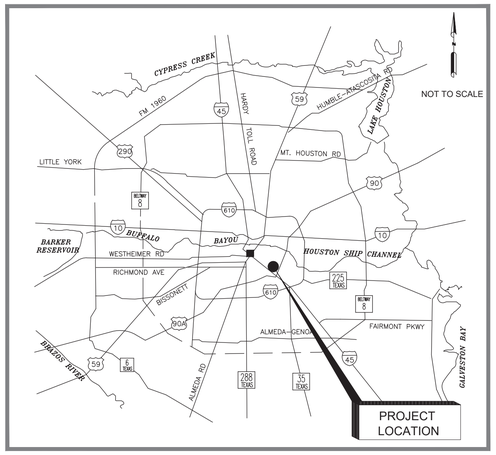
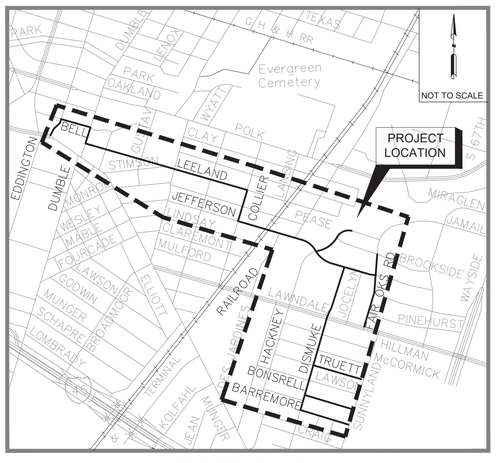
CITY OF HOUSTON

HOUSTON PUBLIC WORKS
CAPITAL PROJECTS

CRMP CIP PACKAGE 5
SANITARY SEWER IMPROVEMENTS
UPSTREAM OF EDDINGTON LIFT STATION
WBS NO. R-001000-0036-3



LOCATION MAP



VICINITY MAP

NOT TO SCALE
KEY MAP NO. 494 X, 494 Y & 534 C
GIMS MAP NO. 5456 B, 5556 A & 5556 C
ZIP CODE: 77023
COUNCIL DISTRICT: I

TDLR EABPRJ NA

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

90% SUBMITTAL

NO.	DATE	REVISION	APP.

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TBPE REG. NO.: F–4528

SURVEYED BY: AMANI
FB NO. P–6406

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MAHESH DUTTA — NAME — 114252 — P.E. NO.
DATE 05/06/2026
TBPELS FIRM #F-4528

PARKS–FORESTRY DEPT.

METRO

HOUSTON WATER

TRANSPORTATION & DRAINAGE OPERATIONS

CAPITAL PROJECTS

SURVEY

CITY ENGINEER DATE

DIRECTOR OF HOUSTON PUBLIC WORKS DATE

FOR CITY OF HOUSTON USE ONLY

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FB NO.: P-6406

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MAHESH DUTTA — NAME
114252 — P.E. NO.
05/15/2026 — DATE

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

SHEET INDEX

WBS NO.
R-001000-0036-3

DRAWING SCALE

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. 2 OF 195

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3

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ABBREVIATIONS:

&	AND
@	AT
AB	ALL BELL
ABAN'D	ABANDONED
AC	ACRE / ASBESTOS CEMENT
AI/VR	AIR INLET / VACUUM RELIEF
APPROX	APPROXIMATELY
ASPH	ASPHALT
AVE	AVENUE
℄	BASELINE
B/B	BACK TO BACK
BC	BACK OF CURB
BFV	BUTTERFLY VALVE
BL	BUILDING LINE
BLDG	BUILDING
BLVD	BOULEVARD
℄	CENTER LINE
C/C	CENTER TO CENTER
CGMP	CORRUGATED GALVANIZED METAL PIPE
CMP	CORRUGATED METAL PIPE
CIP	CAST IRON PIPE
CLR	CLEARANCE
CO	CLEAN OUT
COH	CITY OF HOUSTON
CONC	CONCRETE
CONSTR	CONSTRUCTION
CPEE	CENTERPOINT ENERGY ELECTRIC
CPEG	CENTERPOINT ENERGY GAS
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DR	DRIVE
DWG	DRAWING
DWY	DRIVEWAY
E	EAST
EL	ELEVATION
EP	EDGE OF PAVEMENT
E/R	END OF RADIUS
ESMT	EASEMENT
EXST	EXISTING
FC	FACE OF CURB
F/F	FACE TO FACE
FH	FIRE HYDRANT
℄	FLOW LINE
FM	FORCE MAIN
FT	FEET
GPS	GLOBAL POSITIONING SYSTEM
GV	GATE VALVE
GV&B	GATE VALVE AND BOX
HCFCD	HARRIS COUNTY FLOOD CONTROL DISTRICT
HDPE	HIGH-DENSITY POLYETHYLENE
HGL	HYDRAULIC GRADE LINE
HP	HIGH PRESSURE
INV EL	INVERT ELEVATION
IP	INTERMEDIATE PRESSURE
IR	IRON ROD

