-mounted shown)
10 – Lighting Contactor
11 – Power Distribution Terminal Blocks
12 – Neutral/Ground Bus
13 – Branch Circuit Breaker (See Electrical Service Data)
14 – Circuit Breaker Panelboard (See Electrical Service Data)
15 – Load Center



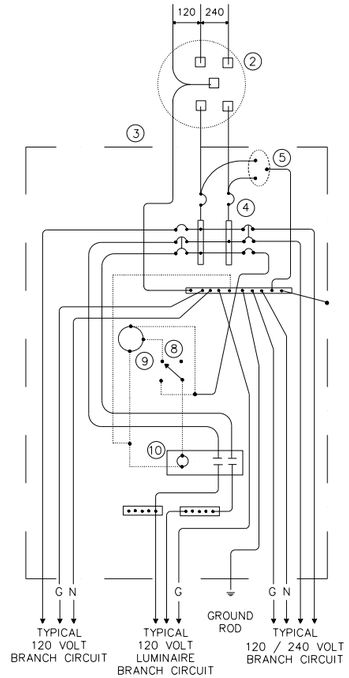
SCHEMATIC TYPE A
THREE WIRE

(MAXIMUM FEEDER CIRCUIT SIZE (HIGH MAST POLES): 100AMPS FOR TWO POLE 480V, 125 AMPS FOR ONE OR TWO POLE 120V OR 240V. MAXIMUM BRANCH CIRCUIT SIZE: 50AMPS)



SCHEMATIC TYPE C
THREE WIRE

(MAXIMUM FEEDER CIRCUIT SIZE (HIGH MAST POLES): 100AMPS FOR TWO POLE 480V, 125 AMPS FOR ONE OR TWO POLE 120V OR 240V. MAXIMUM BRANCH CIRCUIT SIZE: 50AMPS)



SCHEMATIC TYPE D
120/240 VOLTS – THREE WIRE

(INSTALL PHOTOCELL AND LIGHTING CONTACTOR WHEN SHOWN ON ELECTRICAL SERVICE DATA. SEE TYPE D SERVICE NOTES.)

TYPE D SERVICE NOTES:

Photocell and lighting contactor shall be located in the same UL type 3R enclosure. Photocells shall have a window on each side of enclosure to allow operation. Photocell/contactor and breaker area shall have separate dead front trim. Enclosure, except for RT and PS supports, shall not exceed 36 inches in height or 15 inches in width unless approved by the engineer.

NO.	REVISIONS	DATE	NAME

HARRIS COUNTY
ENGINEERING DEPARTMENT

HARRIS COUNTY 1836 TEXAS

TEDSI INFRASTRUCTURE GROUP
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TBPE F-1640
Consulting Engineers
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CK'D BY: BSH		FILE NAME: ED-SE
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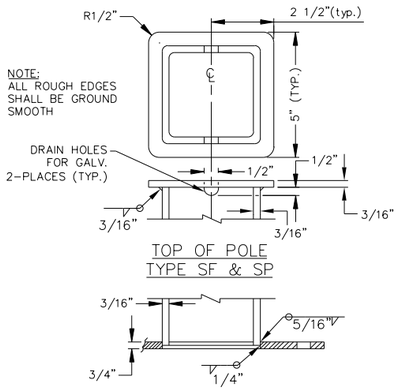
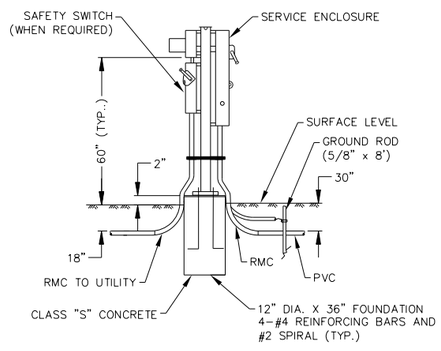
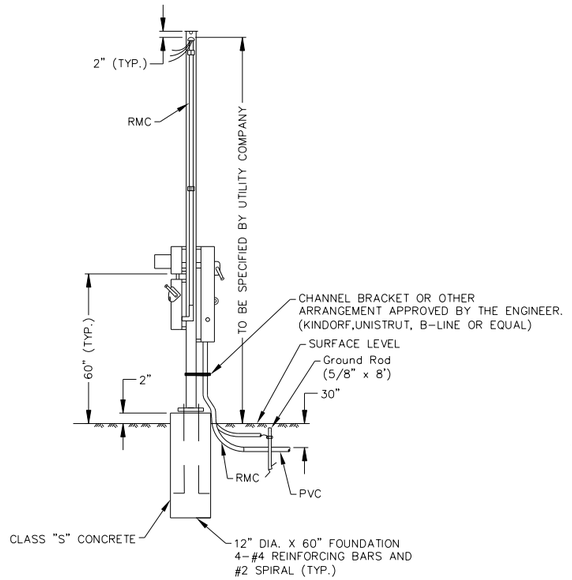


TOP OF POLE
TYPE SF & SP

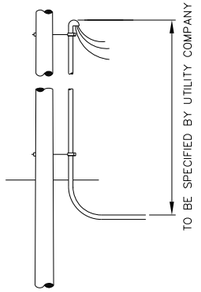
BOTTOM OF POLE
TYPE SF & SP



SERVICE SUPPORT TYPE SP (U)
UNDERGROUND SERVICE WITH
SAFETY SWITCH



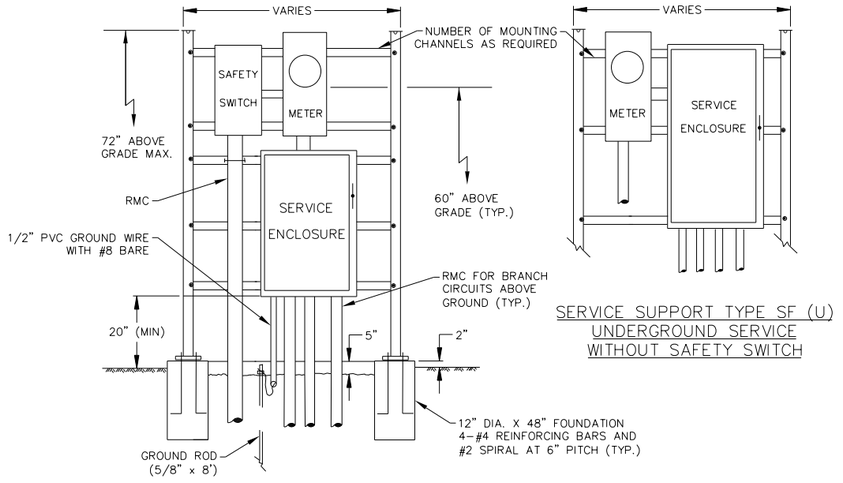
SERVICE SUPPORT TYPE SP (O)
OVERHEAD SERVICE WITH
SAFETY SWITCH



UNDERGROUND RISER
AT UTILITY POLE
(FOR UNDERGROUND SERVICE)

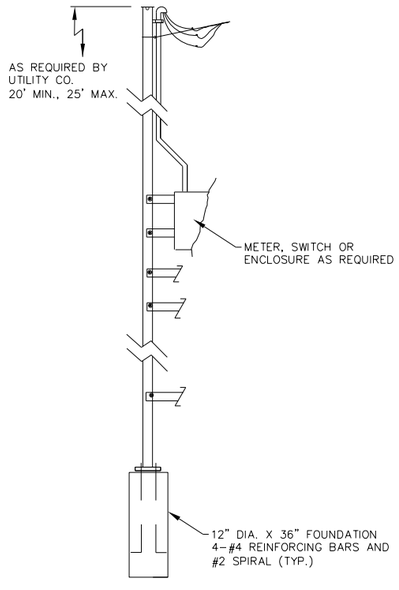
GENERAL NOTES:

1. SUPPORT TYPE SP AND SF: FABRICATED FROM 4" x 4" x 3/16 " SQUARE STRUCTURAL TUBING, ASTM A500 GRADE A OR G OR EQUAL. BASE PLATE SHALL BE 3/4 " PLATE, ASTM A36 OR EQUAL. ALL EQUIPMENT AND CONDUIT SHALL BE MOUNTED ON GALVANIZED CHANNEL STRUT, 1 1/2" x 1 5/8" x 12 GAUGE GALVANIZED STEEL CHANNEL (UNISTRUT, KINDORF, B-LINE OR EQUAL) CLAMPED WITH CHANNEL HARDWARE, BOLTED OR WELDED TO VERTICAL MEMBER AS APPROVED BY THE ENGINEER.
2. PAINT END OF ALL CHANNELS WITH ZINC-RICH PAINT.
3. ALL STEEL POLES (SP AND SF) SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION. POLES FOR OVERHEAD SERVICE SHALL BE FITTED WITH EYEBOLT OR SIMILAR FITTING, AS APPROVED BY THE UTILITY COMPANY, FOR ATTACHMENT OF SERVICE DROP TO THE POLE.
4. ALL CONDUIT AND CONDUCTORS ATTACHED TO THE ELECTRICAL SERVICE AND WITHIN 12 INCHES OF THE ELECTRICAL SERVICE WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE SUBSIDIARY TO THE ELECTRICAL SERVICE, ALL CONDUIT AND CONDUCTORS FROM THE UTILITY COMPANY POLE TO THE POINT 12 INCHES FROM THE ELECTRICAL SERVICE, INCLUDING CONDUIT AND CONDUCTORS REQUIRED FOR THE UTILITY POLE RISER WHEN FURNISHED BY THE CONTRACTOR, WILL BE PAID FOR SEPARATELY.
5. ALL MOUNTING HARDWARE AND INSTALLATION DETAILS OF SERVICES SHALL BE IN ACCORDANCE WITH UTILITY COMPANY SPECIFICATIONS.
6. ANCHOR BOLTS FOR UNDERGROUND SERVICE SUPPORTS SHALL BE 3/4" x 18" x 4" (DIA. x LENGTH x HOOK LENGTH). ANCHOR BOLTS FOR OVERHEAD SERVICES SHALL BE 3/4" x 56" x 4". ANCHOR BOLTS SHALL BE PROVIDED WITH LEVELING NUTS.
7. CONDUIT FOR GROUNDING ELECTRODE CONDUCTOR (GROUND ROD WIRE) SHALL BE 1/2" PVC ALL OTHER CONDUIT ON ELECTRICAL SERVICES SHALL BE RIGID METAL CONDUIT. SERVICE ENTRANCE CONDUIT SIZE SHALL BE AS SHOWN ELSEWHERE. CONDUIT FOR BRANCH CIRCUIT ENTRY TO ENCLOSURE SHALL BE THE SAME SIZE AS THAT SHOWN ON THE LAYOUT SHEETS FOR BRANCH CIRCUIT CONDUIT. RIGID METAL CONDUIT SHALL EXTEND TO THE RIGID METAL ELBOW AND THEN BE COUPLED TO THE TYPE CONDUIT SHOWN ON THE LAYOUT FOR THAT PARTICULAR BRANCH CIRCUIT. RMC SHALL HAVE GROUNDING BUSHINGS IN ENCLOSURES.
8. IF POLE IS PAINTED, EACH SEPARATE PAINTED PIECE SHALL HAVE A BONDING JUMPER ATTACHED TO A DRILL AND TAPPED HOLE.

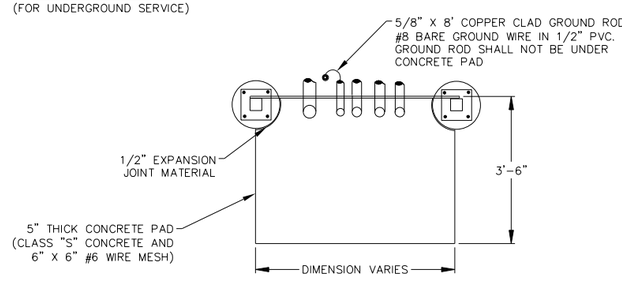


SERVICE SUPPORT TYPE SF (U)
UNDERGROUND SERVICE WITH
SAFETY SWITCH
(TYPICAL ARRANGEMENT)

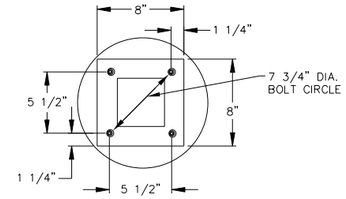
SERVICE SUPPORT TYPE SF (U)
UNDERGROUND SERVICE
WITHOUT SAFETY SWITCH



SERVICE SUPPORT TYPE SF (O)
OVERHEAD SERVICE



SERVICE SUPPORT TY SF (O) & SF (U)
TOP VIEW



BASE PLATE DETAIL

NO.	REVISIONS	DATE	NAME

HARRIS COUNTY
ENGINEERING DEPARTMENT

TEDSI INFRASTRUCTURE GROUP
TEDSI
TBPE F-1640
Consulting Engineers
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PROJECT TITLE: TRAFFIC SIGNALS ON ANTOINE DRIVE		
DRAWN BY: BSH	SHEET DESCRIPTION: ELECTRICAL DETAILS: SERVICE SUPPORTS	JOB NO: 2024-2161-01
CK'D BY: BSH	TYPE SF AND SP	FILE NAME: ED-SFSP
SCALE: NONE		FILE NO:
DATE: 7/9/15	APPROVED BY:	SHT NO: 577 / 718

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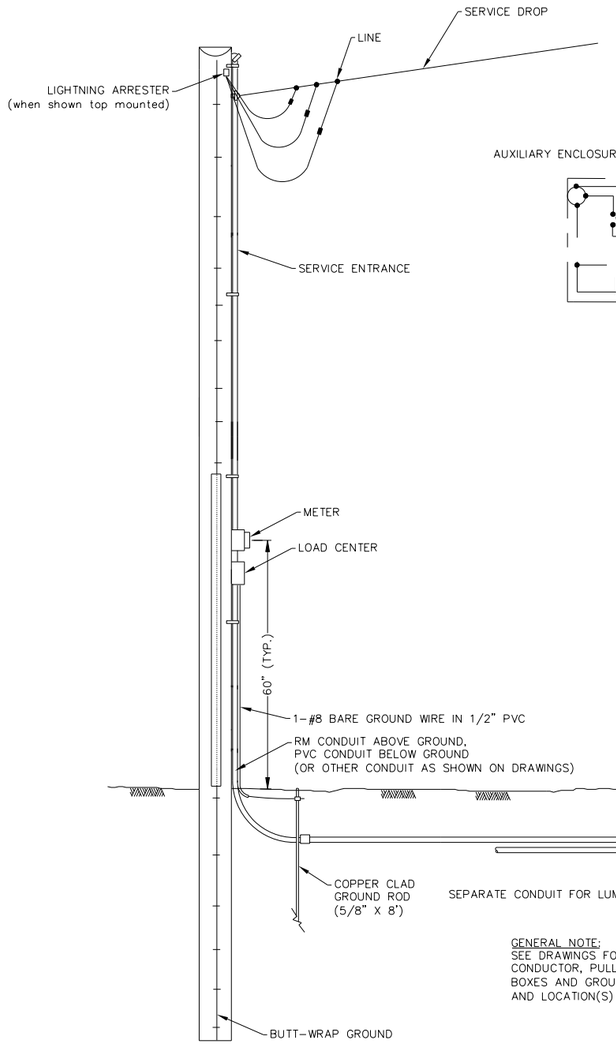
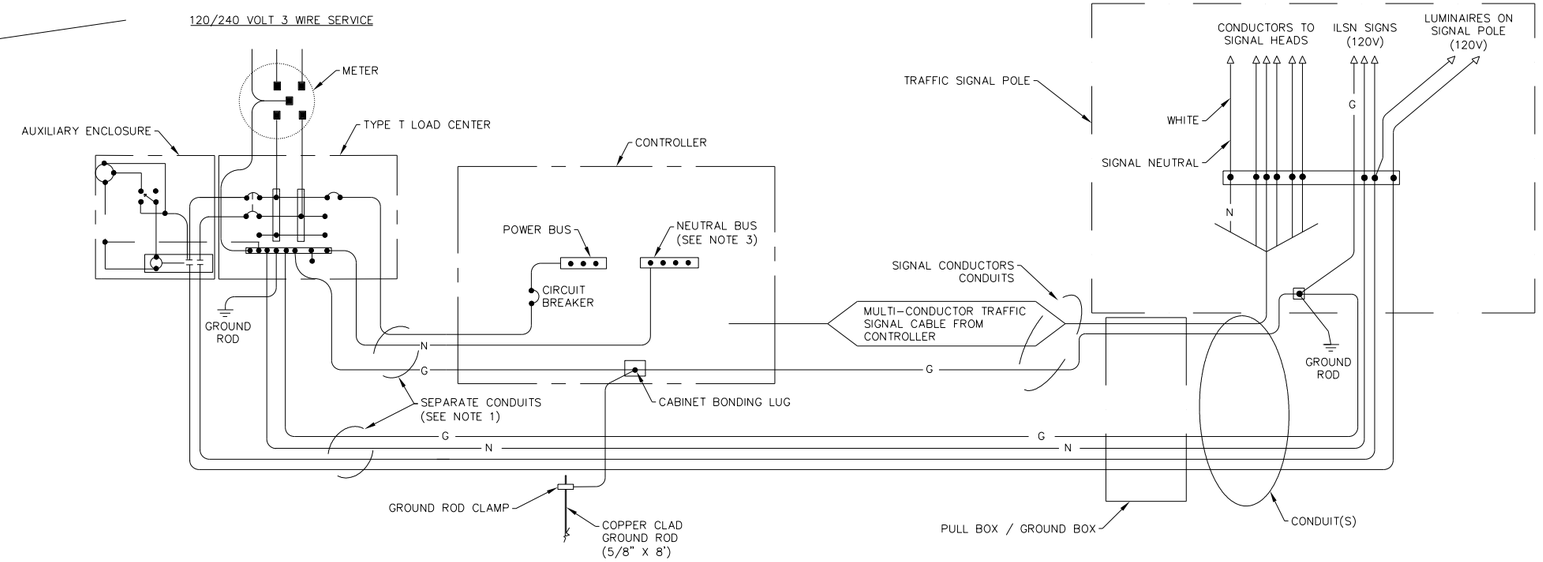
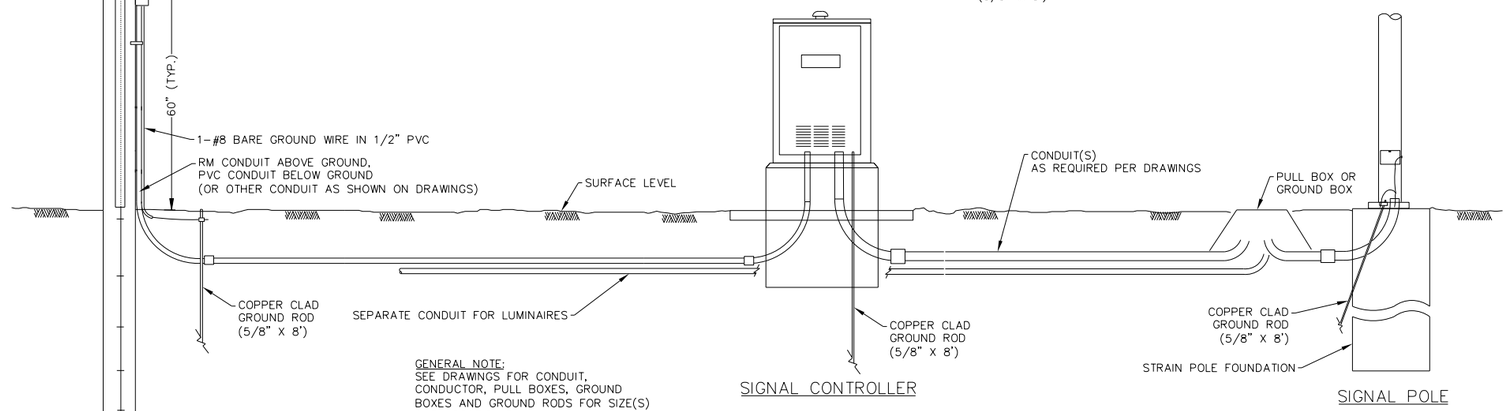


ELECTRICAL SERVICE

(TYPE T TIMBER POLE SHOWN AS EXAMPLE, SEE ELECTRICAL DETAILS, LAYOUT SHEETS, AND ELECTRICAL SERVICE DATA SHEET FOR SERVICE REQUIRED AND FOR DETAILS.)





GENERAL NOTE:
SEE DRAWINGS FOR CONDUIT, CONDUCTOR, PULL BOXES, GROUND BOXES AND GROUND RODS FOR SIZE(S) AND LOCATION(S)

SIGNAL CONTROLLER

SIGNAL POLE

GENERAL NOTES:

1. Luminaire conductors shall not be looped through controller cabinet.
2. Electrical system to include an equipment grounding conductor noted here as "G". All exposed metal parts, lightning arrestors and surge protectors are to be bonded to grounding conductor.
3. Bond neutral bus to cabinet bonding lug when required elsewhere on the plans or when required by the Engineer.
4. Photocell, when required, shall be mounted at top of pole or in enclosure as shown on Electrical Details – Service Schematics and Support Type TP (overhead) and Electrical Details – Service Enclosure & Notes and as required by descriptive code.
5. Roadway lighting fixtures, when required, shall be in accordance with the material and construction methods of the Item, "Roadway Illumination Assemblies" except for the test period for proper operation of the luminaires, Installed roadway lighting luminaires and internally lighted street name signs shall be tested for proper operation as a part of the associated traffic signal system.
6. Internally lighted street name signs (ILSN), when required, shall be in accordance with the Item "Internally Lighted Street Name Signs". Because of the electrical isolation of ILSN hinges, a #12 green grounding conductor shall be run to the ILSN fixture.
7. Install ground rod at alternate location when directed by the Engineer. Maintain a minimum of 8 ft in contact with the earth.

UNLESS SHOWN ELSEWHERE IN THE PLANS, ELECTRICAL SERVICE DATA FOR TYPE D SHALL BE AS FOLLOWS:

ELECTRICAL SERVICE DATA

ELECTRICAL SERVICE DESCRIPTION(SEE ELECTRICAL DETAILS – SERVICE SUPPORT SF & SP	SERVICE CONDUIT SIZE (RMC)	SERVICE CONDUCTORS NO./SIZE	SAFETY SWITCH AMPS	MAIN DISCONNECT		TWO-POLE CONTACTOR AMPS	PANELBD./ LOADCENTER AMP RATING (MIN)	CIRCUIT NO.	BRANCH CKT. BRK. POLE/AMPS	KVA LOAD
				SWITCH AMP/FUSES	CKT. BRK. POLE/AMP					
TY D (120/240)070(NS)SS(E)**(*)	1 1/4"	3/#4	N/A	N/A	2P/70	20	70	TRAFFIC SIGNAL LIGHTING	1P/50 2P/20	<7.1
TY D (MOD 1)(120/240)000(NS)SS(E)**(*)	1 1/4"	3/#4	70	NONE	NONE	N/A	N/A	N/A	N/A	<7.1
TY D (MOD 2)(120/240)070(NS)SS(E)**(*)	1 1/4"	3/#4	N/A	NONE	NONE	20	70	TRAFFIC SIGNAL LIGHTING	1P/50 2P/20	<7.1

* SEE DESCRIPTIVE CODE IN ESTIMATE FOR OVERHEAD OR UNDERGROUND SERVICE
** SEE DESCRIPTIVE CODE IN ESTIMATE FOR SERVICE SUPPORT TYPE

NO.	REVISIONS	DATE	NAME

HARRIS COUNTY ENGINEERING DEPARTMENT

TEDSI INFRASTRUCTURE GROUP
TEDSI
TBPE F-1640
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(832) 619-1000

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DRAWN BY:	SHEET DESCRIPTION:	JOB NO:
BSH	ELECTRICAL DETAILS: TYPICAL TRAFFIC SIGNAL SYSTEM DETAILS	2024-2161-01
CK'D BY: BSH		FILE NAME: ED-TS
SCALE: NONE		FILE NO.
DATE: 7/9/15	APPROVED BY:	SHT NO: 578 / 718

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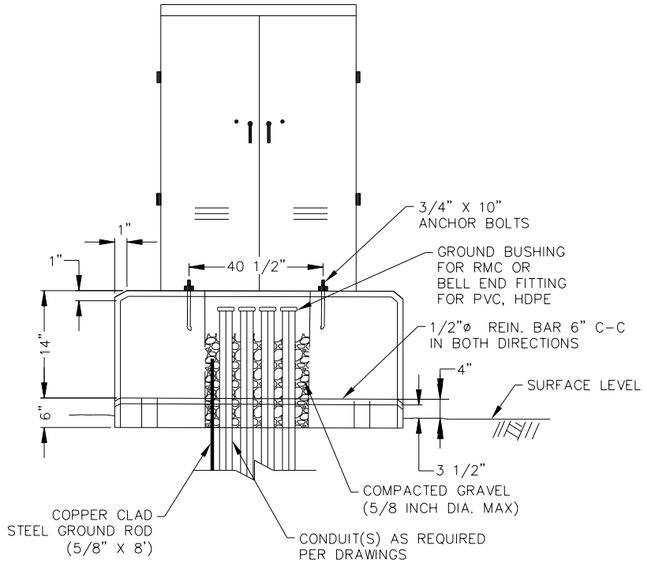
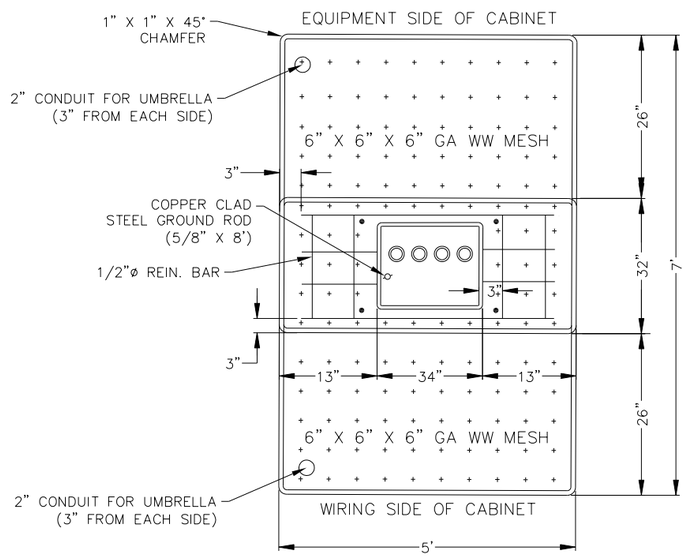
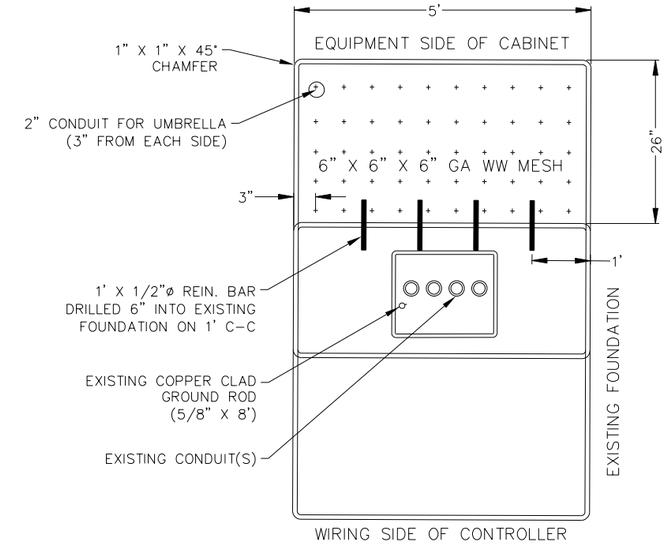


FRONT VIEW

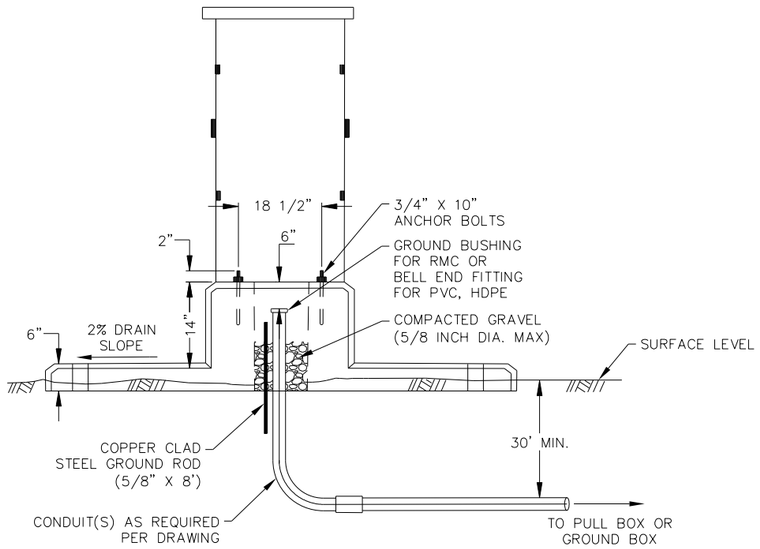


TOP VIEW
(LESS CABINET)



TOP VIEW
(LESS CABINET)

GROUND MOUNTED ITS (HOUSING 3)
CABINET MODIFICATION TO
EXISTING CABINET FOUNDATION



SIDE VIEW

CONTROLLER CABINET FOUNDATION NOTES:

1.) ALL CONCRETE TO BE CLASS C CONCRETE WITH GRADE NO. 5 COARSE AGGREGATE OR EQUIVALENT COMMERCIAL BAGGED CONCRETE MIX IN LIEU OF PLANT CONCRETE.
2.) CONDUIT WELL IN FOUNDATION TO HAVE GRAVEL DRAIN.
3.) THE CONTRACTOR SHALL SET THE TOP OF THE STEP OF THE CONTROLLER FOUNDATION NO LOWER THEN THE LEVEL OF THE PAVEMENT SURFACE. ANY NECESSARY ADJUSTMENT SHALL BE APPROVED BY THE ENGINEER.
4.) THE CONTRACTOR SHALL FURNISH ANY ADDITIONAL MATERIALS WHICH MAY BE NECESSARY TO LEVEL AND/OR STABILIZE FOUNDATION AT UNUSUAL LOCATIONS.
5.) THE CONTRACTOR SHALL CENTER THE CABINET ON THE FOUNDATION.
6.) THE FOUNDATION SHALL BE SUPPORTED BY UNDISTURBED SOIL OR BY SOIL THAT HAS BEEN COMPACTED TO 90% IN 6" LIFTS.

NO.	REVISIONS	DATE	NAME

HARRIS COUNTY
ENGINEERING DEPARTMENT

TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
738 Hwy 6 South, Suite 430
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M. R. NEELAPU
107595
8/22/2024
DATE

PROJECT TITLE: TRAFFIC SIGNALS ON ANTOINE DRIVE		
DRAWN BY: BSH	SHEET DESCRIPTION: CONTROLLER CABINET FOUNDATION	JOB NO.: 2024-2161-01
CK'D BY: BSH	DETAILS	FILE NAME: CCF
SCALE: NONE		FILE NO.:
DATE: 7/9/15	APPROVED BY:	SHT NO.: 579 / 718

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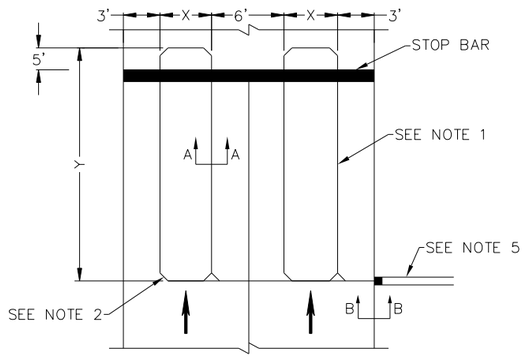
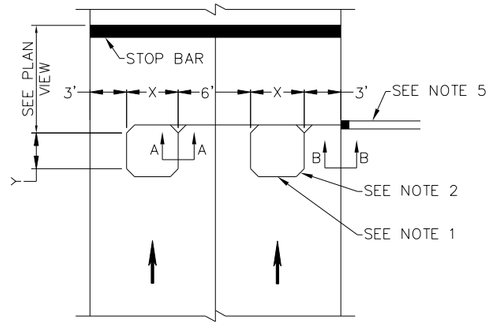
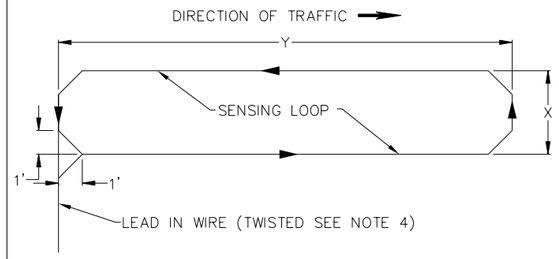


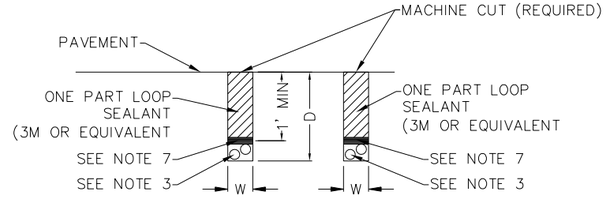
TYPICAL PRESENCE LOOP LAYOUT DETAIL



TYPICAL PULSE LOOP LAYOUT DETAIL



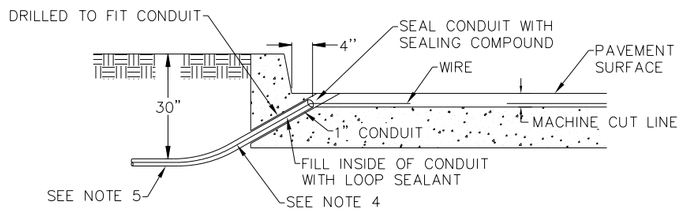
TYPICAL DIPOLE LOOP LAYOUT DETAIL

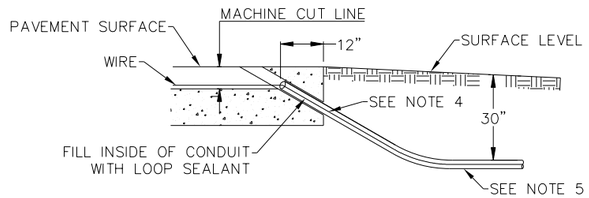


DIM.	CONC.	ASPHALT
D	*1-1/2"	*2"
W	5/16"	5/16"

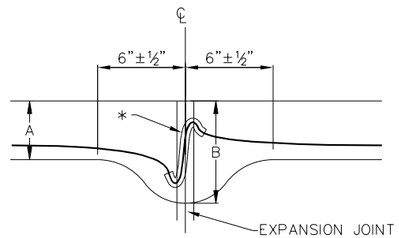
*MINIMUM 3" FOR LEAD LINE ON MULTIPLE LOOPS

SECTION A–A





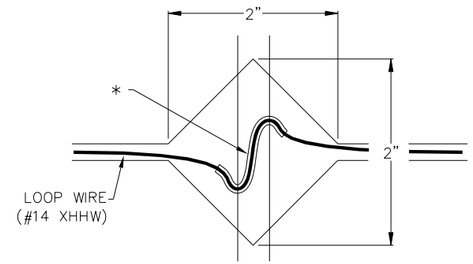
SECTION B–B



	A	B
SINGLE LOOP	1 1/2"	2 1/2"
MULTIPLE LOOPS	3"	4"

* WHEN USING A NON-HOT ASPHALT SEAL, A RUBBER OR PLASTIC SLEEVE IS REQUIRES WHEN CROSSING A EXPANSION JOINT

DETAIL "A"



* AREA REMOVED SHALL BE THE SAME DEPTH AS THE MACHINE CUT FOR THE LOOP WIRE. PROTECT LOOP WIRE WITH FIBERGLASS ROPE WHEN FILLING WITH HOT ASPHALT.

DETAIL "B"

GENERAL NOTES:

1.) MACHINE CUT PAVEMENT TO DEPTH AND WIDTH RECOMMENDED IN SECTION A–A ABOVE.
2.) CORNERS OF THE LOOP SHALL HAVE A ONE FOOT MACHINE CUT CHAMFER AT A 45° ANGLE.
3.) DETECTOR WIRES SHOULD BE WOUND FOR PROPER LOOP TUNING, SEE TABLE 3 ON STANDARD DETAIL FOR STANDARD INTERSECTION LOOP DETECTOR PLACEMENT AND SIZE DETAILS OR DIAMOND INTERSECTION LOOP PLACEMENT AND SIZE DETAILS (SHEET 2 OF 2), OR USE RECOMMENDATIONS OF MANUFACTURER. IT MAY BE NECESSARY TO ADD MORE TURNS TO INCREASE SENSITIVITY.
4.) THE LEAD IN WIRES ARE TO BE TWISTED A MINIMUM OF FIVE TIMES PER FOOT AND REMAIN UNDISTURBED AFTER THE LOOP HAS BEEN TUNED.
5.) MINIMUM 1" CONDUIT SHALL BE BURIED A MINIMUM 30" TO PULL BOX, CONTROLLER OR POLE AS SPECIFIED IN DRAWINGS.
6.) WHEN CUTTING IN ASPHALT, IF MACHINE CUT CLOSES DUE TO HIGH ATMOSPHERIC TEMPERATURE, CUTTING WILL BE HALTED UNTIL TEMPERATURE PERMITS.
7.) THE LOOP WIRE SHALL BE HELD IN PLACE WITH STRIPS OF RUBBER NEOPRENE FLEXIBLE TUBING OR POLYETHYLENE FOAM APPROXIMATELY ONE (1) INCH IN LENGTH EVERY TWO FEET. THESE STRIPS SHALL BE LEFT IN PLACE AND THE SLOT FILLED WITH ONE PART LOOP SEALANT (3M OR EQUIVALENT).
8.) DETECTOR LOOP LEAD–IN CABLE FROM PULL BOX TO CONTROLLER CABINET SHALL BE 2/C #14 (IMSA 50–2).
9.) LOCATION OF CONDUIT AND LOOP LEAD WIRES SUBJECT TO CHANGE.
10.) LOOP WIRES SHALL BE MINIMUM 14 GAUGE XHHW TYPE.
11.) NO EXPANSION JOINT SLOT SHALL BE USED IN LIEU OF SAWCUT SLOTS FOR VEHICLE DETECTOR WIRE PLACEMENT. LOOPS CUT ACROSS EXPANSION JOINTS SHALL HAVE SLACK CABLE FOR EXPANSION (SEE DETAIL "A" AND "B").
12.) THE SAWCUT SHALL BE CLEANED AND DRIED WITH AN AIR COMPRESSOR TO REMOVE ALL DEBRIS AND MOISTURE PRIOR TO INSTALLATION OF LOOP DETECTOR WIRE.
13.) ALL LOOPS SHALL BE TESTED WITH A MEGGER AT THE TIME OF INSTALLATION. INSULATION RESISTANCE MUST EXCEED 50MEG OHMS AND WIRE RESISTANCE MUST BE LESS THAN ONE MEG OHM.
14.) ALL CONNECTIONS SHALL BE SOLDERED. THE SOLDER JOINT SHALL BE SEALED WITH SCOTCHCAST A31 OR OTHER METHOD ACCEPTABLE TO THE ENGINEER.
15.) PRIOR APPROVAL MUST BE ATTAINED FROM HARRIS COUNTY BEFORE LOOP WIRES CAN CROSS AN EXPANSION JOINT.
16.) INSTALLATION OF THE LOOPS ARE TO BE MADE IN THE SHORTEST TIME PRACTICAL, NOT TO EXCEED FOUR HOURS AND SHALL BE SCHEDULED DURING THE OFF–PEAK HOURS TO MINIMIZE DELAY SCHEDULED DURING THE OFF–PEAK HOURS TO MINIMIZE DELAY IN VEHICULAR TRAFFIC.

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107595
8/22/2024
DATE

PROJECT TITLE: TRAFFIC SIGNALS ON ANTOINE DRIVE
DRAWN BY: BSH
SHEET DESCRIPTION: LOOP DETECTOR INSTALLATION DETAILS
JOB NO: 2024-2161-01
CK'D BY: BSH
FILE NAME: LDI
SCALE: NONE
FILE NO.
DATE: 7/9/15
APPROVED BY:
SHT NO: 580 / 718

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8/22/2024

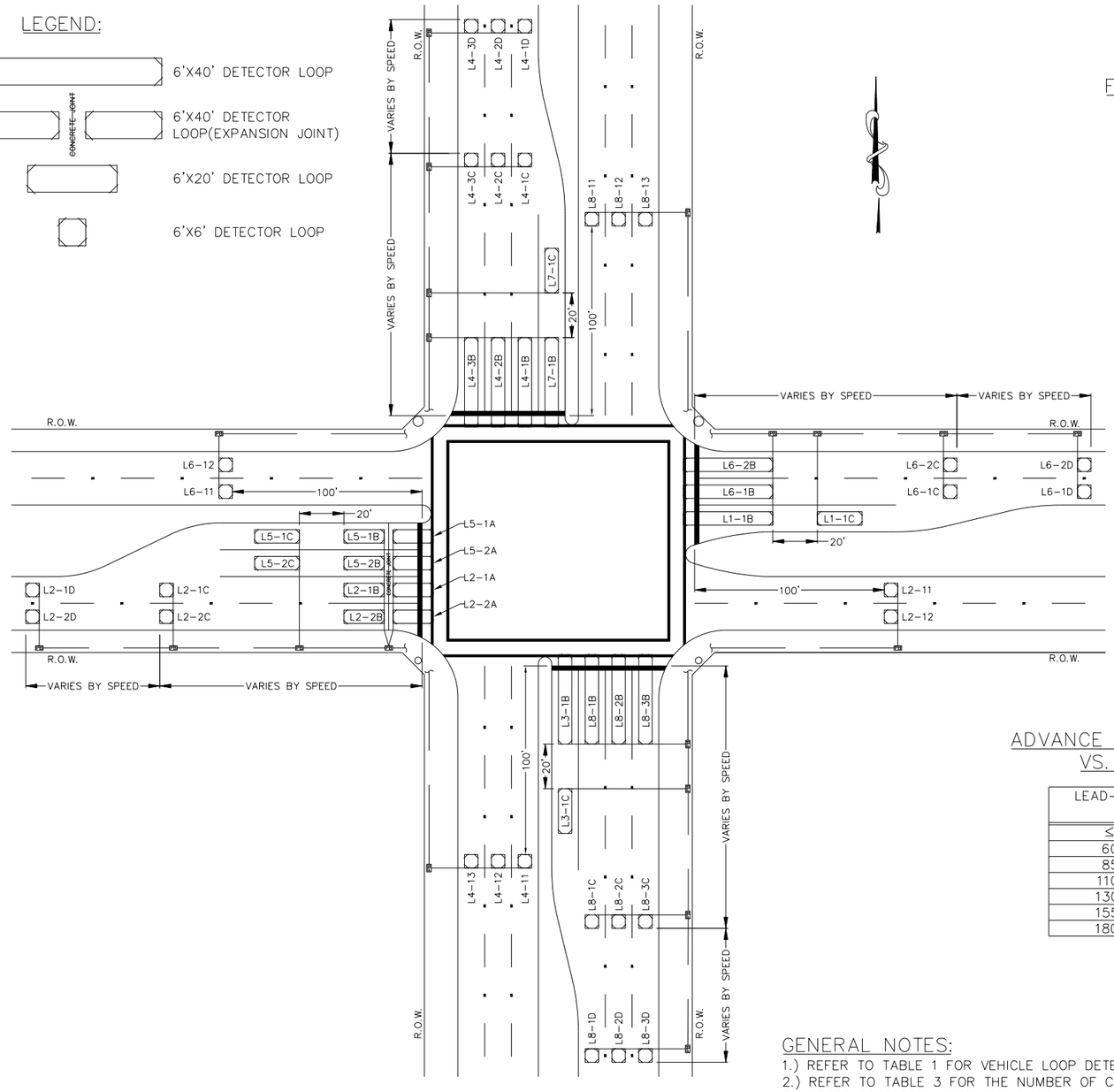
LEGEND:

6'X40' DETECTOR LOOP

6'X40' DETECTOR LOOP(EXPANSION JOINT)

6'X20' DETECTOR LOOP

6'X6' DETECTOR LOOP



VEHICLE LOOP DETECTOR SPACING FOR TRAFFIC SIGNAL INSTALLATIONS

DESIGN SPEED (MPH)	DISTANCE TO 1ST LOOP SET	DISTANCE TO 2ND LOOP SET
30	110'	220'
35	130'	260'
40	150'	300'
45	170'	340'
50	195'	390'
55	230'	460'
60	275'	550'
65	315'	630'
70	370'	740'
75	425'	850'

TABLE 1

RECOMMENDED NO. OF COILS (TURNS) FOR RECTANGULAR TYPE LOOPS

Y \ X	6	8	10	12	14	16	18	20
100	1	1	1	1	1	1	1	1
75	1	1	1	1	1	1	1	1
50	2	2	2	2	2	2	2	2
45	2	2	2	2	2	2	2	2
40	2	2	2	2	2	2	2	2
35	2	2	2	2	2	2	2	2
30	2	2	2	2	2	2	2	2
25	2	2	2	2	2	2	2	2
20	2	2	2	2	2	2	2	2
15	2	2	2	2	2	2	2	2
10	2	2	2	2	2	2	2	2
8	2	2	2	2	2	2	2	2
6	3	3	3	3	2	2	2	2
4	4	3	3	3	3	3	2	2

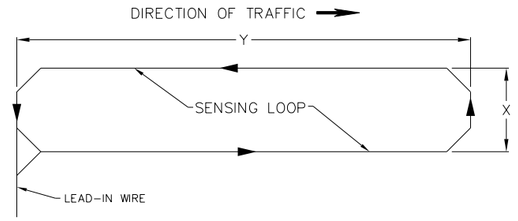
* RECOMMENDED NUMBER OF COILS (TURNS) FOR DIAMOND TYPE LOOPS = 4

TABLE 3

ADVANCE VEHICLE LOOP DETECTOR SIZE VS. LOOP LEAD-IN LENGTH

LEAD-IN LENGTH (FT)	LOOP SIZE (FT X FT)
≤ 550	6 x 6
600-849	6 x 10
850-1099	6 x 15
1100-1299	6 x 20
1300-1549	6 x 25
1550-1799	6 x 30
1800-2000	6 x 35

TABLE 4



TYPICAL DIPOLE LOOP LAYOUT DETAIL

GENERAL NOTES:

1.) REFER TO TABLE 1 FOR VEHICLE LOOP DETECTOR SPACING BASE ON THE POSTED SPEED LIMIT AND/OR 85th PERCENTILE SPEED.
2.) REFER TO TABLE 3 FOR THE NUMBER OF COILS (TURNS) BASED ON THE WIDTH AND LENGTH OF LOOP DETECTOR.
3.) REFER TO TABLE 4 FOR SIZING OF ADVANCE VEHICLE DETECTOR BASE ON LEAD-IN LENGTH FROM STOP BAR.
4.) FOR VEHICLE LOOP DETECTOR INSTALLATION REFER TO HARRIS COUNTY STANDARD DETAIL FOR "LOOP DETECTOR INSTALLATION DETAILS".

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107595
8/22/2024
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PROJECT TITLE: TRAFFIC SIGNALS ON ANTOINE DRIVE		
DRAWN BY: BSH	SHEET DESCRIPTION: STANDARD INTERSECTION LOOP DETECTOR	JOB NO. 2024-2161-01
CK'D BY: BSH	DETAILS	FILE NAME: SILD
SCALE: NONE		FILE NO:
DATE: 7/9/15	APPROVED BY:	SHT NO. 581 / 718

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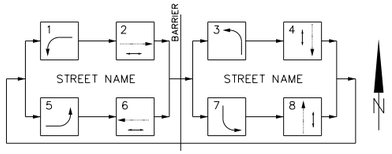
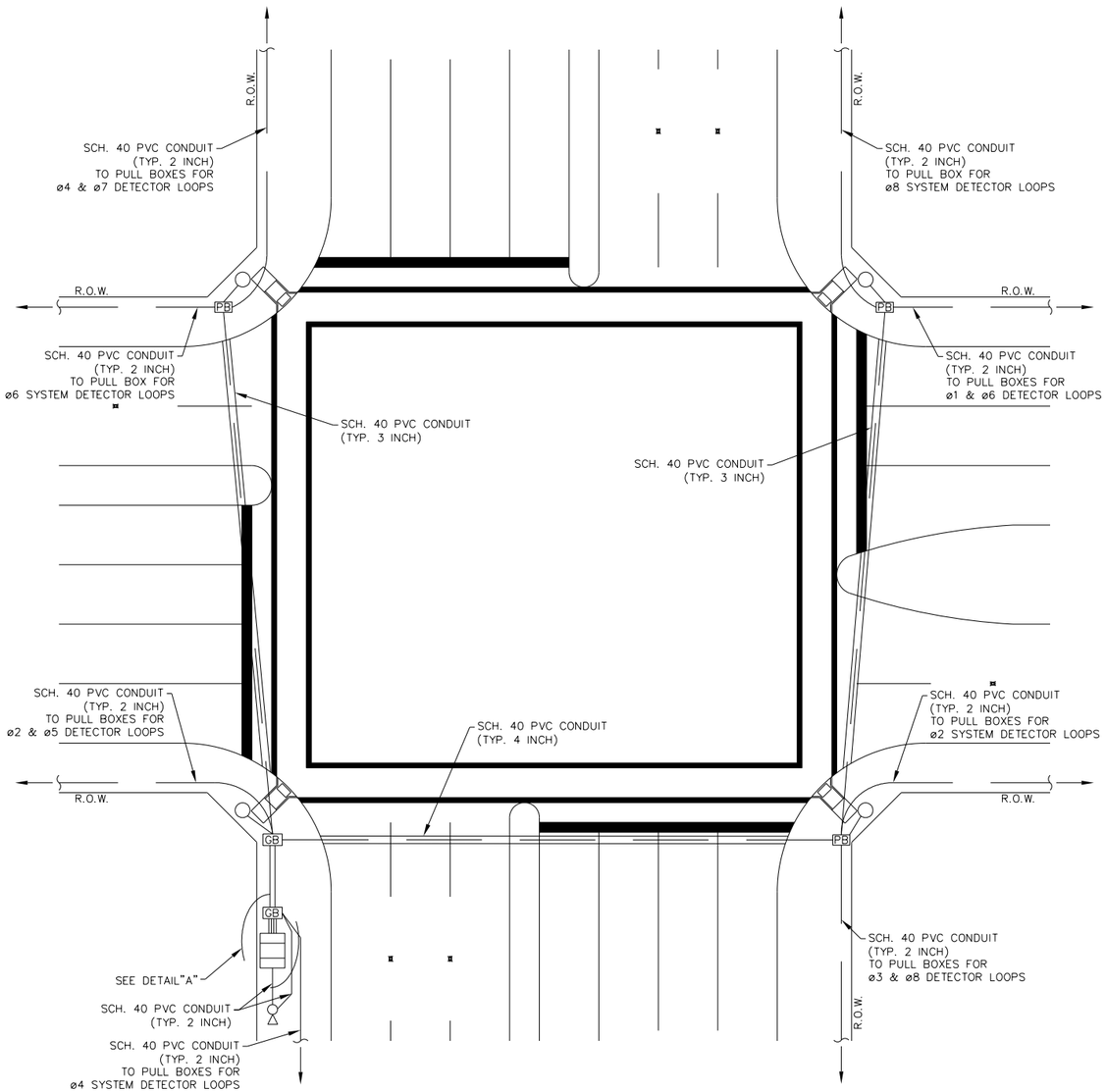
LEGEND:

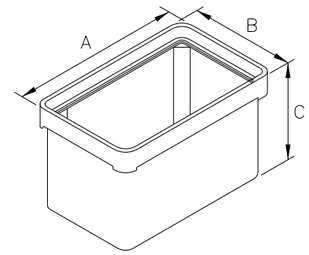
- SIGNAL CONTROLLER
- SIGNAL POLE
- UNDERGROUND CONDUIT
- UNDERGROUND CONDUIT (BORE)
- PB PULL BOX
- GB GROUND BOX
- SERVICE POLE



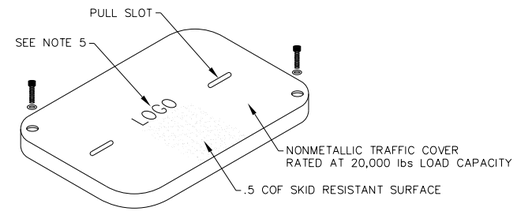
TYPICAL PHASE DIAGRAM



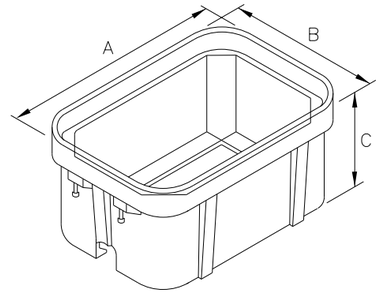
TYPICAL CONDUIT AND PULL BOX / GROUND BOX SYSTEM FOR SIGNALIZED MAJOR / MAJOR INTERSECTION



PULL BOX DETAIL



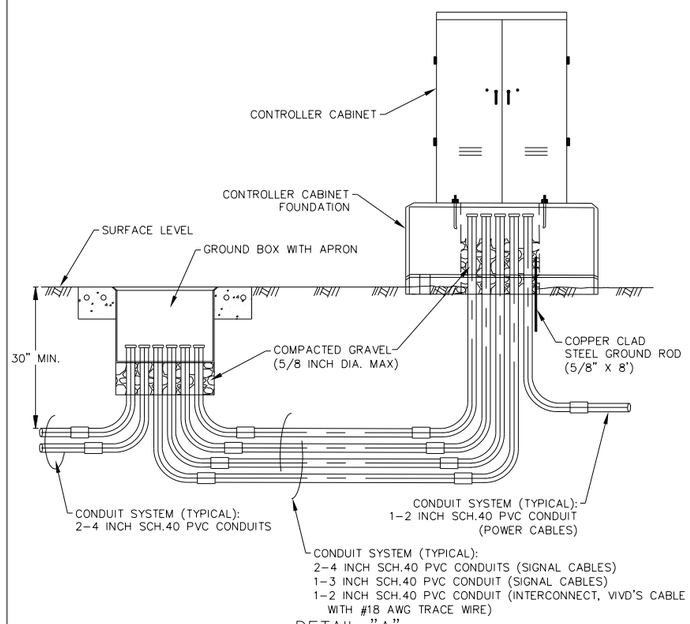
PULL BOX & GROUND BOX COVER DETAIL



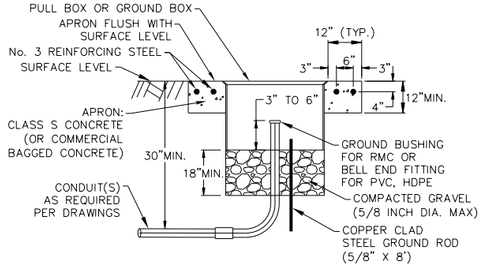
GROUND BOX DETAIL

TYPE	DIMENSIONS		
	A	B	C
PULL BOX (TYPE D)	32-1/4"±1"	19-1/4"±1"	22"±1"
GROUND BOX	37-5/8"±1"	26"±1"	30"±1"

PULL BOX & GROUND BOX DIMENSION DETAIL



DETAIL "A"



PULL BOX & GROUND BOX INSTALLATION DETAIL

GENERAL NOTES:

1.) ALL CONDUIT SPECIFIED IN PLANS SHALL BE INSTALLED AT A MINIMUM DEPTH OF 30 INCHES AND SHALL ENTER BOXES FROM THE BOTTOM.
2.) BOXES SHALL HAVE A CAPACITY LOADING OF 20,000 lbs OVER A 10 INCH BY 10 INCH AREA AND 600 lbs PER SQ. FOOT APPLIED OVER THE ENTIRE SIDE WALL.
3.) ALL BOXES AND COVERS SHALL BE PERMANENTLY MARKED BY EITHER IMPRESSION OR PERMANENT INK WITH MANUFACTURER'S MODEL NUMBER AND NAME/LOGO.
4.) BOX COVERS SHALL BE SECURED WITH TWO 1/2 INCH STAINLESS STEEL BOLTS. BOLTS SHALL BE WITHSTAND A MINIMUM OF 70 FT-lbs TORQUE AND A MINIMUM OF 750 lbs STRAIGHT PULL OUT STRENGTH. BOLT HOLES IN BOX SHALL BE ARRANGED TO DRAIN DIRT.
5.) BOX COVERS SHALL BE LEGIBLY IMPRINTED WITH THE WORDS "TRAFFIC SIGNAL - HCED" IN MINIMUM 1 INCH LETTERS.
6.) ALL BOXES SHALL BE INSTALLED WITH A 5/8 INCH (MIN.) BY 8 FOOT GROUNDING ROD AND ROD CLAMPS SHALL BE IN DIRECT CONTACT WITH THE SOIL.
7.) DETECTOR LOOP LEAD-IN CABLE FROM PULL BOX TO CONTROLLER CABINET SHALL BE 2/C #14 (IMSA 50-2).
8.) LEAVE A MINIMUM OF 10 FEET SLACK TRACE WIRE IN COMMUNICATION GROUND BOX AND CONTROLLER CABINET.

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HARRIS COUNTY ENGINEERING DEPARTMENT

HARRIS COUNTY 1836 TEXAS

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107595
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PROJECT TITLE: TRAFFIC SIGNALS ON ANTOINE DRIVE		
DRAWN BY: BSH	SHEET DESCRIPTION: CONDUITS / PULL BOX / GROUND BOX	JOB NO. 2024-2161-01
CK'D BY: BSH	TRAFFIC SIGNAL SYSTEM DETAILS	FILE NAME: CPGT
SCALE: NONE		FILE NO.
DATE: 7/9/15	APPROVED BY:	SHT NO. 582 / 718

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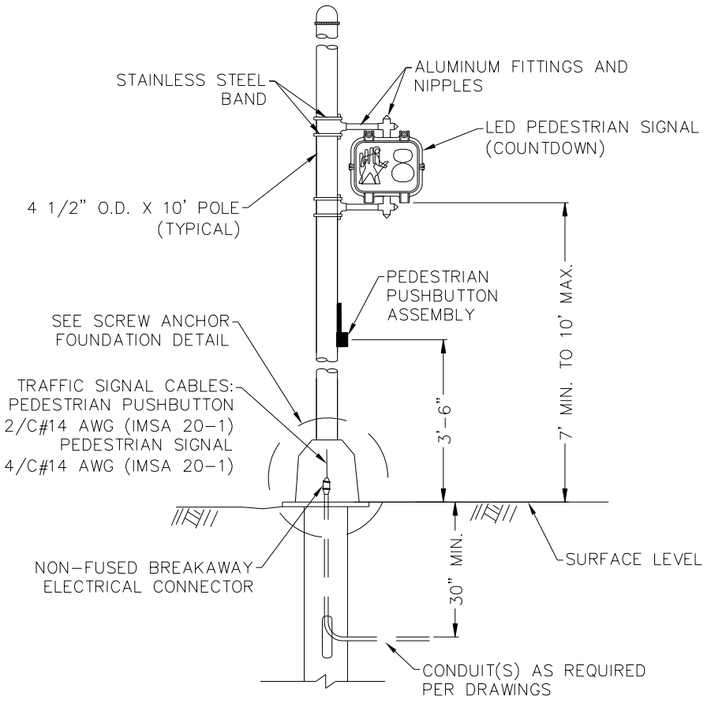
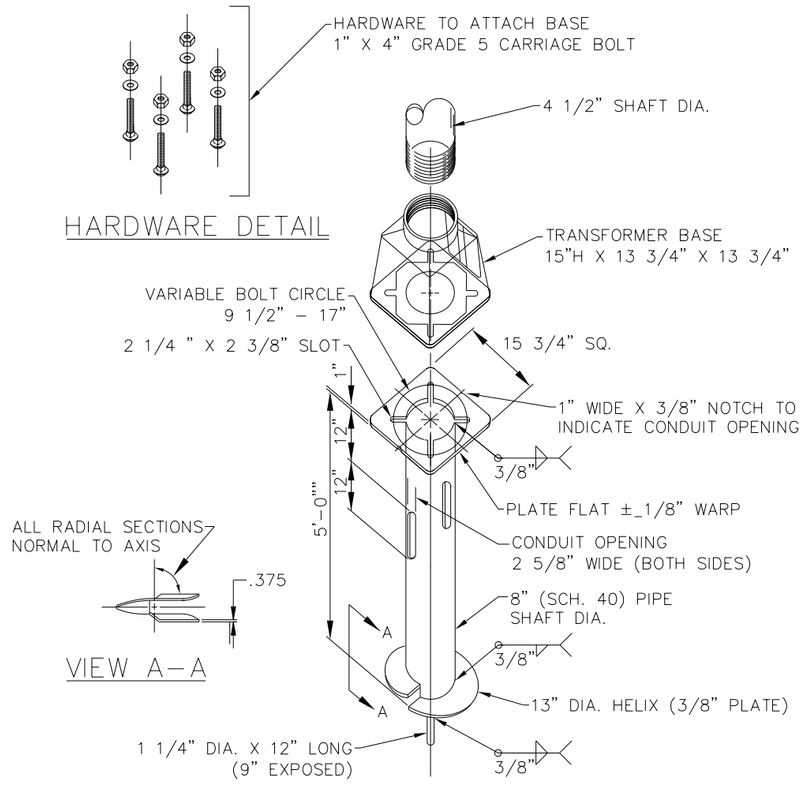
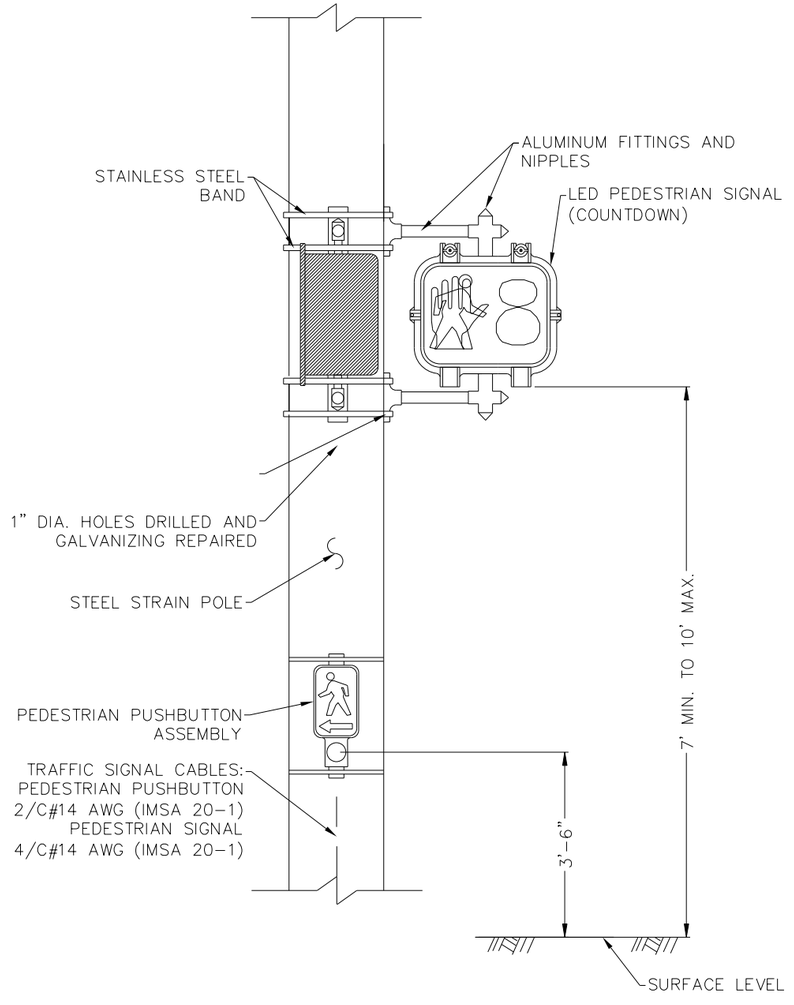


PEDESTRIAN SIGNAL INSTALLATION
ON PEDESTRIAN POLE



SCREW ANCHOR FOUNDATION DETAIL



PEDESTRIAN SIGNAL INSTALLATION
ON STEEL STRAIN POLE

NO.	REVISIONS	DATE	NAME

HARRIS COUNTY
ENGINEERING DEPARTMENT

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PROJECT TITLE: TRAFFIC SIGNALS ON ANTOINE DRIVE		
DRAWN BY: BSH	SHEET DESCRIPTION: PEDESTRIAN SIGNAL AND POLE INSTALLATION	JOB NO: 2024-2161-01
CK'D BY: BSH	DETAILS	FILE NAME: PS&P
SCALE: NONE		FILE NO.
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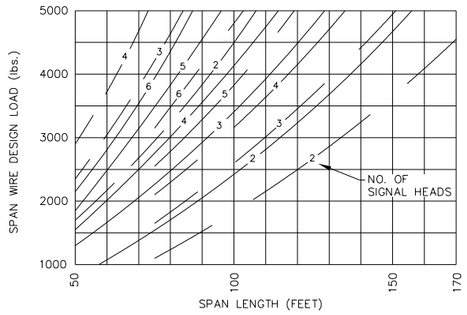


SAG = 4'–6" (30' POLE)
SAG = 8'–0" (30' OR 34' POLE)
SAG = 11'–6" (34' POLE)

SIGNAL HEAD TYPE	WT. PER HEAD	WIND AREA ❖
5–SECTION, 12" LENS	125 LBS.	9.6 SQ. FT.
3–SECTION, 12" LENS	75 LBS.	5.64 SQ. FT.

❖ EFFECTIVE PROJECTED DESIGN WIND AREA (ACTUAL AREA TIMES DRAG COEFFICIENT)

LOAD SPAN CHART – SIGNALS WITH 12–INCH LENS

LOAD SPAN CHART NOTES:

NUMBERS ON LOAD SPAN CHART INDICATE THE NUMBER OF SIGNAL HEADS ON THE SPAN. THE TOTAL SPAN WIRE DESIGN LOAD IS BASED ON ONE 5–SECTION HEAD AND ONE OR MORE ADDITIONAL 3–SECTION HEAD(S). DESIGN WIND PRESSURES ON CABLES ARE ASSUMED AS 1.6 LB/FT. WEIGHT OF SPAN WIRE CABLES (ONE PER SIGNAL HEAD) IS ASSUMED AS 0.65 LB/FT WHICH INCLUDES AN ALLOWANCE FOR CONDUCTOR CABLES AND MISCELLANEOUS HARDWARE. THE EFFECT OF THE SWAY CABLE ON LOAD DISTRIBUTION IS IGNORED AS IT IS ASSUMED TO BREAK AT DESIGN WIND CONDITIONS. WIND LOAD ON STREET NAME SIGNS SHOULD BE CONSIDERED FOR SPAN WIRE DESIGN LOAD. WHEN A POLE SUPPORTS 2 SPANS, THE SPAN WIRE DESIGN LOADS FOR BOTH SPANS SHOULD BE ADDED AS EXPLAINED BELOW TO DETERMINE THE DESIGN LOAD FOR THAT POLE.

DESIGN LOAD AND MOMENT CALCULATIONS:

WHEN A POLE SUPPORTS 2 SPANS, THE SPAN WIRE DESIGN LOADS FOR BOTH SPANS SHOULD BE ADDED, AS BELOW, TO DETERMINE THE DESIGN LOAD FOR THAT POLE.

Fx (lbs) = LOAD 2 + (LOAD 1 * COS(ANGLE BETWEEN SPANS))
Fy (lbs) = LOAD 1 * SIN(ANGLE BETWEEN SPANS)

DESIGN LOAD(lbs) = $\sqrt{Fx^2 + Fy^2}$

DESIGN MOMENT(K*FT) = ((POLE HT. – 0.953) * DESIGN LOAD) / 1000

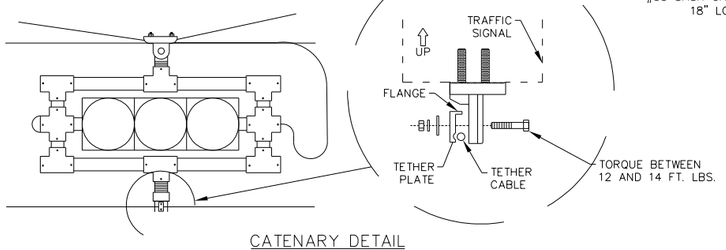
IF DESIGN LOAD IS GREATER THAN THE MAX. PERMISSIBLE LOAD FROM TABLE BELOW, A SPECIAL FOUNDATION DESIGN MAY BE REQUIRED.

IF DESIGN MOMENT IS GREATER THAN THE MAX. ALLOWABLE MOMENT FROM THE FOUNDATION DESIGN TABLE ON THE STRAIN POLE FOUNDATION STANDARD DETAIL, A SPECIAL FOUNDATION MAYBE REQUIRED.

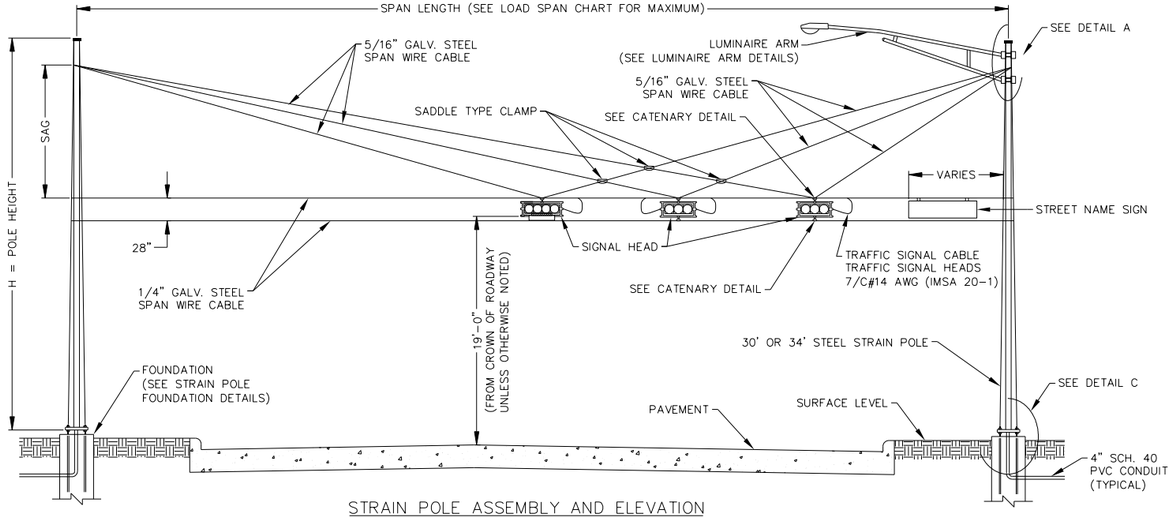
STRAIN POLE DESCRIPTION	POLE TYPE	FOUNDATION TYPE	MAX. PERMISSIBLE SPAN WIRE LOAD (lbs)
30' POLE	HC10030	10030	5800
30' POLE WITH LUMINAIRE	HC10030	10030	5500
34' POLE	HC10034	10036	6300
34' POLE WITH LUMINAIRE	HC10034	10036	6000

POLE TYPE	ROUND STRAIN POLE				OCTAGONAL STRAIN POLE			
	D_B	D_T	THK.	H	D_B	D_T	THK.	H
	IN.	IN.	IN.	FT.	IN.	IN.	IN.	FT.
HC10030	13.75	9.55	0.3125	30	13.75	9.55	0.3125	30
HC10034	15.5	10.74	0.3125	34	15.5	10.74	0.3125	34

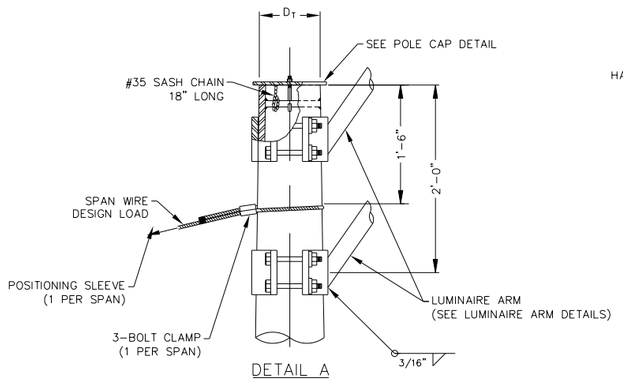
D_B = POLE BASE O.D.
D_T = POLE TOP O.D.
H = HEIGHT



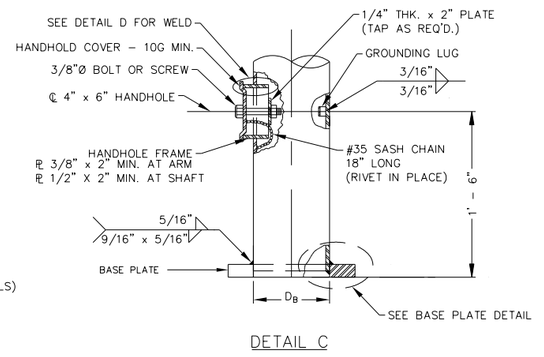
CATENARY DETAIL



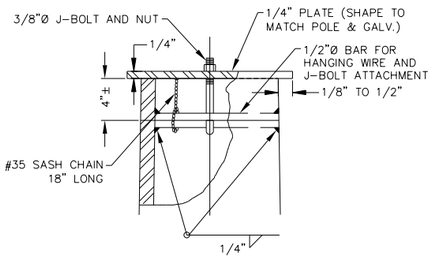
STRAIN POLE ASSEMBLY AND ELEVATION



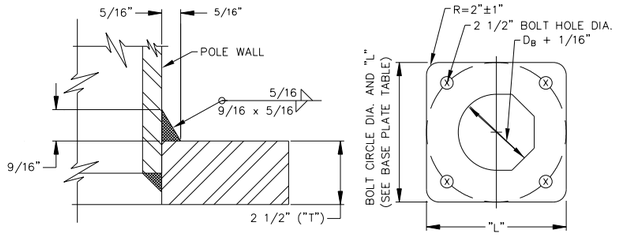
DETAIL A



DETAIL C



POLE CAP DETAIL



BASE PLATE TABLE				
FOUNDATION TYPE	ANCHOR BOLT DIAMETER	BOLT HOLE DIAMETER	BOLT CIRCLE DIAMETER	BASE ℙ DIMENSIONS "L" x "T"
10030	2 1/4"	2 1/2"	19"	19" 2 1/2"
10036	2 1/4"	2 1/2"	21"	21" 2 1/2"

BASE PLATE DETAIL

SHIPPING PARTS LIST

STRAIN POLE(S) (WITHOUT TRAFFIC SIGNAL ARM)						
POLE TYPE	STRAIN POLE(S) WITH LUMINAIRE			STRAIN POLE(S) WITHOUT LUMINAIRE		
	SHIP EACH STRAIN POLE WITH THE FOLLOWING HARDWARE ATTACHED: HANDHOLE AT BASE, POLE CAP, ETC.			SHIP EACH STRAIN POLE WITH THE FOLLOWING HARDWARE ATTACHED: HANDHOLD AT BASE, POLE CAP, ETC.		
	DESCRIPTION	DESIGNATION	QUANTITY	DESCRIPTION	DESIGNATION	QUANTITY
HC10030	30' STRAIN POLE	HC10030		30' STRAIN POLE	HC10030	
HC10034	34' STRAIN POLE	HC10034		34' STRAIN POLE	HC10034	★2

LUMINAIRE ARMS	
ARM LENGTH	QUANTITY
15' ARM	

ANCHOR BOLT ASSEMBLIES (1 PER POLE)*		
ANCHOR BOLT DIAMETER	BOLT HOLE DIAMETER	QUANTITY
2 1/4"	6"–3 1/2"	★2

* EACH ANCHOR BOLT ASSEMBLY CONSIST OF THE FOLLOWING:
TOP AND BOTTOM TEMPLATES, 4 ANCHOR BOLTS, 8 NUTS, 8 FLAT, WASHERS, 4 LOCK WASHERS AND 4 NUT ANCHOR DEVICES (TYPE 2) PER STANDARD DRAWING STRAIN POLE FOUNDATION DETAILS.
(TEMPLATES MAY BE REMOVED FOR SHIPMENT)

MATERIALS	
ROUND STRAIN POLE OR OCTAGONAL STRAIN POLE	ASTM A570 GR50 OR ASTM A572 GR50
PLATES (1)	ASTM A36 OR A572 GR50
STEEL CABLE	ASTM A475, 7 WIRE, UTILITIES GRADE

(1) EITHER OF THE MATERIALS LISTED FOR PLATES MAY BE USED WHERE THE DRAWINGS DO NOT SPECIFY A PARTICULAR ASTM DESIGNATION.

NOTE: ENGINEER SHALL COMPLETE SHIPPING PARTS LIST TABLES

GENERAL NOTES:

1.) DESIGN SHALL CONFORM TO 2001 OR LATEST ADDITION TO AASHTO STANDARD SPECIFICATIONS FOR THE STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS AND INTERIM SPECIFICATIONS DESIGN WIND SPEED EQUALS 100 MPH PLUS A 1.3 GUST FACTOR.

2.) STRAIN POLES ARE DESIGNED TO SUPPORT SPAN WIRE WITH ONE CLAMP–ON MAST ARM. THE SPECIFIED SIGNAL LOAD APPLIED AT THE END OF THE TRAFFIC SIGNAL ARM EQUALS 180 LBS. VERTICAL DEAD LOAD PLUS THE HORIZONTAL WIND LOAD ON AN EFFECTIVE PROJECTED AREA OF 32.4 SQ. FT. THE MAXIMUM PERMISSIBLE SPAN WIRE DESIGN LOADS TABULATED ARE CALCULATED AT A STRESS LOAD OF 1.40 TIMES THE BASIC ALLOWABLE STRESS. A SIMULTANEOUS WIND ON THE POLE, MAST ARM, AND LUMINAIRE IS ALSO INCLUDED. DESIGNS ARE BASED ON A SPAN WIRE AND ARM INCLUDED ANGLE OF 90 DEG. ANGLES OF LESS THAN 75 DEG. OR MORE THAN 105 DEG. WILL REQUIRE A SPECIAL DESIGN.

3.) FABRICATION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE WITH THE DETAILS AND DIMENSIONS. ALL WELDING SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIFICATIONS OF THE AMERICAN WIELDING SOCIETY STRUCTURAL WELDING CODE AWS LATEST EDITION.

4.) SEE SINGLE AND DUAL MAST ARM ASSEMBLIES DETAILS AND MAST ARM CONNECTIONS AND FABRICATIONS DETAILS STANDARD SHEETS FOR DETAILS OF CLAMP–ON MAST ARMS.

5.) SEE LUMINAIRE ARM DETAILS STANDARD SHEET FOR DETAILS OF LUMINAIRE ARM AND CONNECTION.

6.) SEE STRAIN POLE FOUNDATION DETAILS STANDARD SHEET FOR DETAILS OF ANCHOR BOLTS AND FOUNDATION.

7.) UNLESS OTHERWISE NOTED, ALL STEEL PARTS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 REQUIREMENTS WITH A MINIMUM OF 2 OUNCES PER SQUARE FOOT OF GALVANIZED COATING.

8.) ALL SMALL STEEL HARDWARE ITEMS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A153 REQUIREMENTS.

9.) SPECIAL DESIGNS REQUIRE SUBMISSION OF SHOP DRAWINGS IN ACCORDANCE WITH HARRIS COUNTY STANDARD SPECIFICATION ITEM 686 "TRAFFIC SIGNAL POLE ASSEMBLIES."

10.) ALL BOLTS SHALL HAVE TWO FULL DIAMETER THREADS EXPOSED ABOVE THE NUT.

11.) CONTRACTOR SHALL INSTALL A CLOSE NIPPLE WITH LOCKNUTS AND METAL BUSHINGS (SIZE AS REQUIRED) TO PREVENT ABRASION WHERE CABLE(S) ENTER ANY PORTION OF THE STRAIN POLE.

12.) CONTRACTOR SHALL INSTALL AND/OR ADJUST CATENARY SYSTEM AND TRAFFIC SIGNAL HEADS. AND SHALL LEVEL ALL SIGNAL HEADS, PRIOR TO ATTACHING BOTTOM TETHER SPAN.

THIS SEAL SUBSTANTIATES THE ITEMS IDENTIFIED WITH AN ★ ONLY AND DOES NOT CONFIRM THE DESIGN STANDARDS (BY OTHERS) PRESENTED HEREON.

NO.	REVISIONS	DATE	NAME

HARRIS COUNTY ENGINEERING DEPARTMENT

HARRIS COUNTY 1836 TEXAS

TEDSI INFRASTRUCTURE GROUP
TEDSI TBPE F-1640
Consulting Engineers
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Houston, Texas 77079
(832) 619-1000

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M. R. NEELAPU
107595
8/22/2024
DATE

PROJECT TITLE: TRAFFIC SIGNALS ON ANTOINE DRIVE		
DRAWN BY: BSH	SHEET DESCRIPTION: STRAIN POLE ASSEMBLY DETAILS (100 MPH WIND ZONE)	JOB NO. 2024-2161-01
CK'D BY: BSH		FILE NAME: SP-100
SCALE: NONE		FILE NO:
DATE: 7/9/15	APPROVED BY:	SHT NO. 584 / 718

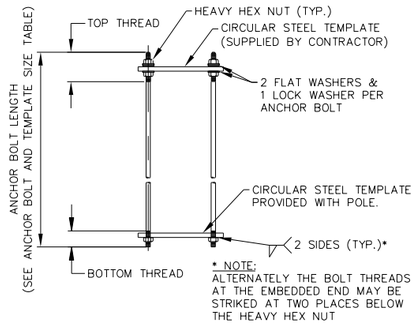
pw:\\tedsi-pw.bentley.com:tedsi-pw-01\Documents\Projects\2024\2024-2161-01 - Antoine Drive Signals\6.0 TEDSIDesign\6.08 CADD\6.08.01Sheet Files\Standard Details\HC_DETAILS_TRAFFIC.dgn
8/22/2024

STRAIN POLE FOUNDATION DESIGN TABLE

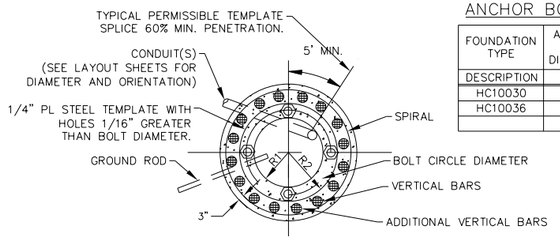
FOUNDATION TYPE	DRILL SHAFT DIAMETER	REINFORCING STEEL			DRILL SHAFT LENGTH	ANCHOR BOLT DESIGN			FOUNDATION DESIGN LOAD			TYPICAL APPLICATION
		VERTICAL BARS	ADDITIONAL VERTICAL BARS	SPIRAL & PITCH		ANCHOR BOLT DIAMETER	Fy	BOLT CIRCLE DIAMETER	MOMENT	SHEAR	TORQUE	
DESCRIPTION	IN.				FT.	IN.	KSI	IN.	K-FT.	KIPS	K-FT.	
10030	30"	8-#9	8-#9x7'-6"	#3@9"	16'-0"	2 ¼"	55	19"	184	7	0	CLAMP-ON MAST ARM ASSEMBLY,
									103	5	93	30' STRAIN POLE WITH OR WITHOUT LUMINAIRE
10036	36"	8-#10	8-#10x8'-0"	#3@9"	14'-0"	2 ¼"	55	21"	236	8	0	CLAMP-ON MAST ARM ASSEMBLY,
									133	5	104	34' STRAIN POLE WITH OR WITHOUT LUMINAIRE

FOUNDATION SELECTION FOR STANDARD CLAMP-ON MAST ARM ASSEMBLIES

	FOUNDATION TYPE	HC10030	HC10036
100 MPH DESIGN WIND SPEED	MAXIMUM SINGLE CLAMP-ON MAST ARM LENGTH	44'	44'
	MAXIMUM DUAL CLAMP-ON MAST ARM LENGTH	35' x 35'	44' x 44'
		40' x 35'	
		42' x 30'	
		44' x 20'	



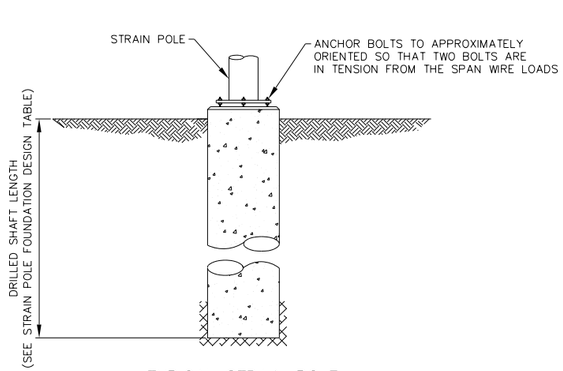
ANCHOR BOLT ASSEMBLY



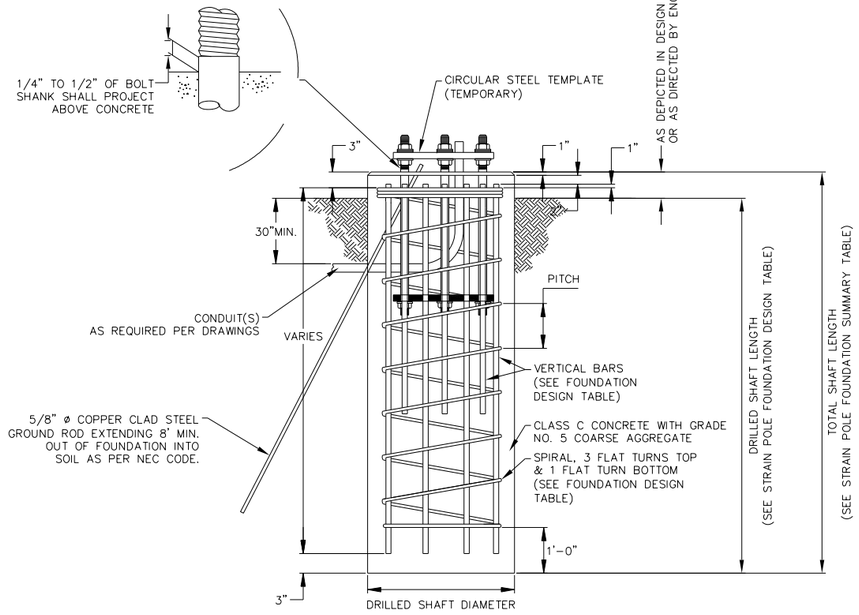
TOP VIEW

ANCHOR BOLT AND TEMPLATE SIZE TABLE

FOUNDATION TYPE	ANCHOR BOLT DIAMETER	*ANCHOR BOLT LENGTH	TOP THREAD	BOTTOM THREAD	BOLT CIRCLE DIAMETER	R1	R2
DESCRIPTION	IN.	FT.	IN.	IN.	IN.	IN.	IN.
HC10030	2 ¼"	6'-3 ½"	9"	4"	19"	7 ⅞"	11 ⅛"
HC10036	2 ¼"	6'-3 ½"	9"	4"	21"	8 ⅞"	12 ⅛"



TYPICAL STRAIN POLE FOUNDATION ASSEMBLY



STRAIN POLE FOUNDATION ELEVATION DETAILS

STRAIN POLE FOUNDATION SUMMARY TABLE

LOCATION IDENTIFICATION	FOUNDATION TYPE	NUMBER (EA)	DRILLED SHAFT LENGTH (FEET)		EXPOSED FOUNDATION (FEET)	TOTAL SHAFT LENGTH (FEET)
			HC10030	HC10036		
ANTOINE DR AT BRIDGE FOREST DR						
* POLE 1	HC10036	1		14	1	15
* POLE 3	HC10036	1		14	1	15
TOTAL DRILLED SHAFT LENGTHS						30

NOTE: ENGINEER SHALL COMPLETE STRAIN POLE FOUNDATION TABLE

GENERAL NOTES:

1.) DESIGN SHALL CONFORM TO 2001 OR LATEST ADDITION TO AASHTO STANDARD SPECIFICATIONS FOR THE STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS AND INTERIM SPECIFICATIONS DESIGN WIND SPEED EQUALS 100 MPH PLUS A 1.3 GUST FACTOR.

2.) REINFORCING STEEL SHALL CONFORM TO THE PERTINENT HARRIS COUNTY STANDARD SPECIFICATION ITEM 440 "REINFORCEMENT FOR CONCRETE."

3.) STRAIN POLE FOUNDATION SHALL BE INSTALLED WITH CLASS C CONCRETE WITH GRADE NO. 5 COARSE AGGREGATE.

4.) THREADS FOR ANCHOR BOLTS AND NUTS SHALL BE ROLLED OR CUT THREADS OF UNIFIED NATIONAL COARSE THREAD SERIES EXCEPT FOR ASTM A193, GRADE B7 BOLTS WHICH SHALL HAVE 8 PITCH THREAD SERIES. BOLTS AND NUTS SHALL HAVE CLASS 2A AND 2B FIT TOLERANCES. GALVANIZED NUTS SHALL BE TAPPED AFTER GALVANIZING.

5.) THREADS FOR ANCHOR BOLTS SHALL BE COATED WITH PIPE JOINT COMPOUND PRIOR TO INSTALLATION OF UPPER NUTS WHEN ERECTING STRAIN POLE. AFTER STRAIN POLE IS PLUMBED AND IN PERMANENT ALIGNMENT, THE REMAINING EXPOSED THREADS OF PAINTED BOLTS SHALL BE CLEANED AND AN ADDITIONAL COATING OF ZINC-RICH PAINT SHALL BE APPLIED TO SEAL THE BOLT THREAD-NUT JOINT.

6.) ALL ANCHOR BOLTS SHALL CONFORM TO ASTM A193, GRADE B7 OR ASTM F1554, GRADE 55 WITH SUPPLEMENTARY REQUIREMENT S1. ANCHOR BOLTS SHALL BE GALVANIZED THE ENTIRE LENGTH OF THE BOLT. NUTS FOR ANCHOR BOLTS SHALL CONFORM TO ASTM A563, GRADE A OR BETTER HEAVY HEX. EXPOSED NUTS AND WASHERS SHALL ALSO BE GALVANIZED. TEMPLATES AND EMBEDDED NUTS SHALL ALSO BE GALVANIZED.

7.) TOP OF STRAIN POLE FOUNDATION SHALL BE NO LOWER THAN THE PAVEMENT SURFACE ELEVATION. TYPICAL STRAIN POLE FOUNDATION SHOULD BE 6" ABOVE CROSS-SECTION CROWN OF MAJOR ROADWAY.

8.) ALL ANCHOR BOLTS SHALL HAVE A MINIMUM OF TWO FULL DIAMETER THREADS EXTENDED BEYOND THE NUTS.

9.) ANCHOR BOLT DESIGN DEVELOPS THE FOUNDATION CAPACITY GIVEN UNDER FOUNDATION DESIGN LOADS.

10.) STRAIN POLE FOUNDATION DESIGN LOADS ARE THE ALLOWABLE MOMENTS AND SHEARS AT THE BASE OF THE STRUCTURE.

11.) STRAIN POLE FOUNDATIONS MAY BE LISTED SEPARATELY OR GROUPED ACCORDING TO SIMILARITY OF LOCATION AND TYPE. QUANTITIES ARE FOR THE CONTRACTOR'S INFORMATION ONLY.

12.) STRAIN POLE FOUNDATION DESIGN IS BASED UPON UNDRAINED SHEAR STRENGTH OF 1500 PSF.

THIS SEAL SUBSTANTIATES THE ITEMS IDENTIFIED WITH AN * ONLY AND DOES NOT CONFIRM THE DESIGN STANDARDS (BY OTHERS) PRESENTED HEREON.

NO.	REVISIONS	DATE	NAME

HARRIS COUNTY ENGINEERING DEPARTMENT

TEDSI INFRASTRUCTURE GROUP
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M. R. NEELAPU
107595
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DATE

PROJECT TITLE: TRAFFIC SIGNALS ON ANTOINE DRIVE		
DRAWN BY: BSH	SHEET DESCRIPTION: STRAIN POLE FOUNDATION DETAILS	JOB NO: 2024-2161-01
CK'D BY: BSH		FILE NAME: SPF
SCALE: NONE		FILE NO.
DATE: 7/9/15	APPROVED BY:	SHT NO: 585 / 718

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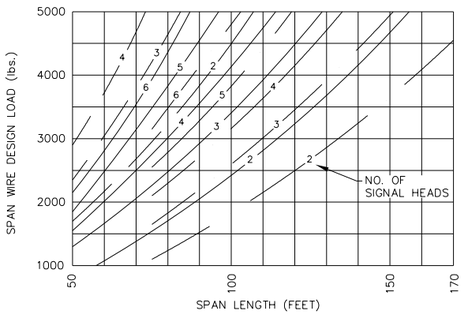
8/22/2024



SAG = 4'-6" (30' POLE)
SAG = 8'-0" (30' OR 34' POLE)
SAG = 11'-6" (34' POLE)

SIGNAL HEAD TYPE	WT. PER HEAD	WIND AREA ◆
5-SECTION, 12" LENS	125 LBS.	9.6 SQ. FT.
3-SECTION, 12" LENS	75 LBS.	5.64 SQ. FT.

◆ EFFECTIVE PROJECTED DESIGN WIND AREA (ACTUAL AREA TIMES DRAG COEFFICIENT)

LOAD SPAN CHART – SIGNALS WITH 12-INCH LENS

LOAD SPAN CHART NOTES:

NUMBERS ON LOAD SPAN CHART INDICATE THE NUMBER OF SIGNAL HEADS ON THE SPAN. THE TOTAL SPAN WIRE DESIGN LOAD IS BASED ON ONE 5-SECTION HEAD AND ONE OR MORE ADDITIONAL 3-SECTION HEAD(S). DESIGN WIND PRESSURES ON CABLES ARE ASSUMED AS 1.6 LB/FT. WEIGHT OF SPAN WIRE CABLES (ONE PER SIGNAL HEAD) IS ASSUMED AS 0.65 LB/FT WHICH INCLUDES AN ALLOWANCE FOR CONDUCTOR CABLES AND MISCELLANEOUS HARDWARE. THE EFFECT OF THE SWAY CABLE ON LOAD DISTRIBUTION IS IGNORED AS IT IS ASSUMED TO BREAK AT DESIGN WIND CONDITIONS. WIND LOAD ON STREET NAME SIGNS SHOULD BE CONSIDERED FOR SPAN WIRE DESIGN LOAD. WHEN A POLE SUPPORTS 2 SPANS, THE SPAN WIRE DESIGN LOADS FOR BOTH SPANS SHOULD BE ADDED AS EXPLAINED BELOW TO DETERMINE THE DESIGN LOAD FOR THAT POLE.

DESIGN LOAD AND MOMENT CALCULATIONS:

WHEN A POLE SUPPORTS 2 SPANS, THE SPAN WIRE DESIGN LOADS FOR BOTH SPANS SHOULD BE ADDED, AS BELOW, TO DETERMINE THE DESIGN LOAD FOR THAT POLE.

Fx (lbs) = LOAD 2 + (LOAD 1 * COS(ANGLE BETWEEN SPANS))
Fy (lbs) = LOAD 1 * SIN(ANGLE BETWEEN SPANS)

DESIGN LOAD(lbs) = $\sqrt{Fx^2 + Fy^2}$

DESIGN MOMENT(K*FT) = ((POLE HT. – 0.953) * DESIGN LOAD) / 1000

IF DESIGN LOAD IS GREATER THAN THE MAX. PERMISSIBLE LOAD FROM TABLE BELOW, A SPECIAL FOUNDATION DESIGN MAY BE REQUIRED.

IF DESIGN MOMENT IS GREATER THAN THE MAX. ALLOWABLE MOMENT FROM THE FOUNDATION DESIGN TABLE ON THE STRAIN POLE FOUNDATION STANDARD DETAIL, A SPECIAL FOUNDATION MAYBE REQUIRED.

STRAIN POLE AND CLAMP-ON MAST ARM DESCRIPTION	POLE TYPE	FOUNDATION TYPE	MAX. PERMISSIBLE SPAN WIRE LOAD (lbs)
30' POLE WITH 20' CLAMP-ON MAST ARM & LUMINAIRE	HC10030	10030	4000
30' POLE WITH 25' CLAMP-ON MAST ARM & LUMINAIRE	HC10030	10030	3700
30' POLE WITH 30' CLAMP-ON MAST ARM & LUMINAIRE	HC10030	10030	3200
30' POLE WITH 35' CLAMP-ON MAST ARM & LUMINAIRE	HC10030	10030	2700
30' POLE WITH 40' CLAMP-ON MAST ARM & LUMINAIRE	HC10030	10030	2000
34' POLE WITH 20' CLAMP-ON MAST ARM & LUMINAIRE	HC10034	10036	4800
34' POLE WITH 25' CLAMP-ON MAST ARM & LUMINAIRE	HC10034	10036	4500
34' POLE WITH 30' CLAMP-ON MAST ARM & LUMINAIRE	HC10034	10036	4200
34' POLE WITH 35' CLAMP-ON MAST ARM & LUMINAIRE	HC10034	10036	3800
34' POLE WITH 40' CLAMP-ON MAST ARM & LUMINAIRE	HC10034	10036	3300
34' POLE WITH 42' CLAMP-ON MAST ARM & LUMINAIRE	HC10034	10036	3100
34' POLE WITH 44' CLAMP-ON MAST ARM & LUMINAIRE	HC10034	10036	2800

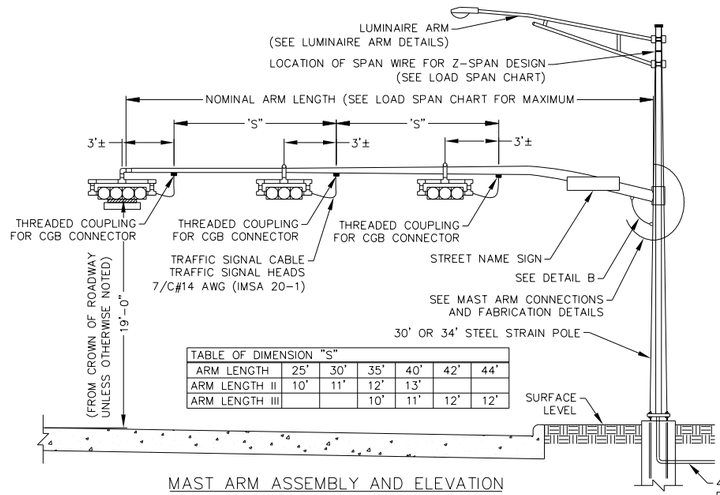
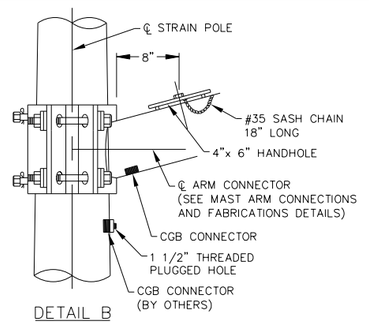
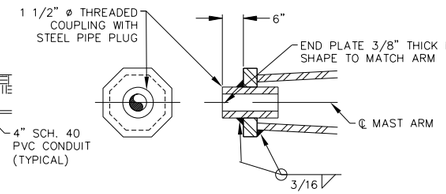


TABLE OF DIMENSION "S"						
ARM LENGTH	25'	30'	35'	40'	42'	44'
ARM LENGTH II	10'	11'	12'	13'		
ARM LENGTH III			10'	11'	12'	12'

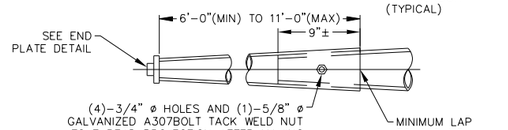
MAST ARM ASSEMBLY AND ELEVATION

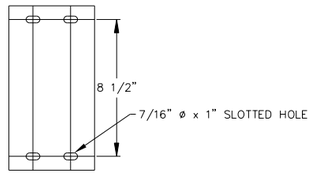


DETAIL B



END PLATE DETAIL

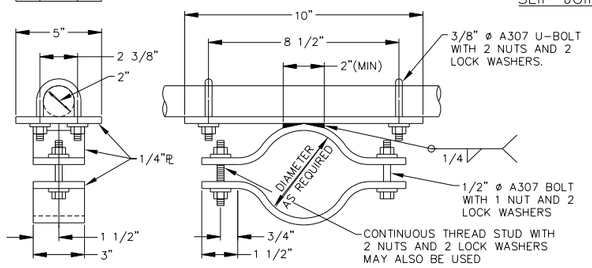




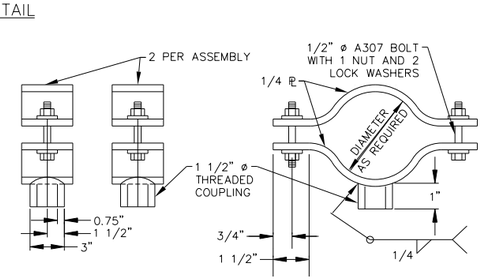
NOTE:
A SLIP JOINT IS PERMISSIBLE FOR MAST ARMS 40' AND GREATER IN LENGTH. THE SLIP JOINT SHALL BE MADE IN THE SHOP, BUT MAY BE MATCH MARKED AND SHIPPED DISASSEMBLED

SLIP JOINT DETAIL

THIS SEAL SUBSTANTIATES THE ITEMS IDENTIFIED WITH AN ★ ONLY AND DOES NOT CONFIRM THE DESIGN STANDARDS (BY OTHERS) PRESENTED HEREON.



BRACKET ASSEMBLY DETAIL – OPTION A



BRACKET ASSEMBLY DETAIL – OPTION B

POLE TYPE	ROUND STRAIN POLE				OCTAGONAL STRAIN POLE			
	D_B	D_T	THK.	H	D_B	D_T	THK.	H
	IN.	IN.	IN.	FT.	IN.	IN.	IN.	FT.
HC10030	13.75	9.55	0.3125	30	13.75	9.55	0.3125	30
HC10034	15.5	10.74	0.3125	34	15.5	10.74	0.3125	34

D_B = POLE BASE O.D.
D_T = POLE TOP O.D.
H = HEIGHT

MAST ARM LENGTH	ROUND CLAMP-ON MAST ARM				OCTAGONAL CLAMP-ON MAST ARM			
	D_1	D_2 ⚠	THK.(t)	RISE	D_1	D_2 ⚠	THK.(t)	RISE
FT.	IN.	IN.	IN.	FT.	IN.	IN.	IN.	FT.
20	8.0"	5.3"	0.1793"	3'-10"	8.0"	5.3"	0.1793"	3'-10"
25	9.0"	5.6"	0.1793"	3'-10"	9.0"	5.6"	0.1793"	3'-10"
30	9.5"	5.4"	0.1793"	3'-10"	10.0"	5.4"	0.1793"	3'-10"
35	10.5"	5.7"	0.1793"	3'-10"	10.0"	5.7"	0.1793"	3'-10"
40	10.5"	5.0"	0.2391"	3'-10"	11.0"	5.0"	0.2391"	3'-10"
42	10.5"	4.7"	0.2391"	3'-10"	11.0"	4.7"	0.2391"	3'-10"
44	11.0"	4.9"	0.2391"	3'-10"	11.5"	4.9"	0.2391"	3'-10"

D_1 = POLE BASE O.D.
D_2 = POLE TOP O.D.
⚠ D_2 MAY BE INCREASED BY UP TO 1.0" FOR OCTAGONAL ARMS

GENERAL NOTES:

1.) DESIGN SHALL CONFORM TO 2001 OR LATEST ADDITION TO AASHTO STANDARD SPECIFICATIONS FOR THE STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS AND INTERIM SPECIFICATIONS DESIGN WIND SPEED EQUALS 100 MPH PLUS A 1.3 GUST FACTOR.
2.) STRAIN POLES ARE DESIGNED TO SUPPORT SPAN WIRE WITH ONE CLAMP-ON MAST ARM. THE SPECIFIED SIGNAL LOAD APPLIED AT THE END OF THE TRAFFIC SIGNAL ARM EQUALS 180 LBS. VERTICAL DEAD LOAD PLUS THE HORIZONTAL WIND LOAD ON AN EFFECTIVE PROJECTED AREA OF 32.4 SQ. FT. THE MAXIMUM PERMISSIBLE SPAN WIRE DESIGN LOADS TABULATED ARE CALCULATED AT A STRESS LOAD OF 1.40 TIMES THE BASIC ALLOWABLE STRESS. A SIMULTANEOUS WIND ON THE POLE, MAST ARM, AND LUMINAIRE IS ALSO INCLUDED. DESIGNS ARE BASED ON A SPAN WIRE AND ARM INCLUDED ANGLE OF 90 DEG. ANGLES OF LESS THAN 75 DEG. OR MORE THAN 105 DEG. WILL REQUIRE A SPECIAL DESIGN.
3.) FABRICATION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE WITH THE DETAILS AND DIMENSIONS. ALL WELDING SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIFICATIONS OF THE AMERICAN WIELDING SOCIETY STRUCTURAL WELDING CODE AWS LATEST EDITION.
4.) SEE CLAMP-ON MAST ARM CONNECTIONS AND FABRICATION TOLERANCES DETAILS STANDARD SHEET FOR DETAILS OF CLAMP-ON MAST ARM CONNECTIONS AND FABRICATION TOLERANCES.
5.) SEE STRAIN POLE ASSEMBLY DETAILS STANDARD SHEET FOR DETAILS OF STRAIN POLE.
6.) SEE LUMINAIRE ARM DETAILS STANDARD SHEET FOR DETAILS OF LUMINAIRE ARM AND CONNECTION.
7.) SEE STRAIN POLE FOUNDATION DETAILS STANDARD SHEET FOR DETAILS OF ANCHOR BOLTS AND FOUNDATION.
8.) UNLESS OTHERWISE NOTED, ALL STEEL PARTS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 REQUIREMENTS WITH A MINIMUM OF 2 OUNCES PER SQUARE FOOT OF GALVANIZED COATING.
9.) ALL SMALL STEEL HARDWARE ITEMS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A153 REQUIREMENTS.
10.) SPECIAL DESIGNS REQUIRE SUBMISSION OF SHOP DRAWINGS IN ACCORDANCE WITH HARRIS COUNTY STANDARD SPECIFICATION ITEM 686 "TRAFFIC SIGNAL POLE ASSEMBLIES."
11.) ALL BOLTS SHALL HAVE TWO FULL DIAMETER THREADS EXPOSED ABOVE THE NUT.
12.) CONTRACTOR SHALL INSTALL A CLOSE NIPPLE WITH LOCKNUTS AND METAL BUSHINGS (SIZE AS REQUIRED) TO PREVENT ABRASION WHERE CABLE(S) ENTER ANY PORTION OF THE STRAIN POLE.
13.) CLAMP-ON MAST ARM(S) AND STRAIN POLE(S) SHALL HAVE THE SAME GEOMETRIC SHAPE PER ASSEMBLY.

SHIPPING PARTS LIST

CLAMP-ON MAST ARM(S) – STRAIN POLE			
NOMINAL ARM LENGTH		SHIP EACH CLAMP-ON MAST ARM AND STRAIN POLE WITH THE FOLLOWING HARDWARE ATTACHED: HANDHOLE AT BASE, POLE CAP, ETC.	
Lc FT.	Lc FT.	DESCRIPTION	QUANTITY
20		20 – HC10030	
		20 – HC10034	
25		25 – HC10030	
		25 – HC10034	
30		30 – HC10030	
		30 – HC10034	★1
35		35 – HC10030	
		35 – HC10034	
40		40 – HC10030	
		40 – HC10034	★1
42		42 – HC10030	
		42 – HC10034	
44		44 – HC10030	
		44 – HC10034	
20	20	20/20 – HC10030	
	20	20/20 – HC10034	
25	20	25/20 – HC10030	
	20	25/20 – HC10034	
	25	25/25 – HC10030	
	25	25/25 – HC10034	
30	20	30/20 – HC10030	
	20	30/20 – HC10034	
	25	30/25 – HC10030	
	25	30/25 – HC10034	
	30	30/30 – HC10030	
	30	30/30 – HC10034	
35	20	35/20 – HC10030	
	20	35/20 – HC10034	
	25	35/25 – HC10030	
	25	35/25 – HC10034	
	30	35/30 – HC10030	
	30	35/30 – HC10034	
	35	35/35 – HC10030	
	35	35/35 – HC10034	
40	20	40/20 – HC10030	
	20	40/20 – HC10034	
	25	40/25 – HC10030	
	25	40/25 – HC10034	
	30	40/30 – HC10030	
	30	40/30 – HC10034	
	35	40/35 – HC10030	
	35	40/35 – HC10034	
	40	40/40 – HC10034	
42	20	42/20 – HC10030	
	20	42/20 – HC10034	
	25	42/25 – HC10030	
	25	42/25 – HC10034	
	30	42/30 – HC10030	
	30	42/30 – HC10034	
	35	42/35 – HC10034	
	40	42/40 – HC10034	
	42	42/42 – HC10034	
44	20	44/20 – HC10030	
	20	44/20 – HC10034	
	25	44/25 – HC10034	
	30	44/30 – HC10034	
	35	44/35 – HC10034	
	40	44/40 – HC10034	
	42	44/42 – HC10034	
	44	44/44 – HC10034	

LUMINAIRE ARMS (1 PER POLE)	
NOMINAL LENGTH	QUANTITY
15' ARM	

ANCHOR BOLT ASSEMBLIES (1 PER POLE)*		
ANCHOR BOLT DIAMETER	BOLT HOLE DIAMETER	QUANTITY
2 ¼"	6"-3 ½"	★2

* EACH ANCHOR BOLT ASSEMBLY CONSIST OF THE FOLLOWING:
TOP AND BOTTOM TEMPLATES, 4 ANCHOR BOLTS, 8 NUTS, 8 FLAT, WASHERS, 4 LOCK WASHERS AND 4 NUT ANCHOR DEVICES (TYPE 2) PER STANDARD DRAWING STRAIN POLE FOUNDATION DETAILS.
(TEMPLATES MAY BE REMOVED FOR SHIPMENT)

MATERIALS	
ROUND CLAMP-ON MAST ARM AND STRAIN POLE OR OCTAGONAL MAST ARM AND STRAIN POLE	ASTM A570 GR50 OR ASTM A572 GR50
PLATES (1)	ASTM A36 OR A572 GR50
STEEL CABLE	ASTM A475, 7 WIRE, UTILITIES GRADE

(1) EITHER OF THE MATERIALS LISTED FOR PLATES MAY BE USED WHERE THE DRAWINGS DO NOT SPECIFY A PARTICULAR ASTM DESIGNATION.

VIBRATION WARNING:

CLAMP-ON MAST ARMS STRUCTURES OF APPROXIMATELY 40 FEET OR LONGER ARE SUBJECT TO HARMONIC VERTICAL VIBRATIONS IN LIGHT WIND CONDITIONS DUE TO THE AEROELASTIC CHARACTERISTICS OF A FEW OF THE MYRIADS OF POSSIBLE COMBINATION OF THE FOLLOWING: SIGNAL NUMBERS, WEIGHTS AND POSITIONS; PRESENCE OF ADDITIONAL ATTACHMENTS TO THE ARM, SUCH AS SIGNS AND CAMERAS; ARM-WIND ORIENTATION; AND ARM-POLE STIFFNESS.
SUCH VIBRATIONS MAY CAUSE FATIGUE DAMAGE TO THE STRUCTURE AND MAY LEAD TO GALLOPING IN MODERATE WIND CONDITIONS WHICH MAY FURTHER DAMAGE THE STRUCTURE AND ALARM THE PUBLIC.
THE TRAFFIC SIGNAL CLAMP-ON MAST ARMS SHALL BE VISUALLY INSPECTED IN 5 TO 20 MPH WIND CONDITIONS AFTER INSTALLATION OF SIGNAL HEADS AND ANY ATTACHMENTS. IF VERTICAL MOVEMENTS WITH A TOTAL EXCURSION (MAXIMUM UPWARD EXCURSION TO MAXIMUM DOWNWARD EXCURSION) OF MORE THAN APPROXIMATELY 8" ARE OBSERVED AT THE ARM TIP, A DAMPING PLATE SHALL BE FITTED TO THE ARM.
THIS VISUAL INSPECTION SHALL BE REPEATED AFTER EACH MODIFICATION OF THE STRUCTURE THAT COULD AFFECT ITS AEROELASTIC RESPONSE. EXCESSIVE VIBRATIONS SHALL NOT BE ALLOWED TO CONTINUE FOR MORE THAN TWO DAYS.

