Docusign Envelope ID: 30E49A44-387A-486A-87A4-EC2D98D55E74

CITY OF HOUSTON

HOUSTON PUBLIC WORKS
CAPITAL PROJECTS
CHATEAU FOREST AREA
DRAINAGE AND PAVING IMPROVEMENTS

WBS No. M-410029-0001-4

NOTICE:

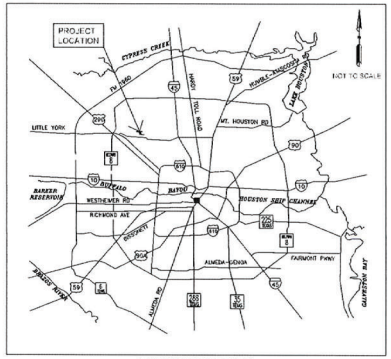
*Construction in Harris County Flood Control District Right-of-Way requires:

1.) HCFCD Right-of-Way Notification (permit)
2.) HCFCD 48-hr Pre-Construction Notification

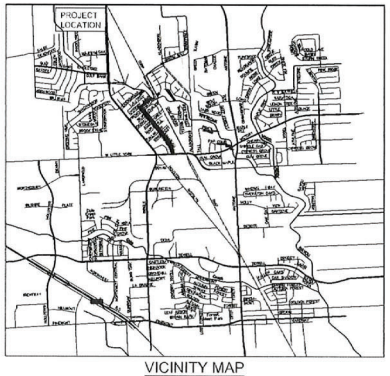
Both are required prior to entering or working within Harris County Flood Control District right-of-way. Both the HCFCD Right-of-Way Notification and 48-hour notification must be provided to HCFCD at dcid@hcfcd.org. Site plans must be approved prior to obtaining the required HCFCD Right-of-Way Notification. Be advised that the HCFCD Right-of-Way Notification is separate from the site development permit package.

To apply for the HCFCD Right-of-Way Notification please go to http://apps.harriscountytx.gov/EPermits and apply for the HCFCD ROW under ROW Notification.

Failure to provide both items could result in delays and additional construction costs.



LOCATION MAP



VICINITY MAP
KEY MAP Nos: 411S, 411T & 411U
GIMS MAP Nos: 5062D, 5162C & 5161A
COH Council District: A

TDLR EABPR TABS2025023155

FLOODPLAIN MANAGEMENT OFFICE
APPROVED
Development Permit #: update to 25-1000
Date: 8/28/25 By: Juan R. [illegible]

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

Initial MM
DS DH
DS RR
Initial YC

ISANI
civil · design · engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: KUO & ASSOCIATES, INC.
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
6/18/25

PARKS-FORESTRY DEPT.

METRO

Signed by: Kim Khanh
7B4F439B7554463...
HOUSTON WATER

DocuSigned by: Colin Lupold
50E461BC7C28417...
TRANSPORTATION & DRAINAGE OPERATIONS

DocuSigned by: Tanu Hiremath
26CB4C9CAAF74FB...
CAPITAL PROJECTS

DocuSigned by: Jeremy Ellison
A7C85C2260C9413...
SURVEY

DocuSigned by: Johana Clark 9/19/2025
808098A38F5E457...
CITY ENGINEER DATE

Signed by: [illegible] 9/19/2025
1BEBB22072F84DC...
DIRECTOR OF HOUSTON PUBLIC WORKS DATE

FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

SHEET NO 01 OF 158 SHEETS

1. PROPERTY DESCRIPTION

I. LOCATION INFORMATION

A. HARRIS COUNTY COMMISSIONER'S PRECINCT:
☑ 1 ☐ 2 ☐ 3 ☐ 4

B. KEY MAP: 411S, 411T, 411U

C. ADDRESS: 0 Alabonson Road, Houston, Tx, 77088

II. LEGAL DESCRIPTION

A. ACREAGE:

B. ☐ SUBDIVISION:

☐ SURVEY & ABSTRACT:

C. ADJACENT ROADS:

III. PLATTING

A. SUBDIVISION PLAT
☐ PROPOSED PLAT / REPLAT
☐ RECORDED PLAT / REPLAT

PLAT NAME:

B. STREETS PROPOSED
☑ PUBLIC
☐ PRIVATE
☐ PUBLIC & PRIVATE
☐ NONE

IV. JURISDICTIONS

☑ CITY OF Houston & HCFCD
☐ ETJ, CITY OF HOUSTON
☐ ETJ, CITY OF
☐ NO ETJ
☐ UTILITY DISTRICT (NAME)

V. HCAD ACCOUNT NOS. (ALL)

0431760000347, 0431880000118
0431880000116, 1051890000011

2. SITE DETENTION DRAINAGE

I. PROPOSED DRAINAGE AREA

☐ NEW DEVELOPMENT AREA:
☑ RE-DEVELOPMENT AREA (AMOUNT INCREASED IMPERVIOUS AREA): 8.28 ac
☐ 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.) E100-00-00, E140-00-00
☐ .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 YEAR 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.): E500-21-00-E002

FOR PROJECTS LOCATED IN ANY FLOODPLAIN
Development constructed or placed in accordance with these plans shall comply with the provisions of the effective Floodplain Administrative Harris County Floodplain Regulations.

OFFSITE SHEET FLOW: (100 YEAR)

OFFSITE SHEET FLOW MAPPING, TOTAL DISCHARGE CALCULATIONS, AND DRAINAGE AREA BOUNDARIES 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 INTERCEPTED AND DRAINED TO A COUNTY STORM SEWER 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)

☑ DISTURBS >1AC. SITE PLAN & DETAILS ON SHEET(S) 144-148
☐ 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:
☐ 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):

4. FLOOD PLAIN STATUS

I. GENERAL INFORMATION

FIRM PANEL(S) FOR PROPERTY: 48201C0465M; 48201C0655M
FIRM PANEL(S) DATE: 06/09/2014; 06/09/2014
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. 17) (1% BASE FLOOD LEVEL 81) (0.2% BASE FLOOD LEVEL 82)
☐ 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 5161-7416, ELEV. 77.34 FEET NAVD 1988 (GEOID '18)

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.) 82 CUBIC YARDS 428.90
B. TOTAL VOLUME OF MATERIAL PROPOSED TO BE REMOVED FROM THE FIRM DELINEATED FLOODPLAIN:
BELOW 0.2% BASE FLOOD ELEVATION (2001 ADJ.) 82 CUBIC YARDS 3012.80 INCLUDING CALCULATIONS)
C. FILL AREA & VOLUME CALCULATIONS ARE SHOWN ON SHEET 49-55

5. WORK IN HCFCD RIGHT-OF-WAY

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

A. BOND/NOTIFICATION INFORMATION
☑ HCFCD WATERSHED White Oak Bayou
☑ HCFCD UNIT No. E100-00-00, E140-00-00
☑ NUMBER OF OUTFALLS 7
☐ UTILITY CROSSING
☐ ROADWAY BRIDGE/CULVERT CROSSING
☐ FILL ACTIVITY
☐ REHABILITATION OF CHANNEL
☐ MAINTENANCE
☐ TEMPORARY CROSSING
☐ TRAIL (LENGTH)
☑ OTHER Outfall Pipe Replacement, Installation of Riprap across Channel
COST OF WORK IN HCFCD ROW $321,000

II. USACE ENVIRONMENTAL PERMIT

☑ US ARMY CORPS OF ENGINEERS NATIONWIDE PERMIT NUMBER(S) NWP7, NWP13
☐ US ARMY CORPS OF ENGINEERS INDIVIDUAL PERMITS
☐ OTHER
☐ NO PERMITS REQUIRED
EXPLAIN:

III. REFERENCE / BASIS OF DETERMINATION

☑ ENVIRONMENTAL CONSULTANT REPORT
BY Holloway Environmental+Communications Services, Inc
REPORT TITLE Waters of the United Stated Report
REPORT DATE October, 2022
☑ OTHER Pre-Construction Notification Package

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 5 OF THESE PLANS.

V. HCFCD STANDARD DETAILS: SEE SHEET 95-97, 148 OF THESE PLANS.

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

VII. REFER TO THE FOLLOWING PLAN SHEETS: 23, 31, 32, 34, 35, 38, 39, 41, 42, 43
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.)

6. REPORTS/AGREEMENTS

I. HCFCD ACCEPTED REPORTS (ALL)

STORMWATER DRAINAGE DESIGN REPORT
REPORT TITLE Chateau Forest Storm Water Drainage Improvements(Hvatt Zollars); Additional H&H Analysis-Outfall pipe relocation at Location F and L(ISAN); Proposed Trunkline Modification-
HCFCD PROJECT # 2107300115; 2207190072; 2211010090 -Chateau Forest Dr and Deirdre Anne Dr.(ISAN)
ENGINEERING FIRM Hvatt-Zollars, Inc. ISAN Consultants, L.P.
REPORT ACCEPTANCE DATE 09/20/2021; 11/04/2022; 01/03/2023

GEOTECHNICAL INVESTIGATION REPORT
REPORT TITLE
HCFCD PROJECT #
ENGINEERING FIRM
REPORT ACCEPTANCE DATE

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

II. AGREEMENT TYPE & No.:
☐ INTERLOCAL (ILA)
☐ LOMR MAINTENANCE
☐ TURF ESTABLISHMENT
☐ OTHER

FLOODPLAIN MANAGEMENT OFFICE
APPROVED
update to:
Development Permit #: 25-1000
Date: 8/20/25 By:

HCFCD SIGNATURE BLOCK

PROJECT NAME: Chateau Forest Area Drainage and Paving Improvements
ADDRESS: 0 ALABONSON ROAD
WAS ACCEPTED BY HARRIS COUNTY FLOOD CONTROL DISTRICT FOR THE PURPOSES LISTED BELOW:

HARRIS COUNTY FLOOD CONTROL DISTRICT
INTERPOSE NO OBJECTION

BY _____ RIGHT-OF-WAY 01/30/2024
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 GOVERNMENT CODE CH. 245.

ENGINEER'S CERTIFICATION

I, Rahul B. Menon, 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 158

SIGNATURE _____ DATE _____

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER

REVISIONS

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 PROJECT NO.

SHEET NUMBER 2 OF 158

HARRIS COUNTY
FLOOD CONTROL DISTRICT
REVIEW SHEET

VERSION 1.0 OCTOBER 2019

SHT. NO.	DESCRIPTION	
1.	COVER SHEET AND VICINITY MAP	
2.	HARRIS COUNTY FLOOD CONTROL DISTRICT REVIEW SHEET	
3.	INDEX OF DRAWINGS	
4.	LEGEND	
5.	GENERAL NOTES	
6.	OVERALL STORM / WATERLINE LAYOUT	(SHEET 1 OF 2)
7.	OVERALL STORM / WATERLINE LAYOUT	(SHEET 2 OF 2)
8.	ALIGNMENT DATA SHEETS	(SHEET 1 OF 2)
9.	ALIGNMENT DATA SHEETS	(SHEET 2 OF 2)
10.	SURVEY CONTROL MAPS	(SHEET 1 OF 4)
11.	SURVEY CONTROL MAPS	(SHEET 2 OF 4)
12.	SURVEY CONTROL MAPS	(SHEET 3 OF 4)
13.	SURVEY CONTROL MAPS	(SHEET 4 OF 4)
14.	SWING TIES	(SHEET 1 OF 3)
15.	SWING TIES	(SHEET 2 OF 3)
16.	SWING TIES	(SHEET 3 OF 3)
17.	DRAINAGE AREA DELINEATION AND FLOODPLAIN MAPS	
18.	DRAINAGE CALCULATIONS	(SHEET 1 OF 2)
19.	DRAINAGE CALCULATIONS	(SHEET 2 OF 2)
20.	EXISTING TYPICAL SECTION	
21.	PROPOSED TYPICAL SECTION	
	PLAN & PROFILE	
22.	DEIRDRE ANNE DRIVE PLAN & PROFILE	STA 1+00 TO STA 6+00
23.	DEIRDRE ANNE DRIVE PLAN & PROFILE	STA 6+00 TO STA 11+00
24.	CHATEAU FOREST DRIVE PLAN & PROFILE	STA 1+00 TO STA 5+80
25.	CHATEAU FOREST DRIVE PLAN & PROFILE	STA 5+80 TO STA 10+80
26.	CHATEAU FOREST DRIVE PLAN & PROFILE	STA 10+80 TO STA 15+80
27.	CHATEAU FOREST DRIVE PLAN & PROFILE	STA 15+80 TO STA 20+00
28.	CHATEAU FOREST DRIVE PLAN & PROFILE	STA 20+00 TO STA 25+00
29.	CHATEAU FOREST DRIVE PLAN & PROFILE	STA 25+00 TO STA 30+00
30.	CHATEAU FOREST DRIVE PLAN & PROFILE	STA 30+00 TO STA 33+40
31.	HIDDEN ARBOR LANE PLAN & PROFILE	STA 1+00 TO STA 4+00
32.	JADEWOOD DRIVE PLAN & PROFILE	STA 1+00 TO STA 6+00
33.	RIDGE OAK DRIVE PLAN & PROFILE	STA 1+00 TO STA 6+00
34.	RIDGE OAK DRIVE PLAN	STA 6+00 TO STA 10+00
35.	RIDGE OAK DRIVE PROFILE	STA 6+00 TO STA 10+00
36.	TALL PINES DRIVE PLAN & PROFILE	STA 1+00 TO STA 6+00
37.	TALL PINES DRIVE PLAN & PROFILE	STA 6+00 TO STA 9+00
38.	TALL PINES DRIVE OUTFALL PLAN	STA 1+00 TO STA 5+00
39.	TALL PINES DRIVE OUTFALL PROFILE	STA 1+00 TO STA 5+00
40.	PAR FOUR DRIVE PLAN & PROFILE	STA 1+00 TO STA 6+00
41.	PAR FOUR DRIVE OUTFALL PLAN & PROFILE	STA 1+00 TO STA 4+00
42.	VICTORY DRIVE / VICTORY DRIVE OUTFALL PLAN & PROFILE	
43.	VICTORY DRIVE PROFILE	
	CROSS UTILITIES PROFILE	
44.	LATERAL WATERLINE 1 OF 3	(SHEET 1 OF 3)
45.	LATERAL WATERLINE 2 OF 3	(SHEET 2 OF 3)
46.	LATERAL WATERLINE 3 OF 3	(SHEET 3 OF 3)
47.	SANITARY CROSSING 1 OF 2	(SHEET 1 OF 2)
48.	SANITARY CROSSING 2 OF 2	(SHEET 2 OF 2)
49.	CROSS SECTIONS	(SHEET 1 OF 7)
50.	CROSS SECTIONS	(SHEET 2 OF 7)
51.	CROSS SECTIONS	(SHEET 3 OF 7)
52.	CROSS SECTIONS	(SHEET 4 OF 7)
53.	CROSS SECTIONS	(SHEET 5 OF 7)
54.	CROSS SECTIONS	(SHEET 6 OF 7)
55.	CROSS SECTIONS / CUT&FILL CALCULATIONS	(SHEET 7 OF 7)
56.	DRIVEWAY TABLE & LAYOUT	(SHEET 1 OF 3)
57.	DRIVEWAY TABLE & LAYOUT	(SHEET 2 OF 3)
58.	DRIVEWAY TABLE & LAYOUT	(SHEET 3 OF 3)
59.	SIGNAGE AND PAVEMENT MARKING - DEIRDRE ANNE DR & CHATEAU FOREST DRIVE	
60.	SIGNAGE AND PAVEMENT MARKING - CHATEAU FOREST DRIVE & PAR FOUR DRIVE	
61.	PAVEMENT MARKING GENERAL NOTES AND LEGENDS	
62.	STANDARD PAVEMENT MARKING - (WORDS)	
63.	STANDARD PAVEMENT MARKING - SYMBOLS	
64.	STANDARD PAVEMENT MARKING WITH REFLECTIVE RAISED PAVEMENT MARKERS FOR POSITION GUIDANCE	
65.	TYPICAL CROSSWALK DETAILS	
66.	GENERAL NOTES AND GROUND MOUNTING SIGN	
67.	SIGN BASE MOUNTING DETAIL	
68.	STREET NAME SIGN AND SIGN MOUNTING	
69.	GROUND MOUNTED SIGN SIZES	
70.	TYPICAL SIGN PLACEMENT	
71.	DEMOLITION PLAN - DEIRDRE ANNE DRIVE & CHATEAU FOREST DRIVE	
72.	DEMOLITION PLAN - CHATEAU FOREST DRIVE	
73.	DEMOLITION PLAN - TALL PINES DRIVE & PAR FOUR DRIVE	
74.	STREET LIGHTING PLANS	(SHEET 1 OF 3)
75.	STREET LIGHTING PLANS	(SHEET 2 OF 3)
76.	STREET LIGHTING PLANS	(SHEET 3 OF 3)
77.	WATERLINE DETAILS	(SHEET 1 OF 6)
78.	WATERLINE DETAILS	(SHEET 2 OF 6)
79.	WATERLINE DETAILS	(SHEET 3 OF 6)
80.	WATERLINE DETAILS	(SHEET 4 OF 6)
81.	WATERLINE DETAILS	(SHEET 5 OF 6)
82.	WATERLINE DETAILS	(SHEET 6 OF 6)
83.	SANITARY SEWER DETAILS	(SHEET 1 OF 4)
84.	SANITARY SEWER DETAILS	(SHEET 2 OF 4)
85.	SANITARY SEWER DETAILS	(SHEET 3 OF 4)
86.	SANITARY SEWER DETAILS	(SHEET 4 OF 4)
87.	STORM DETAILS	(SHEET 1 OF 12)
88.	STORM DETAILS	(SHEET 2 OF 12)
89.	STORM DETAILS	(SHEET 3 OF 12)
90.	STORM DETAILS	(SHEET 4 OF 12)
91.	STORM DETAILS	(SHEET 5 OF 12)
92.	STORM DETAILS	(SHEET 6 OF 12)
93.	STORM DETAILS	(SHEET 7 OF 12)
94.	STORM DETAILS	(SHEET 8 OF 12)
95.	STORM DETAILS	(SHEET 9 OF 12)
96.	STORM DETAILS	(SHEET 10 OF 12)
97.	STORM DETAILS	(SHEET 11 OF 12)
98.	STORM DETAILS	(SHEET 12 OF 12)
99.	STANDARD DETAILS - STREET PAVING AND SIDEWALK	(SHEET 1 OF 15)
100.	STANDARD DETAILS - STREET PAVING AND SIDEWALK	(SHEET 2 OF 15)
101.	STANDARD DETAILS - STREET PAVING AND SIDEWALK	(SHEET 3 OF 15)
102.	STANDARD DETAILS - STREET PAVING AND SIDEWALK	(SHEET 4 OF 15)
103.	STANDARD DETAILS - STREET PAVING AND SIDEWALK	(SHEET 5 OF 15)
104.	STANDARD DETAILS - STREET PAVING AND SIDEWALK	(SHEET 6 OF 15)
105.	STANDARD DETAILS - STREET PAVING AND SIDEWALK	(SHEET 7 OF 15)
106.	STANDARD DETAILS - STREET PAVING AND SIDEWALK	(SHEET 8 OF 15)
107.	STANDARD DETAILS - STREET PAVING AND SIDEWALK	(SHEET 9 OF 15)
108.	STANDARD DETAILS - STREET PAVING AND SIDEWALK	(SHEET 10 OF 15)
109.	STANDARD DETAILS - STREET PAVING AND SIDEWALK	(SHEET 11 OF 15)
110.	STANDARD DETAILS - STREET PAVING AND SIDEWALK	(SHEET 12 OF 15)
111.	STANDARD DETAILS - STREET PAVING AND SIDEWALK	(SHEET 13 OF 15)
112.	STANDARD DETAILS - STREET PAVING AND SIDEWALK	(SHEET 14 OF 15)
113.	STANDARD DETAILS - STREET PAVING AND SIDEWALK	(SHEET 15 OF 15)
114.	CONSTRUCTION SIGN DETAILS	
	TRAFFIC CONTROL PLANS	
115.	NOTES, CHANNELIZING DEVICES AND BARRICADES	
116.	GENERAL NOTES	
117.	PHASING NARRATIVE	(SHEET 1 OF 2)
118.	PHASING NARRATIVE	(SHEET 2 OF 2)
119.	OVERALL PHASING LAYOUT-01	(SHEET 1 OF 2)
120.	OVERALL PHASING LAYOUT-02	(SHEET 2 OF 2)
121.	TYPICAL SECTIONS	(SHEET 1 OF 2)
122.	TYPICAL SECTIONS	(SHEET 2 OF 2)
123.	PHASE 1 STEP 1A&1B	
124.	PHASE 1 STEP 2A&2B	
125.	PHASE 1 STEP 3	
126.	TYPICAL LAYOUT FOR PHASE 1 STEP 4 - PHASE 1 STEP 9	
127.	PHASE 1 STEP 10	
128.	PHASE 1 STEP 11A&11B	
129.	TYPICAL LAYOUT FOR PHASE 1 STEP 12	
130.	TYPICAL LAYOUT FOR PHASE 1 STEP 13	
131.	DETOUR PLAN FOR CHATEAU FOREST DR PHASE 1 STEP 3-7	
132.	DETOUR PLAN FOR CHATEAU FOREST DR PHASE 1 STEP 8-11	
132A	DETOUR PLAN FOR CHATEAU FOREST DR PHASE 1 STEP 12	
132B	DETOUR PLAN FOR CHATEAU FOREST DR PHASE 1 STEP 13	
133.	PHASE 2 STEP 1-3	
134.	PHASE 3 STEP 1-3	
135.	PHASE 3 STEP 4	
136.	TYPICAL 4-WAY INTERSECTION WITH FLAGGING OPERATION (TYP-1)	
137.	TYPICAL TEE INTERSECTION WITH FLAGGING OPERATION (TYP-2)	
138.	BARRICADE STANDARDS	
139.	LPCB PRECAST BARRIER (TYPE I)	
140.	LPCB PRECAST BARRIER (TYPE II)	
141.	ONE-LANE TWO-WAY TRAFFIC CONTROL	
142.	TYPICAL FOR CUL-DE-SAC CONSTRUCTION (TYP III)	
143.	CROSSWALK CLOSURES AND PEDESTRIAN DETOURS, SOLAR SCHOOL ZONE FLASHING BEACON	
	STORMWATER POLLUTION PREVENTION PLAN	
144.	STORMWATER POLLUTION PREVENTION PLAN LAYOUT	(SHEET 1 OF 3)
145.	STORMWATER POLLUTION PREVENTION PLAN LAYOUT	(SHEET 2 OF 3)
146.	STORMWATER POLLUTION PREVENTION PLAN LAYOUT	(SHEET 3 OF 3)
147.	STORMWATER POLLUTION PREVENTION PLAN DETAILS - CITY OF HOUSTON	
148.	STORMWATER POLLUTION PREVENTION PLAN DETAILS - HCFCD	
	TREE PROTECTION PLAN	
149.	TREE PROTECTION PLAN (SHEET 1 OF 10)	
150.	TREE PROTECTION PLAN (SHEET 2 OF 10)	
151.	TREE PROTECTION PLAN (SHEET 3 OF 10)	
152.	TREE PROTECTION PLAN (SHEET 4 OF 10)	
153.	TREE PROTECTION PLAN (SHEET 5 OF 10)	
154.	TREE PROTECTION PLAN (SHEET 6 OF 10)	
155.	TREE PROTECTION PLAN (SHEET 7 OF 10)	
156.	TREE PROTECTION PLAN (SHEET 8 OF 10)	
157.	TREE PROTECTION PLAN (SHEET 9 OF 10)	
158.	TREE PROTECTION PLAN (SHEET 10 OF 10)	

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

1

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED
PROFESSIONAL ENGINEER
10/3/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

INDEX OF DRAWINGS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
Not to Scale	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 3 OF 158	

PLOT STYLE: Coh_ctb_2207l4.ctb PLOTTED: 10/31/2025 3:46 PM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 955\21DR47_002-Index_New.dwg

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 6/18/2025 5:51 PM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47_003 - LEGEND.dwg

EXISTING PLAN VIEW

- WATER METER
- WATER VALVE (GATE)
- WATER VALVE (BUTTERFLY)
- FIRE HYDRANT/FLUSHING VALVE
- TAPPING SLEEVE & VALVE
- REDUCER
- ROUND CONNECTION
- SANITARY SEWER CLEANOUT & MANHOLE
- STORM SEWER MANHOLE
- STORM SEWER INLETS
- CULVERT PIPE AND HEADWALL
- TOP OF CURB ELEVATION
- GUTTER ELEVATION
- TOP OF PAVEMENT ELEVATION
- CONTOUR LINE
- 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
- AERIAL POWER LINE
- UNDERGROUND POWER LINE
- GAS LINE
- UNKNOWN UNDERGROUND LINE
- OIL PIPELINE
- UNDERGROUND TELECOMM LINE W/VAULT
- AERIAL TELECOMM LINE
- RAILROAD LINE
- WATER LINE
- SANITARY SEWER LINE
- STORM SEWER LINE
- SANITARY SEWER FORCE MAIN
- RECLAIMED WATER LINE
- NON–POTABLE WATER LINE
- GAS METER
- GAS VALVE
- PROPANE LINE
- STEAM LINE

PROPOSED PLAN VIEW

- WATER METER
- WATER VALVE (GATE)
- WATER VALVE (BUTTERFLY)
- FIRE HYDRANT/FLUSHING VALVE
- TAPPING SLEEVE & VALVE
- REDUCER
- ROUND CONNECTION
- SANITARY SEWER CLEANOUT & MANHOLE
- STORM SEWER MANHOLE
- STORM SEWER INLETS
- CULVERT PIPE AND HEADWALL
- TOP OF CURB ELEVATION
- GUTTER ELEVATION
- TOP OF PAVEMENT ELEVATION
- CONTOUR LINE
- 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
- AERIAL POWER LINE
- UNDERGROUND POWER LINE
- GAS LINE
- UNKNOWN UNDERGROUND LINE
- OIL PIPELINE
- UNDERGROUND TELCOMM LINE W/ VAULT
- AERIAL TELECOMM LINE
- RAILROAD LINE
- WATER LINE
- DIP W/RESTRAINED JOINTS
- RESTRAINED JOINT SECTION
- SANITARY SEWER LINE
- STORM SEWER LINE
- SANITARY SEWER FORCE MAIN
- RECLAIMED WATER LINE
- NON–POTABLE WATER LINE
- GAS METER
- GAS VALVE
- PROPANE LINE
- STEAM LINE
- MATCH LINE

EXISTING PLAN VIEW

- BUILDING, RESIDENTIAL
- BUILDING, COMMERCIAL
- TREE
- HEDGE
- IRON PIPE OR IRON ROD MONUMENT
- POINT OF INTERSECTION (PI)
- POINT OF CURVE (PC)
POINT OF TANGENCY (PT)
- POWER POLE
- POWER POLE W/DOWN GUY

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
- SOUTH OR WEST CULVERT
- CENTERLINE OF ROW
- CENTERPOINT ENERGY CONDUIT
- GAS LINE
- WESTERN UNION
- AT&T CONDUIT
- WATER LINE
- SANITARY SEWER LINE
- STORM SEWER LINE
- SANITARY SEWER FORCE MAIN
- RECLAIMED WATER LINE
- NON–POTABLE WATER LINE
- CENTERPOINT ENERGY MANHOLE
- AT&T MANHOLE
- WATER LINE MANHOLE
- SANITARY SEWER MANHOLE & CLEANOUT
- STORM SEWER MANHOLE
- STORM SEWER INLET

PROPOSED PLAN VIEW

- BUILDING, RESIDENTIAL
- BUILDING, COMMERCIAL
- TREE
- HEDGE
- IRON PIPE OR IRON ROD MONUMENT
- POINT OF INTERSECTION (PI)
- POINT OF CURVE (PC)
POINT OF TANGENCY (PT)
- POWER POLE
- POWER POLE W/DOWN GUY

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
- SOUTH OR WEST CULVERT
- CENTERLINE OF ROW
- CENTERPOINT ENERGY CONDUIT
- GAS LINE
- WESTERN UNION
- AT&T CONDUIT
- WATER LINE
- SANITARY SEWER LINE
- STORM SEWER LINE
- SANITARY SEWER FORCE MAIN
- RECLAIMED WATER LINE
- NON–POTABLE WATER LINE
- 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
- COH BAR SCALE
- REVISION CLOUD/DELTA
- DETAIL/SECTION TITLE

1 VIEW TITLE
SCALE: 1:1

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P–6257

STATE OF TEXAS · RAHUL B. MENON · 130533 · LICENSED PROFESSIONAL ENGINEER · 6/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

LEGEND

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410029–0001–4	
DRAWING SCALE	
Not to Scale	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 4 OF 158	

HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX

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 KEVIN RAY. AT (713) 614-1983 OR EMAIL HIM AT KE7896@ATT.COM, IF CABLE LOCATE REQUESTS ARE NOT COMPLETED FOR OUR AT&t TEXAS/SWBT FACILITIES.

CENTERPOINT ENERGY NOTES

CAUTION: UNDERGROUND GAS FACILITIES

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 PIPELINE MARKINGS ARE NOT VISIBLE, CALL (713) 207-5463 OR (713) 945-8037 (7:00 A.M. TO 4:30 P.M.) 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) 659-2111 OR (713) 207-4200.

THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND FACILITIES.

WARNING: OVERHEAD ELECTRICAL LINES

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 PERSON OR THINGS MAY COME WITHIN TEN(10) 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.

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

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

WARNING: UNDERGROUND ELECTRICAL LINES

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 OF 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.

HCFCD NOTES

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 DEVELOPMENT COORDINATION AND INSPECTION 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 OR COMPLIANCE WITH NATIONWIDE PERMIT, IF APPLICABLE, TO HCFCD, 9900 NORTHWEST FREEWAY, HOUSTON, TEXAS 77092, ATTN: DEVELOPMENT COORDINATION AND INSPECTION DEPT. BY HAND DELIVERY, BY EMAIL DCID@HCFCD.ORG, OR FAX TO 713-684-4129 (FAX NUMBER).
3. ENGINEER SHALL SUBMIT CERTIFICATION LETTER AND RECORD DRAWINGS TO THE HARRIS COUNTY FLOOD CONTROL DISTRICT'S DEVELOPMENT COORDINATION AND INSPECTION SECTION 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 DRAINAGE SYSTEMS.
5. BACKSLOPE SWALE AND INTERCEPTOR STRUCTURE ELEVATIONS AND LOCATIONS SHOWN ON PLANS ARE APPROXIMATE. FINAL ELEVATIONS AND LOCATIONS SHALL BE FIELD VERIFIED 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 AND 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. PERFORM ALL ACTIVITIES WITHIN HARRIS COUNTY FLOOD CONTROL DISTRICT RIGHT-OF-WAY IN ACCORDANCE WITH THE MOST RECENT HARRIS COUNTY FLOOD CONTROL DISTRICT STANDARD SPECIFICATIONS BOOK.
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 CONSTRUCTION NOTES

1. THE FLOW LINES AND LOCATIONS OF ALL UNDERGROUND UTILITIES MUST BE LOCATED BY WHATEVER MEANS MAY BE REQUIRED (METAL DETECTION EQUIPMENT, PROBES EXCAVATION, SURVEY, COORDINATION WITH UTILITY COMPANIES) BY THE CONTRACTOR PRIOR THE CONSTRUCTION. ALL FIELD VERIFICATION WORK AND UTILITY ADJUSTMENTS SHALL BE COMPLETED PRIOR TO EXCAVATION FOR PROPOSED UTILITIES. NO SEPARATE PAY: INCLUDE COST IN UNIT PRICE FOR WORK IN APPROPRIATE SECTIONS.
2. SERVICES ARE TO BE TRANSFERRED BETWEEN EXISTING AND PROPOSED WATER LINES WITH MINIMUM DISRUPTION OF SERVICE. EXISTING WATER LINES MUST BE MAINTAINED IN SERVICE UNTIL SERVICE WILL TRANSFER IS DONE
3. CALL THE TRAFFIC MANAGEMENT AND MAINTENANCE DIVISION OF THE CITY OF HOUSTON PUBLIC WORK AND ENGINEERING DEPARTMENT WHEN WORK IS SCHEDULED NEAR SIGNAL CONDUITS WITHIN THE CITY OF HOUSTON (713) 837-7280. CALL AT LEAST FIVE WORKING DAYS IN ADVANCE. THE CONTRACTOR SHALL RESPONSIBLE FOR ANY DAMAGES TO EXISTING TRAFFIC SIGNAL CABLES AS A RESULT OF CONSTRUCTION ACTIVITIES FOR FOR THE PROJECT. NO SEPARATE PAYMENT FOR REPAIR TO SIGNAL CONDUIT.
4. SERVICE LINE INSTALLATION COULD BE HINDERED BY THE CEMENT STABILIZED SAND BACKFILL. INCLUDE COST OF CROSSING CEMENT STABILIZED BACKFILL IF ENCOUNTERED DURING SERVICE LINE INSTALLATION IN THE UNIT PRICE OF SERVICES.
5. THE CONTRACTOR TO PROVIDE CUT SHEET GROUND ELEVATIONS AND PROPOSED LINE INVERTS WITH AMOUNT OF CUT, LOCATION OF BENDS, FIRE HYDRANTS, VALVES AND OTHERS FITTINGS AT EVERY 100 FEET IN TABULAR FORMAT) ON EACH STREET TO THE CITY FOR APPROVAL PRIOR TO CONSTRUCTION AT NO ADDITIONAL COST TO THE CITY.
6. CONTRACTOR MUST REFER TO THE CITY OF HOUSTON STANDARD DETAIL DRAWINGS INCLUDED IN THE CITY OF HOUSTON "STANDARD CONSTRUCTION DETAIL FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE, AND STREET PAVING" DATED OCTOBER, 2002, FOR ANY OTHER DETAILS NOT INCLUDED IN THE CONSTRUCTION DRAWINGS.
7. CONTRACTOR SHALL COORDINATE AHEAD OF TIME WITH BUSINESS OWNERS AND RESIDENTS FOR INSTALLATION OF WATER LINES IN ENCROACHED AREAS OF THE PUBLIC RIGHT-OF-WAY. NO SEPARATE PAY.
8. FOR CONSTRUCTION ACTIVITIES WITHIN PIPELINE ROW, REFER TO GENERAL REQUIREMENTS FOR CROSSING GENESIS PIPELINES ATTACHED AS PART OF THE PROJECT MANUAL.
9. TO ALLOW BETTER ROADWAY ACCESS WHILE CONSTRUCTION NO TWO CONSECUTIVE CROSS ROADS BETWEEN TIMBERSIDE DR AND BEVLIN DR SHOULD BE IN CONSTRUCTION AT THE SAME TIME.
10. FOR WORKING ON A SATURDAY CITY OF HOUSTON APPROVAL TO BE ACQUIRED 48 HRS PRIOR FOR EACH DAY.
11. AS INDICATED ON THE PLANS, INFORMATION ON EXISTING WATERLINES ALONG MOST OF THE STREETS WITHIN THE PROJECT LIMITS ARE BASED ON HOUSTON GIMS (HTTPS://GEOGIMSPROD.HOUSTONTX.GOV/HTML5VIEWER/INDEX.HTML?VIEWER=GEOLINK-PUBLIC) AND NO AS-BUILT RECORDS WERE AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING WATERLINES PRIOR TO INSTALLING THE PROPOSED WATERLINES AND CONNECTIONS.

CITY OF HOUSTON - HOUSTON PUBLIC WORKS 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 INSPECTIONAT ALL TIMES.
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.

CITY OF HOUSTON - HOUSTON PUBLIC WORKS STREET & BRIDGE CONSTRUCTION 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.

NETCO PIPELINE NOTES

1. IN ADDITION TO REQUIRED 2-DAY DIG NOTIFICATION, CONTACT NETCO HOUSTON REPRESENTATIVE, RICHARD HINES AT (585)615-5818, 48 HOURS BEFORE BEGINNING EXCAVATION WITHIN NETCO'S 50' WIDE ROW.
2. A 3.27 FEET MINIMUM CLEARANCE WILL BE MAINTAINED BETWEEN THE PIPE AND ANY CONCRETE DRAINAGE OR CONDUIT.
3. IN NECESSARY TO EXPOSE THE NETCO PIPE FOR 12 FEET OR MORE DURING CONSTRUCTION, THAT SECTION OF PIPE SHALL BE SUPPORTED UNTIL BACKFILLED
4. IF NETCO PIPE OR COATING IS DAMAGED BY EXCAVATION, NETCO WILL ARRANGE FOR REPAIRS BUT HOUSTON PUBLIC WORKS AND/OR ITS CONTRACT WILL BE RESPONSIBLE FOR REPAIR COST.

ABBREVIATIONS

AB	ALL BELL
ABAN	ABANDONED
ABS	ABSOLUTE
ADJ	ADJUSTMENT
ALUM	ALUMINUM
APPROX	APPROXIMATE
BC	BACK OF CURB
℄	BASELINE
BLDG	BUILDING
CB	CATCH BASIN
℄	CENTER LINE
CLR	CLEARANCE
CMP	CORRUGATED METAL PIPE
COH	CITY OF HOUSTON
CONC	CONCRETE
CONT	CONTROL OR CONTINUATION
CPP	CORRUGATED PLASTIC PIPE
DI	DUCTILE IRON PIPE
DIA	DIAMETER
DWG	DRAWING
ELEV	ELEVATION
ELECT	ELECTRICAL
ESMT	EASEMENT
EQUIP	EQUIPMENT
EXIST	EXISTING
FF	FACE TO FACE
FH	FIRE HYDRANT
FL	FLOW LINE
FLR	FLOOR
FM	FORCE MAIN
HMAC	HOT MIXED ASPHALT CONCRETE
HP	HIGH PRESSURE
ID	INSIDE DIAMETER
INV	INVERT
IP	INTERMEDIATE PRESSURE
IPB	INLET PROTECTION BARRIER
LF	LINEAR FEET
MH	MANHOLE
MON	MONUMENT
MPLCo	MOBIL PIPELINE COMPANY
NA	NOT APPLICABLE
NFIF	NOT FOUND IN FIELD
NFV	NOT FIELD VERIFIED
NO	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
PCCP	PRESTRESSED CONCRETE CYLINDER PIPE
PROP	PROPOSED
PH	POST HYDRANT
PLA	PLASTIC
PT	POINT OF TANGENCY
PVMT	PAVEMENT
R	FROM RECORD DWGS (NFV)
R	RADIUS
R & R	REMOVE AND REPLACE
RCP	REINFORCED CONCRETE PIPE
REF	REFERENCE
REINF	REINFORCING
REQ'D	REQUIRED
RFB	REINFORCED FILTER FABRIC BARRIER
ROW	RIGHT OF WAY
SAN	SANITARY
SC	SERVICE CONNECTION
SD	SANITARY DRAIN
SEB	SMALL END BELL
STL	STEEL
SWBT	SOUTHWESTERN BELL TELEPHONE COMPANY
SWR	SEWER
SHT	SHEET
STA	STATION
STM	STORM
TC	TOP OF CURB
TEMP	TEMPORARY
TP	TOP OF PAVEMENT
TYP	TYPICAL
UE	UTILITY EASEMENT
VCP	VITRIFIED CLAY PIPE
WL	WATER LINE
WV	WATER VALVE
WM	WATER METER

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

1

APPROVED VARIANCE	APPROVAL DATE
1.VARIANCE FOR CURB RETURN SLOPE ALONG CHATEAU FOREST DRIVE	5/1/2023
2.CLEARANCE BETWEEN THE PROP STORM SEWER AND THE EXISTING SANITARY SEWER ON RIDGE OAK DRIVE	6/2/2023

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

Mike Brower — 08/12/26 (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.

Mike Brower — 08/12/26 (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.

Marlon Smither — 10/07/2025 (Date)

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

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS — RAHUL B. MENON — 130533 — LICENSED PROFESSIONAL ENGINEER — 10/9/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

GENERAL NOTES

WBS NUMBER	M-410029-0001-4
DRAWING SCALE	Not to scale
CITY OF HOUSTON PM	DOAA HAMDAN, P.E.
SHEET NO.	5 OF 158

FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720 CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 10/6/2025 9:22 AM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47_004 - General Notes.dwg

NOTICE:

*Construction in Harris County Flood Control District Right-of-Way requires:

1.) HCFCD Right-of-Way Notification (permit)
2.) HCFCD 48-hr Pre-Construction Notification

Both are required prior to entering or working within Harris County Flood Control District right-of-way. Both the HCFCD Right-of-Way Notification and 48-hour notification must be provided to HCFCD at dcid@hcfcd.org. Site plans must be approved prior to obtaining the required HCFCD Right-of-Way Notification. Be advised that the HCFCD Right-of-Way Notification is separate from the site development permit package.

To apply for the HCFCD Right-of-Way Notification please go to http://apps.harriscountytx.gov/EPermits and apply for the HCFCD ROW under ROW Notification.

Failure to provide both items could result in delays and additional construction costs.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
6/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

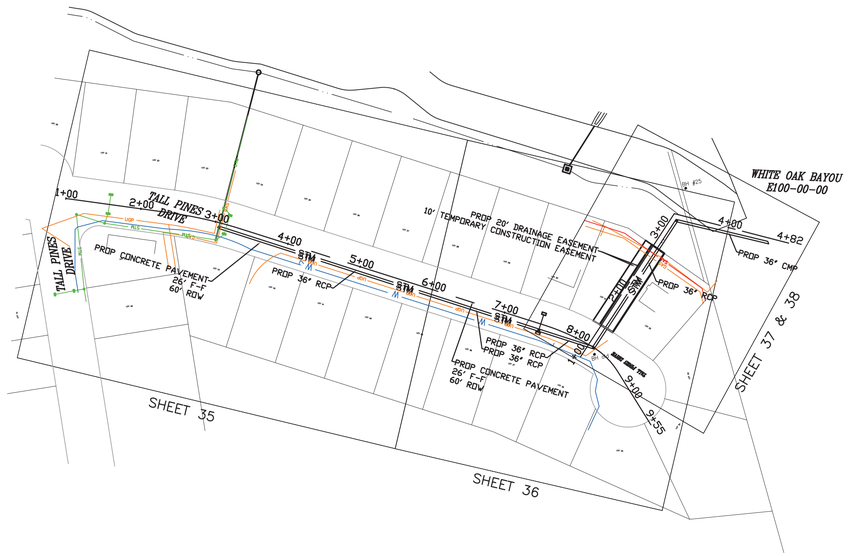
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

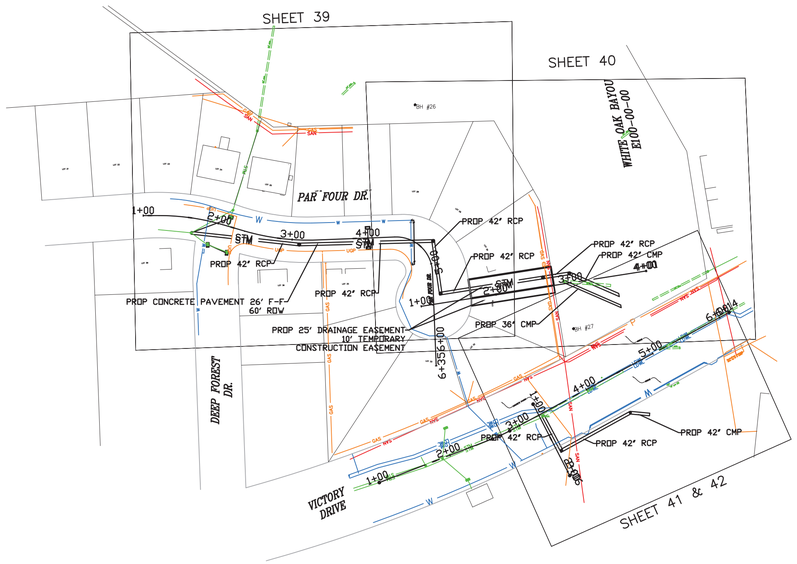
OVERALL STORM/WATERLINE LAYOUT
SHEET 1 OF 2

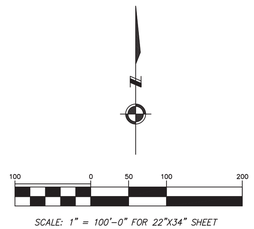
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
1"=100'	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 6 OF 158	

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47_005 - Overall Layout.dwg
PLOT STYLE: Coh_ctb_220714.ctb
PLOTTED: 6/18/2025 5:53 PM







SCALE: 1" = 100'-0" FOR 22"X34" SHEET

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
6/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

OVERALL STORM/WATERLINE LAYOUT
SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
1"=100'	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 7 OF 158	

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 6/18/2025 5:54 PM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47_005 - Overall Layout.dwg

DIERDRE ANNE DRIVE HORIZONTAL ALIGNMENT DATA

Beginning chain CL_DEIR description
Feature: Road_Centerline

Point 29 N 13,883,349.70 E 3,081,304.70 Sta 1+00.00

Course from 29 to PC CL_DEIR_3 N 48° 57′ 40.75" E Dist 348.35

Curve Data

Curve CL_DEIR_3					
P.I. Station	4+70.91	N	13,883,593.23	E	3,081,584.46
Delta =	5° 10′ 00.00" (RT)				
Degree =	11° 27′ 32.96"				
Tangent =	22.56				
Length =	45.09				
Radius =	500.00				
External =	0.51				
Long Chord =	45.07				
Mid. Ord. =	0.51				
P.C. Station	4+48.35	N	13,883,578.42	E	3,081,567.45
P.T. Station	4+93.44	N	13,883,606.45	E	3,081,602.74
C.C.		N	13,883,201.29	E	3,081,895.73
Back = N	48° 57′ 40.75" E				
Ahead = N	54° 07′ 40.75" E				
Chord Bear = N	51° 32′ 40.75" E				

Course from PT CL_DEIR_3 to PC CL_DEIR_6 N 54° 07′ 40.75" E Dist 178.39

Curve Data

Curve CL_DEIR_6					
P.I. Station	7+29.04	N	13,883,744.51	E	3,081,793.66
Delta =	90° 12′ 48.50" (LT)				
Degree =	100° 31′ 08.08"				
Tangent =	57.21				
Length =	89.75				
Radius =	57.00				
External =	23.76				
Long Chord =	80.76				
Mid. Ord. =	16.77				
P.C. Station	6+71.83	N	13,883,710.98	E	3,081,747.30
P.T. Station	7+61.58	N	13,883,790.74	E	3,081,759.96
C.C.		N	13,883,757.17	E	3,081,713.90
Back = N	54° 07′ 40.75" E				
Ahead = N	36° 05′ 07.76" W				
Chord Bear = N	9° 01′ 16.50" E				

Course from PT CL_DEIR_6 to 30 N 36° 05′ 07.76" W Dist 91.19

Point 30 N 13,883,864.44 E 3,081,706.25 Sta 8+52.76

Ending chain CL_DEIR description

CHATEAU FOREST DRIVE HORIZONTAL ALIGNMENT DATA

Beginning chain CL_CHAT description
Feature: Road_Centerline

Point 4 N 13,883,450.85 E 3,081,400.98 Sta 1+00.00

Course from 4 to PC CL_CHAT_3 S 39° 07′ 26.54" E Dist 1,075.66

Curve Data

Curve CL_CHAT_3					
P.I. Station	11+78.84	N	13,882,613.91	E	3,082,081.73
Delta =	0° 10′ 55.98" (LT)				
Degree =	2° 51′ 53.24"				
Tangent =	3.18				
Length =	6.36				
Radius =	2,000.00				
External =	0.00				
Long Chord =	6.36				
Mid. Ord. =	0.00				
P.C. Station	11+75.66	N	13,882,616.38	E	3,082,079.72
P.T. Station	11+82.02	N	13,882,611.45	E	3,082,083.74
C.C.		N	13,883,878.38	E	3,083,631.28
Back = S	39° 07′ 26.54" E				
Ahead = S	39° 18′ 22.52" E				
Chord Bear = S	39° 12′ 54.53" E				

Course from PT CL_CHAT_3 to PC CL_CHAT_6 S 39° 18′ 22.52" E Dist 115.31

Curve Data

Curve CL_CHAT_6					
P.I. Station	13+00.59	N	13,882,519.70	E	3,082,158.86
Delta =	0° 11′ 12.96" (RT)				
Degree =	2° 51′ 53.24"				
Tangent =	3.26				
Length =	6.53				
Radius =	2,000.00				
External =	0.00				
Long Chord =	6.53				
Mid. Ord. =	0.00				
P.C. Station	12+97.33	N	13,882,522.23	E	3,082,156.79
P.T. Station	13+03.86	N	13,882,517.17	E	3,082,160.91
C.C.		N	13,881,255.29	E	3,080,609.25
Back = S	39° 18′ 22.52" E				
Ahead = S	39° 07′ 09.56" E				
Chord Bear = S	39° 12′ 46.04" E				

Course from PT CL_CHAT_6 to PC CL_CHAT_9 S 39° 07′ 09.56" E Dist 868.78

Curve Data

Curve CL_CHAT_9					
P.I. Station	21+82.22	N	13,881,835.71	E	3,082,715.11
Delta =	0° 32′ 57.28" (LT)				
Degree =	2° 51′ 53.24"				
Tangent =	9.59				
Length =	19.17				
Radius =	2,000.00				
External =	0.02				
Long Chord =	19.17				
Mid. Ord. =	0.02				
P.C. Station	21+72.63	N	13,881,843.14	E	3,082,709.06
P.T. Station	21+91.80	N	13,881,828.33	E	3,082,721.23
C.C.		N	13,883,105.02	E	3,084,260.72
Back = S	39° 07′ 09.56" E				
Ahead = S	39° 40′ 06.84" E				
Chord Bear = S	39° 23′ 38.20" E				

Course from PT CL_CHAT_9 to PC CL_CHAT_12 S 39° 40′ 06.84" E Dist 343.47

Curve Data

Curve CL_CHAT_12					
P.I. Station	28+75.88	N	13,881,301.76	E	3,083,157.90
Delta =	37° 26′ 40.33" (RT)				
Degree =	5° 42′ 03.86"				
Tangent =	340.61				
Length =	656.80				
Radius =	1,005.00				
External =	56.15				
Long Chord =	645.17				
Mid. Ord. =	53.18				
P.C. Station	25+35.27	N	13,881,563.94	E	3,082,940.48
P.T. Station	31+92.07	N	13,880,961.40	E	3,083,171.12
C.C.		N	13,880,922.40	E	3,082,166.88
Back = S	39° 40′ 06.84" E				
Ahead = S	2° 13′ 26.51" E				
Chord Bear = S	20° 56′ 46.67" E				

Course from PT CL_CHAT_12 to 5 S 2° 13′ 26.51" E Dist 114.06

Point 5 N 13,880,847.43 E 3,083,175.55 Sta 33+06.14

Ending chain CL_CHAT description

ISANI
civil · design · engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS · V. N. MURTHY MADE · 134936 · LICENSED PROFESSIONAL ENGINEER
6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

HORIZONTAL ALIGNMENT DATA
DEIRDRE ANNE DRIVE
CHATEAU FOREST DRIVE

SHEET 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 8 OF 158	

HOUSTON PUBLIC WORKS ACCEPTED AND FILED
81720 CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

FILE=P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Horizontal Alignment Data\47_HZA01.dgn
DATE=6/19/2025

TALL PINES DRIVE HORIZONTAL ALIGNMENT DATA

Beginning chain CL_TALL description
Feature: Road_Centerline

Point 13 N 13,882,245.09 E 3,084,598.53 Sta 1+00.00

Course from 13 to PC CL_TALL_3 S 82° 10′ 33.88" E Dist 136.27

Curve CL_TALL_3	Curve Data				
P.I. Station	2+85.83	N	13,882,219.80	E	3,084,782.63
Delta =	9° 46′ 07.29" (RT)				
Degree =	9° 52′ 42.90"				
Tangent =	49.56				
Length =	98.89				
Radius =	580.00				
External =	2.11				
Long Chord =	98.77				
Mid. Ord. =	2.11				
P.C. Station	2+36.27	N	13,882,226.54	E	3,084,733.53
P.T. Station	3+35.15	N	13,882,204.82	E	3,084,829.88
C.C.		N	13,881,651.94	E	3,084,654.58
Back = S 82° 10′ 33.88" E					
Ahead = S 72° 24′ 26.59" E					
Chord Bear = S 77° 17′ 30.24" E					

Course from PT CL_TALL_3 to PC CL_TALL_6 S 72° 24′ 26.59" E Dist 420.13

Curve CL_TALL_6	Curve Data				
P.I. Station	7+90.15	N	13,882,067.29	E	3,085,263.60
Delta =	13° 15′ 33.77" (RT)				
Degree =	19° 05′ 54.94"				
Tangent =	34.87				
Length =	69.43				
Radius =	300.00				
External =	2.02				
Long Chord =	69.27				
Mid. Ord. =	2.01				
P.C. Station	7+55.28	N	13,882,077.83	E	3,085,230.36
P.T. Station	8+24.71	N	13,882,049.41	E	3,085,293.53
C.C.		N	13,881,791.86	E	3,085,139.68
Back = S 72° 24′ 26.59" E					
Ahead = S 59° 08′ 52.82" E					
Chord Bear = S 65° 46′ 39.71" E					

Curve CL_TALL_7	Curve Data				
P.I. Station	8+48.97	N	13,882,036.97	E	3,085,314.36
Delta =	27° 16′ 10.74" (RT)				
Degree =	57° 17′ 44.81"				
Tangent =	24.26				
Length =	47.59				
Radius =	100.00				
External =	2.90				
Long Chord =	47.15				
Mid. Ord. =	2.82				
P.C. Station	8+24.71	N	13,882,049.41	E	3,085,293.53
P.T. Station	8+72.30	N	13,882,016.37	E	3,085,327.17
C.C.		N	13,881,963.56	E	3,085,242.25
Back = S 59° 08′ 52.82" E					
Ahead = S 31° 52′ 42.08" E					
Chord Bear = S 45° 30′ 47.45" E					

Course from PT CL_TALL_7 to 14 S 31° 52′ 42.08" E Dist 82.46

Point 14 N 13,881,946.35 E 3,085,370.72 Sta 9+54.77

Ending chain CL_TALL description

PAR FOUR DRIVE HORIZONTAL ALIGNMENT DATA

Beginning chain CL_PAR description
Feature: Road_Centerline

Point 15 N 13,881,410.44 E 3,085,669.09 Sta 1+00.00

Course from 15 to PC CL_PAR_3 Due East Dist 20.91

Curve CL_PAR_3	Curve Data				
P.I. Station	1+63.80	N	13,881,410.44	E	3,085,732.89
Delta =	16° 16′ 25.27" (RT)				
Degree =	19° 05′ 54.94"				
Tangent =	42.89				
Length =	85.21				
Radius =	300.00				
External =	3.05				
Long Chord =	84.92				
Mid. Ord. =	3.02				
P.C. Station	1+20.91	N	13,881,410.44	E	3,085,690.00
P.T. Station	2+06.12	N	13,881,398.42	E	3,085,774.07
C.C.		N	13,881,110.44	E	3,085,690.00
Back = Due East					
Ahead = S 73° 43′ 34.73" E					
Chord Bear = S 81° 51′ 47.36" E					

Course from PT CL_PAR_3 to PC CL_PAR_6 S 73° 43′ 34.73" E Dist 30.07

Curve CL_PAR_6	Curve Data				
P.I. Station	2+85.04	N	13,881,376.31	E	3,085,849.83
Delta =	18° 29′ 48.10" (LT)				
Degree =	19° 05′ 54.94"				
Tangent =	48.85				
Length =	96.85				
Radius =	300.00				
External =	3.95				
Long Chord =	96.43				
Mid. Ord. =	3.90				
P.C. Station	2+36.19	N	13,881,390.00	E	3,085,802.93
P.T. Station	3+33.04	N	13,881,378.20	E	3,085,898.64
C.C.		N	13,881,677.98	E	3,085,887.00
Back = S 73° 43′ 34.73" E					
Ahead = N 87° 46′ 37.17" E					
Chord Bear = S 82° 58′ 28.78" E					

Course from PT CL_PAR_6 to PC CL_PAR_9 N 87° 46′ 37.17" E Dist 102.51

Curve CL_PAR_9	Curve Data				
P.I. Station	4+83.50	N	13,881,384.04	E	3,086,048.98
Delta =	89° 56′ 42.71" (RT)				
Degree =	119° 21′ 58.35"				
Tangent =	47.95				
Length =	75.35				
Radius =	48.00				
External =	19.85				
Long Chord =	67.85				
Mid. Ord. =	14.04				
P.C. Station	4+35.54	N	13,881,382.18	E	3,086,001.07
P.T. Station	5+10.89	N	13,881,336.12	E	3,086,050.89
C.C.		N	13,881,334.21	E	3,086,002.93
Back = N 87° 46′ 37.17" E					
Ahead = S 2° 16′ 40.12" E					
Chord Bear = S 47° 15′ 01.47" E					

Course from PT CL_PAR_9 to 16 S 2° 16′ 40.12" E Dist 124.15

Point 16 N 13,881,212.07 E 3,086,055.82 Sta 6+35.04

Ending chain CL_PAR description

ISANI
civil | design | engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

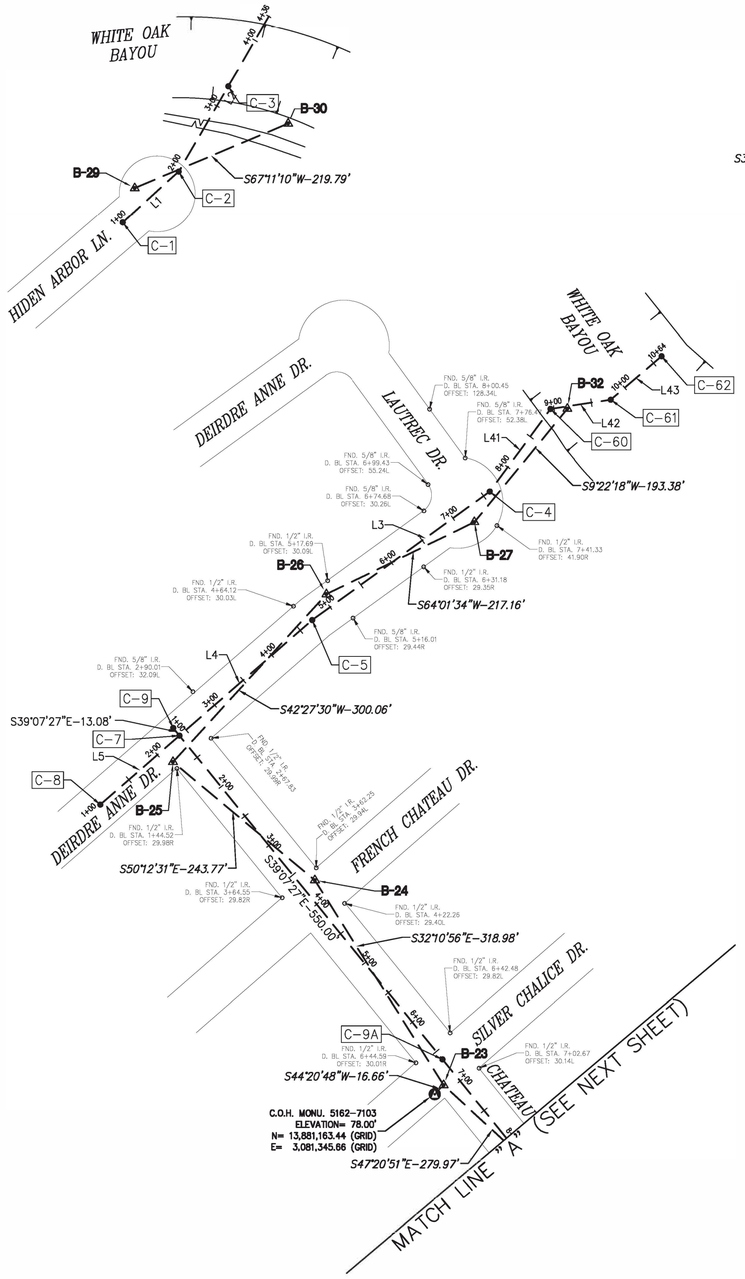
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

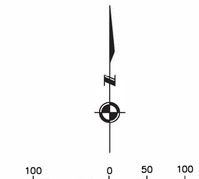
HORIZONTAL ALIGNMENT DATA
TALL PINES DR, PARFOUR DR

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY CONTROL NUMBER Approval Date 09/25 HOUSTON TX
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 9 OF 158	

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Horizontal Alignment Data\47_HZA02.dgn
DATE:6/19/2025

PLOT STYLE: LARGE_FORMAT_BW.CTB PLOTTED: 3/31/2025 9:47 PM





NO.	DATE	REVISION	APP.

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162–7103, A BRASS DISK IN CONCRETE, LOCATED AT THE SOUTH CORNER OF THE INTERSECTION OF SILVER CHALICE DR AND CHATEAU FOREST DR.

ELEV. 78.00 FEET NAVD 1988 (GEOID '18)

VERTICAL DATUM ADJUSTMENT:

THE ELEVATION DIFFERENCE IN BETWEEN THE FLOODPLAIN REFERENCE MARKS (RM 050080)PUBLISHED DATUM NAVD 1988, 2001 ADJUSTMENT AND DATUM NAVD 1988, (GEOID '18) IS 0.47'.

NAVD 1988, 2001 ADJ. ELEVATION
= NAVD 1988 (GEOID '18) ELEVATION + 0.47 FT

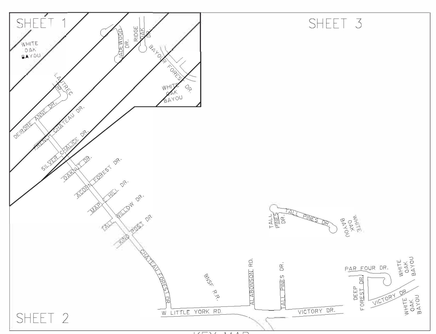
NOTE:

ALL BEARINGS AND DISTANCES ARE BASED ON TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NAD83 (CORS96). ALL DISTANCES ARE IN SURFACE.

THE COORDINATES SHOWN HEREON ARE TEXAS SOUTH CENTRAL ZONE NO. 4204 STATE PLANE GRID COORDINATES (NAD83) AND MAY BE BROUGHT TO SURFACE BY DIVIDING BY THE COMBINED SCALE FACTOR 0.999870017.

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 — — —



ISANI
civil · design · engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

KUO & ASSOCIATES
ENGINEERING • SURVEYING
10300 WESTOFFICE DR. SUITE 800
HOUSTON, TX 77042
713-975-8769
TX FIRM NO.: F-4578

STATE OF TEXAS REGISTERED KUTUBUL A. M. MAHUDDIN 6404 PROFESSIONAL LAND SURVEYOR
03/31/2025

SURVEYED BY: KUO & ASSOC.
FB NO. P-6257

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

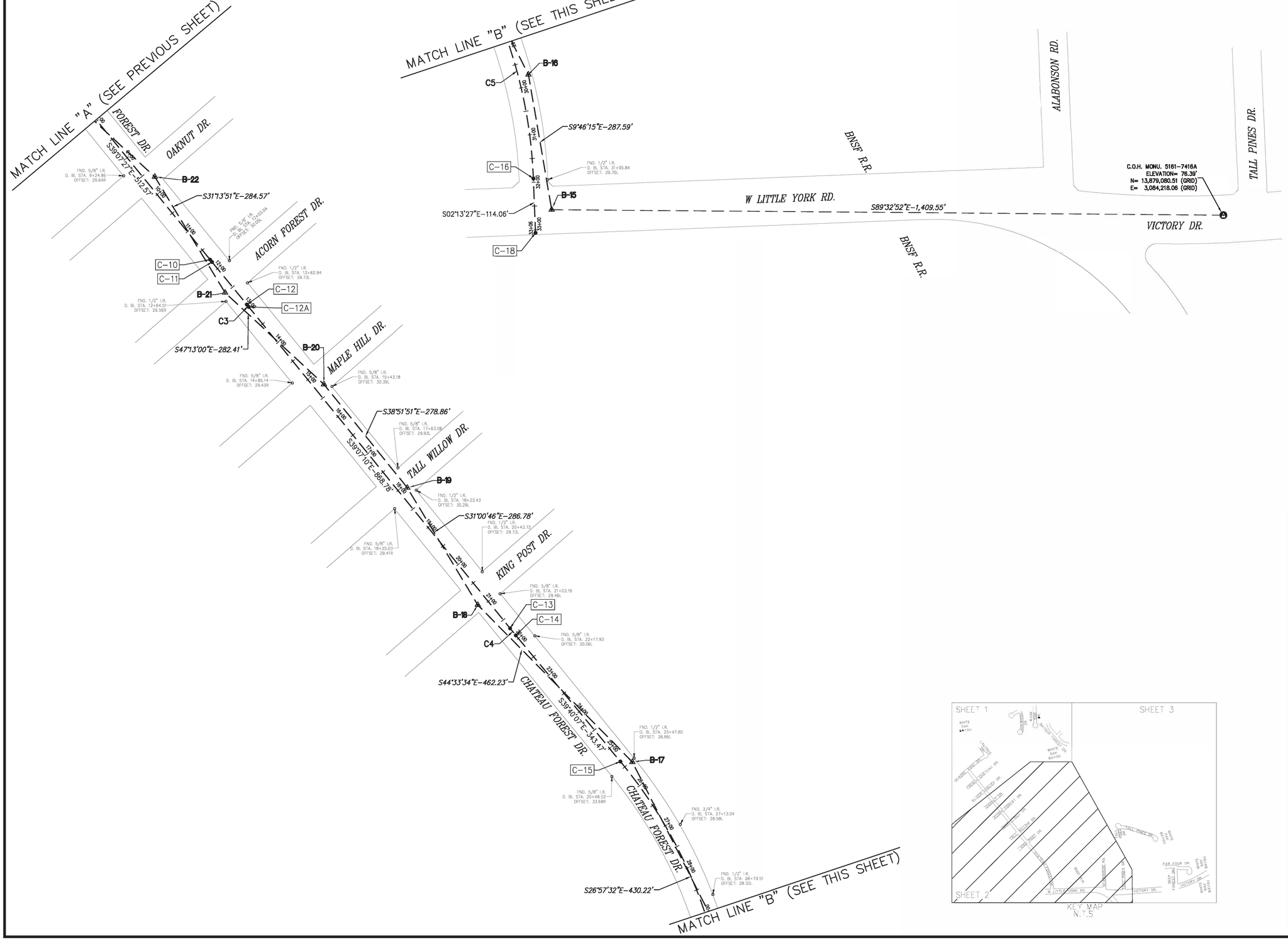
DRAINAGE AND PAVING IMPROVEMENTS IN CHATEAU FOREST AREA

SURVEY CONTROL MAP
(SHEET 1 OF 4)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
AS SHOWN	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 10 OF 158	

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date: 09/19/25
HOUSTON TX

FILE PATH: S:\Proj-2022\22039 (P21083 CHATEAU FOREST)\Dwgs\SCM\SCM-22039.dwg



NO.	DATE	REVISION	APP.

N

100 0 50 100

SCALE: 1" = 100'

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162-710.1, A BRASS DISK IN CONCRETE, LOCATED AT THE SOUTH CORNER OF THE INTERSECTION OF SILVER CHALICE DR AND CHATEAU FOREST DR.

ELEV. 78.00 FEET NAVD 1988 (GEOID '18)

VERTICAL DATUM ADJUSTMENT:

THE ELEVATION DIFFERENCE IN BETWEEN THE FLOODPLAIN REFERENCE MARKS (RM 050080)PUBUSHED DATUM NAVD 1988, 2001 ADJUSTMENT AND DATUM NAVD 1988, (GEOID '18) IS 0.47'.

NAVD 1988, 2001 ADJ. ELEVATION
= NAVD 1988 (GEOID '18) ELEVATION + 0.47 FT

NOTE:

ALL BEARINGS AND DISTANCES ARE BASED ON TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NAD83 (CORS96). ALL DISTANCES ARE IN SURFACE.

THE COORDINATES SHOWN HEREON ARE TEXAS SOUTH CENTRAL ZONE NO. 4204 STATE PLANE GRID COORDINATES (NAD83) AND MAY BE BROUGHT TO SURFACE BY DIVIDING BY THE COMBINED SCALE FACTOR 0.999870017.

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

ISANI
civil ◦ design ◦ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

KUO & ASSOCIATES
ENGINEERING + SURVEYING
10300 WESTOFFICE DR. SUITE 800
HOUSTON, TX 77042
713-975-8769
TX FIRM NO.: F-4578

STATE OF TEXAS REGISTERED KUTUBUL A. M. MANUDDIN 6404 PROFESSIONAL LAND SURVEYOR
08/31/2025

SURVEYED BY: KUO & ASSOC.
FB NO. P-6257

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

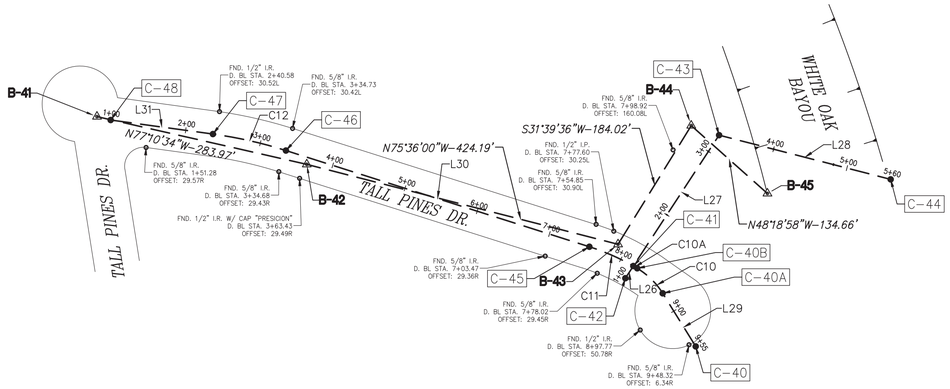
DRAINAGE AND PAVING IMPROVEMENTS IN CHATEAU FOREST AREA

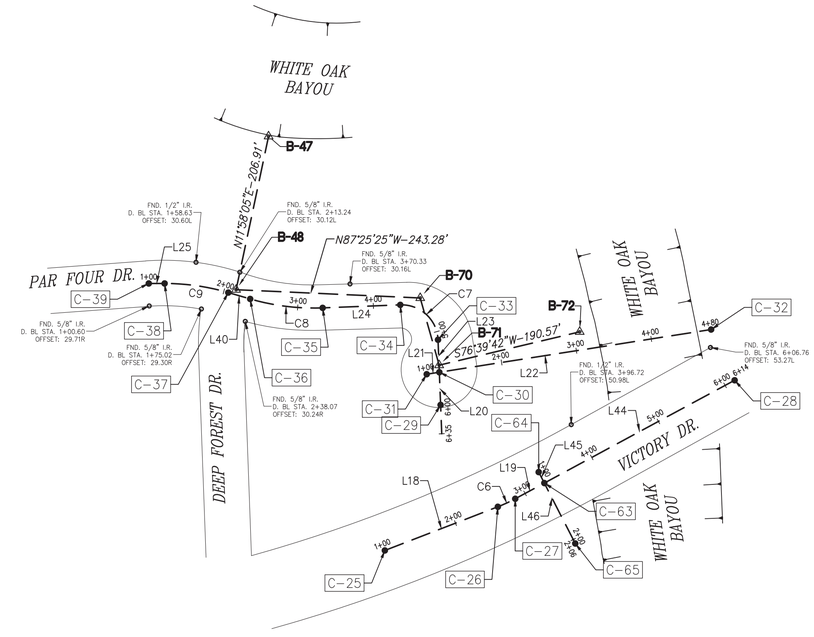
SURVEY CONTROL MAP (SHEET 2 OF 4)

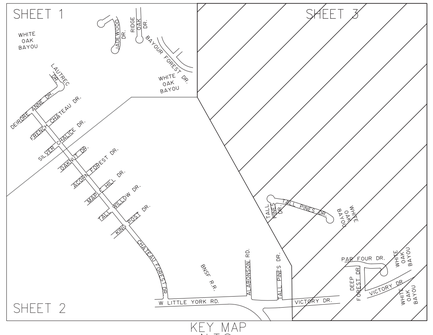
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
AS SHOWN	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 11 OF 158	

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

PLOT STYLE: LARGE_FORMAT_BW.CTB PLOTTED: 3/31/2025 9:43 PM
FILE PATH: S:\Proj-2022\22039 (P21083 CHATEAU FOREST)\Dwgs\SCM\SCM-22039.dwg







KEY MAP
N.T.S

N

100 0 50 100

SCALE: 1" = 100'

NO.	DATE	REVISION	APP.

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162-7103, A BRASS DISK IN CONCRETE, LOCATED AT THE SOUTH CORNER OF THE INTERSECTION OF SILVER CHALICE DR AND CHATEAU FOREST DR.

ELEV. 78.00 FEET NAVD 1988 (GEOID '18)

VERTICAL DATUM ADJUSTMENT:

THE ELEVATION DIFFERENCE IN BETWEEN THE FLOODPLAIN REFERENCE MARK'S (RM 050080)PUBLISHED DATUM NAVD 1988, 2001 ADJUSTMENT AND DATUM NAVD 1988, (GEOID '18) IS 0.47'.

NAVD 1988, 2001 ADJ. ELEVATION
= NAVD 1988 (GEOID '18) ELEVATION + 0.47 FT

NOTE:

ALL BEARINGS AND DISTANCES ARE BASED ON TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NAD83 (CORS96). ALL DISTANCES ARE IN SURFACE.

THE COORDINATES SHOWN HEREON ARE TEXAS SOUTH CENTRAL ZONE NO. 4204 STATE PLANE GRID COORDINATES (NAD83) AND MAY BE BROUGHT TO SURFACE BY DIVIDING BY THE COMBINED SCALE FACTOR 0.99987017.

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

ISANI
civil · design · engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

KUO & ASSOCIATES
ENGINEERING + SURVEYING
10300 WESTOFFICE DR. SUITE 800
HOUSTON, TX 77042
713-975-8769
TX FIRM NO.: F-4578

SURVEYED BY: KUO & ASSOC.
FB NO. P-6257

STATE OF TEXAS
REGISTERED
KUTUBUL A. M. MAINUDDIN
6404
PROFESSIONAL
LAND SURVEYOR
03/31/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

DRAINAGE AND PAVING IMPROVEMENTS IN CHATEAU FOREST AREA

SURVEY CONTROL MAP
(SHEET 3 OF 4)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
AS SHOWN	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 12 OF 158	

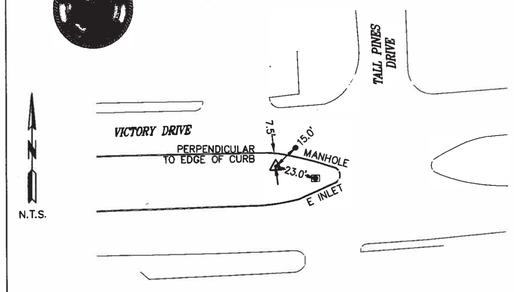
HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date: 09/16/25
HOUSTON TX

PLOT STYLE: LARGE_FORMAT_BW.CTB PLOTTED: 3/31/2025 9:44 PM
FILE PATH: S:\Proj-2022\22039 (P21083 CHATEAU FOREST)\Dwgs\SCM\SCM-22039.dwg

PLOT STYLE: LARGE_FORMAT_BW.CTB PLOTTED: 3/31/2025 9:45 PM

CITY OF HOUSTON

CITY SURVEY 5161
SITE CONTROL MONUMENT 7416A



Project WBS# M-410029-0001-3
Texas Coordinate System of 1983, South Central Zone, U. S. Survey Feet
X= 3,084,218.06
Y= 13,879,080.51
Lat.= 29° 51' 56.19999" (N)
Lon.= 95° 28' 45.52198" (W)
Reference Frame Used: NAD '83 (2011) (EPOCH: 2010)
Vertical Adjustment used: NAVD '88
General Location: IN THE WEST MEDIAN OF VICTORY DR. AND TALL PINES DR. INTERSECTION
Date Set: 03-04-2023 Type of Mark: 4A

Keymap Page: 411T
Orthometric Elevation =76.39 FEET
Ellipsoid Height= _____
Geoid: GEOID '18
Datum Source & Adjustment: CONVENTIONAL (TIED TO MONU. 5162-7103)

3 Nearest project control points (bearings and distances stated below):
1 S 84° 12' 00" E 43.31'
2 S 82° 00' 00" W 299.91'
3 S 85° 14' 30" W 359.62'

NOTE:
1. Bearings are grid bearings.
2. Scale Factor (S.F.) = 0.999870017.
3. Surface= Grid / S.F.

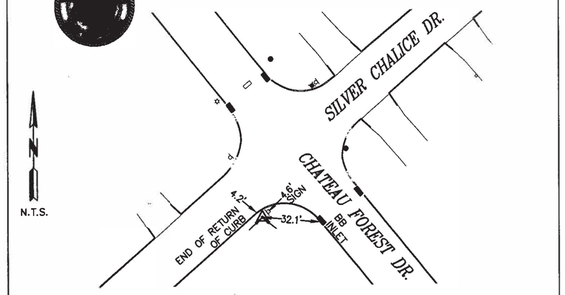
Surveyed By: Kuo & Associates, Inc.
10300 Westoffice Dr., Suite 800
Houston, TX 77042

STATE OF TEXAS REGISTERED KUTUBUL A. M. MANUDDIN 6404 PROFESSIONAL LAND SURVEYOR

City of Houston, Harris County, Texas

CITY OF HOUSTON

CITY SURVEY 5162
SITE CONTROL MONUMENT 7103



Project WBS# M-410029-0001-3
Texas Coordinate System of 1983, South Central Zone, U. S. Survey Feet
X= 3,081,345.66
Y= 13,881,163.44
Lat.= 29° 52' 17.66588" (N)
Lon.= 95° 29' 17.42233" (W)
Reference Frame Used: NAD '83 (2011) (EPOCH: 2010)
Vertical Adjustment used: NAVD '88
General Location: ON THE SOUTH OF INTERSECTION OF SILVER CHALICE DR. AND CHATEAU FOREST DR.
Date Set: 01-07-2023 Type of Mark: 4A

Keymap Page: 411S
Orthometric Elevation =78.00 FEET
Ellipsoid Height= _____
Geoid: GEOID '18
Datum Source & Adjustment: CONVENTIONAL

3 Nearest project control points (bearings and distances stated below):
1 N 44° 20' 50" E 16.66'
2 S 50° 44' 50" E 280.96'
3 N 29° 18' 30" W 323.26'

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 Dr., Suite 800
Houston, TX 77042

STATE OF TEXAS REGISTERED KUTUBUL A. M. MANUDDIN 6404 PROFESSIONAL LAND SURVEYOR

City of Houston, Harris County, Texas

SURVEY BASELINE POINTS DATA (TEMPORARY BENCHMARK)								
POINT No.	NORTHING (SURFACE)	EASTING (SURFACE)	NORTHING (GRID)	EASTING (GRID)	ELEVATION	D. BL STA.	OFFSET	DESCRIPTION
B-15	13,880,895.92	3,083,209.51	13,879,091.64	3,082,808.74	79.14'	2+75.60	0.76L	SET "X" CUT ON CONC.
B-17	13,881,562.80	3,082,965.66	13,879,758.44	3,082,564.93	77.19'	25+51.91	18.80L	SET 5/8" I.R. W/ CAP
B-18	13,881,892.15	3,082,641.34	13,880,087.74	3,082,240.65	76.65'	20+91.88	21.62R	SET "X" CUT ON CONC.
B-19	13,882,137.93	3,082,493.58	13,880,333.49	3,082,092.91	75.89'	18+07.97	18.83L	SET "X" CUT ON CONC.
B-20	13,882,355.06	3,082,318.61	13,880,550.59	3,081,917.96	76.12'	15+29.12	20.07L	SET "X" CUT ON CONC.
B-21	13,882,546.88	3,082,111.34	13,880,742.39	3,081,710.72	77.20'	12+49.46	19.55R	SET "X" CUT ON CONC.
B-22	13,882,790.21	3,081,963.80	13,880,985.68	3,081,563.20	77.00'	9+67.66	19.76L	SET "X" CUT ON CONC.
B-23	13,882,979.91	3,081,757.88	13,881,175.35	3,081,357.31	77.41'	6+90.56	20.29R	SET "X" CUT ON CONC.
B-24	13,883,249.87	3,081,587.99	13,881,445.29	3,081,187.44	77.56'	3+73.92	18.26L	SET "X" CUT ON CONC.
B-25	13,883,405.89	3,081,400.68	13,881,601.28	3,081,000.15	78.89'	1+34.70	28.61R	SET 5/8" I.R. W/ CAP
B-26	13,883,627.26	3,081,603.24	13,881,822.62	3,081,202.68	79.28'	5+06.03	16.57L	SET 1/2" I.R. W/ CAP
B-27	13,883,722.37	3,081,798.46	13,881,917.72	3,081,397.88	77.72'	1+40.18	479.68L	SET "X" CUT ON CONC.
B-29	13,884,163.02	3,081,350.09	13,882,358.31	3,080,949.57	77.18'	1+42.22	22.93L	SET "X" CUT ON CONC.
B-30	13,884,248.24	3,081,552.68	13,882,443.52	3,081,152.13	81.19'	3+27.35	93.01R	SET "X" CUT ON CONC.
B-32	13,883,871.86	3,081,921.13	13,882,067.19	3,081,520.54	78.64'	1+01.61	669.18L	SET "X" CUT ON CONC.
B-33	13,884,214.47	3,082,531.67	13,882,409.76	3,082,130.99	76.22'	4+52.46	10.66R	SET "X" CUT ON CONC.
B-36	13,884,391.52	3,082,797.95	13,882,586.78	3,082,397.24	74.99'	-----	-----	SET "X" CUT ON CONC.
B-37	13,884,299.78	3,082,265.80	13,882,495.05	3,081,865.16	77.67'	-----	-----	SET 1/2" I.R. W/ CAP
B-38	13,884,066.79	3,082,392.86	13,882,262.10	3,081,992.20	79.20'	1+45.43	60.76R	SET 1/2" I.R. W/ CAP
B-41	13,882,249.59	3,084,580.50	13,880,445.13	3,084,179.56	72.34'	-----	-----	SET "X" CUT ON CONC.
B-42	13,882,186.56	3,084,857.39	13,880,382.11	3,084,456.41	71.25'	3+66.89	9.09R	SET "X" CUT ON CONC.
B-43	13,882,081.07	3,085,268.25	13,880,276.63	3,084,867.22	72.46'	7+88.66	16.50L	SET 1/2" I.R. W/ CAP
B-44	13,882,237.70	3,085,364.84	13,880,433.24	3,084,963.79	74.99'	8+03.46	199.46L	SET "X" CUT ON CONC.
B-45	13,882,148.15	3,085,465.41	13,880,343.70	3,085,064.35	76.04'	3+57.51	9.04R	SET 5/8" I.R. W/ CAP
B-47	13,881,604.60	3,085,827.25	13,879,800.23	3,085,426.15	75.00'	2+02.18	212.87L	SET 5/8" I.R. W/ CAP
B-48	13,881,402.19	3,085,784.35	13,879,597.85	3,085,383.25	71.76'	2+14.93	6.50L	SET "X" CUT ON CONC.
B-70	13,881,391.26	3,086,027.37	13,879,586.91	3,085,626.24	72.32'	4+56.84	14.06L	SET "X" CUT ON CONC.
B-71	13,881,302.58	3,086,052.41	13,879,498.25	3,085,651.28	73.45'	1+18.11	9.22L	SET 1/2" I.R. W/ CAP
B-72	13,881,346.55	3,086,237.85	13,879,542.21	3,085,836.69	72.24'	3+08.12	23.88L	SET 1/2" I.R. W/ CAP
B-600	13,883,745.35	3,083,144.72	13,881,940.70	3,082,743.97	79.07'	8+00.34	180.25R	SET 1/2" I.R. W/ CAP
B-601	13,883,792.13	3,083,388.68	13,881,987.48	3,082,987.90	78.12'	9+23.66	41.23L	SET 1/2" I.R. W/ CAP

DESIGN BASELINE POINTS DATA						
POINT No.	D. BL STA.	NORTHING (SURFACE)	EASTING (SURFACE)	NORTHING (GRID)	EASTING (GRID)	MATERIAL SET
C-1	1+00.00	13,884,117.65	3,081,334.29	13,882,312.95	3,080,933.77	SET "X" CUT
C-2	1+99.87	13,884,184.86	3,081,408.17	13,882,380.15	3,081,007.64	SET 1/2" I.R. W/CAP
C-3	3+30.00	13,884,297.32	3,081,473.63	13,882,492.60	3,081,073.09	SET 1/2" I.R. W/CAP
C-4	7+60.00	13,883,762.63	3,081,818.72	13,881,957.98	3,081,418.13	SET "X" CUT
C-5	4+70.91	13,883,593.24	3,081,584.46	13,881,788.61	3,081,183.91	SET "X" CUT
C-7	2+38.60	13,883,440.70	3,081,409.24	13,881,636.09	3,081,008.71	SET "X" CUT
C-8	1+00.00	13,883,349.71	3,081,304.69	13,881,545.11	3,080,904.18	SET "X" CUT
C-9	1+00.00	13,883,450.85	3,081,400.98	13,881,646.24	3,081,000.45	SET "X" CUT
C-9A	6+63.08	13,883,014.02	3,081,756.29	13,881,209.47	3,081,355.71	SET "X" CUT
C-10	11+75.66	13,882,616.38	3,082,079.72	13,880,811.88	3,081,679.10	SET "X" CUT
C-11	11+82.02	13,882,611.45	3,082,083.74	13,880,806.95	3,081,683.12	SET "X" CUT
C-12	12+97.33	13,882,522.23	3,082,156.79	13,880,717.73	3,081,756.16	SET "X" CUT
C-12A	13+03.86	13,882,517.17	3,082,160.91	13,880,712.68	3,081,760.29	SET "X" CUT
C-13	21+72.63	13,881,843.14	3,082,709.06	13,880,038.74	3,082,308.36	SET "X" CUT
C-14	21+91.80	13,881,828.33	3,082,721.23	13,880,023.93	3,082,320.52	SET "X" CUT
C-15	25+35.27	13,881,563.94	3,082,940.48	13,879,759.57	3,082,539.75	SET "X" CUT
C-16	31+92.07	13,880,961.40	3,083,171.12	13,879,157.12	3,082,770.36	SET "X" CUT
C-18	33+06.14	13,880,847.43	3,083,175.55	13,879,043.15	3,082,774.79	SET "X" CUT
C-25	1+00.00	13,881,058.07	3,085,980.69	13,879,253.77	3,085,579.56	SET 1/2" I.R. W/CAP
C-26	2+59.91	13,881,115.71	3,086,129.85	13,879,311.40	3,085,728.71	SET "X" CUT
C-27	2+85.21	13,881,126.29	3,086,152.81	13,879,321.98	3,085,751.67	SET 1/2" I.R. W/CAP
C-28	6+14.32	13,881,282.69	3,086,442.38	13,879,478.36	3,086,041.20	SET 1/2" I.R. W/CAP
C-29	5+96.94	13,881,250.15	3,086,054.31	13,879,445.82	3,085,653.18	SET "X" CUT
C-30	1+16.84	13,881,293.27	3,086,052.59	13,879,488.94	3,085,651.46	SET 1/2" I.R. W/CAP
C-31	1+00.00	13,881,290.66	3,086,035.96	13,879,486.33	3,085,634.82	SET "X" CUT
C-32	4+80.00	13,881,349.63	3,086,411.35	13,879,545.29	3,086,010.17	SET 1/2" I.R. W/CAP
C-33	5+10.89	13,881,336.12	3,086,050.89	13,879,531.78	3,085,649.76	SET "X" CUT
C-34	4+35.54	13,881,382.18	3,086,001.07	13,879,577.83	3,085,599.94	SET "X" CUT
C-35	3+33.04	13,881,378.20	3,085,898.64	13,879,573.86	3,085,497.52	SET "X" CUT
C-36	2+36.19	13,881,390.00	3,085,802.93	13,879,585.65	3,085,401.83	SET "X" CUT
C-37	2+06.12	13,881,398.42	3,085,774.07	13,879,594.08	3,085,372.97	SET "X" CUT

DESIGN BASELINE POINTS DATA						
POINT No.	D. BL STA.	NORTHING (SURFACE)	EASTING (SURFACE)	NORTHING (GRID)	EASTING (GRID)	MATERIAL SET
C-38	1+20.91	13,881,410.44	3,085,690.00	13,879,606.09	3,085,288.91	SET "X" CUT
C-39	1+00.00	13,881,410.44	3,085,669.09	13,879,606.09	3,085,268.01	SET "X" CUT
C-40	9+54.77	13,881,946.35	3,085,370.72	13,880,141.93	3,084,969.67	SET "X" CUT
C-40A	8+72.30	13,882,016.37	3,085,327.17	13,880,211.95	3,084,926.13	SET "X" CUT
C-40B	8+24.71	13,882,049.41	3,085,293.53	13,880,244.98	3,084,892.50	SET "X" CUT
C-41	1+19.25	13,882,052.40	3,085,288.42	13,880,247.96	3,084,887.39	SET "X" CUT
C-42	1+00.00	13,882,036.30	3,085,277.87	13,880,231.87	3,084,876.84	SET 1/2" I.R. W/CAP
C-43	3+25.73	13,882,225.10	3,085,401.59	13,880,420.65	3,085,000.54	SET 1/2" I.R. W/CAP
C-44	5+59.60	13,882,166.78	3,085,628.07	13,880,362.33	3,085,226.99	SET 1/2" I.R. W/CAP
C-45	7+55.28	13,882,077.83	3,085,230.36	13,880,273.40	3,084,829.33	SET "X" CUT
C-46	3+35.15	13,882,204.82	3,084,829.88	13,880,400.36	3,084,428.90	SET "X" CUT
C-47	2+36.27	13,882,226.54	3,084,733.53	13,880,422.09	3,084,332.57	SET "X" CUT
C-48	1+00.00	13,882,245.09	3,084,598.53	13,880,440.64	3,084,197.59	SET "X" CUT
C-49	1+00.00	13,884,061.46	3,082,317.18	13,882,256.77	3,081,916.53	SET 1/2" I.R. W/CAP
C-50	2+04.48	13,884,149.33	3,082,373.72	13,882,344.63	3,081,973.06	SET 1/2" I.R. W/CAP
C-51	3+33.62	13,884,209.41	3,082,488.02	13,882,404.70	3,082,087.35	SET "X" CUT
C-52	3+78.32	13,884,181.45	3,082,522.90	13,882,376.74	3,082,122.23	SET 1/2" I.R. W/CAP
C-54	1+00.00	13,884,366.94	3,082,792.79	13,882,562.21	3,082,392.08	SET "X" CUT
C-55	2+91.73	13,884,243.59	3,082,939.57	13,882,438.87	3,082,538.84	SET "X" CUT
C-56	3+20.58	13,884,223.50	3,082,960.24	13,882,418.78	3,082,559.51	SET 1/2" I.R. W/CAP
C-57	8+38.65	13,883,836.62	3,083,304.80	13,882,031.96	3,082,904.03	SET 1/2" I.R. W/CAP
C-58	8+60.07	13,883,819.89	3,083,318.17	13,882,015.23	3,082,917.39	SET 1/2" I.R. W/CAP
C-59	10+74.50	13,883,645.43	3,083,442.84	13,881,840.79	3,083,042.05	SET 1/2" I.R. W/CAP
C-60	8+95.38	13,883,871.69	3,081,898.94	13,882,067.02	3,081,498.35	SET 1/2" I.R. W/CAP
C-61	9+75.73	13,883,883.77	3,081,978.38	13,882,079.11	3,081,577.77	SET 1/2" I.R. W/CAP
C-62	10+64.02	13,883,941.16	3,082,045.47	13,882,136.48	3,081,644.86	SET 1/2" I.R. W/CAP
C-63	3+28.82	13,881,147.01	3,086,191.18	13,879,342.70	3,085,790.03	SET 1/2" I.R. W/CAP
C-64	1+00.00	13,881,161.53	3,086,183.75	13,879,357.22	3,085,782.60	SET "X" CUT
C-65	2+05.89	13,881,067.28	3,086,232.02	13,879,262.97	3,085,830.86	SET 1/2" I.R. W/CAP

LINE TABLE: SURVEY BASELINE		
LINE #	BEARING	LENGTH
L1	N47° 42' 22.04"E	99.87
L2	N30° 12' 17.69"E	236.60
L3	N54° 07' 40.75"E	289.09
L4	N48° 57' 40.75"E	232.32
L5	N48° 57' 40.75"E	138.60
L6	S39° 07' 26.54"E	13.08
L7	S39° 07' 26.54"E	550.00
L8	S39° 07' 26.54"E	540.70
L9	S39° 29' 47.66"E	60.02
L10	S39° 07' 09.56"E	908.77

LINE TABLE: SURVEY BASELINE		
LINE #	BEARING	LENGTH
L20	S2° 16' 40.12"E	43.15
L21	N81° 04' 21.04"E	16.84
L22	N81° 04' 21.04"E	284.38
L23	S2° 16' 40.12"E	42.88
L24	N87° 46' 37.17"E	102.51
L25	N90° 00' 00.00"E	20.91
L26	N33° 14' 07.17"E	19.25
L27	N33° 14' 07.17"E	206.48
L28	S75° 33' 29.71"E	155.87
L29	S31° 52' 42.08"E	82.46
L30	S72° 24' 26.59"E	420.13

LINE TABLE: SURVEY BASELINE		
LINE #	BEARING	LENGTH
L31	S82° 10' 33.88"E	136.27
L32	N32° 45' 32.86"E	104.48
L33	N62° 16' 16.70"E	129.13
L34	S51° 16' 46.40"E	44.71
L36	S49° 57' 19.08"E	191.73
L37	S41° 41' 21.13"E	518.07
L38	S35° 39' 07.54"E	214.42
L40	S73° 43' 34.73"E	30.07
L41	N36° 20' 20.72"E	135.39
L42	N81° 20' 56.58"E	80.35
L43	N49° 27' 34.15"E	88.28
L44	N61° 37' 34.56"E	285.50
L45	S27° 06' 57.96"E	16.31
L46	S27° 06' 57.96"E	89.59

DESIGN BASELINE: CURVE TABLE					
CURVE #	RADIUS	ARC LENGTH	DELTA ANGLE	CHORD BEARING	CHORD DISTANCE
C2	1993.21	19.08	0°32'55"	S39° 23' 39.39"E	19.08
C3	2000.00	6.53	0°11'13"	S39° 12' 46.04"E	6.53
C4	2000.00	19.17	0°32'57"	S39° 23' 38.20"E	19.17
C5	1005.00	656.80	37°26'40"	S20° 56' 46.67"E	645.17
C6	200.00	25.30	7°14'52"	N65° 15' 00.38"E	25.28
C7	48.00	75.35	89°56'43"	S47° 15' 01.47"E	67.85
C8	300.00	96.85	18°29'48"	S82° 58' 28.78"E	96.43
C9	300.00	85.21	16°16'25"	S81° 51' 47.36"E	84.92
C10	100.00	47.59	27°16'11"	S45° 30' 47.45"E	47.15
C10A	300.00	5.92	01°07'47"	S59° 42' 46.00"E	5.92
C11	300.00	63.51	12°07'47"	S66° 20' 33.27"E	63.39
C12	580.00	98.89	9°46'07"	S77° 17' 30.24"E	98.77
C13	200.00	28.85	8°15'58"	S45° 49' 20.10"E	28.83
C14	200.00	21.07	6°02'14"	S38° 40' 14.34"E	21.06

NO.	DATE	REVISION	APP.

ISANI
civil · design · engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2398
F 713 748 3748
TBPE Firm Reg. #4575

KUO & ASSOCIATES
ENGINEERING & SURVEYING
10300 WESTOFFICE DR. SUITE 800
HOUSTON, TX 77042
713-975-8769
TX FIRM NO.: F-4578

SURVEYED BY: KUO & ASSOC.
FB NO. P-6257

STATE OF TEXAS REGISTERED KUTUBUL A. M. MANUDDIN 6404 PROFESSIONAL LAND SURVEYOR
03/31/2025

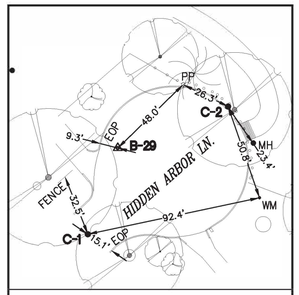
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

DRAINAGE AND PAVING IMPROVEMENTS IN CHATEAU FOREST AREA

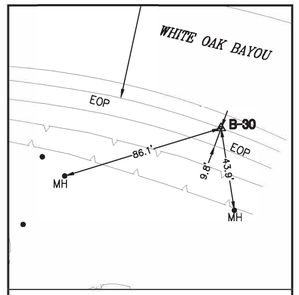
SURVEY CONTROL MAP
(SHEET 4 OF 4)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
AS SHOWN	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 13 OF 158	

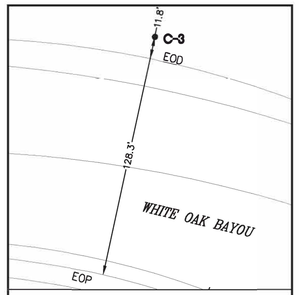
FILE PATH: S:\Proj-2022\22039 (P21083 CHATEAU FOREST)\Dwgs\SCM\SCM-22039.dwg



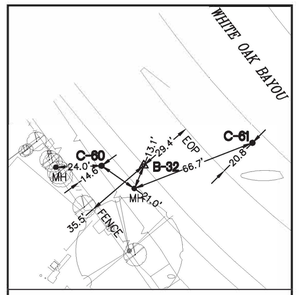
C-1, C-2 & T.B.M. B-29



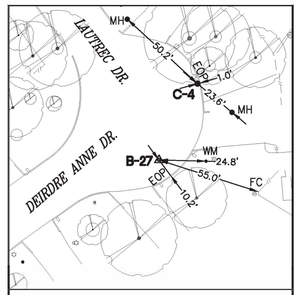
T.B.M. B-30



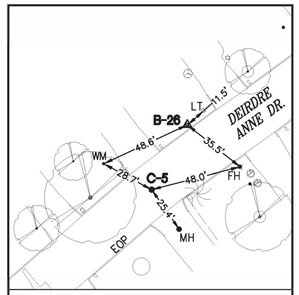
C-3



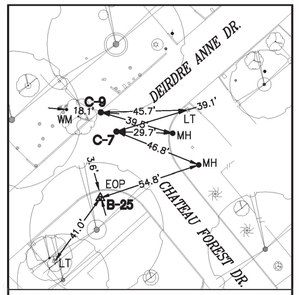
C-60, C-61 & T.B.M. B-32



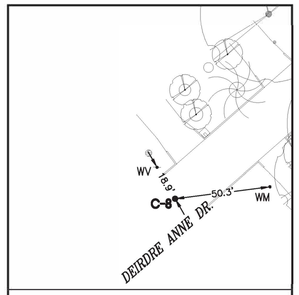
C-4 & T.B.M. B-27



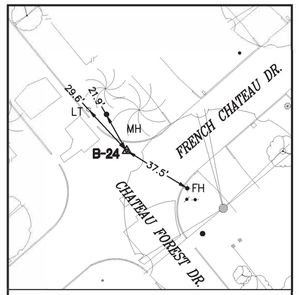
C-5 & T.B.M. B-26



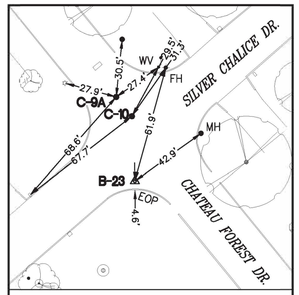
C-7, C-9 & T.B.M. B-25



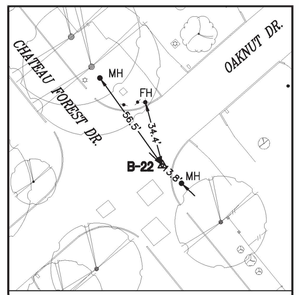
C-8



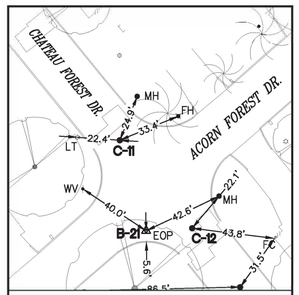
T.B.M. B-24



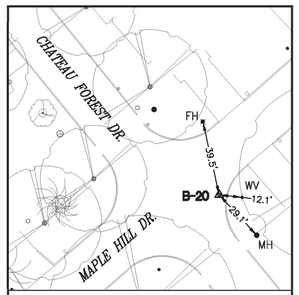
C-10 & T.B.M. B-23



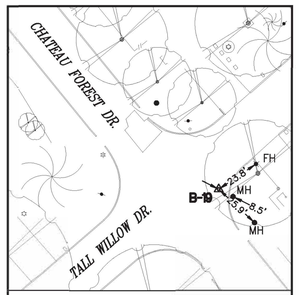
T.B.M. B-22



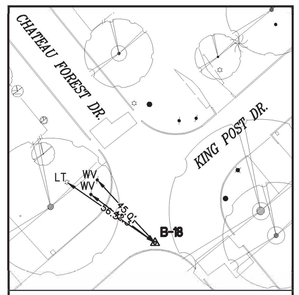
C-11, C-12 & T.B.M. B-21



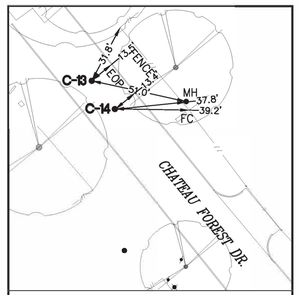
T.B.M. B-20



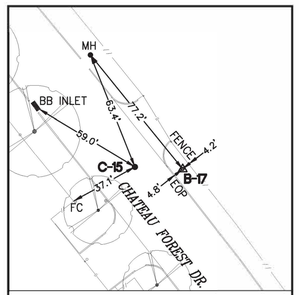
T.B.M. B-19



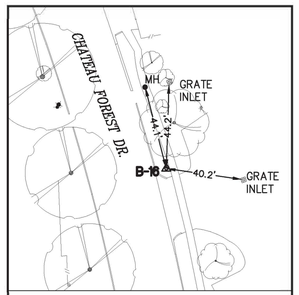
T.B.M. B-18



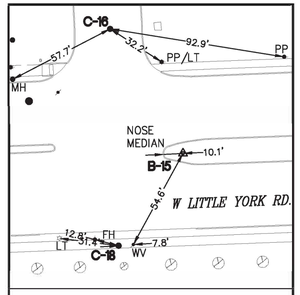
C-13 & C-14



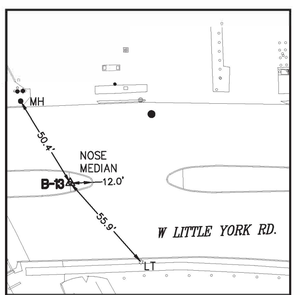
C-15 & T.B.M. B-17



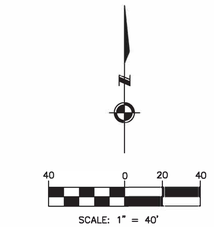
T.B.M. B-16



C-16, C-18 & T.B.M. B-15



T.B.M. B-13



EXIST. TOPOGRAPHIC LEGEND

MANHOLE	LIGHT
GRATE INLET	SIGN
B/BB INLET	POWER POLE
FIRE HYDRANT	POWER POLE W/LIGHT
SIGNAL POLE	DOWN GUY
FENCE	TREE
BUSH	PLANTER
WATER VALVE	BUILDING
HIGH BANK	WATER METER
SPRINKLER HEAD	HEDGE ROW

ABBREVIATIONS

FH – FIRE HYDRANT
FC – FENCE CORNER
HB – HIGH BANK
LT – LIGHT POLE
MB – MAIL BOX
MH – MANHOLE
PP – POWER POLE
PP/LT – POWER POLE W/LIGHT
SH – SPRINKLER HEAD
SCV – SPRINKLER VALVE
EOP – EDGE OF PAVEMENT
EOD – EDGE OF DITCH
PVMT – PAVEMENT
WM – WATER METER
WV – WATER VALVE

NO.	DATE	REVISION	APP.

ISANI
civil · design · engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

KUO & ASSOCIATES
ENGINEERING • SURVEYING
10300 WESTOFFICE DR. SUITE 800
HOUSTON, TX 77042
713-975-8769
TX FIRM NO.: F-4578

STATE OF TEXAS
REGISTERED
KUTUBUL A. M. MAINUDDIN
6404
PROFESSIONAL
LAND SURVEYOR
08/31/2025

SURVEYED BY: KUO & ASSOC.
FB NO. P-6257

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

DRAINAGE AND PAVING IMPROVEMENTS IN CHATEAU FOREST AREA

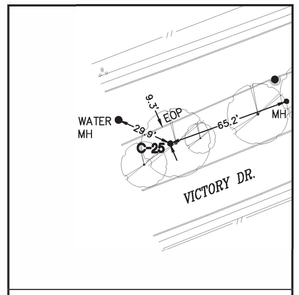
SURVEY CONTROL POINT SWING TIES (SHEET 1 OF 3)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
1" = 40'	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 14 OF 158	

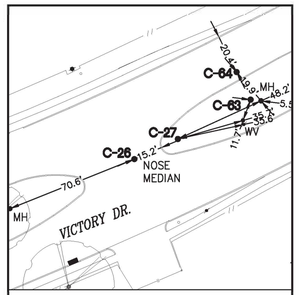
HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/16/25
HOUSTON TX

PLOT STYLE: LARGE_FORMAT_BW.CTB PLOTTED: 3/31/2025 9:50 PM
FILE PATH: S:\Proj-2022\22039 (P21083 CHATEAU FOREST)\Dwgs\SCM\Swingties-22039.dwg

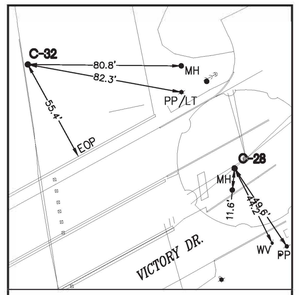
PLOT STYLE: LARGE_FORMAT_BW.CTB PLOTTED: 3/31/2025 9:49 PM



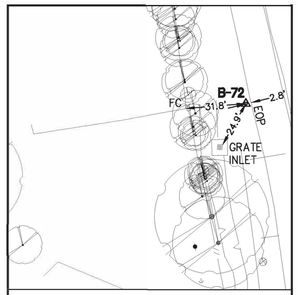
C-25



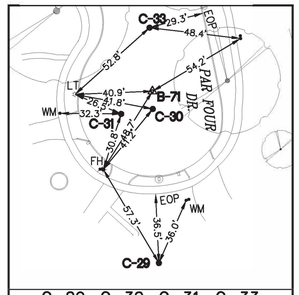
C-26, C-27, C-63, C-64



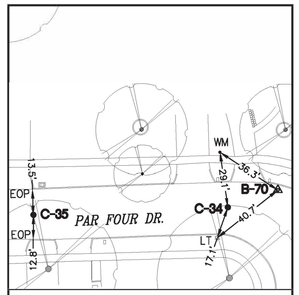
C-28 & C-32



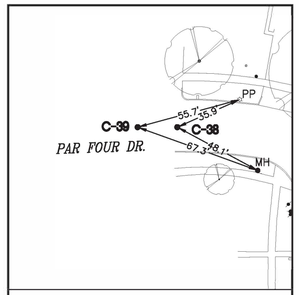
T.B.M. B-72



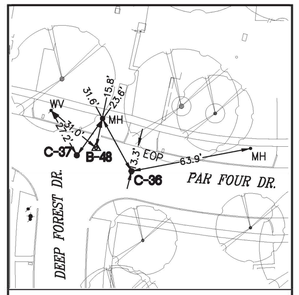
C-29, C-30, C-31, C-33
T.B.M. B-71



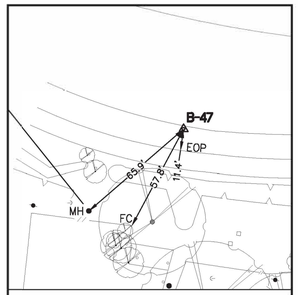
C-34, C-35 & T.B.M. B-70



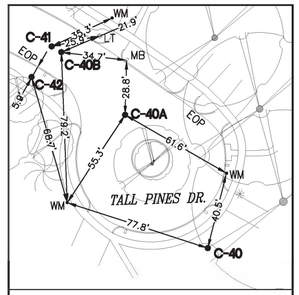
C-38 & C-39



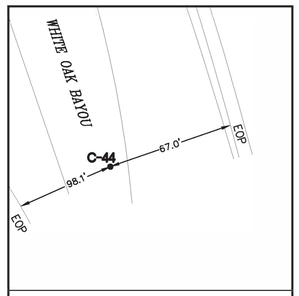
C-36, C-37 & T.B.M. B-48



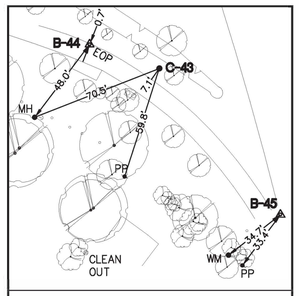
T.B.M. B-47



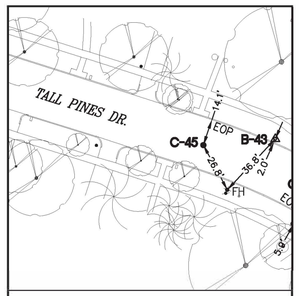
C-40, C-40A, C-40B, C-41 & C-42



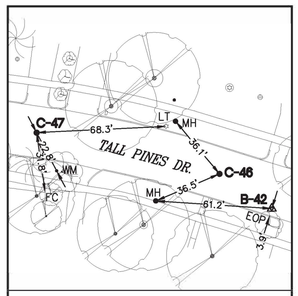
C-44



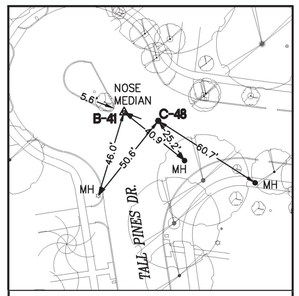
C-43 & T.B.M. B-44 & B-45



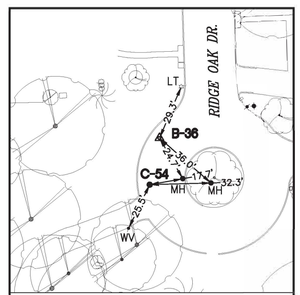
C-45 & T.B.M. B-43



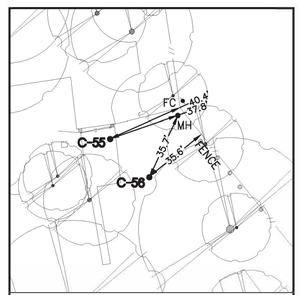
C-46, C-47 & T.B.M. B-42



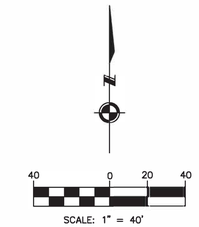
C-48 & T.B.M. B-41



C-54 & T.B.M. B-36



C-55 & C-56



NO.	DATE	REVISION	APP.

EXIST. TOPOGRAPHIC LEGEND

MANHOLE	LIGHT
GRATE INLET	SIGN
B/BB INLET	POWER POLE
FIRE HYDRANT	POWER POLE W/LIGHT
SIGNAL POLE	DOWN GUY
FENCE	TREE
BUSH	PLANTER
WATER VALVE	BUILDING
HIGH BANK	WATER METER
SPRINKLER HEAD	HEDGE ROW

ABBREVIATIONS

FH – FIRE HYDRANT
FC – FENCE CORNER
HB – HIGH BANK
LT – LIGHT POLE
MB – MAIL BOX
MH – MANHOLE
PP – POWER POLE
PP/LT – POWER POLE W/LIGHT
SH – SPRINKLER HEAD
SCV – SPRINKLER VALVE
EOP – EDGE OF PAVEMENT
EOD – EDGE OF DITCH
PVMT – PAVEMENT
WM – WATER METER
WV – WATER VALVE

ISANI
civil · design · engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

KUO & ASSOCIATES
ENGINEERING • SURVEYING
10300 WESTOFFICE DR. SUITE 800
HOUSTON, TX 77042
713-975-8769
TX FIRM NO.: F-4578

SURVEYED BY: KUO & ASSOC.
FB NO. P-6257

STATE OF TEXAS REGISTERED KUTUBUL A. M. MAINUDDIN 6404 PROFESSIONAL LAND SURVEYOR
03/31/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

DRAINAGE AND PAVING IMPROVEMENTS IN CHATEAU FOREST AREA

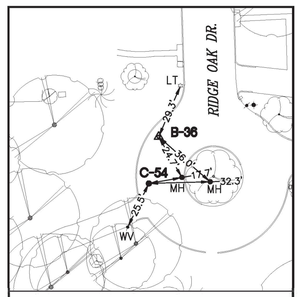
SURVEY CONTROL POINT SWING TIES (SHEET 2 OF 3)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
1" = 40'	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 15 OF 158	

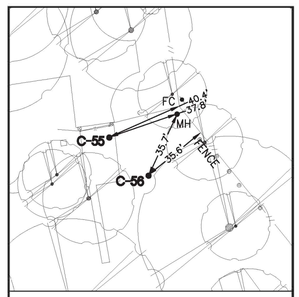
HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/30/25 HOUSTON TX

FILE PATH: S:\Proj-2022\22039 (P21083 CHATEAU FOREST)\Dwgs\SCM\Swingties-22039.dwg

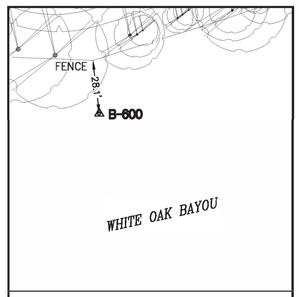
PLOT STYLE: LARGE_FORMAT_BW.CTB PLOTTED: 3/31/2025 9:48 PM



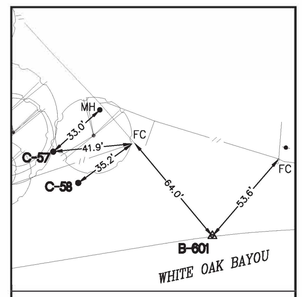
C-54 & T.B.M. B-36



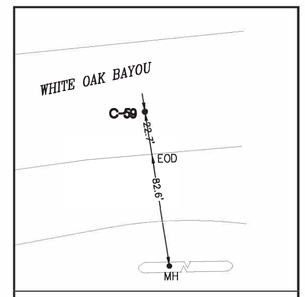
C-55 & C-56



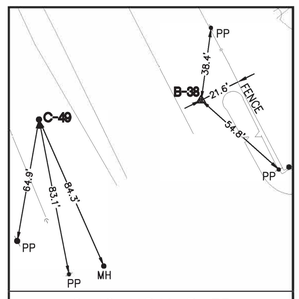
T.B.M. B-600



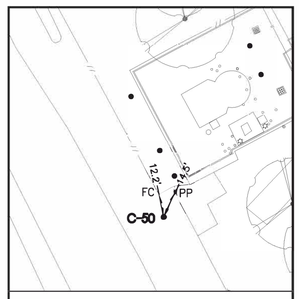
C-57, C-58 & T.B.M. B-601



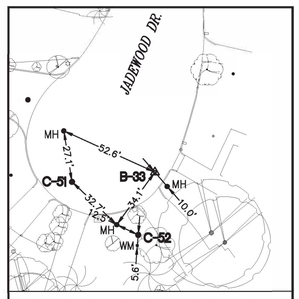
C-59



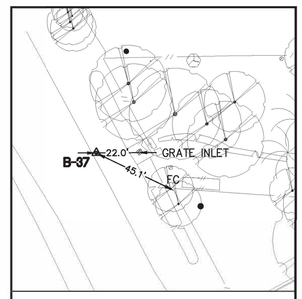
C-49, T.B.M. B-38



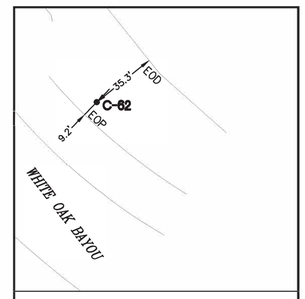
C-50



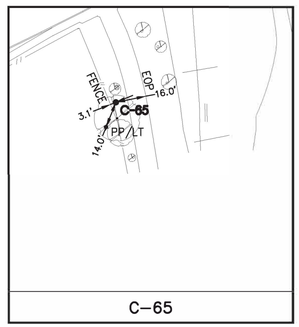
C-51, C-52, C-53 & T.B.M. B-33



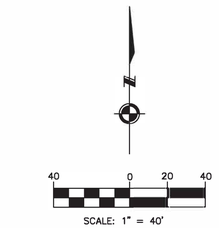
T.B.M. B-37



C-62



C-65



NO.	DATE	REVISION	APP.

EXIST. TOPOGRAPHIC LEGEND

MANHOLE	LIGHT
GRATE INLET	SIGN
B/BB INLET	POWER POLE
FIRE HYDRANT	POWER POLE W/LIGHT
SIGNAL POLE	DOWN GUY
FENCE	TREE
BUSH	PLANTER
WATER VALVE	BUILDING
HIGH BANK	WATER METER
SPRINKLER HEAD	HEDGE ROW

ABBREVIATIONS

FH – FIRE HYDRANT
FC – FENCE CORNER
HB – HIGH BANK
LT – LIGHT POLE
MB – MAIL BOX
MH – MANHOLE
PP – POWER POLE
PP/LT – POWER POLE W/LIGHT
SH – SPRINKLER HEAD
SCV – SPRINKLER VALVE
EOP – EDGE OF PAVEMENT
EOD – EDGE OF DITCH
PVMT – PAVEMENT
WM – WATER METER
WV – WATER VALVE

ISANI
civil · design · engineering
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

KUO & ASSOCIATES
ENGINEERING + SURVEYING
10300 WESTOFFICE DR. SUITE 800
HOUSTON, TX 77042
713-975-8769
TX FIRM NO.: F-4578

SURVEYED BY: KUO & ASSOC.
FB NO. P-6257

STATE OF TEXAS
REGISTERED
KUTUBUL A. M. MAINUDDIN
6404
PROFESSIONAL
LAND SURVEYOR
08/31/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

DRAINAGE AND PAVING IMPROVEMENTS IN CHATEAU FOREST AREA

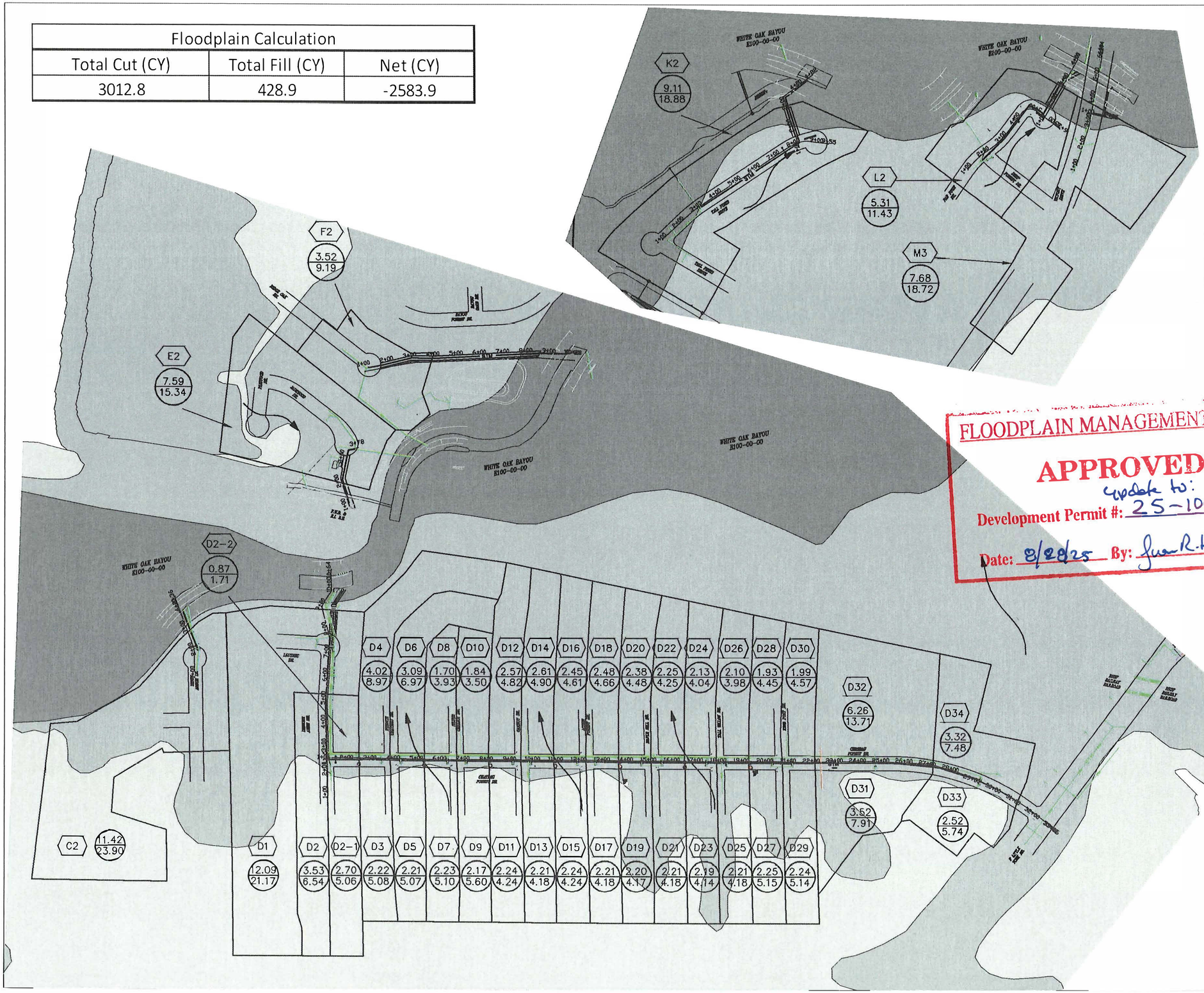
SURVEY CONTROL POINT SWING TIES (SHEET 3 OF 3)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
1" = 40'	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 16 OF 158	

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

FILE PATH: S:\Proj-2022\22039 (P21083 CHATEAU FOREST)\Dwgs\SCM\Swingties-22039.dwg

Floodplain Calculation		
Total Cut (CY)	Total Fill (CY)	Net (CY)
3012.8	428.9	-2583.9



LEGEND

SCALE: 1" = 200'-0" FOR 22"X34" SHEET

XX — DRAINAGE AREA DESIGNATION

XX / XX — AREA (ACRES) / 2-YR FLOW (CFS)

WHITE OAK BAYOU (E100-00-00)
FLOODPLAIN DATA

- FLOODWAY
- 100-YEAR FLOODPLAIN
- 500-YEAR FLOODPLAIN
- OVERLAND FLOW DIRECTION

FIRM Nos: 48201C0465M,48201C0635M
48201C0655M
FIRM EFFECTIVE DATE: JUNE 9, 2014

NO.	DATE	REVISION	APP.

FLOODPLAIN MANAGEMENT OFFICE

APPROVED

update to:

Development Permit #: 25-1000

Date: 8/28/25 By: Juan R. Alejo CFM

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

Mike Brower — 06/24/25
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.

Mike Brower — 06/24/25
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.