ABBREVIATIONS:

J-BOX	JUNCTION BOX
JT	JOINT
JUNCT	JUNCTION
LF	LINEAR FEET
LN	LANE
LPT	LOW POINT
LT	LEFT
LS	LIFT STATION
MAX	MAXIMUM
METRO	METROPOLITAN TRANSIT AUTHORITY
MH	MANHOLE
MIN	MINIMUM
MON	MONUMENT
N	NORTH
NA	NOT APPLICABLE
NAVD	NORTH AMERICAN VERTICAL DATUM
NG	NATURAL GROUND
NO	NUMBER
NTS	NOT TO SCALE
OCC	ZERO CURB CUT
OS	OFFSET
OH	OVERHEAD
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVATURE
PCCP	PRESTRESSED CONCRETE CYLINDER PIPE
PERM	PERMANENT
PGL	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PNT	POINT
PPCA	POTENTIALLY PETROLEUM CONTAMINATED AREA
PRC	POINT OF REVERSE
PROP	PROPOSED
PSI	POUND PER SQUARE INCH
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE PIPE / POINT OF VERTICAL CURVATURE
PVMT	PAVEMENT
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY

ABBREVIATIONS:

(R)	RECORD DRAWING
R	RADIUS
RCB	REINFORCED CONCRETE BOX
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
REINF	REINFORCED
REM	REMOVABLE
RJ	RESTRAINED JOINT
ROW	RIGHT OF WAY
RR	RAILROAD
RRPM	REFLECTIVE REMOVABLE PAVEMENT MARKERS
RT	RIGHT
S	SOUTH
SAN	SANITARY
SCHED	SCHEDULE
SF	SQUARE FEET
SHT	SHEET
SSE	SANITARY SEWER EASEMENT
ST	STREET
STA	STATION
STD	STANDARD
STL	STEEL
STM	STORM
SWBT	SOUTHWESTERN BELL TELEPHONE
SWR	SEWER
SY	SQUARE YARD
TAN	TANGENT
TBM	TEMPORARY BENCHMARK
TEMP	TEMPORARY
TOB	TOP OF BANK
TOC	TOP OF CURB
TOP	TOP OF PAVEMENT
TOS	TOP OF STACK
TS&V	TAPPING SLEEVE AND VALVE
TXDOT	TEXAS DEPARTMENT OF TRANSPORTATION
TYP	TYPICAL
UE	UTILITY EASEMENT
UGND	UNDERGROUND
VC	VERTICAL CURVE
VPI	VERTICAL POINT OF INTERSECTION
W	WEST
W/	WITH
WL	WATER LINE
WLE	WATER LINE EASEMENT
WM	WATER METER
WP	WOOD POLE
WSEL	WATER SURFACE ELEVATION
WV	WATER VALVE
WWTP	WASTE WATER TREATMENT PLANT

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NAME P.E. NO.

DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

ABBREVIATIONS

WBS NO.	R-001000-0036-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	SABEEN SHAIKH, P.E.
SHEET NO. 3 OF 195	

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3

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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
- MISC UNDERGROUND PIPELINE LABLE

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
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- GAS LINE
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- OIL PIPELINE
- UNDERGROUND TELCOMM 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
- MISC UNDERGROUND PIPELINE LABLE MATCH LINE

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3

EXISTING PLAN VIEW

- PAVING HEADER
- 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

- PAVING HEADER
- 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 (SCALE: 1"=20')
- REVISION CLOUD/DELTA
- DETAIL/SECTION TITLE (VIEW TITLE, SCALE: 1:1)
- SECTION CALLOUT
- DETAIL CALLOUT

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270–5700
Texas Registered Engineering Firm No. F–4528
Texas Registered Surveying Firm No. 100282–00

SURVEYED BY: AMANI
FB NO.: P–6406

PRELIMINARY

FOR INTERIM REVIEW ONLY

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MAHESH DUTTA — NAME — 114252 — P.E. NO.
DATE 05/15/2026
TBPELS FIRM #F-4528