CLAMP-ON MAST ARM(S) (TYPES) – STRAIN POLE						
NOMINAL ARM LENGTH (Lc)	TYPE I MAST ARM (1 SIGNAL)		TYPE II MAST ARM (2 SIGNAL)		TYPE I MAST ARM (1 SIGNAL)	
	SHIP EACH CLAMP-ON MAST ARM AND STRAIN POLE WITH THE FOLLOWING HARDWARE ATTACHED: 1–CGB CONNECTOR 1–CLAMP WITH BOLTS AND WASHES		SHIP EACH CLAMP-ON MAST ARM AND STRAIN POLE WITH THE FOLLOWING HARDWARE ATTACHED: 1–SIGNAL BRACKET ASSEMBLIES, 2–CGB CONNECTOR, 1–CLAMP WITH BOLTS AND WASHES		SHIP EACH CLAMP-ON MAST ARM AND STRAIN POLE WITH THE FOLLOWING HARDWARE ATTACHED: 2–SIGNAL BRACKET ASSEMBLIES, 3–CGB CONNECTOR, 1–CLAMP WITH BOLTS AND WASHES	
FT.	DESCRIPTION	QUANTITY	DESCRIPTION	QUANTITY	DESCRIPTION	QUANTITY
	20 – HC10030					
	20 – HC10034					
	25 – HC10030		25 – HC10030			
	25 – HC10034		25 – HC10034			
			30 – HC10030			
			30 – HC10034	★1		
			35 – HC10030		35 – HC10030	
			35 – HC10034		35 – HC10034	
					40 – HC10030	
					40 – HC10034	★1
					42 – HC10030	
					42 – HC10034	
					44 – HC10030	
					44 – HC10034	

NOTE: ENGINEER SHALL COMPLETE SHIPPING PARTS LIST TABLES

NO.	REVISIONS	DATE	NAME

HARRIS COUNTY ENGINEERING DEPARTMENT

HARRIS COUNTY 1836 TEXAS

TEDSI INFRASTRUCTURE GROUP
TEDSI TBPE F-1640
Consulting Engineers
738 Hwy 6 South, Suite 430
Houston, Texas 77079
(832) 619-1000

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M. R. NEELAPU
107595
8/22/2024
DATE

PROJECT TITLE: TRAFFIC SIGNALS ON ANTOINE DRIVE		
DRAWN BY: BSH	SHEET DESCRIPTION: SINGLE AND DUAL MAST ARM ASSEMBLY	JOB NO: 2024-2161-01
CK'D BY: BSH	DETAILS (100 MPH WIND ZONE)	FILE NAME: SPF
SCALE: NONE		FILE NO:
DATE: 7/9/15	APPROVED BY:	SHT NO: 586 / 718

pw:\\tedsi-pw.bentley.com:tedsi-pw-01\Documents\Projects\2024\2024-2161-01 - Antoine Drive Signals\6.0 TEDSIDesign\6.08 CADD\6.08.01 Sheet Files\Standard Details\HC_DETAILS_TRAFFIC.dgn
8/22/2024

TABLE 1 – ROUND CLAMP–ON MAST ARM

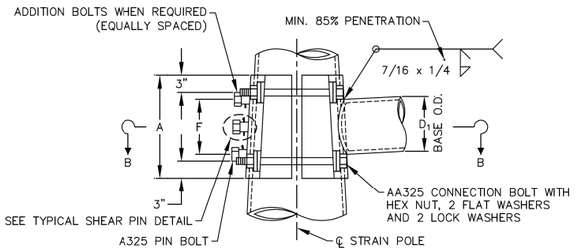
MAST ARM LENGTH	ROUND CLAMP–ON MAST ARM						CONN. BOLTS		PIN BOLTS	
	D_1	D_2 ⚠	THK.(t)	RISE UNDER LOAD	A	F	NO.	DIA.	NO.	DIA.
FT.	IN.	IN.	IN.	FT.	IN.	IN.	EA	IN.	EA	IN.
20	8.0"	5.3"	0.1793"	3'–10"	14"	8"	4	1"	2	5/8"
25	9.0"	5.6"	0.1793"	3'–10"	16"	10"	4	1"	2	5/8"
30	9.5"	5.4"	0.1793"	3'–10"	18"	10"	4	1 1/4"	3	5/8"
35	10.5"	5.7"	0.1793"	3'–10"	18"	10"	4	1 1/4"	3	5/8"
40	10.5"	5.0"	0.2391"	3'–10"	20"	14"	4	1 1/2"	4	5/8"
42	10.5"	4.7"	0.2391"	3'–10"	20"	14"	4	1 1/2"	4	5/8"
44	11.0"	4.9"	0.2391"	3'–10"	20"	14"	4	1 1/2"	4	5/8"

D_1 = POLE BASE O.D.
D_2 = POLE TOP O.D.
⚠ D_2 MAY BE INCREASED BY UP TO 1.0" FOR OCTAGONAL ARMS

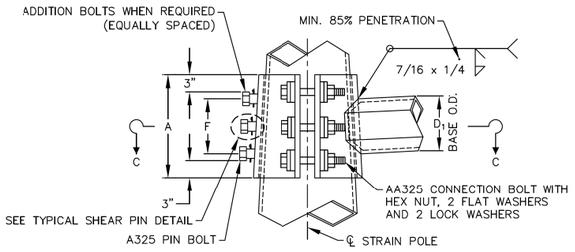
TABLE 2 – OCTAGONAL CLAMP–ON MAST ARM

MAST ARM LENGTH	OCTAGONAL CLAMP–ON MAST ARM							CONN. BOLTS		PIN BOLTS	
	D_1	D_2 ⚠	THK.(t)	RISE UNDER LOAD	A	F	T	NO.	DIA.	NO.	DIA.
FT.	IN.	IN.	IN.	FT.	IN.	IN.	IN.	EA	IN.	EA	IN.
20	8.0"	5.3"	0.1793"	3'–10"	14"	8"	3/4"	4	3/4"	2	5/8"
25	9.0"	5.6"	0.1793"	3'–10"	16"	10"	7/8"	4	1"	2	5/8"
30	10.0"	5.4"	0.1793"	3'–10"	18"	10"	1"	6	1"	3	5/8"
35	10.0"	5.7"	0.1793"	3'–10"	18"	10"	1"	6	1"	3	5/8"
40	11.0"	5.0"	0.2391"	3'–10"	20"	14"	1 1/8"	8	1"	4	5/8"
42	11.0"	4.7"	0.2391"	3'–10"	20"	14"	1 1/8"	8	1"	4	5/8"
44	11.5"	4.9"	0.2391"	3'–10"	20"	14"	1 1/8"	8	1"	4	5/8"

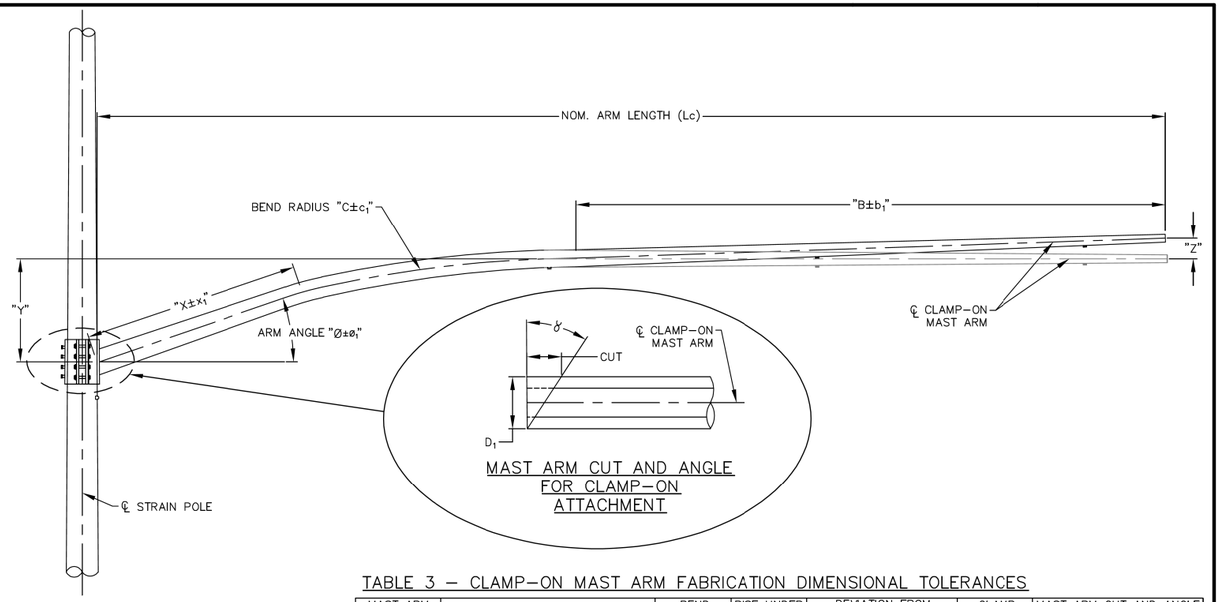
D_1 = POLE BASE O.D.
D_2 = POLE TOP O.D.
⚠ D_2 MAY BE INCREASED BY UP TO 1.0" FOR OCTAGONAL ARMS



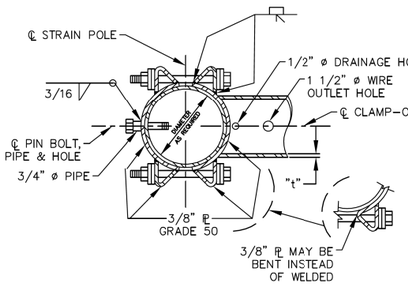
CLAMP–ON DETAIL 1
(ROUND MAST ARM)



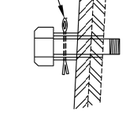
CLAMP–ON DETAIL 2
(OCTAGONAL MAST ARM)



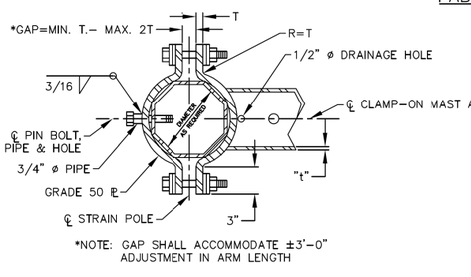
CLAMP–ON MAST ARM
FABRICATION TOLERANCES



CLAMP–ON DETAIL 1
(ROUND MAST ARM)
SECTION B–B

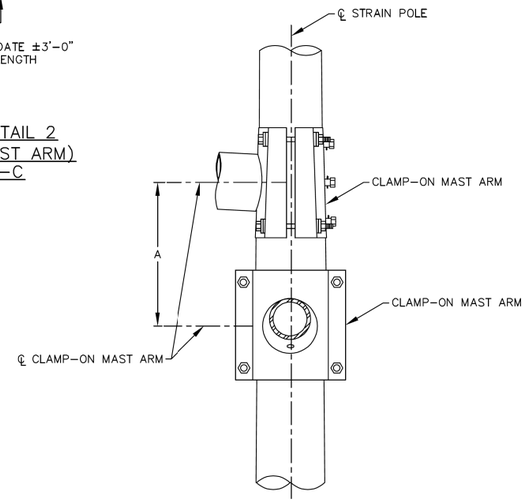


TYPICAL SHEAR
PIN DETAIL



*NOTE: GAP SHALL ACCOMMODATE ±3'–0" ADJUSTMENT IN ARM LENGTH

CLAMP–ON DETAIL 2
(OCTAGONAL MAST ARM)
SECTION C–C



TYPICAL DUAL CLAMP–ON
MAST ARM PLACEMENT

MATERIALS	
ROUND CLAMP–ON MAST ARM AND STRAIN POLE OR OCTAGONAL MAST ARM AND STRAIN POLE	ASTM A570 GR50 OR ASTM A572 GR50
PLATES (1)	ASTM A36 OR A572 GR50
CONNECTION BOLTS	ASTM A325 EXCEPT WHERE NOTED
PIN BOLTS	ASTM A325 EXCEPT WHERE NOTED
PIPE	ASTM A325
MISC. HARDWARE	ASTM A53 GR A OR B, OR A501
STEEL CABLE	ASTM A475, 7 WIRE, UTILITIES GRADE

(1) EITHER OF THE MATERIALS LISTED FOR PLATES MAY BE USED WHERE THE DRAWINGS DO NOT SPECIFY A PARTICULAR ASTM DESIGNATION.

TABLE 3 – CLAMP–ON MAST ARM FABRICATION DIMENSIONAL TOLERANCES

MAST ARM DESIGNATION (100 MPH)					BEND RADIUS		RISE UNDER LOAD	DEVIATION FROM HORIZONTAL (UNLOADED)		CLAMP ANGLE		MAST ARM CUT AND ANGLE FOR CLAMP ATTACHMENT			
	"X"	"x_1"	"B"	"b_1"	"C"	"c_1"	"Y"	"Z"	"β"	"ø"	"$ø_1$"	Lc	CUT	γ	D_1
DESCRIPTION	FT.	FT.	FT.	FT.	FT.	FT.	FT.	IN.	DEG.	DEG.	DEG.	FT.	IN.	ANGLE	DIA.(IN.)
20–HC10030	4'–6"	±1.0'	10'–5/8"	±1.0'	21.5'	±1.0'	3'–10"	3 1/4"±1/2"	±2.0'	29°	±1.0°	20	3 5/8"	24°	8"
20–HC10034	4'–6"	±1.0'	10'–5/8"	±1.0'	21.5'	±1.0'	3'–10"	3 1/4"±1/2"	±2.0'	29°	±1.0°	20	3 5/8"	24°	8"
25–HC10030	3'–10"	±1.0'	10'–5/8"	±1.0'	27.0'	±1.0'	3'–10"	3 1/4"±1/2"	±2.0'	24°	±1.0°	25	3 5/8"	24°	9"
25–HC10034	3'–10"	±1.0'	10'–5/8"	±1.0'	27.0'	±1.0'	3'–10"	3 1/4"±1/2"	±2.0'	24°	±1.0°	25	3 5/8"	24°	9"
30–HC10030	5'–6"	±1.0'	15'–1/2"	±1.0'	27.0'	±1.0'	3'–10"	6 1/4"±1/2"	±2.0'	24°	±1.0°	30	4 9/16"	25°	10"
30–HC10034	5'–6"	±1.0'	15'–1/2"	±1.0'	27.0'	±1.0'	3'–10"	6 1/4"±1/2"	±2.0'	24°	±1.0°	30	4 9/16"	25°	10"
35–HC10030	5'–6"	±1.0'	20'	±2.0'	27.0'	±1.0'	3'–10"	8 1/2"±3/4"	±2.0'	24°	±1.0°	35	4 9/16"	25°	10"
35–HC10034	5'–6"	±1.0'	20'	±2.0'	27.0'	±1.0'	3'–10"	8 1/2"±3/4"	±2.0'	24°	±1.0°	35	4 9/16"	25°	10"
40–HC10030	9'–2"	±1.0'	19'–2 5/8"	±2.0'	46.0'	±1.0'	3'–10"	4 1/16"±3/4"	±2.0'	15°	±1.0°	40	2 3/4"	8°	11"
40–HC10034	9'–2"	±1.0'	19'–2 5/8"	±2.0'	46.0'	±1.0'	3'–10"	4 1/16"±3/4"	±2.0'	15°	±1.0°	40	2 3/4"	8°	11"
42–HC10030	9'–2"	±1.0'	24'–6"	±2.0'	46.0'	±1.0'	3'–10"	10 5/8"±3/4"	±2.0'	14.5°	±1.0°	42	3 1/16"	15°	11"
42–HC10034	9'–2"	±1.0'	24'–6"	±2.0'	46.0'	±1.0'	3'–10"	10 5/8"±3/4"	±2.0'	14.5°	±1.0°	42	3 1/16"	15°	11"
44–HC10030	9'–2"	±1.0'	24'–6"	±2.0'	46.0'	±1.0'	3'–10"	10 7/8"±3/4"	±2.0'	14.5°	±1.0°	44	3 1/16"	15°	11.5"
44–HC10034	9'–2"	±1.0'	24'–6"	±2.0'	46.0'	±1.0'	3'–10"	10 7/8"±3/4"	±2.0'	14.5°	±1.0°	44	3 1/16"	15°	11.5"

GENERAL NOTES:

1.) DESIGN SHALL CONFORM TO 2001 OR LATEST ADDITION TO AASHTO STANDARD SPECIFICATIONS FOR THE STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS AND INTERIM SPECIFICATIONS DESIGN WIND SPEED EQUALS 100 MPH PLUS A 1.3 GUST FACTOR.
2.) STRAIN POLES ARE DESIGNED TO SUPPORT SPAN WIRE WITH ONE CLAMP–ON MAST ARM. THE SPECIFIED SIGNAL LOAD APPLIED AT THE END OF THE TRAFFIC SIGNAL ARM EQUALS 180 LBS. VERTICAL DEAD LOAD PLUS THE HORIZONTAL WIND LOAD ON AN EFFECTIVE PROJECTED AREA OF 32.4 SQ. FT. THE MAXIMUM PERMISSIBLE SPAN WIRE DESIGN LOADS TABULATED ARE CALCULATED AT A STRESS LOAD OF 1.40 TIMES THE BASIC ALLOWABLE STRESS. A SIMULTANEOUS WIND ON THE POLE, MAST ARM, AND LUMINAIRE IS ALSO INCLUDED. DESIGNS ARE BASED ON A SPAN WIRE AND ARM INCLUDED ANGLE OF 90 DEG. ANGLES OF LESS THAN 75 DEG. OR MORE THAN 105 DEG. WILL REQUIRE A SPECIAL DESIGN.
3.) FABRICATION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND WITH THE DETAILS AND DIMENSIONS. ALL WELDING SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIFICATIONS OF THE AMERICAN WIELDING SOCIETY STRUCTURAL WELDING CODE AWS LATEST EDITION.
4.) A MAXIMUM 1 1/2" WIDE VERTICAL SLOTTED HOLE MAY BE CUT IN THE FRONT CLAMP PLATE TO FACILITATE DRAINAGE DURING GALVANIZING. THE SLOT SHALL BE CENTERED BEHIND THE ARM AND SHALL BE NO LONGER THAN THE ARM DIAMETER MINUS 1".
5.) WHERE DUPLICATE PARTS OCCUR ON A DETAIL, WELDS SHOWN FOR ONE PART SHALL APPLY TO ALL SIMILAR PARTS ON THE DETAIL.
6.) PIN BOLTS ARE REQUIRED TO PREVENT ROTATION OF CLAMP–ON ARMS UNDER DESIGN WIND FORCES.
7.) PIN BOLTS SHALL BE ASTM A325 WITH THREADS EXCLUDED FROM THE SHEAR PLANE. PIN BOLT AND 3/4"ø PIPE SHALL HAVE 3/16"ø HOLES FOR A 1/8"ø GALVANIZED COTTER PIN. BACK CLAMP PLATE SHALL BE FURNISHED WITH A 3/4"ø HOLE FOR EACH PIN BOLT. AN 11/16"ø HOLE FOR EACH PIN BOLT SHALL BE DRILLED THROUGH THE POLE AFTER ARM ORIENTATIONS HAVE BEEN APPROVED BY THE ENGINEER. THE DRILLED HOLES SHALL BE PAINTED/SPRAYED WITH GALVANIZE PAINT.
8.) CLAMP–ON MAST ARM FABRICATIONS DIMENSIONAL TOLERANCES SHALL BE IN ACCORDANCE WITH TABLE 3.
9.) SEE SINGLE AND DUAL MAST ARM ASSEMBLIES DETAILS STANDARD SHEET FOR DETAILS OF CLAMP–ON MAST ARMS.
10.) SEE STRAIN POLE ASSEMBLY DETAILS STANDARD SHEET FOR DETAILS OF STRAIN POLE.
11.) SEE LUMINAIRE ARM DETAILS STANDARD SHEET FOR DETAILS OF LUMINAIRE ARM AND CONNECTION.
12.) SEE STRAIN POLE FOUNDATION DETAILS STANDARD SHEET FOR DETAILS OF ANCHOR BOLTS AND FOUNDATION.
13.) UNLESS OTHERWISE NOTED, ALL STEEL PARTS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 REQUIREMENTS WITH A MINIMUM OF 2 OUNCES PER SQUARE FOOT OF GALVANIZED COATING.
14.) ALL SMALL STEEL HARDWARE ITEMS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A153 REQUIREMENTS.
15.) SPECIAL DESIGNS REQUIRE SUBMISSION OF SHOP DRAWINGS IN ACCORDANCE WITH HARRIS COUNTY STANDARD SPECIFICATION ITEM 686 "TRAFFIC SIGNAL POLE ASSEMBLIES."
16.) ALL BOLTS SHALL HAVE TWO FULL DIAMETER THREADS EXPOSED ABOVE THE NUT.
17.) CONTRACTOR SHALL INSTALL A CLOSE NIPPLE WITH LOCKNUTS AND METAL BUSHINGS (SIZE AS REQUIRED) TO PREVENT ABRASION WHERE CABLE(S) ENTER ANY PORTION OF THE STRAIN POLE.
18.) CLAMP–ON MAST ARM(S) AND STRAIN POLE(S) SHALL HAVE THE SAME GEOMETRIC SHAPES PER ASSEMBLY.

NO.	REVISIONS	DATE	NAME

HARRIS COUNTY ENGINEERING DEPARTMENT

TEDSI INFRASTRUCTURE GROUP
TEDSI TBPE F-1640
Consulting Engineers
738 Hwy 6 South, Suite 430
Houston, Texas 77079
(832) 619-1000

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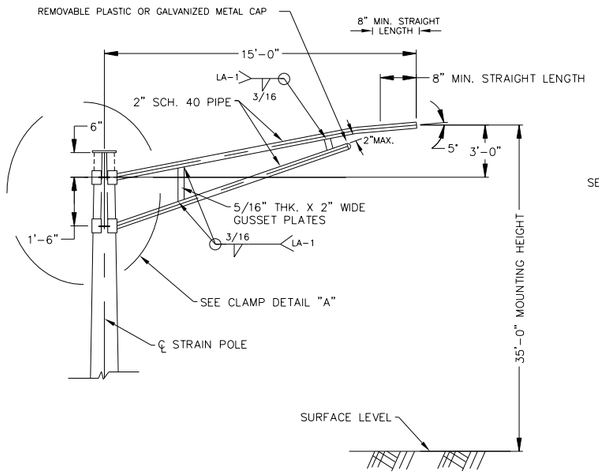
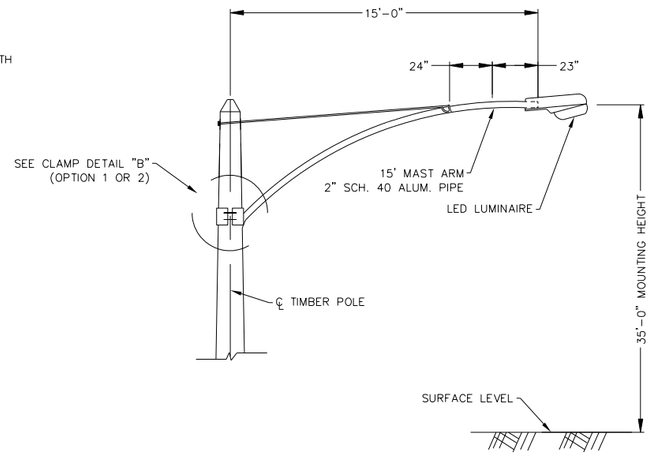
M. R. NEELAPU
107595
8/22/2024
DATE

PROJECT TITLE: TRAFFIC SIGNALS ON ANTOINE DRIVE
DRAWN BY: BSH
SHEET DESCRIPTION: MAST ARM CONNECTIONS AND FABRICATION
JOB NO: 2024-2161-01
CK'D BY: BSH
DETAILS (100 MPH WIND ZONE)
FILE NAME: MAC
SCALE: NONE
FILE NO.
DATE: 7/9/15
APPROVED BY:
SHT NO: 587 / 718

pw:\\tedsi-pw.bentley.com:tedsi-pw-01\Documents\Projects\2024\2024-216i-01 - Antoine Drive Signals\6.0 TEDSIDesign\6.08 CADD\6.08.01Sheet Files\Standard Details\HC_DETAILS_TRAFFIC.dgn
8/22/2024



TRUSS LUMINAIRE ARM



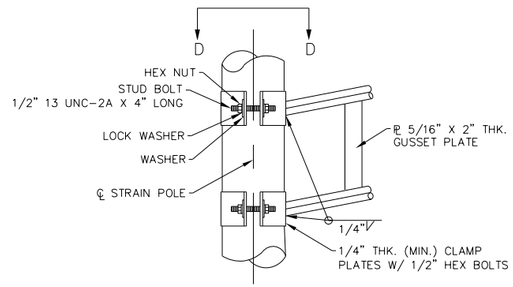
TENSION ROD LUMINAIRE ARM
(TIMBER POLE)

MATERIALS	
LUMINAIRE ARM	ASTM A53 GR A OR B OR A501 OR 595 (2) ALUMINUM 6061-T6
LUMINAIRE ARM PLATES (3)	ASTM A36 OR A572 GR50 (1) OR A595 GR A
MISCELLANEOUS	ASTM DESIGNATIONS AS NOTED

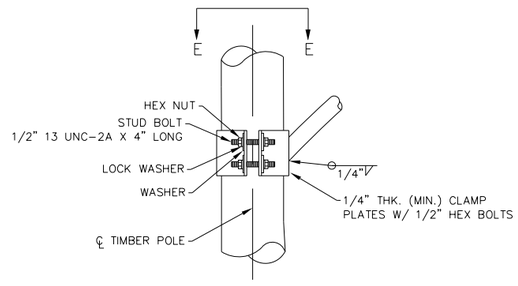
1.) IF A595 GR A MATERIAL IS USED, ARM NEED NOT BE COLD WORKED TO A595 REQUIREMENTS, BUT MATERIAL MUST HAVE 40 KSI MINIMUM YIELD PRIOR TO FABRICATION.
2.) EITHER OF THE MATERIALS LISTED FOR PLATES MAY BE USED WHERE THE DRAWINGS DO NOT SPECIFY A PARTICULAR ASTM DESIGNATION.
3.) ALL MATERIAL FOR TENSION ROD LUMINAIRE ARM EXCEPT BOLTS SHALL BE ALUMINUM 6061-T6.

GENERAL NOTES:

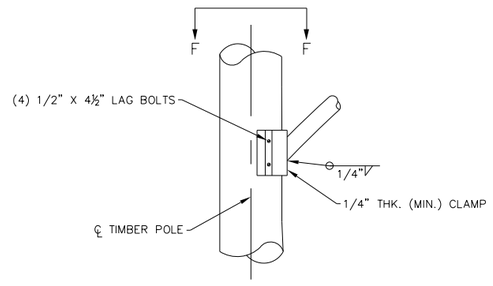
1.) DESIGN SHALL CONFORM TO HIGHWAY SIGNS, AASHTO STANDARD SPECIFICATIONS FOR STRUCTURE SUPPORTS FOR LUMINAIRES AND TRAFFIC SIGNALS, LATEST EDITION. DESIGN WIND SPEED EQUALS 90 MPH PLUS A 1.3 GUST FACTOR. ARMS ARE DESIGNED AREA TIMES DRAG COEFFICIENT) OF 1.5 SQ. FT.
2.) MATERIALS AND FABRICATION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND WITH THE DETAILS, DIMENSIONS, AND WELD PROCEDURES OF THE "AMERICAN NATIONAL STANDARD INSTITUTE/AMERICAN WELDING SOCIETY" ANSI/AWS D1.1, LATEST REVISION.
3.) WELD REFERENCES CALL FOR PREAPPROVED WELD PROCEDURES WHICH THE FABRICATOR MUST OBTAIN PRIOR TO FABRICATION. IN THE ABSENCE OF SPECIFIED FABRICATION TOLERANCES, DIMENSIONS SHALL BE WITHIN THE TOLERANCES GENERALLY OBTAINABLE IN NORMAL FABRICATION PRACTICE.
4.) UNLESS OTHERWISE NOTED, ALL PARTS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123.
5.) SUBMISSION OF SHOP DRAWINGS TO HARRIS COUNTY ENGINEER ON LUMINAIRE ARMS IS REQUIRED.



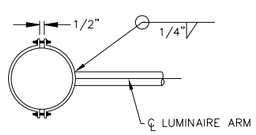
CLAMP DETAIL "A"



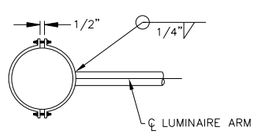
CLAMP DETAIL "B"
(OPTION 1)



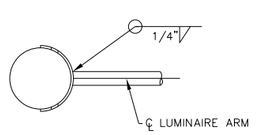
CLAMP DETAIL "B"
(OPTION 2)



SECTION D-D



SECTION E-E



SECTION F-F

NO.	REVISIONS	DATE	NAME

HARRIS COUNTY ENGINEERING DEPARTMENT

TEDSI INFRASTRUCTURE GROUP
Consulting Engineers
738 Hwy 6 South, Suite 430
Houston, Texas 77079
(832) 619-1000
TEDSI
TBPE F-1640

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M. R. NEELAPU
107595
8/22/2024
DATE

PROJECT TITLE: TRAFFIC SIGNALS ON ANTOINE DRIVE		
DRAWN BY: BSH	SHEET DESCRIPTION: LUMINAIRE ARM DETAILS (100 MPH WIND ZONE)	JOB NO.: 2024-2161-01
CK'D BY: BSH		FILE NAME: LUM-A
SCALE: NONE		FILE NO.:
DATE: 7/9/15	APPROVED BY:	SHT NO.: 588 / 718

pw:\\tedsi-pw.bentley.com:tedsi-pw-01\Documents\Projects\2024\2024-2161-01- Antoine Drive Signals\6.0 TEDSI Design\6.08 CADD\6.08.01 Sheet Files\Standard Details\HC_DETAILS_TRAFFIC.dgn
8/22/2024

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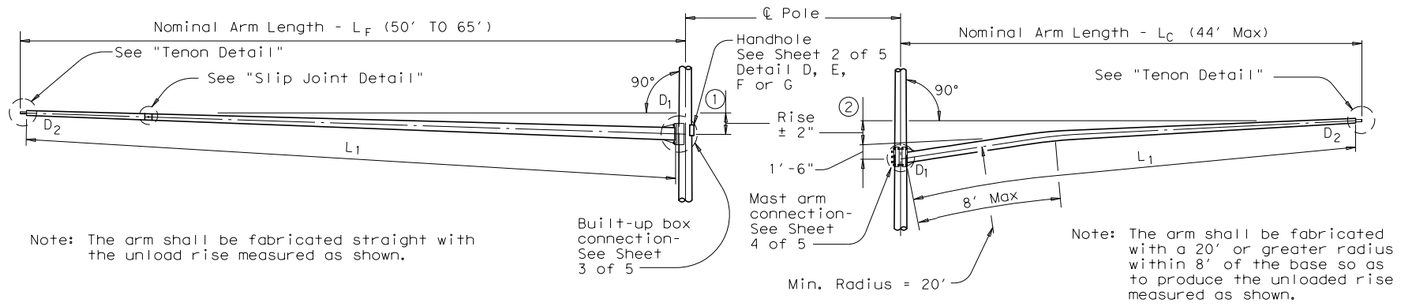
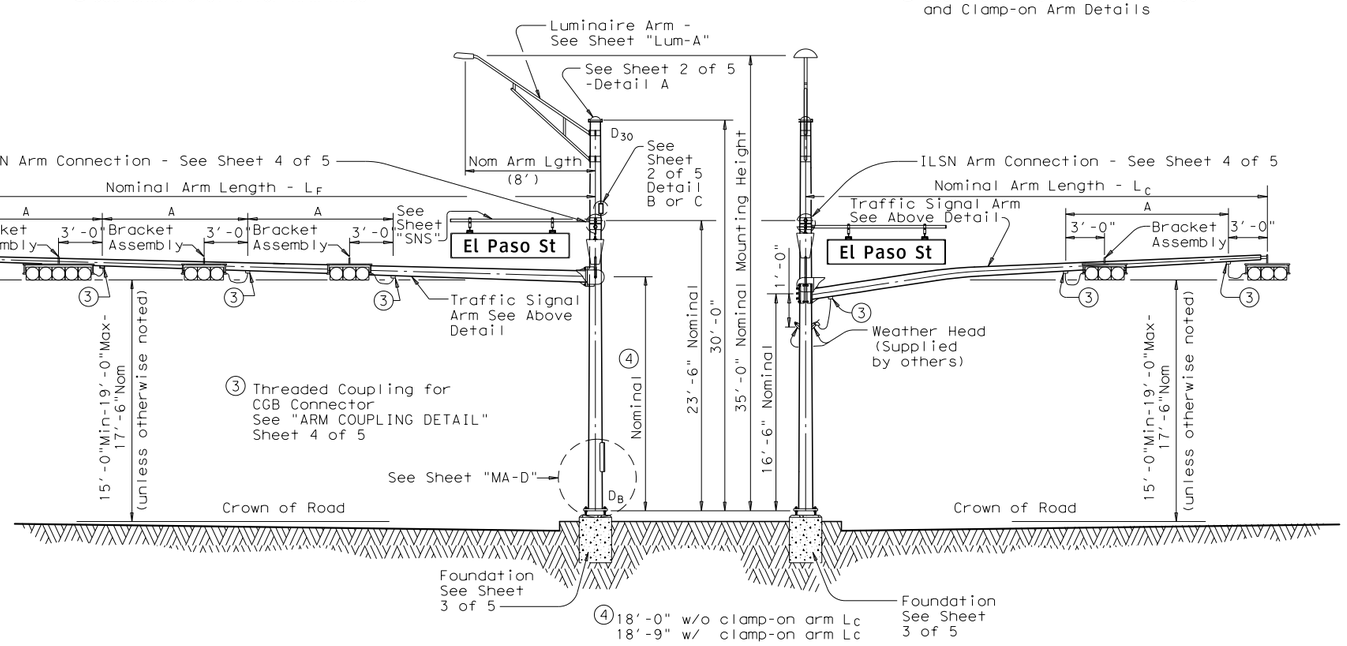


FIXED MOUNT TRAFFIC SIGNAL ARM

① See Sheet 3 of 5 for Arm Rise



CLAMP-ON TRAFFIC SIGNAL ARM (IF REQUIRED)

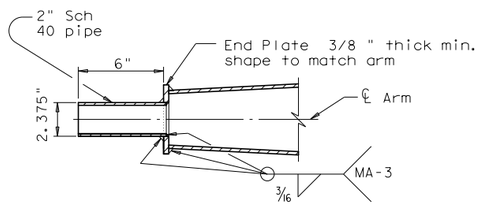
② See Sheet 4 of 5 for Arm Rise and Clamp-on Arm Details

ELEVATION
(Showing fixed mount arm)

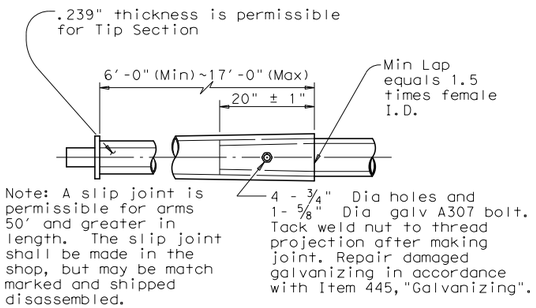
STRUCTURE ASSEMBLY

ELEVATION
(Showing clamp-on arm)

TABLE OF DIMENSIONS "A"										
Arm Length	24'	28'	32'	36'	40'	44'	50'	55'	60'	65'
Arm Type II	10'	11'	12'	13'						
Arm Type III			10'	11'	12'	12'				
Arm Type IV							12'	12'	12'	12'



TENON DETAIL



Note: A slip joint is permissible for arms 50' and greater in length. The slip joint shall be made in the shop, but may be match marked and shipped disassembled.

SLIP JOINT DETAIL(FIXED MOUNT ARM)

GENERAL NOTES:

Design conforms to 1994 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals and Interim Specifications thereto. Design Wind Speed can be either 100 mph or 80 mph plus a 1.3 gust factor. If clamp-on traffic signal is required, designs are based on an arm included angle of 90 degrees or more. Angles of less than approximately 75 degrees will require a special design.

Poles are designed to support one 8'-0" luminaire arm, two 9'-0" internally lighted street name (ILSN) signs and two traffic signal arms with limited length combinations.

Each arm with its related attachment is shown below

Arm	Equivalent DL ⑤	WL EPA ⑤⑥
8' Luminaire Arm	Luminaire 60 lbs	1.6 sq ft
9' ILSN Arm	Sign 85 lbs	11.5 sq ft
50' to 65' Fixed Mount Arm	Signal Loads 310 lbs	52 sq ft
Up to 44' Clamp-on Arm	Signal Loads 180 lbs	32.4 sq ft

⑤ Equivalent dead load plus horizontal wind load applied at the end of arm except ILSN arm, which applied 4.5' from the centerline of the pole.

⑥ Effective projected area (actual area times drag coefficient) for the application of horizontal wind load.

Except as noted in Sheet 1 thru 5 of 5, other details not covered shall refer to Standard Sheet "MA-D" for pole details, "LUM-A" for luminaire arm and connection details, "SNS" for internally lighted street name sign details, and "TS-FD" for anchor bolt and foundation details.

Fabrication shall be in accordance with Item 686, "Traffic Signal Pole Assemblies (Steel)" and with the details, dimensions, and weld procedures shown herein. Weld references call for preapproved weld procedures which the Fabricator must obtain prior to fabrication. Material, fabrication tolerances, and shipping practices shall also meet the requirements of this sheet and Item 686, "Traffic Signal Pole Assemblies (Steel)".

Unless otherwise noted, all parts shall be galvanized in accordance with Item 445, "Galvanizing" after fabrication.

Deviations from the details and dimensions shown herein require submission of shop drawings in accordance with the Item 441, "Steel Structures". Alternate designs are not acceptable.

Installation of damping plate for the long mast arm is not recommended.

Provision of the bracket assembly used to support the traffic signal heads shall be under the direction of the Engineer for approval.

Design also conforms to NCHRP Report 412 for fatigue resistance except that there are no stiffeners at the base plate. TxDOT is conducting tests to determine if stiffeners at the base plate will or will not result in optimal performance; depending upon the results of the tests, poles may need a retrofit to ensure optimal fatigue performance.

Texas Department of Transportation
Traffic Operations Division

TRAFFIC SIGNAL SUPPORT STRUCTURES
LONG MAST ARM ASSEMBLY (50 TO 65 FT) (80 AND 100 MPH WIND ZONE)
LMA(1)-12

Sheet 1 of 5

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DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
REVISIONS	CONT	SECT	JOB	HIGHWAY
4-20-01 1-12				
	DIST	COUNTY		SHEET NO.
				589

131A

DATE:
FILE:

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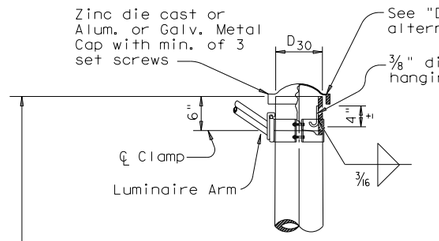
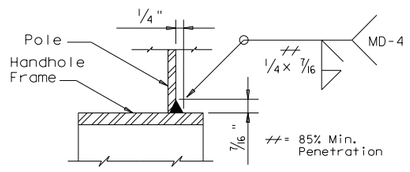
DATE:
FILE:

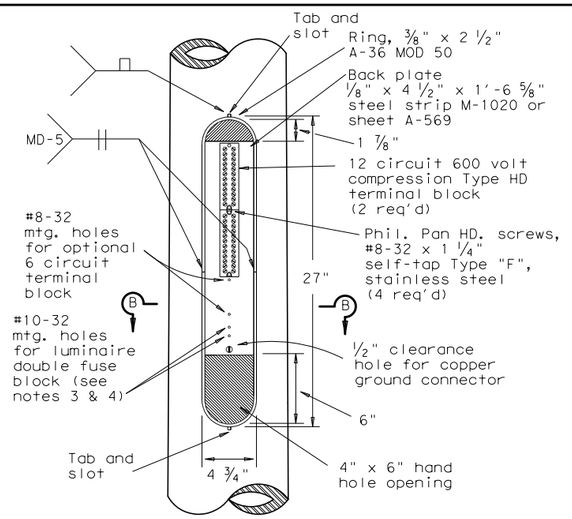


DETAIL A

(for pole with luminaire)



DETAIL H

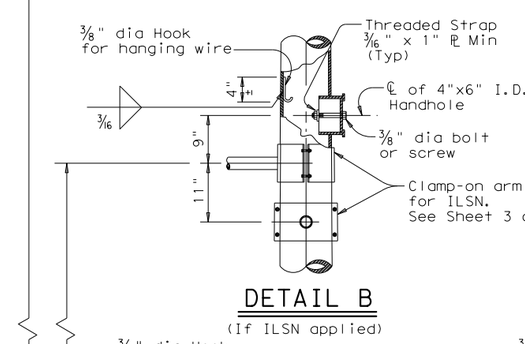


ACCESS COMPARTMENT

MATERIALS	
Round Shafts or Polygonal Shafts (7)	ASTM A595 Gr.A, A588, A1008 HSLAS Gr.50 Class 2, A1011 HSLAS Gr.50 Class 2, A572 Gr.50 or A1011 SS Gr.50 (8)
Plates (7)	ASTM A36, A588, or A572 Gr.50
Connection Bolts	ASTM A325, or A449 except where noted
Pin Bolts	ASTM A325
Pipe (7)	ASTM A53 Gr.B, A501, A1008 HSLAS-F Gr.50, A1011 HSLAS-F Gr.50
Misc. Hardware	Galvanized steel or stainless steel or as noted

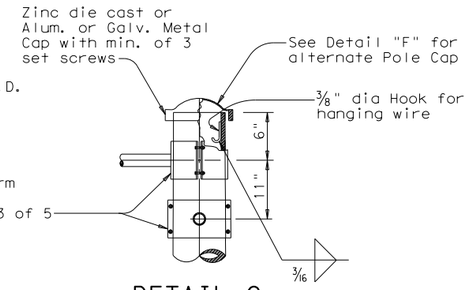
(7) ASTM A572, A1008 HSLAS, A1011 HSLAS, A1008 HSLAS-F, A1011 HSLAS-F, or A1011 SS may have higher yield strengths but shall not have less elongation than the grade indicated.

(8) ASTM A1011 SS Gr.50 shall also have a minimum elongation of 18 percent in 8 inches or 23 percent in 2 inches. Material thickness in excess of those stipulated under A1011 SS will be acceptable providing the material meets all other A1011 SS requirements and the requirements of this item.

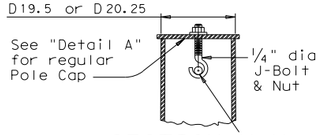


DETAIL B

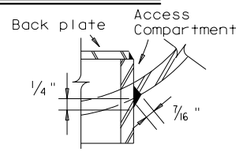
(If ILSN applied)



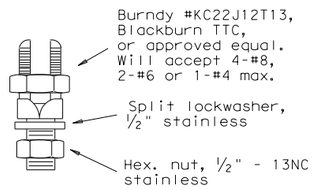
DETAIL C



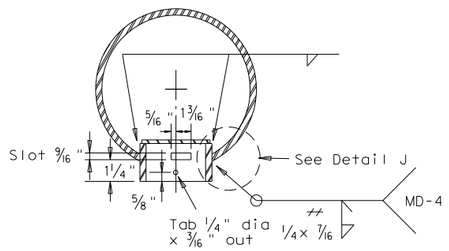
SECTION Y-Y



DETAIL J



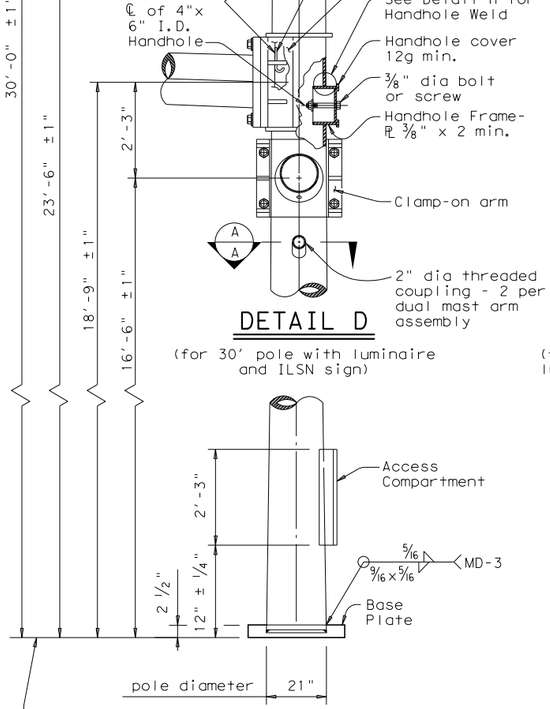
COPPER GROUND CONNECTOR



SECTION B-B

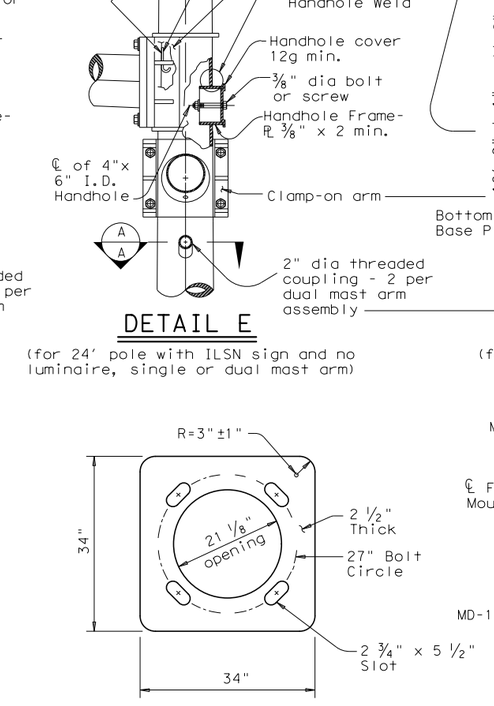
// = 85% Min. Penetration

Opening for access compartment shall be no more than 1/16 inch wider than the access compartment itself.



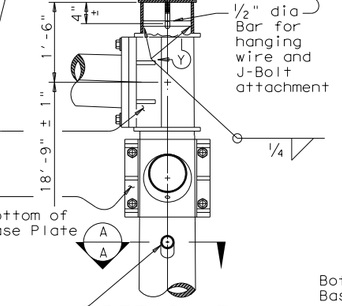
DETAIL D

(for 30' pole with luminaire and ILSN sign)



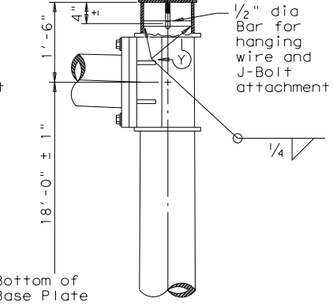
DETAIL E

(for 24' pole with ILSN sign and no luminaire, single or dual mast arm)



DETAIL F

(for 20.25' pole with no ILSN sign and no luminaire, dual mast arm)

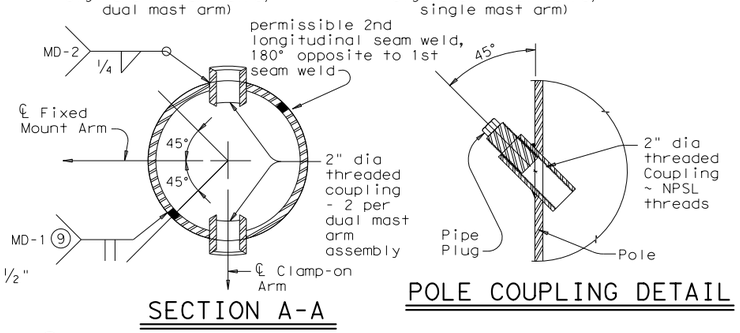


DETAIL G

(for 19.5' pole with no ILSN sign and no luminaire, single mast arm)

POLE ELEVATION

BASE PLATE



SECTION A-A

POLE COUPLING DETAIL

(9) Longitudinal seam weld must be oriented within 90° (45° rotation each side) along the fixed mount arm. 60% min penetration required, 100% penetration within 6" of circumferential base weld.

ACCESS COMPARTMENT NOTES:

1. The cover shall be one piece formed from ABS plastic, shall be a pearl gray color, and shall be suitable for exposure to harsh sunlight and extreme weather. Cover shall latch with two screw latches and shall fit tightly to the enclosure ring to create a rainproof seal. Latch screws shall be 1/4-20 stainless flat socket head screws with tamper proof feature.
2. The pole manufacturer shall provide with each pole a separate kit consisting of: one cover with two latching assemblies, two terminal strips (Marathon #985GP12CU or approved equal), four #8-32 x 1 1/4" self tapping type "F" stainless steel pan head screws, and one ground connector (Blackburn TTC, Burndy KC22J12T13, or Ilsco SSS-5). The traffic signal contractor shall install the kit items in the field.
3. The screw hole spacing on the enclosure back plate shall be for two Marathon #985GP12 terminal strips, one Marathon #985GP06CU terminal strip, and one Bussmann #BM6032B fuse block.
4. Install one Bussmann #BM6032B, Littelfuse #L60030M-2C, or Ferraz-Shawmut #30352 fuse block for poles where luminaires are to be installed.

Texas Department of Transportation
Traffic Operations Division

TRAFFIC SIGNAL SUPPORT STRUCTURES
LONG MAST ARM ASSEMBLY (50 TO 65 FT) (80 AND 100 MPH WIND ZONE)

Sheet 2 of 5

LMA(2)-12

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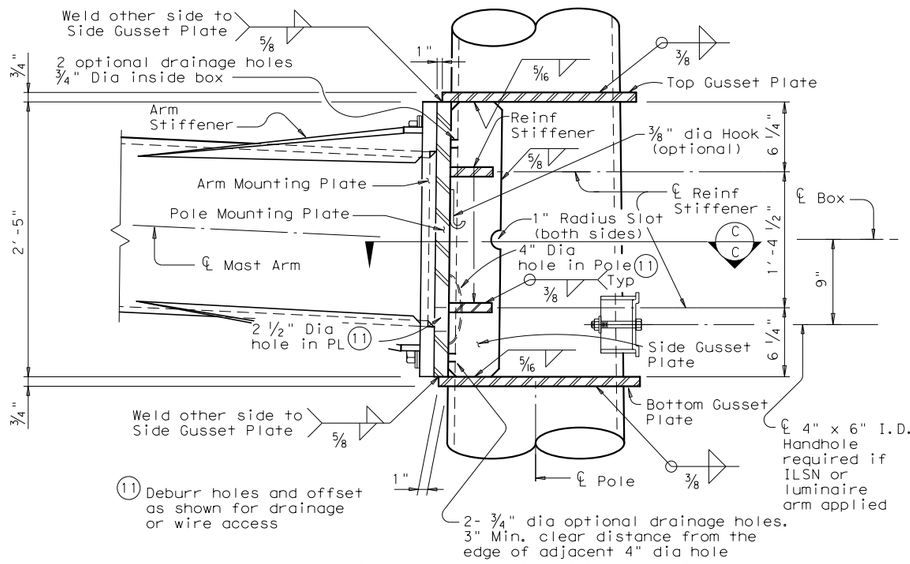
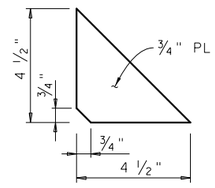
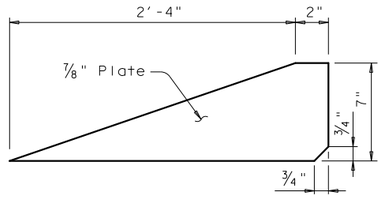


BUILT-UP BOX CONNECTION

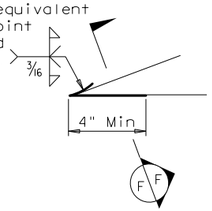


REINFORCING STIFFENER



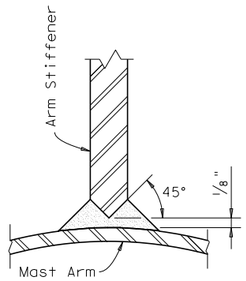
ARM STIFFENER
(Cut to match arm inclination and taper)

Provide Detail shown in SECTION F-F or equivalent 100% complete joint penetration weld from both sides.



Only 4" length at tip of Arm Stiffener requires a complete joint penetration weld. Smooth weld radius to connect Stiffener. Only a fillet weld is required for the remaining weld length.

DETAIL "K"



SECTION F-F

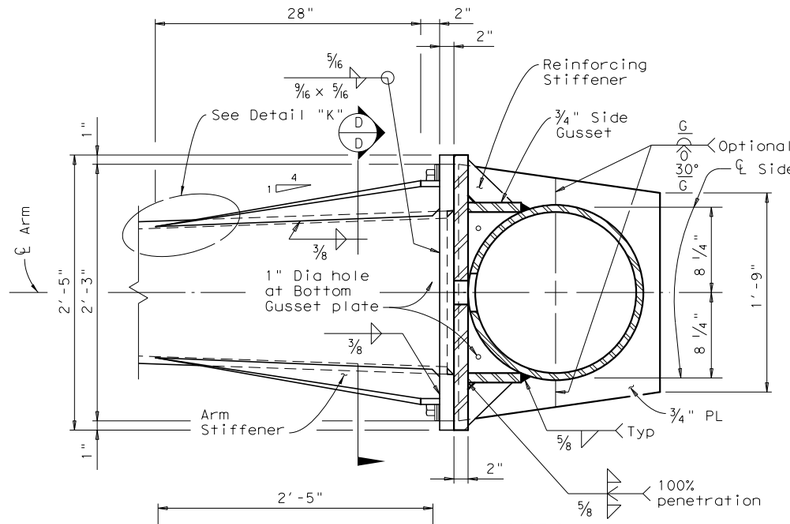
Fixed Mount Arm L_F	ROUND POLES (13)					Foundation Type
	D_B	$D_{19.5}$ or $D_{20.25}$	D_{24}	D_{30}	(12) thk	
ft.	in.	in.	in.	in.	in.	
50', 55' 60', 65'	21.0	18.2	17.6	16.8	.3125	48-A

Fixed Mount Arm L_F	ROUND ARMS (13)				
	L_1	D_1	D_2	(12) thk	Rise
ft.	ft.	in.	in.	in.	
50	49	18.5	11.7	.3125	3'- 3"
55	54	18.5	11.0	.3125	3'- 7"
60	59	18.5	10.3	.3125	3'-11"
65	64	18.5	9.6	.3125	4'- 4"

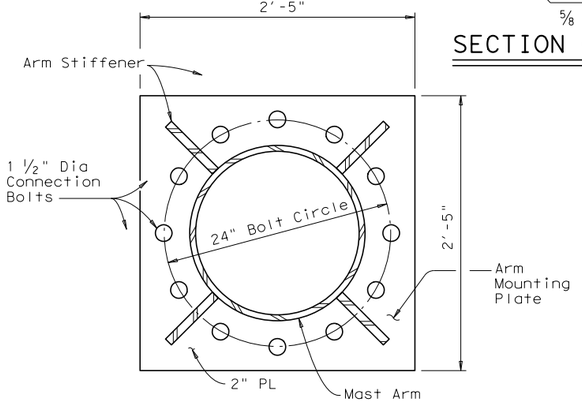
D_B = Pole Base O.D.
$D_{19.5}$ = Pole Top O.D. with no Luminaire and no ILSN (single mast arm)
$D_{20.25}$ = Pole Top O.D. with no Luminaire and no ILSN (dual mast arm)
D_{24} = Pole Top O.D. with ILSN w/out Luminaire
D_{30} = Pole Top O.D. with Luminaire
D_1 = Arm Base O.D.
D_2 = Arm End O.D.
L_1 = Shaft Length
L_F = Fixed Arm Length

(12) Thickness shown is minimum, thicker materials may be used.

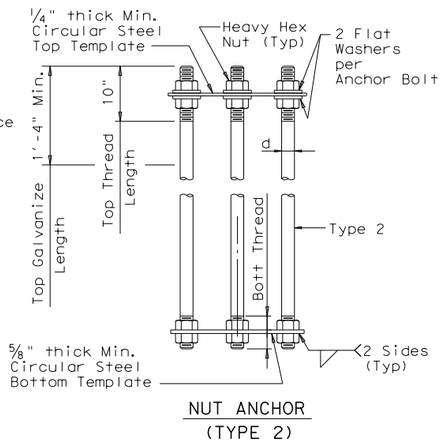
(13) Shaft profile 16-sided or 18-sided is considered to be equivalent to round section.



SECTION C-C

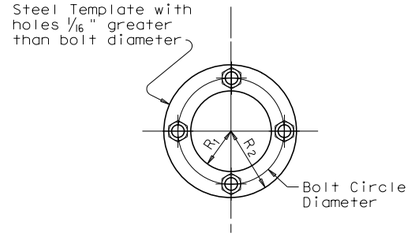


SECTION D-D



NUT ANCHOR
(TYPE 2)

ANCHOR BOLT ASSEMBLY



TEMPLATE DETAIL

FOUNDATION DESIGN TABLE													
FDN TYPE	DRILLED SHAFT DIA	REINFORCING STEEL		DRILLED SHAFT LENGTH-ft (16), (17), (18)			ANCHOR BOLT DESIGN (14)				FOUNDATION DESIGN LOAD (15)		TYPICAL APPLICATION
		VERT BARS	SPIRAL & PITCH	TEXAS CONE PENETROMETER N blows/ft			ANCHOR BOLT DIA	Fy (ksi)	BOLT CIR DIA	ANCHOR TYPE	MOMENT K-ft	SHEAR Kips	
				10	15	40							
48-A	48"	20 #9	#4 at 6"	21.9	19.5	14.7	2 1/2"	55	27"	2	490	10	50' to 65' Mast arm assembly.

SEE SHEET "TS-FD" FOR ADDITIONAL DETAILS.

(14) Anchor bolt design develops the foundation capacity given under Foundation Design Loods.

(15) Foundation Design Loads are the allowable moments and shears at the base of the structure.

(16) Field Penetrometer readings at a depth of approximately 3 to 5 feet may be used to adjust shaft lengths.

(17) If rock is encountered, the Drilled Shaft shall extend a minimum of two diameters into solid rock.

(18) Decimal lengths in Design Table are to allow interpolation for other penetrometer values. Round to nearest foot for entry into Summary Table.

GENERAL NOTES:

Built-up Box Connection: For the welded arm-to-pole connection as a build-up box configuration illustrated here is an example only, fabricators are required to submit a shop drawing of box connection for approval. The drawing shall specify the details of each box element, welds of arm-to-pole connection, arm-to-plate socket connection, and arm rise creation. Specify the proper location of drain holes along the pole. 2 1/2" dia hole in the pole mounting plate and 4" dia hole in the pole need to be aligned for wiring access or drainage. Arm stiffeners cut to match arm inclination and taper shall also be included.

The deviation from flat for either arm or pole mounting plate shall not exceed 1/32 in., which is measured along the center of mounting plate to a radial distance of 13.5 in. The deformed-from-flat connection between arm and pole mounting plates shall not be allowed if the center of both mounting plates cannot contact directly.

Fixed mount details are used for single mast arm assemblies and for the first arm on dual mast arm assemblies.

ANCHOR BOLT & TEMPLATE SIZE						
Bolt Dia in.	Length ‡	Top Thread	Bottom Thread	Bolt Circle	R_2	R_1
2 1/2"	5'-2"	10"	6 1/2"	27"	16"	11"

‡ Min dimension given, longer bolts are acceptable.

Texas Department of Transportation
Traffic Operations Division

TRAFFIC SIGNAL SUPPORT STRUCTURES
LONG MAST ARM ASSEMBLY (50 TO 65 FT) (80 AND 100 MPH WIND ZONE)

Sheet 3 of 5 LMA(3)-12

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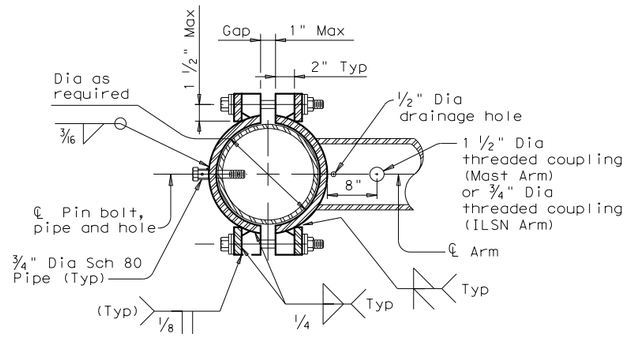
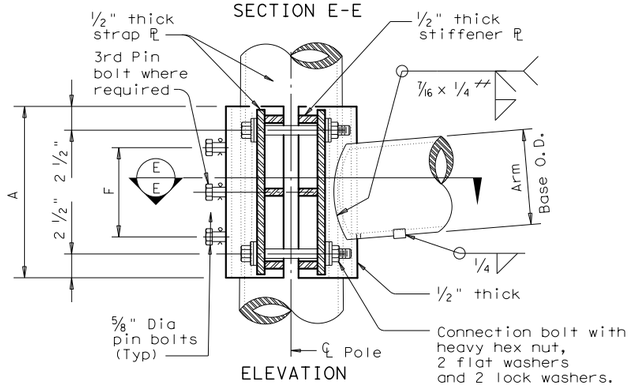


SECTION E-E



ELEVATION
(Mast Arm or ILSN Arm to pole)

= 85% Min. Penetration

CLAMP-ON CONNECTION

80 MPH WIND

Clamp-on Arm Lc	ROUND ARMS					POLYGONAL ARMS				
	L_1	D_1	D_2	thk (12)	Rise	L_1	D_1	D_2	thk (12)	Rise
ft.	ft.	in.	in.	in.		ft.	in.	in.	in.	
20	19.1	6.5	3.8	.179	1'-9"	19.1	7.0	3.5	.179	1'-8"
24	23.1	7.5	4.3	.179	1'-10"	23.1	7.5	3.5	.179	1'-9"
28	27.1	8.0	4.2	.179	1'-11"	27.1	8.0	3.5	.179	1'-10"
32	31.0	9.0	4.7	.179	2'-1"	31.0	9.0	3.5	.179	2'-0"
36	35.0	9.5	4.6	.179	2'-4"	35.0	10.0	3.5	.179	2'-1"
40	39.0	9.5	4.1	.239	2'-8"	39.0	9.5	3.5	.239	2'-3"
44	43.0	10.0	4.1	.239	2'-11"	43.0	10.0	3.5	.239	2'-6"

100 MPH WIND

Clamp-on Arm Lc	ROUND ARMS					POLYGONAL ARMS				
	L_1	D_1	D_2	thk (12)	Rise	L_1	D_1	D_2	thk (12)	Rise
ft.	ft.	in.	in.	in.		ft.	in.	in.	in.	
20	19.1	8.0	5.3	.179	1'-8"	19.1	8.0	3.5	.179	1'-7"
24	23.1	9.0	5.8	.179	1'-9"	23.1	9.0	3.5	.179	1'-8"
28	27.1	9.5	5.7	.179	1'-10"	27.1	10.0	3.5	.179	1'-9"
32	31.0	9.5	5.2	.239	1'-11"	31.0	9.5	3.5	.239	1'-10"
36	35.0	10.0	5.1	.239	2'-0"	35.0	10.0	3.5	.239	1'-11"
40	39.0	10.5	5.1	.239	2'-3"	39.0	11.0	3.5	.239	2'-1"
44	43.0	11.0	5.1	.239	2'-8"	43.0	11.5	4.0	.239	2'-3"

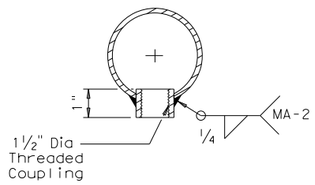
D1 = Arm Base O.D.
D2 = Arm End O.D.
L1 = Shaft Length
Lc = Clamp-on Arm Length

(12) Thickness shown is minimum, thicker materials may be used.

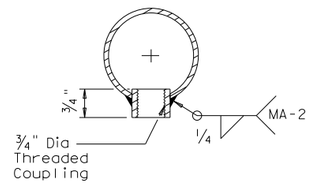
CLAMP-ON ARM CONNECTION

ILSN Arm Size		A	F	4 Conn. Bolts	⅝" Dia. Pin Bolts
Sch 40 pipe Dia	Thick			Dia	No.
in.	in.	in.	in.	in.	ea
3	.216	10	4	¾	2

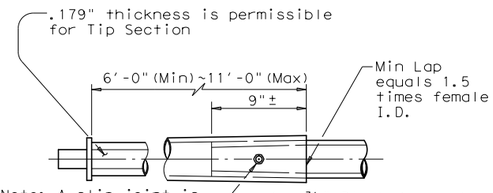
Mast Arm Size		A	F	4 Conn. Bolts	⅝" Dia. Pin Bolts
Base Dia	Thick			Dia	No.
in.	in.	in.	in.	in.	ea
6.5	.179	12	6	1	2
7.5	.179	14	8	1	2
8.0	.179	14	8	1	2
9.0	.179	16	10	1	2
9.5	.179	18	12	1 ¼	3
9.5	.239	18	12	1 ¼	3
10.0	.239	18	12	1 ¼	3
10.5	.239	18	12	1 ¼	3
11.0	.239	18	12	1 ¼	3
11.5	.239	18	12	1 ¼	3



ARM COUPLING DETAIL



ILSN ARM COUPLING DETAIL

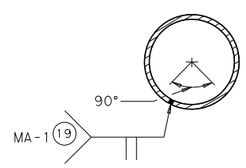


Note: A slip joint is permissible for arms 40' and greater in length. The slip joint shall be made in the shop, but may be match marked and shipped disassembled.

SLIP JOINT DETAIL (CLAMP-ON ARM)

Stainless steel bands (or Cables) and cast bracket as in "Astro-Brac", "Sky Bracket" or "Easy Bracket" with 1 ½" Dia Threaded Coupling.

BRACKET ASSEMBLY



ARM WELD DETAIL

(19) Longitudinal Seam Weld must be oriented within the lower 90° of the signal arm.
60% Min penetration
100% penetration within 6" of circumferential base welds.

GENERAL NOTES:

Clamp-on details are used for the second arm on dual mast arm assemblies or ILSN arm support. For a clamp-on mast arm, a maximum 1 ½" wide vertical slotted hole may be cut in the front clamp plate to facilitate drainage during galvanizing. The slot shall be centered behind the arm and shall be no longer than the arm diameter minus 1". For an ILSN arm, a 1 ½" diameter hole shall be cut in the front clamp plate for wire access. A matched hole shall be field drilled through the pole to provide wire access after arm is oriented. Deburr both holes.

Where duplicate parts occur on a detail, welds shown for part shall apply to all similar parts on the detail.

Pin bolts are required to prevent rotation of clamp-on arms under design wind forces. Pin bolts shall be ASTM A325 with threads excluded from the shear plane. Pin bolt and ¾" diameter pipe shall have 3/16" diameter holes for a ⅛" diameter galvanized cotter pin. Back clamp plate shall be furnished with a ¾" diameter hole for each pin bolt. An 11/16" diameter hole for each pin bolt shall be field drilled through the pole after arm orientations have been approved by the Engineer.

Texas Department of Transportation
Traffic Operations Division

TRAFFIC SIGNAL SUPPORT STRUCTURES
LONG MAST ARM ASSEMBLY (50 TO 65 FT) (80 AND 100 MPH WIND ZONE)

Sheet 4 of 5 LMA(4)-12

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Shipping Parts List

Ship each pole with the following attached: enlarged hand hole, pole cap, fixed arm connection bolts and washers, and any additional hardware listed in the table.

Nominal Arm Length	30' Poles with Luminaire: See note above plus: one (or two if ILSN attached) small hand hole, clamp-on simplex		24' Poles with ILSN: See note above plus one small hand hole		19.50' (Single Mast Arm) 20.25' (Dual Mast Arm) Poles with no Luminaire and no ILSN: See note above	
Single Mast Arm						
Lf ft.	Designation	Quantity	Designation	Quantity	Designation	Quantity
50	50L	*4	50S		50	
55	55L		55S		55	*2
60	60L		60S		60	
65	65L		65S		65	

Dual Mast Arm

Lf ft.	Lc ft.	Designation	Quantity	Designation	Quantity	Designation	Quantity
50	20	5020L		5020S		5020	
	24	5024L		5024S		5024	
	28	5028L		5028S		5028	
	32	5032L		5032S		5032	
	36	5036L		5036S		5036	
	40	5040L		5040S		5040	
	44	5044L		5044S		5044	
55	20	5520L		5520S		5520	
	24	5524L		5524S		5524	
	28	5528L		5528S		5528	
	32	5532L		5532S		5532	
	36	5536L		5536S		5536	
	40	5540L		5540S		5540	
	44	5544L		5544S		5544	
60	20	6020L		6020S		6020	
	24	6024L		6024S		6024	
	28	6028L		6028S		6028	
	32	6032L		6032S		6032	
	36	6036L		6036S		6036	
	40	6040L		6040S		6040	
	44	6044L		6044S		6044	
65	20	6520L		6520S		6520	
	24	6524L		6524S		6524	
	28	6528L		6528S		6528	
	32	6532L		6532S		6532	
	36	6536L		6536S		6536	
	40	6540L		6540S		6540	
	44	6544L		6544S		6544	

Foundation Summary Table **

	Location Ident.	Avg. N Blow/ft.	No. Each	Drill Shaft Length (feet)
				48-A
	ANTOINE DR AT W MOUNT HOUSTON ROAD			
*	POLE 1	10	1	22
*	POLE 2	10	1	22
*	POLE 3	10	1	22
*	POLE 4	10	1	22
	ANTOINE DR AT BRIDGE FOREST DR			
*	POLE 2	10	1	22
*	POLE 4	10	1	22
	Total Drill Shaft Length			132

*** Notes

** Foundations may be listed separately or grouped according to similarity of location and type. Quantities are for the Contractor's information only.

*** Decimal lengths in Design Table are to allow interpolation for other penetrometer values. Round to nearest foot for entry into Summary Table.

Shipping Parts List

Traffic Signal Arms (Fixed Mount) (1 per pole)
Ship each arm with listed equipment attached

Nominal Arm Length	Type IV Arm (4 Signals) 3 Bracket Assembly and 4 CGB Connectors	
ft.	Designation	Quantity
50	50IV	*4
55	55IV	*2
60	60IV	
65	65IV	

Luminaire Arms (1 per 30' pole)

Nominal Arm Length	Quantity
8' Arm	*4

ILSN Arm (Max. 2 per pole) Ship with clamps, bolts and washers

Nominal Arm Length	Quantity
7' Arm	
9' Arm	

Traffic Signal Arms (80 MPH Clamp-On Mount) (1 per pole) Ship each arm with listed equipment attached

Nominal Arm Length	Type I Arm (1 Signal) 2 CGB connector and 1 clamp w/bolts and washers		Type II Arm (2 Signals) 1 Bracket Assembly and 3 CGB connectors, and 1 clamp w/bolts and washers		Type III Arm (3 Signals) 2 Bracket Assembly and 4 CGB connectors, and 1 clamp w/bolts and washers	
ft.	Designation	Quantity	Designation	Quantity	Designation	Quantity
20	20I-80					
24	24I-80		24II-80			
28	28I-80		28II-80			
32			32II-80		32III-80	
36			36II-80		36III-80	
40					40III-80	
44					44III-80	

Traffic Signal Arms (100 MPH Clamp-On Mount) (1 per pole) Ship each arm with listed equipment attached

Nominal Arm	Type I Arm (1 Signal) 2 CGB connector and 1 clamp w/bolts and washers		Type I Arm (1 Signal) 1 Bracket Assembly and 3 CGB connectors, and 1 clamp		Type III Arm (3 Signals) 2 Bracket Assembly and 4 CGB connectors, and 1 clamp	
ft.	Designation	Quantity	Designation	Quantity	Designation	Quantity
20	20I-100					
24	24I-100		24II-100			
28	28I-100		28II-100			
32			32II-100		32III-100	
36			36II-100		36III-100	
40					40III-100	
44					44III-100	

Anchor Bolt Assemblies (1 per pole)

Anchor Bolt Diameter	Anchor Bolt Length	Quantity
2 1/2"	5' - 3"	*6

Each anchor bolt assembly consists of the following: Top and bottom templates, 4 anchor bolts, 8 nuts, 8 flat washers and 4 nut anchor devices (type 2) per Standard Drawing "TS-FD". Templates may be removed for shipment.

Abbreviations
Lf= Fixed Arm Length
Lc= Clamp-on Arm
Length (44' Max.)

THIS SEAL SUBSTANTIATES THE ITEMS IDENTIFIED WITH AN * ONLY AND DOES NOT CONFIRM THE DESIGN STANDARDS (BY OTHERS) PRESENTED HEREON.

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M. R. NEELAPU
107595
8/22/2024
DATE

Texas Department of Transportation
Traffic Operations Division

LONG MAST ARM ASSEMBLY PARTS LIST

LMA(5)-12

Sheet 5 of 5

©TxDOT November 2000

DN: JK	CK: GRB	DW: FDN	CK: CAL

REVISIONS
4-20-01
1-12

CONT	SECT	JOB	HIGHWAY
DIST	COUNTY		SHEET NO.
			593

131E

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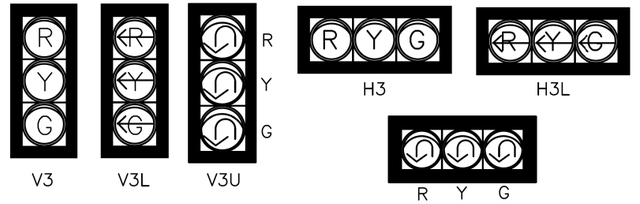
	NEW	EXISTING
TRAFFIC SIGNAL POLE		
PEDESTAL POLE		
POLE W/MAST ARM		
VEHICLE SIGNAL HEAD		
VEHICLE SIGNAL HEAD W/BACK PLATE		
PEDESTRIAN SIGNAL HEAD		
PEDESTRIAN PUSH BUTTON		
PULL BOX – TYPE A		
PULL BOX – TYPE B		
PULL BOX – TYPE C		
PULL BOX – TYPE B W/EXTENSION		
CONDUIT		
VIDEO DETECTION CAMERA		
PRE–EMPT SENSOR		
LUMINAIRE		
LUMINAIRE W/PHOTO CELL		
CONTROLLER CABINET		
METERED POWER PEDESTAL		
POLE MOUNTED METER		
FIBER OPTIC CONDUIT	—FO—	—FO—
MAST ARM SIGN		

SIGNAL TYPES



NOTE:

ALL TRAFFIC SIGNAL HEAD TYPES HAVE 12–INCH LENSES.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

HARDWARE LEGENDS

(SCALE: NOT TO SCALE)

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CITY ENGINEER

DocuSigned by: Carol Haddock A93C410B72B3453...
DIRECTOR OF HPW

DocuSigned by: KHANG NGUYEN 95A29EFDA75B4CD...
CITY TRAFFIC ENGINEER

EFF DATE: NOV–27–2023 | DWG NO: 02893–01

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TEXAS PE FIRM REG. # 3158
712 MAIN ST. #950
HOUSTON, TX 77002

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Firm: TEI PLANNING + DESIGN
Firm No.: F–3158
Date: 10/16/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

CITY OF HOUSTON
TRAFFIC SIGNAL DETAIL
SHEET 1 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N–100030–0GEC–3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 594 OF 718	

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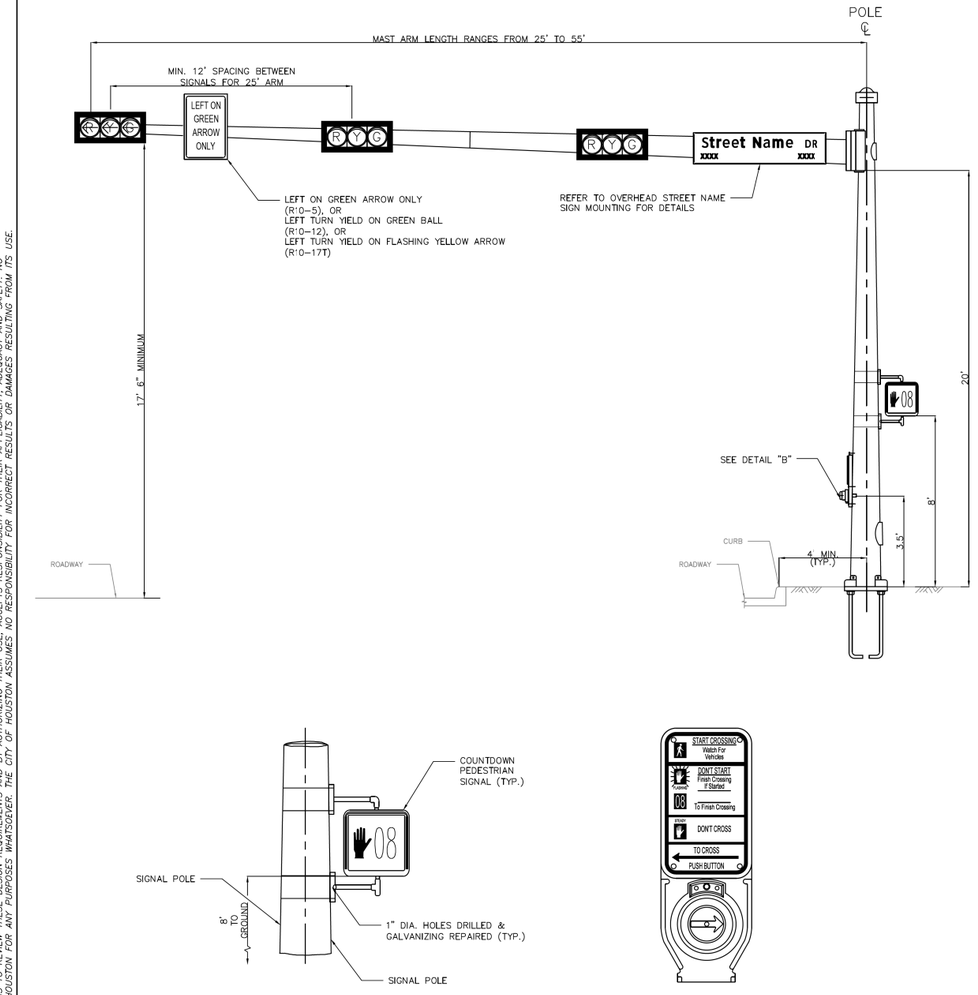
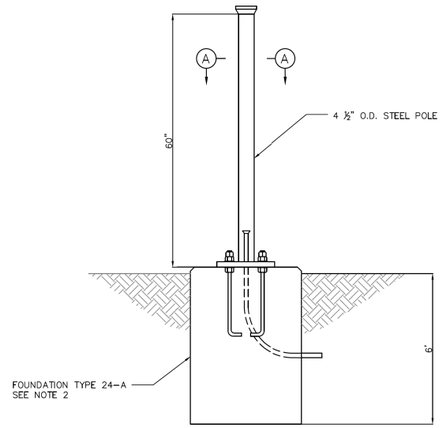


DETAIL "A"

TYPICAL PEDESTRIAN SIGNAL HEAD ON TRAFFIC POLE

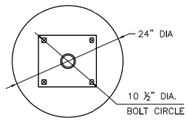
DETAIL "B"

2-WIRE POLARA NAVIGATOR PUSH BUTTON STATION WITH R10-3e SIGN

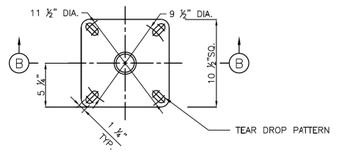


ELEVATION VIEW

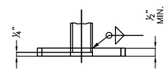
PEDESTRIAN PUSH BUTTON POLE



FOUNDATION PLAN



SECTION A-A



SECTION B-B

NOTE:

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS STATED ON CITY OF HOUSTON STANDARD DETAIL 02465-02 "PEDESTAL/PUSH BUTTON POLE DRILLED SHAFT FOUNDATION".
2. REFER TO CITY OF HOUSTON STANDARD DETAIL 02465-02 "PEDESTAL/PUSHBTTON POLE DRILLED SHAFT FOUNDATION" FOR ANCHOR BOLT DETAILS.

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APPROVED BY: DocuSigned by: Carol Haddock 5E5C41B1B0B3451...	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 02582-01

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TYPICAL MAST ARM/POLE FIXTURE CONFIGURATION

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HOUSTON, TX 77002

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Firm: TEI PLANNING + DESIGN
Firm No.: F-3158
Date: 10/16/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

CITY OF HOUSTON TRAFFIC SIGNAL DETAIL SHEET 2 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 595 OF 718	

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Design Filename: $FILEL$

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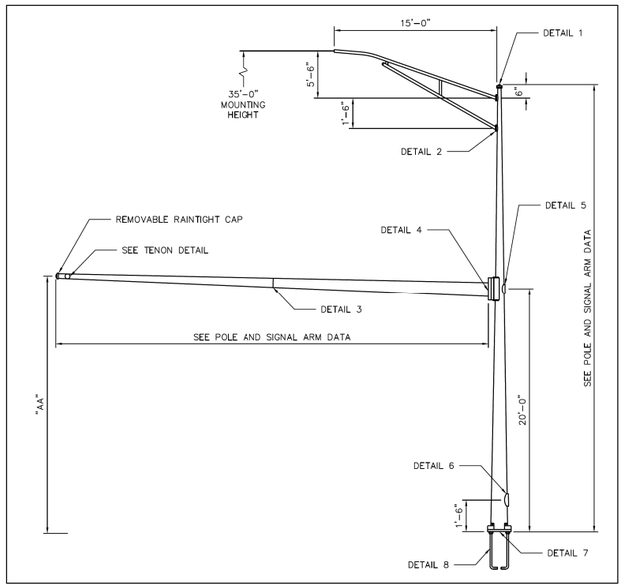
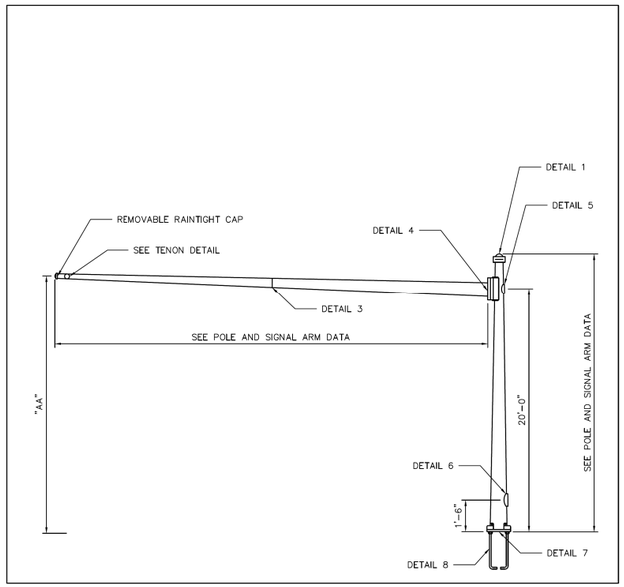
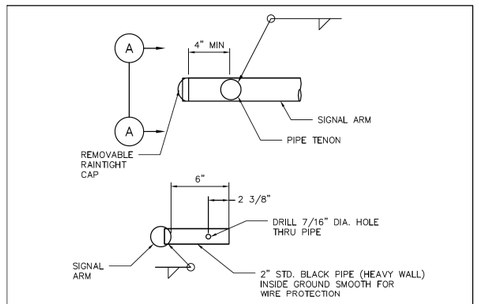






SECTION A–A

TENON DETAIL

ALTHOUGH RARE, VIBRATIONS SEVERE ENOUGH TO CAUSE DAMAGE CAN OCCASIONALLY OCCUR IN STRUCTURES OF ALL TYPES. BECAUSE THEY ARE INFLUENCED BY MANY INTERACTING VARIABLES, VIBRATIONS ARE GENERALLY UNPREDICTABLE. THE USER'S MAINTENANCE PROGRAM SHOULD INCLUDE OBSERVATION FOR EXCESSIVE VIBRATION AND EXAMINATION FOR ANY STRUCTURAL DAMAGE OR BOLT LOOSENING. ARMS SHALL BE VISUALLY INSPECTED IN 5 TO 20 MPH WIND CONDITIONS AFTER SIGNAL HEAD INSTALLATION AND, IF VERTICAL MOVEMENTS WITH A TOTAL EXCURSION (MAXIMUM POSITIVE TO MAXIMUM NEGATIVE) OF MORE THAN APPROXIMATELY 8 INCHES ARE OBSERVED AT ARM TIP, DAMPING DEVICES OR OTHER MEANS SHALL BE FITTED TO THE ARM(S). THE NECESSARY DAMPING DEVICE(S) OR OTHER REMEDIAL MEASURES SHALL BE AS RECOMMENDED BY THE CONTRACTOR. EXCESSIVE VIBRATIONS SHALL NOT BE ALLOWED TO CONTINUE FOR MORE THAN 2 DAYS.

VIBRATION DISCLAIMER

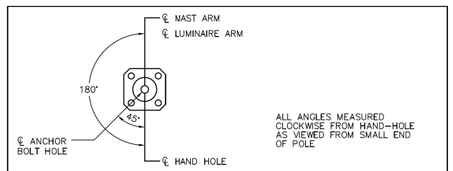
POLE AND MAST ARM DATA

DESIGNATION KEY			POLE TUBE						POLE BASE				ANCHOR BOLT				SIGNAL ARM TUBE				
POLE SERIES	POLE TYPE	SIGNAL ARM SPAN (FT)	BASE DIA. (IN)	TOP DIA. (IN) WITH LUM ARM	TOP DIA. (IN) WITHOUT LUM ARM	LENGTH (FT) WITH LUM ARM	LENGTH (FT) WITHOUT LUM ARM	GAUGE OR THK. (IN)	SQUARE "S" (IN)	BOLT CIRCLE "Y" (IN)	THK. "M" (IN)	HOLE / SLOT "Z" (IN)	DIA. "K" (IN)	LENGTH "J" (IN)	HOOK "H" (IN)	THREAD LENGTH "U" (IN)	FIXED END DIA. (IN)	FREE END DIA. (IN)	GAUGE OR THICK (IN)	SPAN (FT)	TIP HEIGHT "AA" (FT)
HOU	1	25	13.00	8.80	10.00	30.00	21.50	3	19.00	18.00	2.25	2.50	2.25	89.00	7.00	9.00	8.00	3.50	7	25.00	20.2
		30															9.00	4.80	7	30.00	20.3
		35															10.00	5.10	7	35.00	20.3
HOU	2	40	13.00	8.80	10.00	30.00	21.50	0.375									10.50	4.90	7	40.00	20.3
		45															10.14	3.84	3	45.00	20.4
		50															11.00	4.00	3	50.00	20.4
		55															11.50	4.16	DET 3	55.00	20.5

MATERIAL DATA

COMPONENT	ASTM DESIGNATION	MIN. YIELD (KSI)	COMPONENT	ASTM DESIGNATION	MIN. YIELD (KSI)
POLE SHAFT – 3 GAUGE	A595 GR.A	55	MAST ARM CONN. BOLTS	F3125 GR A325*	
POLE SHAFT – 0.375"	A572 GR.55	55	LUM. ARM CONN. BOLTS	SAE GR.5	36
MAST ARM SHAFT	A595 GR.A	55	ANCHOR BOLTS	F1554 GR.55	55
LUMINAIRE ARM SHAFT	2" SCH. 80 PIPE		GALVANIZING	A123 & A153	
ARM ATTACHMENT PLATE	A36	36			
BASEPLATE	A36	36			

*LUBRICATE IN FIELD IF NECESSARY IN LIEU OF THE REQUIREMENTS IN F3125 GR.A325.



RADIAL INDEX

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APPROVED BY: DocuSigned by: Carl Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 02582-02

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TRAFFIC SIGNAL STRUCTURES

SHEET 01 OF 02

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Firm: TEI PLANNING + DESIGN
Firm No.: F-3158
Date: 10/16/2025

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

CITY OF HOUSTON
TRAFFIC SIGNAL DETAIL
SHEET 3 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
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SHEET NO. 596 OF 718	

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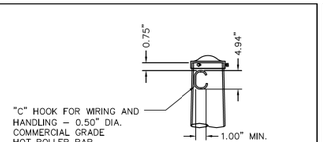
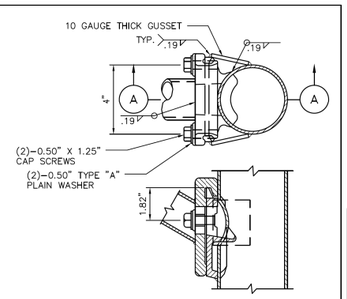
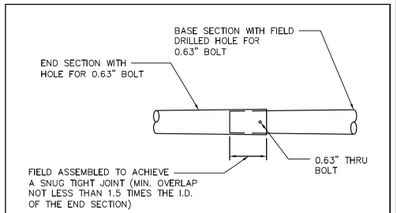


DETAIL 1 | POLE TOP

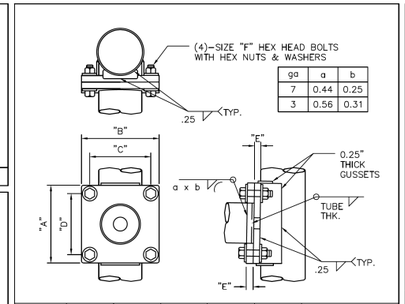


DETAIL 2 | LUMINAIRE ARM ATTACHMENT



ITEM	BASE SECTION		END SECTION	
	LENGTH	GAUGE	LENGTH	GAUGE
55.00'	26.42'	3	30.71'	7

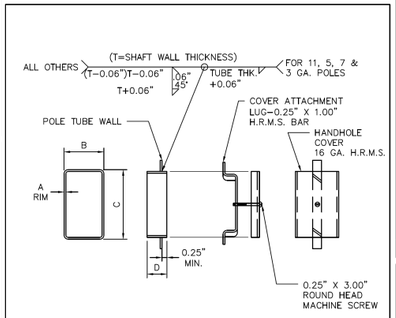
DETAIL 3 | SIGNAL ARM SLIP JOINT



ga	a	b
7	0.44	0.25
3	0.56	0.31

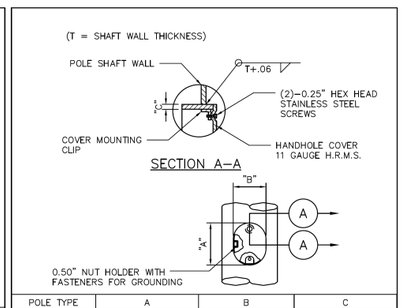
POLE TYPE	"A"	"B"	"C"	"D"	"E"	"F"
1	17.75"	17.75"	14.50"	14.50"	1.50"	1.25" X 4.50"
2	18.75"	18.75"	15.00"	15.00"	1.75"	1.50" X 5.25"

DETAIL 4 | SIGNAL ARM ATTACHMENT



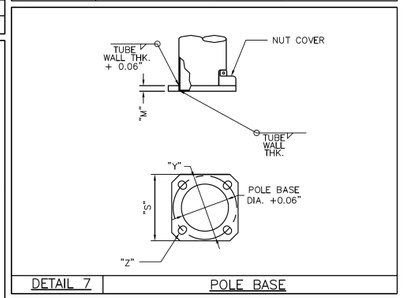
POLE TYPE	A	B	C	D
1	7 GA.	3.00"	5.00"	1.50"
2	0.50"	4.00"	6.00"	2.50"

DETAIL 5 | HANDHOLE

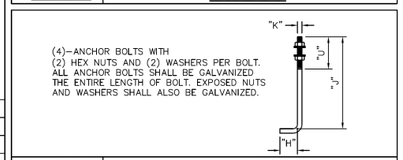


POLE TYPE	A	B	C
1	7.56"	5.19"	0.280"
2	7.31"	5.63"	0.432"

DETAIL 6 | HANDHOLE



DETAIL 7 | POLE BASE



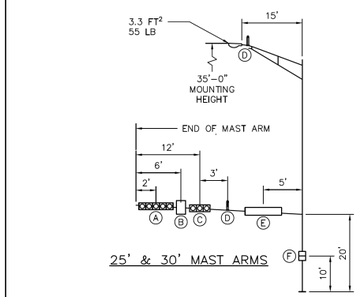
DETAIL 8 | ANCHOR BOLT

DESIGN NOTE:

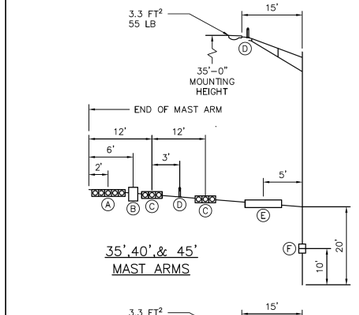
DESIGNS ARE BASED ON THE LOADING CHART SHOWN ON THIS DRAWING AND ARE IN ACCORDANCE WITH MATERIALS AND ALLOWABLE STRESS REQUIREMENTS OF THE 1994 AASHTO "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS" FOR A 90 MPH WIND ZONE WITH A 1.3 GUST FACTOR.

DEVICE	DESCRIPTION	PROJ. AREA (FT^2)	WEIGHT (LBS)
(A)	12"–5 SEC. SIGNAL WITH BACKPLATES	13.33	96
(B)	30" X 36" SIGNAL ARM MOUNTED SIGN	7.50	15
(C)	12"–3 SEC. SIGNAL WITH BACKPLATES	8.67	53
(D)	VIVDS CAMERA	1.00	15
(E)	24" X 72" STREET NAME SIGN	12.00	30
(F)	PEDESTRIAN SIGNAL	4.00	40

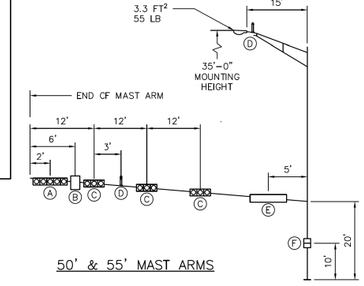
MAXIMUM LOADING INFORMATION



25' & 30' MAST ARMS



35',40',& 45' MAST ARMS



50' & 55' MAST ARMS

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TRAFFIC SIGNAL STRUCTURES

SHEET 02 OF 02

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

CITY OF HOUSTON
TRAFFIC SIGNAL DETAIL
SHEET 4 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N–100030–0GEC–3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 597 OF 718	

Pen Table:TEI*AllBlack.tbl
Plot Driver:E:\TEI Planning+Design Dropbox\Clients\Gauge Engineering\COH Antoine-West Gulf Bank Signal Design\04 Design\03 Reference and Research*
Design Filename: $FILEL$

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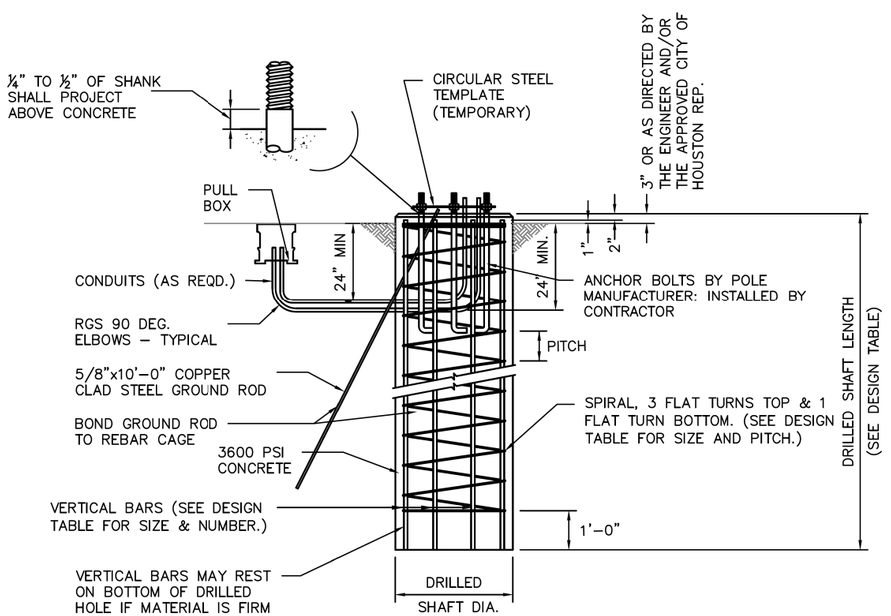
FOUDATION DESIGN TABLE									
POLE MARK	DRILLED SHAFT DIA.	REINFORCING STEEL		DRILLED SHAFT LENGTH FT.	BOLT CIRCLE DIA.	FOUNDATION DESIGN LOADS (1)			TYPICAL APPLICATION
		VERT. BARS	SPIRAL & PITCH			MOMENT K–FT.	SHEAR KIPS	TORQUE K–FT.	
HOU 1	30"	8–#9 BAR	#3 BAR @9"	14'–0"	18"	72.2	3.4	51.9	MAST ARM ASSEMBLY (25'–35') IN COHESIVE SOILS
HOU 2	30"	8–#9 BAR	#3 BAR @9"	18'–0"	18"	89.9	4.0	98.0	MAST ARM ASSEMBLY (40'–55') IN COHESIVE SOILS MAST ARM ASSEMBLY (25'–55') IN NON–COHESIVE SOILS

FOUNDATION DESIGN TABLE NOTES:

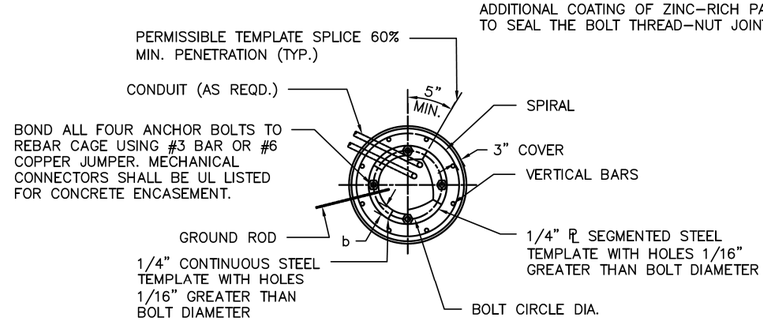
(1) FOUNDATION DESIGN LOADS ARE THE ALLOWABLE MOMENTS, SHEARS AND TORQUES AT THE TOP OF THE FOUNDATION.

(2) CONSTRUCT IN ACCORDANCE WITH CITY OF HOUSTON SPECIFICATION SECTION 02465, "DRILLED SHAFT FOUNDATIONS".

(3) FOUNDATION DESIGN IS BASED UPON AN UNDRAINED SHEAR STRENGTH OF 1500 PSF FOR COHESIVE SOILS AND A TEXAS CONE PENETROMETER MINIMUM OF 10 BLOWS/FOOT IN NON–COHESIVE SOILS. WHERE COHESIVE AND NON–COHESIVE LAYERS EXIST WITHIN THE SPECIFIED SHAFT LENGTH, THE NON–COHESIVE SOILS SHALL GOVERN. LOWER SOIL PARAMETERS WILL REQUIRE A SPECIAL DESIGN.



FOUNDATION DETAILS



TOP VIEW

NOTE:

1. b = MINIMUM STEEL TEMPLATE WIDTH EQUAL TO TWO TIMES ANCHOR BOLT DIAMETER.
2. STEEL TEMPLATE MAY BE OF CONTINUOUS WIDTH OR SEGMENTED WIDTH.
3. SEE FOUNDATION DESIGN TABLE FOR BOLT CIRCLE DIAMETER.
4. BOLTS SHOULD BE CHECKED FOR PLUMB AFTER CONCRETE IS POURED AND BEFORE INITIAL SET.

GENERAL NOTES:

1. DESIGN IS FOR CITY OF HOUSTON STANDARD TRAFFIC SIGNAL MAST ARM SUPPORT STRUCTURES BY VALMONT INDUSTRIES, INC.
2. DESIGN CONFORMS TO 2001 AASHTO "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS" AND INTERIM REVISIONS THERETO FOR A 90 MPH WIND ZONE WITH A 1.3 GUST FACTOR AND ACI "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318–02).
3. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.
4. CONCRETE SHALL BE 6 SACK, 3600 PSI.
5. ALL ANCHOR BOLTS SHALL BE GALVANIZED THE ENTIRE LENGTH OF BOLT. EXPOSED NUTS AND WASHERS SHALL ALSO BE GALVANIZED.

INSTALLATION PROCEDURE

THREADS OF ANCHOR BOLTS SHALL BE COATED WITH PIPE JOINT COMPOUND PRIOR TO INSTALLATION OF UPPER NUTS WHEN ERECTING POLE. AFTER POLE IS PLUMBED AND IN PERMANENT ALIGNMENT, THE EXPOSED THREADS OF PAINTED BOLTS SHALL BE CLEANED AND AN ADDITIONAL COATING OF ZINC–RICH PAINT APPLIED TO SEAL THE BOLT THREAD–NUT JOINT.

DISCLAIMER:
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

DRILLED SHAFT FOUNDATIONS

(SCALE: NOT TO SCALE)

APPROVED BY:

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DocuSigned by: LAING NGUYEN 95A29EFDA75B4CD...
CITY TRAFFIC ENGINEER

DocuSigned by: Carol Haddock A93C4108728345...
DIRECTOR OF HPW

EFF DATE: NOV–27–2023 | DWG NO: 02465–01

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HOUSTON, TX 77002

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P.E. Serial No. 145538
Firm: TEI PLANNING + DESIGN
Firm No.: F–3158
Date: 10/16/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

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CITY OF HOUSTON
TRAFFIC SIGNAL DETAIL
SHEET 5 OF 12

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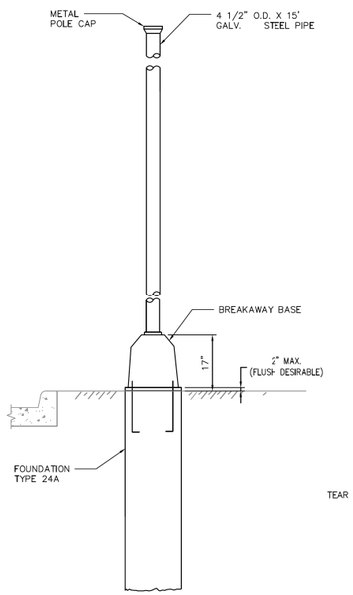
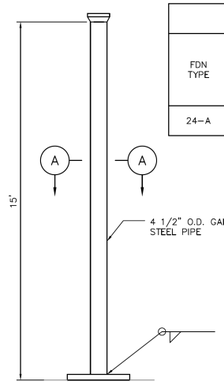




PEDESTAL POLE

FOUNDATION DESIGN TABLE										
FDN TYPE	DRILLED SHAFT DIA.	REINFORCING STEEL		DRILLED SHAFT LENGTH FT	ANCHOR BOLT DESIGN (SEE NOTE 5)				FOUNDATION DESIGN LOAD (SEE NOTE 6)	
		VERT. BARS	SPIRAL & PITCH	TEXAS CONE PENETROMETER 10 BLOWS/ FT	ANCHOR BOLT DIA.	FY (KSI)	BOLT CIR. DIA.	ANCHOR TYPE	MOMENT K-FT	SHEAR KIPS
24-A	24"	4-#5 BARS	#2 BAR AT 12"	6	3/4"	36	*13"	1	10	1

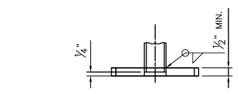
* 10 1/2" B.C. FOR PUSH BUTTON POLE

ANCHOR BOLT & TEMPLATE SIZES						
BOLT DIA. IN.	**BOLT LENGTH	TOP THREAD	BOTT. THREAD	BOLT CIRCLE	R_2	R_1
3/4"	1'-6"	3"	–	13"	7 1/8"	5 5/8"

** MIN DIMENSIONS GIVEN, LONGER BOLTS ARE ACCEPTABLE.

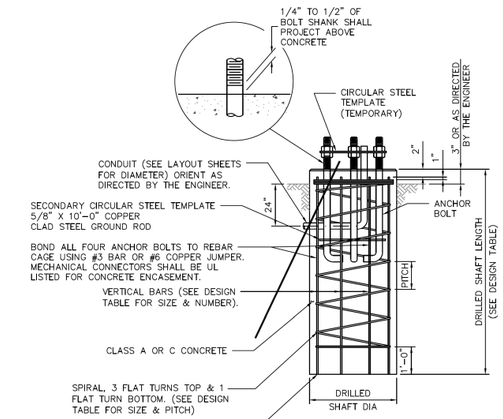
GENERAL NOTES

1. DESIGN CONFORMS TO 1994 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS AND INTERIM REVISIONS THERETO.
2. CONCRETE SHALL BE CLASS A OR C.
3. THREADS FOR ANCHOR BOLTS AND NUTS SHALL BE ROLLED OR CUT THREADS OF UNIFIED NATIONAL COARSE THREAD SERIES EXCEPT FOR A193B7 BOLTS WHICH SHALL HAVE 8 PITCH THREAD SERIES. BOLTS AND NUTS SHALL HAVE CLASS 2A AND 2B FIT TOLERANCES. GALVANIZED NUTS SHALL BE TAPPED AFTER GALVANIZING.
4. ANCHOR BOLTS THAT ARE 1" IN DIAMETER OR LESS SHALL CONFORM TO ASTM A36. GALVANIZE ALL ANCHOR BOLTS UNLESS OTHERWISE NOTED. EXPOSED NUTS SHALL BE GALVANIZED OR COATED WITH ZINC-RICH PAINT. WASHERS SHALL BE GALVANIZED. TEMPLATES AND EMBEDED NUTS NEED NOT BE GALVANIZED.
5. ANCHOR BOLT DESIGN DEVELOPS THE FOUNDATION CAPACITY GIVEN UNDER FOUNDATION DESIGN LOADS.
6. FOUNDATION DESIGN LOADS ARE THE ALLOWABLE MOMENTS AND SHEARS AT THE BASE OF THE STRUCTURE.
7. ANCHOR BOLT ASSEMBLY INSTALLATION PROCEDURE
   - 7.1. THREADS OF ANCHOR BOLTS SHALL BE COATED WITH PIPE JOINT COMPOUND PRIOR TO INSTALLATION OF UPPER NUTS WHEN ERECTING POLE. AFTER POLE IS PLUMBED AND IN PERMANENT ALIGNMENT, THE EXPOSED THREADS OF PAINTED BOLTS SHALL BE CLEANED AND AN ADDITIONAL COATING OF ZINC-RICH PAINT APPLIED TO SEAL THE BOLT THREAD-NUT JOINT.
8. DETAILS DEPICTED ON THIS SHEET SHOW A TYPICAL PEDESTAL POLE ASSEMBLY WITH A DRILLED SHAFT FOUNDATION.
9. USE 24 IN. DRILLED SHAFT FOUNDATION AS SHOWN.
10. PROVIDE BREAKAWAY FUSE HOLDER WITH DOUBLE-POLE HOUSING. ENSURE FUSE HOLDER IS POLARIZED, WATER-RESISTANT, UL RECOGNIZED, AND RATED FOR 30A MAXIMUM CURRENT CAPACITY AT 600V OR LESS. PROVIDE BREAKAWAY FUSE HOLDER FROM MANUFACTURERS PRE-QUALIFIED BY TXDOT TRAFFIC OPERATIONS DIVISION. SEE https://www.txdot.gov/business/resources/materials/material-producer-list.html FOR LIST OF PRE-QUALIFIED MANUFACTURERS. CATEGORY IS "ROADWAY ILLUMINATION AND ELECTRICAL SUPPLIES." PROVIDE 10 AMP TIME DELAY FUSES.
11. POLE SHAFT SHALL BE ONE PIECE. ALUMINUM CONDUIT WILL NOT DEVELOP THE NECESSARY STRENGTH AND WILL NOT BE ALLOWED. IN HIGH WINDS, USE A FOLE AND BASE COLLAR ASSEMBLY TO ADD STRENGTH AND PREVENT LOOSENING ON CONNECTION.
12. PER MANUFACTURER'S RECOMMENDATIONS, ENGAGE ALL THREADS ON THE PEDESTAL POLE BASE AND PIPE UNLESS THE PIPE IS FULLY SEATED INTO BASE.
13. PROVIDE NON-FUSED WATERTIGHT BREAKAWAY ELECTRICAL CONNECTORS FOR BREAKAWAY POLES (BUSSMANN HET, LITTELFUSE LET, FERRAZ-SHAWMUT FEBN, OR APPROVED EQUAL).
14. PROVIDE SIGNAL HEADS AND MOUNTING AS SHOWN ELSEWHERE ON THE PLANS.



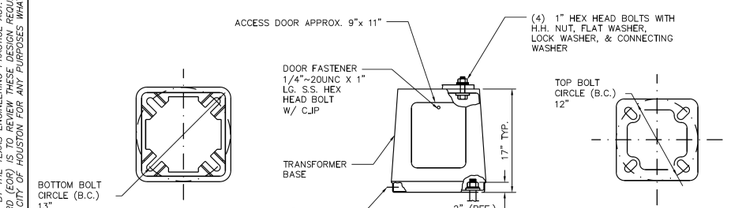
SECTION A-A

SECTION B-B



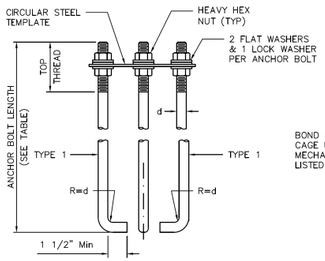
ELEVATION

FOUNDATION DETAILS

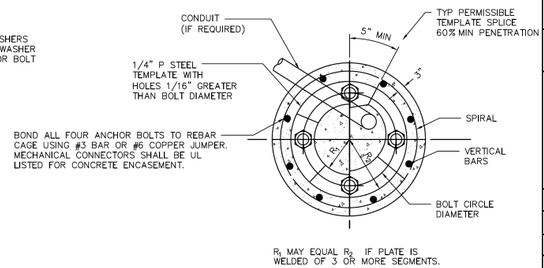


BOTTOM PLAN ELEVATION TOP PLAN

BREAKAWAY BASE DETAILS



HOOKED ANCHOR
(TYPE 1)



R_1 MAY EQUAL R_2 IF PLATE IS WELDED OF 3 OR MORE SEGMENTS.

TOP VIEW

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CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: DocuSigned by: Carl Haddock 5A5F41B1B0A4E1...	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 02465-02

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

PEDESTAL/PUSHBUTTON POLE DRILLED SHAFT FOUNDATION

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P.E. Serial No. 145538
Firm: TEI PLANNING + DESIGN
Firm No.: F-3158
Date: 10/16/2025

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CITY OF HOUSTON TRAFFIC SIGNAL DETAIL SHEET 6 OF 12

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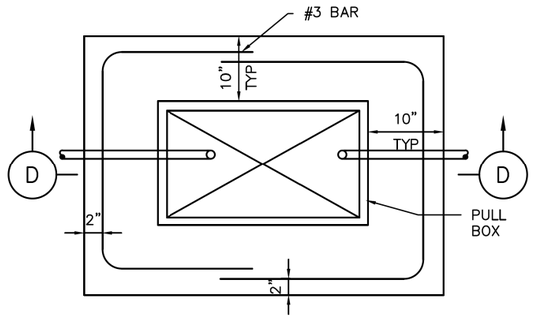
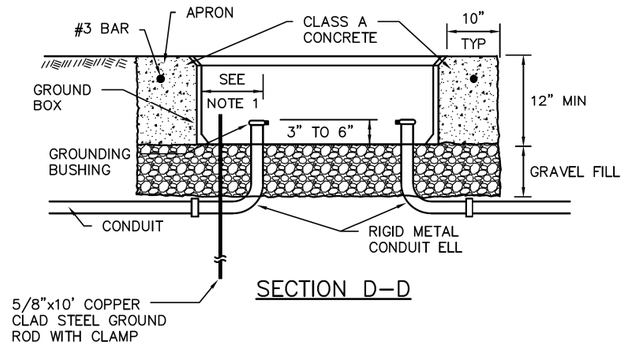


PLAN VIEW

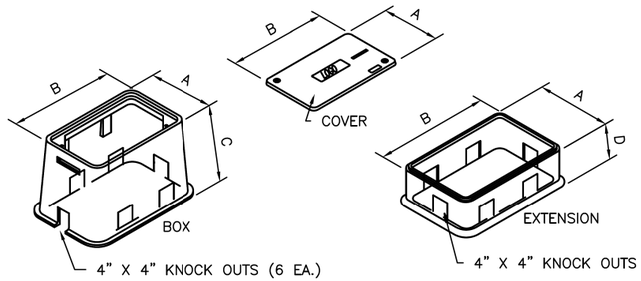


SECTION D–D

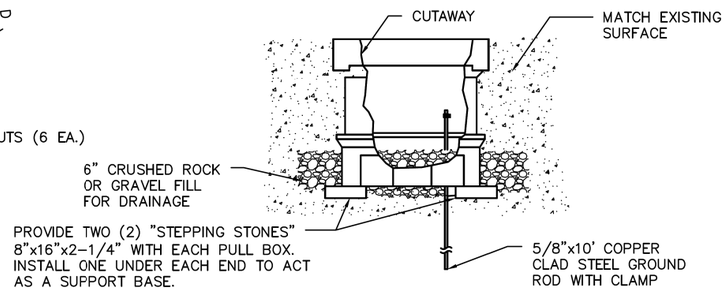
APRON FOR PULL BOXES

NOTES:

1. FINAL POSITION OF END OF CONDUIT SHALL NOT EXCEED ONE–HALF THE DISTANCE TO THE SIDE OF BOX OPPOSITE THE CONDUIT ENTRY.
2. PLACE GRAVEL "UNDER" THE BOX, NOT "IN" THE BOX. GRAVEL SHOULD NOT ENCROACH ON THE INTERIOR VOLUME OF THE BOX.
3. INSTALL BUSHING ON THE UPPER END OF ALL ELLS.
4. PROVIDE A 5/8" GROUND ROD IN ALL PULL BOXES AND CONNECT IT TO ANY AND ALL EQUIPMENT GROUNDING CONDUCTORS USING A LISTED CONNECTOR.
5. MAINTAIN SUFFICIENT SPACE BETWEEN ALL CONDUITS SO AS TO ALLOW FOR PROPER INSTALLATION OF BUSHINGS.
6. ALL CONDUITS SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER.
7. ALL CONDUITS INSTALLED IN THE GROUND BOX SHALL BE SEALED AFTER COMPLETION OF CONDUCTOR INSTALLATION AND ANY REQUIRED PULL TESTS. SILICONE SHALL NOT BE USED AS THE SEALANT.