Marlon Smither — 07/28/2025
Date

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

ISANI
civil design engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
6/11/25

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

DRAINAGE AREA DELINEATION AND FLOODPLAIN MAPS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
1"=200'	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 17 OF 158	

Conduit Calculation Results Based on Atlas 14 Harris County Flood Control District Region 3 Rainfall Data -2 Yr Event

INLET/MH From	INLET/MH To	Area (Acres)	Runoff Coefficient C	Sum of C*A	Intensity I (In/hr)	Time of Conc (Min)	Flow (CIA, cfs)	Sum of Flows (cfs)	Reach Length (ft)	Diam or Rise (in)	Span (ft)	Slope (%)	Manning's "n"	Design Capacity (cfs)	Design Velocity (fps)	Flowline Elevation Upstream (ft)	Flowline Elevation Downstream (ft)	Elevation HG Upstream (ft)	Elevation HG Downstream (ft)	Natural Ground Upstream(ft)	Natural Ground Downstream(ft)	Critical Elevation(ft)
D33	MD19	2.52	0.63	1.59	3.62	26.77	5.74	5.74	14.00	24.00		0.20	0.013	10.14	3.23	73.38	73.35	74.09	70.15	75.84	75.84	75.84
D34	MD19-1	3.32	0.63	2.09	3.58	27.35	7.48	7.48	10.00	24.00		0.20	0.013	10.14	3.23	73.33	73.31	73.71	70.15	75.84	77.65	75.84
D31	MD18	3.52	0.63	2.22	3.57	27.48	7.91	7.91	13.00	24.00		0.20	0.013	10.14	3.23	72.12	72.09	72.12	70.15	75.89	75.89	75.89
D32	MD18-1	6.26	0.29	1.82	3.48	28.81	6.31	6.31	5.00	24.00		0.20	0.013	10.14	3.23	72.07	72.06	72.24	70.15	75.89	76.75	75.89
D30	MD17	1.99	0.52	1.03	3.65	26.28	3.77	3.77	6.60	24.00		0.20	0.013	10.14	3.23	71.81	71.80	71.81	70.15	76.24	76.24	76.24
D29	MD17	2.24	0.52	1.17	3.64	26.53	4.24	4.24	8.50	24.00		0.20	0.013	10.14	3.23	71.76	71.74	71.37	70.15	76.24	76.08	76.24
D27	MD16	2.25	0.52	1.17	3.63	26.54	4.25	4.25	8.30	24.00		0.20	0.013	10.14	3.23	71.53	71.51	71.31	70.15	76.08	76.08	76.08
D28	MD16-1	1.93	0.52	1.00	3.66	26.23	3.67	3.67	7.90	24.00		0.20	0.013	10.14	3.23	70.91	70.90	70.95	70.15	76.08	77.24	76.08
D25	MD15	2.21	0.52	1.15	3.64	26.50	4.18	4.18	7.70	24.00		0.20	0.013	10.14	3.23	71.90	71.88	72.54	70.15	76.65	76.65	76.65
D26	MD15-1	2.10	0.52	1.09	3.64	26.40	3.98	3.98	8.70	24.00		0.20	0.013	10.14	3.23	71.85	71.84	72.49	70.15	76.65	76.95	76.65
D23	MD14	2.19	0.52	1.14	3.64	26.48	4.14	4.14	8.10	24.00		0.20	0.013	10.14	3.23	71.65	71.63	72.07	70.15	76.64	76.64	75.64
D24	MD14-1	2.13	0.52	1.11	3.64	26.43	4.04	4.04	8.40	24.00		0.20	0.013	10.14	3.23	70.78	70.77	70.87	70.15	76.64	77.22	75.64
D21	MD13	2.21	0.52	1.15	3.64	26.50	4.18	4.18	9.10	24.00		0.20	0.013	10.14	3.23	69.84	69.82	75.21	70.15	76.15	76.15	75.49
D22	MD13-1	2.25	0.52	1.17	3.63	26.54	4.25	4.25	7.90	24.00		0.20	0.013	10.14	3.23	69.73	69.72	75.27	70.15	76.15	77.17	75.49
D19	MD12	2.20	0.52	1.15	3.64	26.49	4.17	4.17	8.10	24.00		0.20	0.013	10.14	3.23	70.94	70.92	74.63	70.15	75.57	76.04	75.51
D20	MD12-1	2.38	0.52	1.24	3.63	26.65	4.48	4.48	8.50	24.00		0.20	0.013	10.14	3.23	70.51	70.50	74.15	70.15	75.57	77.36	75.51
D17	MD11	2.21	0.52	1.15	3.64	26.50	4.18	4.18	9.80	24.00		0.20	0.013	10.14	3.23	72.12	72.10	72.72	70.12	76.76	77.22	76.60
D18	MD11-1	2.48	0.52	1.29	3.62	26.73	4.66	4.66	12.00	24.00		0.20	0.013	10.14	3.23	71.42	71.07	72.24	70.12	76.93	77.52	76.60
D15	MD10	2.24	0.52	1.17	3.64	26.53	4.24	4.24	10.00	24.00		0.20	0.013	10.14	3.23	72.45	72.41	73.04	70.11	77.18	77.29	76.60
D16	MD10-1	2.45	0.52	1.27	3.62	26.71	4.61	4.61	10.00	24.00		2.60	0.013	36.58	11.64	71.82	71.56	72.66	70.11	76.97	78.16	76.76
D13	MD9	2.21	0.52	1.15	3.64	26.50	4.18	4.18	8.20	24.00		0.20	0.013	10.14	3.23	73.60	73.58	74.09	70.07	76.55	77.23	76.94
D14	MD9-1	2.61	0.52	1.36	3.61	26.84	4.90	4.90	20.00	24.00		2.30	0.013	34.40	10.95	72.53	72.07	73.23	70.07	76.58	77.82	76.94
D11	MD8	2.24	0.52	1.17	3.64	26.53	4.24	4.24	9.10	24.00		0.20	0.013	10.14	3.23	72.82	72.80	70.06	70.06	76.55	77.08	76.87
D12	MD8-1	2.57	0.52	1.33	3.61	26.80	4.82	4.82	15.00	24.00		2.40	0.013	35.14	11.19	71.64	71.28	70.06	70.06	76.68	78.44	76.87
D9	MD7	2.17	0.52	1.13	3.64	26.46	4.10	4.10	8.10	24.00		0.40	0.013	14.35	4.57	73.25	73.22	73.84	73.84	76.79	77.17	77.00
D10	MD7-1	1.84	0.52	0.96	3.66	26.13	3.50	3.50	16.00	24.00		1.81	0.013	30.54	9.72	72.48	72.19	73.39	73.84	76.65	77.64	77.00
D7	MD6	2.23	0.52	1.16	3.64	26.51	4.21	4.21	9.30	24.00		0.40	0.013	14.35	4.57	72.80	72.76	74.56	74.56	77.06	77.4	77.10
D8	MD6-1	1.70	0.52	0.88	3.68	25.98	3.24	3.24	7.00	24.00		0.71	0.013	19.17	6.10	72.87	72.82	74.56	74.56	76.92	78.48	77.10
D5	MD5	2.21	0.52	1.15	3.64	26.50	4.18	4.18	8.10	24.00		0.20	0.013	10.14	3.23	73.62	73.60	75.01	69.83	77.21	77.64	77.16
D6	MD5-1	3.09	0.52	1.60	3.59	27.19	5.76	5.76	10.00	24.00		1.00	0.013	22.68	7.22	73.20	73.10	74.83	69.83	77.75	78.21	77.16
D3	MD4	2.22	0.52	1.15	3.64	26.51	4.19	4.19	15.80	24.00		0.40	0.013	14.35	4.57	73.32	73.26	74.47	69.75	77.15	77.76	77.24
D4	MD4-1	4.02	0.52	2.09	3.55	27.77	7.41	7.41	7.00	24.00		2.00	0.013	32.08	10.21	72.95	72.81	74.39	69.75	77.11	78.36	77.24
D2-1	MD3	2.70	0.52	1.40	3.61	26.91	5.06	5.06	15.60	24.00		0.40	0.013	14.41	4.59	73.61	73.55	74.62	69.44	78.06	78.23	78.20
D2-2	MD3	0.87	0.52	0.45	3.77	24.76	1.71	1.71	6.30	24.00		0.48	0.013	15.65	4.98	73.51	73.48	74.62	69.44	78.19	78.23	78.20
D2	MD2	3.53	0.52	1.83	3.57	27.48	6.54	6.54	29.00	24.00		0.48	0.013	15.76	5.02	73.61	73.47	74.57	69.39	78.61	78.75	78.61
MD19-1	MD18-1							7.48	466.56	24.00		0.26	0.013	11.60	3.69	73.31	72.09	70.15	70.15	77.65	76.75	75.84
MD18-1	MD16-1							13.79	442.00	24.00		0.22	0.013	10.74	3.42	71.91	70.92	70.15	70.15	76.75	77.24	75.89
MD16-1	MD15-1							17.46	199.76	24.00		0.12	0.013	7.70	2.45	70.42	70.19	70.15	70.15	77.24	76.95	76.08
MD15-1	MD14-1							21.45	63.66	42.00		1.15	0.013	108.03	11.23	70.19	69.46	70.15	70.15	76.95	77.22	76.65
MD14-1	MD13-1							25.49	193.93	42.00		0.03	0.013	17.74	1.84	69.46	69.40	70.15	70.15	77.22	77.17	75.64
MD13-1	MD12-1							29.74	85.56	42.00		0.04	0.013	18.89	1.96	69.40	69.37	70.15	70.15	77.17	77.36	75.49
MD12-1	MD11-1							34.22	212.95	42.00		0.08	0.013	27.65	2.87	69.37	69.21	70.15	70.12	77.36	77.52	75.51
MD11-1	MD10-1							38.89	68.00	42.00		0.24	0.013	48.93	5.09	69.12	68.96	70.12	70.11	77.52	78.16	76.60
MD10-1	MD9-1							43.50	210.33	48.00		0.33	0.013	82.49	6.56	68.96	68.27	70.11	70.07	78.16	77.23	76.76
MD9-1	MD8-1							48.39	70.14	48.00		0.09	0.013	42.13	3.35	68.27	68.21	70.07	70.06	77.23	78.45	76.94
MD8-1	MD7-1							53.22	218.10	48.00		0.18	0.013	60.91	4.85	68.21	67.82	70.06	73.84	78.45	77.64	76.87
MD7-1	MD6-1							56.72	64.66	48.00		0.34	0.013	84.01	6.69	67.79	67.57	73.84	74.56	77.64	78.48	77.00
MD6-1	MD5-1							59.96	195.53	54.00		0.06	0.013	48.85	3.07	67.13	67.01	74.56	69.83	78.48	78.21	77.10
MD5-1	MD4-1							65.72	80.55	54.00		0.05	0.013	43.94	2.76	66.97	66.93	69.83	69.75	78.21	78.36	77.16
MD4-1	MD1							73.12	680.50	66.00		0.34	0.013	196.18	8.26	67.00	64.69	69.75	68.55	78.36	77.72	77.24
MD1	OUTFALL	12.09	0.52	6.29	3.37	30.51	21.17	83.71	258.12	115.00		0.13	0.013	533.71	7.40	63.53	63.20	68.55	68.46	77.72	63.2	77.68
MD19	MD18							5.74	462.90	36.00	6.00	0.10	0.015	56.36	3.13	66.83	66.37	70.15	70.15	76.54	76.22	75.84
MD18	MD17							13.65	358.00	36.00	6.00	0.10	0.015	56.70	3.15	66.37	66.01	70.15	70.15	76.22	76.96	75.89
MD17	MD16							21.67	84.30	48.00	8.00	0.10	0.015	121.77	3.81	66.01	65.93	70.15	70.15	76.96	76.88	76.24
MD16	MD15							25.92	199.76	48.00	8.00	0.10	0.015	121.84	3.81	65.93	65.73	70.15	70.15	76.88	75.98	76.08
MD15	MD14							30.10	83.80	48.00	8.00	0.10	0.015	118.98	3.72	65.73	65.65	70.15	70.15	75.98	75.83	76.65
MD14	MD13							34.23	193.93	48.00	8.00	0.10	0.015	123.66	3.86	65.65	65.45	70.15	70.15	75.83	76.25	75.64
MD13	MD12							38.42	86.00	48.00	8.00	0.10	0.015	121.77	3.81	65.45	65.37	70.15	70.15	76.25	76.16	75.49
MD12	MD11							42.59	198.30	72.00	8.00	0.10	0.015	216.89	4.52	65.37	65.17	70.15	70.12	76.16	77.22	75.51
MD11	MD10							46.76	79.50	72.00	8.00	0.10	0.015	216.65	4.51	65.17	65.09	70.12	70.11	77.22	77.29	76.60
MD10	MD9							51.01	212.50	72.00	8.00	0.10	0.015	215.97	4.50	65.09	64.89	70.11	70.07	77.29	77.23	76.60
MD9	MD8							55.19	78.00	72.00	8.00	0.10	0.015	218.72	4.56	64.89	64.81	70.07	70.06	77.23	77.08	76.94
MD8	MD7							59.42	199.00	72.00	8.00	0.10	0.015	216.51	4.51	64.81	64.61	70.06	73.84	77.08	77.17	76.87
MD7	MD6							63.52	81.20	72.00	6.00	0.10	0.015	147.08	4.09	64.61	64.53	73.84	74.56	77.17	77.4	77.00
MD6	MD5							67.73	201.80	72.00	6.00	0.10	0.015	147.52	4.10	64.53	64.33	74.56	69.83	77.4	77.64	77.10
MD5	MD4							71.91	81.30	66.00		0.10	0.013	105.62	4.45	64.33	64.25	69.83	69.75	77.64	77.76	77.16
MD4	MD3							76.11	197.90	66.00		0.10	0.013	107.04	4.51	64.25	64.05	69.75	69.44	77.76	78.23	77.24
MD3	MD2							81.17	33.70	66.00		0.12	0.013	116.00	4.88	64.05	64.01	69.44	69.39	78.23	78.75	78.20
MD2	MD1							87.71	481.00	66.00		0.10	0.013	106.37	4.48	64.01	63.53	69.39	68.55	78.75	77.72	78.61
MD1	OUTFALL	12.09	0.52	6.29	3.37	30.51	21.17	98.29	258.12	66.00		0.13	0.013	120.39	5.07	63.53	63.20	68.55	68.46	77.72	63.2	77.68

Existing Trunkline Along Chateau Forest Drive and Deirdre Anne Drive

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED
PROFESSIONAL ENGINEER
6/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

DRAINAGE CALCULATION (SHEET 1 OF 2)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
Not to Scale	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 18 OF 158	

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 07/1925
HOUSTON TX

PLOTTED: 6/18/2025 5:55 PM
PLOT STYLE: Con_ctb_220714.ctb
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47_007 - Drainage Calculation.dwg

Conduit Calculation Results Based on Atlas 14 Harris County Flood Control District Region 3 Rainfall Data -100 Yr Event

INLET/MH From	INLET/MH To	Area (Acres)	Runoff Coefficient C	Sum of C*A	Intensity I (In/hr)	Time of Conc (Min)	Flow (CIA, cfs)	Sum of Flows (cfs)	Reach Length (ft)	Diam or Rise (in)	Span (ft)	Slope (%)	Manning's "n"	Design Capacity (cfs)	Design Velocity (fps)	Flowline Elevation Upstream (ft)	Flowline Elevation Downstream (ft)	Elevation HG Upstream (ft)	Elevation HG Downstream (ft)	Natural Ground Upstream(ft)	Natural Ground Downstream(ft)	Max Ponding Elevation(ft)
D33	MD19	2.52	0.63	1.59	3.62	26.77	5.74	5.74	14.00	24.00		0.20	0.013	10.14	3.23	73.38	73.35	78.17	78.17	75.84	75.84	78.32
D34	MD19-1	3.32	0.63	2.09	3.58	27.35	7.48	7.48	10.00	24.00		0.20	0.013	10.14	3.23	73.33	73.31	78.17	78.17	75.84	77.65	78.32
D31	MD18	3.52	0.63	2.22	3.57	27.48	7.91	7.91	13.00	24.00		0.20	0.013	10.14	3.23	72.12	72.09	78.21	78.17	75.89	75.89	78.43
D32	MD18-1	6.26	0.29	1.82	3.48	28.81	6.31	6.31	5.00	24.00		0.20	0.013	10.14	3.23	72.07	72.06	78.21	78.17	75.89	76.75	78.43
D30	MD17	1.99	0.52	1.03	3.65	26.28	3.77	3.77	6.60	24.00		0.20	0.013	10.14	3.23	71.81	71.80	78.44	78.43	76.24	76.24	78.46
D29	MD17	2.24	0.52	1.17	3.64	26.53	4.24	4.24	8.50	24.00		0.20	0.013	10.14	3.23	71.76	71.74	78.43	78.43	76.24	76.08	78.46
D27	MD16	2.25	0.52	1.17	3.63	26.54	4.25	4.25	8.30	24.00		0.20	0.013	10.14	3.23	71.53	71.51	78.46	78.42	76.08	76.08	78.47
D28	MD16-1	1.93	0.52	1.00	3.66	26.23	3.67	3.67	7.90	24.00		0.20	0.013	10.14	3.23	70.91	70.90	78.45	78.42	76.08	77.24	78.47
D25	MD15	2.21	0.52	1.15	3.64	26.50	4.18	4.18	7.70	24.00		0.20	0.013	10.14	3.23	71.90	71.88	78.46	78.45	76.65	76.65	78.73
D26	MD15-1	2.10	0.52	1.09	3.64	26.40	3.98	3.98	8.70	24.00		0.20	0.013	10.14	3.23	71.85	71.84	78.46	78.45	76.65	76.95	78.73
D23	MD14	2.19	0.52	1.14	3.64	26.48	4.14	4.14	8.10	24.00		0.20	0.013	10.14	3.23	71.65	71.63	78.46	78.43	76.64	76.64	78.50
D24	MD14-1	2.13	0.52	1.11	3.64	26.43	4.04	4.04	8.40	24.00		0.20	0.013	10.14	3.23	70.78	70.77	78.46	78.43	76.64	77.22	78.50
D21	MD13	2.21	0.52	1.15	3.64	26.50	4.18	4.18	9.10	24.00		0.20	0.013	10.14	3.23	69.84	69.82	78.47	78.44	76.15	76.15	78.54
D22	MD13-1	2.25	0.52	1.17	3.63	26.54	4.25	4.25	7.90	24.00		0.20	0.013	10.14	3.23	69.73	69.72	78.46	78.44	76.15	77.17	78.54
D19	MD12	2.20	0.52	1.15	3.64	26.49	4.17	4.17	8.10	24.00		0.20	0.013	10.14	3.23	70.94	70.92	78.46	78.44	75.57	76.04	78.55
D20	MD12-1	2.38	0.52	1.24	3.63	26.65	4.48	4.48	8.50	24.00		0.20	0.013	10.14	3.23	70.51	70.50	78.44	78.44	75.57	77.36	78.55
D17	MD11	2.21	0.52	1.15	3.64	26.50	4.18	4.18	9.80	24.00		0.20	0.013	10.14	3.23	72.12	72.10	78.33	78.21	76.76	77.22	78.61
D18	MD11-1	2.48	0.52	1.29	3.62	26.73	4.66	4.66	12.00	24.00		0.20	0.013	10.14	3.23	71.42	71.07	78.31	78.21	76.93	77.52	78.61
D15	MD10	2.24	0.52	1.17	3.64	26.53	4.24	4.24	10.00	24.00		0.20	0.013	10.14	3.23	72.45	72.41	78.31	78.14	77.18	77.29	78.49
D16	MD10-1	2.45	0.52	1.27	3.62	26.71	4.61	4.61	10.00	24.00		2.60	0.013	36.58	11.64	71.82	71.56	78.31	78.14	76.97	78.16	78.49
D13	MD9	2.21	0.52	1.15	3.64	26.50	4.18	4.18	8.20	24.00		0.20	0.013	10.14	3.23	73.60	73.58	78.08	77.93	76.55	77.23	78.10
D14	MD9-1	2.61	0.52	1.36	3.61	26.84	4.90	4.90	20.00	24.00		2.30	0.013	34.40	10.95	72.53	72.07	78.07	77.93	76.58	77.82	78.10
D11	MD8	2.24	0.52	1.17	3.64	26.53	4.24	4.24	9.10	24.00		0.20	0.013	10.14	3.23	72.82	72.80	78.10	77.86	76.55	77.08	79.09
D12	MD8-1	2.57	0.52	1.33	3.61	26.80	4.82	4.82	15.00	24.00		2.40	0.013	35.14	11.19	71.64	71.28	78.06	77.86	76.68	78.44	79.09
D9	MD7	2.17	0.52	1.13	3.64	26.46	4.10	4.10	8.10	24.00		0.40	0.013	14.35	4.57	73.25	73.22	77.84	77.46	76.79	77.17	78.58
D10	MD7-1	1.84	0.52	0.96	3.66	26.13	3.50	3.50	16.00	24.00		1.81	0.013	30.54	9.72	72.48	72.19	77.83	77.46	76.65	77.64	78.58
D7	MD6	2.23	0.52	1.16	3.64	26.51	4.21	4.21	9.30	24.00		0.40	0.013	14.35	4.57	72.80	72.76	77.64	77.37	77.06	77.4	78.87
D8	MD6-1	1.70	0.52	0.88	3.68	25.98	3.24	3.24	7.00	24.00		0.71	0.013	19.17	6.10	72.87	72.82	77.54	77.37	76.92	78.48	78.87
D5	MD5	2.21	0.52	1.15	3.64	26.50	4.18	4.18	8.10	24.00		0.20	0.013	10.14	3.23	73.62	73.60	77.22	77.02	77.21	77.64	78.52
D6	MD5-1	3.09	0.52	1.60	3.59	27.19	5.76	5.76	10.00	24.00		1.00	0.013	22.68	7.22	73.20	73.10	77.14	77.02	77.75	78.21	78.52
D3	MD4	2.22	0.52	1.15	3.64	26.51	4.19	4.19	15.80	24.00		0.40	0.013	14.35	4.57	73.32	73.26	77.25	76.87	77.15	77.76	78.46
D4	MD4-1	4.02	0.52	2.09	3.55	27.77	7.41	7.41	7.00	24.00		2.00	0.013	32.08	10.21	72.95	72.81	77.01	76.87	77.11	78.36	78.46
D2-1	MD3	2.70	0.52	1.40	3.61	26.91	5.06	5.06	15.60	24.00		0.40	0.013	14.41	4.59	73.61	73.55	77.30	76.42	78.06	78.23	79.02
D2-2	MD3	0.87	0.52	0.45	3.77	24.76	1.71	1.71	6.30	24.00		0.48	0.013	15.65	4.98	73.51	73.48	77.30	76.42	78.19	78.23	79.02
D2	MD2	3.53	0.52	1.83	3.57	27.48	6.54	6.54	29.00	24.00		0.48	0.013	15.76	5.02	73.61	73.47	77.30	76.42	78.61	78.75	82.03
MD19-1	MD18-1							7.48	466.56	24.00		0.26	0.013	11.60	3.69	73.31	72.09	78.17	78.17	77.65	76.75	78.32
MD18-1	MD16-1							13.79	442.00	24.00		0.22	0.013	10.74	3.42	71.91	70.92	78.17	78.42	76.75	77.24	78.43
MD16-1	MD15-1							17.46	199.76	24.00		0.12	0.013	7.70	2.45	70.42	70.19	78.42	78.45	77.24	76.95	78.47
MD15-1	MD14-1							21.45	63.66	42.00		1.15	0.013	108.03	11.23	70.19	69.46	78.45	78.43	76.95	77.22	78.73
MD14-1	MD13-1							25.49	193.93	42.00		0.03	0.013	17.74	1.84	69.46	69.40	78.43	78.44	77.22	77.17	78.50
MD13-1	MD12-1							29.74	85.56	42.00		0.04	0.013	18.89	1.96	69.40	69.37	78.44	78.44	77.17	77.36	78.54
MD12-1	MD11-1							34.22	212.95	42.00		0.08	0.013	27.65	2.87	69.37	69.21	78.44	78.21	77.36	77.52	78.55
MD11-1	MD10-1							38.89	68.00	42.00		0.24	0.013	48.93	5.09	69.12	68.96	78.21	78.14	77.52	78.16	78.61
MD10-1	MD9-1							43.50	210.33	48.00		0.33	0.013	82.49	6.56	68.96	68.27	78.14	77.93	78.16	77.23	78.49
MD9-1	MD8-1							48.39	70.14	48.00		0.09	0.013	42.13	3.35	68.27	68.21	77.93	77.86	77.23	78.45	78.10
MD8-1	MD7-1							53.22	218.10	48.00		0.18	0.013	60.91	4.85	68.21	67.82	77.86	77.46	78.45	77.64	79.09
MD7-1	MD6-1							56.72	64.66	48.00		0.34	0.013	84.01	6.69	67.79	67.57	77.46	77.37	77.64	78.48	78.58
MD6-1	MD5-1							59.96	195.53	54.00		0.06	0.013	48.85	3.07	67.13	67.01	77.37	77.02	78.48	78.21	78.87
MD5-1	MD4-1							65.72	80.55	54.00		0.05	0.013	43.94	2.76	66.97	66.93	77.02	76.87	78.21	78.36	78.52
MD4-1	MD1							73.12	680.50	66.00		0.34	0.013	196.18	8.26	67.00	64.69	76.87	77.30	78.36	77.72	78.46
MD1	OUTFALL	12.09	0.52	6.29	3.37	30.51	21.17	83.71	258.12	115.00		0.13	0.013	533.71	7.40	63.53	63.20	77.30	74.80	77.72	63.2	79.52
MD19	MD18							5.74	462.90	36.00	6.00	0.10	0.015	56.36	3.13	66.83	66.37	78.17	78.17	76.54	76.22	78.32
MD18	MD17							13.65	358.00	36.00	6.00	0.10	0.015	56.70	3.15	66.37	66.01	78.17	78.43	76.22	76.96	78.43
MD17	MD16							21.67	84.30	48.00	8.00	0.10	0.015	121.77	3.81	66.01	65.93	78.43	78.42	76.96	76.88	78.46
MD16	MD15							25.92	199.76	48.00	8.00	0.10	0.015	121.84	3.81	65.93	65.73	78.42	78.45	76.88	75.98	78.47
MD15	MD14							30.10	83.80	48.00	8.00	0.10	0.015	118.98	3.72	65.73	65.65	78.45	78.43	75.98	75.83	78.73
MD14	MD13							34.23	193.93	48.00	8.00	0.10	0.015	123.66	3.86	65.65	65.45	78.43	78.44	75.83	76.25	78.50
MD13	MD12							38.42	86.00	48.00	8.00	0.10	0.015	121.77	3.81	65.45	65.37	78.44	78.44	76.25	76.16	78.54
MD12	MD11							42.59	198.30	72.00	8.00	0.10	0.015	216.89	4.52	65.37	65.17	78.44	78.21	76.16	77.22	78.55
MD11	MD10							46.76	79.50	72.00	8.00	0.10	0.015	216.65	4.51	65.17	65.09	78.21	78.14	77.22	77.29	78.61
MD10	MD9							51.01	212.50	72.00	8.00	0.10	0.015	215.97	4.50	65.09	64.89	78.14	77.93	77.29	77.23	78.49
MD9	MD8							55.19	78.00	72.00	8.00	0.10	0.015	218.72	4.56	64.89	64.81	77.93	77.86	77.23	77.08	78.10
MD8	MD7							59.42	199.00	72.00	8.00	0.10	0.015	216.51	4.51	64.81	64.61	77.86	77.46	77.08	77.17	79.09
MD7	MD6							63.52	81.20	72.00	6.00	0.10	0.015	147.08	4.09	64.61	64.53	77.46	77.37	77.17	77.4	78.58
MD6	MD5							67.73	201.80	72.00	6.00	0.10	0.015	147.52	4.10	64.53	64.33	77.37	77.02	77.4	77.64	78.87
MD5	MD4							71.91	81.30	66.00		0.10	0.013	105.62	4.45	64.33	64.25	77.02	76.87	77.64	77.76	78.52
MD4	MD3							76.11	197.90	66.00		0.10	0.013	107.04	4.51	64.25	64.05	76.87	76.42	77.76	78.23	78.46
MD3	MD2							81.17	33.70	66.00		0.12	0.013	116.00	4.88	64.05	64.01	76.42	76.42	78.23	78.75	79.02
MD2	MD1							87.71	481.00	66.00		0.10	0.013	106.37	4.48	64.01	63.53	76.42	77.30	78.75	77.72	79.02
MD1	OUTFALL	12.09	0.52	6.29	3.37	30.51	21.17	98.29	258.12	66.00		0.13	0.013	120.39	5.07	63.53	63.20	77.30	74.80	77.72	63.2	78.60

Existing Trunkline Along Chateau Forest Drive and Deirdre Anne Drive

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED
PROFESSIONAL ENGINEER
6/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

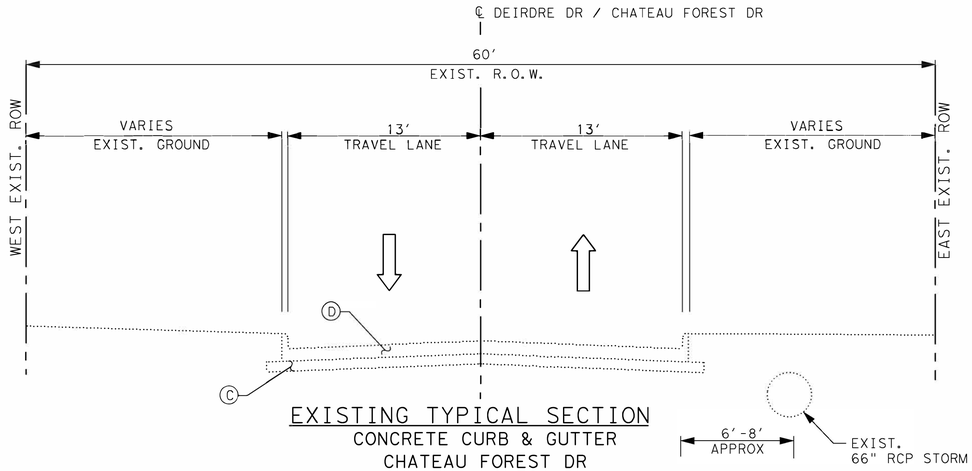
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

DRAINAGE CALCULATION (SHEET 2 OF 2)

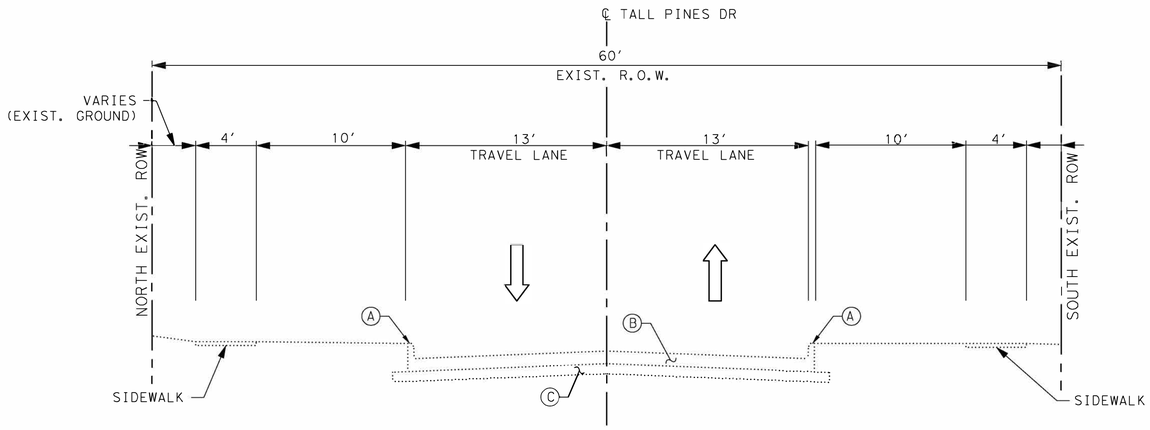
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
Not to Scale	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 19 OF 158	

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

PLOT STYLE: Con_ctb_220714.ctb PLOTTED: 6/18/2025 5:55 PM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47_007 – Drainage Calculation.dwg



EXISTING TYPICAL SECTION
CONCRETE CURB & GUTTER
CHATEAU FOREST DR
DEIRDRE ANNE DR



EXISTING TYPICAL SECTION
CONCRETE CURB & GUTTER
PAR FOUR DR
TALL PINES DR

50 0 25 50 100

SCALE: 1" = 50'-0" FEET FOR 22"X34" SHEET

LEGEND:

- (A) EXIST. 6" CURB
- (B) EXIST. 8.75"-9" REINFORCED CONCRETE PAVEMENT
- (C) EXIST. SUBGRAGE
- (D) EXIST. 5"-9" REINFORCED CONCRETE PAVEMENT

NOTE:

1. SEE PLAN AND PROFILE SHEETS FOR EXIST. R.O.W. LIMITS AND DISTANCE FROM ℄

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED
PROFESSIONAL ENGINEER
6/19/2025

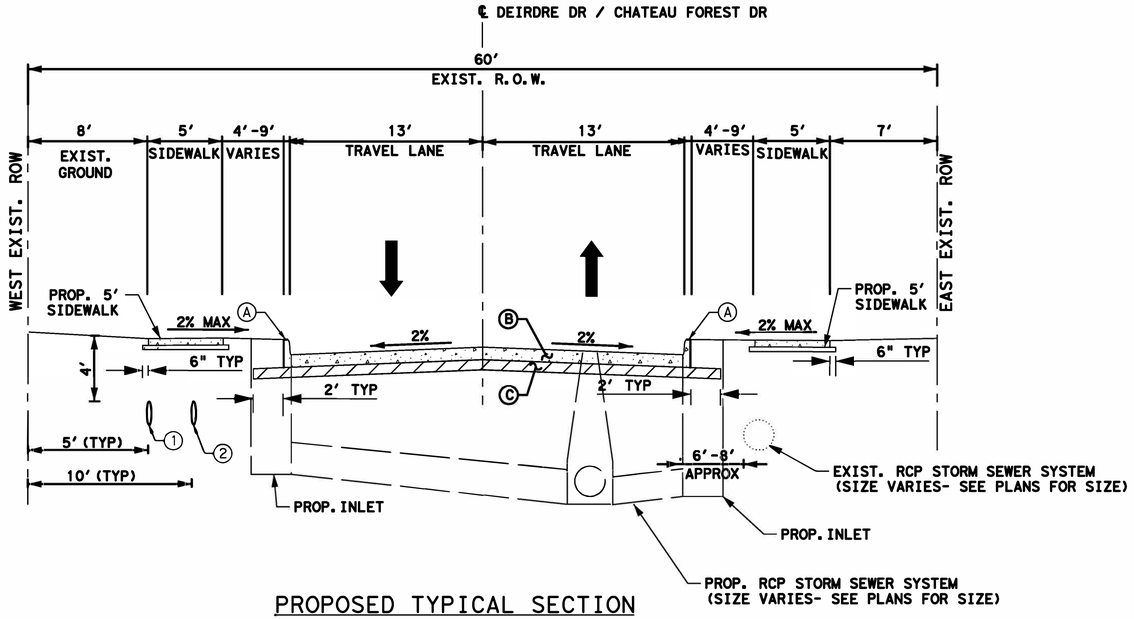
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

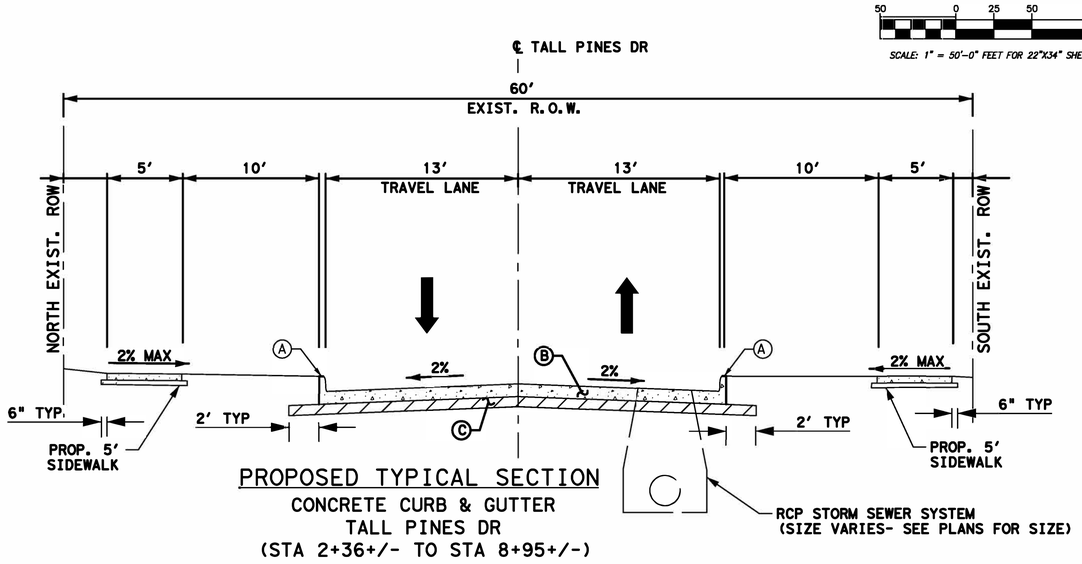
EXISITING TYPICAL SECTIONS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/16/25 HOUSTON TX
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 20 OF 158	

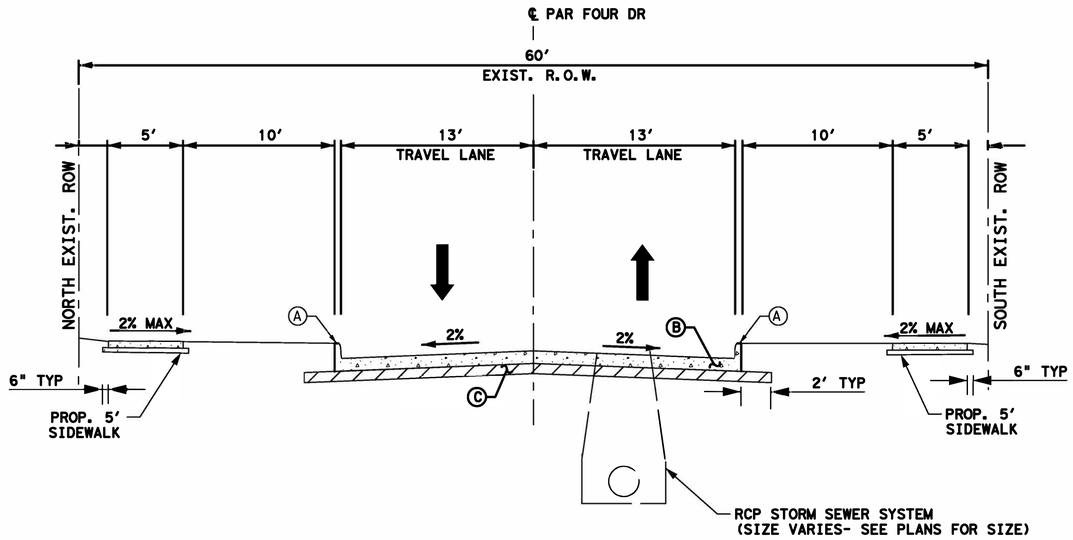
FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Typical sections\47_ETYP -01.dgn
DATE:6/19/2025



PROPOSED TYPICAL SECTION
CONCRETE CURB & GUTTER
CHATEAU FOREST DR
(STA 1+00 TO STA 31+92)
DEIRDRE ANNE DR
(STA 1+00 TO STA 7+59)



PROPOSED TYPICAL SECTION
CONCRETE CURB & GUTTER
TALL PINES DR
(STA 2+36+/- TO STA 8+95+/-)



PROPOSED TYPICAL SECTION
CONCRETE CURB & GUTTER
PAR FOUR DR
(STA 2+36+/- TO STA 6+35+/-)

LEGEND:

- Ⓐ PROP. 6" CONCRETE CURB
- Ⓑ PROP. 9" REINFORCED CONC. PVMT.
- Ⓒ PROP. 8" LIME STABILIZED SUBGRADE (8% LIME BY DRY WEIGHT)
- ① PROP. 8" WATERLINE DEIRDRE ANNE DR
- ② PROP. 8" WATERLINE CHATEAU FOREST DR

NOTES:

1. THE MAXIMUM WIDTH BETWEEN LONGITUDINAL JOINTS SHALL NOT EXCEED 15'-0".
2. ALL OPEN EARTHEN AREAS ARE TO BE SOD GRASS UNLESS SHOWN OTHERWISE ON DRAWINGS.
3. USE 1 FOOT STRIP OF SOD GRASS TO PREVENT EROSION UNTIL STAND OF GRASS IS ESTABLISHED.
4. SEE COH DWG NO: 02751-01- CONCRETE PAVEMENT DETAILS FOR LONGITUDNAL AND TRANSVERSE STEEL BAR SIZES. (SHEET 91)

ISANI
civil | design | engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

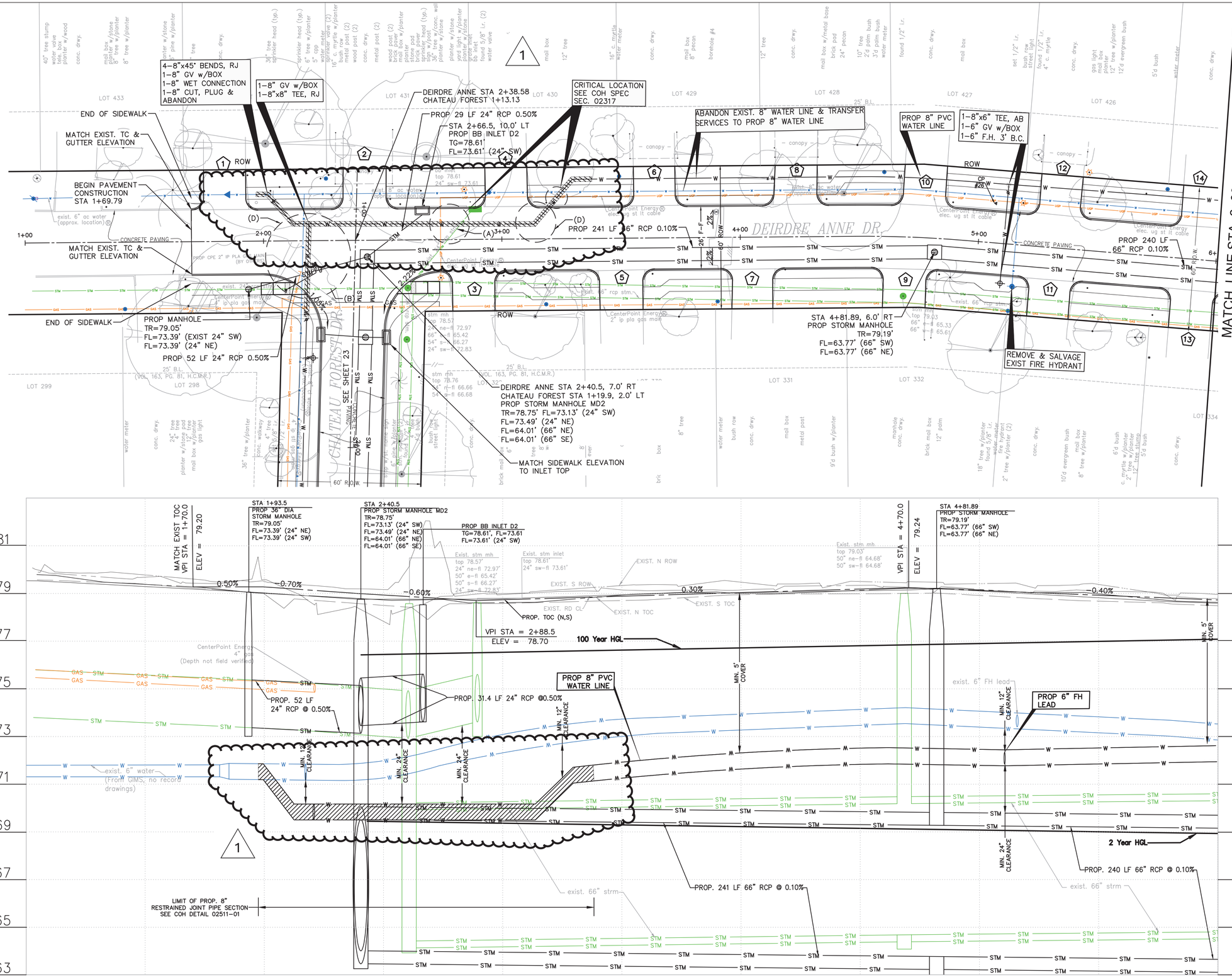
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

PROPOSED TYPICAL SECTIONS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 21 OF 158	

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Typical sections\47_PTYP -01 .dgn
DATE:6/19/2025



TBM: 1/2" I.R. W/CAP
B–26 ELEV.=79.28',
STA 5+06.03, OFFSET 16.57L

20 0 10 20 40

SCALE: 1" = 20'–0" FEET FOR 22"X34" SHEET

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162–7103, A BRASS DISK IN CONCRETE, LOCATED AT THE SOUTH CORNER OF THE INTERSECTION OF SILVER CHALICE DR AND CHATEAU FOREST DR.

ELEV. 78.00 FEET NAVD 1988 (GEOID '18)

(1) THE PROPOSED WATERLINE SHALL BE BUILT BY MEANS OF TRENCHLESS CONSTRUCTION EXCEPT AS NOTED ON THE DRAWINGS. CONTRACTOR TO DETERMINE THE LOCATIONS OF PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.
(2) TREES ARE LOCATED IN THE VICINITY OF PROPOSED ALIGNMENT OF STORM SEWER, WATER LINE AND RELATED APPURTENANCES. REFER TO THE TREE PROTECTION PLANS FOR APPROPRIATE PROTECTION MEASURES.
(3) CONTRACTOR TO BRACE AND SUPPORT BURIED TELECOM CABLES AND GAS LINES DURING CONSTRUCTION.

NOTE:
(A) GROUT FILL AND ABANDON EXISTING STM SWR RCP/CMP
(B) EXISTING PIPE TO BE REMOVED
(C) PLACE 1 FULL SECTION (MIN. 18 FEET) OF WATER LINE CENTERED AT SANITARY SEWER CROSSING. PROVIDE RESTRAINED JOINTS ON WATER LINE, SPACED AT LEAST 9 FEET HORIZONTALLY FROM CENTERLINE OF SANITARY SEWER.
(D) CONTRACTOR SHALL PROVIDE TEMPORARY ASPHALT PATCH TO DISTURBED PAVEMENT AFTER THE WATERLINE INSTALLATION. DETAILS REFER COH DWG NOS 02902–01&02

XX PROP DRIVEWAY NUMBER (SEE SHEET 56–58 FOR DRIVEWAY SUMMARY TABLES AND DETAILS)

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

Mike Brower 08/12/26
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.

Mike Brower 08/12/26
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.

Marlon Smither 10/07/2025
Date

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

ISANI
civil · design · engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P–6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
10/3/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

PLAN & PROFILE
DEIRDRE ANNE DR.
(STA 1+00 TO 6+00)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410029–0001–4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
1"=20' H, 1"=2' V	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 22 OF 160	

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 11/3/2025 10:32 AM

FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\Plan_Profile_Cut_Sheets_100%.dwg

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 10/6/2025 9:27 AM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\Plan_Profile_Cut_Sheets_100%.dwg

MATCH LINE STA 6+00
SEE SHEET 22

STA 7+16.0, 53.5 LT
PROP BB INLET
COVER REPLACE TC=77.36'

END PAVEMENT CONSTRUCTION

MATCH EXIST. TC & GUTTER ELEVATION

STA 7+42.0, 50.5 LT
PROP BB INLET
COVER REPLACE
TC=77.36'

1-8"x45° BENDS, RJ
1-8" GV w/BOX
1-8" WET CONNECTION
1-8" CUT, PLUG & ABANDON

ABANDON EXIST. 8" WATER LINE & TRANSFER SERVICES TO PROP 8" WATER LINE

PROP 8" PVC WATER LINE

MATCH EXISTING

44' R

PROP 57 LF 24" RCP 0.6%

1.52%

MP 77.69 (TOC)

PROP DRAINAGE EASEMENT

PROP 173.9 LF 66" RCP 0.10%

STA 6+70
13' RT, 13' LT

0.74%

PROP 32 LF 66" RCP 0.63%

40' R

1-8"x6" TEE, AB
1-6" GV w/BOX
1-6" F.H. 3' B.C.

STA 6+85.07, 23.5' RT
PROP STORM MANHOLE
TR=78.12'
FL=64.90' (66" SW)
FL=64.90' (66" NE)

STA 7+22.58, 13.5' RT
PROP 19'X8' JUNCTION BOX MD1
TR=77.72'
FL=63.53' (66" SW)
FL=63.53' (66" NE)
FL=64.70' (66' SW)
FL=63.53' (66" NE)
FL=71.62' (24" NW)

(REFER TO PROP EASEMENT DWGS ATTACHED TO CONTRACT DOCUMENTS)

BUILDING TO BE REMOVED (SEE SHEET 65)

CRITICAL LOCATION SEE COH SPEC SEC. 02317

EXIST. 66" RCP TO BE REMOVED

350' ULTIMATE R.O.W.
H.C.F.C.D. DRAINAGE ESMT.
UNIT NO. E100-00-00
HARRIS COUNTY FLOOD CONTROL DISTRICT (FEE)
VOL. 3566, PG. 475, H.C.D.R.
VOL. 3537, PG. 317, H.C.D.R.
VOL. 159, PG. 27, H.C.M.R.
VOL. 163, PG. 81, H.C.M.R.

STA 9+26.30 44.0' RT
PROP 19'X8' JUNCTION BOX
TR=79.83'
FL=63.36' (66" SW)
FL=63.36' (66" SW)
FL=63.36' (66" NE)
FL=63.36' (66" NE)

STA 9+89.94, 59.0' RT
PROP OUTFALL INVERT
EL=63.18'

PROP 91.2 LF 66" RCP 0.20%

PROP 96 LF 66" RCP 0.20%

STA 9+92.71, 73.0' RT
PROP OUTFALL INVERT
EL=63.17'

HEADWALL

WHITE OAK BAYOU

DEIRDRE ANNE DR.

TBM: "X" CUT ON CONC.
B-27 ELEV.=77.72',
STA 1+40.17, OFFSET 479.68L

SCALE: 1" = 20'-0" FEET FOR 22"X34" SHEET

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162-7103, A BRASS DISK IN CONCRETE, LOCATED AT THE SOUTH CORNER OF THE INTERSECTION OF SILVER CHALICE DR AND CHATEAU FOREST DR.

ELEV. 78.00 FEET NAVD 1988 (GEOID '18)

(1) THE PROPOSED WATERLINE SHALL BE BUILT BY MEANS OF TRENCHLESS CONSTRUCTION EXCEPT AS NOTED ON THE DRAWINGS. CONTRACTOR TO DETERMINE THE LOCATIONS OF PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.
(2) TREES ARE LOCATED IN THE VICINITY OF PROPOSED ALIGNMENT OF STORM SEWER, WATER LINE AND RELATED APPURTENANCES. REFER TO THE TREE PROTECTION PLANS FOR APPROPRIATE PROTECTION MEASURES.
(3) CONTRACTOR TO BRACE AND SUPPORT BURIED TELECOM CABLES AND GAS LINES DURING CONSTRUCTION.

NOTE:
(A) GROUT FILL AND ABANDON EXISTING STM SWR RCP/CMP
(B) EXISTING PIPE TO BE REMOVED
(C) PLACE 1 FULL SECTION (MIN. 18 FEET) OF WATER LINE CENTERED AT SANITARY SEWER CROSSING. PROVIDE RESTRAINED JOINTS ON WATER LINE, SPACED AT LEAST 9 FEET HORIZONTALLY FROM CENTERLINE OF SANITARY SEWER.
(D) CONTRACTOR TO ENSURE POSITIVE DRAINAGE AT ALL TIMES DURING CONSTRUCTION. COST OF ANY TEMPORARY DRAINAGE MEASURES/ STRUCTURES IS INCIDENTAL. INCLUDE COST IN APPROPRIATE UTILITY SECTIONS AND BID ACCORDINGLY

(XX) PROP DRIVEWAY NUMBER (SEE SHEET 56-58 FOR DRIVEWAY SUMMARY TABLES AND DETAILS)

NOTICE:

*Construction in Harris County Flood Control District Right-of-Way requires:

1.) HCFCD Right-of-Way Notification (permit)
2.) HCFCD 48-hr Pre-Construction Notification

Both are required prior to entering or working within Harris County Flood Control District right-of-way. Both the HCFCD Right-of-Way Notification and 48-hour notification must be provided to HCFCD at dcid@hcfcd.org. Site plans must be approved prior to obtaining the required HCFCD Right-of-Way Notification. Be advised that the HCFCD Right-of-Way Notification is separate from the site development permit package.

To apply for the HCFCD Right-of-Way Notification please go to http://apps.harriscountytx.gov/EPermits and apply for the HCFCD ROW under ROW Notification.

Failure to provide both items could result in delays and additional construction costs.

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

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

Mike Browder — 08/12/26 (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.

Mike Browder — 08/12/26 (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.

Marlon Smither — 10/07/2025 (Date)

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

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS — RAHUL B. MENON — 130533 — LICENSED PROFESSIONAL ENGINEER — 10/3/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

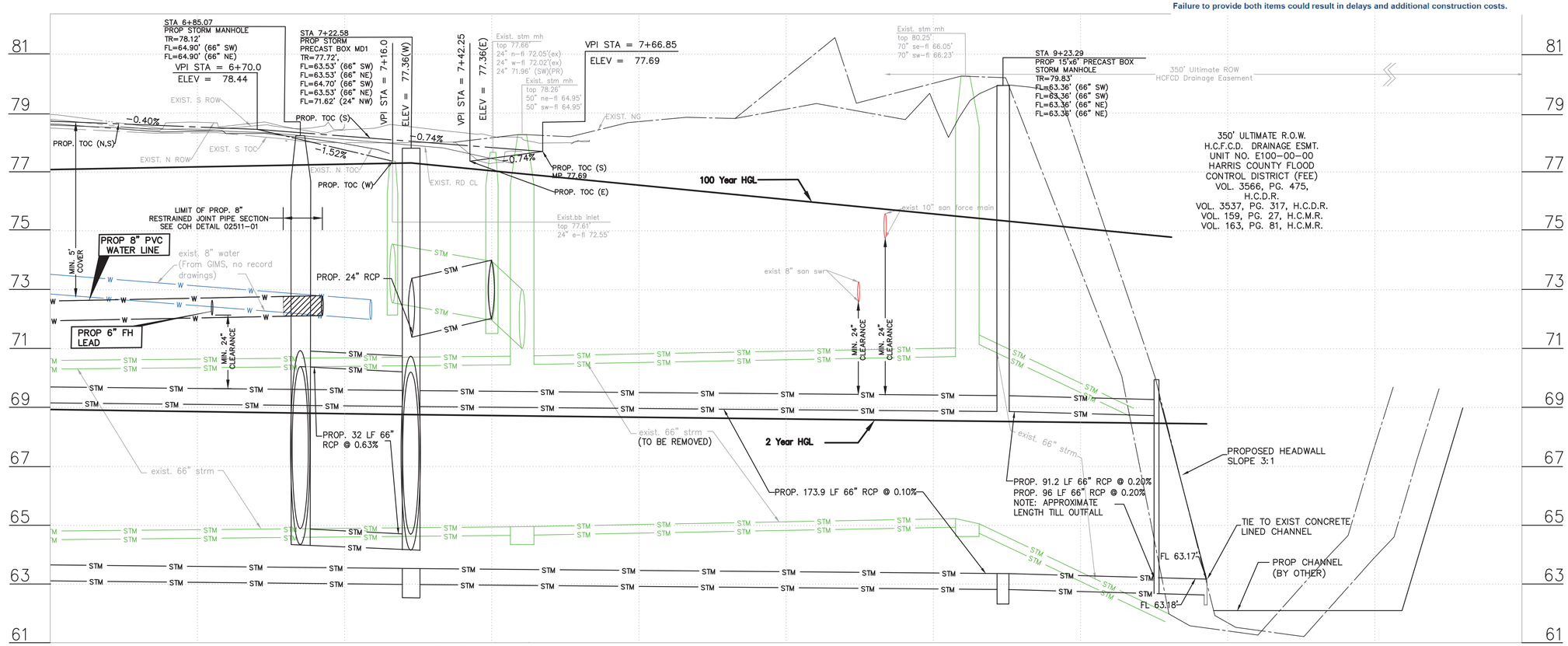
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

PLAN & PROFILE
DEIRDRE ANNE DR. (OUTFALL D)
(STA 6+00 TO 11+00)

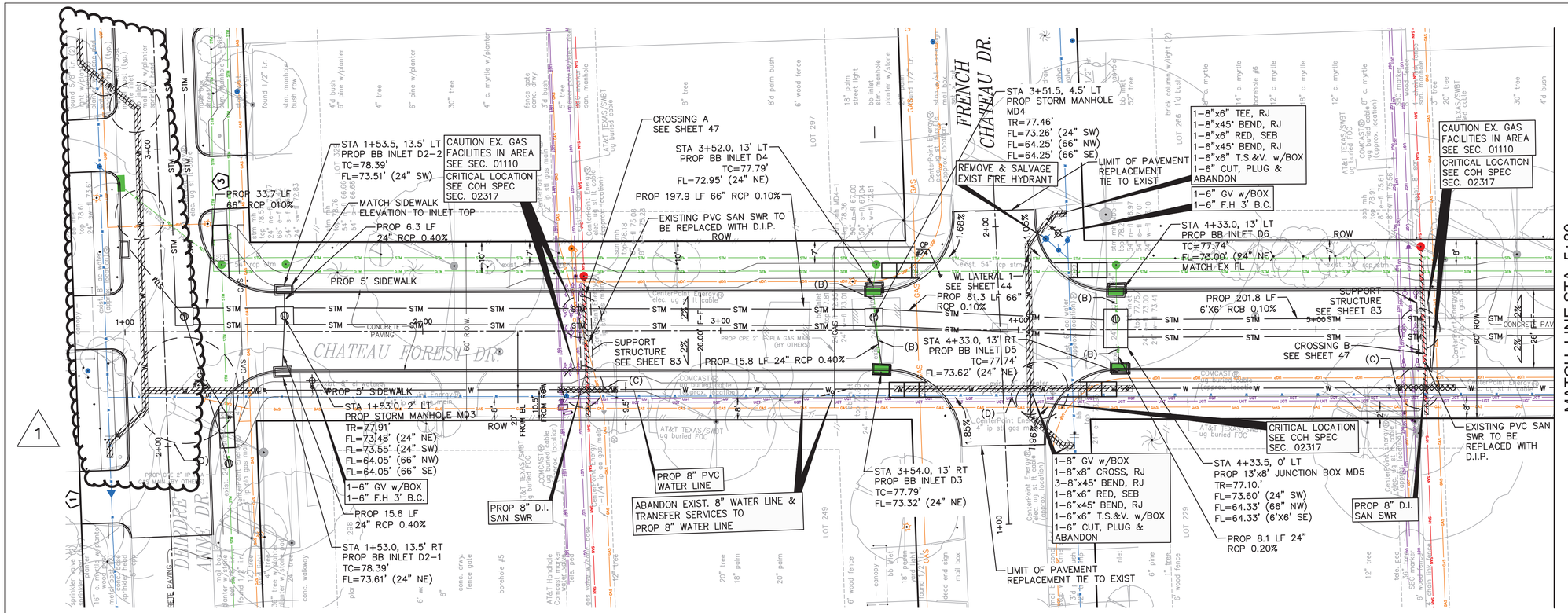
WBS NUMBER	M-410029-0001-4
DRAWING SCALE	1"=20' H, 1"=2' V
CITY OF HOUSTON PM	DOAA HAMDAN, P.E.
SHEET NO.	23 OF 158

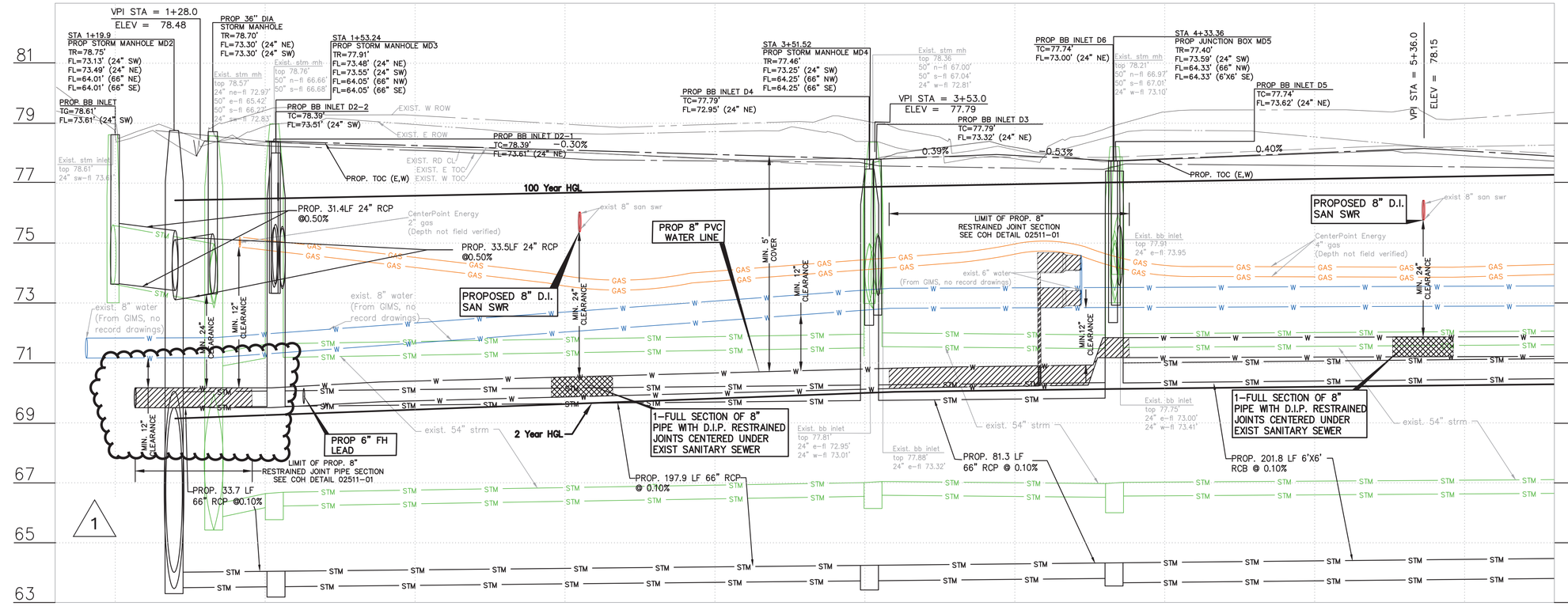
FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720 CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX



PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 10/6/2025 9:28 AM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\Plan_Profile_Cut_Sheets_100%.dwg





TBM: "X" CUT ON CONC. B-24 ELEV.=77.56', STA 3+73.91, OFFSET 18.26L

SCALE: 1" = 20'-0" FEET FOR 22"X34" SHEET

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162-7103, A BRASS DISK IN CONCRETE, LOCATED AT THE SOUTH CORNER OF THE INTERSECTION OF SILVER CHALICE DR AND CHATEAU FOREST DR.

ELEV. 78.00 FEET NAVD 1988 (GEOID '18)

(1) THE PROPOSED WATERLINE SHALL BE BUILT BY MEANS OF TRENCHLESS CONSTRUCTION EXCEPT AS NOTED ON THE DRAWINGS. CONTRACTOR TO DETERMINE THE LOCATIONS OF PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.
(2) TREES ARE LOCATED IN THE VICINITY OF PROPOSED ALIGNMENT OF STORM SEWER, WATER LINE AND RELATED APPURTENANCES. REFER TO THE TREE PROTECTION PLANS FOR APPROPRIATE PROTECTION MEASURES.
(3) CONTRACTOR TO BRACE AND SUPPORT BURIED TELECOM CABLES AND GAS LINES DURING CONSTRUCTION.

NOTE:
(A) GROUT FILL AND ABANDON EXISTING STM SWR RCP/CMP
(B) EXISTING PIPE TO BE REMOVED
(C) PLACE 1 FULL SECTION (MIN. 18 FEET) OF WATER LINE CENTERED AT SANITARY SEWER CROSSING. PROVIDE RESTRAINED JOINTS ON WATER LINE, SPACED AT LEAST 9 FEET HORIZONTALLY FROM CENTERLINE OF SANITARY SEWER.
(D) CONTRACTOR SHALL PROVIDE TEMPORARY ASPHALT PATCH TO DISTURBED PAVEMENT AFTER THE WATERLINE INSTALLATION. DETAILS REFER COH DWG NOS 02902-01&02

XX PROP DRIVEWAY NUMBER (SEE SHEET 56-58 FOR DRIVEWAY SUMMARY TABLES AND DETAILS)

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

Mike Brower 08/12/26
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.

Mike Brower 08/12/26
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.

Marlon Smither 10/07/2025
Date

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

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

ISANI
civil · design · engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
10/3/25

SURVEYED BY: Kuo&Associates
FB NO. P-6257

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

PLAN & PROFILE
CHATEAU FOREST DR.
(STA 1+00 TO 5+80)

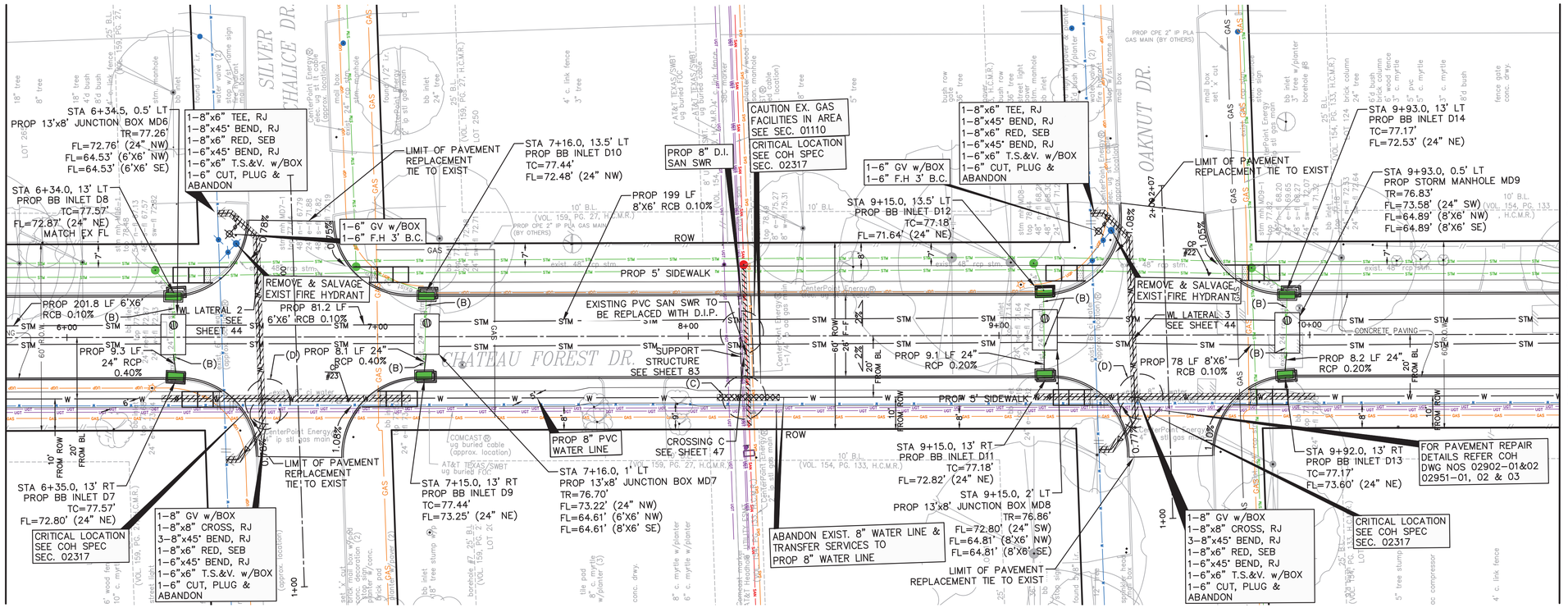
WBS NUMBER
M-410029-0001-4
DRAWING SCALE
1"=20' H, 1"=2' V
CITY OF HOUSTON PM
DOAA HAMDAN, P.E.
SHEET NO. 24 OF 158

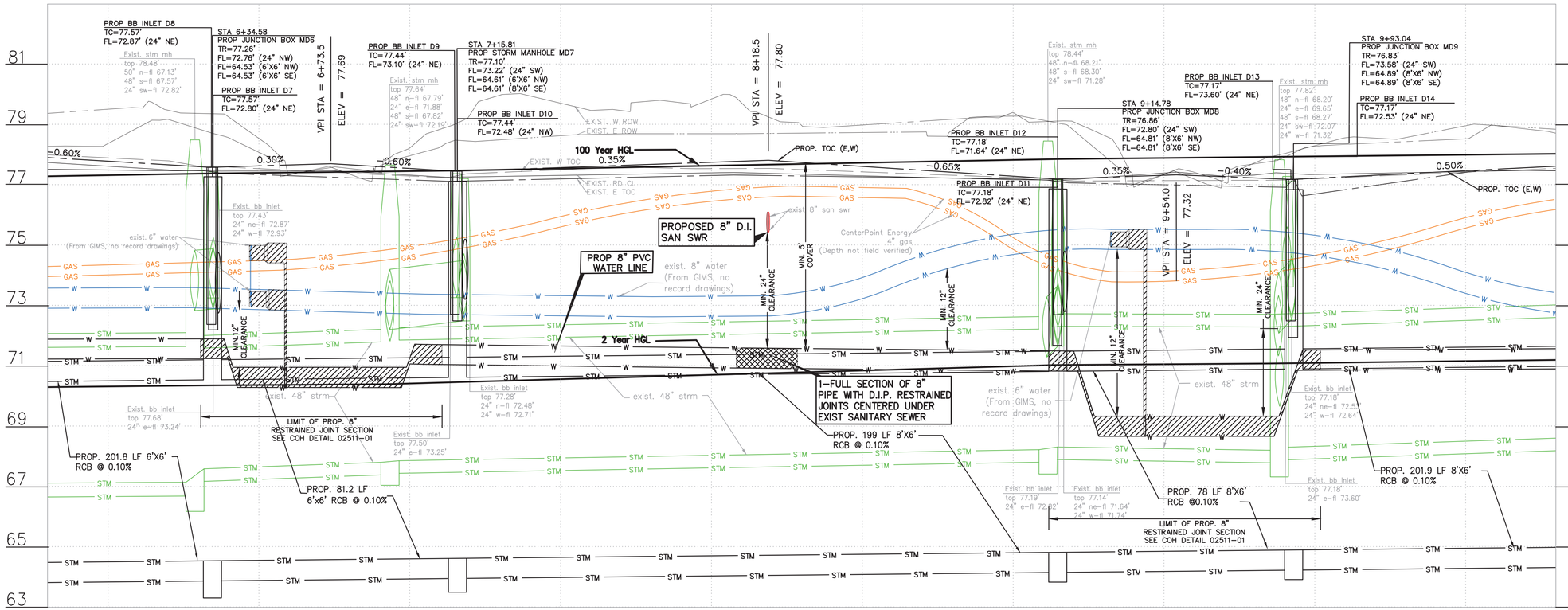
FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

MATCH LINE STA 5+80
SEE SHEET 24

MATCH LINE STA 10+80
SEE SHEET 26





TBM: "X" CUT ON CONC.
B-22 ELEV.=77.00',
STA 9+67.65, OFFSET 19.76L

20 0 10 20 40

SCALE: 1" = 20'-0" FEET FOR 22"X34" SHEET

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162-7103, A BRASS DISK IN CONCRETE, LOCATED AT THE SOUTH CORNER OF THE INTERSECTION OF SILVER CHALICE DR AND CHATEAU FOREST DR.

ELEV. 78.00 FEET NAVD 1988 (GEOID '18)

(1) THE PROPOSED WATERLINE SHALL BE BUILT BY MEANS OF TRENCHLESS CONSTRUCTION EXCEPT AS NOTED ON THE DRAWINGS. CONTRACTOR TO DETERMINE THE LOCATIONS OF PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.
(2) TREES ARE LOCATED IN THE VICINITY OF PROPOSED ALIGNMENT OF STORM SEWER, WATER LINE AND RELATED APPURTENANCES. REFER TO THE TREE PROTECTION PLANS FOR APPROPRIATE PROTECTION MEASURES.
(3) CONTRACTOR TO BRACE AND SUPPORT BURIED TELECOM CABLES AND GAS LINES DURING CONSTRUCTION.

NOTE:
(A) GROUT FILL AND ABANDON EXISTING STM SWR RCP/CMP
(B) EXISTING PIPE TO BE REMOVED
(C) PLACE 1 FULL SECTION (MIN. 18 FEET) OF WATER LINE CENTERED AT SANITARY SEWER CROSSING. PROVIDE RESTRAINED JOINTS ON WATER LINE, SPACED AT LEAST 9 FEET HORIZONTALLY FROM CENTERLINE OF SANITARY SEWER.
(D) CONTRACTOR SHALL PROVIDE TEMPORARY ASPHALT PATCH TO DISTURBED PAVEMENT AFTER THE WATERLINE INSTALLATION. DETAILS REFER COH DWG NOS 02902-01&02

XX PROP DRIVEWAY NUMBER (SEE SHEET 56-58 FOR DRIVEWAY SUMMARY TABLES AND DETAILS)

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

Mike Brower 08/12/26
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.

Mike Brower 08/12/26
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.

Marlon Smither 10/07/2025
Date

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

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

ISANI
civil · design · engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
10/3/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

PLAN & PROFILE
CHATEAU FOREST DR.
(STA 5+80 TO 10+80)

WBS NUMBER	M-410029-0001-4
DRAWING SCALE	1"=20' H, 1"=2' V
CITY OF HOUSTON PM	DOAA HAMDAN, P.E.
SHEET NO.	25 OF 158

FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720 CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 10/6/2025 9:28 AM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\Plan_Profile_Cut_Sheets_100%.dwg

MATCH LINE STA 10+80
SEE SHEET 25

MATCH LINE STA 15+80
SEE SHEET 27

CHATEAU FOREST DR.

CORN FOREST DR.

MAPLE HILL

CAUTION EX. GAS FACILITIES IN AREA SEE SEC. 01110

CRITICAL LOCATION SEE COH SPEC SEC. 02317

SUPPORT STRUCTURE SEE SHEET 83

1-8"x6" TEE, RJ
2-8"x45° BEND, RJ
1-8"x6" RED, SEB
1-6"x45° BEND, RJ
1-6"x6" T.S.&V. w/BOX
1-6" CUT, PLUG & ABANDON

1-6" GV w/BOX
1-6" F.H 3' B.C.

REMOVE & SALVAGE EXIST FIRE HYDRANT

STA 11+94.5, 14' LT
PROP BB INLET D16
TC=77.40'
FL=71.82' (24" NE)

PROP 201.9 LF
8'X6' RCB 0.10%

PROP 8" D.I. SAN SWR

EXISTING PVC SAN SWR TO BE REPLACED WITH D.I.P.

PROP 13'x8' JUNCTION BOX MD10
TR=77.10'
FL=72.41' (24" SW)
FL=65.09' (8'X6' NW)
FL=65.09' (8'X6' SE)

STA 11+95.5, 13.5' RT
PROP BB INLET D15
TC=77.40'
FL=72.45' (24" NE)

1-8" GV w/BOX
1-8"x8" CROSS, RJ
3-8"x45° BEND, RJ
1-6"x45° BEND, RJ
1-6"x6" RED, SEB
1-6"x6" T.S.&V. w/BOX
1-6" CUT, PLUG & ABANDON

CROSSING D, SEE SHEET 47

CRITICAL LOCATION SEE COH SPEC SEC. 02317

LIMIT OF PAVEMENT REPLACEMENT TIE TO EXIST

STA 12+74.5, 13.5' LT
PROP BB INLET D18
TC=77.32'
FL=71.42' (24" NW)

STA 12+74.0, 1.5' LT
PROP 13'x8' JUNCTION BOX MD11
TR=77.06'
FL=72.10' (24" SW)
FL=65.17' (8'X6' NW)
FL=65.17' (8'X6' SE)

PROP 8" D.I. SAN SWR

PROP 5' SIDEWALK

WL LATERAL 4
SEE SHEET 44

PROP 10 LF 24" RCP 0.44%

PROP 79.5 LF
8'X6' RCB 0.10%

PROP 9.8 LF 24" RCP 0.20%

SUPPORT STRUCTURE SEE SHEET 83

STA 12+74.0, 13.5' RT
PROP BB INLET D17
TC=77.32'
FL=72.12' (24" NW)

CRITICAL LOCATION SEE COH SPEC SEC. 02317

CAUTION EX. GAS FACILITIES IN AREA SEE SEC. 01110

ABANDON EXIST. 8" WATER LINE & TRANSFER SERVICES TO PROP 8" WATER LINE

CROSSING E SEE SHEET 48

PROP 8" PVC WATER LINE

STA 14+72.5, 0' RT
PROP 13'x8' JUNCTION BOX MD12
TR=76.10'
FL=65.37' (8'X6' NW)
FL=65.37' (8'X4' SE)
FL=70.92' (24" SW)

STA 14+71.0, 13.5' RT
PROP BB INLET D19
TC=76.34'
FL=70.94' (24" NE)

THOU CITY OF HOUSTON SANITARY SEWER 8" DIA PVC PIPE N=13882143.56 E=3082143.56 NG:77.85 TOU:75.61

LIMIT OF PAVEMENT REPLACEMENT TIE TO EXIST

3-8"x45° BEND, RJ
1-8"x6" RED, SEB
1-6"x45° BEND, RJ
1-6"x6" T.S.&V. w/BOX
1-6" CUT, PLUG & ABANDON

REMOVE & SALVAGE EXIST FIRE HYDRANT 1-6" CUT, PLUG & ABANDON

PROP STORM MANHOLE
MD12-1 TR=77.36'
FL=70.50' (24" SW)
FL=69.37' (42" NW)
FL=69.37' (42" SE)

PROP 8.5 LF 24" RCP 0.20%

STA 14+72.5, 13' LT
PROP BB INLET D20
TC=76.34'
FL=70.51' (24" NE)

EXISTING PVC SAN SWR TO BE REPLACED WITH D.I.P.

PROP 198.2 LF
8'X6' RCB 0.10%

1-6" GV w/BOX
1-6" F.H 3' B.C.

STA 15+58.5, 13' LT
PROP BB INLET D22
TC=76.24'
FL=69.73' (24" NE)

PROP 86 LF
8'X4' RCB 0.10%

PROP 8.1 LF
24" RCP 0.20%

PROP 198.2 LF
8'X6' RCB 0.10%

CRITICAL LOCATION SEE COH SPEC SEC. 02317

LIMIT OF PAVEMENT REPLACEMENT TIE TO EXIST

1-8" GV w/BOX
1-8"x8" CROSS, RJ
3-8"x45° BEND, RJ
1-8"x6" RED, SEB
1-6"x45° BEND, RJ
1-6"x6" T.S.&V. w/BOX
1-6" CUT, PLUG & ABANDON

STA 15+58.5, 0.5' LT
PROP 13'x8' JUNCTION BOX MD13
TR=76.00'
FL=65.45' (8'X4' NW)
FL=65.45' (8'X4' SE)
FL=69.82' (24" SW)

PROP STORM MANHOLE
MD13-1 TR=77.17'
FL=69.72' (24" SW)
FL=69.40' (42" NW)
FL=69.40' (42" SE)

PROP 7.9 LF 24" RCP 0.20%

PROP 9.1 LF
24" RCP 0.20%

STA 15+59.0, 13.5' RT
PROP BB INLET D21
TC=76.24'
FL=69.84' (24" NE)

PROP 86 LF
8'X4' RCB @ 0.10%

LIMIT OF PROP. 8" RESTRAINED JOINT SECTION SEE COH DETAIL 02511-01

1-FULL SECTION OF 20' PIPE WITH D.I.P. RESTRAINED JOINTS CENTERED UNDER EXIST SANITARY SEWER

PROP. 201.9 LF 8'X6' RCB @ 0.10%

PROP. 79.5 LF 8'X6' RCB @ 0.10%

PROP. 198.2 LF 8'X6' RCB @ 0.10%

PROP. 86 LF 8'X4' RCB @ 0.10%

100 Year HGL

2 Year HGL

PROPOSED 8" D.I. SAN SWR

PROPOSED 8" PVC WATER LINE

MIN. 24" CLEARANCE

MIN. 12" CLEARANCE

MIN. 5' COVER

VPI STA = 10+97.0
ELEV = 77.69

VPI STA = 12+34.0
ELEV = 77.56

VPI STA = 13+64.0
ELEV = 77.61

VPI STA = 14+71.0
ELEV = 76.33

STA 15+39
PROP JUNCTION BOX MD13
TR=76.00'
FL=65.45' (8'X4' NW)
FL=65.45' (8'X4' SE)
FL=69.82' (24" SW)

11+00 12+00 13+00 14+00 15+00 15+80

63 65 67 69 71 73 75 77 79

1

TBM: "X" CUT ON CONC.
B-21 ELEV.=77.20',
STA 12+49.39, OFFSET 19.62R

20 0 10 20 40

SCALE: 1" = 20'-0" FEET FOR 22"X34" SHEET

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162-7103, A BRASS DISK IN CONCRETE, LOCATED AT THE SOUTH CORNER OF THE INTERSECTION OF SILVER CHALICE DR AND CHATEAU FOREST DR.

ELEV. 78.00 FEET NAVD 1988 (GEOID '18)

(1) THE PROPOSED WATERLINE SHALL BE BUILT BY MEANS OF TRENCHLESS CONSTRUCTION EXCEPT AS NOTED ON THE DRAWINGS. CONTRACTOR TO DETERMINE THE LOCATIONS OF PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.
(2) TREES ARE LOCATED IN THE VICINITY OF PROPOSED ALIGNMENT OF STORM SEWER, WATER LINE AND RELATED APPURTENANCES. REFER TO THE TREE PROTECTION PLANS FOR APPROPRIATE PROTECTION MEASURES.
(3) CONTRACTOR TO BRACE AND SUPPORT BURIED TELECOM CABLES AND GAS LINES DURING CONSTRUCTION.

NOTE:
(A) GROUT FILL AND ABANDON EXISTING STM SWR RCP/CMP
(B) EXISTING PIPE TO BE REMOVED
(C) PLACE 1 FULL SECTION (MIN. 18 FEET) OF WATER LINE CENTERED AT SANITARY SEWER CROSSING. PROVIDE RESTRAINED JOINTS ON WATER LINE, SPACED AT LEAST 9 FEET HORIZONTALLY FROM CENTERLINE OF SANITARY SEWER.
(D) CONTRACTOR SHALL PROVIDE TEMPORARY ASPHALT PATCH TO DISTURBED PAVEMENT AFTER THE WATERLINE INSTALLATION. DETAILS REFER COH DWG NOS 02902-01&02

XX PROP DRIVEWAY NUMBER (SEE SHEET 56-58 FOR DRIVEWAY SUMMARY TABLES AND DETAILS)

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

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

Mike Brower 08/12/26
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.

Mike Brower 08/12/26
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.

Marlon Smither 10/07/2025
Date

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

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
10/3/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

PLAN & PROFILE
CHATEAU FOREST DR.
(STA 10+80 TO 15+80)

WBS NUMBER	M-410029-0001-4
DRAWING SCALE	1"=20' H, 1"=2' V
CITY OF HOUSTON PM	DOAA HAMDAN, P.E.
SHEET NO.	26 OF 158

FOR CITY OF HOUSTON USE ONLY

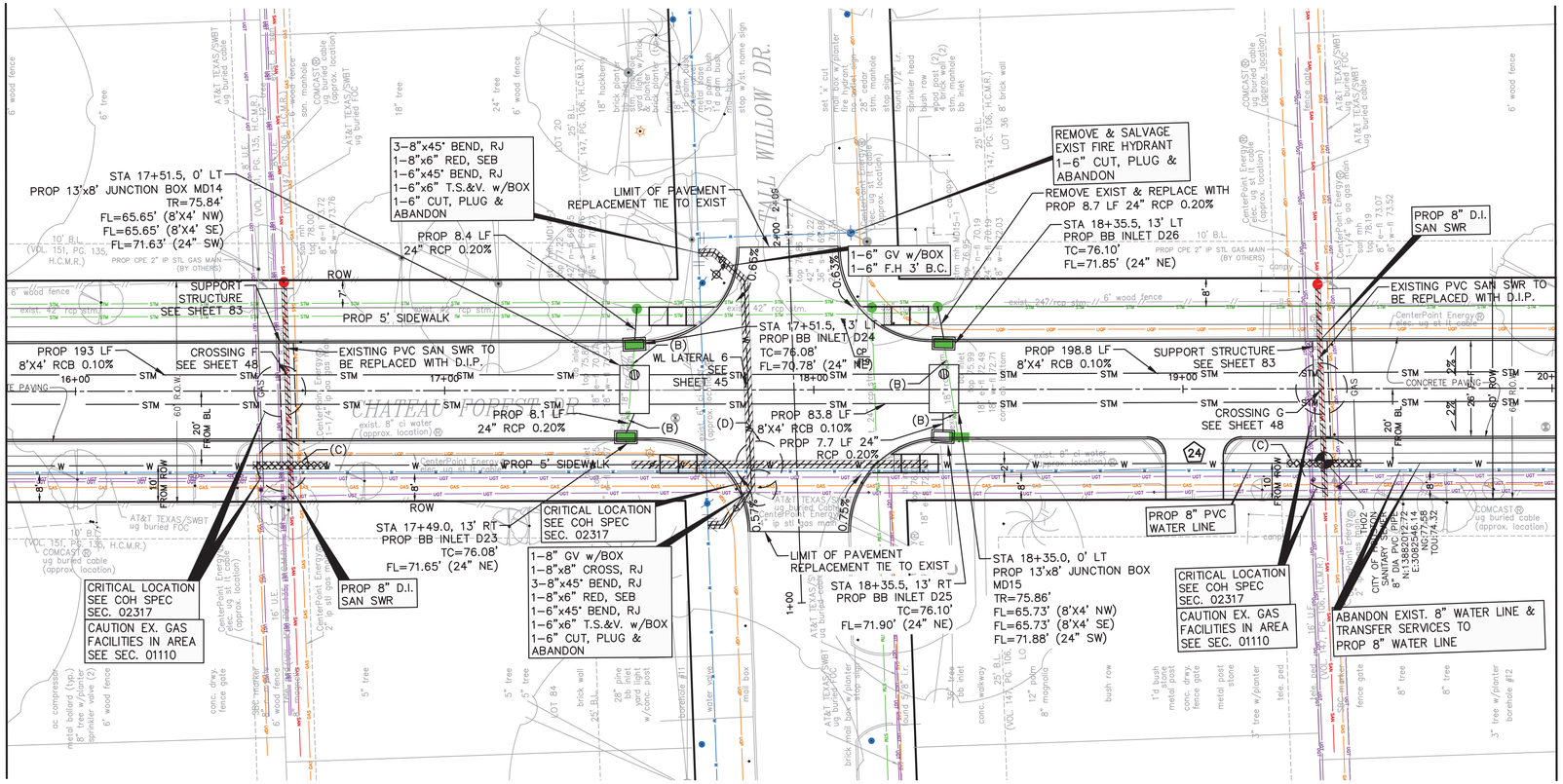
HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720 CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

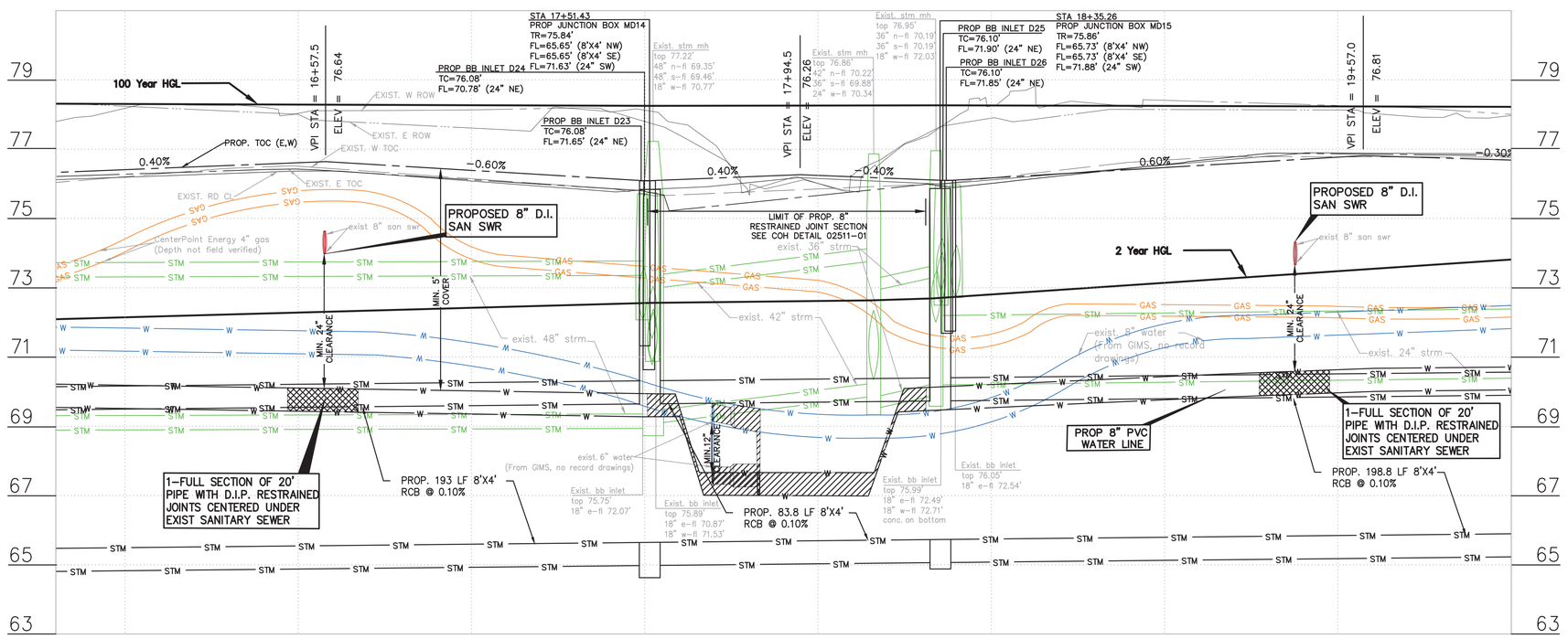
PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 10/6/2025 9:28 AM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\Plan_Profile_Cut_Sheets_100%.dwg

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 10/6/2025 9:29 AM

MATCH LINE STA 15+80
SEE SHEET 26

MATCH LINE STA 20+00
SEE SHEET 28





1

TBM: "X" CUT ON CONC. B-19 ELEV.=75.89', STA 18+07.97, OFFSET 18.82L

20 0 10 20 40

SCALE: 1" = 20'-0" FEET FOR 22"X34" SHEET

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162-7103, A BRASS DISK IN CONCRETE, LOCATED AT THE SOUTH CORNER OF THE INTERSECTION OF SILVER CHALICE DR AND CHATEAU FOREST DR.

ELEV. 78.00 FEET NAVD 1988 (GEOID '18)

(1) THE PROPOSED WATERLINE SHALL BE BUILT BY MEANS OF TRENCHLESS CONSTRUCTION EXCEPT AS NOTED ON THE DRAWINGS. CONTRACTOR TO DETERMINE THE LOCATIONS OF PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.
(2) TREES ARE LOCATED IN THE VICINITY OF PROPOSED ALIGNMENT OF STORM SEWER, WATER LINE AND RELATED APPURTENANCES. REFER TO THE TREE PROTECTION PLANS FOR APPROPRIATE PROTECTION MEASURES.
(3) CONTRACTOR TO BRACE AND SUPPORT BURIED TELECOM CABLES AND GAS LINES DURING CONSTRUCTION.

NOTE:
(A) GROUT FILL AND ABANDON EXISTING STM SWR RCP/CMP
(B) EXISTING PIPE TO BE REMOVED
(C) PLACE 1 FULL SECTION (MIN. 18 FEET) OF WATER LINE CENTERED AT SANITARY SEWER CROSSING. PROVIDE RESTRAINED JOINTS ON WATER LINE, SPACED AT LEAST 9 FEET HORIZONTALLY FROM CENTERLINE OF SANITARY SEWER.
(D) CONTRACTOR SHALL PROVIDE TEMPORARY ASPHALT PATCH TO DISTURBED PAVEMENT AFTER THE WATERLINE INSTALLATION. DETAILS REFER COH DWG NOS 02902-01&02

XX PROP DRIVEWAY NUMBER (SEE SHEET 56-58 FOR DRIVEWAY SUMMARY TABLES AND DETAILS)

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

Mike Brower 08/12/26
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.

Mike Brower 08/12/26
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.

Marlon Smither 10/07/2025
Date

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

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
10/3/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

PLAN & PROFILE
CHATEAU FOREST DR.
(STA 15+80 TO 20+00)

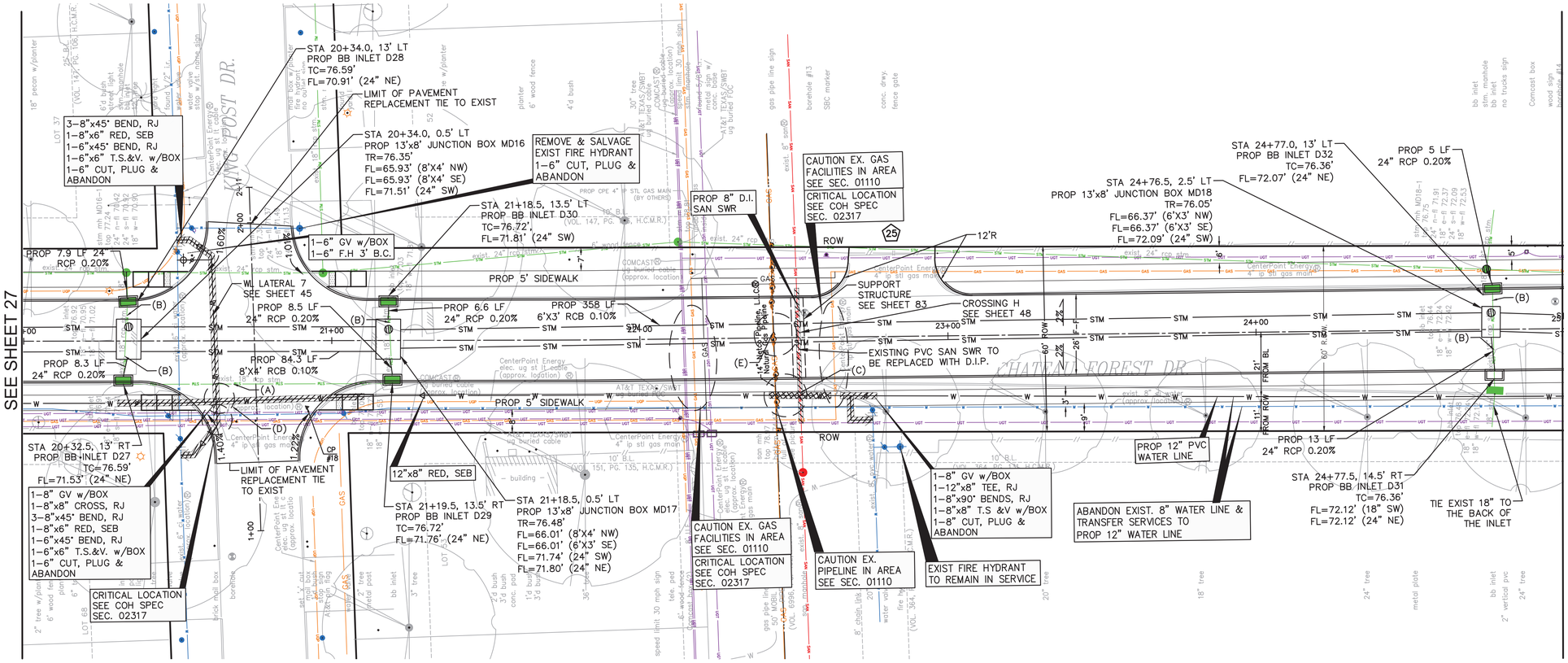
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
1"=20' H, 1"=2' V	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 27 OF 158	

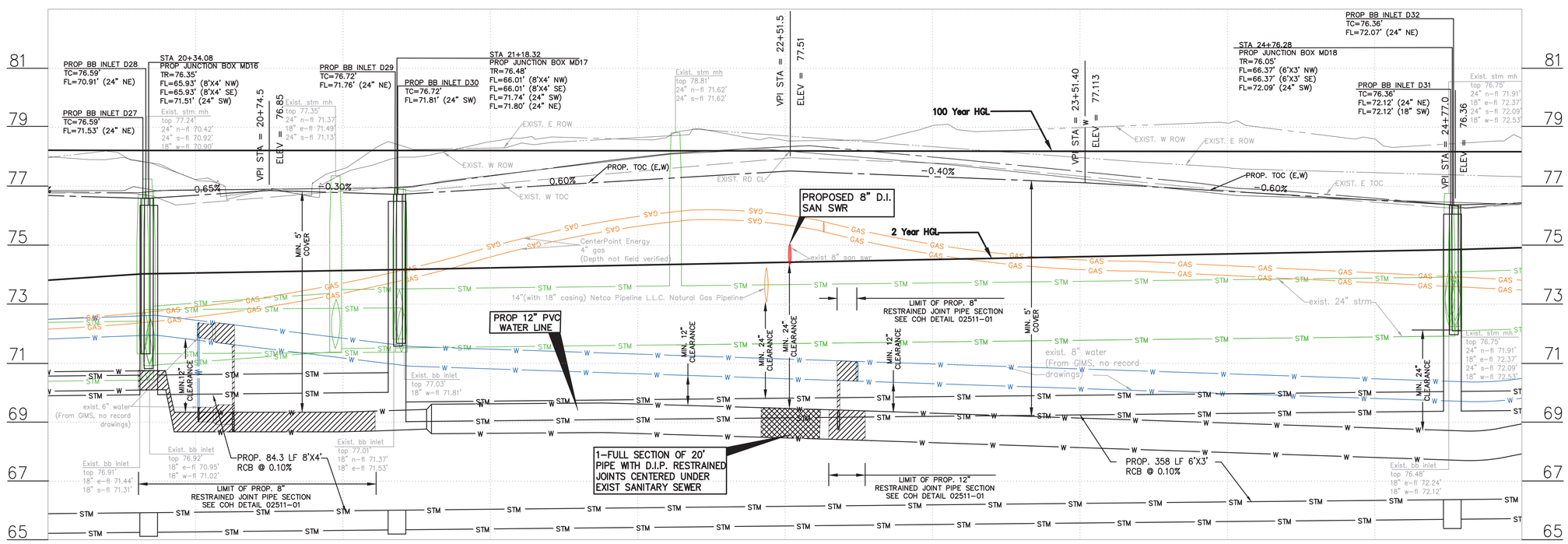
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\Plan_Profile_Cut_Sheets_100%.dwg

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 10/6/2025 9:29 AM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\Plan_Profile_Cut_Sheets_100%.dwg

MATCH LINE STA 20+00 SEE SHEET 27

MATCH LINE STA 25+00 SEE SHEET 29





NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

1

TBM: "X" CUT ON CONC. B-18 ELEV.=76.65', STA 20+91.88, OFFSET 21.62R

20 0 10 20 40

SCALE: 1" = 20'-0" FEET FOR 22"X34" SHEET

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162-7103, A BRASS DISK IN CONCRETE, LOCATED AT THE SOUTH CORNER OF THE INTERSECTION OF SILVER CHALICE DR AND CHATEAU FOREST DR.

ELEV. 78.00 FEET NAVD 1988 (GEOID '18)

(1) THE PROPOSED WATERLINE SHALL BE BUILT BY MEANS OF TRENCHLESS CONSTRUCTION EXCEPT AS NOTED ON THE DRAWINGS. CONTRACTOR TO DETERMINE THE LOCATIONS OF PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.
(2) TREES ARE LOCATED IN THE VICINITY OF PROPOSED ALIGNMENT OF STORM SEWER, WATER LINE AND RELATED APPURTENANCES. REFER TO THE TREE PROTECTION PLANS FOR APPROPRIATE PROTECTION MEASURES.
(3) CONTRACTOR TO BRACE AND SUPPORT BURIED TELECOM CABLES AND GAS LINES DURING CONSTRUCTION.

NOTE:
(A) GROUT FILL AND ABANDON EXISTING STM SWR RCP/CMP
(B) EXISTING PIPE TO BE REMOVED
(C) PLACE 1 FULL SECTION (MIN. 18 FEET) OF WATER LINE CENTERED AT SANITARY SEWER CROSSING. PROVIDE RESTRAINED JOINTS ON WATER LINE, SPACED AT LEAST 9 FEET HORIZONTALLY FROM CENTERLINE OF SANITARY SEWER.
(D) CONTRACTOR SHALL PROVIDE TEMPORARY ASPHALT PATCH TO DISTURBED PAVEMENT AFTER THE WATERLINE INSTALLATION. DETAILS REFER COH DWG NOS. 02902-01&02
(E) IF THE TRENCH WIDTH EXCEEDS 12 FEET, CONTRACTOR TO PROVIDE BRACE AND SUPPORT FOR THE EXISTING NETCO PIPELINE
XX PROP DRIVEWAY NUMBER (SEE SHEET 56-58 FOR DRIVEWAY SUMMARY TABLES AND DETAILS)

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

Mike Brower 08/12/26
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.

Mike Brower 08/12/26
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.

Marlon Smither Date 10/07/2025

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

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS RAHUL B. MENON 130533 LICENSED PROFESSIONAL ENGINEER 10/3/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

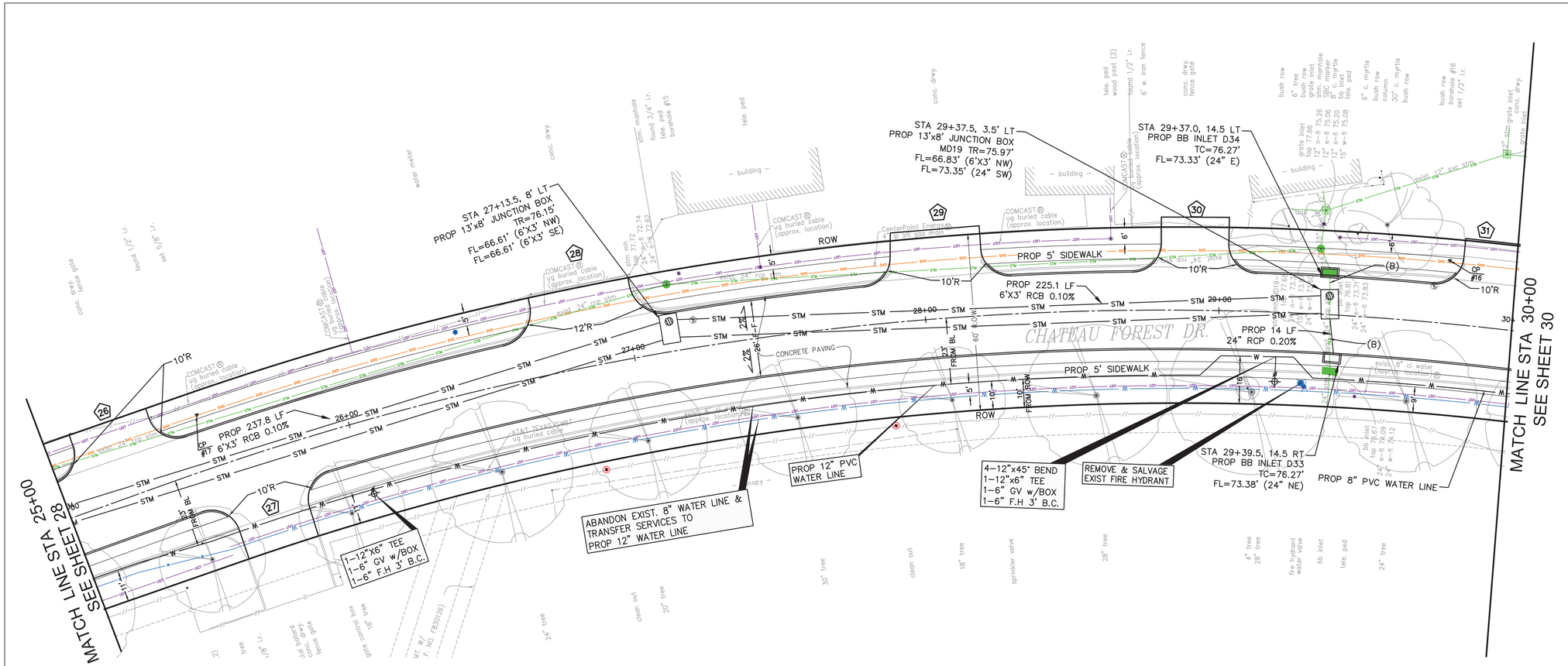
PLAN & PROFILE
CHATEAU FOREST DR.
(STA 20+00 TO 25+00)

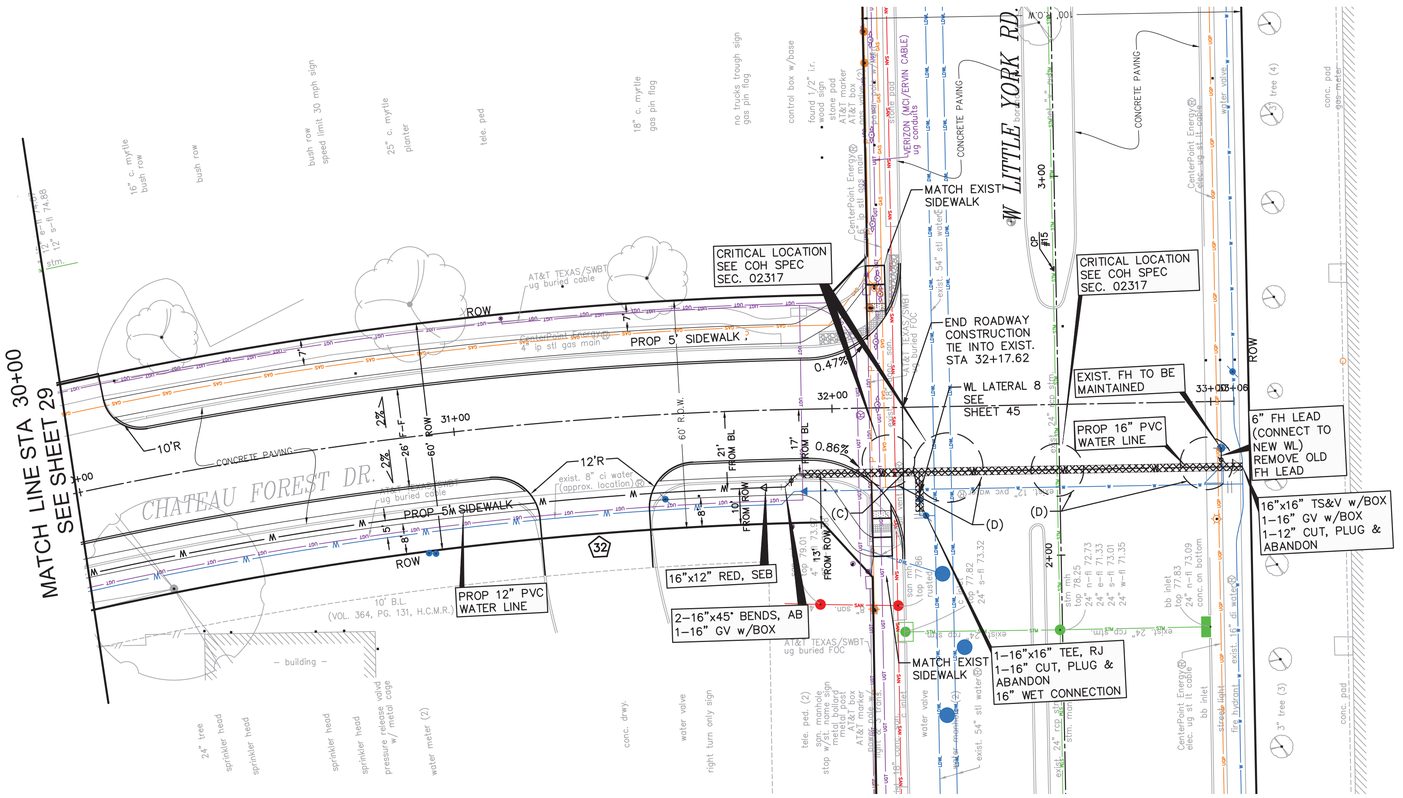
WBS NUMBER	M-410029-0001-4
DRAWING SCALE	1"=20' H, 1"=2' V
CITY OF HOUSTON PM	DOAA HAMDAN, P.E.
SHEET NO.	28 OF 158

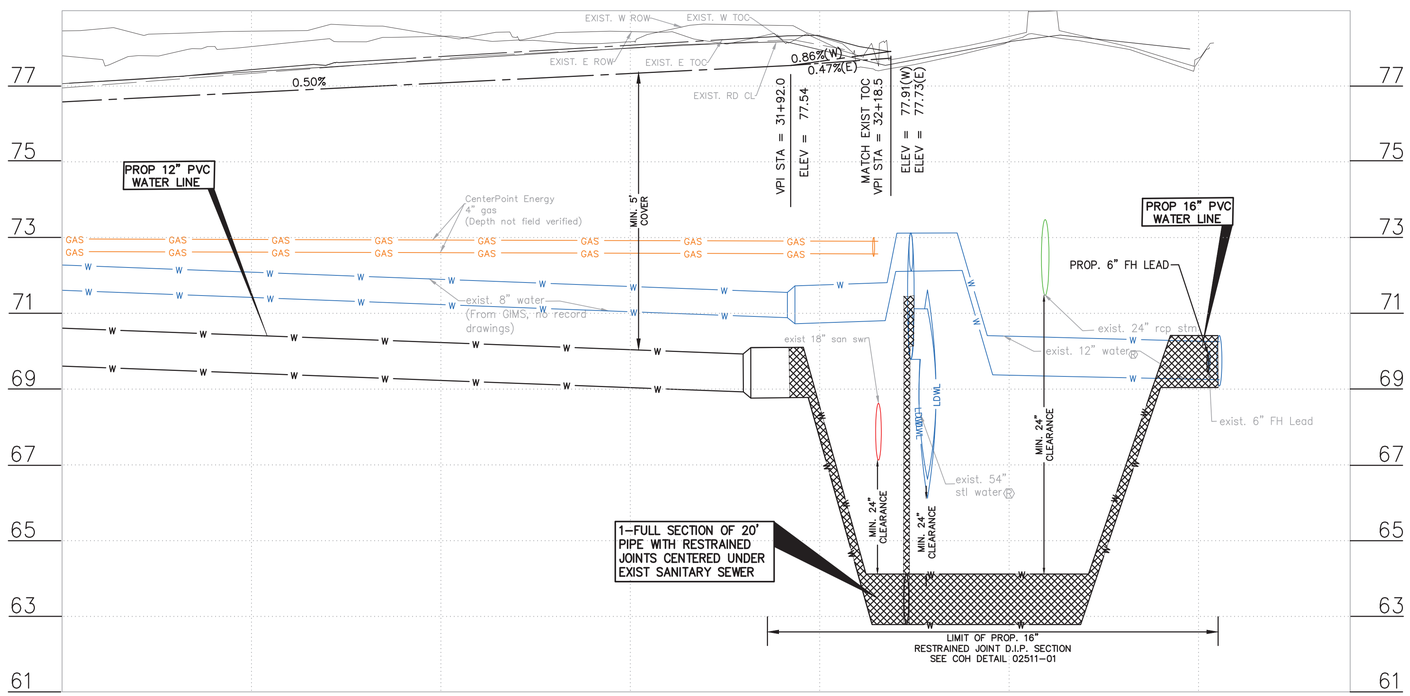
FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720 CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 10/6/2025 9:30 AM


MATCH LINE STA 25+00
SEE SHEET 28
MATCH LINE STA 30+00
SEE SHEET 30
STA 27+13.5, 8' LT
PROP 13'x8' JUNCTION BOX
FL=66.61' (6'X3' NW)
FL=66.61' (6'X3' SE)
STA 29+37.5, 3.5' LT
PROP 13'x8' JUNCTION BOX
MD19 TR=75.97'
FL=66.83' (6'X3' NW)
FL=73.35' (24" SW)
STA 29+37.0, 14.5 LT
PROP BB INLET D34
TC=76.27'
FL=73.33' (24" E)
STA 29+39.5, 14.5 RT
PROP BB INLET D33
TC=76.27'
FL=73.38' (24" NE)
PROP 237.8 LF
6'X3' RCB 0.10%
PROP 225.1 LF
6'X3' RCB 0.10%
PROP 14 LF
24" RCP 0.20%
PROP 5' SIDEWALK
CHATEAU FOREST DR.
CONCRETE PAVING
ROW
PROP 12" PVC
WATER LINE
ABANDON EXIST. 8" WATER LINE &
TRANSFER SERVICES TO
PROP 12" WATER LINE
1-12"x6" TEE
1-6" GV w/BOX
1-6" F.H 3' B.C.
4-12"x45° BEND
1-12"x6" TEE
1-6" GV w/BOX
1-6" F.H 3' B.C.
REMOVE & SALVAGE
EXIST FIRE HYDRANT
PROP 8" PVC WATER LINE
exist 24" strm
exist 8" ci water
(approx. location)
CenterPoint Energy
8" stl gas main
AT&T TEXAS/SWBT
ug buried cable
(approx. location)
COMCAST
ug buried cable
(approx. location)
exist. stm mh
top 77.72'
24" n-fl 72.74'
24" s-fl 72.62'
exist. stm mh
top 77.68'
24" n-fl 73.31'
15" e-fl 73.87'
24" w-fl 73.60'
exist. bb inlet
top 76.81'
24" e-fl 73.71'
24" w-fl 73.83'
exist. bb inlet
top 76.67'
24" e-fl 74.09'
24" w-fl 74.12'
exist. 24" x 36" rcp strm
exist. 24" x 29" rcp strm
exist. 24" x 24" rcp strm
exist. 18" x 29" rcp strm
exist. 24" x 38" rcp strm
exist. 24" x 19" rcp strm
exist. 24" x 24" rcp strm
exist. 24" x 24" rcp strm
exist. 24" x 24





1

TBM: "X" CUT ON CONC.
B-15 ELEV.=79.14',
STA 2+75.60, OFFSET 0.76L

20 0 10 20 40

SCALE: 1" = 20'-0" FEET FOR 22"X34" SHEET

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162-7103, A BRASS DISK IN CONCRETE, LOCATED AT THE SOUTH CORNER OF THE INTERSECTION OF SILVER CHALICE DR AND CHATEAU FOREST DR.

ELEV. 78.00 FEET NAVD 1988 (GEOID '18)

(1) THE PROPOSED WATERLINE SHALL BE BUILT BY MEANS OF TRENCHLESS CONSTRUCTION EXCEPT AS NOTED ON THE DRAWINGS. CONTRACTOR TO DETERMINE THE LOCATIONS OF PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.
(2) TREES ARE LOCATED IN THE VICINITY OF PROPOSED ALIGNMENT OF STORM SEWER, WATER LINE AND RELATED APPURTENANCES. REFER TO THE TREE PROTECTION PLANS FOR APPROPRIATE PROTECTION MEASURES.
(3) CONTRACTOR TO BRACE AND SUPPORT BURIED TELECOM CABLES AND GAS LINES DURING CONSTRUCTION.

NOTE:
(A) GROUT FILL AND ABANDON EXISTING STM SWR RCP/CMP
(B) EXISTING PIPE TO BE REMOVED
(C) PLACE 1 FULL SECTION (MIN. 18 FEET) OF WATER LINE CENTERED AT SANITARY SEWER CROSSING. PROVIDE RESTRAINED JOINTS ON WATER LINE, SPACED AT LEAST 9 FEET HORIZONTALLY FROM CENTERLINE OF SANITARY SEWER.
(D) FOR PAVEMENT REPAIR DETAILS REFER COH DWG NOS 02902-01&02 02951-01, 02&03

XX PROP DRIVEWAY NUMBER (SEE SHEET 56-58 FOR DRIVEWAY SUMMARY TABLES AND DETAILS)

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

Mike Brower 08/12/26
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.

Mike Brower 08/12/26
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.

Marlon Smither Date 10/07/2025

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

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS RAHUL B. MENON 130533 LICENSED PROFESSIONAL ENGINEER 10/3/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

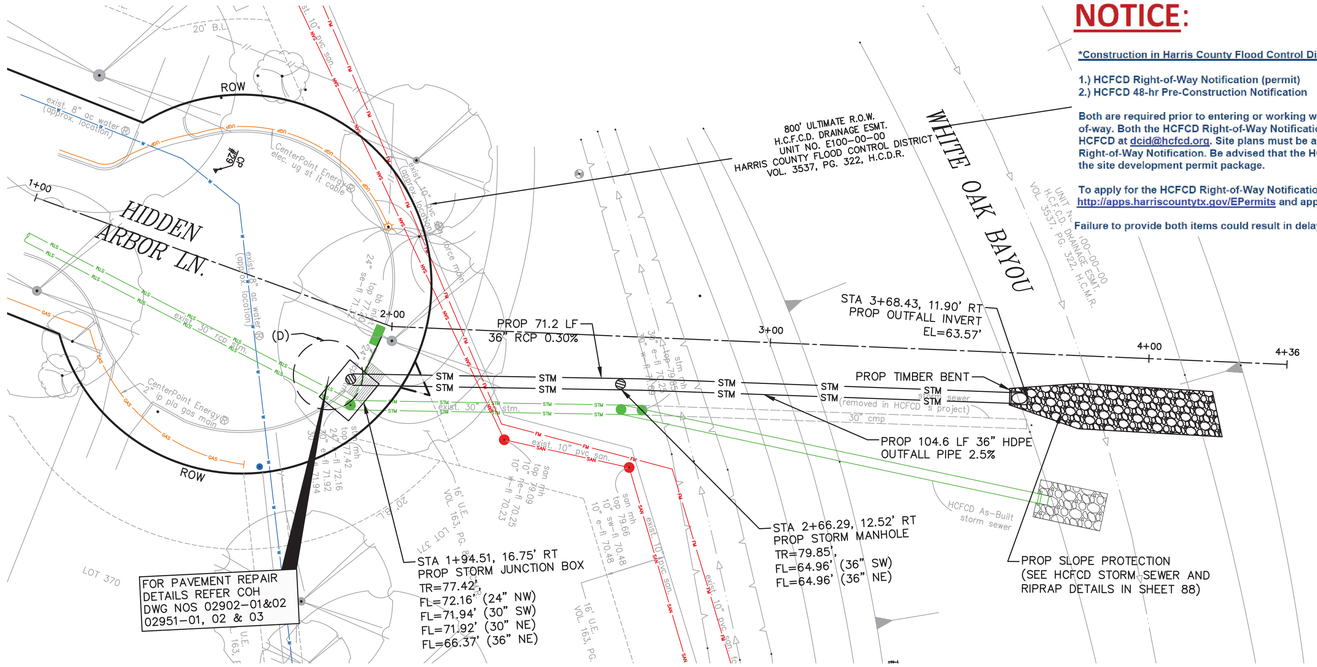
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

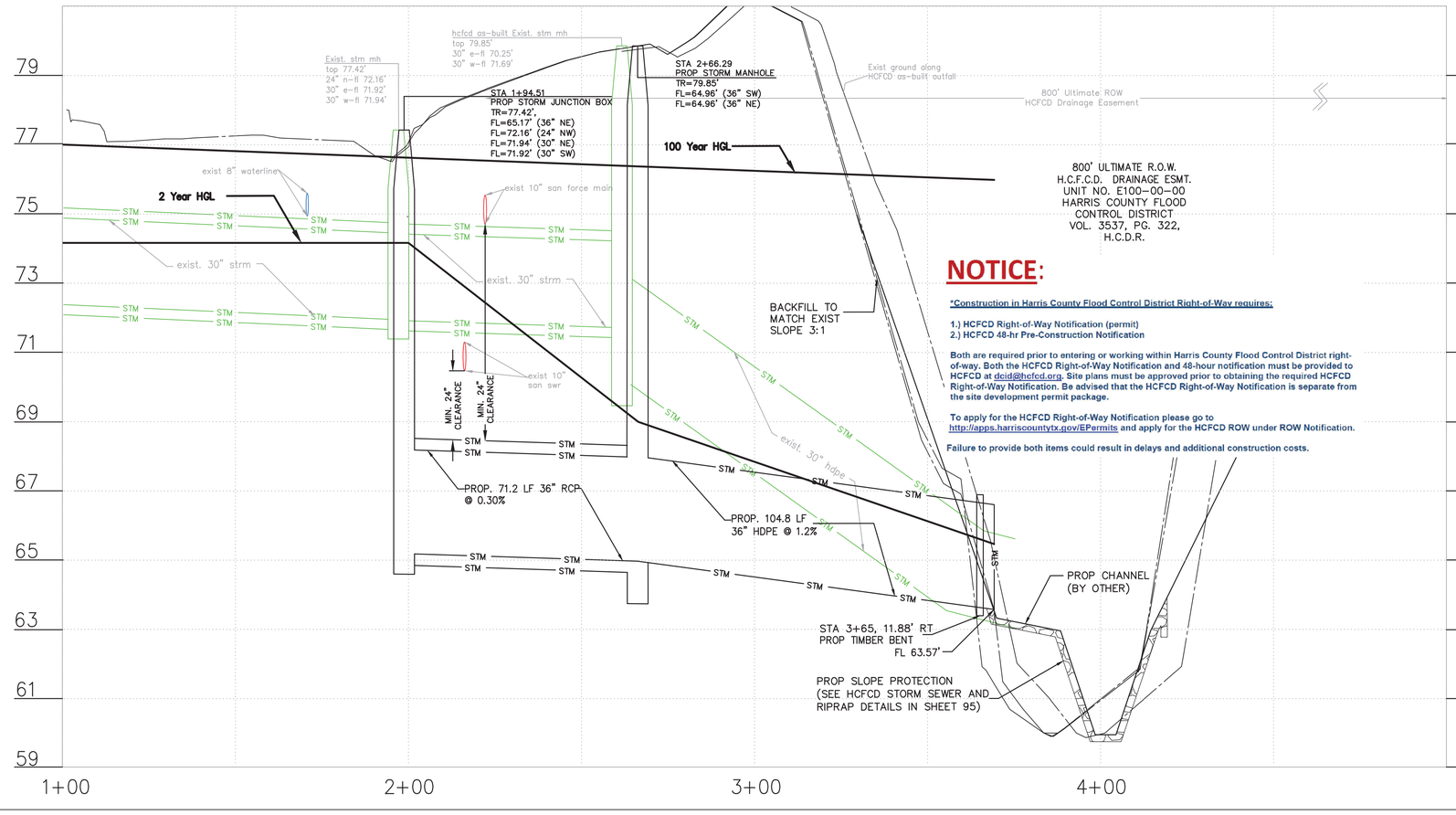
PLAN & PROFILE
CHATEAU FOREST DR.
(STA 30+00 TO 33+40)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
1"=20' H, 1"=2' V	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 30 OF 158	

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 10/6/2025 9:30 AM

FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\Plan_Profile_Cut_Sheets_100%.dwg





NOTICE:

***Construction in Harris County Flood Control District Right-of-Way requires:**

1.) HCFCD Right-of-Way Notification (permit)
2.) HCFCD 48-hr Pre-Construction Notification

Both are required prior to entering or working within Harris County Flood Control District right-of-way. Both the HCFCD Right-of-Way Notification and 48-hour notification must be provided to HCFCD at dcid@hcfcd.org. Site plans must be approved prior to obtaining the required HCFCD Right-of-Way Notification. Be advised that the HCFCD Right-of-Way Notification is separate from the site development permit package.

To apply for the HCFCD Right-of-Way Notification please go to http://apps.harriscountytx.gov/EPermits and apply for the HCFCD ROW under ROW Notification.

Failure to provide both items could result in delays and additional construction costs.

NOTICE:

***Construction in Harris County Flood Control District Right-of-Way requires:**

1.) HCFCD Right-of-Way Notification (permit)
2.) HCFCD 48-hr Pre-Construction Notification

Both are required prior to entering or working within Harris County Flood Control District right-of-way. Both the HCFCD Right-of-Way Notification and 48-hour notification must be provided to HCFCD at dcid@hcfcd.org. Site plans must be approved prior to obtaining the required HCFCD Right-of-Way Notification. Be advised that the HCFCD Right-of-Way Notification is separate from the site development permit package.

To apply for the HCFCD Right-of-Way Notification please go to http://apps.harriscountytx.gov/EPermits and apply for the HCFCD ROW under ROW Notification.

Failure to provide both items could result in delays and additional construction costs.

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

1

TRM: "X" CUT ON CONC.
B-29 ELEV.=77.18',
STA 1+42.22, OFFSET 22.93L

20 0 10 20 40

SCALE: 1" = 20'-0" FEET FOR 22"X34" SHEET

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162-7103, A BRASS DISK IN CONCRETE, LOCATED AT THE SOUTH CORNER OF THE INTERSECTION OF SILVER CHALICE DR AND CHATEAU FOREST DR.

ELEV. 78.00 FEET NAVD 1988 (GEOID '18)

(1) THE PROPOSED WATERLINE SHALL BE BUILT BY MEANS OF TRENCHLESS CONSTRUCTION EXCEPT AS NOTED ON THE DRAWINGS. CONTRACTOR TO DETERMINE THE LOCATIONS OF PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.
(2) TREES ARE LOCATED IN THE VICINITY OF PROPOSED ALIGNMENT OF STORM SEWER, WATER LINE AND RELATED APPURTENANCES. REFER TO THE TREE PROTECTION PLANS FOR APPROPRIATE PROTECTION MEASURES.
(3) CONTRACTOR TO BRACE AND SUPPORT BURIED TELECOM CABLES AND GAS LINES DURING CONSTRUCTION.

NOTE:
(A) GROUT FILL AND ABANDON EXISTING STM SWR RCP/CMP
(B) EXISTING PIPE TO BE REMOVED
(C) PLACE 1 FULL SECTION (MIN. 18 FEET) OF WATER LINE CENTERED AT SANITARY SEWER CROSSING. PROVIDE RESTRAINED JOINTS ON WATER LINE, SPACED AT LEAST 9 FEET HORIZONTALLY FROM CENTERLINE OF SANITARY SEWER.
(D) FOR PAVEMENT REPAIR DETAILS REFER COH DWG NOS 02902-01&02 02951-01, 02&03
(E) CONTRACTOR SHALL FOLLOW HCFCD STORM SEWER AND RIPRAP DETAILS AT SHEET 95 FOR OUTFALL INSTALLATION

XX PROP DRIVEWAY NUMBER (SEE SHEET 56-58 FOR DRIVEWAY SUMMARY TABLES AND DETAILS)

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

Mike Brower — 08/12/26
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.

Mike Brower — 08/12/26
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.

Marlon Smither — 10/07/2025
Date
Approved for AT&T underground conduit facilities only.
Signature valid for one year.

ISANI
civil · design · engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
10/3/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

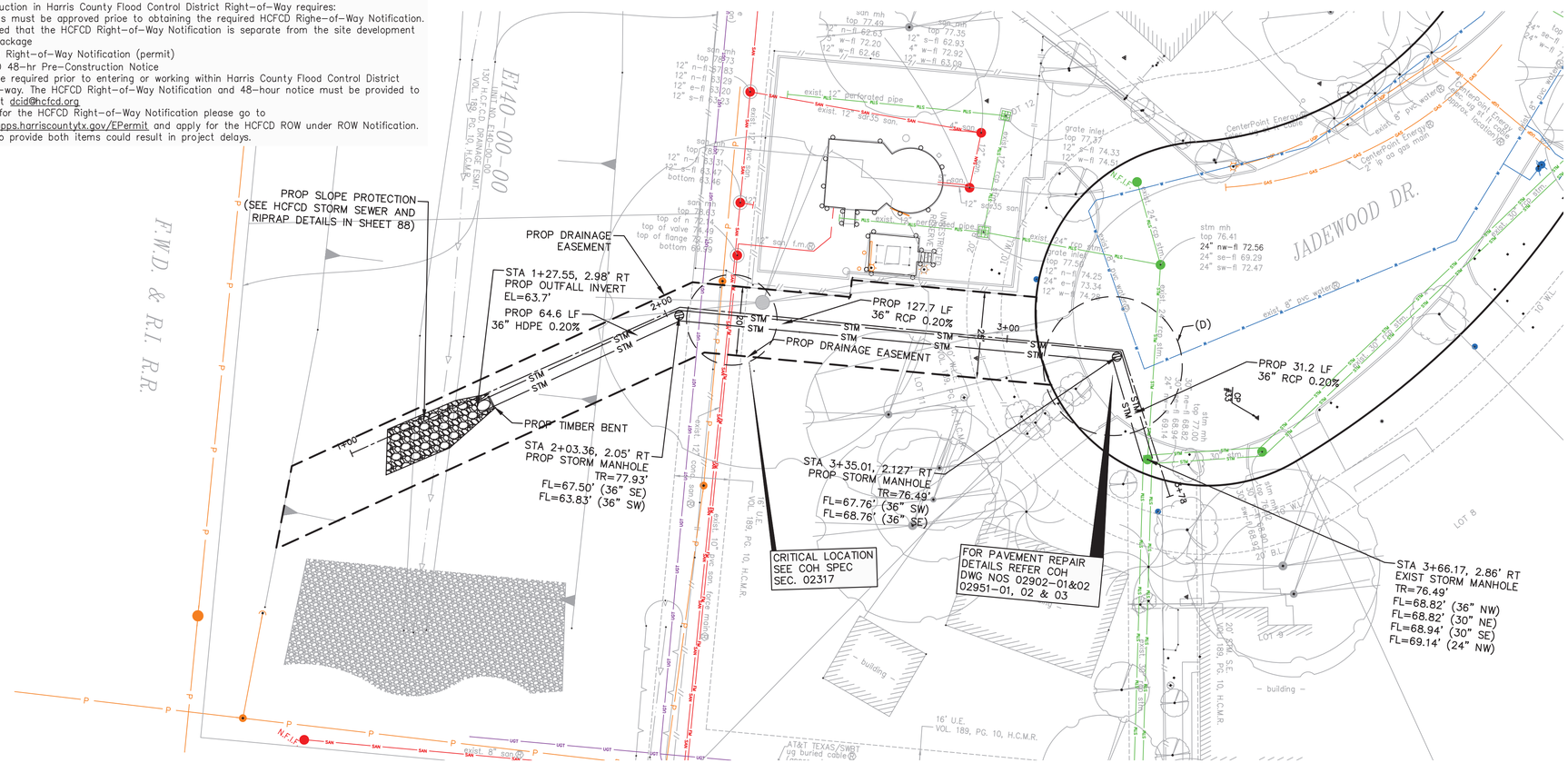
PLAN & PROFILE
HIDDEN ARBOR DR (OUTFALL C).
(STA 1+00 TO 4+00)

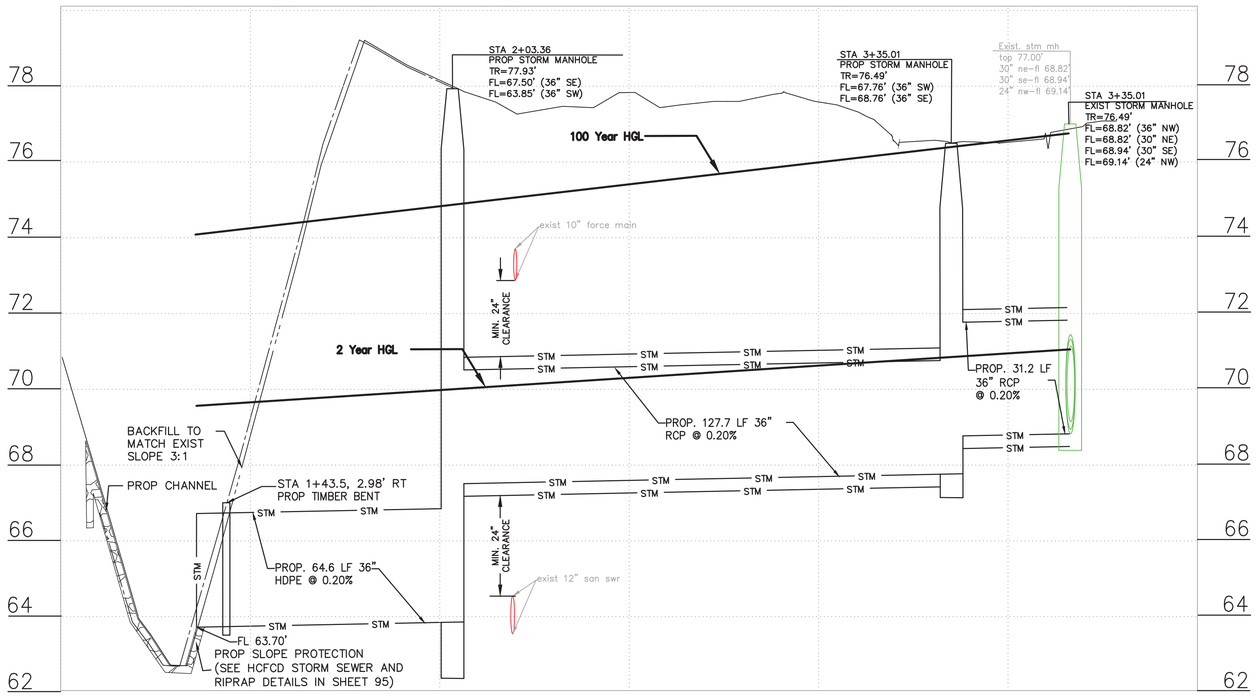
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
1"=20' H, 1"=2' V	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 31 OF 158	

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 10/6/2025 9:30 AM

FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\Plan_Profile_Cut_Sheets_100%.dwg

* Construction in Harris County Flood Control District Right-of-Way requires:
Site plans must be approved prioe to obtaining the required HCFCD Righe-of-Way Notification.
Be advised that the HCFCD Right-of-Way Notification is separate from the site development permit package
1.)HCFCD Right-of-Way Notification (permit)
2.)HCFCD 48-hr Pre-Construction Notice
Bothe are required prior to entering or working within Harris County Flood Control District right-of-way. The HCFCD Right-of-Way Notification and 48-hour notice must be provided to HCFCD at dcid@hcfcd.org
To applyfor the HCFCD Right-of-Way Notification please go to http://apps.harriscountytx.gov/EPermit and apply for the HCFCD ROW under ROW Notification.
Failure to provide both items could result in project delays.





1

TBM: "X" CUT ON CONC.
B-33 ELEV.=76.22',
STA -, OFFSET -

20 0 10 20 40

SCALE: 1" = 20'-0" FEET FOR 22"X34" SHEET

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162-7103, A BRASS DISK IN CONCRETE, LOCATED AT THE SOUTH CORNER OF THE INTERSECTION OF SILVER CHALICE DR AND CHATEAU FOREST DR.

ELEV. 78.00 FEET NAVD 1988 (GEOID '18)

(1) THE PROPOSED WATERLINE SHALL BE BUILT BY MEANS OF TRENCHLESS CONSTRUCTION EXCEPT AS NOTED ON THE DRAWINGS. CONTRACTOR TO DETERMINE THE LOCATIONS OF PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.
(2) TREES ARE LOCATED IN THE VICINITY OF PROPOSED ALIGNMENT OF STORM SEWER, WATER LINE AND RELATED APPURTENANCES. REFER TO THE TREE PROTECTION PLANS FOR APPROPRIATE PROTECTION MEASURES.
(3) CONTRACTOR TO BRACE AND SUPPORT BURIED TELECOM CABLES AND GAS LINES DURING CONSTRUCTION.

NOTE:
(A) GROUT FILL AND ABANDON EXISTING STM SWR RCP/CMP
(B) EXISTING PIPE TO BE REMOVED
(C) PLACE 1 FULL SECTION (MIN. 18 FEET) OF WATER LINE CENTERED AT SANITARY SEWER CROSSING. PROVIDE RESTRAINED JOINTS ON WATER LINE, SPACED AT LEAST 9 FEET HORIZONTALLY FROM CENTERLINE OF SANITARY SEWER.
(D) FOR PAVEMENT REPAIR DETAILS REFER COH DWG NOS 02902-01&02 02951-01, 02&03
(E) CONTRACTOR SHALL FOLLOW HCFCD STORM SEWER AND RIPRAP DETAILS AT SHEET 95 FOR OUTFALL INSTALLATION

XX PROP DRIVEWAY NUMBER (SEE SHEET 56-58 FOR DRIVEWAY SUMMARY TABLES AND DETAILS)

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

Mike Brower 08/12/26
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.

Mike Brower 08/12/26
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.

Marlon Smither 10/07/2025
Date

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

ISANI
civil | design | engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
10/3/25

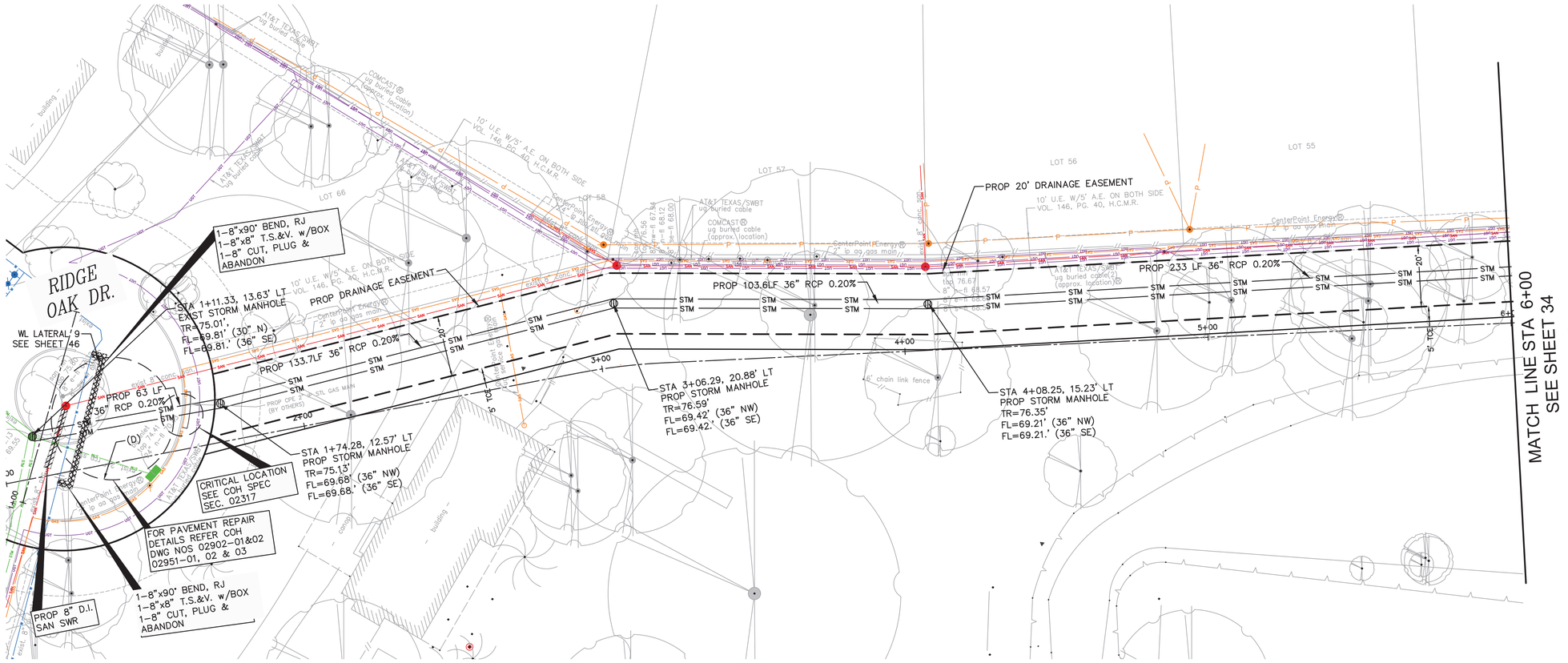
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

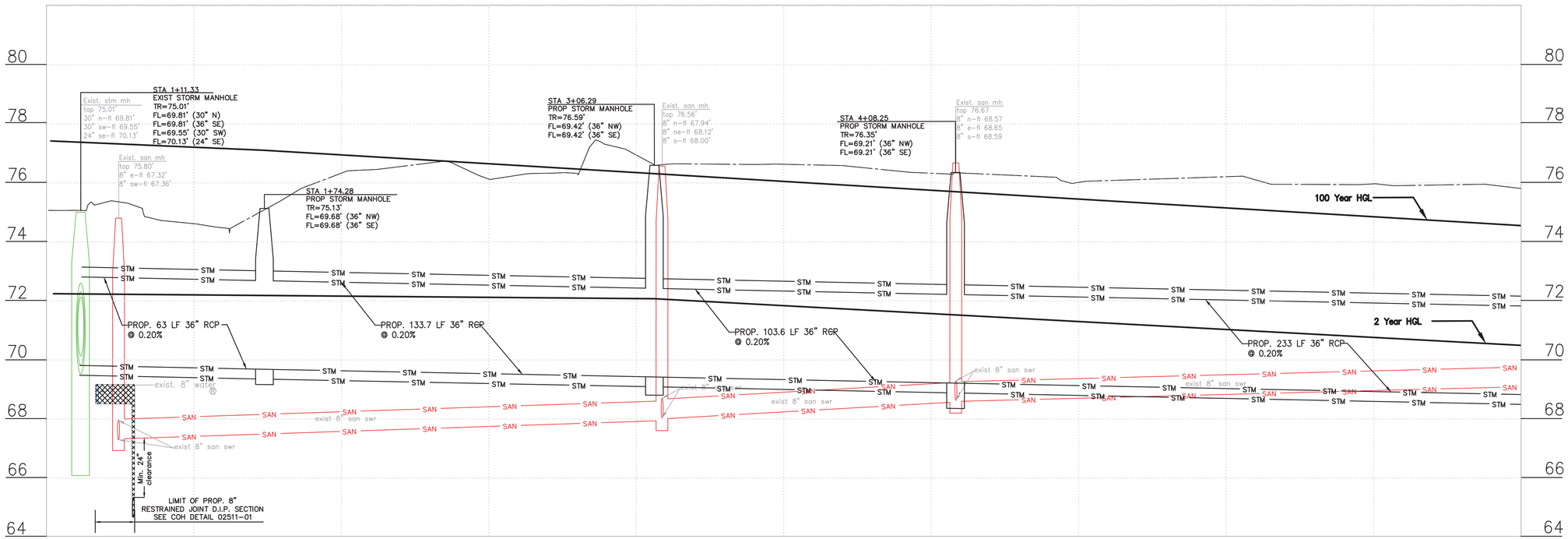
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

PLAN & PROFILE
JADEWOOD DR. (OUTFALL E)
(STA 1+00 TO 6+00)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
1"=20' H, 1"=2' V	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 32 OF 158	

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 10/6/2025 9:31 AM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\Plan_Profile_Cut_Sheets_100%.dwg





1

TBM: "X" CUT ON CONC.
B-36 ELEV.=74.99',
STA -, OFFSET -

20 0 10 20 40

SCALE: 1" = 20'-0" FEET FOR 22"X34" SHEET

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162-7103, A BRASS DISK IN CONCRETE, LOCATED AT THE SOUTH CORNER OF THE INTERSECTION OF SILVER CHALICE DR AND CHATEAU FOREST DR.

ELEV. 78.00 FEET NAVD 1988 (GEOID '18)

(1) THE PROPOSED WATERLINE SHALL BE BUILT BY MEANS OF TRENCHLESS CONSTRUCTION EXCEPT AS NOTED ON THE DRAWINGS. CONTRACTOR TO DETERMINE THE LOCATIONS OF PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.
(2) TREES ARE LOCATED IN THE VICINITY OF PROPOSED ALIGNMENT OF STORM SEWER, WATER LINE AND RELATED APPURTENANCES. REFER TO THE TREE PROTECTION PLANS FOR APPROPRIATE PROTECTION MEASURES.
(3) CONTRACTOR TO BRACE AND SUPPORT BURIED TELECOM CABLES AND GAS LINES DURING CONSTRUCTION.

NOTE:
(A) GROUT FILL AND ABANDON EXISTING STM SWR RCP/CMP
(B) EXISTING PIPE TO BE REMOVED
(C) PLACE 1 FULL SECTION (MIN. 18 FEET) OF WATER LINE CENTERED AT SANITARY SEWER CROSSING. PROVIDE RESTRAINED JOINTS ON WATER LINE, SPACED AT LEAST 9 FEET HORIZONTALLY FROM CENTERLINE OF SANITARY SEWER.
(D) FOR PAVEMENT REPAIR DETAILS REFER COH DWG NOS 02902-01&02 02951-01, 02&03

XX PROP DRIVEWAY NUMBER (SEE SHEET 56-58 FOR DRIVEWAY SUMMARY TABLES AND DETAILS)

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

Mike Brower 08/12/26
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.

Mike Brower 08/12/26
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.

Marlon Smither Date 10/07/2025

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

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
10/3/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

PLAN & PROFILE
RIDGE OAK DR.
(STA 1+00 TO 6+00)

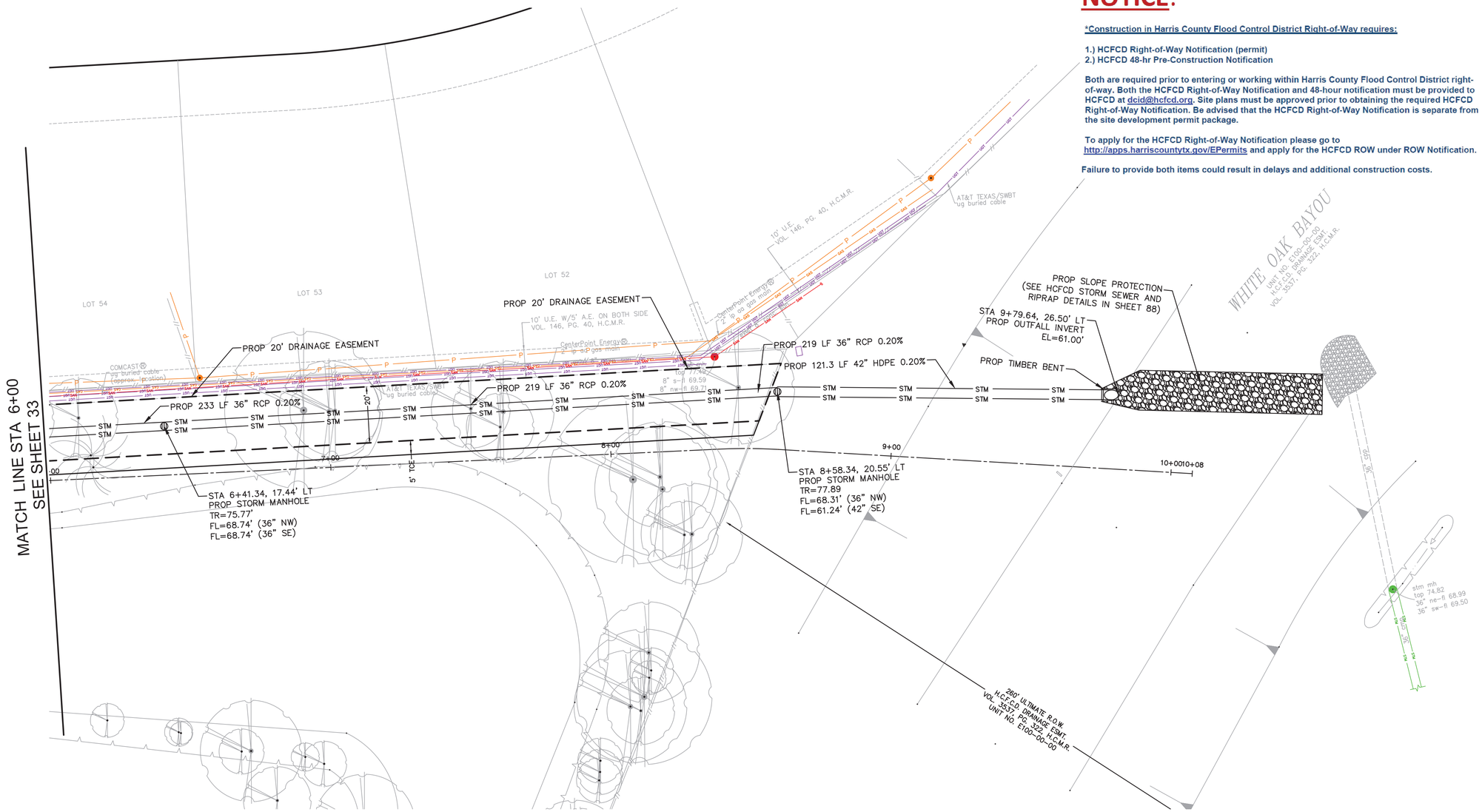
WBS NUMBER	M-410029-0001-4
DRAWING SCALE	1"=20' H, 1"=2' V
CITY OF HOUSTON PM	DOAA HAMDAN, P.E.
SHEET NO.	33 OF 158

FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 10/6/2025 9:31 AM

FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\Plan_Profile_Cut_Sheets_100%.dwg



NOTICE:

***Construction in Harris County Flood Control District Right-of-Way requires:**

1.) HCFCD Right-of-Way Notification (permit)
2.) HCFCD 48-hr Pre-Construction Notification

Both are required prior to entering or working within Harris County Flood Control District right-of-way. Both the HCFCD Right-of-Way Notification and 48-hour notification must be provided to HCFCD at dcid@hcfcd.org. Site plans must be approved prior to obtaining the required HCFCD Right-of-Way Notification. Be advised that the HCFCD Right-of-Way Notification is separate from the site development permit package.

To apply for the HCFCD Right-of-Way Notification please go to http://apps.harriscountytx.gov/EPermits and apply for the HCFCD ROW under ROW Notification.

Failure to provide both items could result in delays and additional construction costs.

1

TBM: "X" CUT ON CONC. B-36 ELEV.=74.99', STA -, OFFSET -

20 0 10 20 40

SCALE: 1" = 20'-0" FEET FOR 22"X34" SHEET

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162-7103, A BRASS DISK IN CONCRETE, LOCATED AT THE SOUTH CORNER OF THE INTERSECTION OF SILVER CHALICE DR AND CHATEAU FOREST DR.

ELEV. 78.00 FEET NAVD 1988 (GEOID '18)

(1) THE PROPOSED WATERLINE SHALL BE BUILT BY MEANS OF TRENCHLESS CONSTRUCTION EXCEPT AS NOTED ON THE DRAWINGS. CONTRACTOR TO DETERMINE THE LOCATIONS OF PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.
(2) TREES ARE LOCATED IN THE VICINITY OF PROPOSED ALIGNMENT OF STORM SEWER, WATER LINE AND RELATED APPURTENANCES. REFER TO THE TREE PROTECTION PLANS FOR APPROPRIATE PROTECTION MEASURES.
(3) CONTRACTOR TO BRACE AND SUPPORT BURIED TELECOM CABLES AND GAS LINES DURING CONSTRUCTION.

NOTE:
(A) GROUT FILL AND ABANDON EXISTING STM SWR RCP/CMP
(B) EXISTING PIPE TO BE REMOVED
(C) PLACE 1 FULL SECTION (MIN. 18 FEET) OF WATER LINE CENTERED AT SANITARY SEWER CROSSING. PROVIDE RESTRAINED JOINTS ON WATER LINE, SPACED AT LEAST 9 FEET HORIZONTALLY FROM CENTERLINE OF SANITARY SEWER.

XX PROP DRIVEWAY NUMBER (SEE SHEET 56-58 FOR DRIVEWAY SUMMARY TABLES AND DETAILS)

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

Mike Brower 08/12/26
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.

Mike Brower 08/12/26
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.

Marlon Smither Date10/07/2025

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

ISANI
civil · design · engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED
PROFESSIONAL ENGINEER
10/3/25

SURVEYED BY: Kuo&Associates
FB NO. P-6257

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

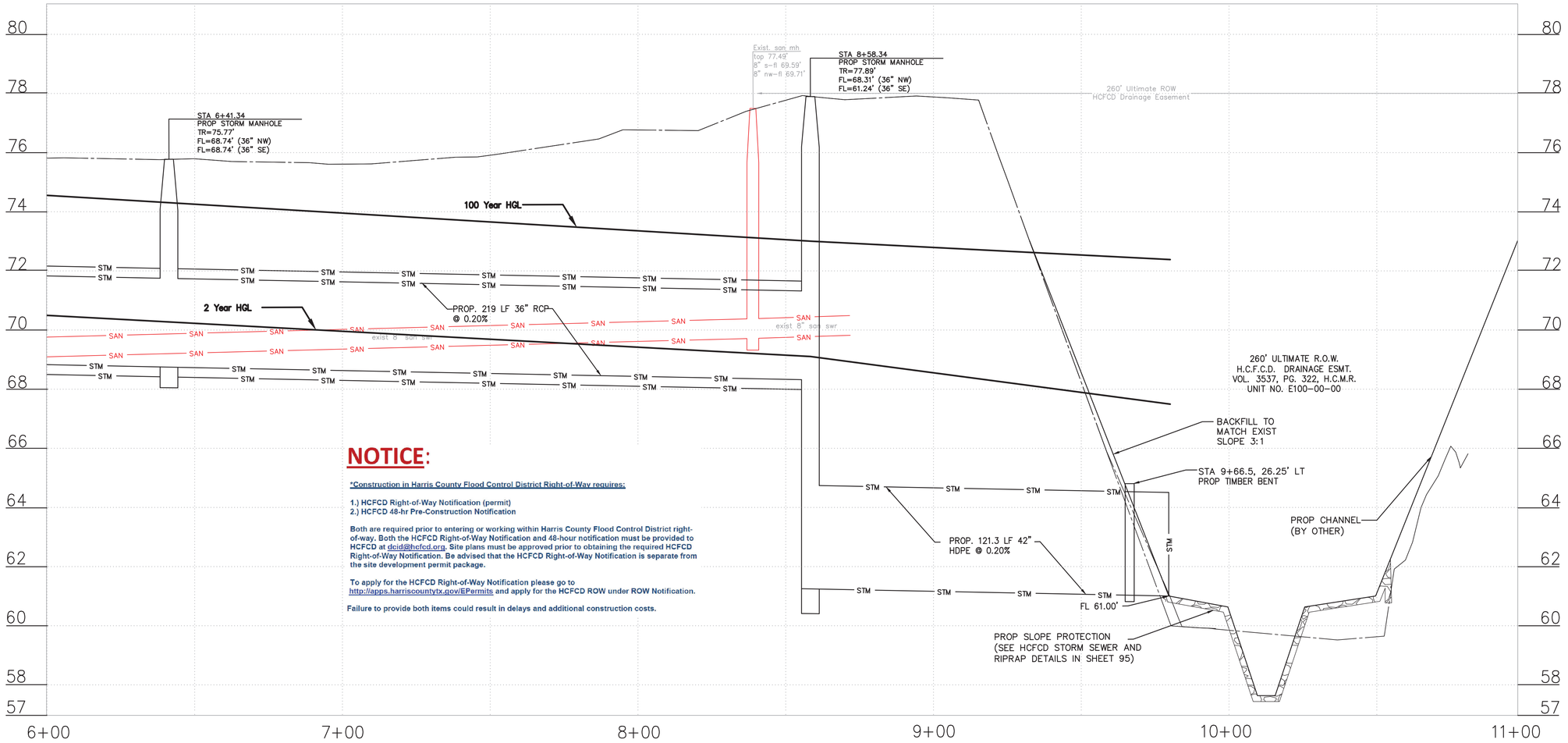
PLAN
RIDGE OAK DR. (OUTFALL F)
(STA 6+00 TO 10+00)

WBS NUMBER
M-410029-0001-4
DRAWING SCALE
1"=20' H, 1"=2' V
CITY OF HOUSTON PM
DOAA HAMDAN, P.E.
SHEET NO. 34 OF 158

FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 10/6/2025 9:31 AM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\Plan_Profile_Cut_Sheets_100%.dwg



NOTICE:

***Construction in Harris County Flood Control District Right-of-Way requires:**

1.) HCFCD Right-of-Way Notification (permit)
2.) HCFCD 48-hr Pre-Construction Notification

Both are required prior to entering or working within Harris County Flood Control District right-of-way. Both the HCFCD Right-of-Way Notification and 48-hour notification must be provided to HCFCD at deid@hcfcd.org. Site plans must be approved prior to obtaining the required HCFCD Right-of-Way Notification. Be advised that the HCFCD Right-of-Way Notification is separate from the site development permit package.

To apply for the HCFCD Right-of-Way Notification please go to http://apps.harriscountytx.gov/EPermits and apply for the HCFCD ROW under ROW Notification.

Failure to provide both items could result in delays and additional construction costs.

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

1

20 0 10 20 40

SCALE: 1" = 20'-0" FEET FOR 22"X34" SHEET

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162-7103, A BRASS DISK IN CONCRETE, LOCATED AT THE SOUTH CORNER OF THE INTERSECTION OF SILVER CHALICE DR AND CHATEAU FOREST DR.

ELEV. 78.00 FEET NAVD 1988 (GEOID '18)

(1) THE PROPOSED WATERLINE SHALL BE BUILT BY MEANS OF TRENCHLESS CONSTRUCTION EXCEPT AS NOTED ON THE DRAWINGS. CONTRACTOR TO DETERMINE THE LOCATIONS OF PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.
(2) TREES ARE LOCATED IN THE VICINITY OF PROPOSED ALIGNMENT OF STORM SEWER, WATER LINE AND RELATED APPURTENANCES. REFER TO THE TREE PROTECTION PLANS FOR APPROPRIATE PROTECTION MEASURES.
(3) CONTRACTOR TO BRACE AND SUPPORT BURIED TELECOM CABLES AND GAS LINES DURING CONSTRUCTION.

NOTE:
(A) GROUT FILL AND ABANDON EXISTING STM SWR RCP/CMP
(B) EXISTING PIPE TO BE REMOVED
(C) PLACE 1 FULL SECTION (MIN. 18 FEET) OF WATER LINE CENTERED AT SANITARY SEWER CROSSING. PROVIDE RESTRAINED JOINTS ON WATER LINE, SPACED AT LEAST 9 FEET HORIZONTALLY FROM CENTERLINE OF SANITARY SEWER.
(D) CONTRACTOR SHALL FOLLOW HCFCD STORM SEWER AND RIPRAP DETAILS AT SHEET 95 FOR OUTFALL INSTALLATION

XX PROP DRIVEWAY NUMBER (SEE SHEET 56-58 FOR DRIVEWAY SUMMARY TABLES AND DETAILS)

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

Mike Brower 08/12/26
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.

Mike Brower 08/12/26
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.

Marlon Smither Date 10/07/2025
Approved for AT&T underground conduit facilities only.
Signature valid for one year.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED
PROFESSIONAL ENGINEER
10/3/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

PROFILE
RIDGE OAK DR. (OUTFALL F)
(STA 6+00 TO 10+00)

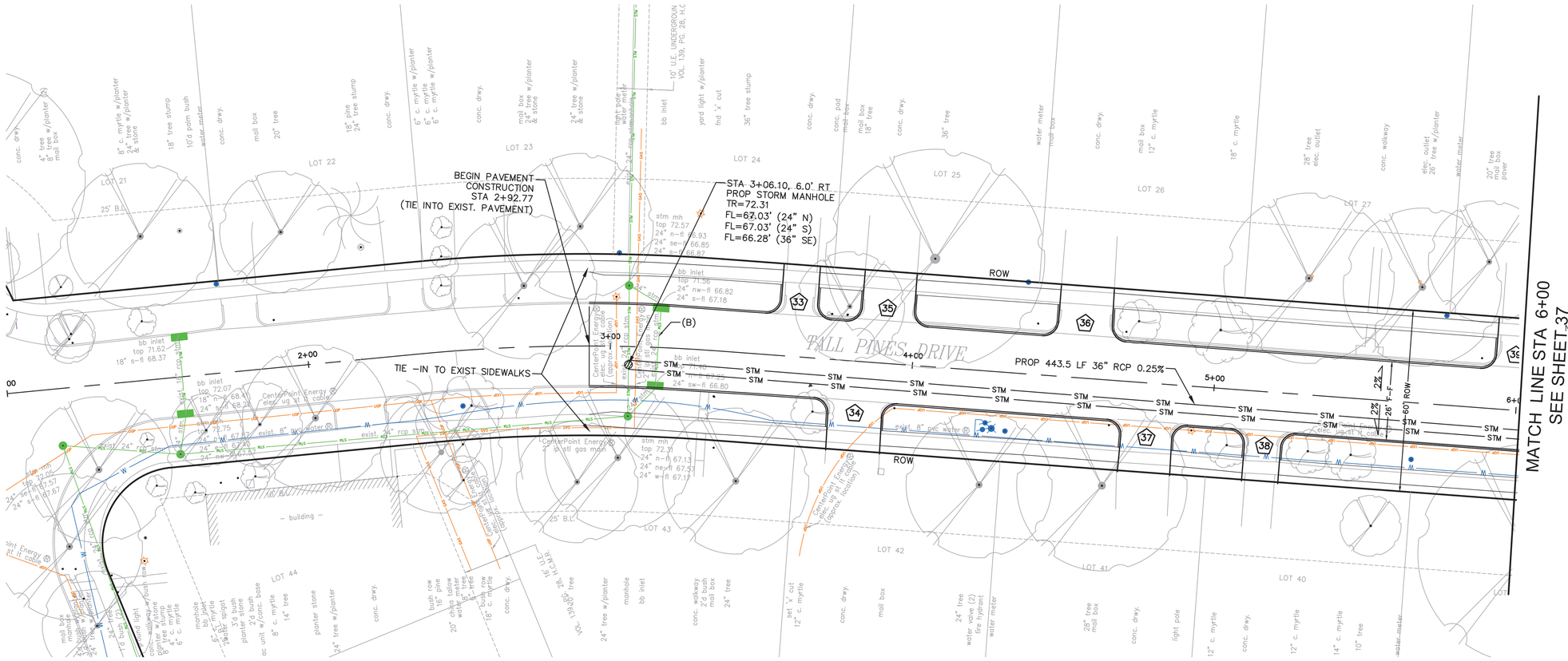
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
1"=20' H, 1"=2' V	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 35 OF 158	

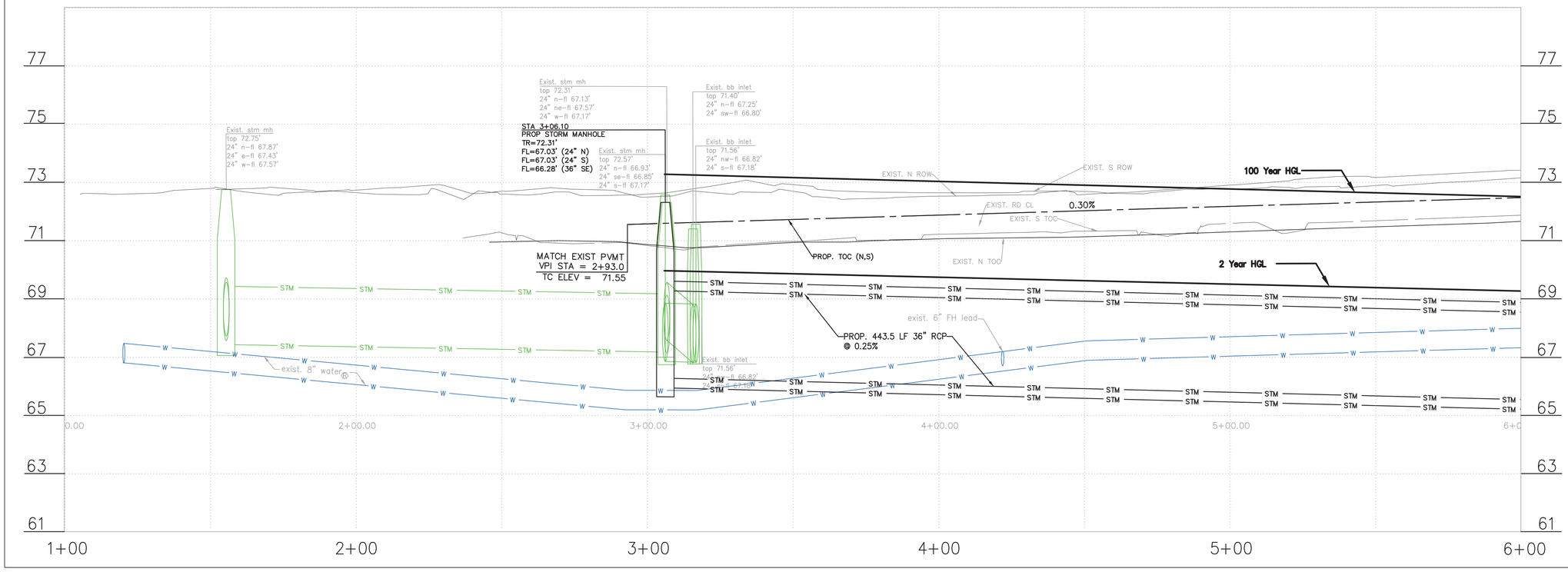
HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 10/6/2025 9:32 AM

FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\Plan_Profile_Cut_Sheets_100%.dwg

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 10/6/2025 9:32 AM





FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\Plan_Profile_Cut_Sheets_100%.dwg

1

TBM: 1/2" I.R. W/CAP
B-43 ELEV.=72.46',
STA 7+88.66, OFFSET 16.50L

20 0 10 20 40

SCALE: 1" = 20'-0" FEET FOR 22"X34" SHEET

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162-7103, A BRASS DISK IN CONCRETE, LOCATED AT THE SOUTH CORNER OF THE INTERSECTION OF SILVER CHALICE DR AND CHATEAU FOREST DR.