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

SYMBOLS

WBS NO.
R–001000–0036–3

DRAWING SCALE
NTS

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. 4 OF 195

P:\Cadd\2024\24014 – COH FY23 CRMP Area 6 & 12\CAD_DWG\STD Drawings\4 – SYMBOLS UPDATED.dwg May 15, 2026 2:58pm

CITY OF HOUSTON SANITARY SEWERS CONSTRUCTION NOTES:

1. ALL SEWERS SHALL BE SUBJECT TO A STANDARD EXFILTRATION TEST. TESTS ARE TO BE PERFORMED ON THE TOTAL FOOTAGE OF SEWER LINE INCLUDED IN THE PROJECT. REQUIREMENTS OF TEXAS ADMINISTRATIVE CODE, TITLE 30 CHAPTER 217, "DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEMS" SHALL GOVERN WHERE CONFLICTS EXIST EXCEPT WHERE CITY REQUIREMENTS ARE MORE STRINGENT.

2. ALL MANHOLES ARE TO BE PER CITY OF HOUSTON STANDARD DETAILS DRAWING NUMBERS 02082-01, 02082-02, 02082N-02, 02082-03, AND 02082N-03 UNLESS OTHERWISE NOTED. USE THE LATEST VERSION AS APPLICABLE.

3. SANITARY SEWER MANHOLES WILL HAVE BEDDING AND BACKFILL PER CITY OF HOUSTON STANDARD DETAILS DRAWING NO. 02317-08 UNLESS OTHERWISE NOTED.

4. THE SANITARY SEWER PVC PIPE SHALL BE ASTM D 3034 TYPE PSM SDR 26 GRAVITY SEWER PIPE, ASTM D2241 SDR 26 PRESSURE RATED SEWER PIPE OR AWWA C-900 DR-18 GREEN PVC PRESSURE RATED SEWER PIPE BASED ON CONSTRUCTION CONDITION REQUIREMENT AND CONFORMING TO ASTM D1784 AND CITY OF HOUSTON STANDARD SPECIFICATION SECTION 02506 POLYVINYL CHLORIDE PIPE.

5. WHEN SS PRESSURE RATED PVC PIPE IS USED ON WATERLINE (WL) CROSSING UNDER CONDITION 1 OF COH IDM TABLE 7.3, THE SAME TYPE OF D2241 SDR 26 PVC PIPE OR C-900 GREEN DR-18 PVC GREEN PRESSURED TO BE UTILIZING IN-BETWEEN TWO SS MH'S. OR TO UTILIZE A DI TRANSITION ADAPTER FOR THE CONNECTING OF ASTM D-3034 PVC GRAVITY PIPE TO DI-OD AWWA C-900 PVC PIPE CENTERED AT WL WHEN CONNECTING TWO DIFFERENT TYPES OF PVC PIPES FOR SEWER CONSTRUCTION.

6. AWWA C-900 DR-18 PVC PIPE USES EITHER AWWA C900 DR-18 PVC FITTINGS OR DIP FITTINGS.

7. ALL SANITARY SEWER LINES UNDER PROPOSED OR FUTURE PAVEMENT AND TO A POINT ONE (1) FOOT BACK OF ALL PROPOSED OR FUTURE CURBS SHALL HAVE BEDDING PER CITY OF HOUSTON STANDARD DETAILS DRAWING NUMBERS 02317-01, 02317-02, OR 02317-03 AS APPLICABLE, WITH 1 ½ SACK CEMENT/CY STABILIZED SAND BACKFILL UP TO THE BOTTOM OF THE PAVEMENT SUBGRADE. 100 PSI PERFORMANCE RESULTS ARE STILL REQUIRED.

8. ALL NEW SANITARY SEWERS CROSSING WATER LINES WITH A CLEARANCE BETWEEN 12 INCHES AND 9 FEET SHALL HAVE A MINIMUM OF ONE 18' JOINT OF DUCTILE IRON OR (GREEN) C900 PVC PIPE MEETING ASTM SPECIFICATION D2241 CENTERED ON WATER LINE. WHEN WATER LINE IS BELOW SANITARY SEWER, PROVIDE MINIMUM 2 FOOT SEPARATION.

9. CONTRACTOR SHALL PROVIDE A MINIMUM HORIZONTAL CLEARANCE OF 9' FEET BETWEEN WATER LINES AND SANITARY SEWER MANHOLES AND LINES.