NOMINAL DIMENSIONS FOR TRAFFIC SIGNAL PULL BOXES				
TYPE	A	B	C	D
DETECTOR TYPE A	13"	18"	24"	12"
TRAFFIC SIGNAL TYPE B	17"	30"	24"	12"
COMMUNICATION TYPE C	26"	38"	24"	12"



SIDE VIEW
ELECTRICAL PULL BOX ASSEMBLY

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HOUSTON PUBLIC WORKS STANDARD

PULL BOXES

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DocuSigned by: KHANG NGUYEN 95A29EFDA75B4CD...
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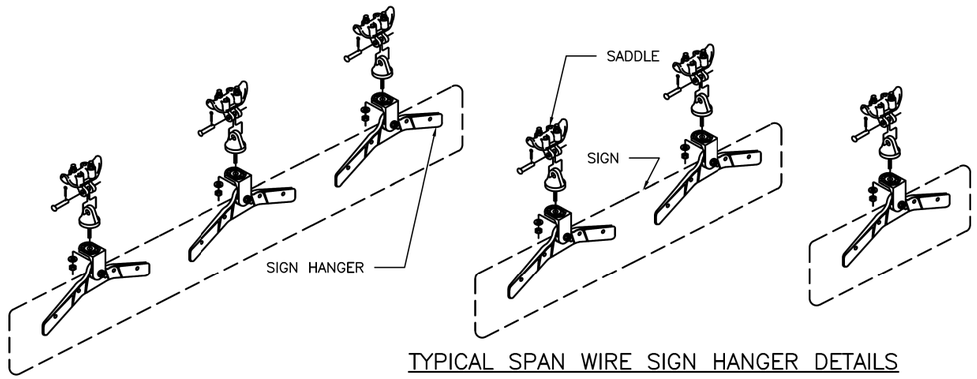
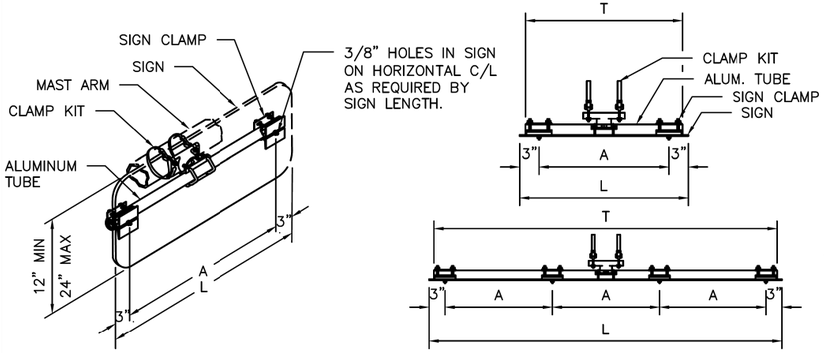


TYPICAL SPAN WIRE SIGN HANGER DETAILS



NOTES:

1. CONTRACTOR SHALL USE PELCO PARTS OR AN APPROVED EQUAL.
2. CONTRACTOR SHALL FURNISH ALL HARDWARE FOR A COMPLETE INSTALLATION.
3. THE 90 DEGREE SPAN WIRE CLAMPS (SADDLES) ARE ATTACHED TO TETHERS (SWAY CABLES).
4. CONTRACTOR SHALL FURNISH ONE (1) ADJUSTABLE FREE SWINGING SIGN HANGER PER STREET NAME SIGN SMALLER THAN 3'–0". SIGNS 3'–0" TO 6'–0" REQUIRE TWO (2) HANGERS. SIGNS LARGER THAN 6'–0" REQUIRE THREE (3) HANGERS.
5. SEE SIGN MOUNTING SERIES FOR STREET NAME SIGN DETAILS.



TYPICAL MAST ARM SIGN MOUNT DETAILS

SIGNS (1'–6" TO 3'–0" LONG)

SIGN LENGTH (L)	TUBE LENGTH (T)	A
1'–6"	16"	12"
2'–0"	22"	18"
2'–6"	28"	24"
3'–0"	34"	30"

MAXIMUM SIGN HEIGHT: 48"

SIGNS (3'–6" TO 8'–0" LONG)

SIGN LENGTH (L)	TUBE LENGTH (T)	A
3'–6"	40"	12"
4'–0"	46"	14"
4'–6"	52"	16"
5'–0"	58"	18"
5'–6"	64"	20"
6'–0"	70"	22"
6'–6"	76"	24"
7'–0"	82"	26"
7'–6"	88"	28"
8'–0"	94"	30"

MAXIMUM SIGN HEIGHT: 24"

SIGNS (8'–6" TO 10'–0" LONG)

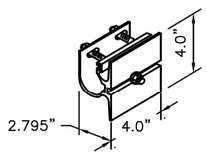
SIGN LENGTH (L)	TUBE LENGTH (T)	A	B
8'–6"	100"	19"	20"
9'–0"	106"	20"	22"
9'–6"	112"	21"	24"
10'–0"	118"	22"	26"

MAXIMUM SIGN HEIGHT: 16"

SIGN SQUARE FOOTAGE NOT TO EXCEED ROTATIONAL RESISTANCE CAPACITY DEFINED BY MOUNTING HARDWARE MANUFACTURER.



GUSSETED TUBE CROSS SECTION



SIGN CLAMP DETAIL

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

OVERHEAD STREET NAME SIGN MOUNTING DETAILS

(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Suhail Kanwar — 9EF8B0C841F5478...
CITY ENGINEER

DocuSigned by: KHANG NGUYEN — 95A29EFDA75B4CD...
CITY TRAFFIC ENGINEER

DocuSigned by: Carl Haddock — A93C410572B3453...
DIRECTOR OF HPW

EFF DATE: NOV–27–2023 | DWG NO: 01554–11

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tei Planning +Design
TEXAS PE FIRM REG. # 3158
712 MAIN ST, #950
HOUSTON, TX 77002

SURVEYED BY:
KUO & ASSOCIATES, INC.

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Engineer: VICTORIA MOTA, PE
P.E. Serial No. 145538
Firm: TEI PLANNING + DESIGN
Firm No.: F–3158
Date: 10/16/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

CITY OF HOUSTON
TRAFFIC SIGNAL DETAIL
SHEET 8 OF 12

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CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 601 OF 718	

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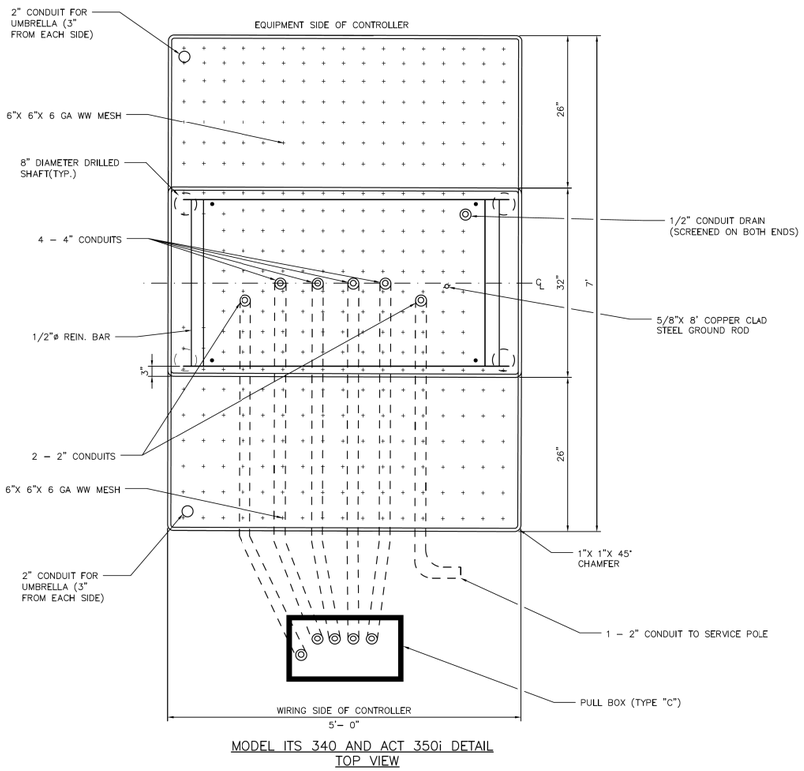
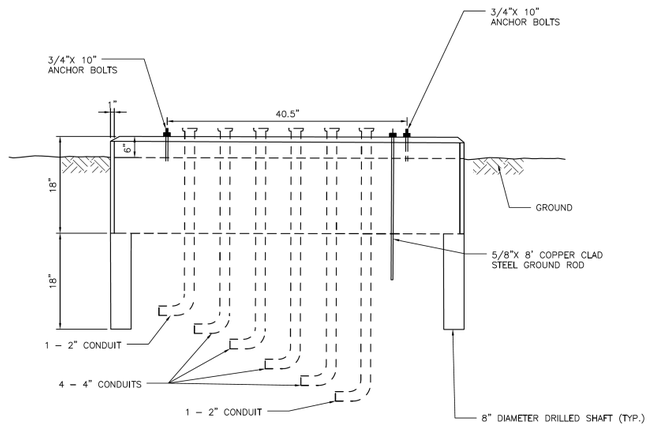
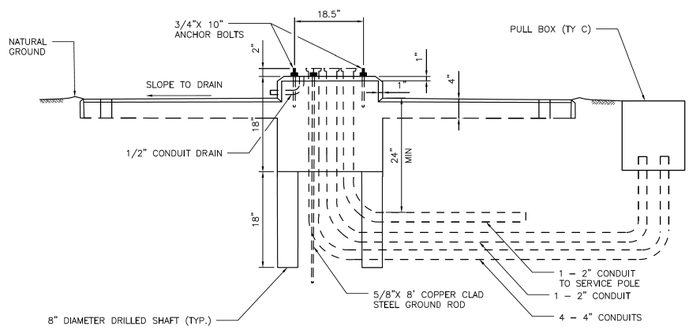


MODEL ITS 340 AND ACT 350i DETAIL
TOP VIEW



MODEL ITS 340 AND 350i DETAIL
FRONT VIEW



MODEL ITS 340 AND 350i DETAIL
SIDE VIEW

NOTES:

1. ALL CONCRETE TO BE IN ACCORDANCE WITH CITY OF HOUSTON SPECIFICATION SECTION 03310.
2. SET THE TOP OF THE STEP OF THE CONTROLLER FOUNDATION NO LOWER THAN THE LEVEL OF THE PAVEMENT SURFACE. ANY NECESSARY ADJUSTMENT SHALL BE APPROVED BY THE ENGINEER.
3. CENTER THE CABINET ON THE FOUNDATION.
4. THE FOUNDATION SHALL BE SUPPORTED BY UNDISTURBED SOIL OR BY SOIL THAT HAS BEEN COMPACTED TO 90% PROCTOR DENSITY IN 6" LIFTS.
5. ALL CONDUIT ELBOWS TO BE RGS.

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DocuSigned by: Sukut Kunwar	DocuSigned by: HUNG NGUYEN
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: DocuSigned by: Carl Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 16730-03

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

CONTROLLER FOUNDATIONS

SHEET 3 OF 3

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Firm: TEI PLANNING + DESIGN
Firm No.: F-3158
Date: 10/16/2025

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TRAFFIC SIGNAL DETAIL
SHEET 9 OF 12

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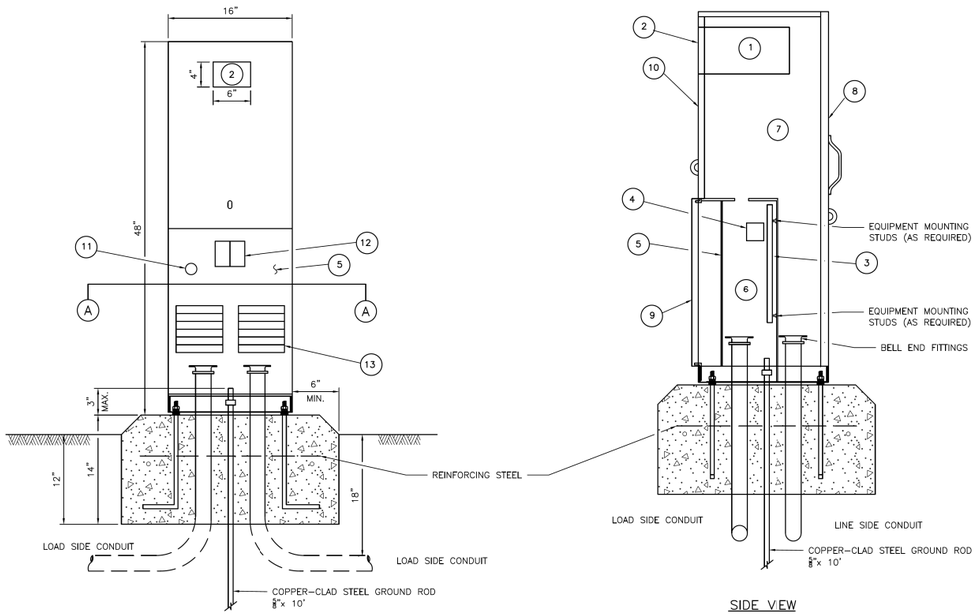
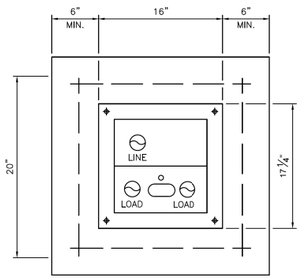


NOTE: ELLS IN FOUNDATION ARE RIGID METAL, SIZE CALLED FOR ON THE PLANS. EXTENSION CONDUITS FROM THESE ELLS MAY BE PVC, PROVIDED ENDS OF RIGID METAL CONDUITS ARE MORE THAN 2 IN. BELOW TOP OF CONCRETE FOUNDATION. WHERE EXTENSION CONDUITS ARE METAL, GROUNDING BUSHING MUST BE INSTALLED AND A BONDING JUMPER PROPERLY TERMINATED.

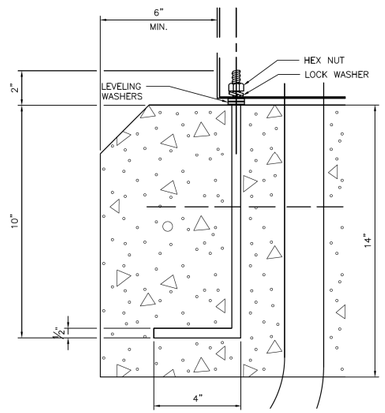
FRONT VIEW

SIDE VIEW

TY C SHOWN. TY A SIMILAR EXCEPT THAT TY A SHALL HAVE INDIVIDUAL CIRCUIT BREAKERS MOUNTED ON AN EQUIPMENT MOUNTING PANEL. CB HANDLES SHALL PROTRUDE THROUGH HINGED DEADFRONT TRIM.



SECTION A-A



ANCHOR BOLT DETAIL

GENERAL NOTES:

1. THE PEDESTAL SERVICE SHALL BE UL TYPE 3R, AND SHALL BE CONSTRUCTED OF A MINIMUM OF 12 GAUGE STAINLESS STEEL OR ALUMINUM AS REQUIRED. STAINLESS STEEL SHALL NOT BE PAINTED. FOR ALUMINUM, THE FINISH SHALL BE AN ELECTROSTATIC APPLIED POLY-URETHANE BAKED ON POWDER, LIGHT GREEN IN COLOR, OR COLOR AS SHOWN ELSEWHERE AND AS APPROVED BY THE ENGINEER. THE FRONT OF THE INTERIOR DEAD FRONT TRIM SHALL BE PERMANENTLY LABELED, "DANGER HIGH VOLTAGE" WITH OSHA STYLE LABEL. THE EXTERIOR OF THE PEDESTAL SERVICE DOOR SHALL BE PERMANENTLY LABELED WITH A PLACARD AS TO ITS USE (I.E. ROADWAY LIGHTING, TRAFFIC SIGNALS, ETC.). PLACARD SHALL BE NEAT AND PROFESSIONAL IN APPEARANCE. LETTERING SHALL BE 1" MINIMUM HEIGHT.
2. UTILITY ACCESS DOOR SHALL HAVE STAINLESS STEEL PIANO HINGE AND PROVISIONS FOR PADLOCKING.
3. PEDESTAL DOOR SHALL HAVE STAINLESS STEEL PIANO HINGE AND STAINLESS STEEL LATCH WITH PROVISIONS FOR PADLOCKING.
4. METER ACCESS SHALL BE HINGED AND CAPABLE OF PADLOCKING.
5. ALL MOUNTING HARDWARE AND INSTALLATION DETAILS OF SERVICES SHALL BE IN ACCORDANCE WITH UTILITY COMPANY SPECIFICATIONS. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE LOCAL UTILITY COMPANY AND OBTAINING THEIR APPROVAL OF PEDESTAL DETAILS PRIOR TO MAKING SUBMITTAL TO THE CITY AND PRIOR TO CONSTRUCTING THE ELECTRICAL PEDESTAL SERVICE. ANY CHANGES REQUIRED BY THE UTILITY COMPANY SHALL BE NOTED ON THE SUBMITTALS.
6. METER SOCKET SHALL BE A MINIMUM OF 100 AMP RATING AND SHALL COMPLY WITH THE LOCAL UTILITY REQUIREMENTS.
7. PHOTOELECTRIC CONTROL SHALL MEET THE REQUIREMENTS AS SHOWN ON ED(5). SHIELD TO CONTROL STRAY LIGHT IS ALLOWABLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER OPERATION OF THE PHOTO-ELECTRIC CONTROL. THE CONTRACTOR SHALL MOVE AND/OR ADJUST OR SHIELD THE PHOTOCELL FROM STRAY OR AMBIENT NIGHTTIME LIGHT OR SHALL MAKE ANY OTHER ADJUSTMENTS REQUIRED FOR PROPER OPERATION. THE PHOTOCELL SHALL FACE NORTH WHEN PRACTICABLE. UNLESS OTHERWISE SHOWN ON THE PLANS, THE PHOTOCELL SHALL TURN ON THE ILLUMINATION SYSTEM AT 1.0 +(−) 0.5 FOOTCANDLE AND TURN OFF THE ILLUMINATION SYSTEM AT TWO FOOTCANDLES HIGHER THAN TURN ON.
8. THE CONTROL STATION (H-O-A SWITCH) SHALL BE AS SHOWN ON TxDOT STANDARD ED(5) EXCEPT THAT H-O-A SWITCH OPERATING HANDLE SHALL PROTRUDE THROUGH HINGED DEADFRONT TRIM AND NEMA 1 ENCLOSURE WILL NOT BE REQUIRED.
9. CONCRETE FOR PEDESTAL SERVICE FOUNDATION SHALL BE CLASS A OR C , AND SHALL BE IN ACCORDANCE WITH TxDOT ITEM 420, "CONCRETE STRUCTURES", EXCEPT THAT CONCRETE WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED INCIDENTAL.
10. REINFORCING STEEL SHALL BE #4 REBAR IN ACCORDANCE WITH TxDOT ITEM 440, "REINFORCING STEEL".
11. ANCHOR BOLTS SHALL BE A36M55 IN ACCORDANCE WITH ITEM 449, "ANCHOR BOLTS". ANCHOR BOLTS SHALL BE ½ INCH X 12 INCHES X 4 INCHES (DIA. X LENGTH X HOOK LENGTH).
12. ALL CONDUIT AND CONDUCTORS ATTACHED TO THE PEDESTAL SERVICE AND WITHIN 12 INCHES OF THE PEDESTAL SERVICE WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE SUBSIDIARY TO THE PEDESTAL SERVICE. ALL SERVICE CONDUIT AND CONDUCTORS FROM THE UTILITY COMPANY TRANSFORMER TO A POINT 12 INCHES FROM THE THE PEDESTAL SERVICE SHALL BE PAID FOR SEPARATELY. SERVICE CONDUIT SHALL BE THE SIZE AND TYPE AS SHOWN IN THE ELECTRICAL SERVICE DATA.
13. DIMENSIONS MAY VARY TO ACCOMODATE REQUIRED EQUIPMENT, UTILITY COMPANY REQUIREMENTS, OR MANUFACTURER'S STANDARD EQUIPMENT DIMENSIONS. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL, SIX (6) COPIES OF BROCHURES AND/OR DRAWINGS OF THE PEDESTAL SERVICE TO BE SUPPLIED, INCLUDING ACTUAL DIMENSIONS, AND A PAINT COLOR SAMPLE.
14. A SEPARATE ENCLOSURE AS SHOWN ON TxDOT STANDARD ED(4) OR ED(5) FOR PHOTOCELL SHALL NOT BE USED FOR PEDESTAL SERVICES. PHOTOCELL SHALL BE INSTALLED AS SHOWN HERE.
15. THE PEDESTAL DOOR SHALL HAVE A MECHANICALLY ATTACHED DATA POCKET ON THE INSIDE. POCKET SHALL BE EITHER METAL OR THERMOPLASTIC AND SHALL MEASURE AT LEAST 12 INCHES BY 12 INCHES. THE CONTRACTOR SHALL PREPARE AND SUBMIT A SCHEMATIC DRAWING UNIQUE TO AN INDIVIDUAL SERVICE. THE APPROVED DRAWING SHALL BE LAMINATED AND PLACED IN THE DOCUMENT POCKET OF THE SERVICE AT THE TIME OF SHIPMENT TO THE JOB SITE. ALL APPLICABLE WIRING DIAGRAMS AND PLAN SHEET LAYOUTS FOR ALL EQUIPMENT AND BRANCH BREAKER CIRCUITS SUPPLIED BY THAT SERVICE SHALL ALSO BE LAMINATED AND PLACED IN THE DOCUMENT POCKET PRIOR TO SHIPPING.
16. GROUND ROD CLAMP TO BE UL LISTED FOR DIRECT BURIAL. ALL NON-CONDUCTIVE COATING TO BE REMOVED FROM GROUND ROD WIRE TO BE #6 AWG SOLID COPPER. METAL CONDUIT ELLS TO HAVE GROUNDING BUSHING AND BONDING JUMPERS CORRECTLY INSTALLED.
17. ALL CONDUITS ENTERING ENCLOSURES FROM UNDERGROUND MUST BE SEALED. SILICONE SHALL NOT BE ALLOWED.
18. ALL CONDUCTORS SHALL BE MEGGED AND PULL TESTED. TRAFFIC SIGNAL CABLE NOT TO BE MEGGED AFTER CONNECTION, AS ELECTRONICS WILL BE DAMAGED.
19. TOP OF CONCRETE FOUNDATION TO BE FINISHED IN A NEAT AND WORKMAN LIKE MANNER. IF LEVELING WASHERS ARE USED, NO MORE THAN ⅛ IN. HEIGHT SHALL BE USED AT ANY ONE CORNER. MAXIMUM DIP OR RISE IN FOUNDATION IS NOT TO EXCEED ⅛ IN PER FOOT. WHEN PROPERLY INSTALLED, TOP OF SERVICE ENCLOSURE SHALL READ LEVEL FRONT TO BACK AND SIDE TO SIDE WITHIN ¼ IN. ROCKING OR MOVEMENT OF THE SERVICE ENCLOSURE SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE STATE.
20. LIQUID TIGHT FLEXIBLE METAL CONDUIT SHALL NOT BE ALLOWED ON PS TYPE SERVICES.

LEGEND:

1. METER SOCKET, (WHEN REQUIRED)
2. METER SOCKET 4" x 6" PLEXIGLASS WINDOW INSTALLED IN THE LID.
3. EQUIPMENT MOUNTING PANEL
4. PHOTO ELECTRIC CONTROL WINDOW, (WHEN REQUIRED)
5. HINGED DEADFRONT TRIM
6. LOAD SIDE CONDUIT AREA
7. LINE SIDE CONDUIT AREA
8. UTILITY ACCESS DOOR, WITH HANDLE
9. PEDESTAL DOOR
10. HINGED METER ACCESS
11. CONTROL STATION (H-O-A SWITCH)
12. MAIN DISCONNECT
13. BRANCH CIRCUIT BREAKERS

APPROVED BY:	APPROVED BY:
DocuSigned by: Sulat Kunwar	DocuSigned by: LIANG NGUYEN
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: DocuSigned by: Carl Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 02893-02

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

ELECTRICAL SERVICE SUPPORT
PEDESTAL SERVICE TYPE PS

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P.E. Serial No. 145538
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Date: 10/16/2025

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HOUSTON PUBLIC WORKS

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TRAFFIC SIGNAL DETAIL
SHEET 10 OF 12

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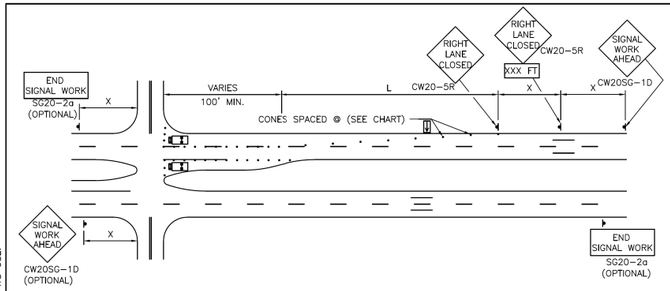
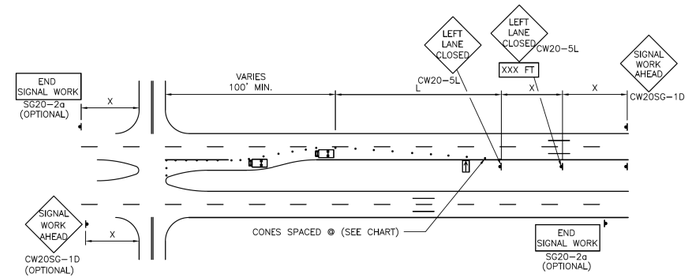


ONE LANE CLOSURE W/ RIGHT LANE AND/OR LEFT TURN LANE CLOSED



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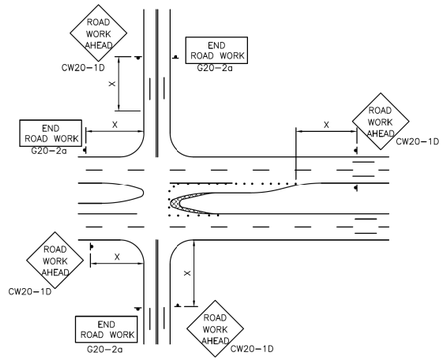

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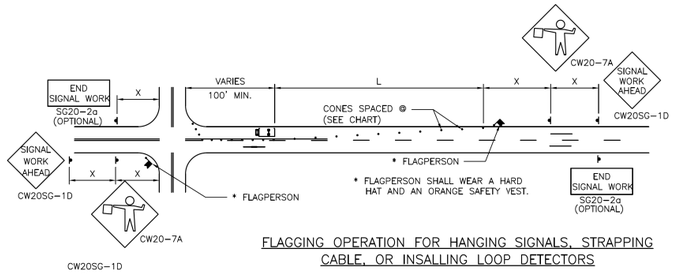
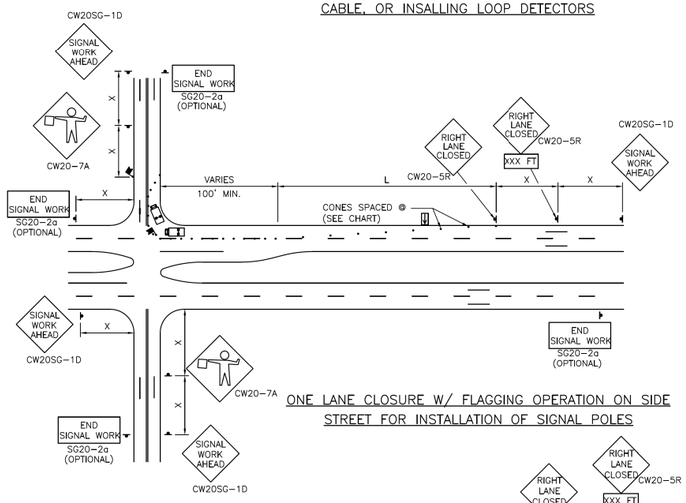
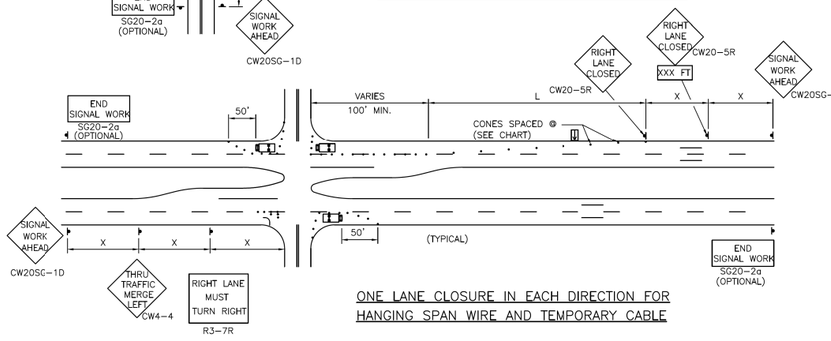


FLAGGING OPERATION FOR HANGING SIGNALS, STRAPPING CABLE, OR INSALLING LOOP DETECTORS



ONE LANE CLOSURE W/ FLAGGING OPERATION ON SIDE STREET FOR INSTALLATION OF SIGNAL POLES



ONE LANE CLOSURE IN EACH DIRECTION FOR HANGING SPAN WIRE AND TEMPORARY CABLE

NOTES:

1. ALL TRAFFIC CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST REVISION.
2. THE MINIMUM LANE WIDTH ALLOWED IS 10 FEET. THE MINIMUM BUFFER ZONE BETWEEN THE WORK ZONE AND ADJACENT TRAFFIC IS 2 FEET.
3. FLORESCENT ORANGE SHALL BE THE BACKGROUND COLOR ON ALL WORK ZONE SIGNS.
4. THE CONTRACTOR SHALL REMOVE ADVANCE SIGNS WHEN NO CONSTRUCTION OPERATIONS ARE UNDERWAY.
5. OBSTRUCTIONS OR HAZARDS AT THE WORK AREA SHALL BE CLEARLY MARKED AND DELINEATED AT ALL TIMES.
6. ALL HOLES, TRENCHES OR OTHER HAZARDOUS AREAS SHALL BE ADEQUATELY PROTECTED BY LIGHTS OR OTHER PROTECTIVE DEVICES.
7. TRENCHES SHALL BE COVERED OR SURROUNDED WITH ORANGE PLASTIC CONSTRUCTION FENCE AS DIRECTED BY THE ENGINEER.
8. FLAGGER AND FCW20-7a SIGN MAY BE REQUIRED ACCORDING TO FIELD CONDITIONS.
9. VEHICLES PARKED IN ROADWAY SHALL BE EQUIPPED WITH TWO STROBES.

LEGEND:

HEAVY WORK VEHICLE

FLASHING ARROW PANEL

TYPICAL TRANSITION LENGTHS

SUGGESTED MAXIMUM SPACING OF DEVICES

POSTED SPEED	FORMULA	MINIMUM DESIRABLE TAPER LENGTHS **			SUGGESTED MAXIMUM SPACING OF DEVICE		MINIMUM SIGN SPACING X DISTANCE
		10' OFFSET	11' OFFSET	12' OFFSET	ON A TAPER	ON A TANGENT	
30	$L=WS^2/60$	150'	165'	180'	30'	60'–75'	120'
35		205'	225'	245'	35'	70'–90'	160'
40		265'	295'	320'	40'	80'100'	240'
45	L=WS	450'	495'	540'	45'	90'–110'	320'
50		500'	550'	600'	50'	100'–125'	400'
55		550'	605'	660'	55'	100'–140'	500'
60		600'	660'	720'	60'	120'–150'	600'

** TAPER LENGTHS HAVE BEEN ROUNDED OFF
L=LENGTH OF TAPER (FT.)
W=WIDTH OF OFFSET (FT.)
S=POSTED SPEED(MPH)

APPROVED BY:	APPROVED BY:
DocuSigned by: Salad Kanwar 8EF8B0C8A1F54F8...	DocuSigned by: HUNG NGUYEN 95A29EF7DA7B4CD...
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: DocuSigned by: Carol Haddock A50C41081D934A5...	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 01555-13

CITY OF HOUSTON
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TRAFFIC CONTROL PLAN FOR SIGNAL CONSTRUCTION

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P.E. Serial No. 145539
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CITY OF HOUSTON TRAFFIC SIGNAL DETAIL SHEET 11 OF 12

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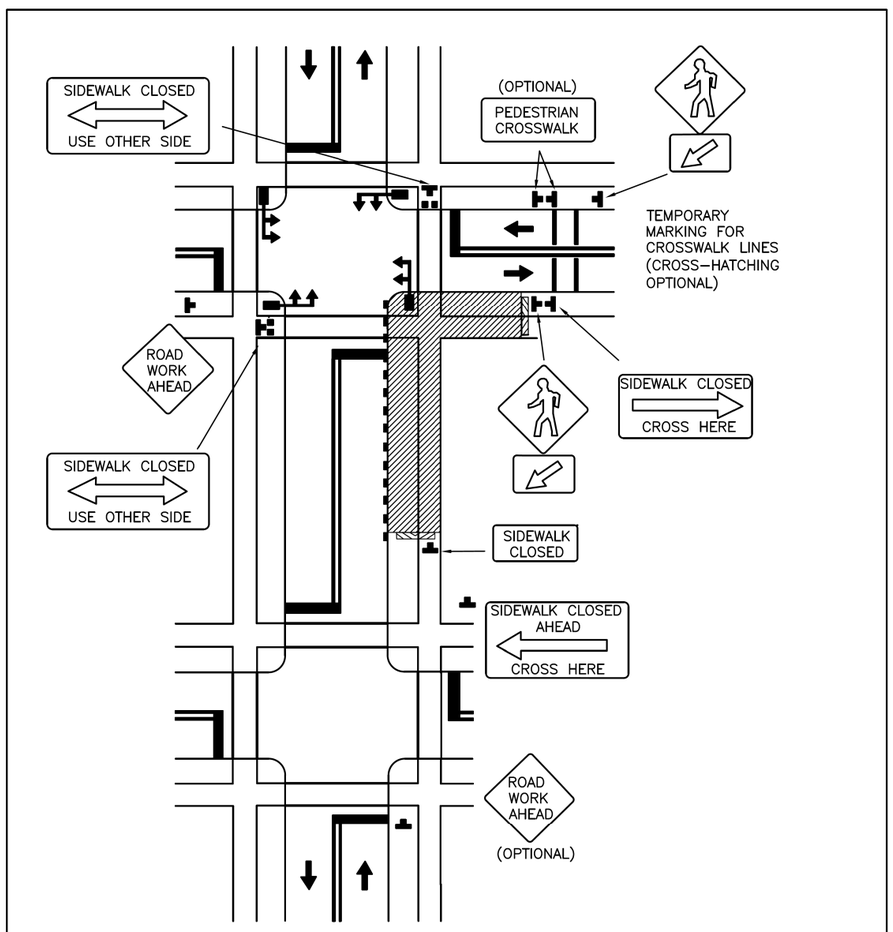

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

CROSSWALK CLOSURES AND PEDESTRIAN DETOURS

(SCALE: NOT TO SCALE)

EFF DATE: NOV–27–2023 | DWG NO: 01555–16

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tei Planning +Design
TEXAS PE FIRM REG. # 3158
712 MAIN ST, #950
HOUSTON, TX 77002

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Firm: TEI PLANNING + DESIGN
Firm No.: F-3158
Date: 10/16/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

CITY OF HOUSTON
TRAFFIC SIGNAL DETAIL
SHEET 12 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
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CITY OF HOUSTON PM	
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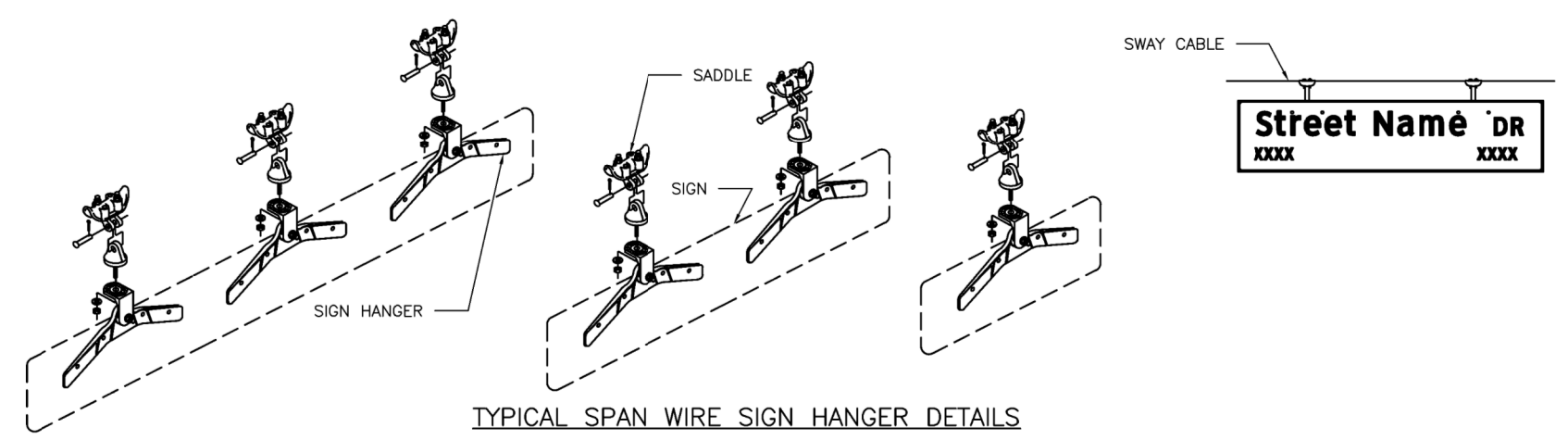
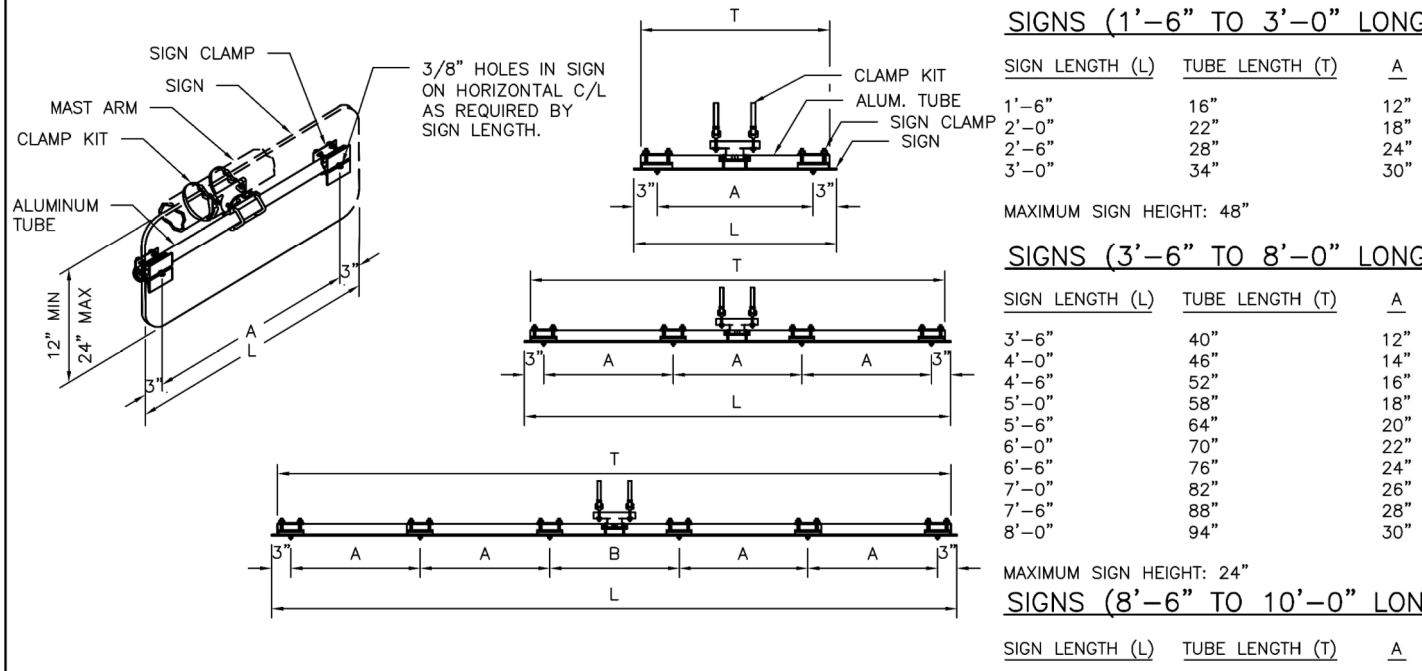


TYPICAL SPAN WIRE SIGN HANGER DETAILS

NOTES:

1. CONTRACTOR SHALL USE PELCO PARTS OR AN APPROVED EQUAL.
2. CONTRACTOR SHALL FURNISH ALL HARDWARE FOR A COMPLETE INSTALLATION.
3. THE 90 DEGREE SPAN WIRE CLAMPS (SADDLES) ARE ATTACHED TO TETHERS (SWAY CABLES).
4. CONTRACTOR SHALL FURNISH ONE (1) ADJUSTABLE FREE SWINGING SIGN HANGER PER STREET NAME SIGN SMALLER THAN 3'-0". SIGNS 3'-0" TO 6'-0" REQUIRE TWO (2) HANGERS. SIGNS LARGER THAN 6'-0" REQUIRE THREE (3) HANGERS.
5. SEE SIGN MOUNTING SERIES FOR STREET NAME SIGN DETAILS.



TYPICAL MAST ARM SIGN MOUNT DETAILS

SIGNS (1'-6" TO 3'-0" LONG)

SIGN LENGTH (L)	TUBE LENGTH (T)	A
1'-6"	16"	12"
2'-0"	22"	18"
2'-6"	28"	24"
3'-0"	34"	30"

MAXIMUM SIGN HEIGHT: 48"

SIGNS (3'-6" TO 8'-0" LONG)

SIGN LENGTH (L)	TUBE LENGTH (T)	A
3'-6"	40"	12"
4'-0"	46"	14"
4'-6"	52"	16"
5'-0"	58"	18"
5'-6"	64"	20"
6'-0"	70"	22"
6'-6"	76"	24"
7'-0"	82"	26"
7'-6"	88"	28"
8'-0"	94"	30"

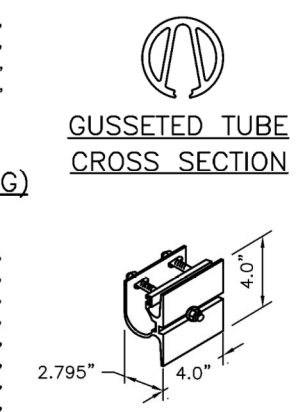
MAXIMUM SIGN HEIGHT: 24"

SIGNS (8'-6" TO 10'-0" LONG)

SIGN LENGTH (L)	TUBE LENGTH (T)	A	B
8'-6"	100"	19"	20"
9'-0"	106"	20"	22"
9'-6"	112"	21"	24"
10'-0"	118"	22"	26"

MAXIMUM SIGN HEIGHT: 16"

SIGN SQUARE FOOTAGE NOT TO EXCEED ROTATIONAL RESISTANCE CAPACITY DEFINED BY MOUNTING HARDWARE MANUFACTURER.



GUSSETED TUBE CROSS SECTION

SIGN CLAMP DETAIL

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

OVERHEAD STREET NAME SIGN MOUNTING DETAILS

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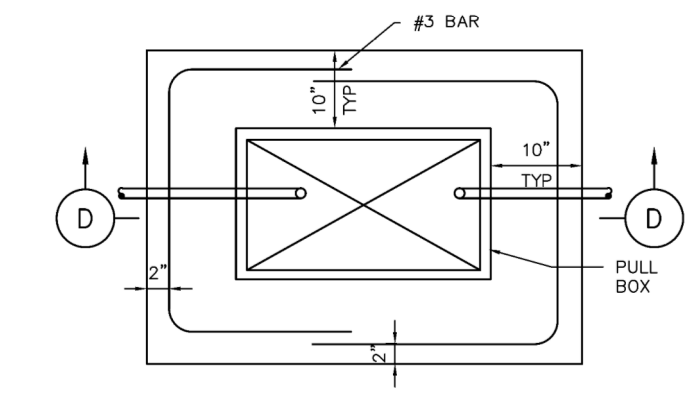
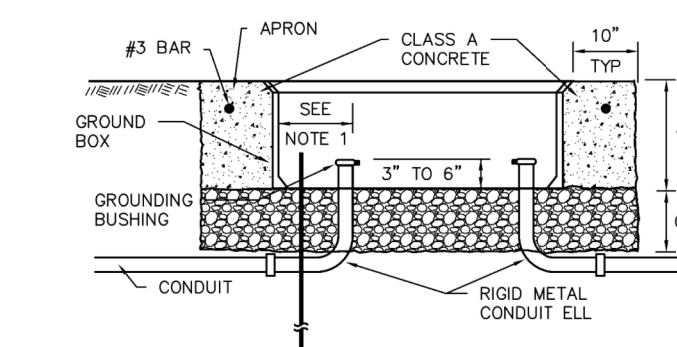
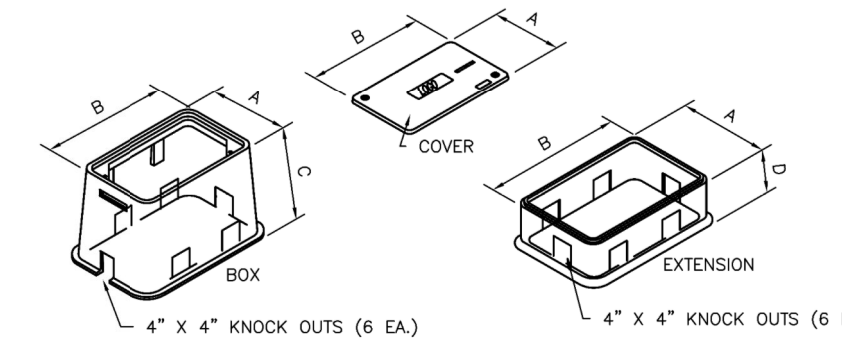


PLAN VIEW

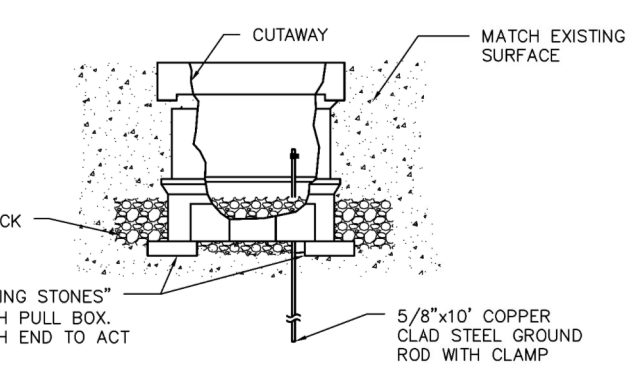


SECTION D-D

APRON FOR PULL BOXES



NOMINAL DIMENSIONS FOR TRAFFIC SIGNAL PULL BOXES				
TYPE	A	B	C	D
DETECTOR TYPE A	13"	18"	24"	12"
TRAFFIC SIGNAL TYPE B	17"	30"	24"	12"
COMMUNICATION TYPE C	26"	38"	24"	12"



SIDE VIEW
ELECTRICAL PULL BOX ASSEMBLY

NOTES:

1. FINAL POSITION OF END OF CONDUIT SHALL NOT EXCEED ONE-HALF THE DISTANCE TO THE SIDE OF BOX OPPOSITE THE CONDUIT ENTRY.
2. PLACE GRAVEL "UNDER" THE BOX, NOT "IN" THE BOX. GRAVEL SHOULD NOT ENCROACH ON THE INTERIOR VOLUME OF THE BOX.
3. INSTALL BUSHING ON THE UPPER END OF ALL ELLS.
4. PROVIDE A 5/8" GROUND ROD IN ALL PULL BOXES AND CONNECT IT TO ANY AND ALL EQUIPMENT GROUNDING CONDUCTORS USING A LISTED CONNECTOR.
5. MAINTAIN SUFFICIENT SPACE BETWEEN ALL CONDUITS SO AS TO ALLOW FOR PROPER INSTALLATION OF BUSHINGS.
6. ALL CONDUITS SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER.
7. ALL CONDUITS INSTALLED IN THE GROUND BOX SHALL BE SEALED AFTER COMPLETION OF CONDUCTOR INSTALLATION AND ANY REQUIRED PULL TESTS. SILICONE SHALL NOT BE USED AS THE SEALANT.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

PULL BOXES

(SCALE: NOT TO SCALE)

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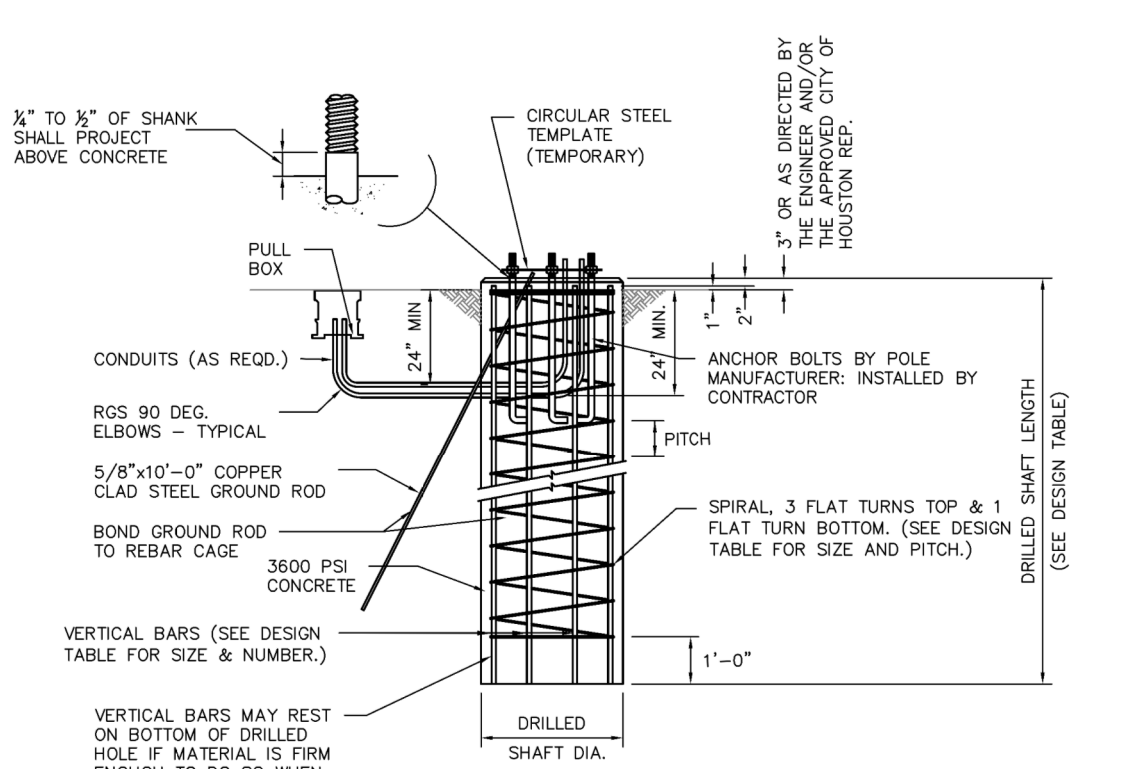
FOUDATION DESIGN TABLE										
POLE MARK	DRILLED SHAFT DIA.	REINFORCING STEEL		DRILLED SHAFT LENGTH FT.	BOLT CIRCLE DIA.	FOUNDATION DESIGN LOADS (1)			TYPICAL APPLICATION
		VERT. BARS	SPIRAL & PITCH			MOMENT K-FT.	SHEAR KIPS	TORQUE K-FT.	
HOU 1	30"	8-#9 BAR	#3 BAR @9"	14'-0"	18"	72.2	3.4	51.9	MAST ARM ASSEMBLY (25'-35') IN COHESIVE SOILS
HOU 2	30"	8-#9 BAR	#3 BAR @9"	18'-0"	18"	89.9	4.0	98.0	MAST ARM ASSEMBLY (40'-55') IN COHESIVE SOILS MAST ARM ASSEMBLY (25'-55') IN NON-COHESIVE SOILS

FOUNDATION DESIGN TABLE NOTES:

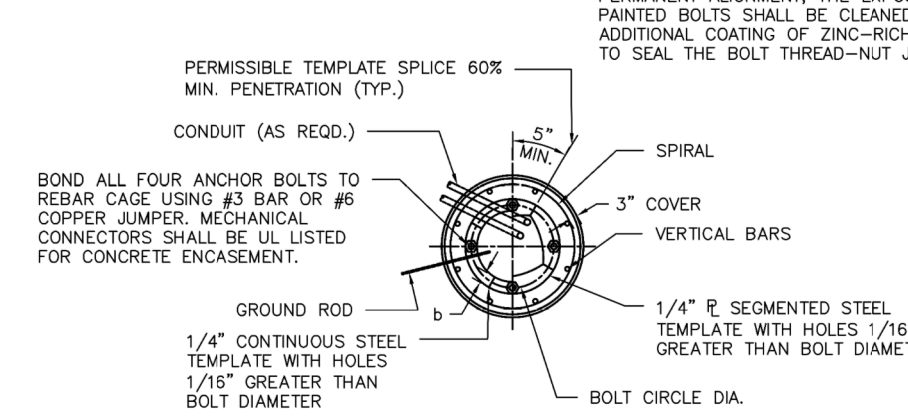
(1) FOUNDATION DESIGN LOADS ARE THE ALLOWABLE MOMENTS, SHEARS AND TORQUES AT THE TOP OF THE FOUNDATION.

(2) CONSTRUCT IN ACCORDANCE WITH CITY OF HOUSTON SPECIFICATION SECTION 02465, "DRILLED SHAFT FOUNDATIONS".

(3) FOUNDATION DESIGN IS BASED UPON AN UNDRAINED SHEAR STRENGTH OF 1500 PSF FOR COHESIVE SOILS AND A TEXAS CONE PENETROMETER MINIMUM OF 10 BLOWS/FOOT IN NON-COHESIVE SOILS. WHERE COHESIVE AND NON-COHESIVE LAYERS EXIST WITHIN THE SPECIFIED SHAFT LENGTH, THE NON-COHESIVE SOILS SHALL GOVERN. LOWER SOIL PARAMETERS WILL REQUIRE A SPECIAL DESIGN.



FOUNDATION DETAILS



TOP VIEW

NOTE:

1. b = MINIMUM STEEL TEMPLATE WIDTH EQUAL TO TWO TIMES ANCHOR BOLT DIAMETER.
2. STEEL TEMPLATE MAY BE OF CONTINUOUS WIDTH OR SEGMENTED WIDTH.
3. SEE FOUNDATION DESIGN TABLE FOR BOLT CIRCLE DIAMETER.
4. BOLTS SHOULD BE CHECKED FOR PLUMB AFTER CONCRETE IS POURED AND BEFORE INITIAL SET.

GENERAL NOTES:

1. DESIGN IS FOR CITY OF HOUSTON STANDARD TRAFFIC SIGNAL MAST ARM SUPPORT STRUCTURES BY VALMONT INDUSTRIES, INC.
2. DESIGN CONFORMS TO 2001 AASHTO "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS" AND INTERIM REVISIONS THERETO FOR A 90 MPH WIND ZONE WITH A 1.3 GUST FACTOR AND ACI "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318-02).
3. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.
4. CONCRETE SHALL BE 6 SACK, 3600 PSI.
5. ALL ANCHOR BOLTS SHALL BE GALVANIZED THE ENTIRE LENGTH OF BOLT. EXPOSED NUTS AND WASHERS SHALL ALSO BE GALVANIZED.

INSTALLATION PROCEDURE

THREADS OF ANCHOR BOLTS SHALL BE COATED WITH PIPE JOINT COMPOUND PRIOR TO INSTALLATION OF UPPER NUTS WHEN ERECTING POLE. AFTER POLE IS PLUMBED AND IN PERMANENT ALIGNMENT, THE EXPOSED THREADS OF PAINTED BOLTS SHALL BE CLEANED AND AN ADDITIONAL COATING OF ZINC-RICH PAINT APPLIED TO SEAL THE BOLT THREAD-NUT JOINT.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

DRILLED SHAFT FOUNDATIONS

(SCALE: NOT TO SCALE)

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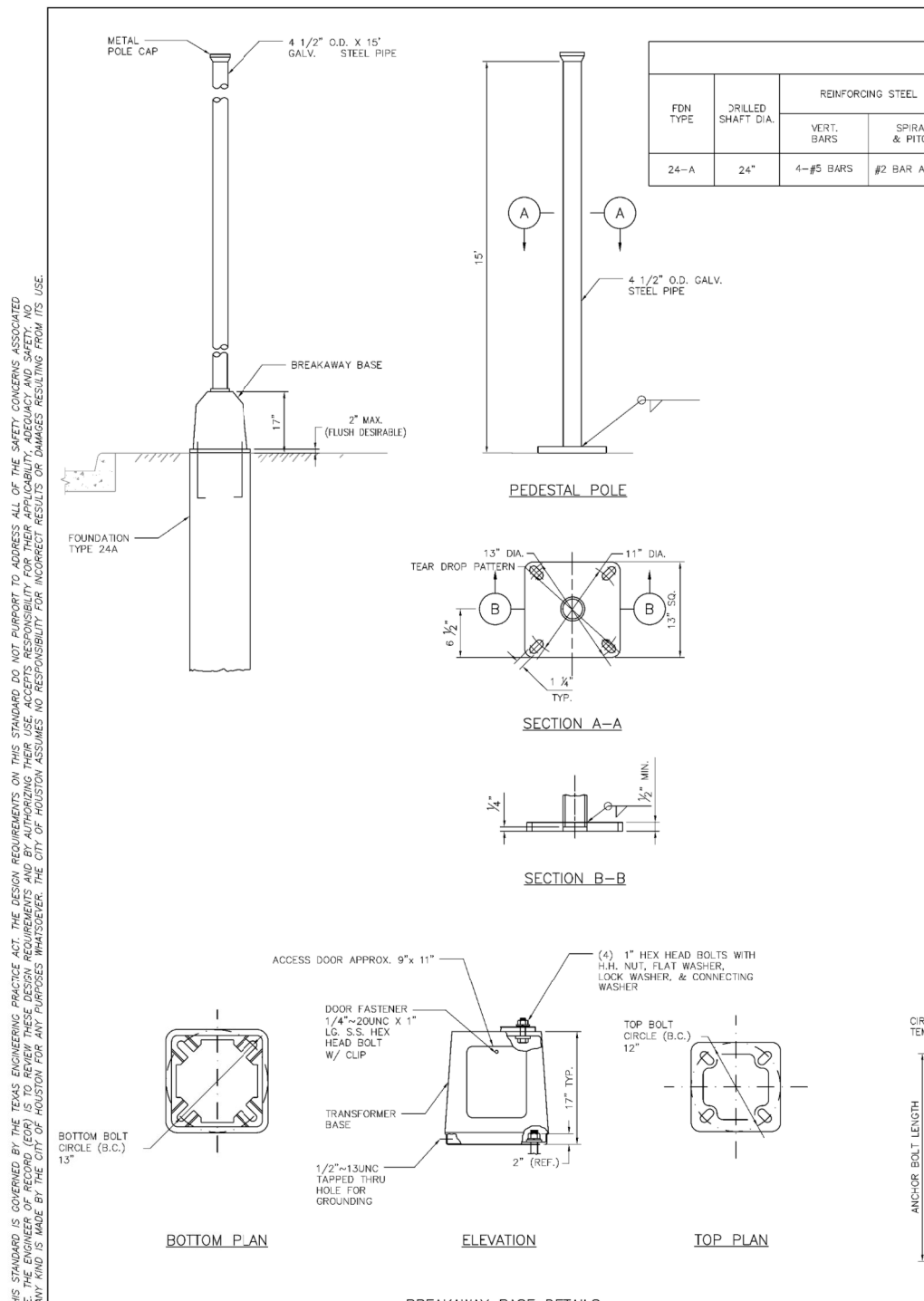
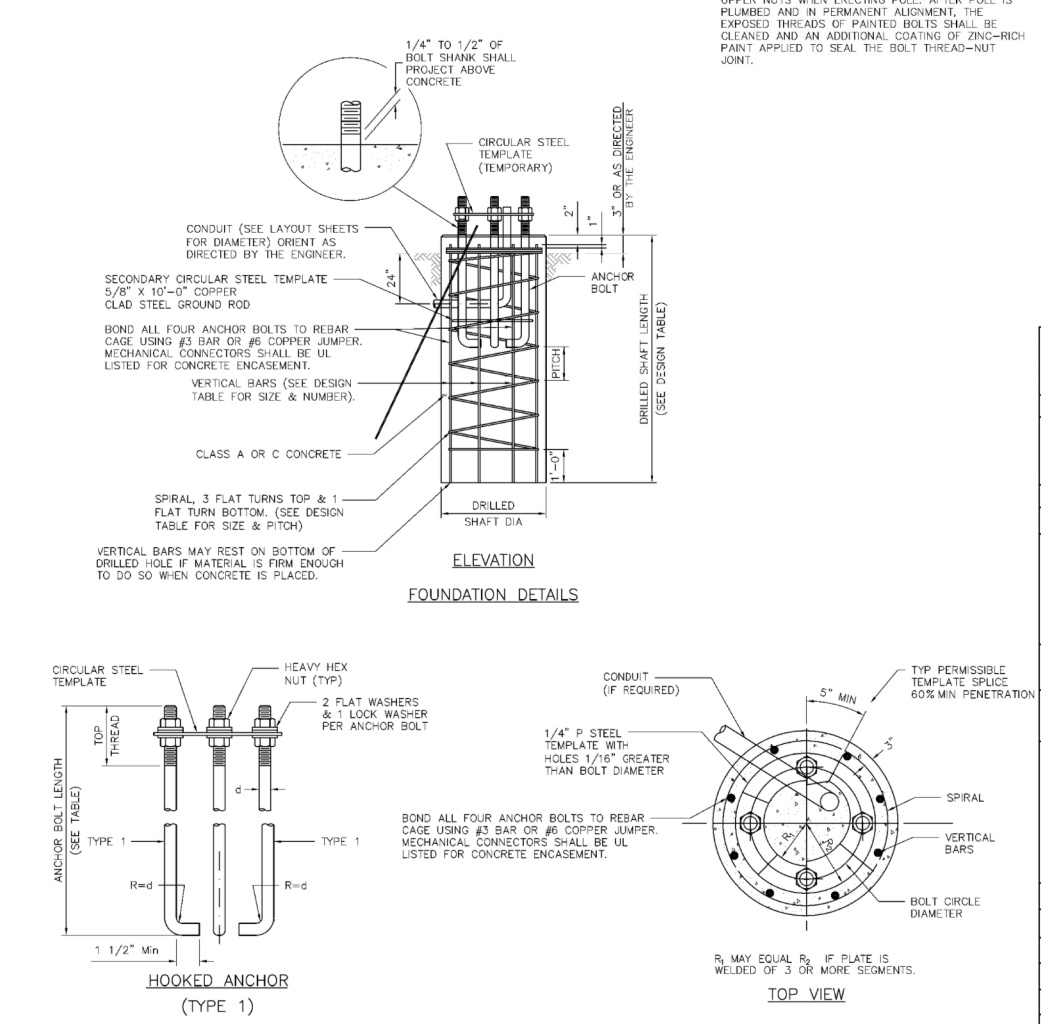
FOUNDATION DESIGN TABLE										
FDN TYPE	DRILLED SHAFT DIA.	REINFORCING STEEL		DRILLED SHAFT LENGTH FT	ANCHOR BOLT DESIGN (SEE NOTE 5)				FOUNDATION DESIGN LOAD (SEE NOTE 6)	
		VERT. BARS	SPIRAL & PITCH	TEXAS CONE PENETROMETER 10 BLOWS/ FT	ANCHOR BOLT DIA.	FY (KSI)	BOLT CIR. DIA.	ANCHOR TYPE	MOMENT K-FT	SHEAR KIPS
24-A	24"	4-#5 BARS	#2 BAR AT 12"	6	3/4"	36	*13"	1	10	1

* 10 1/2" B.C. FOR PUSH BUTTON POLE

ANCHOR BOLT & TEMPLATE SIZES						
BOLT DIA. IN.	**BOLT LENGTH	TOP THREAD	BOTT. THREAD	BOLT CIRCLE	R_2	R_1
3/4"	1'-6"	3"	–	13"	7 1/8"	5 5/8"

** MIN DIMENSIONS GIVEN, LONGER BOLTS ARE ACCEPTABLE.





GENERAL NOTES

1. DESIGN CONFORMS TO 1994 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS AND INTERIM REVISIONS THERETO.
2. CONCRETE SHALL BE CLASS A OR C.
3. THREADS FOR ANCHOR BOLTS AND NUTS SHALL BE ROLLED OR CUT THREADS OF UNIFIED NATIONAL COARSE THREAD SERIES EXCEPT FOR A193B7 BOLTS WHICH SHALL HAVE 8 PITCH THREAD SERIES. BOLTS AND NUTS SHALL HAVE CLASS 2A AND 2B FIT TOLERANCES. GALVANIZED NUTS SHALL BE TAPPED AFTER GALVANIZING.
4. ANCHOR BOLTS THAT ARE 1" IN DIAMETER OR LESS SHALL CONFORM TO ASTM A36. GALVANIZE ALL ANCHOR BOLTS UNLESS OTHERWISE NOTED. EXPOSED NUTS SHALL BE GALVANIZED OR COATED WITH ZINC-RICH PAINT. WASHERS SHALL BE GALVANIZED. TEMPLATES AND EMBEDED NUTS NEED NOT BE GALVANIZED.
5. ANCHOR BOLT DESIGN DEVELOPS THE FOUNDATION CAPACITY GIVEN UNDER FOUNDATION DESIGN LOADS.
6. FOUNDATION DESIGN LOADS ARE THE ALLOWABLE MOMENTS AND SHEARS AT THE BASE OF THE STRUCTURE.
7. ANCHOR BOLT ASSEMBLY INSTALLATION PROCEDURE
   7.1. THREADS OF ANCHOR BOLTS SHALL BE COATED WITH PIPE JOINT COMPOUND PRIOR TO INSTALLATION OF UPPER NUTS WHEN ERECTING POLE. AFTER POLE IS PLUMBED AND IN PERMANENT ALIGNMENT, THE EXPOSED THREADS OF PAINTED BOLTS SHALL BE CLEANED AND AN ADDITIONAL COATING OF ZINC-RICH PAINT APPLIED TO SEAL THE BOLT THREAD-NUT JOINT.
8. DETAILS DEPICTED ON THIS SHEET SHOW A TYPICAL PEDESTAL POLE ASSEMBLY WITH A DRILLED SHAFT FOUNDATION.
9. USE 24 IN. DRILLED SHAFT FOUNDATION AS SHOWN.
10. PROVIDE BREAKAWAY FUSE HOLDER WITH DOUBLE-POLE HOUSING. ENSURE FUSE HOLDER IS POLARIZED, WATER-RESISTANT, UL RECOGNIZED, AND RATED FOR 30A MAXIMUM CURRENT CAPACITY AT 600V OR LESS. PROVIDE BREAKAWAY FUSE HOLDER FROM MANUFACTURERS PRE-QUALIFIED BY TXDOT TRAFFIC OPERATIONS DIVISION. SEE https://www.txdot.gov/business/resources/materials/material-producer-list.html FOR LIST OF PRE-QUALIFIED MANUFACTURERS. CATEGORY IS "ROADWAY ILLUMINATION AND ELECTRICAL SUPPLIES." PROVIDE 10 AMP TIME DELAY FUSES.
11. POLE SHAFT SHALL BE ONE PIECE. ALUMINUM CONDUIT WILL NOT DEVELOP THE NECESSARY STRENGTH AND WILL NOT BE ALLOWED. IN HIGH WINDS, USE A POLE AND BASE COLLAR ASSEMBLY TO ADD STRENGTH AND PREVENT LOOSENING ON CONNECTION.
12. PER MANUFACTURER'S RECOMMENDATIONS, ENGAGE ALL THREADS ON THE PEDESTAL POLE BASE AND PIPE UNLESS THE PIPE IS FULLY SEATED INTO BASE.
13. PROVIDE NON FUSED WATERTIGHT BREAKAWAY ELECTRICAL CONNECTORS FOR BREAKAWAY POLES (BUSSMANN HET, LITTELFUSE LET, FERRAZ-SHAWMUT FEBN, OR APPROVED EQUAL).
14. PROVIDE SIGNAL HEADS AND MOUNTING AS SHOWN ELSEWHERE ON THE PLANS.

APPROVED BY: DocuSigned by: Suhail Kanwar — CITY ENGINEER
APPROVED BY: DocuSigned by: KHANG NGUYEN — CITY TRAFFIC ENGINEER
APPROVED BY: DocuSigned by: Carol Haddock — DIRECTOR OF HOUSTON PUBLIC WORKS

EFF DATE: NOV-27-2023 | DWG NO: 02465-02

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

PEDESTAL/PUSHBUTTON POLE DRILLED SHAFT FOUNDATION

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FCM Engineers, PC
TX FIRM No.: F-13481

WSP USA Inc
16200 Park Row, Suite 200
Houston, TX 77084 TBPE # 2263

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HOUSTON PUBLIC WORKS

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STANDARD DETAILS
SHEET 1

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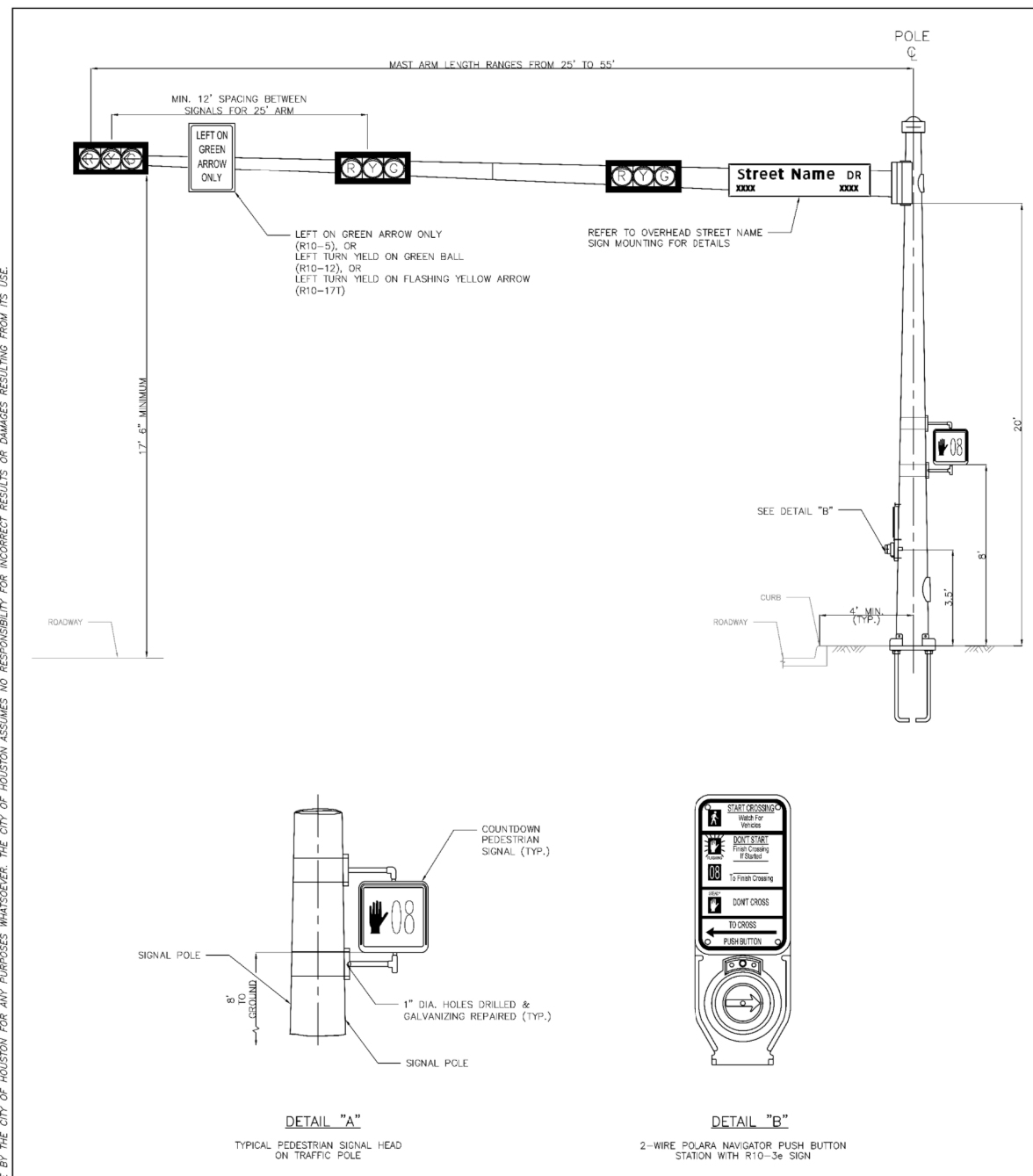
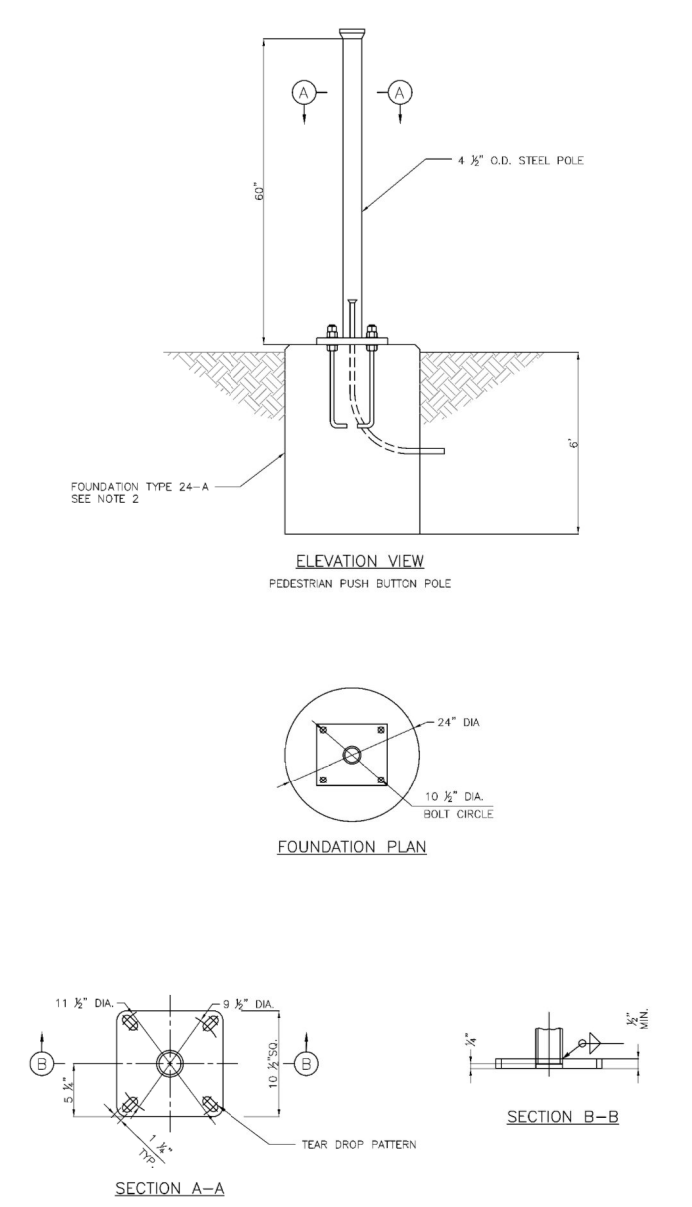


DETAIL "A"

TYPICAL PEDESTRIAN SIGNAL HEAD ON TRAFFIC POLE

DETAIL "B"

2-WIRE POLARA NAVIGATOR PUSH BUTTON STATION WITH R10-3e SIGN



ELEVATION VIEW

PEDESTRIAN PUSH BUTTON POLE

FOUNDATION PLAN

SECTION A-A

SECTION B-B

NOTE:

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS STATED ON CITY OF HOUSTON STANDARD DETAIL 02465-02 "PEDESTAL/PUSH BUTTON POLE DRILLED SHAFT FOUNDATION".
2. REFER TO CITY OF HOUSTON STANDARD DETAIL 02465-02 "PEDESTAL/PUSHBTTON POLE DRILLED SHAFT FOUNDATION" FOR ANCHOR BOLT DETAILS.

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APPROVED BY: DIRECTOR OF HOUSTON PUBLIC WORKS	
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TYPICAL MAST ARM/POLE FIXTURE CONFIGURATION

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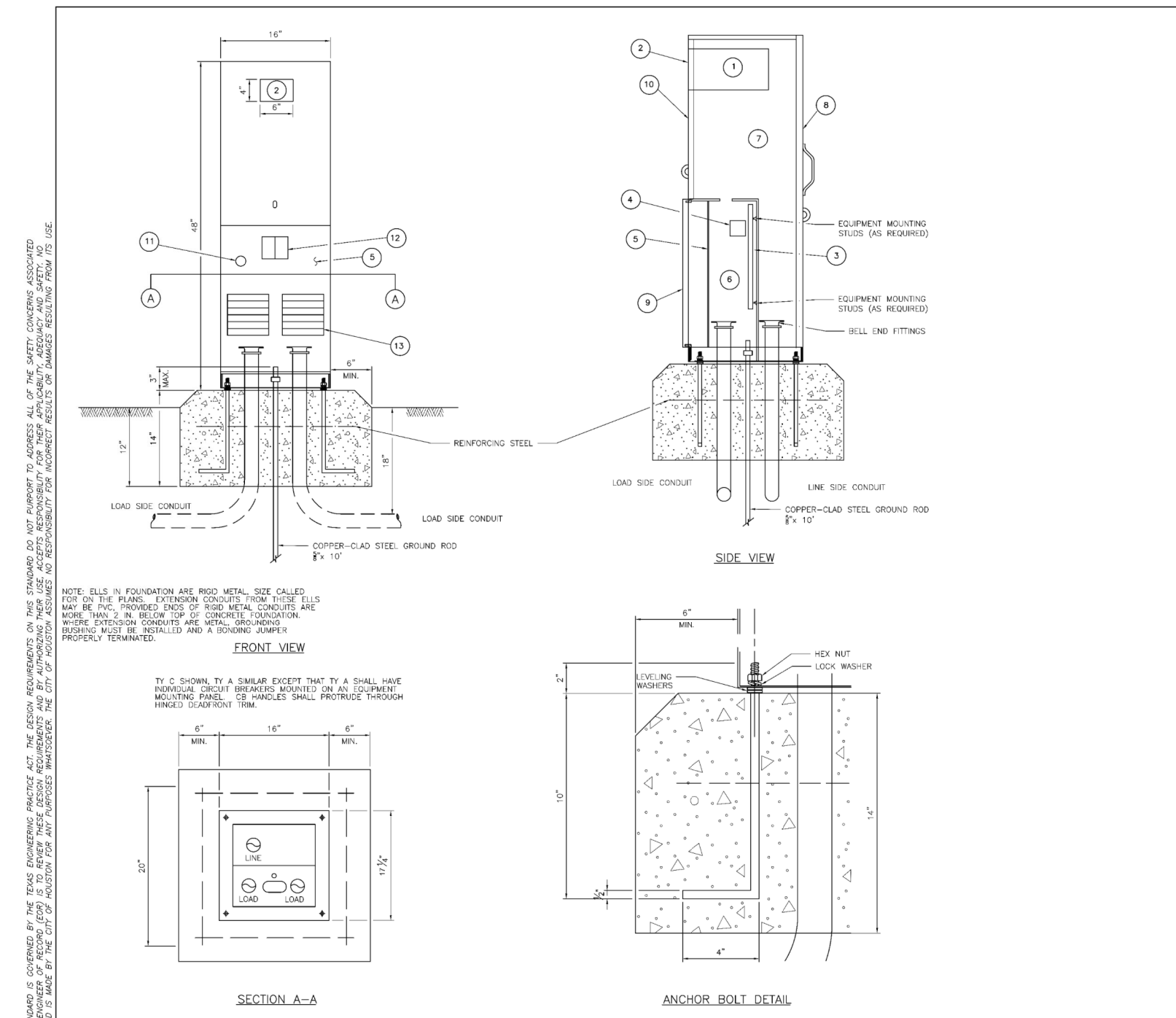

FRONT VIEW

SIDE VIEW

SECTION A-A

ANCHOR BOLT DETAIL

GENERAL NOTES:

1. THE PEDESTAL SERVICE SHALL BE UL TYPE 3R, AND SHALL BE CONSTRUCTED OF A MINIMUM OF 12 GAUGE STAINLESS STEEL OR ALUMINUM AS REQUIRED. STAINLESS STEEL SHALL NOT BE PAINTED. FOR ALUMINUM, THE FINISH SHALL BE AN ELECTROSTATIC APPLIED POLY-URETHANE BAKED ON POWDER, LIGHT GREEN IN COLOR, OR COLOR AS SHOWN ELSEWHERE AND AS APPROVED BY THE ENGINEER. THE FRONT OF THE INTERIOR DEAD FRONT TRIM SHALL BE PERMANENTLY LABELED, "DANGER HIGH VOLTAGE" WITH OSHA STYLE LABEL. THE EXTERIOR OF THE PEDESTAL SERVICE DOOR SHALL BE PERMANENTLY LABELED WITH A PLACARD AS TO ITS USE (I.E. ROADWAY LIGHTING, TRAFFIC SIGNALS, ETC.). PLACARD SHALL BE NEAT AND PROFESSIONAL IN APPEARANCE. LETTERING SHALL BE 1" MINIMUM HEIGHT.
2. UTILITY ACCESS DOOR SHALL HAVE STAINLESS STEEL PIANO HINGE AND PROVISIONS FOR PADLOCKING.
3. PEDESTAL DOOR SHALL HAVE STAINLESS STEEL PIANO HINGE AND STAINLESS STEEL LATCH WITH PROVISIONS FOR PADLOCKING.
4. METER ACCESS SHALL BE HINGED AND CAPABLE OF PADLOCKING.
5. ALL MOUNTING HARDWARE AND INSTALLATION DETAILS OF SERVICES SHALL BE IN ACCORDANCE WITH UTILITY COMPANY SPECIFICATIONS. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE LOCAL UTILITY COMPANY AND OBTAINING THEIR APPROVAL OF PEDESTAL DETAILS PRIOR TO MAKING SUBMITTAL TO THE CITY AND PRIOR TO CONSTRUCTING THE ELECTRICAL PEDESTAL SERVICE. ANY CHANGES REQUIRED BY THE UTILITY COMPANY SHALL BE NOTED ON THE SUBMITTALS.
6. METER SOCKET SHALL BE A MINIMUM OF 100 AMP RATING AND SHALL COMPLY WITH THE LOCAL UTILITY REQUIREMENTS.
7. PHOTOELECTRIC CONTROL SHALL MEET THE REQUIREMENTS AS SHOWN ON ED(5). SHIELD TO CONTROL STRAY LIGHT IS ALLOWABLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER OPERATION OF THE PHOTO-ELECTRIC CONTROL. THE CONTRACTOR SHALL MOVE AND/OR ADJUST OR SHIELD THE PHOTOCELL FROM STRAY OR AMBIENT NIGHTTIME LIGHT OR SHALL MAKE ANY OTHER ADJUSTMENTS REQUIRED FOR PROPER OPERATION. THE PHOTOCELL SHALL FACE NORTH WHEN PRACTICABLE. UNLESS OTHERWISE SHOWN ON THE PLANS, THE PHOTOCELL SHALL TURN ON THE ILLUMINATION SYSTEM AT 1.0 +(-) 0.5 FOOTCANDLE AND TURN OFF THE ILLUMINATION SYSTEM AT TWO FOOTCANDLES HIGHER THAN TURN ON.
8. THE CONTROL STATION (H-O-A SWITCH) SHALL BE AS SHOWN ON TxDOT STANDARD ED(5) EXCEPT THAT H-O-A SWITCH OPERATING HANDLE SHALL PROTRUDE THROUGH HINGED DEADFRONT TRIM AND NEMA 1 ENCLOSURE WILL NOT BE REQUIRED.
9. CONCRETE FOR PEDESTAL SERVICE FOUNDATION SHALL BE CLASS A OR C , AND SHALL BE IN ACCORDANCE WITH TxDOT ITEM 420, "CONCRETE STRUCTURES". EXCEPT THAT CONCRETE WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED INCIDENTAL.
10. REINFORCING STEEL SHALL BE #4 REBAR IN ACCORDANCE WITH TxDOT ITEM 440, "REINFORCING STEEL".
11. ANCHOR BOLTS SHALL BE A36M55 IN ACCORDANCE WITH ITEM 449, "ANCHOR BOLTS". ANCHOR BOLTS SHALL BE ½ INCH X 12 INCHES X 4 INCHES (DIA. X LENGTH X HOOK LENGTH).
12. ALL CONDUIT AND CONDUCTORS ATTACHED TO THE PEDESTAL SERVICE AND WITHIN 12 INCHES OF THE PEDESTAL SERVICE WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE SUBSIDIARY TO THE PEDESTAL SERVICE. ALL SERVICE CONDUIT AND CONDUCTORS FROM THE UTILITY COMPANY TRANSFORMER TO A POINT 12 INCHES FROM THE THE PEDESTAL SERVICE SHALL BE PAID FOR SEPARATELY. SERVICE CONDUIT SHALL BE THE SIZE AND TYPE AS SHOWN IN THE ELECTRICAL SERVICE DATA.
13. DIMENSIONS MAY VARY TO ACCOMODATE REQUIRED EQUIPMENT, UTILITY COMPANY REQUIREMENTS, OR MANUFACTURER'S STANDARD EQUIPMENT DIMENSIONS. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL, SIX (6) COPIES OF BROCHURES AND/OR DRAWINGS OF THE PEDESTAL SERVICE TO BE SUPPLIED, INCLUDING ACTUAL DIMENSIONS, AND A PAINT COLOR SAMPLE.
14. A SEPARATE ENCLOSURE AS SHOWN ON TxDOT STANDARD ED(4) OR ED(5) FOR PHOTOCELL SHALL NOT BE USED FOR PEDESTAL SERVICES. PHOTOCELL SHALL BE INSTALLED AS SHOWN HERE.
15. THE PEDESTAL DOOR SHALL HAVE A MECHANICALLY ATTACHED DATA POCKET ON THE INSIDE. POCKET SHALL BE EITHER METAL OR THERMOPLASTIC AND SHALL MEASURE AT LEAST 12 INCHES BY 12 INCHES. THE CONTRACTOR SHALL PREPARE AND SUBMIT A SCHEMATIC DRAWING UNIQUE TO AN INDIVIDUAL SERVICE. THE APPROVED DRAWING SHALL BE LAMINATED AND PLACED IN THE DOCUMENT POCKET OF THE SERVICE AT THE TIME OF SHIPMENT TO THE JOB SITE. ALL APPLICABLE WIRING DIAGRAMS AND PLAN SHEET LAYOUTS FOR ALL EQUIPMENT AND BRANCH BREAKER CIRCUITS SUPPLIED BY THAT SERVICE SHALL ALSO BE LAMINATED AND PLACED IN THE DOCUMENT POCKET PRIOR TO SHIPPING.
16. GROUND ROD CLAMP TO BE UL LISTED FOR DIRECT BURIAL. ALL NON-CONDUCTIVE COATING TO BE REMOVED FROM GROUND ROD WIRE TO BE #6 AWG SOLID COPPER. METAL CONDUIT ELLS TO HAVE GROUNDING BUSHING AND BONDING JUMPERS CORRECTLY INSTALLED.
17. ALL CONDUITS ENTERING ENCLOSURES FROM UNDERGROUND MUST BE SEALED. SILICONE SHALL NOT BE ALLOWED.
18. ALL CONDUCTORS SHALL BE MEGGED AND PULL TESTED. TRAFFIC SIGNAL CABLE NOT TO BE MEGGED AFTER CONNECTION, AS ELECTRONICS WILL BE DAMAGED.
19. TOP OF CONCRETE FOUNDATION TO BE FINISHED IN A NEAT AND WORKMAN LIKE MANNER. IF LEVELING WASHERS ARE USED, NO MORE THAN ⅛ IN. HEIGHT SHALL BE USED AT ANY ONE CORNER. MAXIMUM DIP OR RISE IN FOUNDATION IS NOT TO EXCEED ⅛ IN PER FOOT. WHEN PROPERLY INSTALLED, TOP OF SERVICE ENCLOSURE SHALL READ LEVEL FRONT TO BACK AND SIDE TO SIDE WITHIN ¼ IN. ROCKING OR MOVEMENT OF THE SERVICE ENCLOSURE SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE STATE.
20. LIQUID TIGHT FLEXIBLE METAL CONDUIT SHALL NOT BE ALLOWED ON PS TYPE SERVICES.

LEGEND:

1. METER SOCKET, (WHEN REQUIRED)
2. METER SOCKET 4" x 6" PLEXIGLASS WINDOW INSTALLED IN THE LID.
3. EQUIPMENT MOUNTING PANEL
4. PHOTO ELECTRIC CONTROL WINDOW, (WHEN REQUIRED)
5. HINGED DEADFRONT TRIM
6. LOAD SIDE CONDUIT AREA
7. LINE SIDE CONDUIT AREA
8. UTILITY ACCESS DOOR, WITH HANDLE
9. PEDESTAL DOOR
10. HINGED METER ACCESS
11. CONTROL STATION (H-O-A SWITCH)
12. MAIN DISCONNECT
13. BRANCH CIRCUIT BREAKERS

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APPROVED BY: DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 02893-02

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

ELECTRICAL SERVICE SUPPORT PEDESTAL SERVICE TYPE PS

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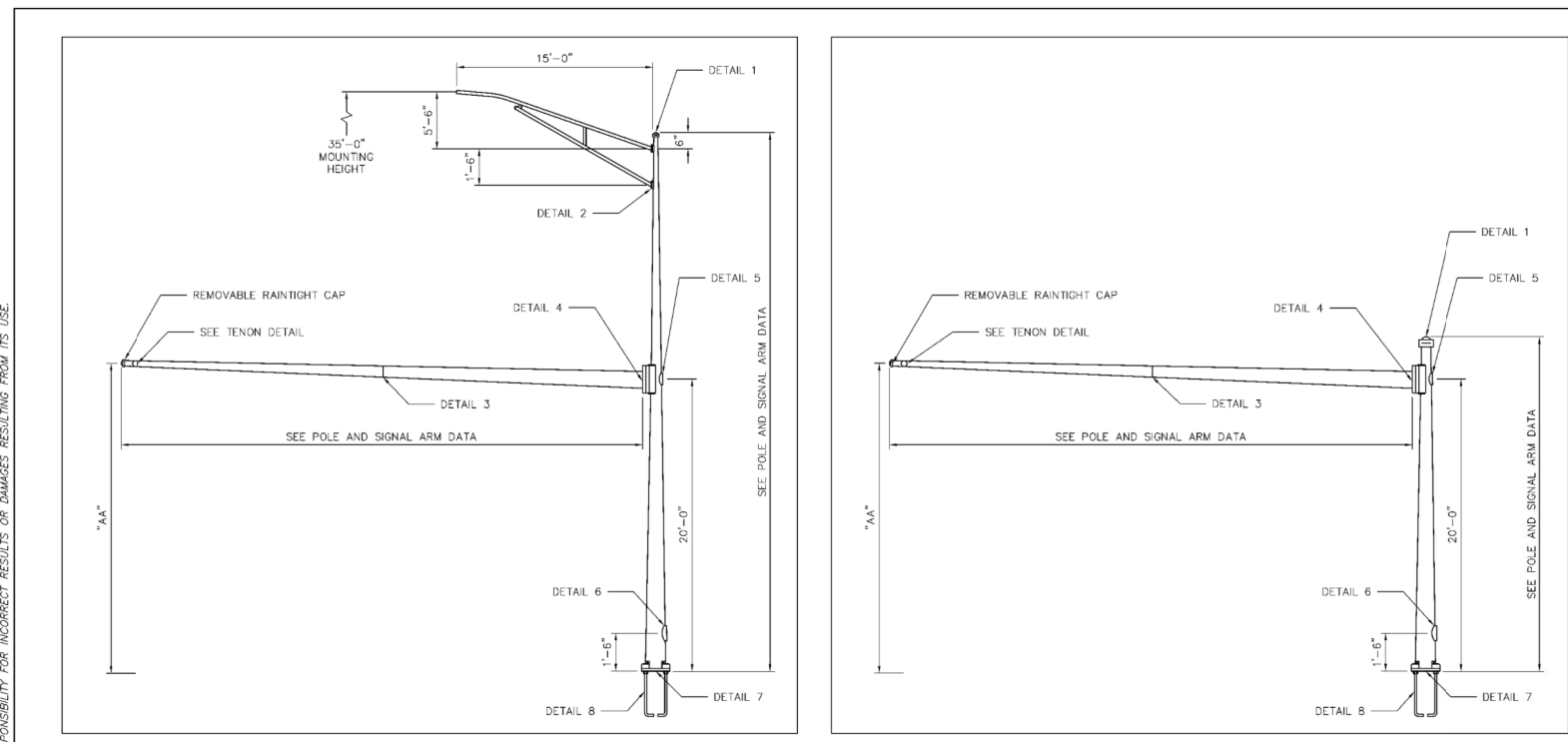
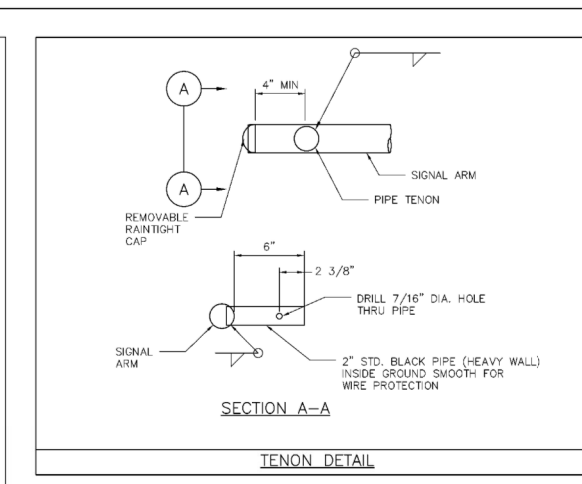




TENON DETAIL

ALTHOUGH RARE, VIBRATIONS SEVERE ENOUGH TO CAUSE DAMAGE CAN OCCASIONALLY OCCUR IN STRUCTURES OF ALL TYPES. BECAUSE THEY ARE INFLUENCED BY MANY INTERACTING VARIABLES, VIBRATIONS ARE GENERALLY UNPREDICTABLE. THE USER'S MAINTENANCE PROGRAM SHOULD INCLUDE OBSERVATION FOR EXCESSIVE VIBRATION AND EXAMINATION FOR ANY STRUCTURAL DAMAGE OR BOLT LOOSENING. ARMS SHALL BE VISUALLY INSPECTED IN 5 TO 20 MPH WIND CONDITIONS AFTER SIGNAL HEAD INSTALLATION AND, IF VERTICAL MOVEMENTS WITH A TOTAL EXCURSION (MAXIMUM POSITIVE TO MAXIMUM NEGATIVE) OF MORE THAN APPROXIMATELY 8 INCHES ARE OBSERVED AT ARM TIP, DAMPING DEVICES OR OTHER MEANS SHALL BE FITTED TO THE ARM(S). THE NECESSARY DAMPING DEVICE(S) OR OTHER REMEDIAL MEASURES SHALL BE AS RECOMMENDED BY THE CONTRACTOR. EXCESSIVE VIBRATIONS SHALL NOT BE ALLOWED TO CONTINUE FOR MORE THAN 2 DAYS.

VIBRATION DISCLAIMER

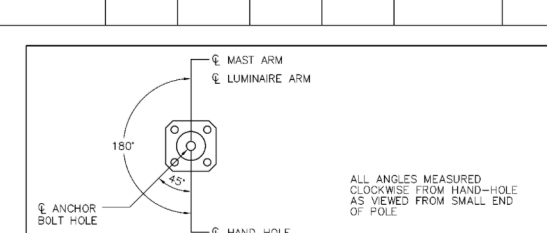
POLE AND MAST ARM DATA

DESIGNATION KEY: POLE SERIES	POLE TYPE	SIGNAL ARM SPAN (FT)	POLE TUBE: BASE DIA. (IN)	TOP DIA. (IN) WITH LUM ARM	TOP DIA. (IN) WITHOUT LUM ARM	LENGTH (FT) WITH LUM ARM	LENGTH (FT) WITHOUT LUM ARM	GAUGE OR THK. (IN)	POLE BASE: SQUARE "S" (IN)	BOLT CIRCLE "Y" (IN)	THK. "M" (IN)	HOLE / SLOT "Z" (IN)	ANCHOR BOLT: DIA. "K" (IN)	LENGTH "J" (IN)	HOOK "H" (IN)	THREAD LENGTH "U" (IN)	SIGNAL ARM TUBE: FIXED END DIA. (IN)	FREE END DIA. (IN)	GAUGE OR THICK (IN)	SPAN (FT)	TIP HEIGHT "AA" (FT)
HOU	1	25	13.00	8.80	10.00	30.00	21.50	3	19.00	18.00	2.25	2.50	2.25	89.00	7.00	9.00	8.00	3.50	7	25.00	20.2
		30															9.00	4.80	7	30.00	20.3
		35															10.00	5.10	7	35.00	20.3
HOU	2	40	13.00	8.80	10.00	30.00	21.50	0.375									10.50	4.90	7	40.00	20.3
		45															10.14	3.84	3	45.00	20.4
		50															11.00	4.00	3	50.00	20.4
		55															11.50	4.16	DET 3	55.00	20.5

MATERIAL DATA

COMPONENT	ASTM DESIGNATION	MIN. YIELD (KSI)	COMPONENT	ASTM DESIGNATION	MIN. YIELD (KSI)
POLE SHAFT - 3 GAUGE	A595 GR.A	55	MAST ARM CONN. BOLTS	F3125 GR A325*	
POLE SHAFT - 0.375"	A572 GR.55	55	LUM. ARM CONN. BOLTS	SAE GR.5	36
MAST ARM SHAFT	A595 GR.A	55	ANCHOR BOLTS	F1554 GR.55	55
LUMINAIRE ARM SHAFT	2" SCH. 80 PIPE		GALVANIZING	A123 & A153	
ARM ATTACHMENT PLATE	A36	36			
BASEPLATE	A36	36			

*LUBRICATE IN FIELD IF NECESSARY IN LIEU OF THE REQUIREMENTS IN F3125 GR.A325.



RADIAL INDEX

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TRAFFIC SIGNAL STRUCTURES

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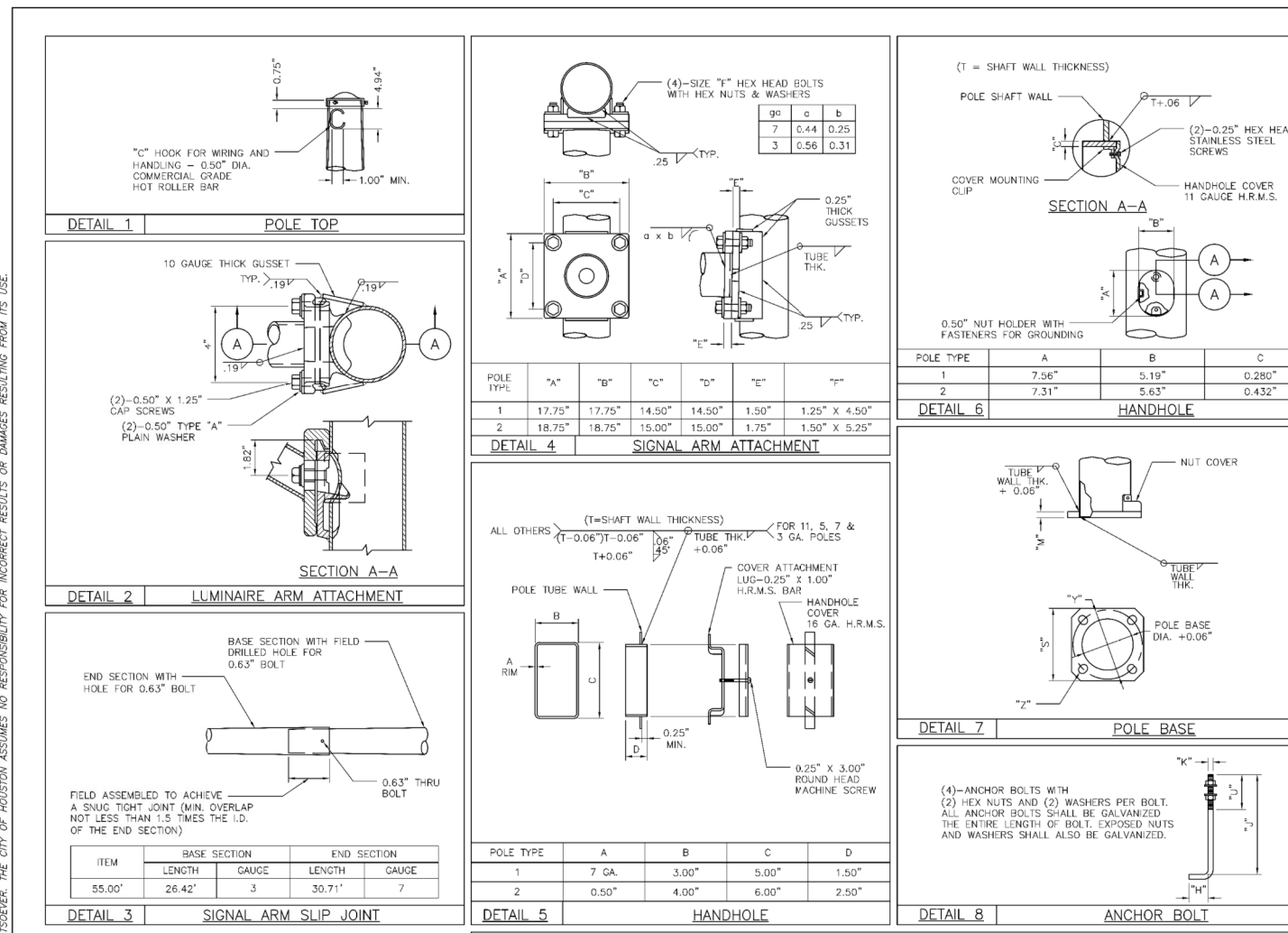


DETAIL 3 – SIGNAL ARM SLIP JOINT

ITEM	BASE SECTION LENGTH	BASE SECTION GAUGE	END SECTION LENGTH	END SECTION GAUGE
55.00'	26.42'	3	30.71'	7

DETAIL 4 – SIGNAL ARM ATTACHMENT

ga	a	b
7	0.44	0.25
3	0.56	0.31

POLE TYPE	"A"	"B"	"C"	"D"	"E"	"F"
1	17.75"	17.75"	14.50"	14.50"	1.50"	1.25" X 4.50"
2	18.75"	18.75"	15.00"	15.00"	1.75"	1.50" X 5.25"

DETAIL 5 – HANDHOLE

POLE TYPE	A	B	C	D
1	7 GA.	3.00"	5.00"	1.50"
2	0.50"	4.00"	6.00"	2.50"

DETAIL 6 – HANDHOLE

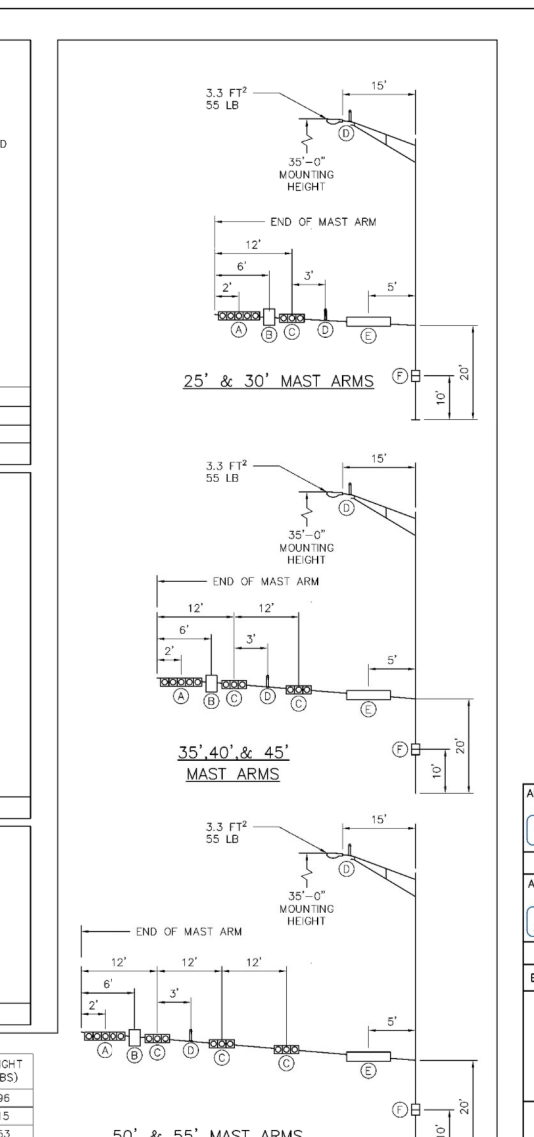
POLE TYPE	A	B	C
1	7.56"	5.19"	0.280"
2	7.31"	5.63"	0.432"

DESIGN NOTE:

DESIGNS ARE BASED ON THE LOADING CHART SHOWN ON THIS DRAWING AND ARE IN ACCORDANCE WITH MATERIALS AND ALLOWABLE STRESS REQUIREMENTS OF THE 1994 AASHTO "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS" FOR A 90 MPH WIND ZONE WITH A 1.3 GUST FACTOR.

DEVICE	DESCRIPTION	PROJ. AREA (FT^2)	WEIGHT (LBS)
Ⓐ	12"-5 SEC. SIGNAL WITH BACKPLATES	13.33	96
Ⓑ	30" X 36" SIGNAL ARM MOUNTED SIGN	7.50	15
Ⓒ	12"-3 SEC. SIGNAL WITH BACKPLATES	8.67	53
Ⓓ	VIVDS CAMERA	1.00	15
Ⓔ	24" X 72" STREET NAME SIGN	12.00	30
Ⓕ	PEDESTRIAN SIGNAL	4.00	40

MAXIMUM LOADING INFORMATION



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TRAFFIC SIGNAL STRUCTURES

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STANDARD DETAILS SHEET 2

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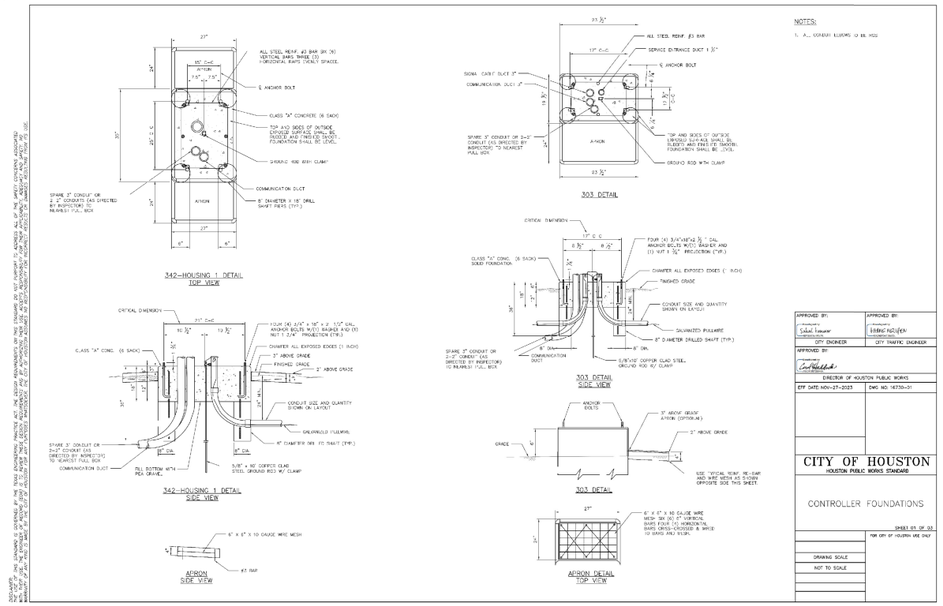

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Salud Ibarra (Director)	Hiang Nguyen (Director)
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY:	
Carl Haddock (Director)	
DIRECTOR OF HOUSTON PUBLIC WORKS	
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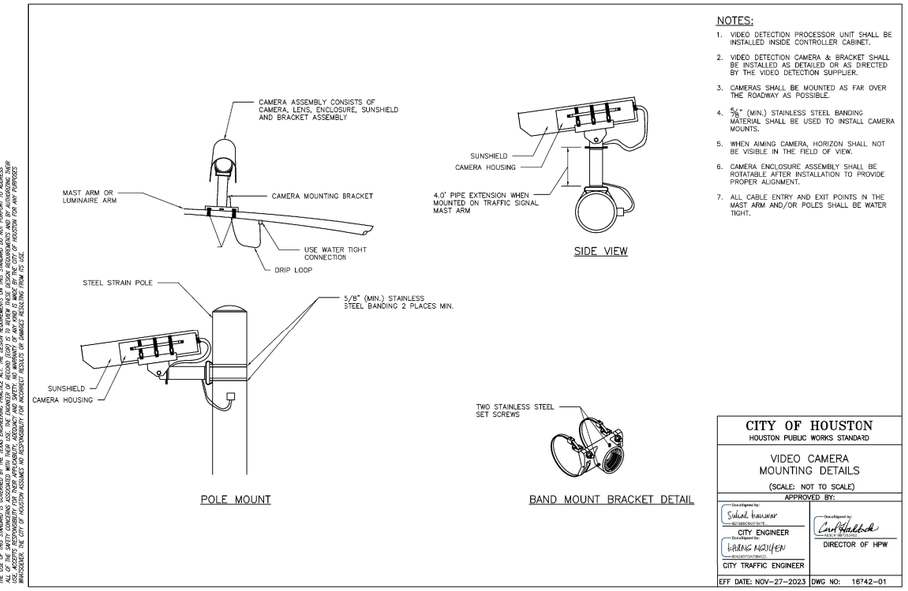

NOTES:

1. VIDEO DETECTION PROCESSOR UNIT SHALL BE INSTALLED INSIDE CONTROLLER CABINET.
2. VIDEO DETECTION CAMERA & BRACKET SHALL BE INSTALLED AS DETAILED OR AS DIRECTED BY THE VIDEO DETECTION SUPPLIER.
3. CAMERAS SHALL BE MOUNTED AS FAR OVER THE ROADWAY AS POSSIBLE.
4. 5/8" (MIN.) STAINLESS STEEL BANDING MATERIAL SHALL BE USED TO INSTALL CAMERA MOUNTS.
5. WHEN AIMING CAMERA, HORIZON SHALL NOT BE VISIBLE IN THE FIELD OF VIEW.
6. CAMERA ENCLOSURE ASSEMBLY SHALL BE ROTATABLE AFTER INSTALLATION TO PROVIDE PROPER ALIGNMENT.
7. ALL CABLE ENTRY AND EXIT POINTS IN THE MAST ARM AND/OR POLES SHALL BE WATER TIGHT.