ELEV. 78.00 FEET NAVD 1988 (GEOID '18)

(1) THE PROPOSED WATERLINE SHALL BE BUILT BY MEANS OF TRENCHLESS CONSTRUCTION EXCEPT AS NOTED ON THE DRAWINGS. CONTRACTOR TO DETERMINE THE LOCATIONS OF PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.
(2) TREES ARE LOCATED IN THE VICINITY OF PROPOSED ALIGNMENT OF STORM SEWER, WATER LINE AND RELATED APPURTENANCES. REFER TO THE TREE PROTECTION PLANS FOR APPROPRIATE PROTECTION MEASURES.
(3) CONTRACTOR TO BRACE AND SUPPORT BURIED TELECOM CABLES AND GAS LINES DURING CONSTRUCTION.

NOTE:
(A) GROUT FILL AND ABANDON EXISTING STM SWR RCP/CMP
(B) EXISTING PIPE TO BE REMOVED
(C) PLACE 1 FULL SECTION (MIN. 18 FEET) OF WATER LINE CENTERED AT SANITARY SEWER CROSSING. PROVIDE RESTRAINED JOINTS ON WATER LINE, SPACED AT LEAST 9 FEET HORIZONTALLY FROM CENTERLINE OF SANITARY SEWER.

XX PROP DRIVEWAY NUMBER (SEE SHEET 56-58 FOR DRIVEWAY SUMMARY TABLES AND DETAILS)

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

Mike Brower 08/12/26
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.

Mike Brower 08/12/26
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.

Marlon Smither Date 10/07/2025

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

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

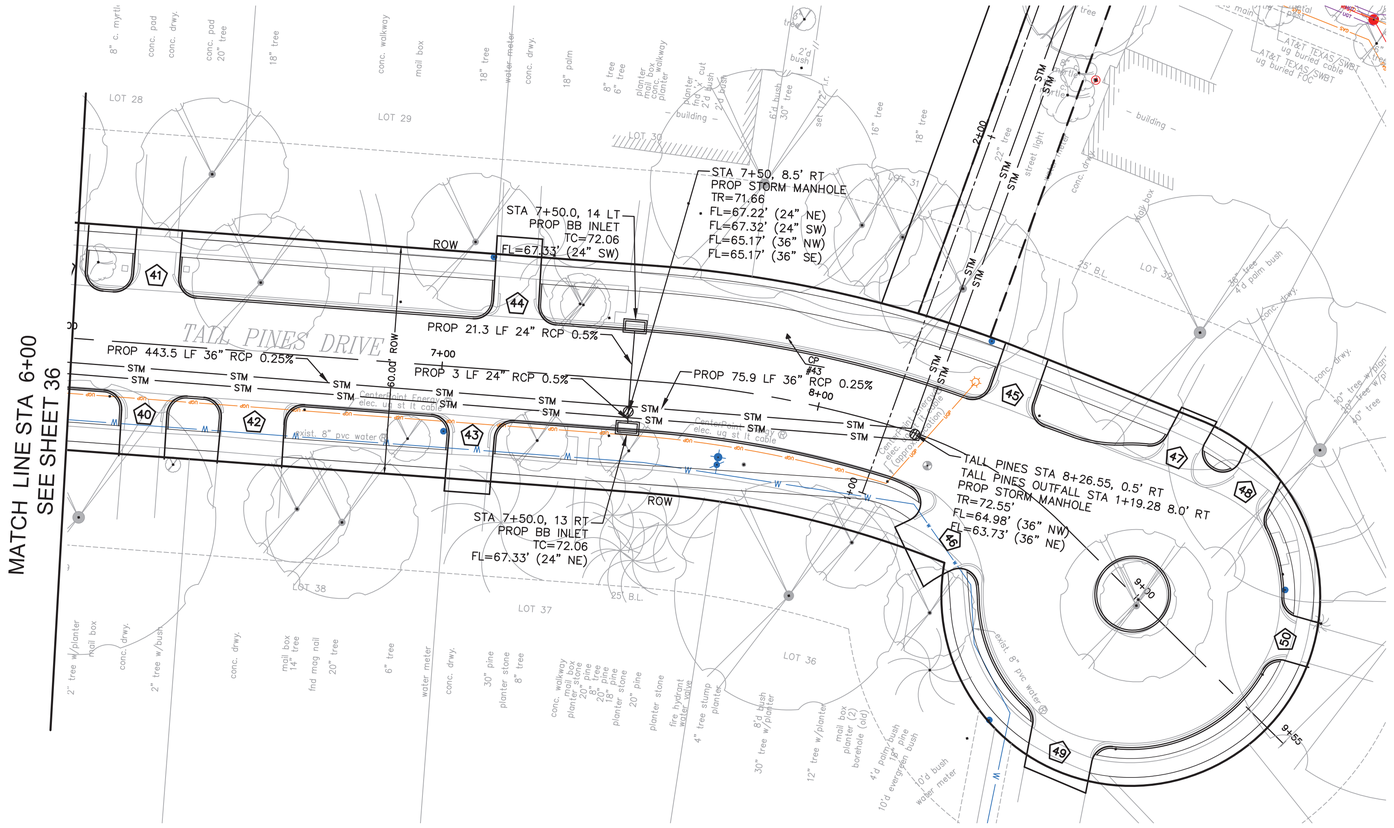
STATE OF TEXAS RAHUL B. MENON 130533 LICENSED PROFESSIONAL ENGINEER 10/3/25

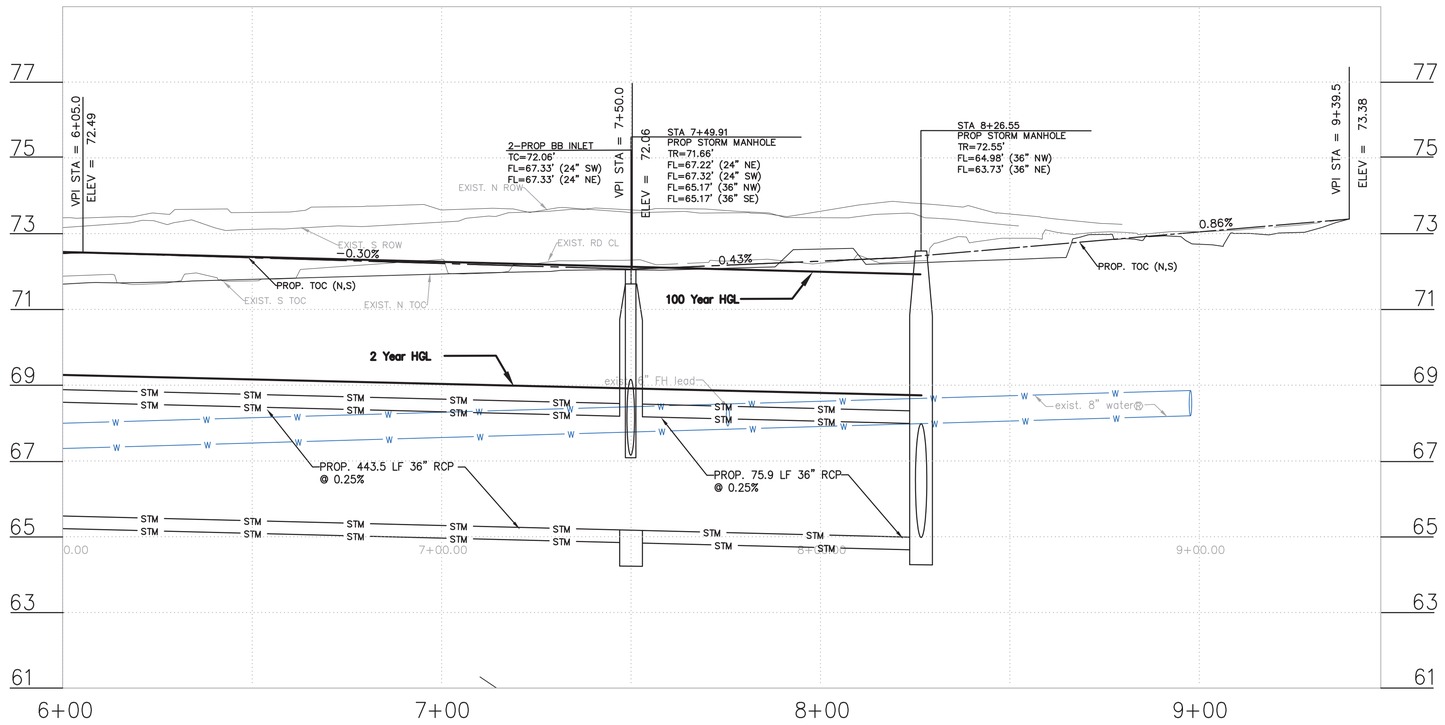
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

PLAN & PROFILE
TALL PINES DR.
(STA 1+00 TO 6+00)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
1"=20' H, 1"=2' V	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 36 OF 158	





TBM: 1/2" I.R. W/CAP
B-43 ELEV.=72.46',
STA 7+88.66, OFFSET 16.50L

20 0 10 20 40

SCALE: 1" = 20'-0" FEET FOR 22"X34" SHEET

1

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162-7103, A BRASS DISK IN CONCRETE, LOCATED AT THE SOUTH CORNER OF THE INTERSECTION OF SILVER CHALICE DR AND CHATEAU FOREST DR.

ELEV. 78.00 FEET NAVD 1988 (GEOID '18)

(1) THE PROPOSED WATERLINE SHALL BE BUILT BY MEANS OF TRENCHLESS CONSTRUCTION EXCEPT AS NOTED ON THE DRAWINGS. CONTRACTOR TO DETERMINE THE LOCATIONS OF PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.
(2) TREES ARE LOCATED IN THE VICINITY OF PROPOSED ALIGNMENT OF STORM SEWER, WATER LINE AND RELATED APPURTENANCES. REFER TO THE TREE PROTECTION PLANS FOR APPROPRIATE PROTECTION MEASURES.
(3) CONTRACTOR TO BRACE AND SUPPORT BURIED TELECOM CABLES AND GAS LINES DURING CONSTRUCTION.

NOTE:
(A) GROUT FILL AND ABANDON EXISTING STM SWR RCP/CMP
(B) EXISTING PIPE TO BE REMOVED
(C) PLACE 1 FULL SECTION (MIN. 18 FEET) OF WATER LINE CENTERED AT SANITARY SEWER CROSSING. PROVIDE RESTRAINED JOINTS ON WATER LINE, SPACED AT LEAST 9 FEET HORIZONTALLY FROM CENTERLINE OF SANITARY SEWER.

XX PROP DRIVEWAY NUMBER (SEE SHEET 56-58 FOR DRIVEWAY SUMMARY TABLES AND DETAILS)

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

Mike Brower 08/12/26
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.

Mike Brower 08/12/26
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.

Marlon Smither Date 10/07/2025

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

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
10/3/25

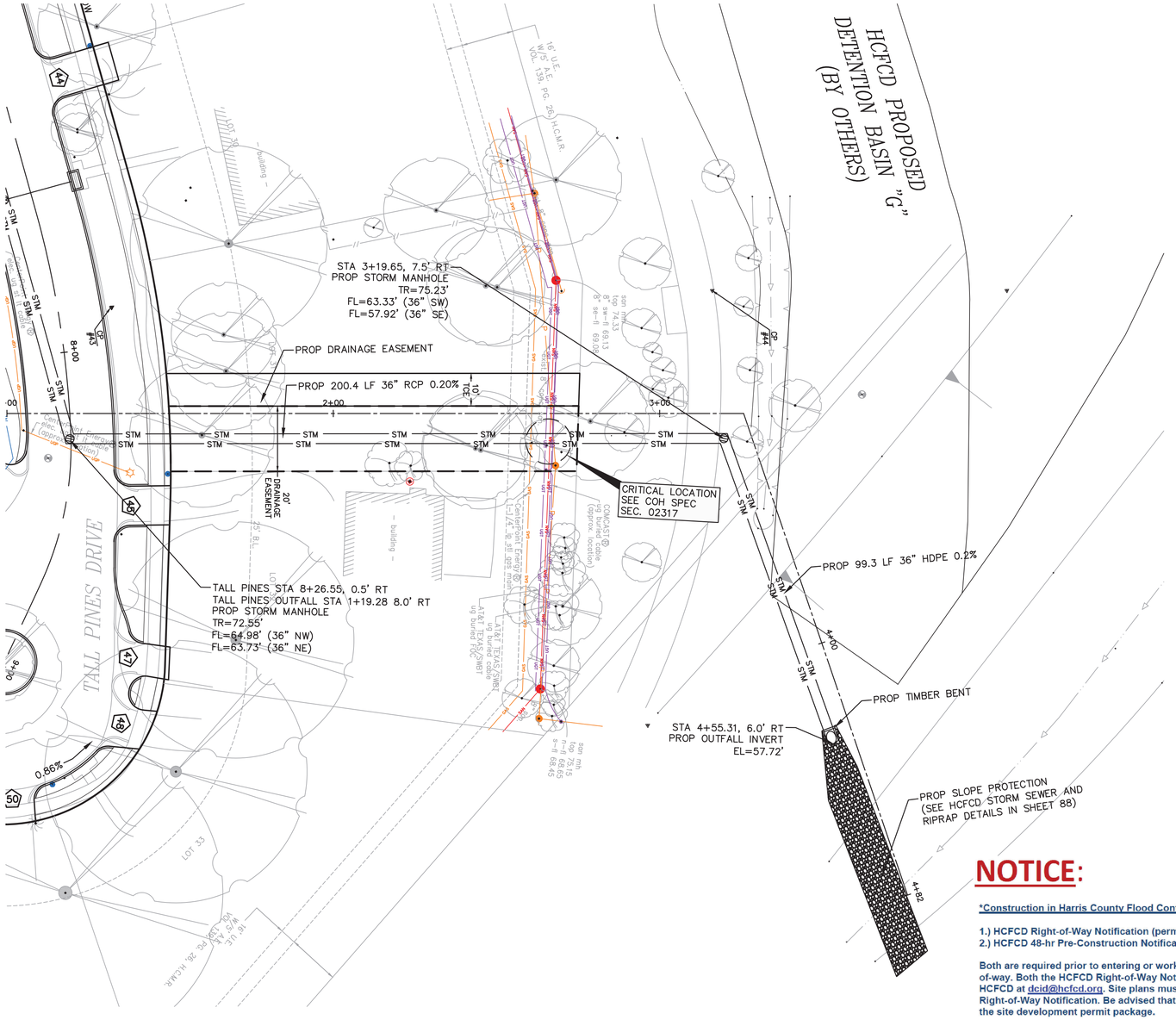
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

PLAN & PROFILE
TALL PINES DR.
(STA 6+00 TO 9+00)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
1"=20' H, 1"=2' V	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 37 OF 158	

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 10/6/2025 9:32 AM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\Plan_Profile_Cut_Sheets_100%.dwg



TBM: "X" CUT ON CONC.
B-44 ELEV.=74.99',
STA 8+03.46, OFFSET 199.46L

20 0 10 20 40

SCALE: 1" = 20'-0" FEET FOR 22"X34" SHEET

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162-7103, A BRASS DISK IN CONCRETE, LOCATED AT THE SOUTH CORNER OF THE INTERSECTION OF SILVER CHALICE DR AND CHATEAU FOREST DR.

ELEV. 78.00 FEET NAVD 1988 (GEOID '18)

(1) THE PROPOSED WATERLINE SHALL BE BUILT BY MEANS OF TRENCHLESS CONSTRUCTION EXCEPT AS NOTED ON THE DRAWINGS. CONTRACTOR TO DETERMINE THE LOCATIONS OF PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.
(2) TREES ARE LOCATED IN THE VICINITY OF PROPOSED ALIGNMENT OF STORM SEWER, WATER LINE AND RELATED APPURTENANCES. REFER TO THE TREE PROTECTION PLANS FOR APPROPRIATE PROTECTION MEASURES.
(3) CONTRACTOR TO BRACE AND SUPPORT BURIED TELECOM CABLES AND GAS LINES DURING CONSTRUCTION.

NOTE:
(A) GROUT FILL AND ABANDON EXISTING STM SWR RCP/CMP
(B) EXISTING PIPE TO BE REMOVED
(C) PLACE 1 FULL SECTION (MIN. 18 FEET) OF WATER LINE CENTERED AT SANITARY SEWER CROSSING. PROVIDE RESTRAINED JOINTS ON WATER LINE, SPACED AT LEAST 9 FEET HORIZONTALLY FROM CENTERLINE OF SANITARY SEWER.

XX PROP DRIVEWAY NUMBER (SEE SHEET 56-58 FOR DRIVEWAY SUMMARY TABLES AND DETAILS)

NOTICE:

***Construction in Harris County Flood Control District Right-of-Way requires:**

1.) HCFCD Right-of-Way Notification (permit)
2.) HCFCD 48-hr Pre-Construction Notification

Both are required prior to entering or working within Harris County Flood Control District right-of-way. Both the HCFCD Right-of-Way Notification and 48-hour notification must be provided to HCFCD at dcid@hcfcd.org. Site plans must be approved prior to obtaining the required HCFCD Right-of-Way Notification. Be advised that the HCFCD Right-of-Way Notification is separate from the site development permit package.

To apply for the HCFCD Right-of-Way Notification please go to http://apps.harriscountytx.gov/EPermits and apply for the HCFCD ROW under ROW Notification.

Failure to provide both items could result in delays and additional construction costs.

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

1

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

Mike Brower 08/12/26
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.

Mike Brower 08/12/26
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.

Marlon Smither Date 10/07/2025

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

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
10/3/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

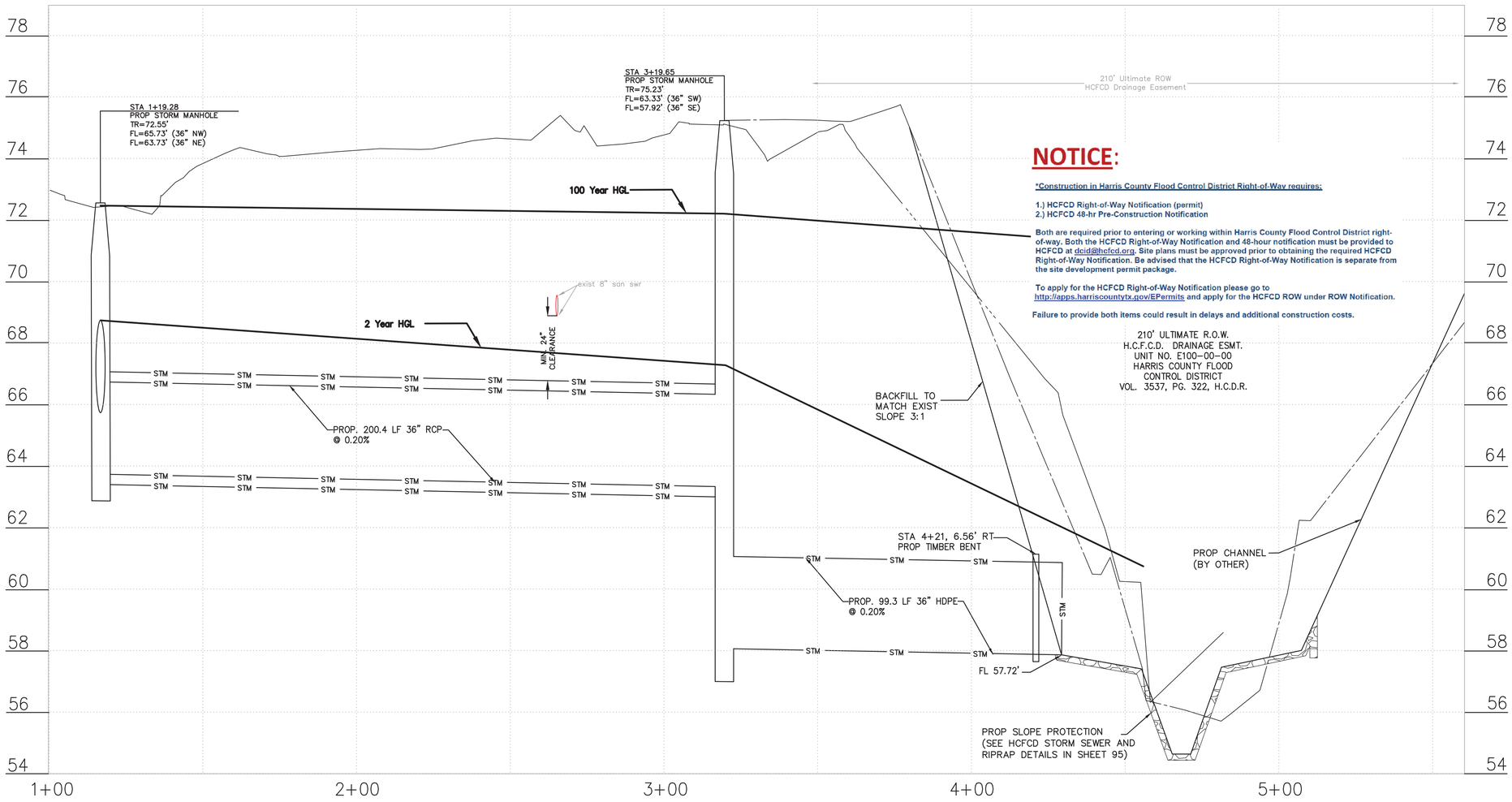
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

PLAN
TALL PINES DR OUTFALL. (OUTFALL K)
(STA 1+00 TO 5+00)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
1"=20' H, 1"=2' V	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 38 OF 158	

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 10/6/2025 9:33 AM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\Plan_Profile_Cut_Sheets_100%.dwg

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 10/6/2025 9:33 AM



NOTICE:

***Construction in Harris County Flood Control District Right-of-Way requires:**

1.) HCFCD Right-of-Way Notification (permit)
2.) HCFCD 48-hr Pre-Construction Notification

Both are required prior to entering or working within Harris County Flood Control District right-of-way. Both the HCFCD Right-of-Way Notification and 48-hour notification must be provided to HCFCD at dcid@hcfcd.org. Site plans must be approved prior to obtaining the required HCFCD Right-of-Way Notification. Be advised that the HCFCD Right-of-Way Notification is separate from the site development permit package.

To apply for the HCFCD Right-of-Way Notification please go to http://apps.harriscountytx.gov/EPermits and apply for the HCFCD ROW under ROW Notification.

Failure to provide both items could result in delays and additional construction costs.

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

1

20 0 10 20 40

SCALE: 1" = 20'-0" FEET FOR 22"X34" SHEET

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162-7103, A BRASS DISK IN CONCRETE, LOCATED AT THE SOUTH CORNER OF THE INTERSECTION OF SILVER CHALICE DR AND CHATEAU FOREST DR.

ELEV. 78.00 FEET NAVD 1988 (GEOID '18)

(1) THE PROPOSED WATERLINE SHALL BE BUILT BY MEANS OF TRENCHLESS CONSTRUCTION EXCEPT AS NOTED ON THE DRAWINGS. CONTRACTOR TO DETERMINE THE LOCATIONS OF PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.
(2) TREES ARE LOCATED IN THE VICINITY OF PROPOSED ALIGNMENT OF STORM SEWER, WATER LINE AND RELATED APPURTENANCES. REFER TO THE TREE PROTECTION PLANS FOR APPROPRIATE PROTECTION MEASURES.
(3) CONTRACTOR TO BRACE AND SUPPORT BURIED TELECOM CABLES AND GAS LINES DURING CONSTRUCTION.

NOTE:
(A) GROUT FILL AND ABANDON EXISTING STM SWR RCP/CMP
(B) EXISTING PIPE TO BE REMOVED
(C) PLACE 1 FULL SECTION (MIN. 18 FEET) OF WATER LINE CENTERED AT SANITARY SEWER CROSSING. PROVIDE RESTRAINED JOINTS ON WATER LINE, SPACED AT LEAST 9 FEET HORIZONTALLY FROM CENTERLINE OF SANITARY SEWER.
(D) CONTRACTOR SHALL FOLLOW HCFCD STORM SEWER AND RIPRAP DETAILS AT SHEET 95 FOR OUTFALL INSTALLATION

XX PROP DRIVEWAY NUMBER (SEE SHEET 56-58 FOR DRIVEWAY SUMMARY TABLES AND DETAILS)

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

Mike Brower 08/12/26
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.

Mike Brower 08/12/26
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.

Marlon Smither 10/07/2025
Date

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

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
10/3/25

SURVEYED BY: Kuo&Associates
FB NO. P-6257

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

PROFILE
TALL PINES DR OUTFALL. (OUTFALL K)
(STA 1+00 TO 5+00)

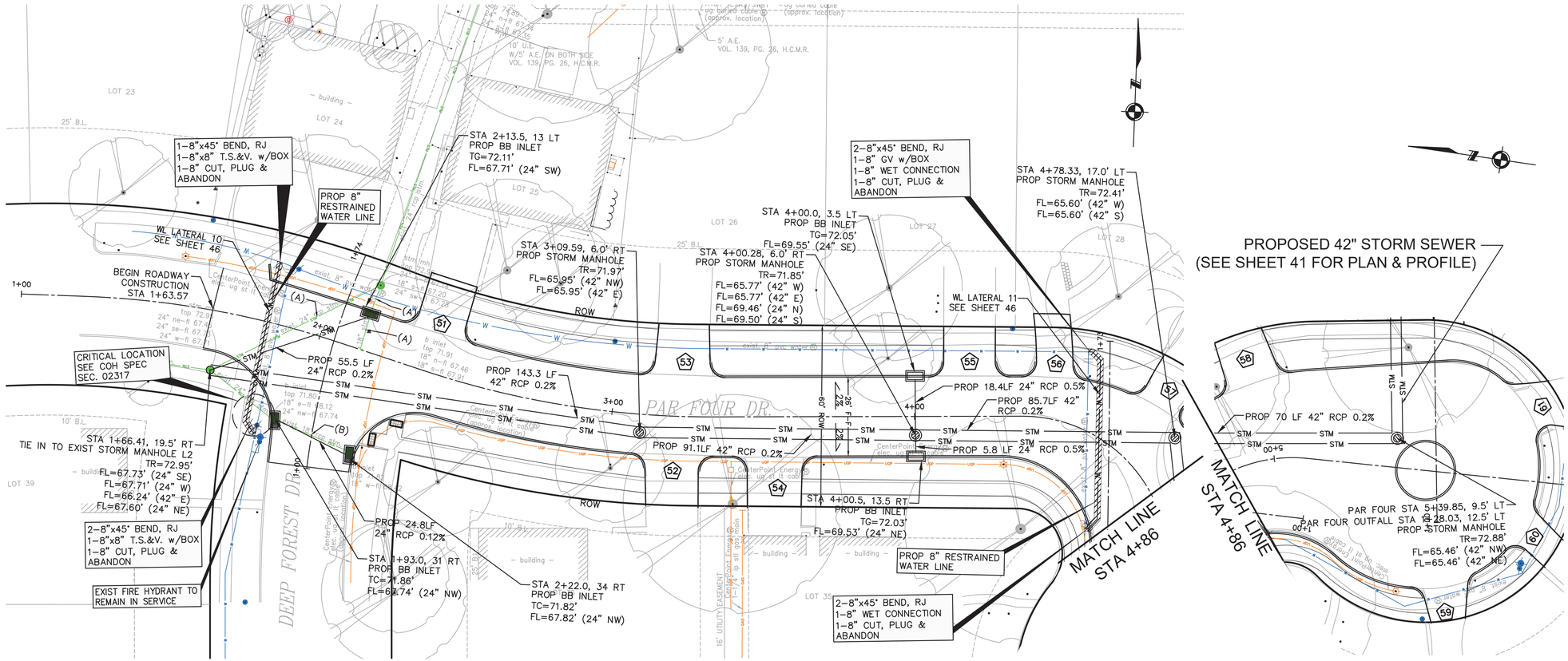
WBS NUMBER
M-410029-0001-4
DRAWING SCALE
1"=20' H, 1"=2' V
CITY OF HOUSTON PM
DOAA HAMDAN, P.E.
SHEET NO. 39 OF 158

FOR CITY OF HOUSTON USE ONLY

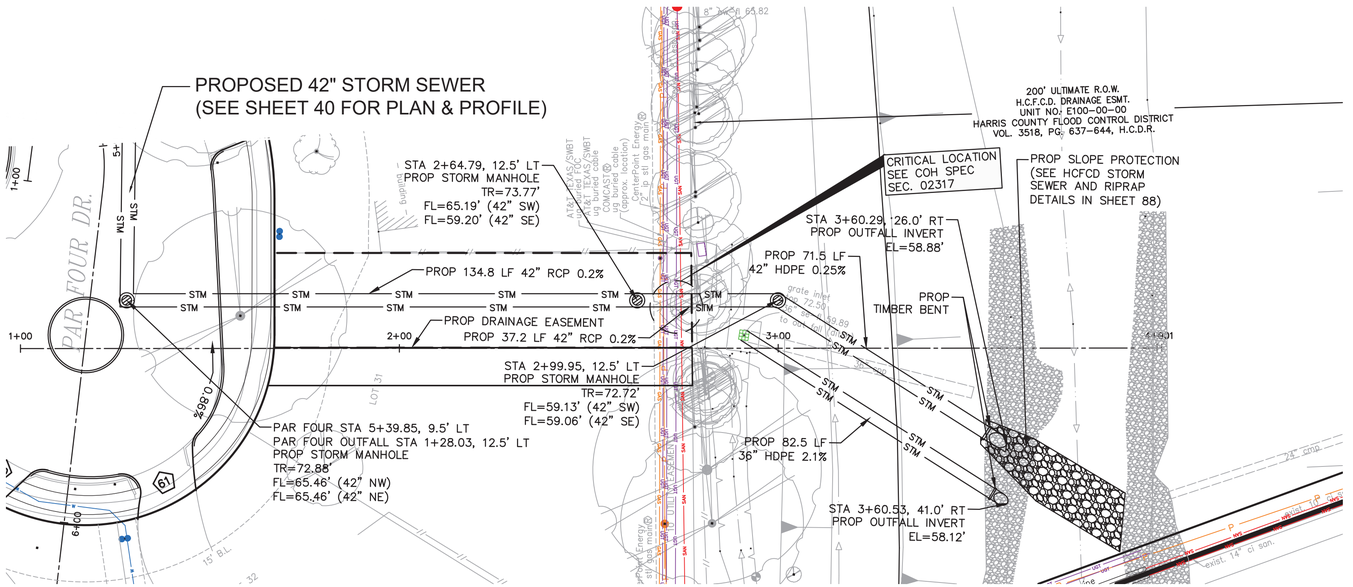
HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

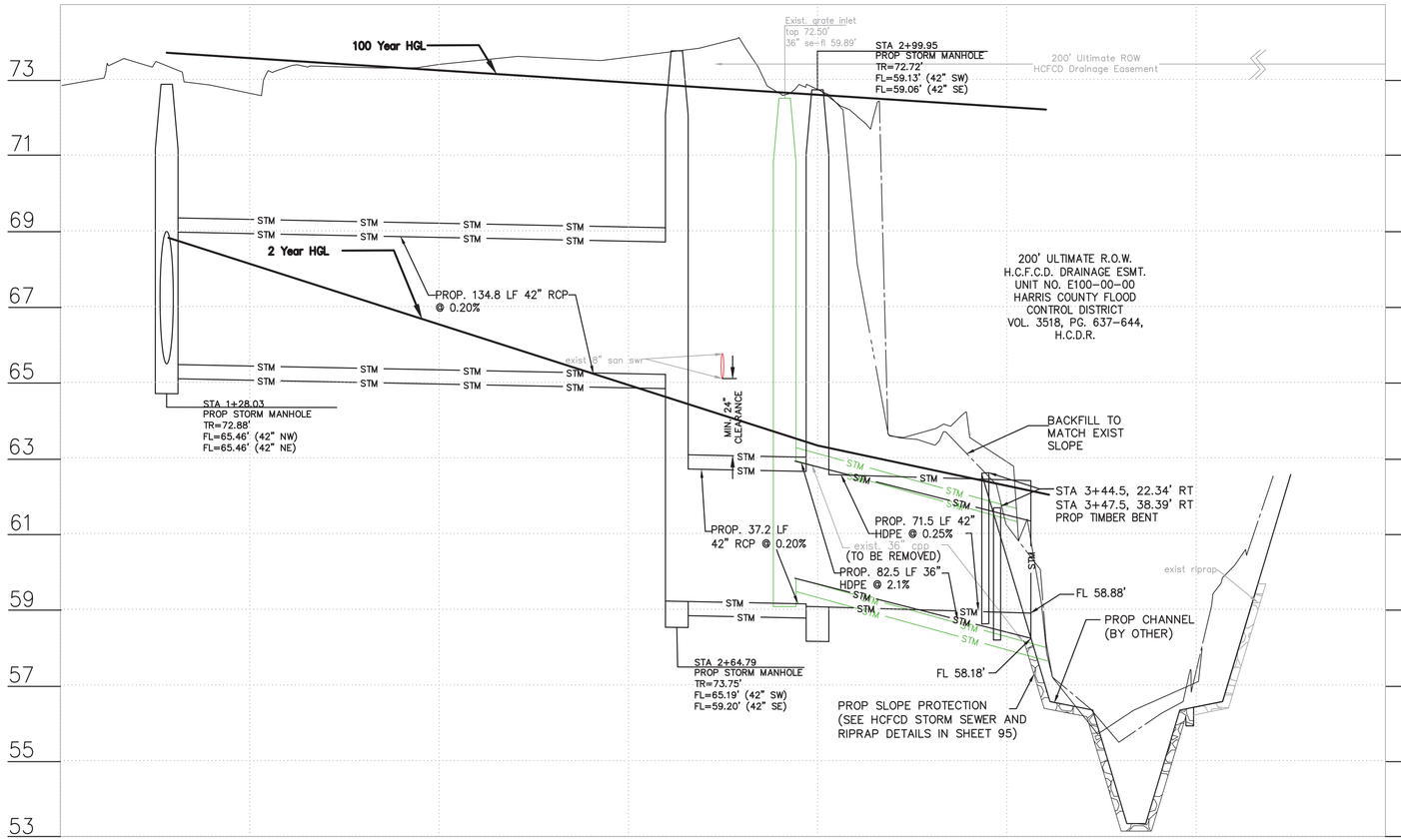
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\Plan_Profile_Cut_Sheets_100%.dwg

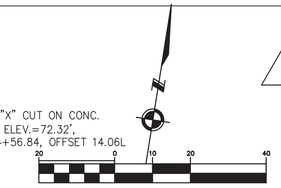
PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 10/6/2025 9:33 AM


1-8"x45° BEND, RJ
1-8"x8" T.S.&V. w/BOX
1-8" CUT, PLUG & ABANDON
PROP 8" RESTRAINED WATER LINE
WL LATERAL 10 SEE SHEET 46
BEGIN ROADWAY CONSTRUCTION STA 1+63.57
CRITICAL LOCATION SEE COH SPEC SEC. 02317
STA 1+66.41, 19.5' RT
TIE IN TO EXIST STORM MANHOLE L2
TR=72.95'
FL=67.73' (24" SE)
FL=67.71' (24" W)
FL=66.24' (42" E)
FL=67.60' (24" NE)
2-8"x45° BEND, RJ
1-8"x8" T.S.&V. w/BOX
1-8" CUT, PLUG & ABANDON
EXIST FIRE HYDRANT TO REMAIN IN SERVICE
PROP 55.5 LF 24" RCP 0.2%
PROP 24.8LF 24" RCP 0.12%
STA 1+93.0, 31 RT
PROP BB INLET
TC=71.86'
FL=64.74' (24" NW)
STA 2+13.5, 13 LT
PROP BB INLET
TG=72.11'
FL=67.71' (24" SW)
PROP 143.3 LF 42" RCP 0.2%
STA 2+22.0, 34 RT
PROP BB INLET
TC=71.82'
FL=67.82' (24" NW)
STA 3+09.59, 6.0' RT
PROP STORM MANHOLE
TR=71.97'
FL=65.95' (42" NW)
FL=65.95' (42" E)
STA 4+00.0, 3.5 LT
PROP BB INLET
TG=72.05'
FL=69.55' (24" SE)
STA 4+00.28, 6.0' RT
PROP STORM MANHOLE
TR=71.85'
FL=65.77' (42" W)
FL=65.77' (42" E)
FL=69.46' (24" N)
FL=69.50' (24" S)
PROP 91.1LF 42" RCP 0.2%
STA 4+00.5, 13.5 RT
PROP BB INLET
TG=72.03'
FL=69.53' (24" NE)
2-8"x45° BEND, RJ
1-8" WET CONNECTION
1-8" CUT, PLUG & ABANDON
2-8"x45° BEND, RJ
1-8" WET CONNECTION
1-8" CUT, PLUG & ABANDON
STA 4+78.33, 17.0' LT
PROP STORM MANHOLE
TR=72.41'
FL=65.60' (42" W)
FL=65.60' (42" S)
PROP 18.4LF 24" RCP 0.5%
PROP 85.7LF 42" RCP 0.2%
PROP 5.8 LF 24" RCP 0.5%
WL LATERAL 11 SEE SHEET 46
PROPOSED 42" STORM SEWER (SEE SHEET 41 FOR PLAN & PROFILE)
MATCH LINE STA 4+86
MATCH LINE STA 4+86
PROP 70 LF 42" RCP 0.2%
PAR FOUR STA 5+39.85, 9.5' LT
PAR FOUR OUTFALL STA 5+28.03, 12.5' LT
PROP STORM MANHOLE
TR=72.88'
FL=65.46' (42" NW)
FL=65.46' (42" NE)
PAR FOUR DR.
DEEP FOREST DR.
ROW
LOT 23
LOT 24
LOT 25
LOT 26
LOT 27
LOT 28
LOT 35
LOT 39
25' B.L.
10' B.L.
16' UTILITY EASEMENT
5' A.E. VOL. 139, PG. 26, H.C.M.R.
10' U.E. W/5' A.E. ON BOTH SIDE VOL. 139, PG. 26, H.C.M.R.
exist. 8" water
exist. 24" strm
CenterPoint Energy (elec. ug cable) (approx. location)
CenterPoint Energy (elec. ug cable) (approx. location)
CenterPoint Energy (elec. ug cable) (approx. location)

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 10/6/2025 9:34 AM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\Plan_Profile_Cut_Sheets_100%.dwg







NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162-7103, A BRASS DISK IN CONCRETE, LOCATED AT THE SOUTH CORNER OF THE INTERSECTION OF SILVER CHALICE DR AND CHATEAU FOREST DR.

ELEV. 78.00 FEET NAVD 1988 (GEOID '18)

(1) THE PROPOSED WATERLINE SHALL BE BUILT BY MEANS OF TRENCHLESS CONSTRUCTION EXCEPT AS NOTED ON THE DRAWINGS. CONTRACTOR TO DETERMINE THE LOCATIONS OF PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.
(2) TREES ARE LOCATED IN THE VICINITY OF PROPOSED ALIGNMENT OF STORM SEWER, WATER LINE AND RELATED APPURTENANCES. REFER TO THE TREE PROTECTION PLANS FOR APPROPRIATE PROTECTION MEASURES.
(3) CONTRACTOR TO BRACE AND SUPPORT BURIED TELECOM CABLES AND GAS LINES DURING CONSTRUCTION.

NOTE:
(A) GROUT FILL AND ABANDON EXISTING STM SWR RCP/CMP
(B) EXISTING PIPE TO BE REMOVED
(C) PLACE 1 FULL SECTION (MIN. 18 FEET) OF WATER LINE CENTERED AT SANITARY SEWER CROSSING. PROVIDE RESTRAINED JOINTS ON WATER LINE, SPACED AT LEAST 9 FEET HORIZONTALLY FROM CENTERLINE OF SANITARY SEWER.
(D) CONTRACTOR SHALL FOLLOW HCFCD STORM SEWER AND RIPRAP DETAILS AT SHEET 95 FOR OUTFALL INSTALLATION

XX PROP DRIVEWAY NUMBER (SEE SHEET 56-58 FOR DRIVEWAY SUMMARY TABLES AND DETAILS)

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

Mike Brower 08/12/26
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.

Mike Brower 08/12/26
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.

Marlon Smither Date 10/07/2025
Approved for AT&T underground conduit facilities only.
Signature valid for one year.

ISANI
civil · design · engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

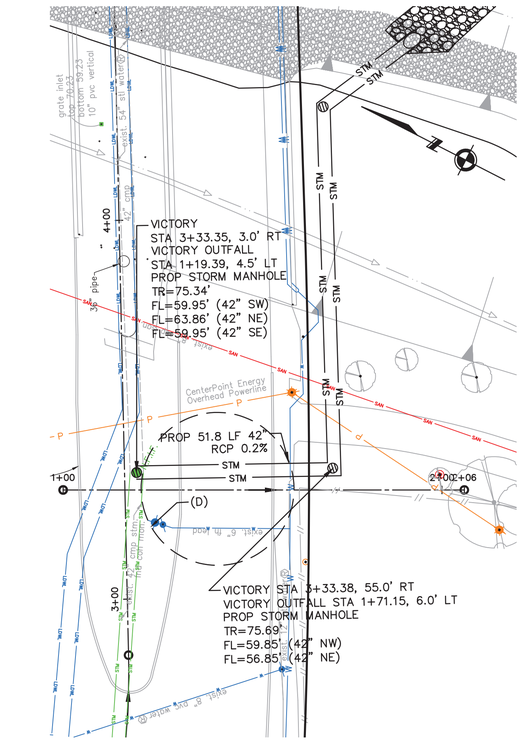
STATE OF TEXAS · RAHUL B. MENON · 130533 · LICENSED PROFESSIONAL ENGINEER · 10/3/25

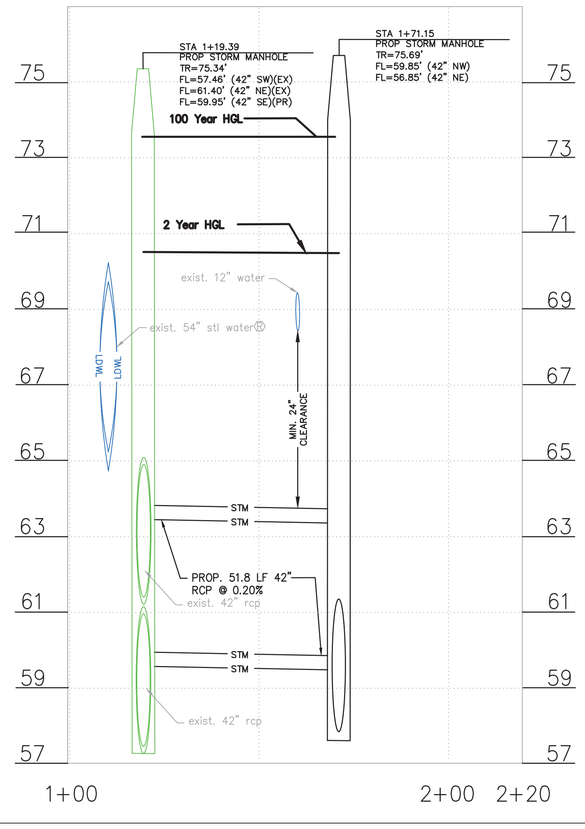
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

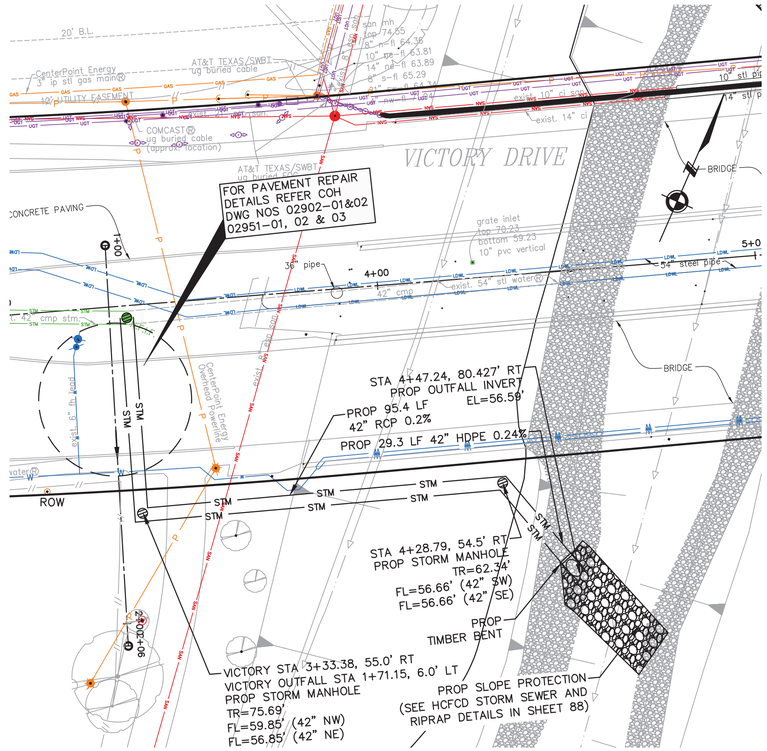
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

PLAN & PROFILE
PAR FOUR DR. OUTFALL (OUTFALL L)
(STA 1+00 TO 4+00)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
1"=20' H, 1"=2' V	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 41 OF 158	







NOTICE:

***Construction in Harris County Flood Control District Right-of-Way requires:**

1.) HCFCD Right-of-Way Notification (permit)
2.) HCFCD 48-hr Pre-Construction Notification

Both are required prior to entering or working within Harris County Flood Control District right-of-way. Both the HCFCD Right-of-Way Notification and 48-hour notification must be provided to HCFCD at dcid@hcfcd.org. Site plans must be approved prior to obtaining the required HCFCD Right-of-Way Notification. Be advised that the HCFCD Right-of-Way Notification is separate from the site development permit package.

To apply for the HCFCD Right-of-Way Notification please go to http://apps.harriscountytx.gov/EPermits and apply for the HCFCD ROW under ROW Notification.

Failure to provide both items could result in delays and additional construction costs.

NOTE:
CONTRACTOR SHALL CONTACT AND COORDINATE WITH HOUSTON PARKS BOARD FOR THE OUTFALL PIPE AND MANHOLE INSTALLATION OR ANY OTHER CONSTRUCTION ACTIVITY WITHIN THEIR PROPERTY. (TRENT RONDOT, EMAIL: trent.rondot@houstonparksboard.org, PHONE: 713-942-8500)

1

TBM: "X" CUT ON CONC.
B-49 ELEV.=72.94',
STA -, OFFSET -

20 0 10 20 40

SCALE: 1" = 20'-0" FEET FOR 22"X34" SHEET

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162-7103, A BRASS DISK IN CONCRETE, LOCATED AT THE SOUTH CORNER OF THE INTERSECTION OF SILVER CHALICE DR AND CHATEAU FOREST DR.

ELEV. 78.00 FEET NAVD 1988 (GEOID '18)

(1) THE PROPOSED WATERLINE SHALL BE BUILT BY MEANS OF TRENCHLESS CONSTRUCTION EXCEPT AS NOTED ON THE DRAWINGS. CONTRACTOR TO DETERMINE THE LOCATIONS OF PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.
(2) TREES ARE LOCATED IN THE VICINITY OF PROPOSED ALIGNMENT OF STORM SEWER, WATER LINE AND RELATED APPURTENANCES. REFER TO THE TREE PROTECTION PLANS FOR APPROPRIATE PROTECTION MEASURES.
(3) CONTRACTOR TO BRACE AND SUPPORT BURIED TELECOM CABLES AND GAS LINES DURING CONSTRUCTION.

NOTE:
(A) GROUT FILL AND ABANDON EXISTING STM SWR RCP/CMP
(B) EXISTING PIPE TO BE REMOVED
(C) PLACE 1 FULL SECTION (MIN. 18 FEET) OF WATER LINE CENTERED AT SANITARY SEWER CROSSING. PROVIDE RESTRAINED JOINTS ON WATER LINE, SPACED AT LEAST 9 FEET HORIZONTALLY FROM CENTERLINE OF SANITARY SEWER.
(D) FOR PAVEMENT REPAIR DETAILS REFER COH DWG NOS 02902-01&02 02951-01, 02&03

XX PROP DRIVEWAY NUMBER (SEE SHEET 56-58 FOR DRIVEWAY SUMMARY TABLES AND DETAILS)

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

Mike Brower — 08/12/26 (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.

Mike Brower — 08/12/26 (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.

Marlon Smither — Date 10/07/2025

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

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

STATE OF TEXAS — RAHUL B. MENON — 130533 — LICENSED PROFESSIONAL ENGINEER — 10/3/25

SURVEYED BY: Kuo&Associates
FB NO. P-6257

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

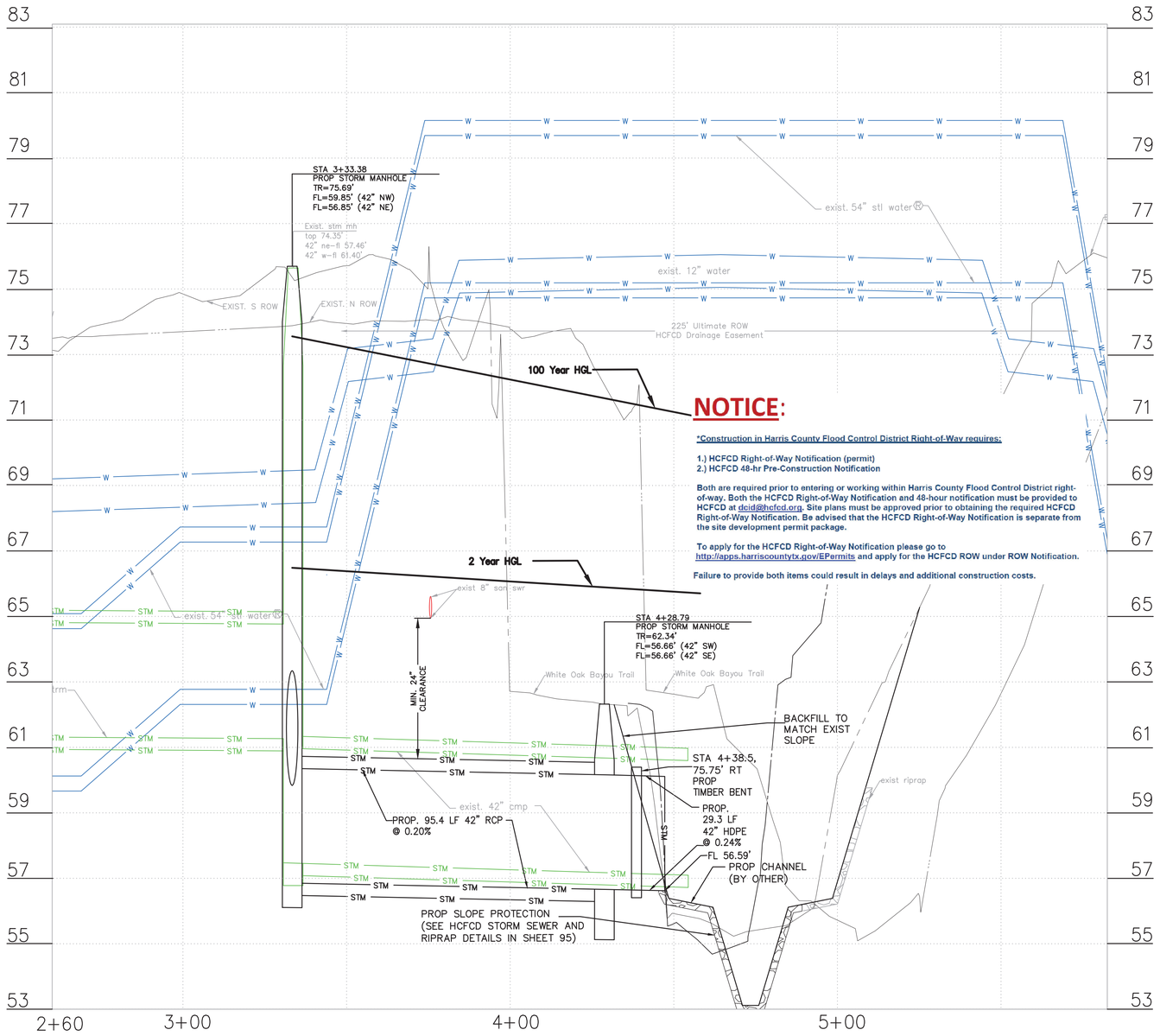
PLAN & PROFILE
VICTORY DR. (OUTFALL M)
VICTORY DR.

WBS NUMBER
M-410029-0001-4
DRAWING SCALE
1"=20' H, 1"=2' V
CITY OF HOUSTON PM
DOAA HAMDAN, P.E.
SHEET NO. 42 OF 158

FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720 CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 10/6/2025 9:34 AM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\Plan_Profile_Cut_Sheets_100%.dwg



NOTICE:

***Construction in Harris County Flood Control District Right-of-Way requires:**

1.) HCFCD Right-of-Way Notification (permit)
2.) HCFCD 48-hr Pre-Construction Notification

Both are required prior to entering or working within Harris County Flood Control District right-of-way. Both the HCFCD Right-of-Way Notification and 48-hour notification must be provided to HCFCD at dcid@hcfcd.org. Site plans must be approved prior to obtaining the required HCFCD Right-of-Way Notification. Be advised that the HCFCD Right-of-Way Notification is separate from the site development permit package.

To apply for the HCFCD Right-of-Way Notification please go to http://apps.harriscountytx.gov/EPermits and apply for the HCFCD ROW under ROW Notification.

Failure to provide both items could result in delays and additional construction costs.

1

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

20 0 10 20 40

SCALE: 1" = 20'-0" FEET FOR 22"X34" SHEET

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162-7103, A BRASS DISK IN CONCRETE, LOCATED AT THE SOUTH CORNER OF THE INTERSECTION OF SILVER CHALICE DR AND CHATEAU FOREST DR.

ELEV. 78.00 FEET NAVD 1988 (GEOID '18)

(1) THE PROPOSED WATERLINE SHALL BE BUILT BY MEANS OF TRENCHLESS CONSTRUCTION EXCEPT AS NOTED ON THE DRAWINGS. CONTRACTOR TO DETERMINE THE LOCATIONS OF PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.
(2) TREES ARE LOCATED IN THE VICINITY OF PROPOSED ALIGNMENT OF STORM SEWER, WATER LINE AND RELATED APPURTENANCES. REFER TO THE TREE PROTECTION PLANS FOR APPROPRIATE PROTECTION MEASURES.
(3) CONTRACTOR TO BRACE AND SUPPORT BURIED TELECOM CABLES AND GAS LINES DURING CONSTRUCTION.

NOTE:
(A) GROUT FILL AND ABANDON EXISTING STM SWR RCP/CMP
(B) EXISTING PIPE TO BE REMOVED
(C) PLACE 1 FULL SECTION (MIN. 18 FEET) OF WATER LINE CENTERED AT SANITARY SEWER CROSSING. PROVIDE RESTRAINED JOINTS ON WATER LINE, SPACED AT LEAST 9 FEET HORIZONTALLY FROM CENTERLINE OF SANITARY SEWER.
(D) CONTRACTOR SHALL FOLLOW HCFCD STORM SEWER AND RIPRAP DETAILS AT SHEET 95 FOR OUTFALL INSTALLATION

XX PROP DRIVEWAY NUMBER (SEE SHEET 56-58 FOR DRIVEWAY SUMMARY TABLES AND DETAILS)

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

Mike Brower 08/12/26
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.

Mike Brower 08/12/26
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.

Marlon Smither Date 10/07/2025
Approved for AT&T underground conduit facilities only.
Signature valid for one year.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
10/3/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

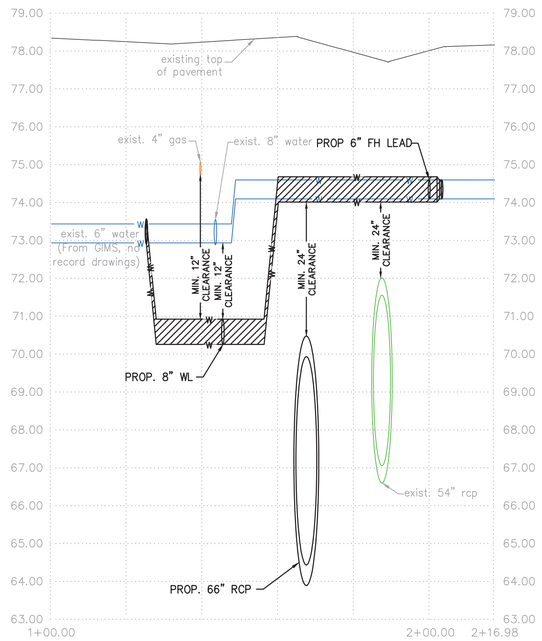
PROFILE
VICTORY DR. (OUTFALL M)

WBS NUMBER
M-410029-0001-4
DRAWING SCALE
1"=20' H, 1"=2' V
CITY OF HOUSTON PM
DOAA HAMDAN, P.E.
SHEET NO. 43 OF 158

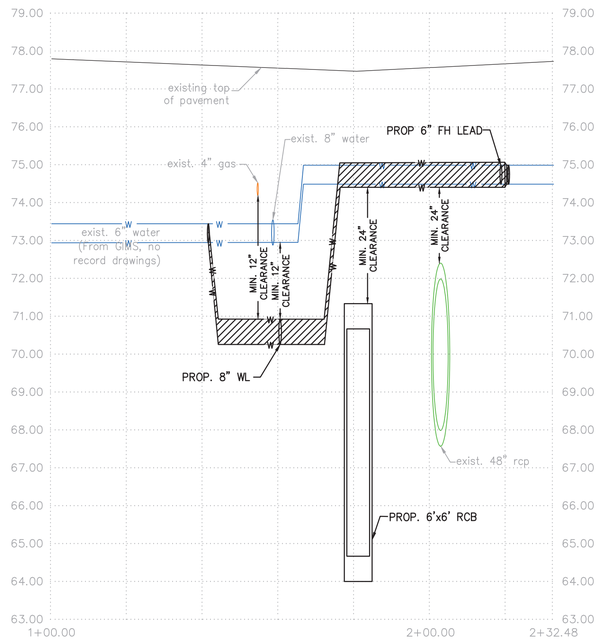
FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

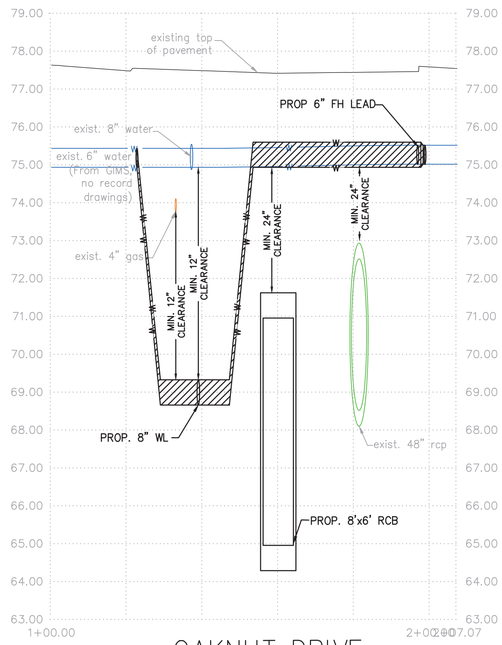
PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 10/6/2025 9:34 AM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\Plan_Profile_Cut_Sheets_100%.dwg



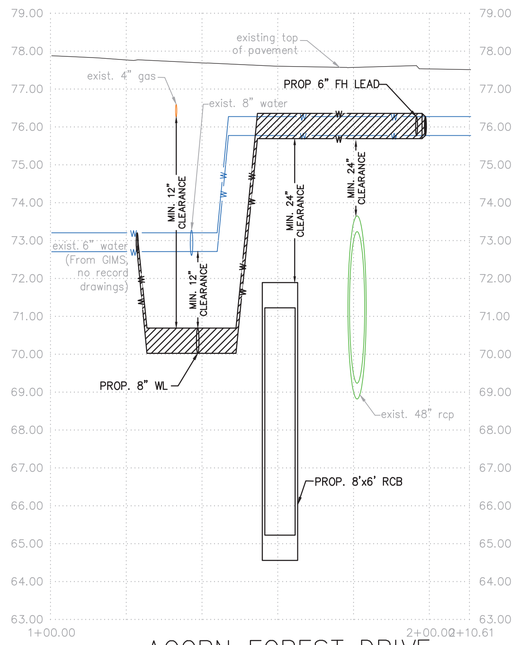
FRENCH CHATEAU DRIVE
WL LATERAL 1 (LOOKING NORTH–WEST)



SILVER CHALICE DRIVE
WL LATERAL 2 (LOOKING NORTH–WEST)



OAKNUT DRIVE
WL LATERAL 3 (LOOKING NORTH–WEST)



ACORN FOREST DRIVE
WL LATERAL 4 (LOOKING NORTH–WEST)

NOTE:
AS INDICATED ON THE PLANS, INFORMATION ON EXISTING WATERLINES ALONG MOST OF THE STREETS WITHIN THE PROJECT LIMITS ARE BASED ON GIMS AND NO AS–BUILT RECORDS WERE AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING WATERLINES PRIOR TO INSTALLING THE PROPOSED WATERLINES AND CONNECTIONS.

1

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

SCALE: 1" = 20'–0" FEET FOR 22"X34" SHEET

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162–7103, A BRASS DISK IN CONCRETE, LOCATED AT THE SOUTH CORNER OF THE INTERSECTION OF SILVER CHALICE DR AND CHATEAU FOREST DR.

ELEV. 78.00 FEET NAVD 1988 (GEOID '18)

(1) THE PROPOSED WATERLINE SHALL BE BUILT BY MEANS OF TRENCHLESS CONSTRUCTION EXCEPT AS NOTED ON THE DRAWINGS. CONTRACTOR TO DETERMINE THE LOCATIONS OF PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.
(2) TREES ARE LOCATED IN THE VICINITY OF PROPOSED ALIGNMENT OF STORM SEWER, WATER LINE AND RELATED APPURTENANCES. REFER TO THE TREE PROTECTION PLANS FOR APPROPRIATE PROTECTION MEASURES.
(3) CONTRACTOR TO BRACE AND SUPPORT BURIED TELECOM CABLES AND GAS LINES DURING CONSTRUCTION.

NOTE:
(A) GROUT FILL AND ABANDON EXISTING STM SWR RCP/CMP
(B) EXISTING PIPE TO BE REMOVED
(C) PLACE 1 FULL SECTION (MIN. 18 FEET) OF WATER LINE CENTERED AT SANITARY SEWER CROSSING. PROVIDE RESTRAINED JOINTS ON WATER LINE, SPACED AT LEAST 9 FEET HORIZONTALLY FROM CENTERLINE OF SANITARY SEWER.

NOTE:
ALL LATERAL WATERLINES TO BE INSTALLED USING OPEN CUT METHOD

XX PROP DRIVEWAY NUMBER (SEE SHEET 56–58 FOR DRIVEWAY SUMMARY TABLES AND DETAILS)

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

Mike Brower 08/12/26
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.

Mike Brower 08/12/26
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.

Marlon Smither Date 10/07/2025
Approved for AT&T underground conduit facilities only.
Signature valid for one year.

ISANI
civil · design · engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

STATE OF TEXAS · RAHUL B. MENON · 130533 · LICENSED PROFESSIONAL ENGINEER · 10/3/25

SURVEYED BY: Kuo&Associates
FB NO. P–6257

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

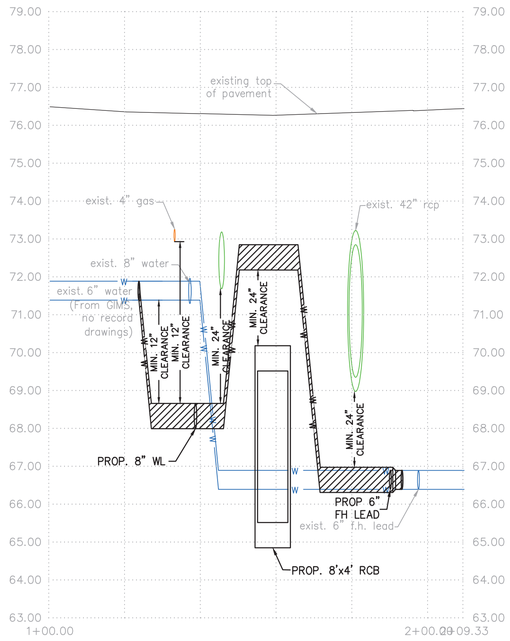
PROFILE
LATERAL WATERLINE 1 OF 3

WBS NUMBER
M–410029–0001–4
DRAWING SCALE
1"=20' H, 1"=2' V
CITY OF HOUSTON PM
DOAA HAMDAN, P.E.
SHEET NO. 44 OF 158

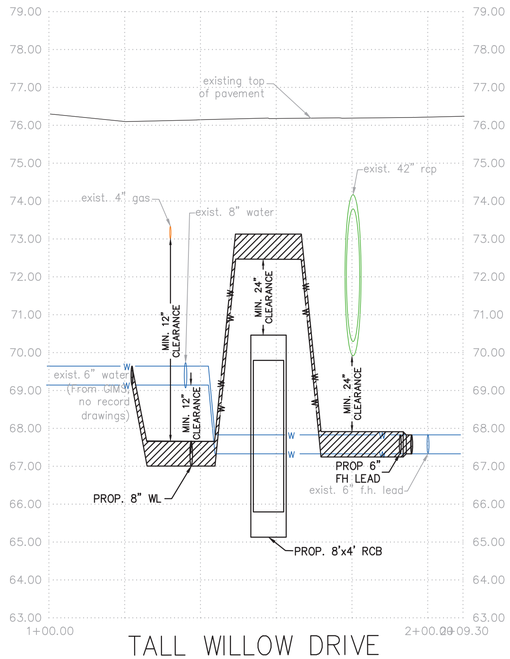
FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720 CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

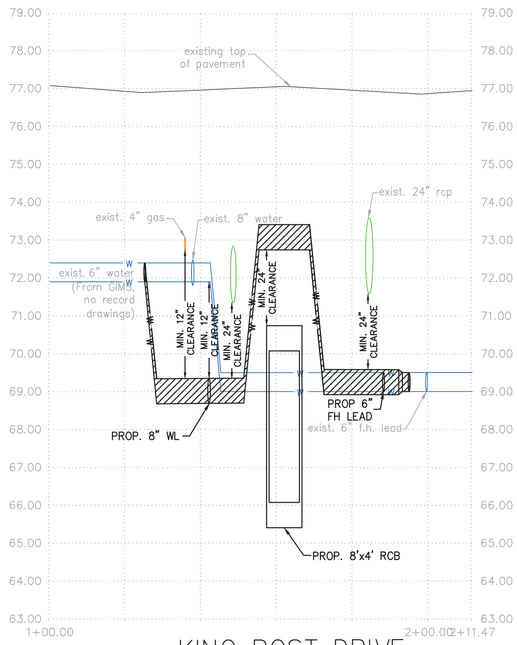
PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 10/6/2025 9:35 AM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\Plan_Profile_Cut_Sheets_100%.dwg



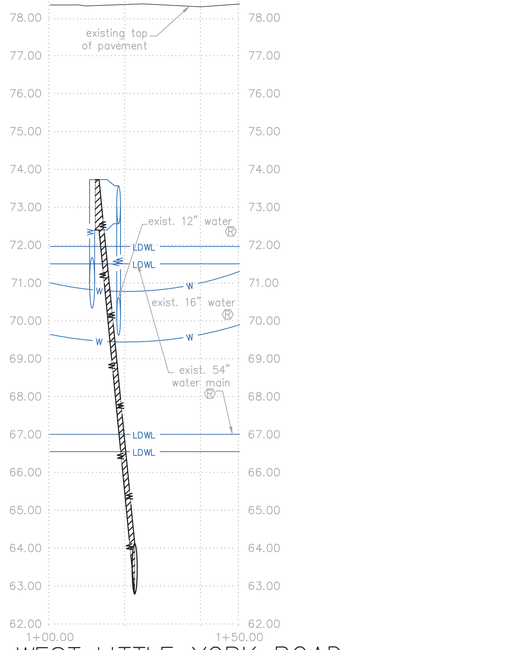
MAPLE HILL DRIVE
WL LATERAL 5 (LOOKING NORTH–WEST)



TALL WILLOW DRIVE
WL LATERAL 6 (LOOKING NORTH–WEST)



KING POST DRIVE
WL LATERAL 7 (LOOKING NORTH–WEST)



WEST LITTLE YORK ROAD
WL LATERAL 8 (LOOKING NORTH)

NOTE:
AS INDICATED ON THE PLANS, INFORMATION ON EXISTING WATERLINES ALONG MOST OF THE STREETS WITHIN THE PROJECT LIMITS ARE BASED ON GIMS AND NO AS–BUILT RECORDS WERE AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING WATERLINES PRIOR TO INSTALLING THE PROPOSED WATERLINES AND CONNECTIONS.

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

1

20 0 10 20 40

SCALE: 1" = 20'–0" FEET FOR 22"X34" SHEET

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162–7103, A BRASS DISK IN CONCRETE, LOCATED AT THE SOUTH CORNER OF THE INTERSECTION OF SILVER CHALICE DR AND CHATEAU FOREST DR.

ELEV. 78.00 FEET NAVD 1988 (GEOID '18)

(1) THE PROPOSED WATERLINE SHALL BE BUILT BY MEANS OF TRENCHLESS CONSTRUCTION EXCEPT AS NOTED ON THE DRAWINGS. CONTRACTOR TO DETERMINE THE LOCATIONS OF PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.
(2) TREES ARE LOCATED IN THE VICINITY OF PROPOSED ALIGNMENT OF STORM SEWER, WATER LINE AND RELATED APPURTENANCES. REFER TO THE TREE PROTECTION PLANS FOR APPROPRIATE PROTECTION MEASURES.
(3) CONTRACTOR TO BRACE AND SUPPORT BURIED TELECOM CABLES AND GAS LINES DURING CONSTRUCTION.

NOTE:
(A) GROUT FILL AND ABANDON EXISTING STM SWR RCP/CMP
(B) EXISTING PIPE TO BE REMOVED
(C) PLACE 1 FULL SECTION (MIN. 18 FEET) OF WATER LINE CENTERED AT SANITARY SEWER CROSSING. PROVIDE RESTRAINED JOINTS ON WATER LINE, SPACED AT LEAST 9 FEET HORIZONTALLY FROM CENTERLINE OF SANITARY SEWER.

NOTE:
ALL LATERAL WATERLINES TO BE INSTALLED USING OPEN CUT METHOD

XX PROP DRIVEWAY NUMBER (SEE SHEET 56–58 FOR DRIVEWAY SUMMARY TABLES AND DETAILS)

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

Mike Brower 08/12/26
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.

Mike Brower 08/12/26
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.

Marlon Smither Date 10/07/2025
Approved for AT&T underground conduit facilities only. Signature valid for one year.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
10/3/25

SURVEYED BY: Kuo&Associates
FB NO. P–6257

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

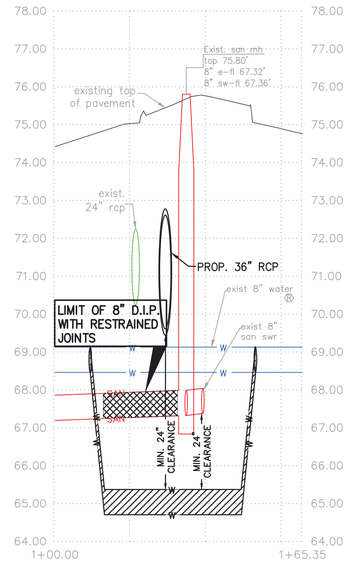
PROFILE
LATERAL WATERLINE 2 OF 3

WBS NUMBER
M–410029–0001–4
DRAWING SCALE
1"=20' H, 1"=2' V
CITY OF HOUSTON PM
DOAA HAMDAN, P.E.
SHEET NO. 45 OF 158

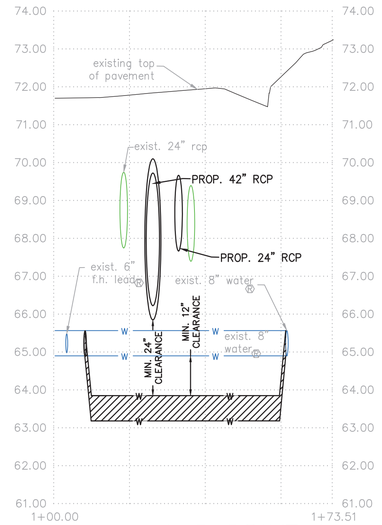
FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

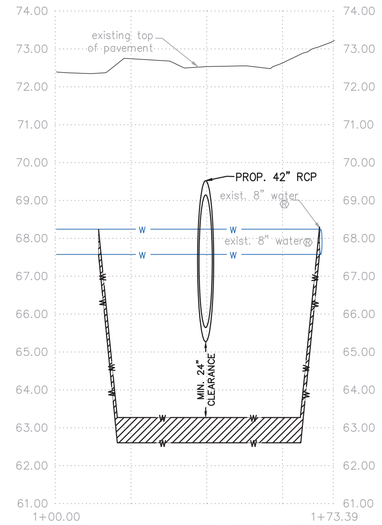
PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 10/6/2025 9:35 AM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\Plan_Profile_Cut_Sheets_100%.dwg



RIDGE OAK DRIVE
WL LATERAL 9 (LOOKING NORTH-WEST)



PAR FOUR DRIVE 1
WL LATERAL 10 (LOOKING WEST)



PAR FOUR DRIVE 2
WL LATERAL 11 (LOOKING WEST)

1

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

20 0 10 20 40

SCALE: 1" = 20'-0" FEET FOR 22"X34" SHEET

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162-7103, A BRASS DISK IN CONCRETE, LOCATED AT THE SOUTH CORNER OF THE INTERSECTION OF SILVER CHALICE DR AND CHATEAU FOREST DR.

ELEV. 78.00 FEET NAVD 1988 (GEOID '18)

(1) THE PROPOSED WATERLINE SHALL BE BUILT BY MEANS OF TRENCHLESS CONSTRUCTION EXCEPT AS NOTED ON THE DRAWINGS. CONTRACTOR TO DETERMINE THE LOCATIONS OF PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.
(2) TREES ARE LOCATED IN THE VICINITY OF PROPOSED ALIGNMENT OF STORM SEWER, WATER LINE AND RELATED APPURTENANCES. REFER TO THE TREE PROTECTION PLANS FOR APPROPRIATE PROTECTION MEASURES.
(3) CONTRACTOR TO BRACE AND SUPPORT BURIED TELECOM CABLES AND GAS LINES DURING CONSTRUCTION.

NOTE:
(A) GROUT FILL AND ABANDON EXISTING STM SWR RCP/CMP
(B) EXISTING PIPE TO BE REMOVED
(C) PLACE 1 FULL SECTION (MIN. 18 FEET) OF WATER LINE CENTERED AT SANITARY SEWER CROSSING. PROVIDE RESTRAINED JOINTS ON WATER LINE, SPACED AT LEAST 9 FEET HORIZONTALLY FROM CENTERLINE OF SANITARY SEWER.

NOTE:
ALL LATERAL WATERLINES TO BE INSTALLED USING OPEN CUT METHOD

XX PROP DRIVEWAY NUMBER (SEE SHEET 56-58 FOR DRIVEWAY SUMMARY TABLES AND DETAILS)

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

Mike Brower 08/12/26
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.

Mike Brower 08/12/26
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.

Marlon Smither 10/07/2025
Date

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

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED
PROFESSIONAL ENGINEER
10/3/25

SURVEYED BY: Kuo&Associates
FB NO. P-6257

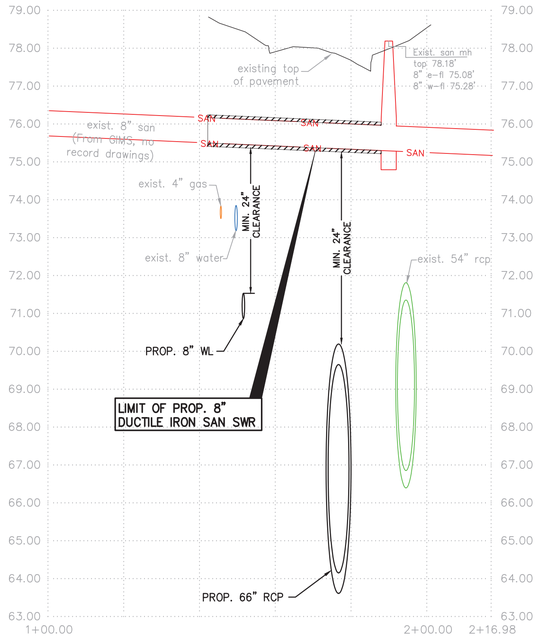
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

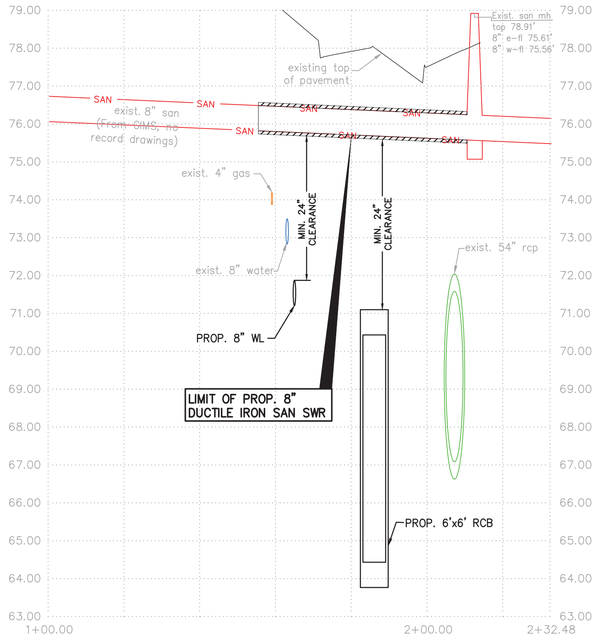
PROFILE
LATERAL WATERLINE 3 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
1"=20' H, 1"=2' V	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 46 OF 158	

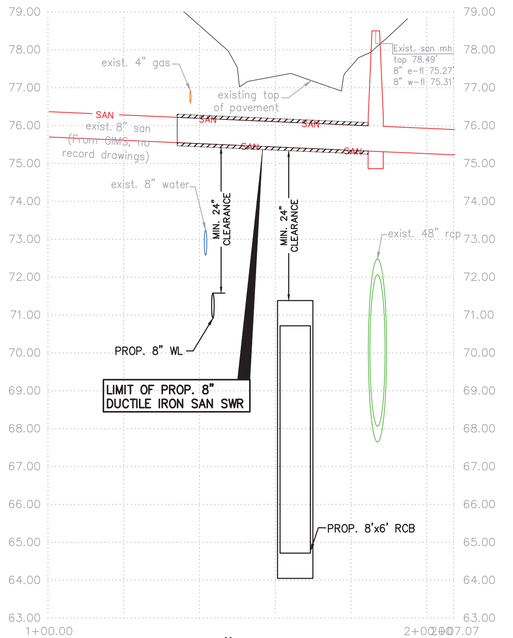
PLOTTED: 10/6/2025 9:35 AM
PLOT STYLE: Coh_ctb_220714.ctb
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\Plan_Profile_Cut_Sheets_100%.dwg



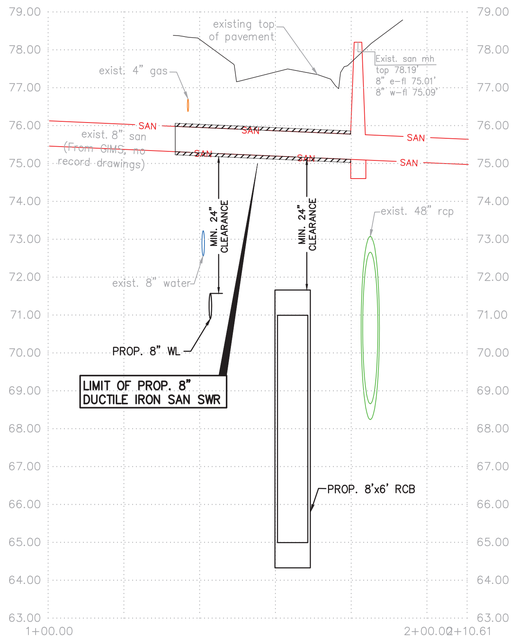
PROPOSED 8" SANITARY SEWER
CROSSING A (LOOKING NORTH-WEST)



PROPOSED 8" SANITARY SEWER
CROSSING B (LOOKING NORTH-WEST)



PROPOSED 8" SANITARY SEWER
CROSSING C (LOOKING NORTH-WEST)



PROPOSED 8" SANITARY SEWER
CROSSING D (LOOKING NORTH-WEST)

1

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

SCALE: 1" = 20'-0" FEET FOR 22"X34" SHEET

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162-7103, A BRASS DISK IN CONCRETE, LOCATED AT THE SOUTH CORNER OF THE INTERSECTION OF SILVER CHALICE DR AND CHATEAU FOREST DR.

ELEV. 78.00 FEET NAVD 1988 (GEOID '18)

(1) THE PROPOSED WATERLINE SHALL BE BUILT BY MEANS OF TRENCHLESS CONSTRUCTION EXCEPT AS NOTED ON THE DRAWINGS. CONTRACTOR TO DETERMINE THE LOCATIONS OF PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.
(2) TREES ARE LOCATED IN THE VICINITY OF PROPOSED ALIGNMENT OF STORM SEWER, WATER LINE AND RELATED APPURTENANCES. REFER TO THE TREE PROTECTION PLANS FOR APPROPRIATE PROTECTION MEASURES.
(3) CONTRACTOR TO BRACE AND SUPPORT BURIED TELECOM CABLES AND GAS LINES DURING CONSTRUCTION.

NOTE:
(A) GROUT FILL AND ABANDON EXISTING STM SWR RCP/CMP
(B) EXISTING PIPE TO BE REMOVED
(C) PLACE 1 FULL SECTION (MIN. 18 FEET) OF WATER LINE CENTERED AT SANITARY SEWER CROSSING. PROVIDE RESTRAINED JOINTS ON WATER LINE, SPACED AT LEAST 9 FEET HORIZONTALLY FROM CENTERLINE OF SANITARY SEWER.

XX PROP DRIVEWAY NUMBER (SEE SHEET 56-58 FOR DRIVEWAY SUMMARY TABLES AND DETAILS)

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

Mike Brower 08/12/26
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.

Mike Brower 08/12/26
Date

CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY (This signature verifies existing underground facilities – not to be usec for conflict verification)
Signature valid for six months.

Marlon Smither Date 10/07/2025
Approved for AT&T underground conduit facilities only.
Signature valid for one year.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
10/3/25

SURVEYED BY: Kuo&Associates
FB NO. P-6257

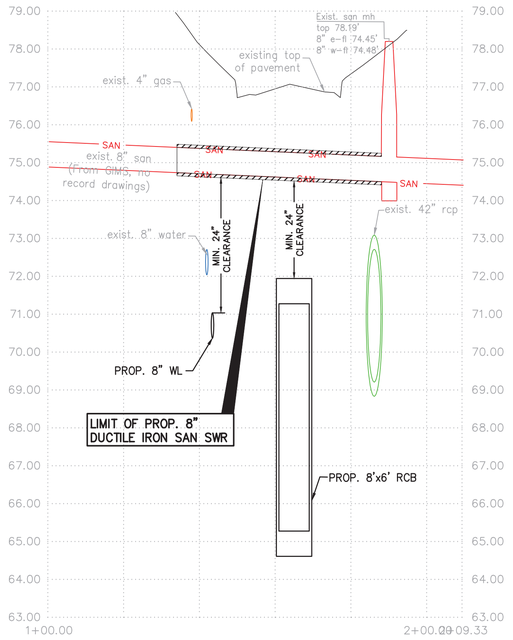
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

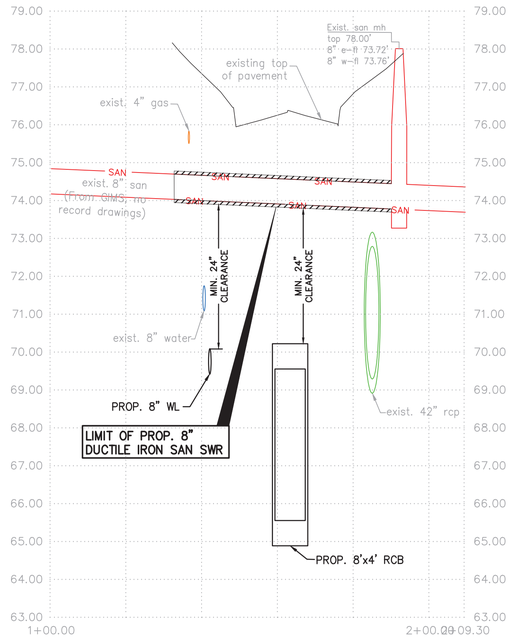
PROFILE
SANITARY CROSSING 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
1"=20' H, 1"=2' V	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 47 OF 158	

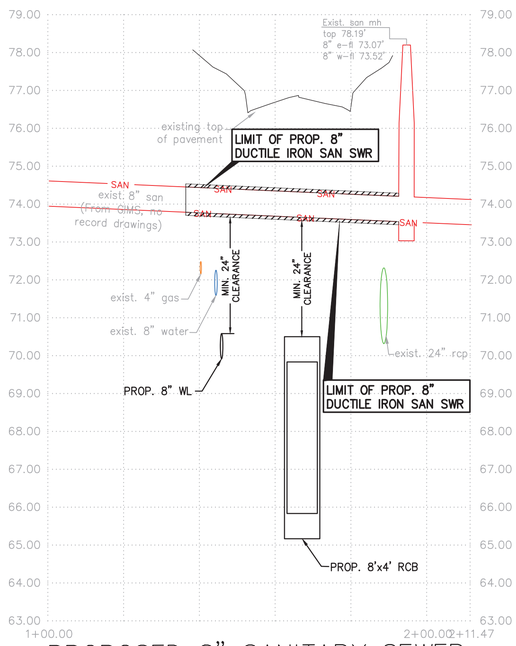
PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 10/6/2025 9:36 AM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\Plan_Profile_Cut_Sheets_100%.dwg



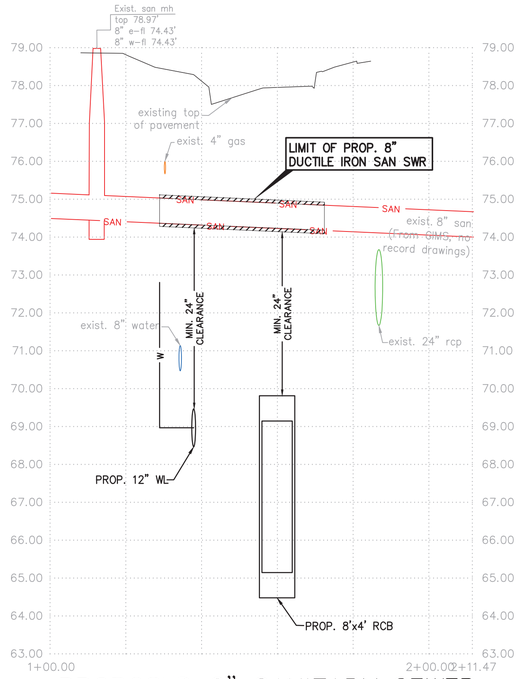
PROPOSED 8" SANITARY SEWER CROSSING E (LOOKING NORTH-WEST)



PROPOSED 8" SANITARY SEWER CROSSING F (LOOKING NORTH-WEST)



PROPOSED 8" SANITARY SEWER CROSSING G (LOOKING NORTH-WEST)



PROPOSED 8" SANITARY SEWER CROSSING H (LOOKING NORTH-WEST)

1

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

SCALE: 1" = 20'-0" FEET FOR 22"X34" SHEET

BENCHMARK:

CITY OF HOUSTON MONUMENT 5162-7103, A BRASS DISK IN CONCRETE, LOCATED AT THE SOUTH CORNER OF THE INTERSECTION OF SILVER CHALICE DR AND CHATEAU FOREST DR.

ELEV. 78.00 FEET NAVD 1988 (GEOID '18)

(1) THE PROPOSED WATERLINE SHALL BE BUILT BY MEANS OF TRENCHLESS CONSTRUCTION EXCEPT AS NOTED ON THE DRAWINGS. CONTRACTOR TO DETERMINE THE LOCATIONS OF PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.
(2) TREES ARE LOCATED IN THE VICINITY OF PROPOSED ALIGNMENT OF STORM SEWER, WATER LINE AND RELATED APPURTENANCES. REFER TO THE TREE PROTECTION PLANS FOR APPROPRIATE PROTECTION MEASURES.
(3) CONTRACTOR TO BRACE AND SUPPORT BURIED TELECOM CABLES AND GAS LINES DURING CONSTRUCTION.

NOTE:
(A) GROUT FILL AND ABANDON EXISTING STM SWR RCP/CMP
(B) EXISTING PIPE TO BE REMOVED
(C) PLACE 1 FULL SECTION (MIN. 18 FEET) OF WATER LINE CENTERED AT SANITARY SEWER CROSSING. PROVIDE RESTRAINED JOINTS ON WATER LINE, SPACED AT LEAST 9 FEET HORIZONTALLY FROM CENTERLINE OF SANITARY SEWER.

XX PROP DRIVEWAY NUMBER (SEE SHEET 56-58 FOR DRIVEWAY SUMMARY TABLES AND DETAILS)

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

Mike Brower 08/12/26
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.

Mike Brower 08/12/26
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.

Marlon Smither Date 10/07/2025
Approved for AT&T underground conduit facilities only.
Signature valid for one year.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS RAHUL B. MENON 130533 LICENSED PROFESSIONAL ENGINEER
10/3/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

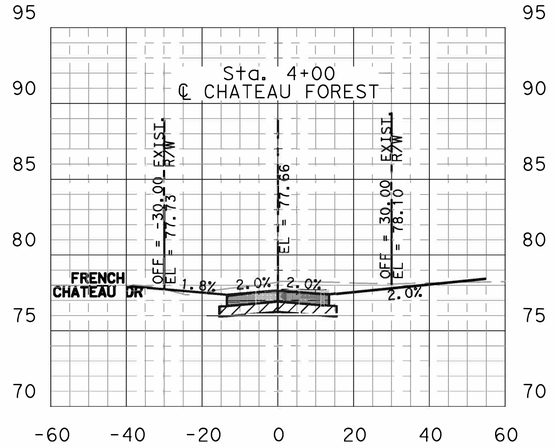
PROFILE
SANITARY CROSSING 2 OF 2

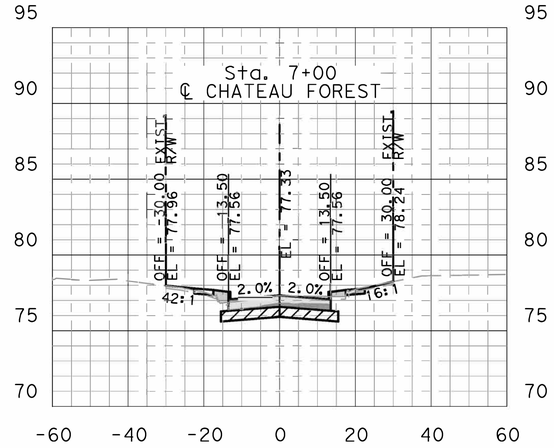
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
1"=20' H, 1"=2' V	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 48 OF 158	

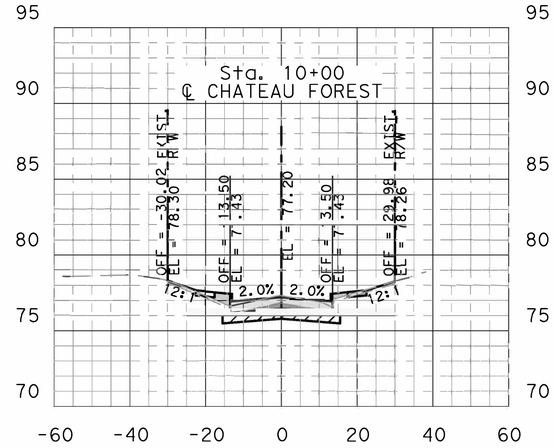
PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 10/6/2025 9:36 AM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\Plan_Profile_Cut_Sheets_100%.dwg

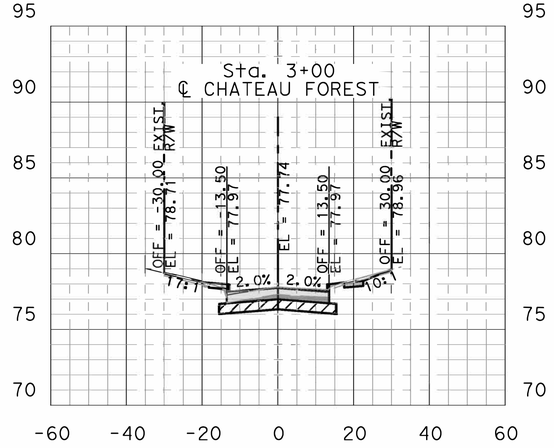
0 10 20 40

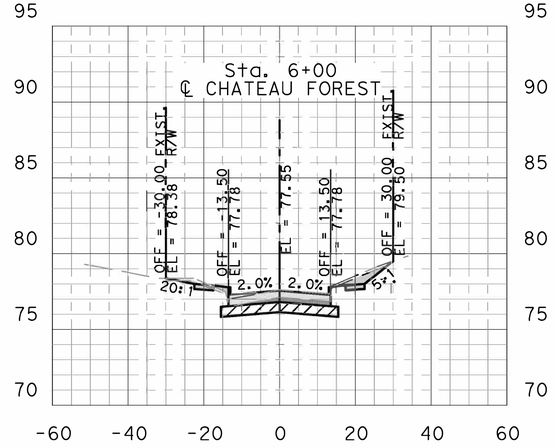
SCALE: 1"=20' HORIZ., 1"=4' VERT. (11X17)
SCALE: 1"=40' HORIZ., 1"=8' VERT. (22X34)

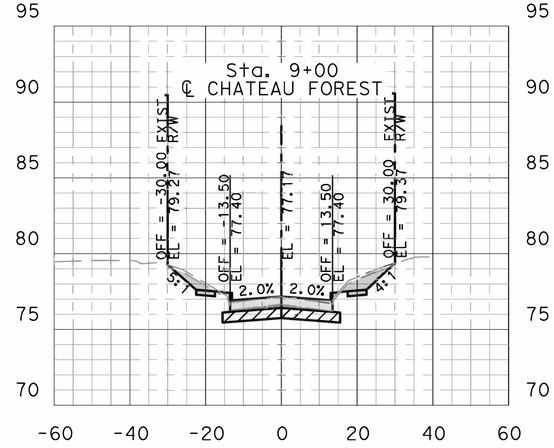


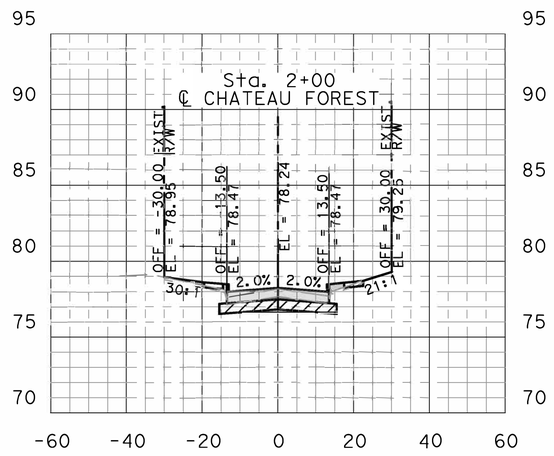


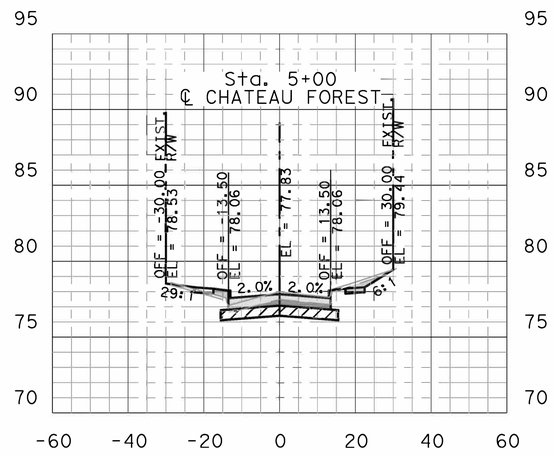


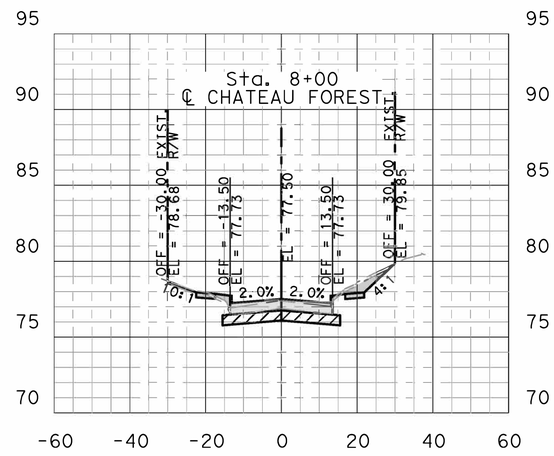












LEGEND

- PROP 9" REINFORCED CONCRETE PAVEMENT
- PROP 8" STABILIZED SUBGRADE

STATION	DISTANCE (FT)	CUT (SF) EA	CUT (SF) AVG-EA	FILL (SF) EA	FILL (SF) AVG-EA	CUT (CY)	FILL (CY)
2+00.00		2.10		3.48			
	100.00		5.38		2.20	19.93	8.16
3+00.00		8.67		0.92			
	100.00		15.42		0.46	57.09	1.71
4+00.00		22.16		0.00			
	100.00		16.25		1.38	60.19	5.12
5+00.00		10.34		2.76			
	100.00		12.12		1.98	44.90	7.33
6+00.00		13.91		1.19			
	100.00		10.49		2.72	38.86	10.09
7+00.00		7.08		4.25			
	100.00		8.12		3.03	30.08	11.23
8+00.00		9.17		1.81			
	100.00		13.78		1.34	51.03	4.97
9+00.00		18.39		0.88			
	100.00		11.91		2.56	44.12	9.47
10+00.00		5.44		4.24			
TOTAL THIS SHEET						346.20	58.07
TOTAL CHATEAU FOREST						2125.00	167.14
GRAND TOTAL						3012.80	428.90

ISANI
civil · design · engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

CROSS SECTIONS CHATEAU FOREST DR

STA. 2+00 TO STA. 10+00

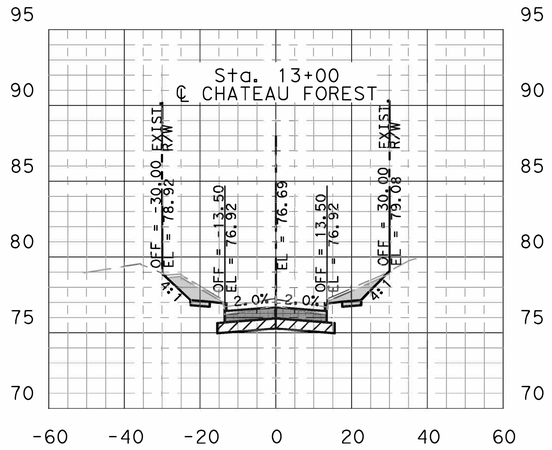
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
HORIZ. 1"=40' VERT. 1"=8	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 49 OF 158	

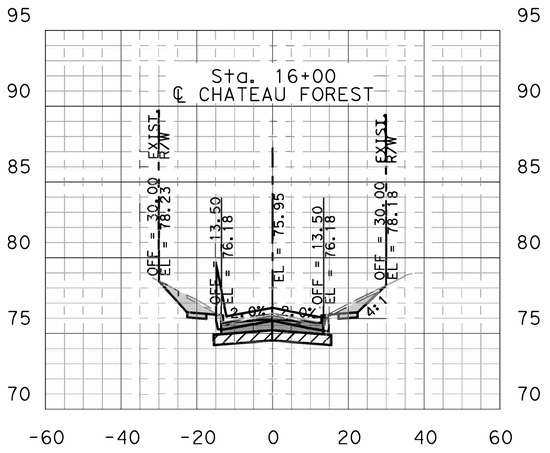
HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

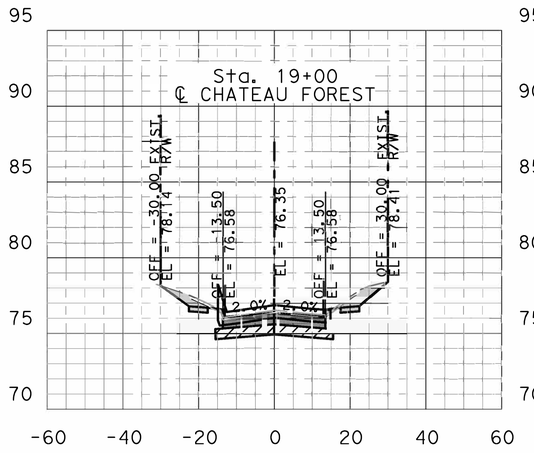
FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\Openroads\47_OR-COR.dgn
DATE:6/19/2025

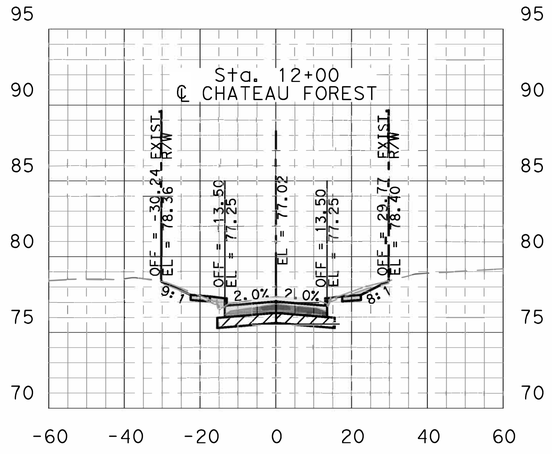
0 10 20 40

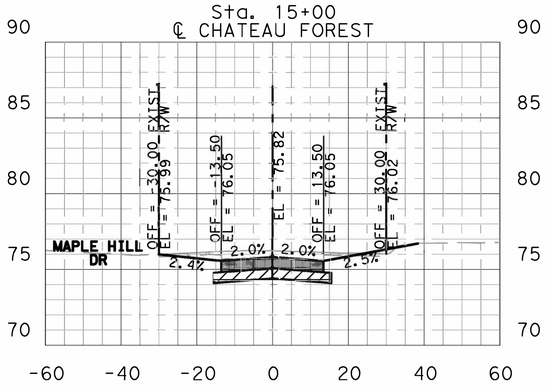
SCALE: 1"=20' HORIZ., 1"=4' VERT. (11X17)
SCALE: 1"=40' HORIZ., 1"=8' VERT. (22X34)

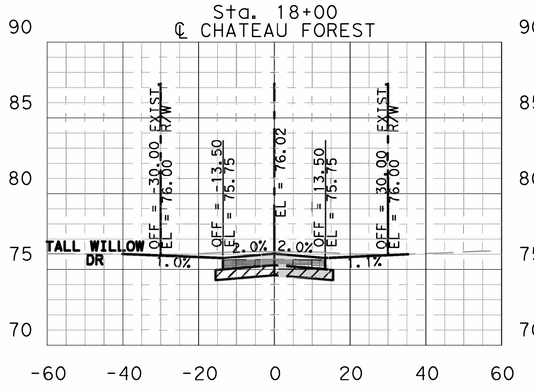


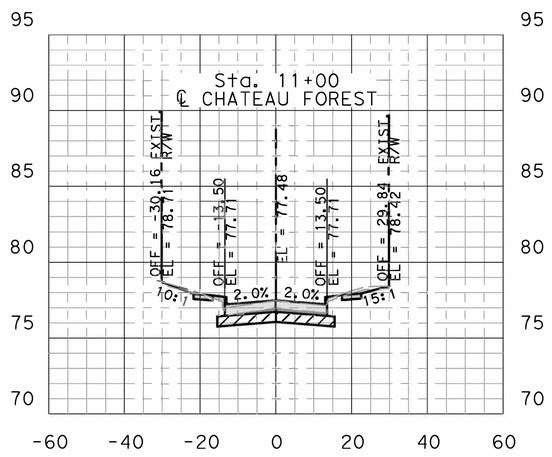


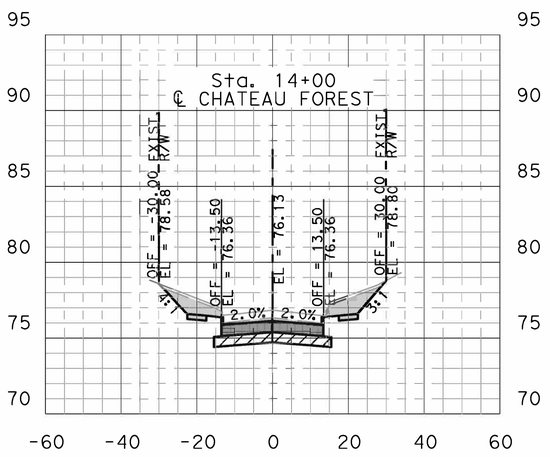


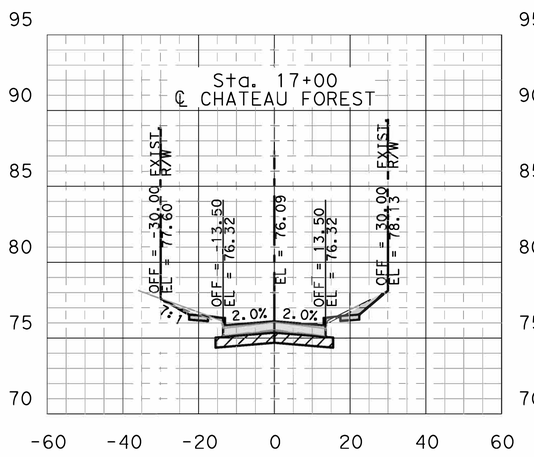












LEGEND

- PROP 9" REINFORCED CONCRETE PAVEMENT
- PROP 8" STABILIZED SUBGRADE

STATION	DISTANCE (FT)	CUT (SF) EA	CUT (SF) AVG-EA	FILL (SF) EA	FILL (SF) AVG-EA	CUT (CY)	FILL (CY)
10+00.00		5.44		4.24			
	100		6.63		2.77	24.57	10.25
11+00.00		7.83		1.29			
	100.00		12.51		1.67	46.32	6.20
12+00.00		17.18		2.05			
	100.00		27.35		1.05	101.29	3.90
13+00.00		37.51		0.05			
	100.00		43.86		0.03	162.44	0.10
14+00.00		50.21		0.00			
	100.00		35.30		0.00	130.75	0.00
15+00.00		20.40		0.00			
	100.00		28.81		0.12	106.71	0.43
16+00.00		37.23		0.23			
	100.00		24.00		0.62	88.91	2.30
17+00.00		10.78		1.01			
	100.00		12.31		0.50	45.59	1.86
18+00.00		13.83		0.00			
	100.00		23.62		0.28	87.50	1.04
19+00.00		33.42		0.56			
TOTAL THIS SHEET						794.08	15.84
TOTAL CHATEAU FOREST						2125.00	167.14
GRAND TOTAL						3012.80	428.90

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

CROSS SECTIONS CHATEAU FOREST DR

STA. 11+00 TO STA. 19+00

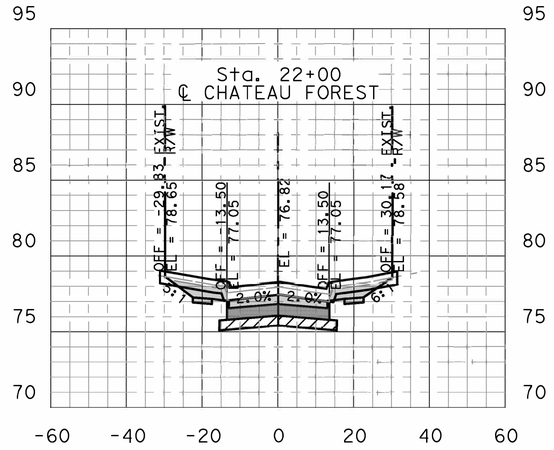
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
HORIZ.1"=40' VERT.1"=8	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 50 OF 158	

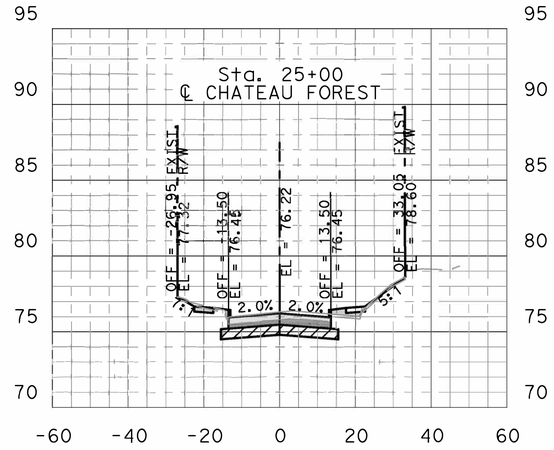
HOUSTON PUBLIC WORKS ACCEPTED AND FILED
81720 CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

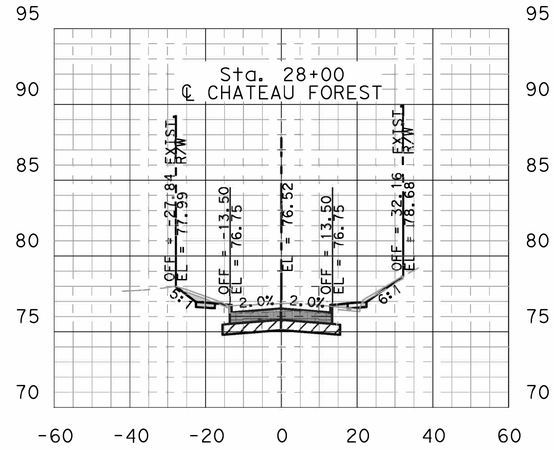
FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\Openroads\47_OR-COR.dgn
DATE:6/19/2025

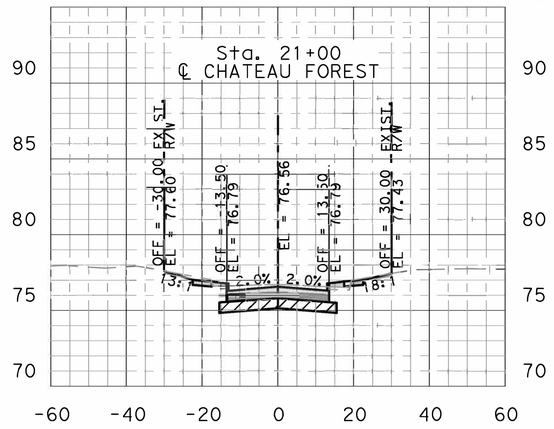
0 10 20 40

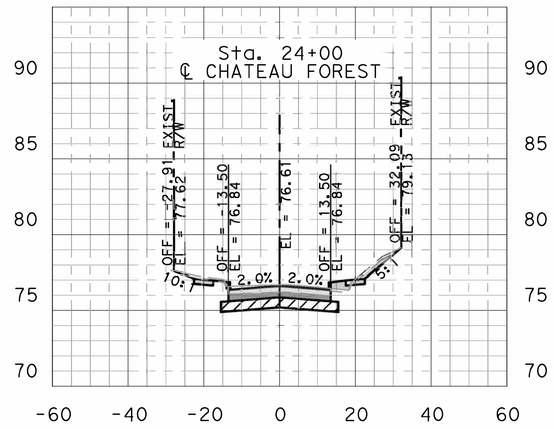
SCALE: 1"=20' HORIZ., 1"=4' VERT. (11X17)
SCALE: 1"=40' HORIZ., 1"=8' VERT. (22X34)

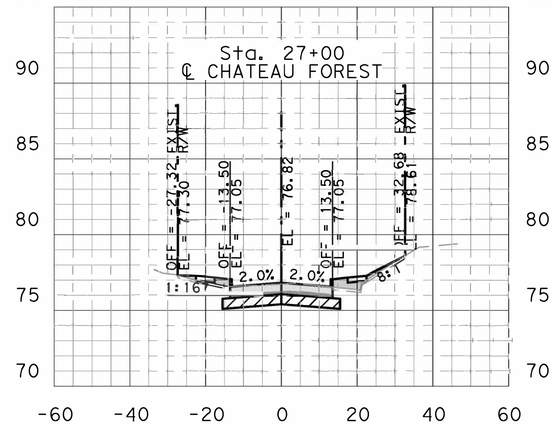


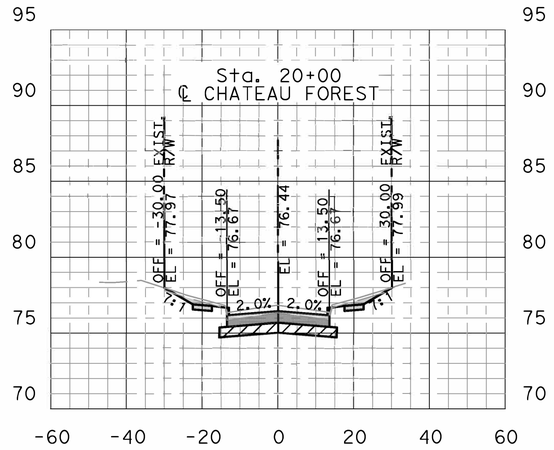


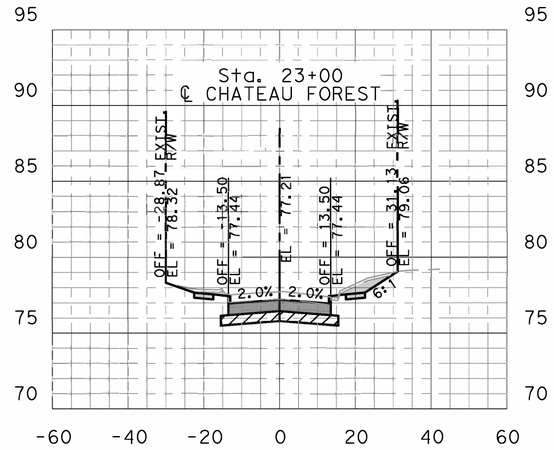


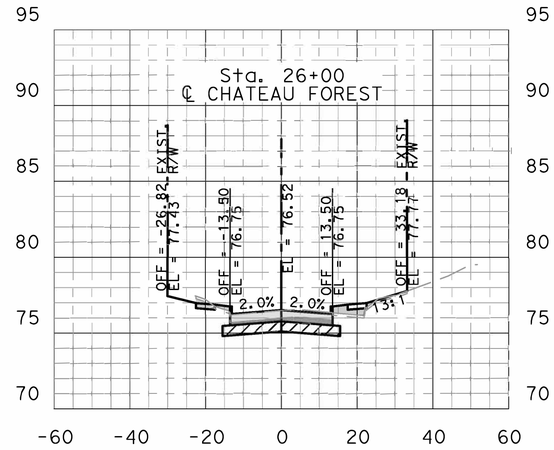












LEGEND

- PROP 9" REINFORCED CONCRETE PAVEMENT
- PROP 8" STABILIZED SUBGRADE

STATION	DISTANCE (FT)	CUT (SF) EA	CUT (SF) AVG-EA	FILL (SF) EA	FILL (SF) AVG-EA	CUT (CY)	FILL (CY)
19+00.00		33.42		0.56			
	100		27.75		0.35	102.78	1.30
20+00.00		22.09		0.14			
	100.00		18.75		1.20	69.46	4.43
21+00.00		15.42		2.26			
	100.00		36.35		1.13	134.64	4.18
22+00.00		57.28		0.00			
	100.00		44.26		0.13	163.92	0.46
23+00.00		31.23		0.25			
	100.00		23.35		1.39	86.48	5.16
24+00.00		15.47		2.53			
	100.00		13.68		2.66	50.65	9.85
25+00.00		11.88		2.78			
	100.00		10.61		3.90	39.31	14.46
26+00.00		9.35		5.02			
	100.00		7.74		6.66	28.68	24.65
27+00.00		6.14		8.29			
	100.00		14.15		4.62	52.39	17.11
28+00.00		22.15		0.95			
TOTAL THIS SHEET						728.31	81.60
TOTAL CHATEAU FOREST						2125.00	167.14
GRAND TOTAL						3012.80	428.90

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg #4575

SURVEYED BY: Kuo&Associates
FB NO. NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

CROSS SECTIONS CHATEAU FOREST DR

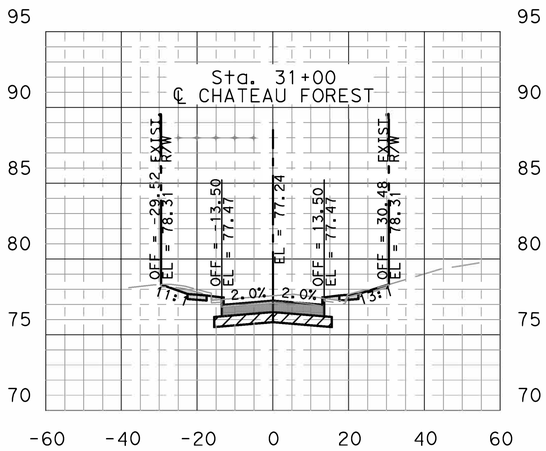
STA. 20+00 TO STA. 28+00

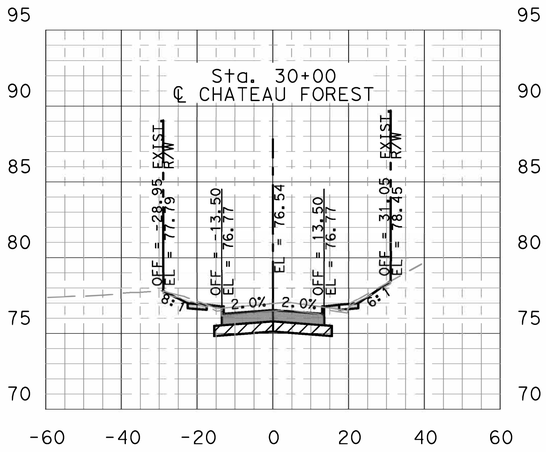
WBS NUMBER
M-410029-0001-4
DRAWING SCALE
HORIZ.1"=40' VERT.1"=8
CITY OF HOUSTON PM
DOAA HAMDAN, P.E.
SHEET NO. 51 OF 158

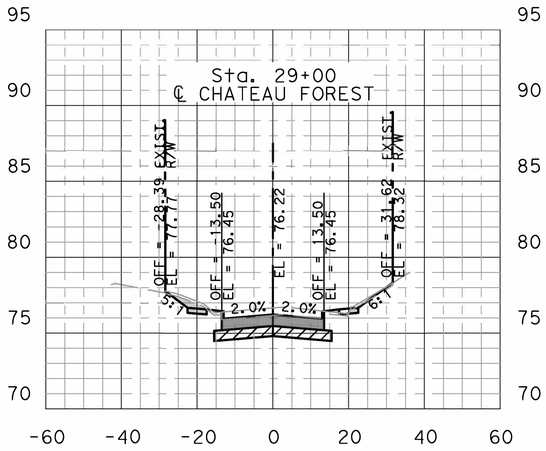
FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\Openroads\47_OR-COR.dgn
DATE:6/19/2025







0 10 20 40

SCALE: 1"=20' HORIZ., 1"=4' VERT. (11X17)
SCALE: 1"=40' HORIZ., 1"=8' VERT. (22X34)

LEGEND

- PROP 9" REINFORCED CONCRETE PAVEMENT
- PROP 8" STABILIZED SUBGRADE

STATION	DISTANCE (FT)	CUT (SF) EA	CUT (SF) AVG-EA	FILL (SF) EA	FILL (SF) AVG-EA	CUT (CY)	FILL (CY)
28+00.00		22.15		0.95			
	100		23.55		0.84	87.23	3.13
29+00.00		24.95		0.73			
	100.00		23.60		0.97	87.41	3.59
30+00.00		22.25		1.20			
	100.00		22.08		1.33	81.77	4.92
31+00.00		21.91		1.46			
TOTAL THIS SHEET						256.41	11.64
TOTAL CHATEAU FOREST						2125.00	167.14
GRAND TOTAL						3012.80	428.90

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg #4575

SURVEYED BY: Kuo&Associates
FB NO. NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

CROSS SECTIONS CHATEAU FOREST DR

STA. 29+00 TO STA. 31+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
HORIZ.1"=40' VERT.1"=8	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 52 OF 158	

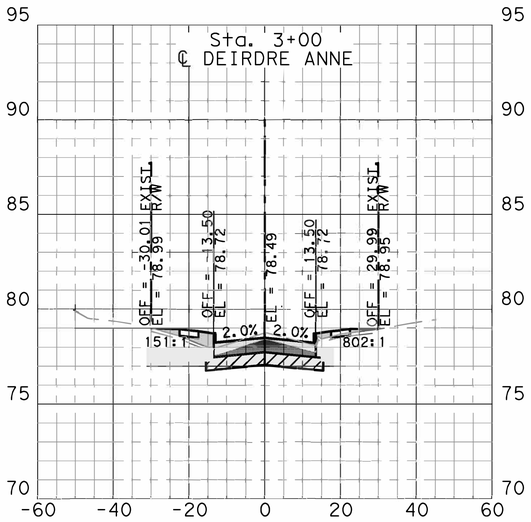
FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\Openroads\47_OR-COR.dgn
DATE:6/19/2025

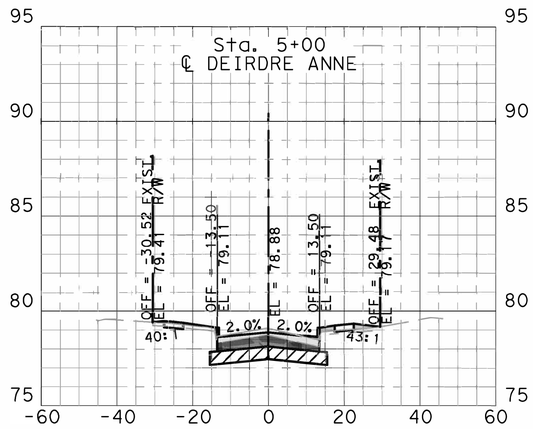
0 10 20 40

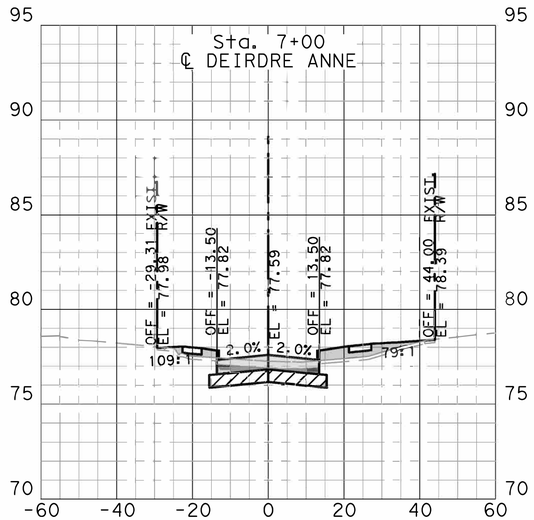
SCALE: 1"=20' HORIZ., 1"=4' VERT. (11X17)
SCALE: 1"=40' HORIZ., 1"=8' VERT. (22X34)

LEGEND

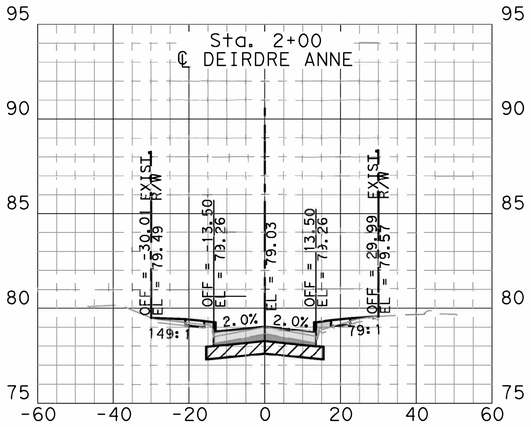
- PROP 9" REINFORCED CONCRETE PAVEMENT
- PROP 8" STABILIZED SUBGRADE

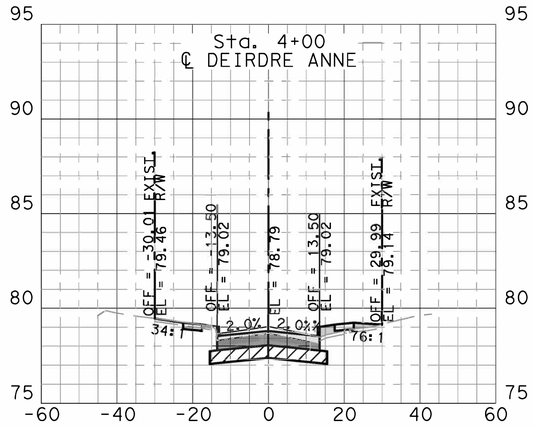


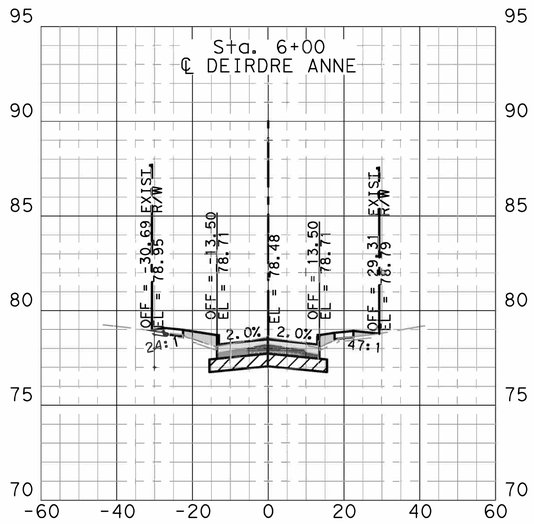




STATION	DISTANCE (FT)	CUT (SF) EA	CUT (SF) AVG-EA	FILL (SF) EA	FILL (SF) AVG-EA	CUT (CY)	FILL (CY)
2+00.00		8.96		4.63			
	100.00		11.60		6.64	42.98	24.59
3+00.00		14.25		8.65			
	100.00		16.61		6.69	61.53	24.76
4+00.00		18.98		4.72			
	100.00		17.61		4.25	65.23	15.75
5+00.00		16.25		3.78			
	100.00		14.79		6.85	54.77	25.38
6+00.00		13.33		9.92			
	100.00		10.65		13.29	39.44	49.23
7+00.00		7.97		16.66			
TOTAL THIS SHEET						263.95	139.71
TOTAL DEIRDRE ANNE						263.95	139.71
GRAND TOTAL						3012.80	428.90







ISANI
civil · design · engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg #4575

SURVEYED BY: Kuo&Associates
FB NO. NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

CROSS SECTIONS DEIRDRE ANNE DR

STA. 2+00.00 TO STA 7+00.00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
HORIZ.1"=40' VERT.1"=8	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 53 OF 158	

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

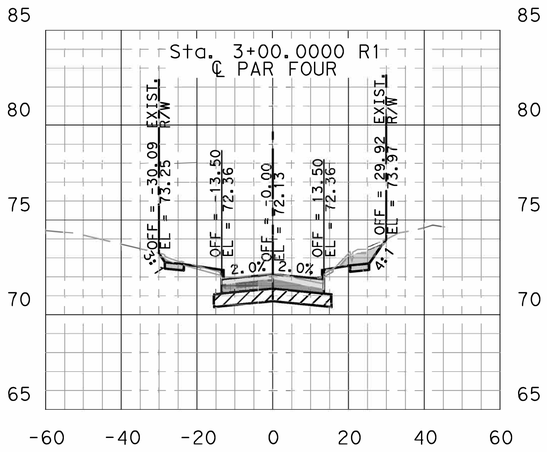
FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\Openroads\47_OR-COR.dgn
DATE:6/19/2025

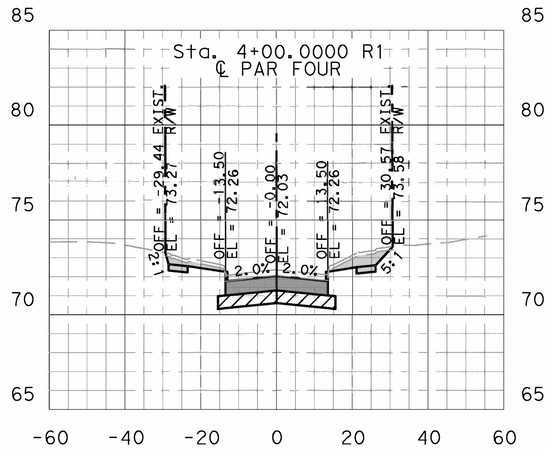
0 10 20 40

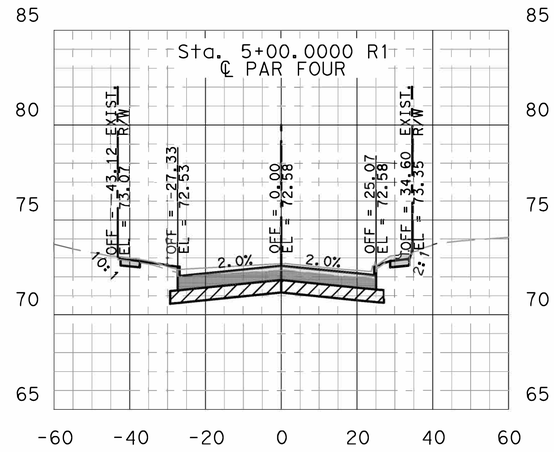
SCALE: 1"=20' HORIZ., 1"=4' VERT. (11X17)
SCALE: 1"=40' HORIZ., 1"=8' VERT. (22X34)

LEGEND

- PROP 9" REINFORCED CONCRETE PAVEMENT
- PROP 8" STABILIZED SUBGRADE







STATION	DISTANCE (FT)	CUT (SF) EA	CUT (SF) AVG-EA	FILL (SF) EA	FILL (SF) AVG-EA	CUT (CY)	FILL (CY)
3+00.00		24.76		0.94			
	100.00		33.90		0.47	125.55	1.75
4+00.00		43.04		0.00			
	100.00		43.04		0.24	159.42	0.87
5+00.00		43.05		0.47			
TOTAL THIS SHEET						284.98	2.62
TOTAL PAR FOUR						284.98	2.62
GRAND TOTAL						3012.80	428.90

ISANI
civil : design : engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

CROSS SECTIONS PAR FOUR DR

STA. 3+00.00 TO STA. 5+00.00

WBS NUMBER
M-410029-0001-4
DRAWING SCALE
HORIZ.1"=40' VERT.1"=8
CITY OF HOUSTON PM
DOAA HAMDAN, P.E.
SHEET NO. 54 OF 158

FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

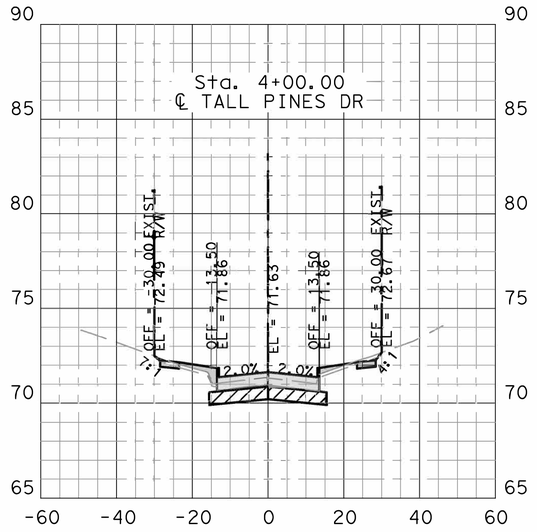
FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\Openroads\47_OR-COR.dgn
DATE:6/19/2025

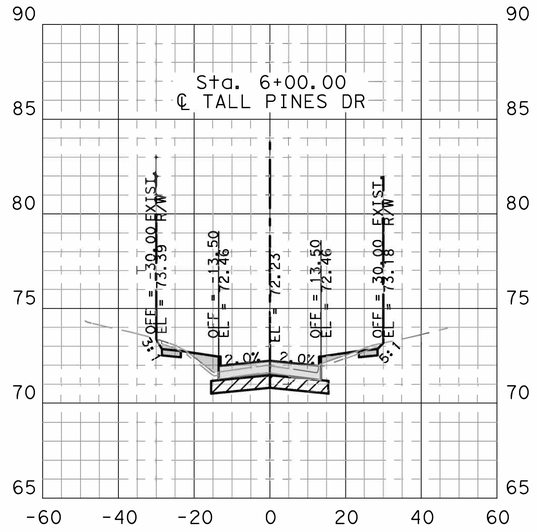
SCALE: 1"=20' HORIZ., 1"=4' VERT. (11X17)
SCALE: 1"=40' HORIZ., 1"=8' VERT. (22X34)

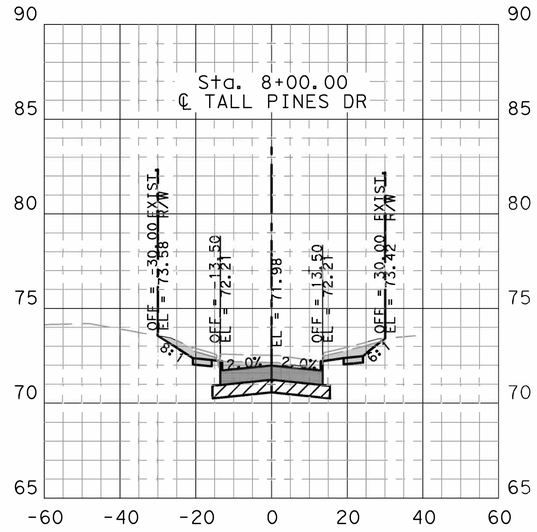
0 10 20 40

LEGEND

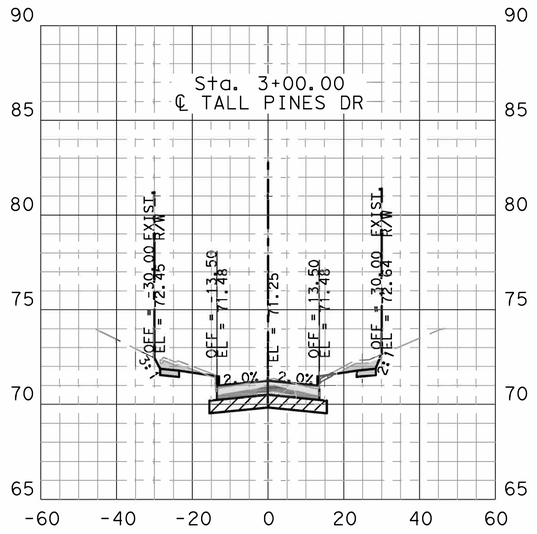
- PROP 9" REINFORCED CONCRETE PAVEMENT
- PROP 8" STABILIZED SUBGRADE

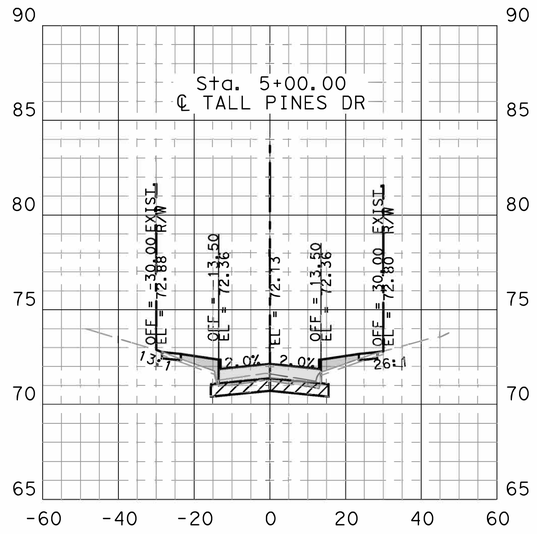


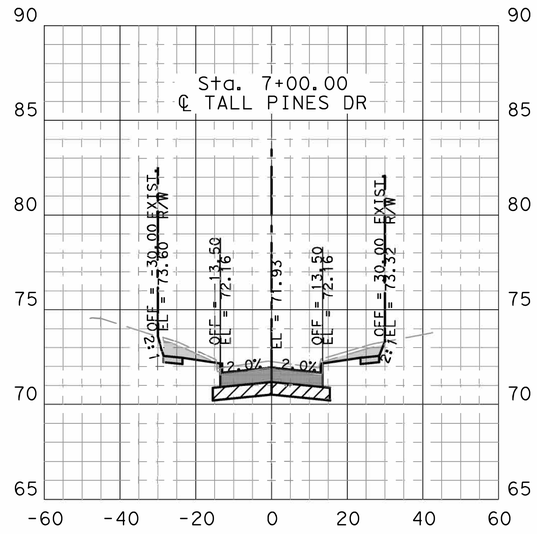




STATION	DISTANCE (FT)	CUT (SF) EA	CUT (SF) AVG-EA	FILL (SF) EA	FILL (SF) AVG-EA	CUT (CY)	FILL (CY)
3+00.00		23.63		0.65			
	100.00		14.61		3.23	54.10	11.95
4+00.00		5.58		5.80			
	100.00		3.10		12.05	11.50	44.64
5+00.00		0.63		18.30			
	100.00		4.26		12.91	15.78	47.82
6+00.00		7.89		7.53			
	100.00		24.30		3.91	90.01	14.48
7+00.00		40.71		0.29			
	100.00		45.22		0.15	167.49	0.54
8+00.00		49.73		0.00			
TOTAL THIS SHEET						338.88	119.43
TOTAL TALL PINES						338.88	119.43
GRAND TOTAL						3012.80	428.90







ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg #4575

SURVEYED BY: Kuo&Associates
FB NO. NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

CROSS SECTIONS TALL PINES DR

STA. 3+00.00 TO STA. 8+00.00

WBS NUMBER
M-410029-0001-
DRAWING SCALE
HORIZ.1"=40' VERT.1"=8
CITY OF HOUSTON PM
DOAA HAMDAN, P.E.
SHEET NO. 55 OF 158

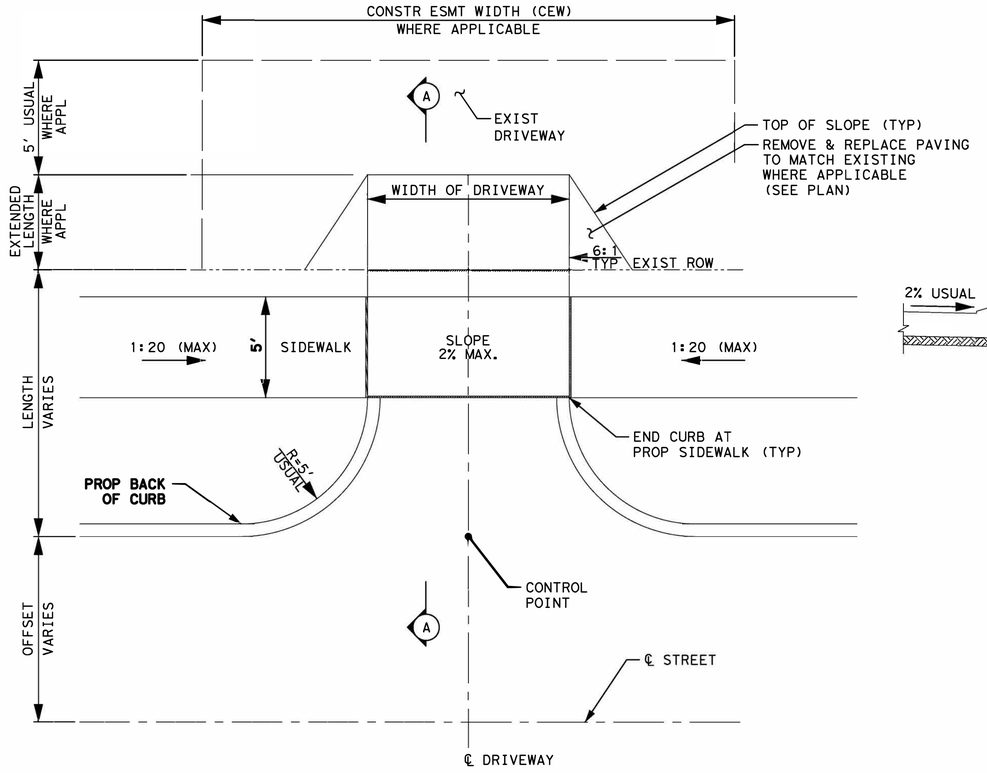
FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

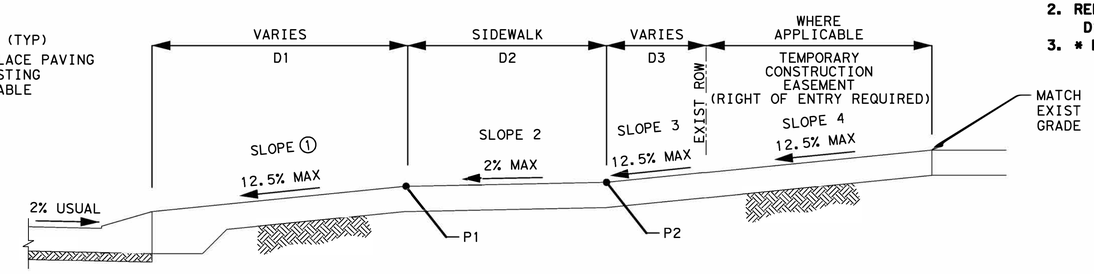
FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\Openroads\47_OR-COR.dgn
DATE:6/19/2025

DEIRDRE ANNE DRIVE

DRIVEWAY NO.	DWY TYPE: ASPHALT	DWY TYPE: CONCRETE	DWY TYPE: DECORATIVE	DWY TYPE: COMMERCIAL	DWY TYPE: RESIDENTIAL	STA	OFFSET	DRIVEWAY WIDTH	DRIVEWAY LENGTH	CURB RETURN RADIUS: EAST	CURB RETURN RADIUS: WEST	DRIVEWAY AREA	ELEVATION AT GUTTER	ELEV AT CURB/CL	ELEV AT ROW	DELTA ELEV	OVERALL SLOPE	SIDEWALK: SLOPE S1	SIDEWALK: DISTANCE D1	SIDEWALK: ELEV P1	SIDEWALK: SLOPE S2	SIDEWALK: DISTANCE D2	SIDEWALK: ELEV P2	SIDEWALK: DISTANCE D3	SIDEWALK: SLOPE S3	CONSTRUCTION EASEMENT: DISTANCE (ROW TO EASEMENT)	CONSTRUCTION EASEMENT: ELEVATION (AT EASEMENT)	CONSTRUCTION EASEMENT: SLOPE S4 &
								FT	FT	FT	FT	SF	FT	FT	FT	FT	%	%	FT	FT	%	FT	FT	FT	%	FT	FT	
1					X	1+83.90	13.0' LT	17.6	17	5.0	5.0	309.8	78.80	79.30	79.56	0.76	-	5.5%	3	78.97	2.0%	5	79.07	9.0	5.5%			
2					X	2+42.54	13.0' LT	18.0	17	5.0	5.0	316.6	78.47	78.97	79.18	0.71	-	5.5%	7.5	78.88	2.0%	5	78.98	4.5	4.5%			
3					X	2+88.01	13.0' RT	17.6	17	5.0	5.0	309.8	78.20	78.70	79.11	0.91	-	5.5%	4.5	78.45	2.0%	5	78.55	7.5	7.5%			
4					X	3+02.06	13.0' LT	17.6	17	5.0	5.0	309.8	78.24	78.74	79.00	0.76	-	5.5%	4.5	78.49	2.0%	5	78.59	7.5	5.4%			
5					X	3+49.91	13.0' RT	18	17	5.0	5.0	316.6	78.38	78.88	79.14	0.76	-	5.5%	7.5	78.79	2.0%	5	78.89	4.5	5.5%			
6					X	3+64.18	13.0' LT	17.4	17	5.0	5.0	306.4	78.43	78.93	79.37	0.94	-	5.5%	4.5	78.68	2.0%	5	78.78	7.5	7.9%			
7					X	4+05.07	13.0' RT	16.8	17	5.0	5.0	296.2	78.55	79.05	79.17	0.62	-	5.5%	4.5	78.80	2.0%	5	78.90	4.9	5.5%			
8					X	4+23.30	13.0' LT	17.6	17	5.0	5.0	309.8	78.60	79.10	79.39	0.79	-	5.5%	4.5	78.85	2.0%	5	78.95	7.5	5.9%			
9					X	4+69.55	13.0' RT	17.9	11.4	5.0	5.0	214.7	78.74	79.24	79.26	0.52	-	4.0%	4.5	78.92	2.0%	5	79.02	7.1	3.3%			
10					X	4+76.42	13.0' LT	17.7	17.8	5.0	5.0	325.7	78.71	79.21	79.48	0.77	-	4.0%	9.5	79.09	2.0%	5	79.19	3.3	8.7%			
11					X	5+31.35	13.0' RT	17.4	16.4	5.0	5.0	296.0	78.50	79.00	79.08	0.58	-	4.0%	4.5	78.68	2.0%	5	78.78	7.0	4.3%			
12					X	5+32.91	13.0' LT	17.1	17.6	5.0	5.0	311.6	78.50	79.00	79.33	0.83	-	5.5%	9.5	79.02	2.0%	5	79.12	3.1	6.6%			
13					X	5+91.15	13.0' RT	17.6	16.3	5.0	5.0	297.5	78.28	78.78	78.79	0.51	-	4.0%	4.5	78.46	2.0%	5	78.56	6.8	3.4%			
14					X	5+92.71	13.0' LT	17.3	17.7	5.0	5.0	316.8	78.27	78.77	79.00	0.73	-	4.0%	9.5	78.65	2.0%	5	78.75	3.2	7.8%			
15					X	6+46.10	13.0' RT	17.4	16.2	5.0	5.0	292.5	78.01	78.51	78.46	0.45	-	3.0%	4.5	78.15	2.0%	5	78.25	6.7	3.2%			
16					X	6+47.80	13.0' LT	17.5	17.8	5.0	5.0	322.1	78.00	78.50	78.69	0.69	-	5.5%	4.5	78.25	2.0%	5	78.35	8.3	4.1%			
17					X	6+89.89	29.25' RT	18.52	19.84	5.0	5.0	378.0	77.65	78.15	78.43	0.78	-	5.5%	4.5	77.90	2.0%	5	78.00	18.3	4.3%			
18					X	7+17.16	52.94' RT	26.46	13.65	5.0	5.0	371.8	77.30	77.80	78.14	0.84	-	7.0%	3	77.51	2.0%	5	77.61	5.7	9.4%			
19					X	7+46.68	25.59' RT	18.17	19.18	5.0	5.0	359.1	76.92	77.42	78.02	1.10	-	12.5%	2	77.17	2.0%	5	77.27	12.2	6.2%			



TYPICAL CONCRETE DRIVEWAY DETAIL W/SIDEWALK
N.T.S.