10. SANITARY SEWER MANHOLE RIMS OUTSIDE OF PROPOSED PAVING WILL BE SET 3" – 6" ABOVE THE SURROUNDING LEVEL FINISHED GRADE AFTER PAVING WITH SLOPED BACKFILL ADDED FOR STORM WATER TO DRAIN AWAY FROM MANHOLE RIM.

11. IN WET STABLE TRENCH AREAS USE BEDDING PER CITY OF HOUSTON STANDARD DETAILS DRAWING NUMBER 02317-02.

12. DEFLECTION TEST: DEFLECTION TESTS SHALL BE PERFORMED ON ALL FLEXIBLE AND SEMI-RIGID SEWER PIPE. THE TEST SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS. NO PIPE SHALL EXCEED A DEFLECTION OF 5% IF THE DEFLECTION TEST IS TO BE RUN USING A RIGID MANDREL, IT SHALL HAVE A DIAMETER EQUAL TO 95% OF THE INSIDE DIAMETER OF THE PIPE. THE TEST SHALL BE PERFORMED AS PER 30 TAC 217.57 LATEST AMENDMENT AND WITHOUT MECHANICAL PULLING DEVICES. NO BALL-TYPE MANDREL IS ALLOWED.

13. INFILTRATION, EXFILTRATION OR LOW-PRESSURE AIR TEST: EITHER OF THE FOLLOWING TESTS SHALL BE PERFORMED AS PER TAC, TITLE 30 217.57 WITHIN THE SPECIFIED TOLERANCES ON ALL GRAVITY SEWERS.

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

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

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

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

14. "SAN. S. E." INDICATES "SANITARY SEWER EASEMENT"

15. FOR SANITARY MANHOLE (MH) RIMS SET INSIDE OF OR @ CURB & GUTTER PAVEMENT AND/OR BELOW T.C., MH RIMS WILL BE SET FLUSHED WITH AN ABUTTING PAVED SURFACE. THE (VALCUN, NEENAH OR EQUAL) HEAVY DUTY BOLTED SOLID MH COVER SHALL BE PROPERLY (AND SECURELY) ATTACHED AND SEALED TO ITS COMPATIBLE GASKETED FRAME BY USING BOTH A NEOPRENE GASKET AND (AT LEAST) 4 COUNTER-SUNK HEX-HEAD COARSE THREADED ½"-13 UNC STAINLESS STEEL BOLTS. THE HEAVY DUTY FRAME MH COVER SHALL BE SOLID (NO AIR HOLES). SAID FRAME SHALL BE BOTH EMBEDDED INTO THE MH'S TOP ALSO SECURELY ANCHORED TO THE UNDERLYING MH STRUCTURE WITH EITHER SECURELY ATTACHED EMBEDDED ANCHOR BOLTS OR THE CONCRETE MH'S EXPOSED REBARS WELDED TO THE FRAME OR OTHER EQUALLY SECURED METHODS TO PREVENT MH COVER/FRAME BLOW-OFFS/EJECTIONS.

CITY OF HOUSTON PUBLIC WORKS GENERAL NOTES– INSIDE CITY LIMITS:

1. UNLESS OTHERWISE NOTED AND APPROVED ON DRAWINGS, CONSTRUCT CIVIL INFRASTRUCTURE IN ACCORDANCE WITH THE EFFECTIVE EDITION OF THE HOUSTON PUBLIC WORKS STANDARD CONSTRUCTION SPECIFICATIONS, STANDARD CONSTRUCTION DETAILS, AND SUPPLEMENTS, ADDENDA AND AMENDMENTS THERETO. THE LATEST EDITION OF THE ABOVE PUBLICATIONS CAN BE FOUND AT: HTTP://WWW.HOUSTONPERMITTINGCENTER.ORG/OFFICE-CITY-ENGINEER/DESIGN-AND-CONSTRUCTION-STANDARDS.

2. THE DESIGN MUST BE CONSISTENT WITH THE EFFECTIVE EDITION OF HOUSTON PUBLIC WORKS INFRASTRUCTURE DESIGN MANUAL AND TCEQ (TEXAS COMMISSION ON ENVIRONMENTAL QUALITY) REQUIREMENTS.

3. THE GEOTECHNICAL INVESTIGATION FOR THIS PROJECT WAS CONDUCTED IN ACCORDANCE WITH CHAPTER 11 OF THE LATEST EDITION OF THE PUBLICATION INFRASTRUCTURE DESIGN MANUAL, PUBLISHED BY HOUSTON PUBLIC WORKS. SOILS REPORT WAS PREPARED BY [GEOTECHNICAL ENGINEERING FIRM] REPORT NO. [NO. OF REPORT], DATED [DATE OF REPORT].