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VIDEO CAMERA MOUNTING DETAILS

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APPROVED BY:

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CITY ENGINEER	DIRECTOR of HPW
Docu Signed by: Hiang Nguyen (Director)	
CITY TRAFFIC ENGINEER	

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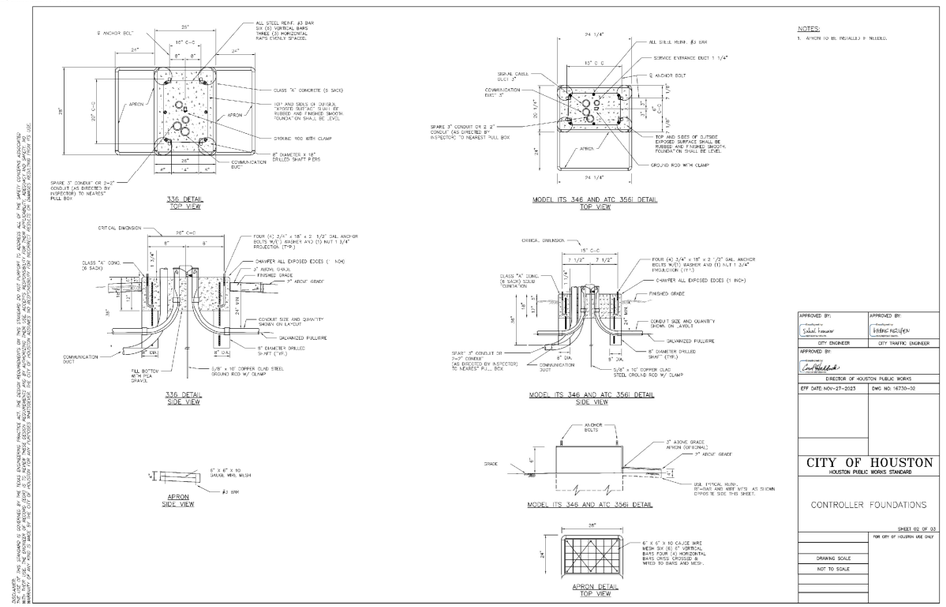

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APPROVED BY:	
Carl Haddock (Director)	
DIRECTOR OF HOUSTON PUBLIC WORKS	
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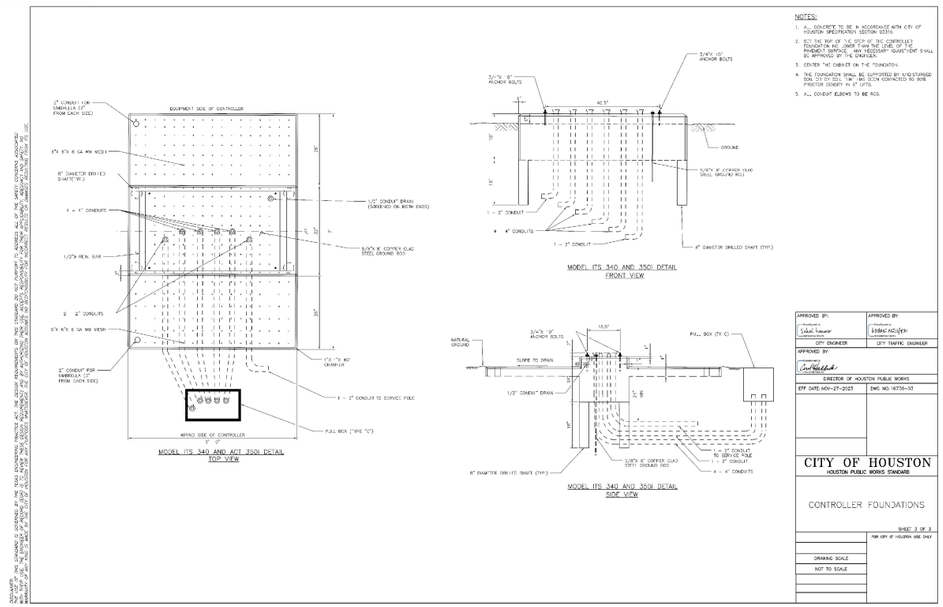

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KUO & ASSOCIATES, INC.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE
STANDARD DETAILS
SHEET 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
N.T.S	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 608 OF 718	

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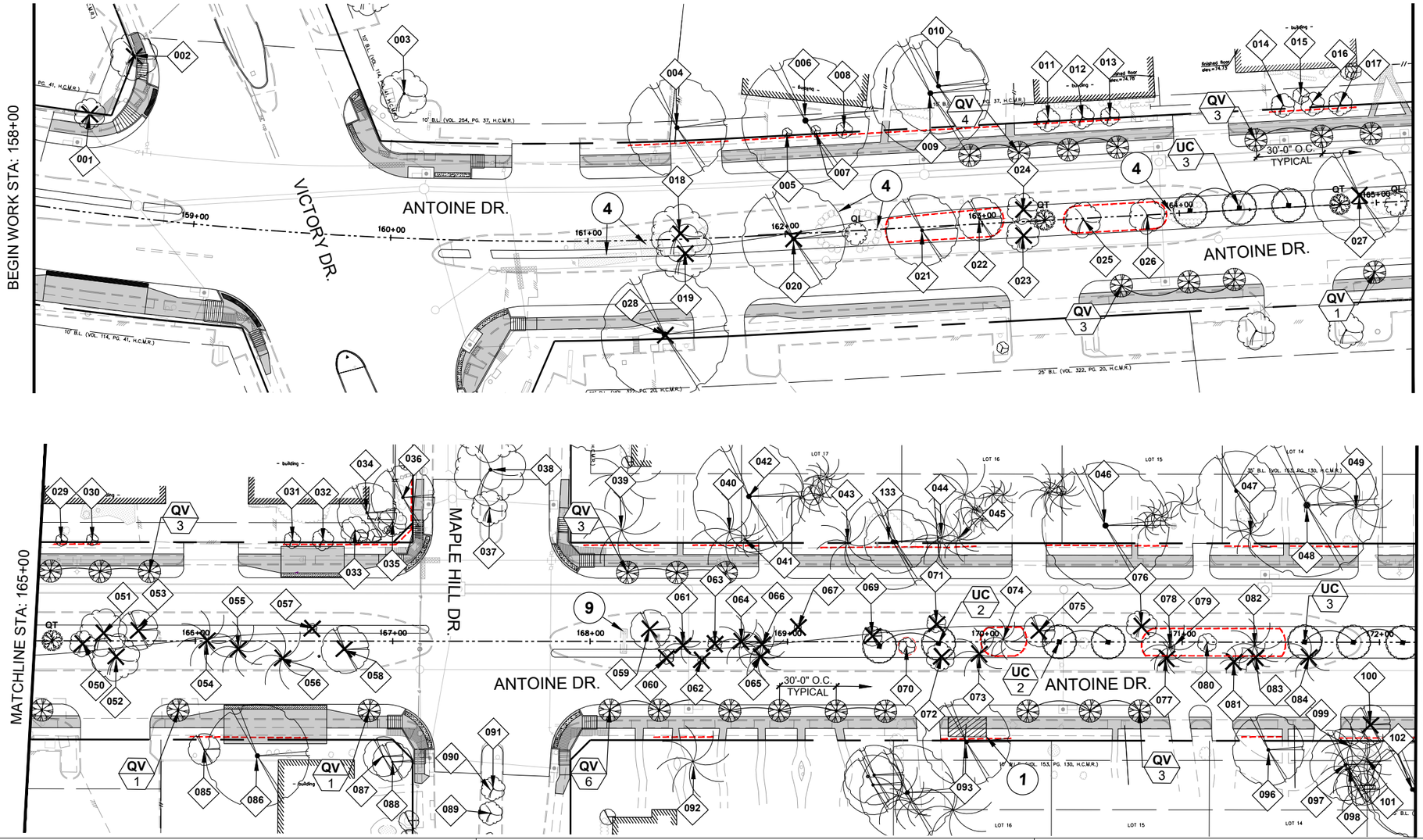

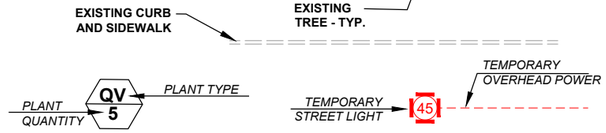

PRESERVED TREE DIAGRAM

GENERAL NOTES

A. CONTRACTOR SHALL SEEK PRIOR APPROVAL FROM THE ARBORIST, CITY URBAN FORESTOR, AND CITY'S REPRESENTATIVE PRIOR TO INITIATION OF TREE REMOVAL AND/OR TREE PROTECTION ACTIVITIES WITHIN THE PROJECT SCOPE OF WORK. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE CITY OF HOUSTON.

B. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT NO DAMAGE TO EXISTING TREES TO BE PROTECTED AND/OR THOSE THAT HAVE THEIR TRUNKS OUTSIDE OF THE PROJECT LIMITS BUT HAVE SIGNIFICANT BRANCH OVERHANG INTO THE PROJECT LIMITS.

C. THE CONTRACTOR SHALL NOT, AT ANY TIME, PARK CONSTRUCTION VEHICLES, MATERIALS, OR EQUIPMENT INSIDE OF THE TREE PROTECTION ZONE (TPZ) OF TREES TO BE PROTECTED.

D. **SEE TREE PRESERVATION DETAILS AND SPECIFICATIONS** FOR DISPOSITION AND CONDITIONAL TREATMENT OF TREES NOTED ON THE DRAWINGS.

E. ALL NOTED TREES ON DRAWINGS MAY REQUIRE ADDITIONAL CONDITIONAL TREATMENT OTHER THAN NOTED ON THE PLANS. ***SEE TREE INVENTORY AND TREE PRESERVATION DETAILS*** *(ALL TREE PRESERVATION WORK REQUIRED HEREIN IS INCIDENTAL TO 01562 UNLESS OTHERWISE NOTED)*

F. CONTRACTOR TO PROVIDE WATER, TREATMENT FOR BORERS AND OTHER INSECTICIDE TREATMENTS FOR TREES TO BE PRESERVED AS NEEDED PER ARBORISTS RECOMMENDATION. (INCIDENTAL TO 01562 AND 02915 AND NOT PAID FOR SEPARATELY.)

G. PROPOSED TREE SHALL BE PLANTED A MINIMUM OF 5'-0" FROM BACK OF CURB AND NO CLOSER THAN 20' O.C. FROM EACH OTHER. TREE MITIGATION PLACEMENT DISTANCES FROM MEDIAN TIP ENDS SHALL BE 50'-0" AT NON-SIGNALIZED INTERSETIONS, ADN 75'-0" AT SIGNALIZED INTERSECTIONS.

H. ALL TREE MITIGATION MATERIALS AND LABOR REQUIRED TO PROVIDE AND INSTALL THE PROPOSED TREES SHALL BE INCIDENTAL TO 02915 - TREE PLANTING

I. CONTRACTOR TO SUBMIT MEANS AND METHODS OF WATERING PROCEDURES FOR NEWLY PLANTED TREES TO ARBORIST FOR REVIEW AND APPROVAL.

J. CONTRACTOR TO WARRANT, PROVIDE WATER, AND MAINTENANCE FOR ALL NEWLY PLANTED TREES FOR A PERIOD OF TWO (2) YEARS FROM DATE OF SUBSTANTIAL COMPLETION TO SUSTAIN HEALTH OF TREE. (INCIDENTAL TO 02915 -TREE PLANTING AND NOT PAID FOR SEPARATELY.)

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PLAN NOTES

1. PROVIDE CHECKER PLATE OVER ROOT FLARE **SEE TREE PRESERVATION DETAILS**
2. PROVIDE ZERO CURB CUT CONTINUOUS **SEE TREE PRESERVATION DETAILS**
3. UNDEVELOPED PROPERTY - TREE REMOVAL AREA - NO MITIGATION REQUIRED. (INCIDENTAL TO CLEARING AND GRUBBING AND NOT PAID FOR SEPARATELY. SEE ENGINEERING PLANS FOR MORE INFORMATION.)
4. REMOVE SHRUB(S) AS NEED TO ACCOMODATE PROPOSED IMPROVEMENTS (INCIDENTAL TO 01562)
5. REDUCE SIDEWALK WIDTH TO 4'-0" AND ADJUST PROPOSED SIDEWALK ("BUMP OUT") AT EXISTING TREE ROOT FLARE(INCIDENTAL AND NOT PAID FOR SEPARATELY) **SEE TREE PRESERVATION DETAILS**
6. PROVIDE 6" CURB AT BACK OF SIDEWALK.
7. PRESERVE EXISTING SHRUBS IN PLACE - NO TREATMENT.
8. ADD 15" REINFORCED CONCRETE WALL. SEE CIVIL DRAWINGS FOR DETAILS
9. SALVAGE COMMUNITY SIGN

PROPOSED PLANTING: ***CONTRACTOR SHALL MARK TREE LOCATIONS PRIOR TO PLANTING FOR APPROVAL BY CITY FORESTER AND CITY ENGINEER***

TYPE	ABR.	BOTANICAL NAME	COMMON NAME	PLANTED SIZE
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QL	QL	QUERCUS LYRATA	OVERCUP OAK	100 GAL, 4" CAL. MIN.
X		REMOVE TREE (INCIDENTAL TO 01562)		

**SEE PLANT LIST ON TREE PRESERVATION DETAILS FOR MORE INFORMATION*

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TREE PRESERVATION PLAN

1 OF 5

(STA: .158+00 TO 172+00)

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CITY OF HOUSTON PM	
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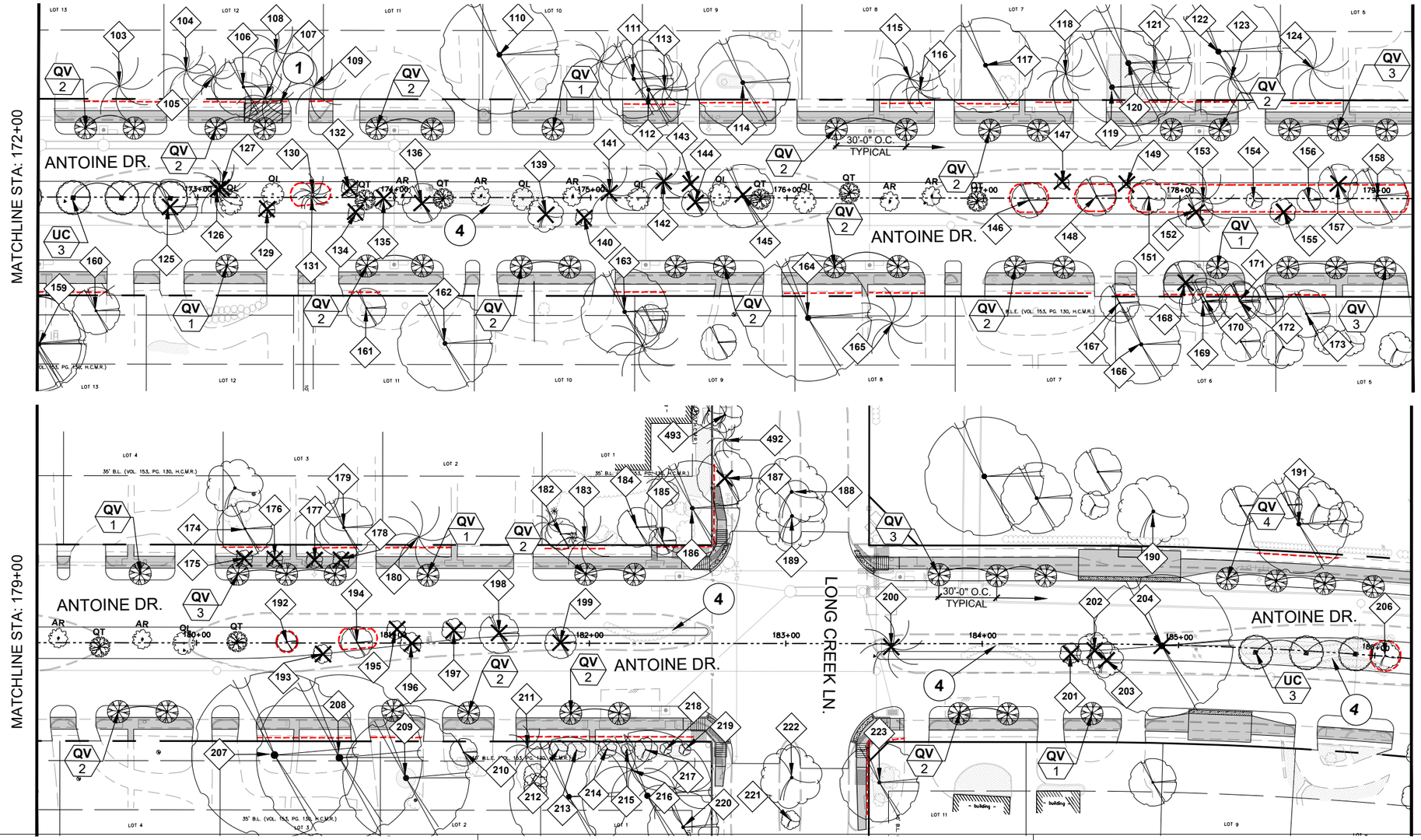

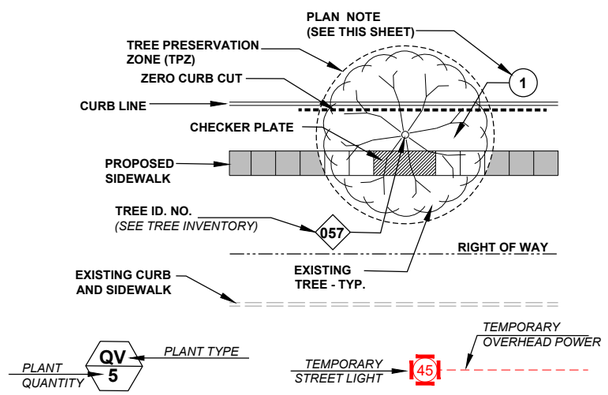

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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TREE PRESERVATION PLAN

2 OF 5

(STA: 172+00 TO 186+00)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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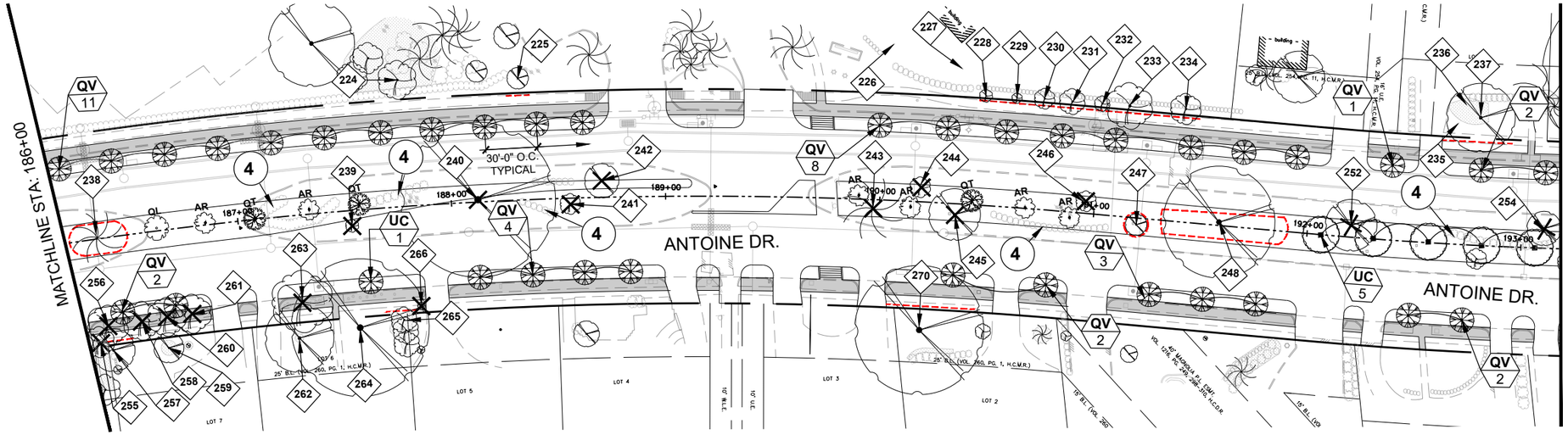
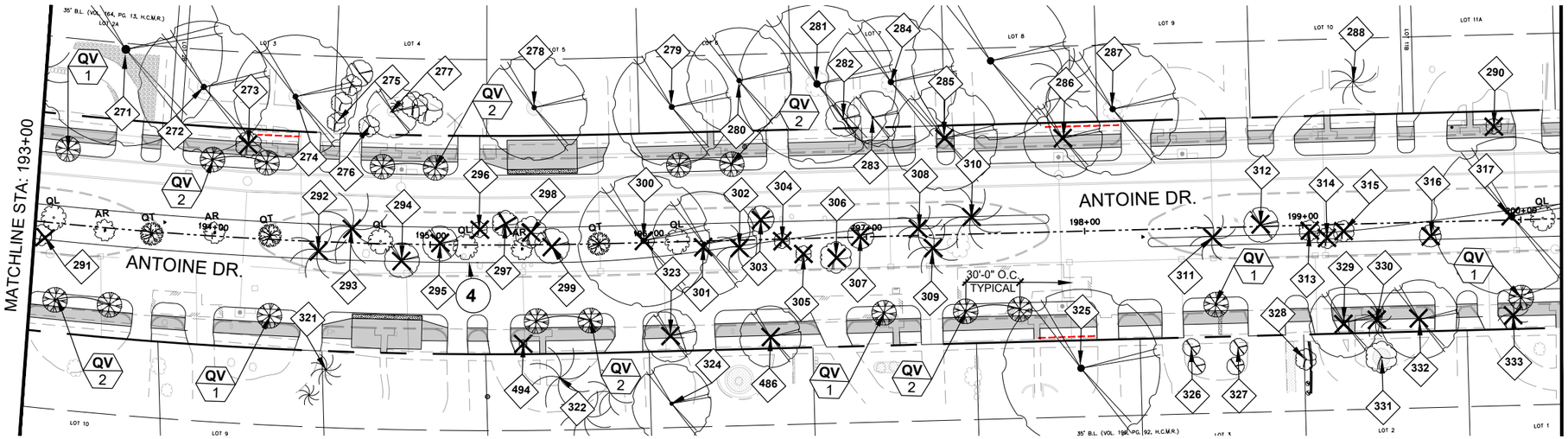
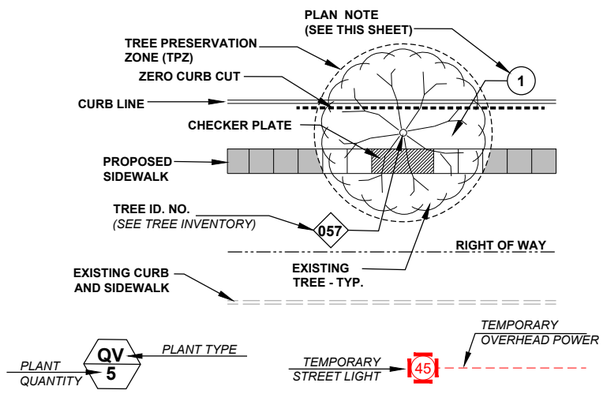
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	





0' 15' 30' 60'
SCALE 1"=30'



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HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TREE PRESERVATION PLAN

3 OF 5

(STA: 186+00 TO 200+00)

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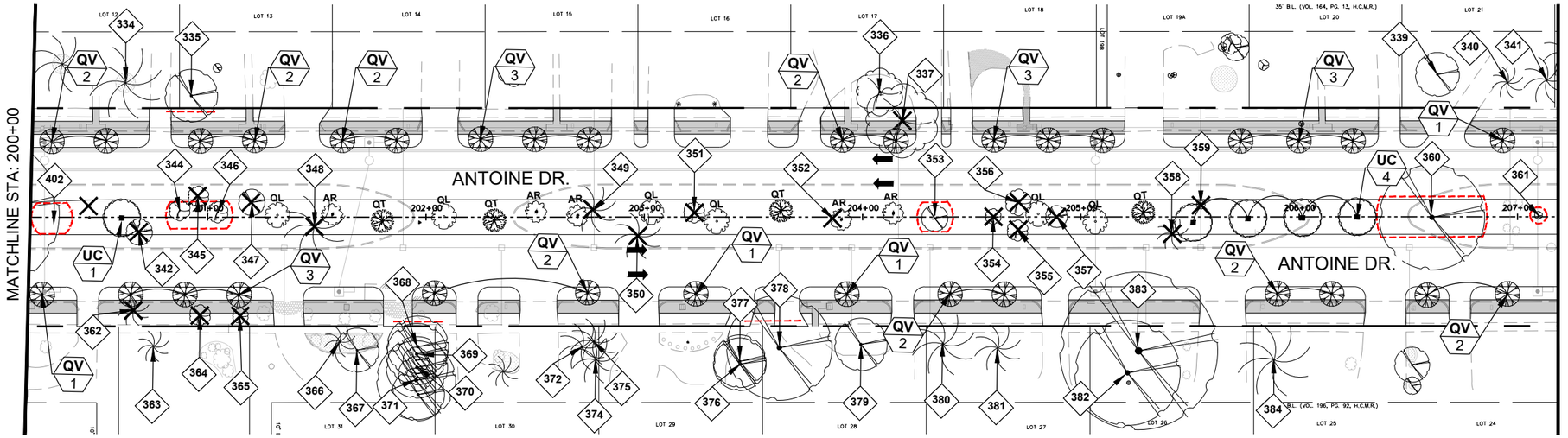

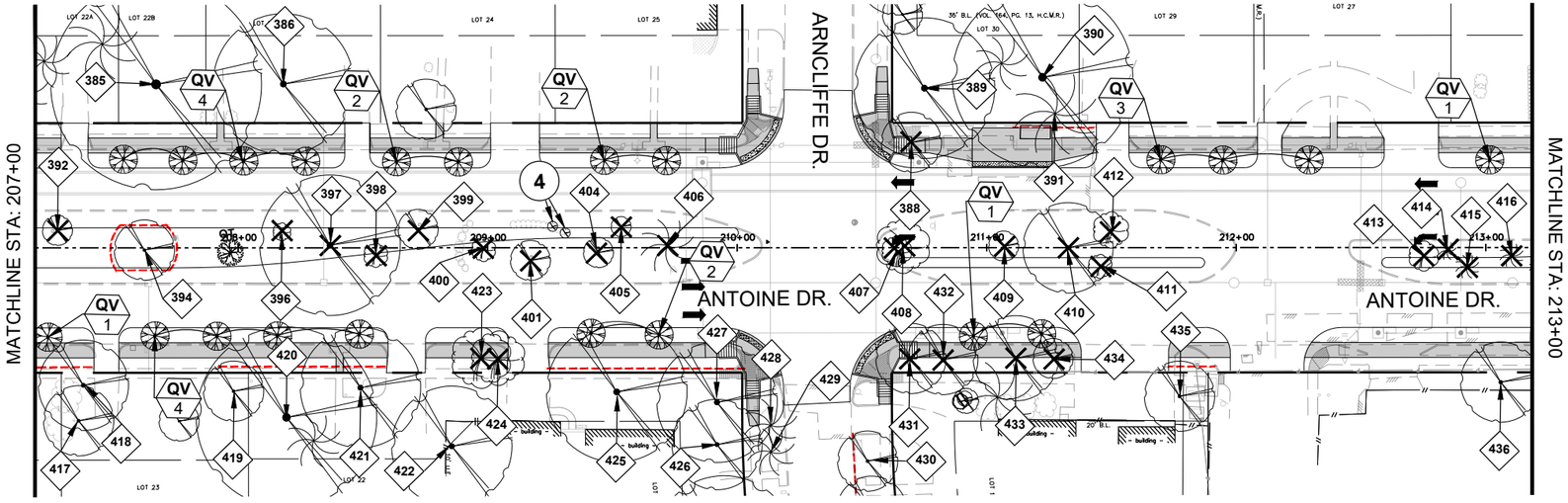

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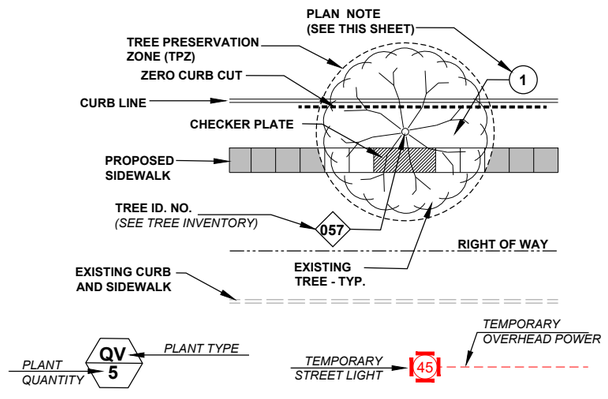

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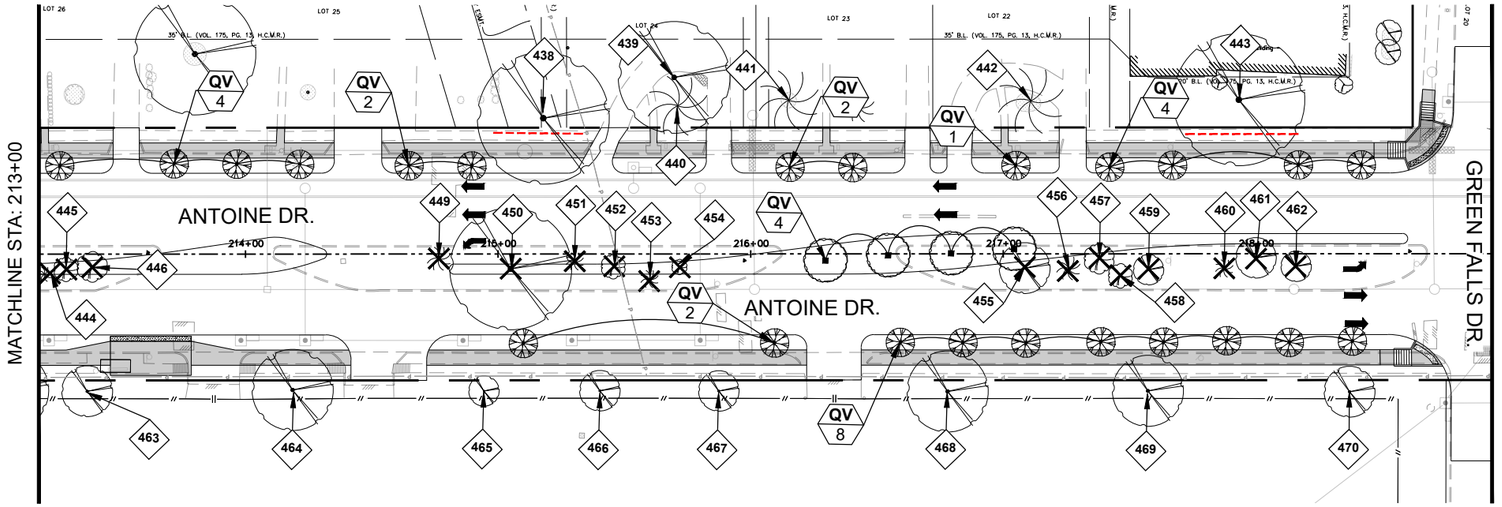
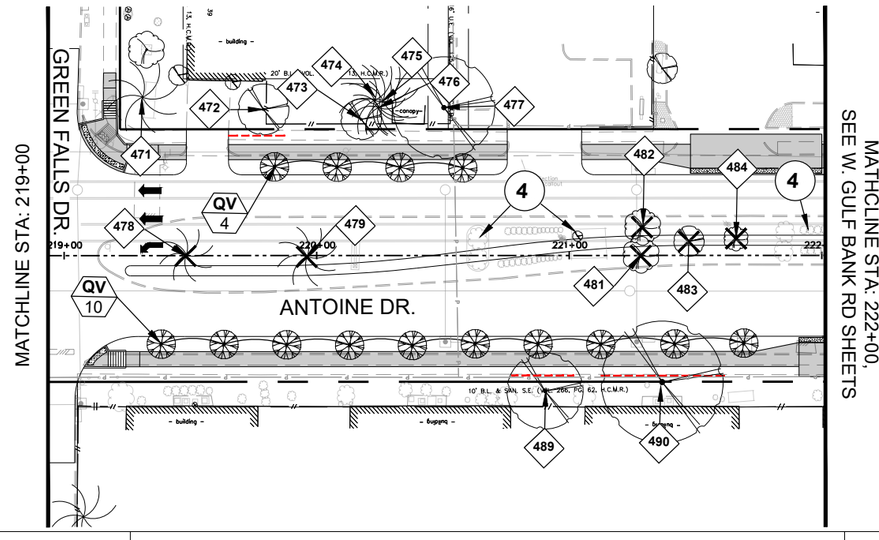
TREE PRESERVATION PLAN

4 OF 5

(STA: 200+00 TO 213+00)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	





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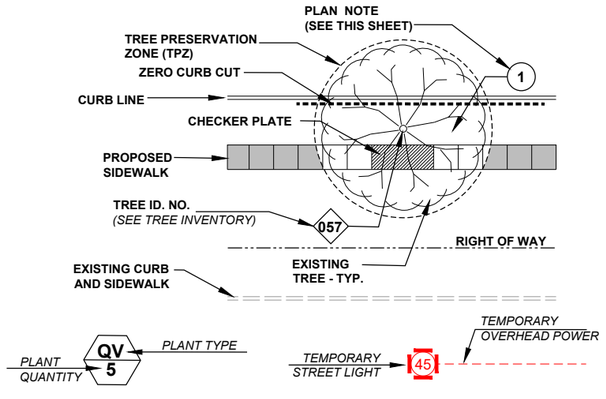
SCALE 1"=30'



PRESERVED TREE DIAGRAM

GENERAL NOTES

A. CONTRACTOR SHALL SEEK PRIOR APPROVAL FROM THE ARBORIST, CITY URBAN FORESTOR, AND CITY'S REPRESENTATIVE PRIOR TO INITIATION OF TREE REMOVAL AND/OR TREE PROTECTION ACTIVITIES WITHIN THE PROJECT SCOPE OF WORK. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE CITY OF HOUSTON.

B. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT NO DAMAGE TO EXISTING TREES TO BE PROTECTED AND/OR THOSE THAT HAVE THEIR TRUNKS OUTSIDE OF THE PROJECT LIMITS BUT HAVE SIGNIFICANT BRANCH OVERHANG INTO THE PROJECT LIMITS.

C. THE CONTRACTOR SHALL NOT, AT ANY TIME, PARK CONSTRUCTION VEHICLES, MATERIALS, OR EQUIPMENT INSIDE OF THE TREE PROTECTION ZONE (TPZ) OF TREES TO BE PROTECTED.

D. **SEE TREE PRESERVATION DETAILS AND SPECIFICATIONS** FOR DISPOSITION AND CONDITIONAL TREATMENT OF TREES NOTED ON THE DRAWINGS.

E. ALL NOTED TREES ON DRAWINGS MAY REQUIRE ADDITIONAL CONDITIONAL TREATMENT OTHER THAN NOTED ON THE PLANS. ***SEE TREE INVENTORY AND TREE PRESERVATION DETAILS*** *(ALL TREE PRESERVATION WORK REQUIRED HEREIN IS INCIDENTAL TO 01562 UNLESS OTHERWISE NOTED)*

F. CONTRACTOR TO PROVIDE WATER, TREATMENT FOR BORERS AND OTHER INSECTICIDE TREATMENTS FOR TREES TO BE PRESERVED AS NEEDED PER ARBORISTS RECOMMENDATION. (INCIDENTAL TO 01562 AND 02915 AND NOT PAID FOR SEPARATELY.)

G. PROPOSED TREE SHALL BE PLANTED A MINIMUM OF 5'-0" FROM BACK OF CURB AND NO CLOSER THAN 20' O.C. FROM EACH OTHER. TREE MITIGATION PLACEMENT DISTANCES FROM MEDIAN TIP ENDS SHALL BE 50'-0" AT NON-SIGNALIZED INTERSECTIONS, ADN 75'-0" AT SIGNALIZED INTERSECTIONS.

H. ALL TREE MITIGATION MATERIALS AND LABOR REQUIRED TO PROVIDE AND INSTALL THE PROPOSED TREES SHALL BE INCIDENTAL TO 02915 - TREE PLANTING

I. CONTRACTOR TO SUBMIT MEANS AND METHODS OF WATERING PROCEDURES FOR NEWLY PLANTED TREES TO ARBORIST FOR REVIEW AND APPROVAL.

J. CONTRACTOR TO WARRANT, PROVIDE WATER, AND MAINTENANCE FOR ALL NEWLY PLANTED TREES FOR A PERIOD OF TWO (2) YEARS FROM DATE OF SUBSTANTIAL COMPLETION TO SUSTAIN HEALTH OF TREE. (INCIDENTAL TO 02915 -TREE PLANTING AND NOT PAID FOR SEPARATELY.)

K. CONTRACTOR TO EXERCISE CAUTION WHEN WORKING AROUND ALL EXISTING TREES REGARDLESS OF SPECIFIC MEASURES THAT ARE NOTED ON THESE PLANS AND DETAILS AT ALL TIMES AND TO THE EXTENT REQUIRED BY THE CONTRACT DOCUMENTS, SPECIFICALLY 01562.

PLAN NOTES

1. PROVIDE CHECKER PLATE OVER ROOT FLARE **SEE TREE PRESERVATION DETAILS**
2. PROVIDE ZERO CURB CUT CONTINUOUS **SEE TREE PRESERVATION DETAILS**
3. UNDEVELOPED PROPERTY - TREE REMOVAL AREA - NO MITIGATION REQUIRED. (INCIDENTAL TO CLEARING AND GRUBBING AND NOT PAID FOR SEPARATELY. SEE ENGINEERING PLANS FOR MORE INFORMATION.)
4. REMOVE SHRUB(S) AS NEED TO ACCOMODATE PROPOSED IMPROVEMENTS (INCIDENTAL TO 01562)
5. REDUCE SIDEWALK WIDTH TO 4'-0" AND ADJUST PROPOSED SIDEWALK ("BUMP OUT") AT EXISTING TREE ROOT FLARE(INCIDENTAL AND NOT PAID FOR SEPARATELY) **SEE TREE PRESERVATION DETAILS**
6. PROVIDE 6" CURB AT BACK OF SIDEWALK.
7. PRESERVE EXISTING SHRUBS IN PLACE - NO TREATMENT.
8. ADD 15" REINFORCED CONCRETE WALL. SEE CIVIL DRAWINGS FOR DETAILS
9. SALVAGE COMMUNITY SIGN

***PROPOSED PLANTING:** CONTRACTOR SHALL MARK TREE LOCATIONS PRIOR TO PLANTING FOR APPROVAL BY CITY FORESTER AND CITY ENGINEER*

TYPE	ABR.	BOTANICAL NAME	COMMON NAME	PLANTED SIZE
	UC	ULMUS CRASSIFOLIA	CEDAR ELM	200 GAL, 6" CAL. MIN.
	QV	QUERCUS VIRGINIANA	LIVE OAK	100 GAL, 4" CAL. MIN.
AR	AR	ACER RUBRUM	RED MAPLE	100 GAL, 4" CAL. MIN.
QT	QT	QUERCUS TEXANA	NUTTAL OAK	100 GAL, 4" CAL. MIN.
QL	QL	QUERCUS LYRATA	OVERCUP OAK	100 GAL, 4" CAL. MIN.
		REMOVE TREE (INCIDENTAL TO 01562)		

**SEE PLANT LIST ON TREE PRESERVATION DETAILS FOR MORE INFORMATION*

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F- 713-706-4410

M2L ASSOCIATES, INC.
8955 KATY FWY, SUITE 300
HOUSTON, TX 77024
T: 713-722-8897 ◆ F: 713-722-8048
Landscape Architecture◆Land Planning◆Urban Design

SURVEYED BY:
KUO & ASSOCIATES, INC.

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF 95% CD REVIEW UNDER AUTHORITY OF MICHAEL MAUER, CERTIFIED ARBORIST, STATE OF TEXAS, LICENSE NO. TX-3436A

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

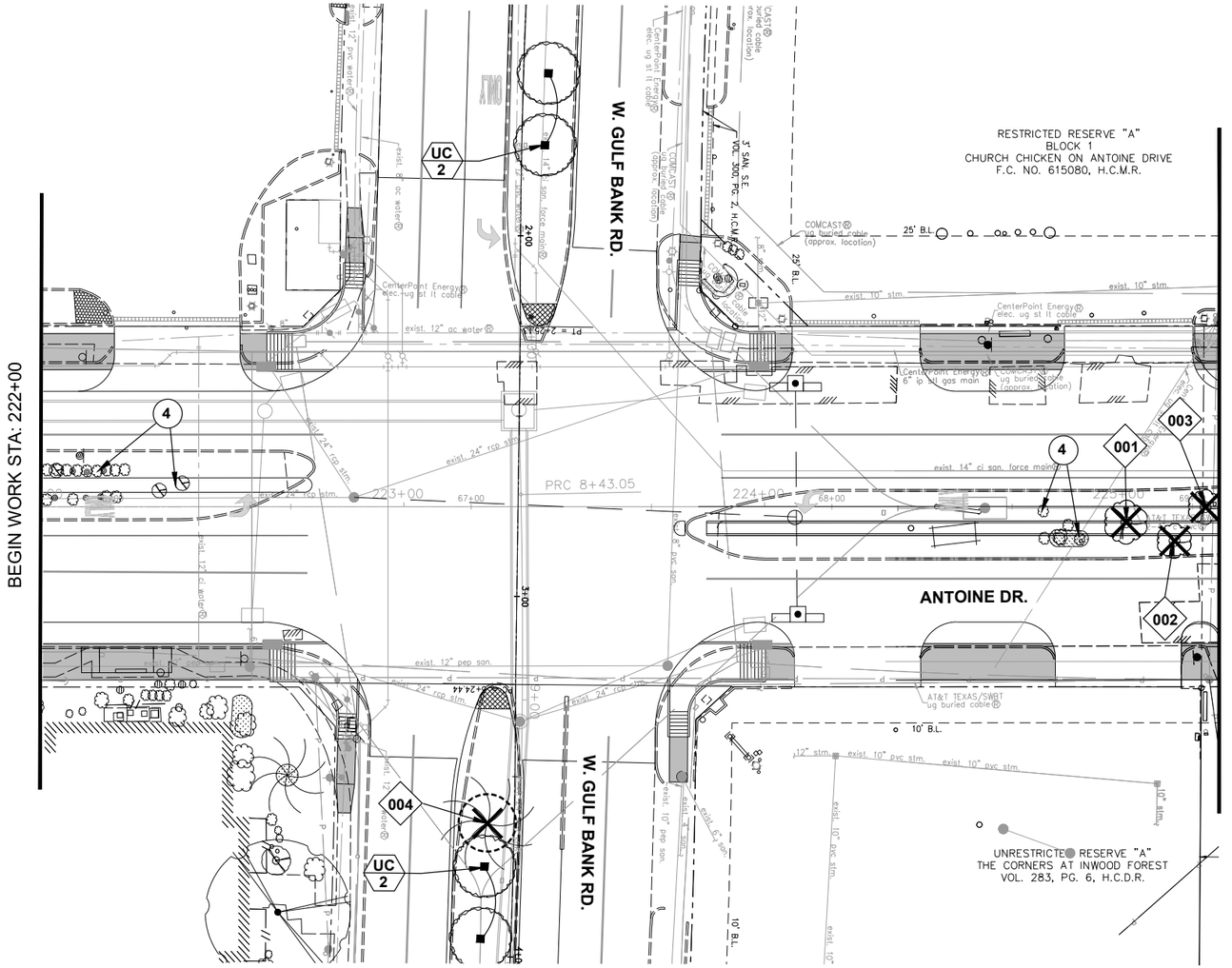
TREE PRESERVATION PLAN

5 OF 5

(STA: 213+00 TO 224+00)

WBS NUMBER	N-100030-0GEC-3
DRAWING SCALE	AS NOTED
CITY OF HOUSTON PM	ROWAIDAH AYOUB
SHEET NO.	613 OF 718

FOR CITY OF HOUSTON USE ONLY



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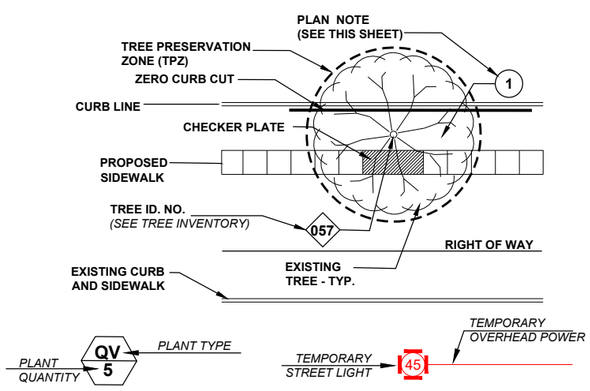
SCALE 1"=20'

No.	DATE	REVISIONS	APP.



PRESERVED TREE DIAGRAM

1. PROVIDE CHECKER PLATE OVER ROOT FLARE **SEE TREE PRESERVATION DETAILS**
2. PROVIDE ZERO CURB CUT CONTINUOUS **SEE TREE PRESERVATION DETAILS**
3. UNDEVELOPED PROPERTY - TREE REMOVAL AREA - NO MITIGATION REQUIRED. (INCIDENTAL TO CLEARING AND GRUBBING AND NOT PAID FOR SEPARATELY. SEE ENGINEERING PLANS FOR MORE INFORMATION.)
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PROPOSED PLANTING: ***CONTRACTOR SHALL MARK TREE LOCATIONS PRIOR TO PLANTING FOR APPROVAL BY CITY FORESTER AND CITY ENGINEER***

TYPE	ABR.	BOTANICAL NAME	COMMON NAME	PLANTED SIZE
○	QV	QUERCUS VIRGINIANA	LIVE OAK	200 GAL, 6" CAL. MIN.
■	UC	ULMUS CRASSIFOLIA	CEDAR ELM	200 GAL, 6" CAL. MIN.
X		REMOVE TREE (INCIDENTAL TO 01562)		

**SEE PLANT LIST ON TREE PRESERVATION DETAILS FOR MORE INFORMATION*

GENERAL NOTES

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B. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT NO DAMAGE TO EXISTING TREES TO BE PROTECTED AND/OR THOSE THAT HAVE THEIR TRUNKS OUTSIDE OF THE PROJECT LIMITS BUT HAVE SIGNIFICANT BRANCH OVERHANG INTO THE PROJECT LIMITS.

C. THE CONTRACTOR SHALL NOT, AT ANY TIME, PARK CONSTRUCTION VEHICLES, MATERIALS, OR EQUIPMENT INSIDE OF THE TREE PROTECTION ZONE (TPZ) OF TREES TO BE PROTECTED.

D. SEE TREE PRESERVATION DETAILS AND SPECIFICATIONS FOR DISPOSITION AND CONDITIONAL TREATMENT OF TREES NOTED ON THE DRAWINGS.

E. ALL NOTED TREES ON DRAWINGS MAY REQUIRE ADDITIONAL CONDITIONAL TREATMENT OTHER THAN NOTED ON THE PLANS. ***SEE TREE INVENTORY AND TREE PRESERVATION DETAILS*** *(ALL TREE PRESERVATION WORK REQUIRED HEREIN IS INCIDENTAL TO 01562 UNLESS OTHERWISE NOTED)*

F. CONTRACTOR TO PROVIDE WATER, TREATMENT FOR BORERS AND OTHER INSECTICIDE TREATMENTS FOR TREES TO BE PRESERVED AS NEEDED PER ARBORISTS RECOMMENDATION. (INCIDENTAL TO 01562 AND 02915 AND NOT PAID FOR SEPARATELY.)

G. PROPOSED TREE SHALL BE PLANTED A MINIMUM OF 5'-0" FROM BACK OF CURB AND NO CLOSER THAN 20' O.C. FROM EACH OTHER. TREE MITIGATION PLACEMENT DISTANCES FROM MEDIAN TIP ENDS SHALL BE 50'-0" AT NON-SIGNALIZED INTERSETIONS, ADN 75"-0" AT SIGNALIZED INTERSECTIONS.

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K. CONTRACTOR TO EXERCISE CAUTION WHEN WORKING AROUNI CIFIC MEASURES THAT ARE NOTED ON THESE PLANS AND DETAILS AT ALL THE CONTRACT DOCUMENTS, SPECIFICALLY 01562.

PLAN NOTES

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M2L ASSOCIATES, INC.
8955 KATY FWY, SUITE 300
HOUSTON, TX 77024
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Landscape Architecture • Land Planning • Urban Design

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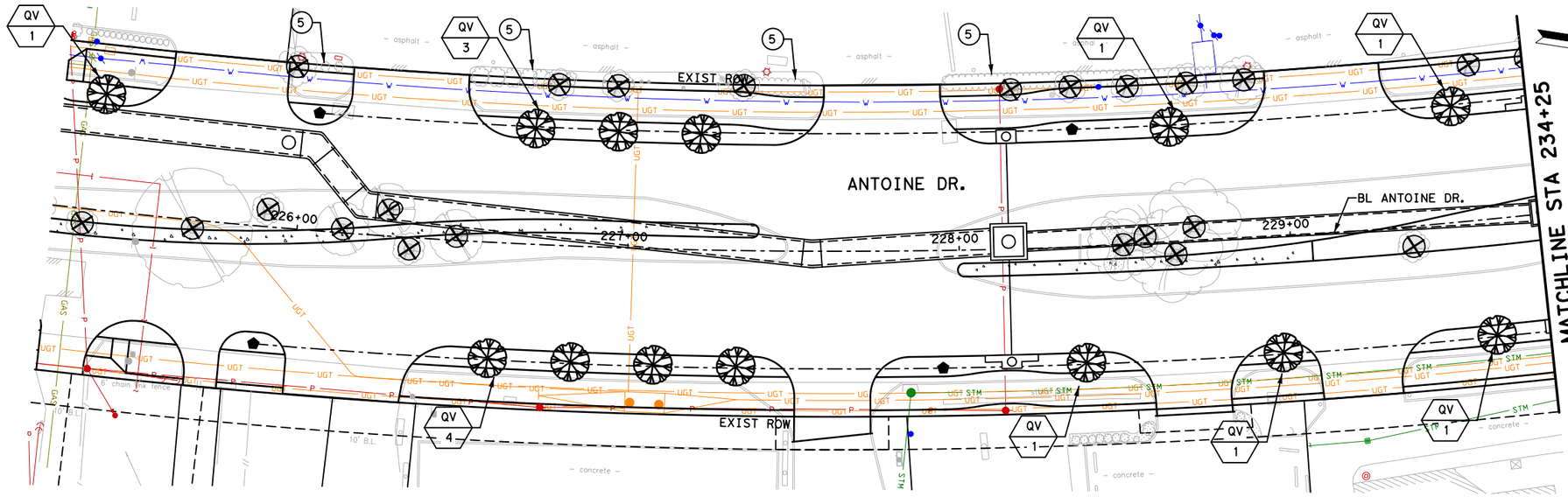
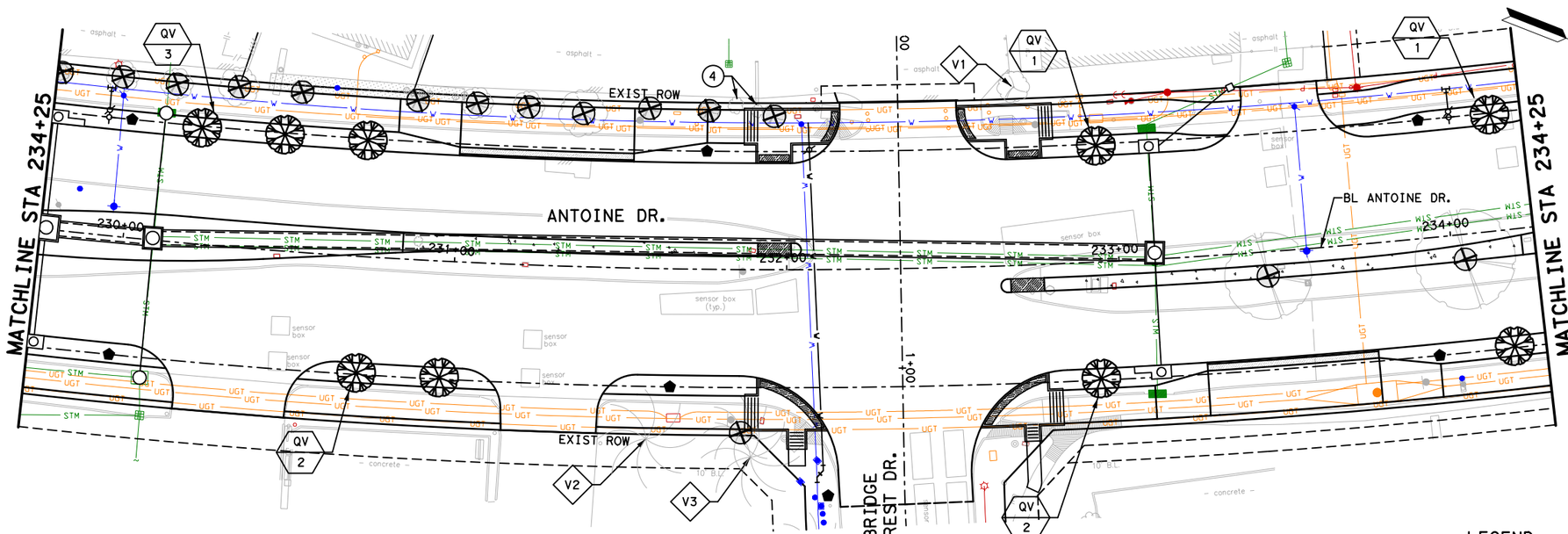
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

W. GULF BANK RD.
(STA: 222+00 TO 225+26)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 614 OF 718	





0′ 20′ 40′
SCALE IN FEET

NOTES:

1. CONTRACTOR SHALL SEEK PRIOR APPROVAL FROM THE ARBORIST, CITY URBAN FORESTOR, AND CITY'S REPRESENTATIVE PRIOR TO INITIATION OF TREE REMOVAL AND/OR TREE PROTECTION ACTIVITIES WITHIN THE PROJECT SCOPE OF WORK. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE CITY OF HOUSTON.
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LEGEND

① PROVIDE CHECKER PLATE OVER ROOT FLARE SEE TREE PRESERVATION DETAILS

② PROVIDE ZERO CURB CUT CONTINUOUS SEE TREE PRESERVATION DETAILS

③ UNDEVELOPED PROPERTY - TREE REMOVAL AREA - NO MITIGATION REQUIRED. (INCIDENTAL TO CLEARING AND GRUBBING AND NOT PAID FOR SEPARATELY. SEE ENGINEERING PLANS FOR MORE INFORMATION.)

④ REMOVE SHRUB(S) AS NEED TO ACCOMODATE PROPOSED IMPROVEMENTS (INCIDENTAL TO 01562)

⑤ PRESERVE EXISTING SHRUBS IN PLACE - NO TREATMENT.

LEGEND

TYPE	ABR.	BOTANICAL NAME	COMMON NAME	PLANTED SIZE
	QV	QUERCUS VIRGINIANA	LIVE OAK	100 GAL, 4" CAL. MIN.
		REMOVE TREE(INCIDENTAL TO 01562)		
XX / *		PLANT TYPE QUANTITY		
X		TREE PROTECTION/ROOT PRUNING		
		PROP METAL STREET LIGHT POLE		

No.	DATE	REVISIONS	APP:

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VOGLER & SPENCER ENGINEERING
777 North Eldridge Parkway, Suite 500
Houston, Texas 77079
713-783-0042
www.vs-eng.com

SURVEYED BY:
KUO & ASSOCIATES, INC.

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JOEL OLSHEFSKI
Date
131531
10/21/2025
95% SUBMITTAL
VOGLER & SPENCER ENGINEERING
Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TREE PRESERVATION PLAN
STA 225+26 TO STA 234+25

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 615 OF 718	

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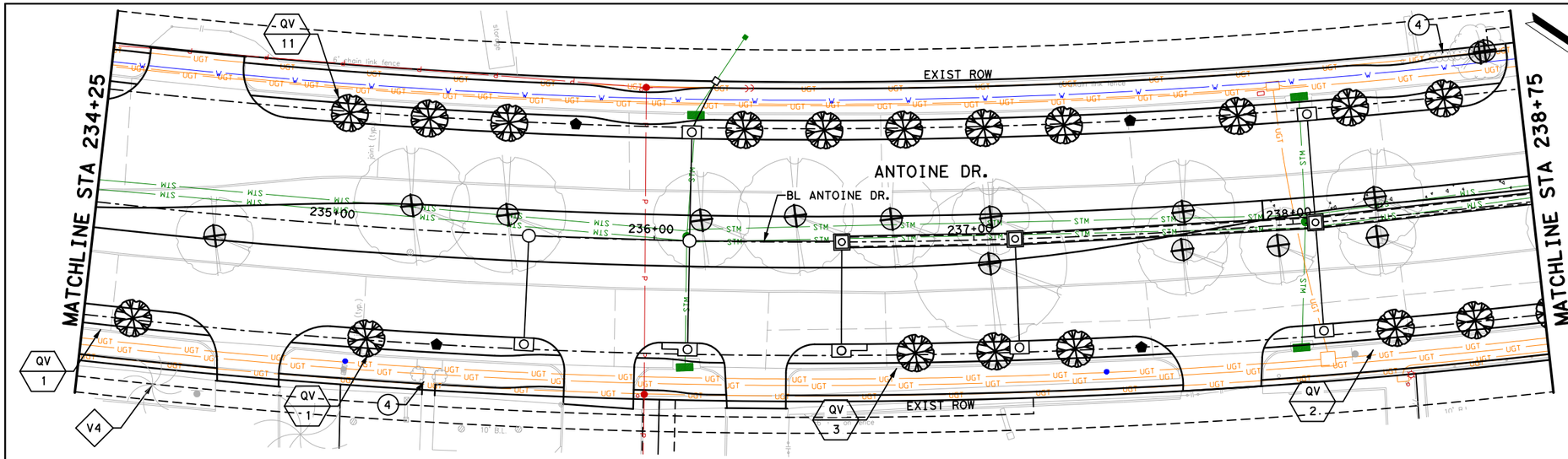

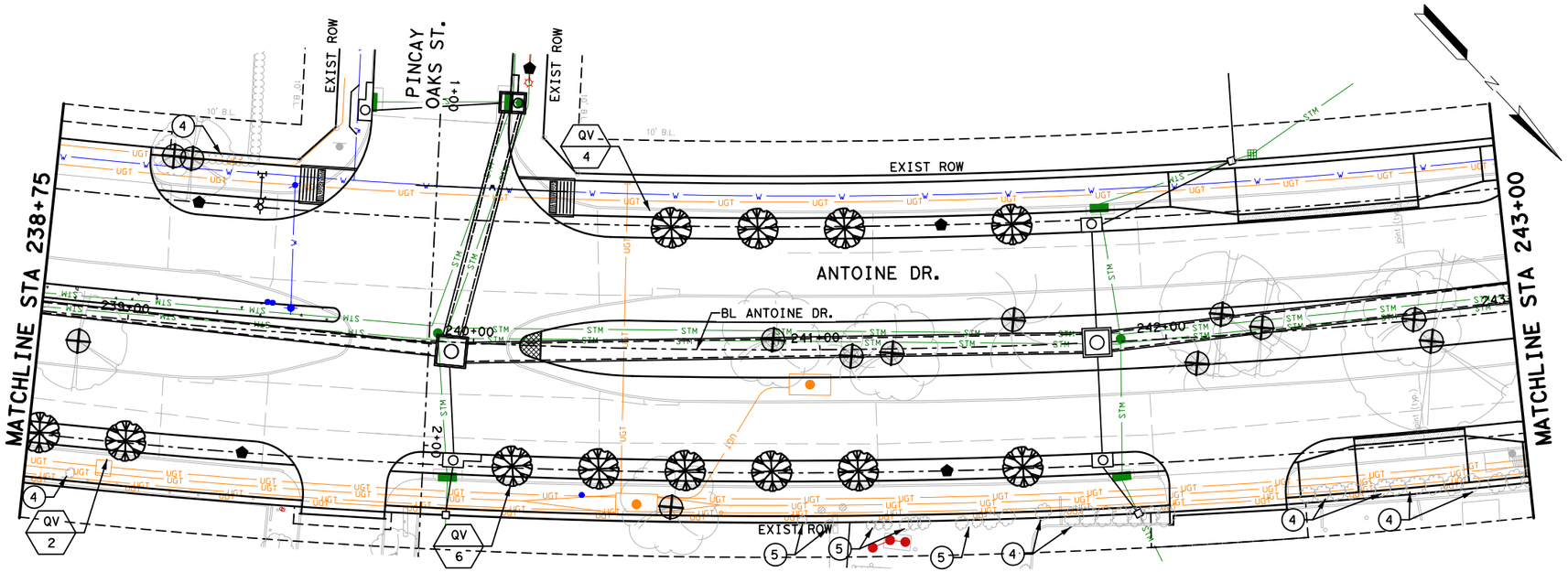

0′ 20′ 40′
SCALE IN FEET

NOTES:

1. CONTRACTOR SHALL SEEK PRIOR APPROVAL FROM THE ARBORIST, CITY URBAN FORESTOR, AND CITY'S REPRESENTATIVE PRIOR TO INITIATION OF TREE REMOVAL AND/OR TREE PROTECTION ACTIVITIES WITHIN THE PROJECT SCOPE OF WORK. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE CITY OF HOUSTON.
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT NO DAMAGE TO EXISTING TREES TO BE PROTECTED AND/OR THOSE THAT HAVE THEIR TRUNKS OUTSIDE OF THE PROJECT LIMITS BUT HAVE SIGNIFICANT BRANCH OVERHANG INTO THE PROJECT LIMITS.
3. THE CONTRACTOR SHALL NOT, AT ANY TIME, PARK CONSTRUCTION VEHICLES, MATERIALS, OR EQUIPMENT INSIDE OF THE TREE PROTECTION ZONE (TPZ) OF TREES TO BE PROTECTED.
4. SEE TREE PRESERVATION DETAILS AND SPECIFICATIONS FOR DISPOSITION AND CONDITIONAL TREATMENT OF TREES NOTED ON THE DRAWINGS.
5. ALL NOTED TREES ON DRAWINGS MAY REQUIRE ADDITIONAL CONDITIONAL TREATMENT OTHER THAN NOTED ON THE PLANS.
6. CONTRACTOR TO PROVIDE WATER, TREATMENT FOR BORERS AND OTHER INSECTICIDE TREATMENTS FOR TREES TO BE PRESERVED AS NEEDED PER ARBORISTS RECOMMENDATION. (INCIDENTAL TO 01562 AND 02915 AND NOT PAID FOR SEPARATELY.)
7. PROPOSED TREE SHALL BE PLANTED A MINIMUM OF 3'-0" FROM BACK OF CURB AND NO CLOSER THAN 20' O.C. FROM EACH OTHER.
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9. CONTRACTOR TO SUBMIT MEANS AND METHODS OF WATERING PROCEDURES FOR NEWLY PLANTED TREES TO ARBORIST FOR REVIEW AND APPROVAL.
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LEGEND

① PROVIDE CHECKER PLATE OVER ROOT FLARE SEE TREE PRESERVATION DETAILS

② PROVIDE ZERO CURB CUT CONTINUOUS SEE TREE PRESERVATION DETAILS

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④ REMOVE SHRUB(S) AS NEED TO ACCOMODATE PROPOSED IMPROVEMENTS (INCIDENTAL TO 01562)

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LEGEND

TYPE	ABR.	BOTANICAL NAME	COMMON NAME	PLANTED SIZE
	QV	QUERCUS VIRGINIANA	LIVE OAK	100 GAL, 4" CAL. MIN.
		REMOVE TREE(INCIDENTAL TO 01562)		
XX / *		PLANT TYPE QUANTITY		
X		TREE PROTECTION/ROOT PRUNING		
		PROP METAL STREET LIGHT POLE		

No.	DATE	REVISIONS	APP.

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VOGLER & SPENCER ENGINEERING
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SURVEYED BY:
KUO & ASSOCIATES, INC.

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JOEL OLSHEFSKI
Date
131531
10/21/2025
95% SUBMITTAL
VOGLER & SPENCER ENGINEERING
Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TREE PRESERVATION LAYOUT STA 234+25 TO STA 243+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 616 OF 718	

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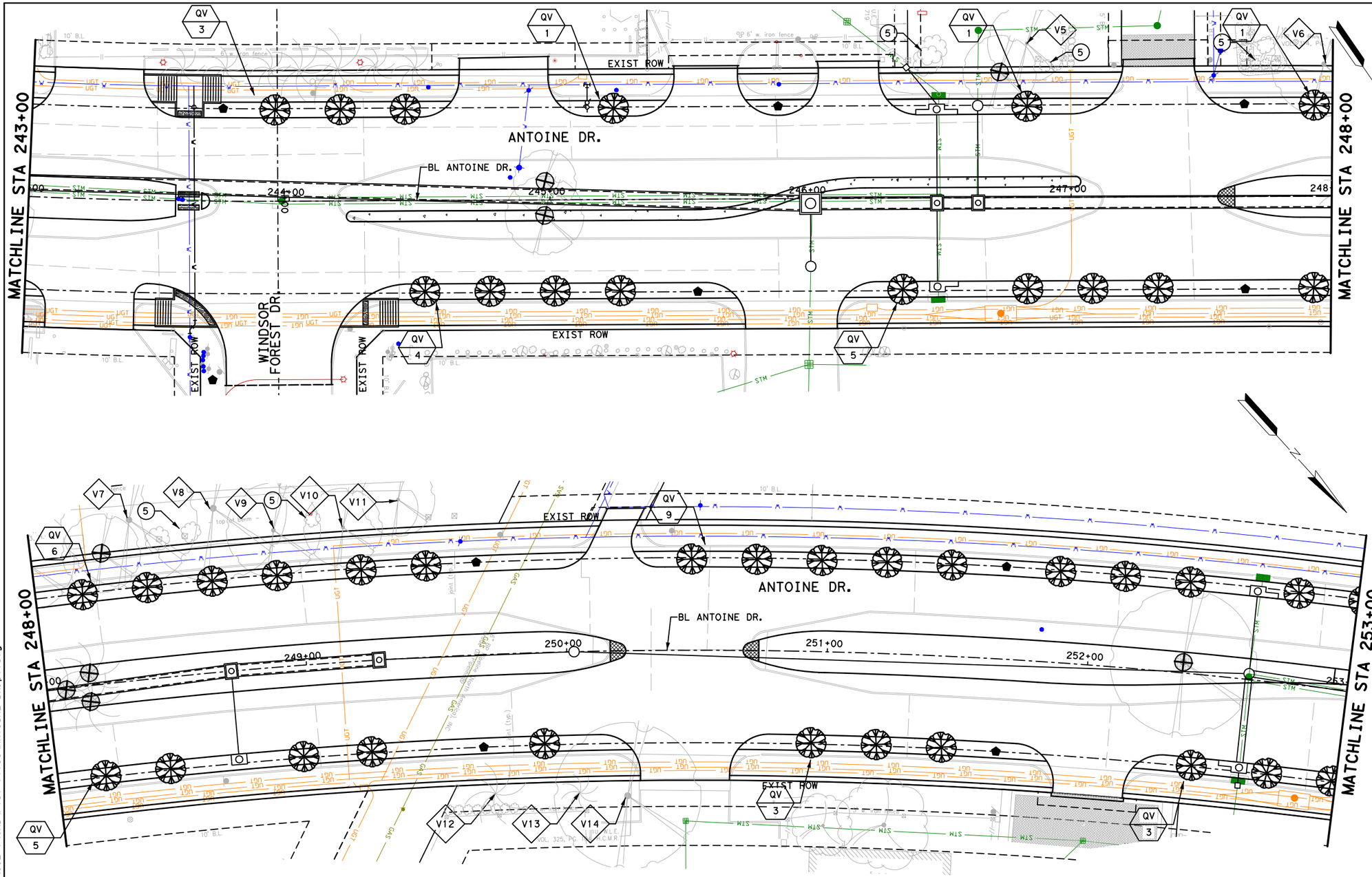

LEGEND

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		PROP METAL STREET LIGHT POLE		

LEGEND

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0' 20' 40'
SCALE IN FEET

NOTES:

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4. SEE TREE PRESERVATION DETAILS AND SPECIFICATIONS FOR DISPOSITION AND CONDITIONAL TREATMENT OF TREES NOTED ON THE DRAWINGS.
5. ALL NOTED TREES ON DRAWINGS MAY REQUIRE ADDITIONAL CONDITIONAL TREATMENT OTHER THAN NOTED ON THE PLANS.
6. CONTRACTOR TO PROVIDE WATER, TREATMENT FOR BORERS AND OTHER INSECTICIDE TREATMENTS FOR TREES TO BE PRESERVED AS NEEDED PER ARBORISTS RECOMMENDATION. (INCIDENTAL TO 01562 AND 02915 AND NOT PAID FOR SEPARATELY.)
7. PROPOSED TREE SHALL BE PLANTED A MINIMUM OF 3'-0" FROM BACK OF CURB AND NO CLOSER THAN 20' O.C. FROM EACH OTHER.
8. ALL TREE MITIGATION MATERIALS AND LABOR REQUIRED TO PROVIDE AND INSTALL THE PROPOSED TREES SHALL BE INCIDENTAL TO 02915 - TREE PLANTING
9. CONTRACTOR TO SUBMIT MEANS AND METHODS OF WATERING PROCEDURES FOR NEWLY PLANTED TREES TO ARBORIST FOR REVIEW AND APPROVAL.
10. CONTRACTOR TO WARRANT, PROVIDE WATER, AND MAINTENANCE FOR ALL NEWLY PLANTED TREES FOR A PERIOD OF TWO (2) YEARS FROM DATE OF SUBSTANTIAL COMPLETION TO SUSTAIN HEALTH OF TREE. (INCIDENTAL TO 02915 -TREE PLANTING AND NOT PAID FOR SEPARATELY.)
11. CONTRACTOR TO EXERCISE CAUTION WHEN WORKING AROUND ALL EXISTING TREES REGARDLESS OF SPECIFIC MEASURES THAT ARE NOTED ON THESE PLANS AND DETAILS AT ALL TIMES AND TO THE EXTENT REQUIRED BY THE CONTRACT DOCUMENTS, SPECIFICALLY 01562.

No.	DATE	REVISIONS	APP.

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713-782-0042
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10/21/2025
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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TREE PRESERVATION LAYOUT STA 243+00 TO STA 253+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 617 OF 718	

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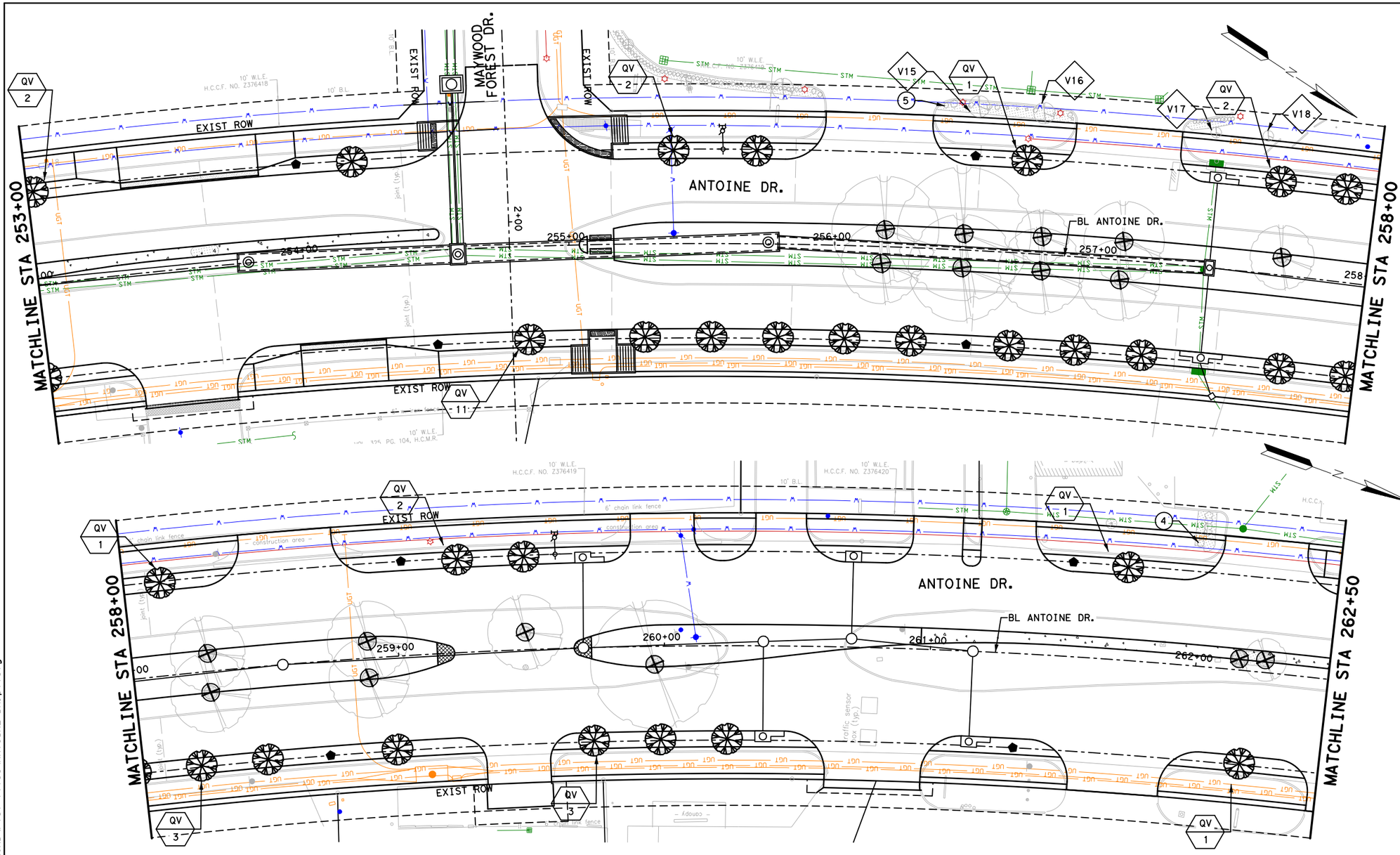

0' 20' 40'
SCALE IN FEET

NOTES:

1. CONTRACTOR SHALL SEEK PRIOR APPROVAL FROM THE ARBORIST, CITY URBAN FORESTOR, AND CITY'S REPRESENTATIVE PRIOR TO INITIATION OF TREE REMOVAL AND/OR TREE PROTECTION ACTIVITIES WITHIN THE PROJECT SCOPE OF WORK. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE CITY OF HOUSTON.
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT NO DAMAGE TO EXISTING TREES TO BE PROTECTED AND/OR THOSE THAT HAVE THEIR TRUNKS OUTSIDE OF THE PROJECT LIMITS BUT HAVE SIGNIFICANT BRANCH OVERHANG INTO THE PROJECT LIMITS.
3. THE CONTRACTOR SHALL NOT, AT ANY TIME, PARK CONSTRUCTION VEHICLES, MATERIALS, OR EQUIPMENT INSIDE OF THE TREE PROTECTION ZONE (TPZ) OF TREES TO BE PROTECTED.
4. SEE TREE PRESERVATION DETAILS AND SPECIFICATIONS FOR DISPOSITION AND CONDITIONAL TREATMENT OF TREES NOTED ON THE DRAWINGS.
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LEGEND

1. PROVIDE CHECKER PLATE OVER ROOT FLARE SEE TREE PRESERVATION DETAILS
2. PROVIDE ZERO CURB CUT CONTINUOUS SEE TREE PRESERVATION DETAILS
3. UNDEVELOPED PROPERTY - TREE REMOVAL AREA - NO MITIGATION REQUIRED. (INCIDENTAL TO CLEARING AND GRUBBING AND NOT PAID FOR SEPARATELY. SEE ENGINEERING PLANS FOR MORE INFORMATION.)
4. REMOVE SHRUB(S) AS NEED TO ACCOMODATE PROPOSED IMPROVEMENTS (INCIDENTAL TO 01562)
5. PRESERVE EXISTING SHRUBS IN PLACE - NO TREATMENT.

LEGEND

TYPE	ABR.	BOTANICAL NAME	COMMON NAME	PLANTED SIZE
	QV	QUERCUS VIRGINIANA	LIVE OAK	100 GAL, 4" CAL. MIN.
		REMOVE TREE(INCIDENTAL TO 01562)		
XX *		PLANT TYPE QUANTITY		
X		TREE PROTECTION/ROOT PRUNING		
		PROP METAL STREET LIGHT POLE		

No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TREE PRESERVATION LAYOUT STA 253+00 TO STA 262+50

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 618 OF 718	

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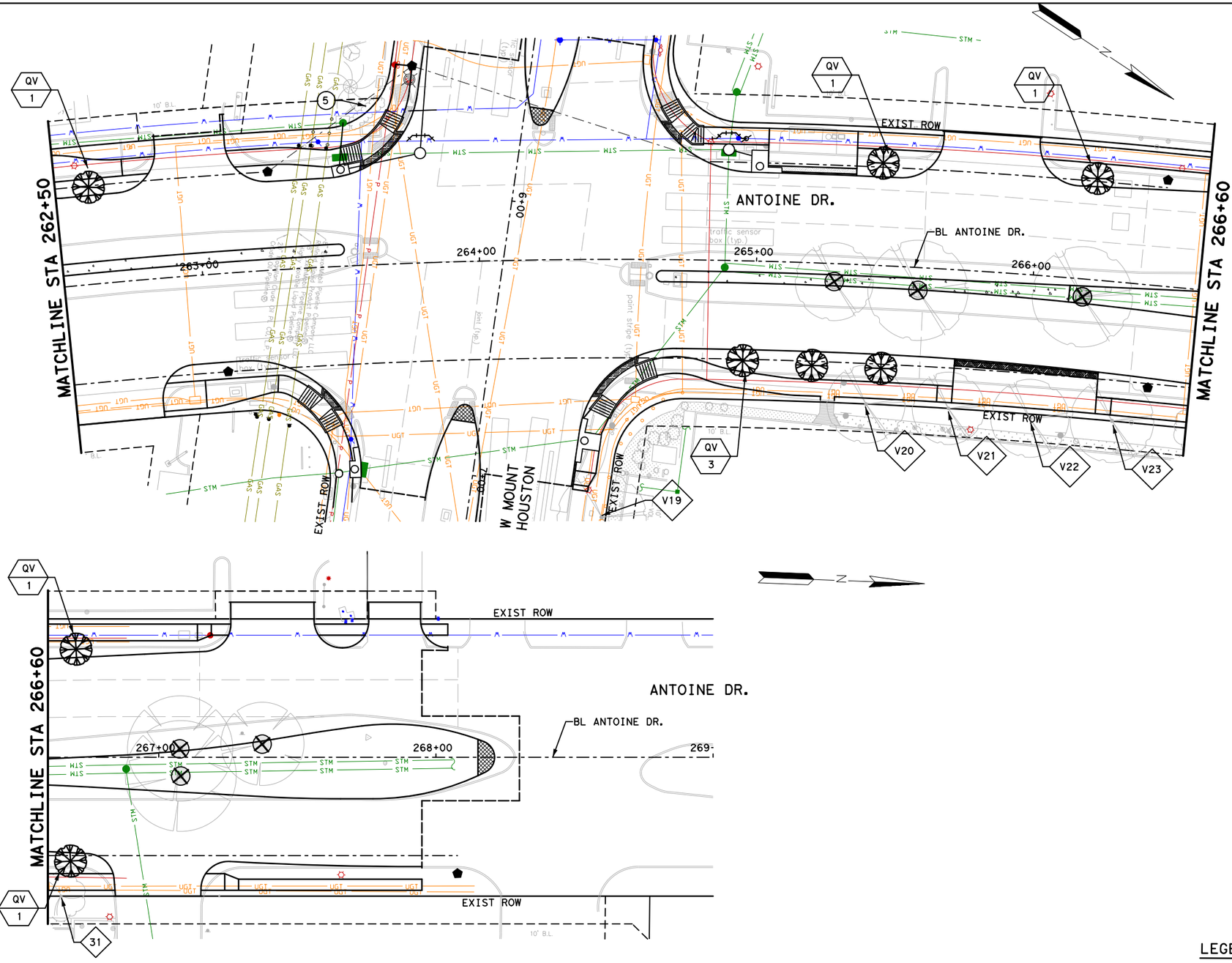

LEGEND

① PROVIDE CHECKER PLATE OVER ROOT FLARE SEE TREE PRESERVATION DETAILS

② PROVIDE ZERO CURB CUT CONTINUOUS SEE TREE PRESERVATION DETAILS

③ UNDEVELOPED PROPERTY - TREE REMOVAL AREA - NO MITIGATION REQUIRED. (INCIDENTAL TO CLEARING AND GRUBBING AND NOT PAID FOR SEPARATELY. SEE ENGINEERING PLANS FOR MORE INFORMATION.)

④ REMOVE SHRUB(S) AS NEED TO ACCOMODATE PROPOSED IMPROVEMENTS (INCIDENTAL TO 01562)

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LEGEND

TYPE	ABR.	BOTANICAL NAME	COMMON NAME	PLANTED SIZE
	QV	QUERCUS VIRGINIANA	LIVE OAK	100 GAL, 4" CAL. MIN.
		REMOVE TREE (INCIDENTAL TO 01562)		
XX / *		PLANT TYPE QUANTITY		
X		TREE PROTECTION/ROOT PRUNING		
		PROP METAL STREET LIGHT POLE		

0′ 20′ 40′
SCALE IN FEET

NOTES:

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APP.	REVISIONS	DATE	No.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TREE PRESERVATION LAYOUT STA 262+50 to END

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 619 OF 718	

Plotted on: 10/21/2025 1:53:07 PM Ovieldo
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ID #	STATION	LOCATION	SPECIES	REQ. REPLACE
001	158+41	West side of Antoine Dr.	Crepe Myrtle	0.0
002	158+62	South side of Victory Dr.	Crepe Myrtle	0.0
018	161+42	Median of Antoine Dr.	Crepe Myrtle	0.0
019	161+43	Median of Antoine Dr.	Crepe Myrtle	0.0
020	162+02	Median of Antoine Dr.	Pecan	21.0
023	163+20	Median of Antoine Dr.	Crepe Myrtle	0.0
024	163+20	Median of Antoine Dr.	Crepe Myrtle	0.0
027	164+90	Median of Antoine Dr.	Ash	0.0
028	161+30	East side of Antoine Dr.	Ash	0.0
050	165+30	Median of Antoine Dr.	Crepe Myrtle	0.0
051	165+40	Median of Antoine Dr.	Crepe Myrtle	0.0
052	165+50	Median of Antoine Dr.	Crepe Myrtle	0.0
053	165+65	Median of Antoine Dr.	Monterrey Oak	16.0
054	166+06	Median of Antoine Dr.	Pine	23.0
055	166+12	Median of Antoine Dr.	Pine	19.5
056	166+29	Median of Antoine Dr.	Pine	23.0
057	166+55	Median of Antoine Dr.	Crepe Myrtle	0.0
058	166+80	Median of Antoine Dr.	Oak	16.0
059	168+20	Median of Antoine Dr.	Monterrey Oak	13.0
060	168+25	Median of Antoine Dr.	Crepe Myrtle	0.0
061	168+40	Median of Antoine Dr.	Pine	0.0
062	168+56	Median of Antoine Dr.	Shrub	0.0
063	168+62	Median of Antoine Dr.	Crepe Myrtle	0.0
064	168+73	Median of Antoine Dr.	Pine	21.0
065	168+87	Median of Antoine Dr.	Pine	0.0
066	168+87	Median of Antoine Dr.	Pine	17.0
067	169+05	Median of Antoine Dr.	Crepe Myrtle	0.0
069	169+44	Median of Antoine Dr.	Monterrey Oak	7.5
071	169+75	Median of Antoine Dr.	Crepe Myrtle	0.0
072	169+77	Median of Antoine Dr.	Crepe Myrtle	0.0
073	169+97	Median of Antoine Dr.	Pine	24.0
075	170+30	Median of Antoine Dr.	Stump	0.0
076	170+80	Median of Antoine Dr.	Crepe Myrtle	0.0
077	170+93	Median of Antoine Dr.	Pine	14.0
081	171+25	Median of Antoine Dr.	Pine	13.0
083	171+36	Median of Antoine Dr.	Pine	15.5
084	171+63	Median of Antoine Dr.	Pine	18.5
100	171+85	East side of Antoine Dr.	Oak	14.5
125	172+80	Median of Antoine Dr.	Oak	18.0
126	173+05	Median of Antoine Dr.	Pine	26.0
127	173+08	Median of Antoine Dr.	Pine	14.5

ID #	STATION	LOCATION	SPECIES	REQ. REPLACE
129	173+35	Median of Antoine Dr.	Bur Oak	8.5
132	173+78	Median of Antoine Dr.	Crepe Myrtle	0.0
134	173+80	Median of Antoine Dr.	Crepe Myrtle	0.0
135	173+95	Median of Antoine Dr.	Crepe Myrtle	0.0
136	174+18	Median of Antoine Dr.	Monterrey Oak	13.5
139	174+76	Median of Antoine Dr.	Crepe Myrtle	0.0
140	174+95	Median of Antoine Dr.	Crepe Myrtle	0.0
141	175+10	Median of Antoine Dr.	Pine	24.0
142	175+35	Median of Antoine Dr.	Pine	23.0
143	175+45	Median of Antoine Dr.	Crepe Myrtle	0.0
144	175+50	Median of Antoine Dr.	Verify in Field	12.0
145	175+75	Median of Antoine Dr.	Monterrey Oak	0.0
147	177+40	Median of Antoine Dr.	Tallow	0.0
149	177+70	Median of Antoine Dr.	Dead	0.0
150	177+70	Median of Antoine Dr.	Not There	
152	178+08	Median of Antoine Dr.	Pecan	0.0
155	178+53	Median of Antoine Dr.	Crepe Myrtle	0.0
157	178+80	Median of Antoine Dr.	Shrub	0.0
168	178+03	East side of Antoine Dr.	Magnolia	11.0
175	180+22	West side of Antoine Dr.	Crepe Myrtle	0.0
176	180+40	West side of Antoine Dr.	Crepe Myrtle	0.0
177	180+60	West side of Antoine Dr.	Crepe Myrtle	0.0
178	180+72	West side of Antoine Dr.	Crepe Myrtle	0.0
187	182+70	West side of Antoine Dr.	Hackberry	0.0
193	180+55	Median of Antoine Dr.	Crepe Myrtle	0.0
195	181+01	Median of Antoine Dr.	Crepe Myrtle	0.0
196	181+14	Median of Antoine Dr.	Crepe Myrtle	0.0
197	181+30	Median of Antoine Dr.	Crepe Myrtle	0.0
198	181+53	Median of Antoine Dr.	Oak	15.0
199	181+86	Median of Antoine Dr.	Magnolia	9.0
200	183+53	Median of Antoine Dr.	Pine	25.0
201	184+44	Median of Antoine Dr.	Crepe Myrtle	0.0
202	184+55	Median of Antoine Dr.	Crepe Myrtle	0.0
203	184+63	Median of Antoine Dr.	Crepe Myrtle	0.0
204	184+87	Median of Antoine Dr.	Oak	42.0
239	187+55	Median of Antoine Dr.	Crepe Myrtle	0.0
240	188+12	Median of Antoine Dr.	Oak	0.0
241	188+55	Median of Antoine Dr.	Crepe Myrtle	0.0
242	188+70	Median of Antoine Dr.	Ligustrum	0.0
243	189+97	Median of Antoine Dr.	Pine	25.0
244	190+18	Median of Antoine Dr.	Crepe Myrtle	0.0

ID #	STATION	LOCATION	SPECIES	REQ. REPLACE
245	190+35	Median of Antoine Dr.	Monterrey Oak	14.5
246	190+96	Median of Antoine Dr.	Crepe Myrtle	0.0
252	193+20	Median of Antoine Dr.	Loquat	0.0
254	194+12	Median of Antoine Dr.	Monterrey Oak	13.0
255	186+30	East side of Antoine Dr.	Crepe Myrtle	0.0
256	186+32	East side of Antoine Dr.	Crepe Myrtle	0.0
258	186+36	East side of Antoine Dr.	Crepe Myrtle	0.0
260	186+41	East side of Antoine Dr.	Crepe Myrtle	0.0
261	186+45	East side of Antoine Dr.	Crepe Myrtle	0.0
263	187+25	East side of Antoine Dr.	Crepe Myrtle	0.0
266	187+88	East side of Antoine Dr.	Crepe Myrtle	0.0
273	194+15	West side of Antoine Dr.	Crepe Myrtle	0.0
285	197+35	West side of Antoine Dr.	Oak	18.5
286	197+90	West side of Antoine Dr.	Pine	19.0
290	199+85	West side of Antoine Dr.	Crepe Myrtle	0.0
291	193+07	Median of Antoine Dr.	Crepe Myrtle	0.0
292	194+48	Median of Antoine Dr.	Pine	19.0
293	194+63	Median of Antoine Dr.	Pine	25.0
294	194+86	Median of Antoine Dr.	Pear	0.0
295	195+04	Median of Antoine Dr.	Loquat	10.0
296	195+23	Median of Antoine Dr.	Crepe Myrtle	0.0
297	195+34	Median of Antoine Dr.	Crepe Myrtle	0.0
298	195+46	Median of Antoine Dr.	Crepe Myrtle	0.0
299	195+55	Median of Antoine Dr.	Pear	0.0
300	195+98	Median of Antoine Dr.	Live Oak	33.0
301	196+25	Median of Antoine Dr.	Pine	28.0
302	196+41	Median of Antoine Dr.	Stump	0.0
303	196+50	Median of Antoine Dr.	Elm	0.0
304	196+60	Median of Antoine Dr.	Crepe Myrtle	0.0
305	196+70	Median of Antoine Dr.	Crepe Myrtle	0.0
306	196+85	Median of Antoine Dr.	Crepe Myrtle	0.0
307	196+97	Median of Antoine Dr.	Elm	9.0
308	197+23	Median of Antoine Dr.	Pine	18.5
309	197+30	Median of Antoine Dr.	Pine	18.0
310	197+48	Median of Antoine Dr.	Pine	23.0
311	198+58	Median of Antoine Dr.	Pine	19.0
312	198+80	Median of Antoine Dr.	Monterrey Oak	13.5
313	199+03	Median of Antoine Dr.	Crepe Myrtle	0.0
314	199+11	Median of Antoine Dr.	Crepe Myrtle	0.0
315	199+18	Median of Antoine Dr.	Crepe Myrtle	0.0
316	199+58	Median of Antoine Dr.	Monterrey Oak	10.0

NOTE: TREE REPLACEMENT LOCATIONS SHOWN ON PLANS MUST BE COORDINATED WITH ADJACENT PROPERTY OWNER AND CITY OF HOUSTON URBAN FORESTRY PRIOR TO EXCAVATION FOR PLANTING. COORDINATION SHALL BE COMPLETED BY CONSTRUCTION CONTRACTOR'S CERTIFIED ARBORIST. TREES TO BE MAINTAINED AND WATERED FOR 2 YEARS FOLLOWING PLANTING PER STANDARD SPEC 02915. TIMING OF PLANTING MAY BE DELAYED IN PERIODS OF DROUGHT WITH MANDATORY WATER RESTRICTIONS IN PLACE-TIMING TO BE COORDINATED WITH CITY OF HOUSTON URBAN FORESTRY. TREES IN ESPLANADE GROUPINGS TO BE PLANTED IN COMMON BED WITH 4" OF HARDWOOD MULCH BETWEEN TREES.

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T: 713-722-8897 • F: 713-722-8048
Landscape Architecture • Land Planning • Urban Design

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TREE REMOVAL SUMMERY
1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 620 OF 718	

1 TREE REMOVAL SUMMARY

NOT TO SCALE

ID #	STATION	LOCATION		SPECIES	REQ. REPLACE
317	199+95	Median of	Antoine Dr.	Oak	34.0
323	196+10	East side of	Antoine Dr.	Oak	16.0
329	199+18	East side of	Antoine Dr.	Cedar	17.0
330	199+34	East side of	Antoine Dr.	Pine	16.0
332	199+50	East side of	Antoine Dr.	Pear	0.0
333	199+95	East side of	Antoine Dr.	Pine	16.0
337	204+05	West side of	Antoine Dr.	Crepe Myrtle	0.0
342	200+60	Median of	Antoine Dr.	Oak	6.0
345	200+96	Median of	Antoine Dr.	Crepe Myrtle	0.0
347	201+20	Median of	Antoine Dr.	Bur Oak	10.0
348	201+48	Median of	Antoine Dr.	Pine	24.0
349	202+75	Median of	Antoine Dr.	Pine	19.0
350	202+95	Median of	Antoine Dr.	Pine	19.0
351	203+22	Median of	Antoine Dr.	Crepe Myrtle	0.0
352	203+86	Median of	Antoine Dr.	Oak	0.0
354	204+59	Median of	Antoine Dr.	Crepe Myrtle	0.0
355	204+71	Median of	Antoine Dr.	Crepe Myrtle	0.0
356	204+71	Median of	Antoine Dr.	Crepe Myrtle	0.0
357	204+88	Median of	Antoine Dr.	Monterrey Oak	0.0
358	205+40	Median of	Antoine Dr.	Pine	15.5
359	205+54	Median of	Antoine Dr.	Pecan	6.0
362	200+55	East side of	Antoine Dr.	Pine	16.5
364	200+96	East side of	Antoine Dr.	Crepe Myrtle	0.0
365	201+15	East side of	Antoine Dr.	Crepe Myrtle	0.0
388	210+75	West side of	Antoine Dr.	Tallow	0.0
392	207+28	Median of	Antoine Dr.	Monterrey Oak	0.0
396	208+15	Median of	Antoine Dr.	Crepe Myrtle	0.0
398	208+54	Median of	Antoine Dr.	Crepe Myrtle	0.0
399	208+70	Median of	Antoine Dr.	Monterrey Oak	20.0
400	208+97	Median of	Antoine Dr.	Crepe Myrtle	0.0
401	209+17	Median of	Antoine Dr.	Monterrey Oak	13.5
404	409+43	Median of	Antoine Dr.	Monterrey Oak	12.5
405	409+53	Median of	Antoine Dr.	Crepe Myrtle	0.0
406	409+72	Median of	Antoine Dr.	Pine	20.0
407	210+62	Median of	Antoine Dr.	Crepe Myrtle	0.0
408	210+64	Median of	Antoine Dr.	Crepe Myrtle	0.0
409	211+07	Median of	Antoine Dr.	Oak	9.0
410	211+33	Median of	Antoine Dr.	Oak	19.5
411	211+45	Median of	Antoine Dr.	Crepe Myrtle	0.0
412	211+50	Median of	Antoine Dr.	Crepe Myrtle	0.0
413	212+75	Median of	Antoine Dr.	Crepe Myrtle	0.0

ID #	STATION	LOCATION		SPECIES	REQ. REPLACE	1335 inches =
414	212+85	Median of	Antoine Dr.	Pine	9.5	
415	212+92	Median of	Antoine Dr.	Pine	9.0	
416	413+10	Median of	Antoine Dr.	Pine	11.5	
423	208+97	East side of	Antoine Dr.	Crepe Myrtle	0.0	
424	209+06	East side of	Antoine Dr.	Crepe Myrtle	0.0	
431	210+75	East side of	Antoine Dr.	Tallow	0.0	
432	210+82	East side of	Antoine Dr.	Tallow	0.0	
433	210+13	East side of	Antoine Dr.	Tallow	0.0	
434	210+26	East side of	Antoine Dr.	Tallow	0.0	
444	213+24	Median of	Antoine Dr.	Pine	7.5	
445	213+26	Median of	Antoine Dr.	Crepe Myrtle	0.0	
446	213+30	Median of	Antoine Dr.	Crepe Myrtle	0.0	
449	214+76	Median of	Antoine Dr.	Crepe Myrtle	0.0	
450	215+05	Median of	Antoine Dr.	Oak	26.0	
451	215+30	Median of	Antoine Dr.	Pine	10.0	
452	215+46	Median of	Antoine Dr.	Crepe Myrtle	0.0	
453	215+60	Median of	Antoine Dr.	Pine	13.0	
454	215+71	Median of	Antoine Dr.	Crepe Myrtle	0.0	
455	217+08	Median of	Antoine Dr.	Vitex	0.0	
456	217+25	Median of	Antoine Dr.	Pine	12.0	
457	217+37	Median of	Antoine Dr.	Crepe Myrtle	0.0	
458	217+48	Median of	Antoine Dr.	Crepe Myrtle	0.0	
459	217+57	Median of	Antoine Dr.	Pine	11.0	
460	217+87	Median of	Antoine Dr.	Pine	12.5	
461	217+99	Median of	Antoine Dr.	Crepe Myrtle	0.0	
462	218+15	Median of	Antoine Dr.	Vitex	0.0	
478	219+46	Median of	Antoine Dr.	Pine	22.0	
479	219+94	Median of	Antoine Dr.	Pine	24.0	
481	221+29	Median of	Antoine Dr.	Crepe Myrtle	0.0	
482	221+30	Median of	Antoine Dr.	Crepe Myrtle	0.0	
483	221+46	Median of	Antoine Dr.	Monterrey Oak	7.5	
484	221+66	Median of	Antoine Dr.	Crepe Myrtle	0.0	
486	196+55	South side of	Antoine Dr.	Pecan	16.0	
494	195+53	East side of	Antoine Dr.	Crepe Myrtle	0.0	

NOTE: TREE REPLACEMENT LOCATIONS SHOWN ON PLANS MUST BE COORDINATED WITH ADJACENT PROPERTY OWNER AND CITY OF HOUSTON URBAN FORESTRY PRIOR TO EXCAVATION FOR PLANTING. COORDINATION SHALL BE COMPLETED BY CONSTRUCTION CONTRACTOR'S CERTIFIED ARBORIST. TREES TO BE MAINTAINED AND WATERED FOR 2 YEARS FOLLOWING PLANTING PER STANDARD SPEC 02915. TIMING OF PLANTING MAY BE DELAYED IN PERIODS OF DROUGHT WITH MANDATORY WATER RESTRICTIONS IN PLACE-TIMING TO BE COORDINATED WITH CITY OF HOUSTON URBAN FORESTRY. TREES IN ESPLANADE GROUPINGS TO BE PLANTED IN COMMON BED WITH 4" OF HARDWOOD MULCH BETWEEN TREES.

TREE REMOVAL SUMMARY	
TOTAL TREE REPLACEMENT INCHES REQUIRED	1,335
TOTAL CALIPER INCHES PROVIDED	1,336
TOTAL 6" CAL. TREES PLANTED	30
TOTAL 4" CAL. TREES PLANTED	289

SEE PLANT LIST ON SHEET ... FOR SPECIFIC TYPES, SIZES & QUANTITIES.