TYPICAL CONCRETE DRIVEWAY SECTION W/SIDEWALK
(SECTION A-A)
N.T.S.

NOTES:

1. REFER TO CITY OF HOUSTON DRIVEWAY DETAIL STANDARD DWG NO: 02754-01B.
2. REFER TO DRIVEWAY TABLE FOR DETAILS ON D1, D2, D3, P1, P2, S2, S3, AND S3.
3. * MATCH DRIVEWAY ELEVATIONS AT SAWCUT LINE.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS — V. N. MURTHY MADE — 134936 — LICENSED PROFESSIONAL ENGINEER — 6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

DRIVEWAY TABLE AND LAYOUT

SHEET 1 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 56 OF 158	

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Driveway Summary Table\47_DWY-SUM_Chateau.dgn
DATE:6/19/2025

CHATEAU FOREST DRIVE

DRIVEWAY NO.	DWY TYPE: ASPHALT	DWY TYPE: CONCRETE	DWY TYPE: DECORATIVE	DWY TYPE: COMMERCIAL	DWY TYPE: RESIDENTIAL	STA	OFFSET	DRIVEWAY WIDTH	DRIVEWAY LENGTH	CURB RETURN RADIUS: NORTH	CURB RETURN RADIUS: SOUTH	DRIVEWAY AREA	ELEVATION AT GUTTER	ELEV AT CURB/CL	ELEV AT ROW	DELTA ELEV	OVERALL SLOPE	SIDEWALK: SLOPE	SIDEWALK: DISTANCE	SIDEWALK: ELEV	SIDEWALK: SIDEWALK SLOPE	SIDEWALK: SIDEWALK DISTANCE	SIDEWALK: ELEV	SIDEWALK: DISTANCE	SIDEWALK: SLOPE	CONSTRUCTION EASEMENT: DISTANCE (ROW TO EASEMENT)	CONSTRUCTION EASEMENT: ELEVATION (AT EASEMENT)	CONSTRUCTION EASEMENT: SLOPE
																		S1	D1	P1	S2	D2	P2	D3	S3			S4
								FT	FT	FT	FT	SF	FT	FT	FT	FT	%	%	FT	FT	%	FT	FT	FT	%	FT	FT	&
24					X	19+03.10	13.0' RT	15.6	17.0	5.0	5.0	275.8	76.61	77.11	78.4	1.79	-	12.50%	4.5	77.17	2.00%	5.0	77.27	7.5	15.03%			
25				X		22+81.60	13.0' LT	27.3	16.1	12.0	12.0	450.1	76.89	77.39	78.47	1.58	-	12.50%	4.5	77.45	2.00%	5.0	77.55	6.5	14.12%			
26				X		25+23.23	13.0' LT	27.6	13.7	10.0	10.0	388.7	76.03	76.53	77.35	1.32	-	12.50%	4.5	76.59	2.00%	5.0	76.69	4.2	15.57%			
27				X		25+65.90	13.0' RT	24.7	20.3	10.0	10.0	512.0	76.66	77.16	77.05	0.39	-	1.00%	4.5	76.71	2.00%	5.0	76.81	10.8	2.27%			
28				X		26+85.66	13.0' LT	34.3	14.5	12.0	12.0	508.0	76.52	77.02	77.23	0.71	-	5.50%	4.5	76.77	2.00%	5.0	76.87	4.7	7.71%			
29				X		28+04.84	13.0' LT	29.6	15.1	10.0	10.0	457.6	76.25	76.75	78.01	1.76	-	12.50%	4.5	76.81	2.00%	5.0	76.91	5.4	20.32%	2.7	77.92	12.50%
30				X		28+91.67	13.0' LT	22.9	15.5	10.0	10.0	365.6	75.99	76.49	77.67	1.68	-	12.50%	4.5	76.55	2.00%	5.0	76.65	5.8	17.54%	3.43	77.81	12.50%
31				X		29+96.13	13.0' LT	30.0	16.1	10.0	10.0	493.6	76.15	76.65	77.70	1.55	-	12.50%	4.5	76.71	2.00%	5.0	76.81	6.4	13.87%	0.68	77.7	12.50%
32				X		31+35.80	13.0' RT	28.6	17.3	12.0	12.0	505.4	77.37	77.87	78.11	0.74	-	5.50%	4.5	77.62	2.00%	5.0	77.72	7.77	5.07%			

TALL PINES DRIVE

DRIVEWAY NO.	DWY TYPE: ASPHALT	DWY TYPE: CONCRETE	DWY TYPE: DECORATIVE	DWY TYPE: COMMERCIAL	DWY TYPE: RESIDENTIAL	STA	OFFSET	DRIVEWAY WIDTH	DRIVEWAY LENGTH	CURB RETURN RADIUS: EAST	CURB RETURN RADIUS: WEST	DRIVEWAY AREA	ELEVATION AT GUTTER	ELEV AT CURB/CL	ELEV AT ROW	DELTA ELEV	OVERALL SLOPE	SIDEWALK: SLOPE	SIDEWALK: DISTANCE	SIDEWALK: ELEV	SIDEWALK: SIDEWALK SLOPE	SIDEWALK: SIDEWALK DISTANCE	SIDEWALK: ELEV	SIDEWALK: DISTANCE	SIDEWALK: SLOPE	CONSTRUCTION EASEMENT: DISTANCE (ROW TO EASEMENT)	CONSTRUCTION EASEMENT: ELEVATION (AT EASEMENT)	CONSTRUCTION EASEMENT: SLOPE
																		S1	D1	P1	S2	D2	P2	D3	S3			S4
								FT	FT	FT	FT	SF	FT	FT	FT	FT	%	%	FT	FT	%	FT	FT	FT	%	FT	FT	&
33					X	3+61.31	13.0' LT	12.0	17.0	5	5	214.6	71.25	71.75	72.45	1.20	-	9.0%	10.0	72.15	2%	5	72.25	1.7	11.64%			
34					X	3+82.21	13.0' RT	17.8	17.0	5	5	312.7	71.33	71.83	72.69	1.36	-	10.0%	9.3	72.26	2%	5	72.36	2.74	12.37%			
35					X	3+90.72	13.0' LT	17.2	17.0	5	5	303.0	71.35	71.85	72.47	1.12	-	8.0%	10.3	72.18	2%	5	72.28	1.68	11.50%			
36					X	4+56.03	13.0' LT	17.5	17.0	5	5	308.8	71.55	72.05	72.59	1.04	-	8.0%	10.8	72.41	2%	5	72.51	1.21	6.23%			
37					X	4+78.84	13.0' RT	16.9	17.0	5	5	297.2	71.62	72.12	72.74	1.12	-	8.0%	8.7	72.32	2%	5	72.42	3.3	9.80%			
38					X	5+17.37	13.0' RT	12.0	17.0	5	5	214.6	71.74	72.24	72.86	1.12	-	8.0%	9.1	72.47	2%	5	72.57	2.89	10.22%			
39					X	5+98.27	13.0' LT	12.0	17.0	5	5	214.6	71.97	72.47	73.38	1.41	-	10.7%	10.5	73.09	2%	5	73.19	1.5	12.50%			
40					X	6+22.51	13.0' RT	12.0	17.0	5	5	214.6	71.93	72.43	73.38	1.45	-	11.0%	9.1	72.93	2%	5	73.03	2.88	11.91%			
41					X	6+22.96	13.0' LT	12.0	17.0	5	5	214.6	71.94	72.44	73.50	1.56	-	12.5%	10.5	73.25	2%	5	73.35	1.5	9.85%			
42					X	6+51.25	13.0' RT	16.7	17.0	5	5	294.8	71.85	72.35	73.14	1.29	-	10.0%	9.1	72.76	2%	5	72.86	2.87	9.65%			
43					X	7+09.17	13.0' RT	12.0	17.0	5	5	214.6	71.67	72.17	73.46	1.79	-	12.5%	9.1	72.81	2%	5	72.91	2.86	-	2.90	73.63	12.50%
44					X	7+18.24	13.0' LT	12.0	17.0	5	5	214.6	71.65	72.15	73.62	1.97	-	12.5%	10.5	72.96	2%	5	73.06	1.5	-	5.30	73.91	12.50%
45					X	8+44.89	13.0' LT	12.0	16.9	5	5	213.0	72.05	72.55	73.61	1.56	-	12.5%	10.1	73.31	2%	5	73.41	1.79	11%			
46					X	8+51.12	13.0' RT	16.8	13.1	5	5	231.1	72.07	72.57	73.33	1.26	-	12.5%	2.5	72.39	2%	5	72.49	3.67	-	1.64	73.40	12.50%
47					X	8+81.03	13.0' LT	12.0	9.8	5	5	128.3	72.38	72.88	73.23	0.85	-	12.5%	3.0	72.76	2%	5	72.86	1.8	-	1.70	73.29	12.50%
48					X	9+02.64	13.0' LT	12.0	10.7	5	5	139.2	72.54	73.04	73.26	0.72	-	12.5%	3.0	72.92	2%	5	73.02	2.7	9%	-	-	-
49					X	9+11.70	13.0' RT	17.2	10.7	5	5	194.2	72.55	73.05	73.58	1.03	-	12.5%	3.0	72.93	2%	5	73.03	2.7	-	2.80	73.72	12.50%
50					X	9+33.39	13.0' LT	12.0	10.6	5	5	137.8	72.80	73.30	73.43	0.63	-	10.0%	3.0	73.10	2%	5	73.20	2.62	9%	-	-	-

NOTES:

1. REFER TO CITY OF HOUSTON DRIVEWAY DETAIL STANDARD DWG NO: 02754-01B.
2. REFER TO DRIVEWAY LAYOUT DETAILS (SHEET 101 - SHEET 102)

ISANI
civil · design · engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS · V. N. MURTHY MADE · 134936 · LICENSED PROFESSIONAL ENGINEER
6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

DRIVEWAY TABLE

SHEET 2 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 57 OF 158	

HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Driveway Summary Table\47_DWY-SUM_Chateau.dgn
DATE:6/19/2025

PAR FOUR DRIVE																														
	DWY TYPE															SIDEWALK									CONSTRUCTION EASEMENT					
DRIVEWAY NO.	ASPHALT	CONCRETE	DECORATIVE	COMMERCIAL	RESIDENTIAL	STA	OFFSET	DRIVEWAY WIDTH	DRIVEWAY LENGTH	CURB RETURN RADIUS		DRIVEWAY AREA	ELEVATION AT GUTTER	ELEV AT CURB/CL	ELEV AT ROW	DELTA ELEV	OVERALL SLOPE	SLOPE	DISTANCE	ELEV	SIDEWALK SLOPE	SIDEWALK DISTANCE	ELEV	DISTANCE	SLOPE	DISTANCE (ROW TO EASEMENT)	ELEVATION (AT EASEMENT)	SLOPE		
										EAST	WEST							S1	D1	P1	S2	D2	P2	D3	S3			S4		
								FT	FT	FT	FT	SF	FT	FT	FT	FT	%	%	FT	FT	%	FT	FT	FT	%	FT	FT	&		
51					X	2+36.89	13.0' LT	15.8	16.5	5	5	271.3	71.63	72.13	73.30	1.67	-	12.5%	10.5	72.94	2%	5	73.04	1.1	-	2	73.38	12.50%		
52					X	3+20.41	13.0' RT	17.3	16.7	5	5	299.5	71.88	72.38	73.85	1.97	-	12.5%	7.6	72.83	2%	5	72.93	4.2	22.17%	-	-	-		
53					X	3+22.74	13.0' LT	16.3	17.3	5	5	292.6	71.88	72.38	73.34	1.46	-	11.0%	10.5	73.04	2%	5	73.14	1.8	11.52%	-	-	-		
54					X	3+53.72	13.0' RT	17.7	17.0	5	5	311.5	71.86	72.36	73.76	1.90	-	12.5%	7.4	72.79	2%	5	72.89	4.6	19.04%	-	-	-		
55					X	4+18.01	13.0' LT	17.0	16.2	5	5	286.0	71.68	72.18	73.15	1.47	-	12.5%	10.5	72.99	2%	5	73.09	0.7	8.21%	-	-	-		
56					X	4+43.86	13.8' LT	12.0	15.9	5	5	201.4	71.35	71.85	73.30	1.95	-	12.0%	10.8	72.65	2%	5	72.75	0.1	-	5	73.4	13.63%		
57					X	4+70.26	19.4' LT	14.0	16.2	5	5	237.4	71.61	72.11	73.00	1.39	-	11.5%	10.0	72.76	2%	5	72.86	1.2	11.33%	-	-	-		
58					X	4+97.78	26.3' LT	16.0	16.2	5	5	269.8	71.89	72.39	73.03	1.14	-	9.0%	10.0	72.79	2%	5	72.89	1.2	12.17%	-	-	-		
59					X	5+61.20	37.2' RT	12.0	12.5	5	5	160.6	72.61	73.11	73.44	0.83	-	12.5%	3.0	72.99	2%	5	73.09	4.6	7.89%	-	-	-		
60					X	5+81.61	38.5' RT	14.8	12.7	5	5	198.6	72.57	73.07	73.43	0.86	-	10.0%	5.2	73.09	2%	5	73.19	2.4	10.34%	-	-	-		
61					X	5+84.28	38.5' LT	12.0	14.3	5	5	182.2	73.05	73.55	73.39	0.34	-	2.0%	5.0	73.15	2%	5	73.25	4.3	3.22%	-	-	-		

NOTES:

1. REFER TO CITY OF HOUSTON DRIVEWAY DETAIL STANDARD DWG NO: 02754-01B.
2. REFER TO DRIVEWAY LAYOUT DETAILS (SHEET 101 - SHEET 102)

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

DRIVEWAY TABLE

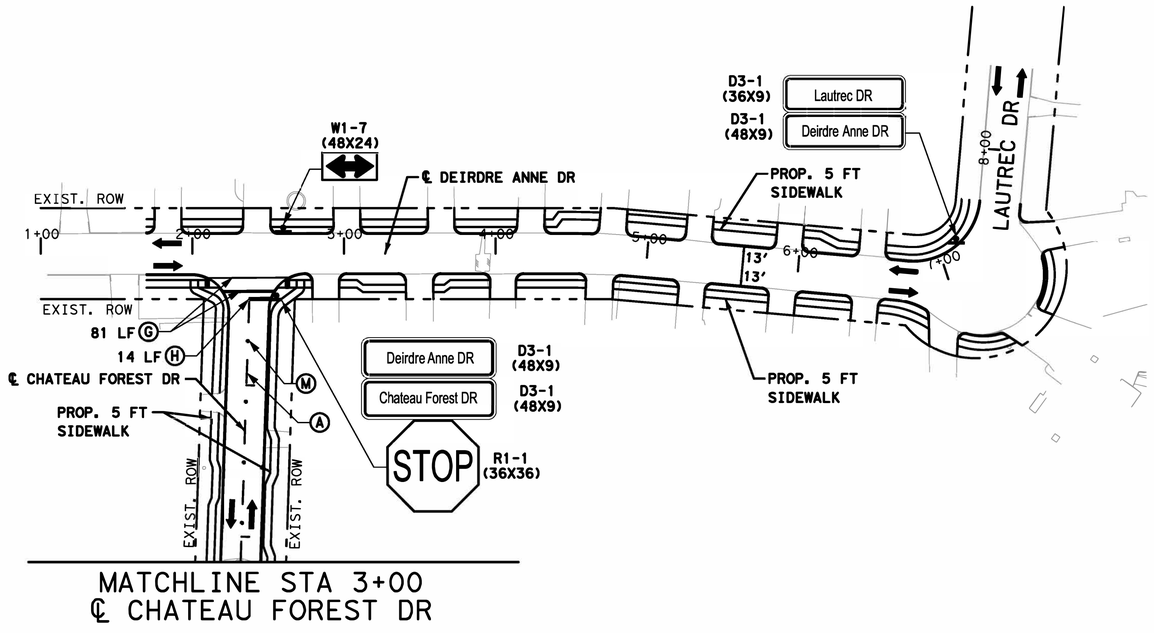
SHEET 3 OF 3

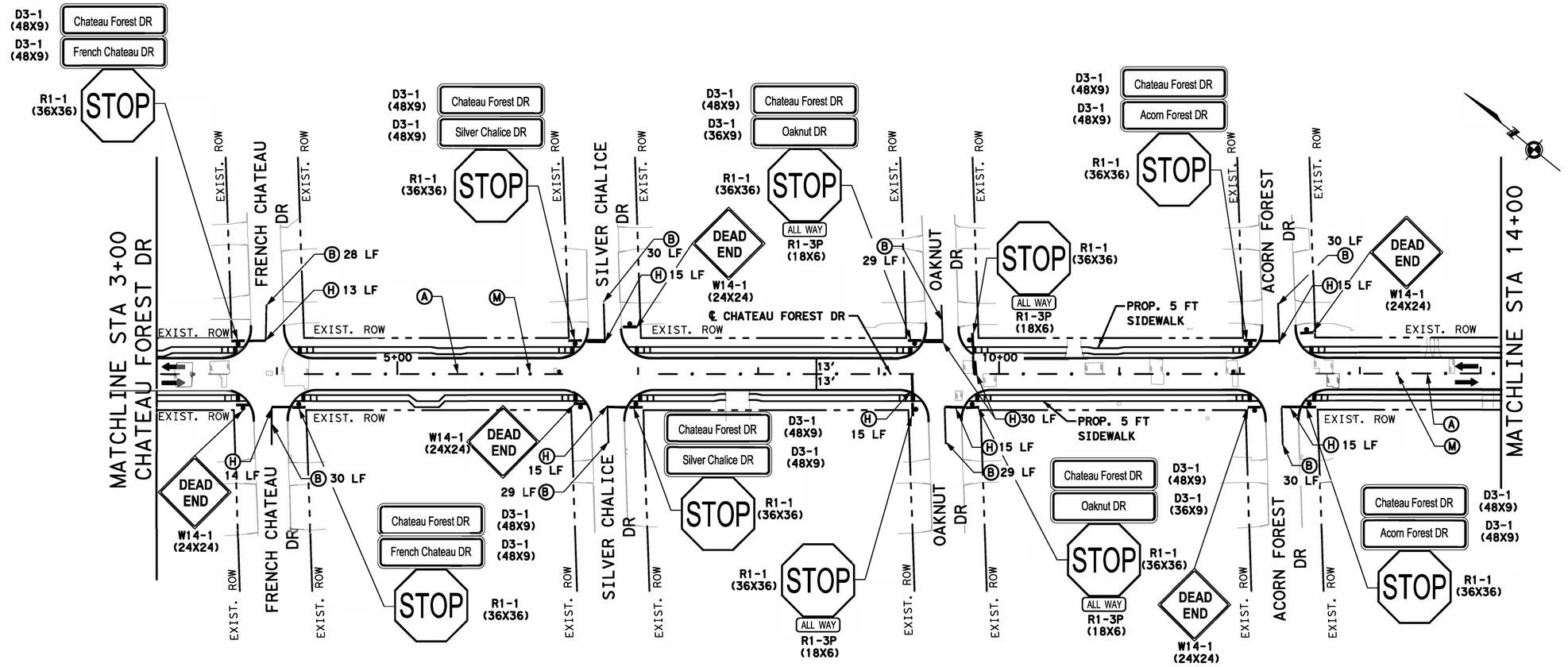
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 58 OF 158	

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Driveway Summary Table\47_DWY-SUM_Chateau.dgn
DATE:6/19/2025

NOTES:

1. PAVEMENT MARKINGS AND SIGNING SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF HOUSTON (COH) TRAFFIC MANAGEMENT AND MAINTAINANCE DIVISION'S PAVEMENT MARKINGS AND SIGNING DETAILS (3700 SERIES), TMUTCD STANDARDS AND SPECIFICATIONS.
2. PERMANENT PAVEMENT MARKINGS SHALL BE THERMOPLASTIC MATERIAL PER THE CITY OF HOUSTON SPECIFICATIONS.
3. SEE CITY OF HOUSTON STANDARDS PMD-2 THRU PMD-7 FOR TYPICAL DIMENSIONS AND DETAILS.





50 0 25 50 100

SCALE: 1" = 50'-0" FEET FOR 22"X34" SHEET

LEGEND:

- (A) REFL PAV MRK 4" DASHED YELLOW (TYPE I)
- (B) REFL PAV MRK 4" SOLID YELLOW (TYPE I)
- (C) REFL PAV MRK 4" DOUBLE SOLID YELLOW (TYPE I)
- (D) REFL PAV MRK 4" DASHED WHITE (TYPE I)
- (E) REFL PAV MRK 4" SOLID WHITE (TYPE I)
- (F) REFL PAV MRK 8" SOLID WHITE (TYPE I)
- (G) REFL PAV MRK 12" SOLID WHITE (TYPE I)
- (H) REFL PAV MRK 24" SOLID WHITE (TYPE I)
- (I) NON-REFLECTORIZED WHITE RAISED TRAFFIC BUTTONS ● 10' C-C
- (J) 4" SQ 2-WAY REFL YELLOW RAISED PAV MRK (TYPE II AA) 12" C-C
- (K) REFL PAV MRK WHITE (ARROW) (TYPE I)
- (L) REFL PAV MRK WHITE (ONLY) (TYPE I)
- (M) 4" SQ 2-WAY REFL YELLOW RAISED PAV MRK (TYPE A) ● 40' C-C
- (N) 4" SQ 2-WAY REFL YELLOW RAISED PAV MRK (TYPE A) ● 10' C-C
- (O) 4" SQ 2-WAY REFL WHITE RAISED PAV MRK (TYPE A) ● 20' C-C
- (P) 4" SQ 1-WAY REFLECTORIZED WHITE RAISED PAVEMENT MARKERS TYPE (1-C) ● 10' C-C

● PROPOSED SIGN

➡ DIRECTION OF TRAVEL

ISANI
civil . design . engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS · V. N. MURTHY MADE · 134936 · LICENSED PROFESSIONAL ENGINEER · 6/19/2025

CITY OF HOUSTON

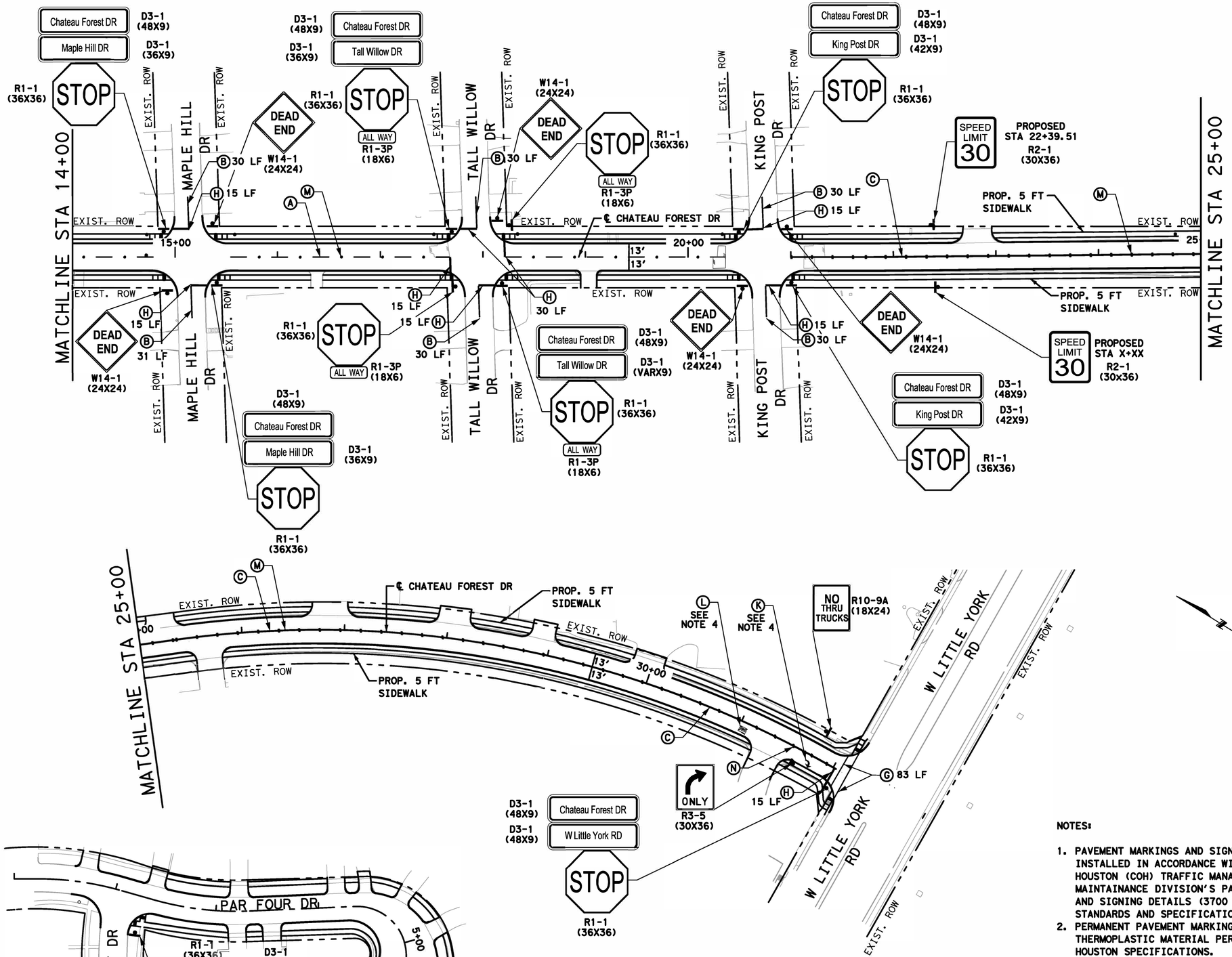
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

SIGNAGE & PAVEMENT MARKING
DEIRDRE ANNE DR
CHATEAU FOREST DRIVE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/30/25 HOUSTON TX
DRAWING SCALE	
1"=50'	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 59 OF 158	

FILE:P:\ACTIVE\21DR47\WorkingDrawings (02 New Design)\xrefs MicroStation\Sheets\Signing and Pavement Marking\47_SPM -01.dgn
DATE:6/19/2025



50 0 25 50 100

SCALE: 1" = 50'-0" FEET FOR 22"X34" SHEET

LEGEND:

- (A) REFL PAV MRK 4" DASHED YELLOW (TYPE I)
- (B) REFL PAV MRK 4" SOLID YELLOW (TYPE I)
- (C) REFL PAV MRK 4" DOUBLE SOLID YELLOW (TYPE I)
- (D) REFL PAV MRK 4" DASHED WHITE (TYPE I)
- (E) REFL PAV MRK 4" SOLID WHITE (TYPE I)
- (F) REFL PAV MRK 8" SOLID WHITE (TYPE I)
- (G) REFL PAV MRK 12" SOLID WHITE (TYPE I)
- (H) REFL PAV MRK 24" SOLID WHITE (TYPE I)
- (I) NON-REFLECTORIZED WHITE RAISED TRAFFIC BUTTONS ● 10' C-C
- (J) 4" SQ 2-WAY REFL YELLOW RAISED PAV MRK (TYPE II AA) 12" C-C
- (K) REFL PAV MRK WHITE (ARROW) (TYPE I)
- (L) REFL PAV MRK WHITE (ONLY) (TYPE I)
- (M) 4" SQ 2-WAY REFL YELLOW RAISED PAV MRK (TYPE A) ● 40' C-C
- (N) 4" SQ 2-WAY REFL YELLOW RAISED PAV MRK (TYPE A) ● 10' C-C
- (O) 4" SQ 2-WAY REFL WHITE RAISED PAV MRK (TYPE A) ● 20' C-C
- (P) 4" SQ 1-WAY REFLECTORIZED WHITE RAISED PAVEMENT MARKERS TYPE (1-C) ● 10' C-C
- PROPOSED SIGN
- DIRECTION OF TRAVEL

NOTES:

1. PAVEMENT MARKINGS AND SIGNING SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF HOUSTON (COH) TRAFFIC MANAGEMENT AND MAINTAINANCE DIVISION'S PAVEMENT MARKINGS AND SIGNING DETAILS (3700 SERIES), TMUTCD STANDARDS AND SPECIFICATIONS.
2. PERMANENT PAVEMENT MARKINGS SHALL BE THERMOPLASTIC MATERIAL PER THE CITY OF HOUSTON SPECIFICATIONS.
3. SEE CITY OF HOUSTON STANDARDS PMD-2 THRU PMD-7 FOR TYPICAL DIMENSIONS AND DETAILS.
4. REFER TO COH STANDARD FOR LEFT/RIGHT-TURN "ONLY" AND ARROW SPACING. COH DWG NO: 01510-02

ISANI
civil : design : engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

SIGNAGE & PAVEMENT MARKINGS CHATEAU FOREST DRIVE & PAR FOUR DRIVE

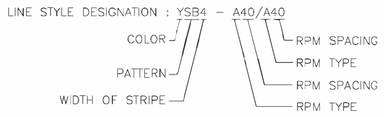
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
1"=50'	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 60 OF 158	

FILE:P:\ACTIVE\21DR47\WorkingDrawings (02 New Design)\xrefs MicroStation\Sheets\Signing and Pavement Marking\47_SPM -02.dgn
DATE:6/19/2025

DocuSign Envelope ID: 9B122261-CF05-4573-9A45-2650F40866D5

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 DURNG 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.



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 DRAWINGS 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, CONTROL 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 MARKINGS 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:
Salad Kawar	Walter Wolfen
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED 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

DRAWING SCALE	FOR CITY OF HOUSTON USE ONLY
NOT TO SCALE	

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

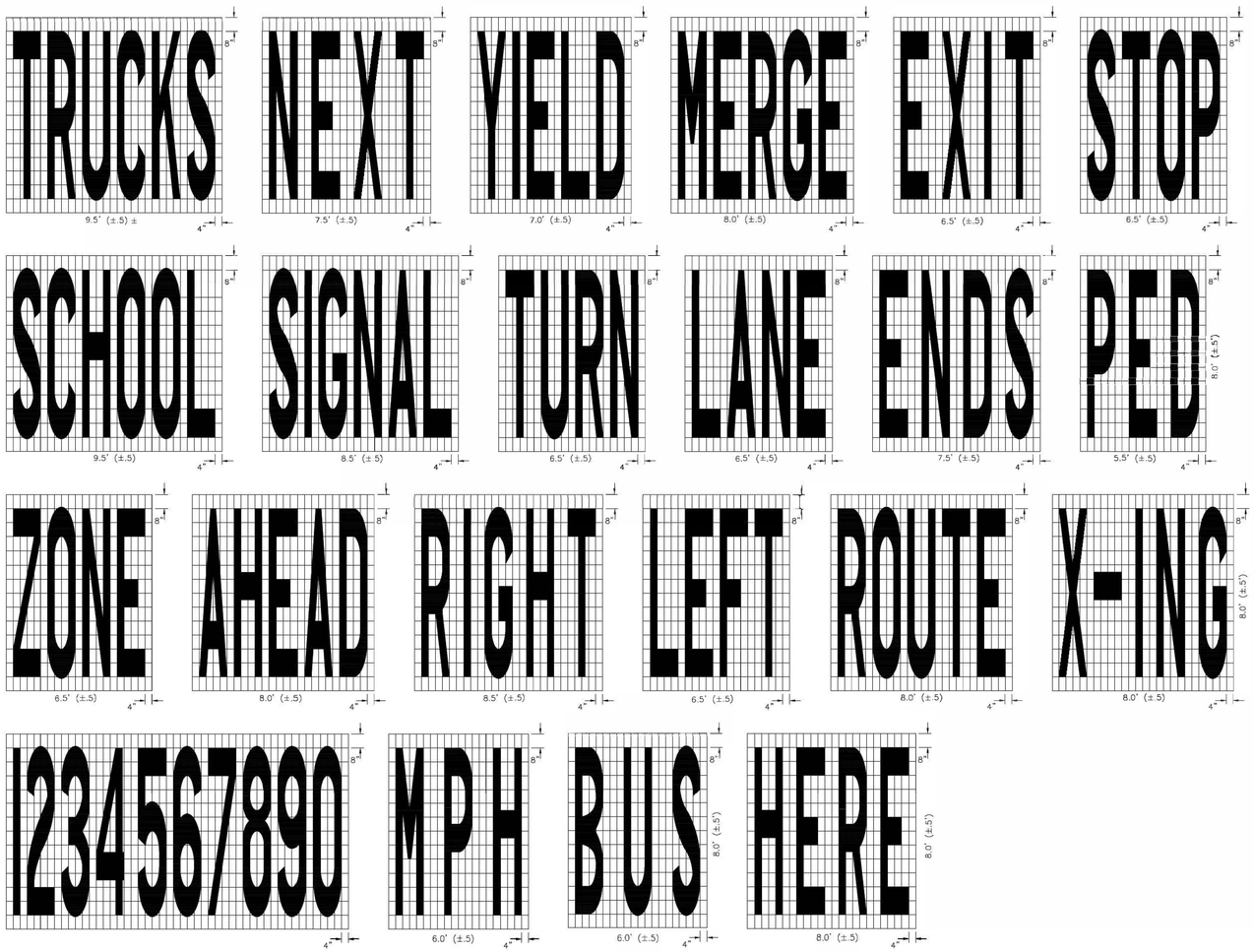
PAVEMENT MARKING GENERAL NOTES AND LEGENDS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
NA	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 61 OF 158	

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. ENGINEERS USING THIS STANDARD ARE RESPONSIBLE FOR THE DESIGN PROCEDURES AND PRACTICES THEY EMPLOY IN CONNECTION WITH THE SITE-SPECIFIC DESIGN THEY PREPARE. THEY SHOULD BE aware OF THE NEEDS OF THE PROJECT AND THE CONDITIONS UNDER WHICH THE WORK MAY BE PERFORMED. THE USE OF THIS STANDARD IS NOT A SUBSTITUTE FOR ENGINEERING JUDGMENT. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE. WITH THIS STANDARD, THE CITY OF HOUSTON MAKES NO EXPRESS OR IMPLIED WARRANTY OF ANY KIND IS MADE BY THE CITY OF HOUSTON FOR ANY PURPOSES WHATSOEVER. THE CITY OF HOUSTON SHALL NOT BE LIABLE FOR DAMAGES OF ANY KIND.

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Signing and Pavement Marking\SPM_STD_Marking.dgn
DATE:6/19/2025

DocuSign Envelope ID: 98122261-CFB5-457B-9A65-2B5CF46B6EC5



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.

APPROVED BY: Docu signed by: Sukat Kunwar 9E18BDC0411F478... CITY ENGINEER	APPROVED BY: Docu signed by: HANG NGUYEN 55A2F9FDA73A4F3... CITY TRAFFIC ENGINEER
APPROVED BY: Docu signed by: Carl Haddock 8D9F7A8E7B8B4E8... 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)

DRAWING SCALE
NOT TO SCALE

FOR CITY OF HOUSTON USE ONLY

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED
PROFESSIONAL ENGINEER
6/19/2025

SURVEYED BY: Kuo&Associates
FB NO. P-6257

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

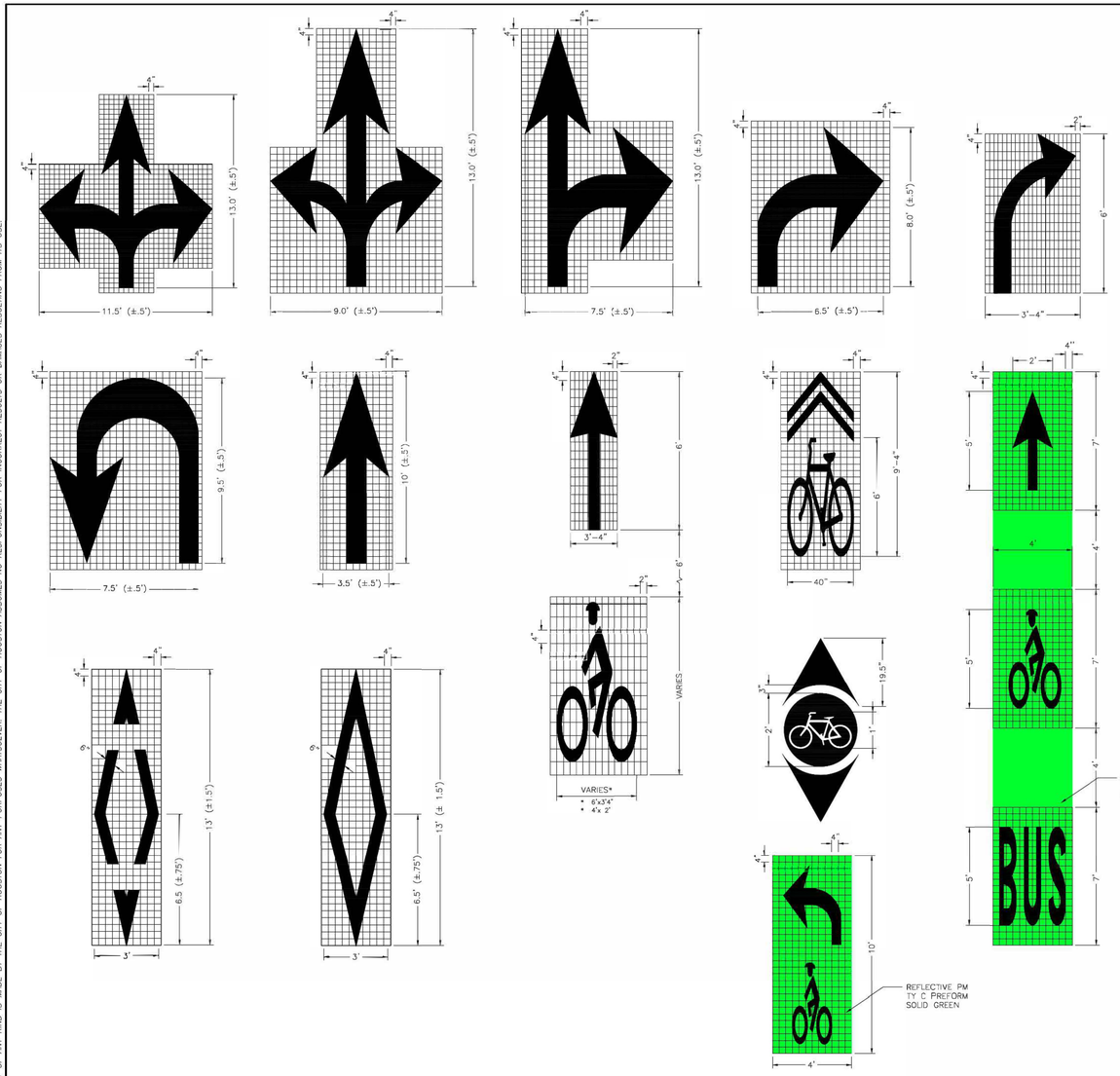
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

STANDARD PAVEMENT MARKING - (WORDS)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
NA	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 62 OF 158	

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Signing and Pavement Marking\SPM_STD_Marking.dgn
DATE:6/19/2025

DocuSign Envelope ID: 98122261-CF05-4573-BA65-2650F4086D05



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: (DocuSigned by: Sulaf Hanoun)	APPROVED BY: (DocuSigned by: KEVIN MATHEW)
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: (DocuSigned by: Carl 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

	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	
NOT TO SCALE	

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.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

STATE OF TEXAS — V. N. MURTHY MADE — 134936 — LICENSED PROFESSIONAL ENGINEER — 6/19/2025

SURVEYED BY: Kuo&Associates
FB NO. P-6257

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

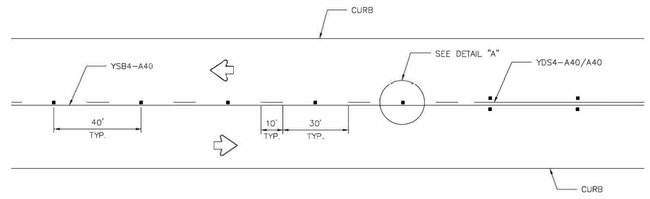
STANDARD PAVEMENT MARKING - SYMBOLS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
NA	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 63 OF 158	

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Signing and Pavement Marking\SPM_STD_Marking.dgn
DATE:6/19/2025

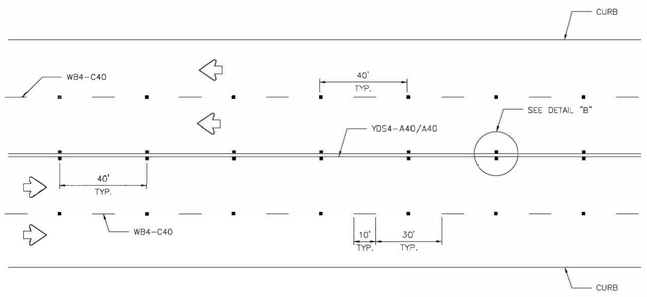
DocuSign Envelope ID: 98122261-CF05-457B-9A85-265DF4DB46D5

CENTERLINE & FOR ALL TWO LANE STREETS WITH PASSING ZONE

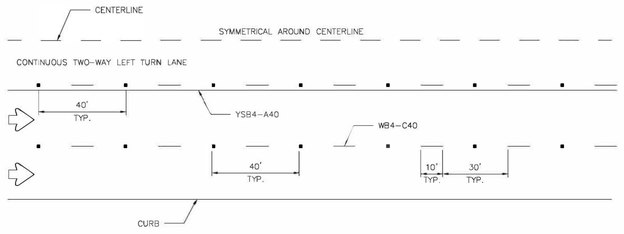


CENTERLINE & LANE LINES FOR FOUR LANE TWO-WAY STREETS

RRPM TYPE C, CLEAR FACE TOWARD NORMAL TRAFFIC, SHALL BE PLACED ON 40-FOOT CENTERS.

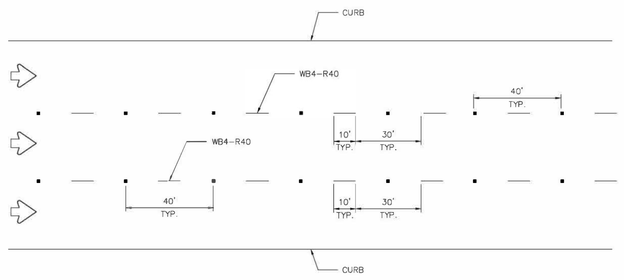


CENTERLINE & LANE LINES FOR TWO-WAY LEFT TURN LANE



LANE LINES FOR ONE-WAY MULTILANE STREET

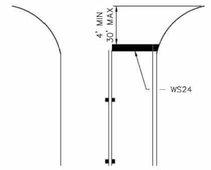
RRPM TYPE R SHALL HAVE CLEAR FACE TOWARD NORMAL TRAFFIC AND RED FACE TOWARD WRONG-WAY TRAFFIC.



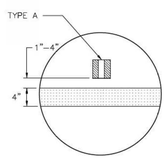
GENERAL NOTES:

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.

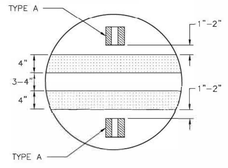
GUIDE FOR PLACEMENT OF STOP LINES & CENTERLINE



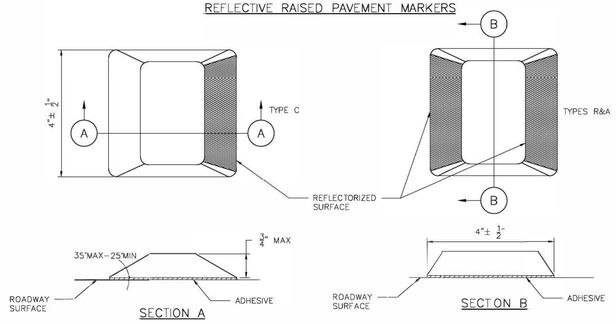
DETAIL "A"



DETAIL "B"



REFLECTIVE RAISED PAVEMENT MARKERS



DISCLAIMER:
THE USER 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 IS TO REVIEW THOSE DESIGN REQUIREMENTS AND BY AUTHORIZING THEIR USE ACCEPTS RESPONSIBILITY FOR THEIR APPLICABILITY AND 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.

APPROVED BY:	APPROVED BY:
DocuSigned by: Sukant Kanawar	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: 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

DRAWING SCALE
NOT TO SCALE

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS · V. N. MURTHY MADE · 134936 · LICENSED PROFESSIONAL ENGINEER · 6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

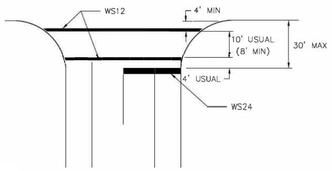
STANDARD PAVEMENT MARKINGS WITH REFLECTIVE RAISED PAVEMENT MARKERS FOR POSITION GUIDANCE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
NA	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 64 OF 158	

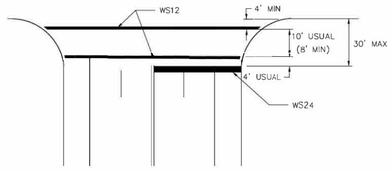
FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Signing and Pavement Marking\SPM_STD_Marking.dgn
DATE:6/19/2025

DocuSign Envelope ID: 9B122261-CF05-457B-9A45-2650F4D866D5

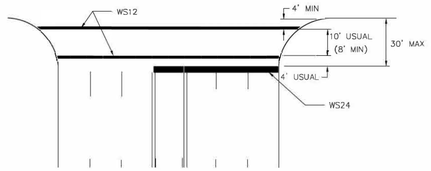
TWO LANES WITH SHOULDERS



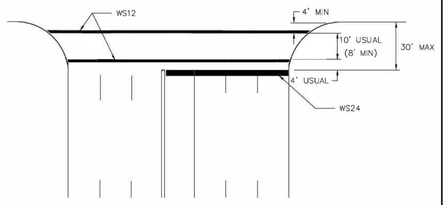
FOUR LANES WITH SHOULDERS



MULTI – LANES



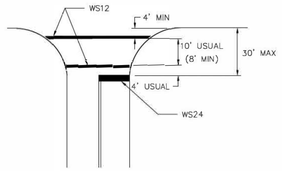
MULTI – LANE WITH MEDIAN



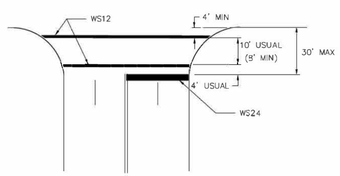
NOTES:

1. CROSSWALKS AND STOP LINES SHALL BE WHITE.
2. "D" IS EQUAL TO ONE HALF THE WIDTH OF TRAVEL LANE.

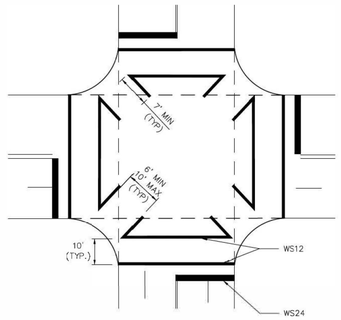
TWO LANES



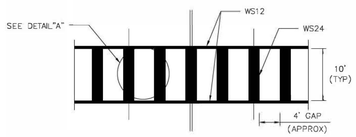
FOUR LANES



EXCLUSIVE PEDESTRIAN PHASE

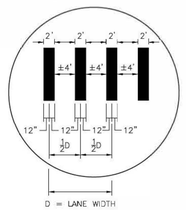


HIGH VISIBILITY
CROSSWALK DETAIL

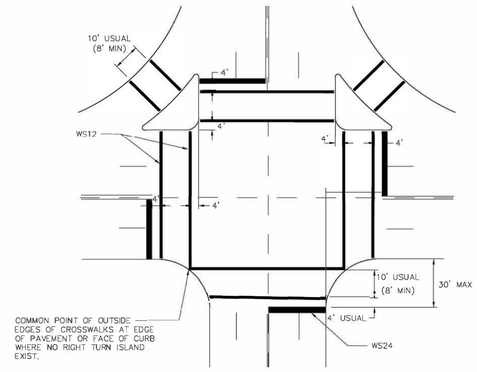


TYPICALLY USED AT SIGNALIZED AND NON-SIGNALIZED CROSSINGS ON COLLECTOR AND ARTERIAL ROADWAYS AND AT LOCATIONS REQUIRING EXTRA EMPHASIS.

DETAIL "A"



INTERSECTION WITH RIGHT – TURN ISLANDS



APPROVED BY:	APPROVED BY:
Docusigned by: Sukut Kanswar	Docusigned by: HAMAD MOMEN
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: Docusigned by: Carl 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

	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	
NOT TO SCALE	

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

TYPICAL CROSSWALK DETAILS

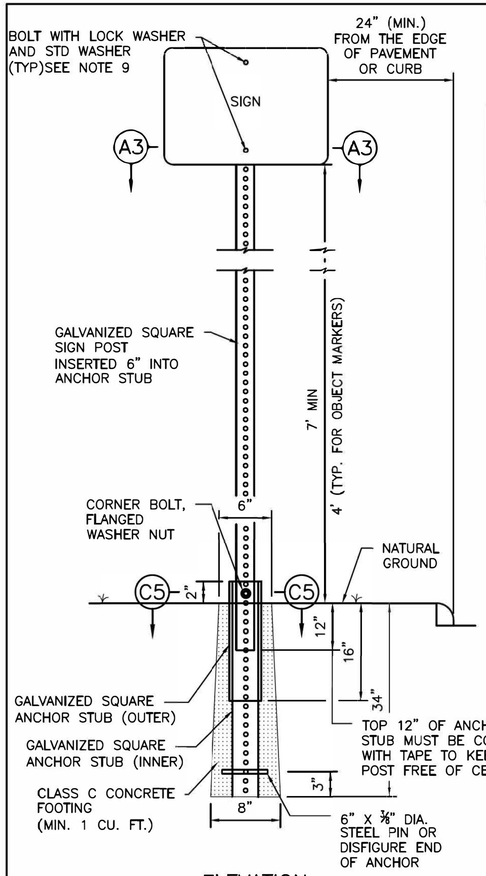
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
NA	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 65 OF 158	

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 01/16/25
HOUSTON TX

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 PURPOSE WHATSOEVER. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.

FILE:P:\ACTIVE\21DR47\WorkingDrawings (02 New Design)\xrefs MicroStation\Sheets\Signing and Pavement Marking\SPM_STD_Marking.dgn
DATE:6/19/2025

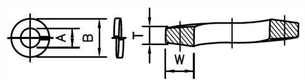
DocuSign Envelope ID: CB71C116-B716-4899-A5EE-0D2F2CC55AF6



ELEVATION

TYPICAL GROUND SIGN INSTALLATION
PERFORATED SQUARE METAL TUBING

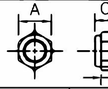
TABLE A	
GALVANIZED SQUARE SIGN POST (PERFORATED)	1–3/4"x–1–3/4" (14 GAUGE)
GALVANIZED SQUARE ANCHOR STUB (PREFORATAED) (INNER)	2"x2"x36" (14 GAUGE)
GALVANIZED SQUARE ANCHOR STUB (PERFORATED) (OUTER)	2 1/4" x 2 1/4" x 18" (14 GAUGE)



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



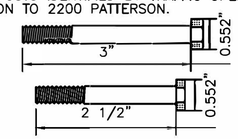
SIZE	C THICKNESS MAX	C THICKNESS MIN	A WIDTH ACROSS FLATS MAX	A WIDTH ACROSS FLATS MIN	D HEX HEIGHT MIN
0.313"	0.359"	0.329"	0.502"	0.489"	0.250"

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

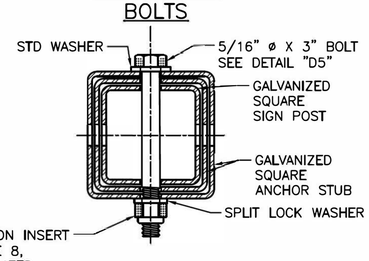
HEX NYLON INSERT LOCKNUTS (NE), GRADE 8, YELLOW ZINC PLATED

NOTES:

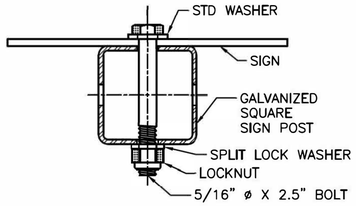
1. THE EXISTING SIGNS LOCATED ON PUBLIC CONSTRUCTION SITE ARE THE PROPERTY OF THE CITY OF HOUSTON. THROUGHOUT THE PERIOD OF THE CONTRACT, THE CONTRACTOR SHALL PROTECT THESE SIGNS SUCH THAT THEY ARE NOT DAMAGED IN THE COURSE OF CONSTRUCTION ACTIVITY. SUCH PROTECTION SHALL INCLUDE THE PERIOD AFTER SIGNS 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.



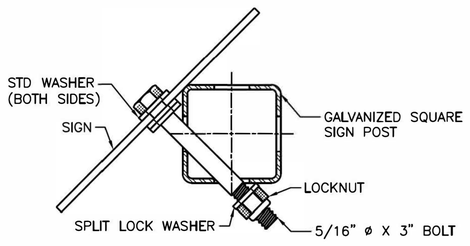
SECTION D5
BOLTS



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: Sukrit Kanwar — CITY ENGINEER
DocuSigned by: KHANG NGUYEN — CITY TRAFFIC ENGINEER
DocuSigned by: Carol Haddock — DIRECTOR OF HPW

EFF DATE: NOV–27–2023 | DWG NO: 01554–01

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.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P–6257

STATE OF TEXAS — V. N. MURTHY MADE — 134936 — LICENSED PROFESSIONAL ENGINEER — 6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

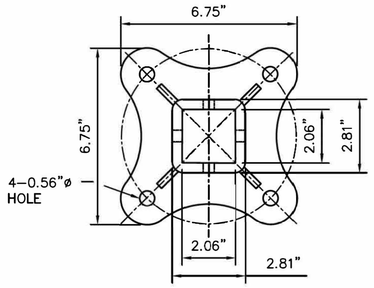
GENERAL NOTES AND GROUND MOUNTING SIGN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410029–0001–4	
DRAWING SCALE	
NA	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 66 OF 158	

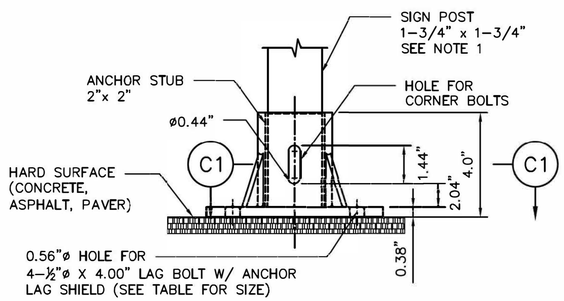
HOUSTON PUBLIC WORKS ACCEPTED AND FILED — 81720 CITY DRAWING NUMBER — Approval Date 09/19/25 — HOUSTON TX

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Signing and Pavement Marking\SPM_STD_Sign.dgn
DATE:6/19/2025

DocuSign Envelope ID: CB71C116-B716-4899-A5EE-0D2F2CC55AF6



TOP VIEW



SIDE VIEW

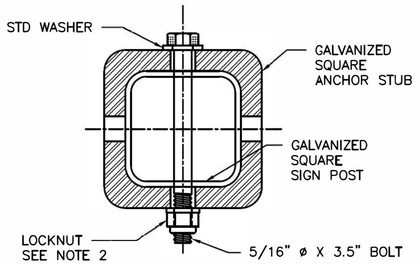
TYPICAL HARD SURFACE INSTALLATION GALVANIZED SIGN BASE

NOTES:

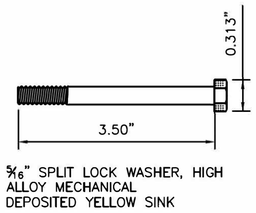
1. REFER TO COH STD DWG 01554–01 FOR SIGN AND POST REQUIREMENTS.
2. REFER TO DETAIL "C5" ON COH STD DWG 01554–01 FOR NUT AND BOLT REQUIREMENTS.

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

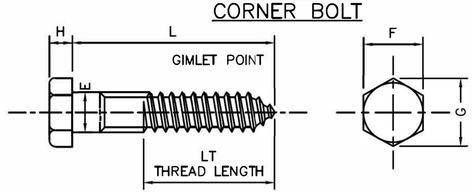


SECTION C1



5/16" SPLIT LOCK WASHER, HIGH
ALLOY MECHANICAL
DEPOSITED YELLOW SINK

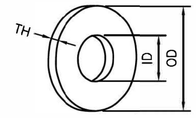
CORNER BOLT



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

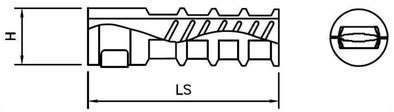
4" HEX LAG SCREWS, HOT DIPPED GALVANIZED



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

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P–6257

STATE OF TEXAS — V. N. MURTHY MADE — 134936 — LICENSED PROFESSIONAL ENGINEER — 6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

SIGN BASE
MOUNTING DETAIL

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410029–0001–4	
DRAWING SCALE	
NA	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 67 OF 158	

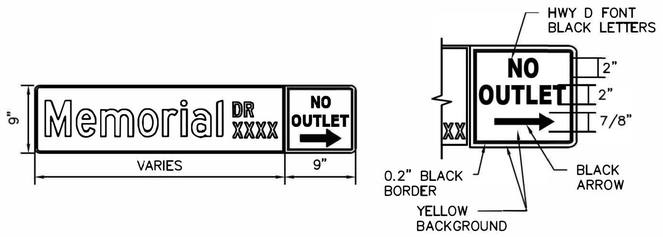
HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX

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 IN 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.

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Signing and Pavement Marking\SPM_STD_Sign.dgn
DATE:6/19/2025

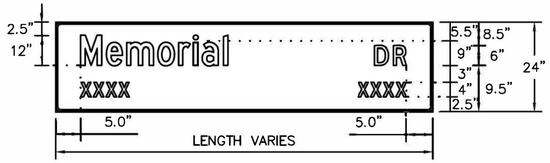
DocuSign Envelope ID: CB71C116-B716-4899-A5EE-0D2F2CC55AF6

POST MOUNTED STREET NAME SIGN W/ NO OUTLET SIGN



D3 – POST MOUNTED STREET NAME SIGN

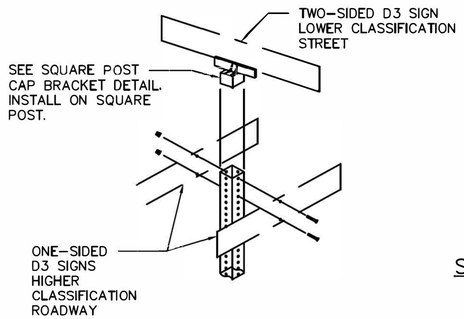
OVERHEAD STREET NAME SIGN DETAIL



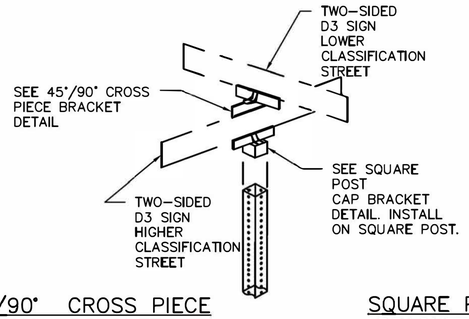
D3 – STREET NAME SIGN

	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	

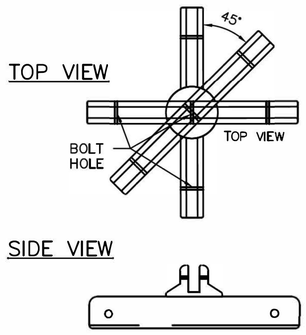
D3 SIGNS GREATER THAN 42" PLATES IN LENGTH



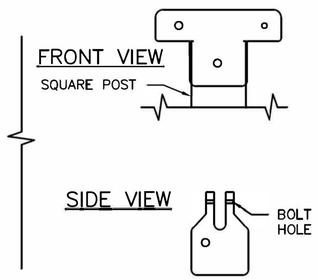
D3 SIGNS LESS THAN OR EQUAL TO 42" PLATES IN LENGTH



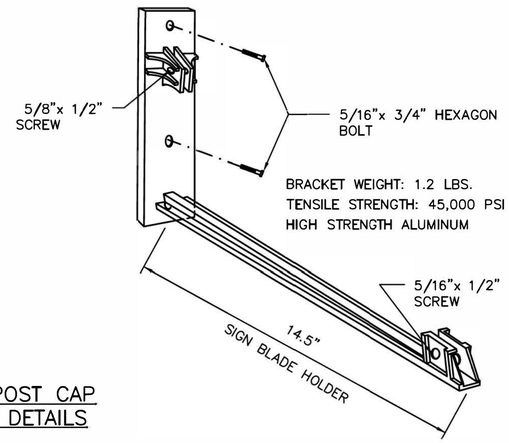
45°/90° CROSS PIECE SIGN BRACKET



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 — CITY ENGINEER

DocuSigned by: KHANG NGUYEN — CITY TRAFFIC ENGINEER

DocuSigned by: Carol Haddock — DIRECTOR OF HPW

EFF DATE: NOV–27–2023 | DWG NO: 01554–03

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.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P–6257

STATE OF TEXAS — V. N. MURTHY MADE — 134936 — LICENSED PROFESSIONAL ENGINEER — 6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

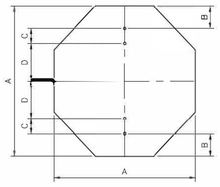
STREET NAME SIGN AND SIGN MOUNTING

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410029–0001–4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
NA	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 68 OF 158	

FILE:P:\ACTIVE\21DR47\WorkingDrawings (02 New Design)\xrefs MicroStation\Sheets\Signing and Pavement Marking\SPM_STD_Sign.dgn
DATE:6/19/2025

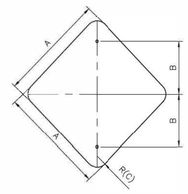
DocuSign Envelope ID: C871C115-8716-4899-A5EE-6D2F2CC55AF6

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. ANY PERSON WHO USES THIS STANDARD TO FURNISH DESIGN RECOMMENDATIONS OR CONSTRUCTION SERVICES IS RESPONSIBLE FOR HIS OR HER ACTIONS AND WORK PRODUCT. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE. WARRANTY OF ANY KIND IS MADE BY THE CITY OF HOUSTON FOR ANY PURPOSES WHATSOEVER.



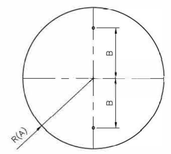
OCTAGONAL

A	B	C	D	T
24	3	3	12	0.08
36	3	3	24	0.08



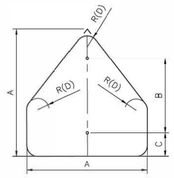
DIAMOND

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



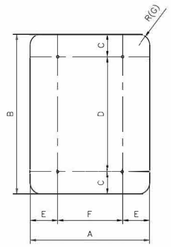
CIRCLE

A	B	T
15	15	0.08
18	12	0.08



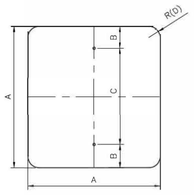
PENTAGON (SCHOOL)

A	B	C	D	T
36	24	3	1 1/2	0.08



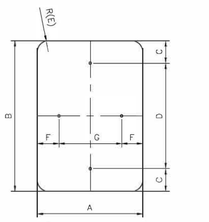
VERTICAL RECTANGLE

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



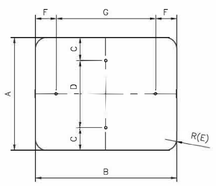
SQUARE (A)

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



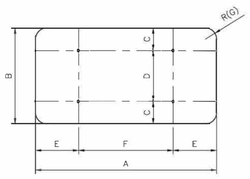
VERTICAL/HORIZONTAL RECTANGLE

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



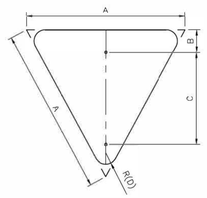
HORIZONTAL/VERTICAL RECTANGLE

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

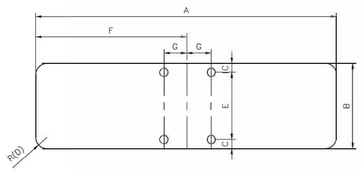


TABLE – D3 SIGNS (BRACKETS)

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

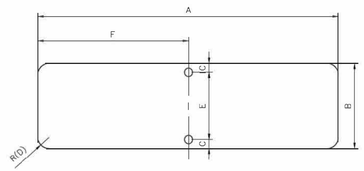


TABLE – D3 SIGNS

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

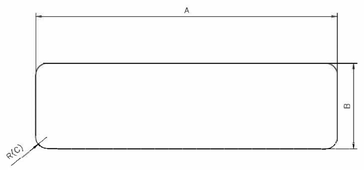
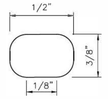


TABLE – D1 SIGNS

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

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 36" 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



APPROVED BY :	APPROVED BY :
DocuSigned by: Sulaal Faruwar	DocuSigned by: LAILING NGUYEN
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY : DocuSigned by: Carl Haddock	
DIRECTOR OF HOUSTON PU BL 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 SCAL E	
NOT TO SCALE	

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

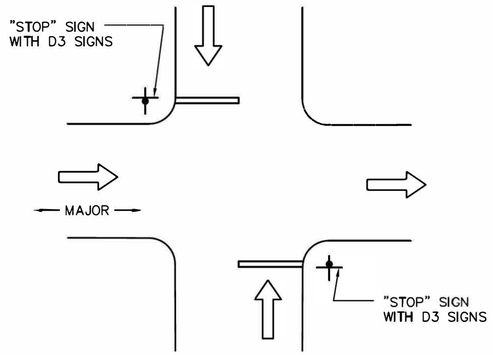
GROUND MOUNTED SIGN SIZES

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/30/25 HOUSTON TX
DRAWING SCALE	
NA	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 69 OF 158	

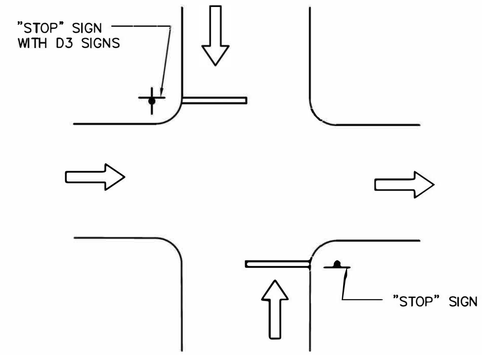
FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Signing and Pavement Marking\SPM_STD_Sign.dgn
DATE:6/19/2025

DocuSign Envelope ID: CB71C116-B716-4899-A5EE-0D2F2CC55AF6

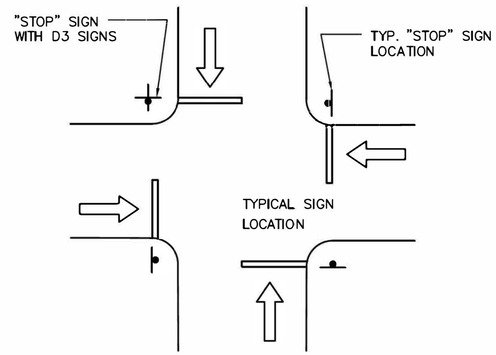
TYPICAL SIGN PLACEMENT



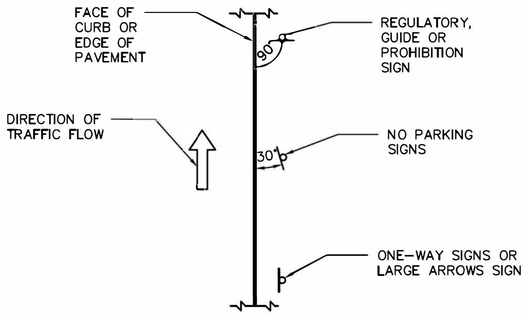
TWO-WAY STOP
AND ONE-WAY OPERATION
ON MAJOR/LOCAL INTERSECTION



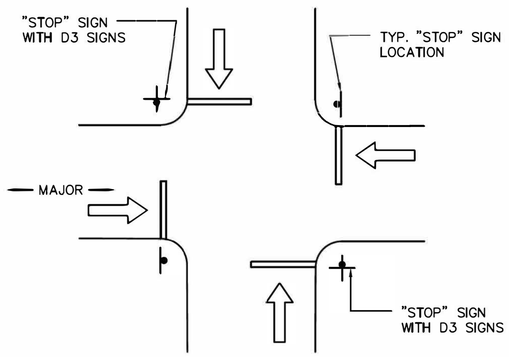
TWO-WAY STOP
AND ONE-WAY OPERATION
ON LOCAL/LOCAL INTERSECTION



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

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

TYPICAL SIGN PLACEMENT

(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Sukait Kanwar 9EF880C641F5478...
CITY ENGINEER

DocuSigned by: KHANG NGUYEN 95A29EFDA75B4CD...
CITY TRAFFIC ENGINEER

DocuSigned by: Carol Haddock A93C41D37253453...
DIRECTOR OF HPW

EFF DATE: NOV-27-2023 | DWG NO: 01554-07

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS · V. N. MURTHY MADE · 134936 · LICENSED PROFESSIONAL ENGINEER · 6/19/2025

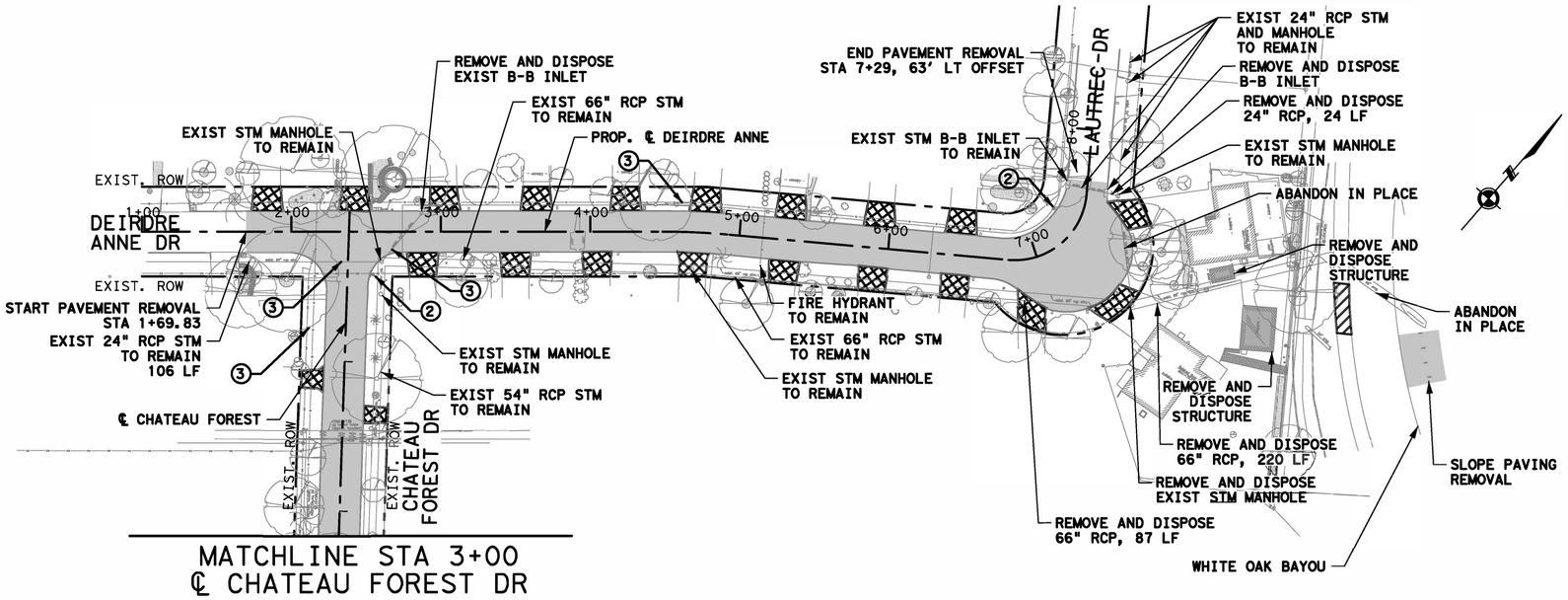
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

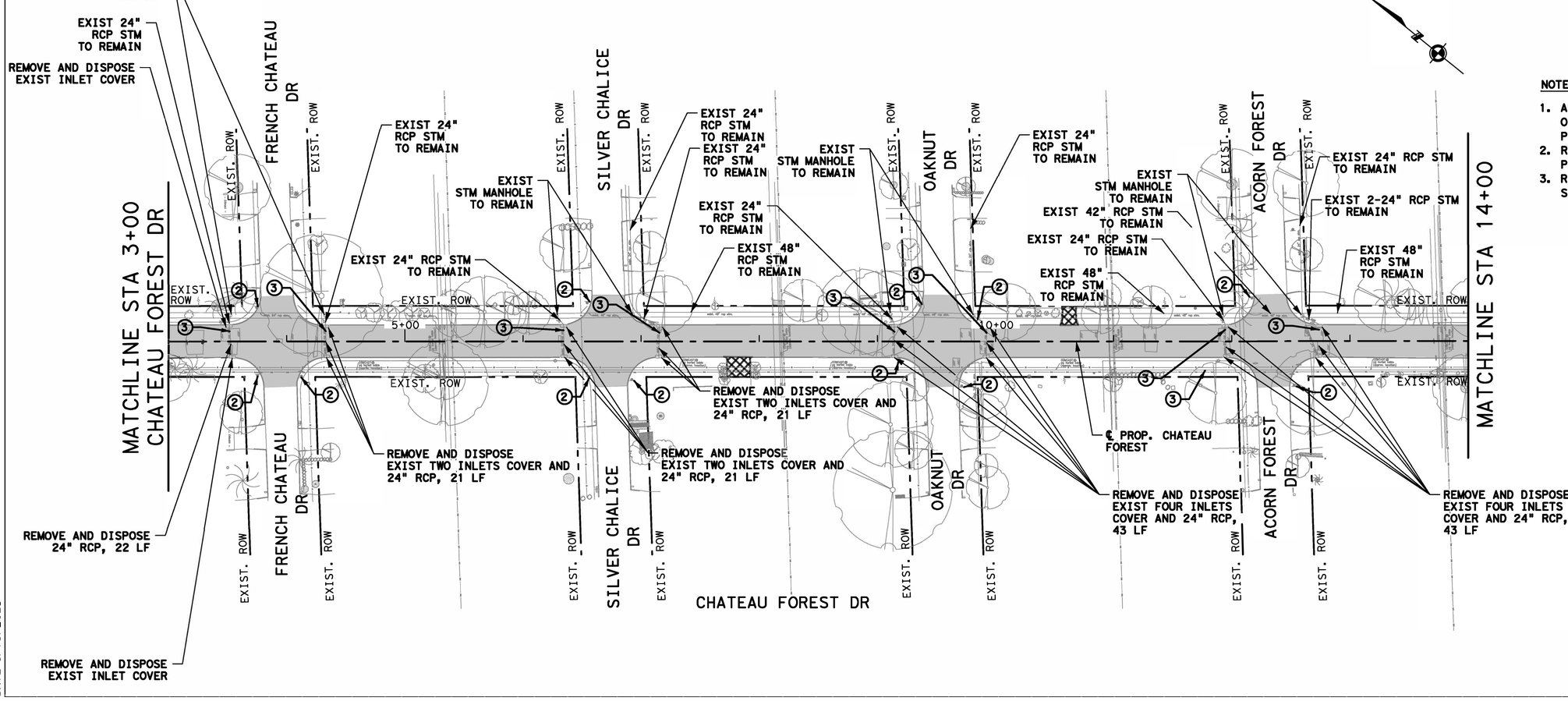
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

TYPICAL SIGN PLACEMENT

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
NA	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 70 OF 158	

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Signing and Pavement Marking\SPM_STD_Sign.dgn
DATE:6/19/2025





50 0 25 50 100

SCALE: 1" = 50'-0" FEET FOR 22"X34" SHEET

LEGEND:

1. REMOVE EXISTING CULVERTS
2. REMOVE AND/OR RELOCATE SIGN
3. ABANDON IN PLACE

REMOVE AND DISPOSE EXISTING ASPHALT PAVEMENT, CONCRETE BASE, AND CEMENT STABILIZED SHELL BASE COURSE WITH OR WITHOUT ASPHALT SURFACING

REMOVE AND DISPOSE EXISTING CONCRETE PAVEMENT INCLUDING BASE AND SUBBASE

REMOVE AND DISPOSE EXISTING SIDEWALK

REMOVE AND DISPOSE EXISTING DRIVEWAY

EXISTING UTILITIES:

U1. AT&T
U2. CENTERPOINT ENERGY (GAS & ELECTRIC)
U3. COMCAST

NOTES:

1. ANY PUBLIC UTILITIES WITHIN THE LIMITS OF CONSTRUCTION TO BE REMOVED AND ADJUSTED PRIOR TO THE BEGINNING OF THE WORK.
2. REFER TO SHEET 126 TO SHEET 135 FOR TREE PROTECTION PLAN.
3. REFER TO LIGHTING PLAN ON SHEET 68 TO 70 FOR STREET LIGHT REMOVAL.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
6/19/2025

SURVEYED BY: Kuo&Associates
FB NO. P-6257

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

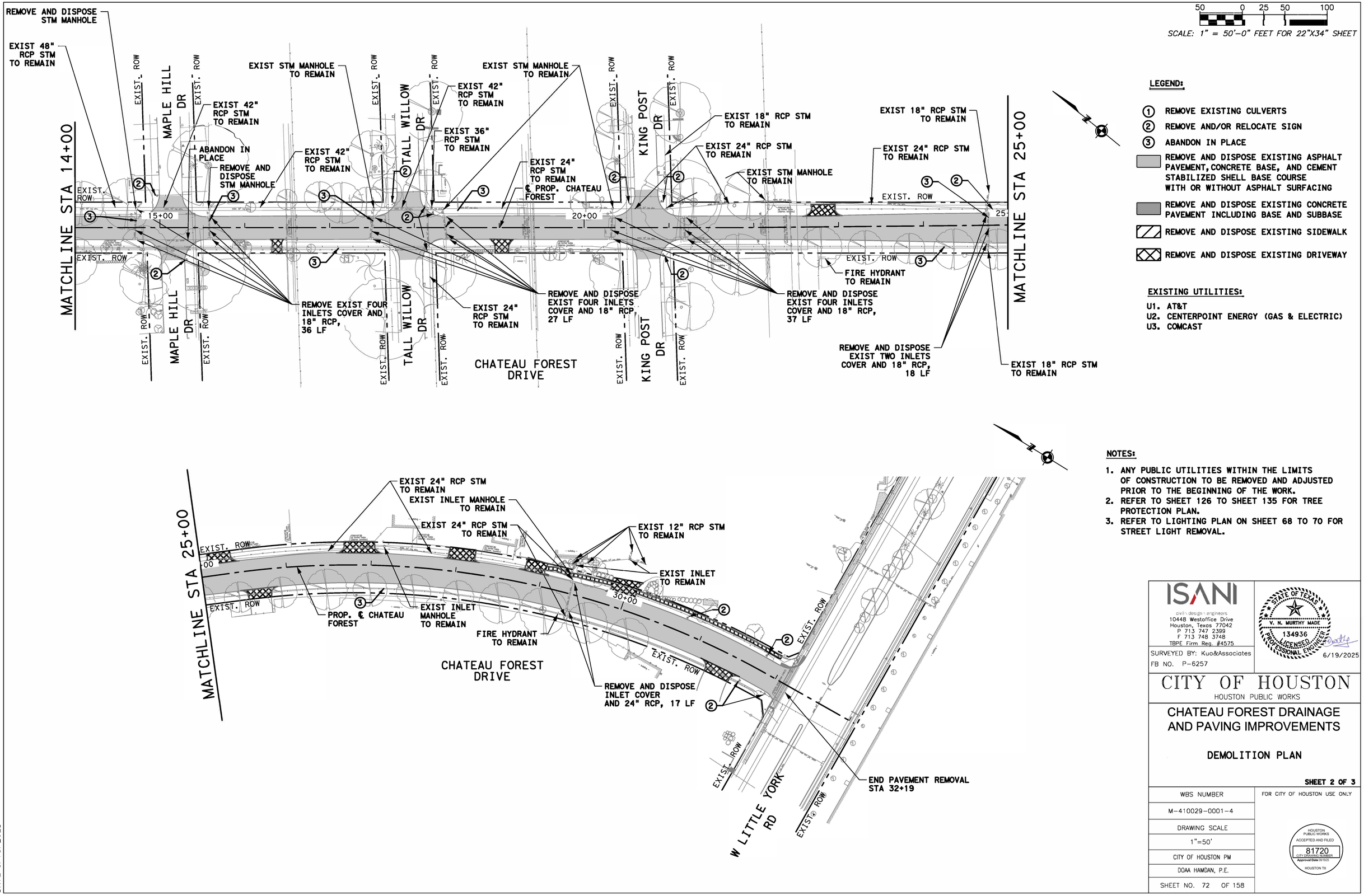
DEMOLITION PLAN

SHEET 1 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
1"=50'	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 71 OF 158	

HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Demolition Plan\47_DEMO -01_Deindre&Chateau.dgn
DATE:6/19/2025



NOTES:

1. ANY PUBLIC UTILITIES WITHIN THE LIMITS OF CONSTRUCTION TO BE REMOVED AND ADJUSTED PRIOR TO THE BEGINNING OF THE WORK.
2. REFER TO SHEET 126 TO SHEET 135 FOR TREE PROTECTION PLAN.
3. REFER TO LIGHTING PLAN ON SHEET 68 TO 70 FOR STREET LIGHT REMOVAL.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

DEMOLITION PLAN

SHEET 2 OF 3

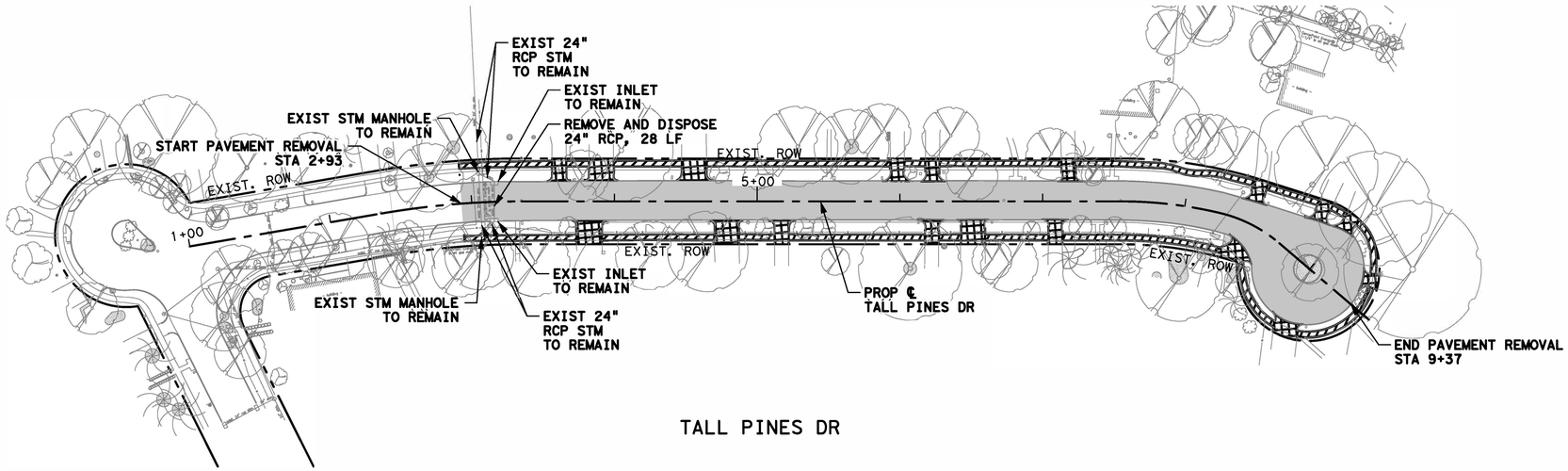
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
1"=50'	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 72 OF 158	

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

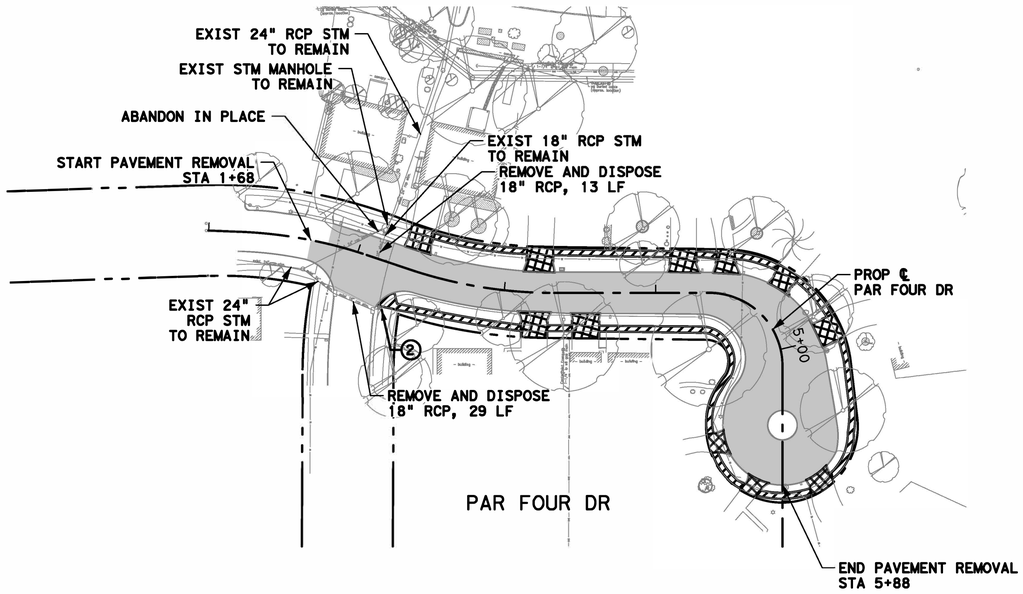
FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Demolition Plan\V47_DEMO -02_Chateau.dgn
DATE:6/19/2025

50 0 25 50 100

SCALE: 1" = 50'-0" FEET FOR 22"X34" SHEET



TALL PINES DR



PAR FOUR DR

LEGEND:

1. REMOVE EXISTING CULVERTS
2. REMOVE AND/OR RELOCATE SIGN
3. ABANDON IN PLACE

REMOVE AND DISPOSE EXISTING ASPHALT PAVEMENT, CONCRETE BASE, AND CEMENT STABILIZED SHELL BASE COURSE WITH OR WITHOUT ASPHALT SURFACING

REMOVE AND DISPOSE EXISTING CONCRETE PAVEMENT INCLUDING BASE AND SUBBASE

REMOVE AND DISPOSE EXISTING SIDEWALK

REMOVE AND DISPOSE EXISTING DRIVEWAY

EXISTING UTILITIES:

U1. AT&T
U2. CENTERPOINT ENERGY (GAS & ELECTRIC)
U3. COMCAST

NOTES:

1. ANY PUBLIC UTILITIES WITHIN THE LIMITS OF CONSTRUCTION TO BE REMOVED AND ADJUSTED PRIOR TO THE BEGINNING OF THE WORK.
2. REFER TO SHEET 126 TO SHEET 135 FOR TREE PROTECTION PLAN.
3. REFER TO LIGHTING PLAN ON SHEET 68 TO 70 FOR STREET LIGHT REMOVAL.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
6/19/2025

SURVEYED BY: Kuo&Associates
FB NO. P-6257

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

DEMOLITION PLAN

SHEET 3 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
1"=50'	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 73 OF 158	

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

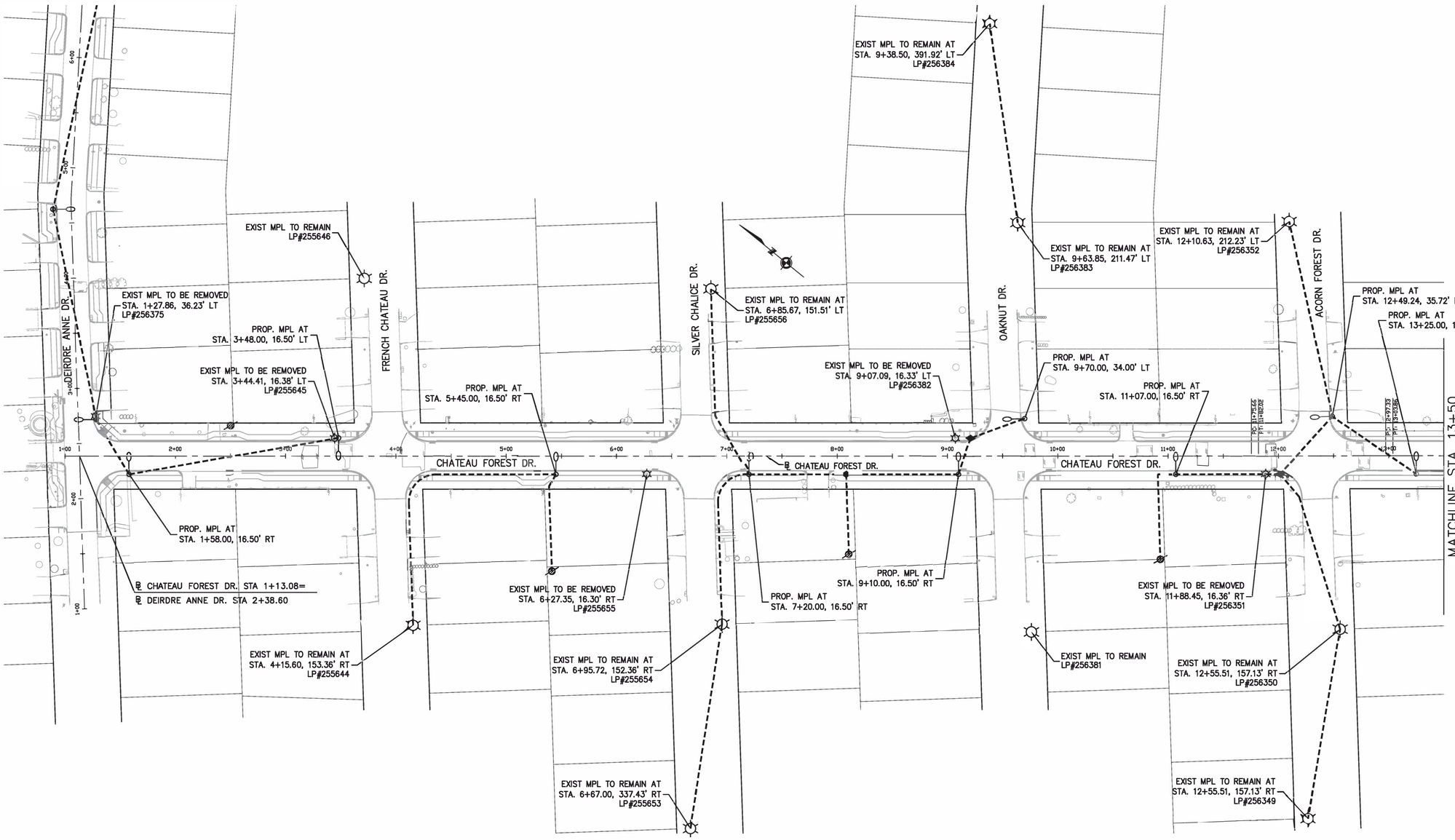
FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Demolition Plan\V47_DEMO -03_Parfour_Tallpines.dgn
DATE:6/19/2025

PLOTTED: 3/31/2025 9:31 PM
PLOT STYLE: COH.ctb
FILE PATH: S:\Proj-2022\22039 (P21083 CHATEAU FOREST)\Dwgs\Design\22039-STREET LIGHTING PLAN.dwg

No.	Date	Revisions	App.

50 0 25 50(H)

SCALE: 1" = 50'-0"



LEGENDS:

- EXISTING WOOD POLE W/ REMOVED OR NO LIGHT
- EXISTING WOOD POLE LIGHT (WPL) TO REMAIN
- PROPOSED LUMINARY ON EXISTING WOOD POLE (WPL)
- EXISTING METAL POLE LIGHT (MPL) TO BE REMOVED
- EXISTING METAL POLE LIGHT (MPL) TO REMAIN
- PROPOSED METAL POLE LIGHT (MPL)
- PROPOSED PULL BOX
- PROPOSED 2" PVC CONDUIT

NOTES:

1. EXISTING STREET LIGHT POLES ARE TO BE REMOVED BY CENTERPOINT ENERGY. AFTER REMOVAL OF EXISTING POLE, CONTRACTOR SHALL DEMO ANY EXISTING POLE FOUNDATION TO MINIMUM 1' BELOW FINISHED GRADE.
2. CONTRACTOR TO REFER TO CENTERPOINT ENERGY SPECIFICATION NO. 007-371-08, LATEST REVISION FOR INFORMATION REGARDING STREET LIGHT CONDUIT INSTALLATION.
3. CONDUIT/ PULL BOX LAYOUT AS DETERMINED BY CENTERPOINT ENERGY.
4. FOR CONDUIT INSTALLATION IN EASEMENTS, AND SIDEWALKS, USE SCHEDULE 40 PVC. FOR CONDUIT INSTALLATION UNDER ROADWAYS. UNDER DRIVEWAYS, DITCH CROSSINGS, AND PIPELINE EASEMENTS USE SCHEDULE 80 PVC.
5. PROVIDE 6'-6"X6'-6" CONCRETE BLOCK OUT AREA IF LIGHT POLE IS LOCATED WITHIN CONCRETE AREA.
6. REFER TO DESIGN PLAN & PROFILE SHEETS FOR OTHER UTILITIES, LOCATED IN THE VICINITY OF THE PROPOSED STREET LIGHT POLES.

CENTERPOINT ENERGY NOTE:

THIS PROJECT IS SUBJECT TO REVIEW AND POSSIBLE REVISION BY THE LIGHTING DESIGN SERVICES DEPARTMENT. STREET LIGHT LAYOUT IS CONTINGENT UPON STREETS BEING CURBED AND GUTTERED IN ACCORDANCE WITH MUNICIPAL OR COUNTY STANDARDS. FIXTURE LOCATION, STANDARD TYPES AND ILLUMINATION LEVELS SHOWN ON THIS LAYOUT WERE PROVIDED BY THE MUNICIPALITY, DEVELOPER, OR ASSOCIATION AND WERE NOT DESIGNED BY CENTERPOINT ENERGY.

LOCATION OF CENTERPOINT ENERGY FACILITIES ARE APPROXIMATE AND HAVE NOT BEEN VERIFIED BY ACTUAL FIELD CHECK.

KUO & ASSOCIATES
ENGINEERING + SURVEYING
10300 WESTOFFICE DR. SUITE 800
HOUSTON, TX 77042
713-975-8769
TX FIRM NO.: F-4578

SURVEYED BY: Kuo&Associates
FB NO. P6257

STATE OF TEXAS
SUDHEER GOUD SANGAM
111684
LICENSED
PROFESSIONAL ENGINEER
03/31/25
KUO & ASSOCIATES, LLC.
TBPELS FIRM NO. F-4578

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

STREET LIGHTING PLANS

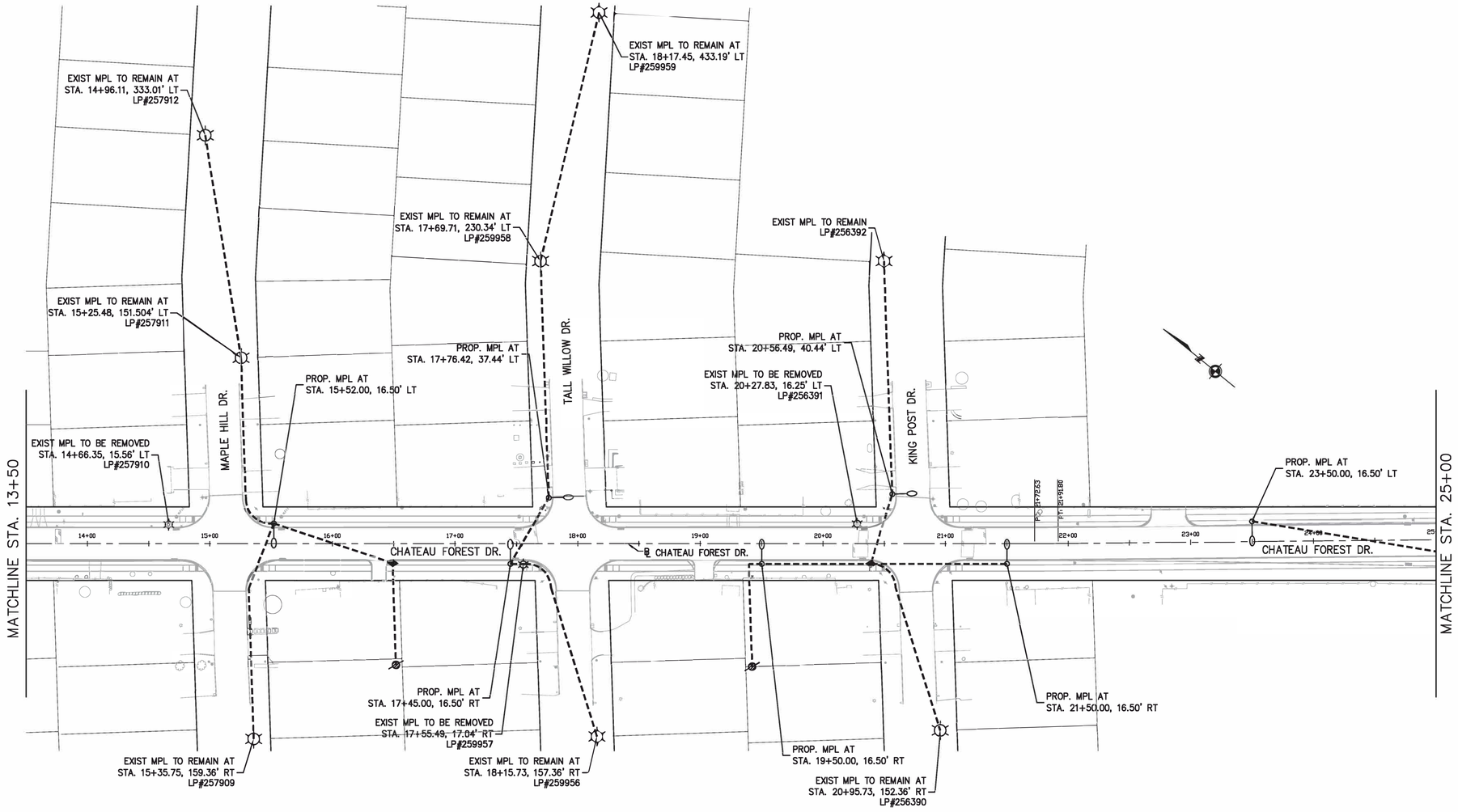
CHATEAU FOREST DR.

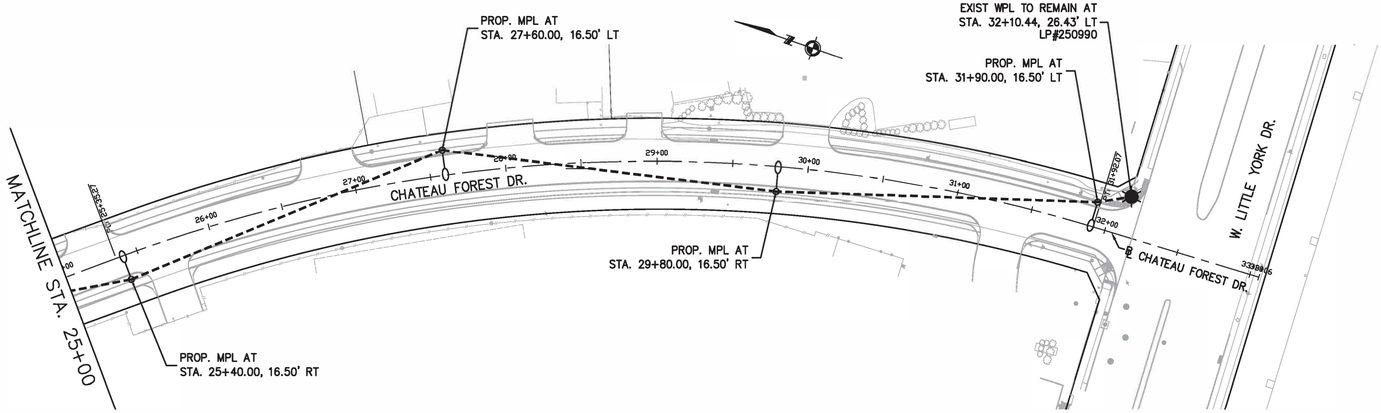
(SHEET 1 OF 3)

WBS NUMBER
M-410029-0001-4
DRAWING SCALE
HORIZ: 1"=50'
CITY OF HOUSTON PM
DOAA HAMDAN, P.E.
SHEET NO. 74 OF 158

FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX





SCALE: 1" = 50'-0"

50 0 25 50(H)

No.	Date	Revisions	App.

LEGENDS:

- EXISTING WOOD POLE W/ REMOVED OR NO LIGHT
- EXISTING WOOD POLE LIGHT (WPL) TO REMAIN
- PROPOSED LUMINARY ON EXISTING WOOD POLE (WPL)
- EXISTING METAL POLE LIGHT (MPL) TO BE REMOVED
- EXISTING METAL POLE LIGHT (MPL) TO REMAIN
- PROPOSED METAL POLE LIGHT (MPL)
- PROPOSED PULL BOX
- PROPOSED 2" PVC CONDUIT

NOTES:

1. EXISTING STREET LIGHT POLES ARE TO BE REMOVED BY CENTERPOINT ENERGY. AFTER REMOVAL OF EXISTING POLE, CONTRACTOR SHALL DEMO ANY EXISTING POLE FOUNDATION TO MINIMUM 1' BELOW FINISHED GRADE.
2. CONTRACTOR TO REFER TO CENTERPOINT ENERGY SPECIFICATION NO. 007-371-08, LATEST REVISION FOR INFORMATION REGARDING STREET LIGHT CONDUIT INSTALLATION.
3. CONDUIT/ PULL BOX LAYOUT AS DETERMINED BY CENTERPOINT ENERGY.
4. FOR CONDUIT INSTALLATION IN EASEMENTS, AND SIDEWALKS, USE SCHEDULE 40 PVC. FOR CONDUIT INSTALLATION UNDER ROADWAYS. UNDER DRIVEWAYS, DITCH CROSSINGS, AND PIPELINE EASEMENTS USE SCHEDULE 80 PVC.
5. PROVIDE 6'-6"X6'-6" CONCRETE BLOCK OUT AREA IF LIGHT POLE IS LOCATED WITHIN CONCRETE AREA.
6. REFER TO DESIGN PLAN & PROFILE SHEETS FOR OTHER UTILITIES, LOCATED IN THE VICINITY OF THE PROPOSED STREET LIGHT POLES.

CENTERPOINT ENERGY NOTE:

THIS PROJECT IS SUBJECT TO REVIEW AND POSSIBLE REVISION BY THE LIGHTING DESIGN SERVICES DEPARTMENT. STREET LIGHT LAYOUT IS CONTINGENT UPON STREETS BEING CURBED AND GUTTERED IN ACCORDANCE WITH MUNICIPAL OR COUNTY STANDARDS. FIXTURE LOCATION, STANDARD TYPES AND ILLUMINATION LEVELS SHOWN ON THIS LAYOUT WERE PROVIDED BY THE MUNICIPALITY, DEVELOPER, OR ASSOCIATION AND WERE NOT DESIGNED BY CENTERPOINT ENERGY.

LOCATION OF CENTERPOINT ENERGY FACILITIES ARE APPROXIMATE AND HAVE NOT BEEN VERIFIED BY ACTUAL FIELD CHECK.

KUO & ASSOCIATES
ENGINEERING + SURVEYING
10300 WESTOFFICE DR. SUITE 800
HOUSTON, TX 77042
713-975-8769
TX FIRM NO.: F-4578

SURVEYED BY: Kuo&Associates
FB NO. P6257

STATE OF TEXAS
SUDHEER GOUD SANGAM
111684
LICENSED PROFESSIONAL ENGINEER
03/31/25
KUO & ASSOCIATES, LLC.
TBPELS FIRM NO. F-4578

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

STREET LIGHTING PLANS

CHATEAU FOREST DR.

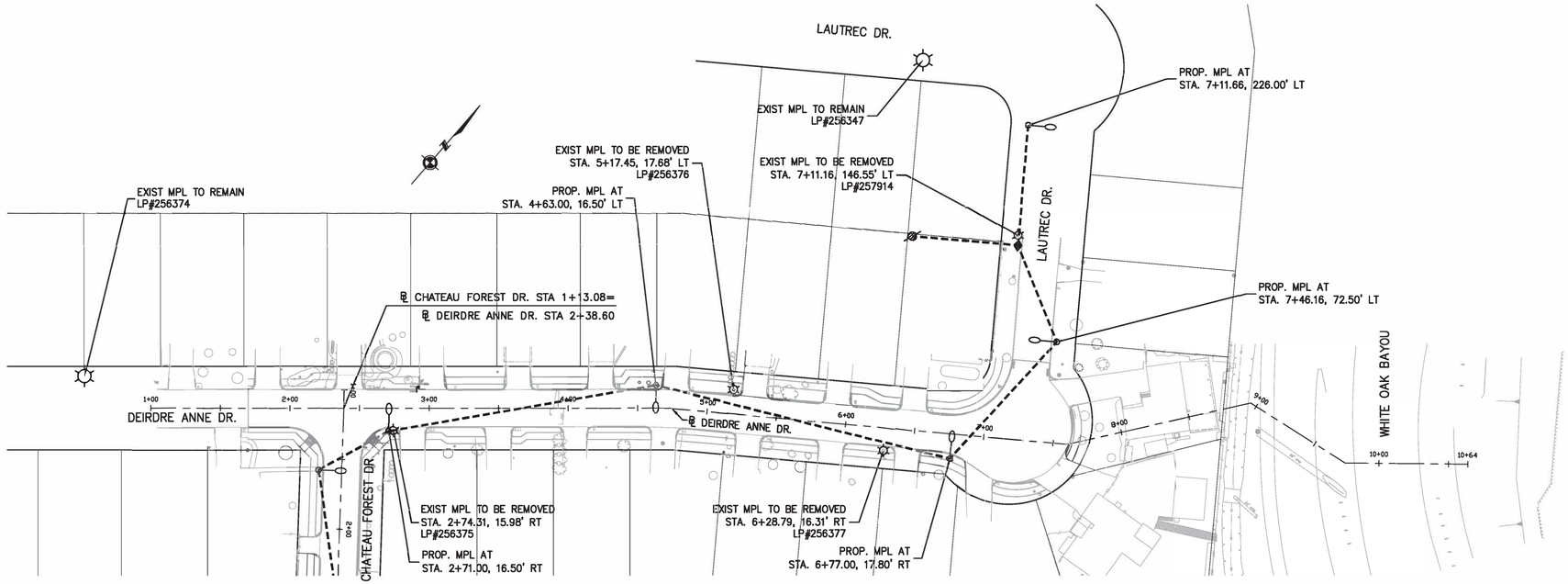
(SHEET 2 OF 3)

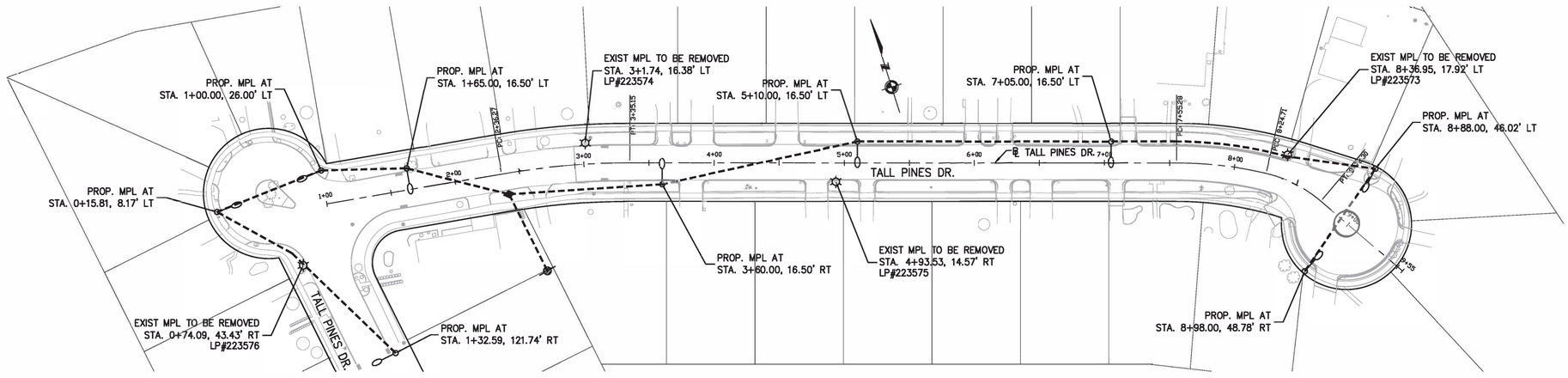
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
HORIZ: 1"=50'	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 75 OF 158	

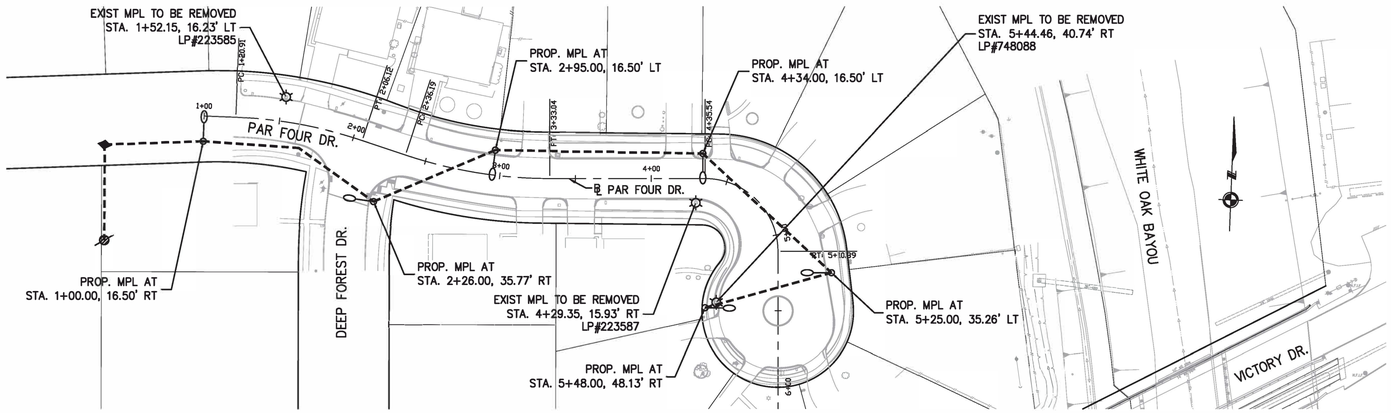
HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 03/19/25
HOUSTON TX

PLOTTED: 3/31/2025 9:32 PM
PLOT STYLE: COH.ctb
FILE PATH: S:\Proj-2022\22039 (P21083 CHATEAU FOREST)\Dwgs\Design\22039-STREET LIGHTING PLAN.dwg

PLOTTED: 3/31/2025 9:32 PM
PLOT STYLE: COH.ctb
FILE PATH: S:\Proj--2022\22039 (P21083 CHATEAU FOREST)\Dwgs\Design\22039--STREET LIGHTING PLAN.dwg







50 0 25 50(H)

SCALE: 1" = 50'-0"

No.	Date	Revisions	App.

LEGENDS:

- EXISTING WOOD POLE W/ REMOVED OR NO LIGHT
- EXISTING WOOD POLE LIGHT (WPL) TO REMAIN
- PROPOSED LUMINARY ON EXISTING WOOD POLE (WPL)
- EXISTING METAL POLE LIGHT (MPL) TO BE REMOVED
- EXISTING METAL POLE LIGHT (MPL) TO REMAIN
- PROPOSED METAL POLE LIGHT (MPL)
- PROPOSED PULL BOX
- PROPOSED 2" PVC CONDUIT

NOTES:

1. EXISTING STREET LIGHT POLES ARE TO BE REMOVED BY CENTERPOINT ENERGY. AFTER REMOVAL OF EXISTING POLE, CONTRACTOR SHALL DEMO ANY EXISTING POLE FOUNDATION TO MINIMUM 1' BELOW FINISHED GRADE.
2. CONTRACTOR TO REFER TO CENTERPOINT ENERGY SPECIFICATION NO. 007-371-08, LATEST REVISION FOR INFORMATION REGARDING STREET LIGHT CONDUIT INSTALLATION.
3. CONDUIT/ PULL BOX LAYOUT AS DETERMINED BY CENTERPOINT ENERGY.
4. FOR CONDUIT INSTALLATION IN EASEMENTS, AND SIDEWALKS, USE SCHEDULE 40 PVC. FOR CONDUIT INSTALLATION UNDER ROADWAYS. UNDER DRIVEWAYS, DITCH CROSSINGS, AND PIPELINE EASEMENTS USE SCHEDULE 80 PVC.
5. PROVIDE 6'-6"X6'-6" CONCRETE BLOCK OUT AREA IF LIGHT POLE IS LOCATED WITHIN CONCRETE AREA.
6. REFER TO DESIGN PLAN & PROFILE SHEETS FOR OTHER UTILITIES, LOCATED IN THE VICINITY OF THE PROPOSED STREET LIGHT POLES.

CENTERPOINT ENERGY NOTE:

THIS PROJECT IS SUBJECT TO REVIEW AND POSSIBLE REVISION BY THE LIGHTING DESIGN SERVICES DEPARTMENT. STREET LIGHT LAYOUT IS CONTINGENT UPON STREETS BEING CURBED AND GUTTERED IN ACCORDANCE WITH MUNICIPAL OR COUNTY STANDARDS. FIXTURE LOCATION, STANDARD TYPES AND ILLUMINATION LEVELS SHOWN ON THIS LAYOUT WERE PROVIDED BY THE MUNICIPALITY, DEVELOPER, OR ASSOCIATION AND WERE NOT DESIGNED BY CENTERPOINT ENERGY.

LOCATION OF CENTERPOINT ENERGY FACILITIES ARE APPROXIMATE AND HAVE NOT BEEN VERIFIED BY ACTUAL FIELD CHECK.

KUO & ASSOCIATES
INFRASTRUCTURE CONSULTING
10300 WESTOFFICE DR. SUITE 800
HOUSTON, TX 77042
713-975-8769
TX FIRM NO.: F-4578

SURVEYED BY: Kuo&Associates
FB NO. P6257

STATE OF TEXAS
SUDHEER GOUD SANGAM
111684
LICENSED PROFESSIONAL ENGINEER
03/31/25
KUO & ASSOCIATES, LLC.
TBPELS FIRM NO. F-4578

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

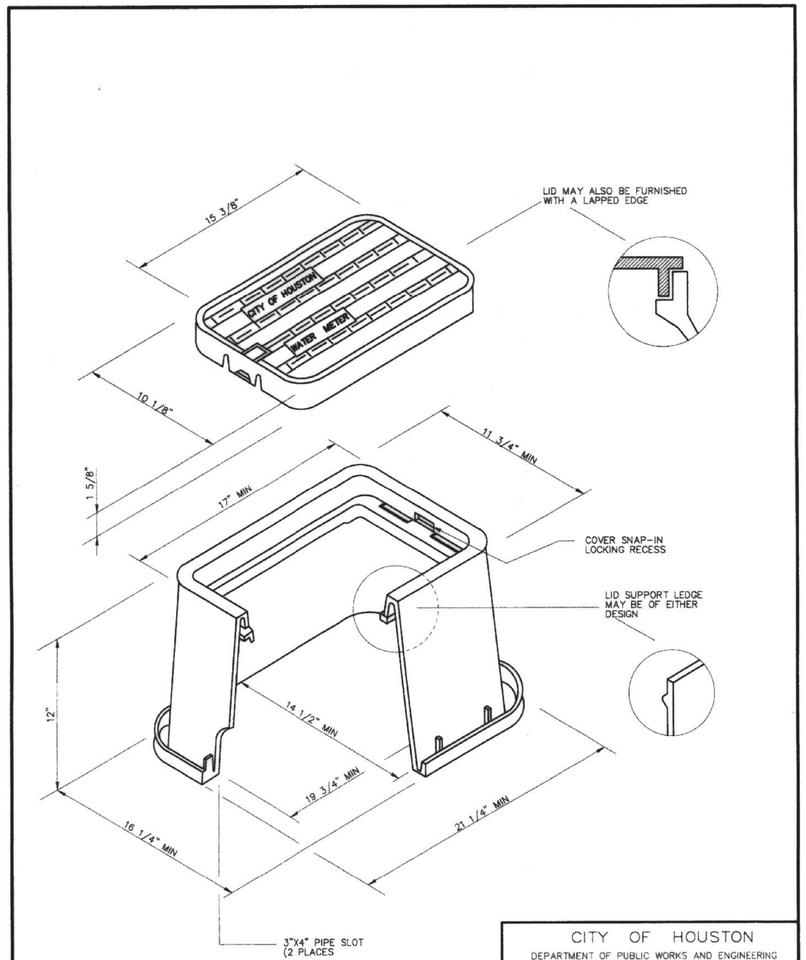
STREET LIGHTING PLANS

DIERDRE ANNE DR.,
TALL PINES DR. & PAR FOUR DR.

(SHEET 3 OF 3)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
HORIZ: 1"=50'	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 76 OF 158	

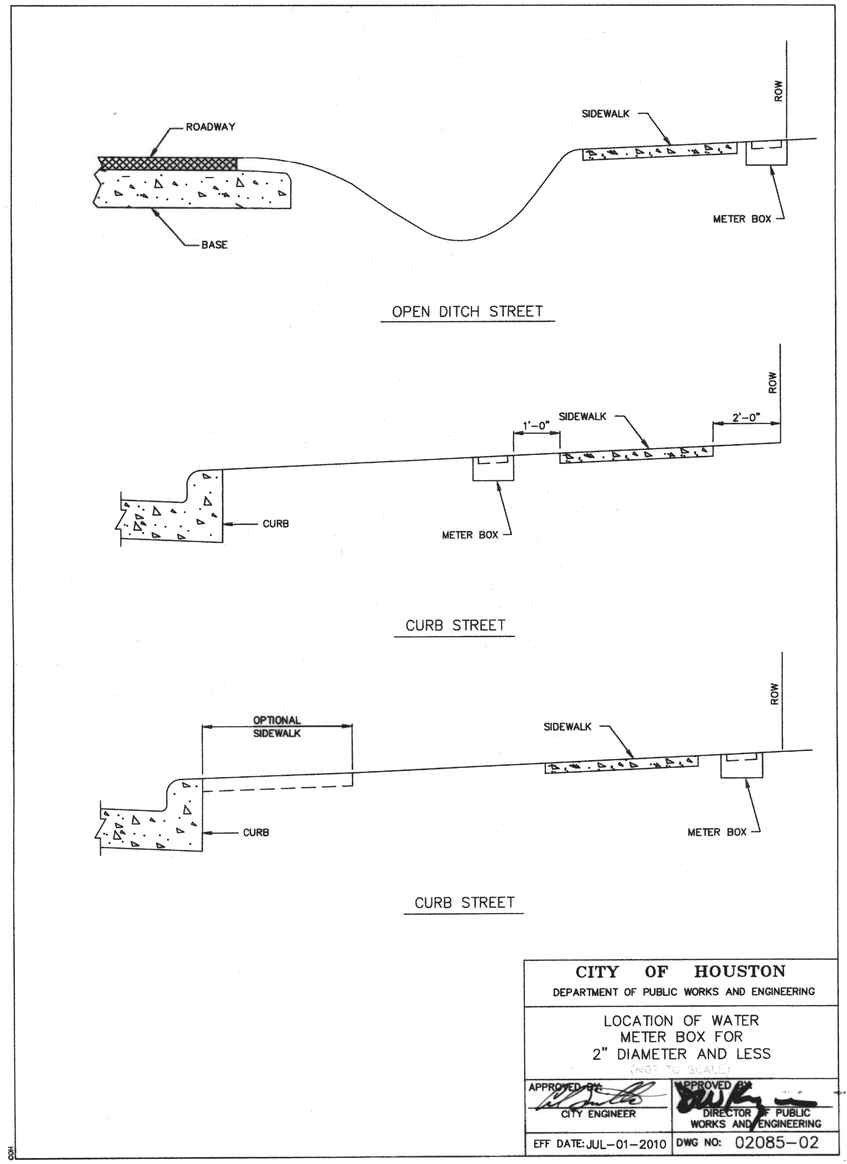
HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX



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 5/8" 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

ISANI
civil · design · engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
6/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

WATERLINE DETAILS
SHEET 1 OF 6

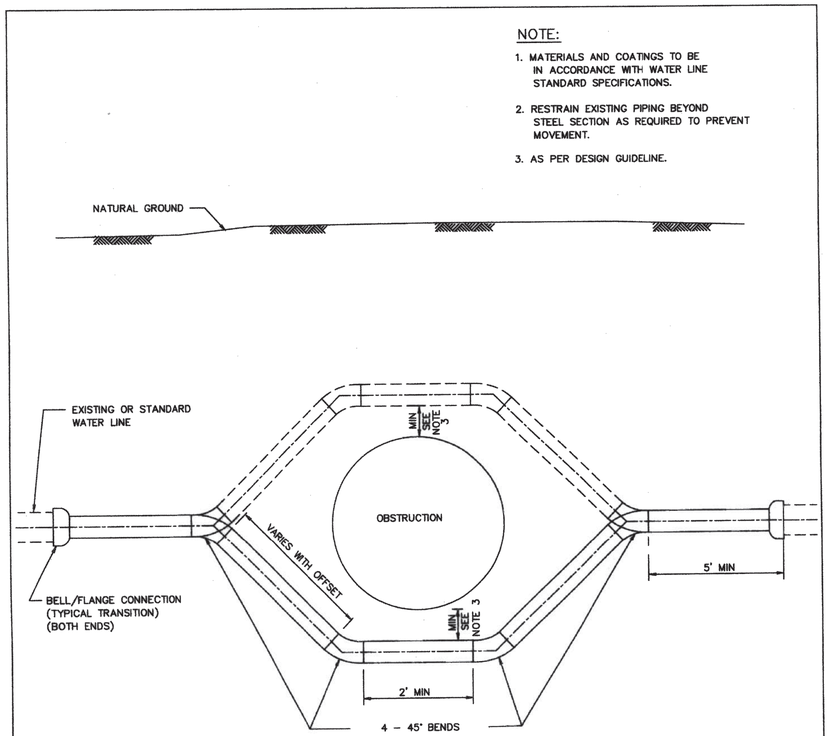
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 77 OF 158	

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 6/18/2025 6:04 PM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47-Details-Water.dwg

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 6/18/2025 6:04 PM

NOTE:

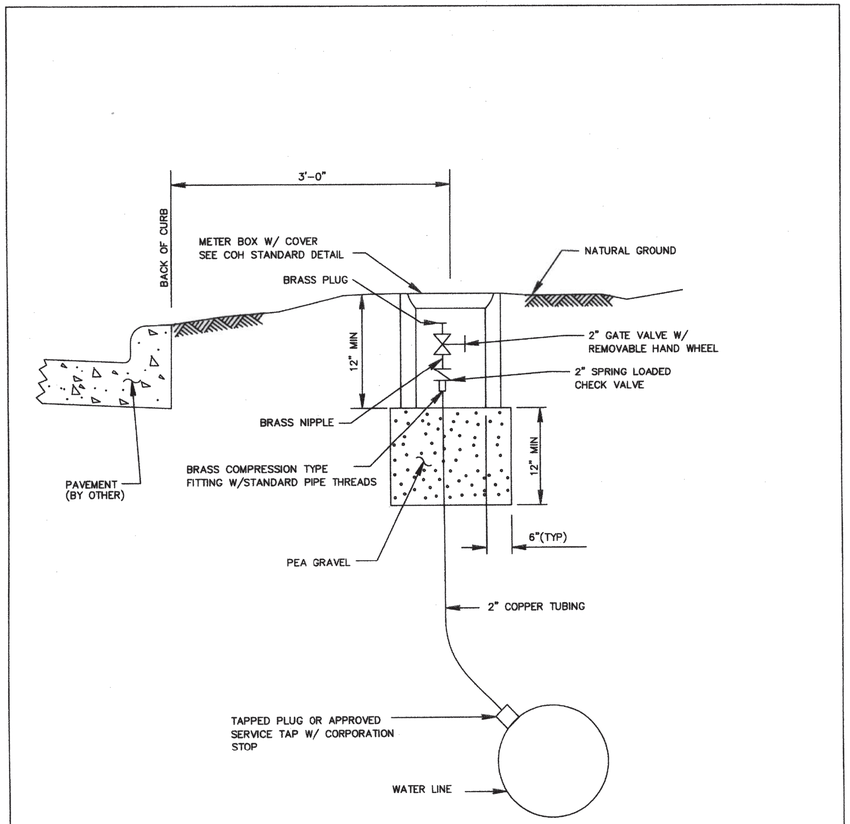
1. MATERIALS AND COATINGS TO BE IN ACCORDANCE WITH WATER LINE STANDARD SPECIFICATIONS.
2. RESTRAIN EXISTING PIPING BEYOND STEEL SECTION AS REQUIRED TO PREVENT MOVEMENT.
3. AS PER DESIGN GUIDELINE.



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. PLACE GATE VALVE VERTICAL TO GROUND WITH END OF BRASS PLUG 3 INCHES FROM SURFACE
2. PLACE METER BOX CENTER AROUND GATE VALVE BOX WITH LONG SIDE PARALLEL TO VALVE.

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
PERMANENT BLOW-OFF-DETAIL (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JULY-01-2010	DWG NO: 02524-01

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
6/18/25

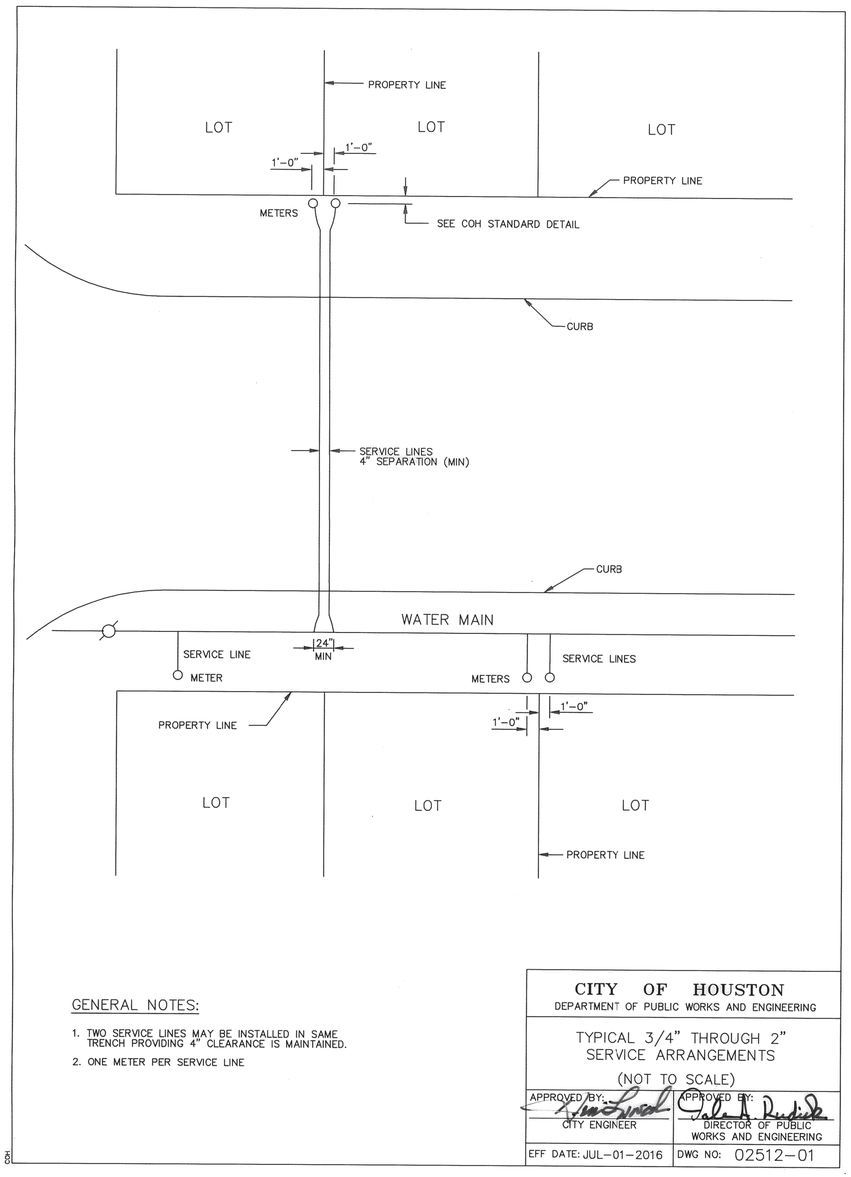
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

WATERLINE DETAILS
SHEET 2 OF 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 78 OF 158	

FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47-Details-Water.dwg



GENERAL NOTES:

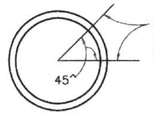
1. TWO SERVICE LINES MAY BE INSTALLED IN SAME TRENCH PROVIDING 4" CLEARANCE IS MAINTAINED.
2. ONE METER PER SERVICE LINE

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

PIPE TAPPING SCHEDULE

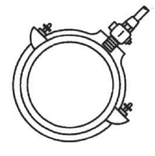
WATER MAIN TYPE AND DIAMETER	SERVICE SIZE			
	3/4"	1"	1 1/2"	2"
4" CAST IRON OR DUCTILE IRON	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
4" ASBESTOS (EXISTING) CEMENT	WBSS	WBSS	DSS, WBSS	DSS, WBSS
4" PVC (AWWA C900)	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
6" AND 8" CAST IRON OR DUCTILE IRON	DSS, WBSS	DSS, 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

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
6/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

WATERLINE DETAILS
SHEET 3 OF 6

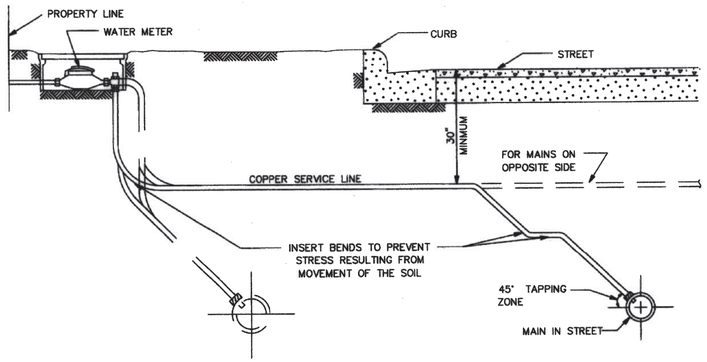
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 79 OF 158	

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 6/18/2025 6:04 PM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47-Details-Water.dwg

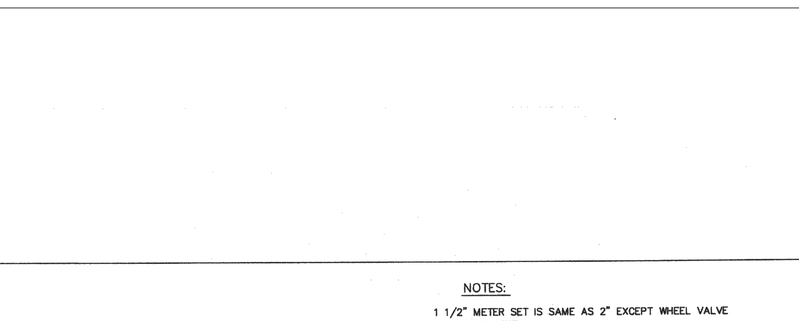
PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 6/18/2025 6:04 PM

NOTES:

1 1/2" METER SET IS SAME AS 2" EXCEPT WHEEL VALVE IS NOT REQUIRED.



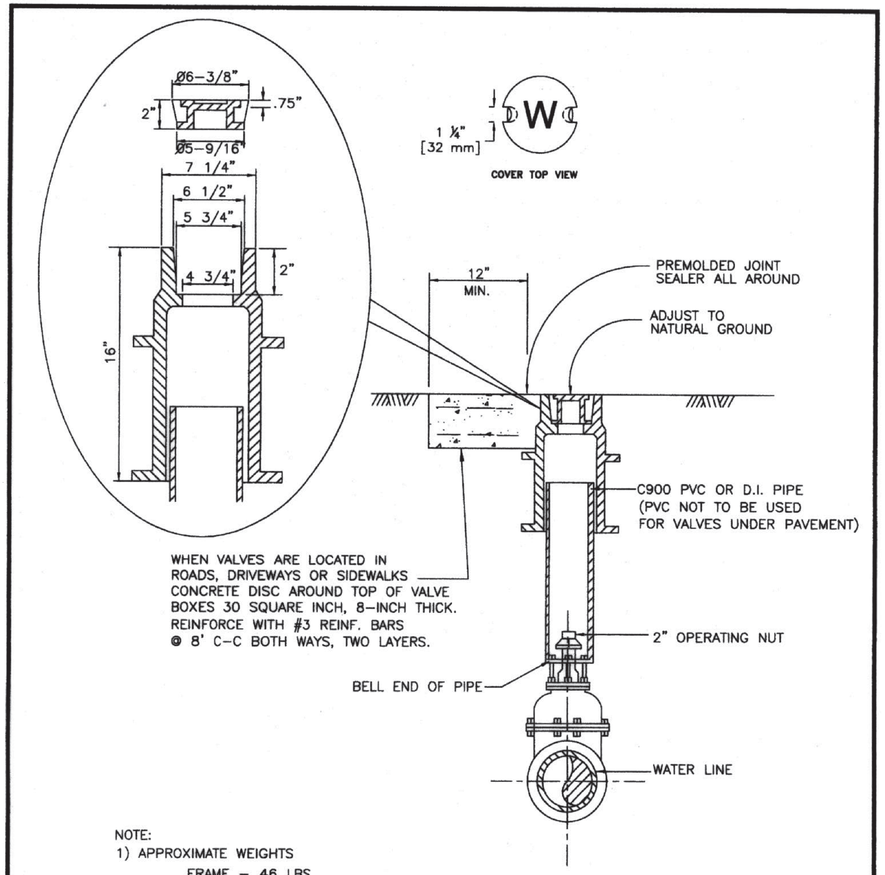
TYPICAL SECTION SERVICE LINE



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



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

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
6/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

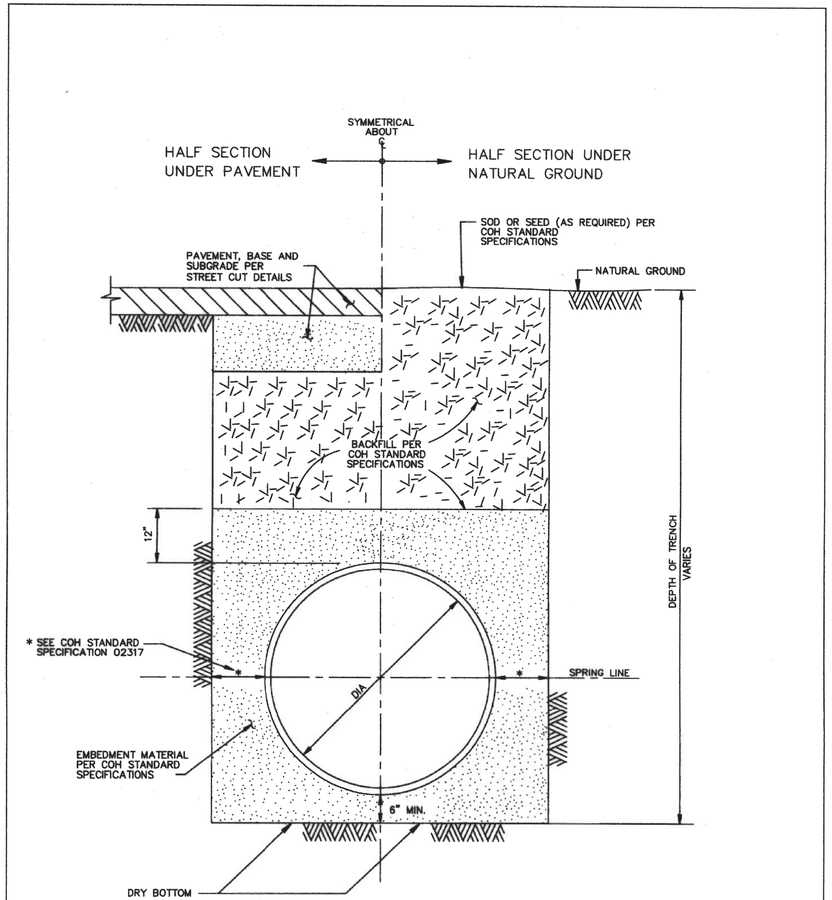
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

WATERLINE DETAILS
SHEET 4 OF 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 08/19/25 HOUSTON TX
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 80 OF 158	

FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47-Details-Water.dwg

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 6/18/2025 6:04 PM

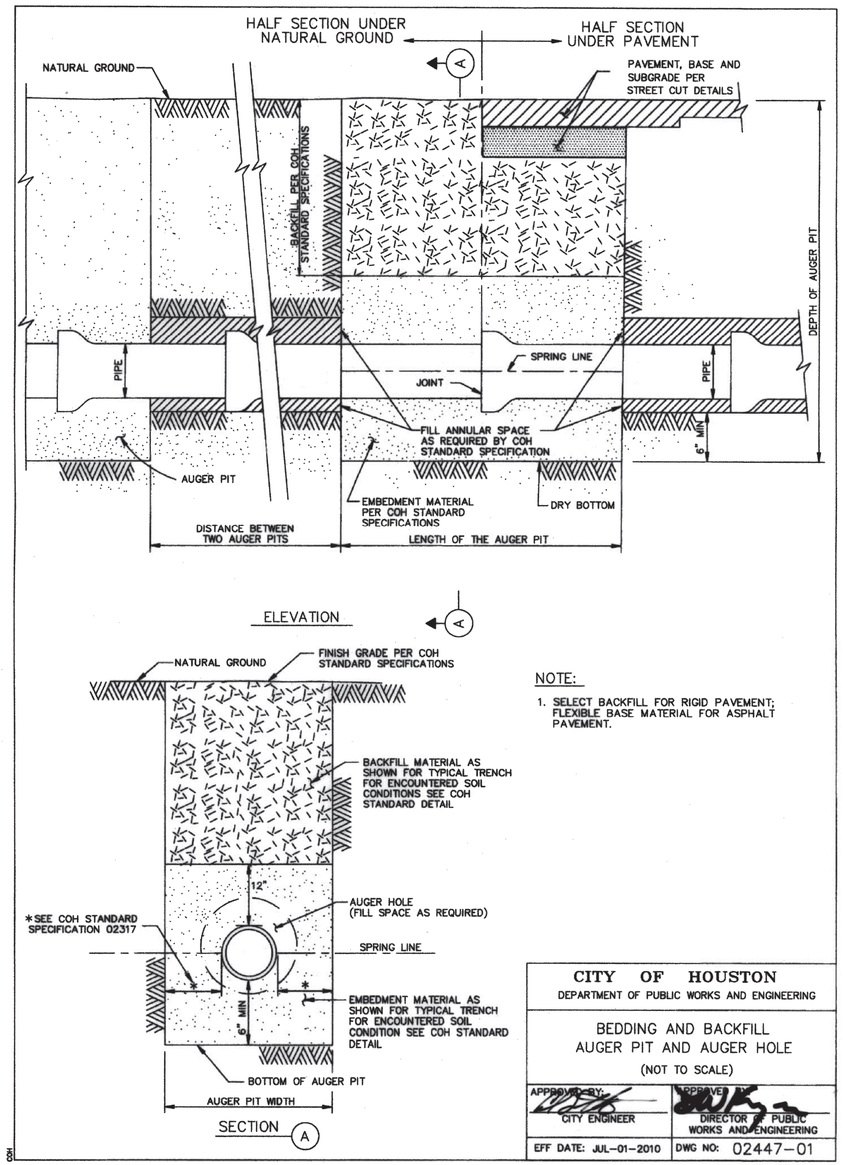


CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

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

COH



NOTE:

1. SELECT BACKFILL FOR RIGID PAVEMENT; FLEXIBLE BASE MATERIAL FOR ASPHALT PAVEMENT.

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

BEDDING AND BACKFILL
AUGER PIT AND AUGER HOLE
(NOT TO SCALE)

APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2010	DWG NO: 02447-01

COH

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
6/18/25

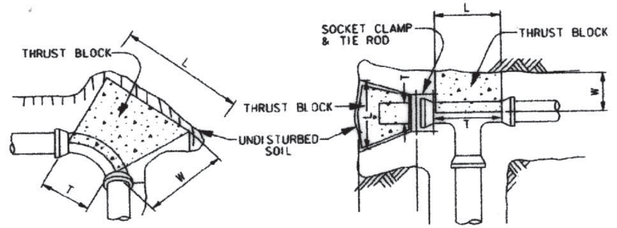
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

WATERLINE DETAILS
SHEET 5 OF 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 06/18/25 HOUSTON TX
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 81 OF 158	

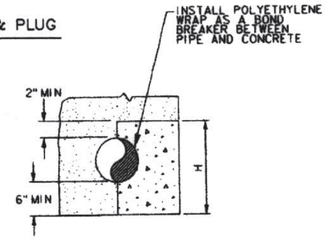
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47-Details-Water.dwg



90° BEND

(45° BENDS SIMILAR)

TEE & PLUG



PIPE
CROSS SECTION

MINIMUM BLOCKING DIMENSION IN INCHES												
PIPE SIZE	90° BEND				45° BEND				TEE/PLUG			
	W	H	L	T	W	H	L	T	W	H	L	T
4"	6	12	14	10	6	8	11	8	6	10	12	12
6"	8	14	26	12	8	14	14	12	8	14	19	19
8"	10	16	40	16	10	18	20	16	10	18	26	26
10"	12	24	42	18	12	22	25	18	12	24	30	30
12"	14	36	40	30	14	26	30	22	14	26	40	40

CORRECTION FACTORS		
SOIL TYPE	SOIL BEARING STRENGTH S_b (lb/ft²)	MULTIPLY "L" AND "H" BY
SOFT CLAY	1000	1.73
SILT	1500	1.41
SANDY SILT	3000	1.00
SAND	4000	0.87
SANDY CLAY	6000	0.71
HARD CLAY	9000	0.58

NOTES:

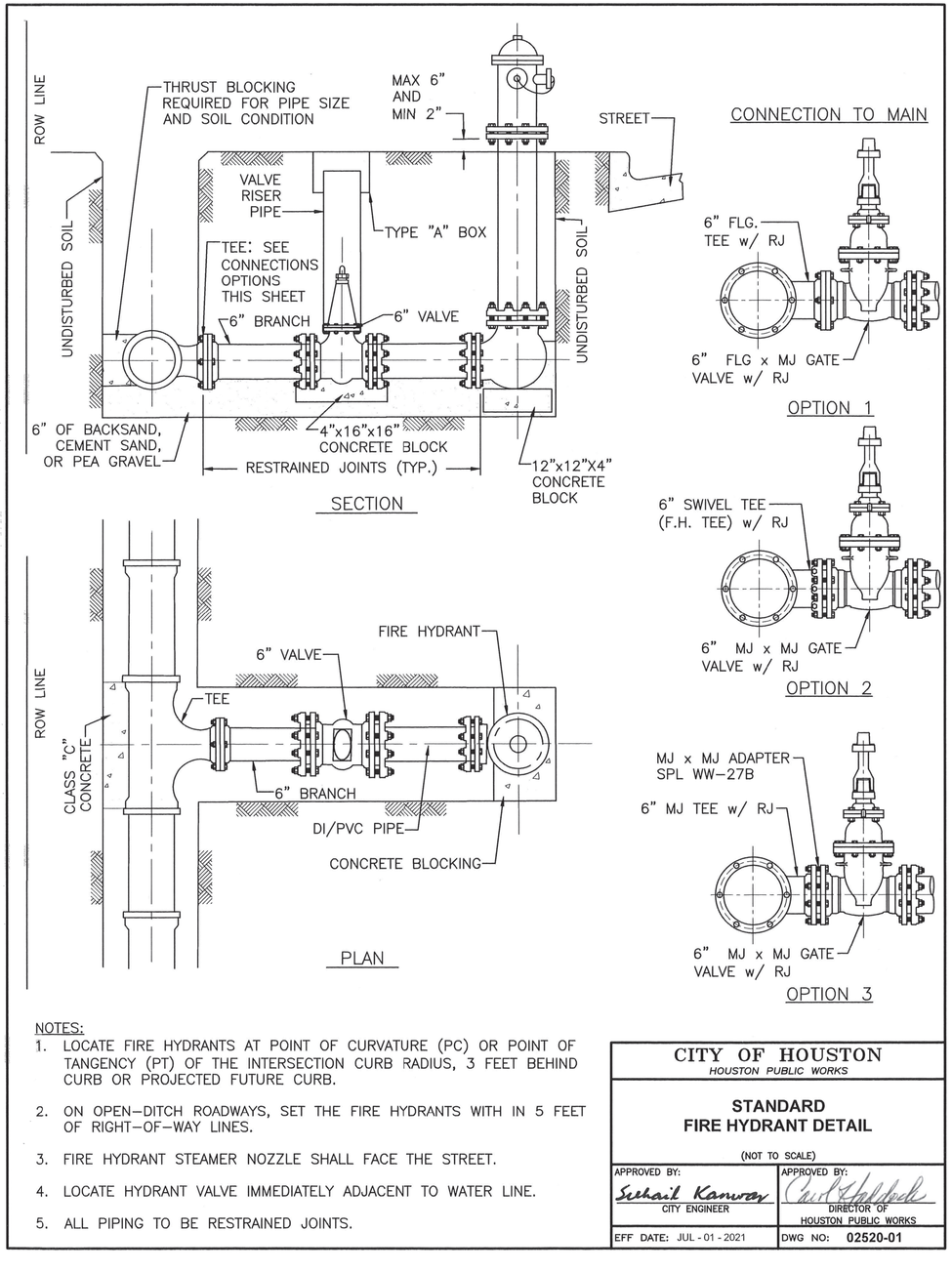
1. DEPTH "W" MAY BE GREATER THAN SPECIFIED TO ALLOW WORKING SPACE.
2. BLOCKING MUST BE PLACED AGAINST UNDISTURBED EARTH. WHERE THIS IS NOT POSSIBLE, THE FILL BETWEEN THE BEARING SURFACE AND UNDISTURBED SOIL MUST BE COMPACTED TO AT LEAST 90% STANDARD PROCTOR DENSITY.
3. PROVIDE CONCRETE IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 03315 – CONCRETE FOR UTILITY CONSTRUCTION.
4. BLOCKING DIMENSIONS SHOWN ARE BASED ON 3000 PSI SOIL BEARING STRENGTH AND 125 PSI INTERNAL WATER PRESSURE. FOR OTHER SOIL CONDITIONS, MULTIPLY DIMENSIONS "L" AND "H" BY THE APPROPRIATE CORRECTION FACTOR.