**REPLACEMENT INCHES HAVE BEEN REDUCED DUE TO AVAILABLE PLANTING SPACE. PER SEC. 33-123. - TREE PLANTING EQUIVALENCY CREDITS. $500/30 GAL TREE WILL BE GIVEN TO THE CITY'S DEPARTMENT OF PARKS AND RECREATION TO COMPENSATE FOR THE SHORTAGE.*

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TREE REMOVAL SUMMERY
2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	

SHEET NO. 621 OF 718

1 TREE REMOVAL SUMMARY

NOT TO SCALE

ID #	STATION	LOCATION	SPECIES	DIA. (IN)	CONDITION	STATUS	TREATMENT	MITIGATION
001	158+41	West side of Antoine Dr.	Crepe Myrtle	35.0	Poor	Remove	A	No Replacement
002	158+62	South side of Victory Dr.	Crepe Myrtle	40.0	Poor	Remove	A	No Replacement
003	160+01	North side of Victory Dr.	Crepe Myrtle	23.0	Poor	Preserve		No Treatment
004	161+42	West side of Antoine Dr.	Hackberry	25.0	Poor	Preserve	B, C, D, Q	Preservation Treatment
005	162+00	West side of Antoine Dr.	Crepe Myrtle	4.0	Poor	Preserve	D	Preservation Treatment
006	162+23	West side of Antoine Dr.	Ash	32.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
007	162+27	West side of Antoine Dr.	Crepe Myrtle	4.0	Poor	Preserve	D	Preservation Treatment
008	162+31	West side of Antoine Dr.	Crepe Myrtle	7.0	Poor	Preserve	D	Preservation Treatment
009	162+75	West side of Antoine Dr.	Ash	30.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
010	162+78	West side of Antoine Dr.	Ash	30.0	Fair	Preserve	D	Preservation Treatment
011	163+33	West side of Antoine Dr.	Crepe Myrtle	10	Fair	Preserve	D	Preservation Treatment
012	163+50	West side of Antoine Dr.	Crepe Myrtle	10.0	Fair	Preserve	D	Preservation Treatment
013	163+65	West side of Antoine Dr.	Crepe Myrtle	8.0	Fair	Preserve	D	Preservation Treatment
014	164+51	West side of Antoine Dr.	Crepe Myrtle	10.0	Fair	Preserve	D	Preservation Treatment
015	164+60	West side of Antoine Dr.	Crepe Myrtle	7.0	Poor	Preserve	D	Preservation Treatment
016	164+65	West side of Antoine Dr.	Crepe Myrtle	10.0	Fair	Preserve	D	Preservation Treatment
017	164+80	West side of Antoine Dr.	Crepe Myrtle	10.0	Fair	Preserve	D	Preservation Treatment
018	161+42	Median of Antoine Dr.	Crepe Myrtle	20.0	Fair	Remove	A	No Replacement
019	161+43	Median of Antoine Dr.	Crepe Myrtle	26.0	Fair	Remove	A	No Replacement
020	162+02	Median of Antoine Dr.	Pecan	21.0	Fair	Remove	A	Replace Inch For Inch
021	162+70	Median of Antoine Dr.	Oak	18.0	Fair	Preserve	D, C, B	Preservation Treatment
022	162+99	Median of Antoine Dr.	Oak	14.5	Poor	Preserve	B, C, D	Preservation Treatment
023	163+20	Median of Antoine Dr.	Crepe Myrtle	16.0	Fair	Remove	A	No Replacement
024	163+20	Median of Antoine Dr.	Crepe Myrtle	12.5	Fair	Remove	A	No Replacement
025	163+50	Median of Antoine Dr.	Crepe Myrtle	47.0	Fair	Preserve	D	Preservation Treatment
026	163+85	Median of Antoine Dr.	Crepe Myrtle	21.0	Fair	Preserve	D	Preservation Treatment
027	164+90	Median of Antoine Dr.	Ash	26.0	Poor	Remove	A	No Replacement
028	161+30	East side of Antoine Dr.	Ash	31.0	Poor	Remove	A	No Replacement
029	165+20	West side of Antoine Dr.	Crepe Myrtle	5.0	Fair	Preserve	D	Preservation Treatment
030	165+35	West side of Antoine Dr.	Crepe Myrtle	5.0	Fair	Preserve	D	Preservation Treatment
031	166+45	West side of Antoine Dr.	Crepe Myrtle	7.0	Fair	Preserve	D	Preservation Treatment
032	166+60	West side of Antoine Dr.	Crepe Myrtle	9.0	Fair	Preserve	D	Preservation Treatment
033	166+80	West side of Antoine Dr.	Crepe Myrtle	12.0	Poor	Preserve	D	Preservation Treatment
034	166+90	West side of Antoine Dr.	Ash	15.0	Poor	Preserve	Q	No Treatment
035	167+00	West side of Antoine Dr.	Crepe Myrtle	12.0	Poor	Preserve	D	Preservation Treatment
036	167+05	South side of Maple Hill Dr.	Ash	16.0	Poor	Preserve	B, C, D, Q	Preservation Treatment
037	167+50	West side of Antoine Dr.	Crepe Myrtle	13.0	Fair	Preserve		No Treatment
038	167+50	West side of Antoine Dr.	Crepe Myrtle	25.0	Fair	Preserve		No Treatment
039	168+12	West side of Antoine Dr.	Pine	32.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
040	168+68	West side of Antoine Dr.	Pine	32.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
041	168+73	West side of Antoine Dr.	Pine	15.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
042	168+74	West side of Antoine Dr.	Ash	28.0	Fair	Preserve		No Treatment

ID #	STATION	LOCATION	SPECIES	DIA. (IN)	CONDITION	STATUS	TREATMENT	MITIGATION
043	169+28	West side of Antoine Dr.	Pine	26.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
044	169+79	West side of Antoine Dr.	Pine	26.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
045	169+87	West side of Antoine Dr.	Pine	26.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
046	170+60	West side of Antoine Dr.	Oak	32.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
047	171+35	West side of Antoine Dr.	Pine	20.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
048	171+62	West side of Antoine Dr.	Oak	36.0	Fair	Preserve	D, Q	Preservation Treatment
049	171+85	West side of Antoine Dr.	Pine	30.0	Fair	Preserve		No Treatment
050	165+30	Median of Antoine Dr.	Crepe Myrtle	31.0	Fair	Remove	A	No Replacement
051	165+40	Median of Antoine Dr.	Crepe Myrtle	18.0	Fair	Remove	A	No Replacement
052	165+50	Median of Antoine Dr.	Crepe Myrtle	20.0	Fair	Remove	A	No Replacement
053	165+65	Median of Antoine Dr.	Monterrey Oak	16.0	Fair	Remove	A	Replace Inch For Inch
054	166+06	Median of Antoine Dr.	Pine	23.0	Fair	Remove	A	Replace Inch For Inch
055	166+12	Median of Antoine Dr.	Pine	19.5	Fair	Remove	A	Replace Inch For Inch
056	166+29	Median of Antoine Dr.	Pine	23.0	Fair	Remove	A	Replace Inch For Inch
057	166+55	Median of Antoine Dr.	Crepe Myrtle	5.5	Poor	Remove	A	No Replacement
058	166+80	Median of Antoine Dr.	Oak	16.0	Fair	Remove	A	Replace Inch For Inch
059	168+20	Median of Antoine Dr.	Monterrey Oak	13.0	Fair	Remove	A	Replace Inch For Inch
060	168+25	Median of Antoine Dr.	Crepe Myrtle	11.5	Fair	Remove	A	No Replacement
061	168+40	Median of Antoine Dr.	Pine	17.0	Poor	Remove	A	No Replacement
062	168+56	Median of Antoine Dr.	Shrub	1.0	Fair	Remove	A	No Replacement
063	168+62	Median of Antoine Dr.	Crepe Myrtle	8.0	Fair	Remove	A	No Replacement
064	168+73	Median of Antoine Dr.	Pine	21.0	Fair	Remove	A	Replace Inch For Inch
065	168+87	Median of Antoine Dr.	Pine	17.0	Poor	Remove	A	No Replacement
066	168+87	Median of Antoine Dr.	Pine	17.0	Fair	Remove	A	Replace Inch For Inch
067	169+05	Median of Antoine Dr.	Crepe Myrtle	12.0	Fair	Remove	A	No Replacement
068	169+17	Median of Antoine Dr.	Not There					
069	169+44	Median of Antoine Dr.	Monterrey Oak	7.5	Fair	Remove	A	Replace Inch For Inch
070	169+60	Median of Antoine Dr.	Crepe Myrtle	9.0	Fair	Preserve	D	Preservation Treatment
071	169+75	Median of Antoine Dr.	Crepe Myrtle	10.5	Fair	Remove	A	No Replacement
072	169+77	Median of Antoine Dr.	Crepe Myrtle	15.5	Fair	Remove	A	No Replacement
073	169+97	Median of Antoine Dr.	Pine	24.0	Fair	Remove	A	Replace Inch For Inch
074	170+10	Median of Antoine Dr.	Pine	17.5	Fair	Preserve	B, C, D	Preservation Treatment
075	170+30	Median of Antoine Dr.	Stump	8.0	Poor	Remove	A	No Replacement
076	170+80	Median of Antoine Dr.	Crepe Myrtle	18.0	Fair	Remove	A	No Replacement
077	170+93	Median of Antoine Dr.	Pine	14.0	Fair	Remove	A	Replace Inch For Inch
078	170+95	Median of Antoine Dr.	Pine	20.0	Fair	Preserve	B, C, D	Preservation Treatment
079	170+96	Median of Antoine Dr.	Pine	4.0	Fair	Preserve	D	Preservation Treatment
080	171+11	Median of Antoine Dr.	Crepe Myrtle	12.0	Fair	Preserve	D	Preservation Treatment
081	171+25	Median of Antoine Dr.	Pine	13.0	Fair	Remove	A	Replace Inch For Inch
082	171+35	Median of Antoine Dr.	Pine	23.0	Fair	Preserve	B, C, D	Preservation Treatment
083	171+36	Median of Antoine Dr.	Pine	15.5	Fair	Remove	A	Replace Inch For Inch
084	171+63	Median of Antoine Dr.	Pine	18.5	Fair	Remove	A	Replace Inch For Inch

TREE INVENTORY TREATMENT LEGEND

(ALL WORK CONTAINED HEREIN IS INCIDENTAL TO 01562 UNLESS OTHERWISE NOTED)

A. REMOVE TREE & STUMP GRIND, PROVIDE TOPSOIL BACKFILL AND COMPACT TO NATURAL GRADE (TOPSOIL INCIDENTAL)
B. MAINTENANCE PRUNING
C. ROOT PRUNING: **SEE DETAIL 2 TREE PRESERVATION DETAILS 1 OF 2**
D. TREE PROTECTION FENCING: **SEE DETAIL 1 TREE PRESERVATION DETAILS 2 OF 3**
E. PROVIDE 3" MULCH OVER EXISTING TREE ROOTS WITHOUT COVERING ROOT FLARE (MIN. 5'-0" DIA. OR UP TO 6'-0" FROM **BASE OF TREE)**
F. ROOT BARRIER AT BACK OF CURB: **SEE DETAILS 3 & 5, PLANTING DETAILS**
G. REMOVE EXISTING SIDEWALK BY HAND IN TREE DRIPLINE, **NO** BACK HOES OR OTHER MOTORIZED EQUIPMENT IS TO BE USED.
H. CHECKER PLATE INSTALLATION **SEE DETAIL 1, TREE PRESERVATION DETAILS 3 OF 3**
I. ZERO CURB CUT (COORDINATE WITH CIVIL ENGINEERING DRAWINGS, **SEE DETAIL 4 TREE PRESERVATION DETAILS 2 OF 3**
J. ROOT SHAVING AS NEEDED OR DIRECTED BY ARBORIST OR COH URBAN FORESTER: **SEE SECTION 01562**
K. RAISED CONCRETE SIDEWALK OVER EXISTING ROOTS, **SEE DETAIL 2, TREE PRESERVATION DETAILS 3 OF 3**
L. TREE BOARDING : **SEE DETAIL 1, TREE PRESERVATION DETAILS 1 OF 3**
M. TREE TRANSPLANTING (IF REQUIRED)
N. PIPE TRENCHING **SEE DETAIL 6, TREE PRESERVATION DETAILS 2 OF 3**
O. PIPE TUNNELING **SEE DETAIL 5, TREE PRESERVATION DETAILS 2 OF 3**
P. REDUCE SIDEWALK WIDTH TO 4'-0" AND/OR ALTER SIDEWALK ALIGNMENT WITH A "BUMP-OUT" TO ACHIEVE A MINIMUM 6'-0" FROM FACE OF EXISTING TREE TRUNK.
Q. PROVIDE ADDITIONAL TREE CANOPY PRUNING FOR TREES THAT HAVE CANOPIES EXTENDING INTO THE ROADWAY WORK OR OTHERWISE CONFLICT WITH PROPOSED CONSTRUCTION ACTIVITIES. TREE CANOPY PRUNING SHALL BE DONE ON ALL SIDES TO 'BALANCE' TREE AND NOT JUST ON THE SIDE OF THE CONSTRUCTION ACTIVITIES. WORK ON TREES OUTSIDE OF THE ROW THAT REQUIRE WORK SHALL BE COORDINATED WITH ADJACENT LAND OWNERS.
R. AIR SPADE ONLY (NO HAND DIGGING)
S. TREE CANOPY PRUNING FOR TEMPORARY LIGHTING OVERHEAD WIRE RUNS.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TREE INVENTORY
1 OF 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	

SHEET NO. 622 OF 718

1 TREE INVENTORY

NOT TO SCALE

ID #	STATION	LOCATION	SPECIES	DIA. (IN)	CONDITION	STATUS	TREATMENT	MITIGATION
085	166+06	East side of Antoine Dr.	Magnolia	8.0	Poor	Preserve	C, D, E, Q	Preservation Treatment
086	166+32	East side of Antoine Dr.	Hackberry	26.0	Poor	Preserve	B, C, D, Q	Preservation Treatment
087	166+90	East side of Antoine Dr.	Magnolia	10.0	Fair	Preserve		No Treatment
088	166+98	East side of Antoine Dr.	Magnolia	10.0	Fair	Preserve		No Treatment
089	167+50	East side of Antoine Dr.	Crepe Myrtle	12.0	Fair	Preserve		No Treatment
090	167+50	East side of Antoine Dr.	Crepe Myrtle	10.0	Fair	Preserve		No Treatment
091	167+50	East side of Antoine Dr.	Crepe Myrtle	14.0	Fair	Preserve		No Treatment
092	168+56	East side of Antoine Dr.	Pine	30.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
093	169+80	East side of Antoine Dr.	Oak	22.0	Fair	Preserve	B, C, D, H, Q	Preservation Treatment
094	171+30	East side of Antoine Dr.	Not There					
095	171+30	East side of Antoine Dr.	Not There					
096	171+40	East side of Antoine Dr.	Oak	18.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
097	171+85	East side of Antoine Dr.	Cottonwood	18.0	Poor	Preserve	B, C, D, Q	Preservation Treatment
098	171+85	East side of Antoine Dr.	Pine	24.0	Fair	Preserve		No Treatment
099	171+85	East side of Antoine Dr.	Pine	24.0	Fair	Preserve	B, C, D	Preservation Treatment
100	171+85	East side of Antoine Dr.	Oak	14.5	Fair	Remove	A	Replace Inch For Inch
101	171+85	East side of Antoine Dr.	Pine	24.0	Fair	Preserve		No Treatment
102	172+17	East side of Antoine Dr.	Oak	24.0	Fair	Preserve		No Treatment
103	172+60	West side of Antoine Dr.	Pine	28.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
104	172+90	West side of Antoine Dr.	Pine	24.0	Fair	Preserve		No Treatment
105	173+05	West side of Antoine Dr.	Pine	18.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
106	173+20	West side of Antoine Dr.	Oak	15.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
107	173+33	West side of Antoine Dr.	Pine	24.0	Fair	Preserve	B, C, D, H, Q	Preservation Treatment
108	173+37	West side of Antoine Dr.	Pine	24.0	Fair	Preserve		No Treatment
109	173+58	West side of Antoine Dr.	Pine	27.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
110	174+50	West side of Antoine Dr.	Oak	30.0	Fair	Preserve		No Treatment
111	175+20	West side of Antoine Dr.	Oak	20.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
112	175+26	West side of Antoine Dr.	Hackberry	20.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
113	175+35	West side of Antoine Dr.	Pine	25.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
114	175+75	West side of Antoine Dr.	Oak	22.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
115	176+60	West side of Antoine Dr.	Pine	30.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
116	176+60	West side of Antoine Dr.	Pine	15.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
117	177+05	West side of Antoine Dr.	Ash	24.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
118	177+40	West side of Antoine Dr.	Palm	24.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
119	177+60	West side of Antoine Dr.	Ash	30.0	Poor	Preserve	B, C, D, Q	Preservation Treatment
120	177+70	West side of Antoine Dr.	Oak	32.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
121	177+83	West side of Antoine Dr.	Stump	25.0		.		.
122	178+18	West side of Antoine Dr.	Oak	32.0	Fair	Preserve		No Treatment
123	178+21	West side of Antoine Dr.	Stump	24.0		.		.
124	178+65	West side of Antoine Dr.	Pine	30.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
125	172+80	Median of Antoine Dr.	Oak	18.0	Fair	Remove	A	Replace Inch For Inch
126	173+05	Median of Antoine Dr.	Pine	26.0	Fair	Remove	A	Replace Inch For Inch
127	173+08	Median of Antoine Dr.	Pine	14.5	Fair	Remove	A	Replace Inch For Inch
128	173+30	Median of Antoine Dr.	Not There					
129	173+35	Median of Antoine Dr.	Bur Oak	8.5	Fair	Remove	A	Replace Inch For Inch
130	173+58	Median of Antoine Dr.	Pine	20.0	Fair	Preserve	C, D	Preservation Treatment
131	173+58	Median of Antoine Dr.	Pine	17.0	Fair	Preserve	C, D	Preservation Treatment
132	173+78	Median of Antoine Dr.	Crepe Myrtle	16.0	Fair	Remove	A	No Replacement
133	169+60	West side of Antoine Dr.	Hackberry	24.0	Poor	Preserve		No Treatment
134	173+80	Median of Antoine Dr.	Crepe Myrtle	10.0	Fair	Remove	A	No Replacement
135	173+95	Median of Antoine Dr.	Crepe Myrtle	14.0	Fair	Remove	A	No Replacement
136	174+18	Median of Antoine Dr.	Monterrey Oak	13.5	Fair	Remove	A	Replace Inch For Inch
137	174+50	Median of Antoine Dr.	Not There					
138	174+50	Median of Antoine Dr.	Not There					
139	174+76	Median of Antoine Dr.	Crepe Myrtle	22.0	Fair	Remove	A	No Replacement
140	174+95	Median of Antoine Dr.	Crepe Myrtle	7.0	Fair	Remove	A	No Replacement
141	175+10	Median of Antoine Dr.	Pine	24.0	Fair	Remove	A	Replace Inch For Inch
142	175+35	Median of Antoine Dr.	Pine	23.0	Fair	Remove	A	Replace Inch For Inch
143	175+45	Median of Antoine Dr.	Crepe Myrtle	4.0	Fair	Remove	A	No Replacement
144	175+50	Median of Antoine Dr.	Verify in Field	12.0	Fair	Remove	A	Replace Inch For Inch
145	175+75	Median of Antoine Dr.	Monterrey Oak	18.0	Poor	Remove	A	No Replacement
146	177+22	Median of Antoine Dr.	Chinkapin Oak	13.0	Fair	Preserve	B, D	Preservation Treatment
147	177+40	Median of Antoine Dr.	Tallow	15.0	Fair	Remove	A	No Replacement
148	177+57	Median of Antoine Dr.	Magnolia	11.0	Fair	Preserve	B, C, D	Preservation Treatment
149	177+70	Median of Antoine Dr.	Dead	3.0	Poor	Remove	A	No Replacement
150	177+70	Median of Antoine Dr.	Not There				A	
151	177+83	Median of Antoine Dr.	Crepe Myrtle	35.0	Fair	Preserve	D	Preservation Treatment
152	178+08	Median of Antoine Dr.	Pecan	13.0	Poor	Remove	A	No Replacement
153	178+11	Median of Antoine Dr.	Pine	24.0	Fair	Preserve	B, C, D	Preservation Treatment
154	178+37	Median of Antoine Dr.	Crepe Myrtle	8.0	Fair	Preserve	D	Preservation Treatment
155	178+53	Median of Antoine Dr.	Crepe Myrtle	15.0	Fair	Remove	A	No Replacement
156	178+65	Median of Antoine Dr.	Magnolia	8.0	Fair	Preserve	D	Preservation Treatment
157	178+80	Median of Antoine Dr.	Shrub	28.0		Remove	A	No Replacement
158	179+01	Median of Antoine Dr.	Monterrey Oak	17.0	Fair	Preserve	B, C, D	Preservation Treatment
159	172+17	East side of Antoine Dr.	Oak	24.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
160	176+45	East side of Antoine Dr.	Magnolia	12.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
161	173+85	East side of Antoine Dr.	Pear	10.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
162	174+26	East side of Antoine Dr.	Oak	24.0	Fair	Preserve	Q	Preservation Treatment
163	175+20	East side of Antoine Dr.	Hackberry	22.0	Poor	Preserve	B, C, D, Q	Preservation Treatment
164	176+10	East side of Antoine Dr.	Oak	32.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
165	176+55	East side of Antoine Dr.	Pine	30.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
166	177+83	East side of Antoine Dr.	Oak	40.0	Fair	Preserve		No Treatment
167	177+65	East side of Antoine Dr.	Magnolia	10.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
168	178+03	East side of Antoine Dr.	Magnolia	11.0	Fair	Remove	A	Replace Inch For Inch

TREE INVENTORY TREATMENT LEGEND

(ALL WORK CONTAINED HEREIN IS INCIDENTAL TO 01562 UNLESS OTHERWISE NOTED)

A. REMOVE TREE & STUMP GRIND, PROVIDE TOPSOIL BACKFILL AND COMPACT TO NATURAL GRADE (TOPSOIL INCIDENTAL)
B. MAINTENANCE PRUNING
C. ROOT PRUNING: **SEE DETAIL 2 TREE PRESERVATION DETAILS 1 OF 2**
D. TREE PROTECTION FENCING: **SEE DETAIL 1 TREE PRESERVATION DETAILS 2 OF 3**
E. PROVIDE 3" MULCH OVER EXISTING TREE ROOTS WITHOUT COVERING ROOT FLARE (MIN. 5'-0" DIA. OR UP TO 6'-0" FROM **BASE OF TREE)**
F. ROOT BARRIER AT BACK OF CURB: **SEE DETAILS 3 & 5, PLANTING DETAILS**
G. REMOVE EXISTING SIDEWALK BY HAND IN TREE DRIPLINE, **NO** BACK HOES OR OTHER MOTORIZED EQUIPMENT IS TO BE USED.
H. CHECKER PLATE INSTALLATION **SEE DETAIL 1, TREE PRESERVATION DETAILS 3 OF 3**
I. ZERO CURB CUT (COORDINATE WITH CIVIL ENGINEERING DRAWINGS, **SEE DETAIL 4 TREE PRESERVATION DETAILS 2 OF 3**
J. ROOT SHAVING AS NEEDED OR DIRECTED BY ARBORIST OR COH URBAN FORESTER: **SEE SECTION 01562**
K. RAISED CONCRETE SIDEWALK OVER EXISTING ROOTS, **SEE DETAIL 2, TREE PRESERVATION DETAILS 3 OF 3**
L. TREE BOARDING : **SEE DETAIL 1, TREE PRESERVATION DETAILS 1 OF 3**
M. TREE TRANSPLANTING (IF REQUIRED)
N. PIPE TRENCHING **SEE DETAIL 6, TREE PRESERVATION DETAILS 2 OF 3**
O. PIPE TUNNELING **SEE DETAIL 5, TREE PRESERVATION DETAILS 2 OF 3**
P. REDUCE SIDEWALK WIDTH TO 4'-0" AND/OR ALTER SIDEWALK ALIGNMENT WITH A "BUMP-OUT" TO ACHIEVE A MINIMUM 6'-0" FROM FACE OF EXISTING TREE TRUNK.
Q. PROVIDE ADDITIONAL TREE CANOPY PRUNING FOR TREES THAT HAVE CANOPIES EXTENDING INTO THE ROADWAY WORK OR OTHERWISE CONFLICT WITH PROPOSED CONSTRUCTION ACTIVITIES. TREE CANOPY PRUNING SHALL BE DONE ON ALL SIDES TO 'BALANCE' TREE AND NOT JUST ON THE SIDE OF THE CONSTRUCTION ACTIVITIES. WORK ON TREES OUTSIDE OF THE ROW THAT REQUIRE WORK SHALL BE COORDINATED WITH ADJACENT LAND OWNERS.
R. AIR SPADE ONLY (NO HAND DIGGING)
S. TREE CANOPY PRUNING FOR TEMPORARY LIGHTING OVERHEAD WIRE RUNS.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TREE INVENTORY
2 OF 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 623 OF 718	

1 TREE INVENTORY

NOT TO SCALE

ID #	STATION	LOCATION	SPECIES	DIA. (IN)	CONDITION	STATUS	TREATMENT	MITIGATION
169	178+08	East side of Antoine Dr.	Magnolia	12.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
170	178+08	East side of Antoine Dr.	Magnolia	7.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
171	178+28	East side of Antoine Dr.	Magnolia	10.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
172	178+28	East side of Antoine Dr.	Magnolia	10.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
173	178+65	East side of Antoine Dr.	Maple	12.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
174	180+24	West side of Antoine Dr.	Oak	14.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
175	180+22	West side of Antoine Dr.	Crepe Myrtle	1.0	Fair	Remove	A	No Replacement
176	180+40	West side of Antoine Dr.	Crepe Myrtle	3.0	Fair	Remove	A	No Replacement
177	180+60	West side of Antoine Dr.	Crepe Myrtle	4.0	Fair	Remove	A	No Replacement
178	180+72	West side of Antoine Dr.	Crepe Myrtle	5.0	Fair	Remove	A	No Replacement
179	180+73	West side of Antoine Dr.	Magnolia	15.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
180	181+14	West side of Antoine Dr.	Pine	30.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
181	181+49	West side of Antoine Dr.	Not There			.		.
182	181+84	West side of Antoine Dr.	Pine	8.0	Fair	Preserve	D	Preservation Treatment
183	181+96	West side of Antoine Dr.	Pine	24.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
184	182+25	West side of Antoine Dr.	Magnolia	10.0	Fair	Preserve		No Treatment
185	182+36	West side of Antoine Dr.	Cedar	7.0	Fair	Preserve	D	Preservation Treatment
186	182+50	West side of Antoine Dr.	Oak	24.0	Fair	Preserve	B, C, D	Preservation Treatment
187	182+70	West side of Antoine Dr.	Hackberry	17.0	Fair	Remove	A	No Replacement
188	183+01	West side of Antoine Dr.	Crepe Myrtle	29.0	Fair	Preserve		No Treatment
189	183+01	West side of Antoine Dr.	Crepe Myrtle	29.0	Fair	Preserve		No Treatment
190	184+85	West side of Antoine Dr.	Crepe Myrtle	30.0	Fair	Preserve		No Treatment
191	185+56	West side of Antoine Dr.	Oak	25.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
192	180+45	Median of Antoine Dr.	Nuttall Oak	12.0	Fair	Preserve	D	Preservation Treatment
193	180+55	Median of Antoine Dr.	Crepe Myrtle	14.0	Fair	Remove	A	No Replacement
194	180+80	Median of Antoine Dr.	Magnolia	9.0	Fair	Preserve	D	Preservation Treatment
195	181+01	Median of Antoine Dr.	Crepe Myrtle	8.0	Fair	Remove	A	No Replacement
196	181+14	Median of Antoine Dr.	Crepe Myrtle	12.0	Fair	Remove	A	No Replacement
197	181+30	Median of Antoine Dr.	Crepe Myrtle	15.0	Fair	Remove	A	No Replacement
198	181+53	Median of Antoine Dr.	Oak	15.0	Fair	Remove	A	Replace Inch For Inch
199	181+86	Median of Antoine Dr.	Magnolia	9.0	Fair	Remove	A	Replace Inch For Inch
200	183+53	Median of Antoine Dr.	Pine	25.0	Fair	Remove	A	Replace Inch For Inch
201	184+44	Median of Antoine Dr.	Crepe Myrtle	14.0	Fair	Remove	A	No Replacement
202	184+55	Median of Antoine Dr.	Crepe Myrtle	18.0	Fair	Remove	A	No Replacement
203	184+63	Median of Antoine Dr.	Crepe Myrtle	16.0	Fair	Remove	A	No Replacement
204	184+87	Median of Antoine Dr.	Oak	42.0	Fair	Remove	A	Replace Inch For Inch
205	184+85	Median of Antoine Dr.	Not There					
206	186+05	Median of Antoine Dr.	Crepe Myrtle	12.0	Fair	Preserve	D	Preservation Treatment
207	180+45	East side of Antoine Dr.	Oak	42.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
208	180+70	East side of Antoine Dr.	Oak	42.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
209	181+14	East side of Antoine Dr.	Oak	32.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
210	181+30	East side of Antoine Dr.	Shrub	7.0	Fair	Preserve		No Treatment
211	181+60	East side of Antoine Dr.	Palm	18.0	Fair	Preserve	D	Preservation Treatment
212	181+90	East side of Antoine Dr.	Crepe Myrtle	8.0	Fair	Preserve	D	Preservation Treatment
213	181+96	East side of Antoine Dr.	Crepe Myrtle	8.0	Fair	Preserve	D	Preservation Treatment
214	182+10	East side of Antoine Dr.	Crepe Myrtle	8.0	Fair	Preserve	D	Preservation Treatment
215	182+20	East side of Antoine Dr.	Crepe Myrtle	5.0	Fair	Preserve	D	Preservation Treatment
216	182+23	East side of Antoine Dr.	Pine	30.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
217	182+30	East side of Antoine Dr.	Crepe Myrtle	10.0	Fair	Preserve	D	Preservation Treatment
218	182+40	East side of Antoine Dr.	Crepe Myrtle	5.0	Fair	Preserve	D	Preservation Treatment
219	182+50	East side of Antoine Dr.	Crepe Myrtle	5.0	Fair	Preserve	D	Preservation Treatment
220	182+50	East side of Antoine Dr.	Elm	18.0	Fair	Preserve		No Treatment
221	183+01	East side of Antoine Dr.	Crepe Myrtle	5.0	Fair	Preserve		No Treatment
222	183+01	East side of Antoine Dr.	Crepe Myrtle	28.0	Fair	Preserve		No Treatment
223	183+45	East side of Antoine Dr.	Mulberry	20.0	Poor	Preserve	B, C, D, Q	Preservation Treatment
224	187+72	West side of Antoine Dr.	Crepe Myrtle	15.0	Fair	Preserve		No Treatment
225	188+32	West side of Antoine Dr.	Elm	5.0	Fair	Preserve	D	Preservation Treatment
226	190+05	West side of Antoine Dr.	Oak	24.0	Fair	Preserve	Q	Preservation Treatment
227	190+40	West side of Antoine Dr.	Oak	28.0	Fair	Preserve	R	Preservation Treatment
228	190+50	West side of Antoine Dr.	Crepe Myrtle	5.0	Fair	Preserve	B, C, D	Preservation Treatment
229	190+60	West side of Antoine Dr.	Crepe Myrtle	4.0	Fair	Preserve	B, C, D	Preservation Treatment
230	190+70	West side of Antoine Dr.	Crepe Myrtle	8.0	Fair	Preserve	B, C, D	Preservation Treatment
231	190+80	West side of Antoine Dr.	Crepe Myrtle	10.0	Fair	Preserve	B, C, D	Preservation Treatment
232	190+98	West side of Antoine Dr.	Crepe Myrtle	6.0	Fair	Preserve	B, C, D	Preservation Treatment
233	191+10	West side of Antoine Dr.	Crepe Myrtle	18.0	Fair	Preserve	B, C, D	Preservation Treatment
234	193+50	West side of Antoine Dr.	Crepe Myrtle	12.0	Fair	Preserve	B, C, D	Preservation Treatment
235	193+50	West side of Antoine Dr.	Water Oak	26.0	Poor	Preserve	B, C, D, K, Q	Preservation Treatment
236	193+60	West side of Antoine Dr.	Water Oak	16.0	Poor	Preserve		No Treatment
237	193+65	West side of Antoine Dr.	Water Oak	16.0	Poor	Preserve	Q	Preservation Treatment
238	186+34	Median of Antoine Dr.	Pine	23.0	Fair	Preserve	B, C, D	Preservation Treatment
239	187+55	Median of Antoine Dr.	Crepe Myrtle	9.5	Fair	Remove	A	No Replacement
240	188+12	Median of Antoine Dr.	Oak	37.0	Poor	Remove	A	No Replacement
241	188+55	Median of Antoine Dr.	Crepe Myrtle	10.0	Fair	Remove	A	No Replacement
242	188+70	Median of Antoine Dr.	Ligustrum	13.0	Poor	Remove	A	No Replacement
243	189+97	Median of Antoine Dr.	Pine	25.0	Fair	Remove	A	Replace Inch For Inch
244	190+18	Median of Antoine Dr.	Crepe Myrtle	12.0	Fair	Remove	A	No Replacement
245	190+35	Median of Antoine Dr.	Monterrey Oak	14.5	Fair	Remove	A	Replace Inch For Inch
246	190+96	Median of Antoine Dr.	Crepe Myrtle	7.5	Fair	Remove	A	No Replacement
247	191+20	Median of Antoine Dr.	Monterrey Oak	8.5	Fair	Preserve	D	Preservation Treatment
248	191+58	Median of Antoine Dr.	Oak	31.0	Fair	Preserve	B, C, D	Preservation Treatment
249	191+85	Median of Antoine Dr.	Not There					
250	191+90	Median of Antoine Dr.	Not There					
251	193+01	Median of Antoine Dr.	Not There					
252	193+20	Median of Antoine Dr.	Loquat	16.0	Fair	Remove	A	No Replacement

TREE INVENTORY TREATMENT LEGEND

(ALL WORK CONTAINED HEREIN IS INCIDENTAL TO 01562 UNLESS OTHERWISE NOTED)

A. REMOVE TREE & STUMP GRIND, PROVIDE TOPSOIL BACKFILL AND COMPACT TO NATURAL GRADE (TOPSOIL INCIDENTAL)
B. MAINTENANCE PRUNING
C. ROOT PRUNING: **SEE DETAIL 2 TREE PRESERVATION DETAILS 1 OF 2**
D. TREE PROTECTION FENCING: **SEE DETAIL 1 TREE PRESERVATION DETAILS 2 OF 3**
E. PROVIDE 3" MULCH OVER EXISTING TREE ROOTS WITHOUT COVERING ROOT FLARE (MIN. 5'-0" DIA. OR UP TO 6'-0" FROM **BASE OF TREE)**
F. ROOT BARRIER AT BACK OF CURB: **SEE DETAILS 3 & 5, PLANTING DETAILS**
G. REMOVE EXISTING SIDEWALK BY HAND IN TREE DRIPLINE, **NO** BACK HOES OR OTHER MOTORIZED EQUIPMENT IS TO BE USED.
H. CHECKER PLATE INSTALLATION **SEE DETAIL 1, TREE PRESERVATION DETAILS 3 OF 3**
I. ZERO CURB CUT (COORDINATE WITH CIVIL ENGINEERING DRAWINGS, **SEE DETAIL 4 TREE PRESERVATION DETAILS 2 OF 3**
J. ROOT SHAVING AS NEEDED OR DIRECTED BY ARBORIST OR COH URBAN FORESTER: **SEE SECTION 01562**
K. RAISED CONCRETE SIDEWALK OVER EXISTING ROOTS, **SEE DETAIL 2, TREE PRESERVATION DETAILS 3 OF 3**
L. TREE BOARDING : **SEE DETAIL 1, TREE PRESERVATION DETAILS 1 OF 3**
M. TREE TRANSPLANTING (IF REQUIRED)
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R. AIR SPADE ONLY (NO HAND DIGGING)
S. TREE CANOPY PRUNING FOR TEMPORARY LIGHTING OVERHEAD WIRE RUNS.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TREE INVENTORY
3 OF 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 624 OF 718	

1 TREE INVENTORY

NOT TO SCALE

ID #	STATION	LOCATION	SPECIES	DIA. (IN)	CONDITION	STATUS	TREATMENT	MITIGATION
253	193+51	Median of Antoine Dr.	Not There					
254	194+12	Median of Antoine Dr.	Monterrey Oak	13.0	Fair	Remove	A	Replace Inch For Inch
255	186+30	East side of Antoine Dr.	Crepe Myrtle	18.5	Fair	Remove	A	No Replacement
256	186+32	East side of Antoine Dr.	Crepe Myrtle	24.0	Fair	Remove	A	No Replacement
257	186+32	East side of Antoine Dr.	Mimosa	10.0	Fair	Preserve	D	Preservation Treatment
258	186+36	East side of Antoine Dr.	Crepe Myrtle	19.0	Fair	Remove	A	No Replacement
259	186+40	East side of Antoine Dr.	Maple	7.0	Fair	Preserve		No Treatment
260	186+41	East side of Antoine Dr.	Crepe Myrtle	18.0	Fair	Remove	A	No Replacement
261	186+45	East side of Antoine Dr.	Crepe Myrtle	23.0	Fair	Remove	A	No Replacement
262	187+23	East side of Antoine Dr.	Pear	16.0	Fair	Preserve		No Treatment
263	187+25	East side of Antoine Dr.	Crepe Myrtle	26.0	Fair	Remove	A	No Replacement
264	187+52	East side of Antoine Dr.	Oak	32.0	Fair	Preserve	B, C, Q	Preservation Treatment
265	187+82	East side of Antoine Dr.	Crepe Myrtle	10.0	Fair	Preserve	B, D	Preservation Treatment
266	187+88	East side of Antoine Dr.	Crepe Myrtle	11.0	Fair	Remove	A	No Replacement
267	188+55	East side of Antoine Dr.	Not There			.		.
268	188+55	East side of Antoine Dr.	Not There			.		.
269	188+85	East side of Antoine Dr.	Not There			.		.
270	190+20	East side of Antoine Dr.	Oak	30.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
271	193+57	West side of Antoine Dr.	Live Oak	42.0	Fair	Preserve	Q	Preservation Treatment
272	193+90	West side of Antoine Dr.	Ash	30.0	Poor	Preserve		No Treatment
273	194+15	West side of Antoine Dr.	Crepe Myrtle	12.0	Fair	Remove	A	No Replacement
274	194+36	West side of Antoine Dr.	Ash	28.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
275	194+54	West side of Antoine Dr.	Crepe Myrtle	7.0	Fair	Preserve		No Treatment
276	194+81	West side of Antoine Dr.	Crepe Myrtle	8.0	Fair	Preserve		No Treatment
277	195+75	West side of Antoine Dr.	Crepe Myrtle	12.0	Fair	Preserve		No Treatment
278	195+44	West side of Antoine Dr.	Oak	24.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
279	196+10	West side of Antoine Dr.	Ash	27.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
280	196+41	West side of Antoine Dr.	Stump	24.0	Poor	Preserve		No Treatment
281	196+77	West side of Antoine Dr.	Oak	36.0	Fair	Preserve		No Treatment
282	196+88	West side of Antoine Dr.	Magnolia	8.0	Fair	Preserve		No Treatment
283	197+03	West side of Antoine Dr.	Cedar	12.0	Fair	Preserve		No Treatment
284	197+10	West side of Antoine Dr.	Oak	30.0	Fair	Preserve		No Treatment
285	197+35	West side of Antoine Dr.	Oak	18.5	Fair	Remove	A	Replace Inch For Inch
286	197+90	West side of Antoine Dr.	Pine	19.0	Fair	Remove	A	Replace Inch For Inch
287	198+10	West side of Antoine Dr.	Oak	30.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
288	198+90	West side of Antoine Dr.	Pine	22.0	Fair	Preserve		No Treatment
289	199+49	West side of Antoine Dr.	Not There		Poor			
290	199+85	West side of Antoine Dr.	Crepe Myrtle	1.0	Fair	Remove	A	No Replacement
291	193+07	Median of Antoine Dr.	Crepe Myrtle	13.5	Fair	Remove	A	No Replacement
292	194+48	Median of Antoine Dr.	Pine	19.0	Fair	Remove	A	Replace Inch For Inch
293	194+63	Median of Antoine Dr.	Pine	25.0	Fair	Remove	A	Replace Inch For Inch
294	194+86	Median of Antoine Dr.	Pear	12.5	Fair	Remove	A	No Replacement

ID #	STATION	LOCATION	SPECIES	DIA. (IN)	CONDITION	STATUS	TREATMENT	MITIGATION
295	195+04	Median of Antoine Dr.	Loquat	10.0	Fair	Remove	A	Replace Inch For Inch
296	195+23	Median of Antoine Dr.	Crepe Myrtle	8.0	Fair	Remove	A	No Replacement
297	195+34	Median of Antoine Dr.	Crepe Myrtle	19.0	Fair	Remove	A	No Replacement
298	195+46	Median of Antoine Dr.	Crepe Myrtle	15.0	Fair	Remove	A	No Replacement
299	195+55	Median of Antoine Dr.	Pear	13.0	Fair	Remove	A	No Replacement
300	195+98	Median of Antoine Dr.	Live Oak	33.0	Fair	Remove	A	Replace Inch For Inch
301	196+25	Median of Antoine Dr.	Pine	28.0	Fair	Remove	A	Replace Inch For Inch
302	196+41	Median of Antoine Dr.	Stump	18.0	Poor	Remove	A	No Replacement
303	196+50	Median of Antoine Dr.	Elm	10.0	Poor	Remove	A	No Replacement
304	196+60	Median of Antoine Dr.	Crepe Myrtle	8.0	Fair	Remove	A	No Replacement
305	196+70	Median of Antoine Dr.	Crepe Myrtle	15.0	Fair	Remove	A	No Replacement
306	196+85	Median of Antoine Dr.	Crepe Myrtle	22.0	Fair	Remove	A	No Replacement
307	196+97	Median of Antoine Dr.	Elm	9.0	Fair	Remove	A	Replace Inch For Inch
308	197+23	Median of Antoine Dr.	Pine	18.5	Fair	Remove	A	Replace Inch For Inch
309	197+30	Median of Antoine Dr.	Pine	18.0	Fair	Remove	A	Replace Inch For Inch
310	197+48	Median of Antoine Dr.	Pine	23.0	Fair	Remove	A	Replace Inch For Inch
311	198+58	Median of Antoine Dr.	Pine	19.0	Fair	Remove	A	Replace Inch For Inch
312	198+80	Median of Antoine Dr.	Monterrey Oak	13.5	Fair	Remove	A	Replace Inch For Inch
313	199+03	Median of Antoine Dr.	Crepe Myrtle	19.0	Fair	Remove	A	No Replacement
314	199+11	Median of Antoine Dr.	Crepe Myrtle	15.0	Fair	Remove	A	No Replacement
315	199+18	Median of Antoine Dr.	Crepe Myrtle	18.0	Fair	Remove	A	No Replacement
316	199+58	Median of Antoine Dr.	Monterrey Oak	10.0	Fair	Remove	A	Replace Inch For Inch
317	199+95	Median of Antoine Dr.	Oak	34.0	Fair	Remove	A	Replace Inch For Inch
318	200+18	Median of Antoine Dr.	Not There					
319	194+10	East side of Antoine Dr.	Not There			.		.
320	194+36	East side of Antoine Dr.	Not There			.		.
321	194+48	East side of Antoine Dr.	Palm	12.0	Fair	Preserve		No Treatment
322	195+50	East side of Antoine Dr.	Pine	24.0	Fair	Preserve		No Treatment
323	196+10	East side of Antoine Dr.	Oak	16.0	Fair	Remove	A	Replace Inch For Inch
324	196+10	East side of Antoine Dr.	Magnolia	18.0	Fair	Preserve		No Treatment
325	197+99	East side of Antoine Dr.	Water Oak	36.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
326	198+48	East side of Antoine Dr.	Cedar	4.0	Fair	Preserve		No Treatment
327	198+68	East side of Antoine Dr.	Cedar	4.0	Fair	Preserve		No Treatment
328	199+00	East side of Antoine Dr.	Crepe Myrtle	8.0	Fair	Preserve	Q	Preservation Treatment
329	199+18	East side of Antoine Dr.	Cedar	17.0	Fair	Remove	A	Replace Inch For Inch
330	199+34	East side of Antoine Dr.	Pine	16.0	Fair	Remove	A	Replace Inch For Inch
331	199+36	East side of Antoine Dr.	Crepe Myrtle	12.0	Fair	Preserve		No Treatment
332	199+50	East side of Antoine Dr.	Pear	16.0	Poor	Remove	A	No Replacement
333	199+95	East side of Antoine Dr.	Pine	16.0	Fair	Remove	A	Replace Inch For Inch
334	200+62	West side of Antoine Dr.	Pine	28.0	Fair	Preserve		Preservation Treatment
335	200+90	West side of Antoine Dr.	Magnolia	12.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
336	204+05	West side of Antoine Dr.	Crepe Myrtle	18.0	Fair	Preserve		No Treatment

TREE INVENTORY TREATMENT LEGEND

(ALL WORK CONTAINED HEREIN IS INCIDENTAL TO 01562 UNLESS OTHERWISE NOTED)

A. REMOVE TREE & STUMP GRIND, PROVIDE TOPSOIL BACKFILL AND COMPACT TO NATURAL GRADE (TOPSOIL INCIDENTAL)

B. MAINTENANCE PRUNING

C. ROOT PRUNING: **SEE DETAIL 2 TREE PRESERVATION DETAILS 1 OF 2**

D. TREE PROTECTION FENCING: **SEE DETAIL 1 TREE PRESERVATION DETAILS 2 OF 3**

E. PROVIDE 3" MULCH OVER EXISTING TREE ROOTS WITHOUT COVERING ROOT FLARE (MIN. 5'-0" DIA. OR UP TO 6'-0" FROM **BASE OF TREE)**

F. ROOT BARRIER AT BACK OF CURB: **SEE DETAILS 3 & 5, PLANTING DETAILS**

G. REMOVE EXISTING SIDEWALK BY HAND IN TREE DRIPLINE, **NO** BACK HOES OR OTHER MOTORIZED EQUIPMENT IS TO BE USED.

H. CHECKER PLATE INSTALLATION **SEE DETAIL 1, TREE PRESERVATION DETAILS 3 OF 3**

I. ZERO CURB CUT (COORDINATE WITH CIVIL ENGINEERING DRAWINGS, **SEE DETAIL 4 TREE PRESERVATION DETAILS 2 OF 3**

J. ROOT SHAVING AS NEEDED OR DIRECTED BY ARBORIST OR COH URBAN FORESTER: **SEE SECTION 01562**

K. RAISED CONCRETE SIDEWALK OVER EXISTING ROOTS, **SEE DETAIL 2, TREE PRESERVATION DETAILS 3 OF 3**

L. TREE BOARDING : **SEE DETAIL 1, TREE PRESERVATION DETAILS 1 OF 3**

M. TREE TRANSPLANTING (IF REQUIRED)

N. PIPE TRENCHING **SEE DETAIL 6, TREE PRESERVATION DETAILS 2 OF 3**

O. PIPE TUNNELING **SEE DETAIL 5, TREE PRESERVATION DETAILS 2 OF 3**

P. REDUCE SIDEWALK WIDTH TO 4'-0" AND/OR ALTER SIDEWALK ALIGNMENT WITH A "BUMP-OUT" TO ACHIEVE A MINIMUM 6'-0" FROM FACE OF EXISTING TREE TRUNK.

Q. PROVIDE ADDITIONAL TREE CANOPY PRUNING FOR TREES THAT HAVE CANOPIES EXTENDING INTO THE ROADWAY WORK OR OTHERWISE CONFLICT WITH PROPOSED CONSTRUCTION ACTIVITIES. TREE CANOPY PRUNING SHALL BE DONE ON ALL SIDES TO 'BALANCE' TREE AND NOT JUST ON THE SIDE OF THE CONSTRUCTION ACTIVITIES. WORK ON TREES OUTSIDE OF THE ROW THAT REQUIRE WORK SHALL BE COORDINATED WITH ADJACENT LAND OWNERS.

R. AIR SPADE ONLY (NO HAND DIGGING)

S. TREE CANOPY PRUNING FOR TEMPORARY LIGHTING OVERHEAD WIRE RUNS.

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SURVEYED BY:
KUO & ASSOCIATES, INC.

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TREE INVENTORY
4 OF 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	

1 TREE INVENTORY

NOT TO SCALE

ID #	STATION	LOCATION	SPECIES	DIA. (IN)	CONDITION	STATUS	TREATMENT	MITIGATION
337	204+05	West side of Antoine Dr.	Crepe Myrtle	34.0	Poor	Remove	A	No Replacement
338	204+16	West side of Antoine Dr.	Not There			.		.
339	206+60	West side of Antoine Dr.	Ash	10.0	Fair	Preserve		No Treatment
340	206+93	West side of Antoine Dr.	Pine	12.0	Fair	Preserve		No Treatment
341	206+13	West side of Antoine Dr.	Pine	18.0	Fair	Preserve		No Treatment
342	200+60	Median of Antoine Dr.	Oak	6.0	Fair	Remove	A	Replace Inch For Inch
343	200+76	Median of Antoine Dr.	Not There					
344	200+88	Median of Antoine Dr.	Crepe Myrtle	11.0	Fair	Preserve	B, C, D	Preservation Treatment
345	200+96	Median of Antoine Dr.	Crepe Myrtle	14.0	Fair	Remove	A	No Replacement
346	200+88	Median of Antoine Dr.	Crepe Myrtle	16.0	Fair	Preserve	D	Preservation Treatment
347	201+20	Median of Antoine Dr.	Bur Oak	10.0	Fair	Remove	A	Replace Inch For Inch
348	201+48	Median of Antoine Dr.	Pine	24.0	Fair	Remove	A	Replace Inch For Inch
349	202+75	Median of Antoine Dr.	Pine	19.0	Fair	Remove	A	Replace Inch For Inch
350	202+95	Median of Antoine Dr.	Pine	19.0	Fair	Remove	A	Replace Inch For Inch
351	203+22	Median of Antoine Dr.	Crepe Myrtle	18.0	Fair	Remove	A	No Replacement
352	203+86	Median of Antoine Dr.	Oak	21.0	Poor	Remove	A	No Replacement
353	204+33	Median of Antoine Dr.	Monterrey Oak	12.0	Fair	Preserve	B, C, D	Preservation Treatment
354	204+59	Median of Antoine Dr.	Crepe Myrtle	9.5	Fair	Remove	A	No Replacement
355	204+71	Median of Antoine Dr.	Crepe Myrtle	11.0	Fair	Remove	A	No Replacement
356	204+71	Median of Antoine Dr.	Crepe Myrtle	16.0	Fair	Remove	A	No Replacement
357	204+88	Median of Antoine Dr.	Monterrey Oak	7.0	Poor	Remove	A	No Replacement
358	205+40	Median of Antoine Dr.	Pine	15.5	Fair	Remove	A	Replace Inch For Inch
359	205+54	Median of Antoine Dr.	Pecan	6.0	Fair	Remove	A	Replace Inch For Inch
360	206+60	Median of Antoine Dr.	Oak	29.0	Fair	Preserve	B, C, D	Preservation Treatment
361	207+09	Median of Antoine Dr.	Crepe Myrtle	4.0	Fair	Preserve	D	Preservation Treatment
362	200+55	East side of Antoine Dr.	Pine	16.5	Fair	Remove	A	Replace Inch For Inch
363	200+76	East side of Antoine Dr.	Pine	12.0	Fair	Preserve		No Treatment
364	200+96	East side of Antoine Dr.	Crepe Myrtle	11.0	Fair	Remove	A	No Replacement
365	201+15	East side of Antoine Dr.	Crepe Myrtle	20.0	Fair	Remove	A	No Replacement
366	201+66	East side of Antoine Dr.	Palm	12.0	Fair	Preserve		No Treatment
367	201+74	East side of Antoine Dr.	Yucca	10.0	Fair	Preserve		No Treatment
368	201+97	East side of Antoine Dr.	Arborvitae	14.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
369	201+97	East side of Antoine Dr.	Arborvitae	14.0	Fair	Preserve		No Treatment
370	201+97	East side of Antoine Dr.	Arborvitae	14.0	Fair	Preserve		No Treatment
371	201+97	East side of Antoine Dr.	Arborvitae	6.0	Fair	Preserve		No Treatment
372	202+70	East side of Antoine Dr.	Pine	18.0	Fair	Preserve		No Treatment
373	202+75	East side of Antoine Dr.	Not There			.		.
374	202+75	East side of Antoine Dr.	Pine	18.0	Fair	Preserve		No Treatment
375	202+75	East side of Antoine Dr.	Pine	18.0	Fair	Preserve		No Treatment
376	203+42	East side of Antoine Dr.	Elm	12.0	Poor	Preserve		No Treatment
377	203+42	East side of Antoine Dr.	Elm	12.0	Poor	Preserve		No Treatment
378	203+61	East side of Antoine Dr.	Oak	24.0	Fair	Preserve	Q, K, B, C, D	Preservation Treatment
379	203+99	East side of Antoine Dr.	Oak	12.0	Fair	Preserve		No Treatment
380	204+33	East side of Antoine Dr.	Pine	24.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
381	204+59	East side of Antoine Dr.	Pine	18.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
382	205+20	East side of Antoine Dr.	Oak	24.0	Fair	Preserve		No Treatment
383	205+25	East side of Antoine Dr.	Oak	36.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
384	205+89	East side of Antoine Dr.	Pine	28.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
385	207+66	West side of Antoine Dr.	Oak	42.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
386	208+15	West side of Antoine Dr.	Oak	28.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
387			Not Used					
388	210+75	West side of Antoine Dr.	Tallow	13.0	Fair	Remove	A	No Replacement
389	210+75	West side of Antoine Dr.	Oak	28.0	Fair	Preserve	S	Preservation Treatment
390	211+25	West side of Antoine Dr.	Oak	36.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
391	211+27	West side of Antoine Dr.	Pine	28.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
392	207+28	Median of Antoine Dr.	Monterrey Oak	9.0	Poor	Remove	A	No Replacement
393	207+43	Median of Antoine Dr.	Not There					
394	207+66	Median of Antoine Dr.	Oak	15.0	Fair	Preserve	B, C, D	Preservation Treatment
395	207+96	Median of Antoine Dr.	Not There					
396	208+15	Median of Antoine Dr.	Crepe Myrtle	10.0	Fair	Remove	A	No Replacement
397	208+36	Median of Antoine Dr.	Oak	27.0	Fair	Remove		Replace Inch For Inch
398	208+54	Median of Antoine Dr.	Crepe Myrtle	15.0	Fair	Remove	A	No Replacement
399	208+70	Median of Antoine Dr.	Monterrey Oak	20.0	Fair	Remove	A	Replace Inch For Inch
400	208+97	Median of Antoine Dr.	Crepe Myrtle	25.0	Fair	Remove	A	No Replacement
401	209+17	Median of Antoine Dr.	Monterrey Oak	13.5	Fair	Remove	A	Replace Inch For Inch
402	200+30	Median of Antoine Dr.	Live Oak	8.0	Fair	Preserve	B, C, D	Preservation Treatment
403			Not Used					
404	409+43	Median of Antoine Dr.	Monterrey Oak	12.5	Fair	Remove	A	Replace Inch For Inch
405	409+53	Median of Antoine Dr.	Crepe Myrtle	9.5	Poor	Remove	A	No Replacement
406	409+72	Median of Antoine Dr.	Pine	20.0	Fair	Remove	A	Replace Inch For Inch
407	210+62	Median of Antoine Dr.	Crepe Myrtle	22.0	Fair	Remove	A	No Replacement
408	210+64	Median of Antoine Dr.	Crepe Myrtle	15.0	Fair	Remove	A	No Replacement
409	211+07	Median of Antoine Dr.	Oak	9.0	Fair	Remove	A	Replace Inch For Inch
410	211+33	Median of Antoine Dr.	Oak	19.5	Fair	Remove	A	Replace Inch For Inch
411	211+45	Median of Antoine Dr.	Crepe Myrtle	8.5	Fair	Remove	A	No Replacement
412	211+50	Median of Antoine Dr.	Crepe Myrtle	17.5	Fair	Remove	A	No Replacement
413	212+75	Median of Antoine Dr.	Crepe Myrtle	17.0	Fair	Remove	A	No Replacement
414	212+85	Median of Antoine Dr.	Pine	9.5	Fair	Remove	A	Replace Inch For Inch
415	212+92	Median of Antoine Dr.	Pine	9.0	Fair	Remove	A	Replace Inch For Inch
416	413+10	Median of Antoine Dr.	Pine	11.5	Fair	Remove	A	Replace Inch For Inch
417	207+40	East side of Antoine Dr.	Oak	14.0	Fair	Preserve		No Treatment
418	207+43	East side of Antoine Dr.	Tallow	18.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
419	207+96	East side of Antoine Dr.	Cottonwood	12.0	Fair	Preserve		No Treatment
420	208+15	East side of Antoine Dr.	Ash	36.0	Fair	Preserve	B, C, D, Q	Preservation Treatment

TREE INVENTORY TREATMENT LEGEND

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A. REMOVE TREE & STUMP GRIND, PROVIDE TOPSOIL BACKFILL AND COMPACT TO NATURAL GRADE (TOPSOIL INCIDENTAL)

B. MAINTENANCE PRUNING

C. ROOT PRUNING: **SEE DETAIL 2 TREE PRESERVATION DETAILS 1 OF 2**

D. TREE PROTECTION FENCING: **SEE DETAIL 1 TREE PRESERVATION DETAILS 2 OF 3**

E. PROVIDE 3" MULCH OVER EXISTING TREE ROOTS WITHOUT COVERING ROOT FLARE (MIN. 5'-0" DIA. OR UP TO 6'-0" FROM **BASE OF TREE)**

F. ROOT BARRIER AT BACK OF CURB: **SEE DETAILS 3 & 5, PLANTING DETAILS**

G. REMOVE EXISTING SIDEWALK BY HAND IN TREE DRIPLINE, **NO** BACK HOES OR OTHER MOTORIZED EQUIPMENT IS TO BE USED.

H. CHECKER PLATE INSTALLATION **SEE DETAIL 1, TREE PRESERVATION DETAILS 3 OF 3**

I. ZERO CURB CUT (COORDINATE WITH CIVIL ENGINEERING DRAWINGS, **SEE DETAIL 4 TREE PRESERVATION DETAILS 2 OF 3**

J. ROOT SHAVING AS NEEDED OR DIRECTED BY ARBORIST OR COH URBAN FORESTER: **SEE SECTION 01562**

K. RAISED CONCRETE SIDEWALK OVER EXISTING ROOTS, **SEE DETAIL 2, TREE PRESERVATION DETAILS 3 OF 3**

L. TREE BOARDING : **SEE DETAIL 1, TREE PRESERVATION DETAILS 1 OF 3**

M. TREE TRANSPLANTING (IF REQUIRED)

N. PIPE TRENCHING **SEE DETAIL 6, TREE PRESERVATION DETAILS 2 OF 3**

O. PIPE TUNNELING **SEE DETAIL 5, TREE PRESERVATION DETAILS 2 OF 3**

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S. TREE CANOPY PRUNING FOR TEMPORARY LIGHTING OVERHEAD WIRE RUNS.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TREE INVENTORY
5 OF 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 626 OF 718	

ID #	STATION	LOCATION	SPECIES	DIA. (IN)	CONDITION	STATUS	TREATMENT	MITIGATION
421	208+54	East side of Antoine Dr.	Oak	24.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
422	208+88	East side of Antoine Dr.	Live Oak	24.0	Fair	Preserve		No Treatment
423	208+97	East side of Antoine Dr.	Crepe Myrtle	21.0	Fair	Remove	A	No Replacement
424	209+06	East side of Antoine Dr.	Crepe Myrtle	20.0	Fair	Remove	A	No Replacement
425	409+53	East side of Antoine Dr.	Oak	28.0	Fair	Preserve	B, C, K, Q	Preservation Treatment
426	409+92	East side of Antoine Dr.	Red Oak	18.0	Fair	Preserve		No Treatment
427	409+92	East side of Antoine Dr.	Ash	24.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
428	410+14	East side of Antoine Dr.	Pine	18.0	Fair	Preserve		No Treatment
429	410+14	East side of Antoine Dr.	Pine	18.0	Fair	Preserve		No Treatment
430	410+55	East side of Antoine Dr.	Tallow	12.0	Fair	Preserve	D	Preservation Treatment
431	210+75	East side of Antoine Dr.	Tallow	17.0	Fair	Remove	A	No Replacement
432	210+82	East side of Antoine Dr.	Tallow	16.0	Fair	Remove	A	No Replacement
433	210+13	East side of Antoine Dr.	Tallow	20.0	Fair	Remove	A	No Replacement
434	210+26	East side of Antoine Dr.	Tallow	11.0	Poor	Remove	A	No Replacement
435	210+78	East side of Antoine Dr.	Magnolia	14.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
436	213+06	East side of Antoine Dr.	Oak	20.0	Poor	Preserve	S	Preservation Treatment
437	215+17	West side of Antoine Dr.	Not There	8.0		.		.
438	215+18	West side of Antoine Dr.	Ash	8.0	Fair	Preserve	D	Preservation Treatment
439	215+70	West side of Antoine Dr.	Oak	22.0	Fair	Preserve		No Treatment
440	215+70	West side of Antoine Dr.	Pine	20.0	Fair	Preserve		No Treatment
441	217+12	West side of Antoine Dr.	Pine	20.0	Fair	Preserve		No Treatment
442	217+10	West side of Antoine Dr.	Pine	22.0	Fair	Preserve		No Treatment
443	217+95	West side of Antoine Dr.	Oak	26.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
444	213+24	Median of Antoine Dr.	Pine	7.5	Fair	Remove	A	Replace Inch For Inch
445	213+26	Median of Antoine Dr.	Crepe Myrtle	15.5	Fair	Remove	A	No Replacement
446	213+30	Median of Antoine Dr.	Crepe Myrtle	17.0	Fair	Remove	A	No Replacement
447	214+51	Median of Antoine Dr.	Not There					
448	214+68	Median of Antoine Dr.	Not There					
449	214+76	Median of Antoine Dr.	Crepe Myrtle	25.0	Fair	Remove	A	No Replacement
450	215+05	Median of Antoine Dr.	Oak	26.0	Fair	Remove	A	Replace Inch For Inch
451	215+30	Median of Antoine Dr.	Pine	10.0	Fair	Remove	A	Replace Inch For Inch
452	215+46	Median of Antoine Dr.	Crepe Myrtle	14.5	Fair	Remove	A	No Replacement
453	215+60	Median of Antoine Dr.	Pine	13.0	Fair	Remove	A	Replace Inch For Inch
454	215+71	Median of Antoine Dr.	Crepe Myrtle	12.0	Fair	Remove	A	No Replacement
455	217+08	Median of Antoine Dr.	Vitex	28.0	Fair	Remove	A	No Replacement
456	217+25	Median of Antoine Dr.	Pine	12.0	Fair	Remove	A	Replace Inch For Inch
457	217+37	Median of Antoine Dr.	Crepe Myrtle	15.0	Fair	Remove	A	No Replacement
458	217+48	Median of Antoine Dr.	Crepe Myrtle	18.0	Fair	Remove	A	No Replacement
459	217+57	Median of Antoine Dr.	Pine	11.0	Fair	Remove	A	Replace Inch For Inch
460	217+87	Median of Antoine Dr.	Pine	12.5	Fair	Remove	A	Replace Inch For Inch
461	217+99	Median of Antoine Dr.	Crepe Myrtle	16.5	Fair	Remove	A	No Replacement
462	218+15	Median of Antoine Dr.	Vitex	7.0	Poor	Remove	A	No Replacement
463	213+30	East side of Antoine Dr.	Crepe Myrtle	10.0	Poor	Preserve	S	Preservation Treatment
464	214+18	East side of Antoine Dr.	Oak	16.0	Poor	Preserve	S	Preservation Treatment
465	214+95	East side of Antoine Dr.	Oak	6.0	Poor	Preserve	S	Preservation Treatment
466	215+40	East side of Antoine Dr.	Oak	8.0	Poor	Preserve	S	Preservation Treatment
467	215+88	East side of Antoine Dr.	Oak	8.0	Poor	Preserve	S	Preservation Treatment
468	216+80	East side of Antoine Dr.	Oak	16.0	Poor	Preserve	S	Preservation Treatment
469	217+57	East side of Antoine Dr.	Oak	14.0	Poor	Preserve	S	Preservation Treatment
470	218+37	East side of Antoine Dr.	Oak	10.0	Poor	Preserve	S	Preservation Treatment
471	219+30	West side of Antoine Dr.	Pine	24.0	Fair	Preserve		No Treatment
472	219+80	West side of Antoine Dr.	Magnolia	10.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
473	220+16	West side of Antoine Dr.	Ash	8.0	Fair	Preserve		No Treatment
474	220+16	West side of Antoine Dr.	Pine	24.0	Fair	Preserve		No Treatment
475	220+18	West side of Antoine Dr.	Pine	18.0	Fair	Preserve		No Treatment
476	220+16	West side of Antoine Dr.	Pine	24.0	Fair	Preserve		No Treatment
477	220+50	West side of Antoine Dr.	Magnolia	20.0	Fair	Preserve		No Treatment
478	219+46	Median of Antoine Dr.	Pine	22.0	Fair	Remove	A	Replace Inch For Inch
479	219+94	Median of Antoine Dr.	Pine	24.0	Fair	Remove	A	Replace Inch For Inch
480			Not Used					
481	221+29	Median of Antoine Dr.	Crepe Myrtle	18.0	Fair	Remove	A	No Replacement
482	221+30	Median of Antoine Dr.	Crepe Myrtle	19.0	Fair	Remove	A	No Replacement
483	221+46	Median of Antoine Dr.	Monterrey Oak	7.5	Fair	Remove	A	Replace Inch For Inch
484	221+66	Median of Antoine Dr.	Crepe Myrtle	14.0	Fair	Remove	A	No Replacement
485	221+84	Median of Antoine Dr.	Not There					
486	196+55	South side of Antoine Dr.	Pecan	16.0	Fair	Remove	A	Replace Inch For Inch
487	222+32	Median of Antoine Dr.	Not There			.		.
488	222+38	Median of Antoine Dr.	Not There					
489	220+90	East side of Antoine Dr.	Oak	8.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
490	221+37	East side of Antoine Dr.	Water Oak	24.0	Fair	Preserve	B, C, D, Q	Preservation Treatment
491	223+26	East side of Antoine Dr.	Pine	21.0	Fair	Preserve		No Treatment
492	182+70	West side of Antoine Dr.	Pine	16.0	Fair	Preserve	D	No Treatment
493	182+70	West side of Antoine Dr.	Crepe Myrtle	14.0	Fair	Preserve		No Treatment
494	195+53	East side of Antoine Dr.	Crepe Myrtle	14.0	Fair	Remove	A	No Replacement

TREE INVENTORY TREATMENT LEGEND

(ALL WORK CONTAINED HEREIN IS INCIDENTAL TO 01562 UNLESS OTHERWISE NOTED)

A. REMOVE TREE & STUMP GRIND, PROVIDE TOPSOIL BACKFILL AND COMPACT TO NATURAL GRADE (TOPSOIL INCIDENTAL)

B. MAINTENANCE PRUNING

C. ROOT PRUNING: **SEE DETAIL 2 TREE PRESERVATION DETAILS 1 OF 2**

D. TREE PROTECTION FENCING: **SEE DETAIL 1 TREE PRESERVATION DETAILS 2 OF 3**

E. PROVIDE 3" MULCH OVER EXISTING TREE ROOTS WITHOUT COVERING ROOT FLARE (MIN. 5'-0" DIA. OR UP TO 6'-0" FROM **BASE OF TREE)**

F. ROOT BARRIER AT BACK OF CURB: **SEE DETAILS 3 & 5, PLANTING DETAILS**

G. REMOVE EXISTING SIDEWALK BY HAND IN TREE DRIPLINE, **NO** BACK HOES OR OTHER MOTORIZED EQUIPMENT IS TO BE USED.

H. CHECKER PLATE INSTALLATION **SEE DETAIL 1, TREE PRESERVATION DETAILS 3 OF 3**

I. ZERO CURB CUT (COORDINATE WITH CIVIL ENGINEERING DRAWINGS, **SEE DETAIL 4 TREE PRESERVATION DETAILS 2 OF 3**

J. ROOT SHAVING AS NEEDED OR DIRECTED BY ARBORIST OR COH URBAN FORESTER: **SEE SECTION 01562**

K. RAISED CONCRETE SIDEWALK OVER EXISTING ROOTS, **SEE DETAIL 2, TREE PRESERVATION DETAILS 3 OF 3**

L. TREE BOARDING : **SEE DETAIL 1, TREE PRESERVATION DETAILS 1 OF 3**

M. TREE TRANSPLANTING (IF REQUIRED)

N. PIPE TRENCHING **SEE DETAIL 6, TREE PRESERVATION DETAILS 2 OF 3**

O. PIPE TUNNELING **SEE DETAIL 5, TREE PRESERVATION DETAILS 2 OF 3**

P. REDUCE SIDEWALK WIDTH TO 4'-0" AND/OR ALTER SIDEWALK ALIGNMENT WITH A "BUMP-OUT" TO ACHIEVE A MINIMUM 6'-0" FROM FACE OF EXISTING TREE TRUNK.

Q. PROVIDE ADDITIONAL TREE CANOPY PRUNING FOR TREES THAT HAVE CANOPIES EXTENDING INTO THE ROADWAY WORK OR OTHERWISE CONFLICT WITH PROPOSED CONSTRUCTION ACTIVITIES. TREE CANOPY PRUNING SHALL BE DONE ON ALL SIDES TO 'BALANCE' TREE AND NOT JUST ON THE SIDE OF THE CONSTRUCTION ACTIVITIES. WORK ON TREES OUTSIDE OF THE ROW THAT REQUIRE WORK SHALL BE COORDINATED WITH ADJACENT LAND OWNERS.

R. AIR SPADE ONLY (NO HAND DIGGING)

S. TREE CANOPY PRUNING FOR TEMPORARY LIGHTING OVERHEAD WIRE RUNS.

CITY OF HOUSTON PROTECTED TREE SUMMARY	
# of Trees Inventoried	460*
# of Trees Greater than 20" caliper	147
# of Trees Greater than 1.5" caliper and on COH's Street Tree List	270

*DOES NOT INCLUDE TREES IN INVENTORY MARKED AS "NOT THERE" OR "NOT USED"

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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TREE INVENTORY
6 OF 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 627 OF 718	

1 TREE INVENTORY

NOT TO SCALE

ID #	STATION	LOCATION	SPECIES	DIA. (IN)	CONDITION	STATUS	TREATMENT	MITIGATION
001		Antoine Dr.	Crepe Myrtle	10.0	Fair	Remove	A	No Replacement
002		Antoine Dr.	Crepe Myrtle	10.0	Fair	Remove	A	No Replacement
003		Antoine Dr.	Crepe Myrtle	8.0	Fair	Remove	A	No Replacement
004		West Gulf Bank Rd.	Pine	22.0	Fair	Remove	A	Replace Inch For Inch

PLEASE NOTE: TREE IDENTIFICATION NUMBERS 001-004 ON THIS SHEET ARE ASSIGNED TO TREES ON THE INTERSECTION OF ANTOINE DR AND W. GULF BANK RD. ONLY

TREE INVENTORY TREATMENT LEGEND

(ALL WORK CONTAINED HEREIN IS INCIDENTAL TO 01562 UNLESS OTHERWISE NOTED)

A. REMOVE TREE & STUMP GRIND, PROVIDE TOPSOIL BACKFILL AND COMPACT TO NATURAL GRADE (TOPSOIL INCIDENTAL)
B. MAINTENANCE PRUNING
C. ROOT PRUNING: **SEE DETAIL 2 TREE PRESERVATION DETAILS 1 OF 2**
D. TREE PROTECTION FENCING: **SEE DETAIL 1 TREE PRESERVATION DETAILS 2 OF 3**
E. PROVIDE 3" MULCH OVER EXISTING TREE ROOTS WITHOUT COVERING ROOT FLARE (MIN. 5'-0" DIA. OR UP TO 6'-0" FROM **BASE OF TREE)**
F. ROOT BARRIER AT BACK OF CURB: **SEE DETAILS 3 & 5, PLANTING DETAILS**
G. REMOVE EXISTING SIDEWALK BY HAND IN TREE DRIPLINE, **NO** BACK HOES OR OTHER MOTORIZED EQUIPMENT IS TO BE USED.
H. CHECKER PLATE INSTALLATION **SEE DETAIL 1, TREE PRESERVATION DETAILS 3 OF 3**

CITY OF HOUSTON PROTECTED TREE SUMMARY	
# of Trees Inventoried	4
# of Trees Greater than 20" caliper	1
# of Trees Greater than 1.5" caliper and on COH's Street Tree List	4

TREE REMOVAL SUMMARY	
TOTAL TREE REPLACEMENT INCHES REQUIRED	22
TOTAL QUANTITY OF 6" CAL. TREES REQUIRED	4
TOTAL QUANTITY OF 6" CAL. TREES PLANTED	4

No.	DATE	REVISIONS	APP.

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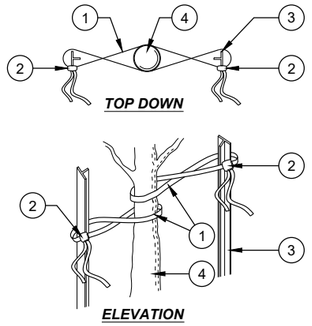
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TREE INVENTORY / REMOVAL
1 OF 1

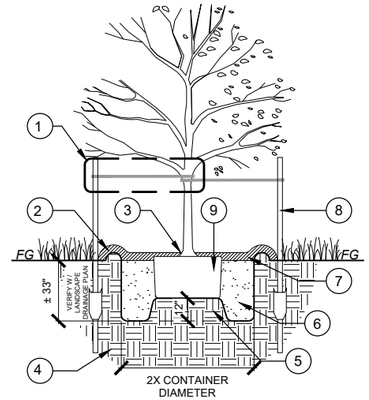
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 628 OF 718	



DETAIL NOTES:

1. 3/4" WIDE GREEN, FLAT WOVEN POLYPROPYLENE ARBORTIE
2. SECURE TO ARBORTIE T-POST WITH A KNOT.
3. STANDARD STEEL T-POST
4. TREE TRUNK

3 TREE STAKING — NOT TO SCALE



DETAIL NOTES:

1. TREE TIE DETAIL, **SEE DETAIL #6, THIS SHEET**.
2. FORM RESERVOIR OF MULCH AND NATIVE SOIL (3" MIN./6" MAX. HEIGHT)
3. SET TOP OF ROOT FLARE ±3" ABOVE FINISHED GRADE
4. UNDISTURBED SUB-GRADE (TYPICAL).
5. PROVIDE 1'-0" TALL X 3'-0" DIA. COMPACTED SOIL LEDGE FOR ROOT BALL (SCARIFY BOTTOM AND SIDES OF TREE PIT).
6. PLANTING MIXTURE, SEE SPECIFICATIONS.
7. 4" (MIN.) MULCH TOP DRESSING
8. STEEL 'T' POST (2 MIN. PER TREE, STANDARD) PLACED A MINIMUM OF 2" FROM ROOTBALL.
9. ROOTBALL, SCARIFY AND LOOSEN ROOTS. SET TOP OF BALL/CONTAINER ± 2" ABOVE FINISHED GRADE.

2 TREE PLANTING — NOT TO SCALE

PROPOSED PLANTING: *CONTRACTOR SHALL MARK TREE LOCATION PRIOR TO PLANTING FOR APPROVAL BY CITY FORESTER AND CITY ENGINEER*

SYM.	ABR.	BOTANICAL NAME	COMMON NAME	CONTAINER SIZE	NOTES	QNTY.
	UC	ULMUS CRASSIFOLIA	CEDAR ELM	200 GAL. SINGLE TRUNK	6" CAL. MIN. @ ±25' 0" O.C.	30
	QV	QUERCUS VIRGINIANA	LIVE OAK	100 GAL. SINGLE TRUNK	4" CAL. MIN. @ ±25' 0" O.C.	226
	AR	ACER RUBRUM	RED MAPLE	100 GAL. SINGLE TRUNK	4" CAL. MIN. @ ±25' 0" O.C.	21
	QT	QUERCUS TEXANA	NUTTAL OAK	100 GAL. SINGLE TRUNK	4" CAL. MIN. @ ±25' 0" O.C.	21
	QL	QUERCUS LYRATA	OVERCUP OAK	100 GAL. SINGLE TRUNK	4" CAL. MIN. @ ±25' 0" O.C.	21

1 PLANT LIST — NOT TO SCALE

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TREE PRESERVATION DETAILS
1 OF 7

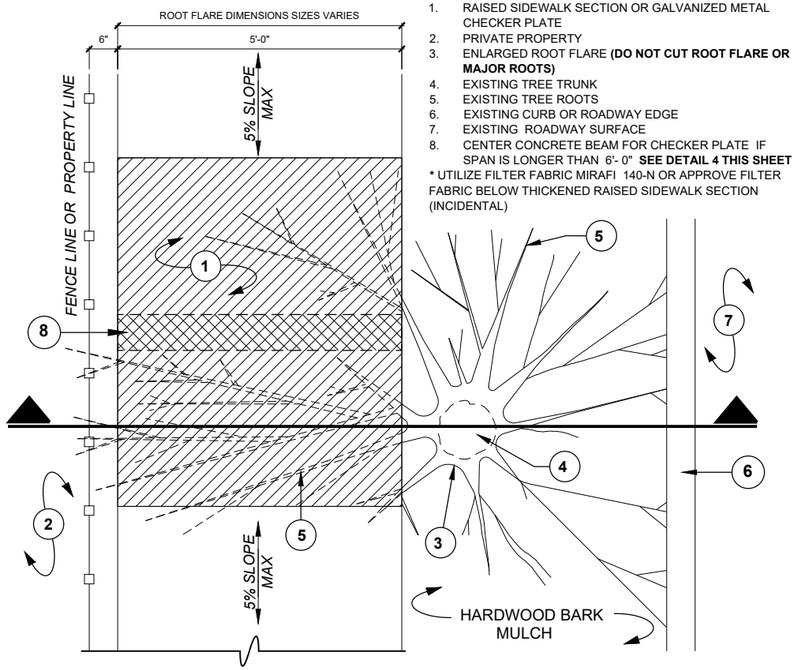
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	

SHEET NO. 629 OF 718

DETAIL NOTES:

1. RAISED SIDEWALK SECTION OR GALVANIZED METAL CHECKER PLATE
2. PRIVATE PROPERTY
3. ENLARGED ROOT FLARE **(DO NOT CUT ROOT FLARE OR MAJOR ROOTS)**
4. EXISTING TREE TRUNK
5. EXISTING TREE ROOTS
6. EXISTING CURB OR ROADWAY EDGE
7. EXISTING ROADWAY SURFACE
8. CENTER CONCRETE BEAM FOR CHECKER PLATE IF SPAN IS LONGER THAN 6'- 0" **SEE DETAIL 4 THIS SHEET**

* UTILIZE FILTER FABRIC MIRAFI 140-N OR APPROVE FILTER FABRIC BELOW THICKENED RAISED SIDEWALK SECTION (INCIDENTAL)

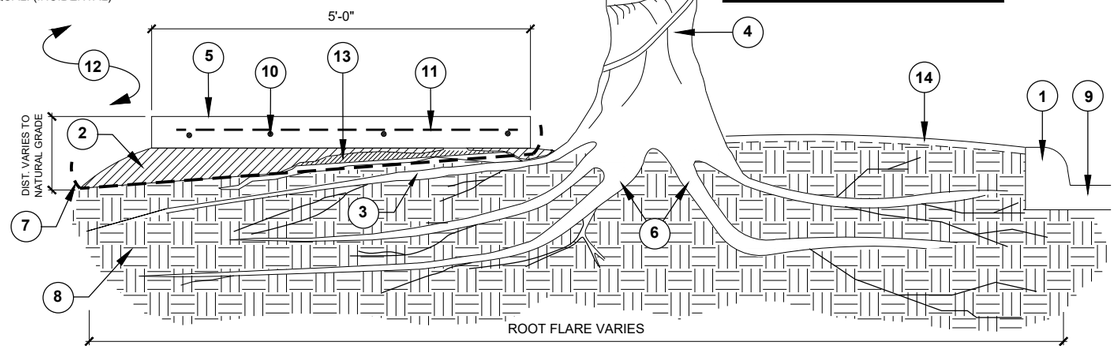


5 ROOT FLARE OVER SIDEWALK INSTALLATION DETAIL PLAN VIEW — NOT TO SCALE

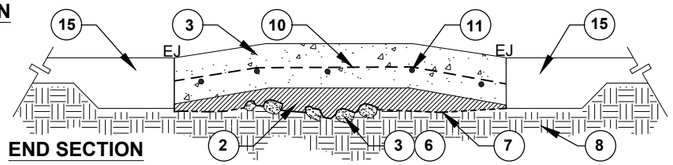
DETAIL NOTES:

1. EXISTING CURB OR ROADWAY EDGE
2. CEMENT STABILIZED SAND BASE (INCIDENTAL)
3. ENLARGED ROOT FLARE **(DO NOT CUT ROOT FLARE OR MAJOR ROOTS WITHOUT ARCHITECT OR COH APPROVAL)**
4. EXISTING TREE MAIN TRUNK
5. 7" INCH THICK SIDEWALK RAISED OVER ROOT FLARE
6. EXISTING TREE ROOTS
7. FILTER FABRIC MIRAFI 140-N OR APPROVED EQUAL. (INCIDENTAL)
8. UNDISTURBED SOIL
9. EXISTING ROADWAY SURFACE
10. #3 @ 18" O.C. (INCIDENTAL)
11. #4 @ 15" O.C. (INCIDENTAL)
12. PRIVATE PROPERTY
13. SHAVE ROOT KNUCKLES AND PROTRUSIONS AS DIRECTED BY LANDSCAPE ARCHITECT OR COH FORESTER.
14. 3" THICK HARDWOOD BARK MULCH **SEE SPECIFICATIONS. (INCIDENTAL)**
15. PAVEMENT HEADER **SEE ENGINEER DRAWINGS**

NOTE:
DO NOT CUT ROOT FLARE OR MAJOR ROOTS. IF ROOT SYSTEM NEEDS TO BE PRUNED CONSULT CITY OF HOUSTON FORESTER PRIOR TO PRUNING ACTIVITIES

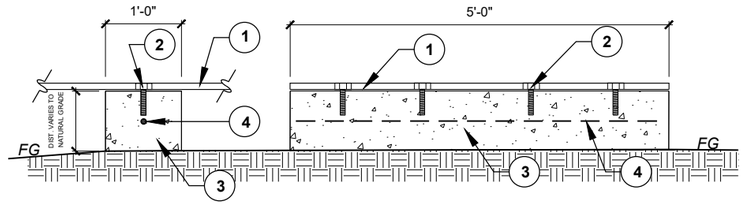


CROSS SECTION



END SECTION

2 RAISED SIDEWALK OVER ROOT FLARE — NOT TO SCALE

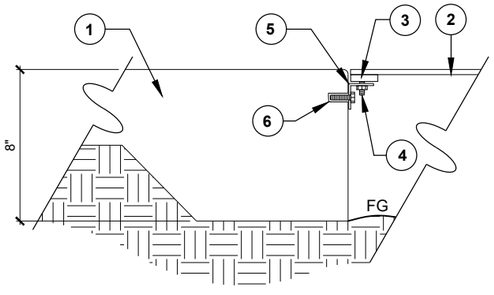


END SECTION **CROSS SECTION**

DETAIL NOTES:

1. 3/8" GALVANIZED CHECKER PLATE, FOR ATTACHMENT TO SIDEWALK
2. PROVIDE FOUR (4) 1/2" VANDAL PROOF COUNTER SUNK CONCRETE ANCHOR BOLTS ON EACH SIDE
3. 3000 PSI CONCRETE
4. #4 REBAR HORIZONTAL CONTINUOUS. (INCIDENTAL)

4 CHECKER PLATE CENTER BEAM SUPPORT — NOT TO SCALE



DETAIL NOTES:

1. SIDEWALK CONCRETE HEADER AT PAVEMENT **SEE ENGINEER DRAWINGS**
2. 3/8" GALVANIZED CHECKERED PLATE FOR ATTACHMENT TO SIDEWALK
3. 2" X 3/8" BAR STITCH WELDED TO CHECKER PLATE AND DRILL 7/8" HOLES.
4. 3/8" Ø 3" LONG GALVANIZED BOLT, LARGE FLAT WASHER AND NUT SPOT WELDED TO ANGLE IRON BEFORE GALVANIZING
5. 2" x 2" x 1/4" ANGLE IRON 4' - 0" LONG WITH DRILLED 5/8" HOLE AND 1/2" HOOK WELDED AT 8" O.C. IN (4) FOUR LOCATION
6. 3/8" Ø BOLT WITH SOLID MASONRY ANCHOR 3" DEEP INTO CONCRETE HEADER.

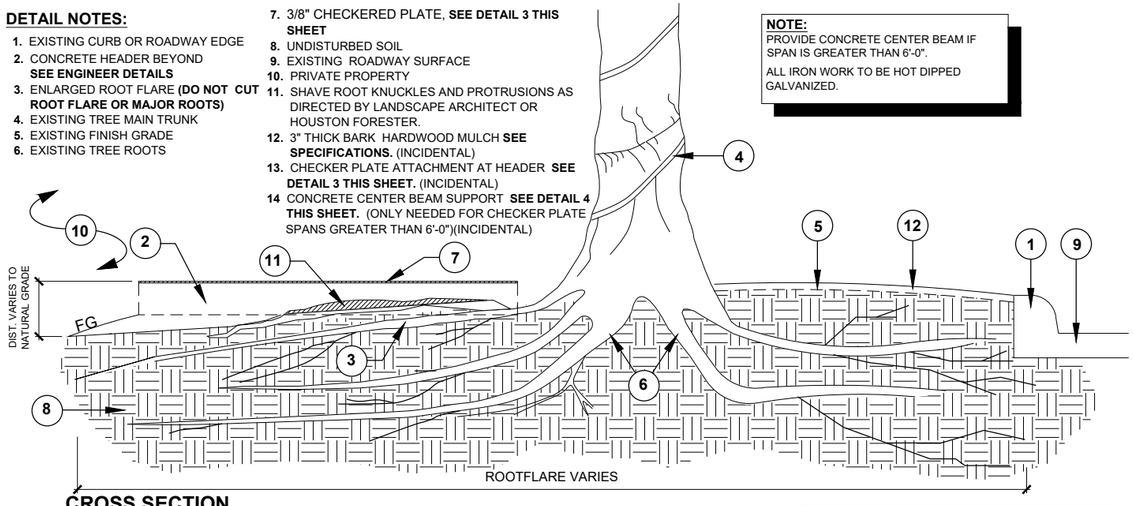
3 CENTER BEAM ATTACHMENT AT SIDEWALK — NOT TO SCALE

DETAIL NOTES:

1. EXISTING CURB OR ROADWAY EDGE
2. CONCRETE HEADER BEYOND **SEE ENGINEER DETAILS**
3. ENLARGED ROOT FLARE **(DO NOT CUT ROOT FLARE OR MAJOR ROOTS)**
4. EXISTING TREE MAIN TRUNK
5. EXISTING FINISH GRADE
6. EXISTING TREE ROOTS
7. 3/8" CHECKERED PLATE, **SEE DETAIL 3 THIS SHEET**
8. UNDISTURBED SOIL
9. EXISTING ROADWAY SURFACE
10. PRIVATE PROPERTY
11. SHAVE ROOT KNUCKLES AND PROTRUSIONS AS DIRECTED BY LANDSCAPE ARCHITECT OR HOUSTON FORESTER.
12. 3" THICK BARK HARDWOOD MULCH **SEE SPECIFICATIONS.** (INCIDENTAL)
13. CHECKER PLATE ATTACHMENT AT HEADER **SEE DETAIL 3 THIS SHEET.** (INCIDENTAL)
14. CONCRETE CENTER BEAM SUPPORT **SEE DETAIL 4 THIS SHEET.** (ONLY NEEDED FOR CHECKER PLATE SPANS GREATER THAN 6'-0")(INCIDENTAL)

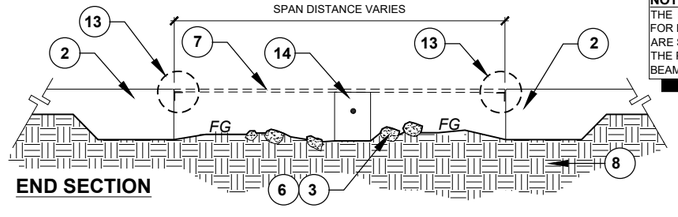
NOTE:
PROVIDE CONCRETE CENTER BEAM IF SPAN IS GREATER THAN 6'-0".

ALL IRON WORK TO BE HOT DIPPED GALVANIZED.



CROSS SECTION

NOTE:
THE DISTANCE OF THE CHECKER PLATE VARIES FOR EACH TREE ROOT CONDITION. THE DISTANCES ARE SHOWN AS APPROXIMATE MEASUREMENTS ON THE PLAN. ADDITIONAL CHECKER PLATE AND CENTER BEAM SUPPORT IS INCIDENTAL TO THE INSTALLATION.



END SECTION

1 CHECKER PLATE OVER ROOT FLARE — NOT TO SCALE

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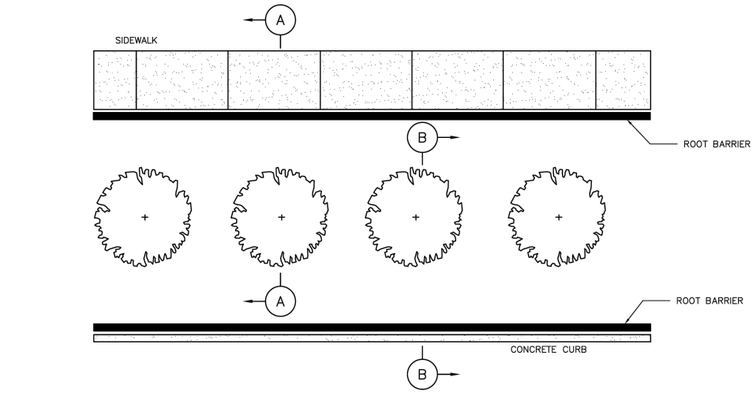
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TREE PRESERVATION DETAILS
2 OF 7

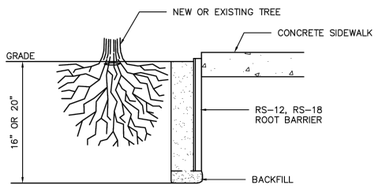
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	

SHEET NO. 630 OF 718

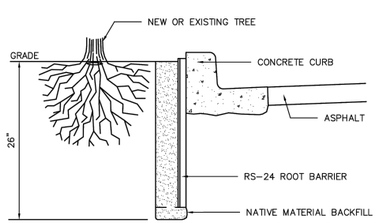


NOTES:

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. THE RAISED ROOT GUIDING RIBS MUST BE FACING TOWARDS THE TREE ROOTS.
3. THE TOP OF THE BARRIER PANELS MUST BE SLIGHTLY ABOVE GRADE (NEVER BELOW GRADE).
4. POSITION BARRIER PANELS VERTICALLY WITH TOP AGAINST THE STRUCTURE TO BE PROTECTED.
5. SEE LANDSCAPE SITE PLAN TO DETERMINE TREES THAT REQUIRE BARRIER PANEL.
6. KEEP THE BARRIER TOP EDGE AT LEAST 1/2" ABOVE GRADE.



SECTION A–A
SIDEWALK



SECTION B–B
CURB & GUTTER PROTECTIONS

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TREE ROOT BARRIERS (LINEAR)

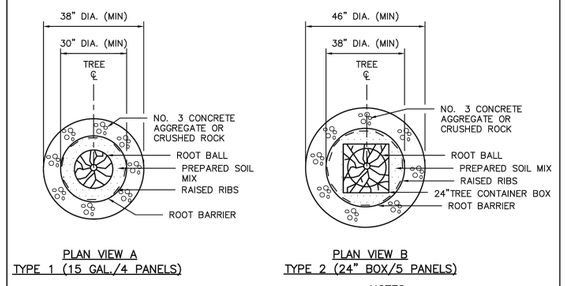
(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER	DIRECTOR OF HPW

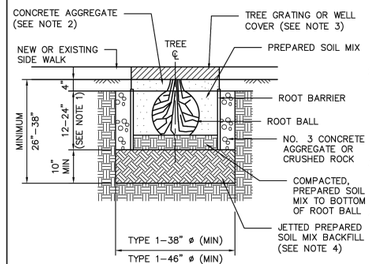
EFF DATE: NOV-27-2023 | DWG NO: 02912-02

2 TREE ROOT BARRIER - LINEAR | NOT TO SCALE



PLAN VIEW A
TYPE 1 (15 GAL./4 PANELS)

PLAN VIEW B
TYPE 2 (24" BOX/5 PANELS)



ELEVATION VIEW

NOTES:

1. ROOT BARRIERS SIZES 12"–24" SHALL BE USED DEPENDS ON THE SIZE OF THE TREE. SIZES 36" AND 48" ARE RECOMMENDED TO BE USED AT SLOPES AND RETAINING WALLS WHEN ADDITIONAL DEPTH IS REQUIRED.
2. CONCRETE AGGREGATE ONLY BE USED TO RAISE THE ELEVATION OF THE WELL COVER/TREE GRATING TO MATCH THE SIDE WALKS. IF TREE WELL COVER IS NOT REQUIRED, THE GRADE SURFACE OF THE TREE WELL SHALL BE 1" LOWER THAN THE SIDE WALK.
3. REFER PROJECT PLAN AND CITY OF HOUSTON STANDARDS FOR TREE GRATING/WELL COVER REQUIREMENTS.
4. PREPARED SOIL MIX SHALL BE PLACED IN PLANTING HOLE AND TEMPED TO BOTTOM OF ROOT BALL ELEVATION PRIOR TO PROCEEDING WITH TREE PLANTING. FOR PLANTING AND TREE MAINTENANCE, REFER STANDARD LANDSCAPE PLANTING SPECIFICATION FOR CITY OF HOUSTON.

DISCLAIMER: THE USE OF THIS STANDARD IS GOVERNED BY THE TEXAS ENGINEERING PRACTICE ACT. THE DESIGN REQUIREMENTS ON THIS STANDARD DO NOT PURPORT TO ADDRESS ALL OF THE SAFETY CONCERNS ASSOCIATED WITH THEIR USE. THE ENGINEER OF RECORD (EOR) IS TO REVIEW THESE DESIGN REQUIREMENTS AND BY AUTHORIZING THEIR USE, ACCEPTS RESPONSIBILITY FOR THEIR APPLICABILITY, ADEQUACY AND SAFETY. NO WARRANTY OF ANY KIND IS MADE BY THE CITY OF HOUSTON FOR ANY PURPOSES WHATSOEVER. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TREE ROOT BARRIERS (CIRCULAR)

(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER	DIRECTOR OF HPW

EFF DATE: NOV-27-2023 | DWG NO: 02912-01

1 TREE ROOT BARRIER- CIRCULAR | NOT TO SCALE

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

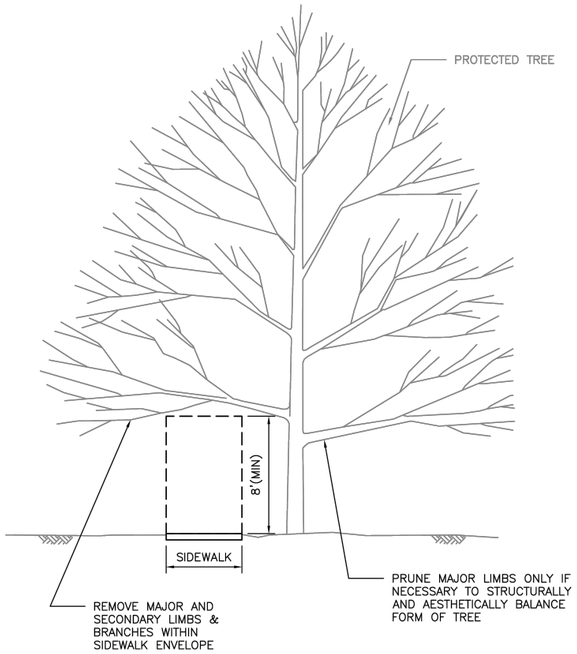
ANTOINE DRIVE

TREE PRESERVATION DETAILS

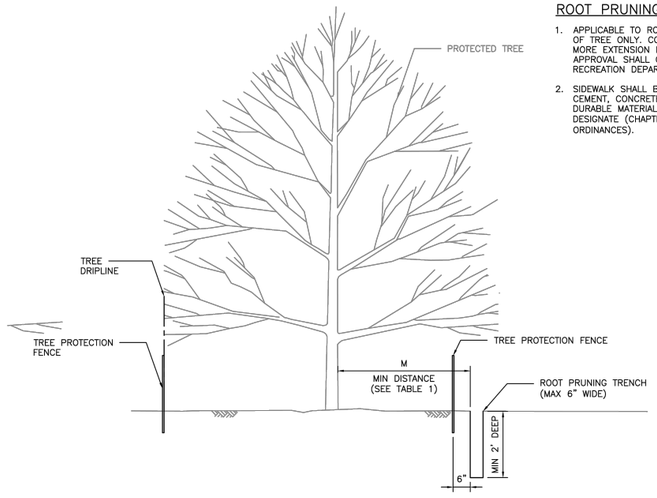
3 OF 7

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	

SHEET NO. 631 OF 718



TREE PRUNING



ROOT PRUNING DETAIL

ROOT PRUNING NOTE:

1. APPLICABLE TO ROOT PRUNING ON ONE SIDE OF TREE ONLY. CONSULT CITY ARBORIST FOR MORE EXTENSION ROOT PRUNING. FINAL APPROVAL SHALL COME FROM PARKS AND RECREATION DEPARTMENT.
2. SIDEWALK SHALL BE CONSTRUCTED OF EITHER CEMENT, CONCRETE, ASPHALT OR OTHER DURABLE MATERIAL AS THE COUNCIL MAY DESIGNATE (CHAPTER 40-91, CODE OF ORDINANCES).

TABLE 1
"M" DISTANCE TABLE

TREE TRUNK DIA. (IN)	*MINIMUM DISTANCE 'M'
< 6"	3 FEET
6" ≤ DIA. ≤ 20"	0.75 FEET PER DIA.-INCH
> 20"	CONSULT CITY ARBORIST

*MINIMUM DISTANCE FROM TREE TRUNK TO EDGE OF TRENCH

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TREE PROTECTION
TREE AND ROOT PRUNING
(SCALE: NOT TO SCALE)

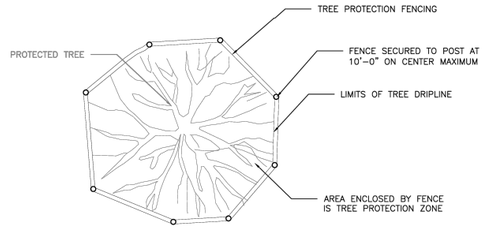
APPROVED BY:

Docu Signed by: Suhail Kanwar 9EF8B0C64197547B...	Docu Signed by: Carol Haddock A5DC41087200435...
CITY ENGINEER	DIRECTOR OF HPW
EFF DATE: NOV-27-2023	DWG NO: 01562-02

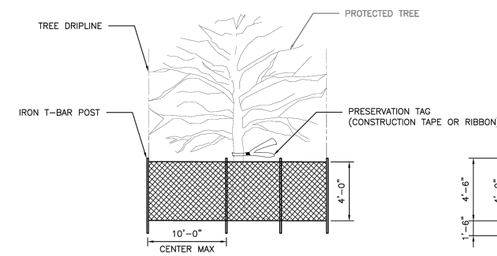
2 TREE AND ROOT PRUNING — NOT TO SCALE

NOTES:

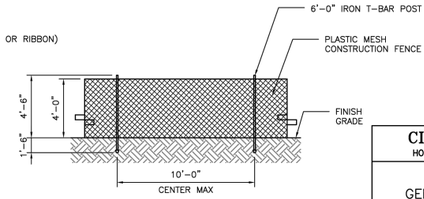
FENCE LOCATION MAY BE ADJUSTED TO ACTUAL SITE CONDITIONS.



PLAN VIEW
TREE PROTECTION FENCING DETAIL



FRONT VIEW
TREE PROTECTION FENCING DETAIL



DETAIL B-4
PROTECTIVE PLASTIC MESH FENCE

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TREE PROTECTION
GENERAL REQUIREMENTS
(SCALE: NOT TO SCALE)

APPROVED BY:

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CITY ENGINEER	DIRECTOR OF HPW
EFF DATE: NOV-27-2023	DWG NO: 01562-01

1 TREE FENCING — NOT TO SCALE

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TREE PRESERVATION DETAILS
4 OF 7

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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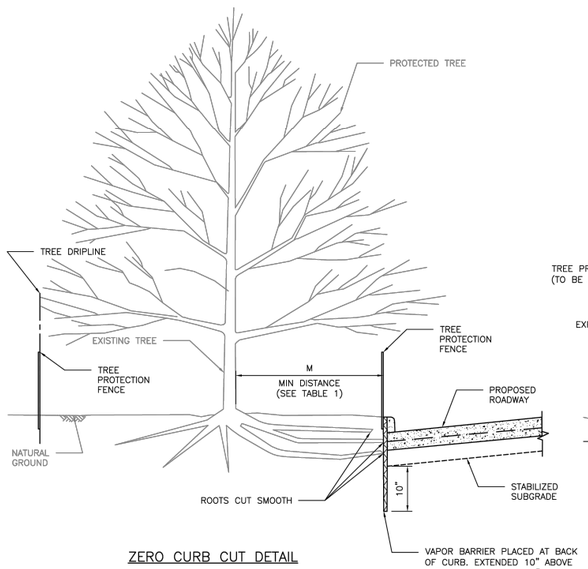
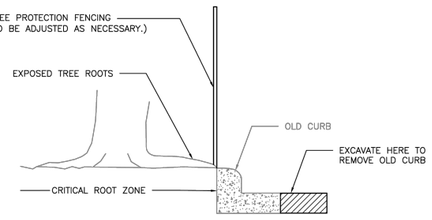
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	

SHEET NO. 632 OF 718



ZERO CURB CUT DETAIL



OLD CURB REMOVAL

TABLE 1 "M" DISTANCE TABLE	
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6" ≤ DIA. ≤ 20"	0.75 FEET PER DIA.–INCH
> 20"	CONSULT CITY ARBORIST

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TREE PROTECTION
ZERO CURB CUT

(SCALE: NOT TO SCALE)

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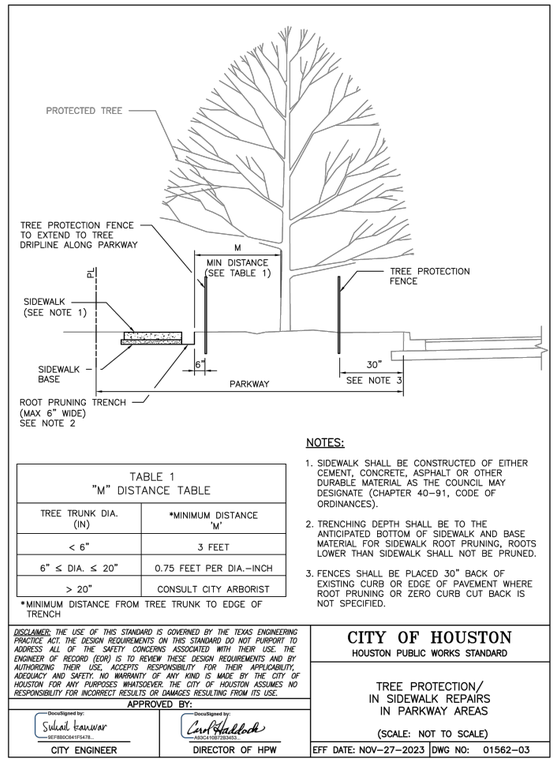
CITY ENGINEER	DIRECTOR OF HPW

EFF DATE: NOV-27-2023 | DWG NO: 01562-04

2 ZERO CURB CUT — NOT TO SCALE



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> 20"	CONSULT CITY ARBORIST

*MINIMUM DISTANCE FROM TREE TRUNK TO EDGE OF TRENCH

NOTES:

1. SIDEWALK SHALL BE CONSTRUCTED OF EITHER CEMENT, CONCRETE, ASPHALT OR OTHER DURABLE MATERIAL AS THE COUNCIL MAY DESIGNATE (CHAPTER 40–91, CODE OF ORDINANCES).
2. TRENCHING DEPTH SHALL BE TO THE ANTICIPATED BOTTOM OF SIDEWALK AND BASE MATERIAL FOR SIDEWALK ROOT PRUNING, ROOTS LOWER THAN SIDEWALK SHALL NOT BE PRUNED.
3. FENCES SHALL BE PLACED 30" BACK OF EXISTING CURB OR EDGE OF PAVEMENT WHERE ROOT PRUNING OR ZERO CURB CUT BACK IS NOT SPECIFIED.

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APPROVED BY:

CITY ENGINEER	DIRECTOR OF HPW

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TREE PROTECTION/
IN SIDEWALK REPAIRS
IN PARKWAY AREAS

(SCALE: NOT TO SCALE)

EFF DATE: NOV-27-2023 | DWG NO: 01562-03

1 SIDEWALK REPAIRS — NOT TO SCALE

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TREE PRESERVATION
DETAILS
5 OF 7

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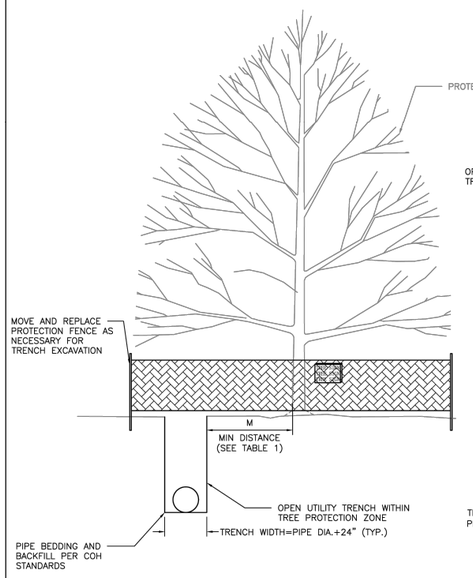
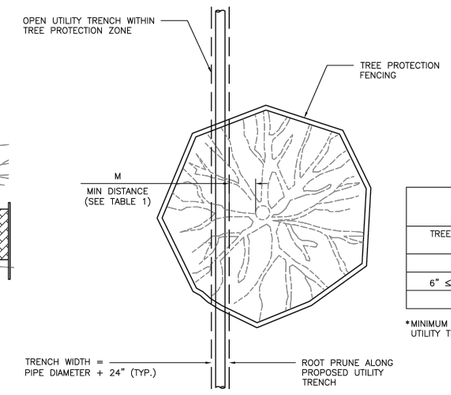
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 633 OF 718	



ELEVATION
TRENCH EXCAVATION



PLAN
TRENCH EXCAVATION

TABLE 1 "M" DISTANCE TABLE	
TREE TRUNK DIA. (IN)	*MINIMUM DISTANCE 'M'
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6" ≤ DIA. ≤ 20"	0.75 FEET PER DIA.–INCH
> 20"	CONSULT CITY ARBORIST

*MINIMUM DISTANCE FROM TREE TRUNK TO EDGE OF UTILITY TRENCH

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TREE PROTECTION
TRENCH REQUIREMENTS

(SCALE: NOT TO SCALE)

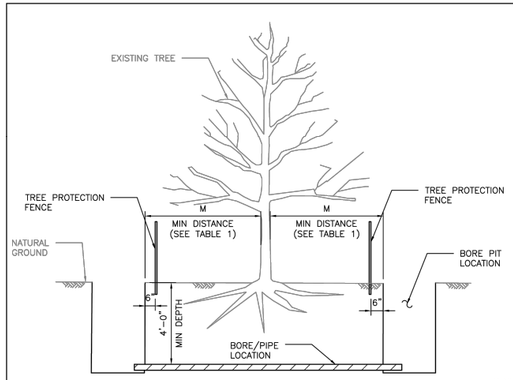
APPROVED BY:

Digitally signed by Sukut Kanwar — CITY ENGINEER

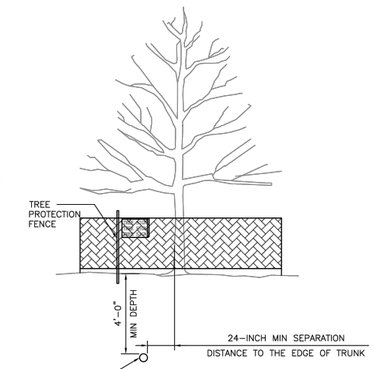
Digitally signed by Carl Haddock — DIRECTOR OF HPW

EFF DATE: NOV–27–2023 | DWG NO: 01562–06

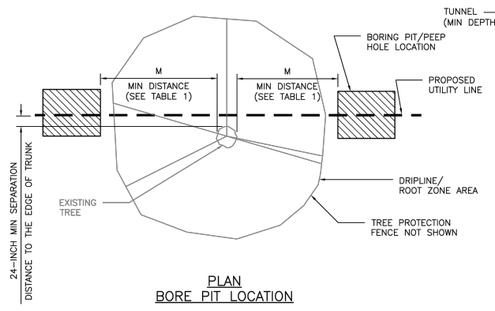
2 TRENCHING REQUIREMENTS — NOT TO SCALE



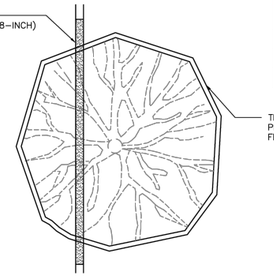
ELEVATION
BORE PIT LOCATION



ELEVATION
TUNNEL LOCATION



PLAN
BORE PIT LOCATION



PLAN
TUNNEL LOCATION

TABLE 1 "M" DISTANCE TABLE	
TREE TRUNK DIA. (IN)	*MINIMUM DISTANCE 'M'
< 6"	3 FEET
6" ≤ DIA. ≤ 20"	0.75 FEET PER DIA.–INCH
> 20"	CONSULT CITY ARBORIST

*MINIMUM DISTANCE FROM TREE TRUNK TO EDGE OF BORE PIT.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TREE PROTECTION
TUNNELING REQUIREMENTS

(SCALE: NOT TO SCALE)

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1 TUNNELING REQUIREMENTS — NOT TO SCALE

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TREE PRESERVATION
DETAILS
6 OF 7

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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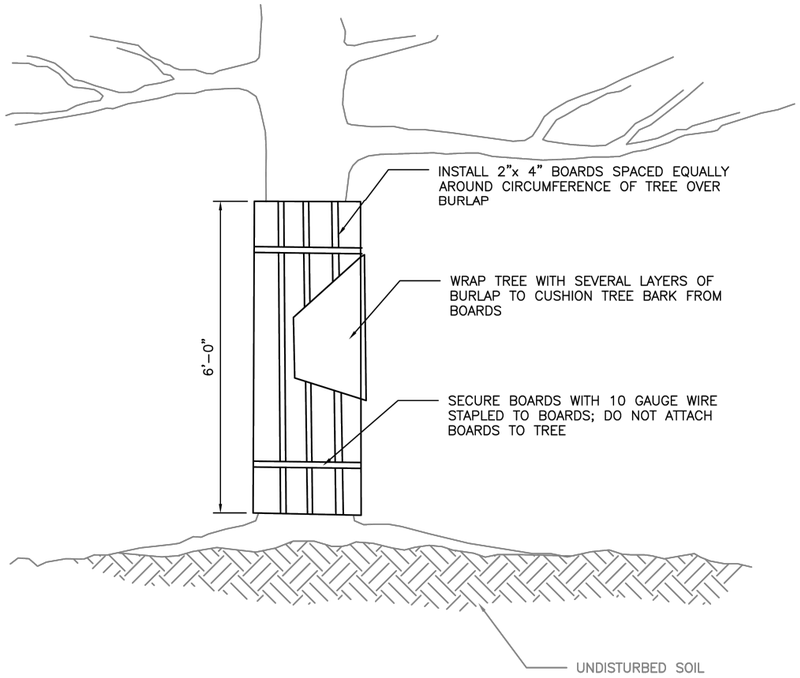
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 634 OF 718	



ELEVATION

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CITY ENGINEER	DIRECTOR OF HPW
DocuSigned by: Suhail Kanwar 9EF880C641F5478...	DocuSigned by: Carol Haddock A93C410B72B3453...

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TREE BOARDING

(SCALE: NOT TO SCALE)

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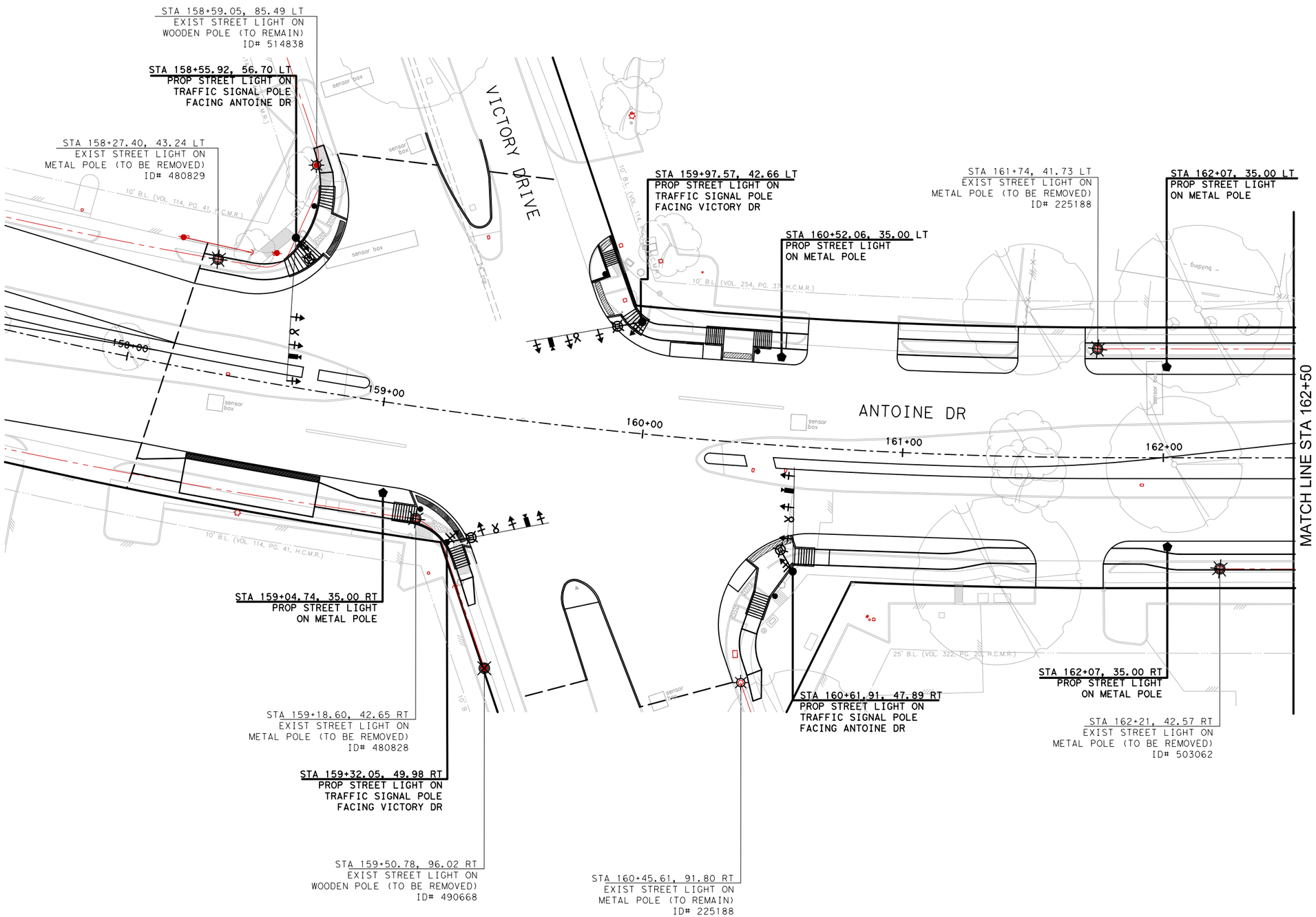
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

TREE PRESERVATION DETAILS
7 OF 7

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 635 OF 718	

1	TREE BOARDING	NOT TO SCALE



LEGEND

- EXIST WOODEN POWER POLE WITH LIGHT (TO REMAIN)
- EXIST METAL STREET LIGHT POLE (TO REMAIN)
- EXIST STREET LIGHT ON WOODEN POLE (TO BE REMOVED)
- EXIST METAL STREET LIGHT POLE (TO BE REMOVED)
- PROP METAL STREET LIGHT POLE
- PROP STREET LIGHT ON EXIST WOODEN POLE
- PROP PVC CONDUIT AND CONDUCTORS

NOTES:

1. EXIST STREET LIGHTS POLES, CONDUCT AND WIRING TO BE REMOVED.
2. COORDINATE WITH CNP FOR DE-ENERGIZING AND POLE REMOVAL/DISPOSAL.
3. LOCATION OF STREETLIGHTS ARE APPROXIMATE.
4. ALL CONDUIT INSTALLATIONS MUST CONFIRM TO CPE SPECIFICATION LATEST EDITION, UNLESS OTHERWISE AUTHORIZED BY LIGHTING DESIGN SERVICES DEPARTMENT. REFER TO SHEETS xx-xx.
5. CABLING & STREETLIGHTS TO BE INSTALLED BY CENTERPOINT.
6. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES DUE TO CONDUITS INSTALLATION.
7. CONTRACTOR TO CALL (713) 954 3222 FOR THE ARRANGEMENT OF ENERGY STANDBY TIME 2" CONDUIT STUB UP.

N

0' 20' 40'
SCALE IN FEET

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Registered Professional Engineer
70302
10/21/2025
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Mechanical & Electrical
Plumbing Design • Construction Mgt
Firm Registration #F1288

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STREET LIGHTING EXHIBIT
BEGIN STA TO 162+50

SHEET 1 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
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SHEET NO. 636 OF 718	

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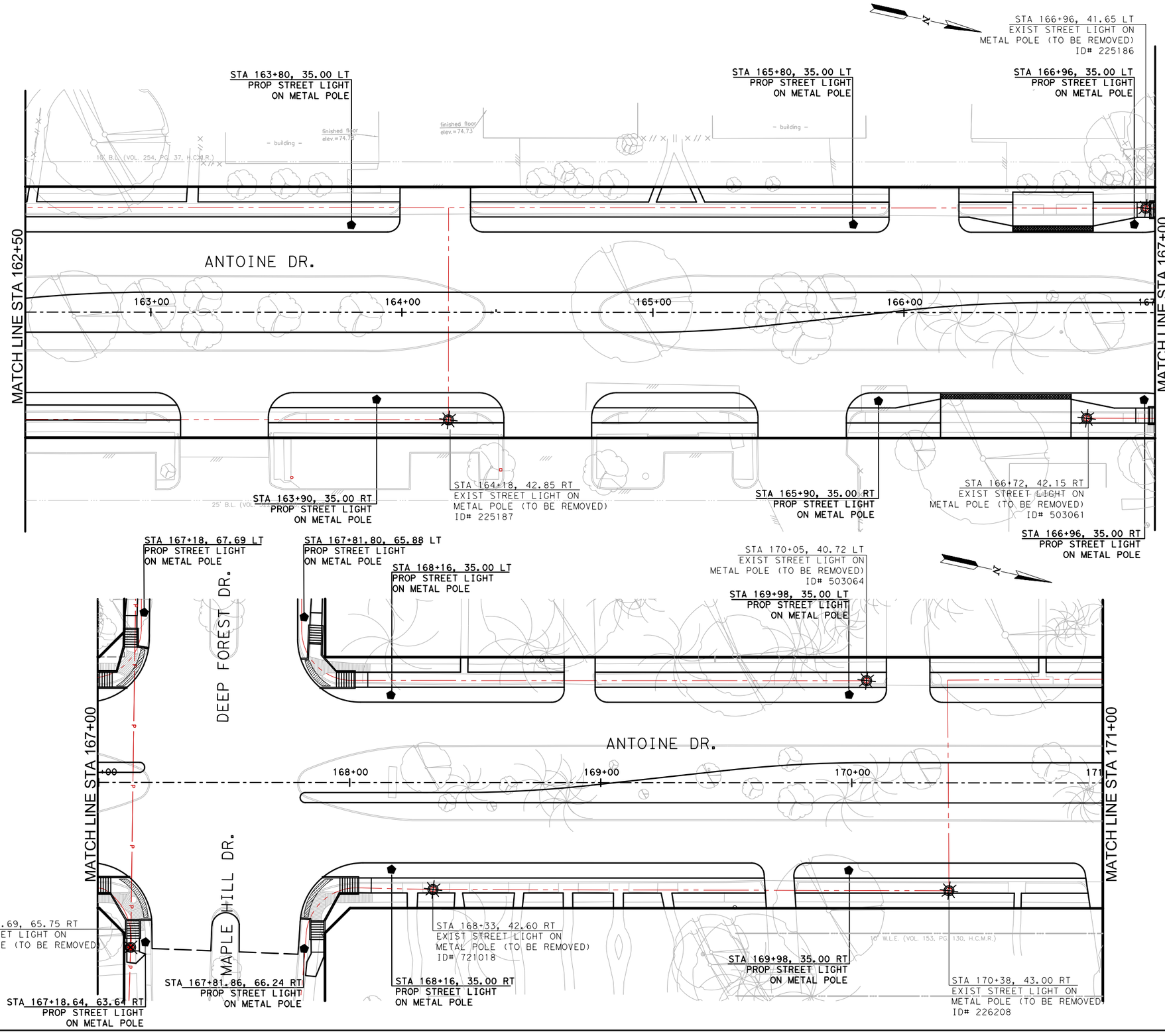

LEGEND

- EXIST WOODEN POWER POLE WITH LIGHT (TO REMAIN)
- EXIST METAL STREET LIGHT POLE (TO REMAIN)
- EXIST STREET LIGHT ON WOODEN POLE (TO BE REMOVED)
- EXIST METAL STREET LIGHT POLE (TO BE REMOVED)
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- PROP STREET LIGHT ON EXIST WOODEN POLE
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NOTES:

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0' 20' 40'
SCALE IN FEET

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10/21/2025
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Plumbing Design • Construction Mgt
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STREET LIGHTING EXHIBIT
STA 162+50 TO 171+00

SHEET 2 OF 14

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ROWAIDAH AYOUB	
SHEET NO. 637 OF 718	

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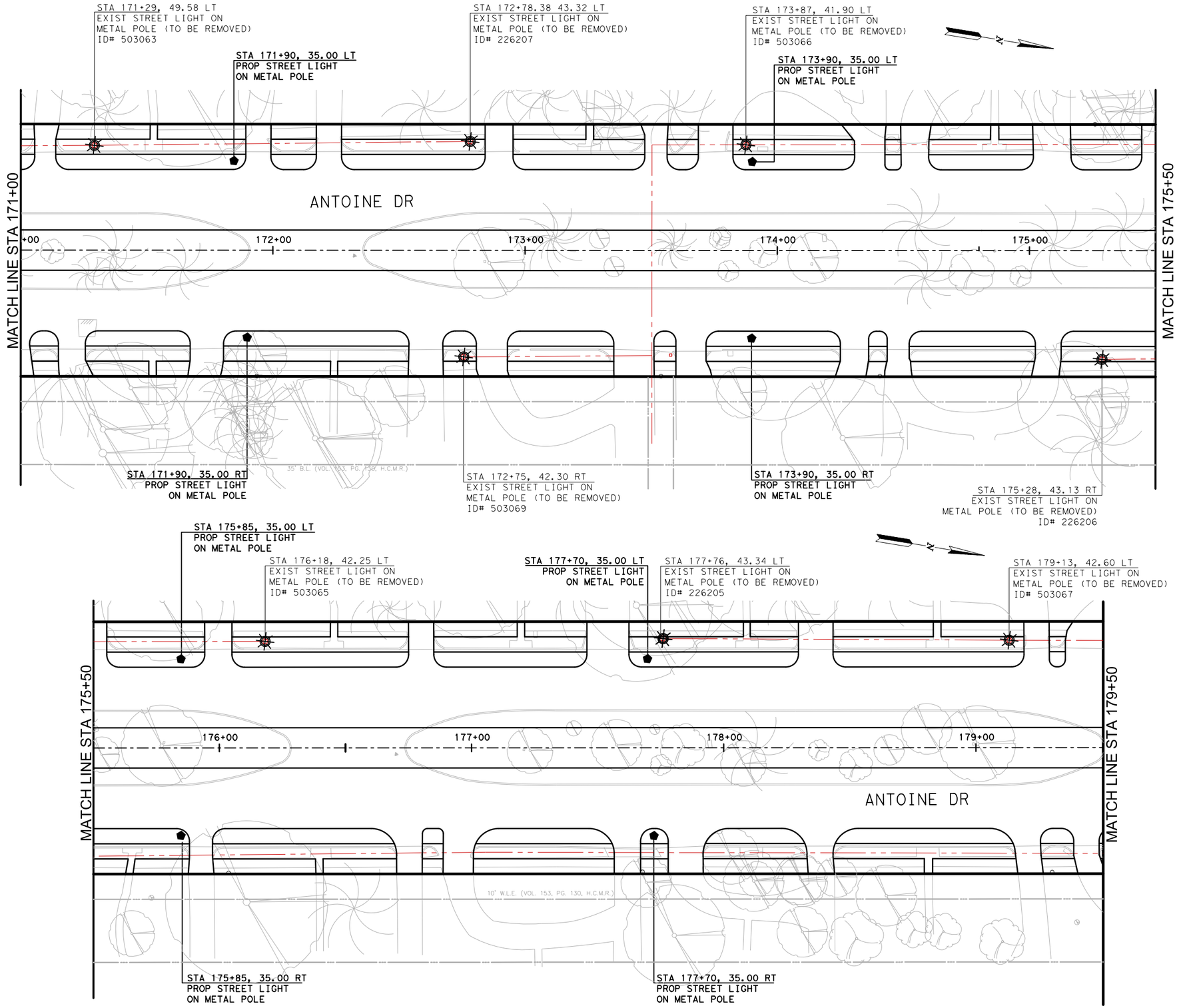

LEGEND

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- EXIST METAL STREET LIGHT POLE (TO REMAIN)
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- PROP STREET LIGHT ON EXIST WOODEN POLE
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0' 20' 40'
SCALE IN FEET

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Texas
70302
10/21/2025
Date
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Mechanical & Electrical
Plumbing Design • Construction Mgt
Firm Registration #F1288

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STREET LIGHTING EXHIBIT
STA 171+00 TO 179+50

SHEET 3 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-OGEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 638 OF 718	

Plotted on: 10/23/2025 2:19:21 PM GEO
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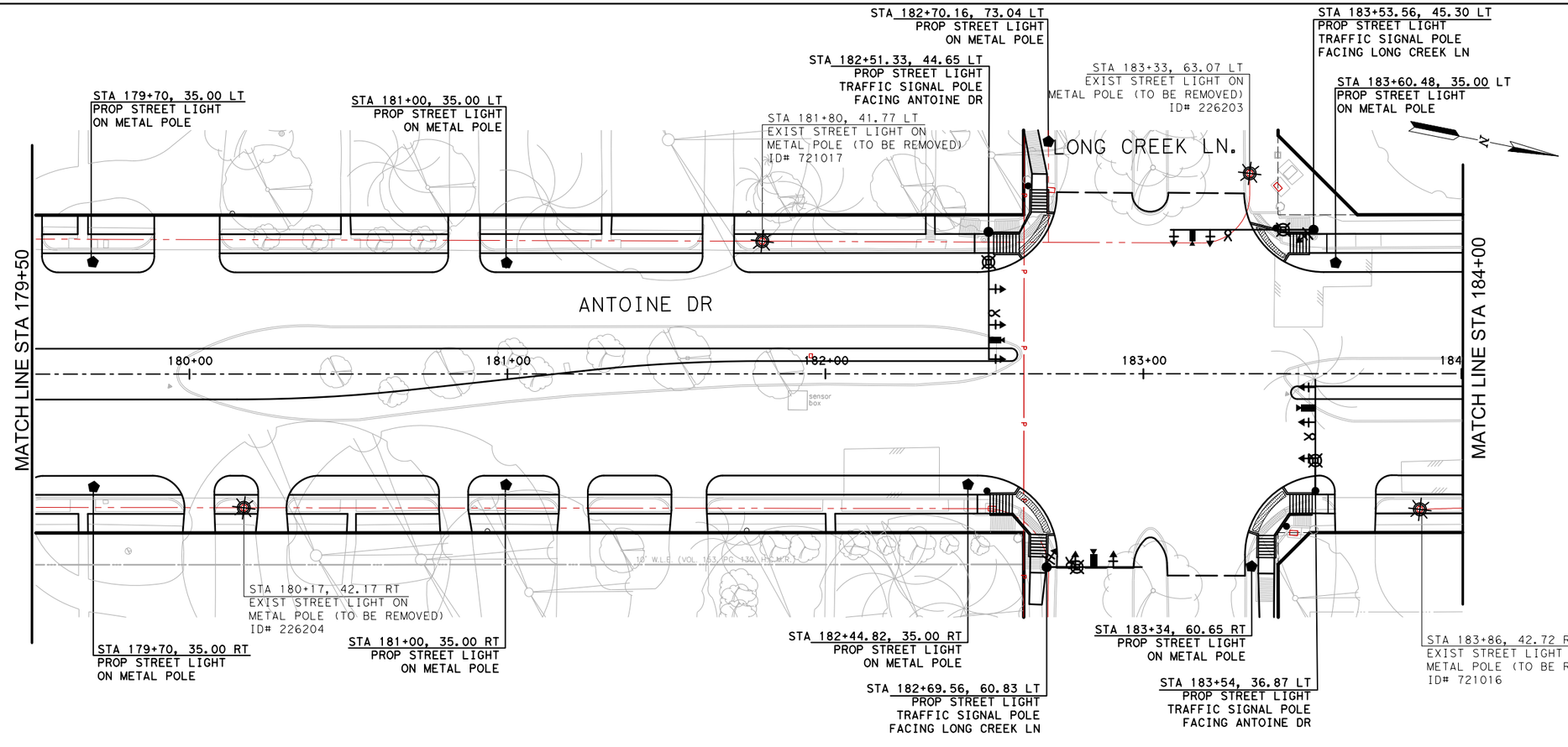

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TEL.No.: 713-706-4412

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Firm Registration #F1285

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STREET LIGHTING EXHIBIT
STA 179+50 TO 188+50

SHEET 4 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-OGEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 639 OF 718	

Plotted on: 10/23/2025 2:19:22 PM GEO
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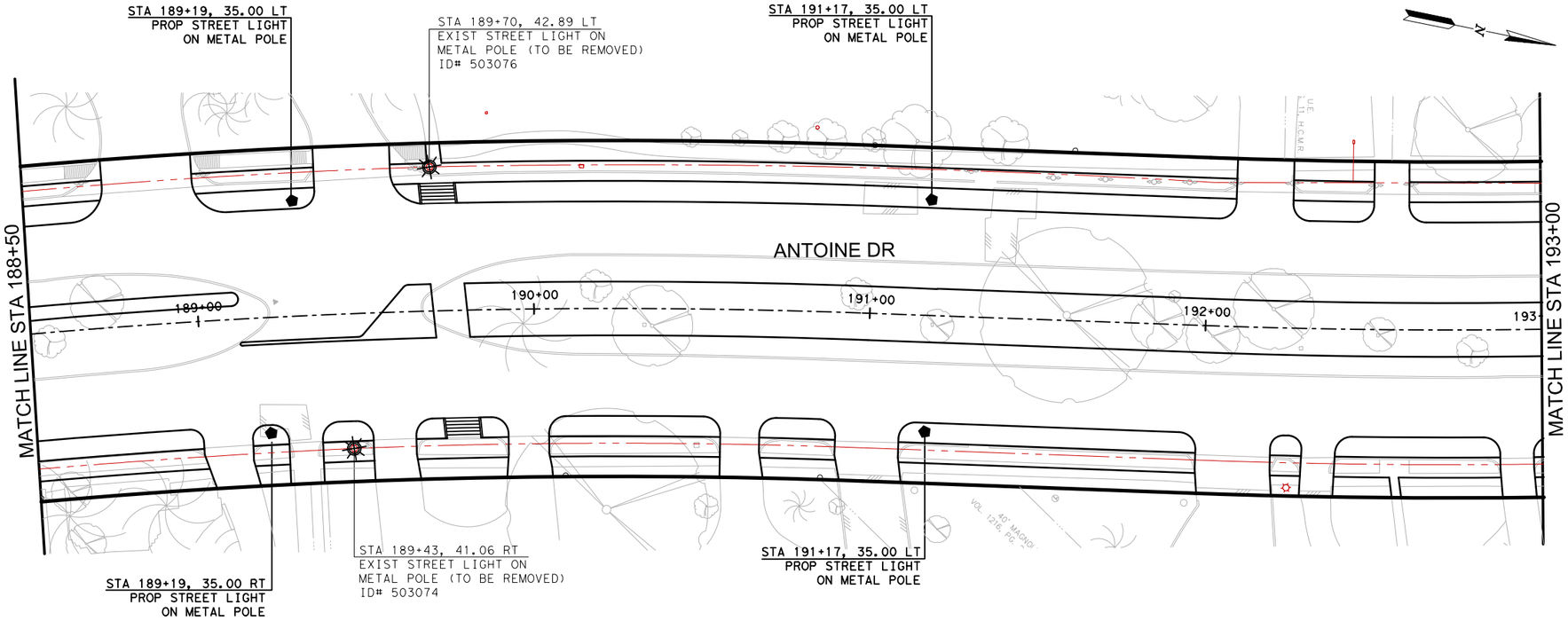

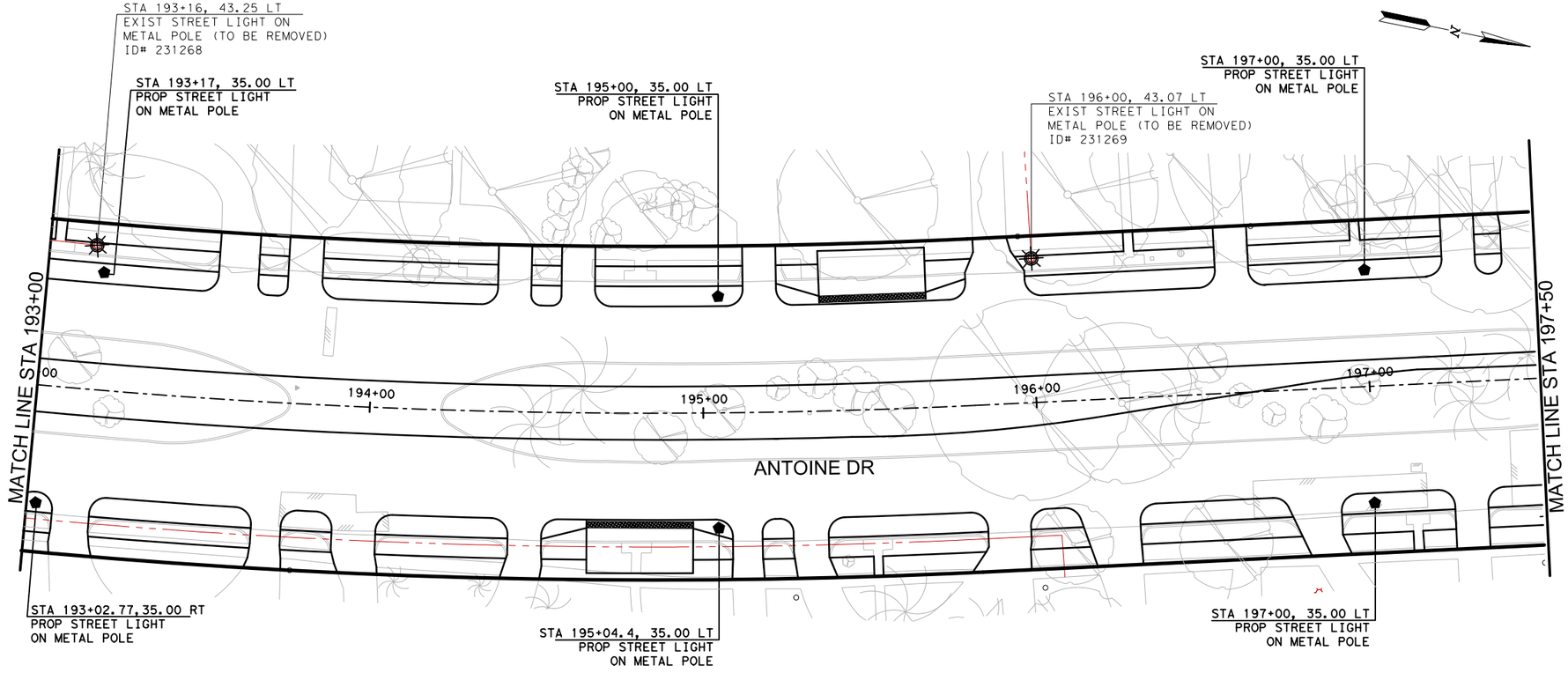

LEGEND

- EXIST WOODEN POWER POLE WITH LIGHT (TO REMAIN)
- EXIST METAL STREET LIGHT POLE (TO REMAIN)
- EXIST STREET LIGHT ON WOODEN POLE (TO BE REMOVED)
- EXIST METAL STREET LIGHT POLE (TO BE REMOVED)
- PROP METAL STREET LIGHT POLE
- PROP STREET LIGHT ON EXIST WOODEN POLE
- PROP PVC CONDUIT AND CONDUCTORS

NOTES:

1. EXIST STREET LIGHTS POLES, CONDUCT AND WIRING TO BE REMOVED.
2. COORDINATE WITH CNP FOR DE-ENERGIZING AND POLE REMOVAL/DISPOSAL.
3. LOCATION OF STREETLIGHTS ARE APPROXIMATE.
4. ALL CONDUIT INSTALLATIONS MUST CONFIRM TO CPE SPECIFICATION LATEST EDITION, UNLESS OTHERWISE AUTHORIZED BY LIGHTING DESIGN SERVICES DEPARTMENT. REFER TO SHEETS xx-xx.
5. CABLING & STREETLIGHTS TO BE INSTALLED BY CENTERPOINT.
6. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES DUE TO CONDUITS INSTALLATION.
7. CONTRACTOR TO CALL (713) 954 3222 FOR THE ARRANGEMENT OF ENERGY STANDBY TIME 2" CONDUIT STUB UP.

0′ 20′ 40′
SCALE IN FEET

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Firm Registration #F1285

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STREET LIGHTING EXHIBIT
STA 188+50 TO 197+50

SHEET 5 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-OGEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 640 OF 718	

Plotted on: 10/23/2025 2:19:22 PM GEO
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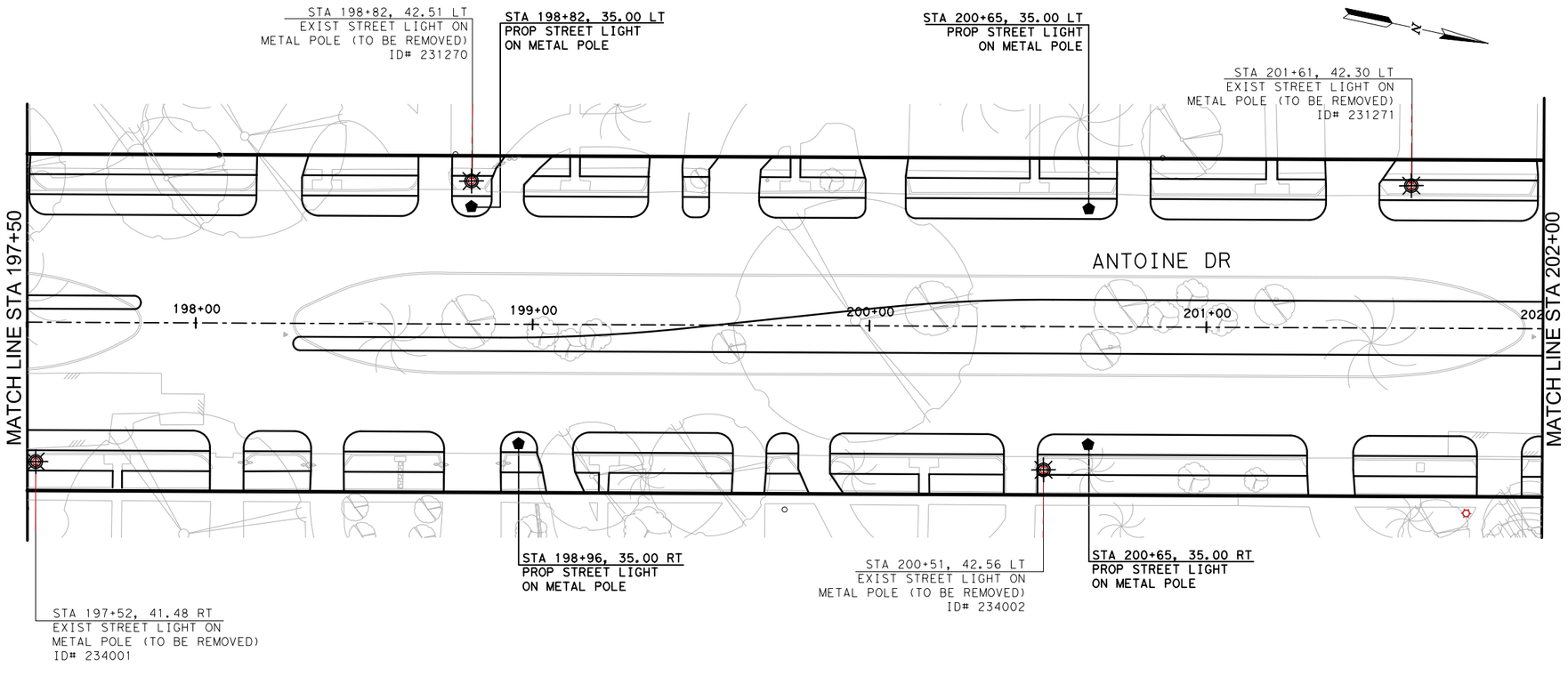

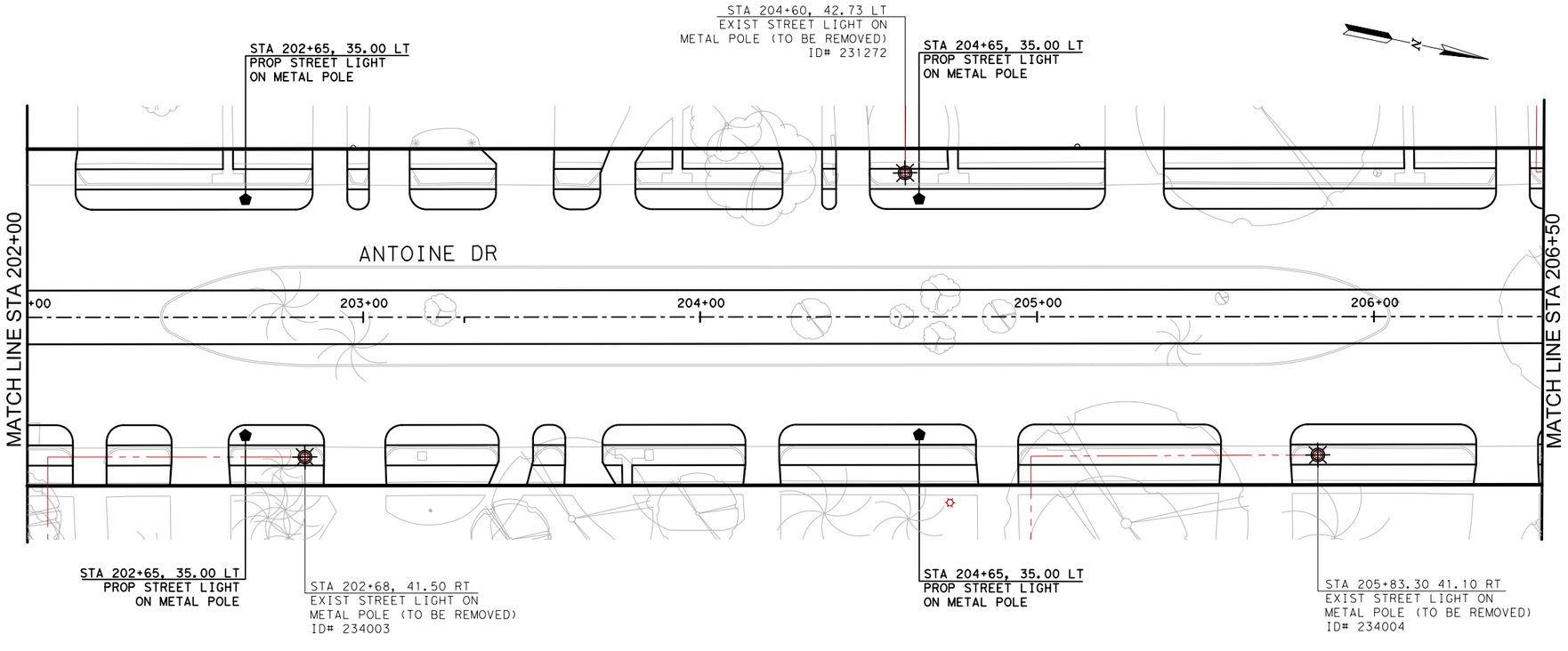

LEGEND

- EXIST WOODEN POWER POLE WITH LIGHT (TO REMAIN)
- EXIST METAL STREET LIGHT POLE (TO REMAIN)
- EXIST STREET LIGHT ON WOODEN POLE (TO BE REMOVED)
- EXIST METAL STREET LIGHT POLE (TO BE REMOVED)
- PROP METAL STREET LIGHT POLE
- PROP STREET LIGHT ON EXIST WOODEN POLE
- PROP PVC CONDUIT AND CONDUCTORS

NOTES:

1. EXIST STREET LIGHTS POLES, CONDUCT AND WIRING TO BE REMOVED.
2. COORDINATE WITH CNP FOR DE-ENERGIZING AND POLE REMOVAL/DISPOSAL.
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7. CONTRACTOR TO CALL (713) 954 3222 FOR THE ARRANGEMENT OF ENERGY STANDBY TIME 2" CONDUIT STUB UP.

0′ 20′ 40′
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STREET LIGHTING EXHIBIT
STA 197+50 TO 206+50

SHEET 6 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 641 OF 718	

Plotted on: 10/23/2025 2:19:23 PM GEO
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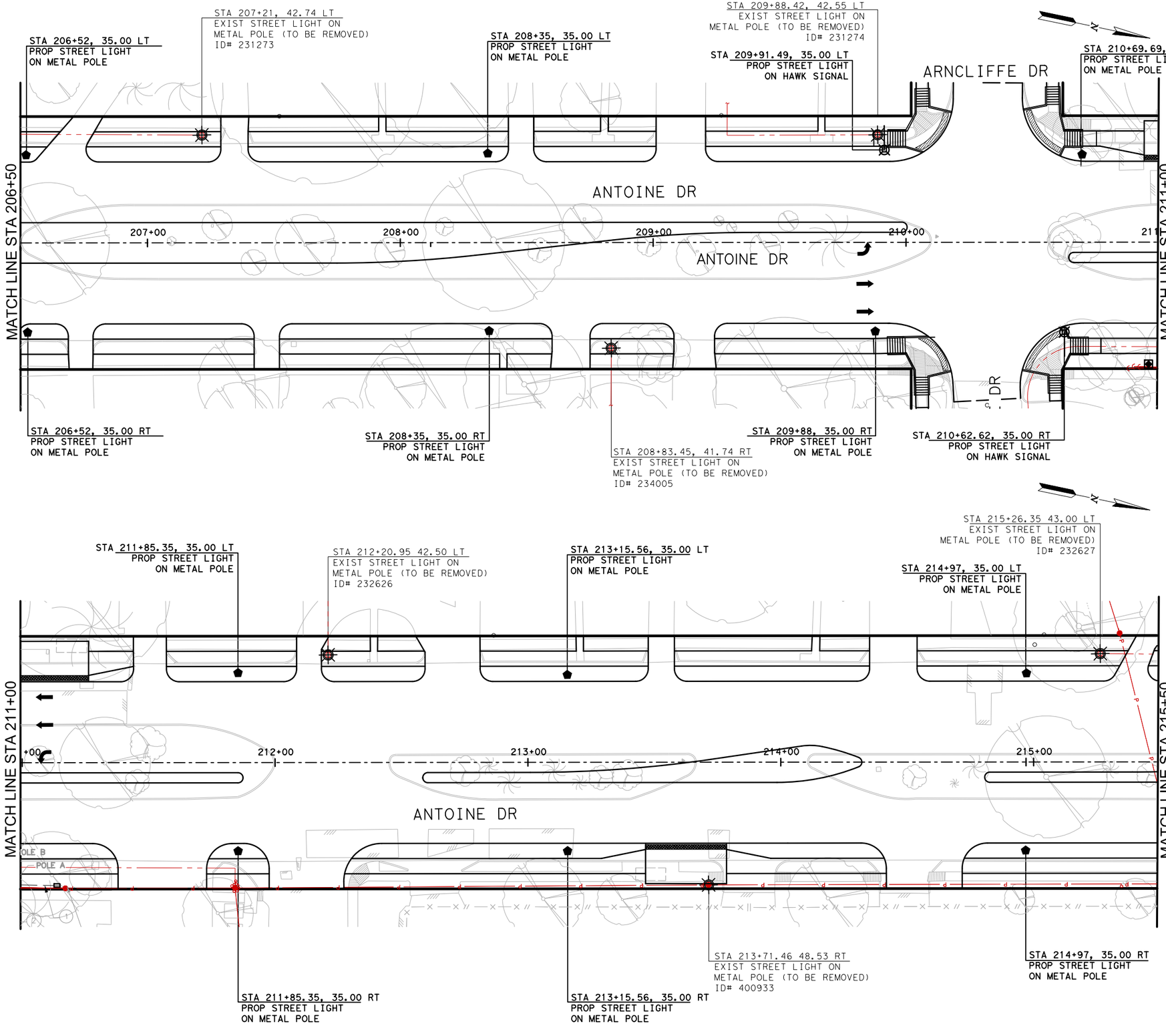

LEGEND

- EXIST WOODEN POWER POLE WITH LIGHT (TO REMAIN)
- EXIST METAL STREET LIGHT POLE (TO REMAIN)
- EXIST STREET LIGHT ON WOODEN POLE (TO BE REMOVED)
- EXIST METAL STREET LIGHT POLE (TO BE REMOVED)
- PROP METAL STREET LIGHT POLE
- PROP STREET LIGHT ON EXIST WOODEN POLE
- PROP PVC CONDUIT AND CONDUCTORS

NOTES:

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Firm Registration #F-1288

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STREET LIGHTING EXHIBIT
STA 206+50 TO 215+50

SHEET 7 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 642 OF 718	

Plotted on: 10/23/2025 2:19:23 PM GEO
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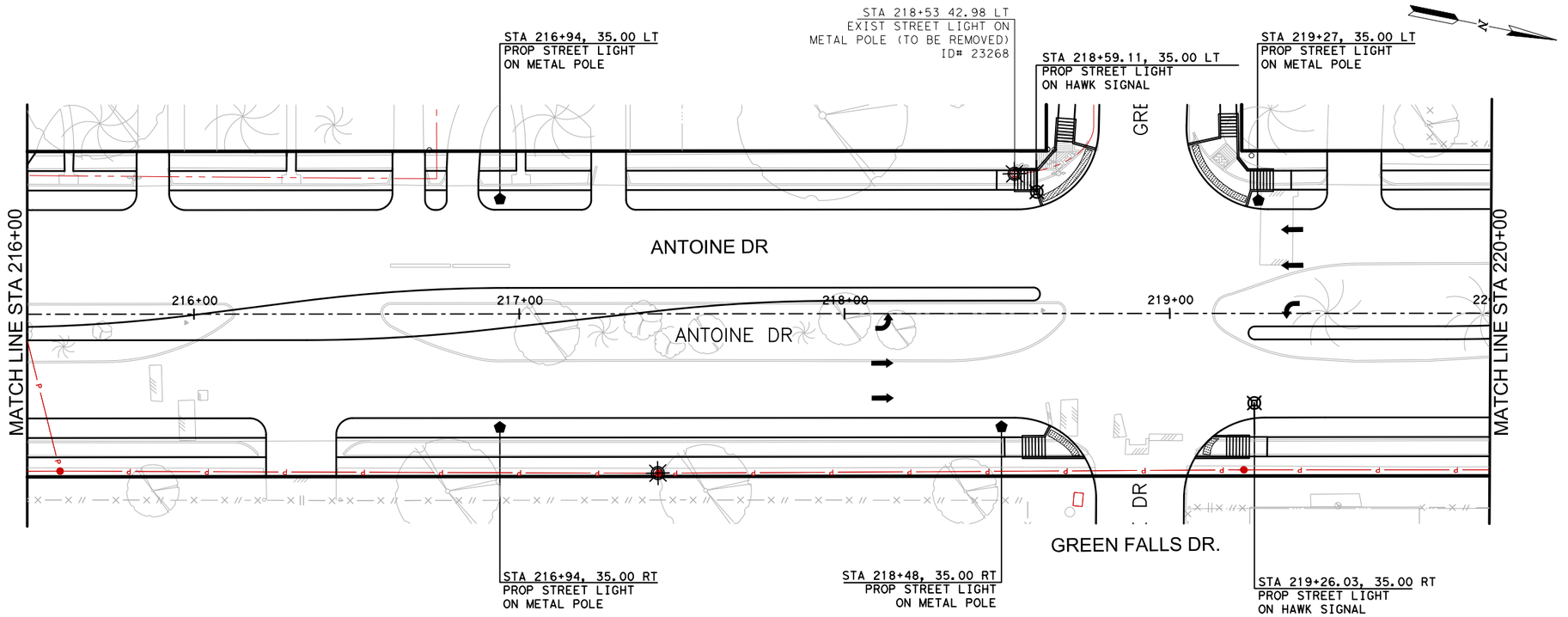

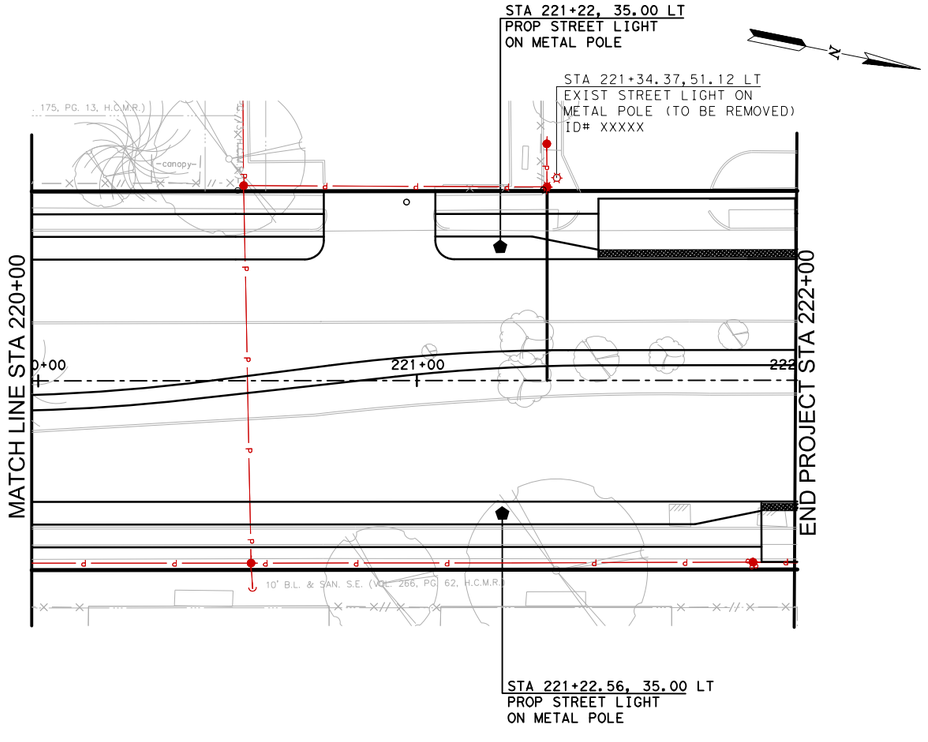

LEGEND

- EXIST WOODEN POWER POLE WITH LIGHT (TO REMAIN)
- EXIST METAL STREET LIGHT POLE (TO REMAIN)
- EXIST STREET LIGHT ON WOODEN POLE (TO BE REMOVED)
- EXIST METAL STREET LIGHT POLE (TO BE REMOVED)
- PROP METAL STREET LIGHT POLE
- PROP STREET LIGHT ON EXIST WOODEN POLE
- PROP PVC CONDUIT AND CONDUCTORS

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0' 20' 40'
SCALE IN FEET

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Firm Registration #F-1288

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STREET LIGHTING EXHIBIT
STA 216+50 TO 224+50

SHEET 8 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 643 OF 718	

Plotted on: 10/23/2025 2:19:24 PM GEO
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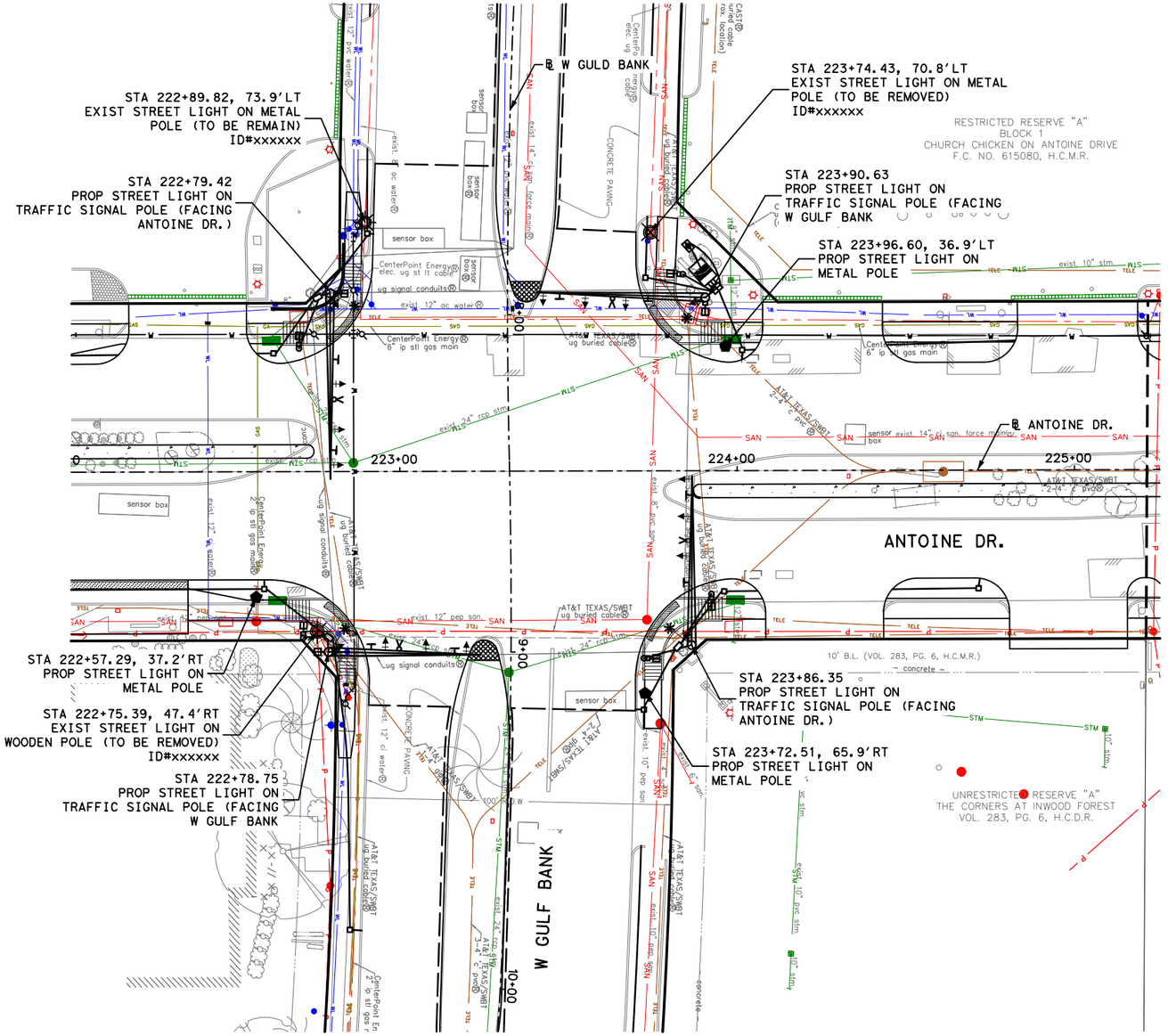

LEGEND

- EXIST WOODEN POWER POLE WITH LIGHT (TO REMAIN)
- EXIST METAL STREET LIGHT POLE (TO REMAIN)
- EXIST STREET LIGHT ON WOODEN POLE (TO BE REMOVED)
- EXIST METAL STREET LIGHT POLE (TO BE REMOVED)
- PROP METAL STREET LIGHT POLE
- PROP STREET LIGHT ON EXIST WOODEN POLE
- PROP PVC CONDUIT AND CONDUCTORS

No.	DATE	REVISIONS	APP.

NOTES:

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7. CONTRACTOR TO CALL (713) 954 3222 FOR THE ARRANGEMENT OF ENERGY STANDBY TIME 2" CONDUIT STUB UP.

N

0' 20' 40'
SCALE IN FEET

Texas Department of Transportation

Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

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Texas 125611
10/24/2025
date
GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ILLUMINATION LAYOUT
ANTOINE DR - W GULF BANK INTERSECTION

SHEET 9 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 644 OF 718	

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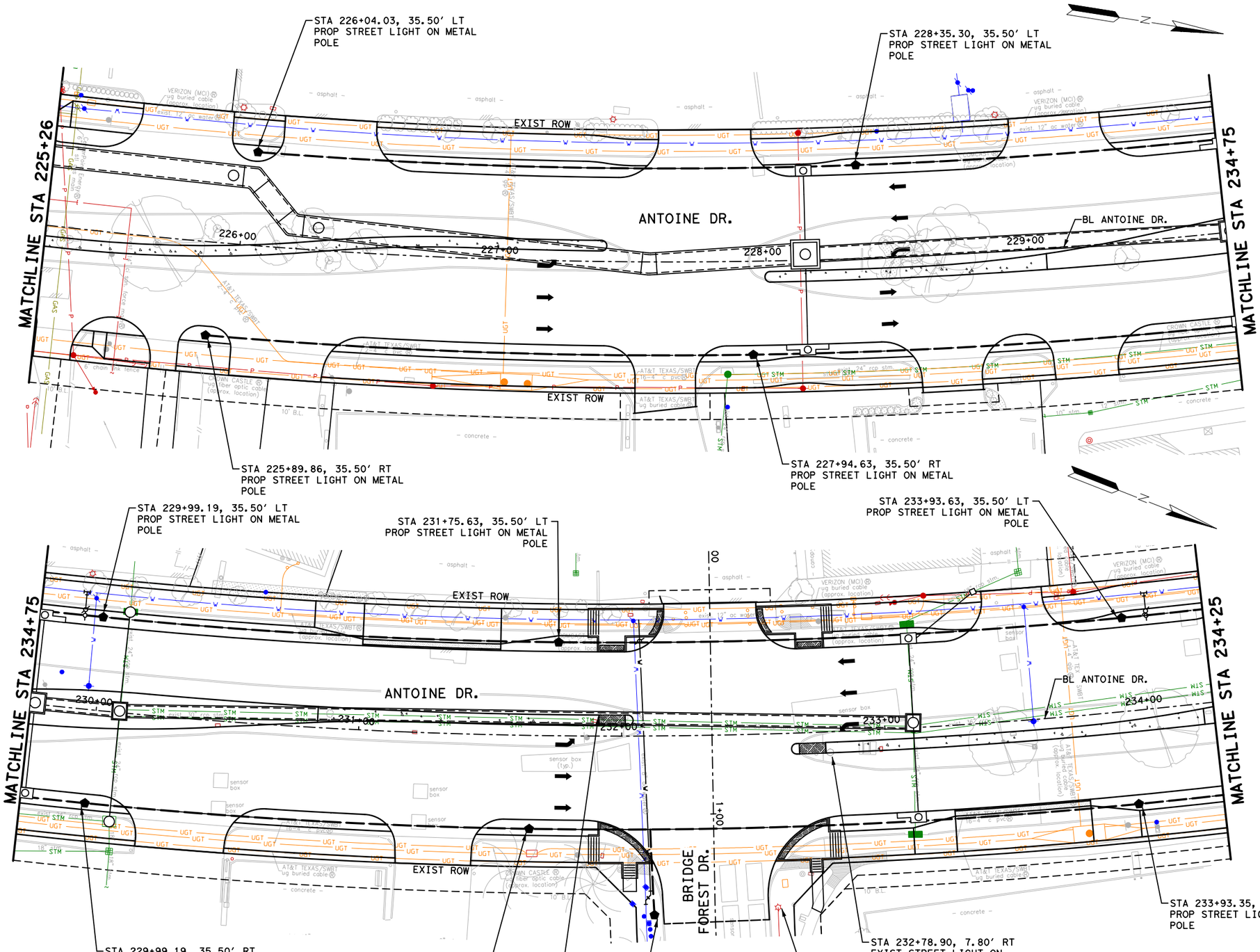

LEGEND

- EXIST WOODEN POWER POLE WITH LIGHT (TO REMAIN)
- EXIST METAL STREET LIGHT POLE (TO REMAIN)
- EXIST STREET LIGHT ON WOODEN POLE (TO BE REMOVED)
- EXIST METAL STREET LIGHT POLE (TO BE REMOVED)
- PROP METAL STREET LIGHT POLE
- PROP STREET LIGHT ON EXIST WOODEN POLE
- PROP PVC CONDUIT AND CONDUCTORS

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No.	DATE	REVISIONS	APP.

0' 20' 40'
SCALE IN FEET

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777 North Eldridge Parkway, Suite 500
Houston, Texas 77079
713-782-0042
www.vs-eng.com

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Texas Registered Engineering Firm F-148

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ILLUMINATION LAYOUT
STA 225+26 TO STA 234+25

SHEET 10 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 645 OF 718	

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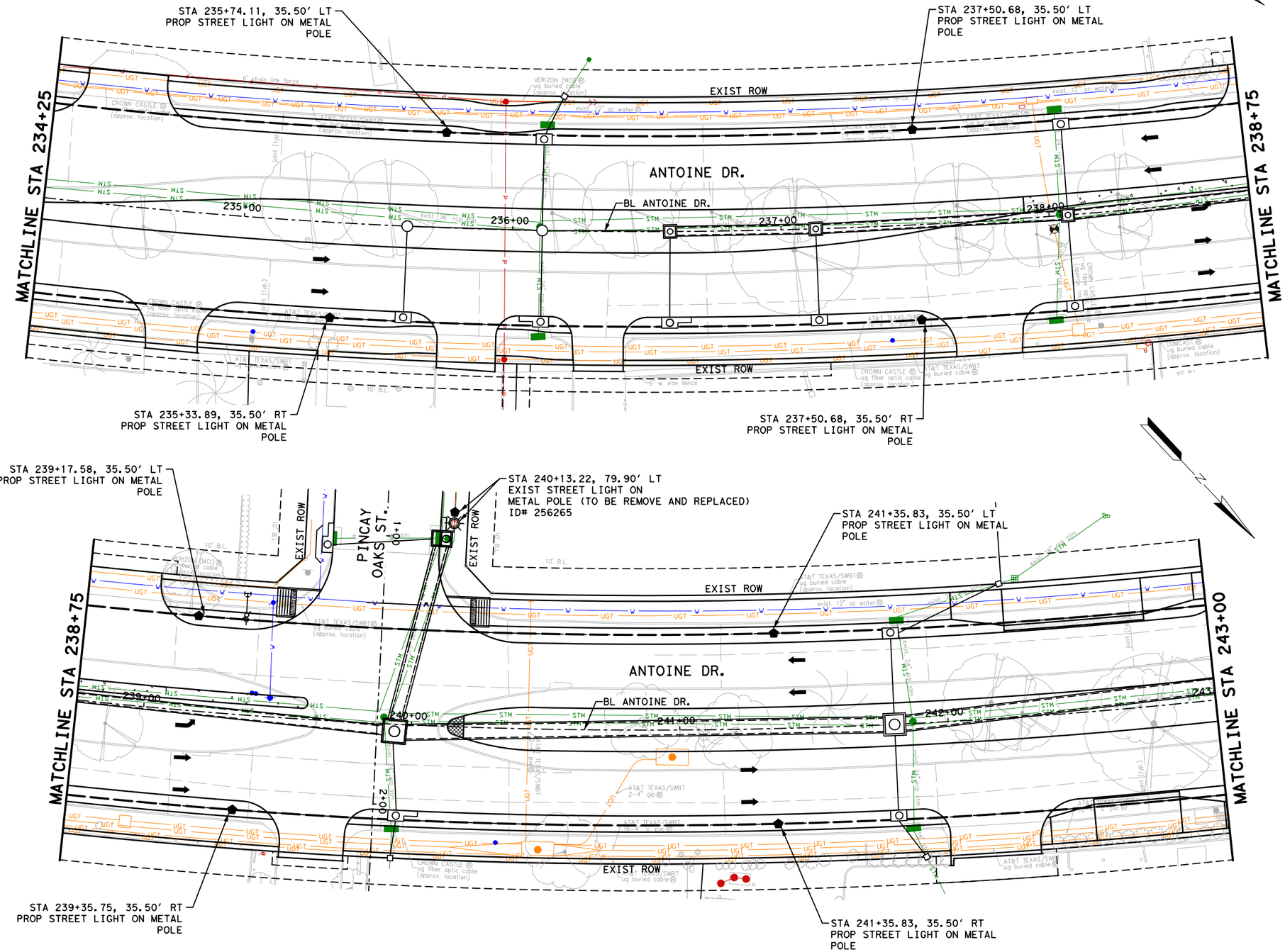

LEGEND

- EXIST WOODEN POWER POLE WITH LIGHT (TO REMAIN)
- EXIST METAL STREET LIGHT POLE (TO REMAIN)
- EXIST STREET LIGHT ON WOODEN POLE (TO BE REMOVED)
- EXIST METAL STREET LIGHT POLE (TO BE REMOVED)
- PROP METAL STREET LIGHT POLE
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- PROP PVC CONDUIT AND CONDUCTORS

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No.	DATE	REVISIONS	APP.

0' 20' 40'
SCALE IN FEET

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Houston, Texas 77079
713-782-0042
www.vs-eng.com

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10/21/2025
95% SUBMITTAL
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Texas Registered Engineering Firm F-148

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ILLUMINATION LAYOUT
STA 234+25 TO STA 243+00

SHEET 11 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 646 OF 718	

Plotted on: 10/21/2025 1:45:31 PM
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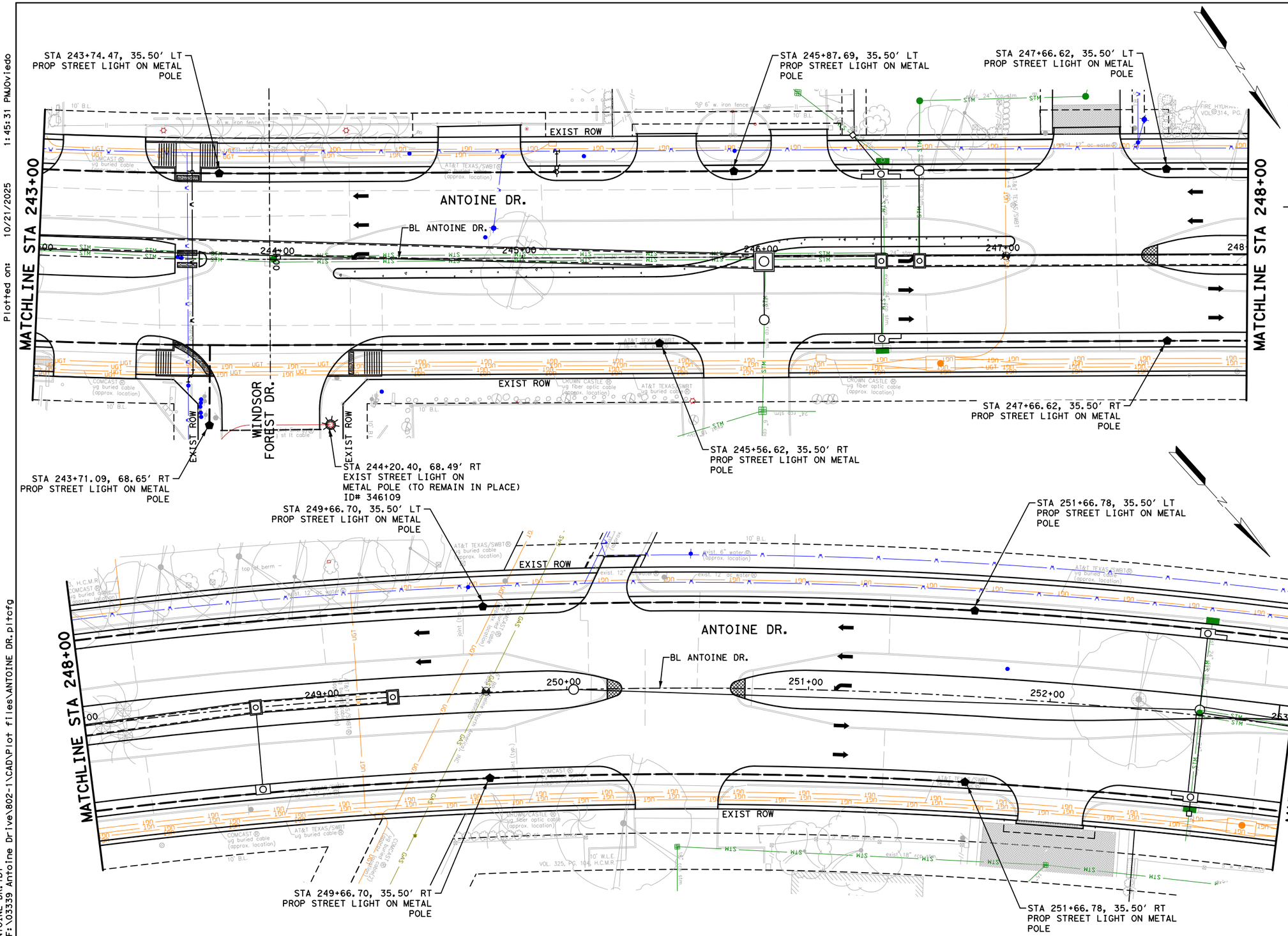

LEGEND

- EXIST WOODEN POWER POLE WITH LIGHT (TO REMAIN)
- EXIST METAL STREET LIGHT POLE (TO REMAIN)
- EXIST STREET LIGHT ON WOODEN POLE (TO BE REMOVED)
- EXIST METAL STREET LIGHT POLE (TO BE REMOVED)
- PROP METAL STREET LIGHT POLE
- PROP STREET LIGHT ON EXIST WOODEN POLE
- PROP PVC CONDUIT AND CONDUCTORS

NOTES:

1. EXIST STREET LIGHTS POLES, CONDUCT AND WIRING TO BE REMOVED.
2. COORDINATE WITH CNP FOR DE-ENERGIZING AND POLE REMOVAL/DISPOSAL.
3. LOCATION OF STREETLIGHTS ARE APPROXIMATE.
4. ALL CONDUIT INSTALLATIONS MUST CONFIRM TO CPE SPECIFICATION LATEST EDITION, UNLESS OTHERWISE AUTHORIZED BY LIGHTING DESIGN SERVICES DEPARTMENT. REFER TO SHEETS xx-xx.
5. CABLING & STREETLIGHTS TO BE INSTALLED BY CENTERPOINT.
6. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES DUE TO CONDUITS INSTALLATION.
7. CONTRACTOR TO CALL (713) 954 3222 FOR THE ARRANGEMENT OF ENERGY STANDBY TIME 2" CONDUIT STUB UP.

0' 20' 40'
SCALE IN FEET

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10/21/2025
Date: 95% SUBMITTAL
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Texas Registered Engineering Firm F-148

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ILLUMINATION LAYOUT
STA 243+00 TO STA 253+00

SHEET 12 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 647 OF 718	

No.	DATE	REVISIONS	APP.

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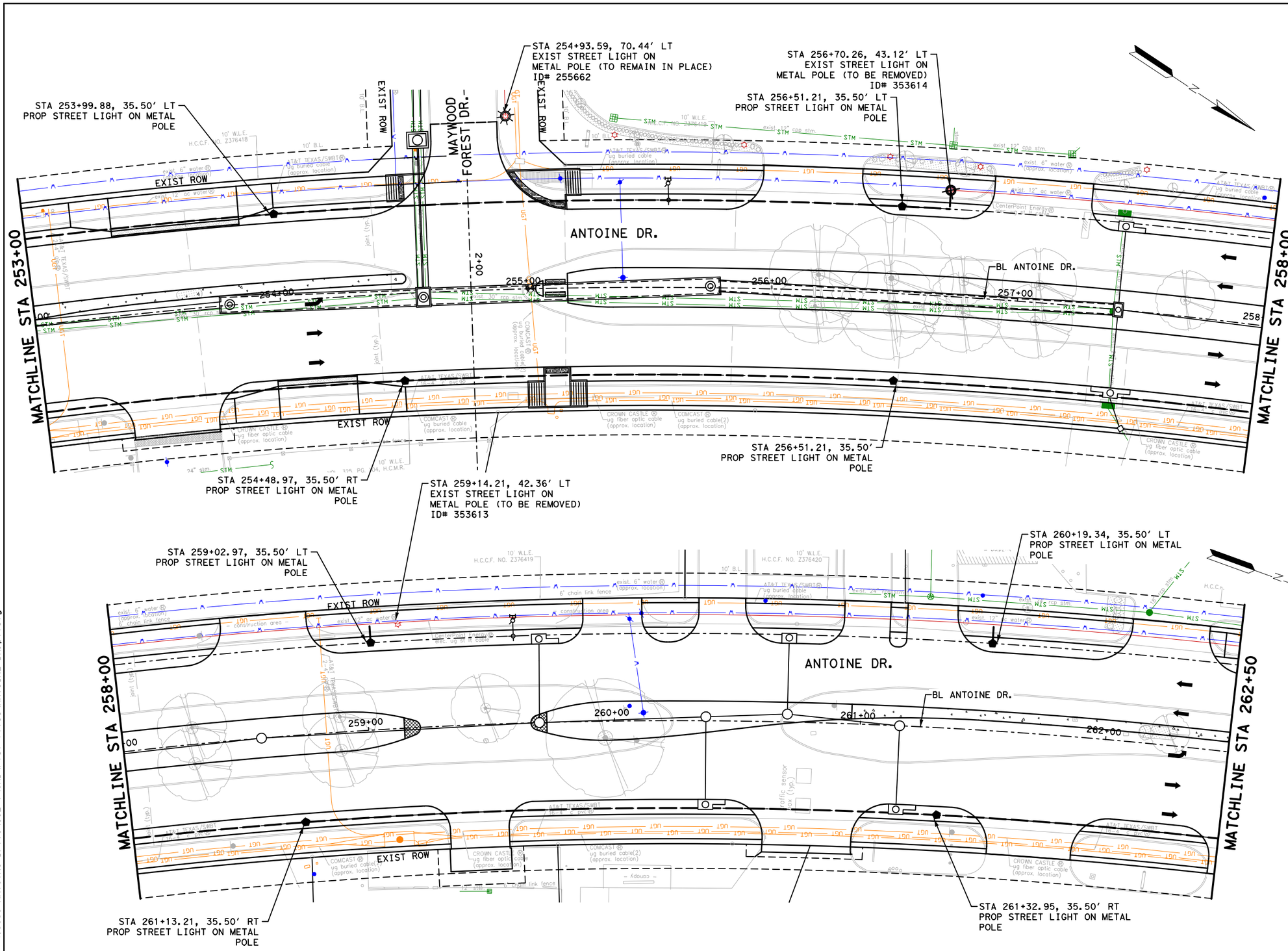

LEGEND

- EXIST WOODEN POWER POLE WITH LIGHT (TO REMAIN)
- EXIST METAL STREET LIGHT POLE (TO REMAIN)
- EXIST STREET LIGHT ON WOODEN POLE (TO BE REMOVED)
- EXIST METAL STREET LIGHT POLE (TO BE REMOVED)
- PROP METAL STREET LIGHT POLE
- PROP STREET LIGHT ON EXIST WOODEN POLE
- PROP PVC CONDUIT AND CONDUCTORS

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No.	DATE	REVISIONS	APP.

0' 20' 40'
SCALE IN FEET

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131531
10/21/2025
for
95% SUBMITTAL
VOGLER & SPENCER ENGINEERING
Texas Registered Engineering Firm F-748

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ILLUMINATION LAYOUT
STA 253+00 TO STA 262+50

SHEET 13 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 648 OF 718	

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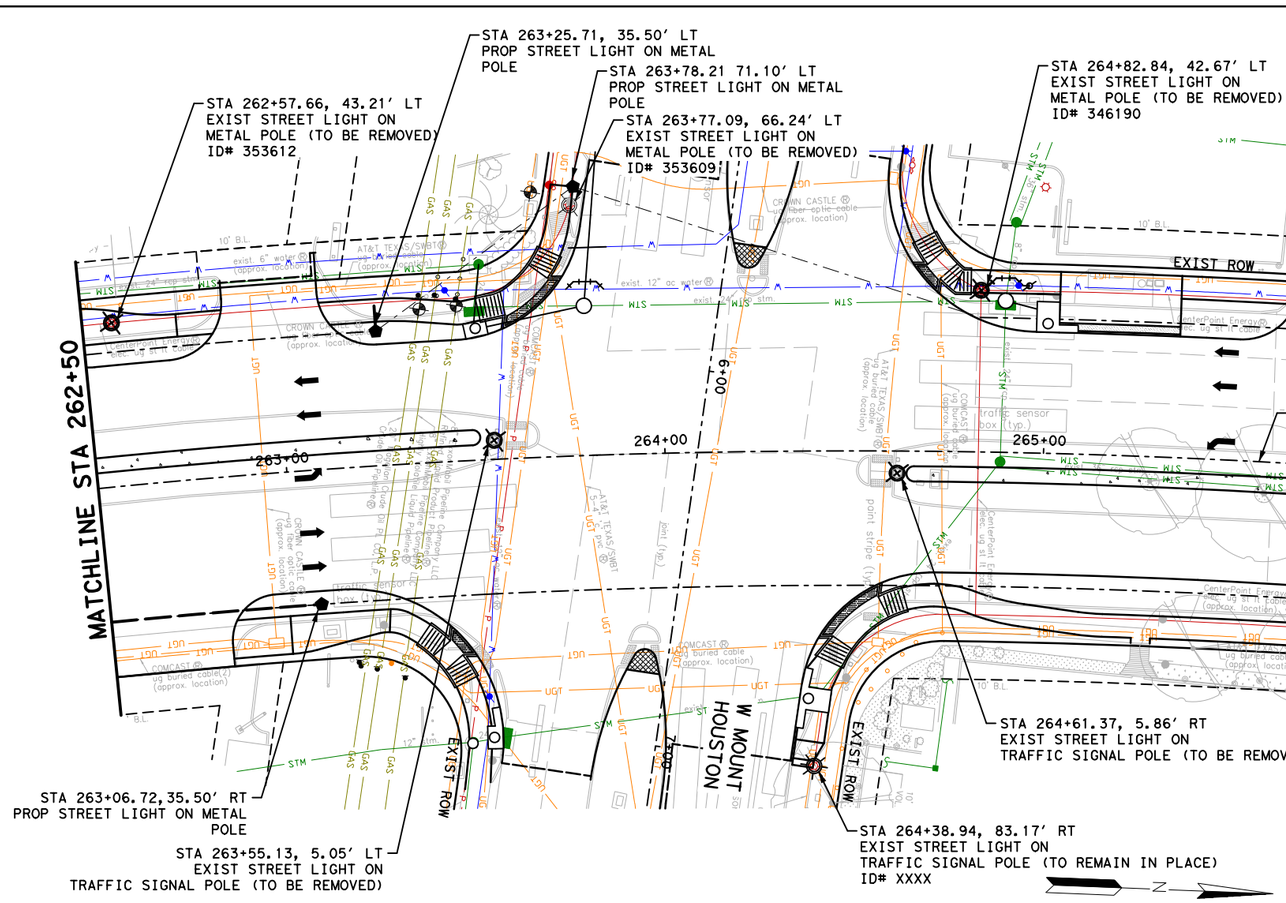

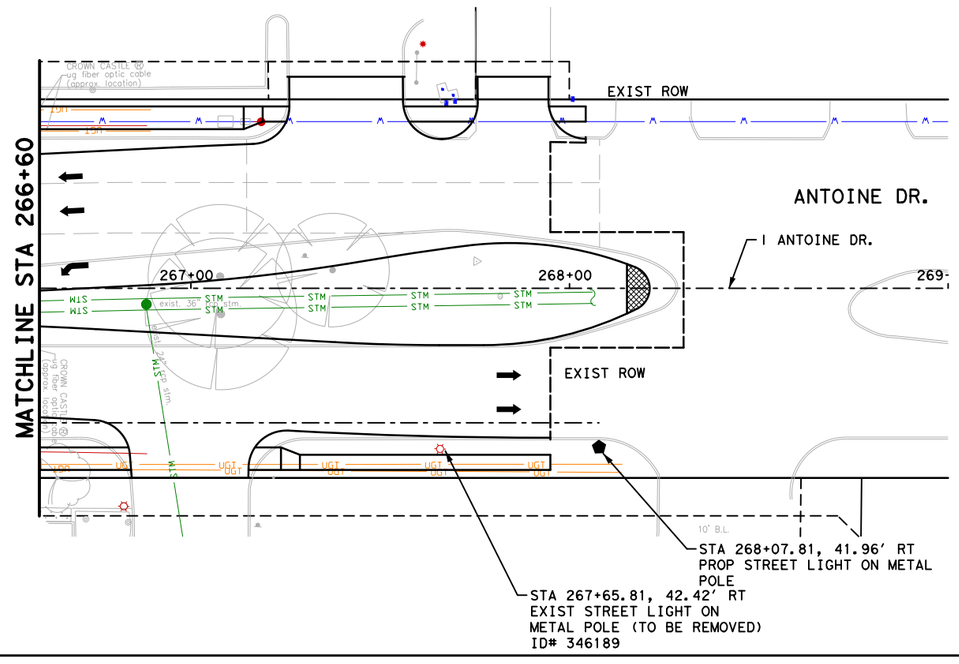

LEGEND

- EXIST WOODEN POWER POLE WITH LIGHT (TO REMAIN)
- EXIST METAL STREET LIGHT POLE (TO REMAIN)
- EXIST STREET LIGHT ON WOODEN POLE (TO BE REMOVED)
- EXIST METAL STREET LIGHT POLE (TO BE REMOVED)
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- PROP STREET LIGHT ON EXIST WOODEN POLE
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No.	DATE	REVISIONS	APP.

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SCALE IN FEET

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Texas Registered Engineering Firm F-148

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

ILLUMINATION LAYOUT
STA 262+50 to END

SHEET 14 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 649 OF 718	

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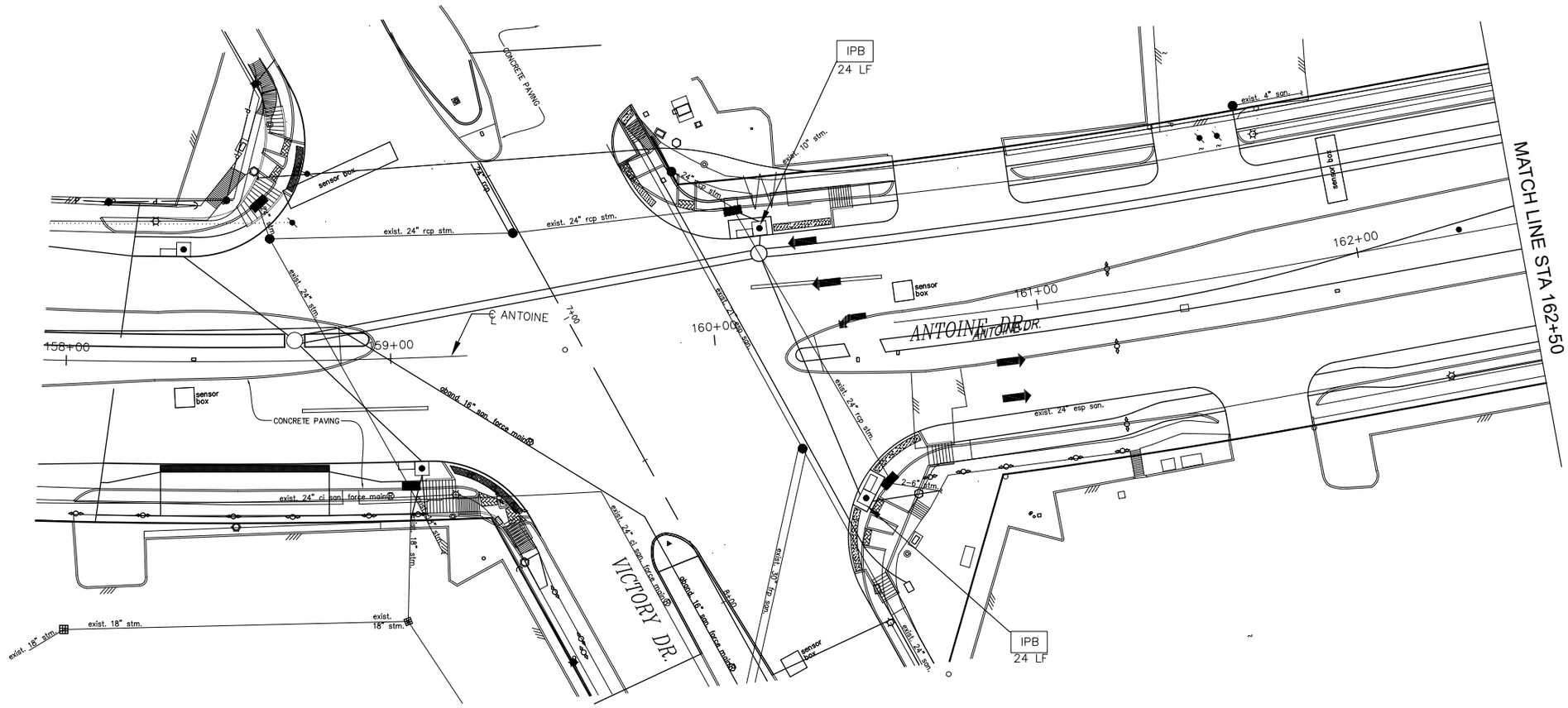

LEGEND

IPB	INLET PROTECTION BARRIER
	PROP BOX STM SEWER
	PROP STM SEWER

NOTE:

1. CONTRACTOR TO PLACE STABILIZED CONSTRUCTION ACCESS AS DIRECTED BY ENGINEER AT PRE-CONSTRUCTION MEETING.
2. CONTRACTOR TO PLACE CONCRETE TRUCK WASH AREA AS DIRECTED BY THE ENGINEER AT PRE-CONSTRUCTION MEETING.
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4. REFER TO STORM WATER POLLUTION PREVENTION PLAN DETAIL SHEETS FOR ADDITIONAL INFORMATION.
5. REFER TO DRAINAGE P&P SHEETS FOR ADDITIONAL INFORMATION.

0' 20' 40'
SCALE IN FEET

No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM WATER POLLUTION PREVENTION PLAN
BEGIN STA TO 162+50

SHEET 1 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 650 OF 718	

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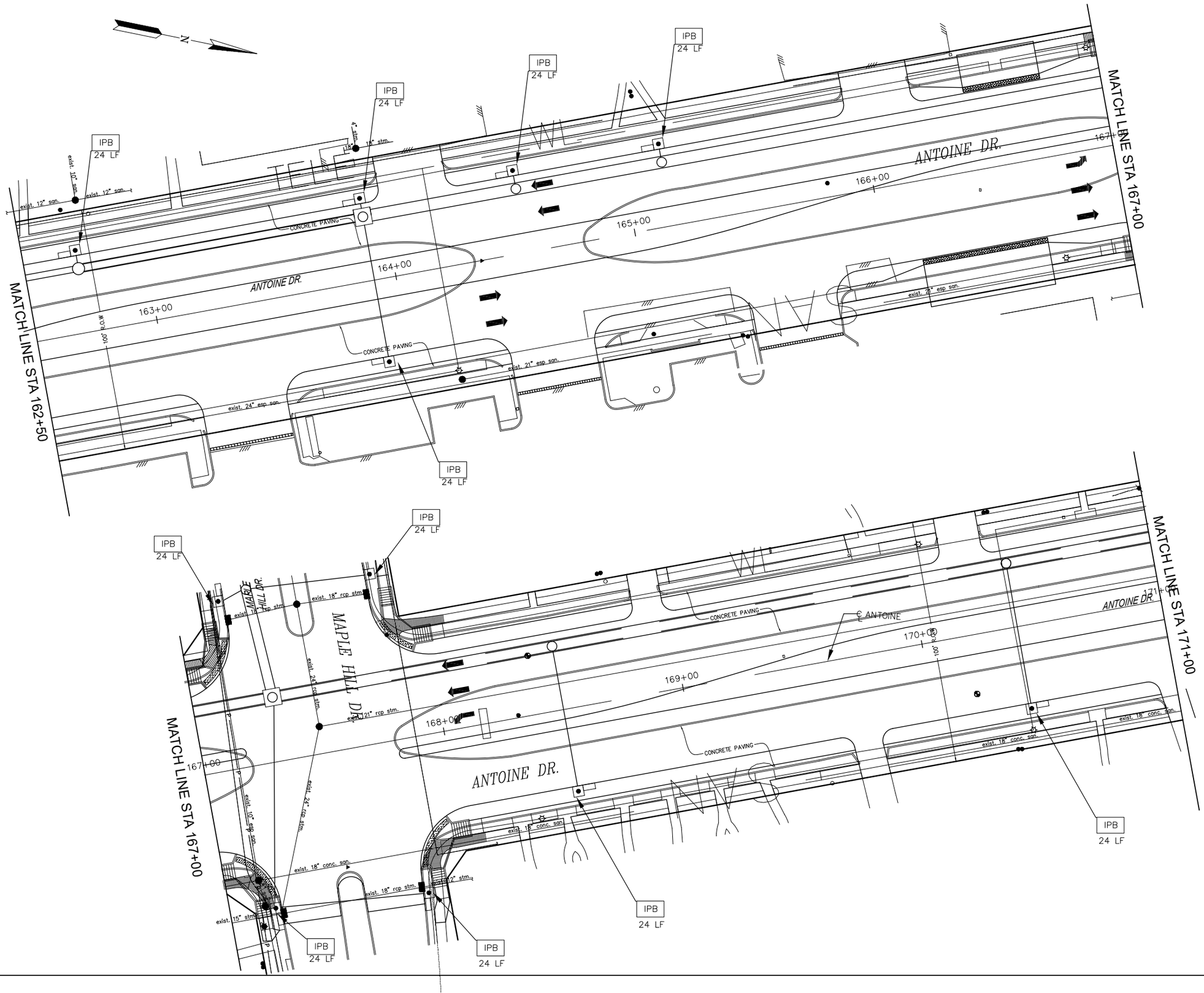

LEGEND

IPB	INLET PROTECTION BARRIER
	PROP BOX STM SEWER
	PROP STM SEWER

NOTE:

1. CONTRACTOR TO PLACE STABILIZED CONSTRUCTION ACCESS AS DIRECTED BY ENGINEER AT PRE-CONSTRUCTION MEETING.
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5. REFER TO DRAINAGE P&P SHEETS FOR ADDITIONAL INFORMATION.

0' 20' 40'
SCALE IN FEET

No.	DATE	REVISIONS	APP.

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LICENSED PROFESSIONAL ENGINEER 75307 09/30/25

95% SUBMITTAL
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Firm Registration #F3645

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM WATER POLLUTION PREVENTION PLAN
STA 162+50 TO STA 171+00

SHEET 2 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 651 OF 718	

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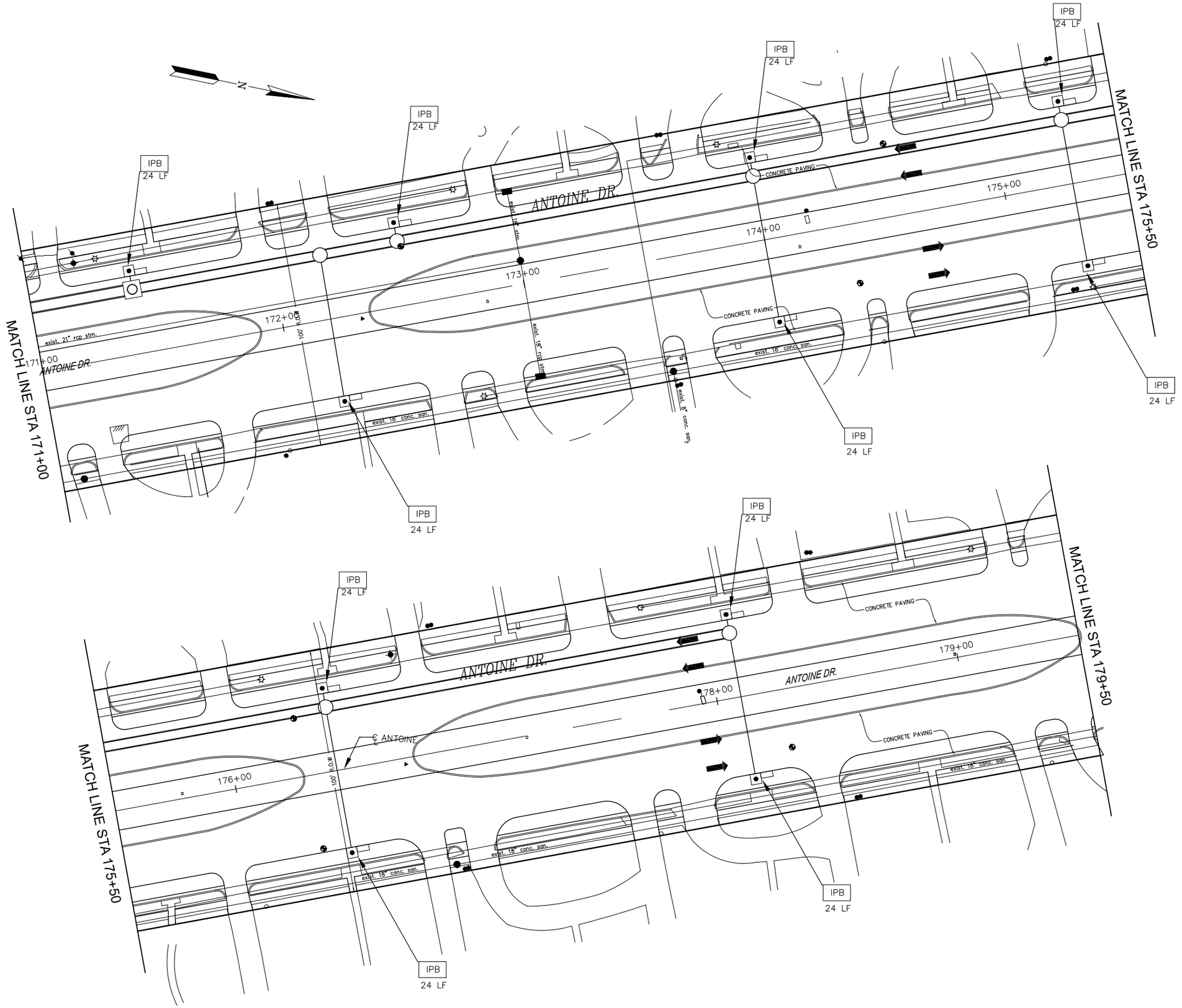

LEGEND

IPB	INLET PROTECTION BARRIER
= = =	PROP BOX STM SEWER
———	PROP STM SEWER

NOTE:

1. CONTRACTOR TO PLACE STABILIZED CONSTRUCTION ACCESS AS DIRECTED BY ENGINEER AT PRE-CONSTRUCTION MEETING.
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5. REFER TO DRAINAGE P&P SHEETS FOR ADDITIONAL INFORMATION.

0' 20' 40'
SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM WATER POLLUTION PREVENTION PLAN
STA 171+00 STA 179+50

SHEET 3 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 652 OF 718	

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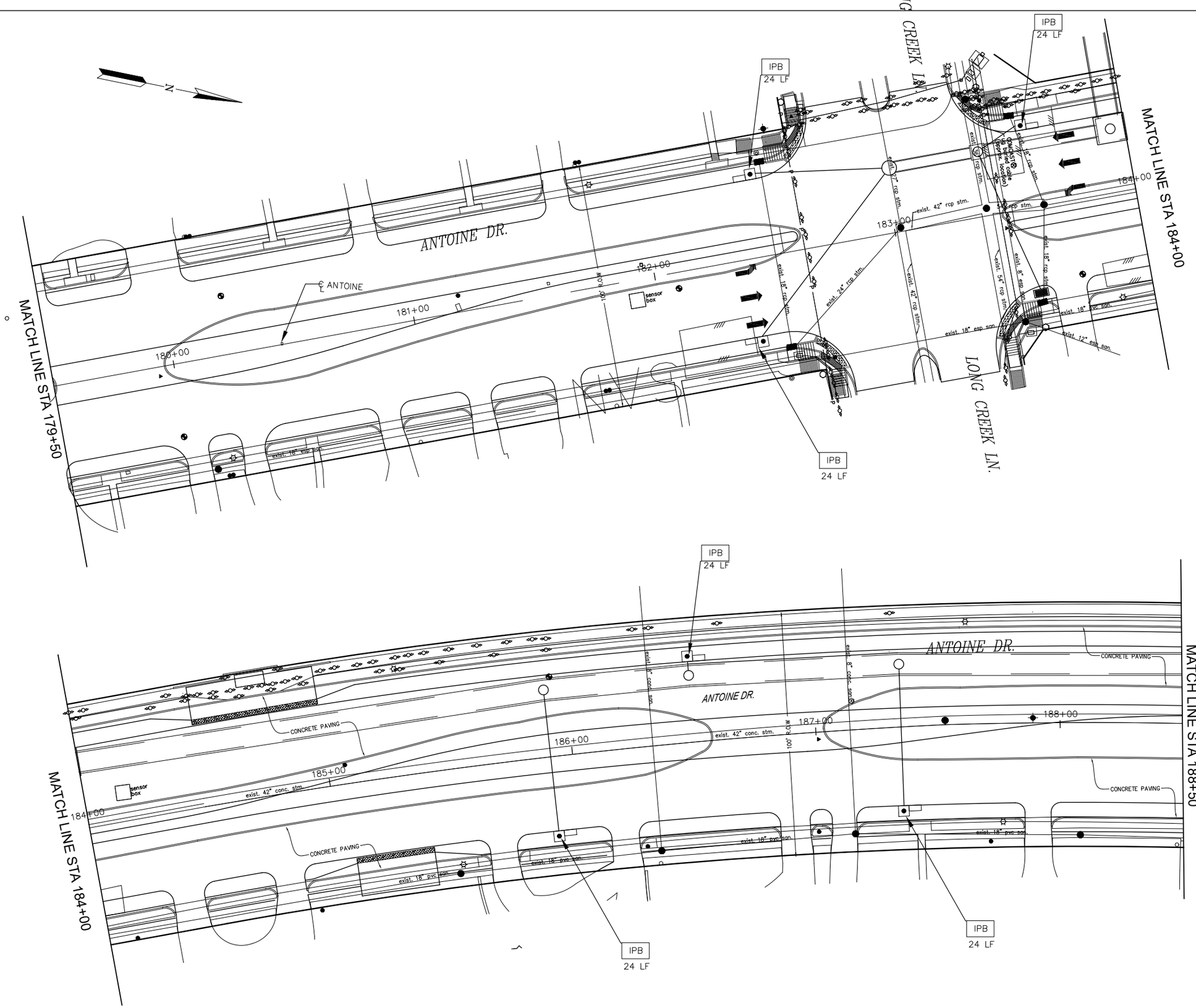

LEGEND

IPB	INLET PROTECTION BARRIER
	PROP BOX STM SEWER
	PROP STM SEWER

NOTE:

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5. REFER TO DRAINAGE P&P SHEETS FOR ADDITIONAL INFORMATION.

0' 20' 40'
SCALE IN FEET

No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM WATER POLLUTION PREVENTION PLAN
STA 179+50 STA 188+50

SHEET 4 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 653 OF 718	

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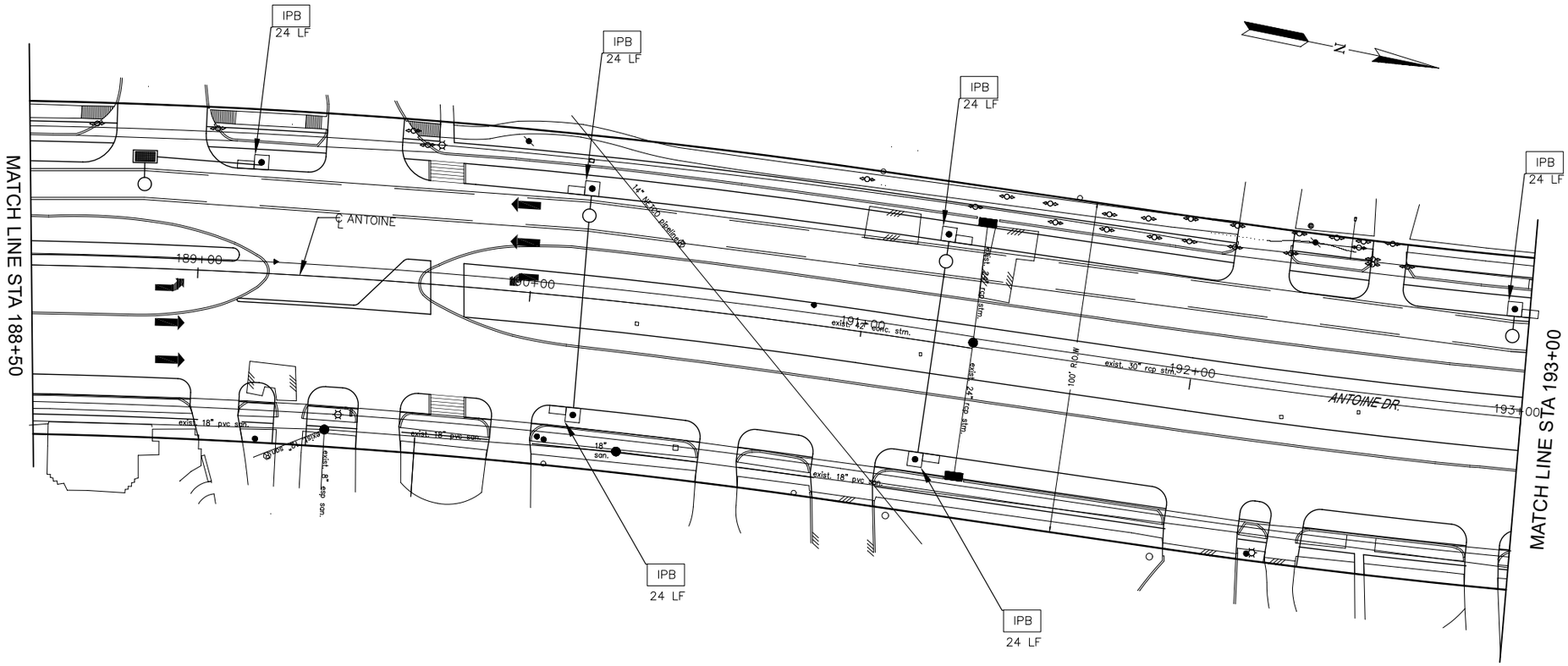

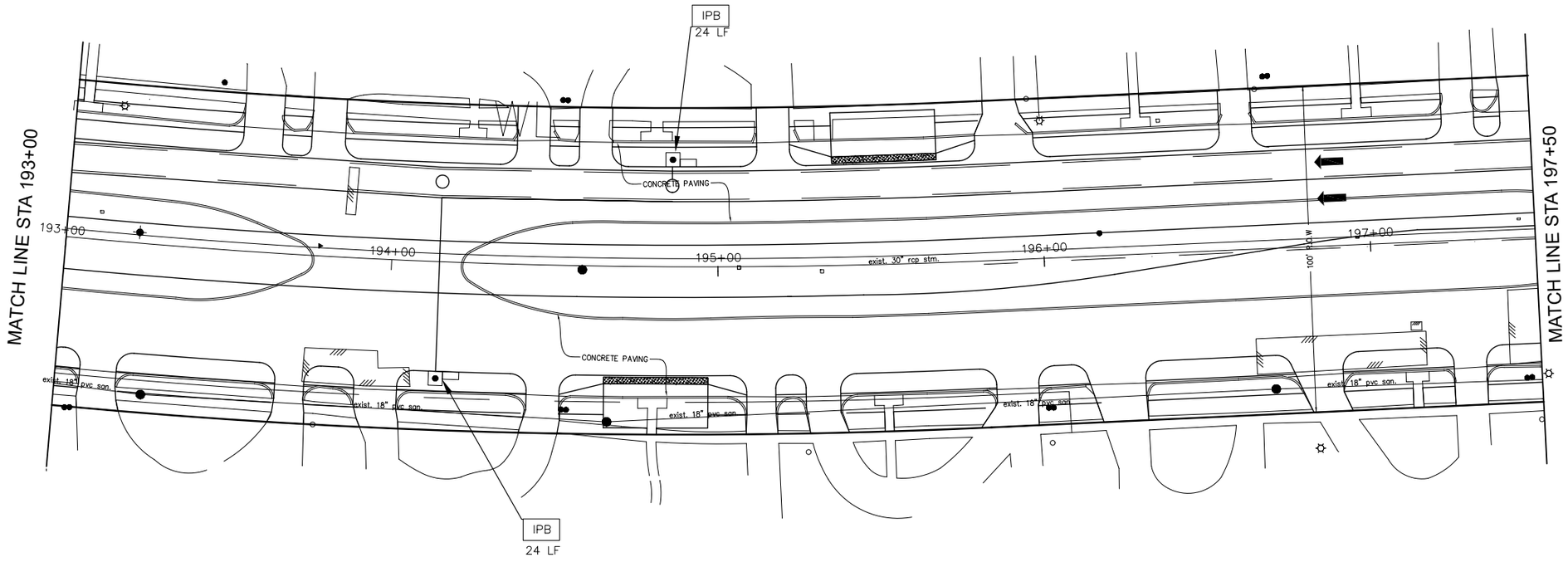

LEGEND

IPB	INLET PROTECTION BARRIER
	PROP BOX STM SEWER
	PROP STM SEWER

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0' 20' 40'
SCALE IN FEET

No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM WATER POLLUTION PREVENTION PLAN
STA 188+50 STA 197+50

SHEET 5 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 654 OF 718	

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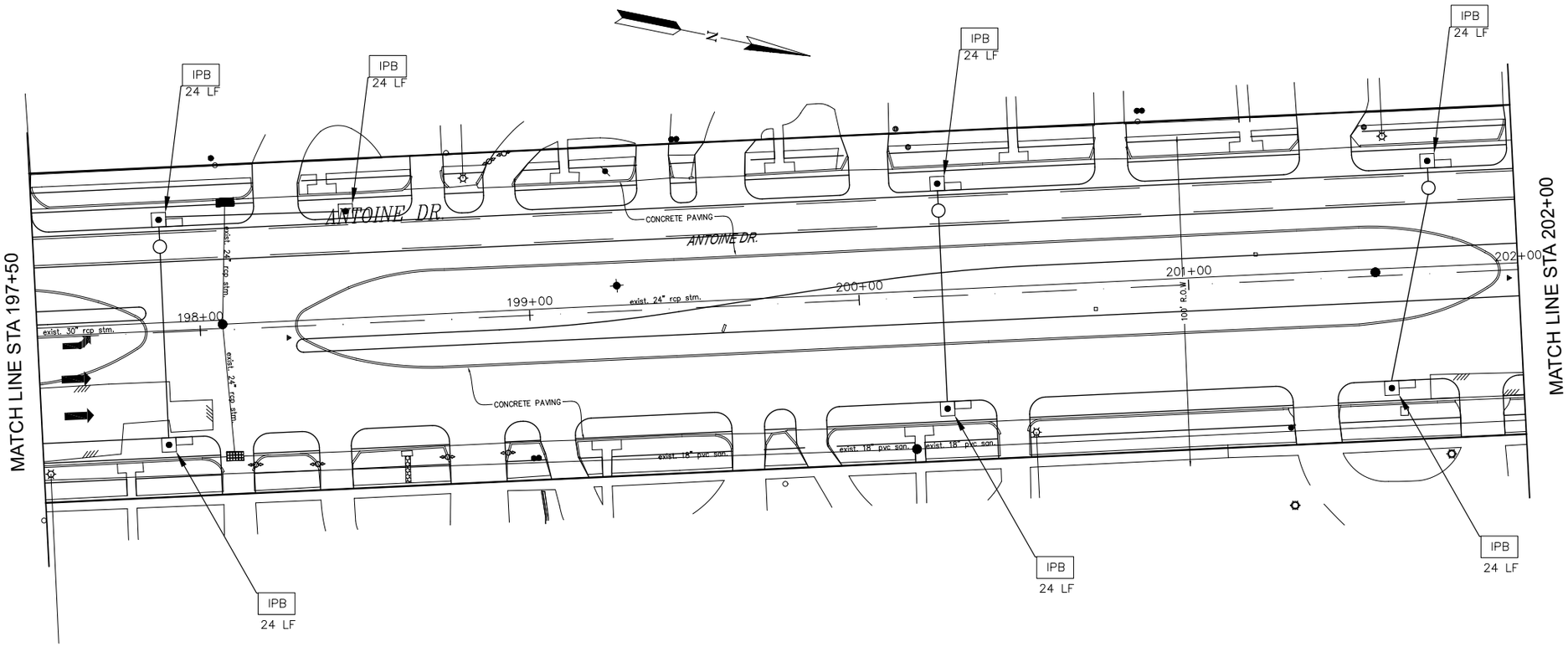

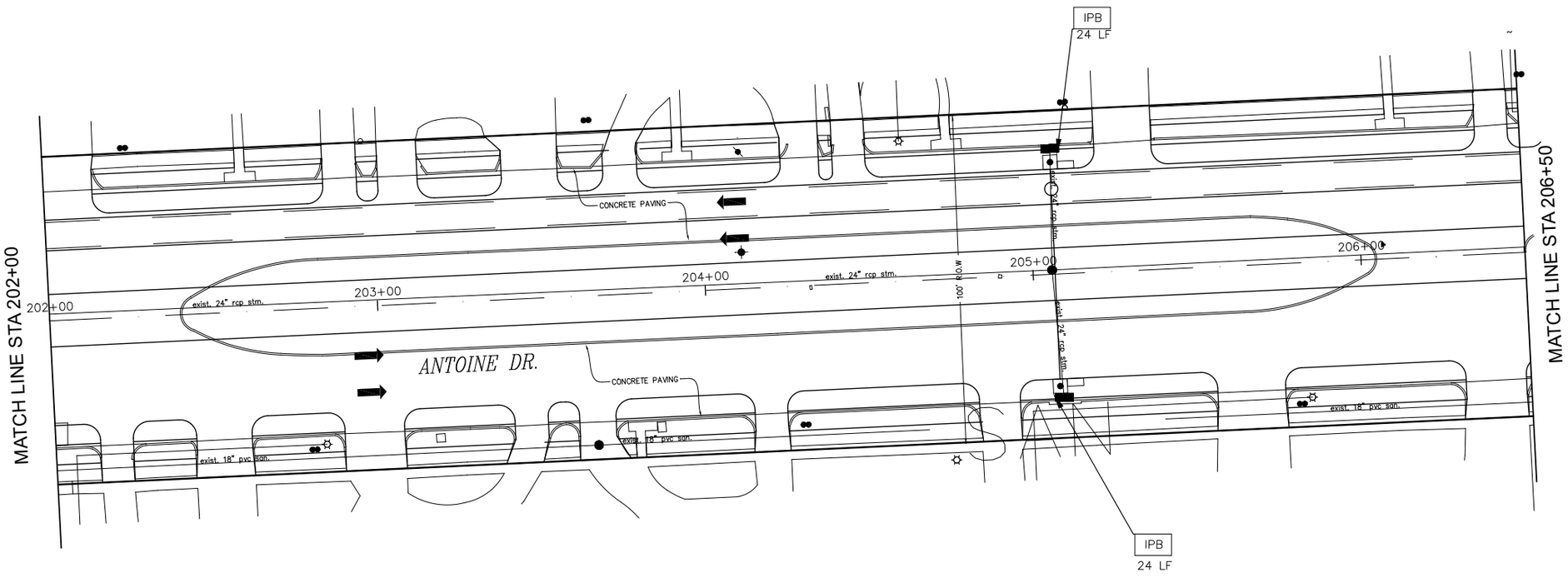

LEGEND

IPB	INLET PROTECTION BARRIER
= = =	PROP BOX STM SEWER
———	PROP STM SEWER

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No.	DATE	REVISIONS	APP.

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SCALE IN FEET

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CHRIS E.K. WONG
75307
LICENSED
PROFESSIONAL ENGINEER
09/30/25

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM WATER POLLUTION PREVENTION PLAN
STA 197+50 STA 206+50

SHEET 6 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
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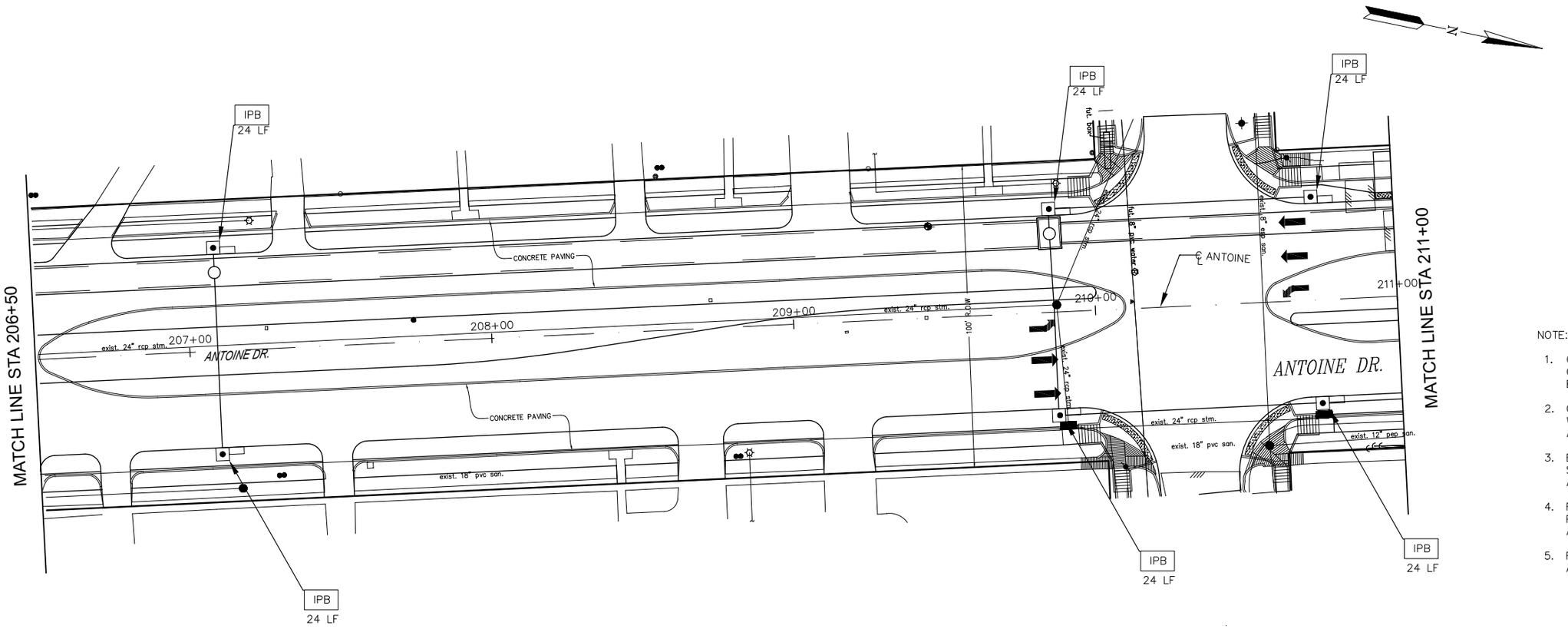

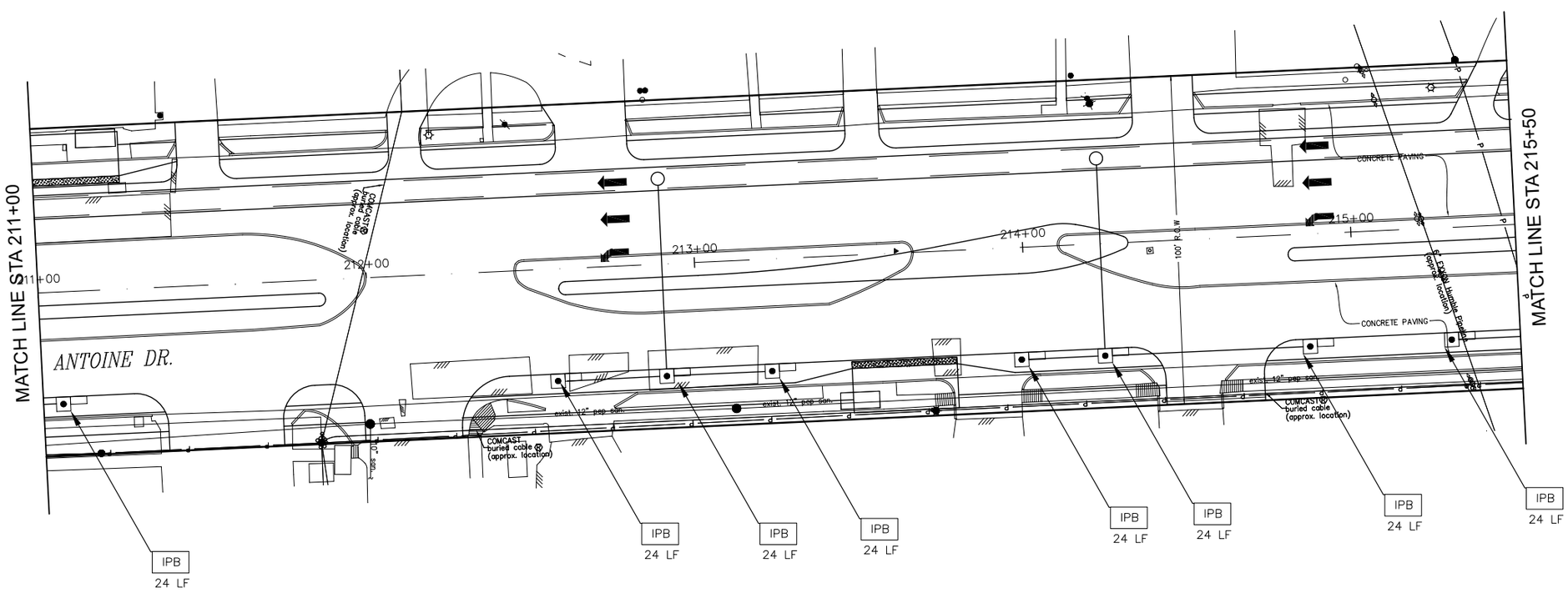

LEGEND

IPB	INLET PROTECTION BARRIER
	PROP BOX STM SEWER
	PROP STM SEWER

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM WATER POLLUTION PREVENTION PLAN
STA 206+50 STA 215+50

SHEET 7 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 656 OF 718	

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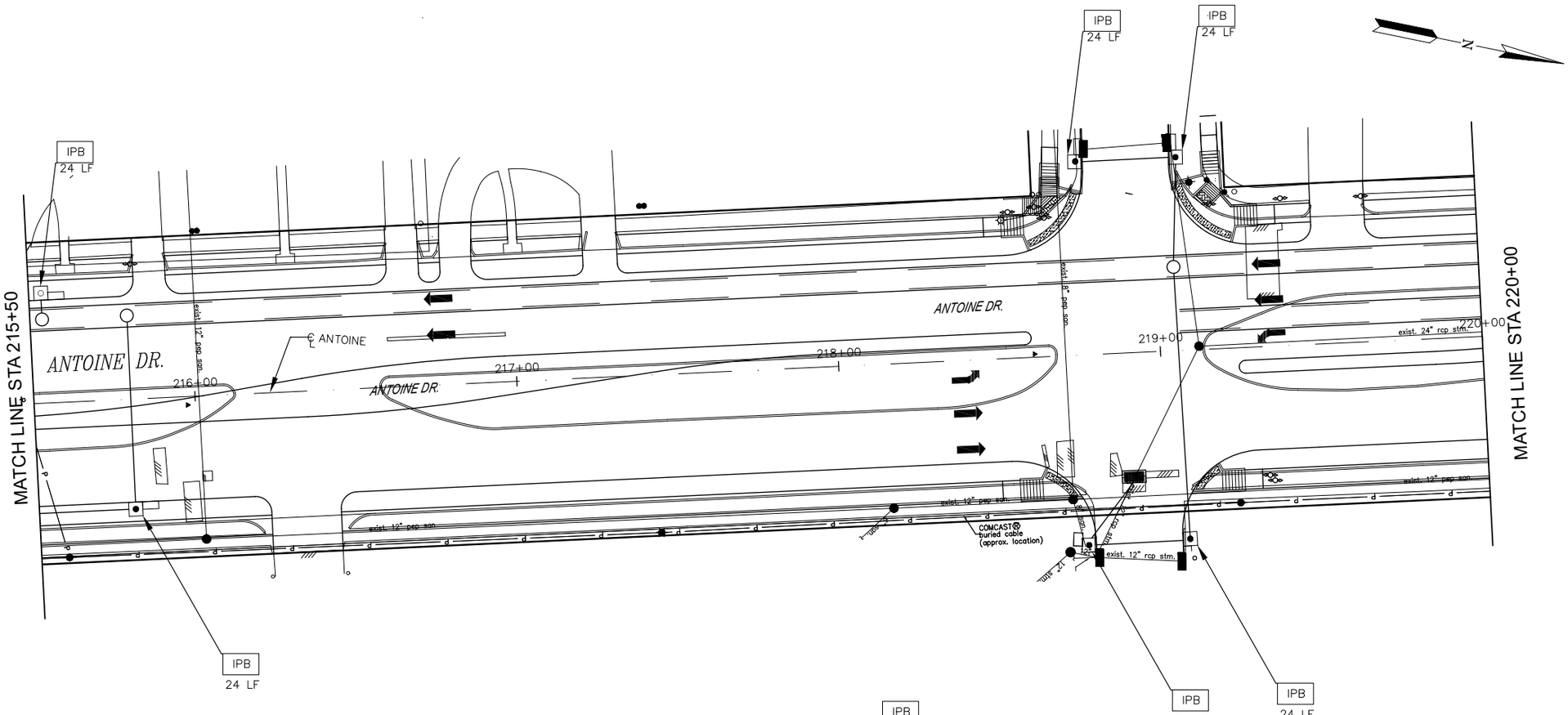

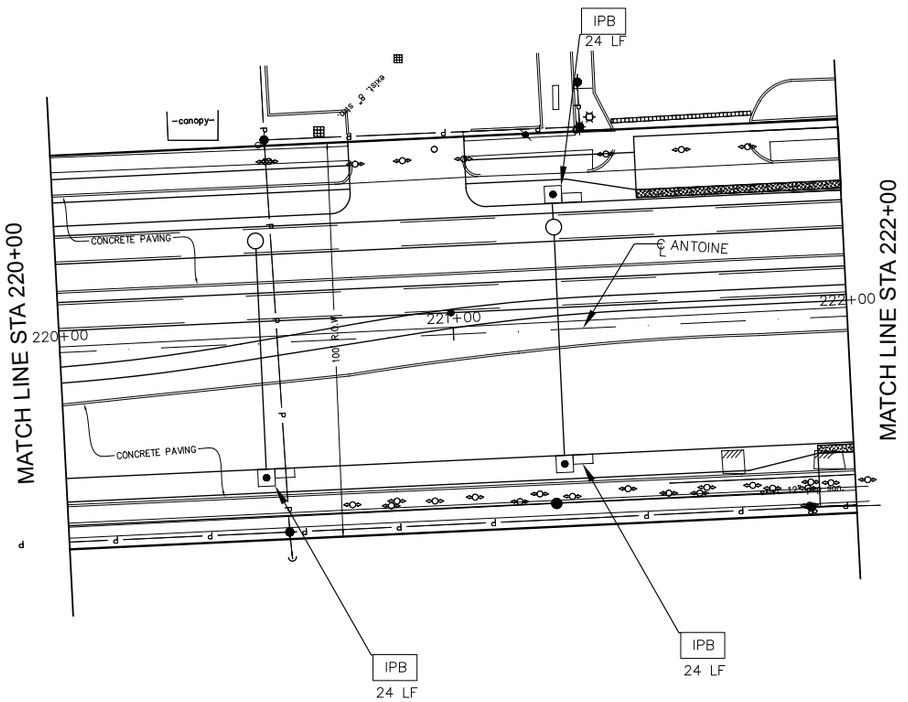

LEGEND

IPB	INLET PROTECTION BARRIER
	PROP BOX STM SEWER
	PROP STM SEWER

NOTE:

1. CONTRACTOR TO PLACE STABILIZED CONSTRUCTION ACCESS AS DIRECTED BY ENGINEER AT PRE-CONSTRUCTION MEETING.
2. CONTRACTOR TO PLACE CONCRETE TRUCK WASH AREA AS DIRECTED BY THE ENGINEER AT PRE-CONSTRUCTION MEETING.
3. BLOCK SOD SHALL BE PLACED BETWEEN SIDEWALK AND CURB AND BETWEEN SIDEWALK AND ROW.
4. REFER TO STORM WATER POLLUTION PREVENTION PLAN DETAIL SHEETS FOR ADDITIONAL INFORMATION.
5. REFER TO DRAINAGE P&P SHEETS FOR ADDITIONAL INFORMATION.

0' 20' 40'
SCALE IN FEET

No.	DATE	REVISIONS	APP.

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FCM Engineers, P.C.
TX FIRM No.: F-13481

ACG
APEX Consulting Group, Inc.
9888 BISSONNET STREET
HOUSTON, TEXAS 77036
TEL.No.: 832.512.6000

SURVEYED BY:
KUO & ASSOCIATES, INC.

STATE OF TEXAS
CHARLES C.A. MOBERLY
73307
REGISTERED PROFESSIONAL ENGINEER
09/30/25
95% SUBMITTAL
APEX CONSULTING GROUP, INC
Firm Registration #F2645

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM WATER POLLUTION PREVENTION PLAN
STA 215+50 STA 222+00

SHEET 8 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 657 OF 718	

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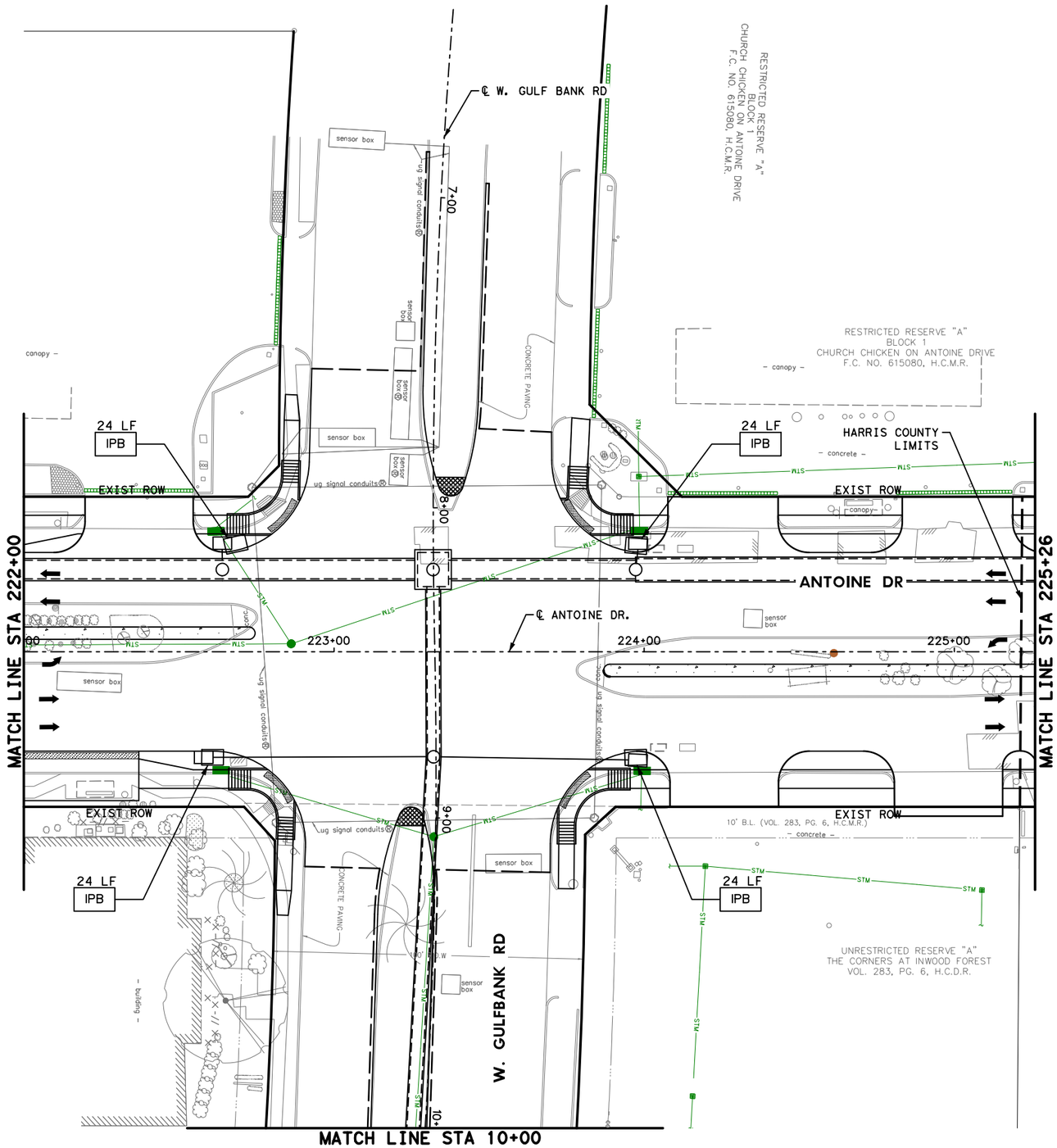

LEGEND

IPB	INLET PROTECTION BARRIER
═══	PROP BOX STM SEWER
———	PROP STM SEWER

NOTE:

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N

0′ 20′ 40′
SCALE IN FEET

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

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Texas Registered Engineering Firm F-20017

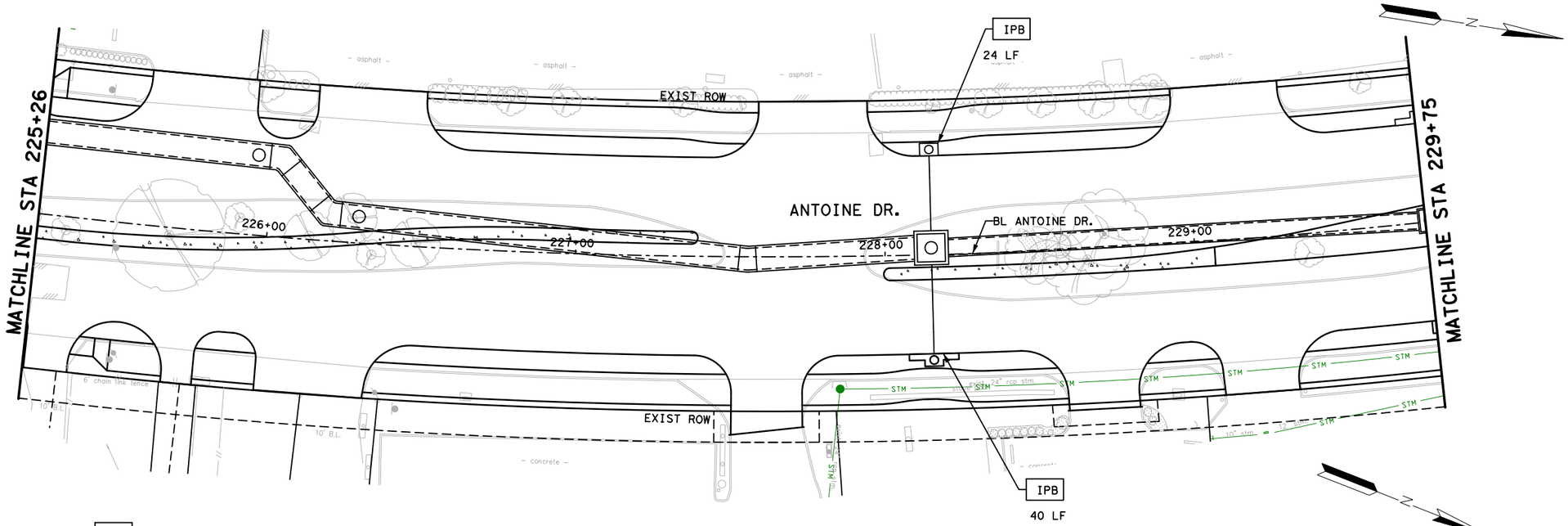
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

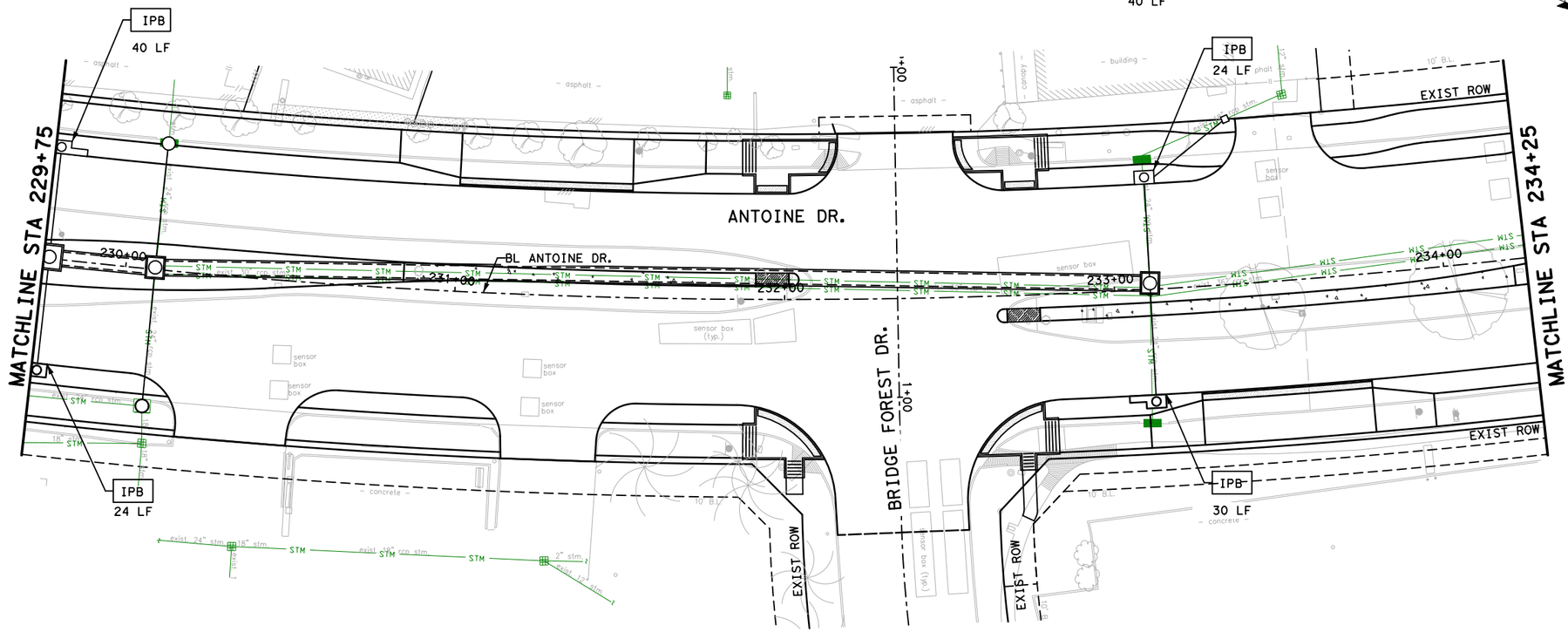
ANTOINE DRIVE

STORM WATER POLLUTION PREVENTION PLAN

SHEET 9 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 658 OF 718	





LEGEND

IPB	INLET PROTECTION BARRIER
	PROP BOX STM SEWER
	PROP STM SEWER

NOTE:

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0' 20' 40'
SCALE IN FEET

No.	DATE	REVISIONS	APP'D

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10/21/2025
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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM WATER POLLUTION PREVENTION PLAN
STA 225+26 TO STA 234+25

SHEET 10 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 659 OF 718	

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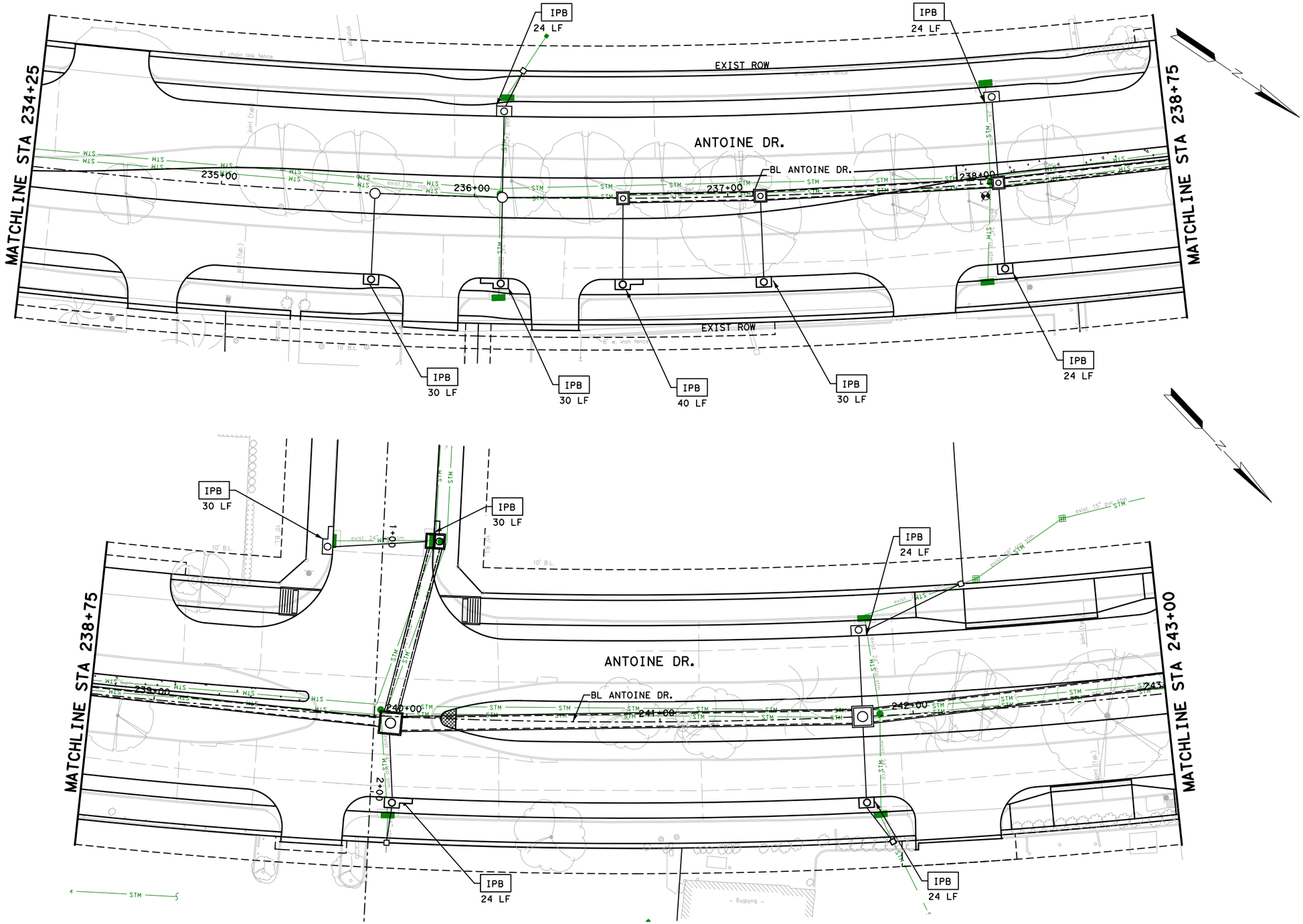

LEGEND

IPB	INLET PROTECTION BARRIER
	PROP BOX STM SEWER
	PROP STM SEWER

No.	DATE	REVISIONS	APP.