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

THRUST BLOCK DETAIL FOR WATER LINES (4–INCH TO 12 INCH)

(NOT TO SCALE)

APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JULY–01–2010	DWG NO: 02511–02



SECTION

PLAN

CONNECTION TO MAIN

OPTION 1

OPTION 2

OPTION 3

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: Suhail Kanwar, CITY ENGINEER	APPROVED BY: Carol Haddock, DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL - 01 - 2021	DWG NO: 02520-01

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P–6257

STATE OF TEXAS — RAHUL B. MENON — 130533 — LICENSED PROFESSIONAL ENGINEER — 6/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

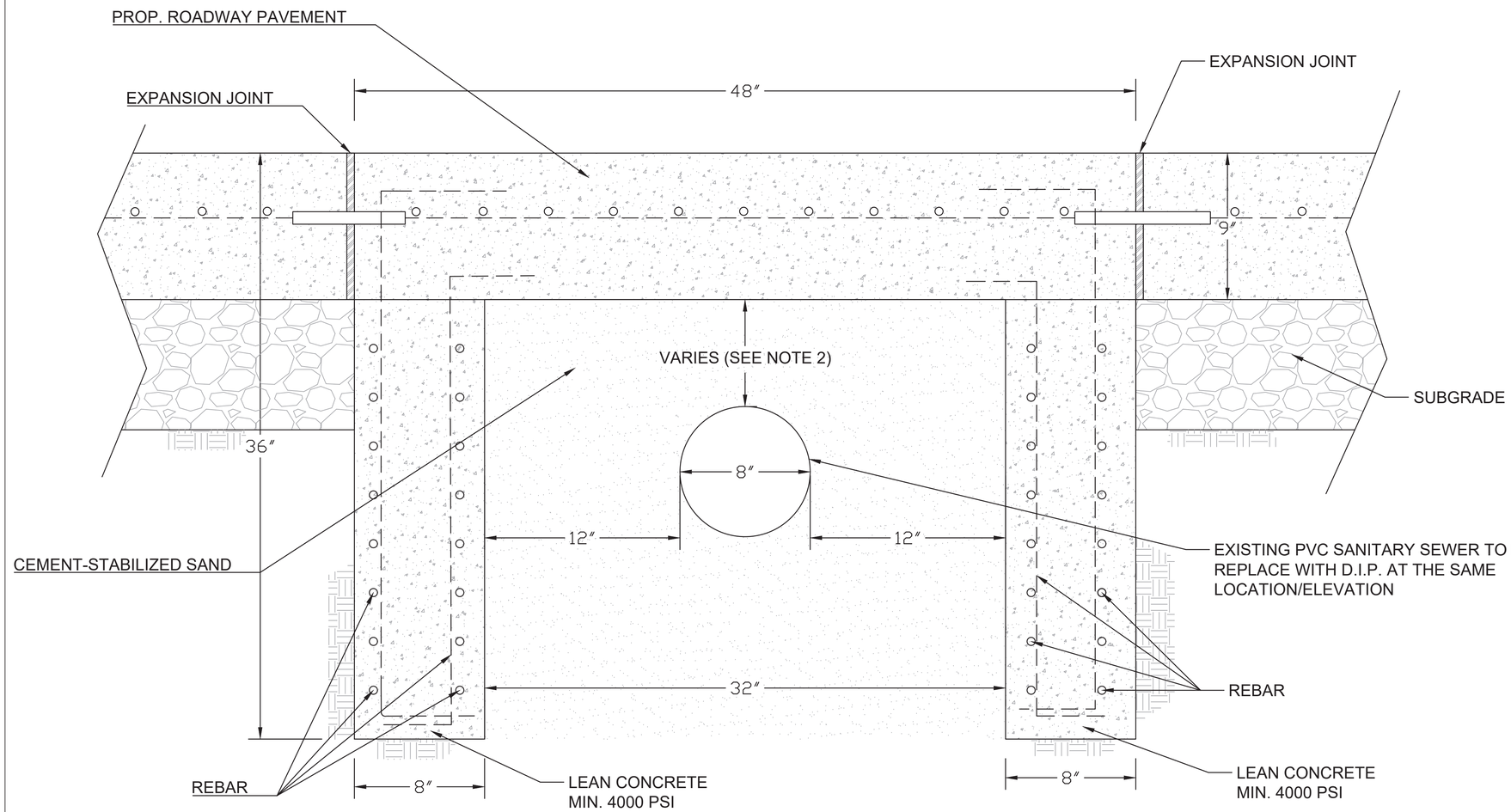
WATERLINE DETAILS
SHEET 6 OF 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410029–0001–4	
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 82 OF 158	

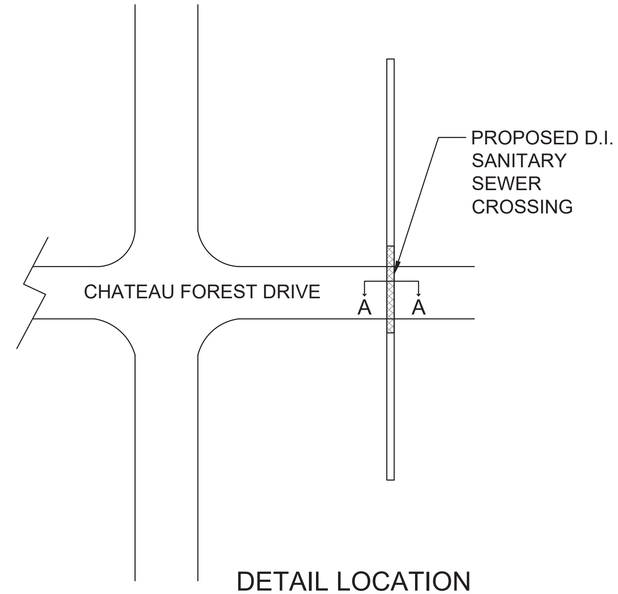
HOUSTON PUBLIC WORKS ACCEPTED AND FILED — 81720 CITY DRAWING NUMBER — Approval Date: 09/19/25 — HOUSTON TX.

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 6/18/2025 6:04 PM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47-Details-Water.dwg

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 6/18/2025 6:04 PM



TYPICAL CROSS-SECTION A-A



DETAIL LOCATION

NOTE:

1. THIS DETAIL IS FOR SUPPORT STRUCTURE ON CHATEAU FOREST AT ALL SANITARY SEWER CROSSINGS FOR THE FULL WIDTH OF THE PAVEMENT.
2. VARIES DEPENDENT ON DEPTH OF SEWER AND ELEVATION OF PAVEMENT.

SUPPORT STRUCTURE DETAILS

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
6/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

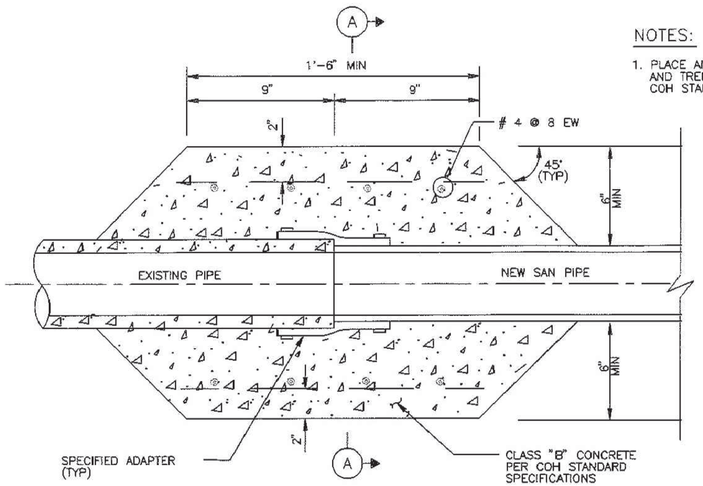
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

SANITARY SEWER DETAILS
SHEET 1 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 10/19/25 HOUSTON TX
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 83 OF 158	

FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47--Details--Support Structure.dwg

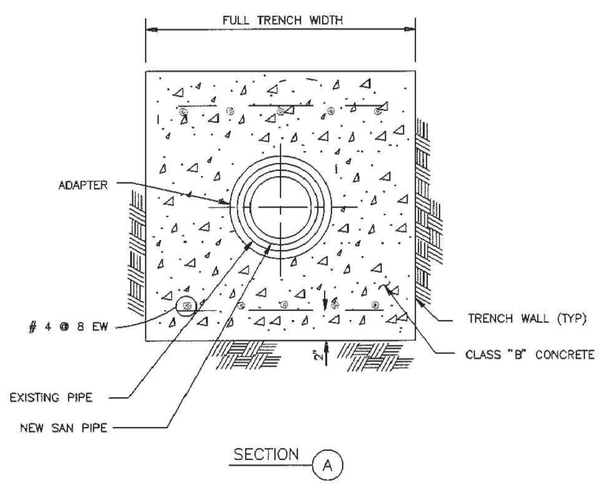
PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 6/18/2025 6:04 PM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47-Details-Sanitary 0503.dwg



NOTES:

1. PLACE AND COMPACT EMBEDMENT AND TRENCH ZONE BACKFILL PER COH STANDARD SPECIFICATIONS.

LONGITUDINAL SECTION



SECTION (A)

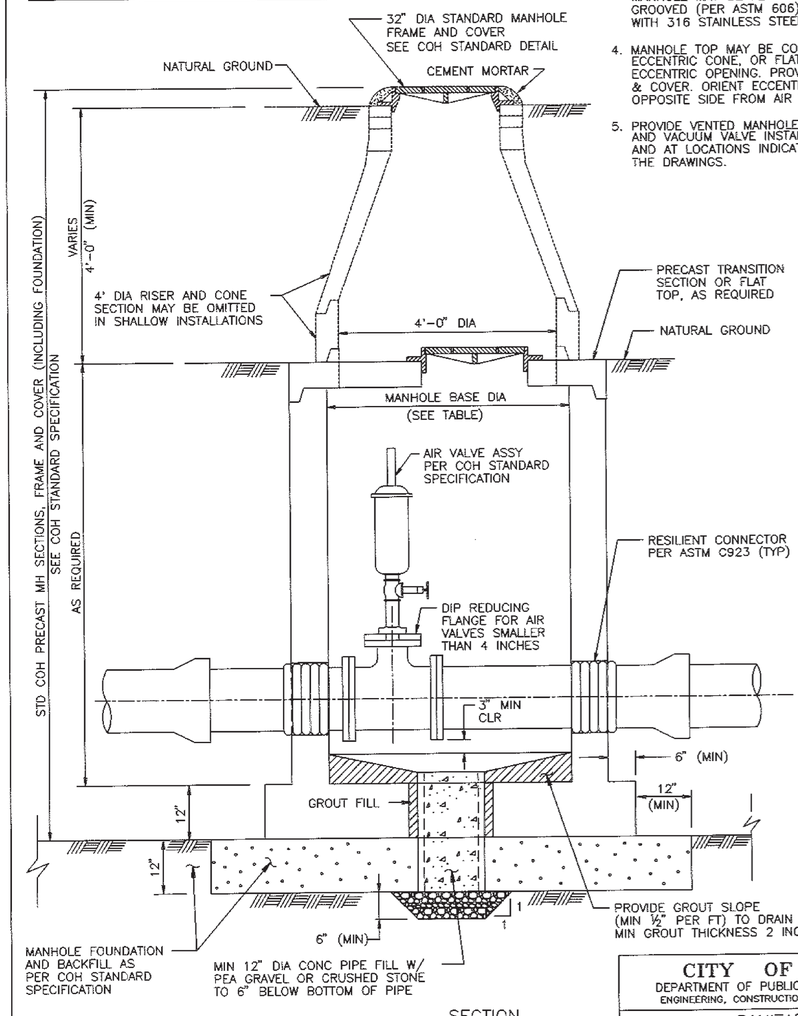
CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION	
SANITARY SEWER PIPE TRANSITION FOR 36" SEWER AND SMALLER (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002	DWG NO: 02531-04

NOTES TO SPECIFIER:

1. *CHECK THAT FORCE MAIN BURIAL DEPTH AT AIR VALVE MANHOLE WILL PROVIDE 1'-0" CLEAR SPACE OVER VALVE INSIDE MANHOLE.*
2. *SHOW STA LOCATION OR MANHOLE, TOP ELEV, AND VALVE SIZE ON PLAN & PROFILE SHEET.*
3. *INCLUDE ALSO VENTED MH DETAIL FOR AIR & VACUUM VALVE INSTALLATIONS.*

NOTES:

1. AIR VALVE MAY BE AIR RELEASE OR AIR AND VACUUM RELEASE VALVE AS NOTED ON PLAN AND PROFILE SHEET.
2. SEE COH STANDARD SPECIFICATION FOR AIR VALVE ASSEMBLY REQUIREMENTS.
3. PROVIDE LINED DUCTILE IRON PIPE, THICK CLASS 53, FOR FORCE MAIN WITHIN 12" OF OUTSIDE FACE OF MANHOLE. JOINTS WITHIN MANHOLE MAY BE FLANGED (AS SHOWN) OR GROOVED (PER ASTM 606) WITHIN MANHOLE, WITH 316 STAINLESS STEEL BOLTS.
4. MANHOLE TOP MAY BE CONCENTRIC CONE, ECCENTRIC CONE, OR FLAT TOP WITH ECCENTRIC OPENING. PROVIDE 32" FRAME & COVER. ORIENT ECCENTRIC OPENING OPPOSITE SIDE FROM AIR VALVE.
5. PROVIDE VENTED MANHOLE FOR AIR AND VACUUM VALVE INSTALLATIONS AND AT LOCATIONS INDICATED ON THE DRAWINGS.



SECTION

TABLE

MANHOLE BASE DIAMETER (FT)	MAX FORCE MAIN DIAMETER
4	8
6	16
8	36

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION	
SANITARY SEWER AIR RELEASE OR AIR/VACUUM RELEASE VALVE MANHOLE (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002	DWG NO: 02082-09

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS · RAHUL B. MENON · 130533 · LICENSED PROFESSIONAL ENGINEER
6/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

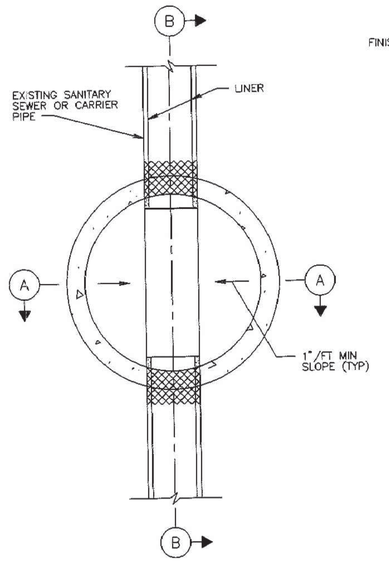
SANITARY SEWER DETAILS
SHEET 2 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 84 OF 158	

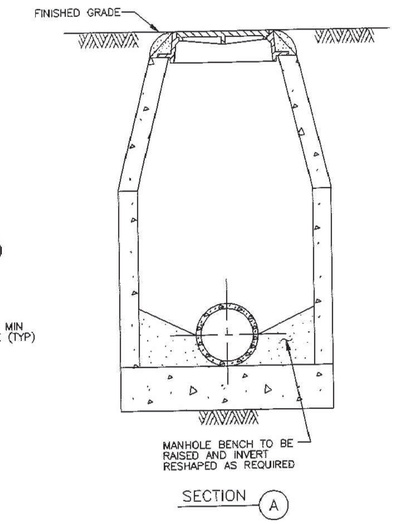
HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/16/25 HOUSTON TX

NOTES:

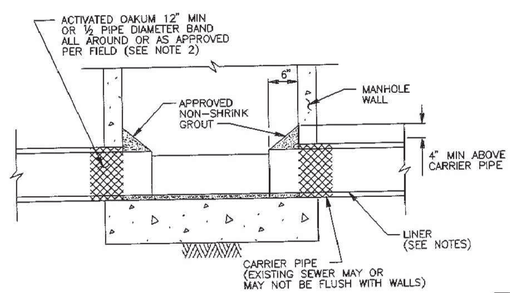
1. ANNULAR SPACE SHALL BE FILLED WITH NON-SHRINK GROUT, MINIMUM 12-INCH OR ONE HALF PIPE DIAMETER OR AS APPROVED BY ENGINEER.



PLAN



SECTION (A)



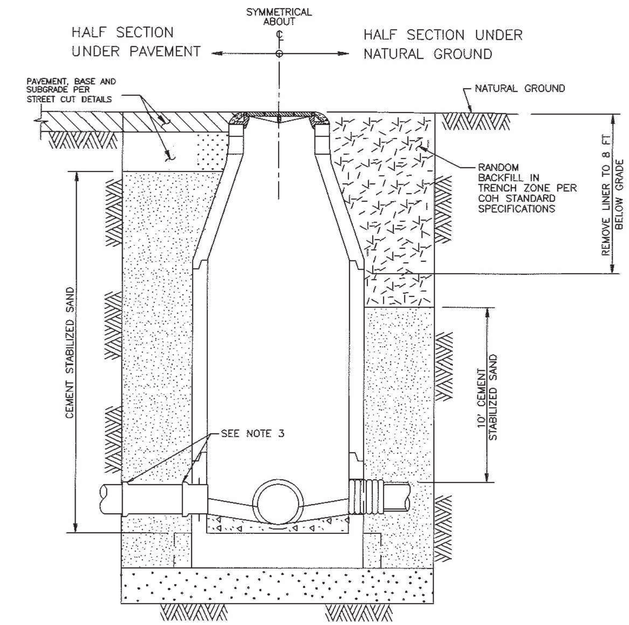
SECTION (B)

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION	
SANITARY SEWER SEALING OF SLIPLINING AT MANHOLE (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002	DWG NO: 02531-01

DGN

NOTES:

1. GROUTING OF MANHOLE STRUCTURE ANNULAR SPACE WILL BE PERMITTED IN CASES WHERE INSUFFICIENT WORK SPACE EXISTS FOR PLACEMENT AND COMPACTATION OF CEMENT STABILIZED SAND, PER COH STANDARD SPECIFICATION FOR TUNNEL GROUT.
2. THIS DETAIL ALSO APPLIES TO BACKFILL OF SHAFTS WITHOUT STRUCTURES.
3. ARRANGE PIPE JOINTS AS SHOWN WHEN USING RIGID CONNECTION TO CAST IN PLACE MANHOLE BASE.



TYPICAL CROSS - SECTION

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION	
SANITARY SEWER BACKFILL OF SHAFTS (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002	DWG NO: 02317-08

DGN

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
6/18/25

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

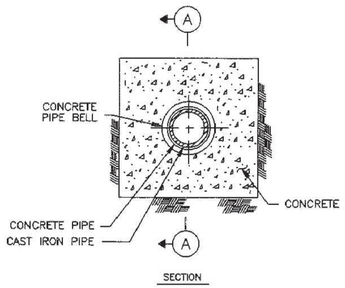
SANITARY SEWER DETAILS
SHEET 3 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date: 09/19/25 HOUSTON TX
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 85 OF 158	

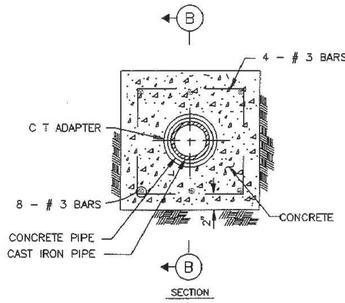
PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 6/18/2025 6:04 PM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47-Details-Sanitary 0503.dwg

NOTE:

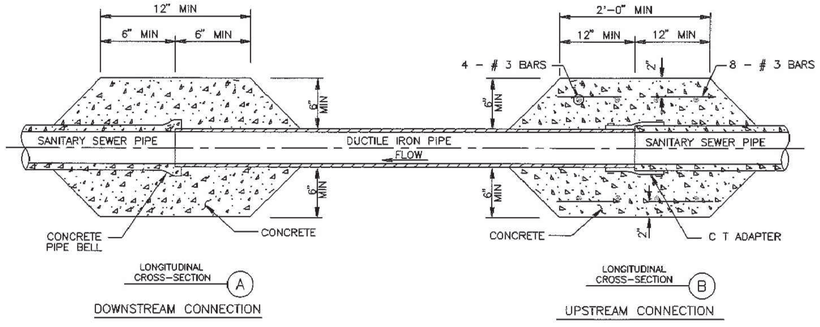
1. THE CONTRACTOR SHALL CENTER A MINIMUM OF 18 FOOT JOINT OF DUCTILE IRON PIPE OR C900 PVC PIPE ACROSS THE CENTER OF THE PROPOSED STORM SEWER.



SECTION



SECTION



CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION	
SANITARY SEWER DUCTILE IRON PIPE STORM SEWER CROSSING (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE:OCT-01-2002	DWG NO: 02531-03

NOTES:

1.) MATERIAL SHALL MEET OR EXCEED MINIMUM REQUIREMENTS OF ASTM A36 CARBON STEEL.

2.) TOP AND BOTTOM RINGS SHALL HAVE A CONTINOUS WELD.

3.) ALL "M5" STYLE RISERS ARE FOR HEIGHT ADJUSTMENTS EQUAL TO OR LESS THAN THE THICKNESS OF THE MANHOLE COVER.

4.) EACH RISER IS CUSTOM FABRICATED FROM MEASUREMENTS PROVIDED WITH EACH ORDER. REQUIRED MEASUREMENTS INCLUDE THE FOLLOWING:
A. EXIST. MANHOLE COVER DIAMETER - TOP & BOTTOM
B. EXISTING MANHOLE COVER THICKNESS
C. REQUIRED HEIGHT OF ADJUSTMENT

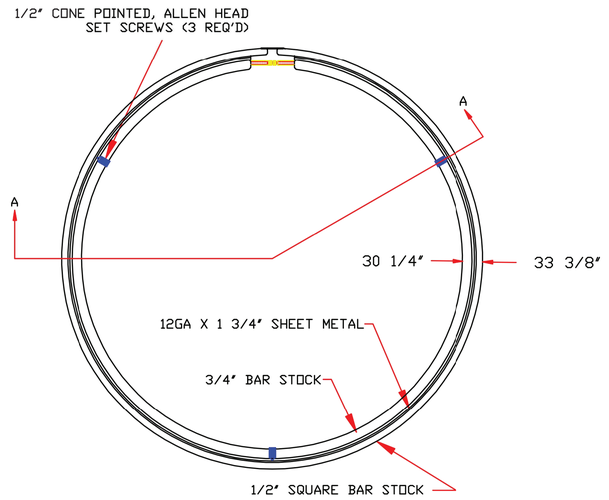
5.) MINIMUM RECOMMENDED HEIGHT OF ADJUSTMENT FOR REPAVING PROJECTS IS 1".

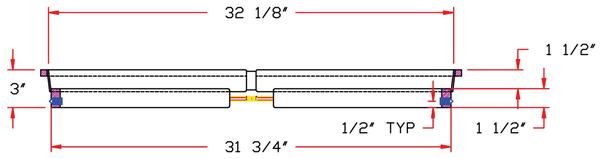
6.) HEIGHT ADJUSTMENTS ARE AVAILABLE IN 1/4" INCREMENTS.

7.) DURING INSTALLATION CHECK FOR FULL BEARING OF LOWER FRAME SECTION ON EXISTING CASTING.

8.) DIMENSIONS MAY VARY TO MEET EXISTING FIELD CONDITIONS. ANY CHANGE IN DIMENSIONS SHALL BE APPROVED BY THE OWNER.

9.) AFTER FABRICATION, RISERS ARE COATED WITH EITHER A WATER BASED BITUMINOUS ASPHALT EMULSION PAINT OR BASF E-COAT W/ CHARCOAL BLACK TOPCOAT.





CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE GROUP	
STEEL ADJUSTING RISER (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF. DATE: XX-XX-XX	DWG. NO: 02084-02B

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
6/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

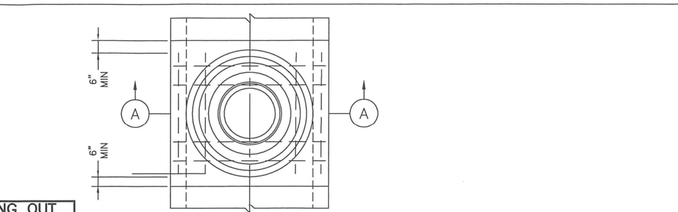
SANITARY SEWER DETAILS
SHEET 4 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 86 OF 158	

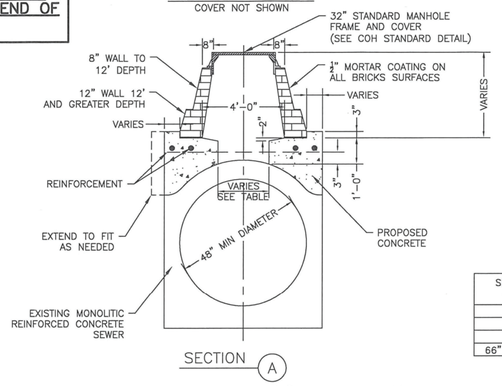
PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 6/18/2025 6:04 PM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47-Details-Sanitary 0503.dwg

02081–05

COH IS PHASING OUT BRICK. NEW DETAILS TO BE POSTED END OF 2019



PLAN OF TYPE "E"
COVER NOT SHOWN



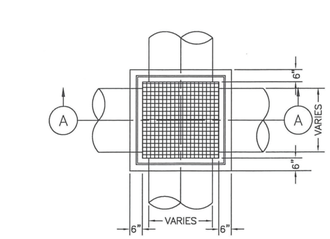
SECTION A

TABLE
SEWER SIZE VS OPENING

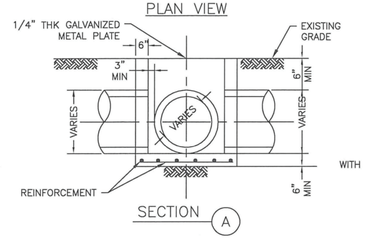
SEWER SIZE (INCHES)	MANHOLE BASE DIAMETER
48"	36"
54"	36"
60"	42"
66" OR GREATER	48"

STORM SEWER MANHOLE TYPE 'E' FOR EXISTING MONOLITIC REINFORCED CONCRETE 48" DIAMETER AND GREATER
NTS

02081–06

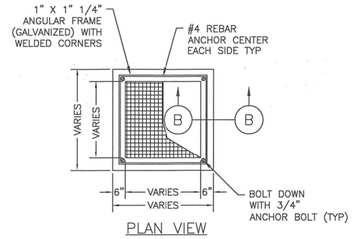


PLAN VIEW

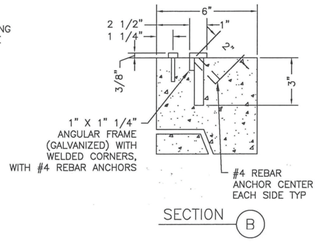


SECTION A

JUNCTION BOX DETAIL



PLAN VIEW



SECTION B

LID FRAME DETAIL

NOTES:

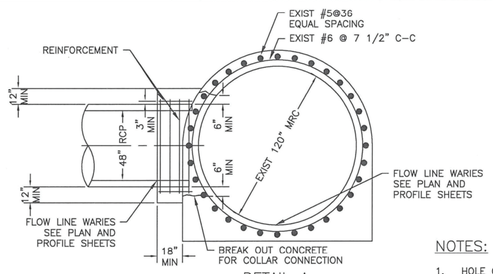
1. DETAIL TO BE USED WHERE STORM SEWER SIZE IS 24" DIA OR LESS.
2 FOR SEWER GREATER 24" DIA USE TYPE 'C' MANHOLE.

NOTES TO SPECIFIER:

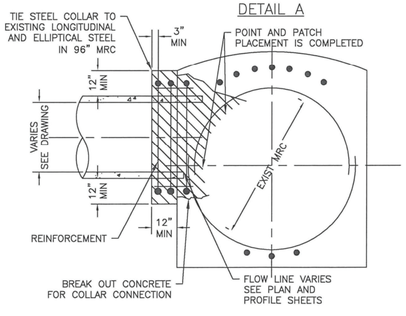
1. WALL TO BE 6" CONCRETE
2. NOT TO BE USED IN STREET. FOR AREA BETWEEN CURB AND PROPERTY LINE ONLY.

STORM SEWER
JUNCTION BOX WITH LID OR GRATE TOP
FOR MAXIMUM OF 24" DIAMETER STORM SEWE4R5
NTS

02081–07



DETAIL A



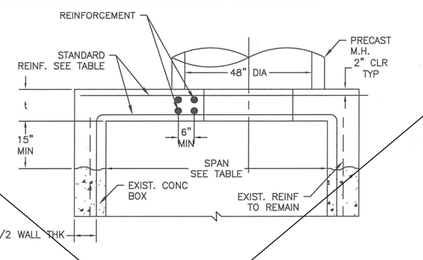
CONCRETE COLLAR DETAIL

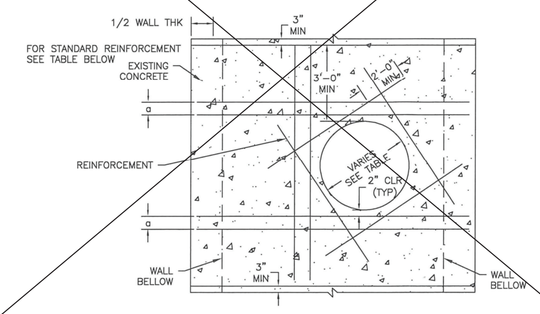
NOTES:

1. HOLE CUT IN WALL OF 120" MRC TO BE NEAT AND DONE IN WORKMAN LIKE MANNER.
2. THE STEEL COLLAR TO EXIST LONGITUDINAL AND ELLIPTICAL STEEL WHERE APPLICABLE.
3. CONCRETE COLLAR SHALL BE CONSTRUCTED AT EACH CONNECTION OF A PROPOSED RCP TO AN EXISTING MRC. HOLE CUT IN WALL OF EXISTING 96" MRC TO BE NEAT AND DONE IN WORKMAN LIKE MANNER.

LATERAL CONNECTION TO EXISTING MONOLITHIC REINFORCED CONCRETE STORM SEWER
NTS

02081–08





PROPOSED MANHOLE ON EXISTING BOX STORM SEWER
NTS

FIRM INFORMATION | ENGINEER'S SEAL

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STORM SEWER
02081–05 THROUGH 08

APPROVED BY: CITY ENGINEER | APPROVED BY: DEPUTY DIRECTOR

APPROVED BY: DIRECTOR

EFFECTIVE DATE: JUL–01–2019

FOR CITY OF HOUSTON USE ONLY

SHEET NO.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P–6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
6/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

STORM DETAILS
SHEET 1 OF 12

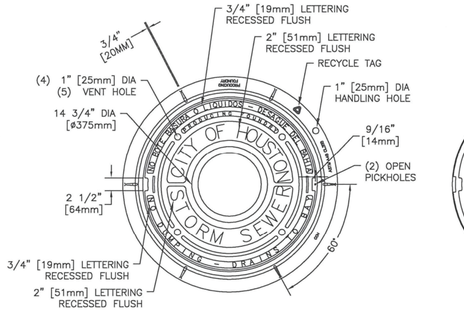
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410029–0001–4	
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 87 OF 158	

HOUSTON PUBLIC WORKS ACCEPTED AND FILED
81720 CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 6/18/2025 6:05 PM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47-Details-Storm_0718.dwg

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 6/18/2025 6:05 PM

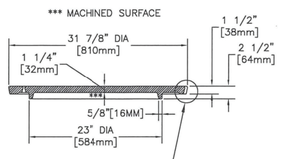
02084-02



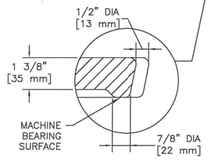
BOTTOM VIEW OF COVER

NOTES:

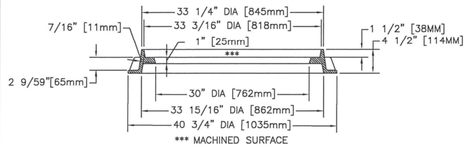
1. APPROXIMATE WEIGHTS.
   FRAME – 170 LBS (77KGS)
   COVER – 270 LBS (123KGS)
   UNIT – 440 LBS (200KGS)
2. MATERIALS – GRAY IRON ASTM A48 CL35B
3. CASTING TO MEET M306 PROOF LOAD SPECIFICATION
4. EJIW V-1420 ASY OR APPROVED EQUAL



COVER SECTION



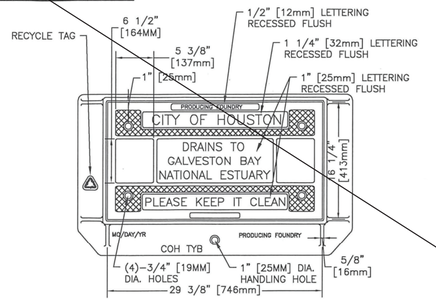
OPEN PICKHOLE DETAIL

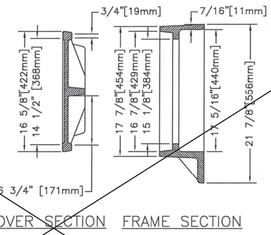


FRAME SECTION

STORM SEWER MANHOLE FRAME AND COVER
NTS

02084-03

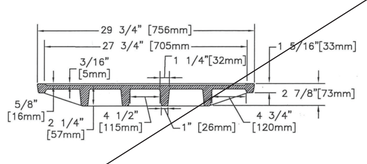




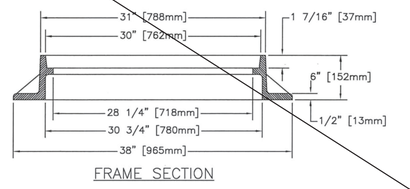
COVER SECTION FRAME SECTION

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 PROOF LOAD SPECIFICATION
4. EJIW V-4241 ASY OR APPROVED EQUAL



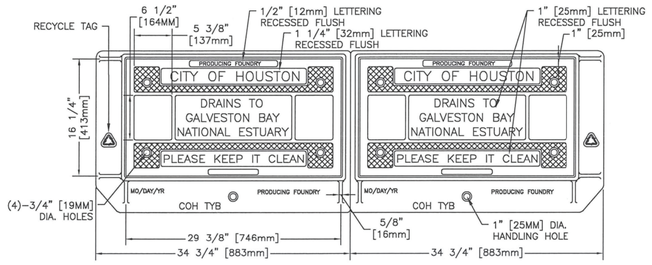
COVER SECTION

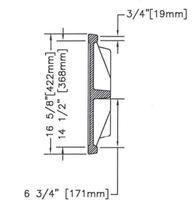


FRAME SECTION

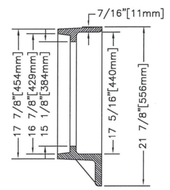
STORM SEWER TYPE "B" INLET ASSEMBLY
NTS

02084-04





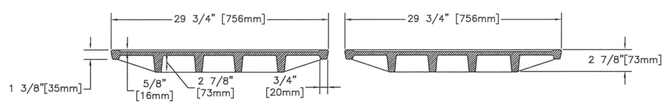
COVER SECTION



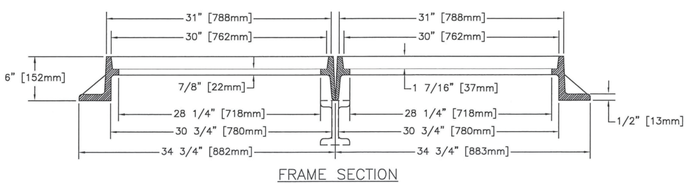
FRAME SECTION

NOTES:

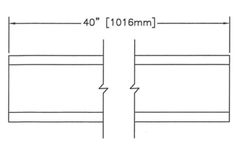
1. APPROXIMATE WEIGHTS.
   FRAME – 125 LBS (57KGS)
   COVER – 120 LBS (55KGS)
   I BEAM – 107 LBS (49KGS)
   UNIT – 597 LBS (271KGS)
2. MATERIALS – GRAY IRON ASTM A48 CL35B
3. CASTING TO MEET M306 PROOF LOAD SPECIFICATION
4. EJIW V-4243 ASY OR APPROVED EQUAL

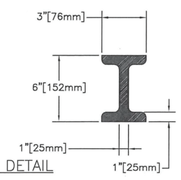


COVER SECTION COVER SECTION



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: _____ CITY ENGINEER
APPROVED BY: _____ DEPUTY DIRECTOR
APPROVED BY: _____ DIRECTOR

EFFECTIVE DATE: JUL-01-2019

FOR CITY OF HOUSTON USE ONLY

SHEET NO.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
6/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

STORM DETAILS
SHEET 2 OF 12

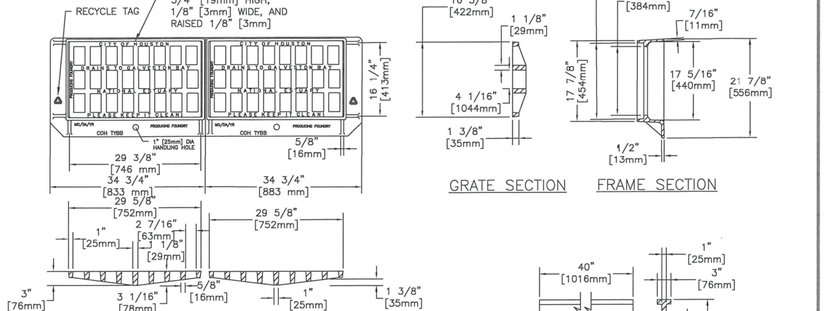
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 88 OF 158	

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date: 09/16/25
HOUSTON TX

FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47-Details-Storm_0718.dwg

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 6/18/2025 6:05 PM

02084-05

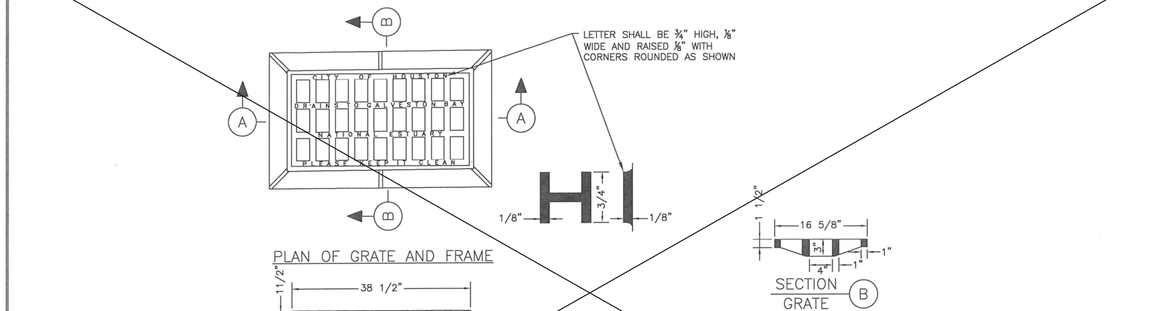


1) NOTE: APPROXIMATE WEIGHTS.
   GRATE – 115 LBS 52kg
   FRAME – 120 LBS 55kg
   I BEAM – 107 LBS 49kg
   UNIT – 577 LBS 262kg
2) MATERIAL– GRAY IRON ASTM A48 CL35B
3) CASTING TO MEET M306 PROOF LOAD SPECIFICATION
4) EJIW V-4243 ASY OR APPROVED EQUAL

OPEN AREA OF GRATE
240 SQ. IN.
[1548 SQ. cm.]

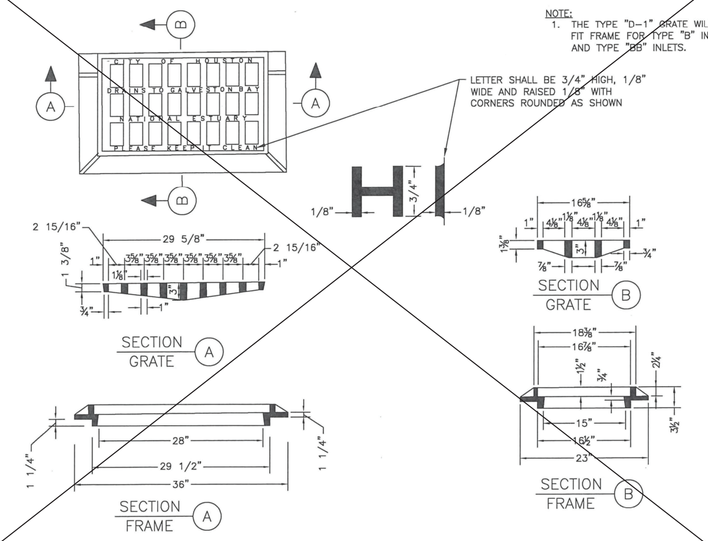
STORM SEWER FRAME AND GRATE FOR TYPE B-B INLET DOUBLE ASSEMBLY
NTS

02084-06



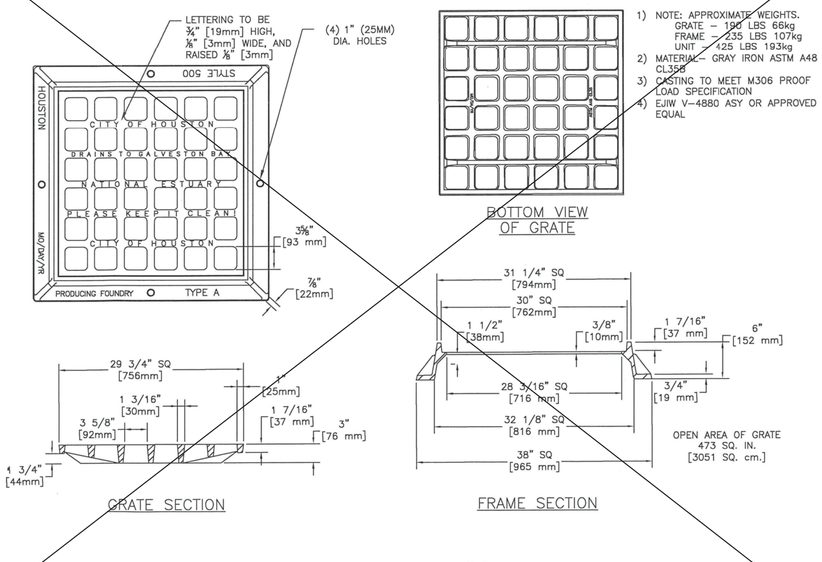
STORM SEWER TYPE "D" INLET GRATE AND FRAME
NTS

02084-07



STORM SEWER TYPE "D-1" INLET GRATE AND FRAME
NTS

02084-08



1) NOTE: APPROXIMATE WEIGHTS.
   GRATE – 190 LBS 66kg
   FRAME – 235 LBS 107kg
   UNIT – 425 LBS 193kg
2) MATERIAL– GRAY IRON ASTM A48 CL35B
3) CASTING TO MEET M306 PROOF LOAD SPECIFICATION
4) EJIW V-4880 ASY OR APPROVED EQUAL

OPEN AREA OF GRATE
473 SQ. IN.
[3051 SQ. cm.]

STORM SEWER TYPE "A" INLET GRATE AND FRAME
NTS

FIRM INFORMATION | ENGINEER'S SEAL

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STORM SEWER
02084-05 THROUGH 08

APPROVED BY:	APPROVED BY:
CITY ENGINEER	DEPUTY DIRECTOR
APPROVED BY: DIRECTOR	
EFFECTIVE DATE: JUL-01-2019	
FOR CITY OF HOUSTON USE ONLY	

SHEET NO.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
6/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

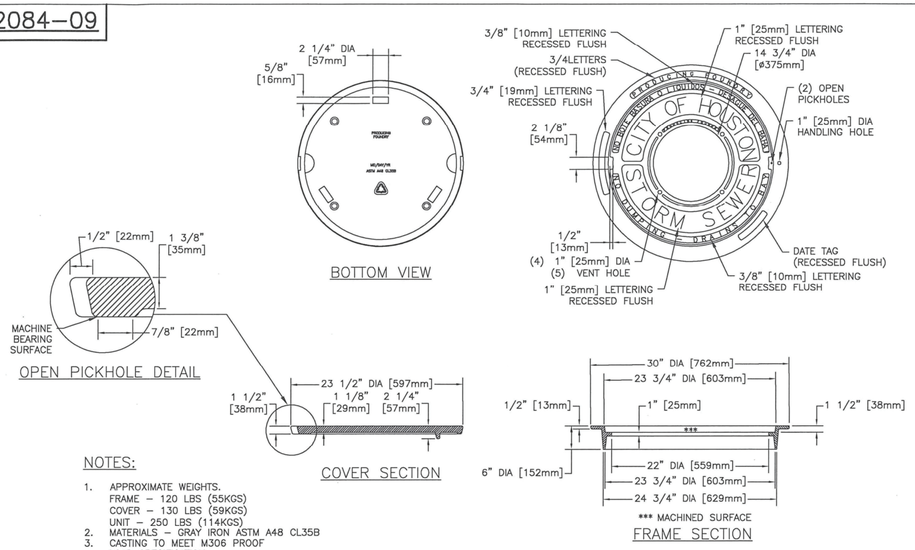
STORM DETAILS
SHEET 3 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date: 09/16/25 HOUSTON TX
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 89 OF 158	

FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47-Details-Storm_07.18.dwg

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 6/18/2025 6:05 PM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47-Details-Storm_0718.dwg

02084-09

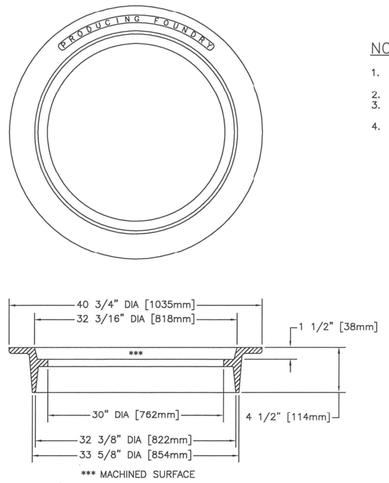


NOTES:

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

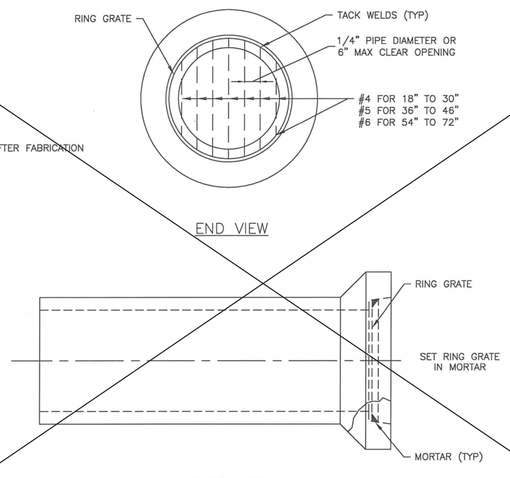


NOTES:

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

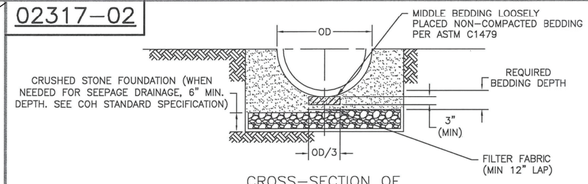


NOTES:

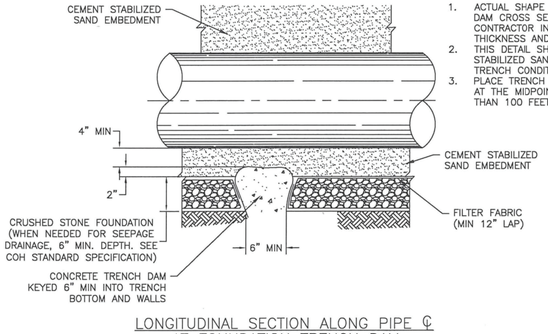
1. GALVANIZED GRATE AFTER FABRICATION

STORM SEWER
RING GRATE FOR OPEN END
OF 18" TO 72" RCP STUBS TO DITCH
NTS

02317-02



CROSS-SECTION OF
CRUSHED STONE FOUNDATION



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.

LONGITUDINAL SECTION ALONG PIPE ℄
AT FOUNDATION TRENCH DAM

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
FOR CITY OF HOUSTON USE ONLY

SHEET NO.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
6/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

STORM DETAILS
SHEET 4 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 07/1925 HOUSTON TX
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 90 OF 158	

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 6/18/2025 6:05 PM

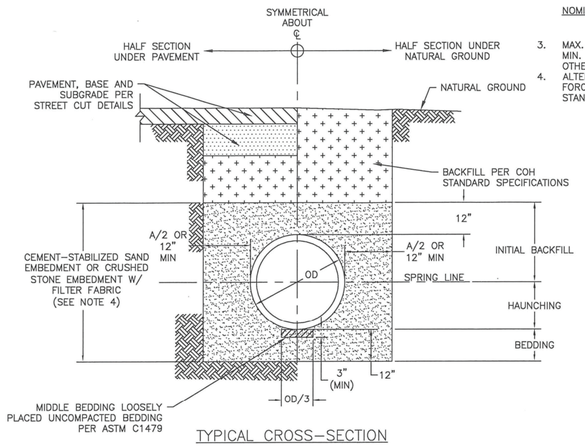
02317–03

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.



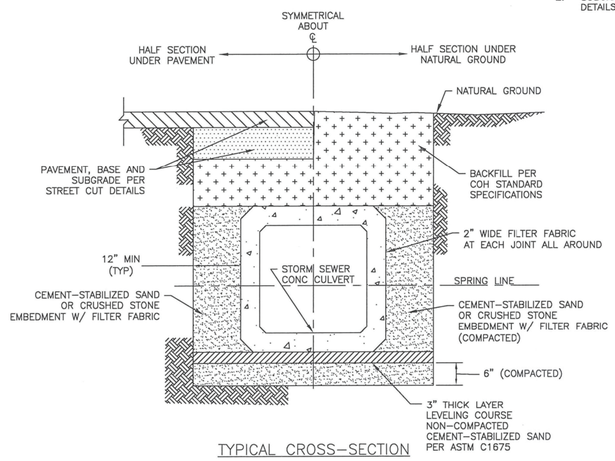
TYPICAL CROSS–SECTION

SANITARY OR STORM SEWER BEDDING AND BACKFILL FOR DRY STABLE TRENCH
NTS

02317–05

NOTES:

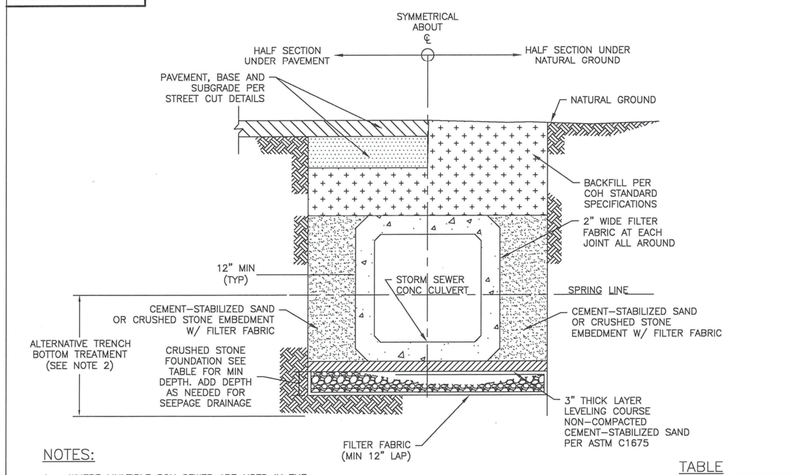
1. WHERE MULTIPLE BOX SEWER ARE USED IN THE SAME TRENCH, MIN. OUTSIDE TO OUTSIDE BOX SEWER SEPERATION SHALL BE 6".
2. SUBGRADE AND PAVEMENT FOR STREET CUT DETAILS – 02951.



TYPICAL CROSS–SECTION

PRECAST CONCRETE BOX STORM SEWER BEDDING AND BACKFILL FOR DRY STABLE TRENCH
NTS

02317–06



NOTES:

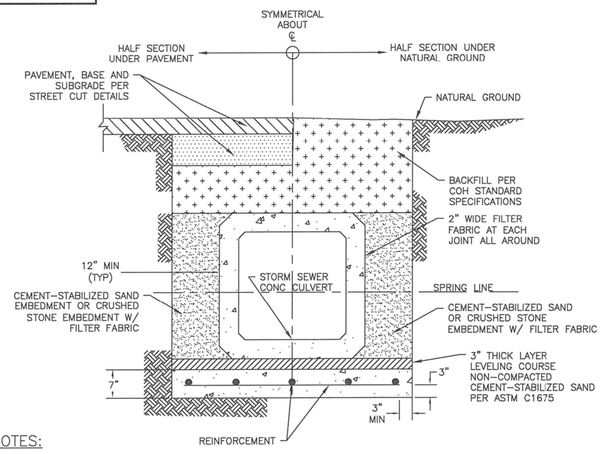
1. WHERE MULTIPLE BOX SEWER ARE USED IN THE SAME TRENCH, MIN. OUTSIDE TO OUTSIDE BOX SEWER SEPERATION SHALL BE 6".
2. ALTERNATIVE TRENCH BOTTOM TREATMENT MAY BE USED AS APPROVED BY THE CITY OF ENGINEERS AND AS PAID FOR IN THE PROPOSAL.

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

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

SHEET NO.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P–6257

STATE OF TEXAS · RAHUL B. MENON · 130533 · LICENSED PROFESSIONAL ENGINEER · 6/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

STORM DETAILS
SHEET 5 OF 12

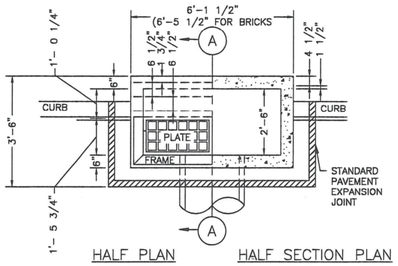
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410029–0001–4	
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 91 OF 158	

HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/9/25 HOUSTON TX

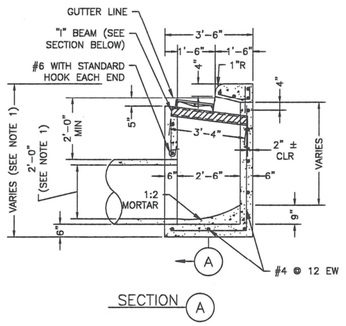
FILE PATH: P:\ACTIVE_21DR47\Ph II\Working\Drawing 95%\21DR47-Details-Storm_0718.dwg

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 6/18/2025 6:05 PM

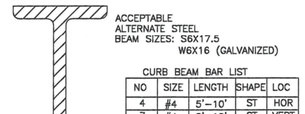
02632-04



HALF PLAN HALF SECTION PLAN



SECTION A



SECTION THRU BEAM

CURB BEAM BAR LIST

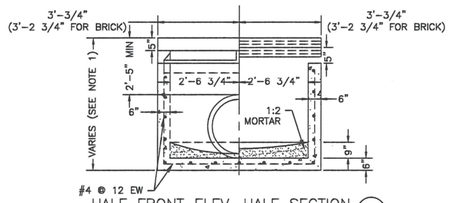
NO	SIZE	LENGTH	SHAPE	LOC
4	#4	5'-10'	ST	HOR
7	#4	0'-10'	ST	VERT
7	#3	1'-6'	BT	

NOTES:

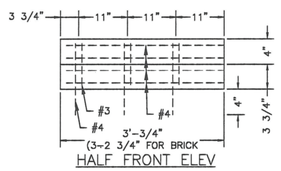
1. DIMENSION VARIES BASED ON PIPE DIAMETER AND WALL THICKNESS.
2. CENTER REINFORCING IN SLAB AND WALLS. CENTER STEEL BEAM ON INLET AND CAST INTO WALLS AS SHOWN.
3. WHEN TOP OF CURB TO FLOWLINE IS GREATER THAN 8 FEET USE TYPE "C" INLET.

GENERAL NOTES:

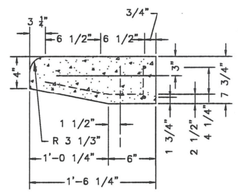
USE STANDARD CAST IRON FRAME & PLATES. LEAD SHALL LEAVE INLET AT LOCATION AND GRADE REQUIRED.



HALF FRONT ELEV HALF SECTION B



HALF FRONT ELEV



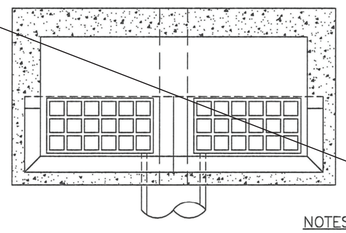
TRANSVERSE SECTION

PRECAST CURB BEAM

STORM SEWER TYPE "B-B" INLET
NTS

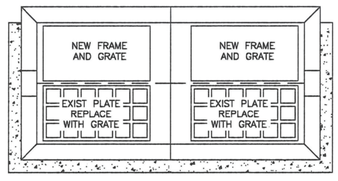
02632-05

STEP 1: EXIST TYPE "B" INLET



TOP VIEW

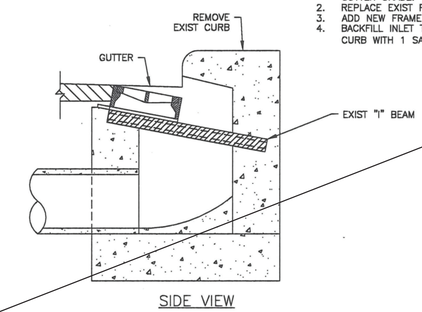
STEP 2:



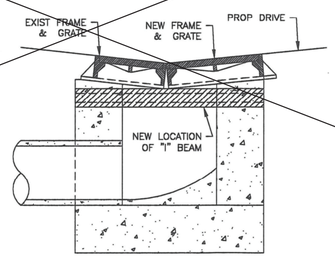
TOP VIEW

NOTES:

1. AFTER REMOVING EXIST CURB, RAISE EXIST FRAME TO GUTTER GRADE.
2. REPLACE EXIST PLATE WITH A GRATE.
3. ADD NEW FRAME AND GRATE NEXT TO EXIST FRAME.
4. BACKFILL INLET TO A POINT ONE FOOT BEHIND THE CURB WITH 1 SACK/TON CEMENT STABILIZED SAND.

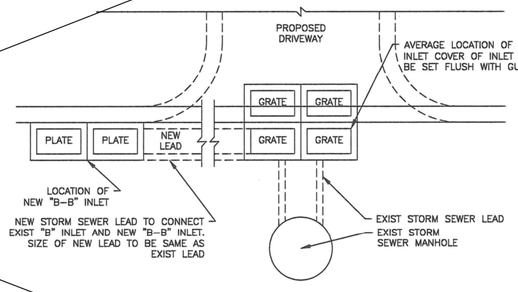


SIDE VIEW



SIDE VIEW

STEP 3: CONSTRUCT NEW TYPE "B-B" INLET ON CURB RETURN OF PROPOSED DRIVEWAY



STORM SEWER TYPE "B" INLET RELOCATION
NTS

FIRM INFORMATION | ENGINEER'S SEAL

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STORM SEWER
02632-04 THROUGH 05

APPROVED BY:	APPROVED BY:
CITY ENGINEER	DEPUTY DIRECTOR
APPROVED BY:	
DIRECTOR	

EFFECTIVE DATE: JUL-01-2019

FOR CITY OF HOUSTON USE ONLY

SHEET NO.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
6/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

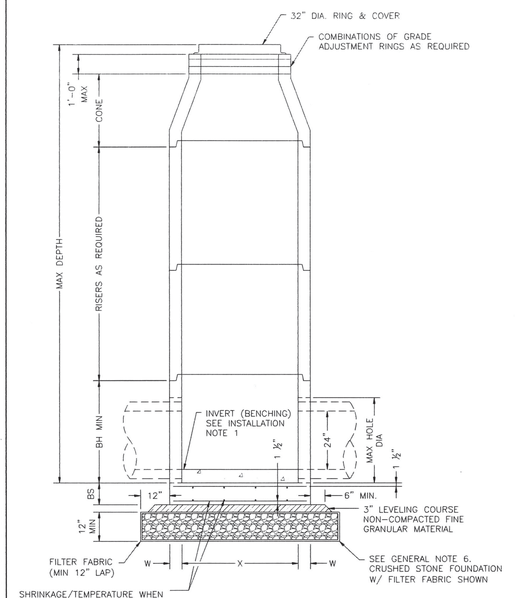
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

STORM DETAILS
SHEET 6 OF 12

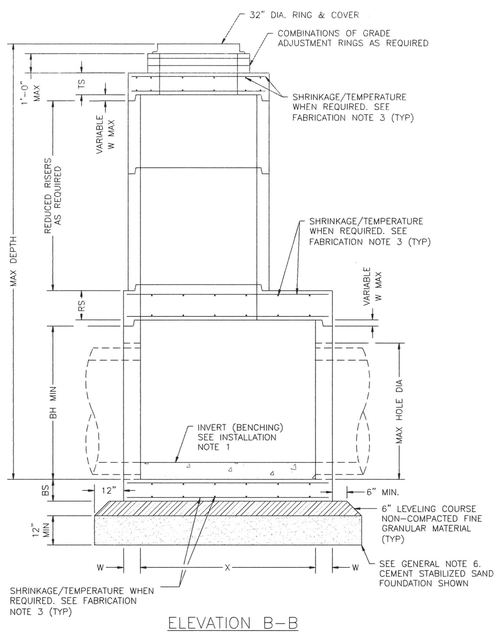
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 92 OF 158	

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/16/25
HOUSTON TX

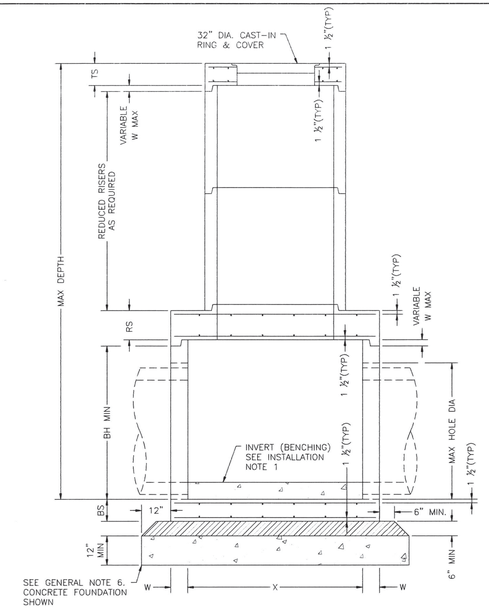
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47-Details-Storm_0718.dwg



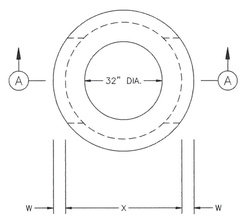
ELEVATION A–A
CONE TOP WITH SHIP LOOSE RING & COVER OPTION



ELEVATION B–B
FLAT SLAB TOP WITH SHIP LOOSE RING & COVER OPTION

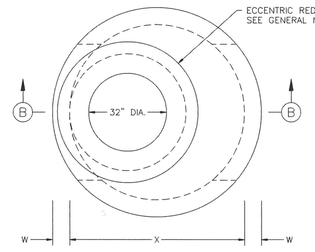


ELEVATION C–C
FLAT SLAB TOP WITH INVERTED RING & COVER OPTION



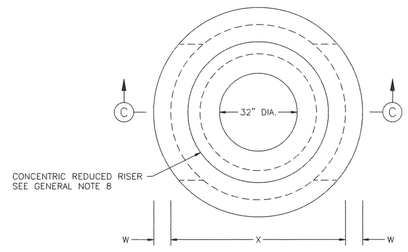
PLAN VIEW A
COVER NOT SHOWN

4–FT DIA MANHOLE



PLAN VIEW B
COVER NOT SHOWN

5–FT & 6–FT DIA MANHOLE
ECCENTRIC MANHOLE
(PREFERRED CONFIGURATION)



PLAN VIEW C
COVER NOT SHOWN

5–FT & 6–FT DIA MANHOLE
CONCENTRIC MANHOLE
(ALTERNATE CONFIGURATION)

TABLE 1
PRECAST ROUND MANHOLE (PRM) MINIMUM REQUIREMENTS FOR 24 IN. TO 42 IN. INTERNAL DIA STORM SEWER PIPES

	SIZE	BASE SLAB THICKNESS	BASE UNIT OR RISER THICKNESS	REDUCED RISER DIA	REDUCING SLAB THICKNESS	TOP SLAB THICKNESS	MAX DEPTH TO TOP OF BASE SLAB	MIN HEIGHT	MAX HOLE DIA
	X	BS	W	ID	RS	TS	MAX DEPTH	BH MIN	MAX HOLE DIA
	FT	IN.	IN.	IN.	IN.	IN.	FT.	IN.	IN.
PRM	4	9	5	–	–	9	25	42	35
	5	9	6	48	9	9	25	42	42
	6	9	7	48/60*	12	9	25	42	56

(*) 60–IN REDUCED RISER IS TO BE USED WHEN DEEMED NECESSARY TO SATISFY WALL PENETRATION SPACING REQUIREMENTS.

FABRICATION NOTES:

1. PROVIDE CLASS "H" CONCRETE IN ACCORDANCE WITH TEXAS DEPARTMENT OF TRANSPORTATION ITEM 421 AND HAVING A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI.
2. PROVIDE GRADE 60 REINFORCING STEEL OR EQUIVALENT AREA OF WWR. PROVIDE CIRCUMFERENTIAL REINFORCING STEEL IN VERTICAL WALLS OF BASE, RISER AND CONE IN ACCORDANCE WITH ASTM C478.
3. SLABS WITH A THICKNESS OF 8" OR GREATER REQUIRE SHRINKAGE AND TEMPERATURE REINFORCING STEEL. PROVIDE STEEL AREA = 0.11 IN^2/FT EACH WAY.
4. MANUFACTURE BASE AND RISERS TO NEAREST 3" INCREMENT.
5. DESIGN TONGUE AND GROOVE JOINTS FOR FULL CLOSURE ON BOTH SHOULDERS. MINIMUM SPIGOT DEPTH IS ¾".
6. PROVIDE LIFTING DEVICES IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS.
7. PROVIDE CAST IRON SOLID COVER, UNLESS NOTED OTHERWISE ELSEWHERE IN THE PLANS.
8. THREE DIFFERENT OPTIONS FOR CAPPING THE MANHOLE RISER NEAR THE FINISHED GRADE ARE SHOWN. CONES CAN BE USED WHEN COVER IS SUFFICIENT TO ALLOW FOR PROPER PLACEMENT. FLAT LIDS ARE TO BE USED WHERE COVER IS LIMITED.

INSTALLATION NOTES:

1. IF REQUIRED ELSEWHERE, INVERTS (BENCHING) TO BE PROVIDED BY CONTRACTOR. CONCRETE OR MORTAR USED FOR INVERT IS SUBSIDIARY TO THIS ITEM. REFER TO CITY OF HOUSTON SPECIFICATION SECTION 02082 FOR INVERT (BENCHING) REQUIREMENTS.
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 ½" BETWEEN EACH SECTION, OR ½ THE JOINT DEPTH, WHICHEVER IS GREATER.
3. DO NOT GROUT RUBBER GASKET JOINTS WITHOUT MANUFACTURER'S RECOMMENDATION.
4. INITIAL INSTALLATION OF GRADE ADJUSTMENT RINGS IS LIMITED TO 1'–0" MAX AS SHOWN.
5. GRADE ADJUSTMENT RINGS MAY BE INCREASED TO 1'–6" MAX WHEN FUTURE CONSTRUCTION AFFECTS FINAL GRADE OF STRUCTURE. MAKE ADJUSTMENTS GREATER THAN 1'–6" WITH ADDITIONAL RISERS. ADJUSTMENTS MAY BE MADE UP TO THE MAX DEPTH OF 25'–0". STRUCTURE MUST BE EVALUATED IF MAX DEPTH WILL BE EXCEEDED.

GENERAL NOTES:

1. SEE TABLE 1 FOR MINIMUM DESIGN REQUIREMENTS. CONCENTRIC RISER WITH RESPECT TO BASE (ALTERNATIVE CONFIGURATION) FALLS OUTSIDE THE SCOPE OF REQUIREMENTS PROVIDED. ENGINEER OF RECORD ACCEPTS RESPONSIBILITY FOR SAFETY AND ADEQUACY OF MANHOLE IF THE ALTERNATIVE CONFIGURATION IS USED.
2. DESIGNED ACCORDING TO ASTM C478.
3. PAYMENT FOR PRECAST MANHOLE PER SECTION 02082 "PRECAST CONCRETE MANHOLES".
4. PIPE OD + PLACEMENT TOLERANCE MUST BE EQUAL OR LESS THAN MAX HOLE DIA. FOR RIGID PIPE, PLACEMENT TOLERANCE IS 4" MAX, 2" MIN. FOR FLEXIBLE PIPE, CONSULT BOOT/SEAL MANUFACTURER'S SPECIFICATION FOR PLACEMENT TOLERANCE.
5. STORM WATER SEWER PIPE INTERNAL DIA SHALL NOT BE LESS THAN 24".
6. FOUNDATION/SUBGRADE TO BE DESIGNED BY ENGINEER AND MEET MINIMUM REQUIREMENTS ACCORDING TO SECTION 02082.
7. ALL STORM WATER MANHOLES ARE TO BE PRECAST CONCRETE, UNLESS OTHERWISE NOTED ELSEWHERE IN THE PLANS.
8. ECCENTRIC REDUCED RISER WITH RESPECT TO BASE IS THE PREFERRED MANHOLE CONFIGURATION. CONCENTRIC REDUCED RISER WITH RESPECT TO BASE MANHOLE CONFIGURATION IS AN ALTERNATIVE DESIGN THAT WILL BE ACCEPTED BASED ON THE NEEDS OF THE CITY OF HOUSTON.
9. CONES MAY BE CONCENTRIC OR ECCENTRIC. REDUCTION CONES ARE ACCEPTABLE. REFER TO MANUFACTURER FOR CONE DIMENSIONS.
10. MANHOLE SIZE SHALL CONSIDER ENGINEERING ECONOMY. THIS DETAIL IS NOT APPLICABLE TO ROUND MANHOLES LARGER THAN 6–FOOT DIA.

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

STORM SEWER TYPE 'C'
PRECAST ROUND MANHOLE

(NOT TO SCALE)

APPROVED BY:	APPROVED BY:
Suhail Kanwar	Carol Haddock
CITY ENGINEER	DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL–01–2021	DWG NO: 02082–12

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P–6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
6/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

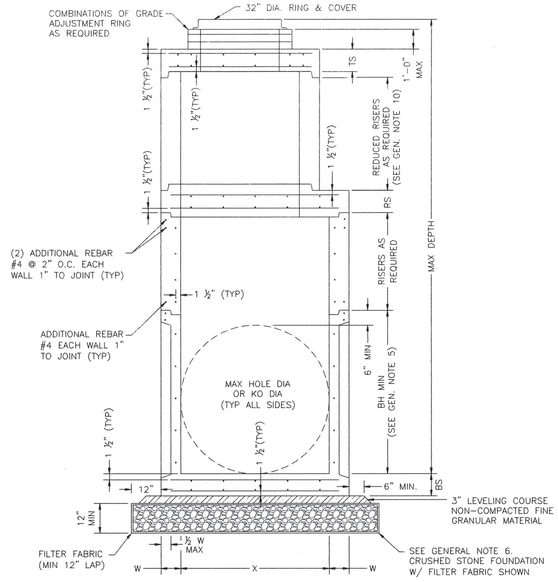
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

STORM DETAILS
SHEET 7 OF 12

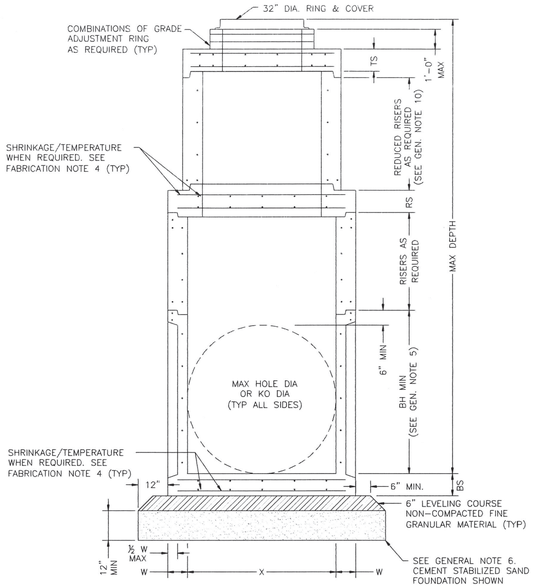
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410029–0001–4	
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 93 OF 158	

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

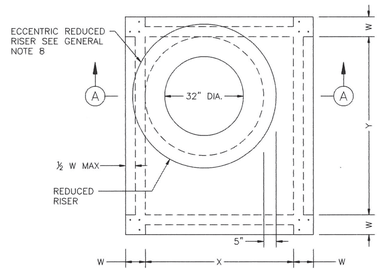
PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 6/18/2025 6:05 PM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47-Details-Storm_0718.dwg



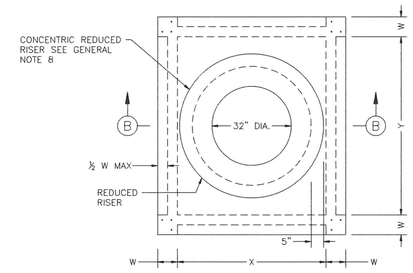
ELEVATION A–A
FLAT SLAB TOP WITH SHIP LOOSE RING & COVER OPTION



ELEVATION B–B
FLAT SLAB TOP WITH SHIP LOOSE RING & COVER OPTION



PLAN VIEW A
COVER NOT SHOWN



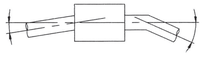
PLAN VIEW B
COVER NOT SHOWN

ECCENTRIC MANHOLE
(PREFERRED CONFIGURATION)

CONCENTRIC MANHOLE
(ALTERNATE CONFIGURATION)

ANGLE OF ENTRY IS LESS THAN OR EQUAL TO 7°

ANGLE OF ENTRY IS GREATER THAN 7°



PIPE CONNECTION DETAIL

CONNECT PIPES WITHIN 7° OF NORMAL TO PRECAST BASE WALL. IF NECESSARY, USE PIPE ELBOW OR CURVED APPROACH ALIGNMENT TO STAY WITHIN THIS LIMIT.

TABLE 1

PRECAST BOX MANHOLE (PBM) MINIMUM REQUIREMENTS FOR 24 IN. TO 78 IN. INTERNAL DIA STORM SEWER PIPES

	SIZE	BASE SLAB THICKNESS	BASE UNIT OR RISER THICKNESS	REDUCED RISER DIA	REDUCING SLAB THICKNESS	TOP SLAB THICKNESS	MAX DEPTH TO TOP OF BASE SLAB	MIN HEIGHT (SEE GEN. NOTE 5)	MAX HOLE DIA (SEE FAB. NOTE 11)	MAX KO DIA (SEE FAB. NOTE 11)
	X & Y	BS	W	ID	RS	TS	MAX DEPTH	BH MIN	MAX HOLE DIA	KO DIA
	FT.	IN.	IN.	FT.*	IN.	IN.	FT.	FT.	IN.	IN.
PBM	3X3'	6	6	N/A	N/A	9	25	3.50	36	36
	4X4'	6	6	N/A	N/A	9	25	4.50	48	48
	3X5'	6	6	N/A	N/A	9	25	3.50	36/60	36/60
	4X5'	6	6	48 IN.	9	9	25	4.50	48/60	48/60
	5X5'	6	6	48 IN.	9	9	25	5.50	60	60
	5X6	9	8	48 IN.	9	9	25	5.50	60/72	60/72
	6X6	9	8	48 IN.	9	9	25	6.50	72	72
	8X8	9	10	48 IN.	12	9	25	8.50	96	96

TABLE 1 NOTES:
1. (') ROUND MANHOLES ARE PREFERRED FOR THESE SIZES.
2. (*) UNLESS OTHERWISE INDICATED.
3. TABLE IS VALID FOR UP TO 25 FT OF INSTALLATION DEPTH.

FABRICATION NOTES:

1. PROVIDE CLASS "H" CONCRETE IN ACCORDANCE WITH TEXAS DEPARTMENT OF TRANSPORTATION ITEM 421 AND HAVING A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI.
2. PROVIDE GRADE 60 REINFORCING STEEL OR EQUIVALENT AREA OF WWR. PROVIDE CIRCUMFERENTIAL REINFORCING STEEL IN VERTICAL WALLS OF RISER AND CONE IN ACCORDANCE WITH ASTM C478.
3. PROVIDE TYPICAL MINIMUM CONCRETE CLEAR COVER OF 1 ½" TO REINFORCING STEEL AT INTERIOR OR EXTERIOR WALLS.
4. SLABS WITH A THICKNESS OF 8" OR GREATER REQUIRE SHRINKAGE AND TEMPERATURE REINFORCING STEEL. PROVIDE STEEL AREA = 0.11 IN^2/FT EACH WAY.
5. MANUFACTURE BASE AND RISERS TO NEAREST 3" INCREMENT.
6. DESIGN TONGUE AND GROOVE JOINTS FOR FULL CLOSURE ON BOTH SHOULDERS. MINIMUM SPIGOT DEPTH IS ¾".
7. PROVIDE LIFTING DEVICES IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS.
8. PROVIDE CAST IRON SOLID COVER, UNLESS NOTED OTHERWISE ELSEWHERE IN THE PLANS.
9. MAXIMUM SPACING OF REINFORCEMENT IS 8".
10. AT MANUFACTURERS OPTION, PROVIDE CAST OR CORED HOLES OR THIN WALL PANELS (KO) TO THE MAXIMUM DIA SHOWN FOR EACH. WHEN NO PENETRATION IS REQUIRED, IT IS ACCEPTABLE TO PROVIDE A WALL WITH NO SECTIONAL REDUCTION.
11. THREE DIFFERENT OPTIONS FOR CAPPING THE MANHOLE RISER NEAR THE FINISHED GRADE ARE ALLOWED. CONES CAN BE USED WHEN COVER IS SUFFICIENT TO ALLOW FOR PROPER PLACEMENT. FLAT LIDS ARE TO BE USED WHERE COVER IS LIMITED. REFER TO 02082–12 FOR OPTIONS.
12. BASES AND RISERS MAY HAVE CAST, CUT OR THIN WALL PANEL (KO) THAT ARE ROUND AND DO NOT EXTEND INTO THE FLOOR, INTO WALLS, OR WITHIN 6" OF THE JOINT ABOVE OR BELOW.

INSTALLATION NOTES:

1. IF REQUIRED ELSEWHERE, INVERTS (BENCHING) TO BE PROVIDED BY CONTRACTOR. CONCRETE OR MORTAR USED FOR INVERT IS SUBSIDIARY TO MANHOLE. REFER TO CITY OF HOUSTON SPECIFICATION SECTION 02082 FOR INVERT (BENCHING) REQUIREMENTS.
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.
6. INITIAL INSTALLATION OF GRADE ADJUSTMENT RINGS IS LIMITED TO 1'–0" MAX AS SHOWN.
7. GRADE ADJUSTMENT RINGS MAY BE INCREASED TO 1'–6" MAX WHEN FUTURE CONSTRUCTION AFFECTS FINAL GRADE OF STRUCTURE. MAKE ADJUSTMENTS GREATER THAN 1'–6" WITH ADDITIONAL RISERS. ADJUSTMENTS MAY BE MADE UP TO THE MAX DEPTH OF 25'–0". STRUCTURE MUST BE EVALUATED IF MAX DEPTH WILL BE EXCEEDED.

GENERAL NOTES:

1. SEE TABLE 1 FOR MINIMUM DESIGN REQUIREMENTS. CONCENTRIC RISER WITH RESPECT TO BASE (ALTERNATIVE CONFIGURATION) FALLS OUTSIDE THE SCOPE OF REQUIREMENTS PROVIDED. ENGINEER OF RECORD ACCEPTS RESPONSIBILITY FOR SAFETY AND ADEQUACY OF MANHOLE IF THE ALTERNATIVE CONFIGURATION IS USED.
2. DESIGNED ACCORDING TO ASTM C478 AND/OR ASTM C913.
3. PAYMENT FOR PRECAST MANHOLE PER SECTION 02082 "PRECAST CONCRETE MANHOLES.
4. PRECAST BASE CONSISTS OF BASE SLAB, BASE UNIT, RISERS (AS REQUIRED), REDUCING SLAB (AS REQUIRED), AND REDUCED RISERS (AS REQUIRED).
5. MIN HEIGHT SHOWN 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".
6. FOUNDATION/SUBGRADE TO BE DESIGNED BY ENGINEER AND MEET MINIMUM REQUIREMENTS ACCORDING TO SECTION 02082.
7. ALL STORM WATER MANHOLES ARE TO BE PRECAST CONCRETE, UNLESS OTHERWISE NOTED ELSEWHERE IN THE PLANS.
8. ECCENTRIC REDUCED RISER WITH RESPECT TO BASE IS THE PREFERRED MANHOLE CONFIGURATION. CONCENTRIC REDUCED RISER WITH RESPECT TO BASE MANHOLE CONFIGURATION IS AN ALTERNATIVE DESIGN THAT WILL BE ACCEPTED BASED ON THE NEEDS OF THE CITY OF HOUSTON.
9. MANHOLE SIZE SHALL CONSIDER ENGINEERING ECONOMY. THIS DETAIL IS NOT APPLICABLE TO BOX MANHOLES LARGER THAN 8–FOOT BY 8–FOOT.
10. REFER TO STORM SEWER TYPE 'C' PRECAST ROUND MANHOLE DETAIL (02082–12) FOR REDUCED RISER DESIGN REQUIREMENTS.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STORM SEWER
PRECAST BOX MANHOLE

(NOT TO SCALE)

APPROVED BY:	APPROVED BY:
CITY ENGINEER	DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL–01–2021	DWG NO: 02082–13

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Req. #4575

SURVEYED BY: Kuo&Associates
FB NO. P–6257

RAHUL B. MENON 130533 LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
6/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

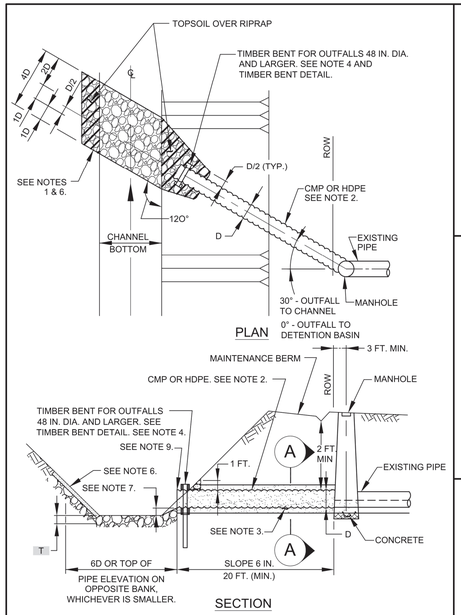
STORM DETAILS
SHEET 8 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410029–0001–4	
DRAWING SCALE: NTS	
CITY OF HOUSTON PM: DOAA HAMDAN, P.E.	
SHEET NO. 94 OF 158	

HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX

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.

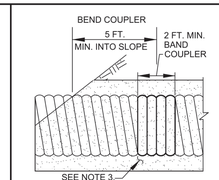
PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 6/18/2025 6:06 PM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47-Details-Storm_0718.dwg



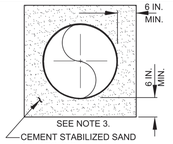
PLAN

SECTION

TYPICAL STORM SEWER OUTFALL STRUCTURE LAYOUT

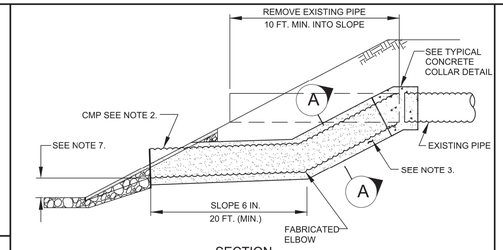


CMP BAND COUPLER DETAIL



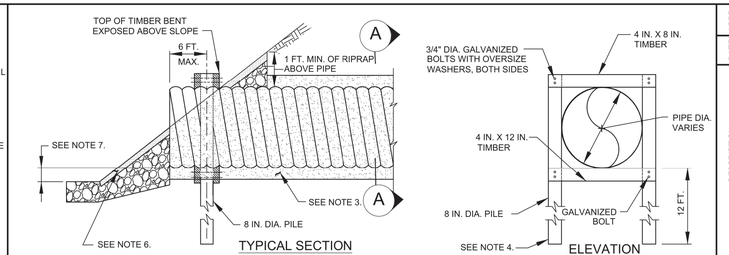
A SECTION

BEDDING RCP & CMP DETAIL



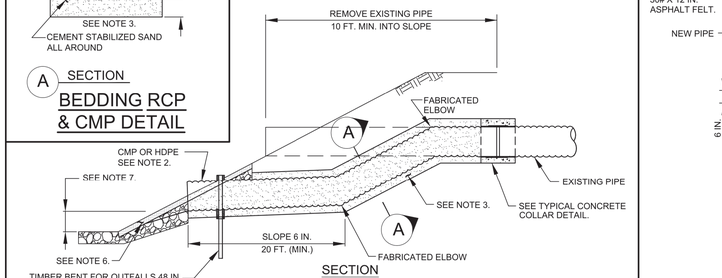
SECTION

PIPE ADJUSTMENT DETAIL 24-INCH TO 42-INCH DIAMETER



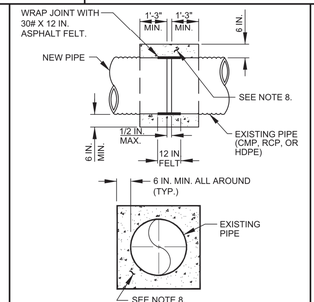
TYPICAL SECTION ELEVATION

TIMBER BENT DETAIL FOR 48-INCH CMP; 36-INCH HDPE AND LARGER OUTFALLS

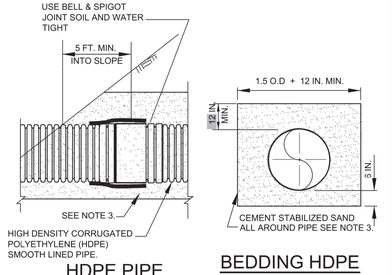


SECTION

PIPE ADJUSTMENT DETAIL 48-INCH AND LARGER DIAMETER



CONCRETE COLLAR DETAIL



HDPE PIPE COUPLER DETAIL

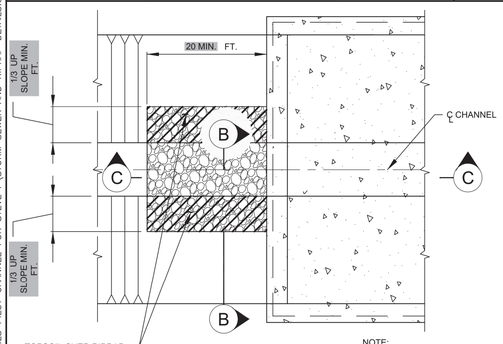
BEDDING HDPE PIPE DETAIL

REV	DESCRIPTION	DATE	APPR

PROJECT ID#

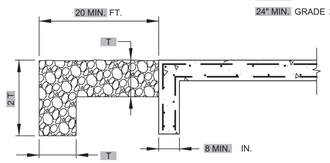
PROJECT TITLE

STORM SEWER AND RIPRAP DETAILS



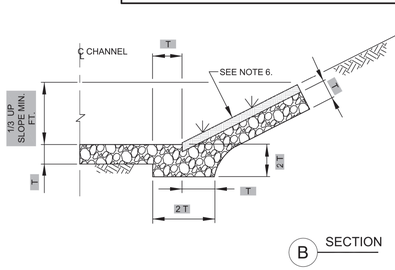
PLAN

NOTE:
T (MAT THICKNESS)
18" MIN. GRADE 1
24" MIN. GRADE 2



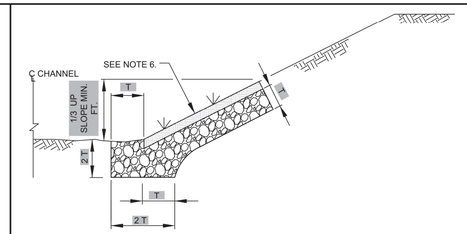
NOTE:
TOE-IN RIPRAP ACROSS CHANNEL BOTTOM & UP SLOPE. DO NOT PLACE TOE AGAINST CONCRETE.

C SECTION



B SECTION

TYPICAL RIPRAP AT CONCRETE CHANNEL LINING



TYPICAL RIPRAP LINING DETAIL-SIDE SLOPE ONLY

PIPE OUTFALL IN CHANNELS

BOTTOM WIDTH	PIPE OUTLET INVERT
6 FEET ≤ BW ≤ 20 FT	1 FOOT ABOVE FLOWLINE *
20 FEET < BW ≤ 60 FT	AT TOE OF SLOPE *
BW > 60 FT	AT TOE OF SLOPE *

* OR 1 FOOT ABOVE NORMAL WATER LEVEL, WHICHEVER IS HIGHER

NOTES:

1. INSTALL RIPRAP EROSION PROTECTION IN GRASS LINED CHANNELS AND DETENTION BASINS FOR ANY SIZE STORM SEWER PIPE AND TREATMENT PLANT OUTFALL, DIMENSIONED AS SHOWN IN "TYPICAL STORM SEWER OUTFALL STRUCTURE LAYOUT."
2. STORM SEWER OUTFALL PIPES WITHIN THE HCFCD RIGHT-OF-WAY SHALL BE CMP OR HDPE IN ACCORDANCE WITH SPECIFICATION SECTION 02642-CORRUGATED METAL PIPE, HIGH DENSITY POLYETHYLENE PIPE (HDPE) IN ACCORDANCE WITH SPECIFICATION SECTION 02505-HIGH DENSITY POLYETHYLENE PIPE, OR APPROVED EQUAL. USE TABLE BELOW FOR CORRUGATED GALVANIZED STEEL PIPE.
3. PROVIDE AND PLACE CEMENT STABILIZED SAND IN ACCORDANCE WITH SPECIFICATION SECTION NO. 02321-CEMENT STABILIZED SAND.
4. TIMBER BENTS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02464-TIMBER BENTS.
5. EXCAVATION, FILL, AND BACKFILL FOR STORM SEWER OUTFALLS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02316- STRUCTURAL EXCAVATING AND BACKFILLING.
6. RIPRAP SHALL BE PLACED IN ACCORDANCE WITH SPECIFICATION SECTION 02378-RIPRAP AND GRANULAR FILL. FILL RIPRAP VOIDS AND BURY RIPRAP A MINIMUM OF 6 INCHES WITH TOPSOIL ON SIDE SLOPE AS DIRECTED BY THE ENGINEER.
7. IN DETENTION BASINS, SET FLOWLINE OF OUTFALL AT TOE OF THE SLOPE OR FLOWLINE OF PILOT CHANNEL. IN CHANNEL, USE ELEVATION INDICATED IN THE PIPE OUTFALL IN CHANNELS TABLE.
8. STRUCTURAL CONCRETE #4 BARS (GRADE 40) 12 INCH O.C. EACH WAY - FOR COLLARS ONLY. WAIT A MINIMUM OF 24 HOURS AFTER PLACING CONCRETE TO BACKFILL.
9. FOR RCP OUTFALL IN GRASS LINED CHANNELS AND DETENTION BASINS, USE HEADWALL/ WINGWALL/APRON DETAIL ON SHEET [redacted]. FOR RCP OUTFALL IN CONCRETE LINED CHANNEL AND DETENTION BASINS , SEE HCFCD CONCRETE CHANNEL LINING DETAILS.

CORRUGATED GALVANIZED STEEL PIPE (TYPE I)

2-2/3" X 1/2" CORRUGATION					3" X 1" & 5" X 1" CORRUGATION				
PIPE DIA. (in.)	MIN. FILL* (in.)	SHEET THICKNESS gage	(in.)	(mm)	MIN. FILL* (in.)	SHEET THICKNESS gage	(in.)	(mm)
24	12	16	.064	1.63	-	-	-	-
30	12	16	.064	1.63	-	-	-	-
36	12	16	.064	1.63	-	-	-	-
42	12	16	.064	1.63	12	16	.064	1.63
48	12	16	.064	1.63	12	16	.064	1.63
54	12	14	.079	2.01	12	16	.064	1.63
60	15	12	.109	2.77	12	16	.064	1.63
66	15	12	.109	2.77	15	16	.064	1.63
72	18	10	.138	3.51	15	16	.064	1.63
78	18	8	.168	4.27	18	16	.064	1.63
84	18	8	.168	4.27	18	14	.079	2.01
90	-	-	-	-	18	14	.079	2.01
96	-	-	-	-	18	14	.079	2.01

* MINIMUM DEPTH OF COVER ABOVE TOP OF PIPE, MAXIMUM DEPTH OF COVER ABOVE TOP OF PIPE IS 20 FEET.

THIS DETAIL SHEET HAS BEEN PREPARED FOR USE ON HCFCD PROJECTS OR PROJECTS TO BE MAINTAINED BY THE HCFCD WHEN COMPLETED BY OTHERS. AN ENGINEER WHO INCORPORATES THE DETAILS ON THIS SHEET BECOMES RESPONSIBLE FOR ITS USE IN THE END PRODUCT IN ACCORDANCE WITH RULE 137.33 (b) AND (c) OF THE TEXAS BOARD OF PROFESSIONAL ENGINEERS.

P.E. SEAL AND SIGNATURE

ENGINEER - CONFIRM, CHANGE, OR FILL IN.

PREPARED: | CHECKED: | APPROVED:

COMPANY INFORMATION AND LOGO GOES HERE

HARRIS COUNTY FLOOD CONTROL DISTRICT
9900 Northwest Freeway
Houston, Texas 77092

DATE: 10-23-2018
SCALE: NTS

SHEET NUMBER
[redacted] OF [redacted]

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
F 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
6/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

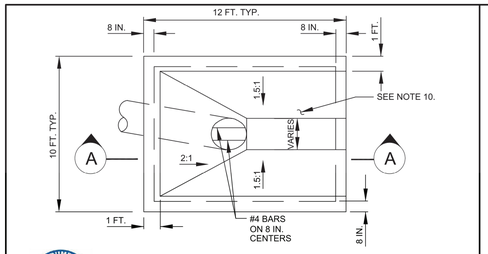
STORM DETAILS
SHEET 9 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 95 OF 158	

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 6/18/2025 6:06 PM

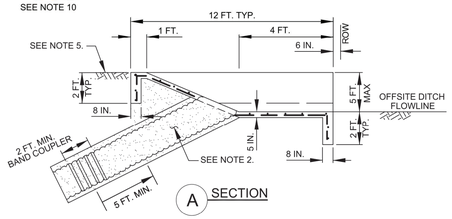
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47-Details-Storm_0718.dwg

S:\Operations\EngDiv\MED\ME Autocad\STANDARD DETAILS PILOT CHANNEL FOR STEVE F\STORM SEWER AND RIPRAP DETAILS.dwg



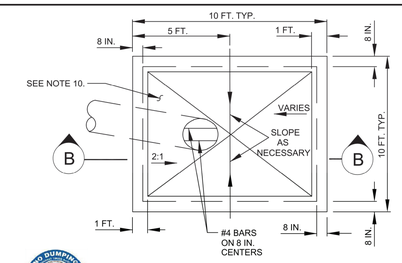
PLAN

SEE NOTE 10



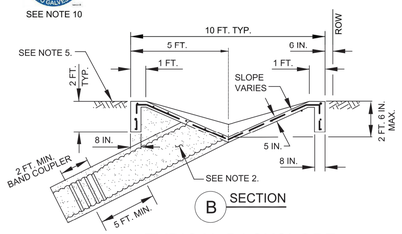
TYPICAL OFFSITE DITCH INTERCEPTOR STRUCTURE

(42 INCH MAX.)



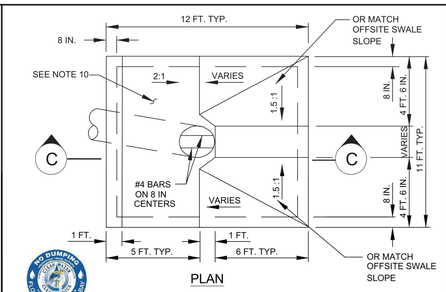
PLAN

SEE NOTE 10



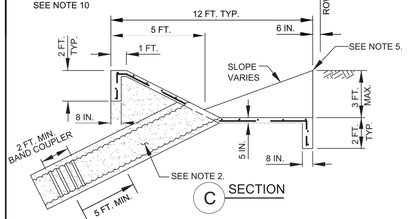
TYPICAL BACKSLOPE INTERCEPTOR STRUCTURE

(24 INCH & 30 INCH ONLY)



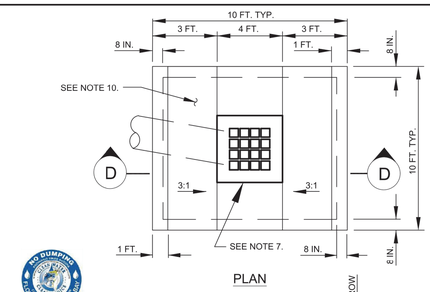
PLAN

SEE NOTE 10



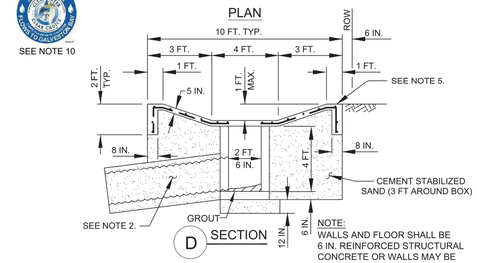
COMBINATION BACKSLOPE & OFFSITE DITCH INTERCEPTOR STRUCTURE

(42 INCH MAX.)



PLAN

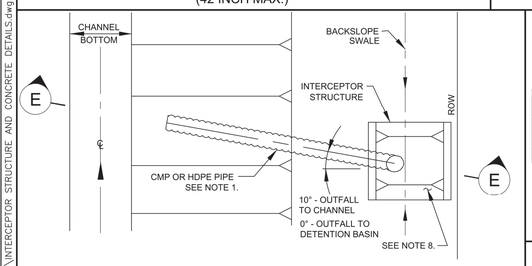
SEE NOTE 10

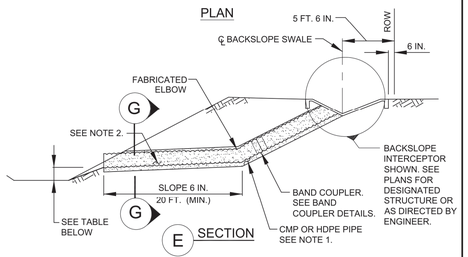


NOTE:
WALLS AND FLOOR SHALL BE 6 IN. REINFORCED STRUCTURAL CONCRETE OR WALLS MAY BE 8 IN. CONCRETE BRICK CONSTRUCTION

URBAN BACKSLOPE INTERCEPTOR STRUCTURE

(24 INCH ONLY)





TYPICAL INTERCEPTOR OUTFALL STRUCTURE LAYOUT

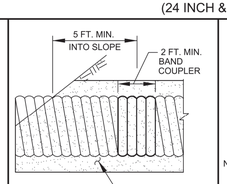
PIPE OUTFALL IN CHANNELS

BOTTOM WIDTH	PIPE OUTLET INVERT
6 FEET ≤ BW ≤ 20 FT	1 FOOT ABOVE FLOWLINE *
20 FEET < BW ≤ 60 FT	AT TOE OF SLOPE *
BW > 60 FT	AT TOE OF SLOPE *

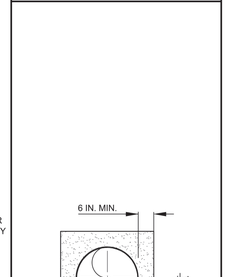
* OR 1 FOOT ABOVE NORMAL WATER LEVEL, WHICHEVER IS HIGHER

PIPE OUTFALL IN DETENTION BASINS

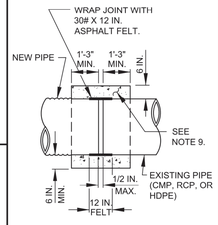
AT TOE OF SLOPE

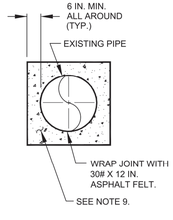


CMP BAND COUPLER DETAIL

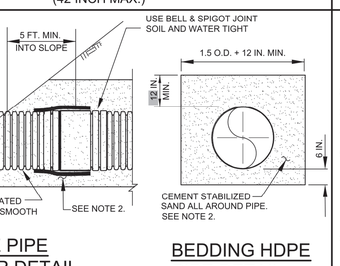


BEDDING CMP DETAIL



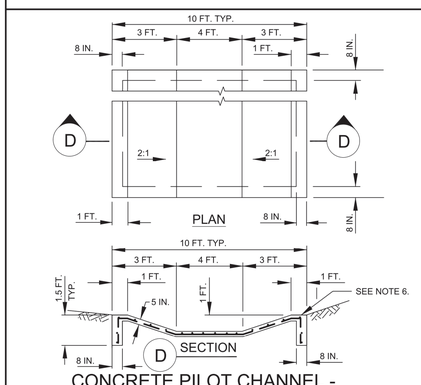


CONCRETE COLLAR DETAIL



HDPE PIPE COUPLER DETAIL

BEDDING HDPE PIPE DETAIL



CONCRETE PILOT CHANNEL - DETENTION BASIN

NOTES:

1. INTERCEPTOR OUTFALL PIPES WITHIN THE HCFCD RIGHT-OF-WAY SHALL BE CMP OR HDPE PIPE IN ACCORDANCE WITH SPECIFICATION SECTION 02642- CORRUGATED METAL PIPE, HIGH DENSITY POLYETHYLENE (HDPE) PIPE IN ACCORDANCE WITH SPECIFICATION SECTION 2505-HIGH DENSITY POLYETHYLENE, OR APPROVED EQUAL. USE TABLE ON STORM SEWER AND RIPRAP DETAILS SHEET FOR CORRUGATED GALVANIZED STEEL PIPE THICKNESS.
2. PROVIDE AND PLACE CEMENT STABILIZED SAND IN ACCORDANCE WITH SPECIFICATION SECTION 02321-CEMENT STABILIZED SAND AND SECTION 02316 - STRUCTURAL EXCAVATING.
3. EXCAVATION, FILL AND BACKFILL FOR INTERCEPTOR OUTFALLS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02316-STRUCTURAL EXCAVATING AND BACKFILLING.
4. CONCRETE SHALL BE STRUCTURAL CONCRETE IN ACCORDANCE WITH SPECIFICATION SECTION 03310-CONCRETE.
5. INTERCEPTOR STRUCTURES:
   a. ADJUST LENGTH AND WIDTH IN FIELD AS NECESSARY.
   b. 2-FEET DEEP X 8-INCH WIDE TOE ALL AROUND THE STRUCTURE.
   c. STEEL REINFORCING-#4 BARS (GRADE 60) AT 12 INCHES ON CENTER EACH WAY.
   d. ANY INTERCEPTOR OUTFALL PIPE LARGER THAN MAXIMUM SIZE INDICATED REQUIRES A SEPARATE DETAIL.
   e. MATCH TOP OF CONCRETE WITH NATURAL GROUND.
6. CONCRETE PILOT CHANNEL
   a. 1.5 FEET DEEP X 8-INCH WIDE TOE ALL AROUND THE STRUCTURE.
   b. STEEL REINFORCING - #4 BARS (GRADE 60) AT 12 INCHES ON CENTER EACH WAY.
   c. MATCH TOP OF CONCRETE WITH BOTTOM OF DETENTION BASIN.
7. CONCRETE PAD AROUND URBAN BACKSLOPE INTERCEPTOR: PAID FOR AS CONCRETE INTERCEPTOR STRUCTURE PER UNIT PRICE SCHEDULE. TYPE "A" INLET BOX, COH DWG. NO. 2084-08 WITH GRATE TOP, VULCAN FOUNDRY COMPANY, V-4880-1 OR APPROVED EQUAL, APPROX. 473 SQ.IN. OPENING. PAID 2632-05
8. BACKSLOPE SWALE AND INTERCEPTOR STRUCTURE ELEVATIONS AND LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE. FINAL ELEVATIONS AND LOCATIONS SHALL BE FIELD VERIFIED BY THE ENGINEER PRIOR TO INSTALLATION.
9. STRUCTURAL CONCRETE WITH #4 BARS (GRADE 60) 12 INCH O.C. EACH WAY, 3 ROWS MIN. EACH WAY. - FOR COLLARS ONLY, WAIT A MINIMUM OF 24 HOURS AFTER PLACING CONCRETE TO BACKFILL.
10. EPOXY "CLEAN WATER CLEAR CHOICE" LOGO BUTTON ON INTERCEPTORS. LOCATION TO BE DETERMINED BY THE ENGINEER.

THIS DETAIL SHEET HAS BEEN PREPARED FOR USE ON HCFCD PROJECTS OR PROJECTS TO BE MAINTAINED BY THE HCFCD WHEN COMPLETED BY OTHERS. AN ENGINEER WHO INCORPORATES THE DETAILS ON THIS SHEET BECOMES RESPONSIBLE FOR ITS USE IN THE END PRODUCT IN ACCORDANCE WITH RULE 137.33 (b) AND (c) OF THE TEXAS BOARD OF PROFESSIONAL ENGINEERS.

ENGINEER - CONFIRM, CHANGE, OR FILL IN.

P.E. SEAL AND SIGNATURE

REV	DESCRIPTION	DATE	APPR

PROJECT ID#

PROJECT TITLE

INTERCEPTOR STRUCTURE AND CONCRETE PILOT CHANNEL DETAILS

PREPARED: | CHECKED: | APPROVED:

COMPANY INFORMATION AND LOGO GOES HERE

HARRIS COUNTY FLOOD CONTROL DISTRICT
9900 Northwest Freeway
Houston, Texas 77092

DATE: 10-23-2018
SCALE: AS NOTED

SHEET NUMBER
OF

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
6/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

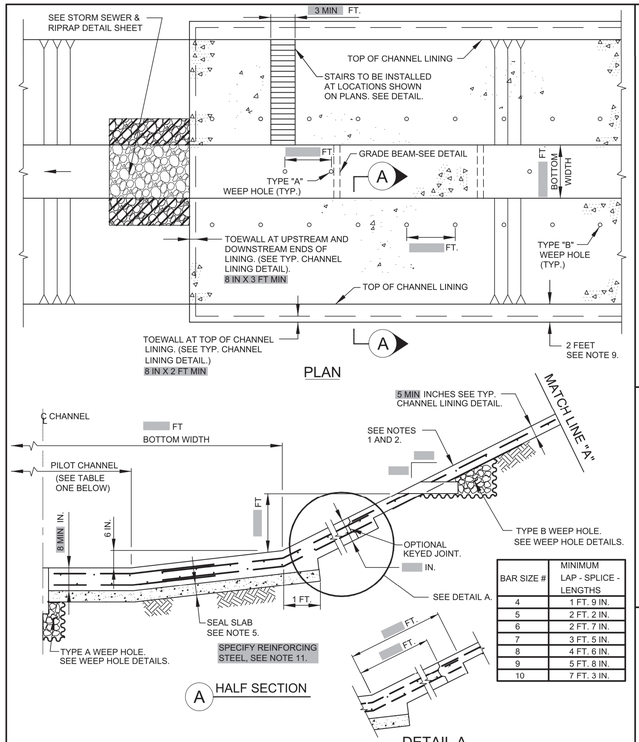
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

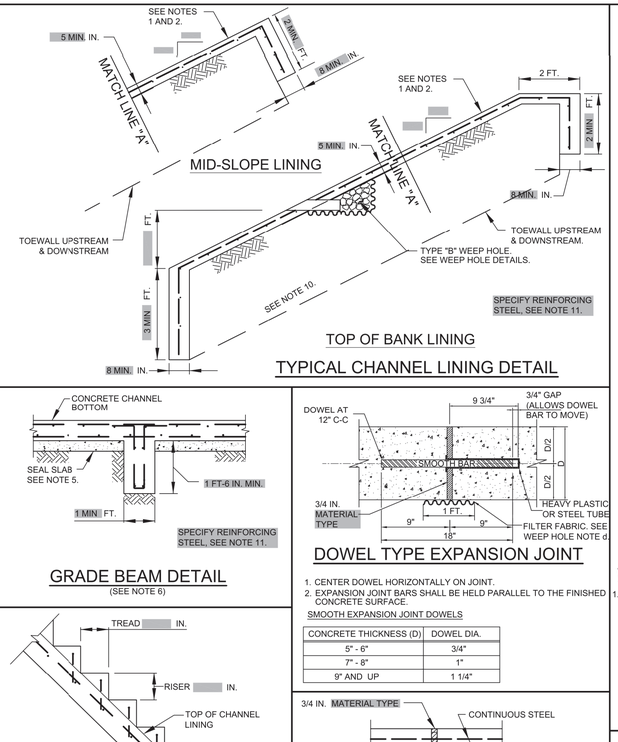
STORM DETAILS
SHEET 10 OF 12

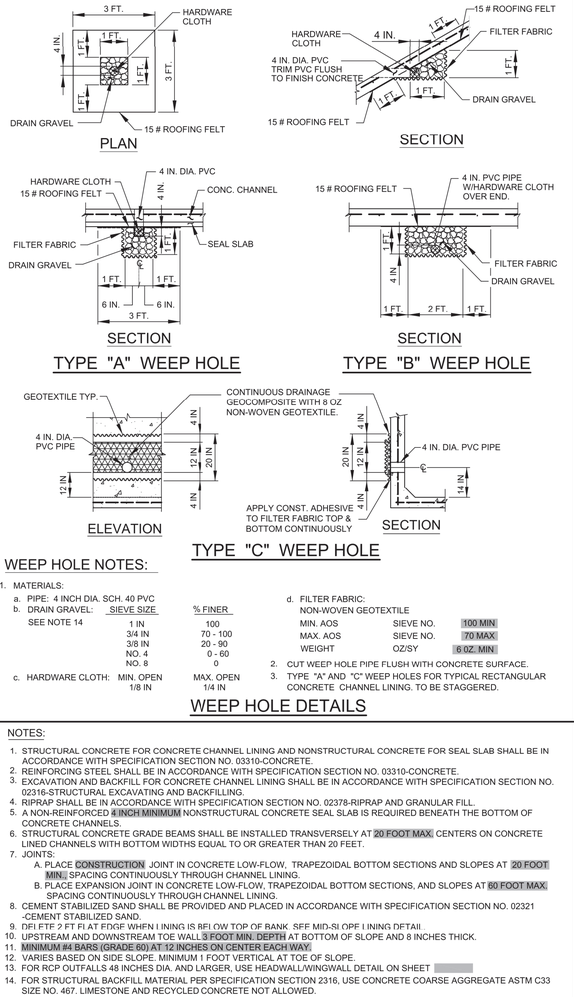
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 96 OF 158	

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/16/25
HOUSTON TX

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 6/18/2025 6:06 PM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47-Details-Storm_0718.dwg
S:\Operations\EngDiv\MED\ME Autocad\STANDARD DETAILS PILOT CHANNEL FOR STEVE P\INTERCEPTOR STRUCTURE AND CONCRETE DETAILS.dwg







WEEP HOLE NOTES:

1. MATERIALS:
   a. PIPE: 4 INCH DIA. SCH. 40 PVC
   b. DRAIN GRAVEL: SEE NOTE 14

SIEVE SIZE	% FINER
1 IN	100
3/4 IN	70 - 100
3/8 IN	20 - 90
NO. 4	0 - 60
NO. 8	0

   c. HARDWARE CLOTH: MIN. OPEN 1/8 IN, MAX. OPEN 1/4 IN
   d. FILTER FABRIC: NON-WOVEN GEOTEXTILE
      MIN. AOS — SIEVE NO. 100 MIN
      MAX. AOS — SIEVE NO. 70 MAX
      WEIGHT — OZ/SY 6 OZ. MIN
2. CUT WEEP HOLE PIPE FLUSH WITH CONCRETE SURFACE.
3. TYPE "A" AND "C" WEEP HOLES FOR TYPICAL RECTANGULAR CONCRETE CHANNEL LINING. TO BE STAGGERED.

WEEP HOLE DETAILS

NOTES:

1. STRUCTURAL CONCRETE FOR CONCRETE CHANNEL LINING AND NONSTRUCTURAL CONCRETE FOR SEAL SLAB SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION NO. 03310-CONCRETE.
2. REINFORCING STEEL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION NO. 03310-CONCRETE.
3. EXCAVATION AND BACKFILL FOR CONCRETE CHANNEL LINING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION NO. 02316-STRUCTURAL EXCAVATING AND BACKFILLING.
4. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION NO. 02378-RIPRAP AND GRANULAR FILL.
5. A NON-REINFORCED 4 INCH MINIMUM NONSTRUCTURAL CONCRETE SEAL SLAB IS REQUIRED BENEATH THE BOTTOM OF CONCRETE CHANNELS.
6. STRUCTURAL CONCRETE GRADE BEAMS SHALL BE INSTALLED TRANSVERSELY AT 20 FOOT MAX. CENTERS ON CONCRETE LINED CHANNELS WITH BOTTOM WIDTHS EQUAL TO OR GREATER THAN 20 FEET.
7. JOINTS:
   A. PLACE CONSTRUCTION JOINT IN CONCRETE LOW-FLOW, TRAPEZOIDAL BOTTOM SECTIONS AND SLOPES AT 20 FOOT MIN. SPACING CONTINUOUSLY THROUGH CHANNEL LINING.
   B. PLACE EXPANSION JOINT IN CONCRETE LOW-FLOW, TRAPEZOIDAL BOTTOM SECTIONS, AND SLOPES AT 60 FOOT MAX. SPACING CONTINUOUSLY THROUGH CHANNEL LINING.
8. CEMENT STABILIZED SAND SHALL BE PROVIDED AND PLACED IN ACCORDANCE WITH SPECIFICATION SECTION NO. 02321 -CEMENT STABILIZED SAND.
9. DELETE 2 FT FLAT EDGE WHEN LINING IS BELOW TOP OF BANK. SEE MID-SLOPE LINING DETAIL.
10. UPSTREAM AND DOWNSTREAM TOE WALL 3 FOOT MIN. DEPTH AT BOTTOM OF SLOPE AND 8 INCHES THICK.
11. MINIMUM #4 BARS (GRADE 60) AT 12 INCHES ON CENTER EACH WAY.
12. VARIES BASED ON SIDE SLOPE. MINIMUM 1 FOOT VERTICAL AT TOE OF SLOPE.
13. FOR RCP OUTFALLS 48 INCHES DIA. AND LARGER, USE HEADWALL/WINGWALL DETAIL ON SHEET
14. FOR STRUCTURAL BACKFILL MATERIAL PER SPECIFICATION SECTION 2316, USE CONCRETE COARSE AGGREGATE ASTM C33 SIZE NO. 467. LIMESTONE AND RECYCLED CONCRETE NOT ALLOWED.

THIS DETAIL SHEET HAS BEEN PREPARED FOR USE ON HCFC PROJECTS OR PROJECTS TO BE MAINTAINED BY THE HCFCD. WHEN COMPLETED BY OTHERS. AN ENGINEER WHO INCORPORATES THE DETAILS ON THIS SHEET BECOMES RESPONSIBLE FOR ITS USE IN THE END PRODUCT IN ACCORDANCE WITH RULE 137.33 (b) AND (c) OF THE TEXAS BOARD OF PROFESSIONAL ENGINEERS.

P.E. SEAL AND SIGNATURE

ENGINEER - CONFIRM, CHANGE, OR FILL IN.

REV	DESCRIPTION	DATE	APPR

PROJECT ID#

PROJECT TITLE

CONCRETE CHANNEL LINING DETAILS

PREPARED: CHECKED: APPROVED:

COMPANY INFORMATION AND LOGO GOES HERE

HARRIS COUNTY FLOOD CONTROL DISTRICT
9900 Northwest Freeway
Houston, Texas 77092

DATE: 10-23-2018
SCALE: NTS

SHEET NUMBER
OF

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
6/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

STORM DETAILS
SHEET 11 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 97 OF 158	

HOUSTON PUBLIC WORKS ACCEPTED AND FILED
81720 CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

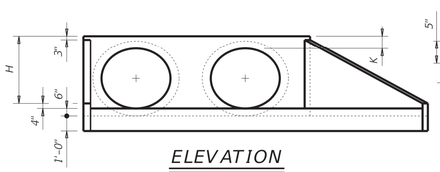
PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 6/18/2025 6:06 PM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47-Details-Storm_0718.dwg
S:\Operations\PROJECTS\STANDARD DETAILS SHEETS 2021\CONCRETE CHANNEL LINING DETAILS\CONCRETE CHANNEL LINING DETAILS.dwg

DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE:
FILE:

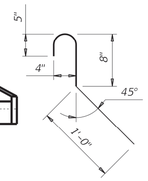
TABLE OF VARIABLE DIMENSIONS AND QUANTITIES FOR ONE HEADWALL (5)

Slope	Dia of Pipe (D)	Values for One Pipe: W	X	Y	L	Reinf (Lbs)	Conc (CY) (1)	Values to be Added for Each Addt'l Pipe: X and W	Reinf (Lbs)	Conc (CY) (1)
2:1	12"	4' – 9"	3' – 1 ½"	2' – 10"	4' – 0"	94	0.6	2' – 0 ¼"	22	0.2
	15"	5' – 6 ¾"	3' – 5 ¼"	3' – 4"	4' – 8 ½"	106	0.8	2' – 6"	28	0.3
	18"	6' – 4 ¾"	3' – 9 ¼"	3' – 10"	5' – 5"	133	0.9	3' – 1"	41	0.4
	21"	7' – 2 ¾"	4' – 1 ¼"	4' – 4"	6' – 1 ½"	150	1.1	3' – 6 ¾"	47	0.5
	24"	8' – 2 ½"	4' – 7"	4' – 10"	6' – 10"	170	1.4	4' – 1 ¾"	57	0.6
	27"	9' – 0 ½"	4' – 11"	5' – 4"	7' – 6 ½"	184	1.6	4' – 6 ¼"	62	0.7
	30"	9' – 10 ½"	5' – 3"	5' – 10"	8' – 3"	218	1.8	5' – 0"	72	0.9
	33"	10' – 8 ¾"	5' – 7"	6' – 4"	8' – 11 ½"	233	2.1	5' – 4 ¾"	79	1.0
	36"	11' – 6 ¾"	5' – 11 ¼"	6' – 10"	9' – 8"	258	2.4	5' – 10 ½"	90	1.2
	42"	13' – 2 ¾"	6' – 7 ¼"	7' – 10"	11' – 1"	312	3.0	6' – 8 ¾"	109	1.5
	48"	15' – 4 ¾"	7' – 3 ¼"	9' – 4"	13' – 2 ½"	379	4.0	7' – 7 ¼"	142	2.0
	54"	17' – 1"	7' – 11 ½"	10' – 4"	14' – 7 ¼"	441	4.7	8' – 8"	170	2.5
	60"	18' – 9"	8' – 7 ½"	11' – 4"	16' – 0 ¼"	496	5.6	9' – 6 ¼"	194	2.9
	66"	20' – 5"	9' – 3 ½"	12' – 4"	17' – 5 ¼"	564	6.5	10' – 1 ¼"	217	3.3
	72"	22' – 1 ¼"	9' – 11 ¾"	13' – 4"	18' – 10 ¼"	628	7.5	10' – 9 ¼"	239	3.7
3:1	12"	6' – 2"	3' – 1 ½"	4' – 3"	6' – 0"	122	0.9	2' – 0 ¼"	24	0.3
	15"	7' – 2 ¾"	3' – 5 ¼"	5' – 0"	7' – 0 ¾"	146	1.1	2' – 6"	31	0.4
	18"	8' – 3 ¾"	3' – 9 ¼"	5' – 9"	8' – 1 ½"	183	1.4	3' – 1"	46	0.5
	21"	9' – 4 ¾"	4' – 1 ¼"	6' – 6"	9' – 2 ½"	203	1.7	3' – 6 ¾"	53	0.7
	24"	10' – 7 ½"	4' – 7"	7' – 3"	10' – 3"	233	2.1	4' – 1 ¾"	65	0.8
	27"	11' – 8 ½"	4' – 11"	8' – 0"	11' – 3 ¾"	261	2.4	4' – 6 ¼"	75	1.0
	30"	12' – 9 ½"	5' – 3"	8' – 9"	12' – 4 ½"	304	2.8	5' – 0"	86	1.2
	33"	13' – 10 ¾"	5' – 7"	9' – 6"	13' – 5 ¼"	330	3.2	5' – 4 ¾"	94	1.3
	36"	14' – 11 ¾"	5' – 11 ¼"	10' – 3"	14' – 6"	363	3.7	5' – 10 ½"	108	1.5
	42"	17' – 1 ¾"	6' – 7 ¼"	11' – 9"	16' – 7 ½"	449	4.6	6' – 8 ¾"	133	2.0
	48"	20' – 0 ¾"	7' – 3 ¼"	14' – 0"	19' – 9 ½"	552	6.2	7' – 7 ¼"	176	2.7
	54"	22' – 3"	7' – 11 ½"	15' – 6"	21' – 11"	638	7.5	8' – 8"	211	3.3
	60"	24' – 5"	8' – 7 ½"	17' – 0"	24' – 0 ½"	737	8.9	9' – 6 ¼"	246	3.9
	66"	26' – 7"	9' – 3 ½"	18' – 6"	26' – 2"	835	10.4	10' – 1 ¼"	274	4.5
	72"	28' – 9 ¼"	9' – 11 ¾"	20' – 0"	28' – 3 ½"	944	12.0	10' – 9 ¼"	309	5.1
4:1	12"	7' – 7"	3' – 1 ½"	5' – 8"	8' – 0 ¼"	160	1.2	2' – 0 ¼"	28	0.3
	15"	8' – 10 ¾"	3' – 5 ¼"	6' – 8"	9' – 5 ¼"	187	1.5	2' – 6"	36	0.5
	18"	10' – 2 ¾"	3' – 9 ¼"	7' – 8"	10' – 10"	232	1.9	3' – 1"	52	0.6
	21"	11' – 6 ¾"	4' – 1 ¼"	8' – 8"	12' – 3"	270	2.3	3' – 6 ¾"	63	0.8
	24"	13' – 0 ½"	4' – 7"	9' – 8"	13' – 8"	307	2.8	4' – 1 ¾"	75	1.0
	27"	14' – 4 ½"	4' – 11"	10' – 8"	15' – 1"	345	3.4	4' – 6 ¼"	87	1.2
	30"	15' – 8 ½"	5' – 3"	11' – 8"	16' – 6"	400	3.9	5' – 0"	99	1.4
	33"	17' – 0 ¾"	5' – 7"	12' – 8"	17' – 11"	440	4.5	5' – 4 ¾"	112	1.7
	36"	18' – 4 ¾"	5' – 11 ¼"	13' – 8"	19' – 4"	487	5.2	5' – 10 ½"	128	1.9
	42"	21' – 0 ¾"	6' – 7 ¼"	15' – 8"	22' – 1 ¾"	595	6.6	6' – 8 ¾"	158	2.5
	48"	24' – 8 ¾"	7' – 3 ¼"	18' – 8"	26' – 4 ¾"	748	8.9	7' – 7 ¼"	211	3.3
	54"	27' – 5"	7' – 11 ½"	20' – 8"	29' – 2 ¾"	883	10.8	8' – 8"	257	4.1
	60"	30' – 1"	8' – 7 ½"	22' – 8"	32' – 0 ¾"	1,011	12.8	9' – 6 ¼"	297	4.9
	66"	32' – 9"	9' – 3 ½"	24' – 8"	34' – 10 ½"	1,153	14.9	10' – 1 ¼"	340	5.6
	72"	35' – 5 ¼"	9' – 11 ¾"	26' – 8"	37' – 8 ½"	1,304	17.3	10' – 9 ¼"	378	6.4
6:1	12"	10' – 5"	3' – 1 ½"	8' – 6"	12' – 0 ¼"	227	1.9	2' – 0 ¼"	32	0.4
	15"	12' – 2 ¾"	3' – 5 ¼"	10' – 0"	14' – 1 ¾"	277	2.5	2' – 6"	43	0.6
	18"	14' – 0 ¾"	3' – 9 ¼"	11' – 6"	16' – 3 ¼"	340	3.2	3' – 1"	61	0.8
	21"	15' – 10 ¾"	4' – 1 ¼"	13' – 0"	18' – 4 ½"	402	3.9	3' – 6 ¾"	76	1.1
	24"	17' – 10 ½"	4' – 7"	14' – 6"	20' – 6"	456	4.8	4' – 1 ¾"	91	1.4
	27"	19' – 8 ½"	4' – 11"	16' – 0"	22' – 7 ½"	525	5.7	4' – 6 ¼"	108	1.6
	30"	21' – 6 ½"	5' – 3"	17' – 6"	24' – 9"	601	6.6	5' – 0"	124	2.0
	33"	23' – 4 ¾"	5' – 7"	19' – 0"	26' – 10 ½"	682	7.7	5' – 4 ¾"	143	2.3
	36"	25' – 2 ¾"	5' – 11 ¼"	20' – 6"	29' – 0"	745	8.8	5' – 10 ½"	162	2.7
	42"	28' – 10 ¾"	6' – 7 ¼"	23' – 6"	33' – 2 ¾"	928	11.3	6' – 8 ¾"	202	3.5
	48"	34' – 0 ¾"	7' – 3 ¼"	28' – 0"	39' – 7 ¼"	1,199	15.5	7' – 7 ¼"	274	4.6

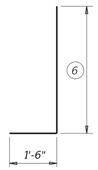


ELEVATION

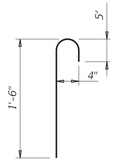
(Showing dimensions.)



BARS CL
(Length = 2'-5')

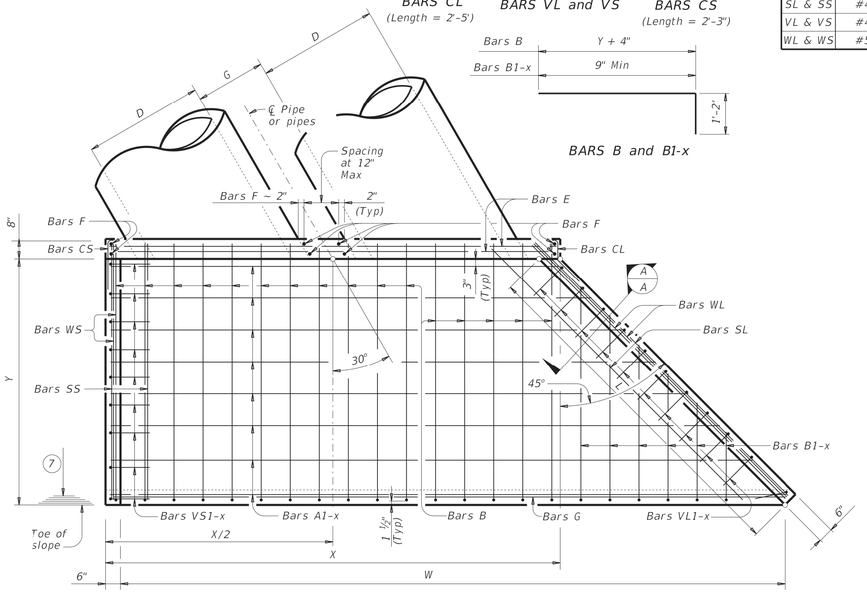


BARS VL and VS

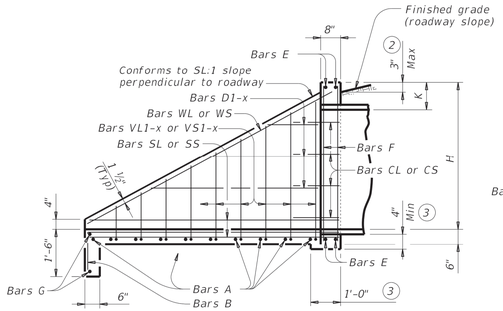


BARS CS
(Length = 2'-3")

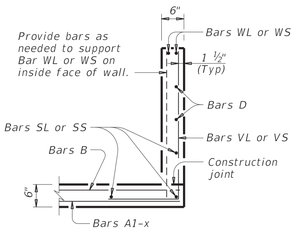
BARS B and B1-x



PLAN



TYPICAL WING ELEVATION



SECTION A-A

TABLE OF REINFORCING STEEL (5)

Bar	Size	Spa	No.
A	#4	1' – 0"	~
B	#3	1' – 6"	~
CL & CS	#4	1' – 0"	~
D	#3	1' – 0"	~
E	#5	~	4
F	#5	~	~
G	#3	~	2
SL & SS	#4	~	6
VL & VS	#4	1' – 0"	~
WL & WS	#5	~	4

TABLE OF CONSTANT DIMENSIONS

Dia of Pipe (D)	G	K (4)	H
12"	0' – 9"	1' – 0"	2' – 0"
15"	0' – 11"	1' – 0"	2' – 3"
18"	1' – 2"	1' – 0"	2' – 6"
21"	1' – 4"	1' – 0"	2' – 9"
24"	1' – 7"	1' – 0"	3' – 0"
27"	1' – 8"	1' – 0"	3' – 3"
30"	1' – 10"	1' – 0"	3' – 6"
33"	1' – 11"	1' – 0"	3' – 9"
36"	2' – 1"	1' – 0"	4' – 0"
42"	2' – 4"	1' – 0"	4' – 6"
48"	2' – 7"	1' – 3"	5' – 3"
54"	3' – 0"	1' – 3"	5' – 9"
60"	3' – 3"	1' – 3"	6' – 3"
66"	3' – 3"	1' – 3"	6' – 9"
72"	3' – 4"	1' – 3"	7' – 3"

(1) Quantities shown are for concrete pipe and will increase slightly for metal pipe installations.

(2) For vehicle safety, construct curbs no more than 3" above finished grade. Reduce curb heights, if necessary, to meet these requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

(3) Provide a 1'-0" footing as shown where required to maintain 4" minimum cover for pipes.

(4) Dimensions shown are usual and maximum.

(5) Quantities shown are for one structure end only (one headwall).

(6) Min Length = $6" + 3" \times \left(\frac{12 \times H - 7}{12 \times L} \right)$

Max Length = $12 \times H - 3" \times \left(\frac{12 \times H - 7}{12 \times L} \right) - 1"$

(7) Lengths of wings based on SL:1 slope along this line.

MATERIAL NOTES:
Provide Grade 60 reinforcing steel.
Provide Class C concrete (f'c = 3,600 psi).

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications.
Do not mount bridge rails of any type directly to these culvert headwalls.
This standard may not be used for wall heights, H, exceeding the values shown.

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing dimensions are out-to-out of bars.

Texas Department of Transportation — Bridge Division Standard

CONCRETE HEADWALLS WITH FLARED WINGS FOR 30° SKEW PIPE CULVERTS

CH-FW-30

FILE: CD-CH-FW30-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P–6257

STATE OF TEXAS — RAHUL B. MENON — 130533 — LICENSED PROFESSIONAL ENGINEER — 6/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

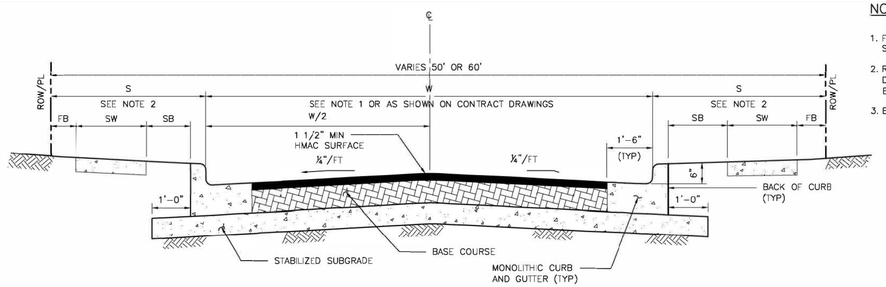
STORM DETAILS
SHEET 12 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410029–0001–4	
DRAWING SCALE	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 98 OF 158	

HOUSTON PUBLIC WORKS — ACCEPTED AND FILED — 81720 CITY DRAWING NUMBER — Approval Date 03/19/25 — HOUSTON TX

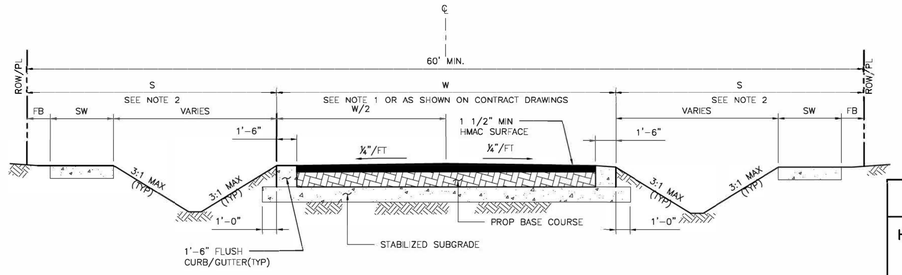
PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 6/18/2025 6:06 PM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47-Details-Storm_0718.dwg

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 AUTHORING THEIR USE, ACCEPTS RESPONSIBILITY FOR THEIR APPLICABILITY, ACCURACY AND SUFFICIENCY. 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.



HMAC PAVEMENT – CURB & GUTTER SECTION

(NOT APPLICABLE TO ETJ OF CITY OF HOUSTON)



HMAC PAVEMENT – DITCH SECTION

(NOT APPLICABLE TO ETJ OF CITY OF HOUSTON)

NOTES:

1. FOR TRAVEL WAY WIDTH (W) REFER TO IDM SECTION 10.3.03.A.
2. REFER TO CONTRACT DRAWINGS FOR "S" DIMENSION (S), SIDEWALK (SW), FRONTAGE BUFFER (FB), AND SAFETY BUFFER (SB) WIDTHS.
3. BASE COURSE SHALL BE:
   ALTERNATES:
   A) 6" (MIN) HOT MIX ASPHALTIC CONCRETE.
   B) 8" (MIN) CRUSHED CONCRETE.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

HOT MIX ASPHALTIC CONCRETE PAVEMENT DETAILS

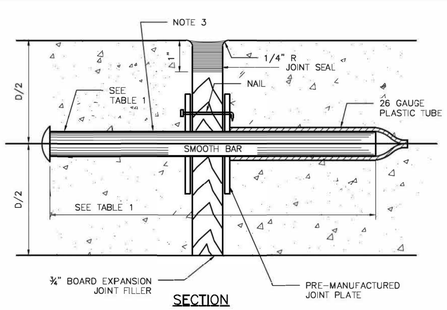
(SCALE: NOT TO SCALE)

APPROVED BY:

Docusigned by: Sukut Kanwar — CITY ENGINEER
Docusigned by: HANG NGUYEN — CITY TRAFFIC ENGINEER
Docusigned by: Carl Hubbuch — DIRECTOR OF HPW

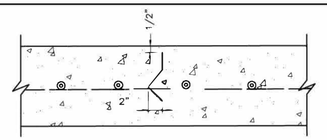
EFF DATE: NOV-27-2023 | DWG NO: 02741-01

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 AUTHORING THEIR USE, ACCEPTS RESPONSIBILITY FOR THEIR APPLICABILITY, ACCURACY AND SUFFICIENCY. 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.



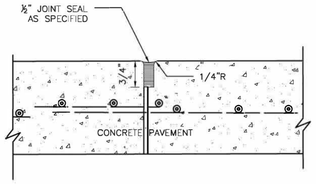
SECTION

DOWEL TYPE EXPANSION JOINT



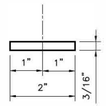
SECTION

DEFORMED METAL STRIP



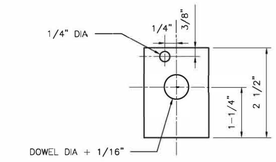
SECTION

CONSTRUCTION JOINT SEAL



PLAN VIEW

JOINT PLATE



ELEVATION VIEW

JOINT PLATE

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

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.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

PAVEMENT EXPANSION AND CONSTRUCTION JOINT DETAILS

(SCALE: NOT TO SCALE)

APPROVED BY:

Docusigned by: Sukut Kanwar — CITY ENGINEER
Docusigned by: HANG NGUYEN — CITY TRAFFIC ENGINEER
Docusigned by: Carl Hubbuch — DIRECTOR OF HPW

EFF DATE: NOV-27-2023 | DWG NO: 02752-01

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS — V. N. MURTHY MADE — 134936 — LICENSED PROFESSIONAL ENGINEER — 6/19/2025

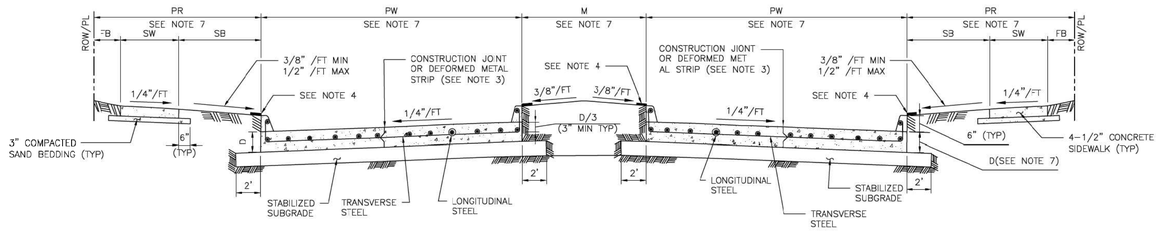
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

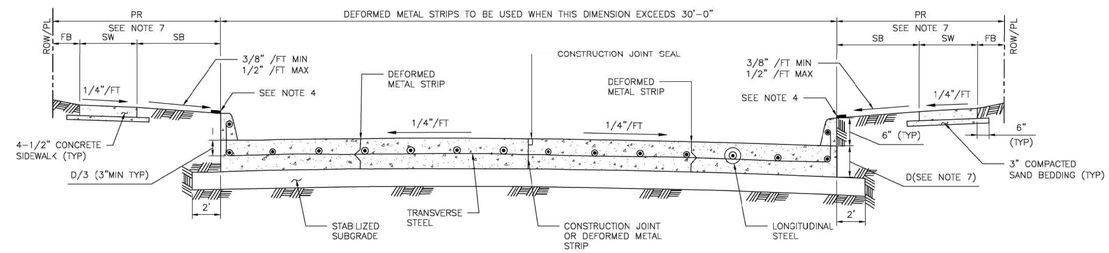
STANDARD DETAILS STREET PAVING AND SIDEWALK SHEET 1 OF 15

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 99 OF 158	

FILE:P:\ACTIVE\21DR47\WorkingDrawings (02 New Design)\xrefs MicroStation\Sheets\Roadway Standard Details\RDWY_STD_Details.dgn
DATE:6/19/2025



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: Sulaiman Kaiwar	DocuSigned by: LINHNG NGUYEN
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: DocuSigned by: Carol 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	

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED
PROFESSIONAL ENGINEER
6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

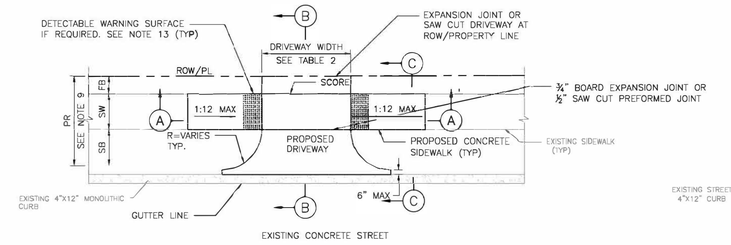
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

STANDARD DETAILS
STREET PAVING AND SIDEWALK
SHEET 2 OF 15

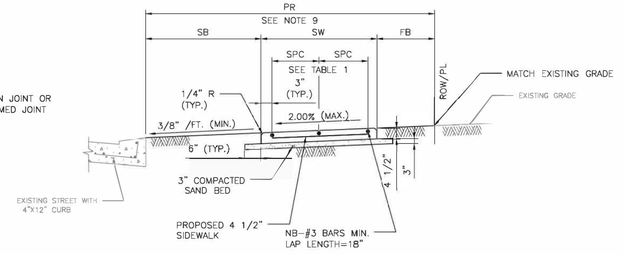
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 100 OF 158	

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 THE USE OF THIS STANDARD. IT IS THE RESPONSIBILITY OF THE DESIGN ENGINEER TO ADDRESS SITE SPECIFIC DESIGN REQUIREMENTS AND ASSUME ALL RISKS AND LIABILITY ARISING FROM THE USE THEREOF. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR ANY CONSEQUENCES ARISING OUT OF THE USE OF THIS STANDARD UNLESS IT OR ITS AUTHORIZED AGENT PREPARES OR MODIFIES THE DESIGN. IN ADDITION, THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.
WARRANTY OF ANY KIND IS MADE BY THE CITY OF HOUSTON FOR ANY PURPOSES WHATSOEVER. THE CITY OF HOUSTON SHALL NOT BE LIABLE FOR DAMAGES OF ANY KIND ARISING FROM THE USE OF THIS STANDARD.