NOTE:

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SCALE IN FEET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM WATER POLLUTION PREVENTION PLAN STA 234+25 TO STA 243+00

SHEET 11 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 660 OF 718	

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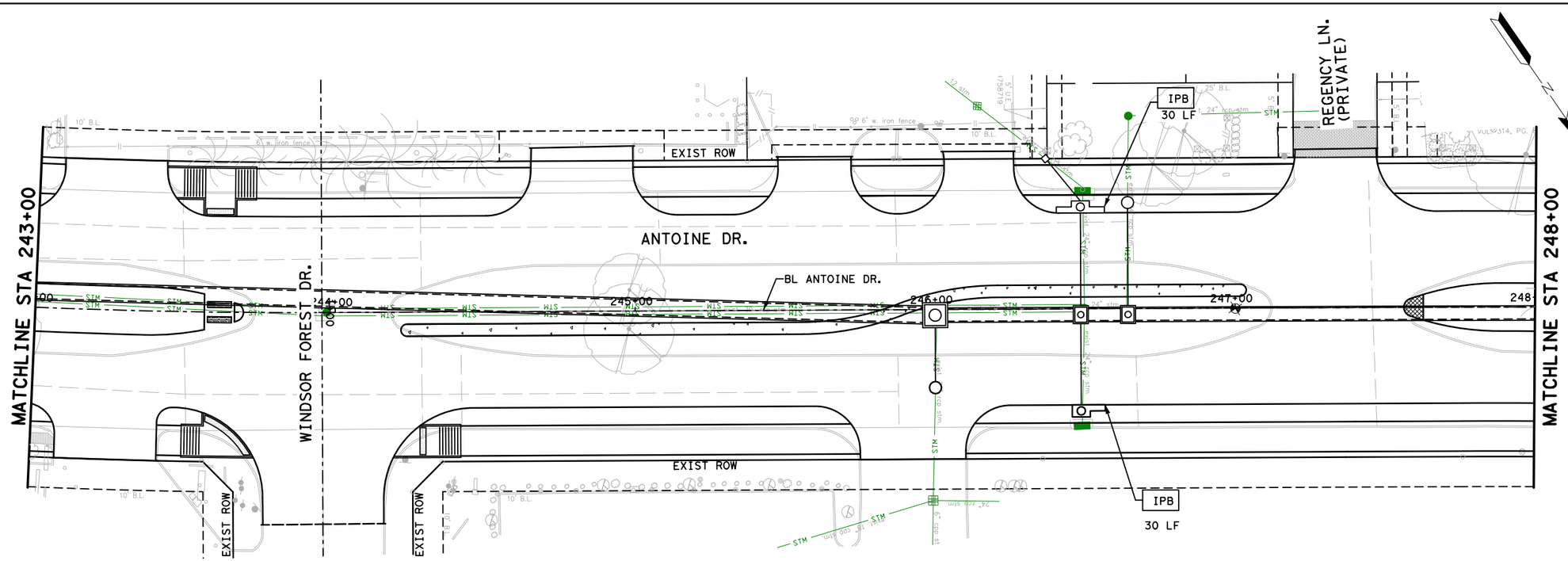

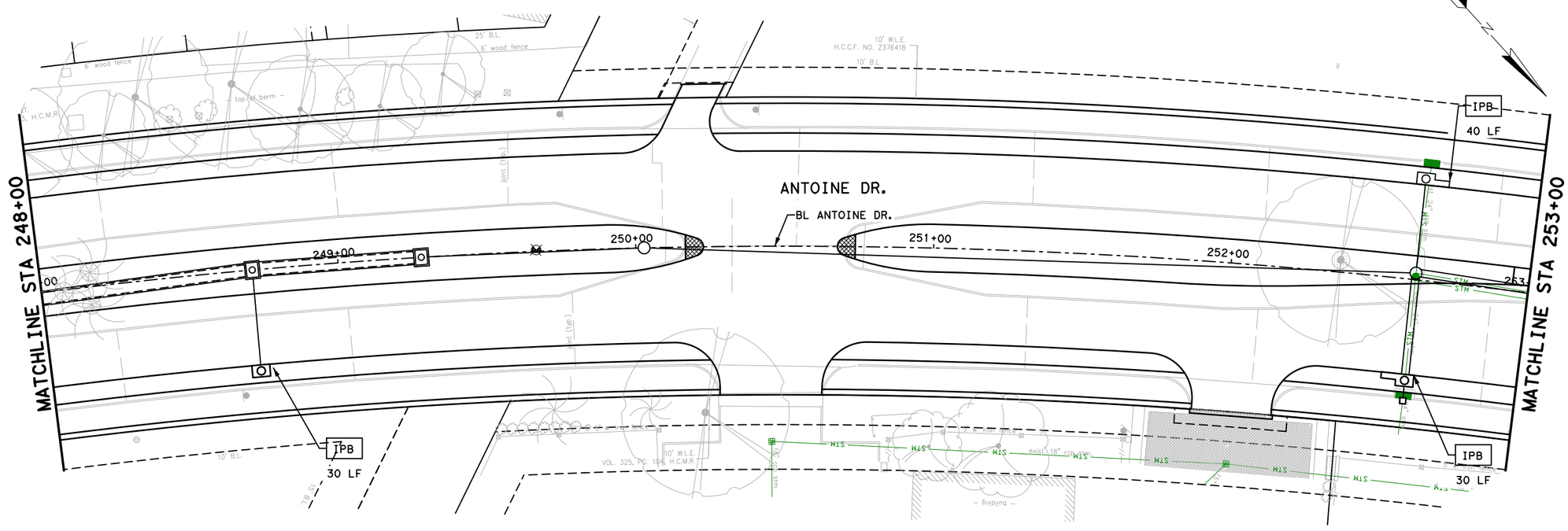

LEGEND

IPB	INLET PROTECTION BARRIER
	PROP BOX STM SEWER
	PROP STM SEWER

NOTE:

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0' 20' 40'
SCALE IN FEET

No.	DATE	REVISIONS	APP.

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131531
10/21/2025
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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM WATER POLLUTION PREVENTION PLAN STA 243+00 TO STA 253+00

SHEET 12 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 661 OF 718	

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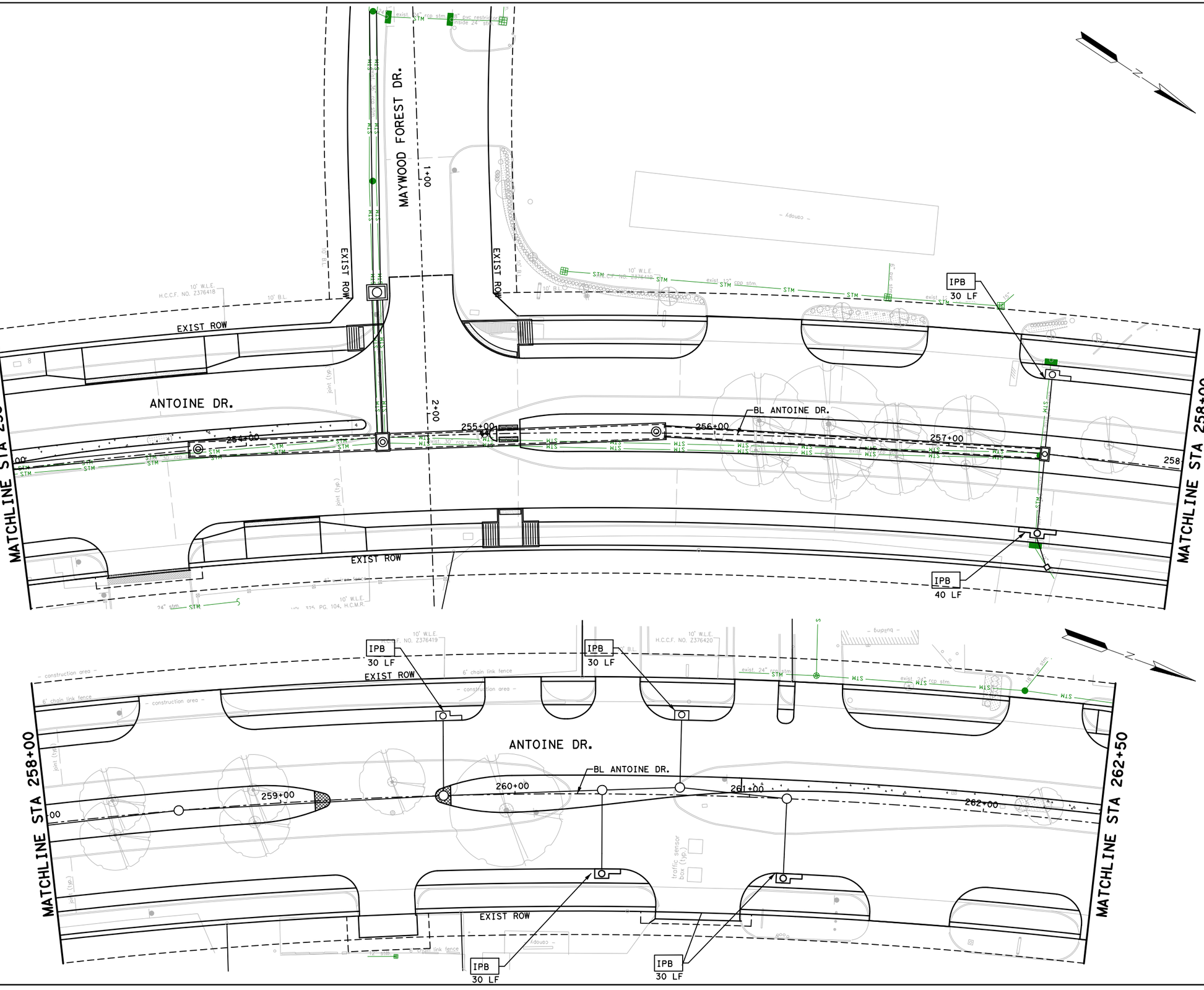

LEGEND

IPB	INLET PROTECTION BARRIER
	PROP BOX STM SEWER
	PROP STM SEWER

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0′ 20′ 40′
SCALE IN FEET

No.	DATE	REVISIONS	APP.

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P.E.
131531
10/21/2025
95% SUBMITTAL
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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM WATER POLLUTION PREVENTION PLAN STA 253+00 TO STA 262+50

SHEET 13 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 662 OF 718	

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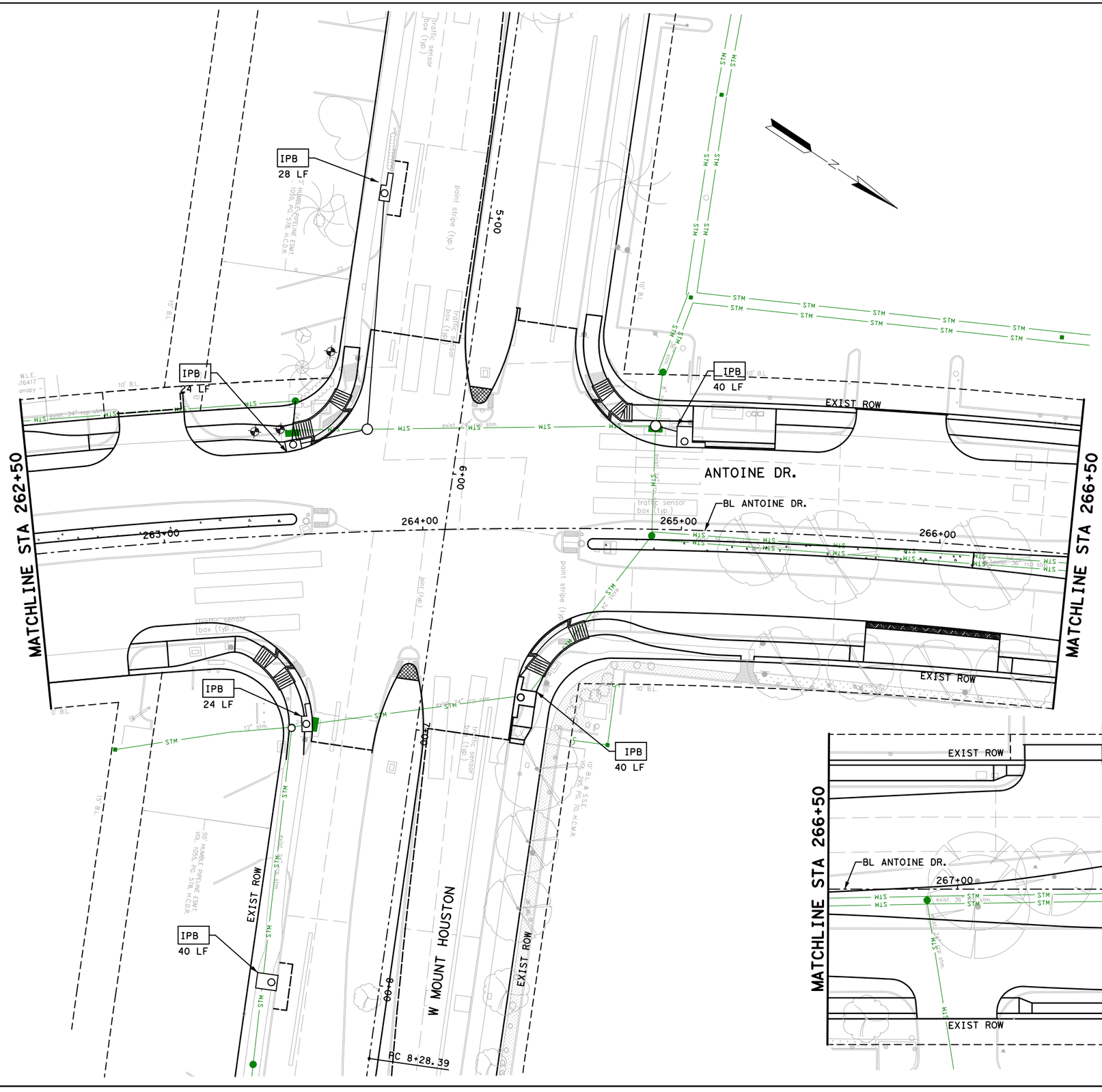

LEGEND

IPB	INLET PROTECTION BARRIER
	PROP BOX STM SEWER
	PROP STM SEWER

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0' 20' 40'
SCALE IN FEET

No.	DATE	REVISIONS	APP.

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P.E. 131531
10/21/2025
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Texas Registered Engineering Firm F-148

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

STORM WATER POLLUTION PREVENTION PLAN STA 262+50 TO END

SHEET 14 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 663 OF 718	

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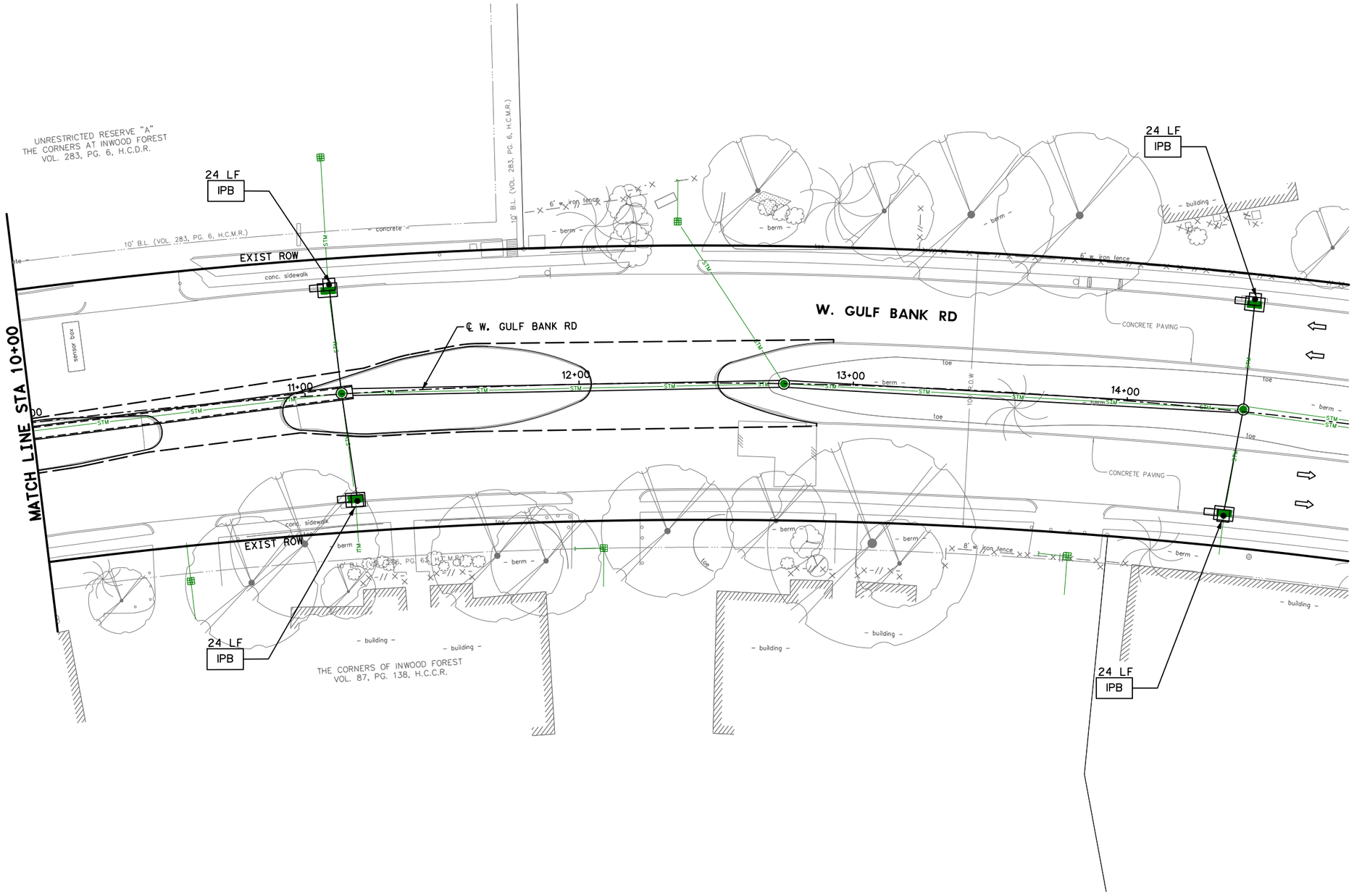

LEGEND

IPB	INLET PROTECTION BARRIER
═══	PROP BOX STM SEWER
———	PROP STM SEWER

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N

0′ 20′ 40′
SCALE IN FEET

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TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

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92917
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Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

GULF BANK DR.
STORM WATER POLLUTION PREVENTION PLAN

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 664 OF 718	

Pen Table: ANTOINE DR.tbl
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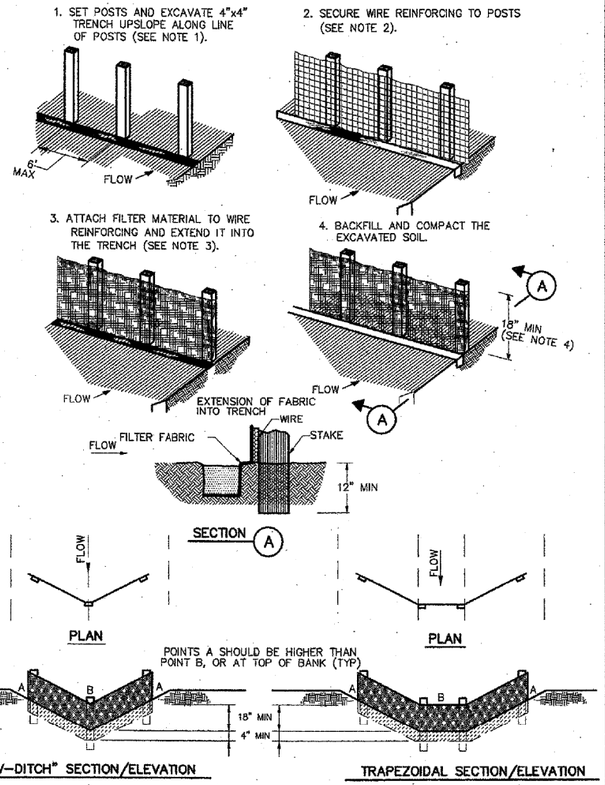
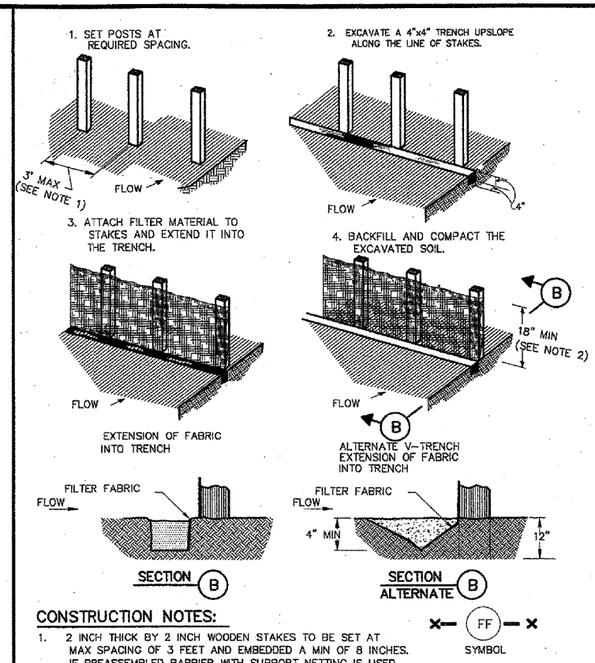


CONSTRUCTION NOTES:

1. SET 2 INCH BY 2 INCH WOODEN STAKES SPACED A MAX OF 6 FEET APART AND EMBEDDED A MIN OF 12 INCHES.
2. WOVEN WIRE REINFORCING TO BE FASTENED SECURELY TO BARRIER POSTS WITH STAPLES.
3. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE REINFORCING, WITH TIES SPACED EVERY 24 INCHES AT TOP AND MIDSECTION.
4. MINIMUM HEIGHT OF FILTER SHOULD BE 18 INCHES AND A MAXIMUM OF 36 INCHES ABOVE NATURAL GROUND.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.
6. SEE COH STANDARD SPECIFICATION FOR FILTER FABRIC BARRIER.

SYMBOL

REINFORCED FILTER FABRIC BARRIER

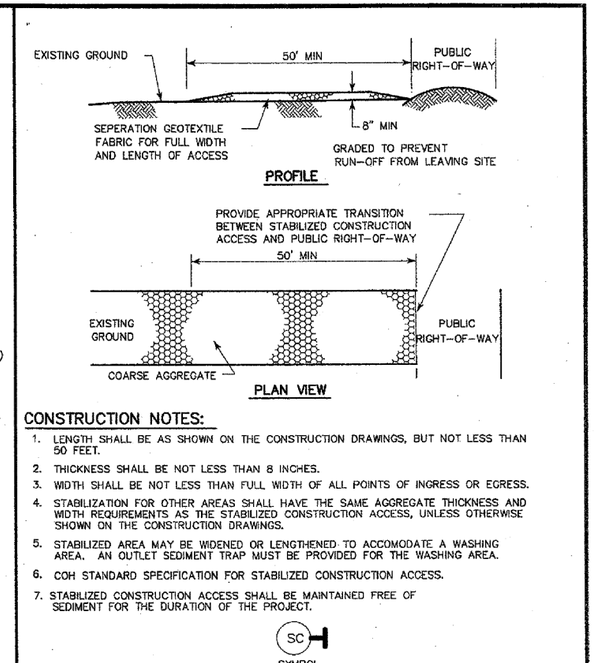


CONSTRUCTION NOTES:

1. 2 INCH THICK BY 2 INCH WOODEN STAKES TO BE SET AT MAX SPACING OF 3 FEET AND EMBEDDED A MIN OF 8 INCHES. IF PREASSEMBLED BARRIER WITH SUPPORT NETTING IS USED, SPACING OF POST MAY BE INCREASED TO 8 FEET MAX.
2. ATTACH FILTER FABRIC TO WOODEN STAKES. FILTER FABRIC BARRIER SHALL HAVE A MIN HEIGHT OF 18 INCHES AND MAX HEIGHT OF 36 INCHES ABOVE NATURAL GROUND.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHOULD BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.
4. SEE COH STANDARD SPECIFICATION FOR FILTER FABRIC BARRIER.

SYMBOL

FILTER FABRIC BARRIER

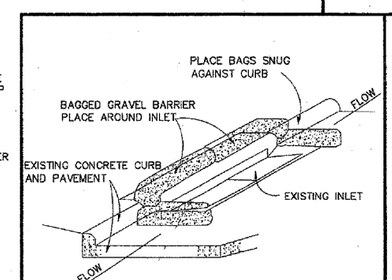


CONSTRUCTION NOTES:

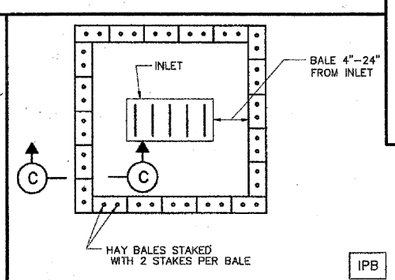
1. LENGTH SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS, BUT NOT LESS THAN 50 FEET.
2. THICKNESS SHALL BE NOT LESS THAN 8 INCHES.
3. WIDTH SHALL BE NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
4. STABILIZATION FOR OTHER AREAS SHALL HAVE THE SAME AGGREGATE THICKNESS AND WIDTH REQUIREMENTS AS THE STABILIZED CONSTRUCTION ACCESS, UNLESS OTHERWISE SHOWN ON THE CONSTRUCTION DRAWINGS.
5. STABILIZED AREA MAY BE WIDENED OR LENGTHENED TO ACCOMODATE A WASHING AREA. AN OUTLET SEDIMENT TRAP MUST BE PROVIDED FOR THE WASHING AREA.
6. COH STANDARD SPECIFICATION FOR STABILIZED CONSTRUCTION ACCESS.
7. STABILIZED CONSTRUCTION ACCESS SHALL BE MAINTAINED FREE OF SEDIMENT FOR THE DURATION OF THE PROJECT.

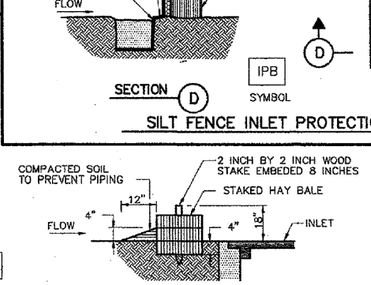
SC
SYMBOL

STABILIZED CONSTRUCTION ACCESS

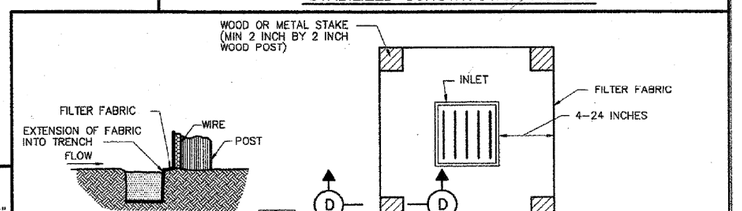


INLET PROTECTION BARRIER
(FOR STAGE II INLETS)
BAGGED GRAVEL BARRIER





HAY BALE INLET PROTECTION BARRIER



SILT FENCE INLET PROTECTION BARRIER

CONSTRUCTION NOTE:

1. SEE CONSTRUCTION NOTES FOR RFB.

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

STORM WATER POLLUTION PREVENTION PLAN DETAILS
(NOT TO SCALE)

APPROVED — CITY ENGINEER
APPROVED — DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: JULY-01-2010 DWG NO: 01571-01

No.	DATE	REVISIONS	APP.

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Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

SURVEYED BY:
KUO & ASSOCIATES, INC.

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GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

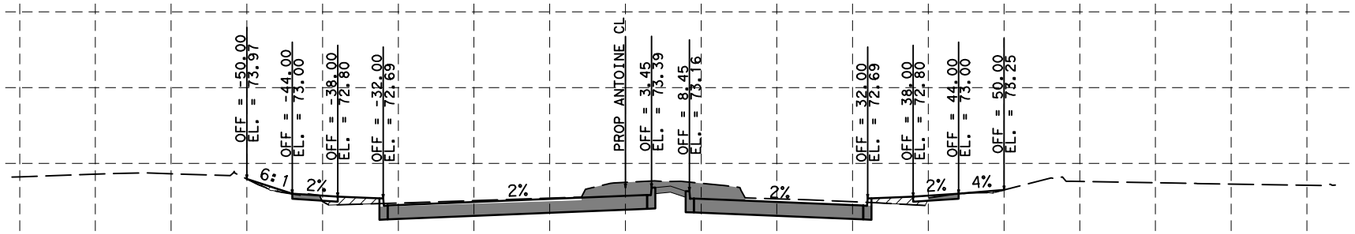
ANTOINE DRIVE

STORM WATER POLLUTION PREVENTION PLAN DETAILS

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 665 OF 718	

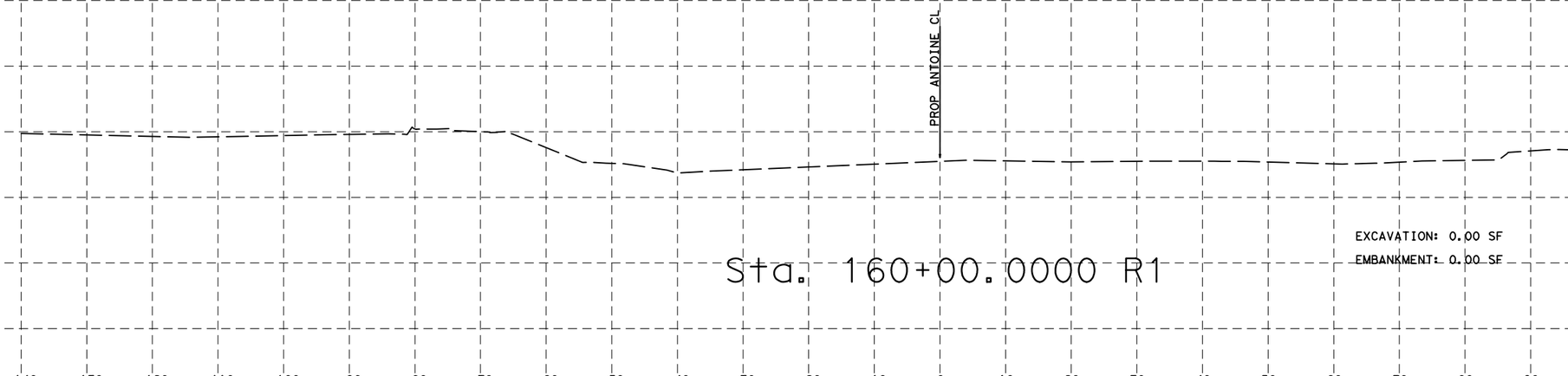
Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\SW3P\W GULF BANK\STANDARD DETAILS\SW3P DETAILS.dgn



Sta. 161+00.0000 R1

EXCAVATION: 72.47 SF

EMBANKMENT: 6.51 SF



Sta. 160+00.0000 R1

EXCAVATION: 0.00 SF

EMBANKMENT: 0.00 SF

HORZ 0' 10' 20'
VERT 0' 1' 2'
SCALE IN FEET

LEGEND
EXCAVATION = XX SF
EMBANKMENT = XX SF

NOTICE:
FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS SIGNATURE DOES NOT FULFILL YOUR OBLIGATION TO CALL 811

VERIFICATION OF PRIVATE UTILITY LINES

Date
CenterPoint Energy natural gas utilities shown. (Gas service lines are not shown). This signature not be used for conflict verification.
Signature valid for six months.

Date
CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY.
(This signature verifies existing underground facilities - not to be used for conflict verification)
Signature valid for six months.

Approved for AT&T underground conduit facilities only. Signature Date
valid for one year.

Texas Department of Transportation ©2023

DESIGN ENGINEER NAME
FCM ENGINEERS, P.C.
ADDRESS:
3300 S. Gessner Rd.
TEL No.: 713-706-4412
TX FIRM No.: F-13481

SURVEYED BY:
KUO & ASSOCIATES, INC.

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FRANK C. MBACHU
108363
10/03/2025
95% SUBMITTAL
FCM ENGINEERING
Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED CROSS SECTIONS

SHEET 1 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAHA AYOUBH	
SHEET NO. 666 OF 718	

Plotted on: $DATE$ $TIME$ $USER$
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Plot Driver:$PLTDRVL$
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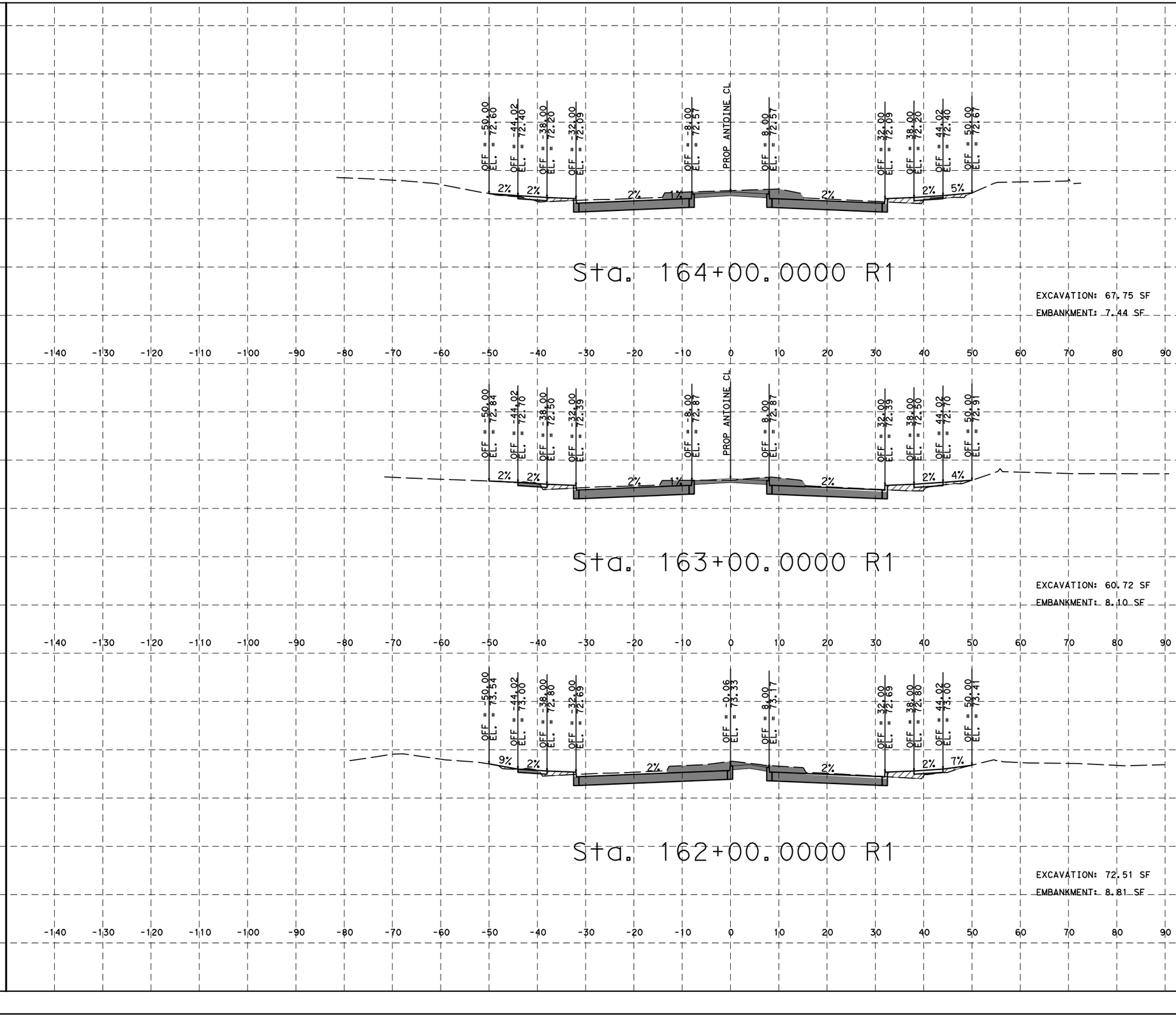

HORZ 0' 10' 20'
VERT 0' 1' 2'
SCALE IN FEET

LEGEND
EXCAVATION = XX SF
EMBANKMENT = XX SF

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED CROSS SECTIONS

SHEET 2 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAHA AYOUBH	
SHEET NO. 667 OF 718	

Plotted on: $DATE$ $TIME$ $USER$
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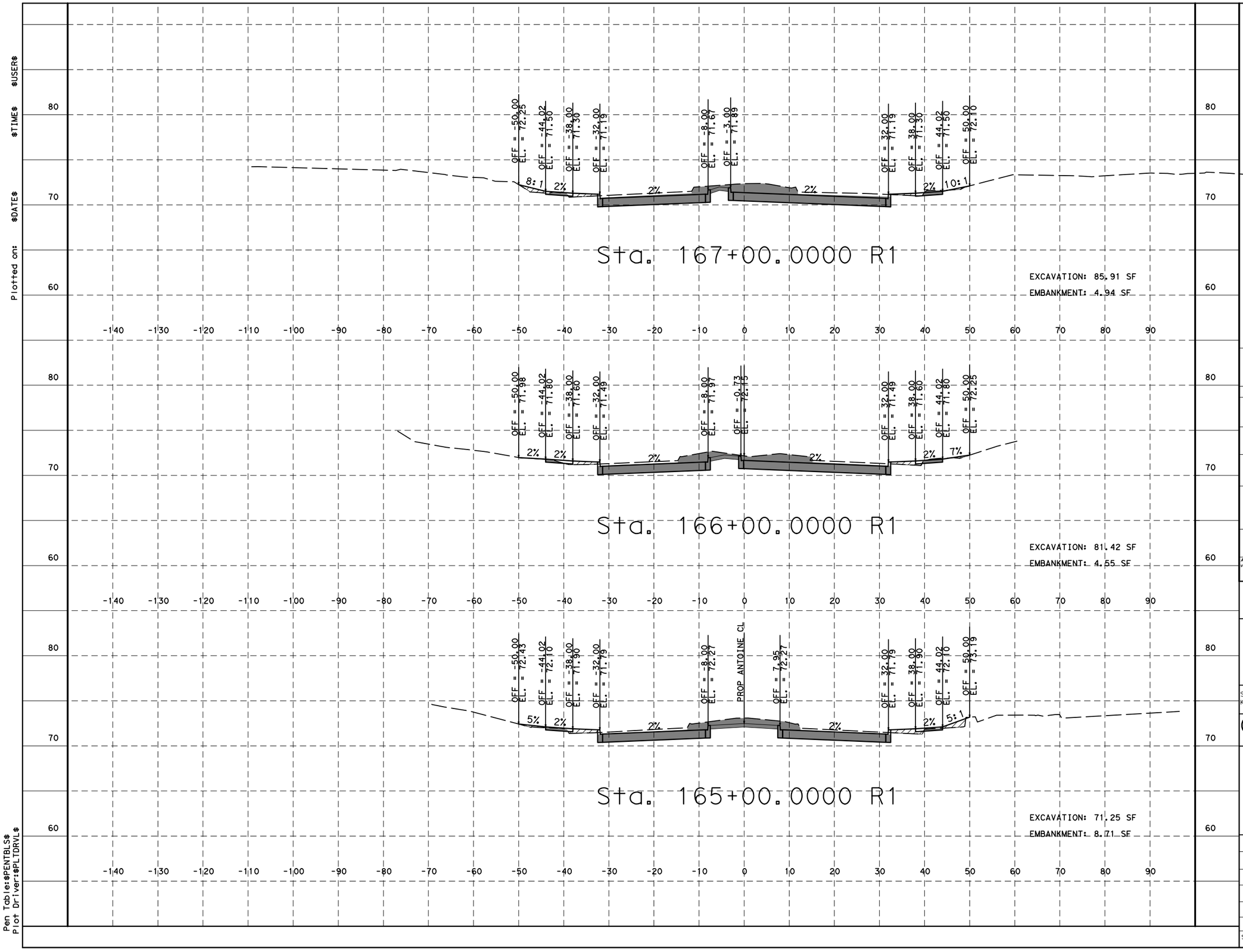
Plot Driver:$PLTDRVL$
Design Filename: $FILEL$



HORZ 0' 10' 20'
VERT 0' 1' 2'
SCALE IN FEET

LEGEND
EXCAVATION = XX SF
EMBANKMENT = XX SF

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

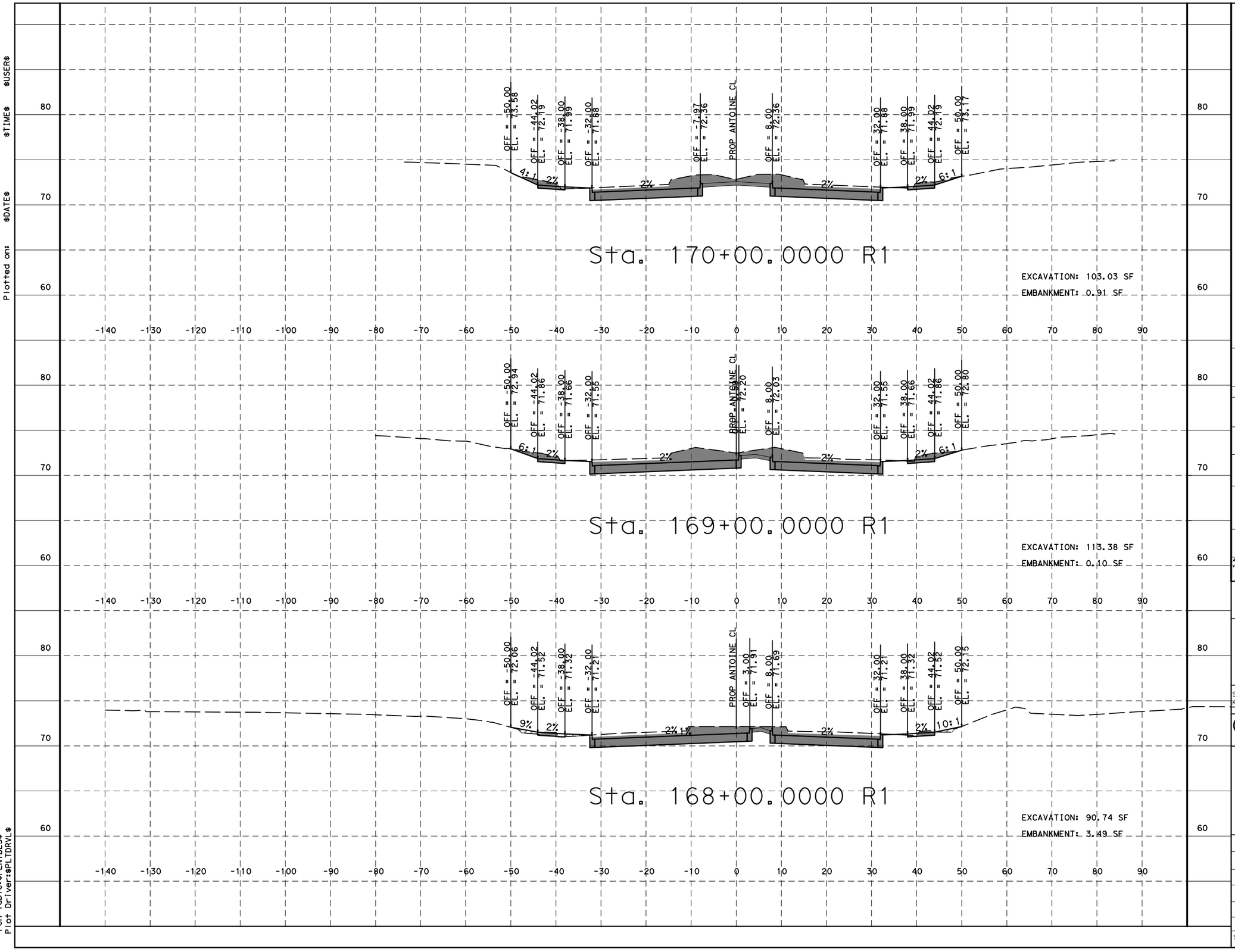
PROPOSED CROSS SECTIONS

SHEET 3 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAHA AYOUBH	

SHEET NO. 668 OF 718

Plotted on: $DATE$ $TIME$ $USER$
Pen Table:$PENTBLS$
Plot Driver:$PLTDRVL$
Design Filename: $FILEL$



HORZ 0' 10' 20'
VERT 0' 1' 2'
SCALE IN FEET

LEGEND
EXCAVATION = XX SF
EMBANKMENT = XX SF

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED CROSS SECTIONS

SHEET 4 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAHA AYOUBH	
SHEET NO. 669 OF 718	

Plotted on: $DATE$ $TIME$ $USER$
Pen Table:$PENTBLS$
Plot Driver:$PLTDRVL$
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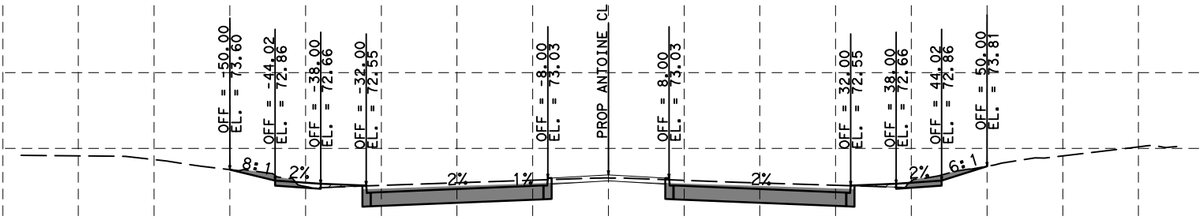
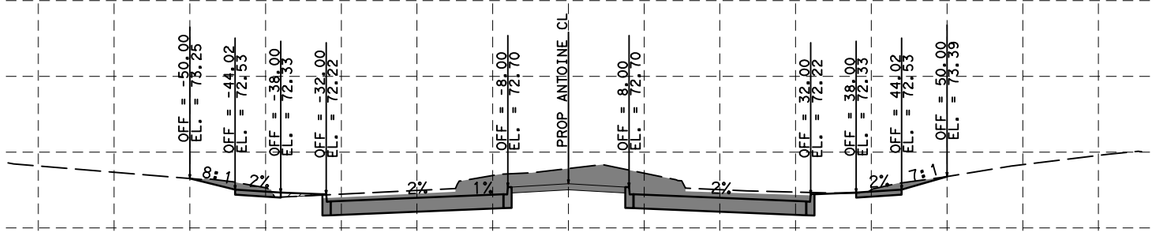


Sta. 172+00.0000 R1

EXCAVATION: 63.75 SF

EMBANKMENT: 1.57 SF



Sta. 171+00.0000 R1

EXCAVATION: 107.55 SF

EMBANKMENT: 0.99 SF

HORZ 0' 10' 20'
VERT 0' 1' 2'
SCALE IN FEET

LEGEND
EXCAVATION = XX SF
EMBANKMENT = XX SF

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VERIFICATION OF PRIVATE UTILITY LINES

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Date

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED CROSS SECTIONS

SHEET 5 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAHA AYOUBH	
SHEET NO. 670 OF 718	

Plotted on: $DATE$ $TIME$ $USER$
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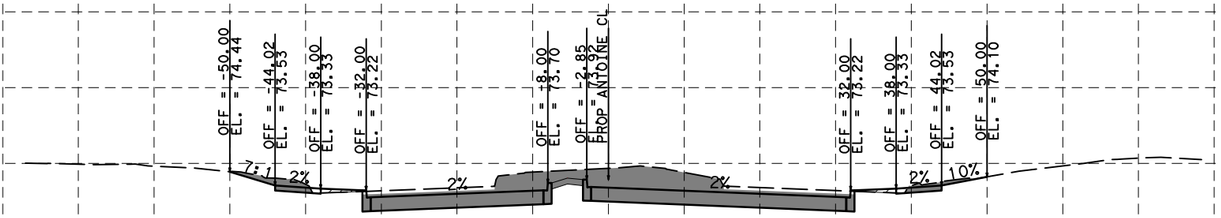
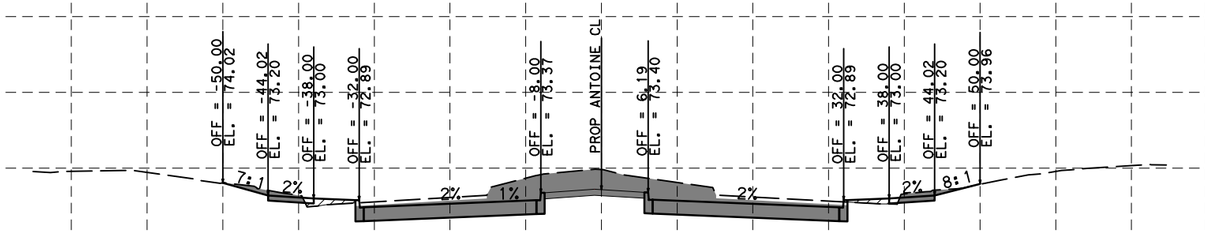
Plot Driver:$PLTDRVL$
Design Filename: $FILEL$



EXCAVATION: 107.27 SF
EMBANKMENT: 2.03 SF

Sta. 174+00.0000 R1



EXCAVATION: 104.02 SF
EMBANKMENT: 3.55 SF

Sta. 173+00.0000 R1

HORZ 0' 10' 20'
VERT 0' 1' 2'
SCALE IN FEET

LEGEND
EXCAVATION = XX SF
EMBANKMENT = XX SF

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED CROSS SECTIONS

SHEET 6 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAHA AYOUBH	
SHEET NO. 671 OF 718	

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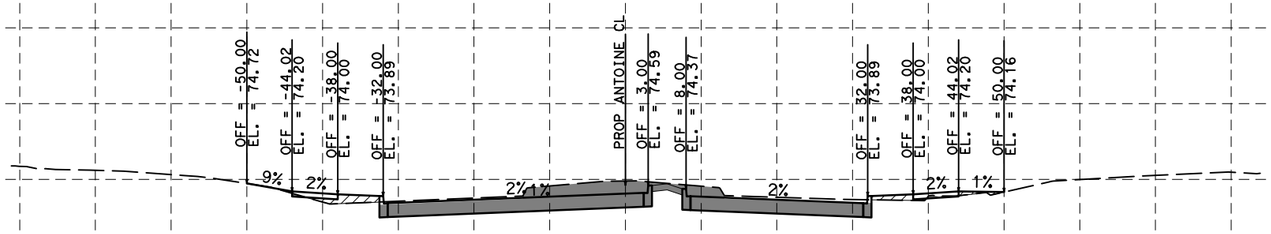
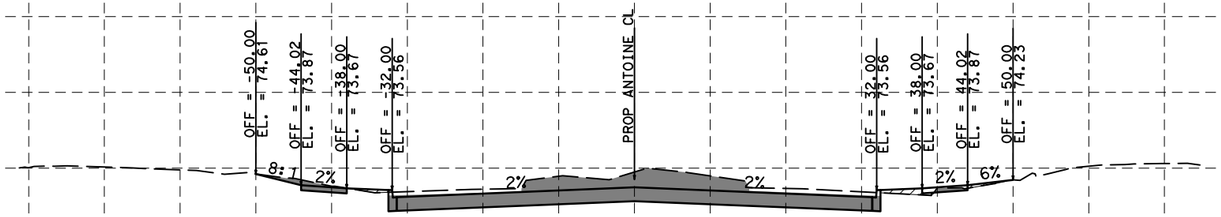
Plot Driver:$PLTDRVL$
Design Filename: $FILEL$

Plotted on: $DATE$ $TIME$ $USER$



EXCAVATION: 73.43 SF
EMBANKMENT: 6.57 SF

Sta. 176+00.0000 R1



EXCAVATION: 95.06 SF
EMBANKMENT: 3.26 SF

Sta. 175+00.0000 R1

HORZ 0' 10' 20'
VERT 0' 1' 2'
SCALE IN FEET

LEGEND
EXCAVATION = XX SF
EMBANKMENT = XX SF

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED CROSS SECTIONS

SHEET 7 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAHA AYOUBH	
SHEET NO. 672 OF 718	

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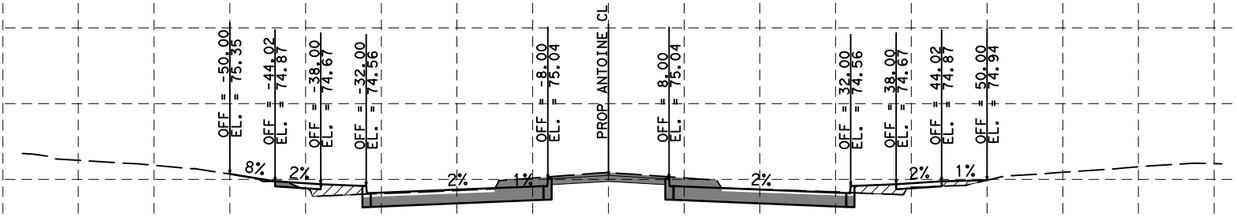
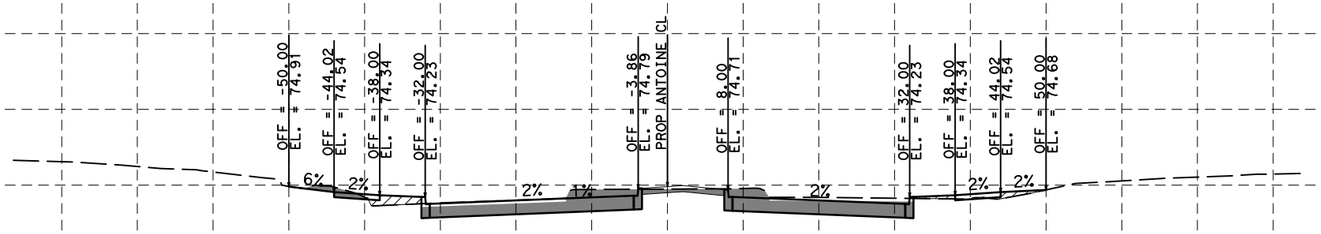


Sta. 178+00.0000 R1

EXCAVATION: 55.41 SF

EMBANKMENT: 9.49 SF



Sta. 177+00.0000 R1

EXCAVATION: 60.41 SF

EMBANKMENT: 6.13 SF

HORZ 0' 10' 20'
VERT 0' 1' 2'
SCALE IN FEET

LEGEND
EXCAVATION = XX SF
EMBANKMENT = XX SF

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED CROSS SECTIONS

SHEET 8 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAHA AYOUBH	
SHEET NO. 673 OF 718	

Plotted on: $DATE$ $TIME$ $USER$
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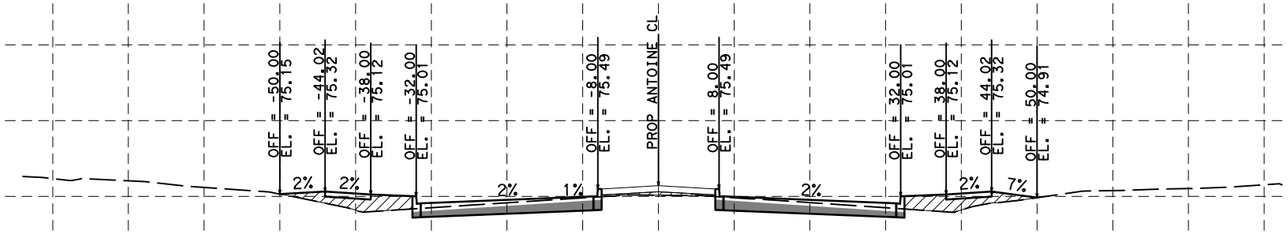
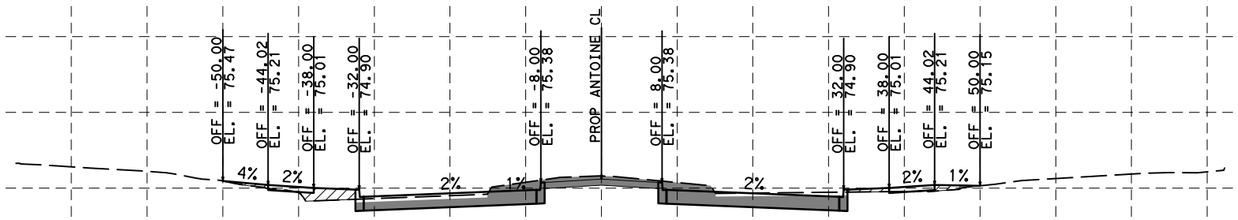
Plot Driver:$PLTDRVL$
Design Filename: $FILEL$



EXCAVATION: 25.84 SF
EMBANKMENT: 25.44 SF

Sta. 180+00.0000 R1



EXCAVATION: 54.23 SF
EMBANKMENT: 8.18 SF

Sta. 179+00.0000 R1

HORZ 0' 10' 20'
VERT 0' 1' 2'
SCALE IN FEET

LEGEND
EXCAVATION = XX SF
EMBANKMENT = XX SF

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

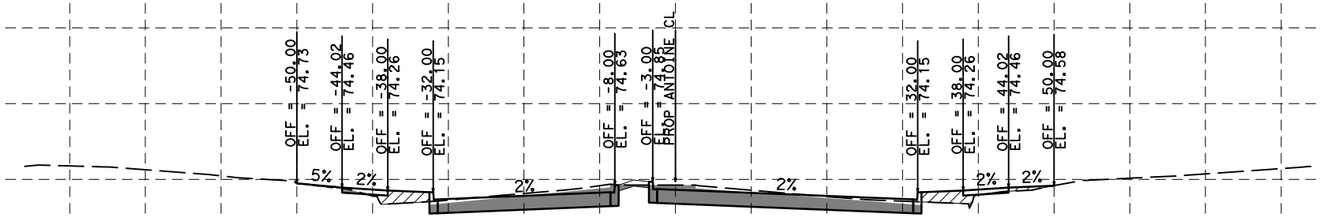
ANTOINE DRIVE

PROPOSED CROSS SECTIONS

SHEET 9 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAHA AYOUBH	
SHEET NO. 674 OF 718	

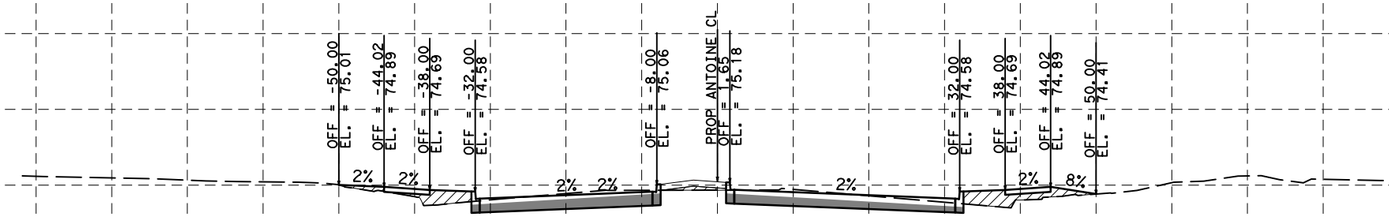
Plotted on: $DATE$ $TIME$ $USER$
Pen Table:$PENTBL$
Plot Driver:$PLTDRVL$
Design Filename: $FILEL$



Sta. 182+00.0000 R1

EXCAVATION: 56.75 SF

EMBANKMENT: 11.16 SF



Sta. 181+00.0000 R1

EXCAVATION: 32.85 SF

EMBANKMENT: 18.85 SF

HORZ 0' 10' 20'
VERT 0' 1' 2'
SCALE IN FEET

LEGEND
EXCAVATION = XX SF
EMBANKMENT = XX SF

NOTICE:

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VERIFICATION OF PRIVATE UTILITY LINES

Date

CenterPoint Energy natural gas utilities shown. (Gas service lines are not shown). This signature not be used for conflict verification.

Signature valid for six months.

Date

CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY. (This signature verifies existing underground facilities - not to be used for conflict verification)

Signature valid for six months.

Approved for AT&T underground conduit facilities only. Signature Date valid for one year.

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DESIGN ENGINEER NAME
FCM ENGINEERS, P.C.
ADDRESS:
3300 S. Gessner Rd.
TEL No.: 713-706-4412
TX FIRM No.: F-13481

SURVEYED BY:
KUO & ASSOCIATES, INC.

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FCM ENGINEERING
Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED CROSS SECTIONS

SHEET 10 OF 39

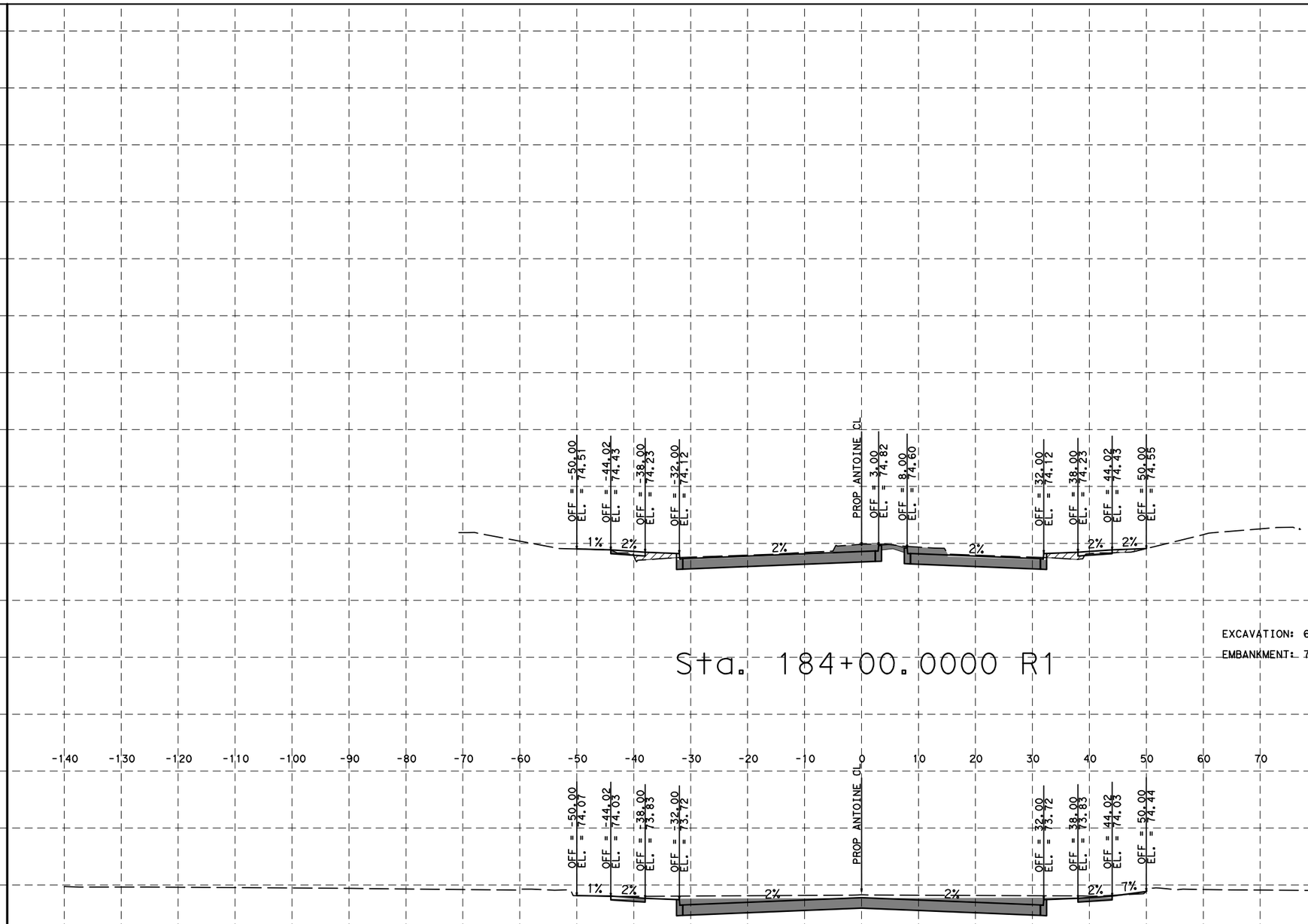
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAHA AYOUBH	
SHEET NO. 675 OF 718	

Plotted on: $DATE$ $TIME$ $USER$

Pen Table:$PENTBL$
Plot Driver:$PLTDRVL$

Design Filename: $FILEL$

Plotted on: $DATE$ $TIME$ $USER$

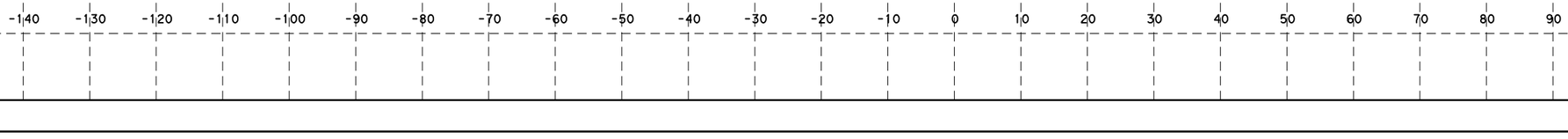


Sta. 184+00.0000 R1

EXCAVATION: 64.27 SF
EMBANKMENT: 7.83 SF

Sta. 183+00.0000 R1

EXCAVATION: 82.63 SF
EMBANKMENT: 0.40 SF



HORZ 0′ 10′ 20′
VERT 0′ 1′ 2′
SCALE IN FEET

LEGEND
EXCAVATION = XX SF
EMBANKMENT = XX SF

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VERIFICATION OF PRIVATE UTILITY LINES

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Date
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108363
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

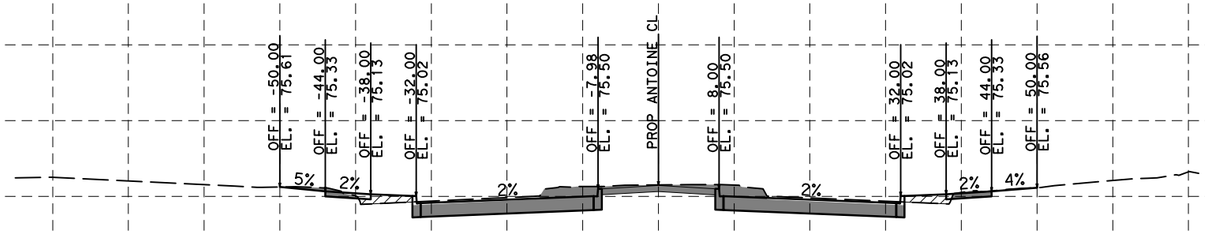
ANTOINE DRIVE

PROPOSED CROSS SECTIONS

SHEET 11 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAHA AYOUBH	
SHEET NO. 676 OF 718	

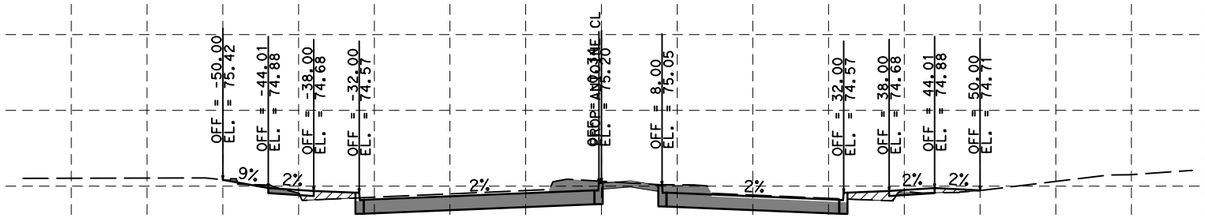
Pen Table:$PENTBL$
Plot Driver:$PLTDRVL$
Design Filename: $FILEL$



Sta. 186+00.0000 R1

EXCAVATION: 62.68 SF

EMBANKMENT: 6.29 SF



Sta. 185+00.0000 R1

EXCAVATION: 62.98 SF

EMBANKMENT: 7.45 SF

HORZ 0' 10' 20'
VERT 0' 1' 2'
SCALE IN FEET

LEGEND
EXCAVATION = XX SF
EMBANKMENT = XX SF

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

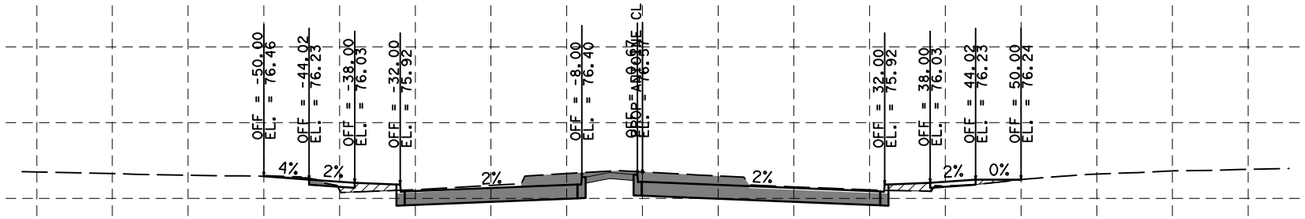
ANTOINE DRIVE

PROPOSED CROSS SECTIONS

SHEET 12 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAHA AYOUBH	
SHEET NO. 677 OF 718	

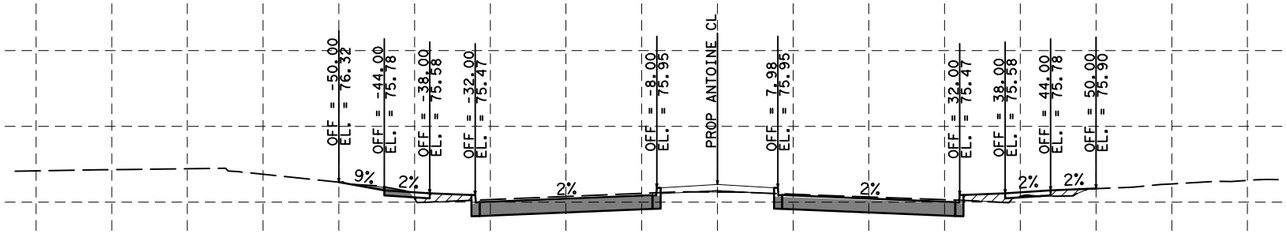
Plotted on: $DATE$ $TIME$ $USER$
Pen Table:$PENTBL$
Plot Driver:$PLTDRVL$
Design Filename: $FILEL$



Sta. 188+00.0000 R1

EXCAVATION: 70.98 SF

EMBANKMENT: 7.11 SF



Sta. 187+00.0000 R1

EXCAVATION: 44.12 SF

EMBANKMENT: 7.91 SF

HORZ 0' 10' 20'
VERT 0' 1' 2'
SCALE IN FEET

LEGEND
EXCAVATION = XX SF
EMBANKMENT = XX SF

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Date

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TX FIRM No.: F-13481

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

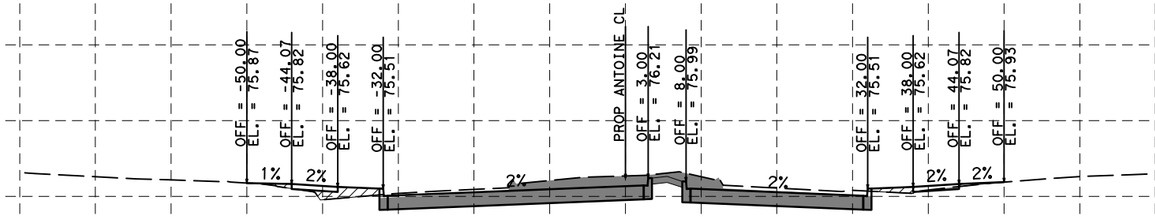
ANTOINE DRIVE

PROPOSED CROSS SECTIONS

SHEET 13 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAHA AYOUBH	
SHEET NO. 678 OF 718	

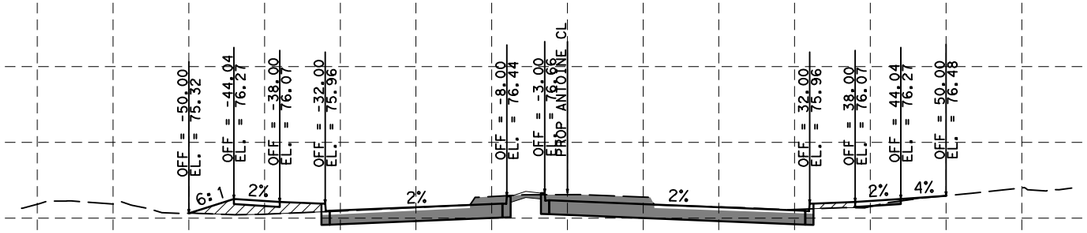
Plotted on: $DATE$ $TIME$ $USER$
Pen Table:$PENTBL$
Plot Driver:$PLTDRVL$
Design Filename: $FILEL$



Sta. 190+00.0000 R1

EXCAVATION: 75.51 SF

EMBANKMENT: 7.62 SF



Sta. 189+00.0000 R1

EXCAVATION: 57.79 SF

EMBANKMENT: 12.62 SF

HORZ 0' 10' 20'
VERT 0' 1' 2'
SCALE IN FEET

LEGEND
EXCAVATION = XX SF
EMBANKMENT = XX SF

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Date

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

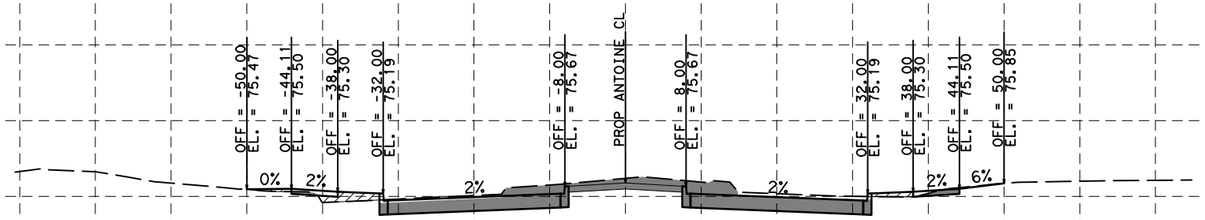
ANTOINE DRIVE

PROPOSED CROSS SECTIONS

SHEET 14 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAHA AYOUBH	
SHEET NO. 679 OF 718	

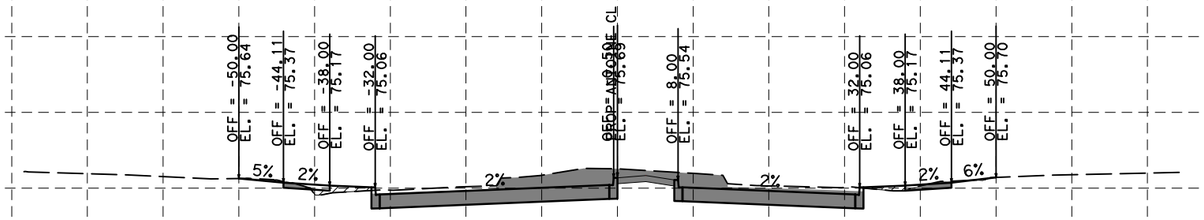
Plotted on: $DATE$ $TIME$ $USER$
Pen Table:$PENTBL$
Plot Driver:$PLTDRVL$
Design Filename: $FILEL$



Sta. 192+00.0000 R1

EXCAVATION: 67.07 SF

EMBANKMENT: 6.19 SF



Sta. 191+00.0000 R1

EXCAVATION: 86.41 SF

EMBANKMENT: 3.90 SF

HORZ 0' 10' 20'
VERT 0' 1' 2'
SCALE IN FEET

LEGEND
EXCAVATION = XX SF
EMBANKMENT = XX SF

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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Date

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ADDRESS:
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TEL No.: 713-706-4412
TX FIRM No.: F-13481

SURVEYED BY:
KUO & ASSOCIATES, INC.

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED CROSS SECTIONS

SHEET 15 OF 39

WBS NUMBER
N-100030-0GEC-3
DRAWING SCALE
AS NOTED
CITY OF HOUSTON PM
ROWAIDAHA AYOUBH
SHEET NO. 680 OF 718

FOR CITY OF HOUSTON USE ONLY

Plotted on: $DATE$ $TIME$ $USER$
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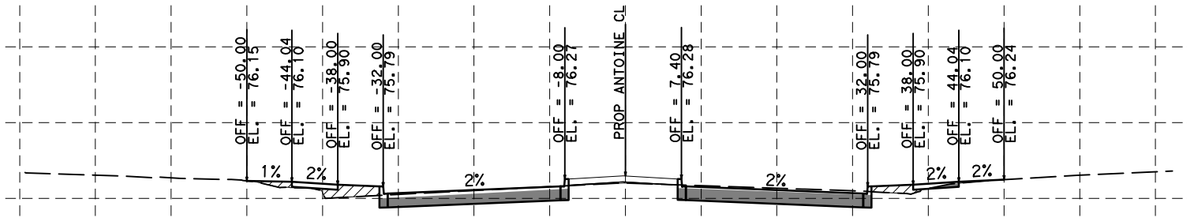
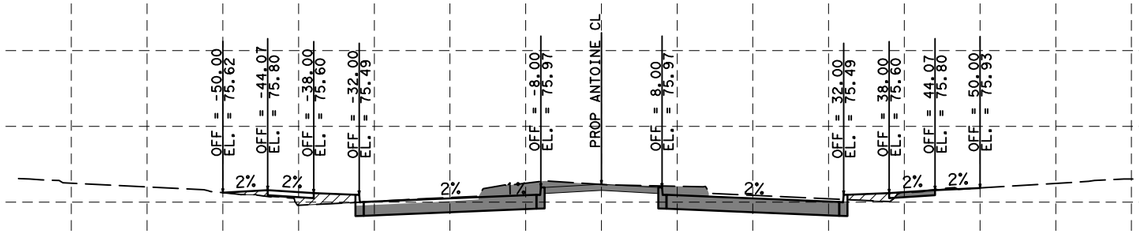
Plot Driver:$PLTDRVL$
Design Filename: $FILEL$



Sta. 194+00.0000 R1

EXCAVATION: 37.52 SF

EMBANKMENT: 10.27 SF



Sta. 193+00.0000 R1

EXCAVATION: 62.06 SF

EMBANKMENT: 8.79 SF

HORZ 0' 10' 20'
VERT 0' 1' 2'
SCALE IN FEET

LEGEND
EXCAVATION = XX SF
EMBANKMENT = XX SF

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED CROSS SECTIONS

SHEET 16 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAHA AYOUBH	
SHEET NO. 681 OF 718	

Plotted on: $DATE$ $TIME$ $USER$
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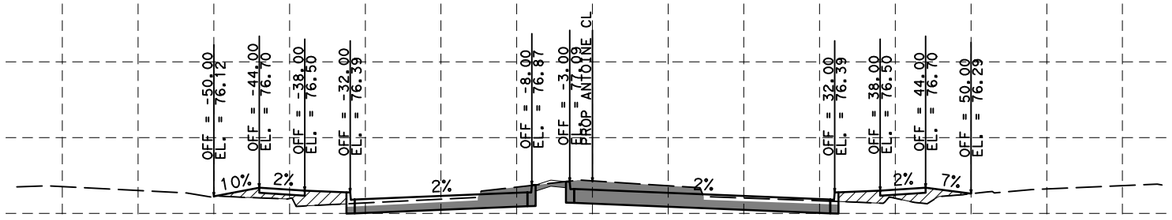
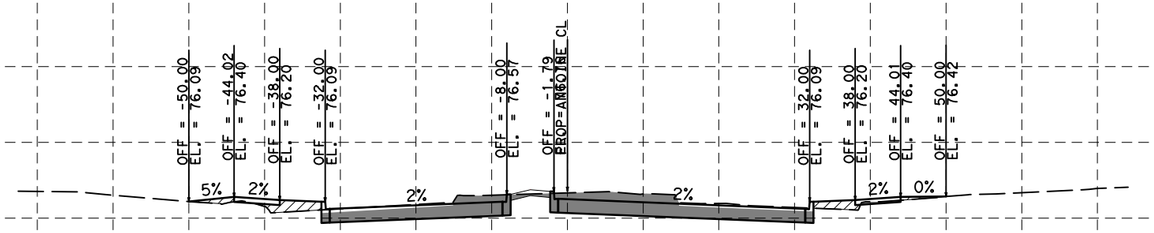
Plot Driver:$PLTDRVL$
Design Filename: $FILEL$



Sta. 196+00.0000 R1

EXCAVATION: 55.42 SF

EMBANKMENT: 18.21 SF



Sta. 195+00.0000 R1

EXCAVATION: 62.36 SF

EMBANKMENT: 10.05 SF

HORZ 0' 10' 20'
VERT 0' 1' 2'
SCALE IN FEET

LEGEND
EXCAVATION = XX SF
EMBANKMENT = XX SF

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

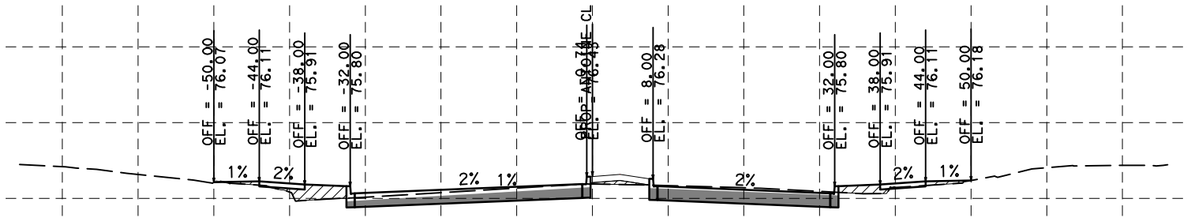
PROPOSED CROSS SECTIONS

SHEET 17 OF 39

WBS NUMBER
N-100030-0GEC-3
DRAWING SCALE
AS NOTED
CITY OF HOUSTON PM
ROWAIDAHA AYOUBH
SHEET NO. 682 OF 718

FOR CITY OF HOUSTON USE ONLY

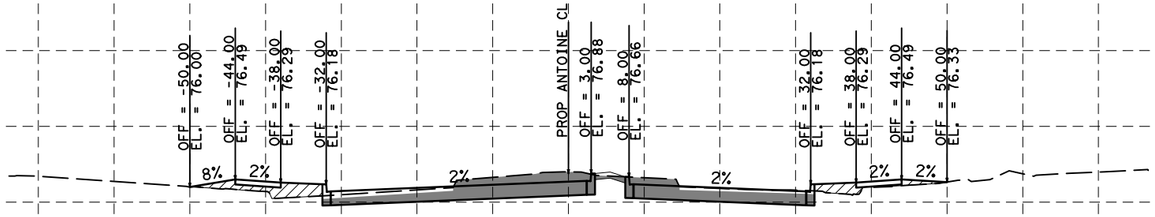
Plotted on: $DATE$ $TIME$ $USER$
Pen Table:$PENTBL$
Plot Driver:$PLTDRVL$
Design Filename: $FILEL$



EXCAVATION: 37.65 SF

EMBANKMENT: 12.76 SF

Sta. 198+00.0000 R1



EXCAVATION: 59.82 SF

EMBANKMENT: 14.83 SF

Sta. 197+00.0000 R1

HORZ 0' 10' 20'

VERT 0' 1' 2'

SCALE IN FEET

LEGEND

EXCAVATION = XX SF

EMBANKMENT = XX SF

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED CROSS SECTIONS

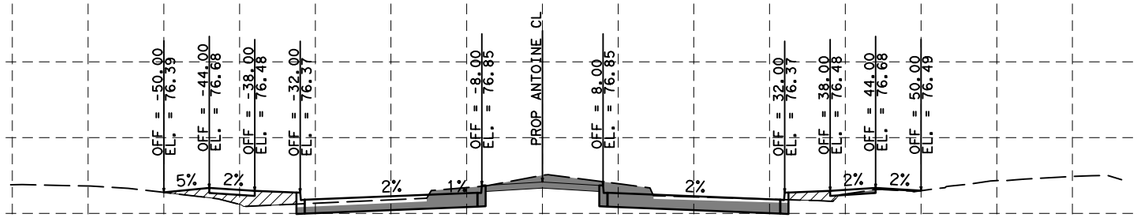
SHEET 18 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAHA AYOUBH	
SHEET NO. 683 OF 718	

Plotted on: $DATE$ $TIME$ $USER$

Pen Table:$PENTBL$
Plot Driver:$PLTDRVL$

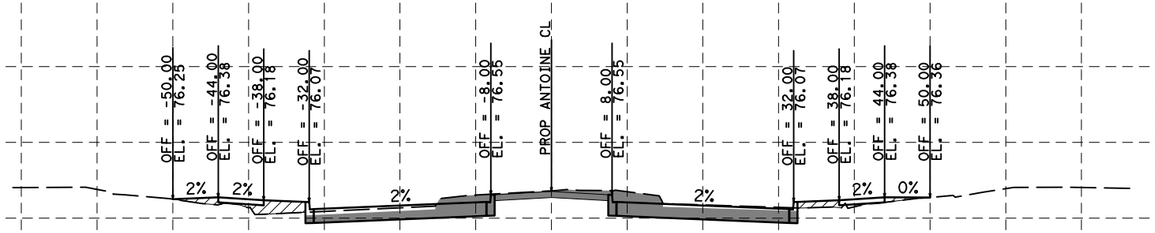
Design Filename: $FILEL$



EXCAVATION: 51.40 SF

EMBANKMENT: 13.79 SF

Sta. 200+00.0000 R1



EXCAVATION: 52.62 SF

EMBANKMENT: 11.16 SF

Sta. 199+00.0000 R1

HORZ 0' 10' 20'
VERT 0' 1' 2'
SCALE IN FEET

LEGEND
EXCAVATION = XX SF
EMBANKMENT = XX SF

NOTICE:
FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS SIGNATURE DOES NOT FULFILL YOUR OBLIGATION TO CALL 811

VERIFICATION OF PRIVATE UTILITY LINES

Date

CenterPoint Energy natural gas utilities shown. (Gas service lines are not shown). This signature not be used for conflict verification.

Signature valid for six months.

Date

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Approved for AT&T underground conduit facilities only. Signature Date valid for one year.

Texas Department of Transportation ©2023

DESIGN ENGINEER NAME
FCM ENGINEERS, P.C.
ADDRESS:
3300 S. Gessner Rd.
TEL No.: 713-706-4412
TX FIRM No.: F-13481

SURVEYED BY:
KUO & ASSOCIATES, INC.

INTERIM REVIEW ONLY
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FCM ENGINEERING
Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

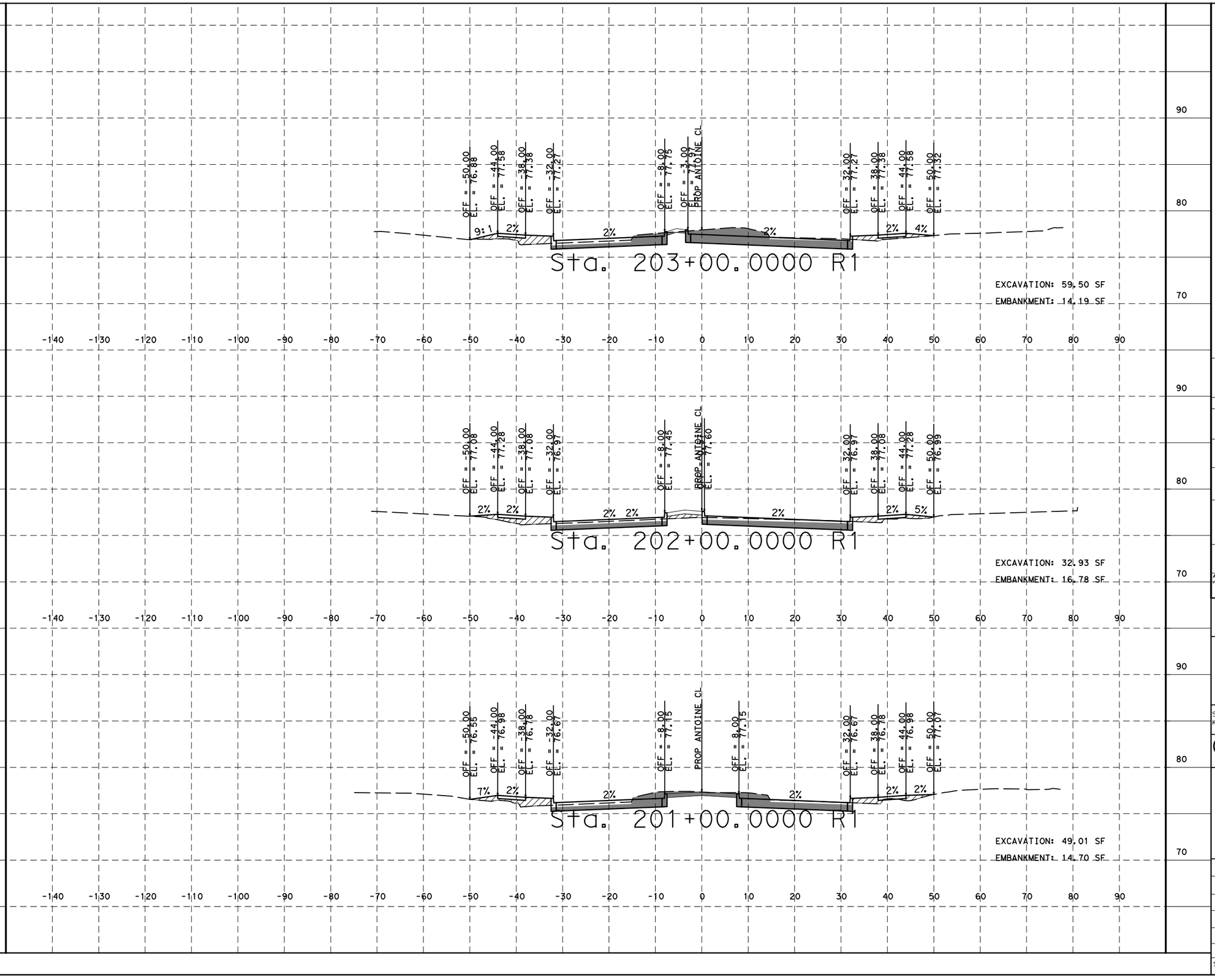
ANTOINE DRIVE

PROPOSED CROSS SECTIONS

SHEET 19 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAHA AYOUBH	
SHEET NO. 684 OF 718	

Plotted on: $DATE$ $TIME$ $USER$
Pen Table:$PENTBL$
Plot Driver:$PLTDRVL$
Design Filename: $FILEL$



HORZ 0' 10' 20'
VERT 0' 1' 2'
SCALE IN FEET

LEGEND
EXCAVATION = XX SF
EMBANKMENT = XX SF

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FCM ENGINEERS, P.C.
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TEL No.: 713-706-4412
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SURVEYED BY:
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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

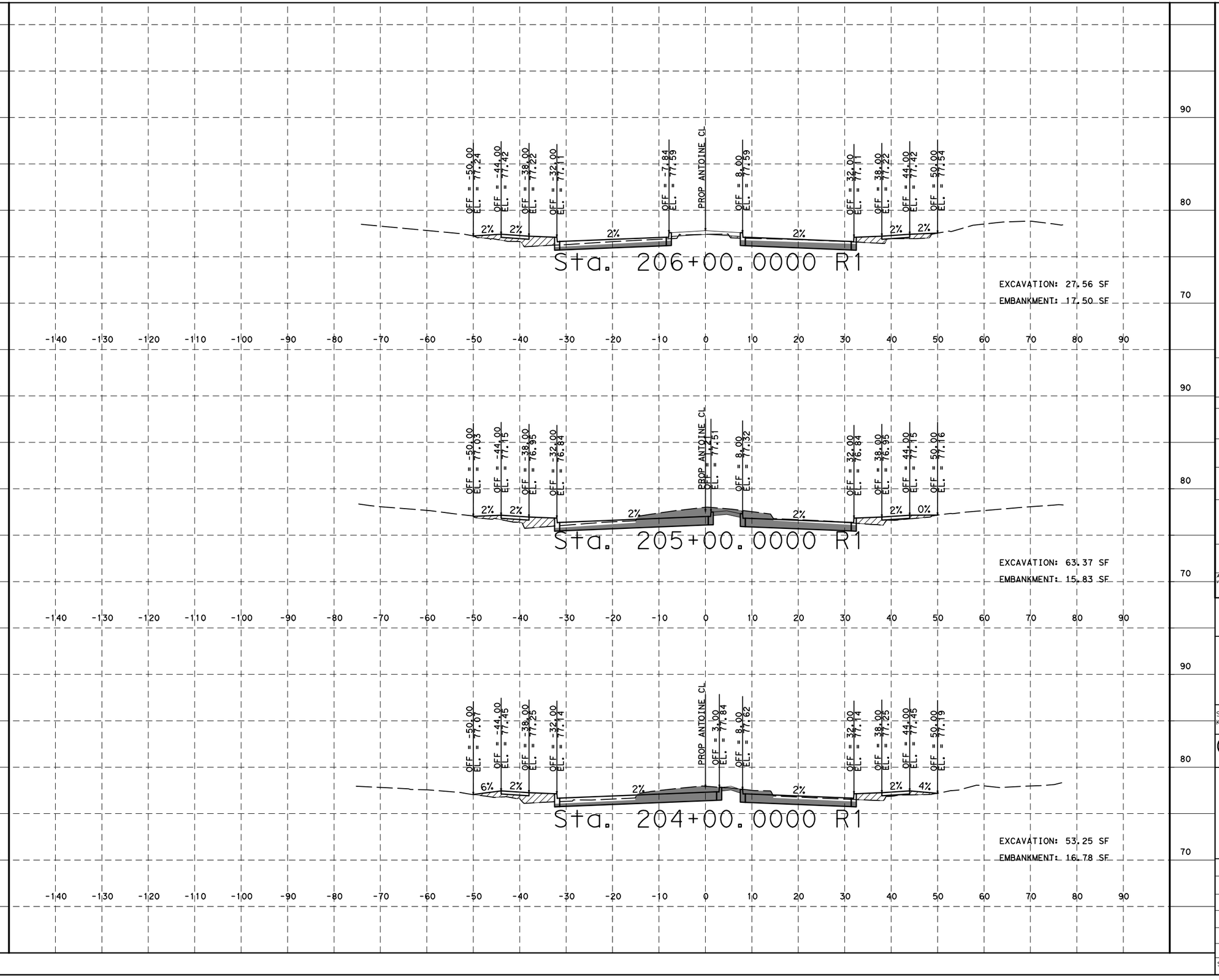
ANTOINE DRIVE

PROPOSED CROSS SECTIONS

SHEET 20 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAHA AYOUBH	
SHEET NO. 685 OF 718	

Plotted on: $DATE$ $TIME$ $USER$
Pen Table:$PENTBLS$
Plot Driver:$PLTDRVL$
Design Filename: $FILEL$



HORZ 0' 10' 20'
VERT 0' 1' 2'
SCALE IN FEET

LEGEND
EXCAVATION = XX SF
EMBANKMENT = XX SF

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

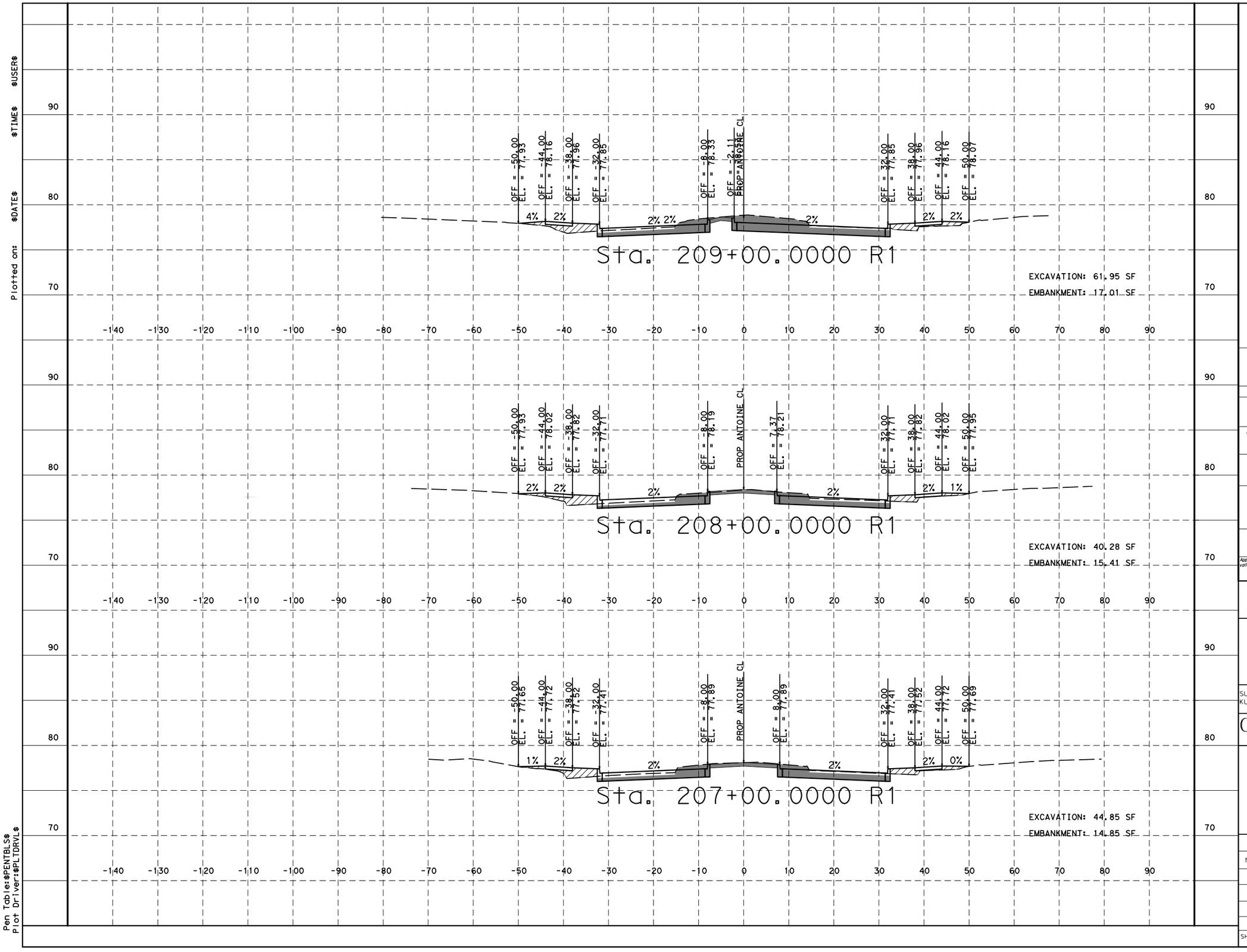
ANTOINE DRIVE

PROPOSED CROSS SECTIONS

SHEET 21 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAHA AYOUBH	
SHEET NO. 686 OF 718	

Plotted on: $DATE$ $TIME$ $USER$
Pen Table:$PENTBL$
Plot Driver:$PLTDRVL$
Design Filename: $FILEL$



HORZ 0' 10' 20'
VERT 0' 1' 2'
SCALE IN FEET

LEGEND
EXCAVATION = XX SF
EMBANKMENT = XX SF

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Date: 10/03/2025
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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

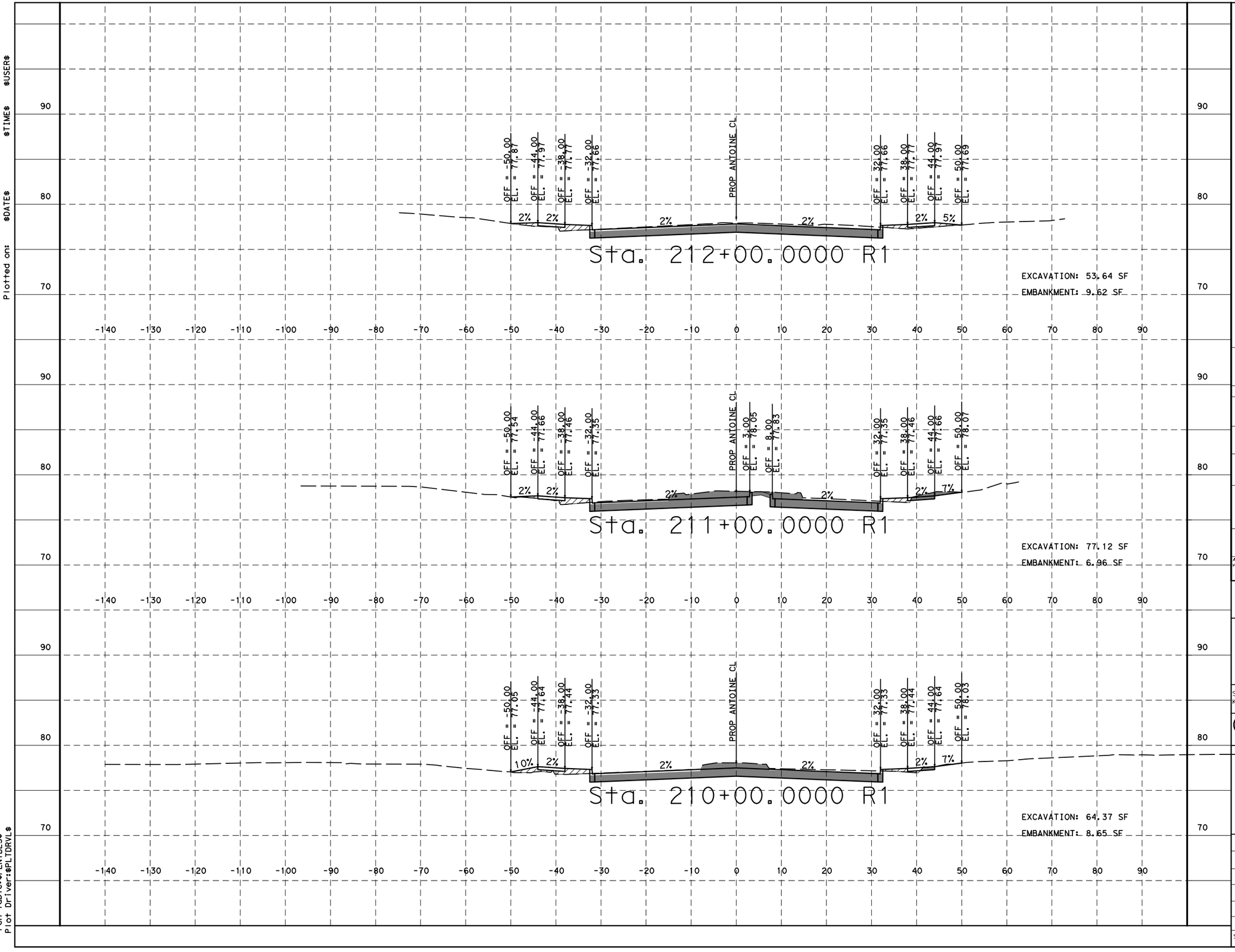
ANTOINE DRIVE

PROPOSED CROSS SECTIONS

SHEET 22 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAHA AYOUBH	
SHEET NO. 687 OF 718	

Plotted on: $DATE$ $TIME$ $USER$
Pen Table:$PENTBLS$
Plot Driver:$PLTDRVL$
Design Filename: $FILEL$



HORZ 0′ 10′ 20′
VERT 0′ 1′ 2′
SCALE IN FEET

LEGEND
EXCAVATION = XX SF
EMBANKMENT = XX SF

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TEL No.: 713-706-4412
TX FIRM No.: F-13481

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108363
10/03/2025
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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

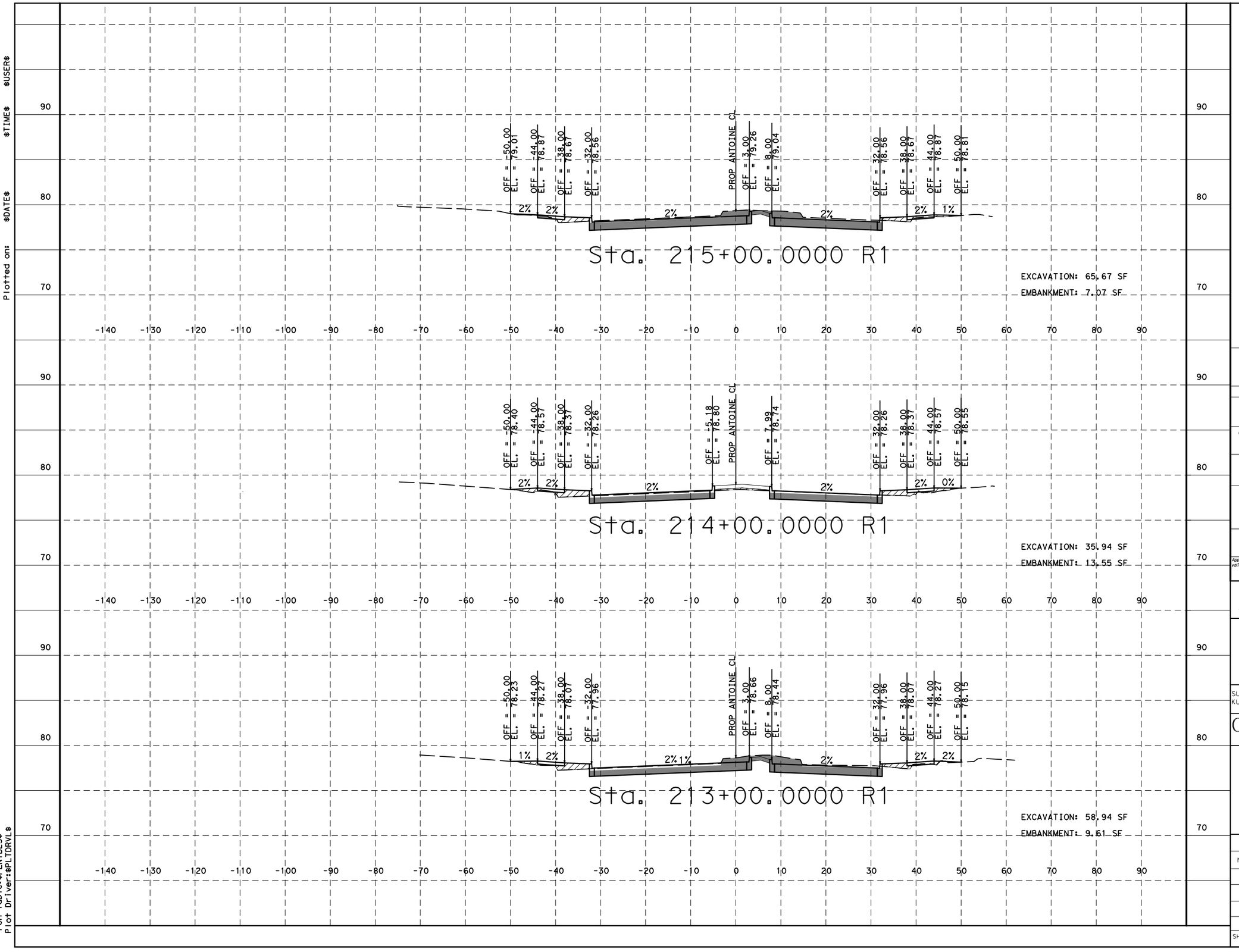
ANTOINE DRIVE

PROPOSED CROSS SECTIONS

SHEET 23 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAHA AYOUBH	
SHEET NO. 688 OF 718	

Plotted on: $DATE$ $TIME$ $USER$
Pen Tables:$PENTBLS$
Plot Driver:$PLTDRVL$
Design Filename: $FILEL$



HORZ 0' 10' 20'
VERT 0' 1' 2'
SCALE IN FEET

LEGEND
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EMBANKMENT = XX SF

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TEL No.: 713-706-4412
TX FIRM No.: F-13481

SURVEYED BY:
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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