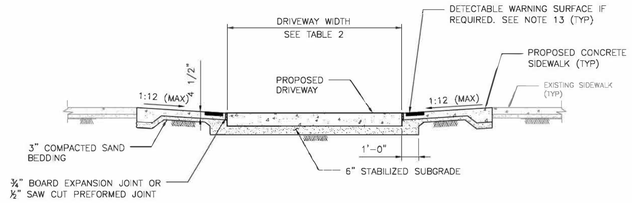
FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Roadway Standard Details\RDWY_STD_Details.dgn
DATE:6/19/2025



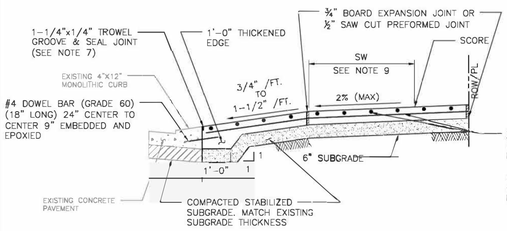
PLAN VIEW
DRIVEWAY



SECTION C–C
TYPICAL SIDEWALK SECTION



SECTION A–A
PROPOSED SIDEWALK, THROUGH DRIVEWAY WITH EXCESSIVE GRADES



SINGLE FAMILY
#3 BAR @ 18" C–C EACH WAY MIN. LAP LENGTH = 16".

ALL OTHERS
#4 BAR @ 24" C–C EACH WAY MIN. LAP LENGTH = 22".

SECTION B–B
TYPICAL DRIVEWAY SECTION

TABLE 1

REINFORCING STEEL INFORMATION
FOR 4 ½ " THICK SIDEWALKS
EXPANSION JOINT SPACING = 40 FT
f'_c = 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.

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 INTERSEC" 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: Sukai 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: 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

DRAWING SCALE
NOT TO SCALE

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P–6257

STATE OF TEXAS V. N. MURTHY MADE 134936 LICENSED PROFESSIONAL ENGINEER
6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

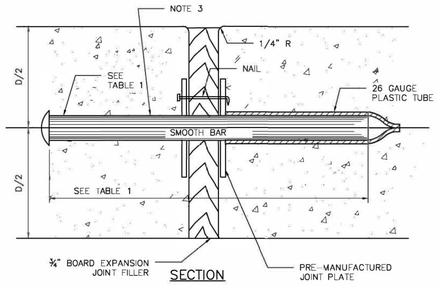
STANDARD DETAILS STREET PAVING AND SIDEWALK SHEET 3 OF 15

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410029–0001–4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 101 OF 158	

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.

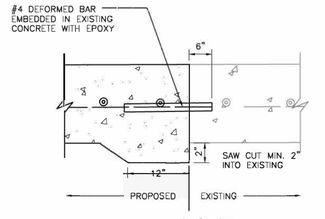
FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Roadway Standard Details\RDWY_STD_Details.dgn
DATE:6/19/2025

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 SITUATIONS ASSOCIATED WITH THE SUBJECT MATTER. ANY ENGINEER USING THIS STANDARD IS RESPONSIBLE FOR COMPLIANCE WITH THE ENGINEERING PRACTICE ACT AND ANY OTHER LAW, RULE OR REGULATION GOVERNING THE PREPARATION OF ENGINEERING DOCUMENTS. BY USING THIS STANDARD, THE ENGINEER ACCEPTS RESPONSIBILITY FOR HIS/HER APPLICABILITY, ADEQUACY AND SUITABILITY. 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.



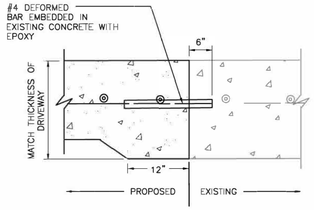
SECTION

DOWEL TYPE EXPANSION JOINT



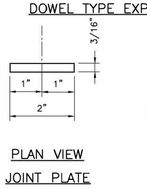
SECTION

SIDEWALK TO EXISTING SIDEWALK



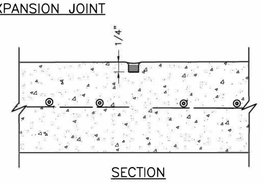
SECTION

SIDEWALK TO EXISTING DRIVEWAY



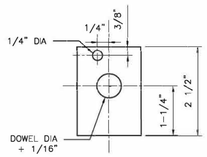
PLAN VIEW

JOINT PLATE



SECTION

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

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.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

SIDEWALK EXPANSION AND CONSTRUCTION JOINT DETAILS

(SCALE: NOT TO SCALE)

APPROVED BY:

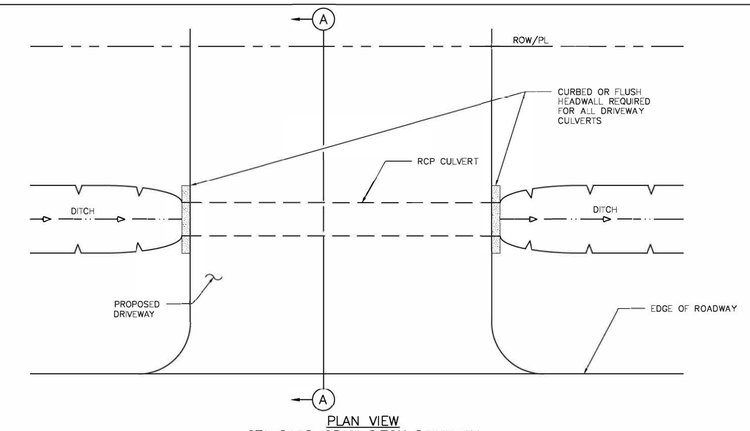
DocuSigned by: Sukat kauwar — CITY ENGINEER

DocuSigned by: HANG NGUYEN — CITY TRAFFIC ENGINEER

DocuSigned by: Carol Haddock — DIRECTOR OF HPW

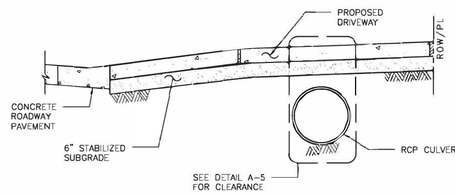
EFF DATE: NOV-27-2023 | DWG NO: 02752-02

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 SITUATIONS ASSOCIATED WITH THE SUBJECT MATTER. ANY ENGINEER USING THIS STANDARD IS RESPONSIBLE FOR COMPLIANCE WITH THE ENGINEERING PRACTICE ACT AND ANY OTHER LAW, RULE OR REGULATION GOVERNING THE PREPARATION OF ENGINEERING DOCUMENTS. BY USING THIS STANDARD, THE ENGINEER ACCEPTS RESPONSIBILITY FOR HIS/HER APPLICABILITY, ADEQUACY AND SUITABILITY. 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.



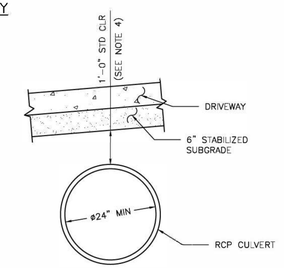
PLAN VIEW

STANDARD OPEN DITCH DRIVEWAY



SECTION A-A

STANDARD PIPE CULVERT CLEARANCE



DETAIL A-5

CULVERT CLEARANCE

NOTES:

1. PIPE CULVERTS SHALL CONFORM TO CHAPTER 9 DESIGN REQUIREMENTS OF THE INFRASTRUCTURE DESIGN MANUAL AND MATERIAL REQUIREMENTS OF STANDARD CONSTRUCTION SPECIFICATION SECTION 02631.
2. RCP CULVERT SIZE WILL BE APPROVED BY CITY ENGINEER WITH 24" DIAMETER MINIMUM.
3. DRIVEWAY MATERIAL WITHIN THE RIGHT OF WAY SHALL BE CONCRETE OR ASPHALT.
4. WHERE STANDARD 1'-0" CLEARANCE IS NOT FEASIBLE, MINIMUM CLEARANCE OF 6" IS ALLOWED WHEN APPROVED BY THE OFFICE OF THE CITY ENGINEER (OCE).
5. DITCH FLOW LINE DIRECTION DEPICTED IS SHOWN AS AN EXAMPLE AND MAY NOT MATCH SITE SPECIFIC CONDITIONS. REFER TO CONTRACT DRAWINGS FOR FLOW LINE DIRECTION AND ELEVATIONS.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

DRIVEWAYS WITH CULVERTS ON OPEN DITCH TYPE STREETS

(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Sukat kauwar — CITY ENGINEER

DocuSigned by: HANG NGUYEN — CITY TRAFFIC ENGINEER

DocuSigned by: Carol Haddock — DIRECTOR OF HPW

EFF DATE: NOV-27-2023 | DWG NO: 02754-02

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates

FB NO. P-6257

STATE OF TEXAS — V. N. MURTHY MADE — 134936 — LICENSED PROFESSIONAL ENGINEER

6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

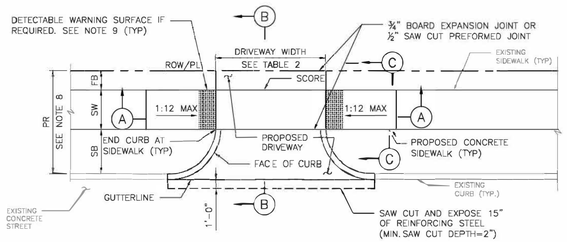
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

STANDARD DETAILS
STREET PAVING AND SIDEWALK
SHEET 4 OF 15

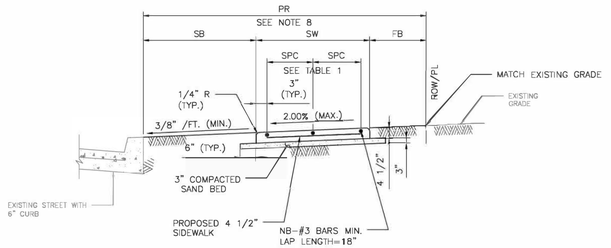
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 102 OF 158	

HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date: 09/16/25 HOUSTON TX

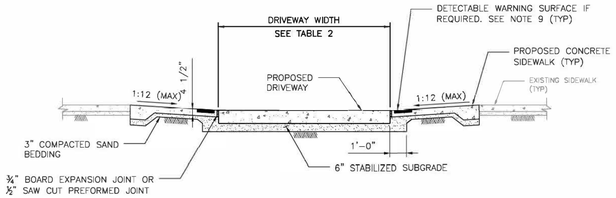
FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Roadway Standard Details\RDWY_STD_Details.dgn
DATE:6/19/2025



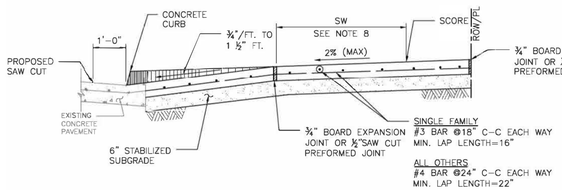
PLAN VIEW
DRIVEWAY



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

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(6)	16(6)	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. 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.

APPROVED BY:	APPROVED BY:
DocuSigned by: Sukut Kaswar	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: 02754–01B

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

DRIVEWAY DETAIL WITH 6" CURBED STREETS

	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	
NOT TO SCALE	

ISANI
civil . design . engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
6/19/2025

SURVEYED BY: Kuo&Associates
FB NO. P–6257

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

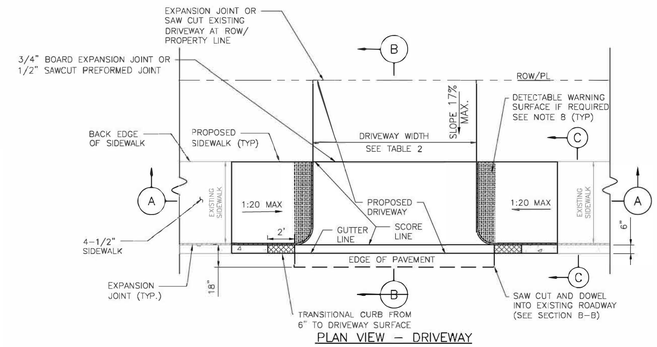
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

STANDARD DETAILS
STREET PAVING AND SIDEWALK
SHEET 5 OF 15

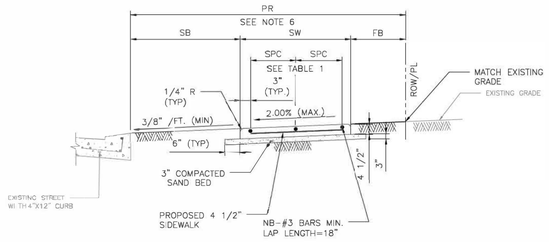
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410029–0001–4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 103 OF 158	

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.

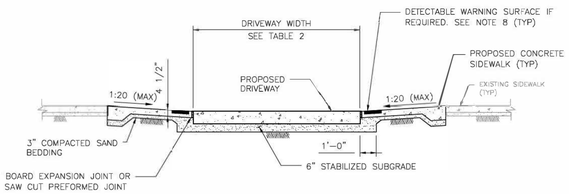
FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Roadway Standard Details\RDWY_STD_Details.dgn
DATE:6/19/2025



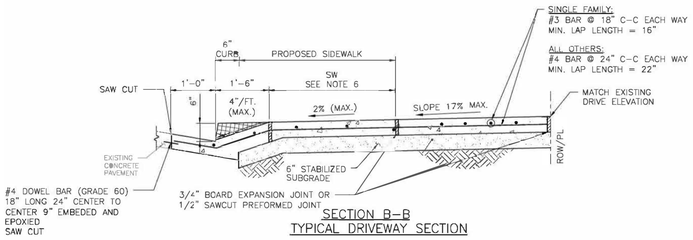
PLAN VIEW – DRIVEWAY



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
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 #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	TYPE A DRIVEWAY WIDTH (FT) MAX	TYPE A DRIVEWAY RADIUS (FT) MIN	TYPE A DRIVEWAY RADIUS (FT) MAX	TYPE B DRIVEWAY (SHARED ACCESS/SHARED DRIVEWAY) WIDTH (FT) MIN	TYPE B DRIVEWAY WIDTH (FT) MAX	TYPE B DRIVEWAY RADIUS (FT) MIN	TYPE B DRIVEWAY RADIUS (FT) MAX	TYPE C DRIVEWAY (COMMERCIAL DRIVEWAY) WIDTH (FT) MIN	TYPE C DRIVEWAY WIDTH (FT) MAX	TYPE C DRIVEWAY RADIUS (FT) MIN	TYPE C DRIVEWAY RADIUS (FT) 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:
Sukul Bauwar	Hailing Nguyen
CITY ENGINEER	CITY TRAFFIC ENGINEER

APPROVED 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 THROJGH DRIVEWAY WITH MINIMAL ELEVATION DIFFERENCE

	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	
NOT TO SCALE	

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS V. N. MURTHY MADE 134936 LICENSED PROFESSIONAL ENGINEER
6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

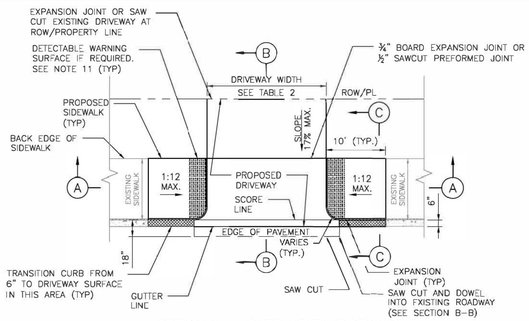
STANDARD DETAILS STREET PAVING AND SIDEWALK SHEET 6 OF 15

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 104 OF 158	

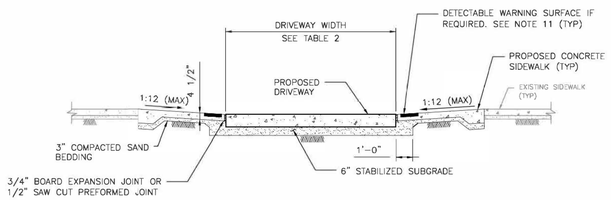
HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX

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.

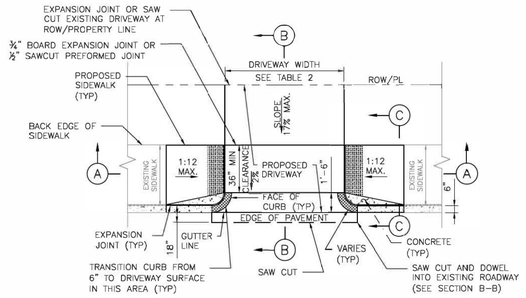
FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Roadway Standard Details\RDWY_STD_Details.dgn
DATE:6/19/2025



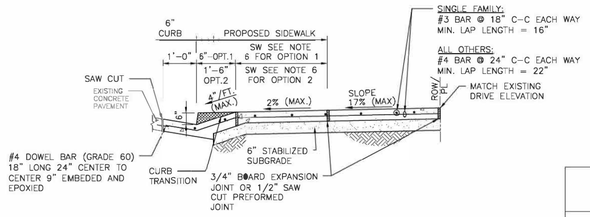
OPTION 1 – CURB LEVEL SIDEWALK
PLAN VIEW – DRIVEWAY WITHOUT CURB AT CURB RETURN



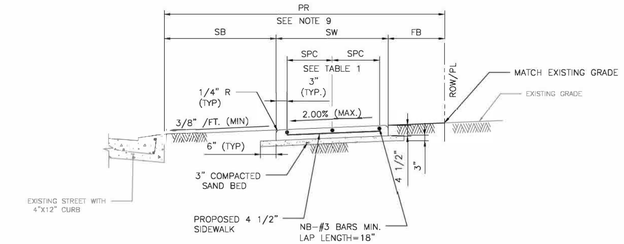
SECTION A–A
PROPOSED SIDEWALK THROUGH DRIVEWAY



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 #3 BARS			TRANSVERSE STEEL #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 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.

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: Sukut Kanwar	DocuSigned by: LONG NGUYEN
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: DocuSigned by: Carl Hedlund	
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	

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

STATE OF TEXAS · V. N. MURTHY MADE · 134936 · LICENSED PROFESSIONAL ENGINEER · 6/19/2025

SURVEYED BY: Kuo&Associates
FB NO. P-6257

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

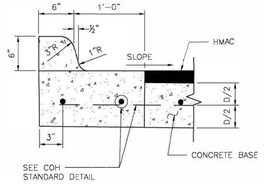
STANDARD DETAILS
STREET PAVING AND SIDEWALK
SHEET 7 OF 15

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 105 OF 158	

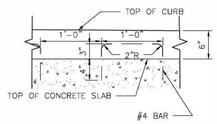
DISCLAIMER:
THE USE OF THIS STANDARD IS GOVERNED BY THE TEXAS ENGINEERING PRACTICE ACT. THE DESIGN REQUIREMENTS ON THIS STANDARD DO NOT PURPORT TO ADDRESS ALL OF THE SAFETY CONCERNS ASSOCIATED WITH THEIR USE. THE ENGINEER OF RECORD (EOR) IS TO REVIEW THESE DESIGN REQUIREMENTS AND BY AUTHORIZING THEIR 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.

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Roadway Standard Details\RDWY_STD_Details.dgn
DATE:6/19/2025

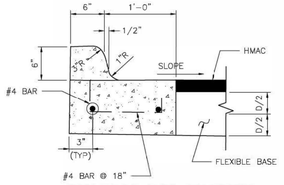
DocuSign Envelope ID: 9B122261-CF05-457B-9A65-2650F40866D5



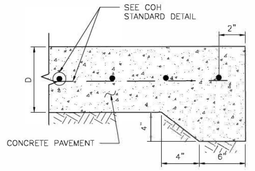
ESPLANADE CURB CONNECTED TO CONCRETE BASE



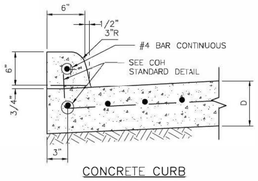
ALTERNATE CONCRETE CURB REINFORCEMENT



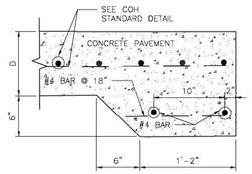
ESPLANADE CURB CONNECTED TO FLEXIBLE BASE



STANDARD CONCRETE PAVING HEADER

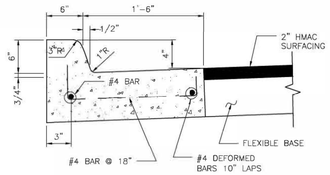


CONCRETE CURB

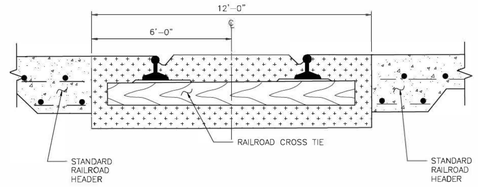


STANDARD RAILROAD HEADER

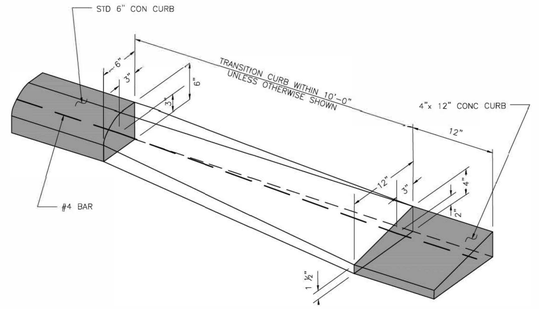
WHEN CONCRETE CURB IS TO BE PLACED EXISTING CONCRETE USE BASE
#4 BAR @ 18x10" LONG, DOWELED AND SET N EPOXY GROUT.
SET #4 DOWEL BARS, 25" LONG AT 12" C-C WHEN PAVEMENT SECTION POURED.



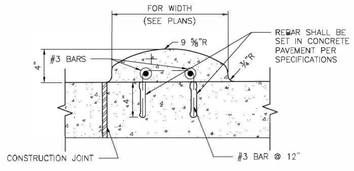
MONOLITHIC CURB AND GUTTER



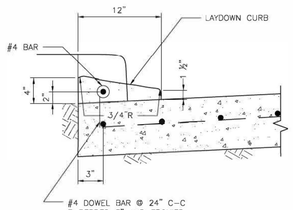
STANDARD RAILROAD CROSSING – SINGLE TRACK



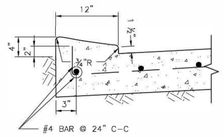
CURB TRANSITION
(SEE NOTES)



MOUNTABLE CURB



4-INCH x 12-INCH TRANSITION CURB
(SEE NOTES)



4-INCH x 12-INCH MONOLITHIC CURB
(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-INCH 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.

APPROVED BY:	APPROVED BY:
DocuSigned by: Sukul 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: 02771-01

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

CURB, CURB AND GUTTER AND HEADER DETAILS

	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	
NOT TO SCALE	

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

STANDARD DETAILS
STREET PAVING AND SIDEWALK
SHEET 8 OF 15

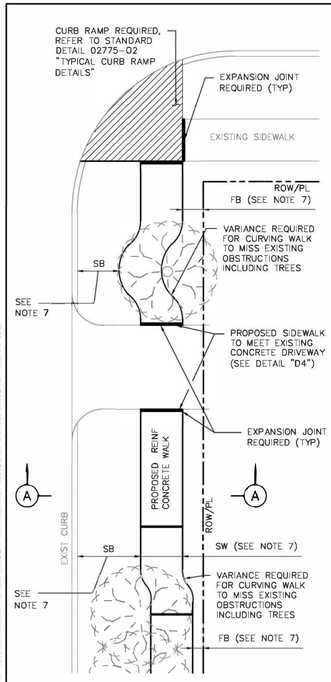
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 106 OF 158	

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

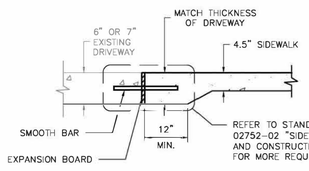
DISCLAIMER:
THE USE OF THIS STANDARD IS GOVERNED BY THE TEXAS ENGINEERING PRACTICE ACT. THE DESIGN REQUIREMENTS ON THIS STANDARD DO NOT PURPORT TO ADDRESS ALL OF THE SAFETY CONCERNS ASSOCIATED WITH THEIR USE. IT IS THE RESPONSIBILITY OF THE DESIGN ENGINEER TO PERFORM SUCH HAZARD ANALYSES AS ARE NECESSARY TO ENSURE THE SAFETY OF THE WORKERS AND THE PUBLIC AND TO TAKE THE NECESSARY STEPS TO MITIGATE HAZARDS THAT ARE NOT ADDRESSED BY THIS STANDARD. THE CITY OF HOUSTON MAKES 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.

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Roadway Standard Details\RDWY_STD_Details.dgn
DATE:6/19/2025

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 SITE-SPECIFIC ENGINEERING ISSUES ASSOCIATED WITH THE USE OF THIS STANDARD. BY REFERENCING THIS STANDARD, THE ENGINEER ASSUMES ALL RISK AND LIABILITY ARISING FROM ITS 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.



PLAN VIEW

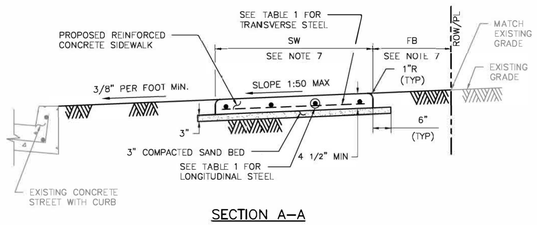


DETAIL D4
DRIVEWAY/SIDEWALK HEADER

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

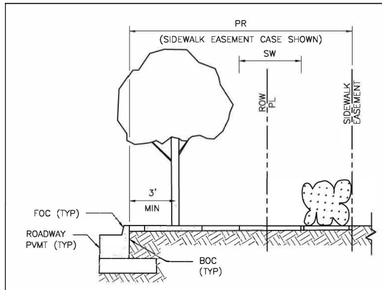
TYPICAL SIDEWALK LAYOUT AND DETAILS FOR STREETS WITH CURBS
(SCALE: NOT TO SCALE)

APPROVED BY:

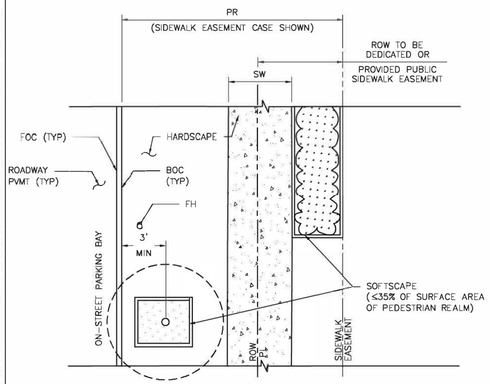
CITY ENGINEER	DIRECTOR OF HPW
CITY TRAFFIC ENGINEER	

EFF DATE: NOV-27-2023 | DWG NO: 02775-01

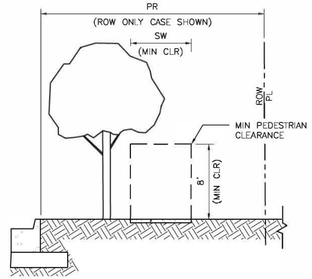
DISCLAIMER:
THE USE OF THIS STANDARD IS GOVERNED BY THE TEXAS ENGINEERING PRACTICE ACT. THE DESIGN REQUIREMENTS ON THIS STANDARD DO NOT PURPORT TO ADDRESS ALL OF THE SITE-SPECIFIC ENGINEERING ISSUES ASSOCIATED WITH THE USE OF THIS STANDARD. BY REFERENCING THIS STANDARD, THE ENGINEER ASSUMES ALL RISK AND LIABILITY ARISING FROM ITS 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.



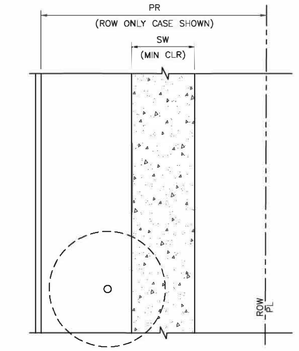
ELEVATION



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:

CITY ENGINEER	DIRECTOR OF HPW
CITY TRAFFIC ENGINEER	

EFF DATE: NOV-27-2023 | DWG NO: 02775-08

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED
PROFESSIONAL ENGINEER
6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

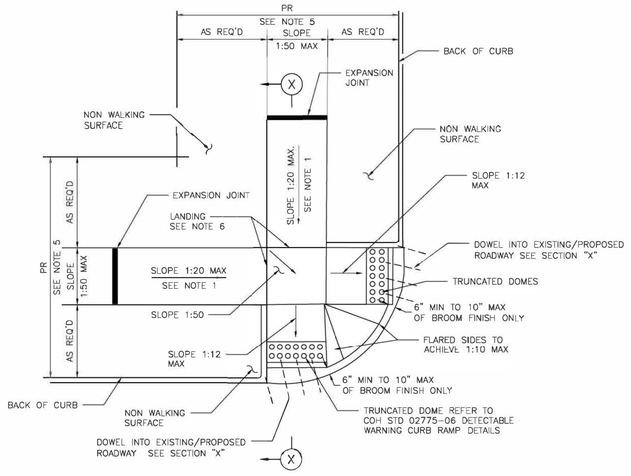
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

STANDARD DETAILS
STREET PAVING AND SIDEWALK
SHEET 9 OF 15

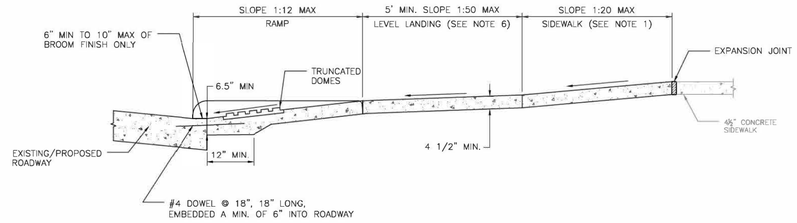
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 107 OF 158	

HOUSTON PUBLIC WORKS ACCEPTED AND FILED
81720 CITY DRAWING NUMBER
Approval Date: 09/19/25
HOUSTON TX

FILE:P:\ACTIVE\21DR47\WorkingDrawings (02 New Design)\xrefs MicroStation\Sheets\Roadway Standard Details\RDWY_STD_Details.dgn
DATE:6/19/2025



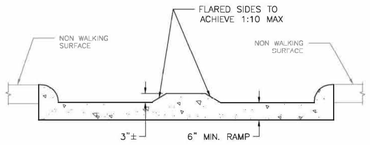
STREETS WITH NON– WALKING SURFACE BEHIND CURB
SEE NOTE–7



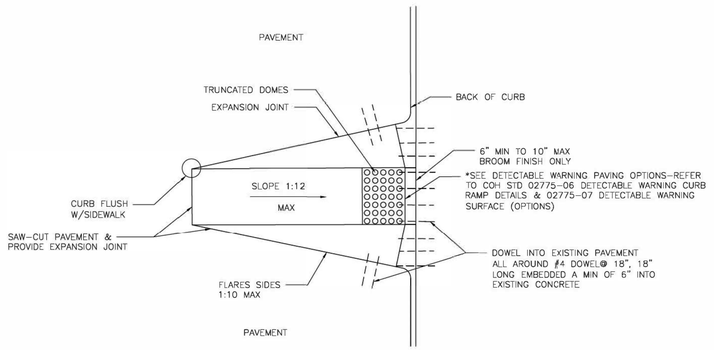
SECTION X–X

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: Sukul 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: 02775–02

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TYPICAL CURB RAMP DETAILS

DRAWING SCALE	FOR CITY OF HOUSTON USE ONLY
NOT TO SCALE	

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P–6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED
PROFESSIONAL ENGINEER
6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

STANDARD DETAILS
STREET PAVING AND SIDEWALK
SHEET 10 OF 15

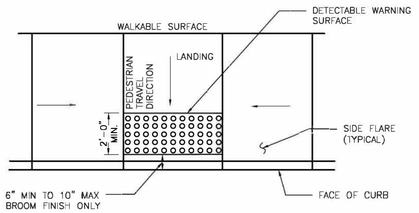
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410029–0001–4	
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 108 OF 158	

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date: 09/19/25
HOUSTON TX

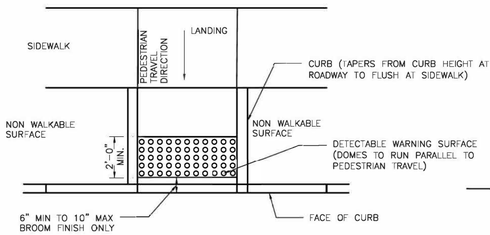
DISCLAIMER:
THE USE OF THIS STANDARD IS GOVERNED BY THE TEXAS ENGINEERING PRACTICE ACT. THE DESIGN REQUIREMENTS ON THIS STANDARD DO NOT PURPORT TO ADDRESS ALL OF THE SAFETY CONCERNS ASSOCIATED WITH THE USE OF THIS STANDARD OR WHICH MAY RESULT FROM ITS USE. IT IS THE RESPONSIBILITY OF THE ENGINEER TO ADOPT SAFE PRACTICES IN DESIGNING ITEMS INCLUDED IN THIS STANDARD AND TO DETERMINE THE APPLICABILITY AND LIMITATIONS OF THIS STANDARD FOR EACH USE. ALTHOUGH THE CITY OF HOUSTON HAS ENDEAVORED TO ASSURE THE ACCURACY AND RELIABILITY OF THE DATA CONTAINED ON THIS STANDARD, THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE. NO WARRANTY OF ANY KIND IS MADE BY THE CITY OF HOUSTON FOR ANY PURPOSES WHATSOEVER. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR ANY DAMAGES RESULTING FROM THE USE OF THIS STANDARD FOR PURPOSES OTHER THAN THOSE FOR WHICH IT WAS DESIGNED.

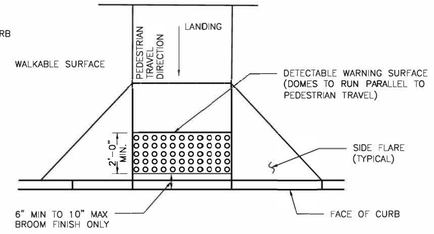
FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Roadway Standard Details\RDWY_STD_Details.dgn
DATE:6/19/2025

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 THE SAFETY CONCERNS ASSOCIATED WITH ITS USE. IT IS FURNISHED IN CONNECTION WITH THE CITY OF HOUSTON (COH) ROADWAY AND TRAFFIC DESIGN AND CONSTRUCTION ACTIVITIES. ANY USE OF THIS STANDARD BY ANY PERSON, ENTITY OR ITS EMPLOYEES OR AGENTS IS AT THE SOLE RISK OF SUCH PERSON OR ENTITY. THE COH EXPRESSLY DISCLAIMS ANY AND ALL RESPONSIBILITY FOR PLANS PREPARED, SEALED, SIGNED AND/OR DATED BY ENGINEERS WHO ARE EMPLOYED BY OTHER GOVERNMENTAL ENTITIES OR PRIVATE FIRMS OR INDIVIDUALS WHO UTILIZE THIS STANDARD. ALL PERSONS ARE RESPONSIBLE FOR THEIR APPLICATION, ACCURACY AND SAFETY. NO WARRANTY OF ANY KIND IS MADE BY THE CITY OF HOUSTON FOR ANY PURPOSE WHATSOEVER. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.



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.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

DETECTABLE WARNING CURB RAMP DETAILS

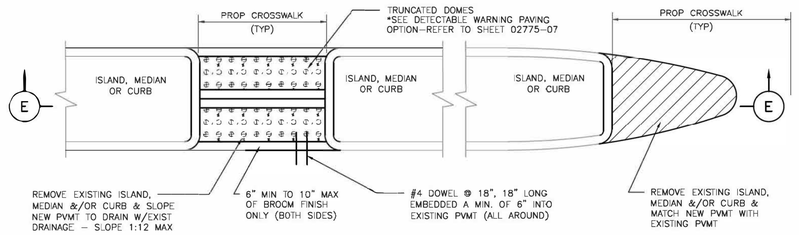
(SCALE: NOT TO SCALE)

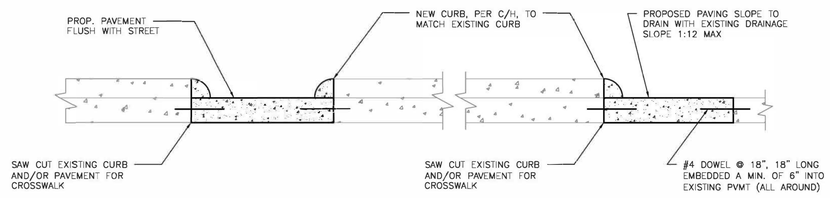
APPROVED BY:

Docusigned by: Sukat Kanwar — CITY ENGINEER
Docusigned by: Linh Nguyen — CITY TRAFFIC ENGINEER
Docusigned by: Carol Haddock — DIRECTOR OF HPW

EFF DATE: NOV-27-2023 | DWG NO: 02775-06

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 THE SAFETY CONCERNS ASSOCIATED WITH ITS USE. IT IS FURNISHED IN CONNECTION WITH THE CITY OF HOUSTON (COH) ROADWAY AND TRAFFIC DESIGN AND CONSTRUCTION ACTIVITIES. ANY USE OF THIS STANDARD BY ANY PERSON, ENTITY OR ITS EMPLOYEES OR AGENTS IS AT THE SOLE RISK OF SUCH PERSON OR ENTITY. THE COH EXPRESSLY DISCLAIMS ANY AND ALL RESPONSIBILITY FOR PLANS PREPARED, SEALED, SIGNED AND/OR DATED BY ENGINEERS WHO ARE EMPLOYED BY OTHER GOVERNMENTAL ENTITIES OR PRIVATE FIRMS OR INDIVIDUALS WHO UTILIZE THIS STANDARD. ALL PERSONS ARE RESPONSIBLE FOR THEIR APPLICATION, ACCURACY AND SAFETY. NO WARRANTY OF ANY KIND IS MADE BY THE CITY OF HOUSTON FOR ANY PURPOSE WHATSOEVER. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.





SECTION E-E
FOR ISLAND, MEDIAN, OR CURB MODIFICATIONS FOR CROSSWALKS

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.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

CURB MODIFICATION FOR CURB RAMPS & CROSSWALKS

(SCALE: NOT TO SCALE)

APPROVED BY:

Docusigned by: Sukat Kanwar — CITY ENGINEER
Docusigned by: Linh Nguyen — CITY TRAFFIC ENGINEER
Docusigned by: Carol Haddock — DIRECTOR OF HPW

EFF DATE: NOV-27-2023 | DWG NO: 02775-04

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS — V. N. MURTHY MADE — 134936 — LICENSED PROFESSIONAL ENGINEER
6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

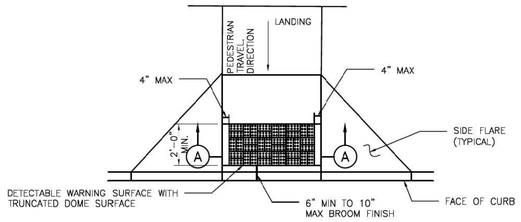
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

STANDARD DETAILS
STREET PAVING AND SIDEWALK
SHEET 11 OF 15

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 109 OF 158	

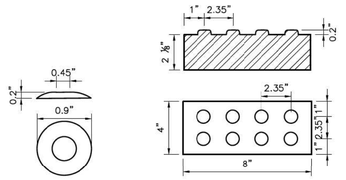
HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX

FILE:P:\ACTIVE\21DR47\WorkingDrawings (02 New Design)\xrefs MicroStation\Sheets\Roadway Standard Details\RDWY_STD_Details.dgn
DATE:6/19/2025



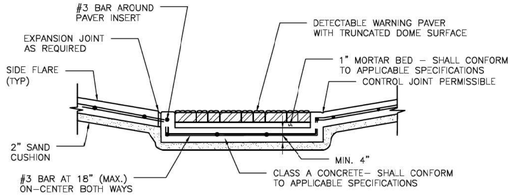
PLAN VIEW

DETECTABLE WARNING SURFACE



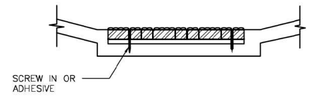
DETAIL

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

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

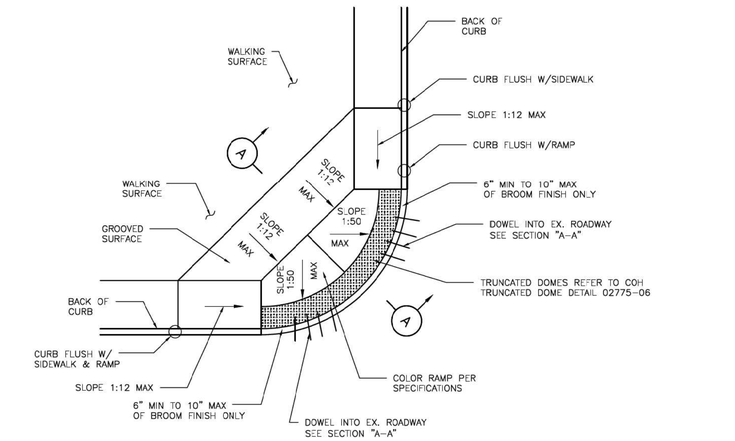
DETECTABLE WARNING SURFACE (OPTIONS)

(SCALE: NOT TO SCALE)

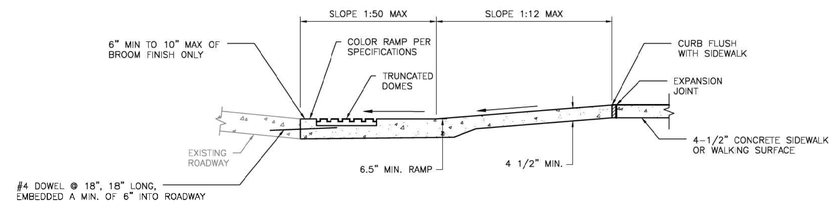
APPROVED BY:

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: 02775–07



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 — CITY ENGINEER
Docusigned by: KHANG NGUYEN — CITY TRAFFIC ENGINEER
Docusigned by: Carol Haddock — DIRECTOR OF HPW

EFF DATE: NOV–27–2023 | DWG NO: 02775–05

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P–6257

STATE OF TEXAS — V. N. MURTHY MADE — 134936 — LICENSED PROFESSIONAL ENGINEER — 6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

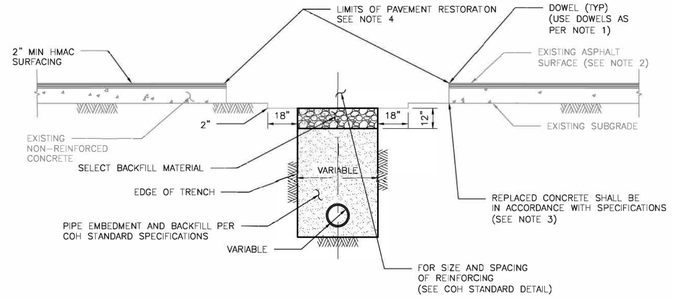
STANDARD DETAILS STREET PAVING AND SIDEWALK SHEET 12 OF 15

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410029–0001–4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 110 OF 158	

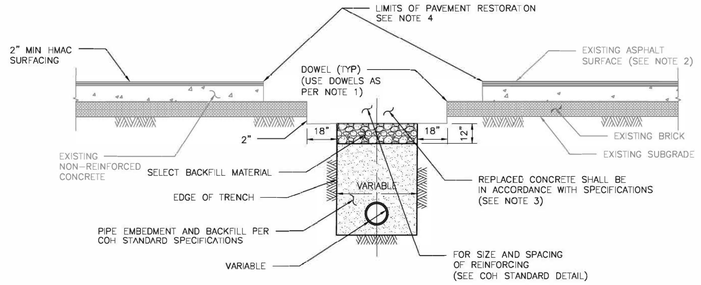
DISCLAIMER:
THE USE OF THIS STANDARD IS GOVERNED BY THE TEXAS ENGINEERING PRACTICE ACT. THE DESIGN REQUIREMENTS ON THIS STANDARD DO NOT PURPORT TO ADDRESS ALL OF THE DESIGN ISSUES NECESSARY FOR ANY SPECIFIC PROJECT. ENGINEERS USING THIS STANDARD IN THE PREPARATION OF CONSTRUCTION PLANS ARE RESPONSIBLE FOR THEIR APPLICABILITY, ACCURACY AND SUFFICIENCY FOR THEIR PROJECTS. THE CITY OF HOUSTON (COH) DOES NOT WARRANT OR GUARANTEE THE ACCURACY, ADEQUACY, OR SUITABILITY OF ANY STANDARD FOR ANY PURPOSE AND EXPRESSLY DISCLAIMS ANY AND ALL LIABILITY ARISING FROM OR RELATED TO ITS USE. BY USING THIS STANDARD, THE USER ACCEPTS RESPONSIBILITY FOR ITS APPROPRIATE APPLICATION AND ASSUMES ALL RISKS ASSOCIATED WITH ITS USE. USE OF THIS STANDARD ACKNOWLEDGES THAT THE USER UNDERSTANDS AND AGREES THAT THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.

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 DESIGN ISSUES NECESSARY FOR ANY SPECIFIC PROJECT. ENGINEERS USING THIS STANDARD IN THE PREPARATION OF CONSTRUCTION PLANS ARE RESPONSIBLE FOR THEIR APPLICABILITY, ACCURACY AND SUFFICIENCY FOR THEIR PROJECTS. THE CITY OF HOUSTON (COH) DOES NOT WARRANT OR GUARANTEE THE ACCURACY, ADEQUACY, OR SUITABILITY OF ANY STANDARD FOR ANY PURPOSE AND EXPRESSLY DISCLAIMS ANY AND ALL LIABILITY ARISING FROM OR RELATED TO ITS USE. BY USING THIS STANDARD, THE USER ACCEPTS RESPONSIBILITY FOR ITS APPROPRIATE APPLICATION AND ASSUMES ALL RISKS ASSOCIATED WITH ITS USE. USE OF THIS STANDARD ACKNOWLEDGES THAT THE USER UNDERSTANDS AND AGREES THAT THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Roadway Standard Details\RDWY_STD_Details.dgn
DATE:6/19/2025



ELEVATION C
REPAIR OF NON-REINFORCED CONCRETE PAVEMENT



ELEVATION D
REPAIR OF NON-REINFORCED CONCRETE PAVEMENT WITH BRICK

NOTES:

1. EXPOSE 15" OF REINFORCING STEEL AT PROPOSED SAWED JOINT. IF NO REINFORCING STEEL EXISTS, USE HORIZONTAL DOWELS. HORIZONTAL DOWELS SHALL BE #6 BAR, 24" LONG, 24" C-C, DRILLED AND EMBEDDED 8" INTO THE CENTER OF THE EXISTING SLAB. WITH "PO ROC" OR EQUAL.
2. IF REINFORCED CONCRETE IS OVERLAYED REPLACE WITH SAME THICKNESS OF HMAC SURFACING.
3. REFER TO STANDARD DETAIL 02751-01 FOR REINFORCING STEEL REQUIREMENT
4. REFER TO STANDARD DETAILS 02951-01 THROUGH 03 FOR PAVEMENT RESTORATION LIMITS.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

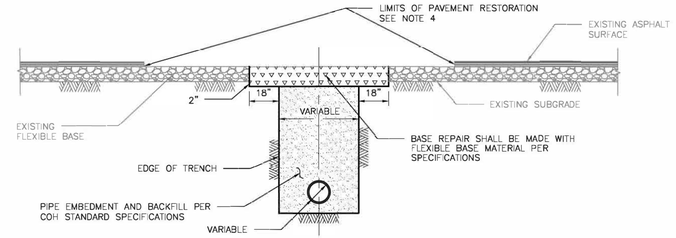
PAVEMENT REPAIR DETAIL
FOR STREET CUTS
(NON-REINFORCED CONCRETE & BRICK PAVEMENT)
(SCALE: NOT TO SCALE)

APPROVED BY:

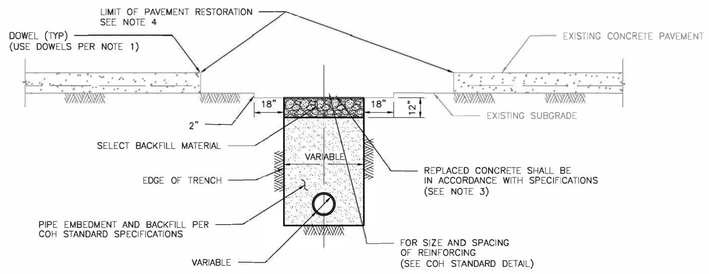
DocuSigned by: Sukat Kanwar — CITY ENGINEER
DocuSigned by: KHANG NGUYEN — CITY TRAFFIC ENGINEER
DocuSigned by: Carl Haddock — DIRECTOR OF HPW

EFF DATE: NOV-27-2023 | DWG NO: 02951-05

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 THE SITE CONDITIONS AND DESIGN CONSIDERATIONS THAT MAY BE REQUIRED FOR A SPECIFIC LOCATION. IT IS THE RESPONSIBILITY OF THE ENGINEER USING THIS STANDARD FOR HIS 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 RESULING FROM ITS USE.



ELEVATION A
REPAIR OF FLEXIBLE BASE PAVEMENT



ELEVATION B
REPAIR OF REINFORCED CONCRETE PAVEMENT

NOTES:

1. EXPOSE 15" OF REINFORCING STEEL AT PROPOSED SAWED JOINT. IF NO REINFORCING STEEL EXISTS, USE HORIZONTAL DOWELS. HORIZONTAL DOWELS SHALL BE #6 BAR, 24" LONG, 24" C-C, DRILLED AND EMBEDDED 8" INTO THE CENTER OF THE EXISTING SLAB. WITH "PO ROC" OR EQUAL.
2. IF REINFORCED CONCRETE IS OVERLAYED WITH ASPHALT, REPLACE WITH 2" MIN HMAC SURFACING.
3. REFER TO STANDARD DETAIL 02751-01 FOR REINFORCING STEEL REQUIREMENTS.
4. REFER TO STANDARD DETAIL 02951 01 THROUGH 03 FOR PAVEMENT RESTORATION LIMITS.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

PAVEMENT REPAIR DETAIL
FOR STREET CUTS
(FLEX-BASE PAVEMENT & CONCRETE PAVEMENT)
(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Sukat Kanwar — CITY ENGINEER
DocuSigned by: KHANG NGUYEN — CITY TRAFFIC ENGINEER
DocuSigned by: Carl Haddock — DIRECTOR OF HPW

EFF DATE: NOV-27-2023 | DWG NO: 02951-04

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 THE SITE CONDITIONS AND DESIGN CONSIDERATIONS THAT MAY BE REQUIRED FOR A SPECIFIC LOCATION. IT IS THE RESPONSIBILITY OF THE ENGINEER USING THIS STANDARD FOR HIS 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 RESULING FROM ITS USE.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS — V. N. MURTHY MADE — 134936 — LICENSED PROFESSIONAL ENGINEER
6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

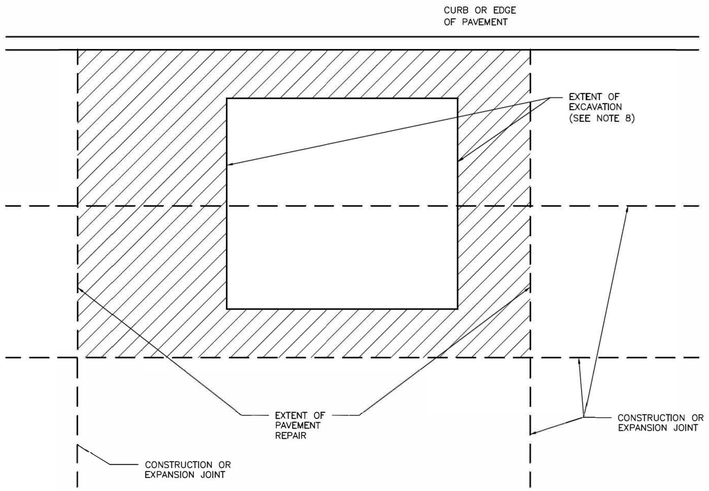
STANDARD DETAILS
STREET PAVING AND SIDEWALK
SHEET 13 OF 15

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 111 OF 158	

HOUSTON PUBLIC WORKS ACCEPTED AND FILED
81720 CITY DRAWING NUMBER
Approval Date: 09/19/25
HOUSTON TX

FILE:P:\ACTIVE\21DR47\WorkingDrawings (02 New Design)\xrefs MicroStation\Sheets\Roadway Standard Details\RDWY_STD_Details.dgn
DATE:6/19/2025

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 ITS USE. THE ENGINEER OF RECORD (EOR) IS TO REVIEW THESE DESIGN REQUIREMENTS AND BY AUTHORIZING THEIR USE, ACCEPTS RESPONSIBILITY FOR THE SAFETY AND ADEQUACY OF ANY PLANS BASED ON THIS STANDARD. NO WARRANTY OF ANY KIND IS MADE BY THE CITY OF HOUSTON FOR ANY PURPOSE WHATSOEVER. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.



NOTES:

1. EXTENT OF PAVEMENT REPAIR SHALL BE PERPENDICULAR AND PARALLEL TO TRAVEL WAY.
2. REPLACE ENTIRE PANEL WIDTH AND LENGTH TO NEAREST CONSTRUCTION OR EXPANSION JOINT BEYOND EDGE OF EXCAVATION.
3. SAW CUT AND EXPOSE 15" OF REINFORCING STEEL WITHIN EXISTING PAVEMENT. PROVIDE HORIZONTAL DOWELS (PER SPECIFICATION SECTION 02951–PAVEMENT REPAIR AND RESTORATION) IF EXISTING REINFORCING IS BROKEN OFF.
4. REPLACE CURB WHEN ADJACENT LANE IS REPLACED.
5. MAINTAIN EXPANSION JOINTS AT EXISTING LOCATIONS UNLESS OTHERWISE DIRECTED BY CITY ENGINEER.
6. SPECIALTY PAVEMENTS (IE: BRICK PAVERS) TO BE REPLACED WITH MATCHING PAVEMENT IN ALL CASES.
7. REPLACE PAVEMENT MARKINGS IN ACCORDANCE WITH CITY OF HOUSTON STANDARD SPECIFICATIONS 02764–RAISED PAVEMENT MARKERS AND 02767–THERMOPLASTIC PAVEMENT MARKINGS.
8. EXTENT OF EXCAVATION INCLUDES 18" OVERCUT AS SHOWN ON STANDARD DETAIL 02951–04 PAVEMENT REPAIR DETAIL FOR STREET CUTS (FLEX–BASE PAVEMENT & CONCRETE PAVEMENT).

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

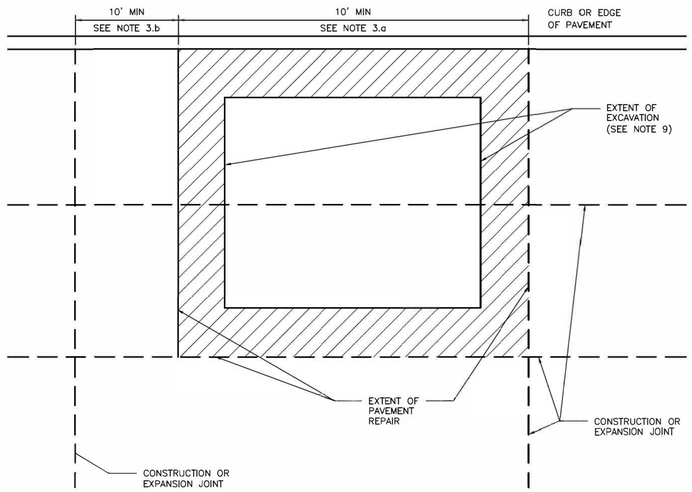
STREET CUT FOR CONCRETE PAVEMENT REPLACEMENT/RESTORATION AGE OF PAVEMENT ≤ 5YRS
(SCALE: NOT TO SCALE)

APPROVED BY:

Docusigned by: Sukai Kanwar — CITY ENGINEER
Docusigned by: KHANG NGUYEN — CITY TRAFFIC ENGINEER
Docusigned by: Carl Stahlbock — DIRECTOR OF HPW

EFF DATE: NOV–27–2023 | **DWG NO: 02951–01**

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 ITS USE. THE ENGINEER OF RECORD (EOR) IS TO REVIEW THESE DESIGN REQUIREMENTS AND BY AUTHORIZING THEIR USE, ACCEPTS RESPONSIBILITY FOR THE SAFETY AND ADEQUACY OF ANY PLANS BASED ON THIS STANDARD. NO WARRANTY OF ANY KIND IS MADE BY THE CITY OF HOUSTON FOR ANY PURPOSE WHATSOEVER. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.



NOTES:

1. EXTENT OF PAVEMENT REPAIR SHALL BE PERPENDICULAR AND PARALLEL TO TRAVEL WAY.
2. WIDTH:
   REPLACE PANEL WIDTH TO NEAREST CONSTRUCTION OR EXPANSION JOINT BEYOND EDGE OF EXCAVATION.
3. LENGTH:
   a. MINIMUM LENGTH OF PAVEMENT REPAIR ALONG TRAVEL WAY IS 10' FROM THE NEAREST JOINT.
   b. IF EXTENT OF PAVEMENT REPAIR IS LESS THAN 10' FROM EXISTING CONSTRUCTION OR EXPANSION JOINT, EXTEND PAVEMENT REPAIR TO EXISTING JOINT.
4. SAW CUT AND EXPOSE 15" OF REINFORCING STEEL AROUND EDGE OF PANEL REPLACEMENT. PROVIDE HORIZONTAL DOWELS (PER SPECIFICATION SECTION 02951–PAVEMENT REPAIR AND RESTORATION) IF REINFORCING IS BROKEN OFF OR DOES NOT EXIST.
5. REPLACE CURB WHEN ADJACENT LANE IS REPLACED.
6. MAINTAIN EXPANSION JOINTS AT EXISTING LOCATIONS UNLESS OTHERWISE DIRECTED BY CITY ENGINEER.
7. SPECIALTY PAVEMENTS (IE: BRICK PAVERS) TO BE REPLACED WITH MATCHING PAVEMENT IN ALL CASES.
8. REPLACE PAVEMENT MARKINGS IN ACCORDANCE WITH CITY OF HOUSTON STANDARD SPECIFICATIONS 02764–RAISED PAVEMENT MARKERS AND 02767–THERMOPLASTIC PAVEMENT MARKINGS.
9. EXTENT OF EXCAVATION INCLUDES 18" OVERCUT AS SHOWN ON STANDARD DETAIL 02951–04 PAVEMENT REPAIR DETAIL FOR STREET CUTS (FLEX–BASE PAVEMENT & CONCRETE PAVEMENT).

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

STREET CUT FOR CONCRETE PAVEMENT REPLACEMENT/RESTORATION AGE OF PAVEMENT > 5YRS
(SCALE: NOT TO SCALE)

APPROVED BY:

Docusigned by: Sukai Kanwar — CITY ENGINEER
Docusigned by: KHANG NGUYEN — CITY TRAFFIC ENGINEER
Docusigned by: Carl Stahlbock — DIRECTOR OF HPW

EFF DATE: NOV–27–2023 | **DWG NO: 02951–02**

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P–6257

STATE OF TEXAS — V. N. MURTHY MADE — 134936 — LICENSED PROFESSIONAL ENGINEER
6/19/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

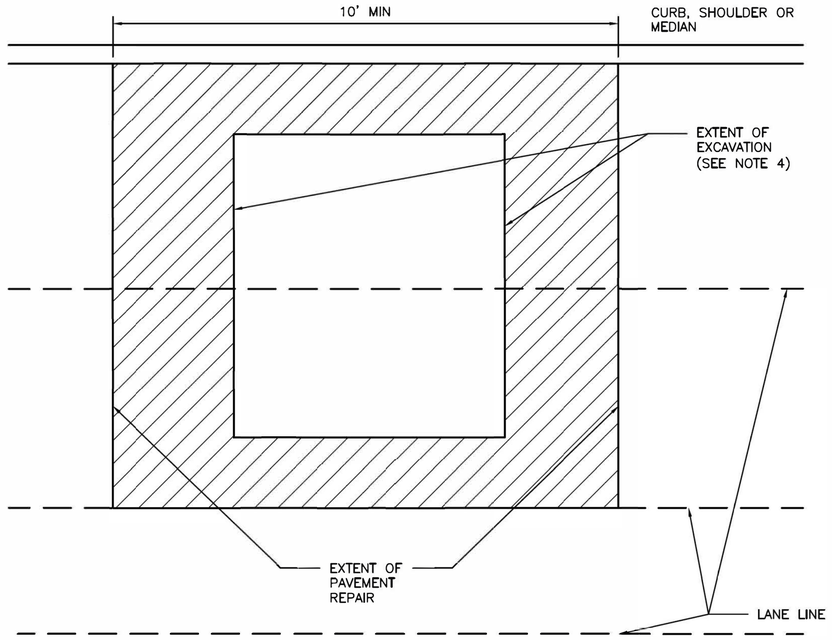
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

STANDARD DETAILS
STREET PAVING AND SIDEWALK
SHEET 14 OF 15

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410029–0001–4	
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 112 OF 158	

HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Roadway Standard Details\RDWY_STD_Details.dgn
DATE:6/19/2025



NOTES:

1. EXTENT OF PAVEMENT REPAIR SHALL BE PERPENDICULAR AND PARALLEL TO TRAVEL WAY.
2. FLEXIBLE BASE: REPLACE BASE TO SAME THICKNESS PLUS TWO INCHES (2") FOR EXTENT OF EXCAVATION. USE APPROVED BASE MATERIAL TYPE.*
3. SURFACE COURSE:
   - 3.1. WIDTH: SURFACE MILL AND OVERLAY FULL WIDTH OF LANE(S) TO NEAREST LANE DIVIDER BEYOND EDGE OF EXCAVATION.
   - 3.2. LENGTH: MINIMUM LENGTH OF SURFACE MILL ALONG TRAVEL WAY IS 10'.
   - 3.3. REPLACE PAVEMENT MARKINGS IN ACCORDANCE WITH CITY OF HOUSTON STANDARD SPECIFICATIONS 02764–RAISED PAVEMENT MARKERS AND 02767–THERMOPLASTIC PAVEMENT MARKINGS.
4. EXTENT OF EXCAVATION INCLUDES 18" OVER CUT AS SHOWN ON STANDARD DETAIL 02951–04 PAVEMENT REPAIR DETAIL FOR STREET CUTS (FLEX–BASE PAVEMENT AND CONCRETE PAVEMENT).
5. ADDITIONAL REQUIREMENTS FOR ASPHALT OVERLAY ON CONCRETE PAVEMENT:
   - 5.1. REPLACE CONCRETE FOR EXTENT OF EXCAVATION. REPLACE TO SAME THICKNESS PLUS TWO INCHES (2").
   - 5.2. WIDTH:
     - 5.2.1. IF EXCAVATION EXTENDS MORE THAN HALF OF A LANE, REPLACE ENTIRE LANE OF CONCRETE. OTHERWISE USE STANDARD DETAIL 02951–04 THROUGH 05.
   - 5.3. SAW CUT AND EXPOSE 15" OF REINFORCING STEEL AROUND EDGE OF CONCRETE REPLACEMENT. IF NO REINFORCING STEEL EXISTS, USE HORIZONTAL DOWELS PER CITY OF HOUSTON STANDARD SPECIFICATION SECTION 02951–PAVEMENT REPAIR AND RESTORATION.
   - 5.4. REPLACE CURB WHEN ADJACENT LANE IS REPLACED.
   - 5.5. MAINTAIN CONCRETE EXPANSION JOINTS AT EXISTING LOCATIONS UNLESS OTHERWISE APPROVED BY CITY ENGINEER.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

STREET CUT FOR ASPHALT PAVEMENT REPLACEMENT/RESTORATION FOR PAVEMENT OF ALL AGES
(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: 02951–03

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED
PROFESSIONAL ENGINEER
6/19/2025

SURVEYED BY: Kuo&Associates
FB NO. P–6257

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

STANDARD DETAILS
STREET PAVING AND SIDEWALK
SHEET 15 OF 15

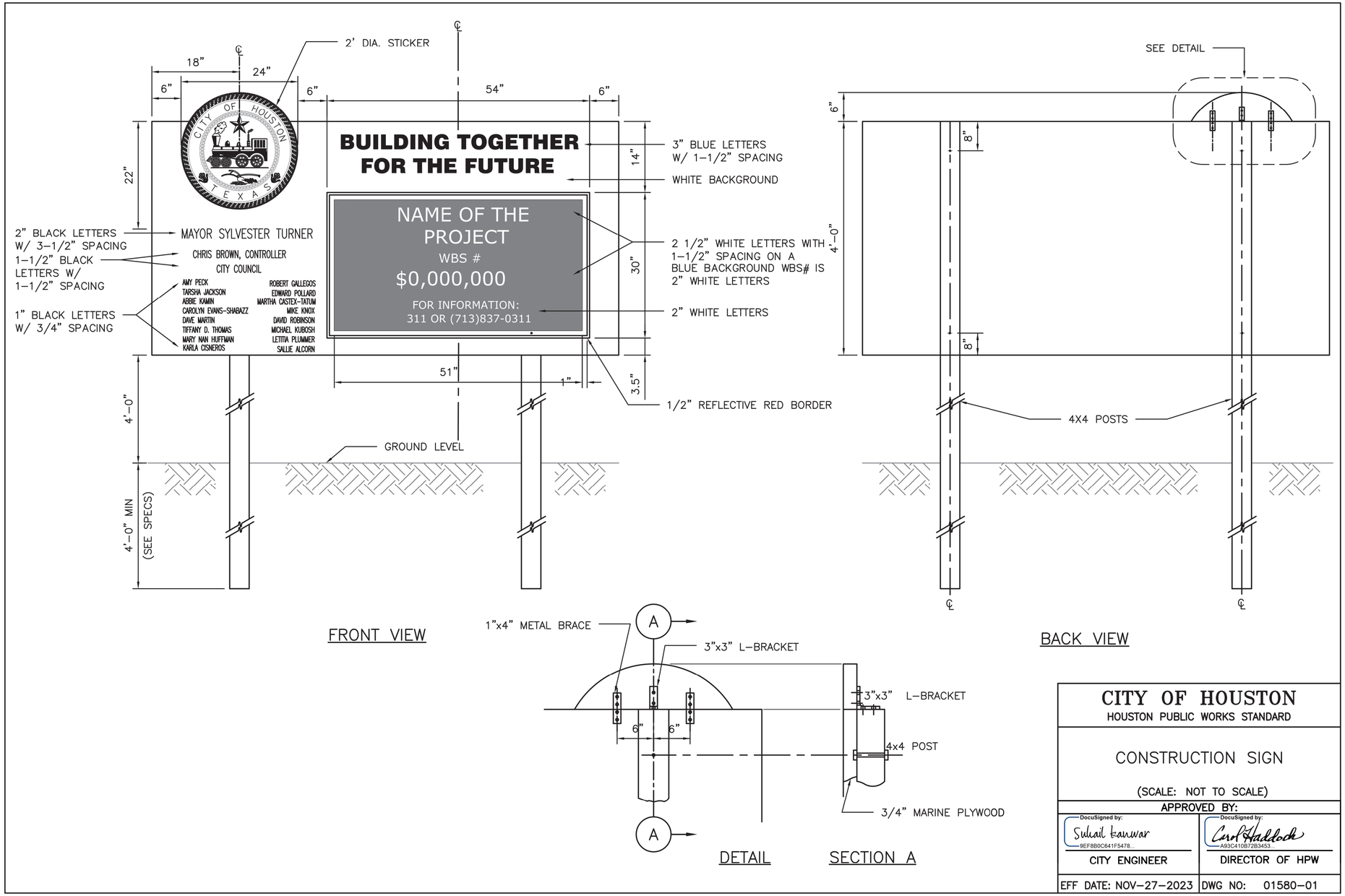
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410029–0001–4	
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 113 OF 158	

HOUSTON PUBLIC WORKS ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 8/1/2025
HOUSTON TX

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.

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Roadway Standard Details\RDWY_STD_Details.dgn
DATE:6/19/2025

DocuSign Envelope ID: CB71C116-B716-4899-A5EE-0D2F2CC55AF6



FRONT VIEW

BACK VIEW

DETAIL SECTION A

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

CONSTRUCTION SIGN

(SCALE: NOT TO SCALE)

APPROVED BY:	
DocuSigned by: Sukait Kanwar 9EF8B0C641F5478...	DocuSigned by: Carol Haddock A93C410B72B3453...
CITY ENGINEER	DIRECTOR OF HPW
EFF DATE: NOV–27–2023	DWG NO: 01580–01

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P–6257

STATE OF TEXAS · RAHUL B. MENON · 130533 · LICENSED PROFESSIONAL ENGINEER · 6/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

CONSTRUCTION SIGN DETAILS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410029–0001–4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 114 OF 158	

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 6/18/2025 6:06 PM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47–Details–Construction Sign & Barricade.dwg

DocuSign Envelope ID: CB71C116-B716-4899-A5EE-0D2F2CC55AF6

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. IT IS THE RESPONSIBILITY OF THE DESIGN ENGINEER TO USE SOUND ENGINEERING JUDGMENT FOR EACH SET OF PLANS PREPARED UNDER THIS STANDARD. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE. WARRANTY OF ANY KIND IS MADE BY THE CITY OF HOUSTON FOR ANY PURPOSES WHATSOEVER.

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 WITHOLT 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://geohub.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 STAKE HOLDERS IN THE VICINITY INCLUDING 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 DUE 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 IN ALL CASES YELD TO PUBLIC TRAFFIC WITH THE ASSISTANCE OF CONTRACTOR PROVIDED CERTIFIED 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.

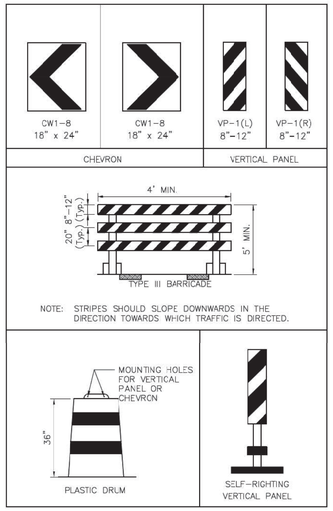
J. SPACING MAY BE ADJUSTED TO PROVIDE DRIVEWAYS, INTERSECTIONS AND /OR MEDIAN OPENINGS.

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'

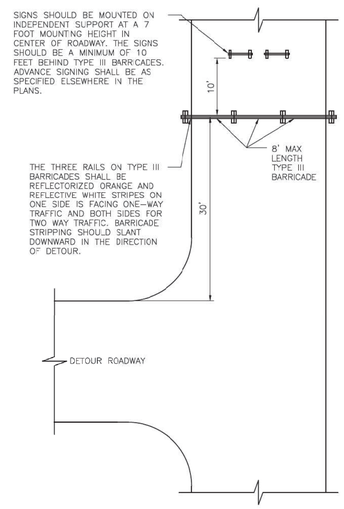
TABLE C4 – STOPPING SIGHT DISTANCE AS A FUNCTION OF SPEED

POSTED SPEED (MPH)	DISTANCE "D" (FEET)
30	200
35	250
40	305
45	360
50	425
55	495



CHANNELIZATION AND BARRICADES

LEGEND:
- SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- BARRICADE
- FLASHING ARROW PANEL
- AREA UNDER CONSTRUCTION
- EXISTING TRAVEL WAY
- TRAFFIC CONTROL PLAN DETOUR TRAVEL WAY



PLAN VIEW
TYPE III BARRICADE (POST AND SKID)
TYPICAL APPLICATION

APPROVED BY:	APPROVED BY:
Suhail Kanwar	KHANG NGUYEN
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED 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

FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE
NOT TO SCALE

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

1

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
10/6/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

TRAFFIC CONTROL PLANS

NOTES, CHANNELIZING DEVICES AND BARRICADES

TCP SHEET: 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
NA	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 115 OF 158	

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Traffic Control Plan\47TCP_NOTES_01.dgn
DATE:10/31/2025

1

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

TRAFFIC CONTROL PLAN GENERAL NOTES:

1. PLACE ADVANCE WARNING SIGNS ALONG THE PROJECT AREA DURING CONSTRUCTION FOR ALL PHASES/STEPS.
2. PLACE DETOUR SIGNS ALONG THE PROJECT AREA WHERE APPLICABLE AND/OR AS SHOWN ON PLANS.
3. RESTORE TRAFFIC TO NEW CONSTRUCTED PAVEMENT BY PROCEEDING THROUGH CONSTRUCTION WITH BLOCKS AT A TIME.
4. MAINTAIN THE CONSTRUCTION ZONE SPEED LIMIT OF 30 MPH.
5. MAINTAIN ACCESS TO ALL DRIVEWAYS AT ALL TIMES DURING CONSTRUCTION. LPCB'S SHOULD NOT BLOCK THE DRIVEWAY ACCESS DURING CONSTRUCTION.
6. AVOID EXISTING DRIVEWAYS FOR PLACING THE TRAFFIC CONTROL SIGNS.
7. CONTRACTOR SHOULD CONSTRUCT THE UNDERGROUND UTILITIES AND TEMPORARY ASPHALT PAVEMENT PER THE TRAFFIC CONTROL PLAN IN BLOCKS AND MOVE TO NEXT BLOCK BY OPENING TWO WAY TRAFFIC PAVEMENT. CONTRACTOR TO RESTORE TRAFFIC ON CROSS STREETS AS SOON AS CONSTRUCTION IS COMPLETED ACROSS INTERSECTION. CONTRACTOR SHALL INSTALL LOW PROFILE CONCRETE BARRIER AT STORM SEWER WORK LOCATIONS. LOW PROFILE CONCRETE BARRIER TO REMAIN AT LOCATIONS WHERE ELEVATION DIFFERENCE BETWEEN THE DRIVING SURFACE AND WORK AREA EXCEEDS 18 INCHES. THE TRAFFIC WILL BE SEPARATED BY LPCB WHERE AN ELEVATION DIFFERENCE IN THE EXISTING AND PROPOSED PAVEMENTS EXISTS.
8. PROPOSED STORM SEWER INCLUDES THE TRUNK LINE, LATERALS, JUNCTION BOXES, MANHOLES AND INLETS.
9. PROPOSED CONCRETE PAVEMENT INCLUDES THE CURBS, PAVEMENT, SIDEWALK (IF ANY) AND THE DRIVEWAYS.
10. SEE ROADWAY PLAN AND PROFILE DRAWINGS FOR EXACT WIDTH OF THE PAVEMENT.
11. SEE ROADWAY PLAN AND PROFILE DRAWINGS FOR LIMITS OF PROPOSED ASPHALT TRANSITION, ASPHALT PAVEMENT AND CONCRETE PAVEMENT.
12. CONTRACTOR SHALL NOT CLOSE ANY TWO (2) CONSECUTIVE CROSS STREETS SIMULTANEOUSLY.
13. CONTRACTOR SHALL MAINTAIN ACCESS TO DRIVEWAYS AT ALL TIMES DURING CONSTRUCTION. "ONE WAY" SIGNS SHALL BE PLACED AT ALL DRIVEWAYS BY CONTRACTOR APPROPRIATELY. CONTRACTOR TO NOTIFY RESIDENTS 48 HOUR IN ADVANCE IF THEIR DRIVEWAY IS NOT ACCESSIBLE FOR ANY REASON DURING CONSTRUCTION.
14. CONSTRUCTION AT DEAD END STREETS WILL BE PERFORMED AS TWO HALVES.
15. CONTRACTOR SHALL INSTALL LOW PROFILE CONCRETE BARRIER ONLY FOR THE LENGTH OF THE CONSTRUCTION ZONE. CONTRACTOR SHALL NOT BLOCK THE ENTIRE LENGTH OF THE PROJECT DURING CONSTRUCTION.
16. CONTRACTOR SHALL USE HIGH EARLY STRENGTH CONCRETE FOR ALL INTERSECTIONS.
17. USE "TYPICAL ONE LANE ROAD CLOSURE" DETAIL FROM STANDARDS FOR FLAGGING OPERATION FOR APPLICABLE PHASES/STEPS.
18. WHERE APPLICABLE, DITCHES SHALL BE OPENED AT END OF EACH DAY TO ASSURE ADEQUATE DRAINAGE.
19. ALL ADVANCED WARNING SIGNS TO BE PLACED PER THE TEXAS MUTCD LATEST VERSION.
20. CONTRACTOR TO PROVIDE TEMPORARY TIE IN TO THE EXISTING STORM SEWER SYSTEM WHILE DOING INTERSECTIONS.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED
PROFESSIONAL ENGINEER
10/6/2025

SURVEYED BY: Kuo&Associates
FB NO. P-6257

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

TRAFFIC CONTROL PLANS
GENERAL NOTES

TCP SHEET: 2

WBS NUMBER
M-410029-0001-4
DRAWING SCALE
NA
CITY OF HOUSTON PM
DOAA HAMDAN, P.E.
SHEET NO. 116 OF 158

FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Traffic Control Plan\47TCP_NOTES_02.dgn
DATE:10/31/2025

TCP NARRATIVE:

FOR ALL PHASES AND STEPS:

1. PLACE CONSTRUCTION ADVANCED WARNING SIGNS, DRUMS, LPCB, CHEVRON, BARRICADES, AND SIGNS PER TMUTCD AND CITY OF HOUSTON TRAFFIC CONTROL STANDARDS 01512-01 THROUGH 01512-12.
2. PLACE FILTER FABRIC FENCING, INLET PROTECTION BARRIERS, AND OTHER SWPPP MEASURES AS NEEDED.
3. ALL INTERSECTIONS ARE CONSTRUCTED FIRST USING HIGH EARLY STRENGTH CONCRETE AFTER THE UNDERGROUND WORK IS COMPLETED AND WILL BE OPENED TO TRAFFIC FIRST WITHIN THE SPECIFIC PHASE/STEP. NO TWO ADJACENT SIDE STREETS ARE TO BE CLOSED AT ONE TIME.
4. MAINTAIN ACCESS TO ALL DRIVEWAYS DURING CONSTRUCTION IN EACH PHASE/STEP. CONSTRUCT PROPOSED DRIVEWAY IN EACH PHASE/STEP. REFER TO DRIVEWAY SUMMARY TABLE.
5. CONSTRUCT PROPOSED STORM SEWER FROM DOWNSTREAM (OUTFALL) TO UPSTREAM.

PHASE 0

CONSTRUCT THE FOLLOWING DURING THIS STEP

- THE PROPOSED WATERLINE AS SHOWN ON THE PLANS, PIPE SIZE VARIES.

PHASE 1 (STEPS 1 TO 13)

INTERSECTIONS CONSTRUCTED:

DEIRDRE ANNE DR./CHATEAU FOREST DR., FRENCH CHATEAU DR./CHATEAU FOREST DR., SILVER CHALICE DR./CHATEAU FOREST DR., OAKNUT DR./CHATEAU FOREST DR., ACORN FOREST DR./CHATEAU FOREST DR., MAPLE HILL DR./CHATEAU FOREST DR., TALL WILLOW DR./CHATEAU FOREST DR., KING POST DR./CHATEAU FOREST DR., AND W LITTLE YORK/CHATEAU FOREST.

STEP 1A: (CONSTRUCT EASTBOUND SECTION OF CUL-DE-SAC)
CONSTRUCT THE FOLLOWING DURING THIS STEP

- PROPOSED STORM SEWER (66-INCH RCP), JUNCTION BOX, MANHOLES, AND INLETS. CONSTRUCT PROPOSED ROADWAY WITH HIGH EARLY STRENGTH CONCRETE ALLOWING ONE WAY TRAFFIC WITH DETOUR.
- CONSTRUCT THE SIDEWALK AFTER FINISHING ALL CONSTRUCTIONS.

STEP 1B: (CONSTRUCT WESTBOUND SECTION OF CUL-DE-SAC)
CONSTRUCT THE FOLLOWING DURING THIS STEP

- CONSTRUCT PROPOSED ROADWAY WITH HIGH EARLY STRENGTH CONCRETE ALLOWING ONE WAY TRAFFIC WITH DETOUR.
- CONSTRUCT THE SIDEWALK AFTER FINISHING ALL CONSTRUCTIONS.

STEP 2A: (EASTBOUND LANE OF DEIRDRE ANNE DR)
CONSTRUCT THE FOLLOWING DURING THIS STEP

- PROPOSED STORM SEWER (66-INCH RCP), JUNCTION BOX, MANHOLES, AND INLETS.
- PROPOSED PAVEMENT (13-FEET).
- CONSTRUCT THE SIDEWALK AFTER FINISHING ALL CONSTRUCTIONS.

STEP 2B: (WESTBOUND LANE OF DEIRDRE ANNE DR)
CONSTRUCT THE FOLLOWING DURING THIS STEP

- PROPOSED INLETS AND LATERALS (24-INCH RCP) AND PROPOSED PAVEMENT (13-FEET).
- CONSTRUCT THE SIDEWALK AFTER FINISHING ALL CONSTRUCTIONS.

STEP 3: (CONSTRUCT FROM DEIRDRE ANNE TO FRENCH CHATEAU ALONG CHATEAU FOREST)
CONSTRUCT THE FOLLOWING DURING THIS STEP

- CONSTRUCT PROPOSED STORM SEWER, PROPOSED SANITARY CROSSING WITH SUPPORT STRUCTURE, AND TEMPORARY ASPHALT PAVEMENT BY CONVOY, MOVING SEGMENT BY SEGMENT UNTIL UPSTREAM HAS BEEN REACHED UTILIZING DETOUR.
- PROPOSED STORM SEWER (66-INCH RCP), JUNCTION BOX, MANHOLES, AND INLETS.
- CONSTRUCT 10-FEET WIDE TEMPORARY ASPHALT AFTER THE INSTALLATION OF STORM SEWER, AND OPEN TWO-WAY TRAFFIC MOVEMENT.
- CONSTRUCT THE SIDEWALK AFTER FINISHING ALL CONSTRUCTIONS.

STEP 4: (CONSTRUCT FROM FRENCH CHATEAU TO SILVER CHALICE ALONG CHATEAU FOREST)
CONSTRUCT THE FOLLOWING DURING THIS STEP

- CONSTRUCT PROPOSED STORM SEWER, PROPOSED SANITARY CROSSING WITH SUPPORT STRUCTURE, AND TEMPORARY ASPHALT PAVEMENT BY CONVOY, MOVING SEGMENT BY SEGMENT UNTIL UPSTREAM HAS BEEN REACHED UTILIZING DETOUR.
- PROPOSED STORM SEWER (6'X6' RCB), JUNCTION BOX, MANHOLES, AND INLETS.
- CONSTRUCT 12-FEET WIDE TEMPORARY ASPHALT AFTER THE INSTALLATION OF STORM SEWER, AND OPEN TRAFFIC TO LOCAL RESIDENTS.
- CONSTRUCT THE SIDEWALK AFTER FINISHING ALL CONSTRUCTIONS.

STEP 5: (CONSTRUCT FROM SILVER CHALICE TO OAKNUT ALONG CHATEAU FOREST)
CONSTRUCT THE FOLLOWING DURING THIS STEP

- CONSTRUCT PROPOSED STORM SEWER, PROPOSED SANITARY CROSSING WITH SUPPORT STRUCTURE, AND TEMPORARY ASPHALT PAVEMENT BY CONVOY, MOVING SEGMENT BY SEGMENT UNTIL UPSTREAM HAS BEEN REACHED UTILIZING DETOUR.
- PROPOSED STORM SEWER (8'X6' RCB), JUNCTION BOX, MANHOLES, AND INLETS.
- CONSTRUCT 12-FEET WIDE TEMPORARY ASPHALT AFTER THE INSTALLATION OF STORM SEWER, AND OPEN TRAFFIC TO LOCAL RESIDENTS.
- CONSTRUCT THE SIDEWALK AFTER FINISHING ALL CONSTRUCTIONS.

STEP 6: (CONSTRUCT FROM OAKNUT TO ACORN FOREST ALONG CHATEAU FOREST)
CONSTRUCT THE FOLLOWING DURING THIS STEP

- CONSTRUCT PROPOSED STORM SEWER, PROPOSED SANITARY CROSSING WITH SUPPORT STRUCTURE, AND TEMPORARY ASPHALT PAVEMENT BY CONVOY, MOVING SEGMENT BY SEGMENT UNTIL UPSTREAM HAS BEEN REACHED UTILIZING DETOUR.
- PROPOSED STORM SEWER (8'X6' RCB), JUNCTION BOX, MANHOLES, AND INLETS.
- CONSTRUCT 12-FEET WIDE TEMPORARY ASPHALT AFTER THE INSTALLATION OF STORM SEWER, AND OPEN TRAFFIC TO LOCAL RESIDENTS.
- CONSTRUCT THE SIDEWALK AFTER FINISHING ALL CONSTRUCTIONS.

STEP 7: (CONSTRUCT FROM ACORN FOREST TO MAPLE HILL ALONG CHATEAU FOREST)
CONSTRUCT THE FOLLOWING DURING THIS STEP

- CONSTRUCT PROPOSED STORM SEWER, PROPOSED SANITARY CROSSING WITH SUPPORT STRUCTURE, AND TEMPORARY ASPHALT PAVEMENT BY CONVOY, MOVING SEGMENT BY SEGMENT UNTIL UPSTREAM HAS BEEN REACHED UTILIZING DETOUR.
- PROPOSED STORM SEWER (8'X6' RCB), JUNCTION BOX, MANHOLES, AND INLETS.
- CONSTRUCT 12-FEET WIDE TEMPORARY ASPHALT AFTER THE INSTALLATION OF STORM SEWER, AND OPEN TRAFFIC TO LOCAL RESIDENTS.
- CONSTRUCT THE SIDEWALK AFTER FINISHING ALL CONSTRUCTIONS.

STEP 8: (CONSTRUCT FROM MAPLE HILL TO TALL WILLOW ALONG CHATEAU FOREST)
CONSTRUCT THE FOLLOWING DURING THIS STEP

- CONSTRUCT PROPOSED STORM SEWER, PROPOSED SANITARY CROSSING WITH SUPPORT STRUCTURE, AND TEMPORARY ASPHALT PAVEMENT BY CONVOY, MOVING SEGMENT BY SEGMENT UNTIL UPSTREAM HAS BEEN REACHED UTILIZING DETOUR.
- PROPOSED STORM SEWER (8'X4' RCB), JUNCTION BOX, MANHOLES, AND INLETS.
- CONSTRUCT 12-FEET WIDE TEMPORARY ASPHALT AFTER THE INSTALLATION OF STORM SEWER, AND OPEN TRAFFIC TO LOCAL RESIDENTS.
- CONSTRUCT THE SIDEWALK AFTER FINISHING ALL CONSTRUCTIONS.

1

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
10/6/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

TRAFFIC CONTROL PLANS
PHASING NARRATIVE

TCP SHEET: 3 SHEET 1 OF 2

WBS NUMBER
M-410029-0001-4
DRAWING SCALE
NA
CITY OF HOUSTON PM
DOAA HAMDAN, P.E.
SHEET NO. 117 OF 158

FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Traffic Control Plan\47_NARARTIVE.dgn
DATE:10/31/2025

STEP 9: (CONSTRUCT FROM TALL WILLOW TO KING POST ALONG CHATEAU FOREST)
CONSTRUCT THE FOLLOWING DURING THIS STEP

- CONSTRUCT PROPOSED STORM SEWER, PROPOSED SANITARY CROSSING WITH SUPPORT STRUCTURE, AND TEMPORARY ASPHALT PAVEMENT BY CONVOY, MOVING SEGMENT BY SEGMENT UNTIL UPSTREAM HAS BEEN REACHED UTILIZING DETOUR.
- PROPOSED STORM SEWER (8'X4' RCB), JUNCTION BOX, MANHOLES, AND INLETS.
- CONSTRUCT 12-FEET WIDE TEMPORARY ASPHALT AFTER THE INSTALLATION OF STORM SEWER, AND OPEN TRAFFIC TO LOCAL RESIDENTS.
- CONSTRUCT THE SIDEWALK AFTER FINISHING ALL CONSTRUCTIONS.

STEP 10: (CONSTRUCT FROM KING POST TO STA 27+28 ALONG CHATEAU FOREST)
CONSTRUCT THE FOLLOWING DURING THIS STEP

- CONSTRUCT PROPOSED STORM SEWER, PROPOSED SANITARY CROSSING WITH SUPPORT STRUCTURE, AND TEMPORARY ASPHALT PAVEMENT BY CONVOY, MOVING SEGMENT BY SEGMENT UNTIL UPSTREAM HAS BEEN REACHED UTILIZING DETOUR.
- PROPOSED STORM SEWER (6'X3' RCB), JUNCTION BOX, MANHOLES, AND INLETS.
- CONSTRUCT 10-FEET WIDE TEMPORARY ASPHALT AFTER THE INSTALLATION OF STORM SEWER, AND OPEN TRAFFIC TO LOCAL RESIDENTS.
- CONSTRUCT THE SIDEWALK AFTER FINISHING ALL CONSTRUCTIONS.

STEP 11A: (CONSTRUCT FROM STA 27+28 TO END OF CHATEAU FOREST DR. NORTHBOUND SIDE)
CONSTRUCT THE FOLLOWING DURING THIS STEP

- CONSTRUCT PROPOSED STORM SEWER AND PROPOSED ROADWAY BY CONVOY, MOVING SEGMENT BY SEGMENT UNTIL UPSTREAM HAS BEEN REACHED UTILIZING DETOUR.
- PROPOSED STORM SEWER (6'X3' RCB), JUNCTION BOX, MANHOLES, AND INLETS.
- CONSTRUCT 144 SY TEMPORARY ASPHALT IN ADDITION TO THE PROPOSED ROADWAY, TO ALLOW ONE WAY TRAFFIC FLOW WITH DETOUR.
- CONSTRUCT THE SIDEWALK AFTER FINISHING ALL CONSTRUCTIONS.

STEP 11B: (CONSTRUCT FROM STA 27+28 TO END OF CHATEAU FOREST DR. SOUTHBOUND SIDE)
CONSTRUCT THE FOLLOWING DURING THIS STEP

- CONSTRUCT PROPOSED PAVEMENT BY CONVOY, MOVING SEGMENT BY SEGMENT UNTIL UPSTREAM HAS BEEN REACHED UTILIZING DETOUR.
- CONSTRUCT THE SIDEWALK AFTER FINISHING ALL CONSTRUCTIONS.

STEP 12: (CONSTRUCT FROM STA 1+50 TO 27+28 ALONG NORTHBOUND LANE OF CHATEAU FOREST)
CONSTRUCT THE FOLLOWING DURING THIS STEP

- CONSTRUCT PROPOSED PERMANENT PAVEMENT (13-FEET) ON THE NORTH BOUND LANE ALLOWING ONE-WAY TRAFFIC ON THE TEMPORARY ASPHALT PAVEMENT USING DETOURS ON CHATEAU FOREST DR.
- PROPOSED PAVEMENT SHALL BE CONSTRUCTED BY CONVOY, MOVING SEGMENTS SIMILAR TO PHASE 1 STEP 3 TO PHASE 1 STEP 11.

STEP 13: (CONSTRUCT FROM STA 1+50 TO 27+28 ALONG SOUTHBOUND LANE OF CHATEAU FOREST)
CONSTRUCT THE FOLLOWING DURING THIS STEP

- CONSTRUCT PROPOSED PERMANENT PAVEMENT (13-FEET) ON THE SOUTH BOUND LANE ALLOWING ONE-WAY TRAFFIC ON THE NEWLY CONSTRUCTED PERMANENT PAVEMENT ALONG CHATEAU FOREST DR. THE PROPOSED PAVEMENT SHALL BE CONSTRUCTED BY CONVOY, MOVING SEGMENTS SIMILAR TO PHASE 1 STEP 3 TO PHASE 1 STEP 11.

PHASE 2 (STEPS 1 TO 3)

STEP 1: (CONSTRUCT CUL-DE-SAC AT TALL PINES DRIVE)
CONSTRUCT THE FOLLOWING DURING THIS STEP

- PROPOSED STORM SEWER (36-INCH RCP), JUNCTION BOX, MANHOLES, AND INLETS. CONSTRUCT PROPOSED ROADWAY. FOR THE CONSTRUCTION SEQUENCE, PLEASE REFER TCP:26.
- CONSTRUCT THE SIDEWALK AFTER FINISHING ALL CONSTRUCTIONS.

STEP 2: (TALL PINES EASTBOUND LANE)
CONSTRUCT THE FOLLOWING DURING THIS STEP

- CONSTRUCT THE PROPOSED STORM SEWER (36-INCH RCP), MANHOLES, INLETS AND LATERALS ALONG THE EASTBOUND LANE. CONSTRUCT PROPOSED ROADWAY. MAINTAIN ACCESS TO ALL DRIVEWAYS.
- CONSTRUCT THE SIDEWALK AFTER FINISHING ALL CONSTRUCTIONS.

STEP 3: (TALL PINES WESTBOUND LANE)
CONSTRUCT THE FOLLOWING DURING THIS STEP

- CONSTRUCT PROPOSED LATERALS AND INLETS. CONSTRUCT THE PROPOSED ROADWAY ALONG THE WESTBOUND LANE.
- CONSTRUCT THE SIDEWALK AFTER FINISHING ALL CONSTRUCTIONS.

PHASE 3 (STEPS 1 TO 4)

STEP 1: (CONSTRUCT CUL-DE-SAC AT PAR FOUR DRIVE)
CONSTRUCT THE FOLLOWING DURING THIS STEP

- PROPOSED STORM SEWER (42-INCH RCP), JUNCTION BOX, MANHOLES, AND INLETS AND 8 INCH WATERLINE. CONSTRUCT PROPOSED ROADWAY AND SIDEWALK.
- FOR THE CONSTRUCTION SEQUENCE, PLEASE REFER TCP:26.
- CONSTRUCT THE SIDEWALK AFTER FINISHING ALL CONSTRUCTIONS.

STEP 2: (PAR FOUR EASTBOUND LANE)
CONSTRUCT THE FOLLOWING DURING THIS STEP

- CONSTRUCT PROPOSED STORM SEWER (42-INCH RCP), MANHOLES, LATERALS, INLETS, AND 8 INCH WATERLINE. CONSTRUCT PROPOSED ROADWAY AND SIDEWALKS AND HIGH EARLY STRENGTH CONCRETE PAVEMENT AT THE INTERSECTION ALONG THE EASTBOUND LANE.
- CONSTRUCT THE SIDEWALK AFTER FINISHING ALL CONSTRUCTIONS.

STEP 3: (PAR FOUR WESTBOUND LANE)
CONSTRUCT THE FOLLOWING DURING THIS STEP

- CONSTRUCT THE PROPOSED ROADWAY AND SIDEWALKS ALONG THE WESTBOUND LANE.
- CONSTRUCT THE SIDEWALK AFTER FINISHING ALL CONSTRUCTIONS.

STEP 4: (VICTORY DR EASTBOUND LANE)
CONSTRUCT THE FOLLOWING DURING THIS STEP

- CONSTRUCT THE PROPOSED STORM SEWER CLOSING EASTBOUND LANE AND UTILIZING DETOUR.

PHASE 4
CONSTRUCT THE FOLLOWING DURING THIS STEP

- CONSTRUCT PROPOSED STORM SEWER (36-INCH RCP), AND JUNCTION BOX/MANHOLES AT HIDDEN ARBOR LN AND JADEWOOD DR WITHOUT IMPACTING THE TRAFFIC AND FOLLOWING STANDARD DETAIL. PLEASE REFER TO TCP: 26 FOR THE CUL-DE-SAC TYPICAL STANDARD.
- CONSTRUCT PROPOSED STORM SEWER (36-INCH RCP), MANHOLES, 8 INCH WATERLINE AND SANITARY CROSSING AT RIDGE OAK DR WITHOUT IMPACTING THE TRAFFIC FOLLOWING STANDARD DETAIL. PLEASE REFER TO TCP: 26 FOR THE CUL-DE-SAC TYPICAL STANDARD.

NOTES:

1. CONTRACTORS TO INSTALL W20-1W SIGN AND OTHER RELEVANT CONSTRUCTION SIGN NEAR CUL-DE-SAC FOR JADEWOOD DR, HIDDEN ARBOR LN. AND RIDGE OAK DRIVE.
2. FOR PAVEMENT REPAIR AT THE CUL-DE-SAC REFER TO COH DWG NOS 02902-01&02, 02951-01, 02 & 03.
3. PLEASE REFER TO TCP: 27 FOR THE SIDEWALK CLOSURE STANDARD.

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

1

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED
PROFESSIONAL ENGINEER
10/6/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

TRAFFIC CONTROL PLANS
PHASING NARRATIVE

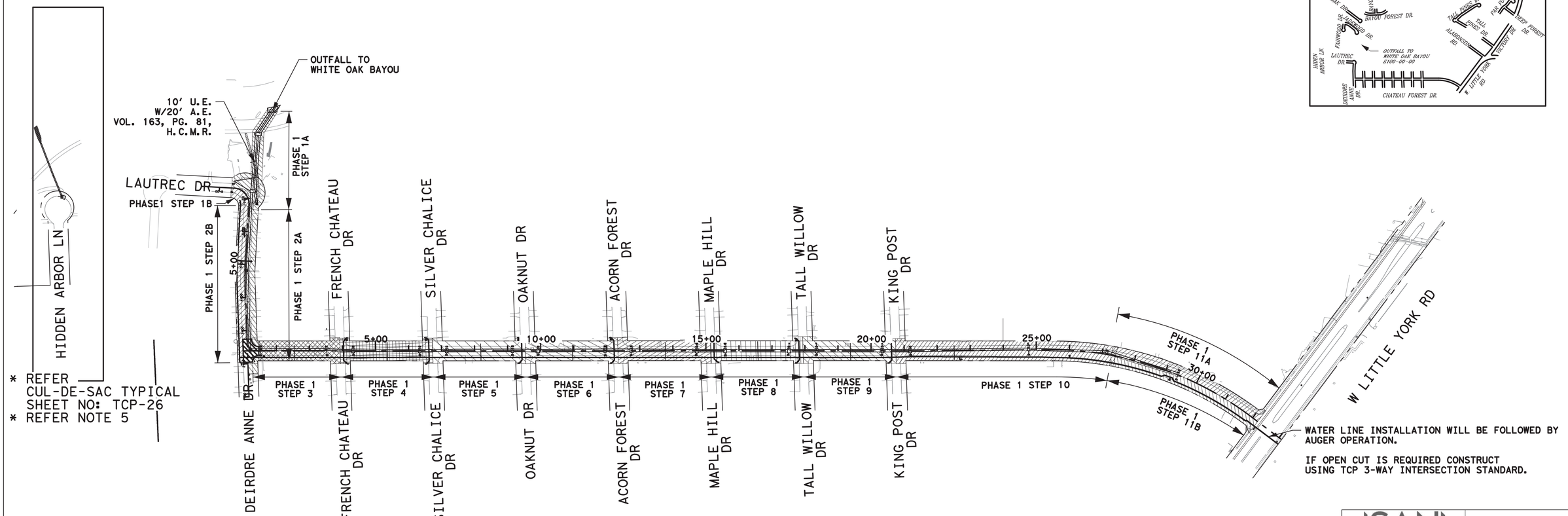
TCP SHEET: 4 SHEET 2 OF 2

WBS NUMBER
M-410029-0001-4
DRAWING SCALE
NA
CITY OF HOUSTON PM
DOAA HAMDAN, P.E.
SHEET NO. 118 OF 158

FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Traffic Control Plan\47_NARARTIVE.dgn
DATE:10/31/2025



LEGEND

- PHASE 1 STEP 1A
- PHASE 1 STEP 1B
- PHASE 1 STEP 2A
- PHASE 1 STEP 2B
- PHASE 1 STEP 3
- PHASE 1 STEP 4
- PHASE 1 STEP 5
- PHASE 1 STEP 6
- PHASE 1 STEP 7
- PHASE 1 STEP 8
- PHASE 1 STEP 9
- PHASE 1 STEP 10
- PHASE 1 STEP 11A
- PHASE 1 STEP 11B

NOTES:

1. NO TWO ADJACENT ROADS/INTERSECTIONS SHALL BE CLOSED SIMULTANEOUSLY.
2. ACCESS TO EXISTING BUSINESSES AND RESIDENCES SHALL BE MAINTAINED AT ALL TIMES.
3. INTERSECTIONS WILL BE CLOSED AND CONSTRUCTED ALONG WITH STORM JUNCTION BOXES. PAVEMENT CONSTRUCTION AT THE INTERSECTION SHOULD BE DONE USING HIGH EARLY STRENGTH CONCRETE.
4. COORDINATE WITH CONCERNED AUTHORITY FOR THEIR REQUIREMENT ON THE TRAILS BEFORE STARTING THE CONSTRUCTION AT TRAILS AND OUTFALLS.
5. HIDDEN ARBOR LANE, RIDGE OAK DR., AND JADEWOOD DR ARE NOT SHOWN EXCEPT IN OVERALL LAYOUT. PLEASE REFER TO PLANS, NARRATIVE AND COH TRAFFIC CONTROL STANDARDS.

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
10/6/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

TRAFFIC CONTROL PLANS
OVERALL PHASING LAYOUT- 01

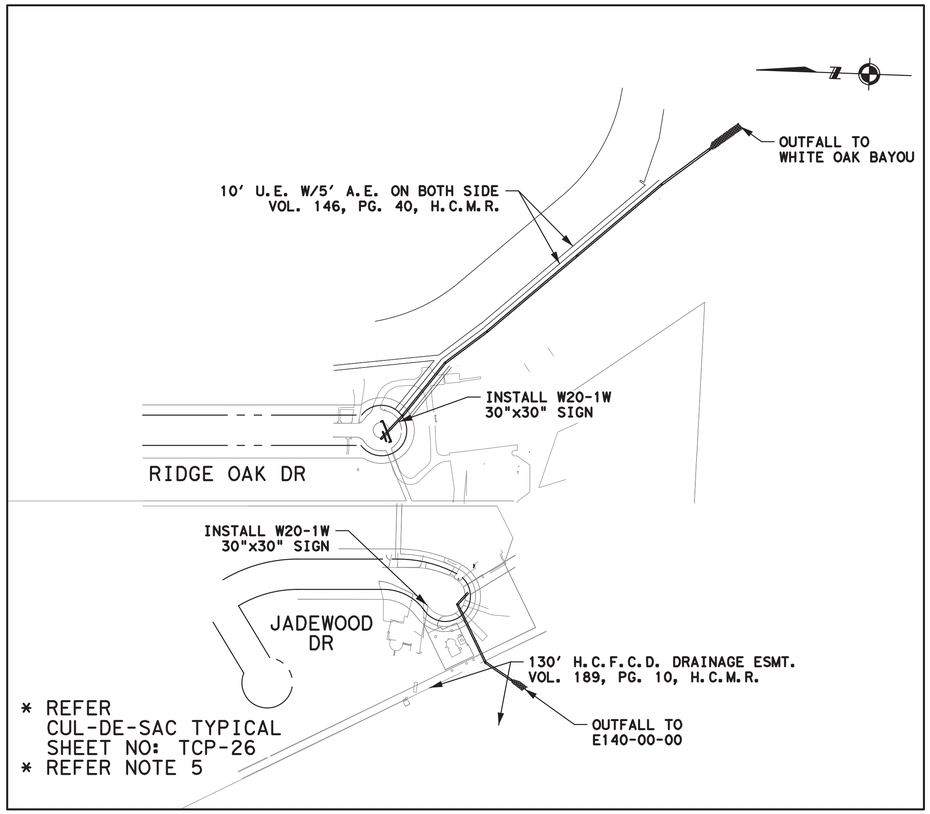
TCP SHEET: 5 SHEET 1 OF 2

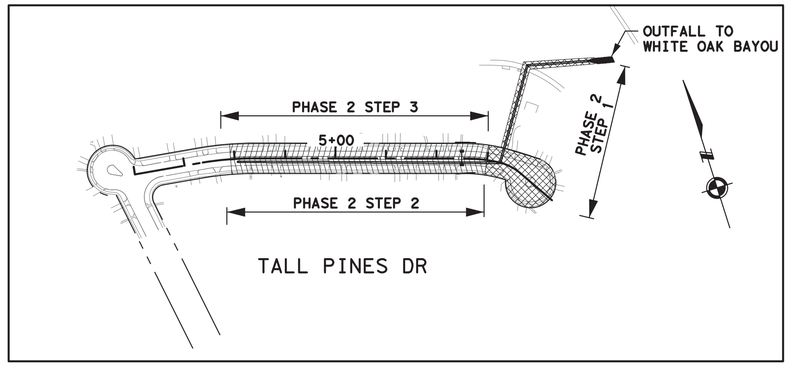
WBS NUMBER	M-410029-0001-4
DRAWING SCALE	1"=150'
CITY OF HOUSTON PM	DOAA HAMDAN, P.E.
SHEET NO. 119 OF 158	

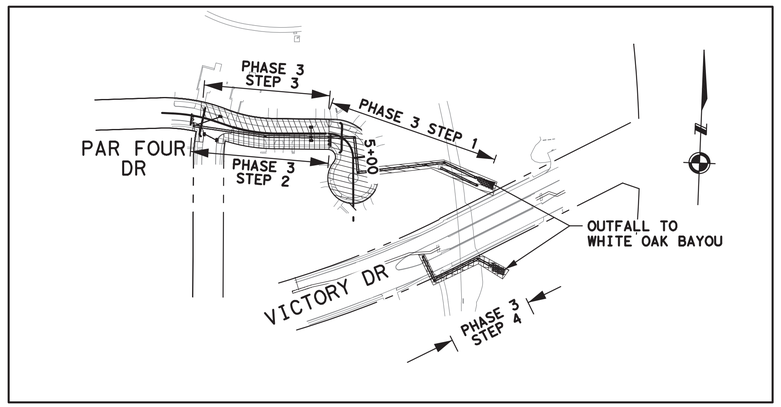
FOR CITY OF HOUSTON USE ONLY

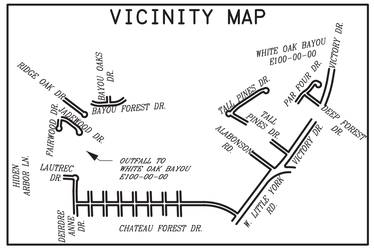
HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Traffic Control Plan\47_OVERALL LAYOUT_01.dgn
DATE:10/31/2025









SCALE: 1" = 150'-0" FEET FOR 22"X34" SHEET

1

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

NOTES:

1. NO TWO ADJACENT ROADS/INTERSECTIONS SHALL BE CLOSED SIMULTANEOUSLY.
2. ACCESS TO EXISTING BUSINESSES AND RESIDENCES SHALL BE MAINTAINED AT ALL TIMES.
3. INTERSECTIONS WILL BE CLOSED AND CONSTRUCTED ALONG WITH STORM JUNCTION BOXES. PAVEMENT CONSTRUCTION AT THE INTERSECTION SHOULD BE DONE USING HIGH EARLY STRENGTH CONCRETE.
4. COORDINATE WITH CONCERNED AUTHORITY FOR THEIR REQUIREMENT ON THE TRAILS BEFORE STARTING THE CONSTRUCTION AT TRAILS AND OUTFALLS.
5. HIDDEN ARBOR LANE, RIDGE OAK DR., AND JADEWOOD DR ARE NOT SHOWN EXCEPT IN OVERALL LAYOUT. PLEASE REFER TO PLANS, NARRATIVE AND COH TRAFFIC CONTROL STANDARDS.

LEGEND

- PHASE 2 STEP 1
- PHASE 2 STEP 2
- PHASE 2 STEP 3
- PHASE 3 STEP 1
- PHASE 3 STEP 2
- PHASE 3 STEP 3
- PHASE 3 STEP 4

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED
PROFESSIONAL ENGINEER
10/6/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

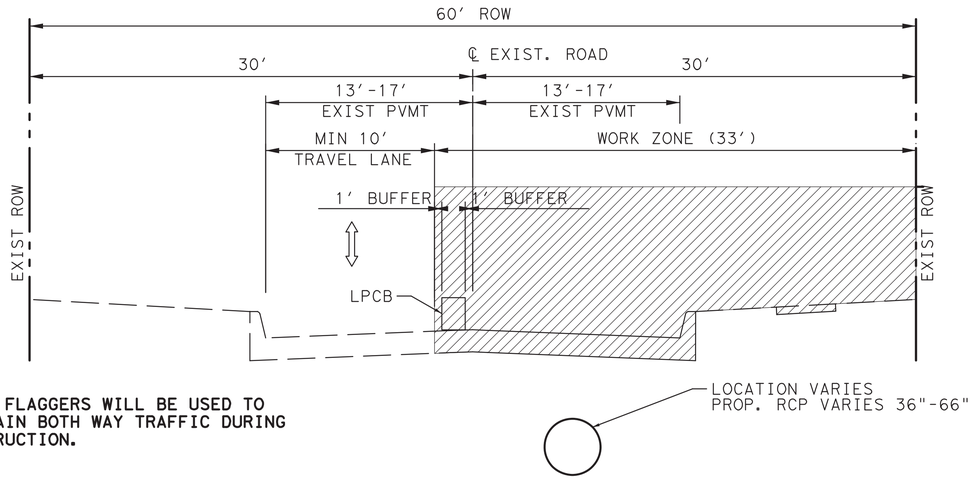
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

TRAFFIC CONTROL PLANS
OVERALL PHASING LAYOUT- 02

TCP SHEET: 6 SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED
DRAWING SCALE	81720 CITY DRAWING NUMBER
1"=150'	Approval Date 09/19/25
CITY OF HOUSTON PM	HOUSTON TX
DOAA HAMDAN, P.E.	
SHEET NO. 120 OF 158	

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Traffic Control Plan\47_OVERALL LAYOUT - 02.dgn
DATE:10/31/2025

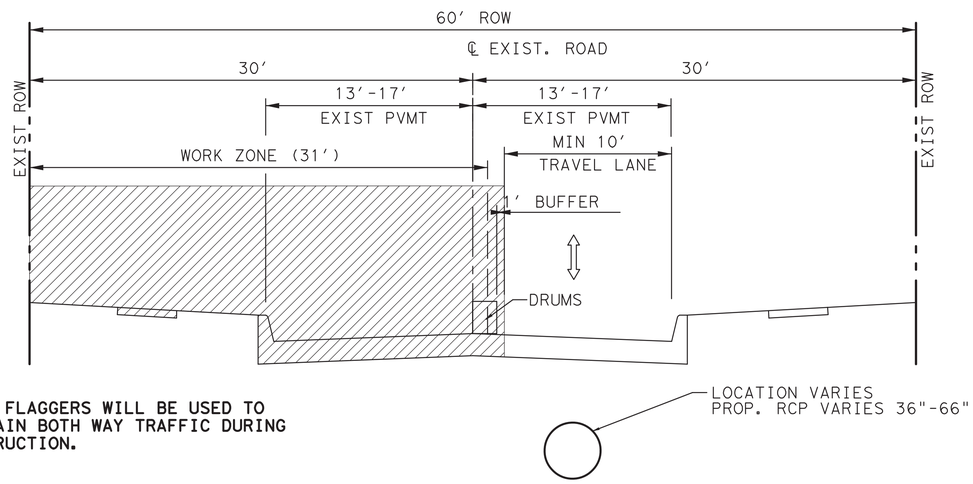


NOTE: FLAGGERS WILL BE USED TO MAINTAIN BOTH WAY TRAFFIC DURING CONSTRUCTION.

TYPICAL SECTION FOR CONSTRUCTION OF
RCP AND CONCRETE PAVEMENT WITH CURB AND GUTTER

STREET NAMES
DEIRDRE ANNE DR
TALLPINES DR
PARFOUR DR
N.T.S.

PHASE 1 STEP 2A
PHASE 1 STEP 13
PHASE 2 STEP 2
PHASE 3 STEP 2



NOTE: FLAGGERS WILL BE USED TO MAINTAIN BOTH WAY TRAFFIC DURING CONSTRUCTION.

TYPICAL SECTION FOR CONSTRUCTION OF
RCP AND CONCRETE PAVEMENT WITH CURB AND GUTTER

STREET NAMES
DEIRDRE ANNE DR
TALL PINES DR
PAR FOUR DR
N.T.S.

PHASE 1 STEP 2B
PHASE 1 STEP 12
PHASE 2 STEP 2
PHASE 3 STEP 3

1

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED
PROFESSIONAL ENGINEER
10/6/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

TRAFFIC CONTROL PLANS
TYPICAL SECTIONS

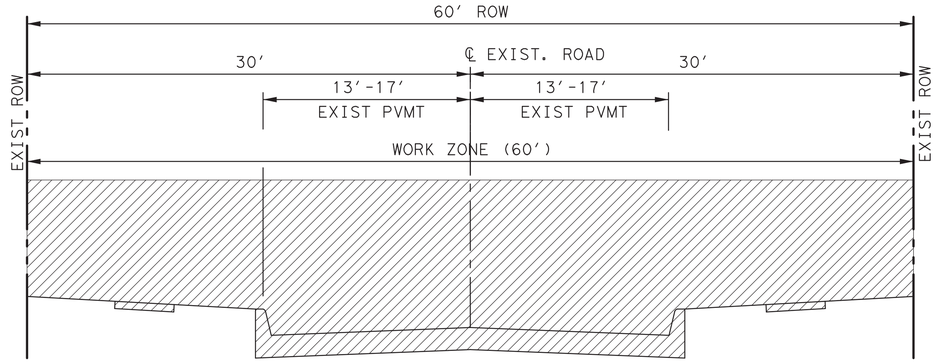
TCP SHEET: 7 SHEET 1 OF 2

WBS NUMBER
M-410029-0001-4
DRAWING SCALE
NTS
CITY OF HOUSTON PM
DOAA HAMDAN, P.E.
SHEET NO. 121 OF 158

FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Traffic Control Plan\47TCP_TYP_SEC-01.dgn
DATE:10/31/2025

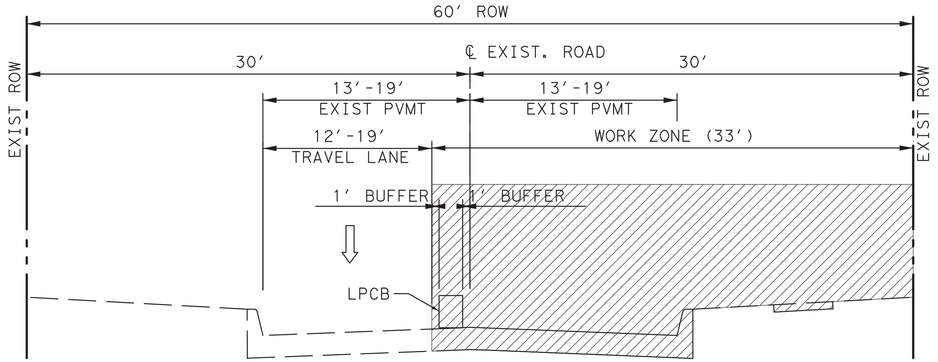


NOTE: FLAGGERS WILL BE USED TO MAINTAIN BOTH WAY TRAFFIC DURING CONSTRUCTION.

TYPICAL SECTION FOR CONSTRUCTION OF
RCP AND CONCRETE PAVEMENT WITH CURB AND GUTTER

STREET NAMES
CHATEAU FOREST DR
N.T.S.

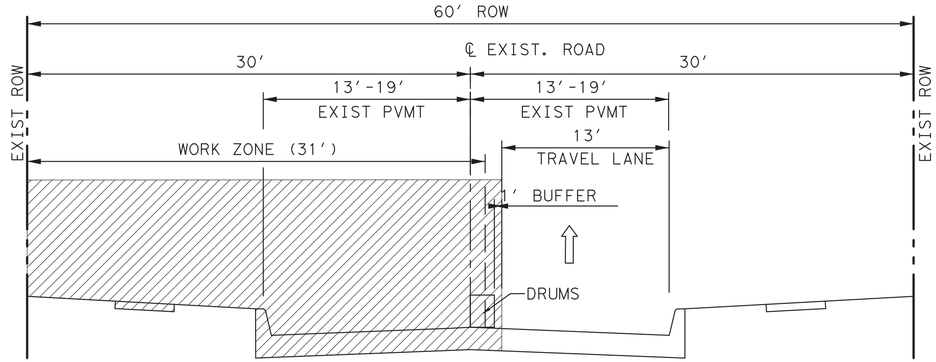
PHASE 1 STEP 3
PHASE 1 STEP 4
PHASE 1 STEP 5
PHASE 1 STEP 6
PHASE 1 STEP 7
PHASE 1 STEP 8
PHASE 1 STEP 9
PHASE 1 STEP 10



TYPICAL SECTION FOR CONSTRUCTION OF
RCP AND CONCRETE PAVEMENT WITH CURB AND GUTTER

STREET NAMES
CHATEAU FOREST DR
N.T.S.

PHASE 1 STEP 11B



TYPICAL SECTION FOR CONSTRUCTION OF
RCP AND CONCRETE PAVEMENT WITH CURB AND GUTTER

STREET NAMES
CHATEAU FOREST DR
N.T.S.

PHASE 1 STEP 11B

1

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED
PROFESSIONAL ENGINEER
10/6/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

TRAFFIC CONTROL PLANS
TYPICAL SECTIONS

TCP SHEET: 8 SHEET 2 OF 2

WBS NUMBER
M-410029-0001-4
DRAWING SCALE
NTS
CITY OF HOUSTON PM
DOAA HAMDAN, P.E.
SHEET NO. 122 OF 158

FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Traffic Control Plan\47TCP_TYP_SEC - 02.dgn
DATE:10/31/2025

NOTES:

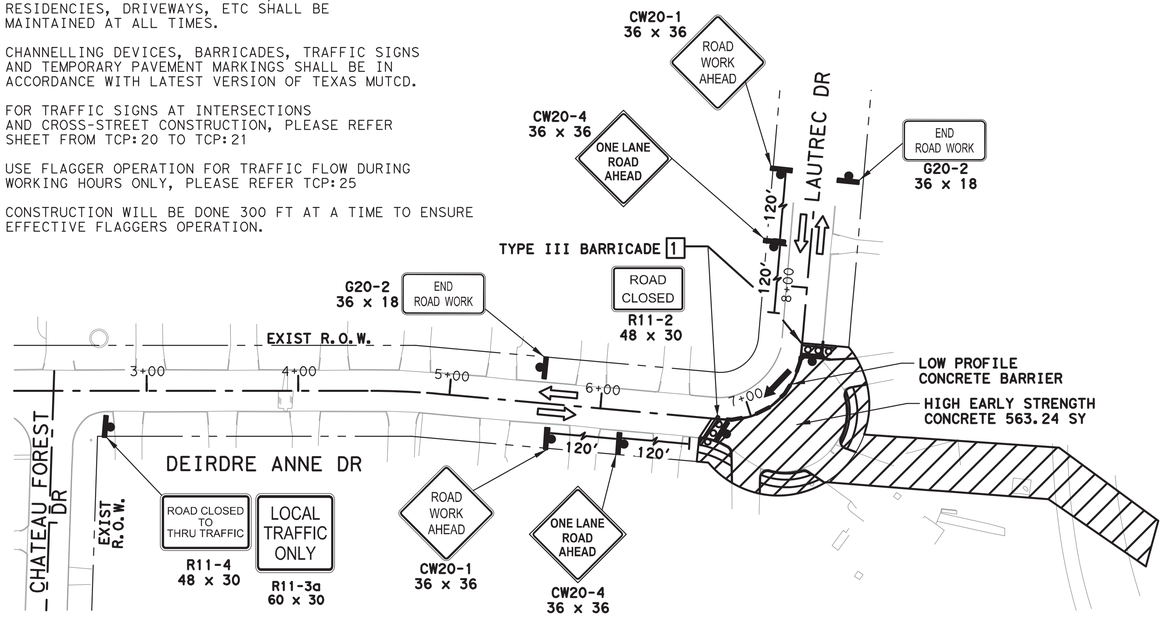
1) ACCESS TO EXISTING BUSINESSES, RESIDENCIES, DRIVEWAYS, ETC SHALL BE MAINTAINED AT ALL TIMES.

2) CHANNELLING DEVICES, BARRICADES, TRAFFIC SIGNS AND TEMPORARY PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH LATEST VERSION OF TEXAS MUTCD.

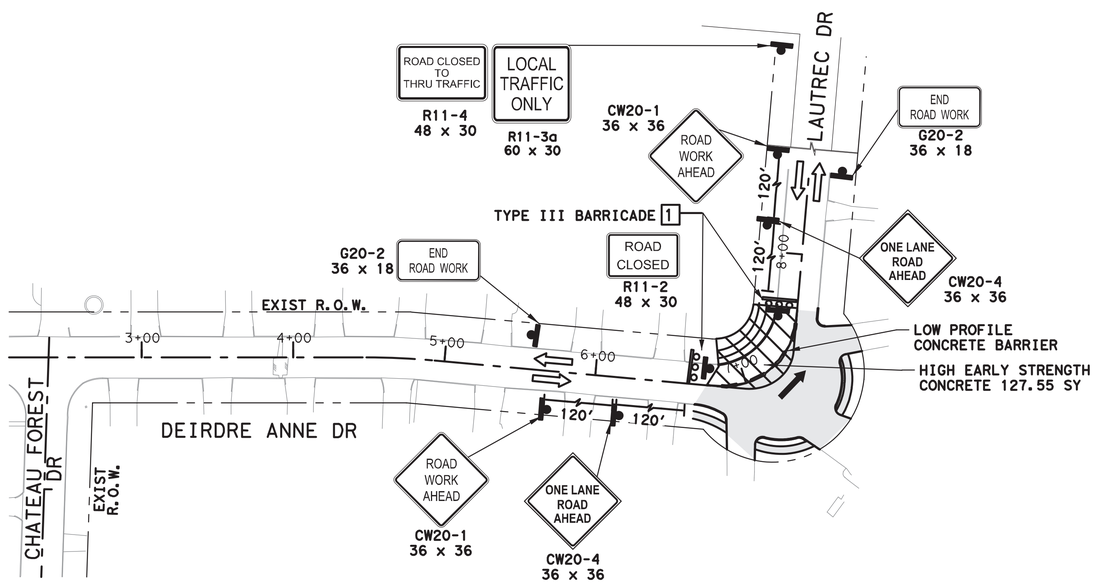
3) FOR TRAFFIC SIGNS AT INTERSECTIONS AND CROSS-STREET CONSTRUCTION, PLEASE REFER SHEET FROM TCP:20 TO TCP:21

4) USE FLAGGER OPERATION FOR TRAFFIC FLOW DURING WORKING HOURS ONLY, PLEASE REFER TCP:25

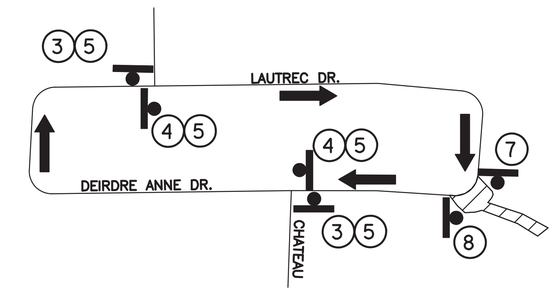
5) CONSTRUCTION WILL BE DONE 300 FT AT A TIME TO ENSURE EFFECTIVE FLAGGERS OPERATION.



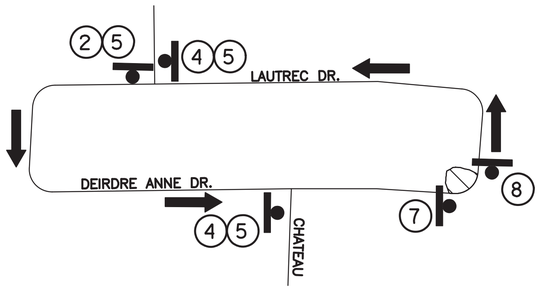
PHASE 1 STEP 1A



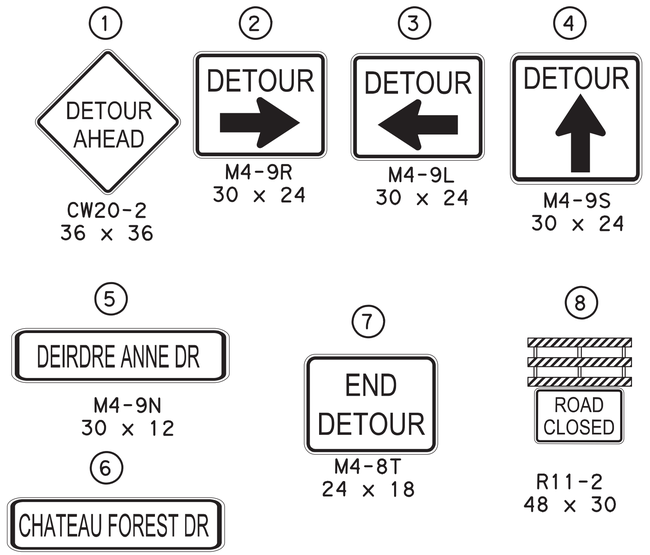
PHASE 1 STEP 1B



DETOUR PLAN FOR PHASE 1 STEP 1A



DETOUR PLAN FOR PHASE 1 STEP 1B



50 0 25 50 100

SCALE: 1" = 50'-0" FEET FOR 22"X34" SHEET

LEGEND:

- PERMANENT CONSTRUCTION WORK ZONE (PHASE 1 STEP 1A)
- PERMANENT CONSTRUCTION WORK ZONE (PHASE 1 STEP 1B)
- PERMANENT CONSTRUCTION
- PLASTIC DRUM, CONE, OR TUBULAR MARKER
- PROPOSED SIGN POST
- 1 TYPE III BARRICADE
- PROPOSED TRAFFIC FLOW
- EXISTING TRAFFIC FLOW
- 2 LOW PROFILE CONCRETE BARRIER (LPCB) (TY 1 AND TY 2)
- 3PD PLASTIC DRUM (DRUM) (SEE LEGEND SP FOR SPACING)
- 4CL DRUM WITH CHEVRON (CW1-8) ON EVERY OTHER DRUM (LEFT) (SEE LEGEND SP FOR SPACING)
- 4CR DRUM WITH CHEVRON (CW1-8) ON EVERY OTHER DRUM (RIGHT) (SEE LEGEND SP FOR SPACING)
- 5VP DRUM WITH VERTICAL PANEL (SEE LEGEND SP FOR SPACING)
- 6MC TUBULAR MARKERS OR TRAFFIC CONES (SEE LEGEND SP FOR SPACING)
- SP SPACED @ 20' C-C (ALONG WORK ZONE & TAPERS) SPACED @ 5' C-C (AT INTERSECTIONS & ON RADII)
- 7 TRAILER MOUNTED FLASHING ARROW PANEL (FAP)

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

1

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED
PROFESSIONAL ENGINEER
10/6/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

TRAFFIC CONTROL PLANS
PHASE1 STEP 1A
PHASE1 STEP 1B

TCP SHEET: 9A

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
1"=50'	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 123 OF 158	

FILE:P:\ACTIVE\21DR47\WorkingDrawings (02 New Design)\xrefs MicroStation\Sheets\Traffic Control Plan\47_Phase 1_STEP 1A & 1B.dgn
DATE:10/31/2025

NOTES:

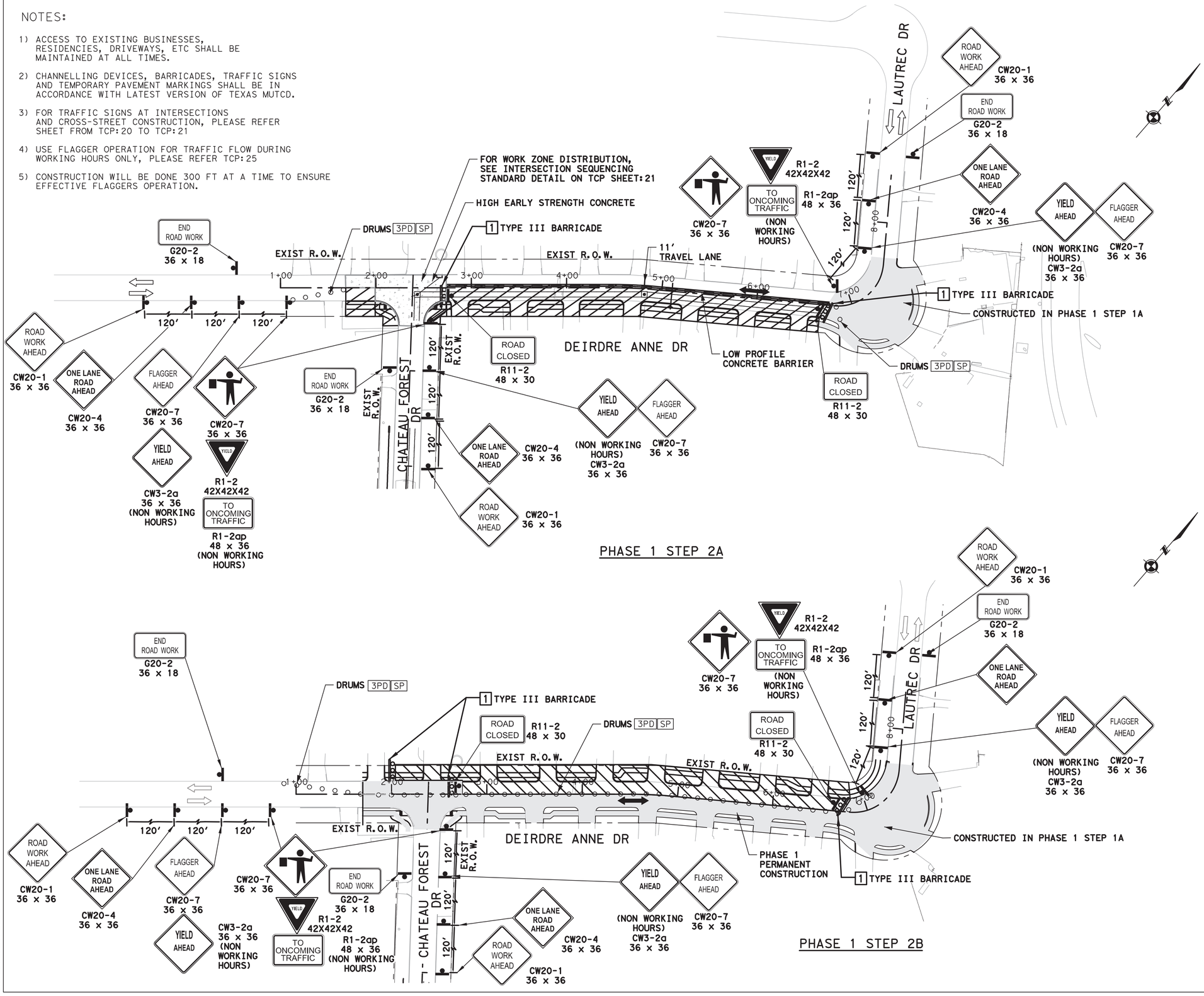
1) ACCESS TO EXISTING BUSINESSES, RESIDENCIES, DRIVEWAYS, ETC SHALL BE MAINTAINED AT ALL TIMES.

2) CHANNELLING DEVICES, BARRICADES, TRAFFIC SIGNS AND TEMPORARY PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH LATEST VERSION OF TEXAS MUTCD.

3) FOR TRAFFIC SIGNS AT INTERSECTIONS AND CROSS-STREET CONSTRUCTION, PLEASE REFER SHEET FROM TCP:20 TO TCP:21

4) USE FLAGGER OPERATION FOR TRAFFIC FLOW DURING WORKING HOURS ONLY, PLEASE REFER TCP:25

5) CONSTRUCTION WILL BE DONE 300 FT AT A TIME TO ENSURE EFFECTIVE FLAGGERS OPERATION.