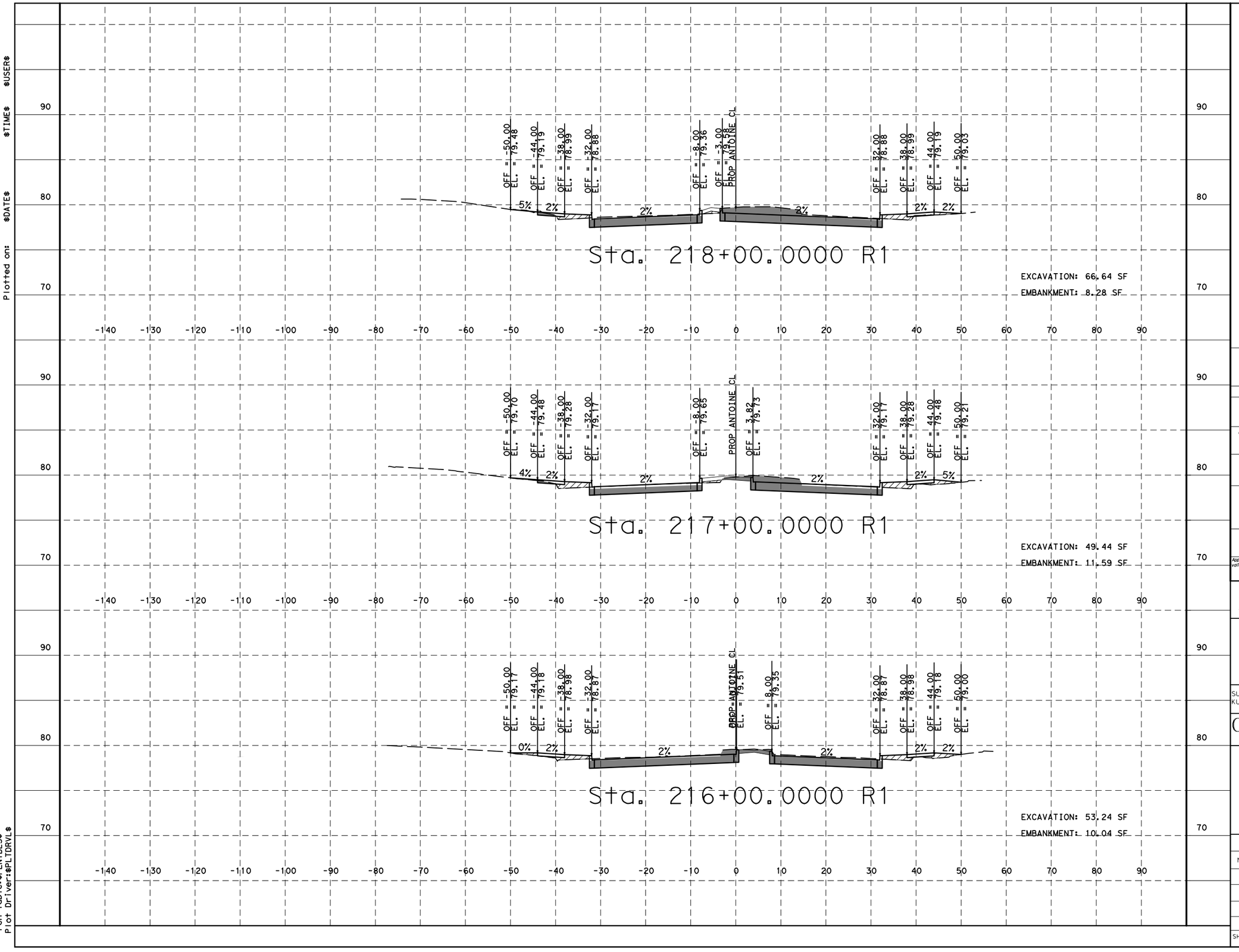
ANTOINE DRIVE

PROPOSED CROSS SECTIONS

SHEET 24 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAHA AYOUBH	
SHEET NO. 689 OF 718	

Plotted on: $DATE$ $TIME$ $USER$
Pen Table:$PENTBLS$
Plot Driver:$PLTDRVL$
Design Filename: $FILEL$



HORZ 0′ 10′ 20′
VERT 0′ 1′ 2′
SCALE IN FEET

LEGEND
EXCAVATION = XX SF
EMBANKMENT = XX SF

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DESIGN ENGINEER NAME
FCM ENGINEERS, P.C.
ADDRESS:
3300 S. Gessner Rd.
TEL No.: 713-706-4412
TX FIRM No.: F-13481

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108363
10/03/2025
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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

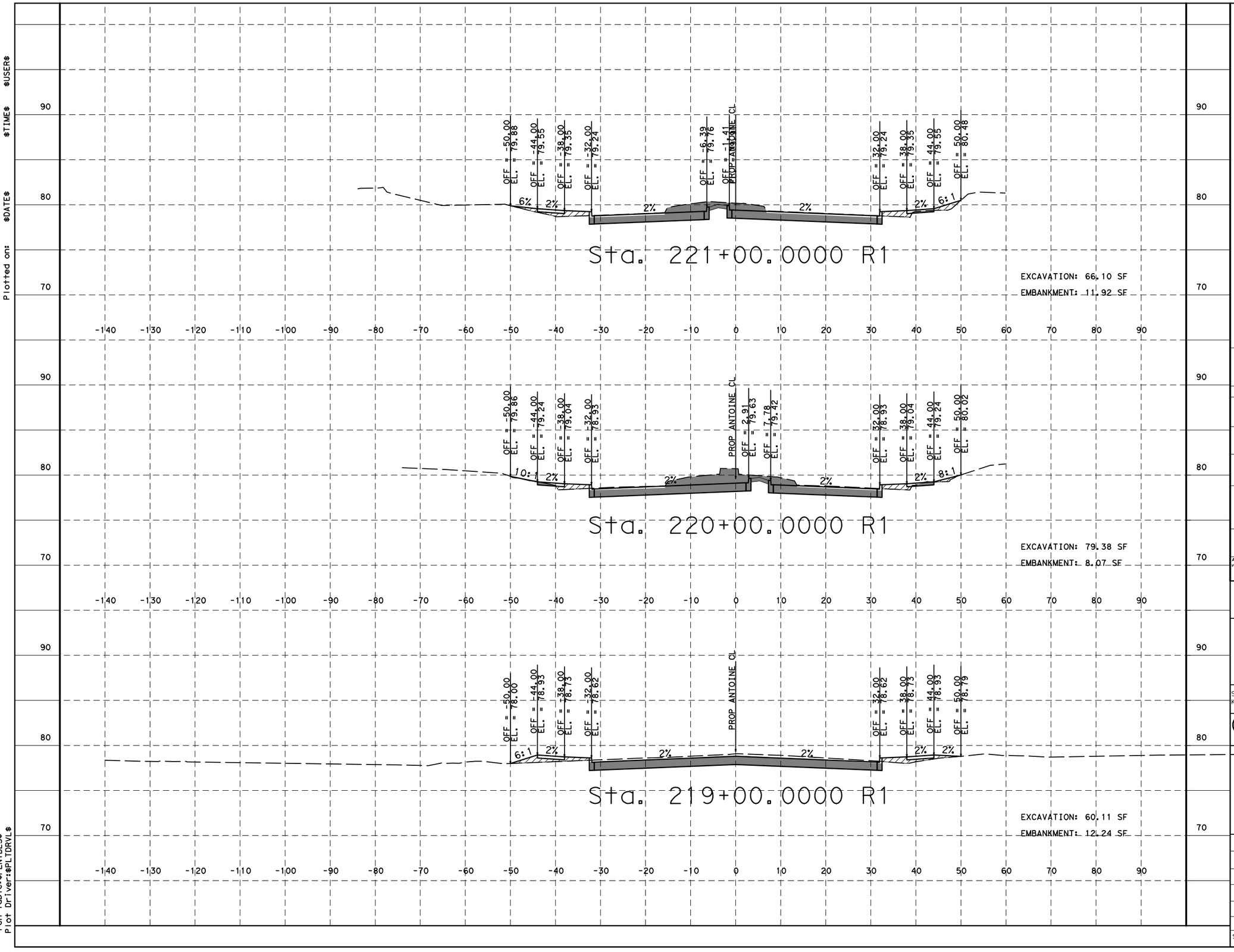
ANTOINE DRIVE

PROPOSED CROSS SECTIONS

SHEET 25 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAHA AYOUBH	
SHEET NO. 690 OF 718	

Plotted on: $DATE$ $TIME$ $USER$
Pen Table:$PENTBLS$
Plot Driver:$PLTDRVL$
Design Filename: $FILEL$



HORZ 0′ 10′ 20′
VERT 0′ 1′ 2′
SCALE IN FEET

LEGEND
EXCAVATION = XX SF
EMBANKMENT = XX SF

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108363
10/03/2025
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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

~~ANTOINE DRIVE~~

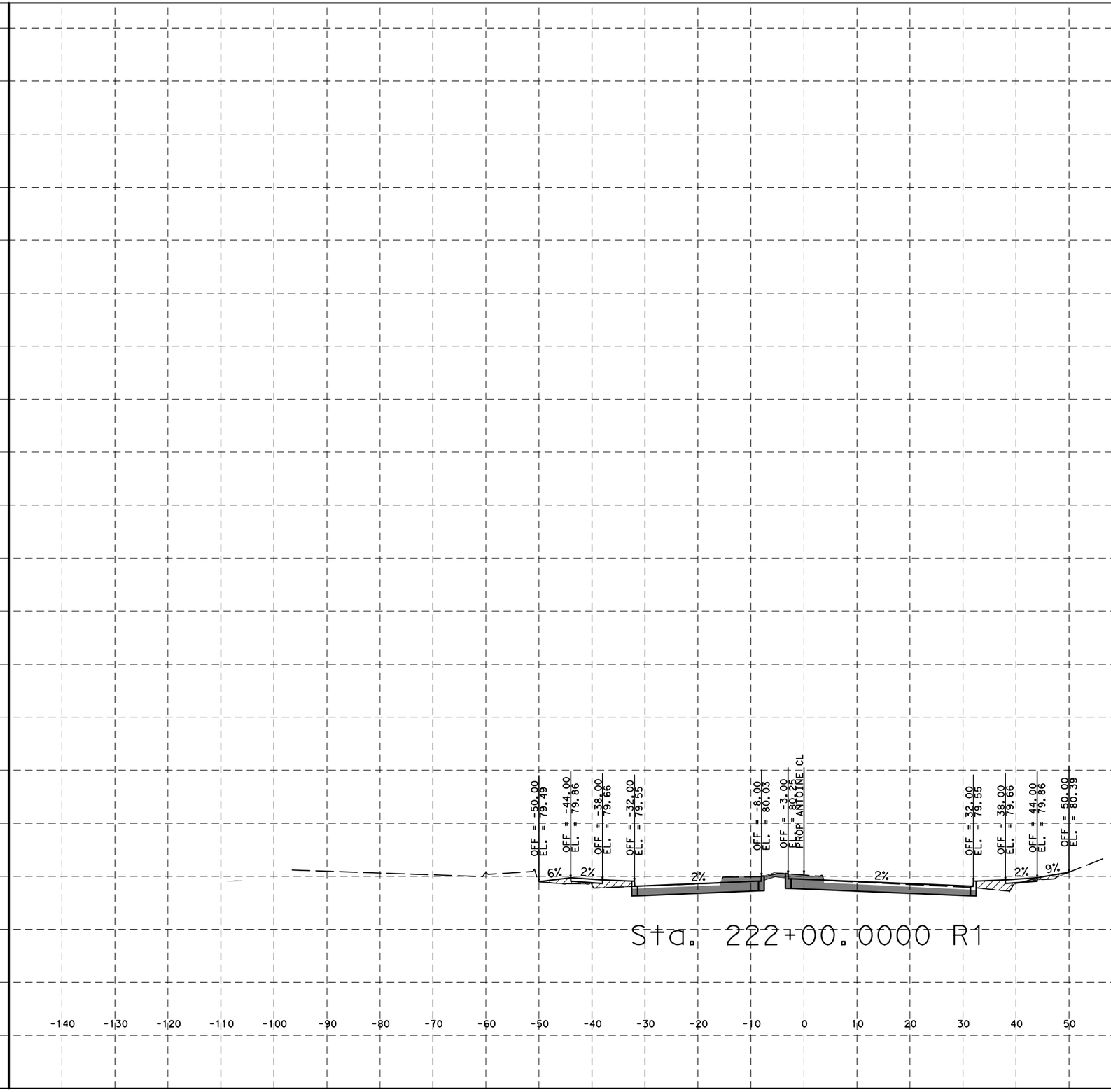
PROPOSED CROSS SECTIONS

SHEET 26 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAHA AYOUBH	
SHEET NO. 691 OF 718	

Plotted on: $DATE$ $TIME$ $USER$
Pen Table:$PENTBLS$
Plot Driver:$PLTDRVL$
Design Filename: $FILEL$

Plotted on: $DATE$ $TIME$ $USER$



Sta. 222+00.0000 R1

EXCAVATION: 51.70 SF

EMBANKMENT: 13.76 SF

HORZ 0′ 10′ 20′

VERT 0′ 1′ 2′

SCALE IN FEET

LEGEND

EXCAVATION = XX SF

EMBANKMENT = XX SF

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3300 S. Gessner Rd.
TEL No.: 713-706-4412
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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

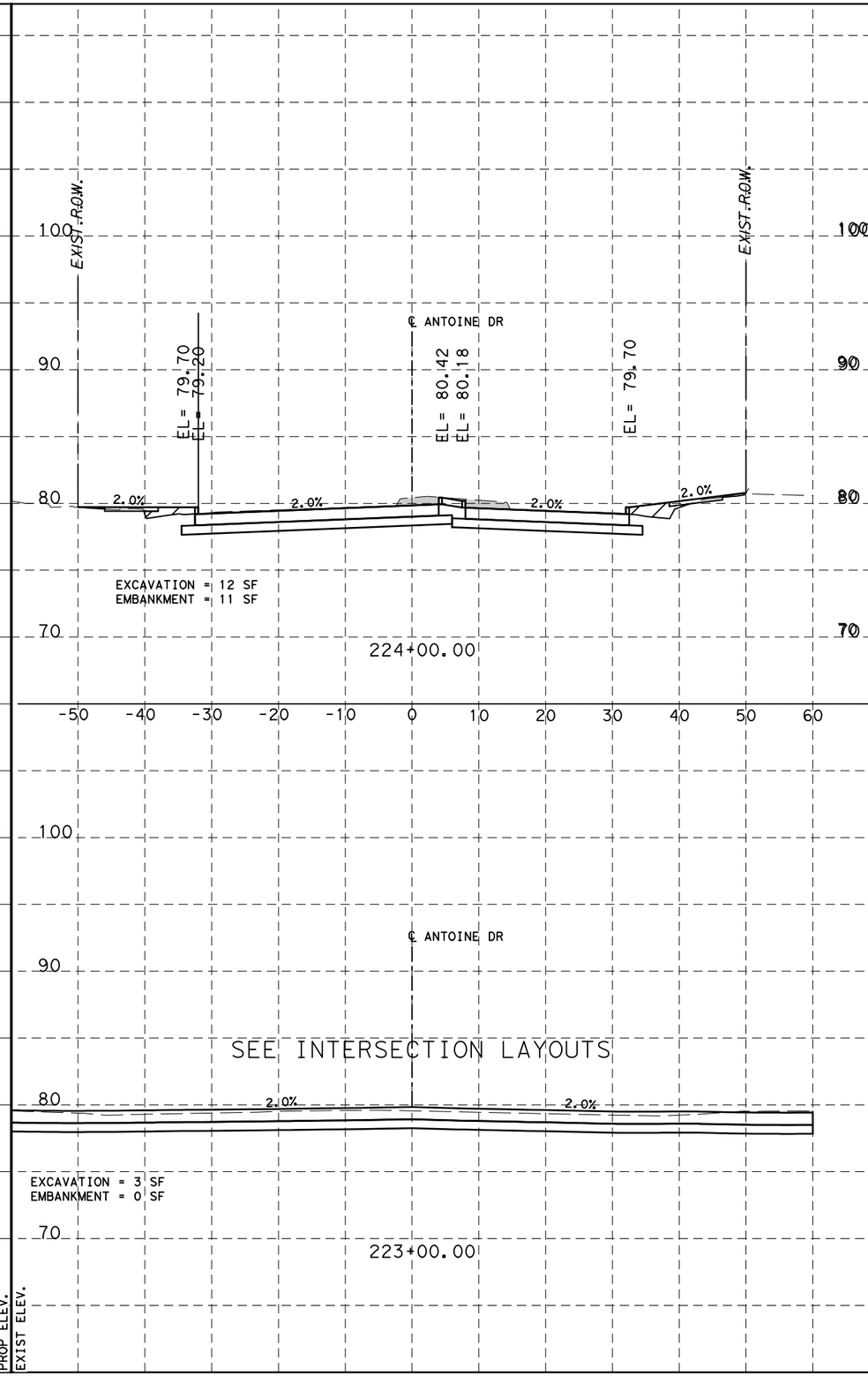
PROPOSED CROSS SECTIONS

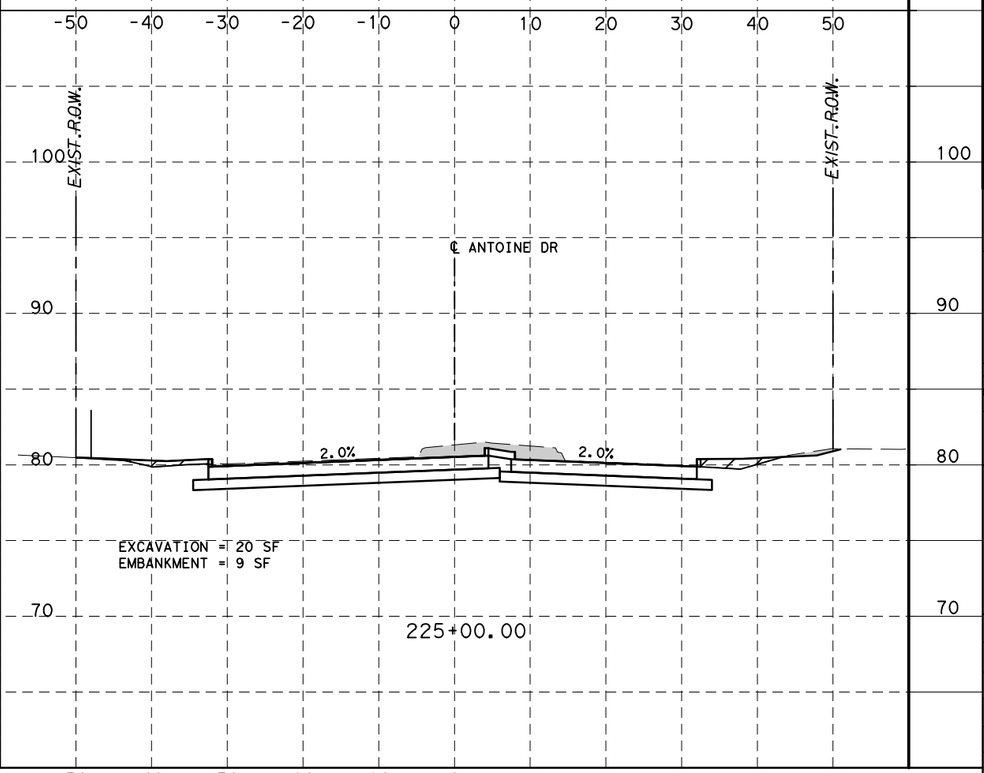
SHEET 27 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAHA AYOUBH	
SHEET NO. 692 OF 718	

Pen Table:$PENTBL$
Plot Driver:$PLTDRVL$

Design Filename: $FILEL$





LEGEND

EXCAVATION

EMBANKMENT

HORZ 0′ 10′ 20′

VERT 0′ 5′ 10′

SCALE IN FEET

Texas Department of Transportation ©2026

Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY. #400
HOUSTON, TX 77079

SURVEYED BY:
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KARAM QADDO
125611
10/24/2025
95% SUBMITTAL
GAUGE ENGINEERING
Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED CROSS SECTIONS

SHEET 28 OF 39

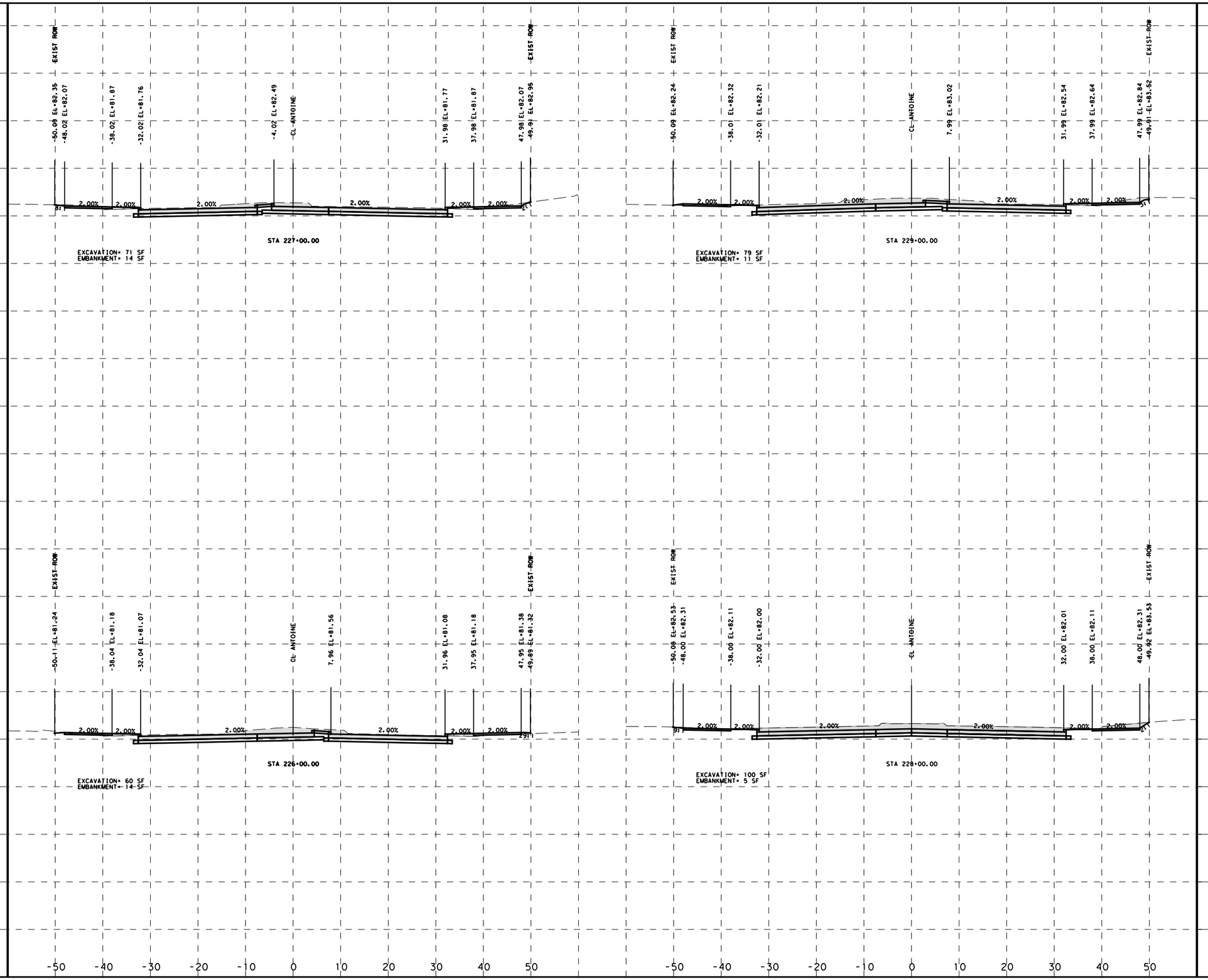
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 693 OF 718	

No.	DATE	REVISIONS	APP.

Plotted on: 10/24/2025 3:12:03 PM michael.guthrie

Pen Table: ANTOINE DR.tbl
Plot Driver: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Resource\Plot files\ANTOINE DR.pltcfg

Design Filename: P:\City of Houston\1100-Antoine-Dr\4-0-Production-Working\4-1-CAD\Geopak\DGN\X-SEG1_GULFBANK_XSEC_SHEETS.dgn



HORZ 0' 10' 20'
VERT 0' 10' 20'
SCALE IN FEET

LEGEND

EXCAVATION=XX SF

EMBANKMENT=XX SF

No.	DATE	REVISIONS	APP.

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VOGLER & SPENCER ENGINEERING
777 North Eldridge Parkway, Suite 500
Houston, Texas 77079
713-782-0042
www.vse-eng.com

SURVEYED BY:
KUO & ASSOCIATES, INC.

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JOEL OLSHEFSKI
131531
$DATE$
95% SUBMITTAL
VOGLER & SPENCER ENGINEERING
Texas Registered Engineering Firm F-468

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

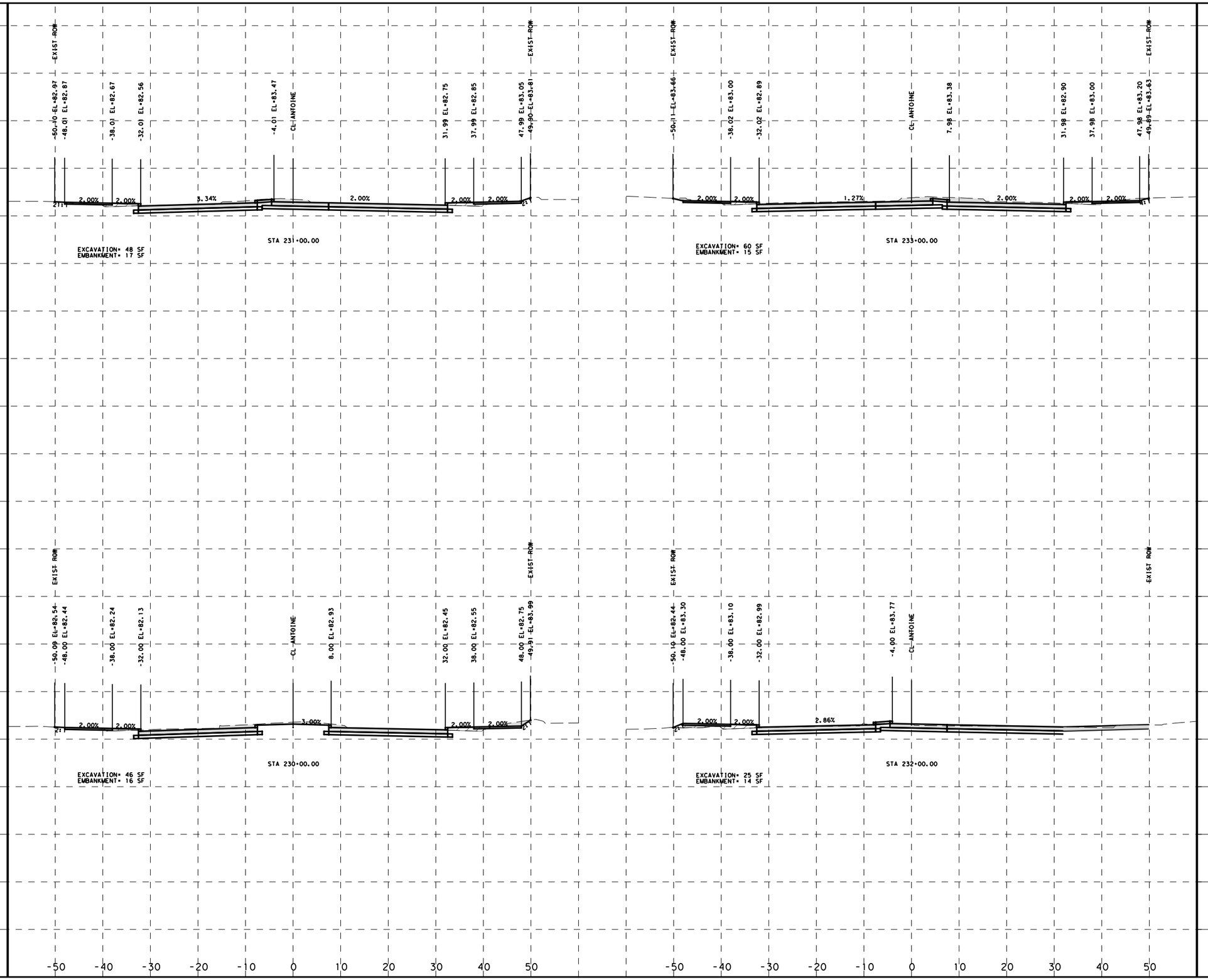
ANTOINE DRIVE

PROPOSED CROSS SECTION STA. 226+00 TO 229+00

SHEET 29 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 694 OF 718	

Plotted on: $DATE$ $TIME$ $USER$
Pen Table:$PENTBLS$
Plot Driver:$PLTDRVL$
Design Filename: $FILEL$



Plotted on: $TIME$ $USER$

Pen Table:$PENTBL$
Plot Driver:$PLTDRVL$

HORZ 0' 10' 20'
VERT 0' 10' 20'
SCALE IN FEET

LEGEND

EXCAVATION=XX SF
EMBANKMENT=XX SF

No.	DATE	REVISIONS	APP.

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777 North Eldridge Parkway, Suite 500
Houston, Texas 77079
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www.vse-eng.com

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$DATE$
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Texas Registered Engineering Firm F-468

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KUO & ASSOCIATES, INC.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

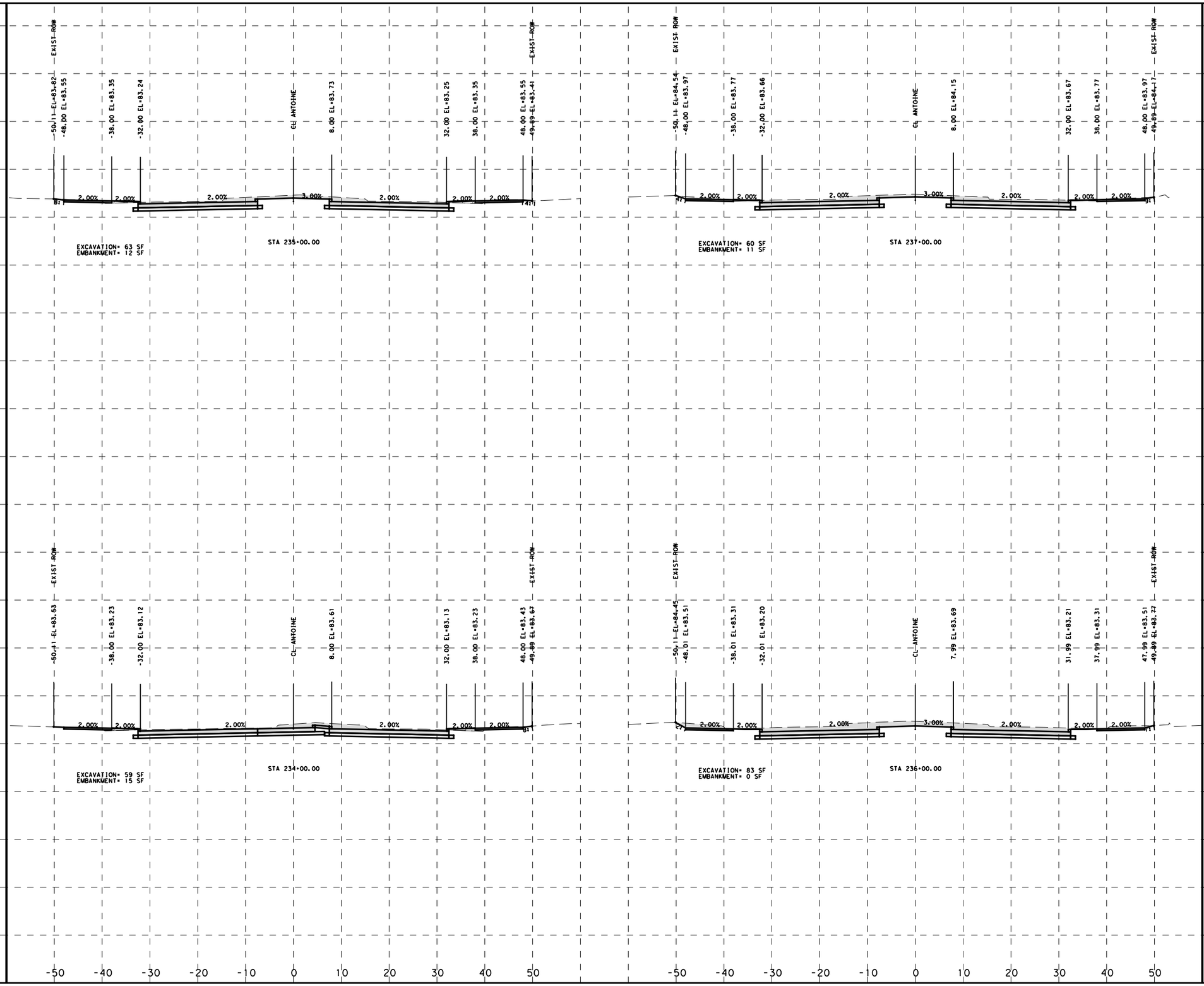
ANTOINE DRIVE

PROPOSED CROSS SECTION STA. 230+00 TO 233+00

SHEET 30 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 695 OF 718	

Design Filename: $FILEL$



HORZ 0' 10' 20'
VERT 0' 10' 20'
SCALE IN FEET

LEGEND

EXCAVATION=XX SF

EMBANKMENT=XX SF

No.	DATE	REVISIONS	APP.

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Houston, Texas 77079
713-782-0042
www.vse-eng.com

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131531
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Texas Registered Engineering Firm F-448

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED CROSS SECTION STA. 234+00 TO 237+00

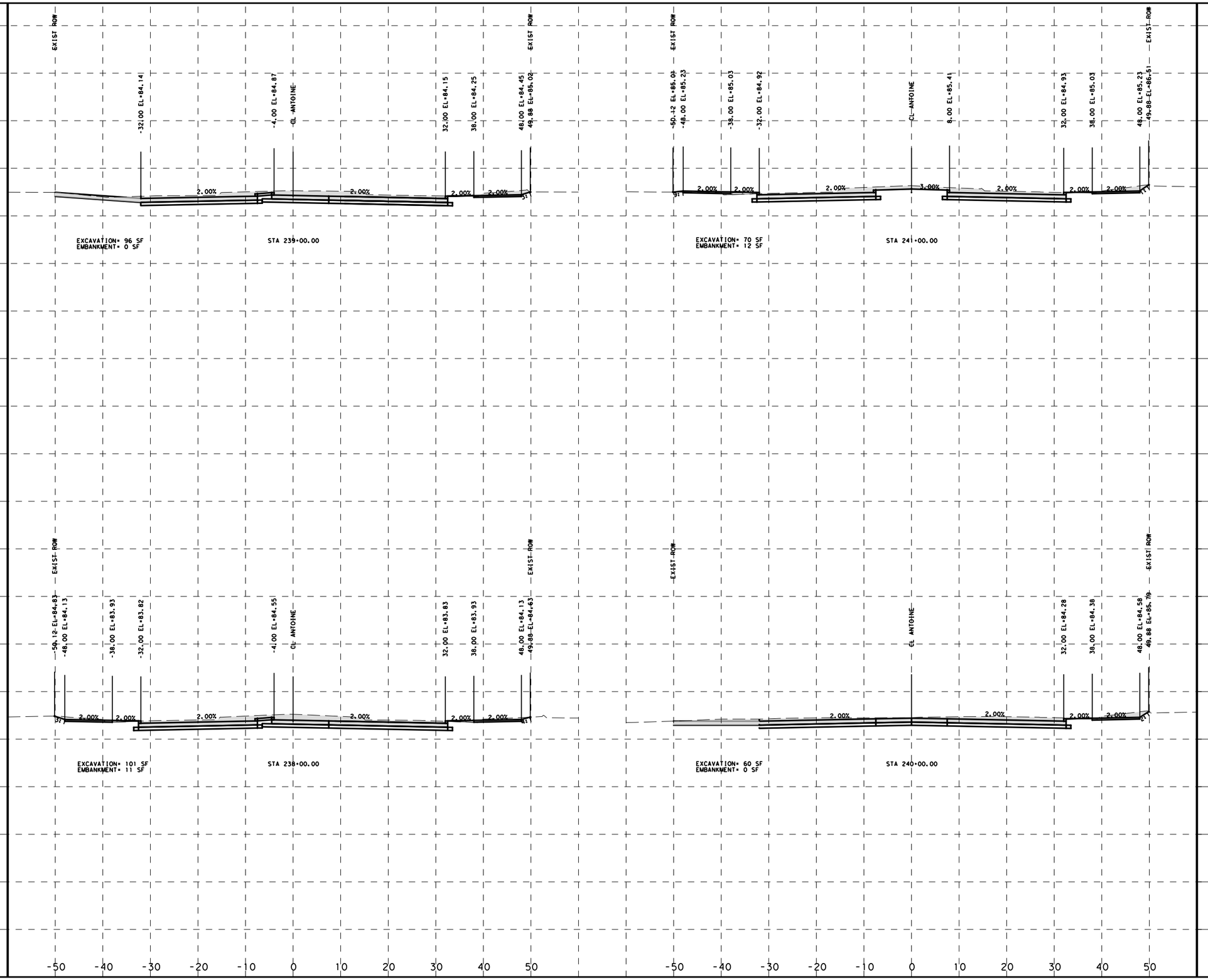
SHEET 31 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 696 OF 718	

Plotted on: $DATE$ $TIME$ $USER$

Pen Table:$PENTBL$
Plot Driver:$PLTDRVR$

Design Filename: $FILEL$



HORZ 0' 10' 20'
VERT 0' 10' 20'
SCALE IN FEET

LEGEND

EXCAVATION=XX SF

EMBANKMENT=XX SF

No.	DATE	REVISIONS	APP.

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HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED CROSS SECTION STA. 238+00 TO 241+00

SHEET 32 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 697 OF 718	

Plotted on: $TIME$ $USER$
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Plot Driver:$PLTDRVL$
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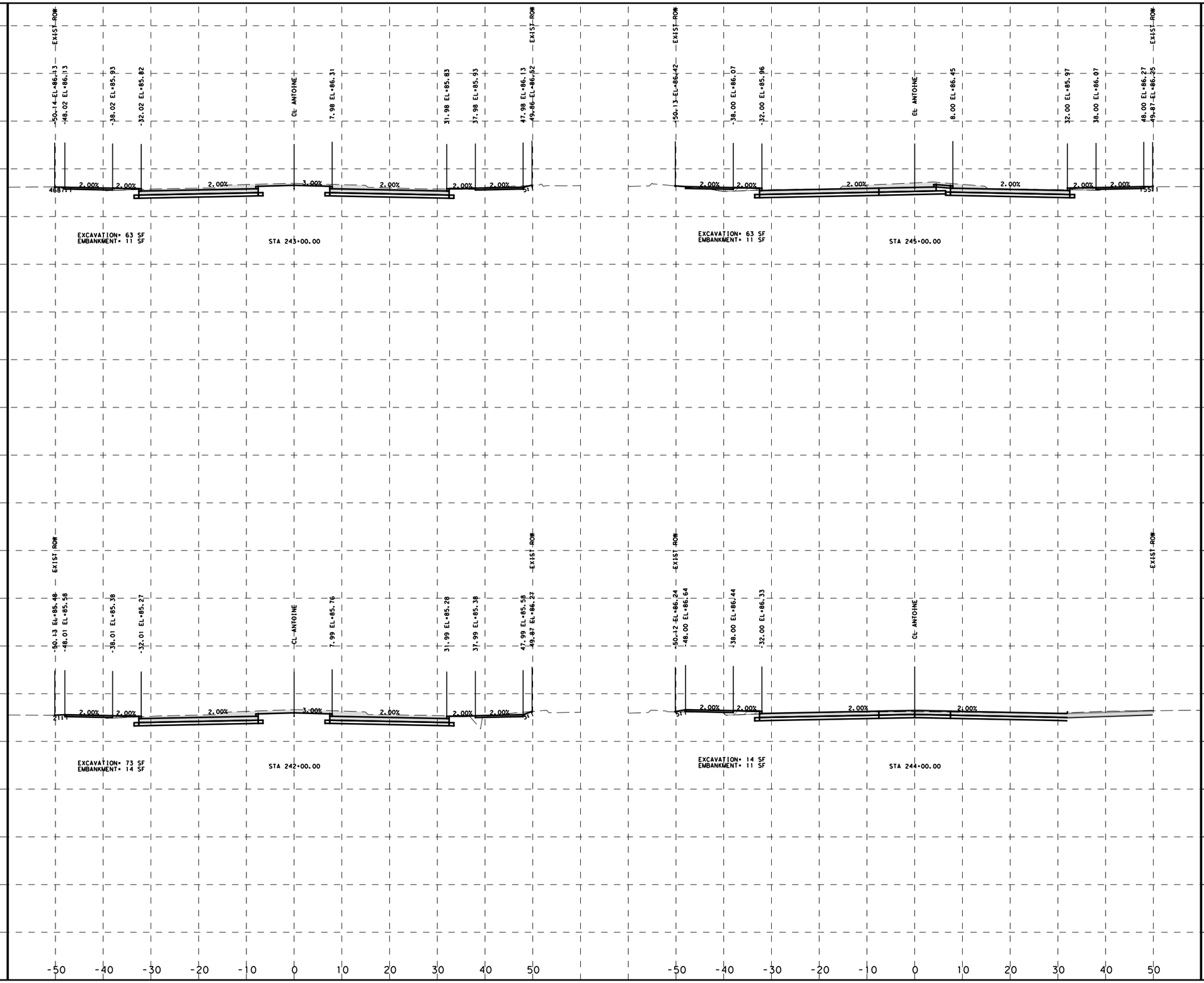

HORZ 0' 10' 20'
VERT 0' 10' 20'
SCALE IN FEET

LEGEND

EXCAVATION=XX SF

EMBANKMENT=XX SF

No.	DATE	REVISIONS	APP.

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HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED CROSS SECTION STA. 242+00 TO 245+00

SHEET 33 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 698 OF 718	

Plotted on: $DATE$ $TIME$ $USER$

Pen Table:$PENTBLS$
Plot Driver:$PLTDRVL$

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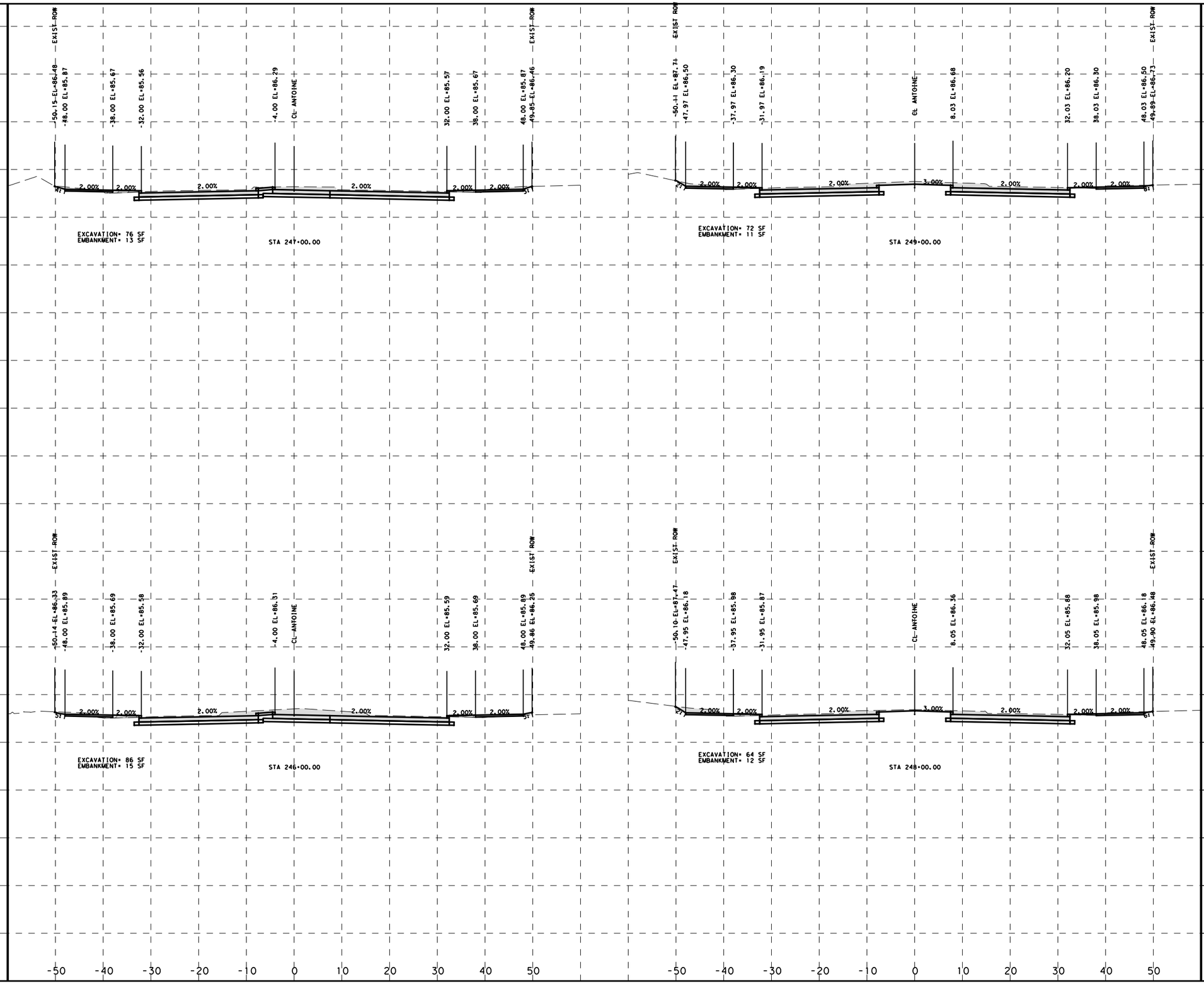

HORZ 0' 10' 20'
VERT 0' 10' 20'
SCALE IN FEET

LEGEND

EXCAVATION=XX SF

EMBANKMENT=XX SF

No.	DATE	REVISIONS	APP.

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HOUSTON PUBLIC WORKS

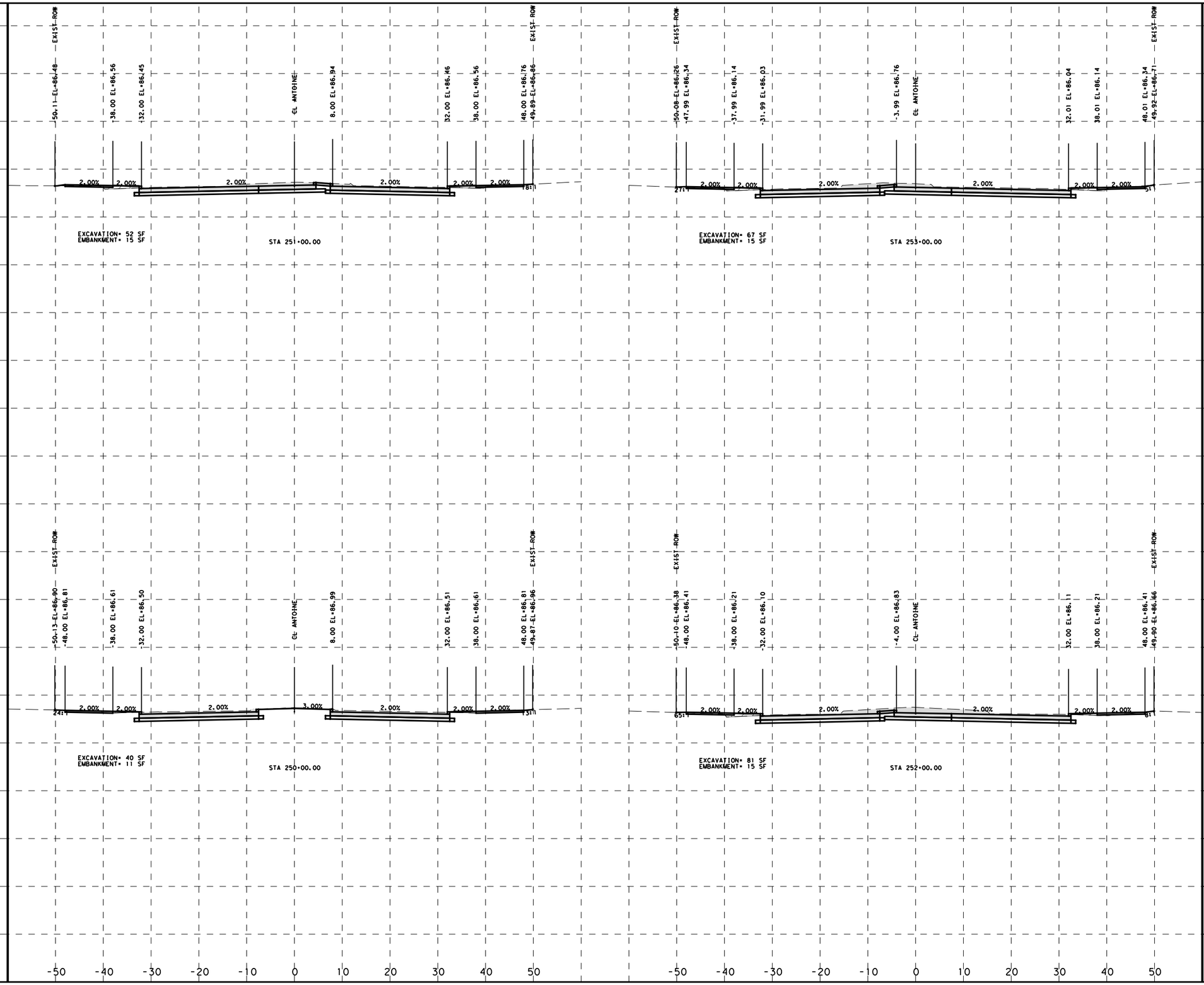
ANTOINE DRIVE

PROPOSED CROSS SECTION STA. 246+00 TO 249+00

SHEET 34 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 699 OF 718	

Plotted on: $DATE$ $TIME$ $USER$
Pen Table:$PENTBLS$
Plot Driver:$PLTDRVL$
Design Filename: $FILEL$



HORZ 0' 10' 20'
VERT 0' 10' 20'
SCALE IN FEET

LEGEND

EXCAVATION=XX SF

EMBANKMENT=XX SF

No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

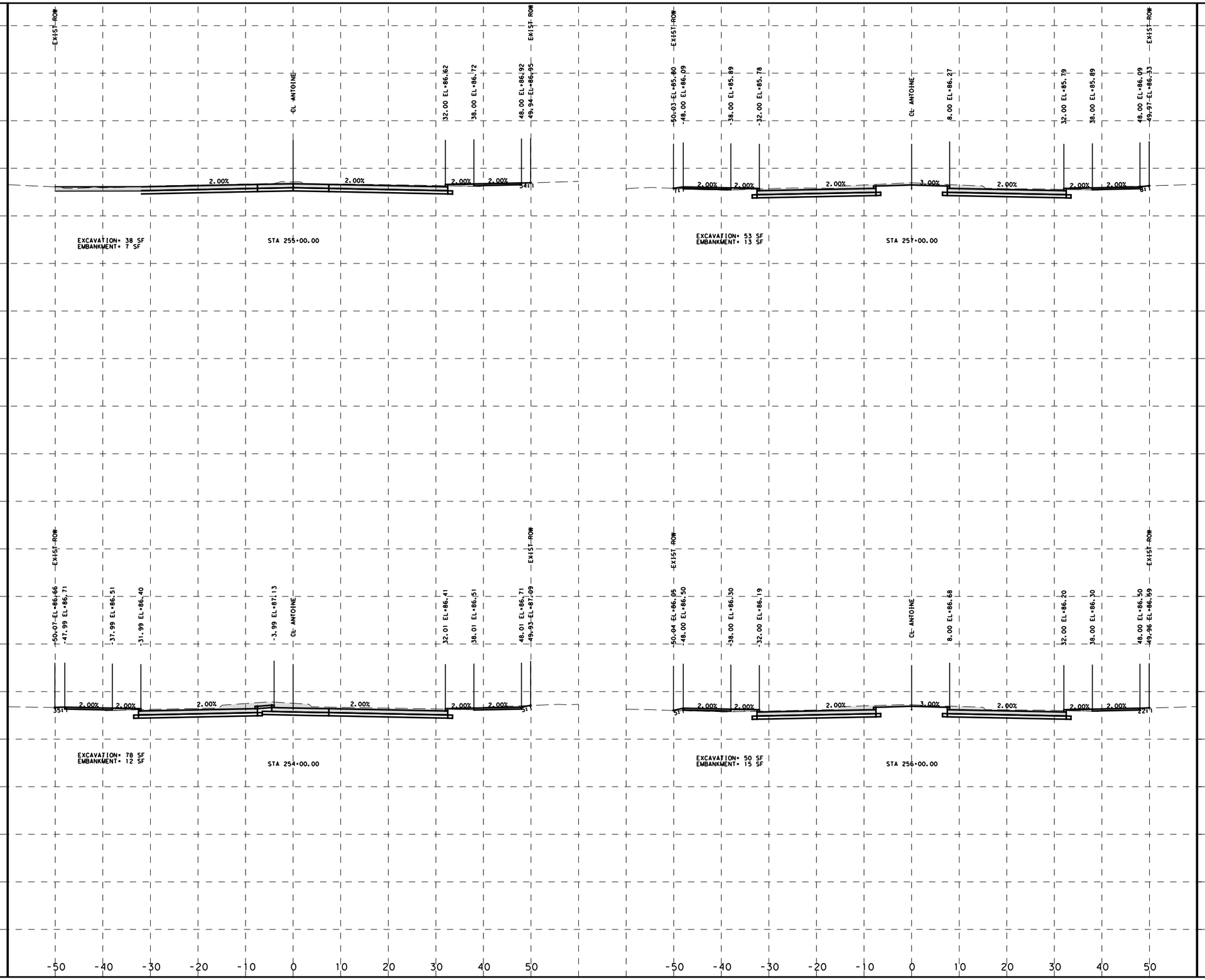
ANTOINE DRIVE

PROPOSED CROSS SECTION STA. 250+00 TO 253+00

SHEET 35 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 700 OF 718	

Plotted on: $TIME$ $USER$
Pen Table:$PENTBLS$
Plot Driver:$PLTDRVL$
Design Filename: $FILEL$



HORZ 0' 10' 20'
VERT 0' 10' 20'
SCALE IN FEET

LEGEND

EXCAVATION=XX SF

EMBANKMENT=XX SF

No.	DATE	REVISIONS	APP.

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HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED CROSS SECTION STA. 254+00 TO 257+00

SHEET 36 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 701 OF 718	

Plotted on: $DATE$ $TIME$ $USER$
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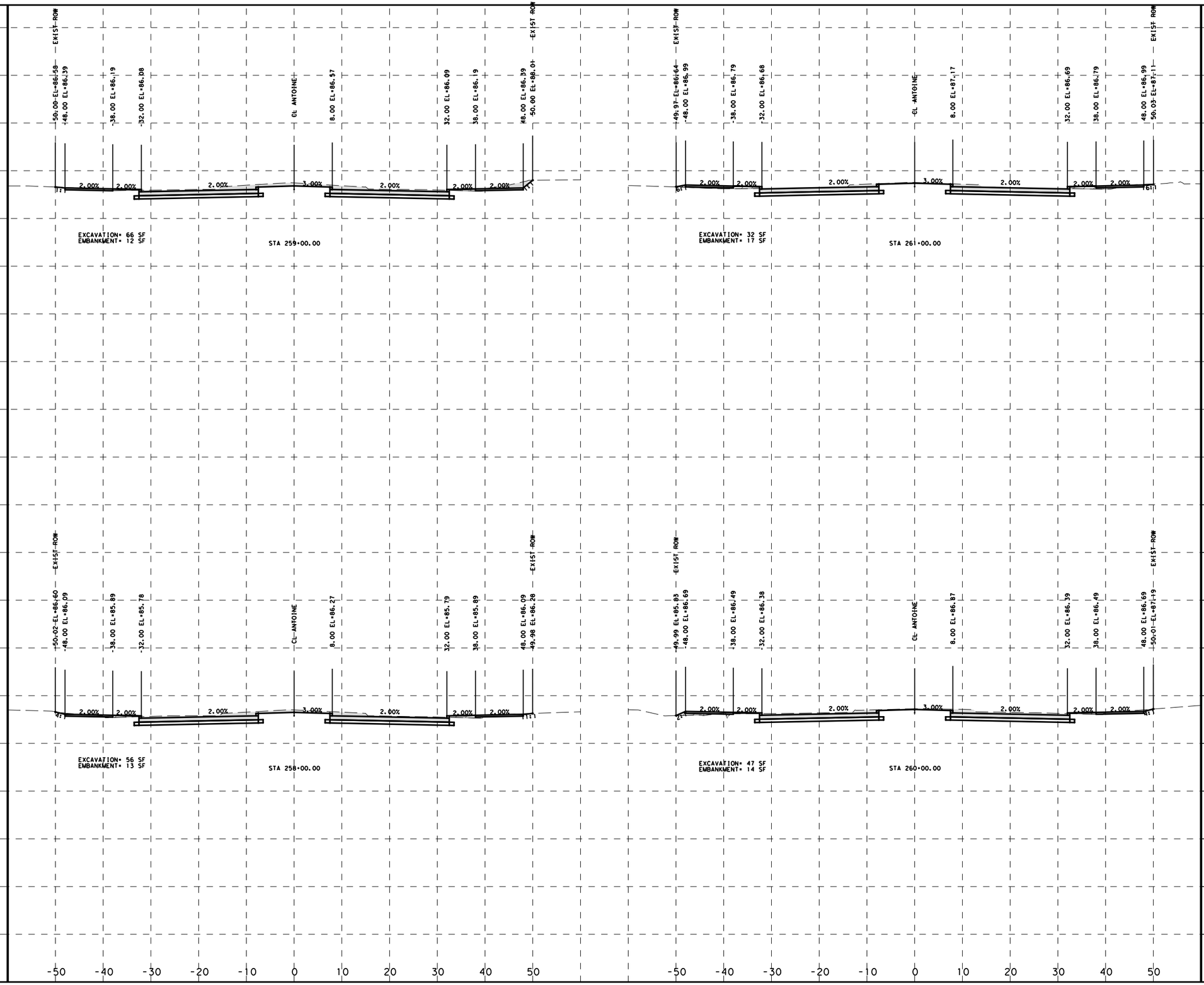

HORZ 0' 10' 20'
VERT 0' 10' 20'
SCALE IN FEET

LEGEND

EXCAVATION=XX SF

EMBANKMENT=XX SF

No.	DATE	REVISIONS	APP.

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HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED CROSS SECTION STA. 258+00 TO 261+00

SHEET 37 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 702 OF 718	

Plotted on: $TIME$ $USER$
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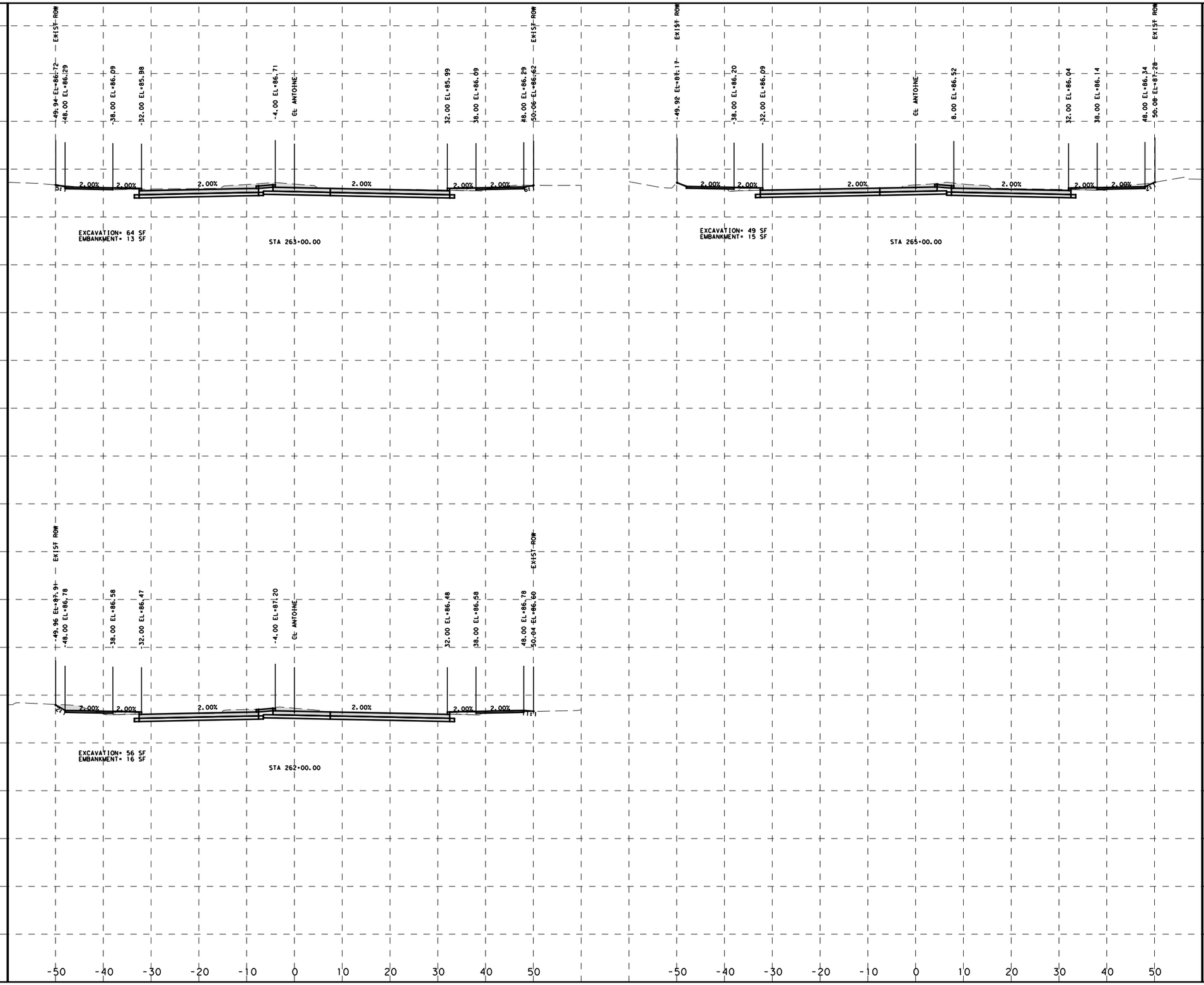

HORZ 0' 10' 20'
VERT 0' 10' 20'
SCALE IN FEET

LEGEND

EXCAVATION=XX SF

EMBANKMENT=XX SF

No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

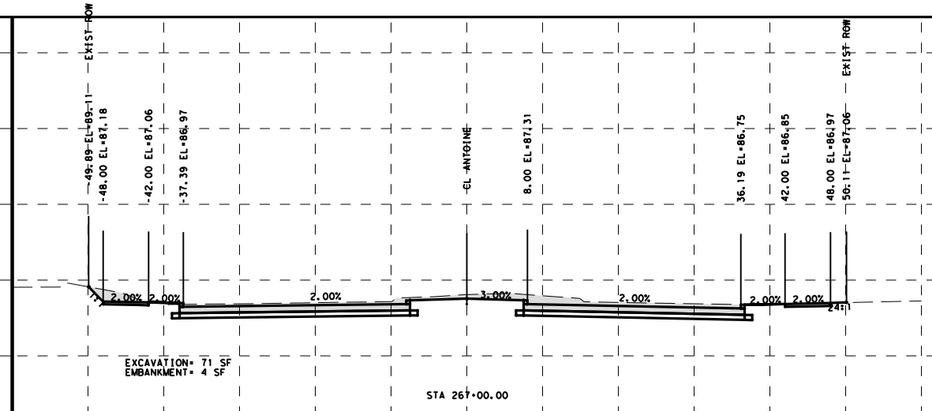
ANTOINE DRIVE

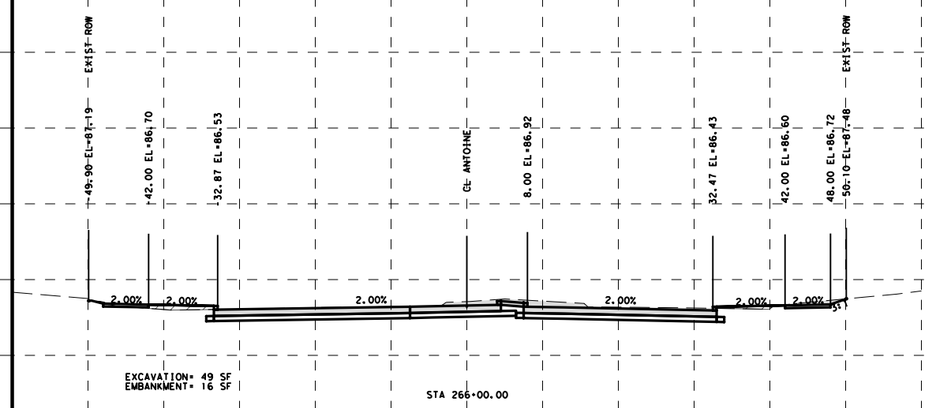
PROPOSED CROSS SECTION
STA. 262+00 TO 265+00

SHEET 38 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 703 OF 718	

Plotted on: $TIME$ $USER$
Pen Table:$PENTBLS$
Plot Driver:$PLTDRVL$
Design Filename: $FILEL$





HORZ 0' 10' 20'
VERT 0' 10' 20'
SCALE IN FEET

LEGEND

EXCAVATION=XX SF

EMBANKMENT=XX SF

No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

PROPOSED CROSS SECTION
STA. 266+00 TO 267+00

SHEET 39 OF 39

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 704 OF 718	

Plotted on: $TIME$ $USER$
$DATE$
Pen Table:$PENTBLS$
Plot Driver:$PLTDRVL$
Design Filename: $FILEL$

LOG OF BORING B-01

PROJECT: Antoine Paving and Drainage

WBS NO.: N-100030-0001-3

LOCATION: N 13887206.112; E 3086171.392
Antoine Drive

COMPLETION DEPTH: 25 FT

SURFACE ELEVATION: 78.5 FT

DATE: 6/17/2021

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 22 FT
WET ROTARY: 22 TO 25 FT

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0			6 inches of concrete							
				4 inches of base material				16	49	16	33
75				SANDY LEAN CLAY (CL), stiff to hard, gray, with calcareous nodules		67		16	33	14	19
	5							15	47	17	30
				- gravel 6'-8'				16			
▼ 70				SANDY FAT CLAY (CH), stiff, light gray, with sand seams		56		22	50	16	34
	10			SANDY LEAN CLAY (CL), very soft, gray, with silt			105	19			
65				- silt materials 12'-14'				21			
▽	15						116	23			
				FAT CLAY WITH SAND (CH), hard, gray				21			
60						84		17	50	17	33
▽	20										
55				-with gravel 23'-25'				16			
	25										

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT 22.0 FT. DURING DRILLING; AFTER 15.0 MIN. AT 16.0 FT.
▼ WATER DEPTH AT 8.5 FT., HOLE OPEN TO 25.0 FT. ON 7/21/2021

Drilled By: ETD Logged By: Frank

Kenall Inc

Plate No. A-1

LOG OF BORING B-02

PROJECT: Antoine Paving and Drainage

WBS NO.: N-100030-0001-3

LOCATION: N 13886732.747; E 3086163.845
Antoine Drive

COMPLETION DEPTH: 25 FT

SURFACE ELEVATION: 78.0 FT

DATE: 6/18/2021

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 25 FT
WET ROTARY: TO FT

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0			6.5 inches of concrete							
				6 inches of base material				17	47	13	34
75				LEAN CLAY WITH SAND (CL), stiff to hard, gray				17			
	5					77		16	41	12	29
70								17			
	10							32			
65								15			
	15					83		16			
								15	43	16	27
60				LEAN CLAY (CL), very stiff to hard, gray		95	116	17			
	20							21			
▽ 55				-with sand 23'-25'			111	21	44	15	29
	25										

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT 24.0 FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 25.0 FT. ON

Drilled By: ETD Logged By: Frank

Kenall Inc

Plate No. A-2

Texas Department of Transportation
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ADDRESS:
3300 S. Gessner Rd.
TEL.No.: 713-706-4412

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Texas Registered Engineering Firm F-13481

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

BORING LOGS

SHEET 1 OF 13

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-OGEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 705 OF 718	

Plotted on: 10/23/2025 2:21:53 PM GEO
Pen Table: ANTOINE DR.tbl
Plot Driver: Y:\2017012 Antoine North Paving and Drainage\MicroStation\90% SET-CAD DESIGN FILES\Resource Files\ANTOINE DR.pltcfg
Design Filename: Y:\2017012 Antoine North Paving and Drainage\MicroStation\95% SET-CAD DESIGN FILES _03_07_2025\P&P Sheets\95% BOR_LOG SHEETS PDFs\001-BORING SHT.dgn

LOG OF BORING B-03

PROJECT: Antoine Paving and Drainage

WBS NO.: N-100030-0001-3

LOCATION: N 13886299.861; E 3086212.576
Antoine Drive

COMPLETION DEPTH: 25 FT

SURFACE ELEVATION: 77.6 FT

DATE: 6/17/2021

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 25 FT
WET ROTARY: TO FT

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0			6 inches of concrete							
				4 inches of base material							
75				SANDY LEAN CLAY (CL), stiff to hard, gray, with gravel				14			
	5							15			
								19			
70				FAT CLAY WITH SAND (CH), very stiff to hard, gray			115	16	56	16	40
	10							21			
							115	17	56	20	36
65								16			
	15			- calcareous nodules 14'-16'				16			
60								18			
	20			SILTY CLAY (CL-ML), very stiff, gray and brown				20			
55											
	25							22	26	20	6

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 25.0 FT. ON

Drilled By: ETD Logged By: Frank

Kenall Inc

Plate No. A-3

LOG OF BORING B-04

PROJECT: Antoine Paving and Drainage

WBS NO.: N-100030-0001-3

LOCATION: N 13885778.3; E 3086195.05
Antoine Drive

COMPLETION DEPTH: 25 FT

SURFACE ELEVATION: 76.4 FT

DATE: 6/18/2021

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 23 FT
WET ROTARY: 23 TO 25 FT

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0			6.5 inches of concrete							
				4 inches of base material							
75				SANDY LEAN CLAY (CL), stiff to hard, gray				15	38	15	23
	5							14			
								17			
70				-with grvael and calcareous nodules 6'-10'				13			
▼	10						116	15			
								17	36	14	22
65								16			
▽	15							17			
60								18			
	20							22			
55											
▽	25			-with silt and sand 23'-25'			109	19	45	16	29

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT 23.0 FT. DURING DRILLING; AFTER 15.0 MIN. AT 15.5 FT.
▼ WATER DEPTH AT 9.0 FT., HOLE OPEN TO 25.0 FT. ON 7/21/2021

Drilled By: ETD Logged By: Frank

Kenall Inc

Plate No. A-4

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TEL.No.: 713-706-4412

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

BORING LOGS

SHEET 2 OF 13

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 706 OF 718	

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Design Filename: Y:\2017012 Antoine North Paving and Drainage\MicroStation\95% SET-CAD DESIGN FILES_03_07_2025\P&P Sheets\95% BOR_LOG SHEETS PDFs\002-BORING SHT.dgn
Pen Table: ANTOINE DR.tbl
Plot Driver: Y:\2017012 Antoine North Paving and Drainage\MicroStation\90% SET-CAD DESIGN FILES\Resource Files\ANTOINE DR.pltcfg

LOG OF BORING B-05

PROJECT: Antoine Paving and Drainage

WBS NO.: N-100030-0001-3

LOCATION: N 13885424.232; E 3086253.271
Antoine Drive

COMPLETION DEPTH: 25 FT

SURFACE ELEVATION: 76.0 FT

DATE: 6/17/2021

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 22 FT
WET ROTARY: 22 TO 25 FT

ELEVATION, FT	DEPTH, FT	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0	6 inches of concrete 4 inches of base material				16			
75		SANDY LEAN CLAY (CL), very stiff to hard, gray, with calcareous nodules				17	45	14	31
	5					19			
70						16			
	10	FAT CLAY (CH), stiff to very stiff to hard, light gray, with sand seams		95		21	51	16	35
65					88	34			
	15	-with silt material 14'-16'				21			
60						17			
	20					18			
55				94	112	18	66	22	44
▽		-with sand 23'-25'							
	25					28			

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT 22.0 FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 25.0 FT. ON

Drilled By: ETD Logged By: Frank

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Plate No. A-5

LOG OF BORING B-06

PROJECT: Antoine Paving and Drainage

WBS NO.: N-100030-0001-3

LOCATION: N 13884959.322; E 3086234.602
Antoine Drive

COMPLETION DEPTH: 25 FT

SURFACE ELEVATION: 75.8 FT

DATE: 6/18/2021

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 25 FT
WET ROTARY: TO FT

ELEVATION, FT	DEPTH, FT	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0	5.5 inches of concrete 3 inches of base material				11			
75		FAT CLAT WITH SAND (CH), stiff to hard, gray, with calcareous nodules				15			
	5			74		14	60	14	46
70						19			
	10					15			
65						19			
	15	FAT CLAY (CH), very stiff to hard, gray, with Calcareous nodules		98	109	20	60	19	41
60						19			
	20	SANDY SILTY CLAY (CL-ML), very soft to hard, gray and brown,		56	112	20	23	18	5
55									
	25					20			

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 25.0 FT. ON

Drilled By: ETD Logged By: Frank

Kenall Inc

Plate No. A-6

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

BORING LOGS

SHEET 3 OF 13

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-OGEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 707 OF 718	

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Pen Table: ANTOINE DR.tbl
Plot Driver: Y:\2017012 Antoine North Paving and Drainage\MicroStation\90% SET-CAD DESIGN FILES\Resource Files\ANTOINE DR.pltcfg

LOG OF BORING B-07

PROJECT: Antoine Paving and Drainage

WBS NO.: N-100030-0001-3

LOCATION: N 13882988.195; E 3086369.004
Antoine Drive

COMPLETION DEPTH: 25 FT

SURFACE ELEVATION: 73.6 FT

DATE: 6/18/2021

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 23 FT
WET ROTARY: 23 TO 25 FT

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0			6 inches of concrete							
				5 inches of base material							
70				SANDY LEAN CLAY (CL), stiff to hard, gray, with calcareous nodules		64		12 16	30	15	15
	5			-with silt 4'-6'				16			
				FAT CLAY WITH SAND (CH), very stiff, light gray, with sand seams				18			
65								21			
	10					79	110	22	50	16	34
				-with silt 12'-14'				19			
60								18			
	15							17			
				LEAN CLAY WITH SAND (CL), very stiff, gray		84	111	18	25	17	8
55	20			SILTY CLAY (CL-ML), brown, with gravel							
▽								26			
50	25										

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT 23.0 FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 25.0 FT. ON

Drilled By: ETD Logged By: Frank

Kenall Inc

Plate No. A-7

LOG OF BORING B-08

PROJECT: Antoine Paving and Drainage

WBS NO.: N-100030-0001-3

LOCATION: N 13882561.247; E 3086489.686
Antoine Drive

COMPLETION DEPTH: 25 FT

SURFACE ELEVATION: 72.6 FT

DATE: 6/17/2021

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 22 FT
WET ROTARY: 22 TO 25 FT

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0			6 inches of concrete							
				5 inches of base material							
70				SANDY FAT CLAY (CH), very stiff, light gray, with sand seams		69		12	54	17	37
	5							13			
65								14			
	10							14			
								32			
60								15			
	15			FAT CLAY (CH), hard, gray and brown		87	117	18	54	19	35
				SANDY LEAN CLAY (CL), very stiff, gray, with silt				17			
55								18			
	20						111	19	28	15	13
				SILTY SAND (SM), loose, gray							
▽											
50	25					29		22			

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT 22.0 FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 25.0 FT. ON

Drilled By: ETD Logged By: Frank

Kenall Inc

Plate No. A-8

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CITY OF HOUSTON
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ANTOINE DRIVE

BORING LOGS

SHEET 4 OF 13

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 708 OF 718	

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Pen Table:ANTOINE DR.tbl
Plot Driver:Y:\2017012 Antoine North Paving and Drainage\MicroStation\90% SET-CAD DESIGN FILES\Resource Files\ANTOINE DR.pltcfg

LOG OF BORING B-09

PROJECT: Antoine Paving and Drainage

WBS NO.: N-100030-0001-3

LOCATION: N 13882101.34; E 3086532.648
Antoine Drive

COMPLETION DEPTH: 25 FT

SURFACE ELEVATION: 71.4 FT

DATE: 6/18/2021

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 22 FT
WET ROTARY: 22 TO 25 FT

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0			6 inches of concrete							
70				2 inches of base material							
				LEAN CLAY WITH SAND (CL), very stiff, gray				14			
								18			
	5										
						79		13	36	15	21
65				FAT CLAY (CH), stiff to hard, gray				17			
								20			
	10										
60						92	105	24	66	21	45
								22			
	15						110	23			
55								19			
				SANDY LEAN CLAY (CL), soft to very stiff, brown				17			
	20										
▽ 50											
				-with silt 23'-25'							
	25					52		21	34	17	17

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT 22.0 FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 25.0 FT. ON

Drilled By: ETD Logged By: Frank

Kenall Inc

Plate No. A-9

LOG OF BORING B-10

PROJECT: Antoine Paving and Drainage

WBS NO.: N-100030-0001-3

LOCATION: N 13881810.37; E 3086626.618
Antoine Drive

COMPLETION DEPTH: 25 FT

SURFACE ELEVATION: 72.1 FT

DATE: 6/17/2021

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 17 FT
WET ROTARY: 17 TO 25 FT

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0			6 inches of concrete							
70				2 inches of base material							
				LEAN CLAY WITH SAND (CL), very stiff, gray				10			
								10			
	5										
								12			
65						80		12	41	14	27
	10						116	15	31	12	19
				SILTY SAND (SM), loose, gray							
60						46		19			
				FAT CLAY (CH), very stiff, gray							
	15							18			
▽ 55								18			
				SILTY CLAY (CL-ML), very stiff, brown				17			
	20						113	19			
50				SANDY SILT (ML), gray, with clay							
	25					54		22			

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT 17.0 FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 25.0 FT. ON

Drilled By: ETD Logged By: Frank

Kenall Inc

Plate No. A-10

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

BORING LOGS

SHEET 5 OF 13

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 709 OF 718	

Pen Table:ANTOINE DR.tbl
Plot Driver:Y:\2017012 Antoine North Paving and Drainage\Microstation\90% SET-CAD DESIGN FILES\Resource Files\ANTOINE DR.pltcfg
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Design Filename: Y:\2017012 Antoine North Paving and Drainage\Microstation\95% SET-CAD DESIGN FILES_03_07_2025\P&P Sheets\95% BOR_LOG SHEETS PDFs\005-BORING SHT.dgn

LOG OF BORING B-11

PROJECT: Antoine Paving and Drainage

WBS NO.: N-100030-0001-3

LOCATION: N 13884585.414; E 3086252.814
Antoine Drive

COMPLETION DEPTH: 25 FT

SURFACE ELEVATION: 75.2 FT

DATE: 6/17/2021

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 15 FT
WET ROTARY: 15 TO 25 FT

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0			6.5 inches of concrete							
				4 inches of base material							
75				LEAN CLAY WITH SAND (CL), very stiff, gray		80		14			
								15	34	14	20
▼ 70	5							11			
▽								15			
				CLAYEY SAND (SC), loose, light gray		42		16			
65	10							17			
				LEAN CLAY (CL), very stiff, gray				39			
▽ 60	15					99	85	26	39	22	17
								24			
				SILTY SAND (SM), medium dense, gray							
55	20				12			26			
	25				17			26			

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT 15.0 FT. DURING DRILLING; AFTER 15.0 MIN. AT 8.0 FT.
▼ WATER DEPTH AT 5.0 FT., HOLE OPEN TO 25.0 FT. ON 7/21/2021

Drilled By: ETD Logged By: Frank

Kenall Inc

Plate No. A-11

LOG OF BORING B-12

PROJECT: Antoine Paving and Drainage

WBS NO.: N-100030-0001-3

LOCATION: N 13883962.541; E 3086194.873
Antoine Drive

COMPLETION DEPTH: 25 FT

SURFACE ELEVATION: 74.7 FT

DATE: 6/18/2021

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 22 FT
WET ROTARY: 22 TO 25 FT

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0			6 inches of concrete							
				3 inches of base material							
				FAT CLAY WITH SAND (CH), very stiff to hard, gray				11			
70	5					81		14			
								15	56	14	42
								15			
65	10							17			
				FAT CLAY (CH), very stiff, gray		86		18	56	23	33
								17			
60	15						110	21			
								20			
				SILT WITH SAND (ML), gray and brown		76	109	19	23	20	3
55	20										
▽				SILTY SAND (SM), very dense, gray							
50	25				56	25		22			

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT 22.0 FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 25.0 FT. ON

Drilled By: ETD Logged By: Frank

Kenall Inc

Plate No. A-12

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HOUSTON PUBLIC WORKS

ANTOINE DRIVE

BORING LOGS

SHEET 6 OF 13

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 710 OF 718	

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Pen Table:ANTOINE DR.tbl
Plot Driver:Y:\2017012 Antoine North Paving and Drainage\MicroStation\90% SET-CAD DESIGN FILES\Resource Files\ANTOINE DR.pltcfg
Plotted on: 10/23/2025 2:22:05 PM GEO

LOG OF BORING B-13

PROJECT: Antoine Paving and Drainage

WBS NO.: N-100030-0001-3

LOCATION: N 13883469.566; E 3086282.34
Antoine Drive

COMPLETION DEPTH: 25 FT

SURFACE ELEVATION: 74.1 FT

DATE: 6/18/2021

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 25 FT
WET ROTARY: TO FT

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0			6 inches of concrete 3 inches of base material							
70	5			FAT CLAY (CH), very stiff to hard, gray				14 10 13 17			
65	10					91	108	21	52	20	32
								15 17			
60	15					95	107	20	50	22	28
				LEAN CLAY (CL), very stiff, gray and brown, with some silt				24			
55	20							32			
				-silty sand 23'-25'							
50	25					96		22			

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 25.0 FT. ON

Drilled By: ETD Logged By: Frank

Kenall Inc

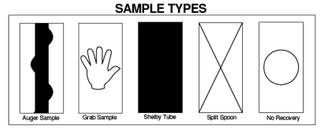
Plate No. A-13

UNIFIED SOIL CLASSIFICATION CHART-ASTM 2487

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS, MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS, MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS, MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS, MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS, LIQUID LIMIT LESS THAN 50			ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS, LIQUID LIMIT GREATER THAN 50			MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

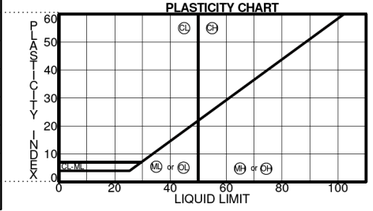
SAMPLE TYPES



GROUNDWATER

- Water level encountered during drilling operations
- Water level after drilling operations
- Water level after 24 hours

PLASTICITY CHART



CONSISTENCY OF COHESIVE SOILS

Description	Unconfined Compressive Strength-TSF	Blows Per Foot
Very Soft	Less than 0.25	0-2
Soft	0.25 to 0.50	2-4
Firm	0.50 to 1.00	4-8
Stiff	1.00 to 2.00	8-15
Very Stiff	2.00 to 4.00	15-30
Hard	4.00 & Higher	>30

RELATIVE DENSITY-GRANULAR SOILS

Description	Penetration Resistance Blow per Foot	Relative Density-%
Very Loose	0-4	0-15
Loose	4-10	15-35
Medium Dense	10-30	35-65
Dense	30-50	65-85
Very Dense	>50	85-100

CLASSIFICATION OF GRANULAR SOILS

U.S. Standard Sieve Size (s)

6"	3"	3/4"	4	10	40	200

Boulders	Cobbles	Gravel		Sand			Silt or Clay	Clay
		Coarse	Fine	Coarse	Medium	Fine		

152	76.2	19.1	4.76	2.0	0.42	0.074	0.002

Grain Size in mm

TERMS CHARACTERIZING SOIL STRUCTURE

Slickensided	- having inclined planes of weakness that are slick and glossy in appearance
Fissured	- containing shrinkage cracks, frequently filled with fine sand or silt; usually more or less vertical
Laminated	- composed of thin layers of varying colors and texture
Interbedded	- composed of alternate layers of different soil types
Calcareous Nodules	- containing appreciable quantities of calcium carbonate
Ferrous Nodules	- containing appreciable quantities of ferrous materials
Well Graded	- having wide range in grain sizes and substantial amounts of all intermediate particle size
Poorly Graded	- predominantly of one grain size, or having a range of sizes with some intermediate size missing

ABBREVIATIONS USED FOR CONSISTENCY

COHESIVE SOILS	COHESIONLESS SOILS
V/So: Very Soft	V/Lo: Very Loose
So: Soft	Lo: Loose
Fm: Firm	M/De: Medium Dense
St: Stiff	De: Dense
V/St: Very Stiff	V/De: Very Dense
Hd: Hard	

Kenall

Approved By: KP | Prepared By: SC

KEY TO SOIL CLASSIFICATION AND SYMBOLS

Project No. 2098 | Plate No. A-14

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ADDRESS:
3300 S. Gessner Rd.
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

BORING LOGS

SHEET 7 OF 13

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-OGEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 711 OF 718	

Design Filename: Y:\2017012 Antoine North Paving and Drainage\MicroStation\95% SET-CAD DESIGN FILES\PDFs\007-BORING SHT.dgn

DRILLING LOG

WinCore Version 3.3

County	Harris	Hole	B-3	District	Houston
Highway	Antoine Drive	Structure	Drainage Improvement	Date	5/24/2023
CSJ	0912-72-615	Station	233+77.47	Grnd. Elev.	83.08 ft
		Offset	8.50L	GW Elev.	N/A

Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test: Lateral Press. (psi)	Triaxial Test: Deviator Stress (psi)	Properties: MC	LL	PI	Wet Den. (pcf)	Additional Remarks
			CLAY, LEAN CLAY, very soft to soft, brownish yellow, light gray, gray, with calcareous nodules, gravels, sand seams and layers (CL)			11	41	24		-200(%):49
						16				PP:0.69, TT:0.75
5		5 (6) 5 (6)				19			129	PP:0.62, TT:0.75, UCS:0.64
						21				PP:0.56, TT:0.62
						20	49	30	131	PP:0.56, TT:0.62, UCS:0.64
10		3 (6) 5 (6)				25				PP: 0.15, TT: 0.25
69.1			SAND, SILTY SAND, compact, brownish yellow, light gray			19				PP:0.31, TT:0.38
68.1	15	22 (6) 24 (6)				20				
20										

Remarks: Northing: 13888743.4572; Easting: 3085900.193

The ground water elevation was not determined during the course of this boring.

Driller: Blake Logger: Andrew Organization: GET

Z:\ENGINEERS\Nick\2023\23-341E Harris County Pavement\Logs\23-341E B-3.CLG

DRILLING LOG

WinCore Version 3.3

County	Harris	Hole	B-4	District	Houston
Highway	Antoine Drive	Structure	Drainage Improvement	Date	5/24/2023
CSJ	0912-72-615	Station	237+31.45	Grnd. Elev.	83.84 ft
		Offset	20.39L	GW Elev.	N/A

Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test: Lateral Press. (psi)	Triaxial Test: Deviator Stress (psi)	Properties: MC	LL	PI	Wet Den. (pcf)	Additional Remarks
			CLAY, LEAN CLAY, very soft, light brown, brown, brownish yellow, light gray, gray, with gravels, with sand seams and layers (CL)			11				PP:1.50, TT:1.50
						11	31	15		PP:1.50, TT:1.50, -200(%):74
5		3 (6) 5 (6)				19				PP:0.31, TT:0.38
						21			131	PP:0.46, TT:0.50, UCS:0.66
						21				PP:0.46, TT:0.50
10		3 (6) 4 (6)				25				PP: 0.23, TT: 0.25
69.8			SAND, SILTY SAND, very loose, reddish brown, light gray			22				PP:0.23, TT:0.25
68.8	15	2 (6) 4 (6)				22				
20										

Remarks: Northing: 13889036.161; Easting: 3085706.1857

The ground water elevation was not determined during the course of this boring.

Driller: Blake Logger: Andrew Organization: GET

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

BORE LOGS

SHEET 9 OF 13

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 712 OF 718	

No.	DATE	REVISIONS	APP.

Plotted on: 10/21/2025 1:42:32 PM Oviedo
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Plot Driver:F:\03339 Antoine Drive\802-1\CAD\Plot files\ANTOINE DR.pltcfg
Design Filename: F:\03339 Antoine Drive\802-1\CAD\Plan Production_Details\XX-Bore Log 2 of 6.dgn

DRILLING LOG

WinCore Version 3.3

County	Harris	Hole	B-5	District	Houston
Highway	Antoine Drive	Structure	Drainage Improvement	Date	5/24/2023
CSJ	0912-72-615	Station	240+03.01	Grnd. Elev.	83.80 ft
		Offset	53.59L	GW Elev.	N/A

Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test: Lateral Press. (psi)	Triaxial Test: Deviator Stress (psi)	Properties: MC	LL	PI	Wet Den. (pcf)	Additional Remarks
			CLAY, LEAN CLAY, soft to stiff, light brown to dark brown, light gray to dark gray, with calcareous nodules, gravels, with sand seams and layers (CL)			19	30	14		PP:0.62, TT:0.75, -200(%): 69
						16				PP:1.24, TT:1.25
5		6 (6) 6 (6)				17			132	PP:0.15, TT:0.25, UCS:0.35
						23	45	27		PP:0.23, TT:0.25, -200(%):71
		10 (6) 15 (6)				23			132	PP:0.39, TT:0.50, UCS:0.54
						19				PP: 0.15, TT: 0.25
69.8			SAND, SILTY SAND, slightly compacted, light brown, light gray, with gravels			21				PP:0.23, TT:0.25
68.8		12 (6) 16 (6)				21				
20										

Remarks: Northing: 13889216.956; Easting: 3085507.826

The ground water elevation was not determined during the course of this boring.

Driller: Blake **Logger: Andrew** **Organization: GET**

Z:\ENGINEERS\Nick\2023\23-341E Harris County Pavement\Logs\23-341E B-5.CLG

DRILLING LOG

WinCore Version 3.3

County	Harris	Hole	B-6	District	Houston
Highway	Antoine Drive	Structure	Drainage Improvement	Date	5/23/2023
CSJ	0912-72-615	Station	246+71.84	Grnd. Elev.	85.50 ft
		Offset	20.41L	GW Elev.	N/A

Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test: Lateral Press. (psi)	Triaxial Test: Deviator Stress (psi)	Properties: MC	LL	PI	Wet Den. (pcf)	Additional Remarks
			CLAY, LEAN CLAY, soft, light brown, brown, light gray, with calcareous nodules, gravels, with sand seams and layers (CL)			18				PP:0.56, TT:0.62
						14			133	PP:1.08, TT:1.12, UCS:0.97
5		5 (6) 6 (6)				18	37	20		PP:0.39, TT:0.50, -200(%):68
						19				PP:0.78, TT:0.88
		5 (6) 5 (6)				21				PP:0.15, TT:0.25
						22				
73.			SAND, SILTY SAND, loose, light brown, light gray, with gravels			20				
72.		5 (6) 8 (6)				20				
20										

Remarks: Northing: 13889644.846; Easting: 3085005.794

The ground water elevation was not determined during the course of this boring.

Driller: Blake **Logger: Andrew** **Organization: GET**

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HOUSTON PUBLIC WORKS

ANTOINE DRIVE

BORE LOGS

SHEET 10 OF 13

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 713 OF 718	

Plotted on: 10/21/2025 1:42:33 PM Jovi Ledo
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Plot Driver: F:\03339 Antoine Drive\802-1\CAD\Plot files\ANTOINE DR.pltcfg
Design Filename: F:\03339 Antoine Drive\802-1\CAD\Plan Production_Details\XX-Bore Log 3 of 6.dgn

DRILLING LOG

WinCore Version 3.3

County	Harris	Hole	B-7	District	Houston
Highway	Antoine Drive	Structure	Drainage Improvement	Date	5/23/2023
CSJ	0912-72-615	Station	251+17.60	Grnd. Elev.	86.29 ft
		Offset	20.43L	GW Elev.	N/A

Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test: Lateral Press. (psi)	Triaxial Test: Deviator Stress (psi)	Properties: MC	LL	PI	Wet Den. (pcf)	Additional Remarks
			CLAY, LEAN CLAY, soft to stiff, light brown, brownish yellow, light gray to dark gray, with root fibers to 14', calcareous nodules, gravels, sand seams and layers (CL)			16	28	13		PP:0.62, TT:0.75, -200(%):65
						16				PP:1.24, TT:1.25
5		5 (6) 6 (6)				24			123	PP:0.31, TT:0.38, UCS:0.19
						19				PP:0.56, TT:0.62
10		10 (6) 13 (6)				20	45	27	138	PP:0.62, TT:0.75, UCS: 1.11
						20				PP:0.62, TT:0.75
72.3			SAND, SILTY SAND, slightly compact, light brown, light gray			24				PP:0.46, TT:0.50
71.3 15		11 (6) 13 (6)				18				
20										

Remarks: Northing: 13889921.393; Easting: 3084652.646

The ground water elevation was not determined during the course of this boring.

Driller: Blake **Logger: Andrew** **Organization: GET**

Z:\ENGINEERS\Nick\2023\23-341E Harris County Pavement\Logs\23-341E B-7.CLG

DRILLING LOG

WinCore Version 3.3

County	Harris	Hole	B-8	District	Houston
Highway	Antoine Drive	Structure	Drainage Improvement	Date	5/23/2023
CSJ	0912-72-615	Station	255+48.03	Grnd. Elev.	86.27 ft
		Offset	20.54L	GW Elev.	N/A

Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test: Lateral Press. (psi)	Triaxial Test: Deviator Stress (psi)	Properties: MC	LL	PI	Wet Den. (pcf)	Additional Remarks
			SAND, SILTY SAND, gray, dark gray, with gravels, lime			23				
84.3			CLAY, LEAN CLAY, soft to stiff, light brown, dark brown, light gray to dark gray with root fibers to 14', ferrous and calcareous nodules, gravels, sand seams and layers (CL)			17	28	13		PP:1.50, TT:1.50, -200(%):58
5		8 (6) 10 (6)				17				PP:0.46, TT:0.5
						18				PP:0.56, TT:0.62
10		13 (6) 15 (6)				21			128	PP:0.31, TT:0.38, UCS: 0.25
						19				PP:0.56, TT:0.62
72.3			SAND, SILTY SAND, slightly compact, light brown, light gray			22				PP:0.15, TT:0.25
71.3 15		9 (6) 12 (6)				22				
20										

Remarks: Northing: 13890255.061; Easting: 3084375.121

The ground water elevation was not determined during the course of this boring.

Driller: Blake **Logger: Andrew** **Organization: GET**

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CITY OF HOUSTON
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ANTOINE DRIVE

BORE LOGS

SHEET 11 OF 13

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 714 OF 718	

Plotted on: 10/21/2025 1:42:34 PM Jovi Ledo
Pen Table:ANTOINE DR.tbl
Plot Driver:F:\03339 Antoine Drive\802-1\CAD\Plot files\ANTOINE DR.pltcfg
Design Filename: F:\03339 Antoine Drive\802-1\CAD\Plan Production_Details\XX-Bore Log 4 of 6.dgn

DRILLING LOG

WinCore Version 3.3

County	Harris	Hole	B-9	District	Houston
Highway	Antoine Drive	Structure	Drainage Improvement	Date	5/23/2023
CSJ	0912-72-615	Station	258+45.84	Grnd. Elev.	85.95 ft
		Offset	20.79L	GW Elev.	N/A

Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test: Lateral Press. (psi)	Triaxial Test: Deviator Stress (psi)	Properties: MC	LL	PI	Wet Den. (pcf)	Additional Remarks
			CLAY, LEAN CLAY, soft, light brown, light gray, with root fibers to 12', ferrous and calcareous nodules, gravels, sand seams and layers (CL)			19	32	16		PP:1.24, TT:1.25, -200(%):52
						16			135	PP:0.78, TT:0.88, UCS:0.65
5		5 (6) 7 (6)								
						15				PP:0.69, TT:0.75
						15	35	19	135	PP:0.56, TT:0.62, UCS:0.69
10		8 (6) 11 (6)				18				PP:0.85, TT:0.88
74.						19				PP:0.15, TT:0.25
			SAND, SILTY SAND, slightly compact, light brown, light gray							
						19				
71. 15		10 (6) 14 (6)				19				
20										

Remarks: Northing: 13890517.077; Easting: 3084227.760

The ground water elevation was not determined during the course of this boring.

Driller: Blake **Logger: Andrew** **Organization: GET**

Z:\ENGINEERS\Nick\2023\23-341E Harris County Pavement\Logs\23-341E B-9.CLG

DRILLING LOG

WinCore Version 3.3

County	Harris	Hole	B-10	District	Houston
Highway	Antoine Drive	Structure	Drainage Improvement	Date	5/23/2023
CSJ	0912-72-615	Station	262+62.58	Grnd. Elev.	85.92 ft
		Offset	20.25L	GW Elev.	N/A

Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test: Lateral Press. (psi)	Triaxial Test: Deviator Stress (psi)	Properties: MC	LL	PI	Wet Den. (pcf)	Additional Remarks
			CLAY, LEAN CLAY, very soft, brown, dark gray, with root fibers to 4', ferrous nodules, sand seams and layers (CL)			20				PP:0.78, TT:0.88
						17				PP:0.46, TT:0.50
5		4 (6) 4 (6)								
						16	31	15	130	PP:0.15, TT:0.25, UCS:0.21
77.9						20				PP:0.39, TT:0.50
			SAND, SILTY SAND, loose, light brown, light gray							
75.9 10		4 (6) 15 (6)				20				
			CLAY, LEAN CLAY, soft, reddish brown, light gray, sand seams and layers (CL)			17				PP:0.15, TT:0.25
73.9			SAND, SILTY SAND, loose, reddish brown, light gray							
						20				
70.9 15		7 (6) 8 (6)				21				
20										

Remarks: Northing: 13890914.436; Easting: 3084090.946

The ground water elevation was not determined during the course of this boring.

Driller: Blake **Logger: Andrew** **Organization: GET**

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

BORE LOGS

SHEET 12 OF 13

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 715 OF 718	

Plotted on: 10/21/2025 1:42:36 PM Ovledo
Pen Table:ANTOINE DR.tbl
Plot Driver:F:\03339 Antoine Drive\802-1\CAD\Plot files\ANTOINE DR.pltcfg
Design Filename: F:\03339 Antoine Drive\802-1\CAD\Plan Production_Details\XX-Bore Log 5 of 6.dgn

DRILLING LOG

1 of 1

WinCore Version 3.3	County	Harris	Hole	B-11	District	Houston
	Highway	Antoine Drive	Structure	Drainage Improvement	Date	5/23/2023
	CSJ	0912-72-615	Station	3+72.36	Grnd. Elev.	86.54 ft
			Offset	30.34L	GW Elev.	N/A

Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test Lateral Press. (psi)	Triaxial Test Deviator Stress (psi)	Properties MC	LL	PI	Wet Den. (pcf)	Additional Remarks
			CLAY, LEAN CLAY, soft, brown, reddish brown, light gray to dark gray, with root fibers to 2', ferrous nodules, sand seams and layers (CL)			18	43	25		PP:0.56, TT:0.62, -200(%):51
						16			131	PP:0.46, TT:0.5, UCS:0.54
5		3 (6) 6 (6)								
						17				PP:0.39, TT:0.50
78.5			SAND, SILTY SAND, loose, reddish brown, light gray			19				PP:0.39, TT:0.50
76.5	10	6 (6) 14 (6)				19				-200(%):18
			CLAY, LEAN CLAY, very soft, reddish brown, light gray, with sand seams and layers (CL)							
74.5						20				PP:0.15, TT:0.25
			SAND, SILTY SAND, slightly compact, reddish brown, light gray							
						21				
71.5	15	15 (6) 18 (6)				21				
20										
25										

Remarks: Northing: 13891094.440; Easting: 3083833.678

The ground water elevation was not determined during the course of this boring.

Driller: Blake **Logger: Andrew** **Organization: GET**

Z:\ENGINEERS\Nick\2023\23-341E Harris County Pavement\Logs\23-341E B-11.CLG

DRILLING LOG

1 of 1

WinCore Version 3.3	County	Harris	Hole	B-12	District	Houston
	Highway	Antoine Drive	Structure	Drainage Improvement	Date	5/23/2023
	CSJ	0912-72-615	Station	265+98.05	Grnd. Elev.	86.45 ft
			Offset	7.56L	GW Elev.	N/A

Elev. (ft)	LOG	Texas Cone Penetrometer	Strata Description	Triaxial Test Lateral Press. (psi)	Triaxial Test Deviator Stress (psi)	Properties MC	LL	PI	Wet Den. (pcf)	Additional Remarks
			CLAY, LEAN CLAY, soft, light brown, brown, reddish brown, light gray, gray, with root fibers to 4', ferrous and calcareous nodules, sand seams and layers (CL)			12				
						9	28	13		PP:1.50, TT:1.50, -200(%):53
5		7 (6) 7 (6)								
						15				PP:0.56, TT:0.62
						18			131	PP:0.31, TT:0.38, UCS:0.36
76.5	10	6 (6) 10 (6)	SAND, SILTY SAND, slightly compact, light brown, reddish brown, light gray			20	28	13		PP:0.15, TT:0.25
						20				
						20				
71.5	15	11 (6) 15 (6)				19				
20										

Remarks: Northing: 13891250.139; Easting: 3084054.775

The ground water elevation was not determined during the course of this boring.

Driller: Blake **Logger: Andrew** **Organization: GET**

Z:\ENGINEERS\Nick\2023\23-341E Harris County Pavement\Logs\23-341E B-12.CLG

No.	DATE	REVISIONS	APP.

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VOGLER & SPENCER ENGINEERING
777 North Eldridge Parkway, Suite 500
Houston, Texas 77079
713-782-0042
www.vs-eng.com

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Texas Registered Engineering Firm F-148

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

BORE LOGS

SHEET 13 OF 13

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 716 OF 718	

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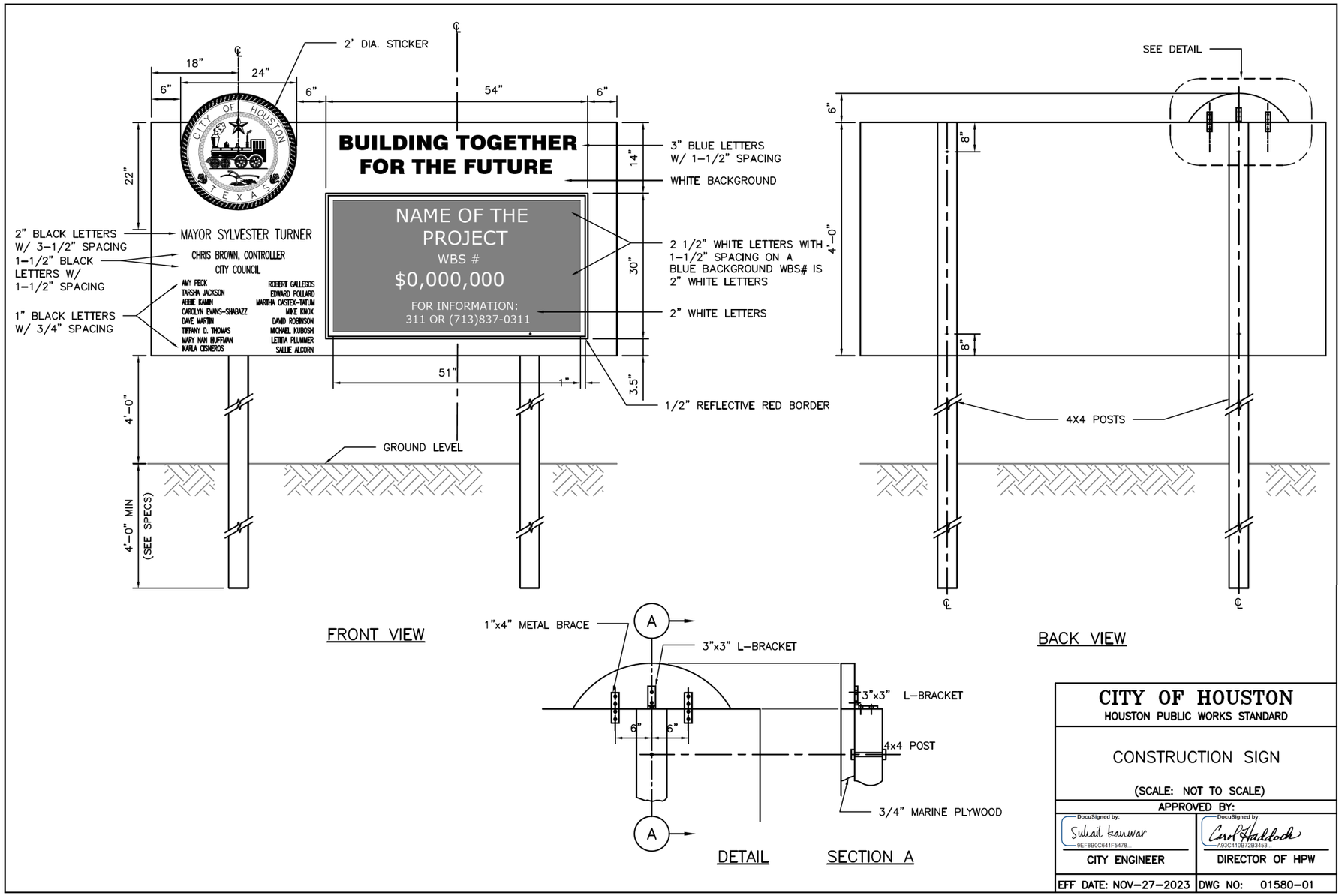

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CITY OF HOUSTON HOUSTON PUBLIC WORKS STANDARD	
CONSTRUCTION SIGN (SCALE: NOT TO SCALE)	
APPROVED BY:	
DocuSigned by: Sukrit Kanwar 9EF8B0C641F5478...	DocuSigned by: Carol Haddock A93C410B72B3453...
CITY ENGINEER	DIRECTOR OF HPW
EFF DATE: NOV–27–2023	DWG NO: 01580–01

Texas Department of Transportation

Gauge ENGINEERING
TEXAS PE FIRM REG. # 20017
11750 KATY FREEWAY, #400
HOUSTON, TX 77079

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Texas Registered Engineering Firm F-20017

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

CONSTRUCTION SIGN

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N–100030–0GEC–3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 717 OF 718	

No.	DATE	REVISIONS	APP.

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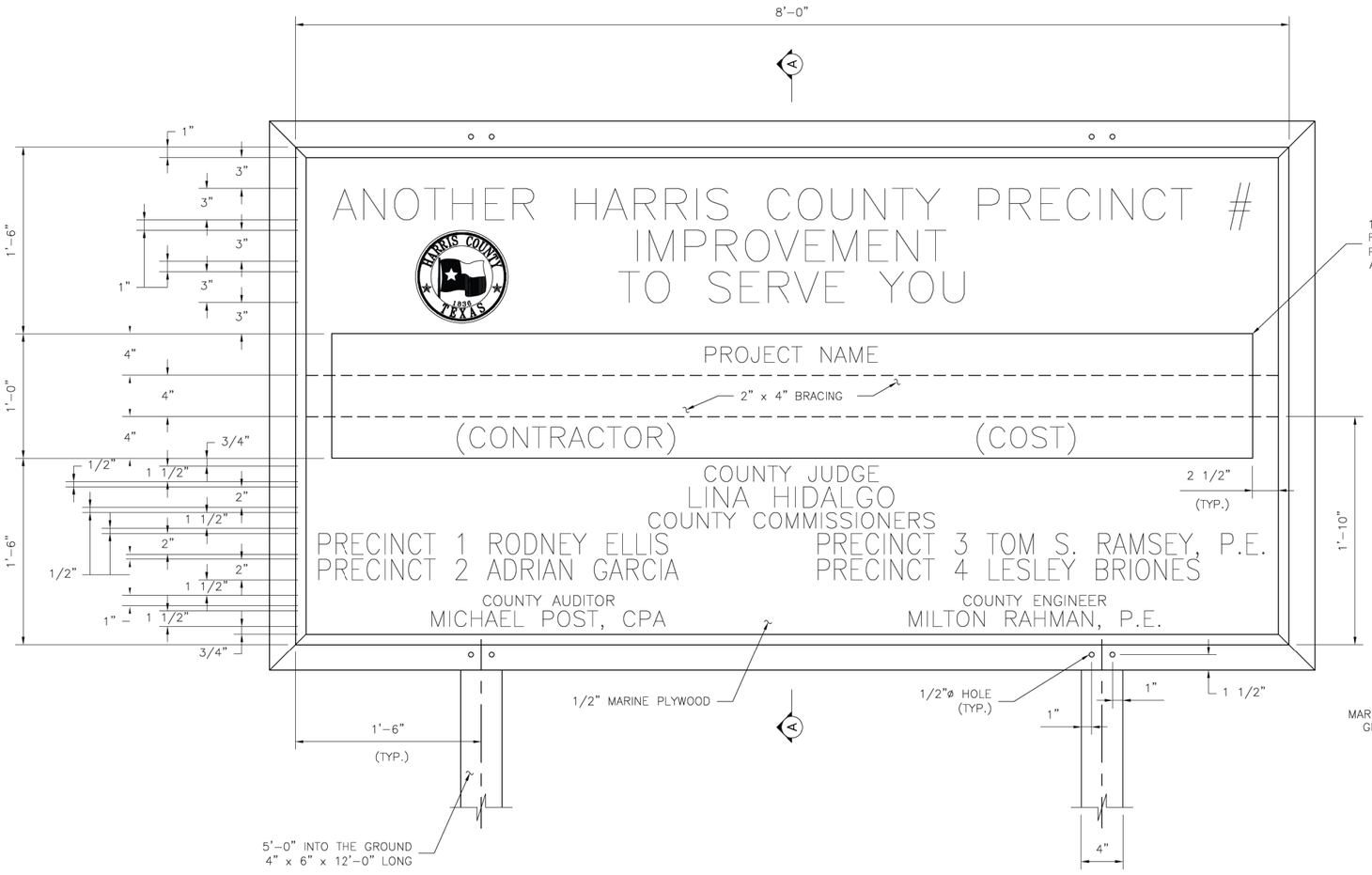
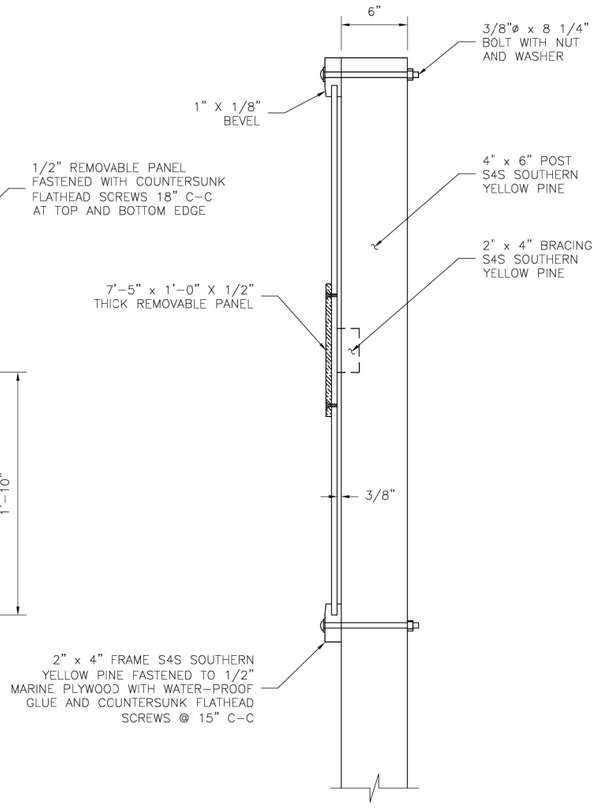


ELEVATION VIEW



SECTION A-A

GENERAL NOTES:

1. THE SIGN SHALL HAVE BLACK LETTERS WITH WHITE BACKGROUND.
2. SIGN SHALL BE MOUNTED ON 4" x 6" POSTS AND LOCATED BY THE ENGINEER.
3. REMOVABLE PANEL SHALL BE 1/2" MARINE PLYWOOD.
4. ALL BOLTS, SCREWS, NAILS, NUTS AND WASHERS SHALL BE GALVANIZED OR CADMIUM PLATED.
5. 4" x 6" POST SHALL BE WOLMANIZED OR PENTACHLOROPHENOL TREATED.
6. ALL WOOD SURFACES SHALL HAVE PRIME COAT AND TWO (2) COATS OF SHERWIN-WILLIAMS KEM-LUSTRA ENAMEL OR EQUAL.

No.	DATE	REVISIONS	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

ANTOINE DRIVE

HCED PRECINCT 1
PROJECT SIGN

SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-100030-0GEC-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
ROWAIDAH AYOUB	
SHEET NO. 718 OF 718	

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