50 0 25 50 100

SCALE: 1" = 50'-0" FEET FOR 22"X34" SHEET

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

LEGEND:

- PERMANENT CONSTRUCTION WORK ZONE (PHASE 1 STEP 2A)
- PERMANENT CONSTRUCTION WORK ZONE (PHASE 1 STEP 2B)
- PERMANENT CONSTRUCTION
- PLASTIC DRUM, CONE, OR TUBULAR MARKER
- PROPOSED SIGN POST
- 1 TYPE III BARRICADE
- PROPOSED TRAFFIC FLOW
- EXISTING TRAFFIC FLOW
- 2 LOW PROFILE CONCRETE BARRIER (LPCB) (TY 1 AND TY 2)
- 3PD PLASTIC DRUM (DRUM) (SEE LEGEND SP FOR SPACING)
- 4CL DRUM WITH CHEVRON (CW1-8) ON EVERY OTHER DRUM (LEFT) (SEE LEGEND SP FOR SPACING)
- 4CR DRUM WITH CHEVRON (CW1-8) ON EVERY OTHER DRUM (RIGHT) (SEE LEGEND SP FOR SPACING)
- 5VP DRUM WITH VERTICAL PANEL (SEE LEGEND SP FOR SPACING)
- 6MC TUBULAR MARKERS OR TRAFFIC CONES (SEE LEGEND SP FOR SPACING)
- SP SPACED @ 20′ C-C (ALONG WORK ZONE & TAPERS) SPACED @ 5′ C-C (AT INTERSECTIONS & ON RADII)
- 7 TRAILER MOUNTED FLASHING ARROW PANEL (FAP)

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
10/6/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

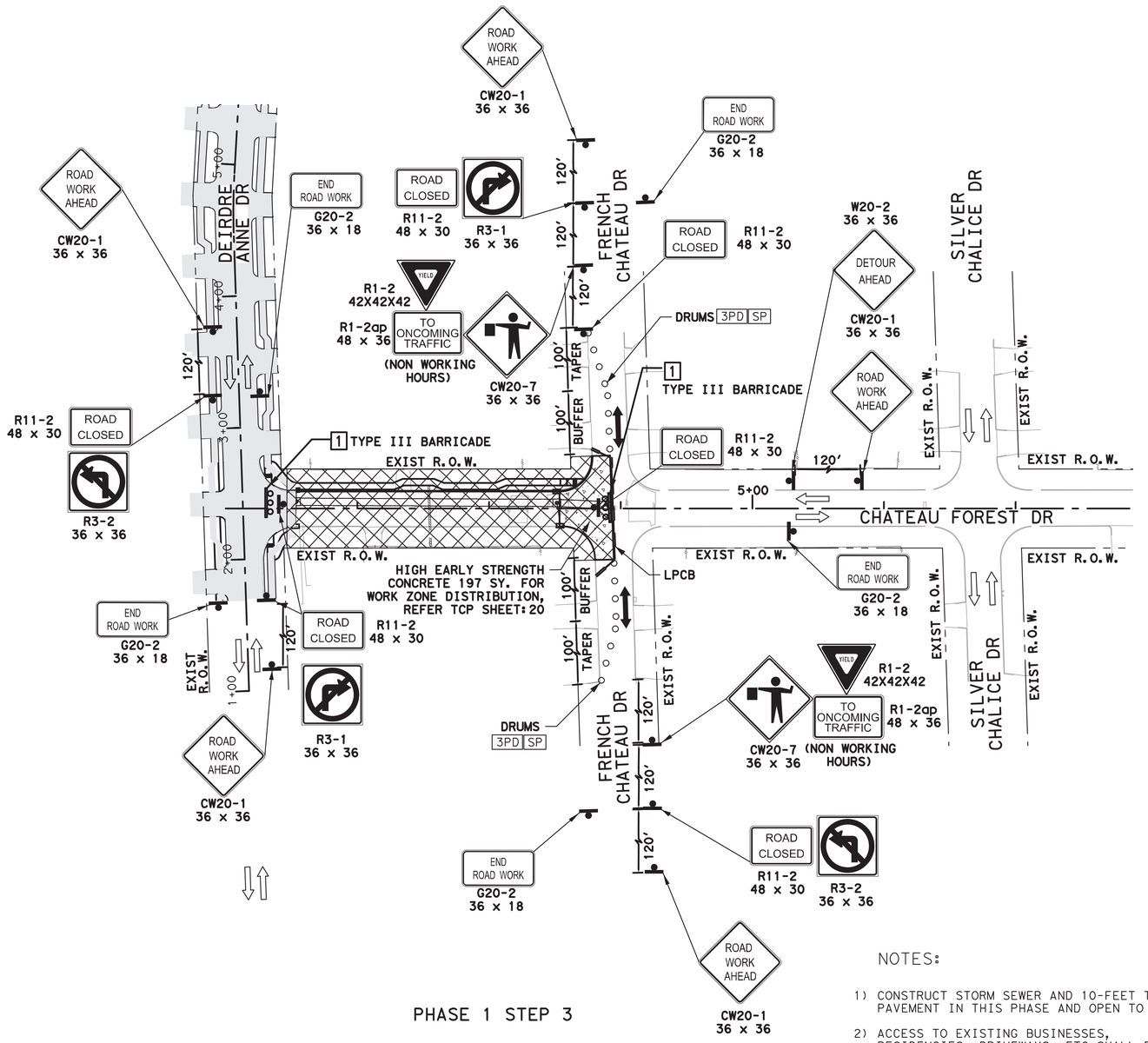
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

TRAFFIC CONTROL PLANS
PHASE 1 STEP 2A
PHASE 1 STEP 2B

TCP SHEET: 9B

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED
DRAWING SCALE	81720 CITY DRAWING NUMBER
1"=50'	Approval Date 09/19/25
CITY OF HOUSTON PM	HOUSTON TX
DOAA HAMDAN, P.E.	
SHEET NO. 124 OF 158	

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Traffic Control Plan\47_Phase 1_STEP 2A & 2B.dgn
DATE:10/31/2025



LEGEND:

- CONSTRUCTION WORK ZONE (PHASE 1 STEP 3)
- PREVIOUS PERMANENT CONSTRUCTION
- PREVIOUS TEMPORARY CONSTRUCTION
- PLASTIC DRUM, CONE, OR TUBULAR MARKER
- PROPOSED SIGN POST
- 1 TYPE III BARRICADE
- PROPOSED TRAFFIC FLOW
- EXISTING TRAFFIC FLOW
- 2 LOW PROFILE CONCRETE BARRIER (LPCB) (TY 1 AND TY 2)
- 3PD PLASTIC DRUM (DRUM) (SEE LEGEND SP FOR SPACING)
- 4CL DRUM WITH CHEVRON (CW1-8) ON EVERY OTHER DRUM (LEFT) (SEE LEGEND SP FOR SPACING)
- 4CR DRUM WITH CHEVRON (CW1-8) ON EVERY OTHER DRUM (RIGHT) (SEE LEGEND SP FOR SPACING)
- 5VP DRUM WITH VERTICAL PANEL (SEE LEGEND SP FOR SPACING)
- 6MC TUBULAR MARKERS OR TRAFFIC CONES (SEE LEGEND SP FOR SPACING)
- SP SPACED @ 20' C-C (ALONG WORK ZONE & TAPERS) SPACED @ 5' C-C (AT INTERSECTIONS & ON RADII)
- 7 TRAILER MOUNTED FLASHING ARROW PANEL (FAP)

NOTES:

1) CONSTRUCT STORM SEWER AND 10-FEET TEMPORARY ASPHALT PAVEMENT IN THIS PHASE AND OPEN TO LOCAL TRAFFIC.
2) ACCESS TO EXISTING BUSINESSES, RESIDENCIES, DRIVEWAYS, ETC SHALL BE MAINTAINED AT ALL TIMES.
3) CHANNELLING DEVICES, BARRICADES, TRAFFIC SIGNS AND TEMPORARY PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH LATEST VERSION OF TEXAS MUTCD.
4) FOR TRAFFIC SIGNS AT INTERSECTIONS AND CROSS-STREET CONSTRUCTION, PLEASE REFER SHEET FROM TCP: 20 TO TCP: 21
5) USE FLAGGER OPERATION FOR TRAFFIC FLOW DURING WORKING HOURS ONLY, PLEASE REFER TCP: 25
6) REFER TO SHEET TCP: 16 AND TCP: 17 FOR TRAFFIC DETOUR PLAN

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED
PROFESSIONAL ENGINEER
10/6/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

TRAFFIC CONTROL PLANS
PHASE 1 STEP 3

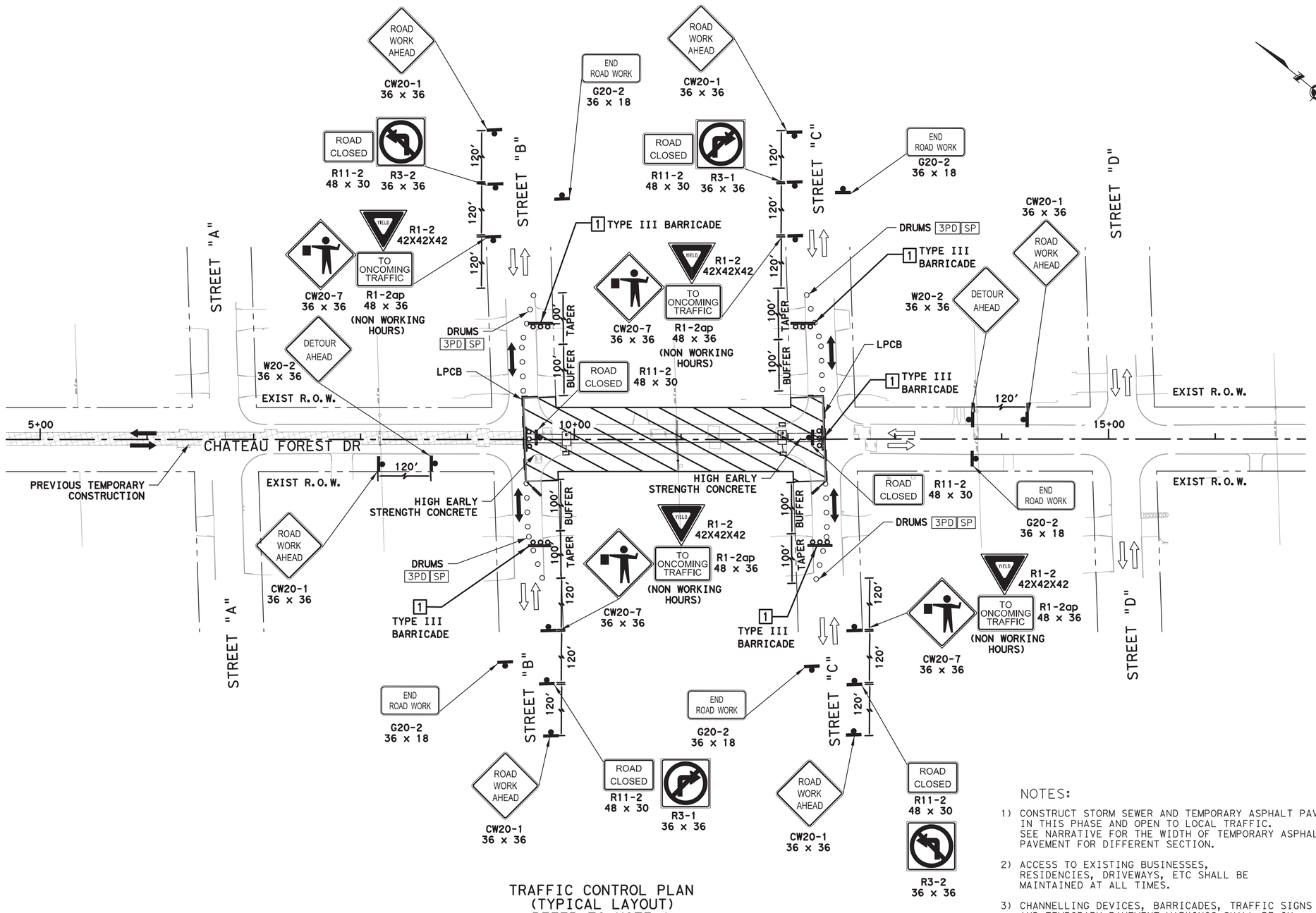
TCP SHEET: 10

WBS NUMBER
M-410029-0001-4
DRAWING SCALE
1"=50'
CITY OF HOUSTON PM
DOAA HAMDAN, P.E.
SHEET NO. 125 OF 158

FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Traffic Control Plan\47_Phase 1_STEP 3.dgn
DATE:10/31/2025



TRAFFIC CONTROL PLAN
(TYPICAL LAYOUT)
REFER TO NOTE A

NOTE A:

THIS TRAFFIC CONTROL PLAN IS APPLICABLE TO

1. DEIRDRE ANNE DR/CHATEAU FOREST DR TO FRENCH CHATEAU DR/CHATEAU FOREST DR
2. FRENCH CHATEAU DR/CHATEAU FOREST DR TO SILVER CHALICE DR/CHATEAU FOREST DR
3. SILVER CHALICE DR/CHATEAU FOREST DR TO OAKNUT DR/CHATEAU FOREST DR
4. OAKNUT DR/CHATEAU FOREST DR TO ACORN FOREST DR/CHATEAU FOREST DR
5. ACORN FOREST DR/CHATEAU FOREST DR TO MAPLE HILL DR/CHATEAU FOREST DR
6. MAPLE HILL DR/CHATEAU FOREST DR TO TALL WILLOW DR/CHATEAU FOREST DR
7. TALL WILLOW DR/CHATEAU FOREST DR TO KING POST DR/CHATEAU FOREST DR

50 0 25 50 100

SCALE: 1" = 50'-0" FEET FOR 22"X34" SHEET

LEGEND:

- CONSTRUCTION WORK ZONE (PHASE 1 STEP 4-9)
- PREVIOUS PERMANENT CONSTRUCTION
- PREVIOUS TEMPORARY CONSTRUCTION
- PLASTIC DRUM, CONE, OR TUBULAR MARKER
- PROPOSED SIGN POST
- 1 TYPE III BARRICADE
- PROPOSED TRAFFIC FLOW
- EXISTING TRAFFIC FLOW
- 2 LOW PROFILE CONCRETE BARRIER (LPCB) (TY 1 AND TY 2)
- 3PD PLASTIC DRUM (DRUM) (SEE LEGEND SP FOR SPACING)
- 4CL DRUM WITH CHEVRON (CW1-8) ON EVERY OTHER DRUM (LEFT) (SEE LEGEND SP FOR SPACING)
- 4CR DRUM WITH CHEVRON (CW1-8) ON EVERY OTHER DRUM (RIGHT) (SEE LEGEND SP FOR SPACING)
- 5VP DRUM WITH VERTICAL PANEL (SEE LEGEND SP FOR SPACING)
- 6MC TUBULAR MARKERS OR TRAFFIC CONES (SEE LEGEND SP FOR SPACING)
- SP SPACED @ 20′ C-C (ALONG WORK ZONE & TAPERS) SPACED @ 5′ C-C (AT INTERSECTIONS & ON RADII)
- 7 TRAILER MOUNTED FLASHING ARROW PANEL (FAP)

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

NOTES:

1) CONSTRUCT STORM SEWER AND TEMPORARY ASPHALT PAVEMENT IN THIS PHASE AND OPEN TO LOCAL TRAFFIC. SEE NARRATIVE FOR THE WIDTH OF TEMPORARY ASPHALT PAVEMENT FOR DIFFERENT SECTION.
2) ACCESS TO EXISTING BUSINESSES, RESIDENCIES, DRIVEWAYS, ETC SHALL BE MAINTAINED AT ALL TIMES.
3) CHANNELLING DEVICES, BARRICADES, TRAFFIC SIGNS AND TEMPORARY PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH LATEST VERSION OF TEXAS MUTCD.
4) FOR TRAFFIC SIGNS AT INTERSECTIONS AND CROSS-STREET CONSTRUCTION, PLEASE REFER SHEET FROM TCP:20 TO TCP:21
5) USE FLAGGER OPERATION FOR TRAFFIC FLOW DURING WORKING HOURS ONLY, PLEASE REFER TCP:25
6) REFER TO SHEET TCP:16 AND TCP:17 FOR TRAFFIC DETOUR PLAN

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
10/6/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

TRAFFIC CONTROL PLANS TYPICAL LAYOUT FOR PHASE 1 STEP 4 - PHASE 1 STEP 9

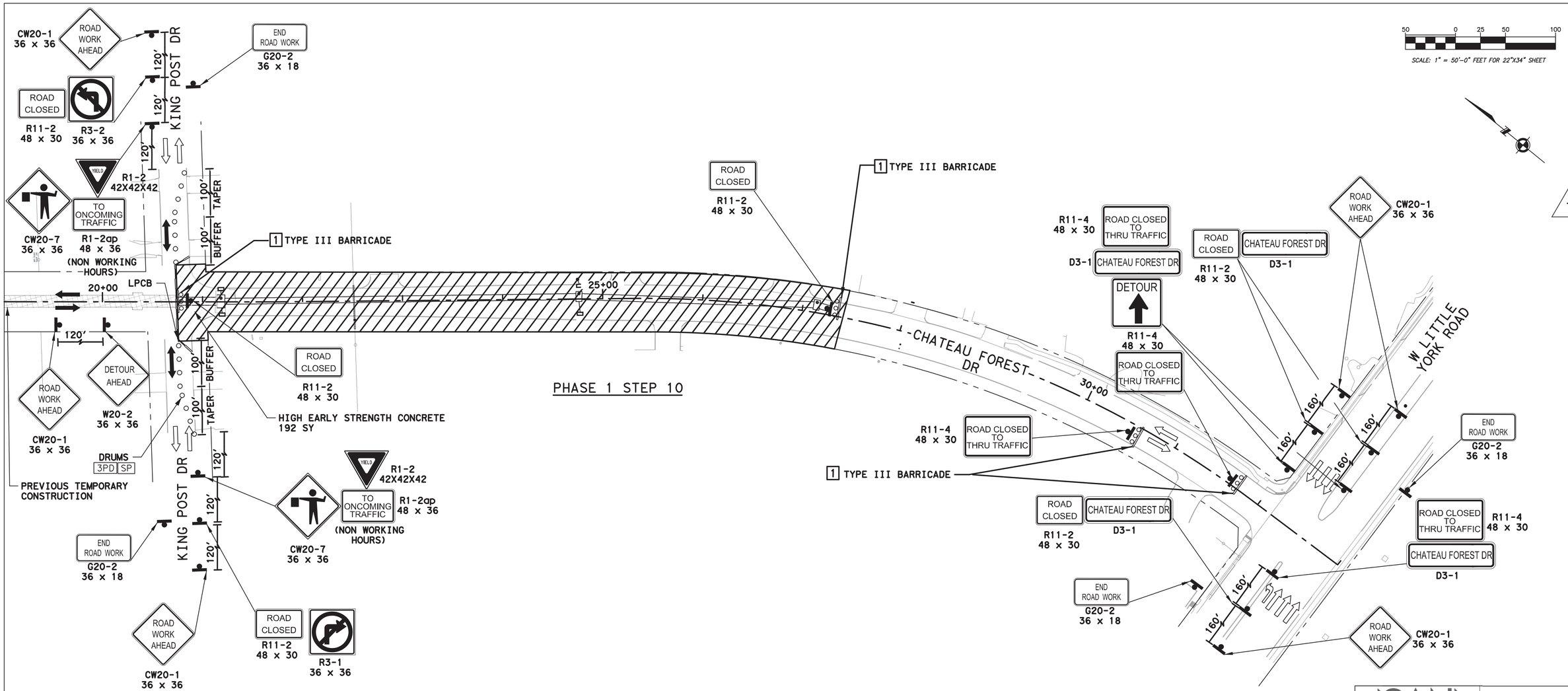
TCP SHEET: 11

WBS NUMBER
M-410029-0001-4
DRAWING SCALE
1"=50'
CITY OF HOUSTON PM
DOAA HAMDAN, P.E.
SHEET NO. 126 OF 158

FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Traffic Control Plan\47_Phase 1_STEP 4-9.dgn
DATE:10/31/2025



NOTES:

1) CONSTRUCT STORM SEWER AND 10-FEET TEMPORARY ASPHALT PAVEMENT IN THIS PHASE AND OPEN TO LOCAL TRAFFIC.
2) ACCESS TO EXISTING BUSINESSES, RESIDENCIES, DRIVEWAYS, ETC SHALL BE MAINTAINED AT ALL TIMES.
3) CHANNELLING DEVICES, BARRICADES, TRAFFIC SIGNS AND TEMPORARY PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH LATEST VERSION OF TEXAS MUTCD.
4) CONSTRUCT THE 20-FEET WIDE TEMPORARY ASPHALT PAVEMENT AFTER THE INSTALLATION OF STORM SEWER, AND OPEN TWO WAY TRAFFIC MOVEMENT FOR LOCAL RESIDENTS.
5) FOR TRAFFIC SIGNS AT INTERSECTIONS AND CROSS-STREET CONSTRUCTION, PLEASE REFER SHEET FROM TCP:20 TO TCP:21
6) USE FLAGGER OPERATION FOR TRAFFIC FLOW DURING WORKING HOURS ONLY, PLEASE REFER TCP:25
7) REFER TO SHEET TCP:16 AND TCP:17 FOR TRAFFIC DETOUR PLAN

LEGEND:

- CONSTRUCTION WORK ZONE (PHASE 1 STEP 10)
- PREVIOUS PERMANENT CONSTRUCTION
- PREVIOUS TEMPORARY CONSTRUCTION
- PLASTIC DRUM, CONE, OR TUBULAR MARKER
- PROPOSED SIGN POST
- 1 TYPE III BARRICADE
- PROPOSED TRAFFIC FLOW
- EXISTING TRAFFIC FLOW
- 2 LOW PROFILE CONCRETE BARRIER (LPCB) (TY 1 AND TY 2)
- 3PD PLASTIC DRUM (DRUM) (SEE LEGEND SP FOR SPACING)
- 4CL DRUM WITH CHEVRON (CW1-8) ON EVERY OTHER DRUM (LEFT) (SEE LEGEND SP FOR SPACING)
- 4CR DRUM WITH CHEVRON (CW1-8) ON EVERY OTHER DRUM (RIGHT) (SEE LEGEND SP FOR SPACING)
- 5VP DRUM WITH VERTICAL PANEL (SEE LEGEND SP FOR SPACING)
- 6MC TUBULAR MARKERS OR TRAFFIC CONES (SEE LEGEND SP FOR SPACING)
- SP SPACED @ 20' C-C (ALONG WORK ZONE & TAPERS) SPACED @ 5' C-C (AT INTERSECTIONS & ON RADII)
- 7 TRAILER MOUNTED FLASHING ARROW PANEL (FAP)

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS V. N. MURTHY MADE 134936 LICENSED PROFESSIONAL ENGINEER 10/6/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

TRAFFIC CONTROL PLANS PHASE 1 STEP 10

TCP SHEET:12

WBS NUMBER
M-410029-0001-4
DRAWING SCALE
1"=50'
CITY OF HOUSTON PM
DOAA HAMDAN, P.E.
SHEET NO. 127 OF 158

FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX

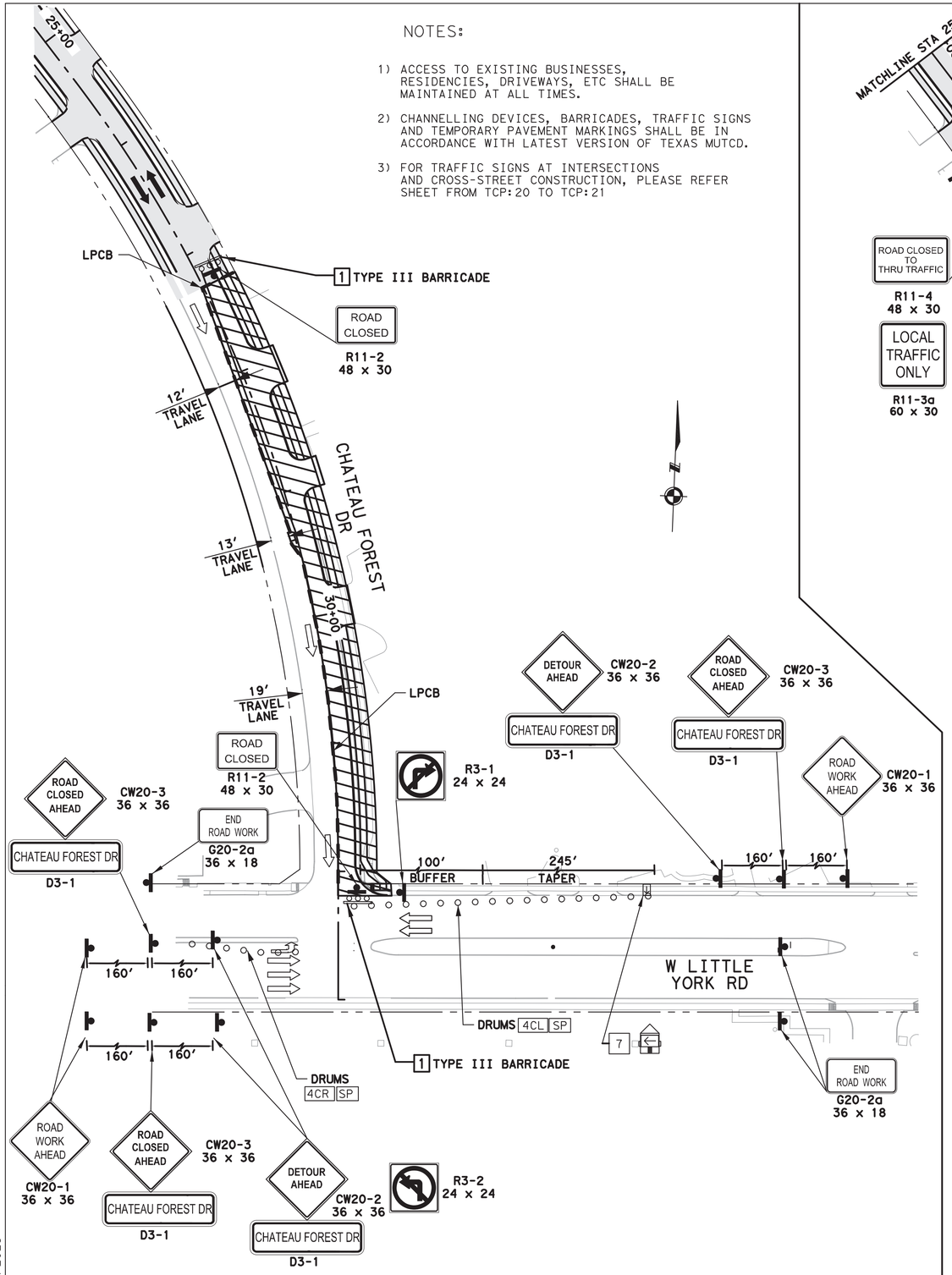
FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Traffic Control Plan\47_Phase 1_STEP 10.dgn
DATE:10/31/2025

NOTES:

1) ACCESS TO EXISTING BUSINESSES, RESIDENCIES, DRIVEWAYS, ETC SHALL BE MAINTAINED AT ALL TIMES.

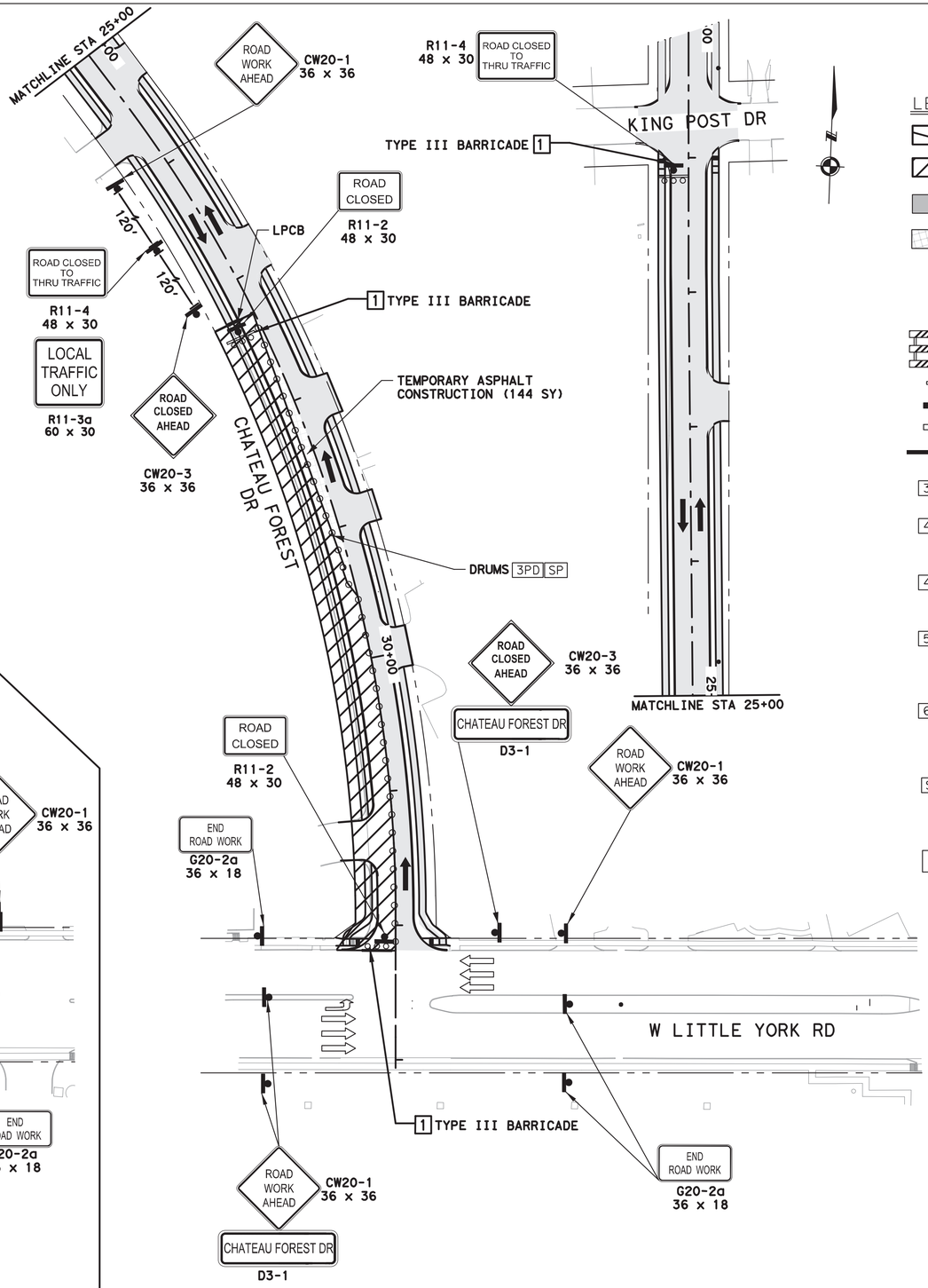
2) CHANNELLING DEVICES, BARRICADES, TRAFFIC SIGNS AND TEMPORARY PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH LATEST VERSION OF TEXAS MUTCD.

3) FOR TRAFFIC SIGNS AT INTERSECTIONS AND CROSS-STREET CONSTRUCTION, PLEASE REFER SHEET FROM TCP:20 TO TCP:21



PHASE 1 STEP 11A

NOTE:
SEE TCP SHEET: 17 FOR DETOUR PLAN



PHASE 1 STEP 11B

NOTE:
SEE TCP SHEET: 17 FOR DETOUR PLAN

SCALE: 1" = 50'-0" FEET FOR 22"X34" SHEET

LEGEND:

- CONSTRUCTION WORKZONE (PHASE 1 STEP 11A)
- CONSTRUCTION WORKZONE (PHASE 1 STEP 11B)
- PREVIOUS PERMANENT CONSTRUCTION (CONCRETE)
- PREVIOUS TEMPORARY CONSTRUCTION
- PLASTIC DRUM, CONE, OR TUBULAR MARKER
- PROPOSED SIGN POST
- 1 TYPE III BARRICADE
- PROPOSED TRAFFIC FLOW
- EXISTING TRAFFIC FLOW
- 2 LOW PROFILE CONCRETE BARRIER (LPCB) (TY 1 AND TY 2)
- 3PD PLASTIC DRUM (DRUM) (SEE LEGEND SP FOR SPACING)
- 4CL DRUM WITH CHEVRON (CW1-8) ON EVERY OTHER DRUM (LEFT) (SEE LEGEND SP FOR SPACING)
- 4CR DRUM WITH CHEVRON (CW1-8) ON EVERY OTHER DRUM (RIGHT) (SEE LEGEND SP FOR SPACING)
- 5VP DRUM WITH VERTICAL PANEL (SEE LEGEND SP FOR SPACING)
- 6MC TUBULAR MARKERS OR TRAFFIC CONES (SEE LEGEND SP FOR SPACING)
- SP SPACED @ 20' C-C (ALONG WORK ZONE & TAPERS) SPACED @ 5' C-C (AT INTERSECTIONS & ON RADII)
- 7 TRAILER MOUNTED FLASHING ARROW PANEL (FAP)

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED
PROFESSIONAL ENGINEER
10/6/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

TRAFFIC CONTROL PLANS
PHASE 1 STEP 11A
PHASE 1 STEP 11B

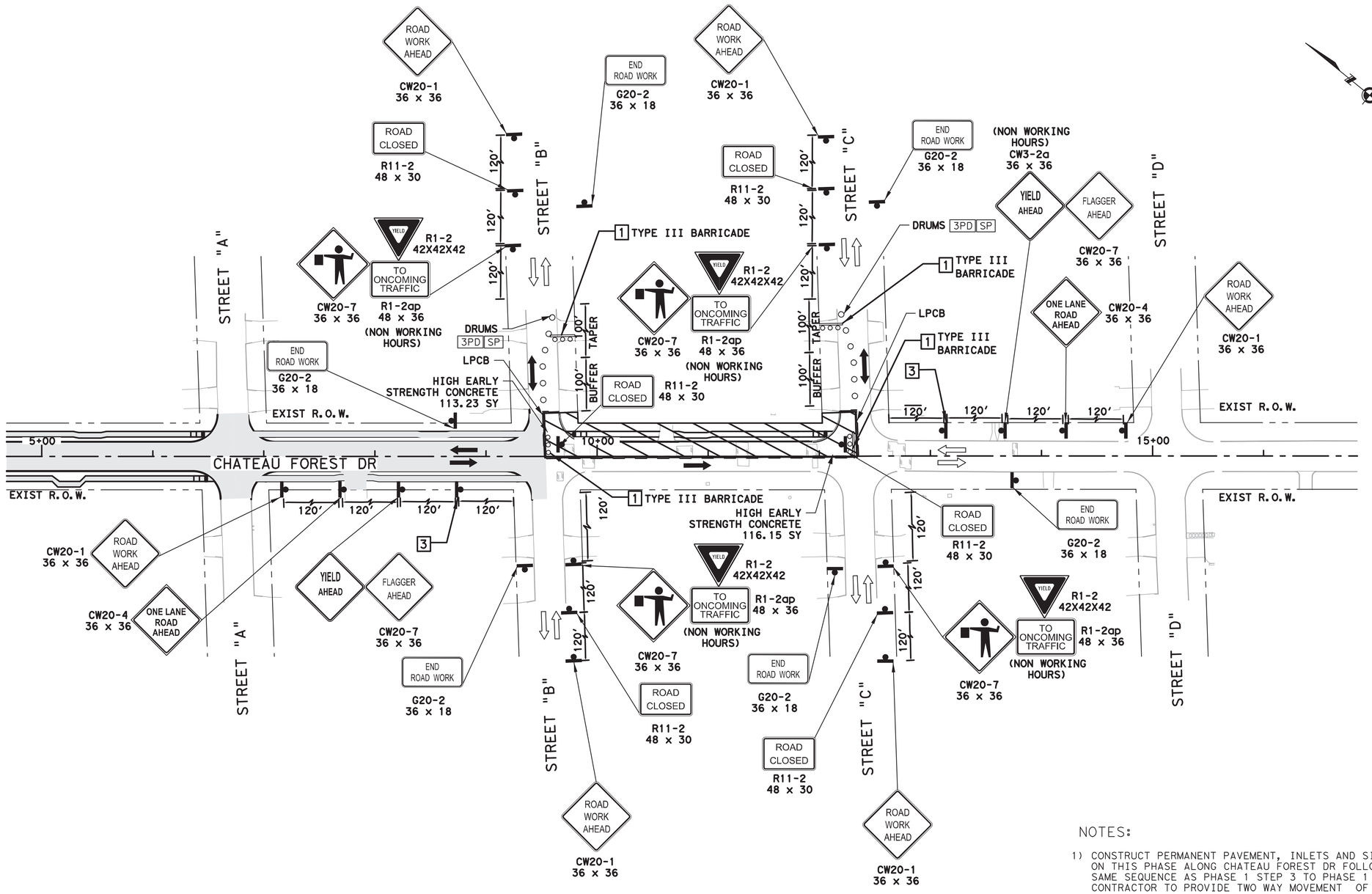
TCP SHEET: 13

WBS NUMBER
M-410029-0001-4
DRAWING SCALE
1"=50'
CITY OF HOUSTON PM
DOAA HAMDAN, P.E.
SHEET NO. 128 OF 158

FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Traffic Control Plan\47_Phase 1_STEP 11A & 11B_Chateau.dgn
DATE:10/31/2025



TRAFFIC CONTROL PLAN
(TYPICAL LAYOUT)
REFER TO NOTE A

NOTE A:

PLEASE REFER TO THE DETOUR PLAN ON SHEET 17A FOR DETOUR INFORMATION ALONG CHATEAU FOREST ROAD.

TWO-WAY TRAFFIC WITH FLAGGERS TO BE USED IN CONNECTING STREET WHICH HAS NO OUTLET. OTHER CONNECTING STREETS MAY UTILIZE DETOUR PLAN 17A AND 17B FOR ONE WAY TRAFFIC FLOW.

50 0 25 50 100

SCALE: 1" = 50'-0" FEET FOR 22"X34" SHEET

LEGEND:

- CONSTRUCTION WORK ZONE (PHASE 1 STEP 12)
- PREVIOUS PERMANENT CONSTRUCTION
- PREVIOUS TEMPORARY CONSTRUCTION
- PLASTIC DRUM, CONE, OR TUBULAR MARKER
- PROPOSED SIGN POST
- 1 TYPE III BARRICADE
- PROPOSED TRAFFIC FLOW
- EXISTING TRAFFIC FLOW
- 2 LOW PROFILE CONCRETE BARRIER (LPCB) (TY 1 AND TY 2)
- 3PD PLASTIC DRUM (DRUM) (SEE LEGEND SP FOR SPACING)
- 4CL DRUM WITH CHEVRON (CW1-8) ON EVERY OTHER DRUM (LEFT) (SEE LEGEND SP FOR SPACING)
- 4CR DRUM WITH CHEVRON (CW1-8) ON EVERY OTHER DRUM (RIGHT) (SEE LEGEND SP FOR SPACING)
- 5VP DRUM WITH VERTICAL PANEL (SEE LEGEND SP FOR SPACING)
- 6MC TUBULAR MARKERS OR TRAFFIC CONES (SEE LEGEND SP FOR SPACING)
- SP SPACED @ 20' C-C (ALONG WORK ZONE & TAPERS) SPACED @ 5' C-C (AT INTERSECTIONS & ON RADII)
- 7 TRAILER MOUNTED FLASHING ARROW PANEL (FAP)

FOR DETOUR PLAN REFER TCP SHEET: 16 AND TCP SHEET: 17

NOTES:

1) CONSTRUCT PERMANENT PAVEMENT, INLETS AND SIDEWALK ON THIS PHASE ALONG CHATEAU FOREST DR FOLLOWING SAME SEQUENCE AS PHASE 1 STEP 3 TO PHASE 1 STEP 11. CONTRACTOR TO PROVIDE TWO WAY MOVEMENT OF TRAFFIC DURING CONSTRUCTION. CONSTRUCT NORTH SIDE OF CHATEAU FOREST FIRST FOLLOWED BY SOUTH SIDE OF CHATEAU FOREST.
2) ACCESS TO EXISTING BUSINESSES, RESIDENCIES, DRIVEWAYS, ETC SHALL BE MAINTAINED AT ALL TIMES.
3) CHANNELLING DEVICES, BARRICADES, TRAFFIC SIGNS AND TEMPORARY PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH LATEST VERSION OF TEXAS MUTCD.
4) FOR TRAFFIC SIGNS AT INTERSECTIONS AND CROSS-STREET CONSTRUCTION, PLEASE REFER SHEET FROM TCP: 20 TO TCP: 21
5) USE FLAGGER OPERATION FOR TRAFFIC FLOW DURING WORKING HOURS ONLY, PLEASE REFER TCP: 25

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED
PROFESSIONAL ENGINEER
10/6/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

TRAFFIC CONTROL PLANS TYPICAL LAYOUT FOR PHASE 1 STEP 12

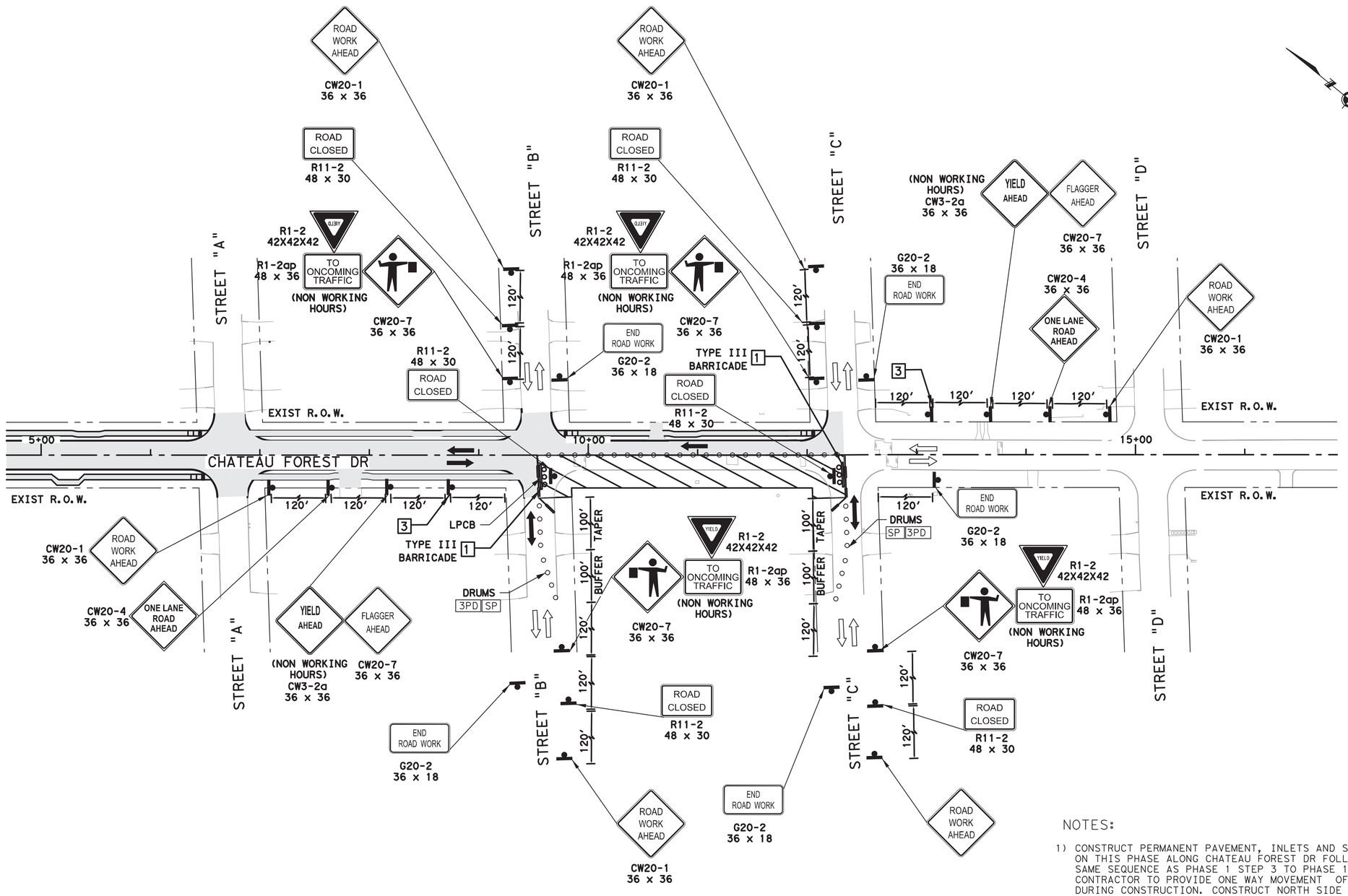
TCP SHEET: 14

WBS NUMBER	M-410029-0001-4
DRAWING SCALE	1"=50'
CITY OF HOUSTON PM	DOAA HAMDAN, P.E.
SHEET NO. 129 OF 158	

FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

FILE: P:\ACTIVE\21DR47\WorkingDrawings (02 New Design)\xrefs MicroStation\Sheets\Traffic Control Plan\47_Phase 1_STEP 12 .dgn
DATE: 10/31/2025



TRAFFIC CONTROL PLAN
(TYPICAL LAYOUT)
REFER TO NOTE A

NOTE A:

PLEASE REFER TO THE DETOUR PLAN ON SHEET 17A FOR DETOUR INFORMATION ALONG CHATEAU FOREST ROAD.

TWO-WAY TRAFFIC WITH FLAGGERS TO BE USED IN CONNECTING STREET WHICH HAS NO OUTLET. OTHER CONNECTING STREETS MAY UTILIZE DETOUR PLAN 17A AND 17B FOR ONE WAY TRAFFIC FLOW.

SCALE: 1" = 50'-0" FEET FOR 22"X34" SHEET

LEGEND:

- CONSTRUCTION WORK ZONE (PHASE 1 STEP 13)
- PREVIOUS PERMANENT CONSTRUCTION
- PREVIOUS TEMPORARY CONSTRUCTION
- PLASTIC DRUM, CONE, OR TUBULAR MARKER
- PROPOSED SIGN POST
- 1 TYPE III BARRICADE
- PROPOSED TRAFFIC FLOW
- EXISTING TRAFFIC FLOW
- 2 LOW PROFILE CONCRETE BARRIER (LPCB) (TY 1 AND TY 2)
- 3PD PLASTIC DRUM (DRUM) (SEE LEGEND SP FOR SPACING)
- 4CL DRUM WITH CHEVRON (CW1-8) ON EVERY OTHER DRUM (LEFT) (SEE LEGEND SP FOR SPACING)
- 4CR DRUM WITH CHEVRON (CW1-8) ON EVERY OTHER DRUM (RIGHT) (SEE LEGEND SP FOR SPACING)
- 5VP DRUM WITH VERTICAL PANEL (SEE LEGEND SP FOR SPACING)
- 6MC TUBULAR MARKERS OR TRAFFIC CONES (SEE LEGEND SP FOR SPACING)
- SP SPACED @ 20' C-C (ALONG WORK ZONE & TAPERS) SPACED @ 5' C-C (AT INTERSECTIONS & ON RADII)
- 7 TRAILER MOUNTED FLASHING ARROW PANEL (FAP)

FOR DETOUR PLAN REFER TCP SHEET: 16 AND TCP SHEET: 17

NOTES:

1) CONSTRUCT PERMANENT PAVEMENT, INLETS AND SIDEWALK ON THIS PHASE ALONG CHATEAU FOREST DR FOLLOWING SAME SEQUENCE AS PHASE 1 STEP 3 TO PHASE 1 STEP 11. CONTRACTOR TO PROVIDE ONE WAY MOVEMENT OF TRAFFIC DURING CONSTRUCTION. CONSTRUCT NORTH SIDE OF CHATEAU FOREST FIRST FOLLOWED BY SOUTH SIDE OF CHATEAU FOREST.
2) ACCESS TO EXISTING BUSINESSES, RESIDENCIES, DRIVEWAYS, ETC SHALL BE MAINTAINED AT ALL TIMES.
3) CHANNELLING DEVICES, BARRICADES, TRAFFIC SIGNS AND TEMPORARY PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH LATEST VERSION OF TEXAS MUTCD.
4) FOR TRAFFIC SIGNS AT INTERSECTIONS AND CROSS-STREET CONSTRUCTION, PLEASE REFER SHEET FROM TCP: 20 TO TCP: 21
5) USE FLAGGER OPERATION FOR TRAFFIC FLOW DURING WORKING HOURS ONLY, PLEASE REFER TCP: 25

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
10/6/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

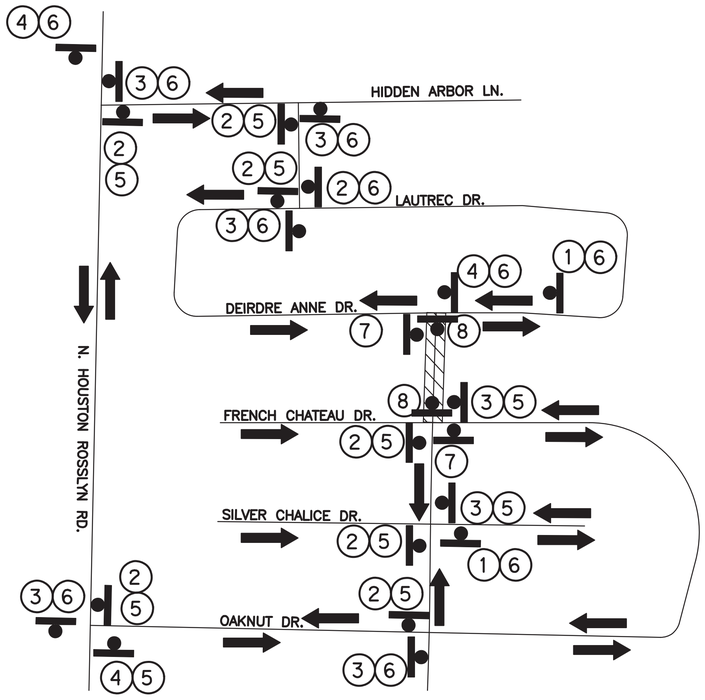
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

TRAFFIC CONTROL PLANS TYPICAL LAYOUT FOR PHASE 1 STEP 13

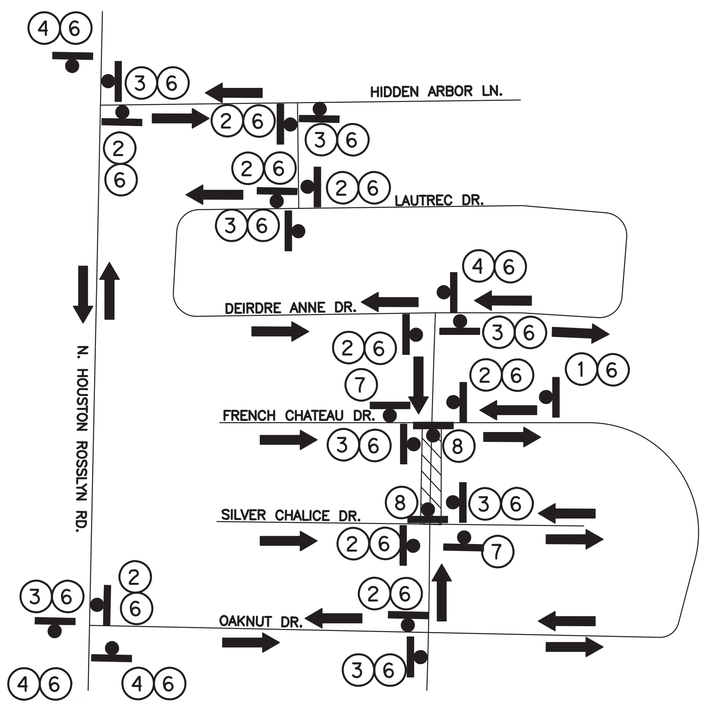
TCP SHEET: 15

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED
DRAWING SCALE	81720 CITY DRAWING NUMBER
1"=50'	Approval Date 09/19/25
CITY OF HOUSTON PM	HOUSTON TX
DOAA HAMDAN, P.E.	
SHEET NO. 130 OF 158	

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Traffic Control Plan\47_Phase 1_STEP 13 .dgn
DATE:10/31/2025



DETOUR PLAN FOR PHASE 1 STEP 3

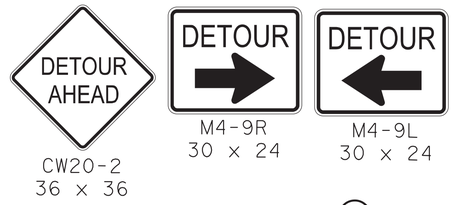


DETOUR PLAN FOR PHASE 1 STEP 4

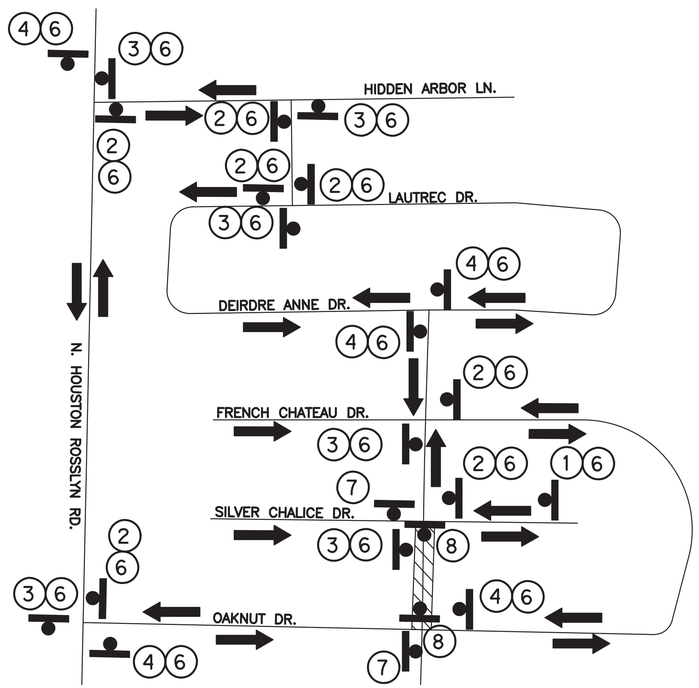
LEGEND:

WORKZONE

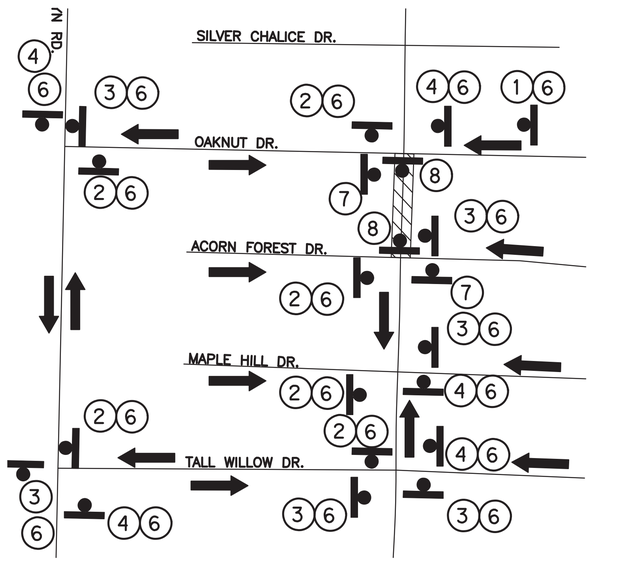
1



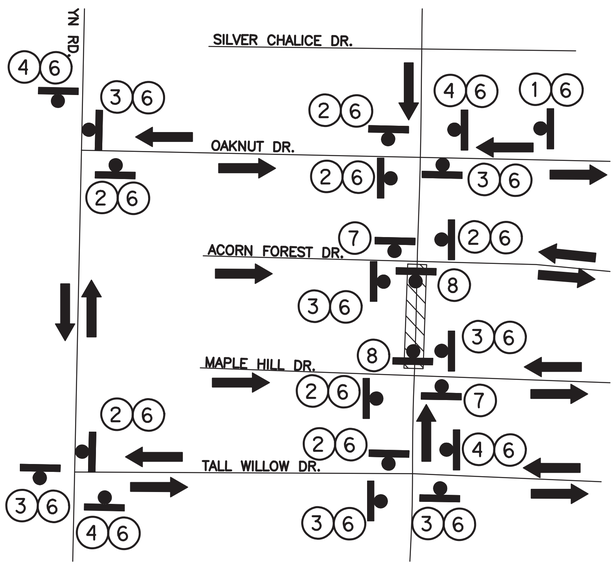
NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.



DETOUR PLAN FOR PHASE 1 STEP 5



DETOUR PLAN FOR PHASE 1 STEP 6



DETOUR PLAN FOR PHASE 1 STEP 7

NOTE:

1. **TYPICAL SPACING OF SIGNS = 120' (FOR 30 MPH)**
2. **FULL CLOSURE OF CHATEAU FOREST DR WITH DETOUR ROUTING IS TO BE IMPLEMENTED DURING THE CONSTRUCTION OF PROP RCP ALONG CHATEAU FOREST DRIVE. CONTRACTOR SHALL MAINTAIN ACCESS TO LOCAL DRIVEWAYS AND WORK TRUCKS.**

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
10/6/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

DETOUR PLAN FOR CHATEAU FOREST DR (PHASE 1 STEP 3 TO STEP 7)

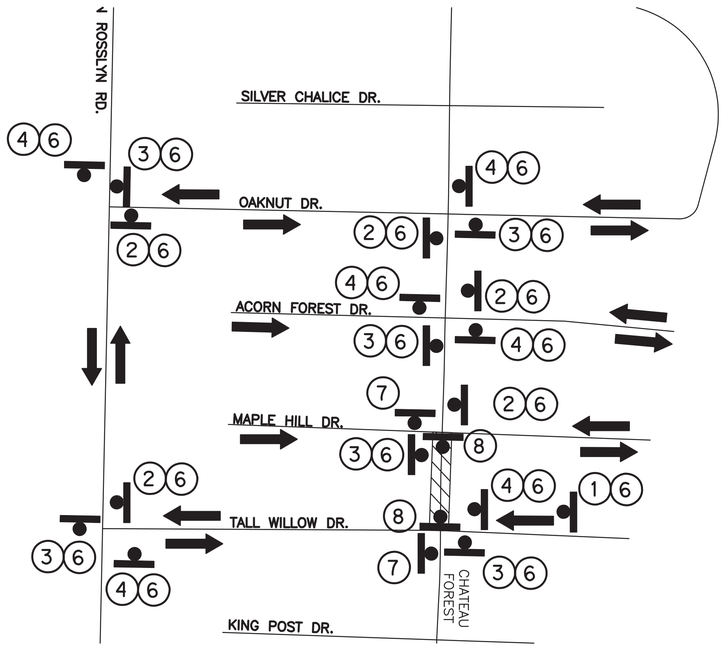
TCP SHEET: 16

WBS NUMBER	M-410029-0001-4
DRAWING SCALE	NTS
CITY OF HOUSTON PM	DOAA HAMDAN, P.E.
SHEET NO.	131 OF 158

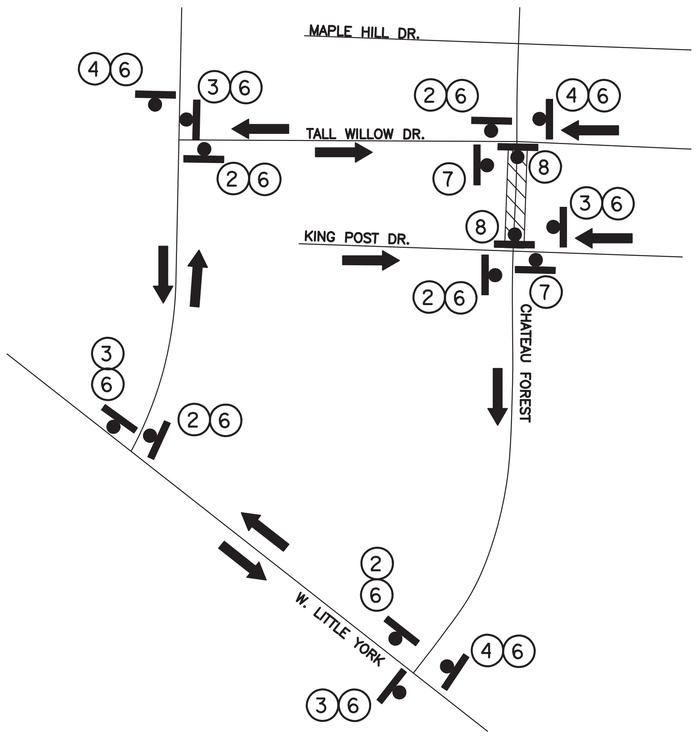
FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Traffic Control Plan\47TCP_PH1_Detour_S3-S6.dgn
DATE:10/31/2025



DETOUR PLAN FOR PHASE 1 STEP 8



DETOUR PLAN FOR PHASE 1 STEP 9

LEGEND:

WORKZONE

1

1 DETOUR AHEAD
CW20-2
36 x 36

2 DETOUR
M4-9R
30 x 24

3 DETOUR
M4-9L
30 x 24

4 DETOUR
M4-9S
30 x 24

5 DEIRDRE ANNE DR
M4-9N
30 x 12

6 CHATEAU FOREST DR

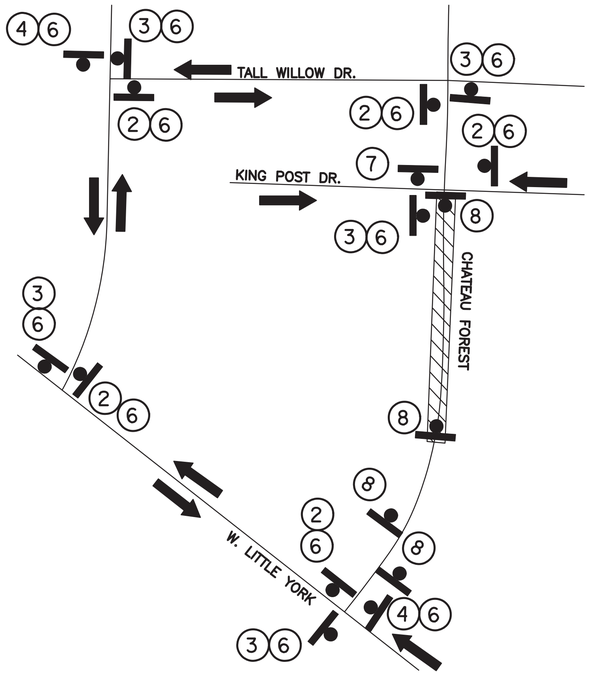
7 END DETOUR
M4-8T
24 x 18

8 ROAD CLOSED
R11-2
48 x 30

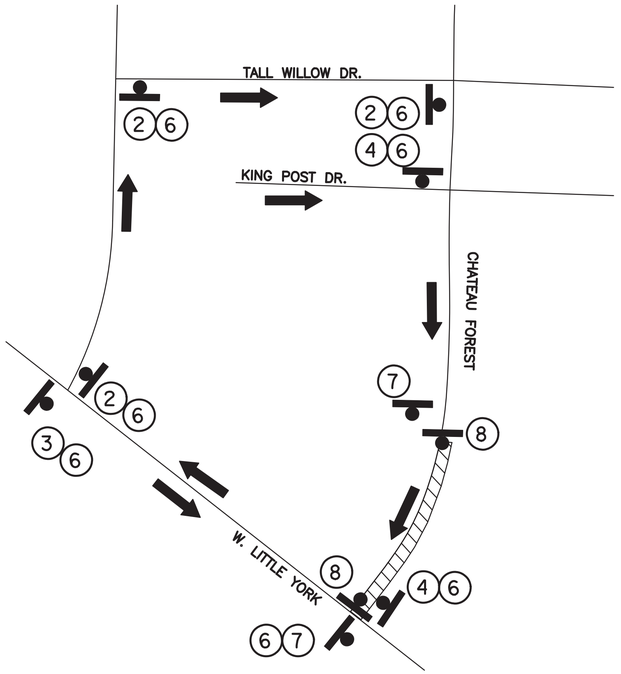
NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

NOTE:

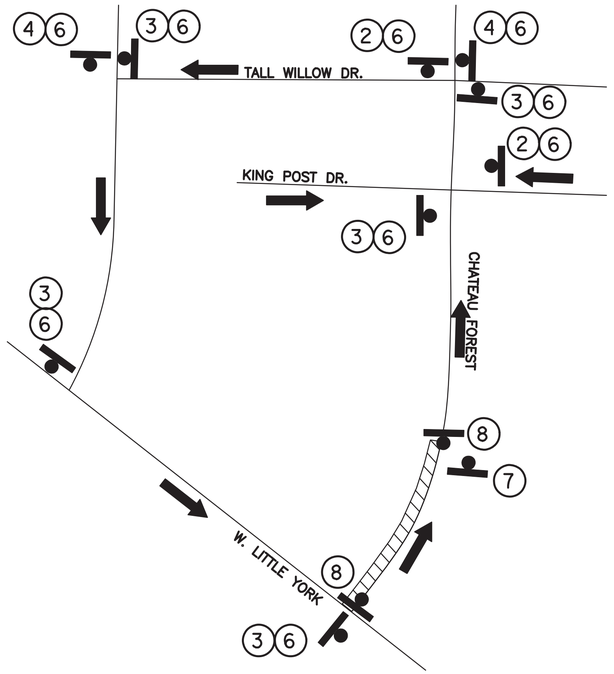
1. TYPICAL SPACING OF SIGNS = 120' (FOR 30 MPH)
2. FULL CLOSURE OF CHATEAU FOREST DR WITH DETOUR ROUTING IS TO BE IMPLEMENTED DURING THE CONSTRUCTION OF PROP RCP ALONG CHATEAU FOREST DRIVE. CONTRACTOR SHALL MAINTAIN ACCESS TO LOCAL DRIVEWAYS AND WORK TRUCKS.



DETOUR PLAN FOR PHASE 1 STEP 10



DETOUR PLAN FOR PHASE 1 STEP 11A



DETOUR PLAN FOR PHASE 1 STEP 11B

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED
PROFESSIONAL ENGINEER
10/6/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

DETOUR PLAN FOR CHATEAU FOREST DR (PHASE 1 STEP 8 TO STEP 11)

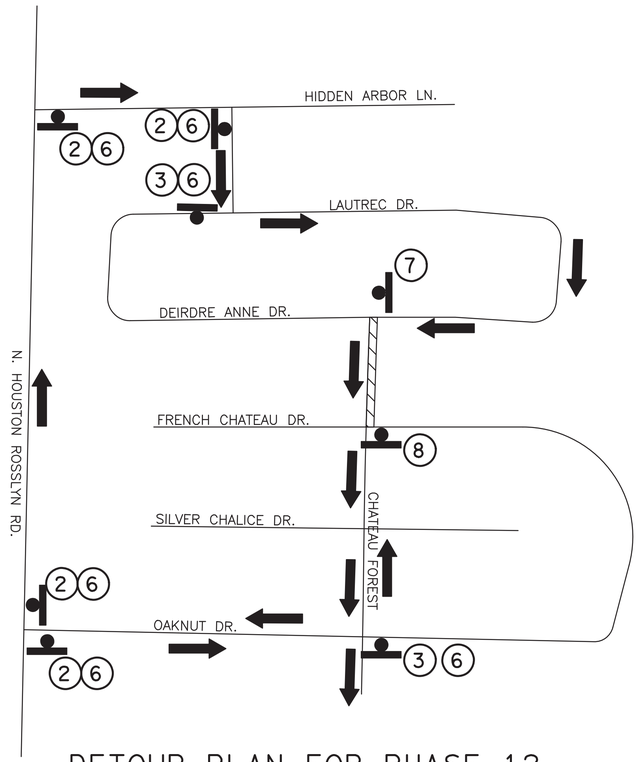
TCP SHEET: 17

WBS NUMBER	M-410029-0001-4
DRAWING SCALE	NTS
CITY OF HOUSTON PM	DOAA HAMDAN, P.E.
SHEET NO.	132 OF 158

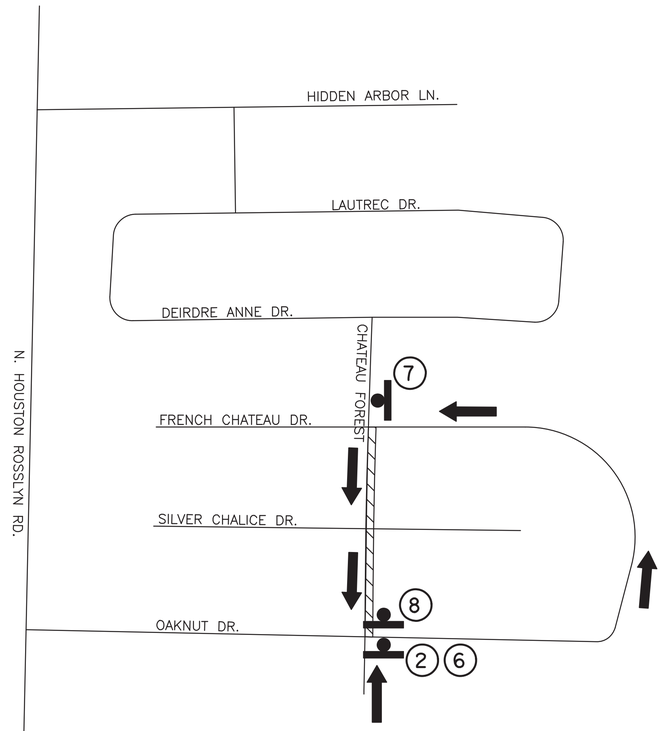
FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

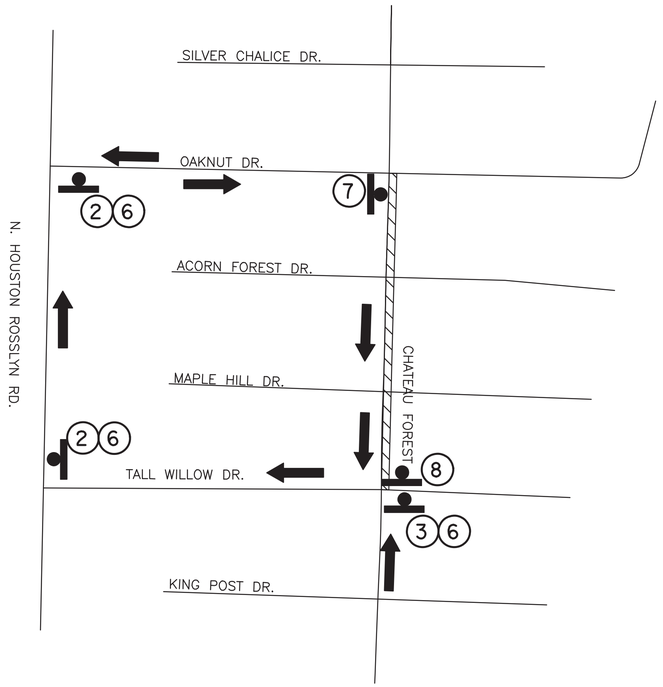
FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Traffic Control Plan\47TCP_PH1_Detour_S7-S10.dgn
DATE:10/31/2025

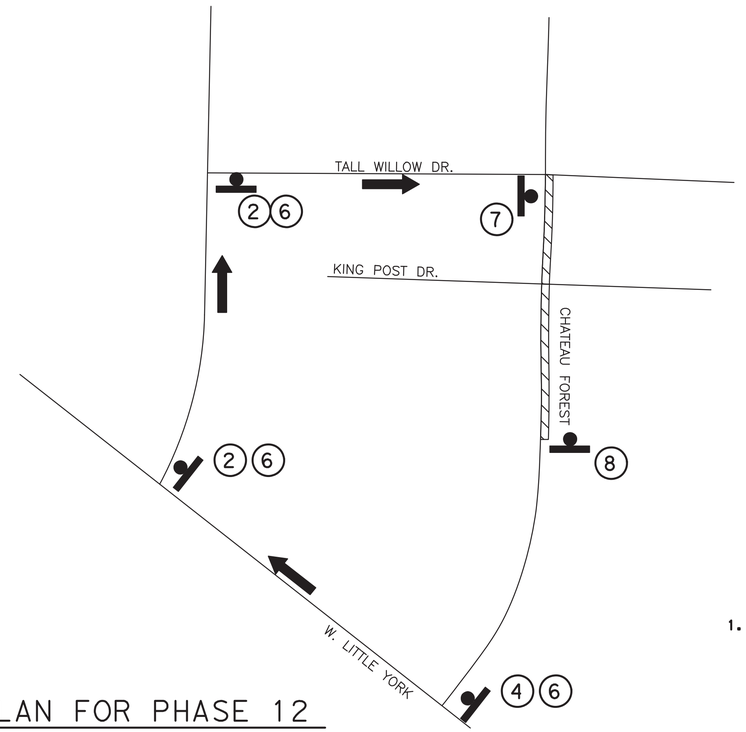


DETOUR PLAN FOR PHASE 12



DETOUR PLAN FOR PHASE 12





TYPICAL DETOUR PLAN FOR PHASE 12

LEGEND:

WORKZONE

1

DETOUR AHEAD
CW20-2
36 x 36

DETOUR
M4-9R
30 x 24

DETOUR
M4-9L
30 x 24

DETOUR
M4-9S
30 x 24

DEIRDRE ANNE DR
M4-9N
30 x 12

CHATEAU FOREST DR
M4-9N
30 x 12

END DETOUR
M4-8T
24 x 18

ROAD CLOSED
R11-2
48 x 30

1. TYPICAL SPACING OF SIGNS = 120' (FOR 30 MPH)

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
10/6/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

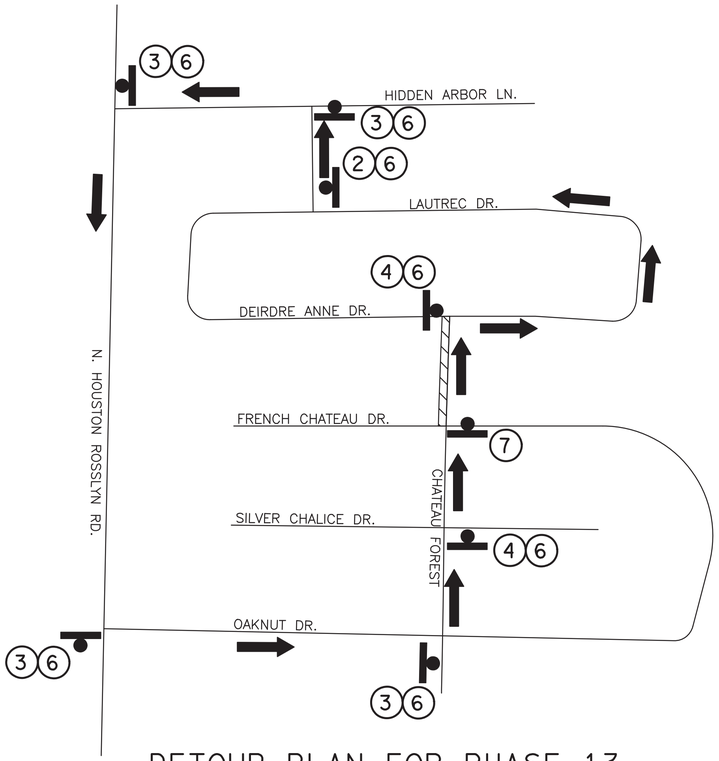
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

DETOUR PLAN
FOR CHATEAU FOREST DR
(PHASE 1 STEP 12)

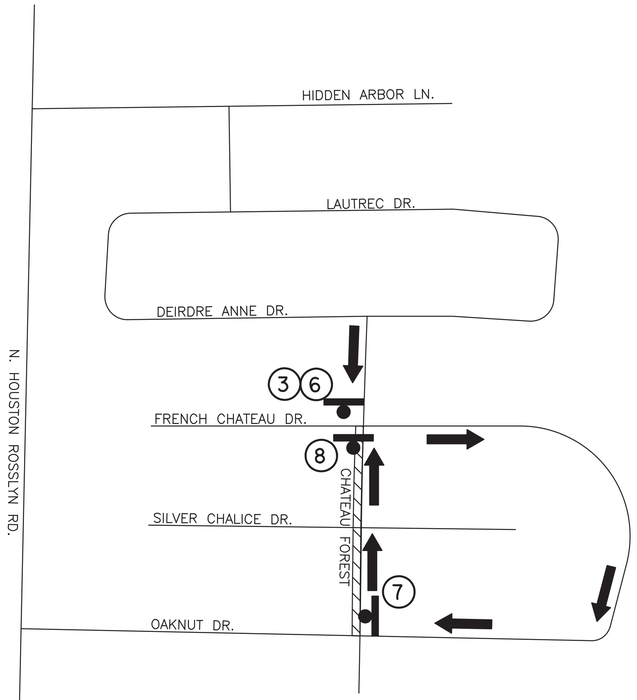
TCP SHEET: 17A

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED
DRAWING SCALE	81720 CITY DRAWING NUMBER
NTS	Approval Date 09/19/25
CITY OF HOUSTON PM	HOUSTON TX
DOAA HAMDAN, P.E.	
SHEET NO. 132A OF 158	

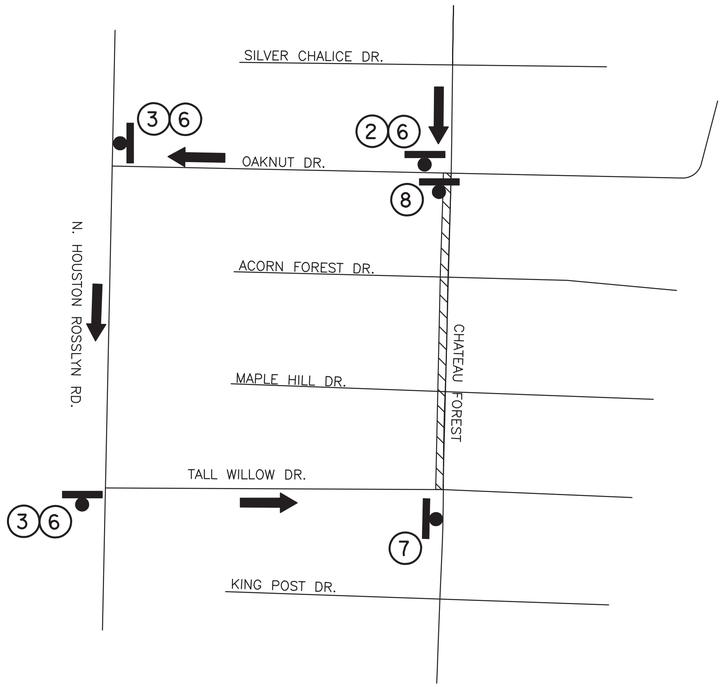
FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Traffic Control Plan\47TCP_PH1_Detour_S12.dgn
DATE:10/31/2025

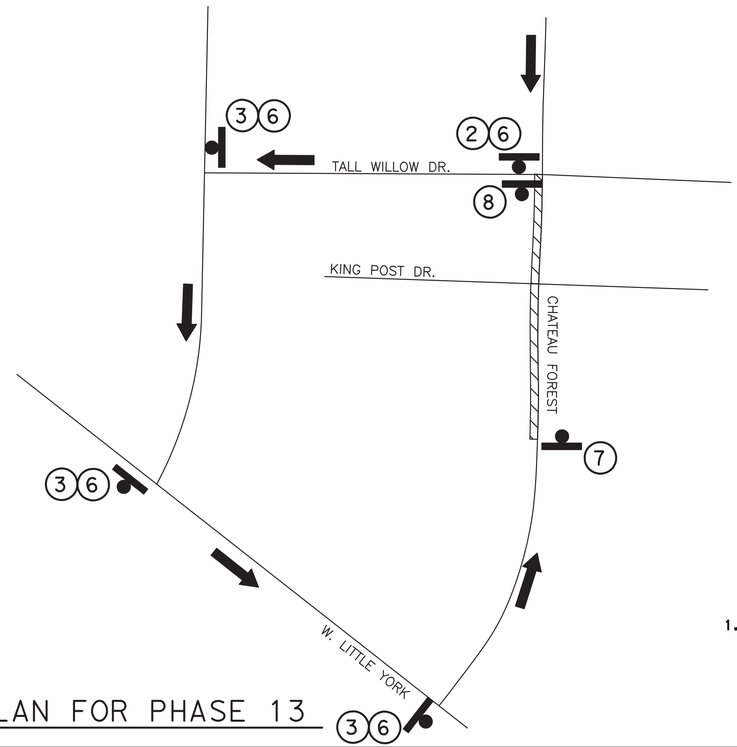


DETOUR PLAN FOR PHASE 13



DETOUR PLAN FOR PHASE 13





TYPICAL DETOUR PLAN FOR PHASE 13

LEGEND:

WORKZONE

1

1 — DETOUR AHEAD — CW20-2, 36 x 36

2 — DETOUR — M4-9R, 30 x 24

3 — DETOUR — M4-9L, 30 x 24

4 — DETOUR — M4-9S, 30 x 24

5 — DEIRDRE ANNE DR — M4-9N, 30 x 12

6 — CHATEAU FOREST DR — M4-9N, 30 x 12

7 — END DETOUR — M4-8T, 24 x 18

8 — ROAD CLOSED — R11-2, 48 x 30

1. TYPICAL SPACING OF SIGNS = 120' (FOR 30 MPH)

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS — V. N. MURTHY MADE — 134936 — LICENSED PROFESSIONAL ENGINEER — 10/6/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

DETOUR PLAN FOR CHATEAU FOREST DR (PHASE 1 STEP 13)

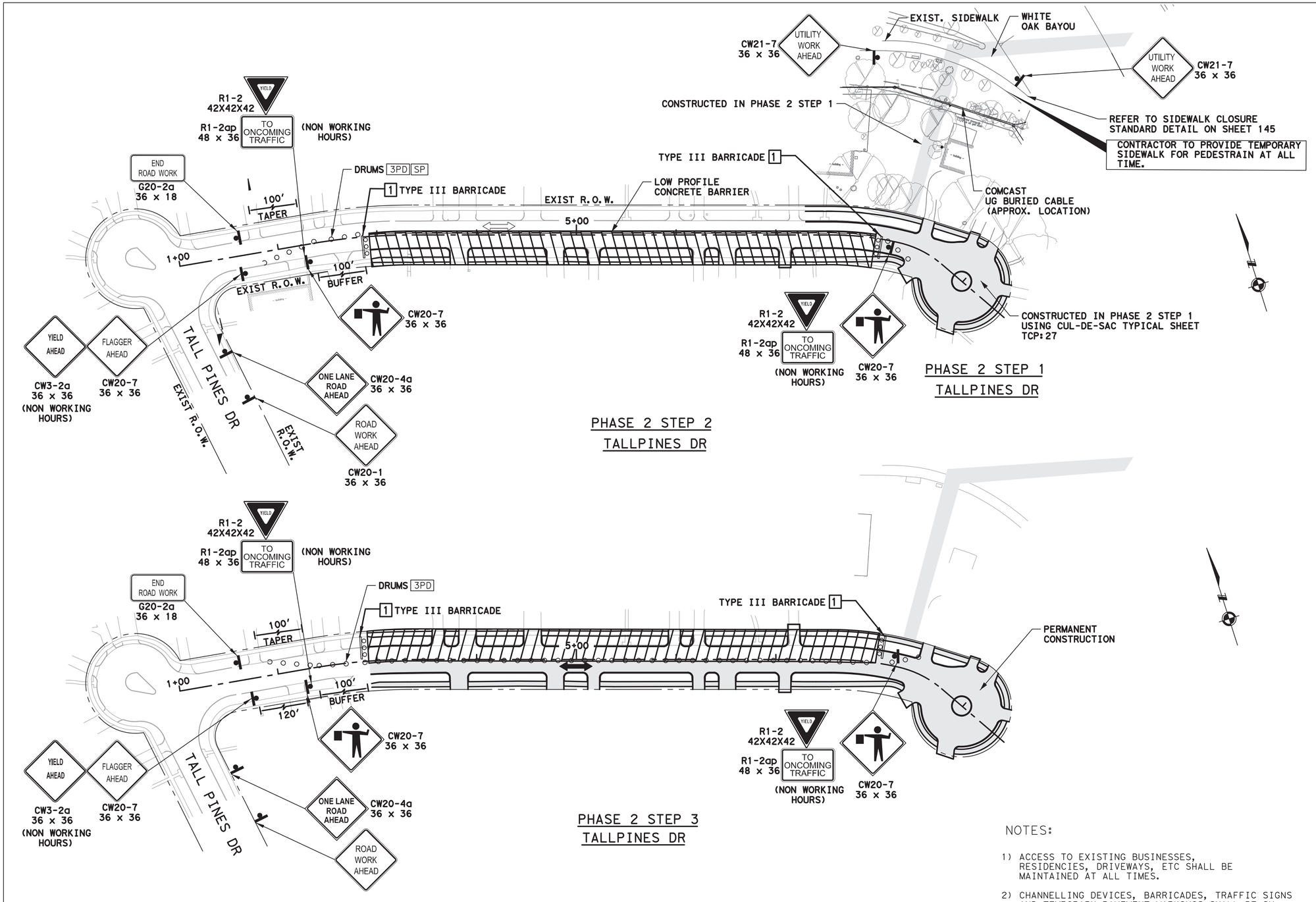
TCP SHEET: 17B

WBS NUMBER	M-410029-0001-4
DRAWING SCALE	NTS
CITY OF HOUSTON PM	DOAA HAMDAN, P.E.
SHEET NO. 132B OF 158	

FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720 CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Traffic Control Plan\47TCP_PH1_Detour_S13.dgn
DATE:10/31/2025



50 0 25 50 100

SCALE: 1" = 50'-0" FEET FOR 22"X34" SHEET

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

LEGEND:

- CONSTRUCTION WORK ZONE (PHASE 2 STEP 2)
- CONSTRUCTION WORK ZONE (PHASE 2 STEP 3)
- PERMANENT CONSTRUCTION
- PLASTIC DRUM, CONE, OR TUBULAR MARKER
- PROPOSED SIGN POST
- 1 TYPE III BARRICADE
- PROPOSED TRAFFIC FLOW
- EXISTING TRAFFIC FLOW
- 2 LOW PROFILE CONCRETE BARRIER (LPCB) (TY 1 AND TY 2)
- 3PD PLASTIC DRUM (DRUM) (SEE LEGEND SP FOR SPACING)
- 4CL DRUM WITH CHEVRON (CW1-8) ON EVERY OTHER DRUM (LEFT) (SEE LEGEND SP FOR SPACING)
- 4CR DRUM WITH CHEVRON (CW1-8) ON EVERY OTHER DRUM (RIGHT) (SEE LEGEND SP FOR SPACING)
- 5VP DRUM WITH VERTICAL PANEL (SEE LEGEND SP FOR SPACING)
- 6MC TUBULAR MARKERS OR TRAFFIC CONES (SEE LEGEND SP FOR SPACING)
- SP SPACED @ 20' C-C (ALONG WORK ZONE & TAPERS) SPACED @ 5' C-C (AT INTERSECTIONS & ON RADII)
- 7 TRAILER MOUNTED FLASHING ARROW PANEL (FAP)

NOTES:

1) ACCESS TO EXISTING BUSINESSES, RESIDENCIES, DRIVEWAYS, ETC SHALL BE MAINTAINED AT ALL TIMES.
2) CHANNELLING DEVICES, BARRICADES, TRAFFIC SIGNS AND TEMPORARY PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH LATEST VERSION OF TEXAS MUTCD.
3) FOR TRAFFIC SIGNS AT INTERSECTIONS AND CROSS-STREET CONSTRUCTION, PLEASE REFER SHEET FROM TCP:20 TO TCP:21
4) USE FLAGGER OPERATION FOR TRAFFIC FLOW DURING WORKING HOURS ONLY, PLEASE REFER TCP:25
6) CONSTRUCTION WILL BE DONE 300 FT AT A TIME TO ENSURE EFFECTIVE FLAGGERS OPERATION.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
10/6/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

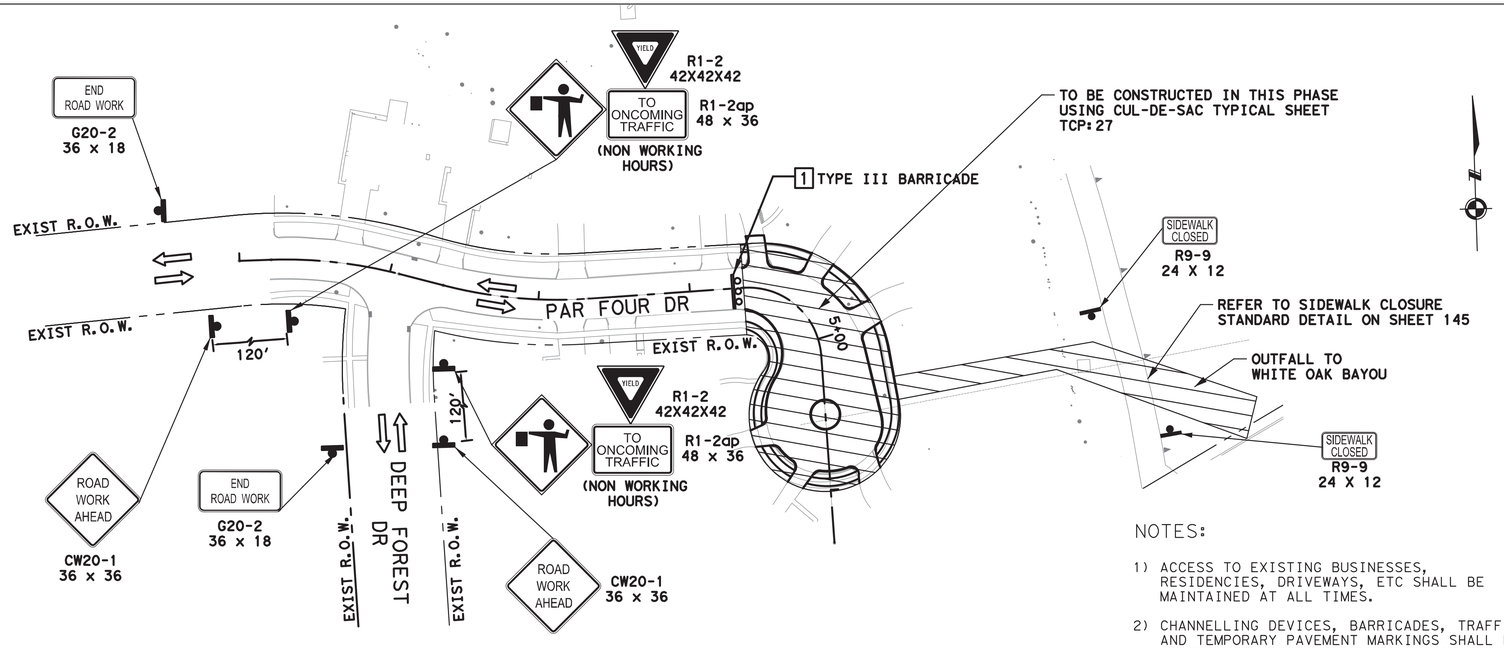
TRAFFIC CONTROL PLANS
PHASE 2 STEP 1
PHASE 2 STEP 2
PHASE 2 STEP 3

TCP SHEET:18

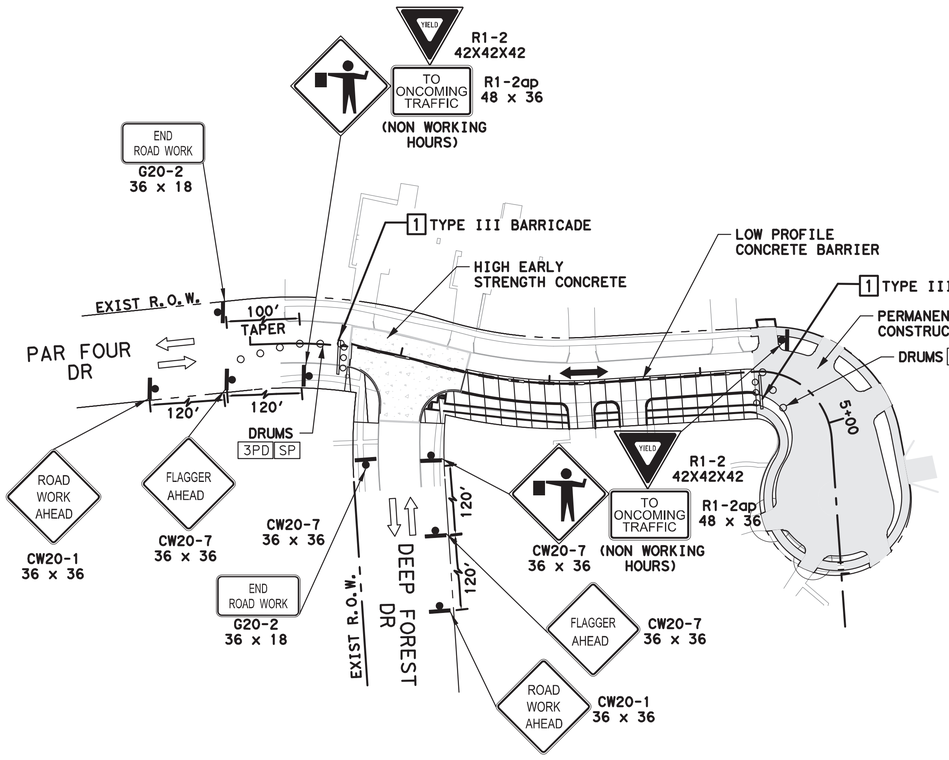
WBS NUMBER	M-410029-0001-4
DRAWING SCALE	1"=50'
CITY OF HOUSTON PM	DOAA HAMDAN, P.E.
SHEET NO. 133 OF 158	

FOR CITY OF HOUSTON USE ONLY
HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

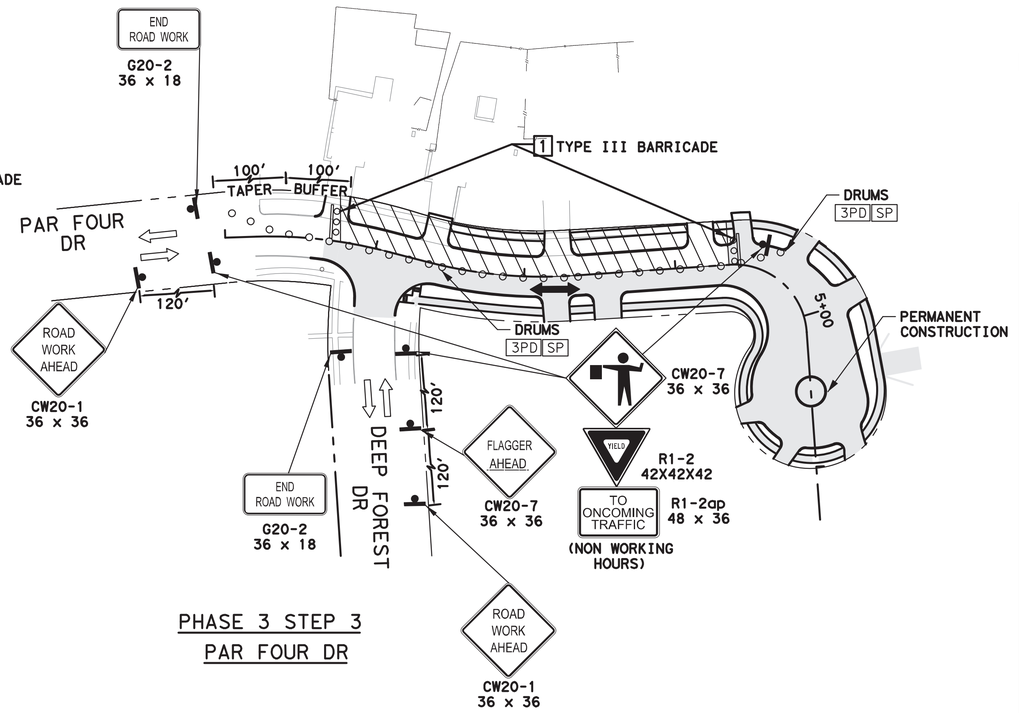
FILE:P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Traffic Control Plan\47_Phase 2_STEP 1-2 _TallPines.dgn
DATE:10/31/2025



PHASE 3 STEP 1
PAR FOUR DR



PHASE 3 STEP 2
PAR FOUR DR



PHASE 3 STEP 3
PAR FOUR DR

NOTES:

1) ACCESS TO EXISTING BUSINESSES, RESIDENCIES, DRIVEWAYS, ETC SHALL BE MAINTAINED AT ALL TIMES.

2) CHANNELLING DEVICES, BARRICADES, TRAFFIC SIGNS AND TEMPORARY PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH LATEST VERSION OF TEXAS MUTCD.

3) FOR TRAFFIC SIGNS AT INTERSECTIONS AND CROSS-STREET CONSTRUCTION, PLEASE REFER SHEET FROM TCP: 20 TO TCP: 21

4) USE FLAGGER OPERATION FOR TRAFFIC FLOW DURING WORKING HOURS ONLY, PLEASE REFER TCP: 25

50 0 25 50 100

SCALE: 1" = 50'-0" FEET FOR 22"X34" SHEET

LEGEND:

- CONSTRUCTION WORK ZONE (PHASE 3 STEP 1)
- CONSTRUCTION WORK ZONE (PHASE 3 STEP 2
- CONSTRUCTION WORK ZONE (PHASE 3 STEP 3)
- PREVIOUS PERMANENT CONSTRUCTION
- PREVIOUS TEMPORARY CONSTRUCTION
- PLASTIC DRUM, CONE, OR TUBULAR MARKER
- PROPOSED SIGN POST
- 1 TYPE III BARRICADE
- PROPOSED TRAFFIC FLOW
- EXISTING TRAFFIC FLOW
- 2 LOW PROFILE CONCRETE BARRIER (LPCB) (TY 1 AND TY 2)
- 3PD PLASTIC DRUM (DRUM) (SEE LEGEND SP FOR SPACING)
- 4CL DRUM WITH CHEVRON (CW1-8) ON EVERY OTHER DRUM (LEFT) (SEE LEGEND SP FOR SPACING)
- 4CR DRUM WITH CHEVRON (CW1-8) ON EVERY OTHER DRUM (RIGHT) (SEE LEGEND SP FOR SPACING)
- 5VP DRUM WITH VERTICAL PANEL (SEE LEGEND SP FOR SPACING)
- 6MC TUBULAR MARKERS OR TRAFFIC CONES (SEE LEGEND SP FOR SPACING)
- SP SPACED @ 20' C-C (ALONG WORK ZONE & TAPERS) SPACED @ 5' C-C (AT INTERSECTIONS & ON RADII)
- 7 TRAILER MOUNTED FLASHING ARROW PANEL (FAP)

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

1

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
10/6/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

TRAFFIC CONTROL PLANS

PHASE 3 STEP 1
PHASE 3 STEP 2
PHASE 3 STEP 3

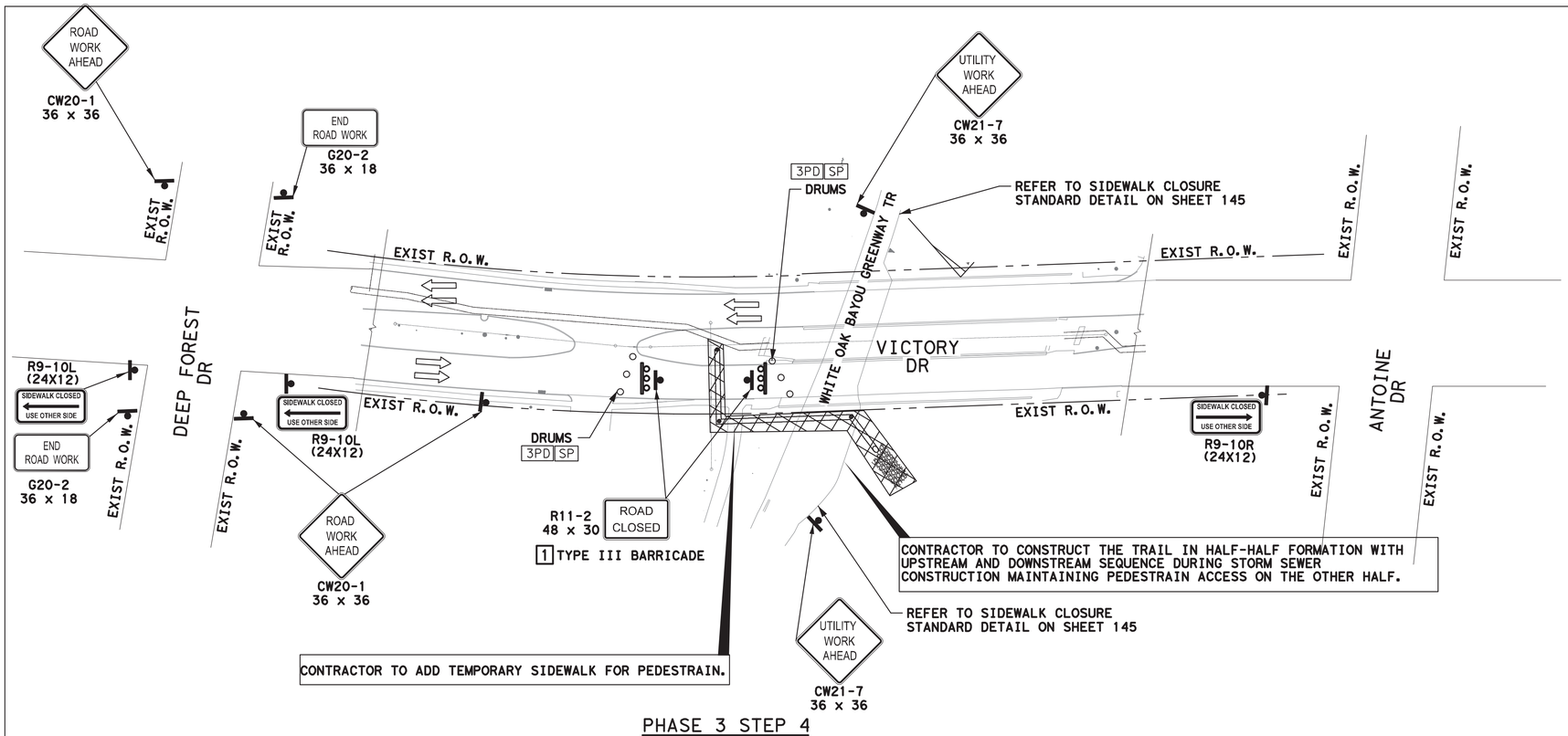
TCP SHEET: 19

WBS NUMBER
M-410029-0001-4
DRAWING SCALE
1"=50'
CITY OF HOUSTON PM
DOAA HAMDAN, P.E.
SHEET NO. 134 OF 158

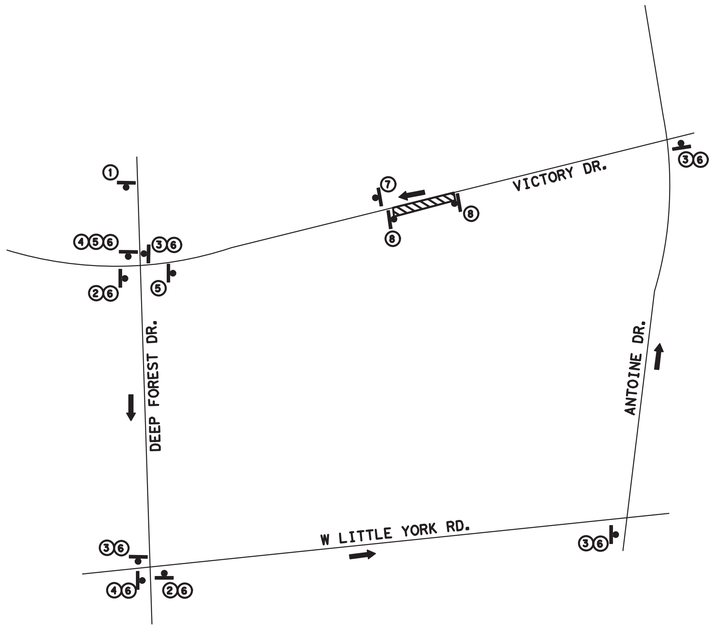
FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

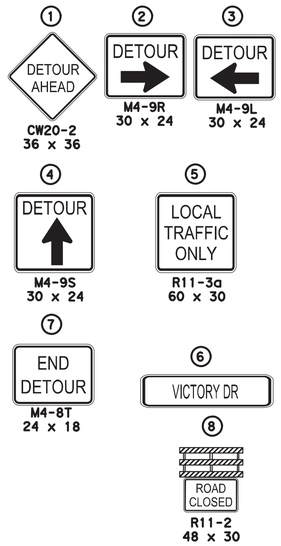
FILE: P:\ACTIVE\21DR47\Working\Drawings (02 New Design)\xrefs MicroStation\Sheets\Traffic Control Plan\47_Phase 3_STEP 1&2&3 _Parfour.dgn
DATE: 10/31/2025



PHASE 3 STEP 4
VICTORY DR



DETOUR PLAN FOR PHASE 3 STEP 4
N.T.S.



SCALE: 1" = 50'-0" FEET FOR 22"X34" SHEET

LEGEND:

- CONSTRUCTION WORK ZONE (PHASE 3 STEP 4)
- PREVIOUS PERMANENT CONSTRUCTION
- PREVIOUS TEMPORARY CONSTRUCTION
- PLASTIC DRUM, CONE, OR TUBULAR MARKER
- PROPOSED SIGN POST
- 1 TYPE III BARRICADE
- PROPOSED TRAFFIC FLOW
- EXISTING TRAFFIC FLOW
- 2 LOW PROFILE CONCRETE BARRIER (LPCB) (TY 1 AND TY 2)
- 3PD PLASTIC DRUM (DRUM) (SEE LEGEND SP FOR SPACING)
- 4CL DRUM WITH CHEVRON (CW1-8) ON EVERY OTHER DRUM (LEFT) (SEE LEGEND SP FOR SPACING)
- 4CR DRUM WITH CHEVRON (CW1-8) ON EVERY OTHER DRUM (RIGHT) (SEE LEGEND SP FOR SPACING)
- 5VP DRUM WITH VERTICAL PANEL (SEE LEGEND SP FOR SPACING)
- 6MC TUBULAR MARKERS OR TRAFFIC CONES (SEE LEGEND SP FOR SPACING)
- SP SPACED @ 20' C-C (ALONG WORK ZONE & TAPERS) SPACED @ 5' C-C (AT INTERSECTIONS & ON RADII)
- 7 TRAILER MOUNTED FLASHING ARROW PANEL (FAP)

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

NOTES:

1) ACCESS TO EXISTING BUSINESSES, RESIDENCIES, DRIVEWAYS, ETC SHALL BE MAINTAINED AT ALL TIMES.
2) CHANNELLING DEVICES, BARRICADES, TRAFFIC SIGNS AND TEMPORARY PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH LATEST VERSION OF TEXAS MUTCD.
3) FOR TRAFFIC SIGNS AT INTERSECTIONS AND CROSS-STREET CONSTRUCTION, PLEASE REFER SHEET FROM TCP:20 TO TCP:21
4) TYPICAL SPACING OF SIGNS = 120' (FOR 30 MPH)

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
10/6/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

TRAFFIC CONTROL PLANS AND DETOUR PLAN FOR PHASE 3 STEP 4

TCP SHEET: 19A

WBS NUMBER
M-410029-0001-4
DRAWING SCALE
1"=50'
CITY OF HOUSTON PM
DOAA HAMDAN, P.E.
SHEET NO. 135 OF 158

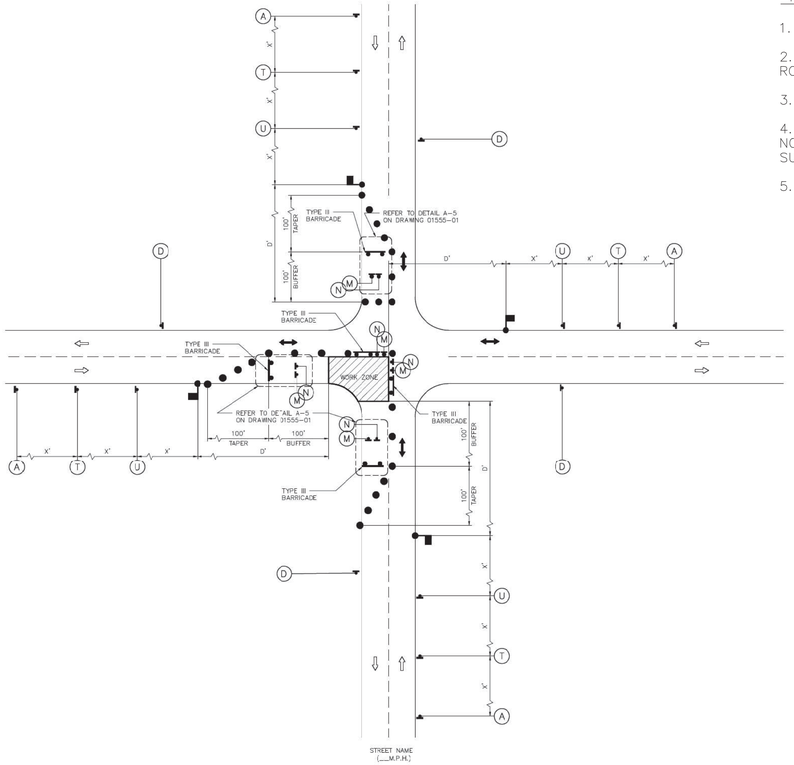
FOR CITY OF HOUSTON USE ONLY

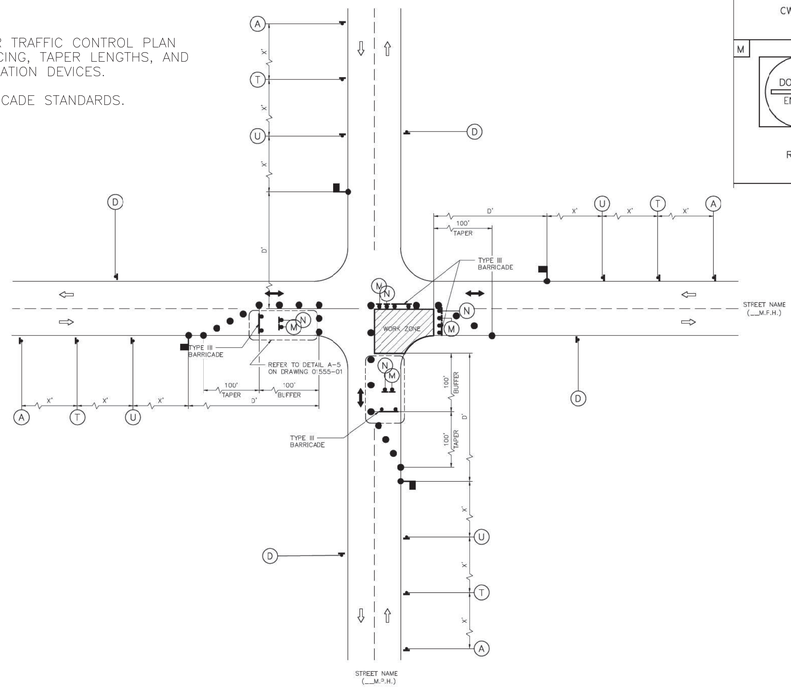
HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

FILE:P:\ACTIVE\21DR47\WorkingDrawings (02 New Design)\xrefs MicroStation\Sheets\Traffic Control Plan\47_Phase 3_STEP 4 _Victory Dr.dgn
DATE:10/31/2025

NOTES:

1. MINOR WORK ONLY.
2. CONTRACTOR TO USE ONE–LANE ROAD CLOSURE AND DETOUR ROUTING FOR MAJOR OPERATIONS.
3. DAYTIME WORK ONLY.
4. SEE TCP SHEET 1 OF 27 FOR TRAFFIC CONTROL PLAN NOTES, LEGEND, TYPICAL SIGN SPACING, TAPER LENGTHS, AND SUGGESTED SPACING OF CHANNELIZATION DEVICES.
5. SEE SHEET TCP:22 FOR BARRICADE STANDARDS.

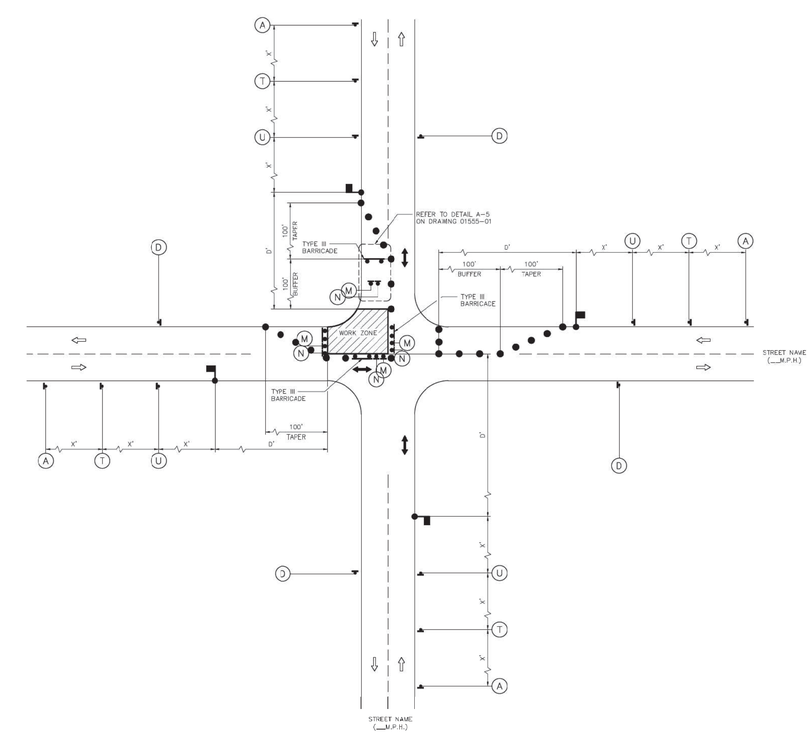


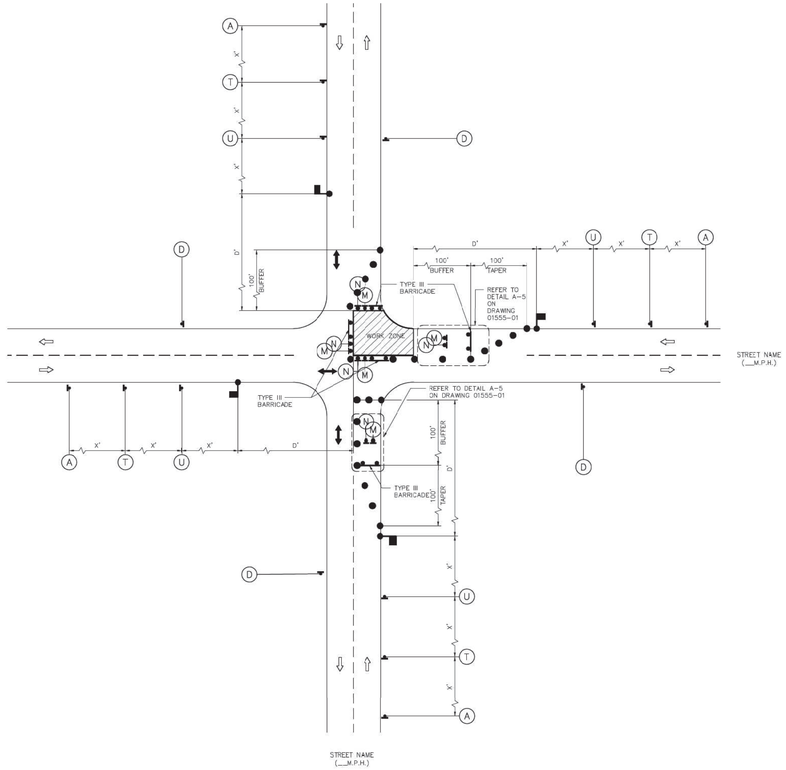


A ROAD WORK AHEAD CW20–1	T ONE LANE ROAD AHEAD CW20–4	U
M DO NOT ENTER R5–1	N ROAD CLOSED R11–2	D END ROAD WORK G20–2

1

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.





ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P–6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
10/6/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

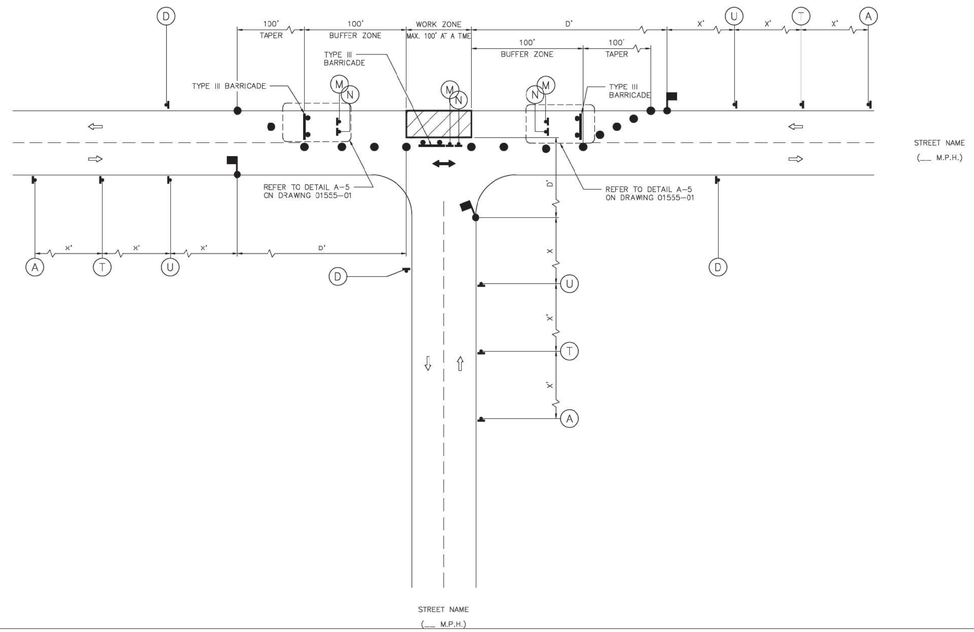
TRAFFIC CONTROL PLANS

TYPICAL 4-WAY INTERSECTION WITH FLAGGING OPERATION (TYP-1)

TCP SHEETS: 20

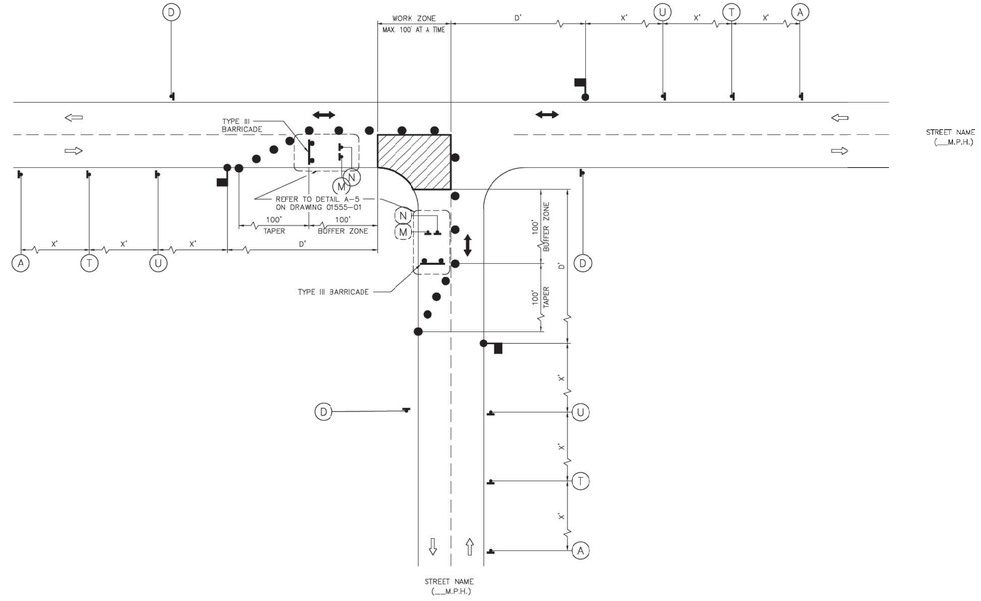
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410029–0001–4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
N/A	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 136 OF 158	

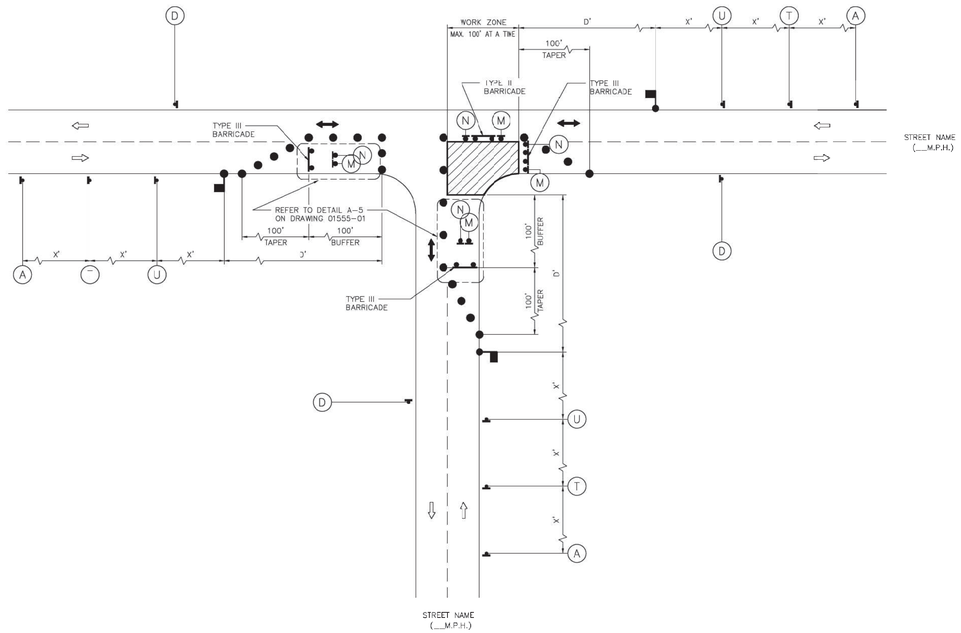
A	T	U	D	M	N
ROAD WORK AHEAD	ONE LANE ROAD AHEAD		END ROAD WORK	DO NOT ENTER	ROAD CLOSED
CW20-1	CW20-4	CW20-7	G20-2	R5-1	R11-2



NOTES:

1. MINOR WORK ONLY.
2. CONTRACTOR TO USE ONE-LANE ROAD CLOSURE AND DETOUR ROUTING FOR MAJOR OPERATIONS.
3. DAYTIME WORK ONLY.
4. SEE TCP SHEET 1 OF 27 FOR TRAFFIC CONTROL PLAN NOTES, LEGEND, TYPICAL SIGN SPACING, TAPER LENGTHS, AND SUGGESTED SPACING OF CHANNELIZATION DEVICES.
5. SEE SHEET TCP:22 FOR BARRICADE STANDARDS.





NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

1

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED
PROFESSIONAL ENGINEER
10/6/2025

SURVEYED BY: Kuo&Associates
FB NO. P-6257

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

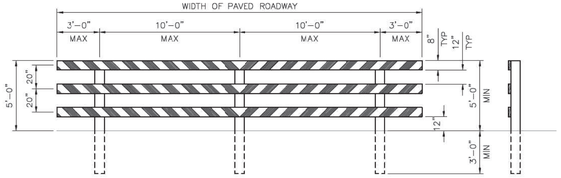
TRAFFIC CONTROL PLANS
TYPICAL TEE INTERSECTION WITH FLAGGING OPERATION (TYP-2)

TCP SHEETS: 21

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
N/A	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 137 OF 158	

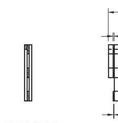
DocuSign Envelope ID: CB71C116-B716-4899-A5EE-0D2F2CC55AF6

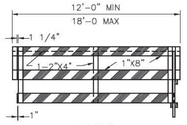
DISCLAIMER:
THE USE OF THIS STANDARD IS GOVERNED BY THE TEXAS ENGINEERING PRACTICE ACT. THE DESIGN REQUIREMENTS ON THIS STANDARD DO NOT PURPORT TO ADDRESS ALL OF THE SAFETY CONCERNS ASSOCIATED WITH ITS USE. THE ENGINEER USING THIS STANDARD IS RESPONSIBLE FOR THE DESIGN AND SAFETY OF THE DESIGN AND FOR ANY USE OF THE STANDARD. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.



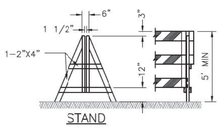
TYPE III BARRICADE
FOR END OF ROAD

FOR TYPE III BARRICADE FOR END OF ROAD, THE THREE (3) RAILS SHALL BE REFLECTIVE RED AND REFLECTIVE WHITE STRIPES ON SIDE FACING TRAFFIC





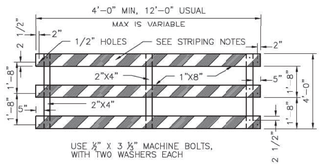
PANEL



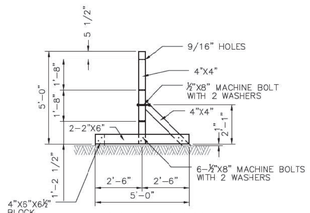
STAND

ASSEMBLY

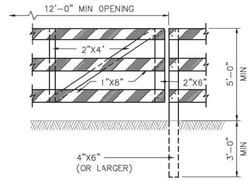
DEMOUNTABLE TYPE III BARRICADE



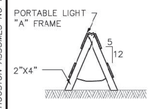
PANEL FOR TYPE III BARRICADE



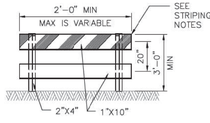
STAND FOR TYPE III BARRICADE



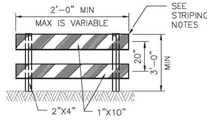
GATE FOR TYPE III BARRICADE



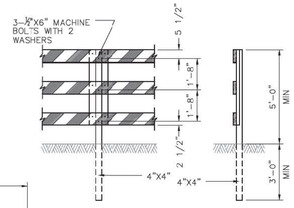
"A" FRAME



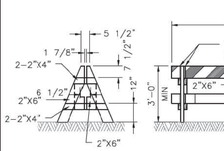
TYPE I



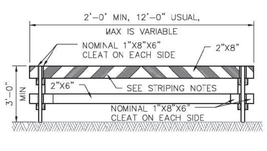
TYPE II



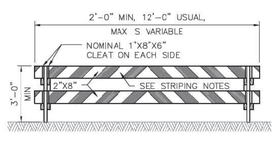
POST FOR TYPE III BARRICADE



DEMOUNTABLE



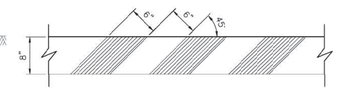
TYPE I



TYPE II

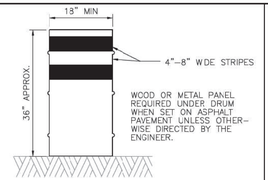
BARRICADE NOTES:

1. THE MOST RECENT EDITION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, AND IT'S REVISIONS, SHALL GOVERN THE CONSTRUCTION AND USE OF ALL ITEMS HEREIN DESCRIBED.
2. CHANNELIZATION DEVICES OTHER THAN BARRICADES SHOULD NORMALLY BE USED FOR CHANNELIZATION PURPOSES.
3. BARRICADES SHOULD NORMALLY BE PLACED PERPENDICULAR TO THE TRAFFIC FLOW. OTHER CHANNELIZING DEVICES, SUCH AS DRUMS, VERTICAL PANELS OR PORTABLE BARRIERS, SHOULD BE USED WHERE NEEDED TO SEPARATE TRAFFIC FROM THE WORK AREA. IN ALL CASES, THE BARRICADES SHOULD BE SO LOCATED AS TO MOST ADVANTAGEOUSLY WARN AND DIRECT TRAFFC.
4. BARRICADES MAY BE DESIGNED AND CONSTRUCTED FROM WOOD OR ANY OTHER SUITABLE MATERIAL APPROVED BY THE TMUTCD. THE CONSTRUCTION DETAILS SHOWN HEREON ARE TYPICAL AND ARE SUGGESTED DETAILS FOR WOOD SUPPORT SYSTEMS FOR BARRICADES. THE DETAILS OF RAIL WIDTH AND STRIPING, NUMBER AND SPACING OF RAILS, MINIMUM LENGTH AND HEIGHT (ABOVE PAVEMENT) OF RAILS MUST BE ADHERED TO WHEN ALTERNATE DESIGNS ARE USED.
5. BARRICADES ARE TO BE CONSTRUCTED OF CLEAN SOUND MATERIAL. ALL SURFACES ABOVE GROUND, WHICH ARE NOT STRIPED, SHALL BE WHITE EXCEPT THE UNPAINTED GALVANIZED METAL ON ALUMINUM COMPONENTS MAY BE USED. COMPONENTS MADE OF LUMBER SHALL BE PAINTED WITH A MINIMUM OF TWO COATS OF AN APPROVED BRAND OF WHITE PAINT TO SECURE THOROUGH COVERAGE AND A UNIFORM WHITE COLOR.
6. THE REFLECTORIZED WHITE AND REFLECTORIZED ORANGE (REFLECTORIZED RED) STRIPES FOR BARRICADES, DRUMS AND VERTICAL PANELS SHALL BE CONSTRUCTED OF HIGH INTESITY SHEETING AND SHALL BE MAINTAINED TO MEET THE APPEARANCE, COLOR AND REFLECTIVITY REQUIREMENTS SET BY DOTT.
7. THE CONTRACTOR SHALL MAINTAIN EACH BARRICADE IN A CLEAN AND GOOD CONDITION.
8. BARRICADES SHALL BE REMOVED UPON COMPLETION OF THE WORK AND/OR THE ELIMINATION OF THE HAZARD ON ANY SECTION.



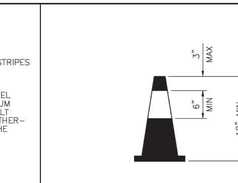
STRIPING FOR BARRICADE

1. FOR ALL TYPES OF BARRICADES WITH RAILS LESS THAN 3'-0" LONG, STRIPES 4" WIDE SHALL BE USED. IDENTIFICATION MARKINGS MAY BE SHOWN ONLY ON BACK SIDE OF BARRICADE RAILS.
2. STRIPING SHOULD COVER THE FULL WIDTH OF THE RAIL. STRIPING OF RAILS, PANELS, ETC, SHOULD SLOPE DOWNWARD AT AN ANGLE OF 45° DEGREES IN DIRECTIONS TRAFFIC IS TO PASS.
3. WHERE A BARRICADE EXTENDS ENTIRELY ACROSS A ROADWAY, IT IS DESIRABLE THAT THE STRIPES SLOPE DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN IN DETOURING. WHEN BOTH RIGHT AND LEFT TURNS ARE PROVIDED FOR, THE CHEVRON STRIPING MAY SLOPE DOWNWARD IN BOTH DIRECTIONS FROM THE CENTER OF THE BARRICADE.



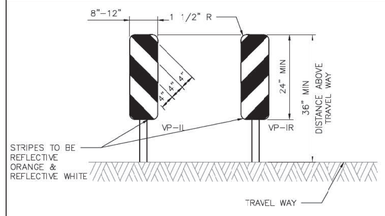
DRUMS

1. DRUMS, SET ON END, AND USED FOR TRAFFIC WARNING OR CHANNELIZATION SHALL BE APPROX 36" IN HEIGHT AND A MIN OF 18" IN DIAMETER. THE CONTRACTOR, AT HIS OPTION, MAY USE DRUMS MADE FROM STEEL BARRELS OR BLACK POLYETHYLENE PLASTIC DRUM LINERS WEIGHING APPROX EIGHT POUNDS EACH. THE MARKINGS ON DRUMS SHALL BE HORIZONTAL, CIRCUMFERENTIAL, REFLECTORIZED ORANGE AND REFLECTORIZED WHITE STRIPES, 4 TO 8 INCHES WIDE. THE FIRST REFLECTORIZED STRIPE SHOULD START WITHIN TWO (2) INCHES OF THE TOP OF THE DRUM. THERE SHALL BE AT LEAST TWO ORANGE AND TWO WHITE STRIPES ON EACH DRUM. IF THERE ARE NON-REFLECTORIZED SPACES BETWEEN THE HORIZONTAL ORANGE AND WHITE STRIPES, THEY SHALL BE NO MORE THAN 2 INCHES WIDE. METAL DRUMS SHALL BE PAINTED BLACK OR ORANGE BEFORE REFLECTORIZED STRIPES ARE ADDED. ALL DRUMS ON PROJECT WILL BE THE SAME COLOR. WHEN DRUMS ARE PLACED IN THE ROADWAY, APPROPIATE WARNING SIGNS SHOULD BE USED. DURING HOURS OF DARKNESS, A FLASHING WARNING LIGHT SHOULD BE PLACED ON DRUMS USED SINGLY AS A WARNING DEVICE. STEADY BURN ELECTRIC LIGHTS OR DELINEATORS SHOULD BE PLACED ON DRUMS USED IN SERIES FOR TRAFFIC CHANNELIZATION. DRUMS SHALL BE WEIGHTED WITH SAND TO THE EXTENT INDICATED IN THE PLANS.
2. CW1-8 CHEVRON SIGNS, CW1-6A ARROW SIGNS OR VP-1 VERTICAL PANELS MOUNTED ABOVE DRUMS MAY BE USED AS SUPPLEMENTS TO DRUM DELINEATION.



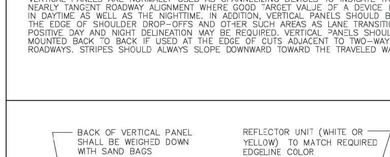
CONES

1. TRAFFIC CONES AND TUBULAR MARKERS SHALL BE A MIN OF 18" INCHES IN HEIGHT WITH A BROADENED BASE AND MAY BE MADE OF VARIOUS MATERIALS TO WITHSTAND IMPACT WITHOUT DAMAGE TO THEMSELVES OR TO VEHICLES. LARGER SIZES SHOULD BE USED ON FREEWAYS AND OTHER ROADWAYS WHERE SPEED ARE RELATIVELY HIGH OR WHERE EVER MORE CONSPICUOUS GUIDANCE IS NEEDED. ORANGE SHALL BE THE PREDOMINANT COLOR ON CONES AND TUBULAR MARKERS. THEY SHOULD BE KEPT CLEAN AND BRIGHT FOR MAX TARGET VALUE. FOR NIGHT TIME USE THEY SHALL BE REFLECTORIZED OR EQUIPPED WITH LIGHTING DEVICES FOR MAX VISIBILITY. REFLECTORIZED MATERIAL SHALL HAVE A SMOOTH, SCALED OUTER SURFACE WHICH WILL DISPLAY THE SAME APPROX COLOR DAY AND NIGHT.
2. REFLECTORIZATION OF TUBULAR MARKERS SHALL BE A MIN OF TWO THREE-INCH BANDS PLACED A MAX OF 2" FROM THE TOP WITH A MAX OF 6" BETWEEN THE BANDS. REFLECTORIZATION OF CONES SHALL BE PROVIDED BY A MIN 6" BAND PLACED A MAX OF 3" FROM THE TOP.
3. CONES OR TUBULAR MARKERS ARE GENERALLY ONLY SUITABLE FOR TEMPORARY USAGE (UP TO 8 HOURS) WITH OTHER CHANNELIZATION DEVICES SUCH AS VERTICAL PANELS OR BARRICADES PREFERRED FOR LONGER TERM USAGE. CARE SHOULD BE TAKEN TO INSURE THAT THEY REMAIN IN THEIR PROPER LOCATION AND IN AN UPRIGHT POSITION.



VERTICAL PANELS (VP)

VERTICAL PANELS ARE NORMALLY USED AS CHANNELIZING DEVICES TO INDICATE TANGENT OR NEARLY TANGENT ROADWAY ALIGNMENT WHERE GOOD TARGET VALUE OF A DEVICE IS NEEDED IN DAYTIME AS WELL AS THE NIGHTTIME. IN ADDITION, VERTICAL PANELS SHOULD BE USED AT THE EDGE OF SHOULDER DROP-OFFS AND OTHER SUCH AREAS AS LANE TRANSITIONS WHERE POSITIVE DAY AND NIGHT DELINEATION MAY BE REQUIRED. VERTICAL PANELS SHOULD BE MOUNTED BACK TO BACK IF USED AT THE EDGE OF CUTS ADJACENT TO TWO-WAY TWO LANE ROADWAYS. STRIPES SHOULD ALWAYS SLOPE DOWNWARD TOWARD THE TRAVELED WAY.



TYPICAL PORTABLE VERTICAL PANEL OR DELINEATOR

OTHER SIMILAR SUPPORTS MAY BE USED WHEN APPROVED BY TMUTCD AND DIRECTED BY THE CITY OF HOUSTON.

APPROVED BY:	APPROVED BY:
Signed by: Salud Ibanez	Signed by: ERING MAUHEN
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: Signed by: Carl Stadlbook	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 01555-14

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

BARRICADE AND CHANNELIZING DEVICES

	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	
NOT TO SCALE	

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

1

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED
PROFESSIONAL ENGINEER
10/6/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

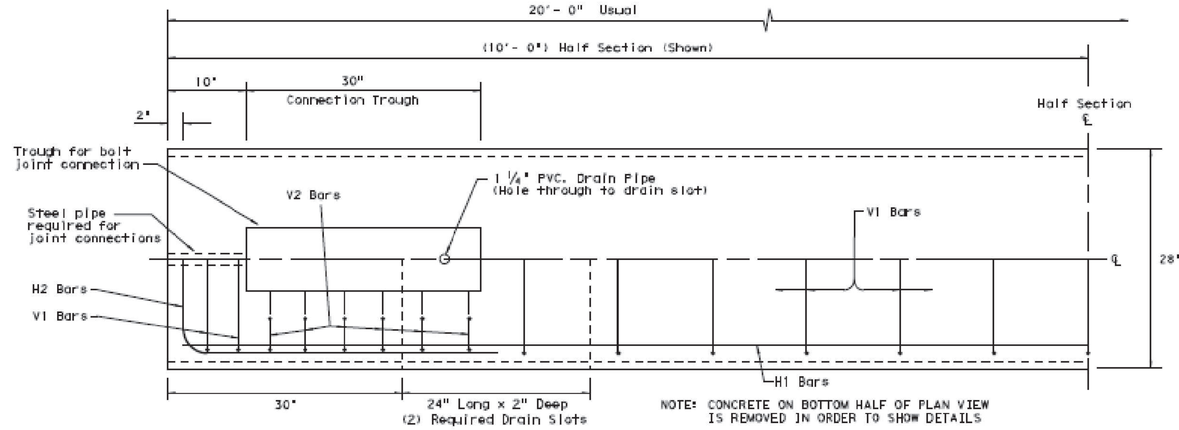
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

TRAFFIC CONTROL PLANS

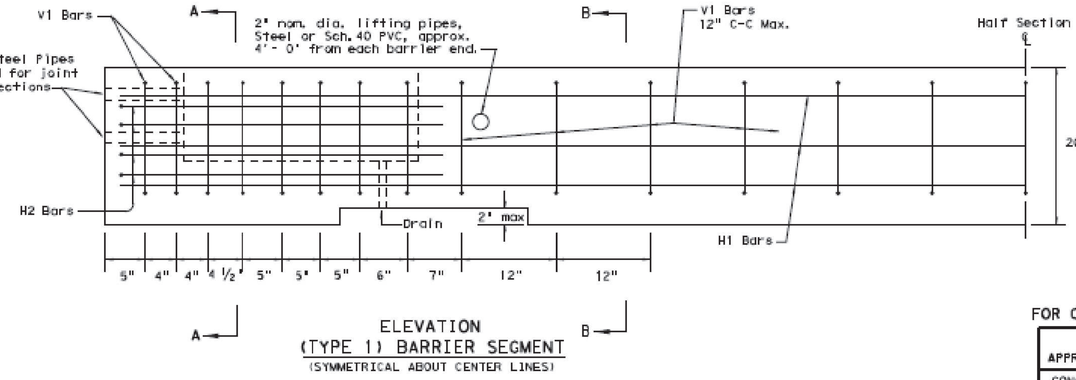
BARRICADE STANDARDS

TCP SHEETS: 22

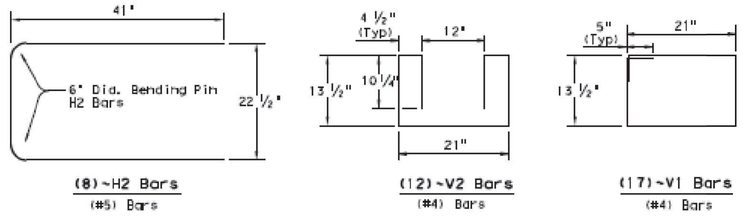
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
N/A	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 138 OF 158	



PLAN
(TYPE 1) BARRIER SEGMENT
(SYMMETRICAL ABOUT CENTER LINES)



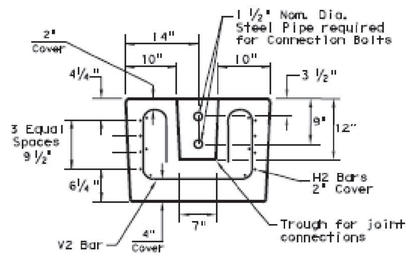
ELEVATION
(TYPE 1) BARRIER SEGMENT
(SYMMETRICAL ABOUT CENTER LINES)



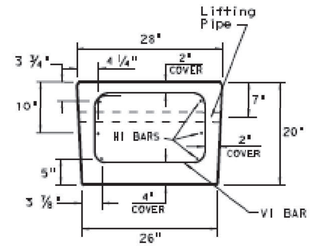
(8)-H2 Bars (#5) Bars
(12)-V2 Bars (#4) Bars
(17)-V1 Bars (#4) Bars

REINFORCING STEEL DETAILS
TYPE 1 - BARRIER SEGMENT

Note: Use 2" Dia. Bending Pin, unless otherwise shown



SECTION A-A



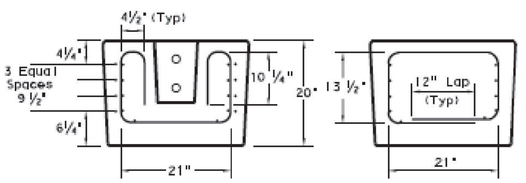
SECTION B-B

GENERAL NOTES

1. Low Profile Concrete Barrier (LPCB), is approved for use in temporary work zone locations, where the posted speed is 45 mph, or less.
2. Concrete shall be Class H for precast barrier with a minimum compressive strength of 3,600 psi.
3. Where used, rebar reinforcement shall be Grade 60 and conform to ASTM A615.
4. Precast LPCB barrier length shall be 20 ft.
5. All barrier edges shall have ¾" chamfer or a tooled radius.
6. Joint connection hardware shall be in accordance with Item 449, "Anchor Bolts," and is considered subsidiary.
7. Steel pipe required for joint connection bolts shall be galvanized in accordance with Item 445, "Galvanizing."
8. Welded wire reinforcement (WWR) may be used in lieu of conventional reinforcement for Type 1 barrier, and shall meet the requirements shown.

FOR CONTRACTORS INFORMATION ONLY

(TYPE 1) APPROX. QUANTITIES		20 FT. SECTION
CONCRETE	CY	2.6
REINFORCING STEEL	LBS	330
TOTAL BARRIER WT.	LBS	11000



SECTION A-A
SECTION B-B

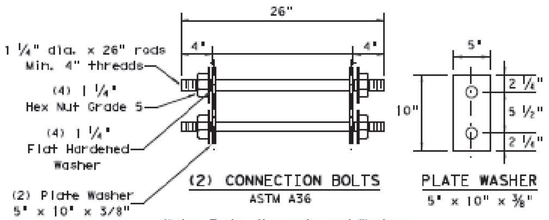
(WWR) GENERAL NOTES

1. Deformed Welded Wire Reinforcement shall conform to ASTM A497.
2. Welded wire cage may be cut or bent, if necessary, but must be approved by the Engineer.
3. Combinations of reinforcing steel and WWR are permitted, as directed by the Engineer. The dimensions from the end of the barrier section to the first wire shall not exceed 3".

REQUIRED (WWR) WIRE DESIGN

8 - (D31) Horizontal Wires (Equally spaced)
10 - (D20) Horizontal Wires (Equally spaced)
29 - (D20) Vertical Wires (Spaced as shown in Elevation View)

WELDED WIRE REINFORCEMENT (WWR)- OPTIONAL REINFORCING



(2) CONNECTION BOLTS
ASTM A36

PLATE WASHER
5" x 10" x ⅜"

Note: Rods, Hex nuts and Washers shall be Galvanized.

SHEET 1 OF 2

Texas Department of Transportation — Design Division Standard

LOW PROFILE CONCRETE BARRIER
PRECAST BARRIER (TYPE 1)
LPCB-13

FILE: lpcb13.dgn	DW: TxDOT	CK: AM	DW: VP	CK:
©TxDOT December 2010	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.

1 | 11/03/2025 | ADDENDUM 1 | R.M. | APP.
NO. | DATE | REVISION

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS — V. N. MURTHY MADE — 134936 — LICENSED PROFESSIONAL ENGINEER — 10/6/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

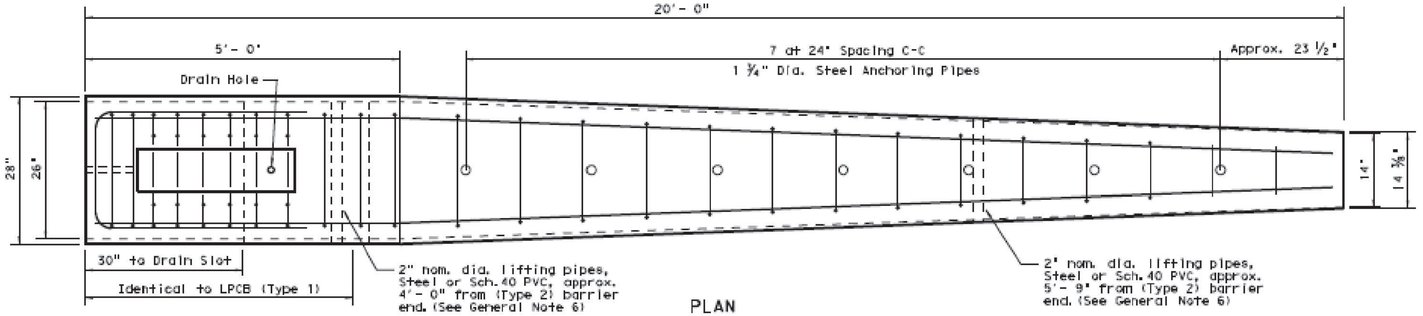
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

TRAFFIC CONTROL PLANS

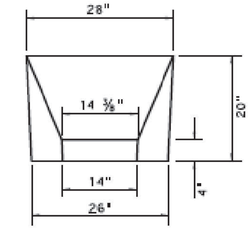
LPCB
PRECAST BARRIER
(TYPE I)

TCP SHEETS: 23

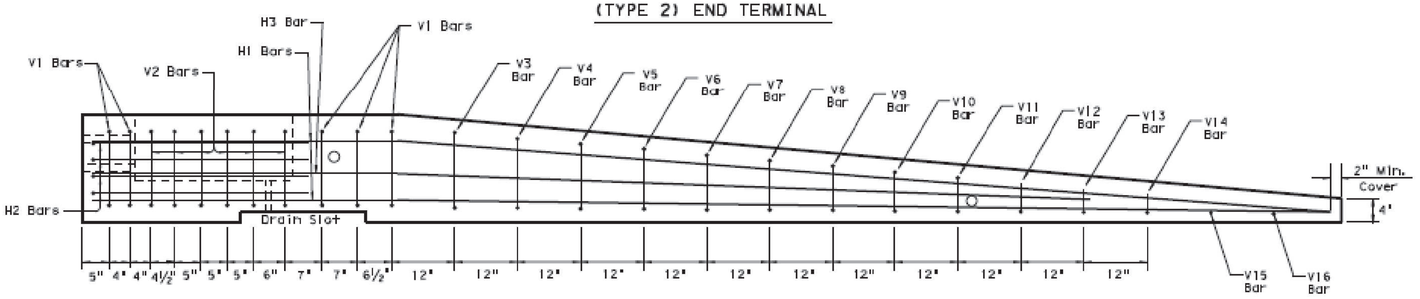
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
N/A	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 139 OF 158	



PLAN
(TYPE 2) END TERMINAL



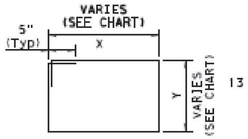
APPROACH VIEW



ELEVATION
(TYPE 2) END TERMINAL

TYPE 2 - NOTES

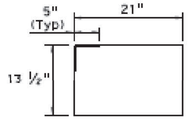
1. Welded wire reinforcment (WWR) is "not" an option for Type 2 Barrier.
2. Type 2 Barrier shall be used as an end treatment for the Type 1 barrier segments, when applicable.
3. The end treatment can be used without the anchor pins in locations that can accommodate approximately 4 ft. of lateral displacement of the end treatment. The use of non-pinned end treatment does not affect the performance or the deflection of the Low-Profile barrier system.
4. The anchor pins are all the same length and are to be driven flush with the top of the (Type 2) barrier surface.
5. The bends in the H3 and H1 bars are slight, no formal bend is necessary.
6. The Type 2 barrier segment must be lifted from the rear first, to prevent cracking of sloped section.
7. See LPCB sheet 1 for additional information.



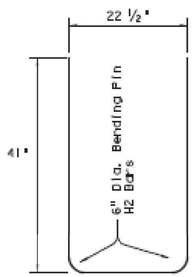
V3-V14 Bars

BAR (#4)	X (IN.)	Y (IN.)
V3 BAR	20 ¼	14 ½
V4 BAR	19 ½	13 ½
V5 BAR	18 ½	12 ¼
V6 BAR	17 ½	11 ¼
V7 BAR	17	10 ¼
V8 BAR	16 ¼	9
V9 BAR	15 ½	8
V10 BAR	14 ½	7
V11 BAR	13 ¾	6

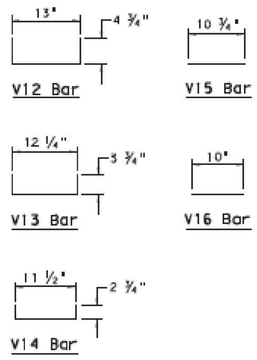
(6)~V2 Bars



(5)~V1 Bars



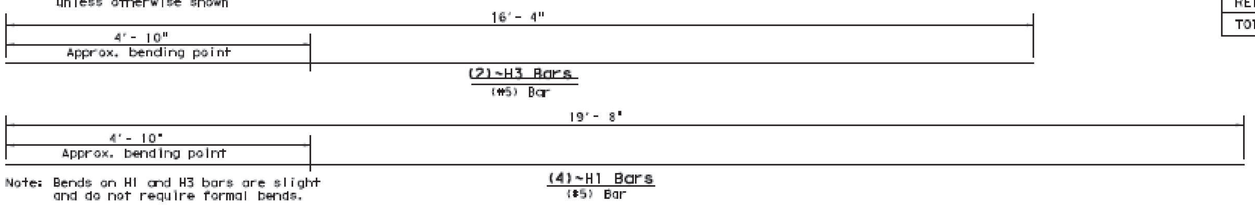
(4)~H2 Bars
(#5) Bars



Note: All V Bars are (#4)

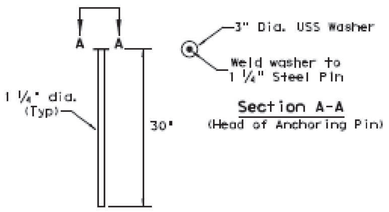
REINFORCING STEEL DETAILS
TYPE 2 - END TERMINAL

Note: Use 2" Dia. Bending Pin, unless otherwise shown



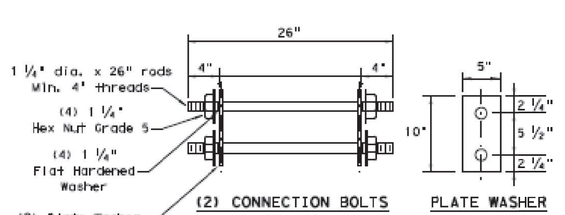
Note: Bends on H1 and H3 bars are slight and do not require formal bends.

Note: Anchoring pipes not shown in Elevation View



Section A-A
(Head of Anchoring Pin)

(7) Anchor Pins
ASTM A36 Steel
(See Note 3)



(2) CONNECTION BOLTS
ASTM A36

PLATE WASHER
5" x 10" x ⅜"

Note: Rods, Hex nuts and Washers shall be Galvanized.

FOR CONTRACTORS INFORMATION ONLY

(TYPE 2) APPROX. QUANTITIES 20 FT. SECTION		
CONCRETE	CY	1.65
REINFORCING STEEL	LBS	240
TOTAL BARRIER WT.	LBS	7000

SHEET 2 OF 2

Texas Department of Transportation — Design Division Standard

LOW PROFILE CONCRETE BARRIER
PRECAST BARRIER (TYPE 2)
LPCB-13

FILE: lpcb13.dgn	DW: TxDOT	CK: AM	DW: VP	CK:
©TxDOT December 2010	CONT	SECT	JOB	HIGHWAY
FED.RD.DIV.NO.				
	DIST	COUNTY		SHEET NO.

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

1

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS — V. N. MURTHY MADE — 134936 — LICENSED PROFESSIONAL ENGINEER — 10/6/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

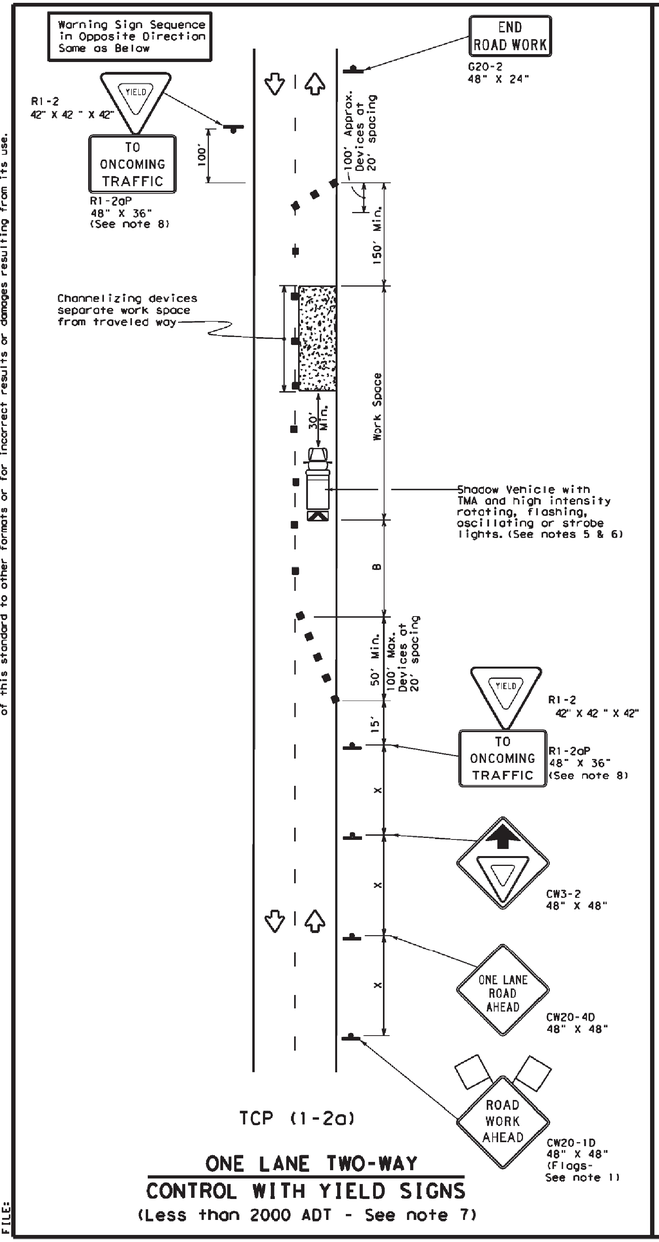
TRAFFIC CONTROL PLANS

LPCB
PRECAST BARRIER
(TYPE II)

TCP SHEETS: 24

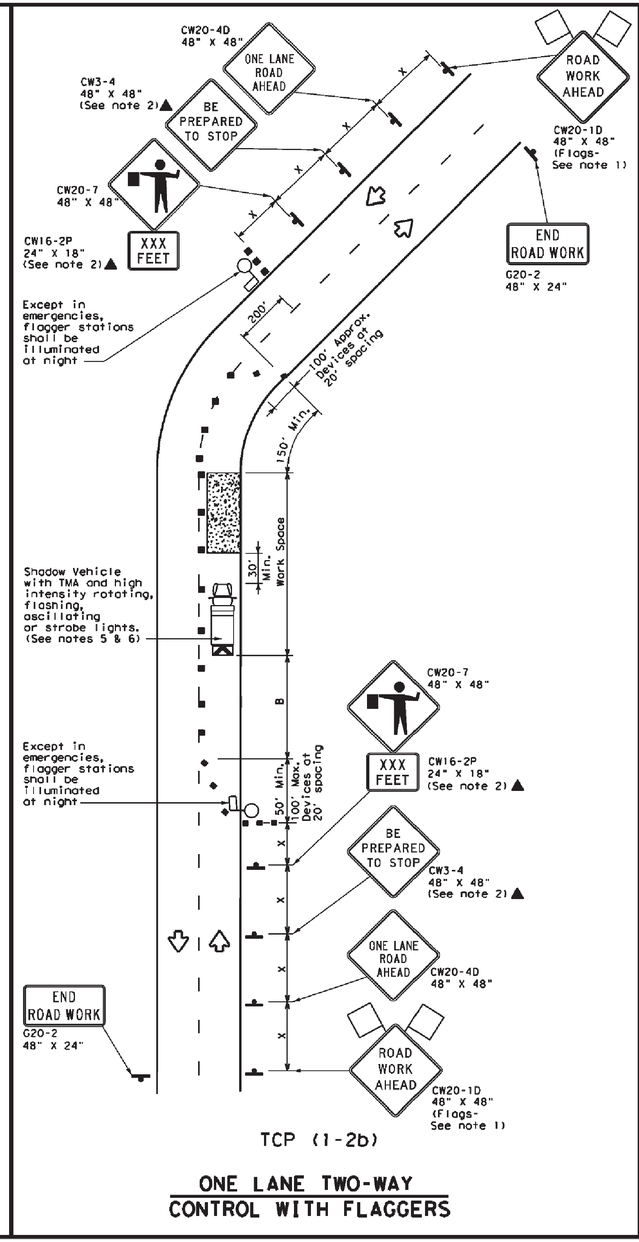
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
N/A	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 140 OF 158	

DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



TCP (1-2a)

ONE LANE TWO-WAY
CONTROL WITH YIELD SIGNS
(Less than 2000 ADT - See note 7)



TCP (1-2b)

ONE LANE TWO-WAY
CONTROL WITH FLAGGERS

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	80'	240'	155'	305'
45	L=WS	450'	495'	540'	45'	90'	320'	195'	360'
50		500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	600'	350'	570'
65		650'	715'	780'	65'	130'	700'	410'	645'
70		700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

* Conventional Roads Only
** Taper lengths have been rounded off.
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓		

GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4D "ONE LANE ROAD AHEAD" sign, but proper sign spacing shall be maintained.
4. Sign spacing may be increased or an additional CW20-1D "ROAD WORK AHEAD" sign may be used if advance warning ahead of the flagger or R1-2 "YIELD" sign is less than 1500 feet.
5. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
6. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.

TCP (1-2a)

7. R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work spaces should be no longer than one half city block. In rural areas on roadways with less than 2000 ADT, work spaces should be no longer than 400 feet.
8. R1-2 "YIELD" sign with R1-2aP "TO ONCOMING TRAFFIC" plaque shall be placed on a support at a 7 foot minimum mounting height.

TCP (1-2b)

9. Flaggers should use two-way radios or other methods of communication to control traffic.
10. Length of work space should be based on the ability of flaggers to communicate.
11. If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain adequate stopping sight distance to the flagger and a queue of stopped vehicles (see table above).
12. Channelizing devices on the center-line may be omitted when a pilot car is leading traffic and approved by the Engineer.
13. Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.

Texas Department of Transportation — Traffic Operations Division Standard

TRAFFIC CONTROL PLAN
ONE-LANE TWO-WAY TRAFFIC CONTROL

TCP(1-2)-18

FILE: tcp1-2-18.dgn	DN:	CK:	DW:	CK:
©TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS				
4-90 4-98	DIST	COUNTY		SHEET NO.
2-94 2-12				
1-97 2-18				

152

DATE:
FILE:

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

1

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS — V. N. MURTHY MADE — 134936 — LICENSED PROFESSIONAL ENGINEER
10/6/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

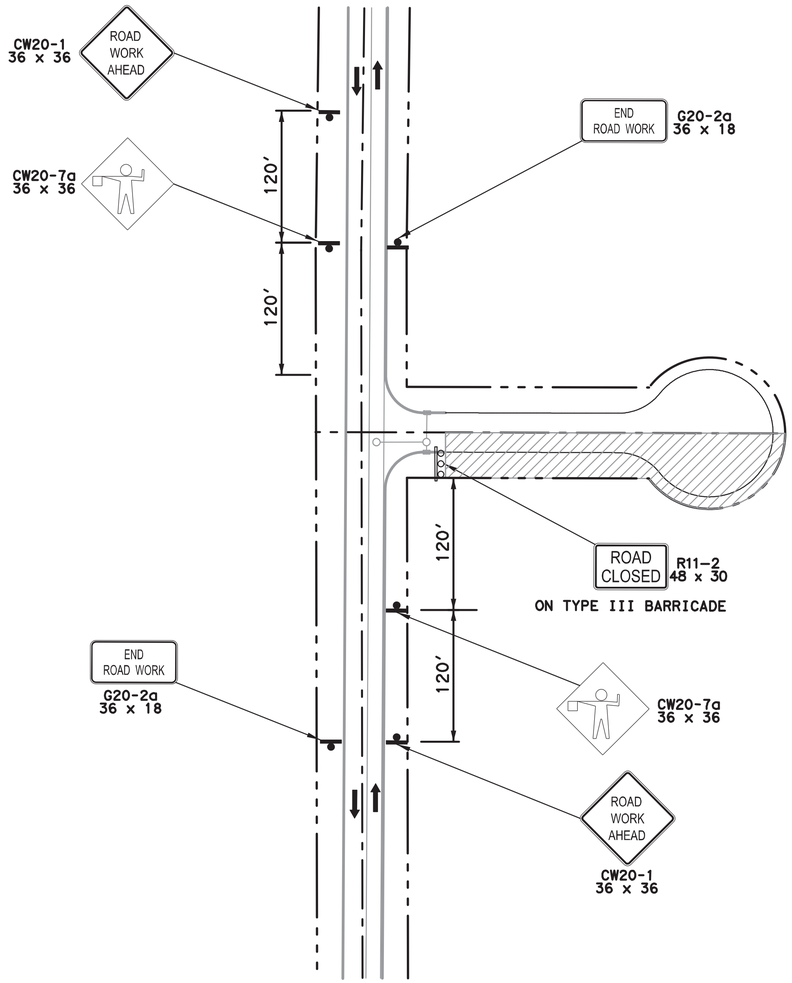
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

TRAFFIC CONTROL PLAN

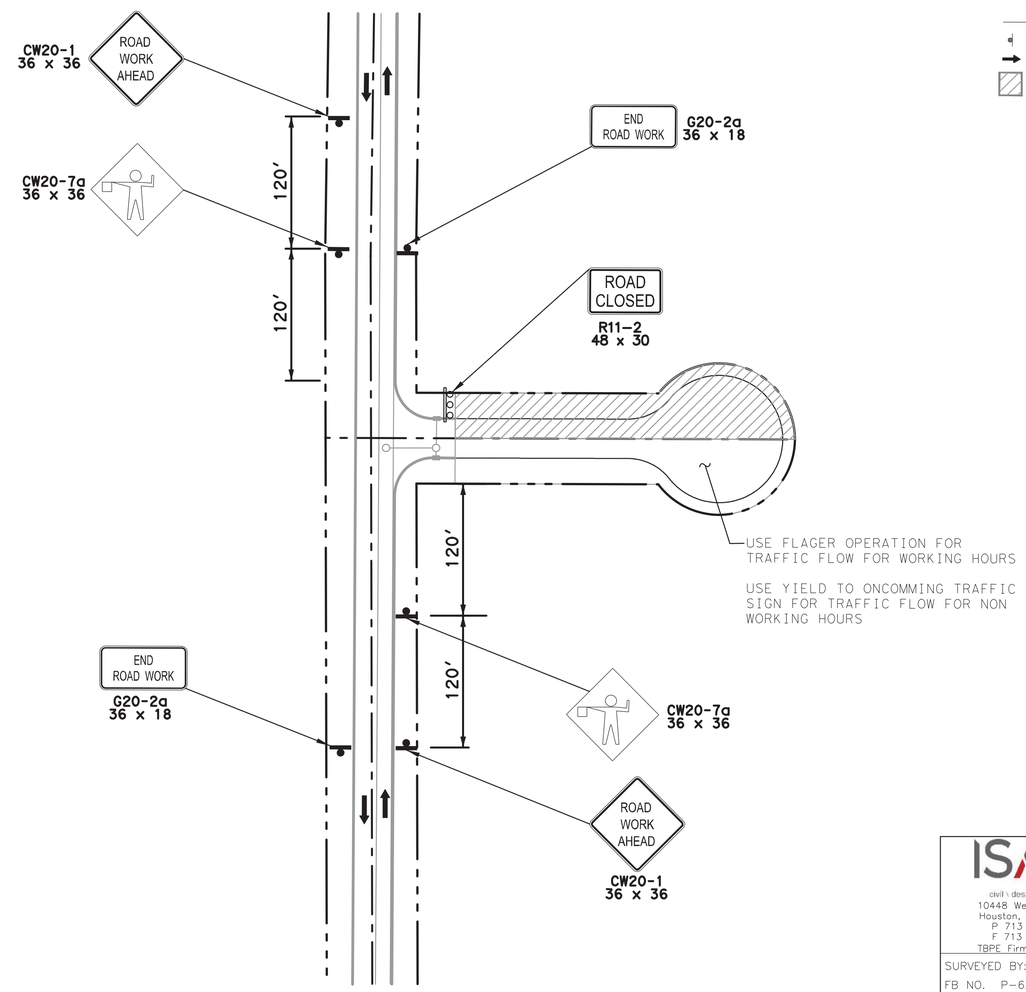
ONE-LANE TWO-WAY TRAFFIC CONTROL

TCP SHEETS: 25

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
N/A	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 141 OF 158	



STEP A



STEP B

LEGEND

- SIGN
- TRAFFIC FLOW
- WORK ZONE

NOTE:
FOR NON WORKING HOURS USE R1-2 "YIELD" SIGN WITH R1-2aP "TO ONCOMMING TRAFFIC" PLAQUE.
REFER TCP SHEETS: 26 FOR MORE DETAIL.

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
10/6/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

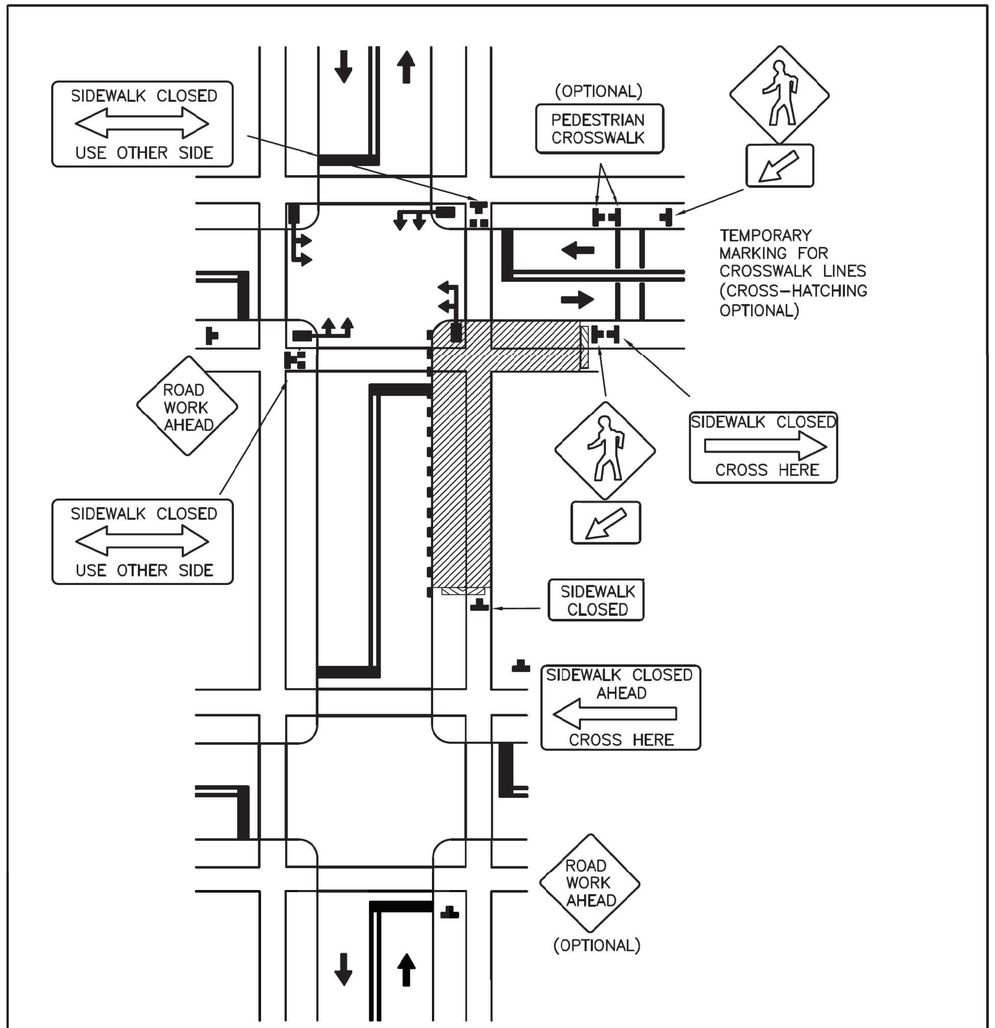
TRAFFIC CONTROL PLAN

TYPICAL FOR CUL-DE-SAC CONSTRUCTION
(Typ III)

TCP SHEETS: 26

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
N/A	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 142 OF 158	

DocuSign Envelope ID: CB71C116-B716-4899-A5EE-0D2F2CC55AF6



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.

APPROVED BY:

CITY ENGINEER	CITY TRAFFIC ENGINEER	DIRECTOR OF HPW
DocuSigned by: Suhail Kanwar 9EF8B0C641F5473...	DocuSigned by: KHANG NGUYEN 95A29EFDA75B4CD...	DocuSigned by: Carol Haddock A93C410B72B3453...

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

1

NO.	DATE	REVISION	APP.
1	11/03/2025	ADDENDUM 1	R.M.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P–6257

STATE OF TEXAS
V. N. MURTHY MADE
134936
LICENSED PROFESSIONAL ENGINEER
10/6/2025

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

TRAFFIC CONTROL PLAN

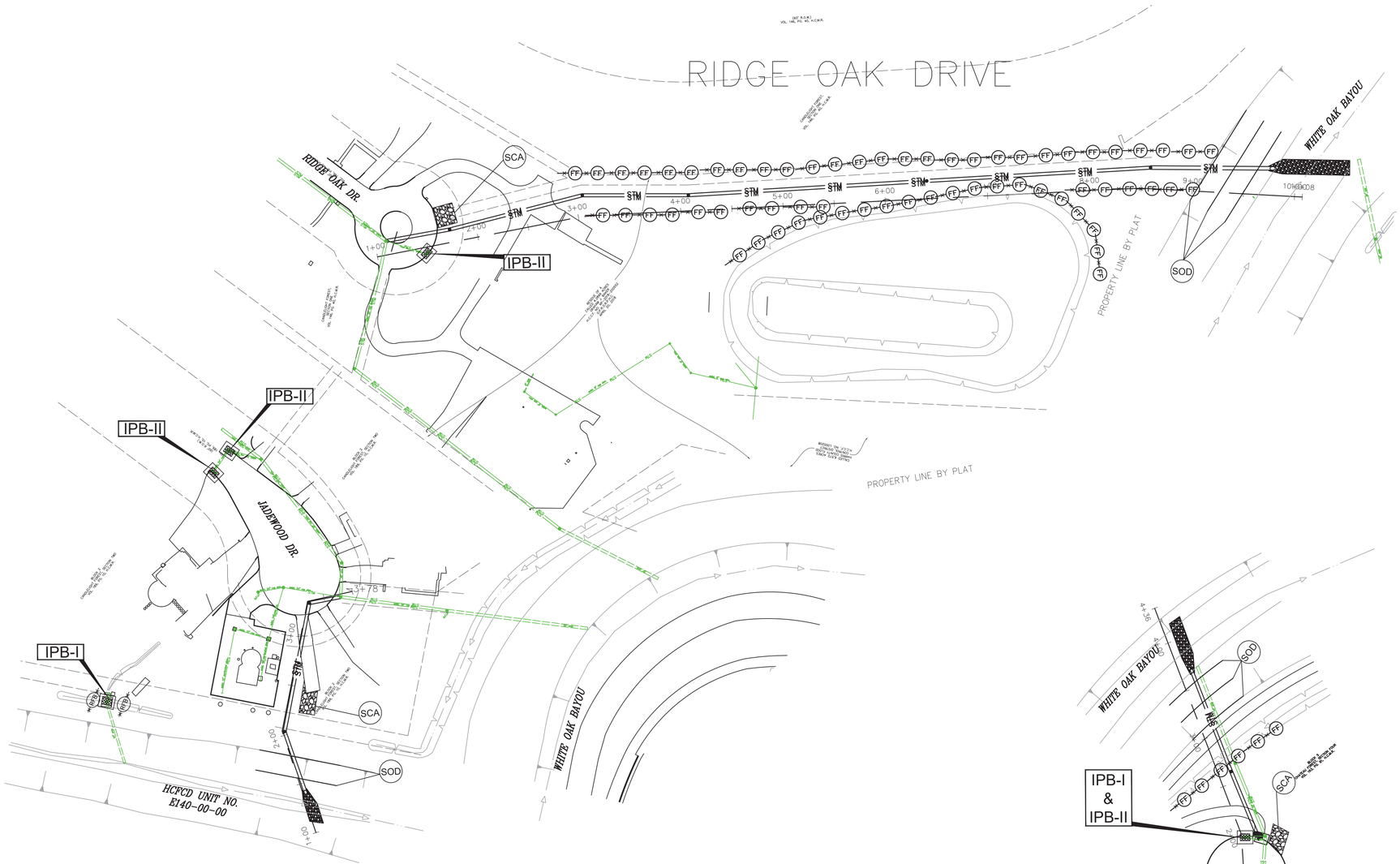
CROSSWALK CLOSURES AND PEDESTRIAN DETOURS, SOLAR SCHOOL ZONE FLASHING BEACON

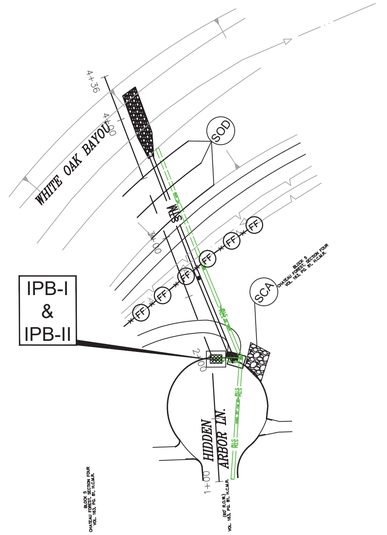
TCP SHEETS: 27

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410029–0001–4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
N/A	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 143 OF 158	

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 6/18/2025 6:06 PM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47_006 - SW3P Plans_new Design.dwg

NO.	DATE	REVISION	APP.





NOTES:
1. STABILIZED CONSTRUCTION AREA (SCA) LOCATION TO BE DETERMINED BY THE CONTRACTOR IN-FIELD. SCA LOCATION WILL CHANGE AS THE CONSTRUCTION PROGRESSES.
2. LOCATION OF PROP. CONCRETE TRUCK WASHOUT AREA IS TO BE DETERMINED BY CONTRACTOR IN-FIELD.

LEGEND

IPB-I	INLET PROTECTION BARRIER STAGE I
IPB-II	INLET PROTECTION BARRIER STAGE II
FF	FILTER FABRIC FENCE
RFB	REINFORCED FILTER FABRIC BARRIER
SCA	STABILIZED CONSTRUCTION ACCESS
IP	INTERCEPTOR STRUCTURE & INLET PROTECTION
SOD	SODDING

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

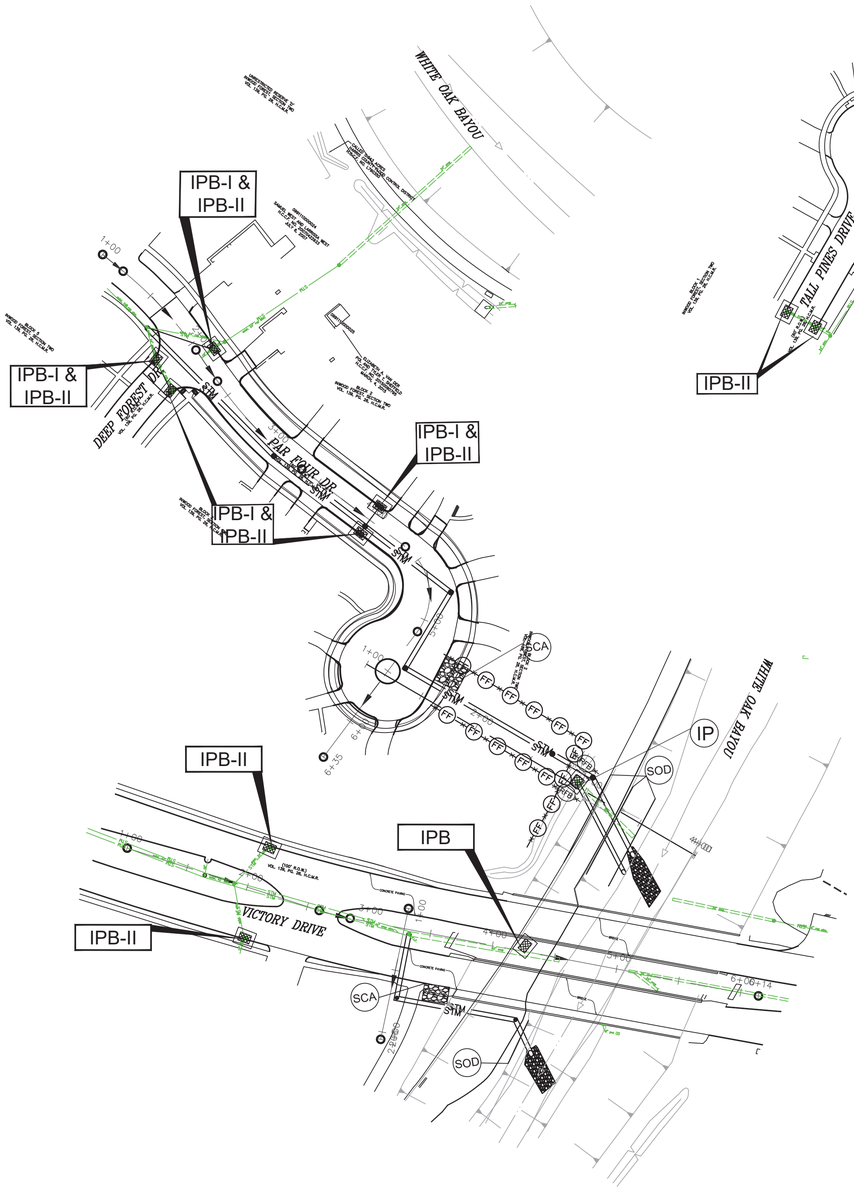
STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
6/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

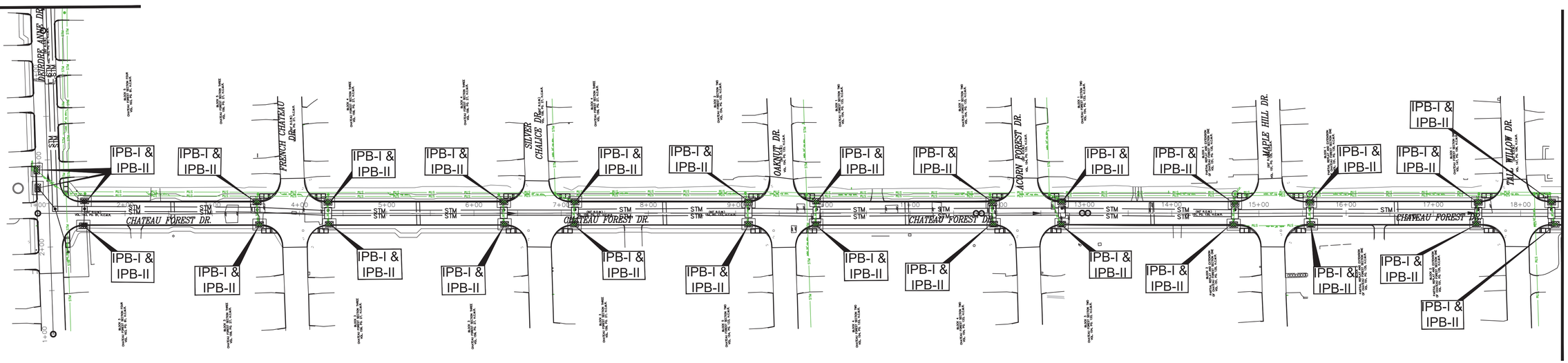
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

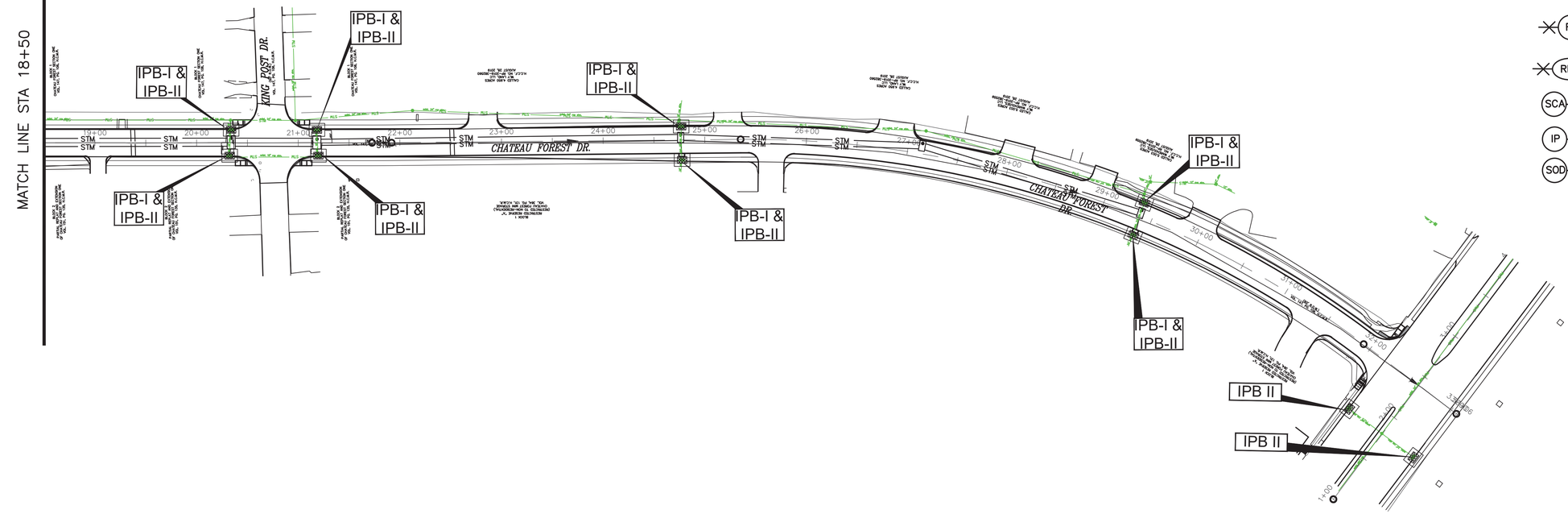
STORMWATER POLLUTION PREVENTION PLAN LAYOUT
SHEET 1 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
1"=60'	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 144 OF 158	


WHITE OAK BAYOU
IPB-I & IPB-II
DEEP FOREST DR
PAR FOUR DR
VICTORY DRIVE
IPB-II
IPB
IP
SOD
SCA
SWM
SWM
SWM

SEE SHEET 145





LEGEND

IPB-I	INLET PROTECTION BARRIER STAGE I
IPB-II	INLET PROTECTION BARRIER STAGE II
FF	FILTER FABRIC FENCE
RFB	REINFORCED FILTER FABRIC BARRIER
SCA	STABILIZED CONSTRUCTION ACCESS
IP	INTERCEPTOR STRUCTURE & INLET PROTECTION
SOD	SODDING

NOTES:
1. STABILIZED CONSTRUCTION AREA (SCA) LOCATION TO BE DETERMINED BY THE CONTRACTOR IN-FIELD. SCA LOCATION WILL CHANGE AS THE CONSTRUCTION PROGRESSES.
2. LOCATION OF PROP. CONCRETE TRUCK WASHOUT AREA IS TO BE DETERMINED BY CONTRACTOR IN-FIELD.

NO.	DATE	REVISION	APP.

ISANI
civil · design · engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
6/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

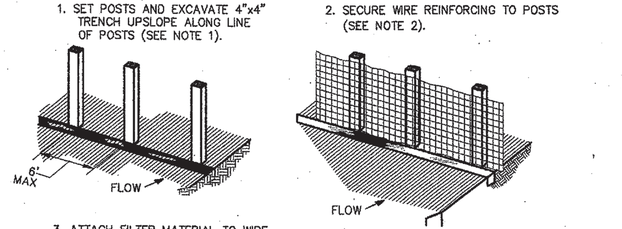
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

STORMWATER POLLUTION PREVENTION PLAN LAYOUT
SHEET 3 OF 3

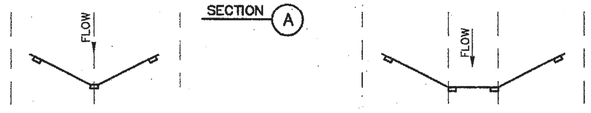
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
1"=60'	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 146 OF 158	

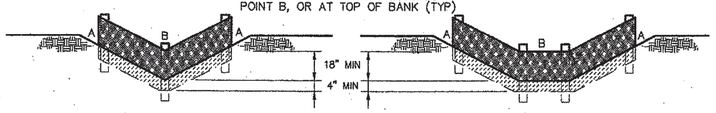
HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/25
HOUSTON TX

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 6/18/2025 6:07 PM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47_006 - SW3P Plans_new Design.dwg



SECTION A



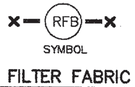


"V-DITCH" SECTION/ELEVATION

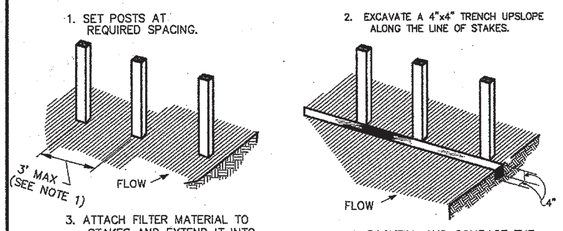
TRAPEZOIDAL SECTION/ELEVATION

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.



REINFORCED FILTER FABRIC BARRIER

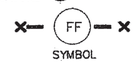


SECTION B

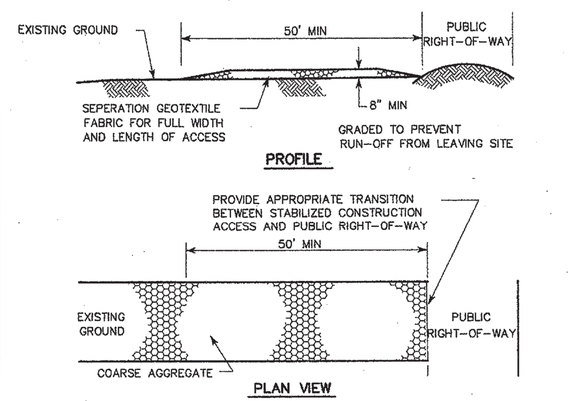
SECTION ALTERNATE B

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.



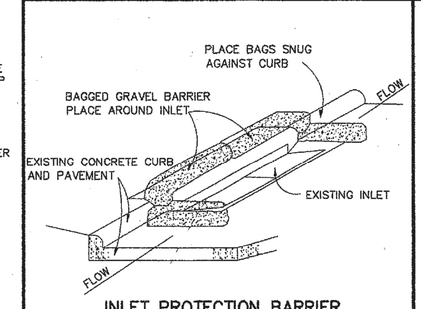
FILTER FABRIC BARRIER



CONSTRUCTION NOTES:

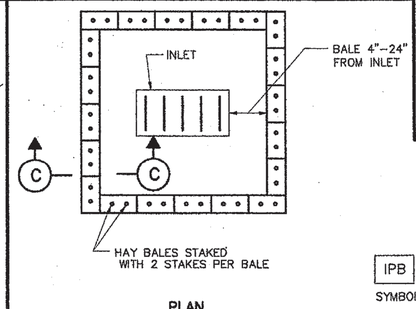
1. LENGTH SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS, BUT NOT LESS THAN 50 FEET.
2. THICKNESS SHALL BE NOT LESS THAN 8 INCHES.
3. WIDTH SHALL BE NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
4. STABILIZATION FOR OTHER AREAS SHALL HAVE THE SAME AGGREGATE THICKNESS AND WIDTH REQUIREMENTS 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.

STABILIZED CONSTRUCTION ACCESS

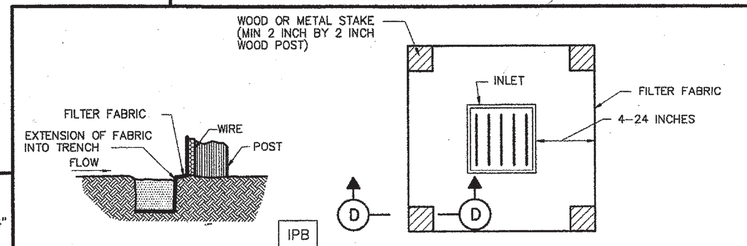


INLET PROTECTION BARRIER

(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.

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
6/18/25

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

STORM WATER POLLUTION PREVENTION PLAN DETAILS

(NOT TO SCALE)

APPROVED BY: CITY ENGINEER

APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: JULY-01-2010

DWG NO: 01571-01

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

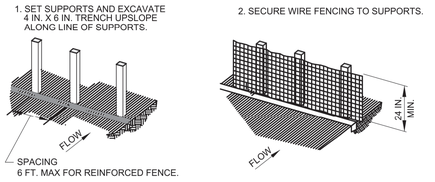
STORMWATER POLLUTION PREVENTION PLAN DETAILS – CITY OF HOUSTON

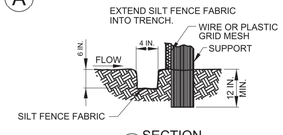
WBS NUMBER
M-410029-0001-4
DRAWING SCALE
NTS
CITY OF HOUSTON PM
DOAA HAMDAN, P.E.
SHEET NO. 147 OF 158

FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

PLOT STYLE: Coh_ctb_220734.ctb PLOTTED: 6/18/2025 6:07 PM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47-Details-SW3P.dwg

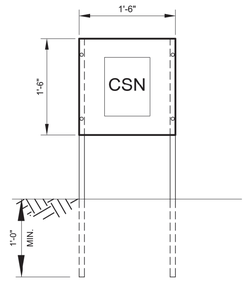




NOTE:
1. SEE SPECIFICATION SECTION NO. 02361-SILT FENCES.

RSF SYMBOL — REINFORCED SILT FENCE

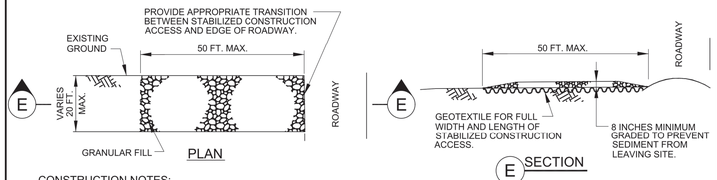
REINFORCED SILT FENCE



NOTE:
CONSTRUCT IN ACCORDANCE WITH HCFCD SPECIFICATION SECTION 01580 - PROJECT SIGNS.

CSN HOLDER

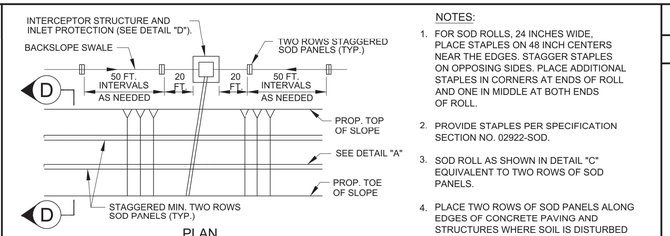
SWPPP / BMP SIGN AND CONSTRUCTION SITE NOTICE HOLDER DETAILS



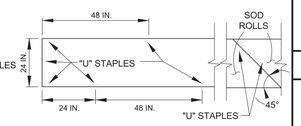
CONSTRUCTION NOTES:
1. SEE SPECIFICATION SECTION NO. 02365-STABILIZED CONSTRUCTION ACCESS.

STABILIZED CONSTRUCTION ACCESS

SCA SYMBOL



NOTES:
1. FOR SOD ROLLS, 24 INCHES WIDE, PLACE STAPLES ON 48 INCH CENTERS NEAR THE EDGES. STAGGER STAPLES ON OPPOSING SIDES. PLACE ADDITIONAL STAPLES IN CORNERS AT ENDS OF ROLL AND ONE IN MIDDLE AT BOTH ENDS OF ROLL.
2. PROVIDE STAPLES PER SPECIFICATION SECTION NO. 02922-SOD.
3. SOD ROLL AS SHOWN IN DETAIL "C" EQUIVALENT TO TWO ROWS OF SOD PANELS.
4. PLACE TWO ROWS OF SOD PANELS ALONG EDGES OF CONCRETE PAVING AND STRUCTURES WHERE SOIL IS DISTURBED EXCEPT BELOW THE NORMAL WATER SURFACE.

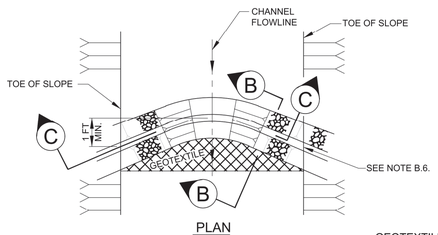


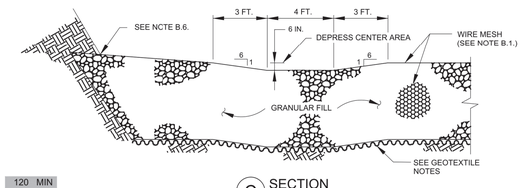
SODDING

FILTER DAM NOTES:

A. TYPES OF FILTER DAMS
   1. TYPE 1 - NOT USED BY HCFCD
   2. TYPE 2 (REINFORCED).
      a. HEIGHT - 18-36 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
      b. TOP WIDTH - 2 FEET (MINIMUM).
      c. SLOPES - 2:1 (MAXIMUM).
   3. TYPE 3 - NOT USED BY HCFCD
   4. TYPE 4 (GABION)
      a. HEIGHT - 30 INCHES (MINIMUM). MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
      b. TOP WIDTH - 2 FEET (MINIMUM).
   5. TYPE 5. AS SHOWN ON THE PLANS.

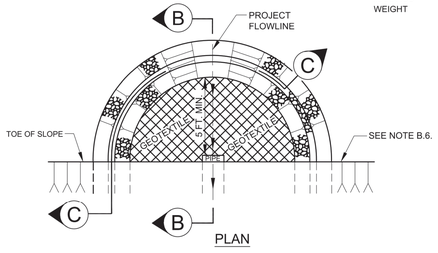
B. CONSTRUCT FILTER DAMS ACCORDING TO THE FOLLOWING CRITERIA UNLESS SHOWN OTHERWISE ON THE PLANS.
   1. TYPE 2 AND 3 FILTER DAMS: SECURE WITH 20 GAUGE GALVANIZED WOVEN WIRE MESH WITH 1 INCH DIAMETER HEXAGONAL OPENINGS.
   2. GRANULAR FILL:
      a. PLACE ON MESH TO HEIGHT AND SLOPES SHOWN ON PLANS OR AS SPECIFIED BY THE ENGINEER.
      b. 3-5 INCHES FOR ROCK FILTER DAM TYPES 2, AND 4. REFER TO GRANULAR FILL IN SPECIFICATION SECTION NO. 02378-RIPRAP AND GRANULAR FILL.
   3. WIRE MESH: FOLD AT UPSTREAM SIDE OVER GRANULAR FILL AND TIGHTLY SECURE TO ITSELF ON THE DOWNSTREAM SIDE USING WIRE TIES OR HOG RINGS.
   4. IN STREAMS: SECURE OR STAKE MESH TO STREAM BED PRIOR TO AGGREGATE PLACEMENT.
   5. SEE SPECIFICATION SECTION NO. 02364-FILTER DAMS.
   6. EMBED ONE FOOT MINIMUM INTO SLOPE AND AT SLOPE RAISE ONE FOOT HIGHER THAN CENTER OF DEPRESSED AREA.

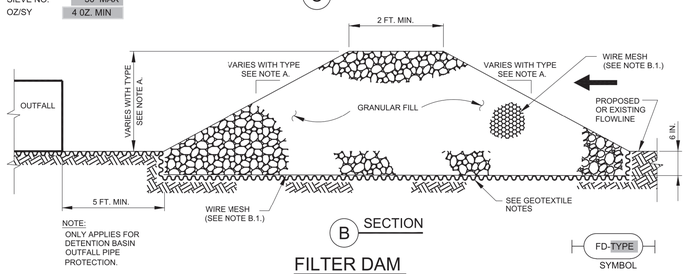




GEOTEXTILE NOTES:

MIN. AOS	SIEVE NO.	120 MIN
MAX. AOS	SIEVE NO.	50 MAX
WEIGHT	OZ/SY	4 OZ. MIN





THIS DETAIL SHEET HAS BEEN PREPARED FOR USE ON HCFCD PROJECTS OR PROJECTS TO BE MAINTAINED BY THE HCFCD WHEN COMPLETED BY OTHERS. AN ENGINEER WHO INCORPORATES THE DETAILS ON THIS SHEET BECOMES RESPONSIBLE FOR ITS USE IN THE END PRODUCT IN ACCORDANCE WITH RULE 137.33 (b) AND (c) OF THE TEXAS BOARD OF PROFESSIONAL ENGINEERS.

P.E. SEAL AND SIGNATURE

ENGINEER - CONFIRM, CHANGE, OR FILL IN.

REV	DESCRIPTION	DATE	APPR

PROJECT ID#

PROJECT TITLE

STORMWATER POLLUTION PREVENTION DETAILS

PREPARED:

CHECKED:

APPROVED:

COMPANY INFORMATION AND LOGO GOES HERE

HARRIS COUNTY FLOOD CONTROL DISTRICT
9900 Northwest Freeway
Houston, Texas 77092

DATE: 10-23-2018
SCALE: NTS

SHEET NUMBER
OF

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
6/18/25

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

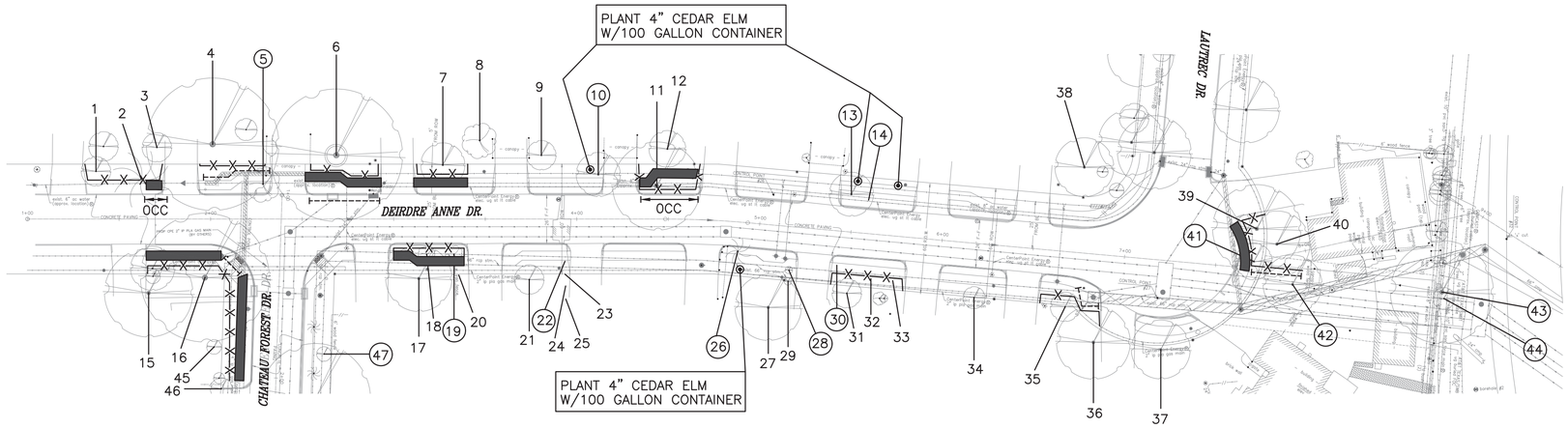
STORMWATER POLLUTION PREVENTION PLAN DETAILS – HARRIS COUNTY FLOOD CONTROL DISTRICT

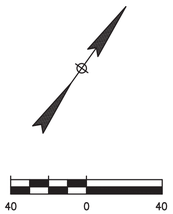
WBS NUMBER
M-410029-0001-4
DRAWING SCALE
NTS
CITY OF HOUSTON PM
DOAA HAMDAN, P.E.
SHEET NO. 148 OF 158

FOR CITY OF HOUSTON USE ONLY

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 6/18/2025 6:07 PM
FILE PATH: P:\ACTIVE\21DR47\Ph II\Working\Drawing 95%\21DR47-Details-SW3P.dwg
S:\Operations\PROJECTS\2020 Standard Detail Sheets\STORMWATER POPULATION PREVENTION DETAILS\Stormwater Pollution Prevention Details.dwg





Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
Tree on Deirdre Anne Drive					
1	6406 Deirdre Anne	7" Crepe Myrtle	Not ordinance tree	Topped	
2	6406 Deirdre Anne	23" Pine	Ordinance tree		Zero curb cutback, Fence, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
3	6402 Deirdre Anne	11" Red Maple	Private tree	Not impacted	
4	6402 Deirdre Anne	34" Water Oak	Private tree		Root prune for waterline, Fence,
5	6342 Deirdre Anne	15" Crepe Myrtle	Not ordinance tree	Topped, Remove for sidewalk	Remove tree, no replacement plantings required
6	6342 Deirdre Anne	44" Live Oak	Private tree		Root prune for street, Fence, Bore waterline, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Clearance prune, Hand dig for bends, Hand dig tap and lead
7	6338 Deirdre Anne	10" Live Oak	Ordinance tree		Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Fence, Bore waterline, Clearance prune
8	6338 Deirdre Anne	15" Crepe Myrtle	Private tree	Not impacted	
9	6334 Deirdre Anne	11" Pecan	Private tree	Not impacted	
10	6330 Deirdre Anne	10" Arborvitae	Not ordinance tree	Remove for sidewalk	Remove tree, no replacement plantings required
11	6330 Deirdre Anne	16" Pecan	Ordinance tree		Zero curb cutback, Demo form pour sidewalk without damage to tree roots 1" In diameter or larger, Fence, Bore waterline, Clearance prune
12	6330 Deirdre Anne	9" Water Oak	Private tree		Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Fence, Bore waterline, Hand dig tap and lead
13	Not available	10" Loquat	Not ordinance tree	Remove for sidewalk	Remove tree, no replacement plantings required
14	Not available	13" Arborvitae	Not ordinance tree	Remove for sidewalk	Remove tree, no replacement plantings required
15	Not available	16" Water Oak	Private tree		Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Fence, Clearance prune
16	Not available	25" Arizona Ash	Private tree		Root prune for ramp & landing, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Fence, Bore waterline, Clearance prune
17	6345 Chateau Forest Drive	17" Pecan	Private tree		Fence, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
18	6345 Chateau Forest Drive	11" Crepe Myrtle	Not ordinance tree	Topped	
19	6345 Chateau Forest Drive	3" Crepe Myrtle	Not ordinance tree	Remove for sidewalk	Remove tree, no replacement plantings required
20	6345 Chateau Forest Drive	5" Arborvitae	Not ordinance tree		Clearance prune
21	Not available	7" Willow Oak	Private tree	Not impacted	
22	Not available	8" Arborvitae	Not ordinance tree	Remove for sidewalk	Remove tree, no replacement plantings required
23	Not available	8" Arborvitae	Not ordinance tree	Not impacted	
24	Not available	8" Arborvitae	Private tree	Not impacted	
25	Not available	8" Arborvitae	Private tree	Not impacted	
26	Not available	5' Sago	Not ordinance tree	Remove for sidewalk	Remove tree, no replacement plantings required
27	Not available	16" Sweetgum	Private tree	Not impacted	
28	6323 Deirdre Anne	2" Crepe Myrtle	Not ordinance tree	Remove for sidewalk	Remove tree, no replacement plantings required
29	6323 Deirdre Anne	2" Crepe Myrtle	Private tree	Not impacted	
30	6323 Deirdre Anne	9" Arborvitae	Not ordinance tree	Remove for sidewalk	Remove tree, no replacement plantings required
31	6323 Deirdre Anne	9" Live Oak	Private tree		Fence
32	6323 Deirdre Anne	5" Holly	Ordinance tree		Fence
33	6323 Deirdre Anne	3" Ligustrum	Not ordinance tree		
34	6319 Deirdre Anne	6" Olive	Private tree	Stump Sprouts, Not impacted	
35	6315 Deirdre Anne	10" Magnolia	Private tree		Root prune for storm, Fence, Clearance prune
36	Not available	14" Sugarberry	Private tree	Not impacted	
37	Not available	11" Weeping Willow	Private tree		Clearance prune
38	6314 Deirdre Anne	11" Tallow	Private tree	Not impacted	
39	6303 Deirdre Anne	23" Water Oak	Private tree		Root prune for storm, Fence, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
40	6303 Deirdre Anne	16" Water Oak	Private tree		Root prune for storm, Fence, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
41	6303 Deirdre Anne	12" Magnolia	Ordinance tree	Remove for storm	Remove tree, provide 12" in replacement plantings
42	6303 Deirdre Anne	17" Water Oak	Easement tree	Remove for storm	Remove tree, no replacement plantings required
43	Not available	16" Chinaberry	Easement tree	Remove for storm	Remove tree, no replacement plantings required
44	Not available	9" Sugarberry	Easement tree	Remove for storm	Remove tree, no replacement plantings required

TREE PRESERVATION PLAN LEGEND

- 1 — TREE NUMBER/LOCATION
- (1) — TREE TO BE REMOVED
- —X—X— TREE PROTECTION FENCE
- ROOT PRUNING TRENCH
- REPLACEMENT PLANTING SPECIES AND SIZE/TYPE
- OCC — ZERO CUTBACK CURB
- SIDEWALK ON GRADE
- CHECKERPLATE SECTION

NOTE:

1. THIS TREE PROTECTION PLAN WAS DEVELOPED WITH INFORMATION PROVIDED BY DESIGN ENGINEER IN DRAWINGS DATED MARCH 2024. THE PLAN CONSIDERS ALL FITTINGS, VERTICAL OFFSETS AND AREAS OF NECESSARY EXCAVATION. CHANGES MADE TO DESIGN MAY COMPROMISE THE TREE PROTECTION PLAN. REFER SPECIFICATIONS 01562 AND 02915. CONDITION OF EACH TREE IS BASED ON VISUAL EVALUATION AT TIME OF DESIGN. CONDITION AND STRUCTURAL INTEGRITY OF EACH TREE IS NOT GUARANTEED BY DESIGNER AT ANY POINT IN THE FUTURE, AS ENVIRONMENTAL AND MAINTENANCE INFLUENCES ON EACH TREE CAN NOT BE DETERMINED BY DESIGNER.
2. CN KOEHL URBAN FORESTRY, INC. HAS NOT BEEN CONTRACTED TO COMPLETE ANY TREE RISK ASSESSMENTS ON THIS PROJECT–THIS TPP INCLUDES PROTECTION MEASURES FOR SPECIES OF TREES PROTECTED BY APPLICABLE ORDINANCE ONLY. CN KOEHL URBAN FORESTRY, INC. DOES NOT GUARANTEE CONDITION OR STRUCTURAL INTEGRITY OF ANY TREES LOCATED ON OR ADJACENT TO THIS PROJECT.
3. IN AREAS WHERE INDIVIDUAL TREES HAVE NOT BEEN TIED IN BY SURVEY APPROXIMATE LOCATION IS INDICATED ON TPP WITH A DOT AND TREE NUMBER. ACCURACY OF REPRESENTED LOCATION IS NOT GUARANTEED BY CN KOEHL URBAN FORESTRY, INC.
4. THE CONTRACTOR'S ARBORIST WILL MARK LOCATIONS OF TREES TO BE PLANTED AND OBTAIN APPROVAL BY CITY ENGINEER AND CITY FORESTER BEFORE PURCHASING OR EXCAVATING PLANTING HOLE OF EACH TREE.

C.N. Koehl
Urban Forestry, Inc.
210 Stone Bush Ct. • Katy, Texas 77493
281-391-0022 ckoehl@koehlurbanforestry.com
APPROVED: Craig N. Koehl 04/02/2025

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P–6257

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

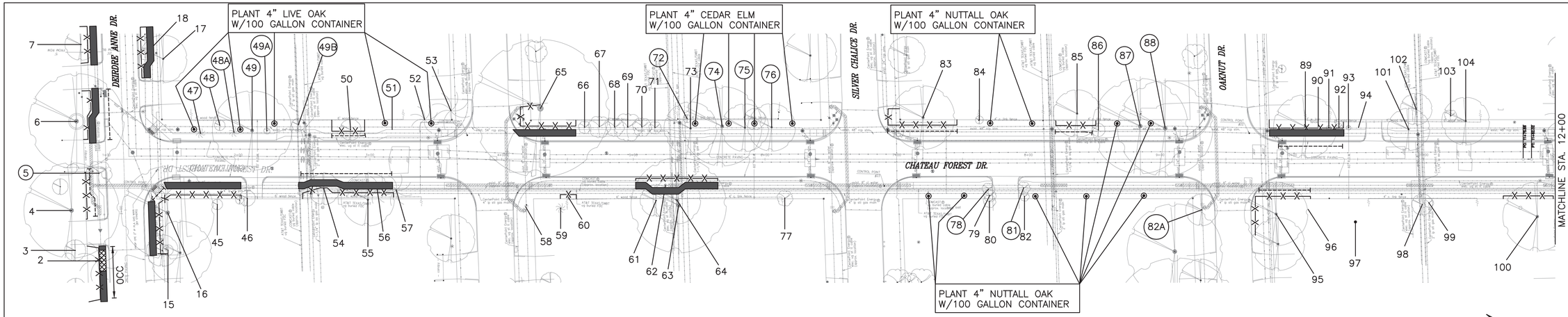
TREE PROTECTION PLAN

SHEET 1 OF 10

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410029–0001–4	
DRAWING SCALE	
1"=40'	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 149 OF 158	

HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX

PLOTTED: 4/1/2025 4:49 PM
PLOT STYLE: COH.ctb
FILE PATH: C:\Users\Ned\Desktop\Work For Craig\ISANI Chateau Forest\ISANI CHATEAU FOREST TP-1.dwg



Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
Tree on Chateau Forest Drive					
45	Not available	5" Water Oak	Private tree	Not impacted	
46	Not available	4" Pecan	Private tree	Not impacted	
47	6345 Deirdre Anne	5" Juniper	Not ordinance tree	Remove for sidewalk	Remove tree, no replacement plantings required
48	6345 Deirdre Anne	4" Juniper	Not ordinance tree	Remove for sidewalk	Remove tree, no replacement plantings required
48A	6345 Deirdre Anne	3" Juniper	Not ordinance tree	Remove for sidewalk	Remove tree, no replacement plantings required
49	6345 Deirdre Anne	31" Water Oak	Ordinance tree	Remove for sidewalk	Remove tree, provide 31" in replacement plantings
49A	6345 Deirdre Anne	4" Crepe Myrtle	Not ordinance tree	Remove for sidewalk	Remove tree, no replacement plantings required
49B	6374 French Chateau	5" Sugarberry	Not ordinance tree	Remove for sidewalk	Remove tree, no replacement plantings required
50	6374 French Chateau	9" Water Oak	Ordinance tree		Root prune for sidewalk, Fence
51	6374 French Chateau	3' Sago	Not ordinance tree	Remove for sidewalk	Remove tree, no replacement plantings required
52	6374 French Chateau	15' Palm	Private tree	Dead	
53	6374 French Chateau	12' Palm	Private tree	Dead	
54	6402 French Chateau	14" Pecan	Ordinance tree	Pruned by CenterPoint Energy	Root prune for street, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Fence, Bore waterline
55	6402 French Chateau	17" Pecan	Private tree		Root prune for street, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Fence, Bore waterline
56	6402 French Chateau	15' Palm	Not ordinance tree	Not impacted	
57	6402 French Chateau	15' Pam	Not ordinance tree	Not impacted	
58	Not available	2' Sago	Not ordinance tree		
59	Not available	5" Juniper	Private tree	Not impacted	
60	Not available	2" Pecan	Ordinance tree		Fence
61	Not available	13" Pecan	Private tree		Bore waterline, Fence, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
62	Not available	1" Pecan	Not ordinance tree		
63	Not available	23" Sugarberry	Private tree		Bore waterline, Fence, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
64	Not available	18" Arizona Ash	Private tree		Bore waterline, Fence, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
65	6375 French Chateau	61" Arizona Ash	Private tree		Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Fence, Hand dig for ts&v, Hand dig for fire hydrant
66	6375 French Chateau	10" Crepe Myrtle	Not ordinance tree	Topped	
67	6375 French Chateau	10" Crepe Myrtle	Not ordinance tree	Topped	
68	6375 French Chateau	10" Crepe Myrtle	Not ordinance tree	Topped	
69	6375 French Chateau	10" Crepe Myrtle	Not ordinance tree	Topped	
70	6375 French Chateau	10" Crepe Myrtle	Not ordinance tree	Topped	
71	6375 French Chateau	10" Crepe Myrtle	Not ordinance tree	Topped	
72	6330 Silver Chalice	22" American Elm	Ordinance tree	Trunk Cavity, Remove for sidewalk	Remove tree, no replacement plantings required
73	6330 Silver Chalice	4" Sugarberry	Private tree	Not impacted	
74	6330 Silver Chalice	26" American Elm	Ordinance tree	Remove for sidewalk	Remove tree, provide 26" in replacement plantings to comply with ordinance
75	6330 Silver Chalice	19" American Elm	Ordinance tree	Remove for sidewalk	Remove tree, provide 19" in replacement plantings to comply with ordinance
76	6330 Silver Chalice	18" American Elm	Ordinance tree	Remove for sidewalk	Remove tree, Provide 18" in replacement plantings to comply with ordinance
77	6402 Silver Chalice	9" Crepe Myrtle	Private tree		Clearance prune
78	6403 Silver Chalice	8" Crepe Myrtle	Not ordinance tree	Topped, Remove for sidewalk	Remove tree, no replacement plantings required
79	6403 Silver Chalice	8" Crepe Myrtle	Not ordinance tree	Topped	
80	6403 Silver Chalice	8" Crepe Myrtle	Private tree	Topped, Not impacted	
81	6403 Silver Chalice	8" Crepe Myrtle	Not ordinance tree	Topped, Remove for sidewalk	Remove tree, no replacement plantings required
82	6403 Silver Chalice	8" Crepe Myrtle	Not ordinance tree	Topped	
82A	6402 Oaknut	11" Sweetgum	Ordinance tree	Remove for ts&v	Remove tree, Provide 11" in replacement plantings
83	6331 Silver Chalice	19" Live Oak	Private tree		Root prune for sidewalk, Fence, Clearance prune
84	6331 Silver Chalice	3" Mulberry	Private tree		Clearance prune
85	6350 Oaknut	17" Water Oak	Private tree		Root prune for sidewalk, Fence
86	6350 Oaknut	4" Vitex	Not ordinance tree	Remove for sidewalk	Remove tree, no replacement plantings required
87	6350 Oaknut	33" Live Oak	Ordinance tree	Remove for sidewalk	Remove tree, provide 33" in replacement plantings to comply with ordinance
88	6350 Oaknut	33" Live Oak	Ordinance tree	Remove for sidewalk	Remove tree, provide 33" in replacement plantings to comply with ordinance

Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
Tree on Chateau Forest Drive					
89	6351 Oaknut	19" Water Oak	Ordinance tree		Root prune for street, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
90	6351 Oaknut	3" Crepe Myrtle	Not ordinance tree		
91	6351 Oaknut	3" Crepe Myrtle	Not ordinance tree		
92	6351 Oaknut	3" Crepe Myrtle	Not ordinance tree		
93	6351 Oaknut	3" Crepe Myrtle	Not ordinance tree		
94	6351 Oaknut	3" Crepe Myrtle	Not ordinance tree		
95	6403 Oaknut	26" Arizona Ash	Private tree		Root prune for waterline, Fence
96	6403 Oaknut	2" Mimosa	Private tree	Not impacted	
97	6403 Oaknut	21" Pine	Private tree	Not impacted	
98	6404 Acorn Forest	10" Arborvitae	Private tree	Not impacted	
99	6404 Acorn Forest	4" Crepe Myrtle	Private tree	Not impacted	
100	6404 Acorn Forest	22" Shumard Oak	Private tree		Fence
101	6350 Acorn Forest	15" Tallow	Not ordinance tree		
102	6350 Acorn Forest	14" Raintree	Private tree	Dead	
103	6350 Acorn Forest	8" Sugarberry	Private tree	Not impacted	
104	6350 Acorn Forest	17" Sugarberry	Private tree		Clearance prune

SCALE: 1"=40'

TREE PRESERVATION PLAN LEGEND

- TREE NUMBER/LOCATION
- TREE TO BE REMOVED
- TREE PROTECTION FENCE
- ROOT PRUNING TRENCH
- REPLACEMENT PLANTING SPECIES AND SIZE/TYPE
- ZERO CUTBACK CURB
- SIDEWALK ON GRADE
- CHECKERPLATE SECTION

NOTE:

1. THIS TREE PROTECTION PLAN WAS DEVELOPED WITH INFORMATION PROVIDED BY DESIGN ENGINEER IN DRAWINGS DATED MARCH 2024. THE PLAN CONSIDERS ALL FITTINGS, VERTICAL OFFSETS AND AREAS OF NECESSARY EXCAVATION. CHANGES MADE TO DESIGN MAY COMPROMISE THE TREE PROTECTION PLAN. REFER SPECIFICATIONS 01562 AND 02915. CONDITION OF EACH TREE IS BASED ON VISUAL EVALUATION AT TIME OF DESIGN. CONDITION AND STRUCTURAL INTEGRITY OF EACH TREE IS NOT GUARANTEED BY DESIGNER AT ANY POINT IN THE FUTURE, AS ENVIRONMENTAL AND MAINTENANCE INFLUENCES ON EACH TREE CAN NOT BE DETERMINED BY DESIGNER.
2. CN KOEHL URBAN FORESTRY, INC. HAS NOT BEEN CONTRACTED TO COMPLETE ANY TREE RISK ASSESSMENTS ON THIS PROJECT–THIS TPP INCLUDES PROTECTION MEASURES FOR SPECIES OF TREES PROTECTED BY APPLICABLE ORDINANCE ONLY. CN KOEHL URBAN FORESTRY, INC. DOES NOT GUARANTEE CONDITION OR STRUCTURAL INTEGRITY OF ANY TREES LOCATED ON OR ADJACENT TO THIS PROJECT.
3. IN AREAS WHERE INDIVIDUAL TREES HAVE NOT BEEN TIED IN BY SURVEY APPROXIMATE LOCATION IS INDICATED ON TPP WITH A DOT AND TREE NUMBER. ACCURACY OF REPRESENTED LOCATION IS NOT GUARANTEED BY CN KOEHL URBAN FORESTRY, INC.
4. THE CONTRACTOR'S ARBORIST WILL MARK LOCATIONS OF TREES TO BE PLANTED AND OBTAIN APPROVAL BY CITY ENGINEER AND CITY FORESTER BEFORE PURCHASING OR EXCAVATING PLANTING HOLE OF EACH TREE.

C.N. Koehl
Urban Forestry, Inc.
210 Stone Bush Ct. • Katy, Texas 77493
281-391-0022 ckoehl@koehlurbanforestry.com

APPROVED: Craig N. Koehl 04/02/2025

ISANI
civil · design · engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P–6257

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

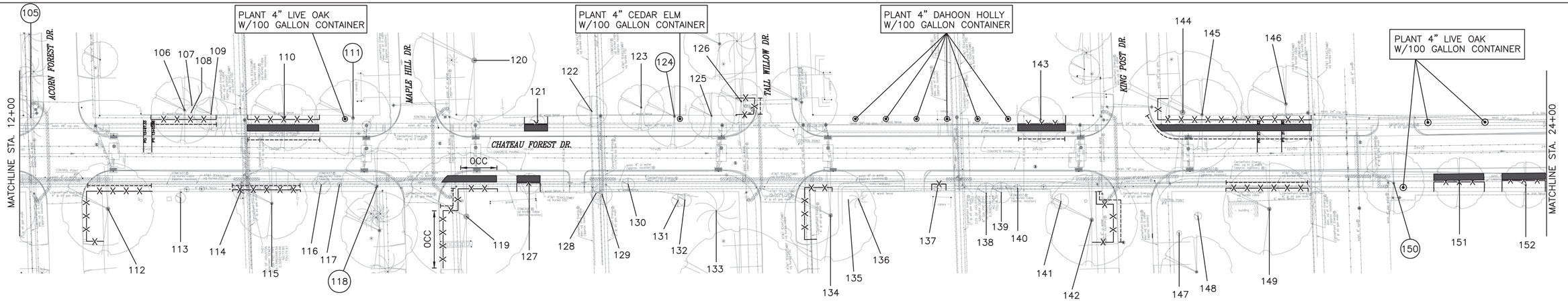
TREE PROTECTION PLAN

SHEET 2 OF 10

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410029–0001–4	
DRAWING SCALE	
1"=40'	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 150 OF 158	

HOUSTON PUBLIC WORKS ACCEPTED AND FILED
81720 CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

PLOTTED: 4/1/2025 4:49 PM
PLOT STYLE: CNKoehl.ctb
FILE PATH: C:\Users\Ned\Desktop\Work For Craig\ISANI Chateau Forest\ISANI CHATEAU FOREST TP-2.dwg



Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
Tree on Chateau Forest Drive					
105	6350 Acorn Forest	25' Palm	Not ordinance tree	Dead, Remove for condition	Remove tree, no replacement plantings required
106	6347 Acorn Forest	23" Post Oak	Private tree	40% dieback	Root prune for sidewalk, Fence
107	6347 Acorn Forest	19" Pine	Private tree		Root prune for sidewalk, Fence
108	6347 Acorn Forest	3" Ligustrum	Private tree		Root prune for sidewalk, Fence
109	6347 Acorn Forest	12" Sugarberry	Private tree		Root prune for sidewalk, Fence
110	6342 Maple Hill	24" Post Oak	Ordinance tree		Root prune for street, Fence, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Clearance prune
111	6342 Maple Hill	29" Water Oak	Ordinance tree	Remove for sidewalk	Remove tree, provide 29" in replacement plantings to comply with ordinance
112	6403 Acorn Forest	32" Arizona Ash	Private tree		Root prune for waterline, Fence, Clearance prune
113	6403 Acorn Forest	3" Pear	Private tree	Not impacted	
114	6403 Acorn Forest	2" Pecan	Private tree	Protected with tree #115	
115	6402 Acorn Forest	26" Post Oak	Private tree		Root prune for waterline, Fence
116	6402 Acorn Forest	11" Crepe Myrtle	Not ordinance tree		
117	6402 Acorn Forest	3" Crepe Myrtle	Not ordinance tree		
118	6402 Acorn Forest	27" Live Oak	Ordinance tree	Remove for excavation of ADA compliant slopes	Remove tree, provide 27" in replacement plantings to comply with ordinance
119	6403 Maple Hill	52" Live Oak	Private tree		Zero curb cutback, Root prune for wheel chair ramp & waterline fittings, Fence, Bore waterline, Clearance prune
120	6343 Maple Hill	52" Arizona Ash	Private tree	50% dieback, Not impacted	
121	6334 Tall Willow	7" Green Ash	Ordinance tree	Dieback, Poor	Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Fence
122	6334 Tall Willow	14" Pecan	Private tree		Clearance prune
123	6334 Tall Willow	16" Pecan	Private tree	40% dieback, Not impacted	
124	6334 Tall Willow	21" American Elm	Ordinance tree	Dead	Remove tree, no replacement plantings required
125	6334 Tall Willow	15" Sugarberry	Not ordinance tree		Clearance prune
126	6334 Tall Willow	19" Water Oak	Ordinance tree		Root prune for street, Fence, Bore waterline, Hand dig for ts&v and fittings
127	6402 Tall Willow	7" Pecan	Ordinance tree		Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Fence, Bore waterline, Clearance prune
128	6402 Tall Willow	11" Crepe Myrtle	Private tree	Topped, Not impacted	
129	6402 Tall Willow	10" Loquat	Private tree	Not impacted	
130	6402 Tall Willow	4" Peach	Not ordinance tree		
131	6402 Tall Willow	5" Pyracantha	Private tree	Not impacted	
132	6402 Tall Willow	5" Pyracantha	Private tree	Not impacted	
133	6402 Tall Willow	23" Pine	Private tree	Not impacted	
134	6403 Tall Willow	31" Water Oak	Private tree	Recent private drive and private sidewalk impacts	Fence
135	6403 Tall Willow	6" Photinia	Private tree	Not impacted	
136	6403 Tall Willow	7' Palm	Private tree	Not impacted	
137	6403 Tall Willow	5" Live Oak	Ordinance tree		Fence
138	6402 King Post	3" Lead Tree	Private tree	Not impacted	
139	6402 King Post	3" Lead Tree	Private tree	Not impacted	
140	6402 King Post	2" Chinaberry	Not ordinance tree		
141	6402 King Post	5" Loquat	Private tree	Not impacted	
142	6402 King Post	34" Water Oak	Private tree		Root prune for street & water line fittings, Fence
143	6330 King Post	17" Pecan	Ordinance tree	30% dieback	Root prune for street, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Fence, Clearance prune
144	6331 King Post	35" Arizona Ash	Private tree	Poor condition, 50% dieback	Root prune for street, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Fence
145	6331 King Post	28" Water Oak	Ordinance tree		Root prune for street, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Fence
146	6331 King Post	42" Water Oak	Private tree		Root prune for street, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Fence
147	6403 King Post	2" Purple Leaf Plum	Private tree	Not impacted	
148	6403 King Post	3" Crepe Myrtle	Private tree	Not impacted	
149	6403 King Post	33" Water Oak	Private tree		Root prune for waterline, Fence, Clearance prune
150	6400 W Little York	24" Live Oak	Ordinance tree	Remove for waterline bends	Remove tree, provide 24" in replacement plantings to comply with ordinance
151	6400 W Little York	18" Live Oak	Ordinance tree		Remove existing curb without disturbing roots and soil behind, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Fence
152	6400 W Little York	20" Live Oak	Ordinance tree		Remove existing curb without disturbing roots and soil behind, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Fence

TREE PRESERVATION PLAN LEGEND

- 1 — TREE NUMBER/LOCATION
- (1) — TREE TO BE REMOVED
- -X-X- — TREE PROTECTION FENCE
- ------ — ROOT PRUNING TRENCH
- ⊙ — REPLACEMENT PLANTING SPECIES AND SIZE/TYPE
- OCC — ZERO CUTBACK CURB
- ▬ — SIDEWALK ON GRADE
- ▩ — CHECKERPLATE SECTION

40 0 40

SCALE: 1"=40'

NOTE:

1. THIS TREE PROTECTION PLAN WAS DEVELOPED WITH INFORMATION PROVIDED BY DESIGN ENGINEER IN DRAWINGS DATED MARCH 2024. THE PLAN CONSIDERS ALL FITTINGS, VERTICAL OFFSETS AND AREAS OF NECESSARY EXCAVATION. CHANGES MADE TO DESIGN MAY COMPROMISE THE TREE PROTECTION PLAN. REFER SPECIFICATIONS 01562 AND 02915. CONDITION OF EACH TREE IS BASED ON VISUAL EVALUATION AT TIME OF DESIGN. CONDITION AND STRUCTURAL INTEGRITY OF EACH TREE IS NOT GUARANTEED BY DESIGNER AT ANY POINT IN THE FUTURE, AS ENVIRONMENTAL AND MAINTENANCE INFLUENCES ON EACH TREE CAN NOT BE DETERMINED BY DESIGNER.
2. CN KOEHL URBAN FORESTRY, INC. HAS NOT BEEN CONTRACTED TO COMPLETE ANY TREE RISK ASSESSMENTS ON THIS PROJECT–THIS TPP INCLUDES PROTECTION MEASURES FOR SPECIES OF TREES PROTECTED BY APPLICABLE ORDINANCE ONLY. CN KOEHL URBAN FORESTRY, INC. DOES NOT GUARANTEE CONDITION OR STRUCTURAL INTEGRITY OF ANY TREES LOCATED ON OR ADJACENT TO THIS PROJECT.
3. IN AREAS WHERE INDIVIDUAL TREES HAVE NOT BEEN TIED IN BY SURVEY APPROXIMATE LOCATION IS INDICATED ON TPP WITH A DOT AND TREE NUMBER. ACCURACY OF REPRESENTED LOCATION IS NOT GUARANTEED BY CN KOEHL URBAN FORESTRY, INC.
4. THE CONTRACTOR'S ARBORIST WILL MARK LOCATIONS OF TREES TO BE PLANTED AND OBTAIN APPROVAL BY CITY ENGINEER AND CITY FORESTER BEFORE PURCHASING OR EXCAVATING PLANTING HOLE OF EACH TREE.

C.N. Koehl
Urban Forestry, Inc.
210 Stone Bush Ct. • Katy, Texas 77493
281-391-0022 ckoehl@koehlurbanforestry.com

APPROVED: Craig N. Koehl 04/02/2025

ISANI
civil · design · engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P–6257

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

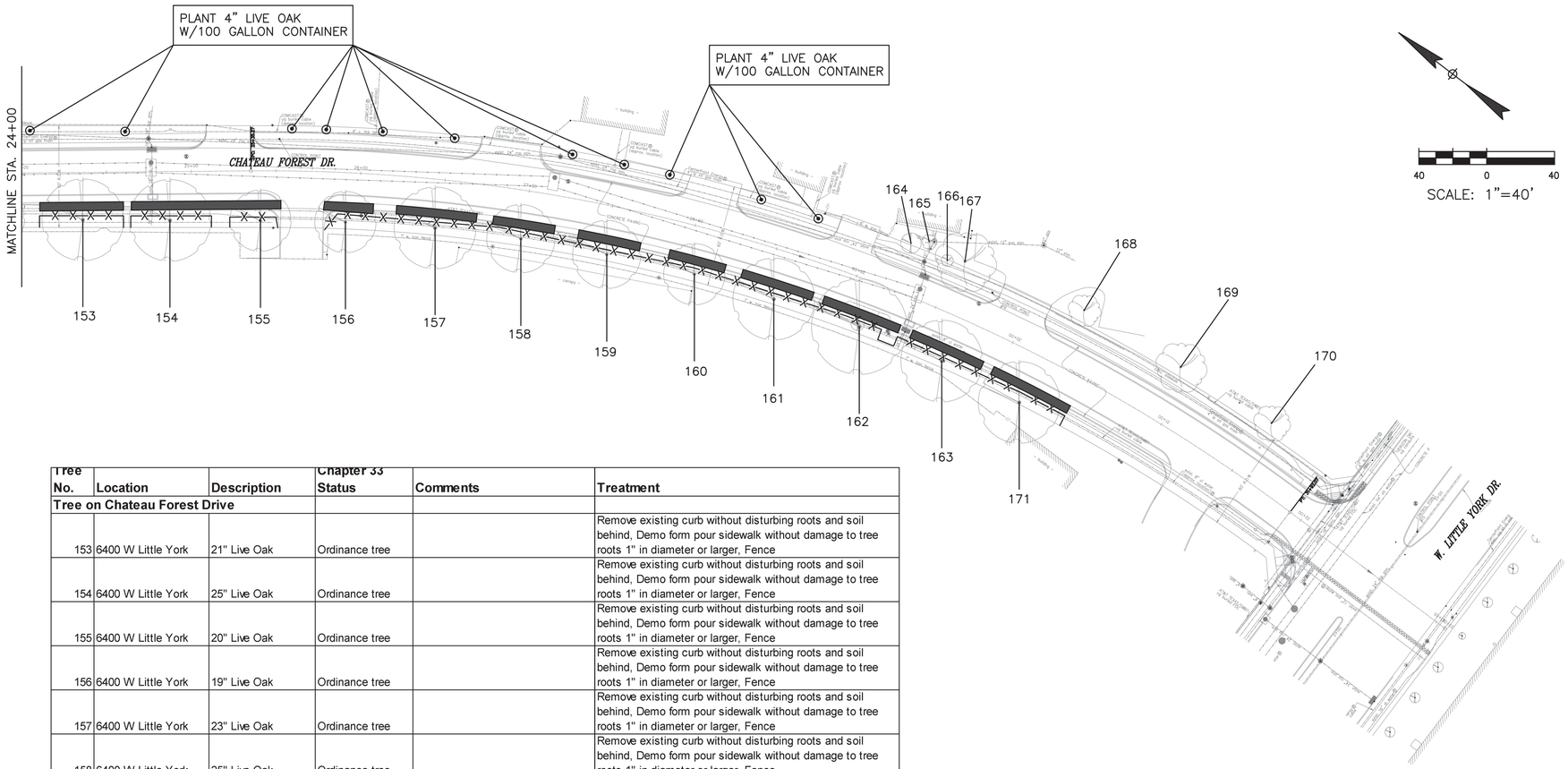
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

TREE PROTECTION PLAN

SHEET 3 OF 10

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410029–0001–4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
1"=40'	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 151 OF 158	

PLOTTED: 4/1/2025 4:49 PM
PLOT STYLE: CNKoehl.ctb
FILE PATH: C:\Users\Ned\Desktop\Work For Craig\ISANI Chateau Forest\ISANI CHATEAU FOREST TP–3.dwg



Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
Tree on Chateau Forest Drive					
153	6400 W Little York	21" Live Oak	Ordinance tree		Remove existing curb without disturbing roots and soil behind, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Fence
154	6400 W Little York	25" Live Oak	Ordinance tree		Remove existing curb without disturbing roots and soil behind, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Fence
155	6400 W Little York	20" Live Oak	Ordinance tree		Remove existing curb without disturbing roots and soil behind, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Fence
156	6400 W Little York	19" Live Oak	Ordinance tree		Remove existing curb without disturbing roots and soil behind, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Fence
157	6400 W Little York	23" Live Oak	Ordinance tree		Remove existing curb without disturbing roots and soil behind, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Fence
158	6400 W Little York	25" Live Oak	Ordinance tree		Remove existing curb without disturbing roots and soil behind, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Fence
159	6400 W Little York	21" Live Oak	Ordinance tree		Remove existing curb without disturbing roots and soil behind, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Fence
160	6400 W Little York	17" Live Oak	Ordinance tree		Remove existing curb without disturbing roots and soil behind, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Fence
161	6400 W Little York	20" Live Oak	Ordinance tree		Remove existing curb without disturbing roots and soil behind, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Fence
162	6400 W Little York	25" Live Oak	Ordinance tree		Remove existing curb without disturbing roots and soil behind, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Fence
163	6400 W Little York	21" Live Oak	Ordinance tree		Remove existing curb without disturbing roots and soil behind, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Fence
164	6320 W Little York	4" Crepe Myrtle	Private tree	Not impacted	
165	6320 W Little York	5" Sugarberry	Private tree	Not impacted	
166	6320 W Little York	3" Crepe Myrtle	Private tree	Not impacted	
167	6320 W Little York	15" Crepe Myrtle	Private tree		Clearance prune
168	6320 W Little York	8" Sugarberry	Private tree	Not impacted	
169	6320 W Little York	14" Crepe Myrtle	Private tree	Not impacted	
170	6320 W Little York	10" Crepe Myrtle	Private tree	Not impacted	
171	6400 W Little York	22" Live Oak	Ordinance tree		Remove existing curb without disturbing roots and soil behind, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Fence

TREE PRESERVATION PLAN LEGEND

- 1 — TREE NUMBER/LOCATION
- (1) — TREE TO BE REMOVED
- —X—X— TREE PROTECTION FENCE
- ------ ROOT PRUNING TRENCH
- ⊙ REPLACEMENT PLANTING SPECIES AND SIZE/TYPE
- OCC ZERO CUTBACK CURB
- SIDEWALK ON GRADE
- CHECKERPLATE SECTION

NOTE:

1. THIS TREE PROTECTION PLAN WAS DEVELOPED WITH INFORMATION PROVIDED BY DESIGN ENGINEER IN DRAWINGS DATED MARCH 2024. THE PLAN CONSIDERS ALL FITTINGS, VERTICAL OFFSETS AND AREAS OF NECESSARY EXCAVATION. CHANGES MADE TO DESIGN MAY COMPROMISE THE TREE PROTECTION PLAN. REFER SPECIFICATIONS 01562 AND 02915. CONDITION OF EACH TREE IS BASED ON VISUAL EVALUATION AT TIME OF DESIGN. CONDITION AND STRUCTURAL INTEGRITY OF EACH TREE IS NOT GUARANTEED BY DESIGNER AT ANY POINT IN THE FUTURE, AS ENVIRONMENTAL AND MAINTENANCE INFLUENCES ON EACH TREE CAN NOT BE DETERMINED BY DESIGNER.
2. CN KOEHL URBAN FORESTRY, INC. HAS NOT BEEN CONTRACTED TO COMPLETE ANY TREE RISK ASSESSMENTS ON THIS PROJECT–THIS TPP INCLUDES PROTECTION MEASURES FOR SPECIES OF TREES PROTECTED BY APPLICABLE ORDINANCE ONLY. CN KOEHL URBAN FORESTRY, INC. DOES NOT GUARANTEE CONDITION OR STRUCTURAL INTEGRITY OF ANY TREES LOCATED ON OR ADJACENT TO THIS PROJECT.
3. IN AREAS WHERE INDIVIDUAL TREES HAVE NOT BEEN TIED IN BY SURVEY APPROXIMATE LOCATION IS INDICATED ON TPP WITH A DOT AND TREE NUMBER. ACCURACY OF REPRESENTED LOCATION IS NOT GUARANTEED BY CN KOEHL URBAN FORESTRY, INC.
4. THE CONTRACTOR'S ARBORIST WILL MARK LOCATIONS OF TREES TO BE PLANTED AND OBTAIN APPROVAL BY CITY ENGINEER AND CITY FORESTER BEFORE PURCHASING OR EXCAVATING PLANTING HOLE OF EACH TREE.

C.N. Koehl
Urban Forestry, Inc.
210 Stone Bush Ct. ◦ Katy, Texas 77493
281-391-0022 ckoehl@koehlurbanforestry.com

APPROVED: Craig N. Koehl 04/02/2025

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

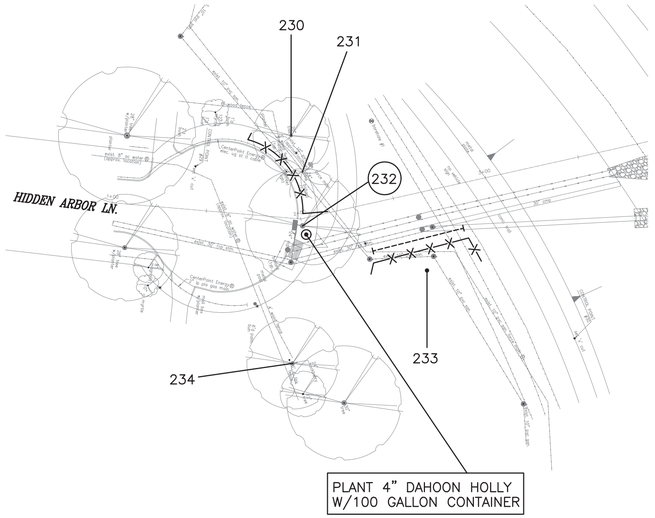
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

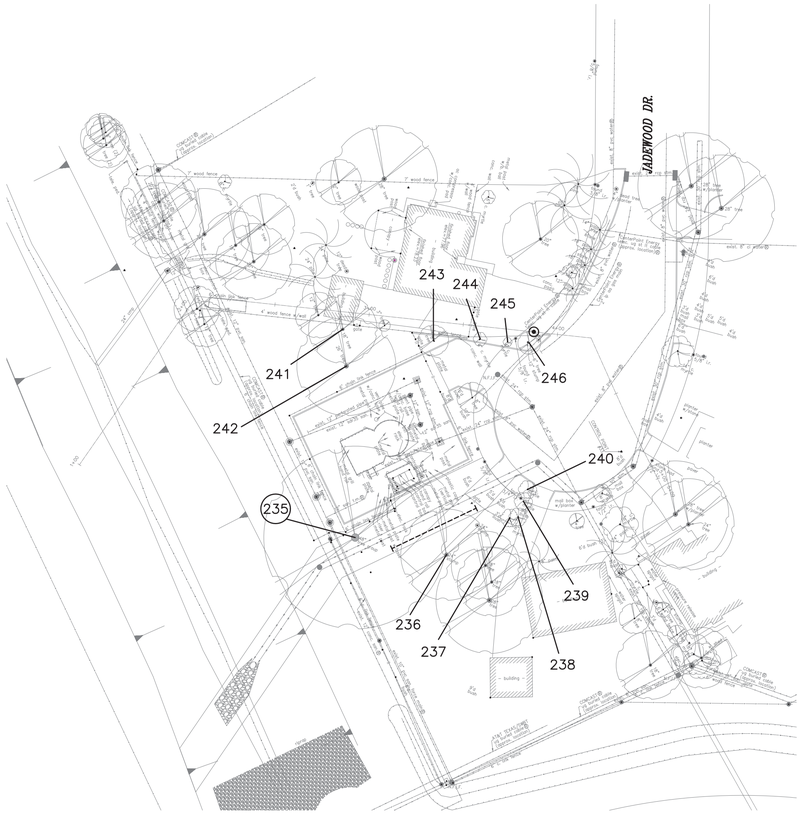
TREE PROTECTION PLAN

SHEET 4 OF 10

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX
DRAWING SCALE	
1"=40'	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 152 OF 158	

PLOTTED: 4/1/2025 4:49 PM
PLOT STYLE: CNKoehl.ctb
FILE PATH: C:\Users\Ned\Desktop\Work For Craig\ISANI Chateau Forest\ISANI CHATEAU FOREST TP-4.dwg





SCALE: 1"=40'

TREE PRESERVATION PLAN LEGEND

- 1 — TREE NUMBER/LOCATION
- (1) — TREE TO BE REMOVED
- —X—X— TREE PROTECTION FENCE
- ----- ROOT PRUNING TRENCH
- ⊙ REPLACEMENT PLANTING SPECIES AND SIZE/TYPE
- ⊢OCC⊣ ZERO CUTBACK CURB
- SIDEWALK ON GRADE
- CHECKERPLATE SECTION

NOTE:

1. THIS TREE PROTECTION PLAN WAS DEVELOPED WITH INFORMATION PROVIDED BY DESIGN ENGINEER IN DRAWINGS DATED MARCH 2024. THE PLAN CONSIDERS ALL FITTINGS, VERTICAL OFFSETS AND AREAS OF NECESSARY EXCAVATION. CHANGES MADE TO DESIGN MAY COMPROMISE THE TREE PROTECTION PLAN. REFER SPECIFICATIONS 01562 AND 02915. CONDITION OF EACH TREE IS BASED ON VISUAL EVALUATION AT TIME OF DESIGN. CONDITION AND STRUCTURAL INTEGRITY OF EACH TREE IS NOT GUARANTEED BY DESIGNER AT ANY POINT IN THE FUTURE, AS ENVIRONMENTAL AND MAINTENANCE INFLUENCES ON EACH TREE CAN NOT BE DETERMINED BY DESIGNER.
2. CN KOEHL URBAN FORESTRY, INC. HAS NOT BEEN CONTRACTED TO COMPLETE ANY TREE RISK ASSESSMENTS ON THIS PROJECT–THIS TPP INCLUDES PROTECTION MEASURES FOR SPECIES OF TREES PROTECTED BY APPLICABLE ORDINANCE ONLY. CN KOEHL URBAN FORESTRY, INC. DOES NOT GUARANTEE CONDITION OR STRUCTURAL INTEGRITY OF ANY TREES LOCATED ON OR ADJACENT TO THIS PROJECT.
3. IN AREAS WHERE INDIVIDUAL TREES HAVE NOT BEEN TIED IN BY SURVEY APPROXIMATE LOCATION IS INDICATED ON TPP WITH A DOT AND TREE NUMBER. ACCURACY OF REPRESENTED LOCATION IS NOT GUARANTEED BY CN KOEHL URBAN FORESTRY, INC.
4. THE CONTRACTOR'S ARBORIST WILL MARK LOCATIONS OF TREES TO BE PLANTED AND OBTAIN APPROVAL BY CITY ENGINEER AND CITY FORESTER BEFORE PURCHASING OR EXCAVATING PLANTING HOLE OF EACH TREE.

Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
Tree on Hidden Arbor Lane					
230	Not available	18" Water Oak	Private tree		Fence
231	Not available	21" Pine	Private tree		Fence
232	Not available	28" Water Oak	Ordinance tree	Hypoxylon, Ganoderma, Trunk decay, Very poor condition, Remove for storm	Remove tree, no replacement plantings required
233	6307 Hidden Arbor	25" Pecan	Private tree		Root prune for storm, Fence
234	6307 Hidden Arbor	17" Sugarberry	Private tree	Not impacted	
Tree on Jadewood Drive					
235	7202 Jadewood	29" Mulberry	Easement tree	Remove for storm	Remove tree, no replacement plantings required
236	7202 Jadewood	21" Green Ash	Private tree		Root prune for storm, Clearance prune
237	7202 Jadewood	5" Crepe Myrtle	Private tree	Not impacted	
238	7202 Jadewood	5" Crepe Myrtle	Private tree	Not impacted	
239	7202 Jadewood	5" Crepe Myrtle	Private tree	Not impacted	
240	7202 Jadewood	5" Crepe Myrtle	Not ordinance tree	Not impacted	
241	7205 Jadewood	17" Green Ash	Private tree	Dead, Not impacted	
242	7205 Jadewood	23" Water Oak	Private tree	Not impacted	
243	7205 Jadewood	7" Monterrey Oak	Private tree	Girdled by guidewire, Not impacted	
244	7205 Jadewood	5" Crepe Myrtle	Private tree	Not impacted	
245	7205 Jadewood	5" Crepe Myrtle	Private tree	Not impacted	
246	7205 Jadewood	7" Live Oak	Ordinance tree	Not impacted	

C.N. Koehl
Urban Forestry, Inc.
210 Stone Bush Ct. • Katy, Texas 77493
281-391-0022 ckoehl@koehlurbanforestry.com

APPROVED: Craig N. Koehl 04/02/2025

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P–6257

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

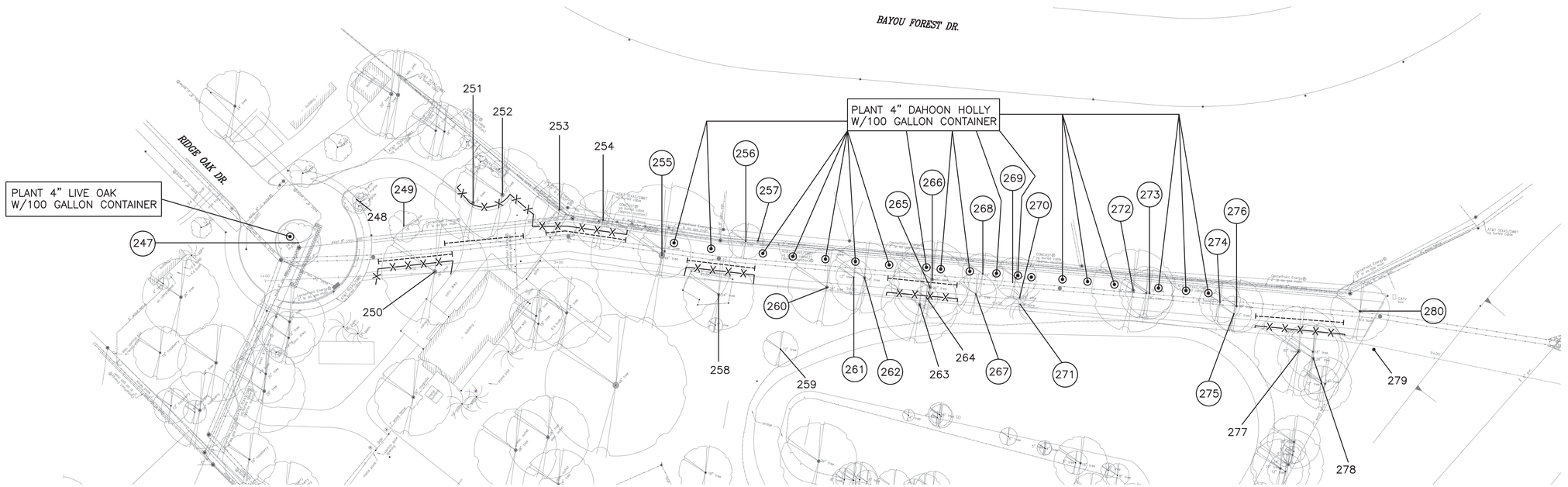
TREE PROTECTION PLAN

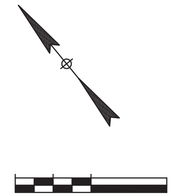
SHEET 5 OF 10

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410029–0001–4	
DRAWING SCALE	
1"=40'	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 153 OF 158	

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

PLOTTED: 4/1/2025 4:49 PM
PLOT STYLE: CNKoehl.ctb
FILE PATH: C:\Users\Ned\Desktop\Work For Craig\ISANI Chateau Forest\ISANI CHATEAU FOREST TP–5.dwg





SCALE: 1"=40'

Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
Trees on Ridge Oak Drive					
247	Median	13" Crepe Myrtle	Not ordinance tree	Remove for storm	Remove tree, no replacement plantings required
248	7200 Ridge Oak Drive	15" Crepe Myrtle	Not ordinance tree		
249	7200 Ridge Oak Drive	15" Crepe Myrtle	Easement tree	Remove for storm	Remove tree, no replacement plantings required
250	7200 Ridge Oak Drive	31" Live Oak	Private tree		Crown cleaning prune, Root stimulate, Root prune for storm, Clearance prune, Fence
251	7200 Ridge Oak Drive	25" Green Ash	Private tree		Root prune for storm, Clearance prune, Fence
252	7200 Ridge Oak Drive	22" Green Ash	Private tree		Root prune for storm, Clearance prune, Fence
253	7200 Ridge Oak Drive	16" Sugarberry	Private tree		Root prune for storm, Clearance prune, Fence
254	7200 Ridge Oak Drive	18" American Elm	Private tree		Root prune for storm, Clearance prune, Fence
255	7200 Ridge Oak Drive	18" Green Ash	Easement tree	Remove for storm	Remove tree, no replacement plantings required
256	7200 Ridge Oak Drive	12" Green Ash	Easement tree	Topped, Remove for storm	Remove tree, no replacement plantings required
257	7200 Ridge Oak Drive	17" Sugarberry	Easement tree	Remove for storm	Remove tree, no replacement plantings required
258	7200 Ridge Oak Drive	23" Green Ash	Private tree		Root prune for storm, Clearance prune, Fence
259	7200 Ridge Oak Drive	12" Sugarberry	Private tree	Not impacted	
260	7200 Ridge Oak Drive	22" Water Oak	Easement tree	50% dieback, Poor condition, Remove for storm	Remove tree, no replacement plantings required
261	7200 Ridge Oak Drive	13" Pecan	Easement tree	Remove for storm	Remove tree, no replacement plantings required
262	7200 Ridge Oak Drive	22" Green Ash	Easement tree	Decay, Poor condition, Remove for storm	Remove tree, no replacement plantings required
263	7200 Ridge Oak Drive	25" Water Oak	Private tree		Root prune for storm, Clearance prune, Fence
264	7200 Ridge Oak Drive	9" Pecan	Private tree		Root prune for storm, Clearance prune, Fence
265	7200 Ridge Oak Drive	23" Green Ash	Easement tree	Remove for storm	Remove tree, no replacement plantings required
266	7200 Ridge Oak Drive	24" Green Ash	Easement tree	Remove for storm	Remove tree, no replacement plantings required
267	7200 Ridge Oak Drive	14" Pecan	Easement tree	Remove for storm	Remove tree, no replacement plantings required
268	7200 Ridge Oak Drive	15" Sugarberry	Easement tree	Remove for storm	Remove tree, no replacement plantings required
269	7200 Ridge Oak Drive	15" Sugarberry	Easement tree	Remove for storm	Remove tree, no replacement plantings required
270	7200 Ridge Oak Drive	22" Pine	Easement tree	Remove for storm	Remove tree, no replacement plantings required
271	7200 Ridge Oak Drive	18" Pine	Easement tree	Remove for storm	Remove tree, no replacement plantings required
272	7200 Ridge Oak Drive	28" Cottonwood	Easement tree	Remove for storm	Remove tree, no replacement plantings required
273	7200 Ridge Oak Drive	23" Sugarberry	Easement tree	Remove for storm	Remove tree, no replacement plantings required
274	7200 Ridge Oak Drive	14" Green Ash	Easement tree	Remove for storm	Remove tree, no replacement plantings required
275	7200 Ridge Oak Drive	13" Pecan	Easement tree	Remove for storm	Remove tree, no replacement plantings required
276	7200 Ridge Oak Drive	18" Cedar Elm	Easement tree	Remove for storm	Remove tree, no replacement plantings required
277	7200 Ridge Oak Drive	33" Cottonwood	Private tree		Root prune for storm, Fence
278	7200 Ridge Oak Drive	19" Winged Elm	Private tree	Pruned by CenterPoint Energy	Root prune for storm, Fence
279	7200 Ridge Oak Drive	17" Sugarberry	Private tree	Not impacted	
280	7200 Ridge Oak Drive	24" American Elm	Easement tree	Dead, Remove for storm	Remove tree, no replacement plantings required

TREE PRESERVATION PLAN LEGEND

- 1 — TREE NUMBER/LOCATION
- (1) — TREE TO BE REMOVED
- —X—X— TREE PROTECTION FENCE
- ROOT PRUNING TRENCH
- REPLACEMENT PLANTING SPECIES AND SIZE/TYPE
- —OCC— ZERO CUTBACK CURB
- SIDEWALK ON GRADE
- CHECKERPLATE SECTION

NOTE:

1. THIS TREE PROTECTION PLAN WAS DEVELOPED WITH INFORMATION PROVIDED BY DESIGN ENGINEER IN DRAWINGS DATED MARCH 2024. THE PLAN CONSIDERS ALL FITTINGS, VERTICAL OFFSETS AND AREAS OF NECESSARY EXCAVATION. CHANGES MADE TO DESIGN MAY COMPROMISE THE TREE PROTECTION PLAN. REFER SPECIFICATIONS 01562 AND 02915. CONDITION OF EACH TREE IS BASED ON VISUAL EVALUATION AT TIME OF DESIGN. CONDITION AND STRUCTURAL INTEGRITY OF EACH TREE IS NOT GUARANTEED BY DESIGNER AT ANY POINT IN THE FUTURE, AS ENVIRONMENTAL AND MAINTENANCE INFLUENCES ON EACH TREE CAN NOT BE DETERMINED BY DESIGNER.
2. CN KOEHL URBAN FORESTRY, INC. HAS NOT BEEN CONTRACTED TO COMPLETE ANY TREE RISK ASSESSMENTS ON THIS PROJECT–THIS TPP INCLUDES PROTECTION MEASURES FOR SPECIES OF TREES PROTECTED BY APPLICABLE ORDINANCE ONLY. CN KOEHL URBAN FORESTRY, INC. DOES NOT GUARANTEE CONDITION OR STRUCTURAL INTEGRITY OF ANY TREES LOCATED ON OR ADJACENT TO THIS PROJECT.
3. IN AREAS WHERE INDIVIDUAL TREES HAVE NOT BEEN TIED IN BY SURVEY APPROXIMATE LOCATION IS INDICATED ON TPP WITH A DOT AND TREE NUMBER. ACCURACY OF REPRESENTED LOCATION IS NOT GUARANTEED BY CN KOEHL URBAN FORESTRY, INC.
4. THE CONTRACTOR'S ARBORIST WILL MARK LOCATIONS OF TREES TO BE PLANTED AND OBTAIN APPROVAL BY CITY ENGINEER AND CITY FORESTER BEFORE PURCHASING OR EXCAVATING PLANTING HOLE OF EACH TREE.

C.N. Koehl
Urban Forestry, Inc.
210 Stone Bush Ct. ◦ Katy, Texas 77493
281-391-0022 ckoehl@koehlurbanforestry.com

APPROVED: Craig N. Koehl 04/02/2025

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

TREE PROTECTION PLAN

SHEET 6 OF 10

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
1"=40'	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 154 OF 158	

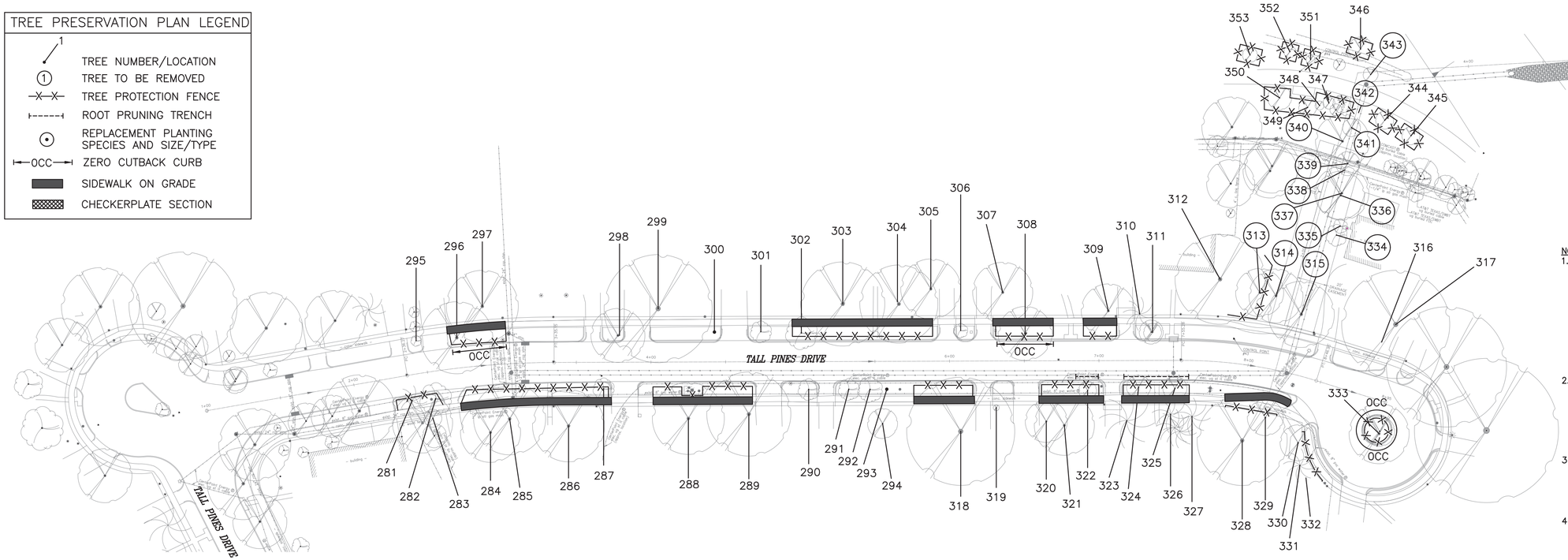
HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720 CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX

PLOTTED: 4/1/2025 4:49 PM
PLOT STYLE: CNKoehl.ctb
FILE PATH: C:\Users\Ned\Desktop\Work For Craig\ISANI Chateau Forest\ISANI CHATEAU FOREST TP-6.dwg

PLOTTED: 4/1/2025 4:50 PM
PLOT STYLE: CNKoehl.ctb
FILE PATH: C:\Users\Ned\Desktop\Work For Craig\ISANI Chateau Forest\ISANI CHATEAU FOREST TP-7.dwg

TREE PRESERVATION PLAN LEGEND

- TREE NUMBER/LOCATION
- TREE TO BE REMOVED
- TREE PROTECTION FENCE
- ROOT PRUNING TRENCH
- REPLACEMENT PLANTING SPECIES AND SIZE/TYPE
- ZERO CUTBACK CURB
- SIDEWALK ON GRADE
- CHECKERPLATE SECTION



SCALE: 1"=40'

NOTE:

1. THIS TREE PROTECTION PLAN WAS DEVELOPED WITH INFORMATION PROVIDED BY DESIGN ENGINEER IN DRAWINGS DATED MARCH 2024. THE PLAN CONSIDERS ALL FITTINGS, VERTICAL OFFSETS AND AREAS OF NECESSARY EXCAVATION. CHANGES MADE TO DESIGN MAY COMPROMISE THE TREE PROTECTION PLAN. REFER SPECIFICATIONS 01562 AND 02915. CONDITION OF EACH TREE IS BASED ON VISUAL EVALUATION AT TIME OF DESIGN. CONDITION AND STRUCTURAL INTEGRITY OF EACH TREE IS NOT GUARANTEED BY DESIGNER AT ANY POINT IN THE FUTURE, AS ENVIRONMENTAL AND MAINTENANCE INFLUENCES ON EACH TREE CAN NOT BE DETERMINED BY DESIGNER.
2. CN KOEHL URBAN FORESTRY, INC. HAS NOT BEEN CONTRACTED TO COMPLETE ANY TREE RISK ASSESSMENTS ON THIS PROJECT–THIS TPP INCLUDES PROTECTION MEASURES FOR SPECIES OF TREES PROTECTED BY APPLICABLE ORDINANCE ONLY. CN KOEHL URBAN FORESTRY, INC. DOES NOT GUARANTEE CONDITION OR STRUCTURAL INTEGRITY OF ANY TREES LOCATED ON OR ADJACENT TO THIS PROJECT.
3. IN AREAS WHERE INDIVIDUAL TREES HAVE NOT BEEN TIED IN BY SURVEY APPROXIMATE LOCATION IS INDICATED ON TPP WITH A DOT AND TREE NUMBER. ACCURACY OF REPRESENTED LOCATION IS NOT GUARANTEED BY CN KOEHL URBAN FORESTRY, INC.
4. THE CONTRACTOR'S ARBORIST WILL MARK LOCATIONS OF TREES TO BE PLANTED AND OBTAIN APPROVAL BY CITY ENGINEER AND CITY FORESTER BEFORE PURCHASING OR EXCAVATING PLANTING HOLE OF EACH TREE.

Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
Trees on Tall Pines Drive					
281	7330 Tall Pines	16" Pine	Ordinance tree	Trunk Scars	Fence
282	7330 Tall Pines	15" Crepe Myrtle	Not ordinance tree	Topped	
283	7330 Tall Pines	8" Water Oak	Private tree	Suppressed	Fence
284	7330 Tall Pines	19" Arizona Ash	Private tree	40% dieback	Fence, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
285	7330 Tall Pines	27" Arizona Ash	Private tree	50% dieback	Fence, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
286	7330 Tall Pines	23" Arizona Ash	Private tree		Fence, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
287	7422 Tall Pines	12" Crepe Myrtle	Not ordinance tree		Clearance prune
288	7422 Tall Pines	23" Water Oak	Private tree		Fence, Clearance prune, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
289	7430 Tall Pines	28" Arizona Ash	Private tree	50% dieback	Fence, Clearance prune, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
290	7434 Tall Pines	11" Crepe Myrtle	Not ordinance tree		Clearance prune
291	7434 Tall Pines	12" Crepe Myrtle	Not ordinance tree	Topped	Clearance prune
292	7434 Tall Pines	12" Crepe Myrtle	Not ordinance tree	Topped	Clearance prune
293	7434 Tall Pines	12" Crepe Myrtle	Not ordinance tree	Topped	Clearance prune
294	7434 Tall Pines	10" Arizona Ash	Private tree	Not impacted	
295	7419 Tall Pines	3" Crepe Myrtle	Not ordinance tree		Clearance prune
296	7419 Tall Pines	23" Arizona Ash	Ordinance tree	30% dieback	Zero curb cutback, Clearance prune, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Fence
297	7419 Tall Pines	25" Sweetgum	Private tree	50% dieback	Protected with tree #296
298	7427 Tall Pines	14" Arizona Ash	Not ordinance tree		Clearance prune
299	7427 Tall Pines	39" Arizona Ash	Private tree	90% dieback	Clearance prune
300	7431 Tall Pines	3" Crepe Myrtle	Not ordinance tree	50% dieback, Not impacted	
301	7431 Tall Pines	10" Crepe Myrtle	Not ordinance tree		Clearance prune
302	7431 Tall Pines	12" Crepe Myrtle	Not ordinance tree		Clearance prune
303	7435 Tall Pines	26" Green Ash	Private tree		Fence, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
304	7435 Tall Pines	26" Live Oak	Private tree		Fence, Clearance prune, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
305	7435 Tall Pines	23" Water Oak	Private tree		Fence, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
306	7435 Tall Pines	8" Crepe Myrtle	Not ordinance tree		Clearance prune
307	7435 Tall Pines	18" Post Oak	Private tree		demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Fence
308	7443 Tall Pines	16" Water Oak	Ordinance tree		Zero curb cutback, Fence, Clearance prune, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
309	7443 Tall Pines	19" Post Oak	Private tree		Fence, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
310	7447 Tall Pines	20' Palm	Private tree	Not impacted	
311	7447 Tall Pines	12" Loquat	Not ordinance tree	60% dieback, Not impacted	
312	7447 Tall Pines	28" Water Oak	Private tree	40% dieback	Fence
313	7447 Tall Pines	14" Water Oak	Easement tree	Remove for storm	Remove tree, no replacement plantings required
314	7447 Tall Pines	16" Water Oak	Easement tree	Remove for storm	Remove tree, no replacement plantings required
315	7447 Tall Pines	22" Arizona Ash	Easement tree	Remove for storm	Remove tree, no replacement plantings required
316	7455 Tall Pines	2' Sago	Private tree	Not impacted	
317	7455 Tall Pines	33" Water Oak	Private tree	Not impacted	
318	7438 Tall Pines	28" Live Oak	Private tree		Fence, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
319	7438 Tall Pines	2" Water Oak	Private tree	Not impacted	
320	7442 Tall Pines	17" Water Oak	Private tree		Fence, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
321	7442 Tall Pines	23" Water Oak	Private tree		Fence, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
322	7442 Tall Pines	9" Magnolia	Ordinance tree		Root prune for street, Clearance prune, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
323	7446 Tall Pines	27" Pine	Private tree		Fence, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
324	7446 Tall Pines	9" Magnolia	Ordinance tree		Root prune for street, Clearance prune, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
325	7446 Tall Pines	8" Magnolia	Ordinance tree	50% dieback	Root prune for street, Clearance prune, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
326	7446 Tall Pines	21" Pine	Private tree		Fence, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
327	7446 Tall Pines	19" Pine	Private tree		Fence, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
328	7450 Tall Pines	33" Post Oak	Private tree		Fence, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
329	7450 Tall Pines	12" Water Oak	Private tree		Fence, Clearance prune, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
330	7450 Tall Pines	13" Water Oak	Private tree		Fence, Clearance prune, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
331	7450 Tall Pines	19" Pine	Private tree		Fence, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
332	7450 Tall Pines	6" Arborvitae	Private tree		Fence, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
333	Median	27" Live Oak	Ordinance tree		Zero curb cutback, Fence, Clearance prune
334	Not available	8" Crepe Myrtle	Easement tree	Remove for storm	Remove tree, no replacement plantings required
335	Not available	8" Crepe Myrtle	Easement tree	Remove for storm	Remove tree, no replacement plantings required
336	Not available	13" Sugarberry	Easement tree	Remove for storm	Remove tree, no replacement plantings required
337	Not available	16" Sugarberry	Easement tree	Remove for storm	Remove tree, no replacement plantings required
338	Not available	4" Cherry Laurel	Easement tree	Remove for storm	Remove tree, no replacement plantings required
339	Not available	6" Chinaberry	Easement tree	Remove for storm	Remove tree, no replacement plantings required
340	Not available	13" Mulberry	Easement tree	Remove for storm	Remove tree, no replacement plantings required
341	Not available	6" Bald Cypress	Easement tree	Remove for storm	Remove tree, no replacement plantings required
342	Not available	4" Redbud	Easement tree	Remove for storm	Remove tree, no replacement plantings required
343	Not available	5" Bald Cypress	Easement tree	Remove for storm	Remove tree, no replacement plantings required
344	Not available	5" Bald Cypress	Easement tree		Fence
345	Not available	5" Bald Cypress	Easement tree		Fence
346	Not available	8" Bald Cypress	Easement tree		Fence
347	Not available	4" Redbud	Easement tree		Fence
348	Not available	4" Redbud	Easement tree		Fence
349	Not available	4" Redbud	Easement tree		Fence
350	Not available	5" Mexican Plum	Easement tree		Fence
351	Not available	4" Redbud	Easement tree		Fence
352	Not available	4" Redbud	Easement tree		Fence
353	Not available	4" Redbud	Easement tree		Fence

C.N. Koehl
Urban Forestry, Inc.
210 Stone Bush Ct. • Katy, Texas 77493
281-391-0022 ckoehl@koehlurbanforestry.com

APPROVED: Craig N. Koehl 04/02/2025

ISANI
civil · design · engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

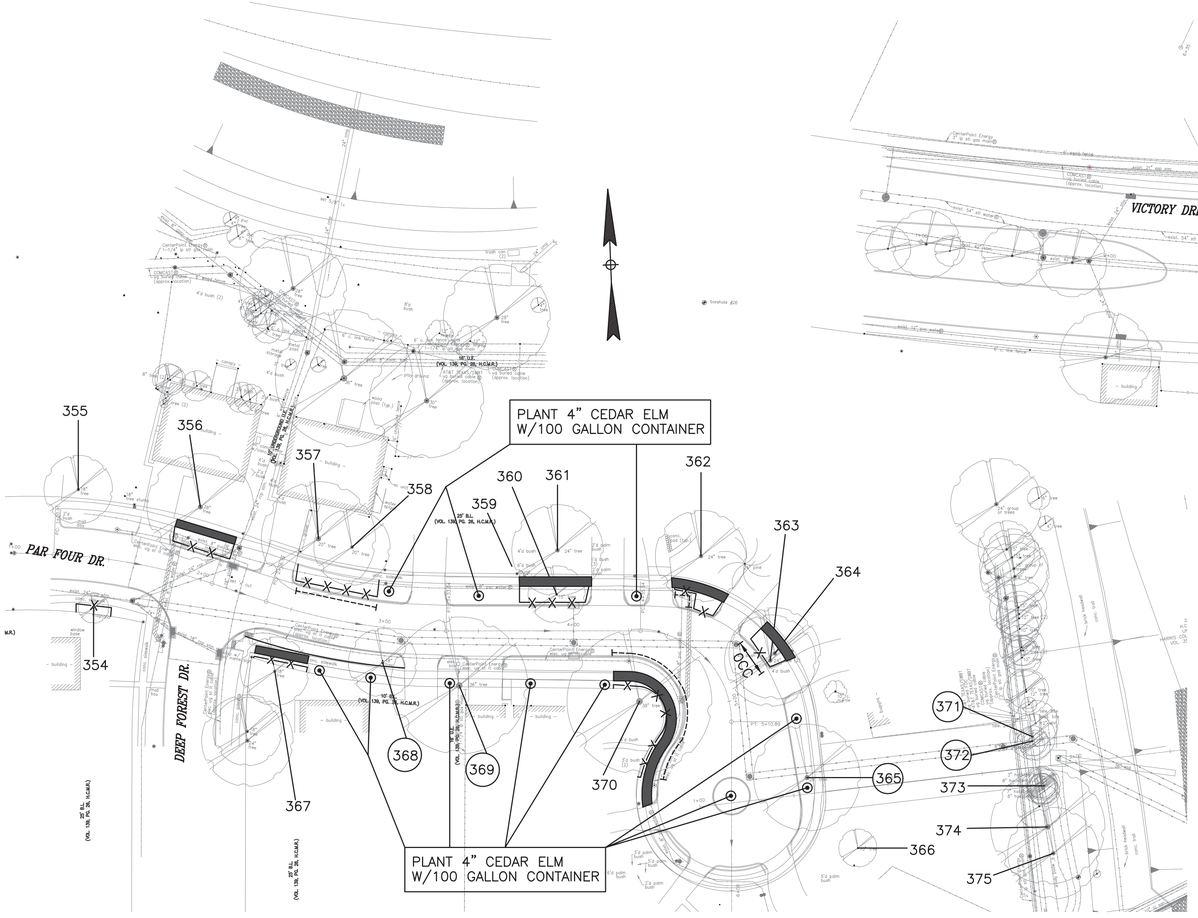
CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

TREE PROTECTION PLAN

SHEET 7 OF 10

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
1"=40'	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 155 OF 158	

HOUSTON PUBLIC WORKS
ACCEPTED AND FILED
81720
CITY DRAWING NUMBER
Approval Date 09/19/25
HOUSTON TX



Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
Trees on Par Four Drive					
354	7219 Deep Forest	8" Magnolia	Ordinance tree		Clearance prune, Fence
355	5902 Par Four	19" Water Oak	Private tree		Clearance prune, Fence
356	5834 Par Four	29" Water Oak	Private tree		Fence, Clearance prune, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
357	5830 Par Four	41" Willow Oak	Private tree		Root prune for street, Fence, Clearance prune
358	5830 Par Four	21" Water Oak	Private tree		Root prune for street, Fence, Clearance prune
359	5826 Par Four	5" Oleander	Private tree	Not impacted	
360	5822 Par Four	13" Tallow	Not ordinance tree		Clearance prune
361	5822 Par Four	32" Water Oak	Private tree		Fence, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
362	5818 Par Four	25" Nutall Oak	Private tree		Root prune for waterline, Fence, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
363	5810 Par Four	22" Arizona Ash	Ordinance tree		Zero curb cutback, Fence, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Clearance prune
364	5810 Par Four	23" Arizona Ash	Ordinance tree		Zero curb cutback, Fence, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger, Clearance prune
365	5802 Par Four	24" Tallow	Ordinance tree	Remove for storm	Remove tree, provide 24" in replacement plantings to comply with ordinance
366	5802 Par Four	7" Loquat	Private tree	Dead	
367	7218 Deep Forest	14" Water Oak	Private tree		Fence, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
368	7218 Deep Forest	18" Water Oak	Ordinance tree	Remove for sidewalk	Remove tree, provide 18" in replacement plantings to comply with ordinance
369	7218 Deep Forest	37" Green Ash	Ordinance tree	Trunk cavity, Poor condition	Remove tree, no replacement plantings required
370	5891 Par Four	39" Water Oak	Private tree		Root prune for street, Clearance prune, Fence, Demo form pour sidewalk without damage to tree roots 1" in diameter or larger
371	Not available	7" Sugarberry	Easement tree	Remove for storm	Remove tree, no replacement plantings required
372	Not available	14" Sugarberry	Easement tree	Remove for storm	Remove tree, no replacement plantings required
373	Not available	11" Water Oak	Easement tree	Not impacted	
374	Not available	17" Sugarberry	Easement tree	Not impacted	
375	Not available	15" Tallow	Easement tree	Not impacted	
376	Not available	4" Bald Cypress	Easement tree	Remove for storm	Remove tree, no replacement plantings required
377	Not available	4" Bald Cypress	Easement tree		Fence

TREE PRESERVATION PLAN LEGEND

- 1 — TREE NUMBER/LOCATION
- (1) — TREE TO BE REMOVED
- —X—X— TREE PROTECTION FENCE
- ------ ROOT PRUNING TRENCH
- ⊙ REPLACEMENT PLANTING SPECIES AND SIZE/TYPE
- 0CC ZERO CUTBACK CURB
- SIDEWALK ON GRADE
- CHECKERPLATE SECTION

NOTE:

1. THIS TREE PROTECTION PLAN WAS DEVELOPED WITH INFORMATION PROVIDED BY DESIGN ENGINEER IN DRAWINGS DATED MARCH 2024. THE PLAN CONSIDERS ALL FITTINGS, VERTICAL OFFSETS AND AREAS OF NECESSARY EXCAVATION. CHANGES MADE TO DESIGN MAY COMPROMISE THE TREE PROTECTION PLAN. REFER SPECIFICATIONS 01562 AND 02915. CONDITION OF EACH TREE IS BASED ON VISUAL EVALUATION AT TIME OF DESIGN. CONDITION AND STRUCTURAL INTEGRITY OF EACH TREE IS NOT GUARANTEED BY DESIGNER AT ANY POINT IN THE FUTURE, AS ENVIRONMENTAL AND MAINTENANCE INFLUENCES ON EACH TREE CAN NOT BE DETERMINED BY DESIGNER.
2. CN KOEHL URBAN FORESTRY, INC. HAS NOT BEEN CONTRACTED TO COMPLETE ANY TREE RISK ASSESSMENTS ON THIS PROJECT–THIS TPP INCLUDES PROTECTION MEASURES FOR SPECIES OF TREES PROTECTED BY APPLICABLE ORDINANCE ONLY. CN KOEHL URBAN FORESTRY, INC. DOES NOT GUARANTEE CONDITION OR STRUCTURAL INTEGRITY OF ANY TREES LOCATED ON OR ADJACENT TO THIS PROJECT.
3. IN AREAS WHERE INDIVIDUAL TREES HAVE NOT BEEN TIED IN BY SURVEY APPROXIMATE LOCATION IS INDICATED ON TPP WITH A DOT AND TREE NUMBER. ACCURACY OF REPRESENTED LOCATION IS NOT GUARANTEED BY CN KOEHL URBAN FORESTRY, INC.
4. THE CONTRACTOR'S ARBORIST WILL MARK LOCATIONS OF TREES TO BE PLANTED AND OBTAIN APPROVAL BY CITY ENGINEER AND CITY FORESTER BEFORE PURCHASING OR EXCAVATING PLANTING HOLE OF EACH TREE.

40 0 40

SCALE: 1"=40'

C.N. Koehl
Urban Forestry, Inc.
210 Stone Bush Ct. • Katy, Texas 77493
281-391-0022 ckoehl@koehlurbanforestry.com

APPROVED: Craig N. Koehl 04/02/2025

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P–6257

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

TREE PROTECTION PLAN

SHEET 8 OF 10

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410029–0001–4	
DRAWING SCALE	
1"=40'	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 156 OF 158	

HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX

PLOTTED: 4/1/2025 4:50 PM
PLOT STYLE: CNKoehl.ctb
FILE PATH: C:\Users\Ned\Desktop\Work For Craig\ISANI Chateau Forest\ISANI CHATEAU FOREST TP–8.dwg

Tree Removal List

Tree No.	Location	Description	Replacement requirement
5	6342 Deirdre Anne	15" Crepe Myrtle	0
10	6330 Deirdre Anne	10" Arborvitae	0
13	Not available	10" Loquat	0
14	Not available	13" Arborvitae	0
19	6345 Chateau Forest Drive	3" Crepe Myrtle	0
22	Not available	8" Arborvitae	0
26	Not available	5' Sago	0
28	6323 Deirdre Anne	2" Crepe Myrtle	0
30	6323 Deirdre Anne	9" Arborvitae	0
41	6303 Deirdre Anne	12" Magnolia	12
42	6303 Deirdre Anne	17" Water Oak	0
43	Not available	16" Chinaberry	0
44	Not available	9" Sugarberry	0
47	6345 Deirdre Anne	5" Juniper	0
48	6345 Deirdre Anne	4" Juniper	0
48A	6345 Deirdre Anne	3" Juniper	0
49	6345 Deirdre Anne	31" Water Oak	31
49a	6345 Deirdre Anne	4" Crepe Myrtle	0
49B	6374 French Chateau	5" Sugarberry	0
51	6374 French Chateau	3' Sago	0
72	6330 Silver Chalice	22" American Elm	0
74	6330 Silver Chalice	26" American Elm	26
75	6330 Silver Chalice	19" American Elm	19
76	6330 Silver Chalice	18" American Elm	18
78	6403 Silver Chalice	8" Crepe Myrtle	0
81	6403 Silver Chalice	8" Crepe Myrtle	0
82A	6402 Oaknut	11" Sweetgum	11
86	6350 Oaknut	4" Vitex	0
87	6350 Oaknut	33" Live Oak	33
88	6350 Oaknut	33" Live Oak	33
105	6350 Acorn Forest	25' Palm	0
111	6342 Maple Hill	29" Water Oak	29
118	6402 Acorn Forest	27" Live Oak	27
124	6334 Tall Willow	21" American Elm	0
150	6400 Little York	24" Live Oak	24
232	Not available	28" Water Oak	0
235	7202 Jadewood	29" Mulberry	0
247	Median	13" Crepe Myrtle	0
249	7200 Ridge Oak Drive	15" Crepe Myrtle	0
255	7200 Ridge Oak Drive	18" Green Ash	0
256	7200 Ridge Oak Drive	12" Green Ash	0
257	7200 Ridge Oak Drive	17" Sugarberry	0
260	7200 Ridge Oak Drive	22" Water Oak	0
261	7200 Ridge Oak Drive	13" Pecan	0
262	7200 Ridge Oak Drive	22" Green Ash	0
265	7200 Ridge Oak Drive	23" Green Ash	0
266	7200 Ridge Oak Drive	24" Green Ash	0
267	7200 Ridge Oak Drive	14" Pecan	0
268	7200 Ridge Oak Drive	15" Sugarberry	0
269	7200 Ridge Oak Drive	15" Sugarberry	0
270	7200 Ridge Oak Drive	22" Pine	0
271	7200 Ridge Oak Drive	18" Pine	0
272	7200 Ridge Oak Drive	28" Cottonwood	0
273	7200 Ridge Oak Drive	23" Sugarberry	0
274	7200 Ridge Oak Drive	14" Green Ash	0
275	7200 Ridge Oak Drive	13" Pecan	0
276	7200 Ridge Oak Drive	18" Crepe Myrtle	0
280	7200 Ridge Oak Drive	24" American Elm	0
313	7447 Tall Pines	14" Water Oak	0
314	7447 Tall Pines	16" Water Oak	0
315	7447 Tall Pines	22" Arizona Ash	0
334	Not available	8" Crepe Myrtle	0
335	Not available	8" Crepe Myrtle	0
336	Not available	13" Sugarberry	0
337	Not available	16" Sugarberry	0
338	Not available	4" Cherry Laurel	0
339	Not available	6" Chinaberry	0
340	Not available	13" Mulberry	0
341	Not available	6" Bald Cypress	0
342	Not available	4" Redbud	0
343	Not available	5" Bald Cypress	0
365	5802 Par Four	24" Tallow	24
368	7218 Deep Forest	18" Water Oak	18
369	7218 Deep Forest	37" Green Ash	0
371	Not available	7" Sugarberry	0
372	Not available	14" Sugarberry	0
376	Not available	4" Bald Cypress	0
		TOTAL REPLACEMENT INCHES REQUIRED	**305**

Tree Replacement List

Quantity	Caliper Size	Species	Container/Tree Spade size
20	4	Cedar Elm (Ulmus crassifolia)	100 gallon
26	4	Dahoon Holly (Ilex cassine)	100 gallon
9	4	Nuttall Oak (Quercus texana)	100 gallon
1	4	Bald Cypress (Taxodium distichum)	100 gallon
21	4	Live Oak (Quercus virginiana)	100 gallon
TOTAL REPLACEMENT INCHES INCLUDED IN PLAN			**308**

NOTE: Tree replacement locations are not shown on plans. Contractor must coordinate with City of Houston Urban Forestry and Houston Public Works prior to PURCHASING trees. This project may not have adequate room for all required replacement trees without creating regulatory sign or traffic/pedestrian visibility issues. Number of trees and planting locations will be determined by City of Houston Urban Forestry in construction phase. Trees that are planted are 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.

Trees are 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 Forestry.

Tree replacement locations shall comply with Houston Public Works spec sections 02811, 02911, 02912, 02915, 02921 & 02922. In general trees along sides of street right of ways shall be no closer than 3' to back of curb or 20' from another tree. Trees in medians shall be no closer than 6' back of curb, 75' from an intersection, 50' to a median cut, or 20' from another tree. Contractor to coordinate locations with City Forestry and HPW prior to PURCHASING trees. All replacement trees called out on plans may not be planted on project relative to coordination with listed parties.

Arboriculturally Significant Tree List

Tree No.	Location	Description
4	6402 Deirdre Anne	34" Water Oak
6	6342 Deirdre Anne	44" Live Oak
16	Not available	25" Arizona Ash
49	6345 Deirdre Anne	31" Water Oak
65	6375 French Chateau	61" Arizona Ash
74	6330 Silver Chalice	26" American Elm
87	6350 Oaknut	33" Live Oak
88	6350 Oaknut	33" Live Oak
95	6403 Oaknut	26" Arizona Ash
110	6342 Maple Hill	24" Post Oak
111	6342 Maple Hill	29" Water Oak
112	6403 Acorn Forest	32" Arizona Ash
115	6402 Acorn Forest	26" Post Oak
118	6402 Acorn Forest	27" Live Oak
119	6403 Maple Hill	52" Live Oak
120	6343 Maple Hill	52" Arizona Ash
134	6403 Tall Willow	31" Water Oak
142	6402 King Post	34" Water Oak
144	6331 King Post	35" Arizona Ash
145	6331 King Post	28" Water Oak
146	6331 King Post	42" Water Oak
149	6403 King Post	33" Water Oak
150	6400 W Little York	24" Live Oak
154	6400 W Little York	25" Live Oak
158	6400 W Little York	25" Live Oak
162	6400 W Little York	25" Live Oak
232	Not available	28" Water Oak
233	6307 Hidden Arbor	25" Pecan
250	7200 Ridge Oak Drive	31" Live Oak
251	7200 Ridge Oak Drive	25" Green Ash
263	7200 Ridge Oak Drive	25" Water Oak
266	7200 Ridge Oak Drive	24" Green Ash
272	7200 Ridge Oak Drive	28" Cottonwood
277	7200 Ridge Oak Drive	33" Cottonwood
280	7200 Ridge Oak Drive	24" American Elm
285	7330 Tall Pines	27" Arizona Ash
289	7430 Tall Pines	28" Arizona Ash
297	7419 Tall Pines	25" Sweetgum
299	7427 Tall Pines	39" Arizona Ash
303	7435 Tall Pines	26" Green Ash
304	7435 Tall Pines	26" Live Oak
312	7447 Tall Pines	28" Water Oak
317	7455 Tall Pines	33" Water Oak
318	7438 Tall Pines	28" Live Oak
323	7446 Tall Pines	27" Pine
328	7450 Tall Pines	33" Post Oak
333	Median	27" Live Oak
356	5834 Par Four	29" Water Oak
357	5830 Par Four	41" Willow Oak
361	5822 Par Four	32" Water Oak
362	5818 Par Four	25" Nutall Oak
365	5802 Par Four	24" Tallow
369	7218 Deep Forest	37" Green Ash
370	5891 Par Four	39" Water Oak

Trees Identified by City of Houston Forestry/Parks & Recreation Department as Arboriculturally Significant are identified here and/or in treatment schedule included on TPP sheets. Arboriculturally Significant trees are to be pruned under direct supervision of City of Houston Forestry. Minimal pruning will be allowed for construction equipment access, and in some cases no pruning will be allowed. Contractor must review conditions around and/or under the canopy of Arboriculturally Significant trees and consider restrictions when preparing cost estimate and planning construction equipment that will be necessary to accomplish design installation with minimal to no tree pruning.

C.N. Koehl
Urban Forestry, Inc.
210 Stone Bush Ct. • Katy, Texas 77493
281-391-0022 ckoehl@koehlurbanforestry.com

APPROVED: Craig N. Koehl 04/02/2025

ISANI
civil · design · engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

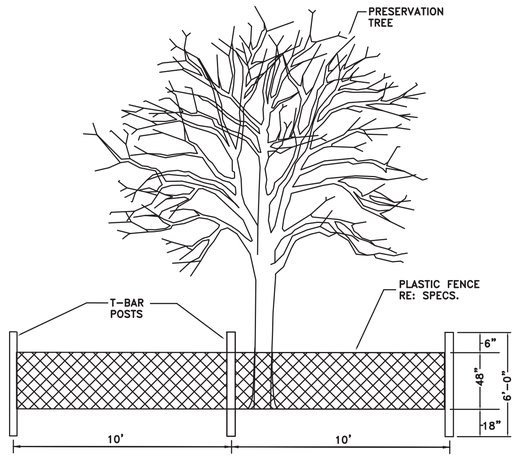
TREE PROTECTION PLAN

SHEET 9 OF 10

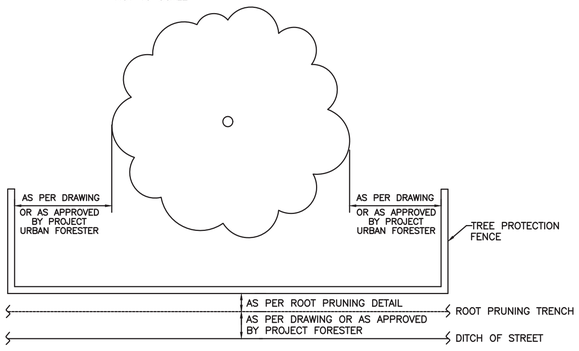
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 157 OF 158	

HOUSTON PUBLIC WORKS ACCEPTED AND FILED
81720 CITY DRAWING NUMBER
Approval Date 08/19/25
HOUSTON TX

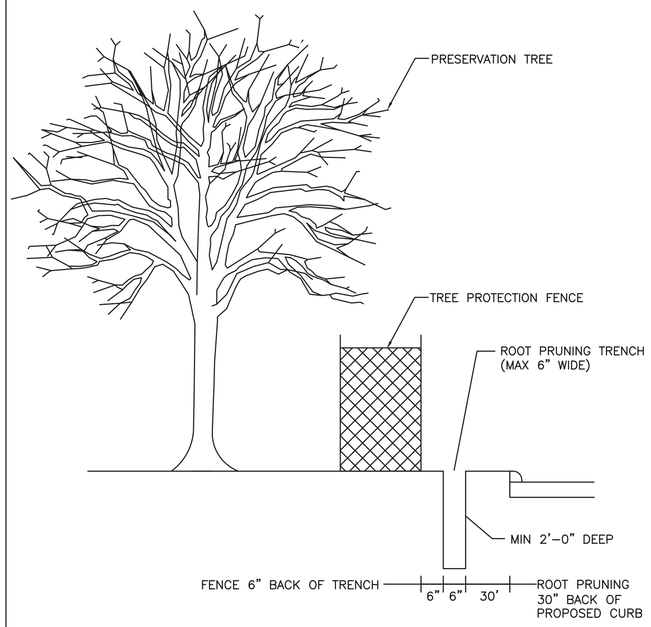
PLOTTED: 4/1/2025 4:50 PM
PLOT STYLE: CNKoehl.ctb
FILE PATH: C:\Users\Ned\Desktop\Work For Craig\ISANI Chateau Forest\ISANI CHATEAU FOREST TP-9.dwg



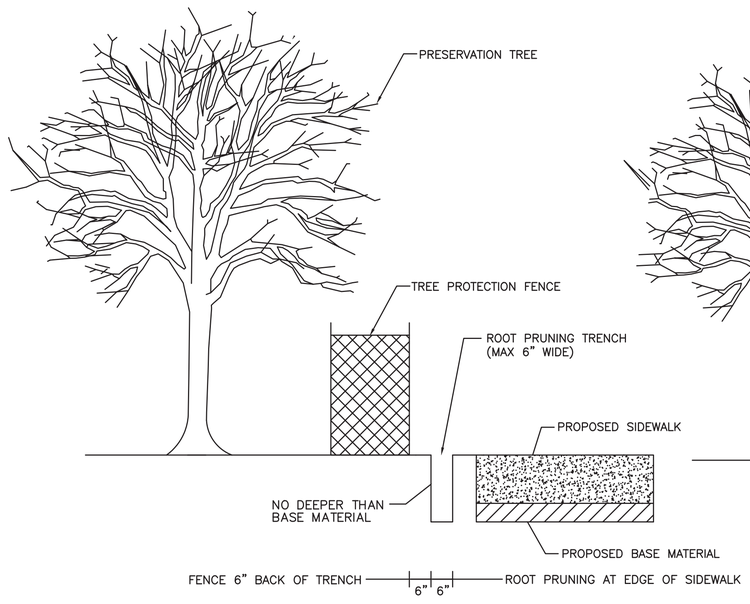
TREE PROTECTION FENCING DETAIL A
NOT TO SCALE



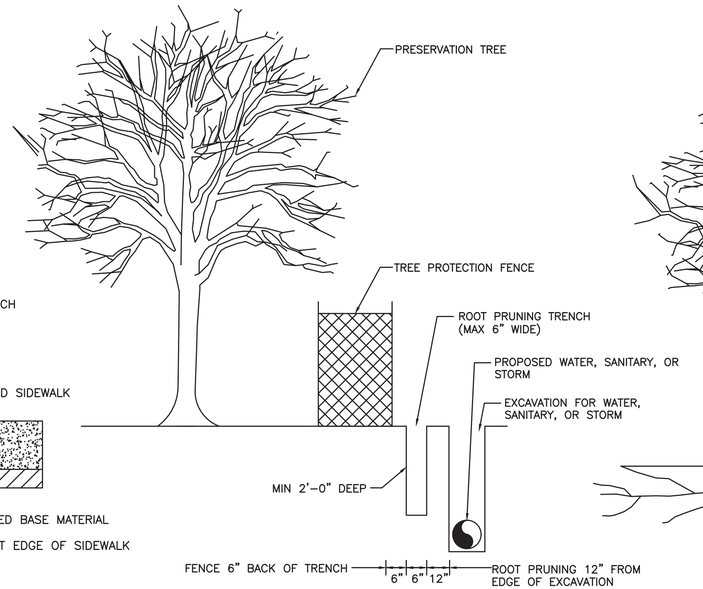
TREE PROTECTION FENCING DETAIL B
NOT TO SCALE



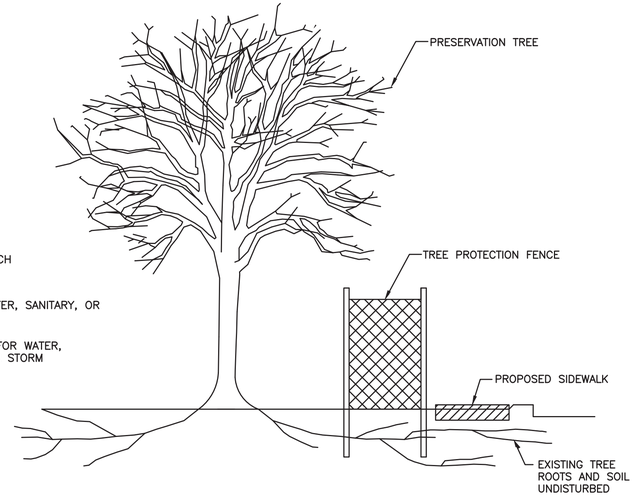
ROOT PRUNE FOR STREET-CURB & GUTTER - NO 0CC
NOT TO SCALE



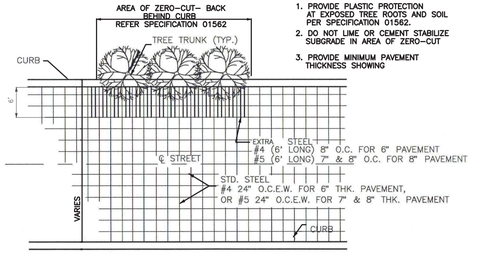
ROOT PRUNE FOR SIDEWALK
NOT TO SCALE



ROOT PRUNE FOR WATER, SANITARY, OR STORM LINE
NOT TO SCALE

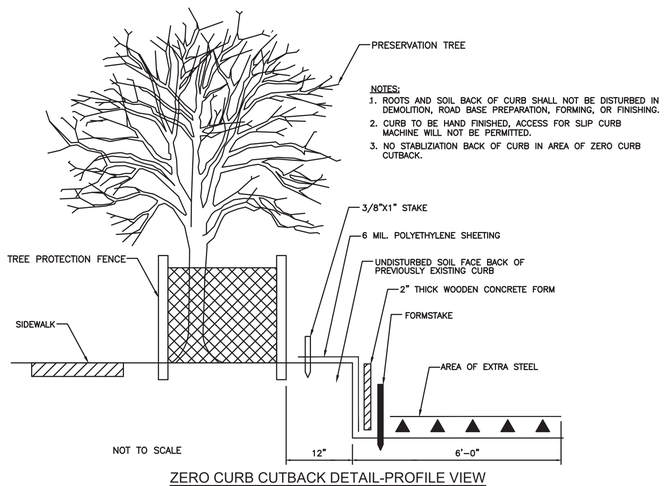


DEMO-FORM-POUR WALK WITHOUT DAMAGE TO TREE ROOTS 1" DIAMETER OR LARGER
NOT TO SCALE



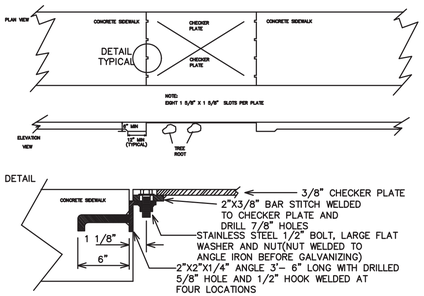
NOTE:
1. PROVIDE PLASTIC PROTECTION AT EXPOSED TREE ROOTS AND SOIL PER SPECIFICATION 01562.
2. DO NOT LIME OR CEMENT STABILIZE SUBGRADE IN AREA OF ZERO-CUT
3. PROVIDE MINIMUM PAVEMENT THICKNESS SHOWING

ZERO CURB CUTBACK DETAIL
EXTRA STEEL BEHIND CURB
NOT TO SCALE



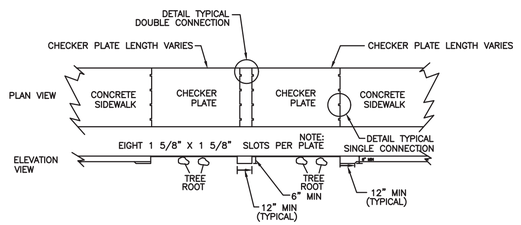
NOTES:
1. ROOTS AND SOIL BACK OF CURB SHALL NOT BE DISTURBED IN DEMOLITION, ROAD BASE PREPARATION, FORMING, OR FINISHING.
2. CURB TO BE HAND FINISHED, ACCESS FOR SLIP CURB MACHINE WILL NOT BE PERMITTED.
3. NO STABLIZIATION BACK OF CURB IN AREA OF ZERO CURB CUTBACK.

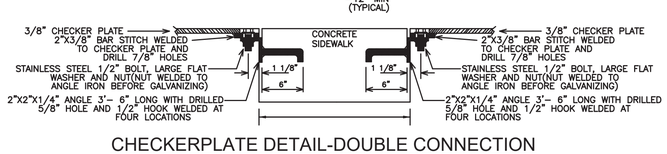
NOT TO SCALE
ZERO CURB CUTBACK DETAIL-PROFILE VIEW



CHECKERPLATE DETAIL-SINGLE CONNECTION
NOT TO SCALE

NOTE:
ALL IRONWORK TO BE HOT DIPPED GALVINIZED EXCEPT AS NOTED.





CHECKERPLATE DETAIL-DOUBLE CONNECTION
NOT TO SCALE

NOTE:
ALL IRONWORK TO BE HOT DIPPED GALVINIZED EXCEPT AS NOTED.

C.N. Koehl
Urban Forestry, Inc.
210 Stone Bush Ct. • Katy, Texas 77493
281-391-0022 ckoehl@koehlurbanforestry.com

APPROVED: Craig N. Koehl 04/02/2025

ISANI
civil \ design \ engineers
10448 Westoffice Drive
Houston, Texas 77042
P 713 747 2399
F 713 748 3748
TBPE Firm Reg. #4575

SURVEYED BY: Kuo&Associates
FB NO. P-6257

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CHATEAU FOREST DRAINAGE AND PAVING IMPROVEMENTS

TREE PROTECTION PLAN

SHEET 10 OF 10

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410029-0001-4	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
DOAA HAMDAN, P.E.	
SHEET NO. 158 OF 158	

HOUSTON PUBLIC WORKS ACCEPTED AND FILED 81720 CITY DRAWING NUMBER Approval Date 09/19/25 HOUSTON TX

PLOTTED: 4/1/2025 4:50 PM
PLOT STYLE: CNKoehl.ctb
FILE PATH: C:\Users\Ned\Desktop\Work For Craig\ISANI Chateau Forest\ISANI CHATEAU FOREST TP-10.dwg