4. UTILITIES PRESENTED ON THESE DRAWINGS ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION. CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS IN THE FIELD PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR SHALL NOTIFY TEXAS ONE CALL AT 713-223-4567/811 OR 800-344-8377 AND LONE STAR NOTIFICATION CENTER AT 800-669-8344 AT LEAST 48 HOURS BEFORE PROCEEDING WITH ANY EXCAVATION. UTILITIES MARKED WITHIN THE PUBLIC RIGHT OF WAY OR IN EASEMENTS SHALL COMPLY WITH TAC TITLE 16, PART 1, CHAPTER 18, RULE §18.6 AND THE AMERICAN PUBLIC WORKS ADMINISTRATION (APWA) UNIFORM COLOR CODE.

5. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO EXISTING WATER, WASTEWATER, STORM WATER LINES AND TRAFFIC CONTROL DEVICES. DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH THE EFFECTIVE EDITION OF HOUSTON PUBLIC WORKS, STANDARD CONSTRUCTION SPECIFICATIONS FOR WASTEWATER COLLECTION SYSTEM, WATER LINES, STORM DRAINAGE, STREET PAVING, AND TRAFFIC AND STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE, STREET PAVING, AND TRAFFIC, REFERENCED ABOVE AND SUPPLEMENTS, ADDENDA AND AMENDMENTS THERETO, AT NO ADDITIONAL COST TO THE CITY OF HOUSTON.

6. CONTRACTOR SHALL NOTIFY THE OFFICE OF THE CITY ENGINEER, HOUSTON PUBLIC WORKS @ 832-394-9098 OR VIA FAX AT 832-395-4424 FOR INSPECTION AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.

7. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO EXISTING CONDITIONS OR BETTER AND TO THE SATISFACTION OF THE OWNING AUTHORITY.

8. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT ROOT SYSTEMS OF SHRUBS, PLANTS AND TREES ALONG THE AREA OF EXCAVATION.

9. CONTRACTOR SHALL COMPLY WITH LATEST EDITION OF OSHA REGULATIONS AND THE STATE OF TEXAS LAWS CONCERNING EXCAVATION.

10. CONTRACTOR SHALL MAINTAIN A SET OF REDLINE DRAWINGS AND RECORD AS-BUILT CONDITIONS DURING CONSTRUCTION. THESE AS-BUILT DRAWINGS WILL BE SUBMITTED TO THE DESIGN CONSULTANT WHO WILL MAKE THE CHANGES ON THE ORIGINAL TRACINGS, LABEL EACH SHEET IN THE SET AS "RECORD DRAWINGS", AND RETURN IT TO THE OFFICE OF THE CITY ENGINEER.

STANDARD HCFCD NOTES FOR CONSTRUCTION DRAWING:

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 PIGHT-OF-WAY.

2. NOTIFY THE HARRIS COUNTY FLOOD CONTROL DISTRICT'S PROPERTY MANAGEMENT DEPARTMENT IN WRITING AT LEAST 48-HOURS PRIOR TO CONSTRUCTION. SUBMIT THE HCFCD 48-HOUR PRE-CONSTRUCTION NOTIFICATION FORM, A COPY OF THE APPROVED CONSTRUCTION DRAWINGS, AND A COPY OF THE CORPS OF ENGINEERS INDIVIDUAL SECTION 404 PERMIT, IF APPLICABLE, TO HCFCD, 9900 NORTHWEST FREEWAY, HOUSTON TEXAS, 77092, ATTN: PROPERTY MANAGEMENT DEPT. BY HAND DELIVERY, OR FAX TO 713-684-4129(FAX NUMBER).

3. ENGINEER SHALL SUBMIT CERTIFICATION LETTER AND RECORD DRAWINGS TO THE HARRIS COUNTY CONTROL DISTRICT'S PROPERTY MANAGEMENT DEPARTMENT REQUESTING INSPECTION OF ITEMS CONSTRUCTED IN HARRIS COUNTY FLOOD CONTROL DISTRICT RIGHT-OF-WAY. PRIOR TO REQUESTING INSPECTION, THE DRAINAGE RIGHT-OF-WAY AND/OR EASEMENTS SHALL BE STAKED AND FLAGGED.

4. PROTECT, MAINTAIN AND RESTORE EXISTING BACK-SLOPE DRAINAGE SYSTEMS.

5. BACK-SLOPE, SWALE AND INTERCEPTOR STRUCTURE ELEVATIONS AND LOCATIONS SHOWN ON PLANS ARE APPROXIMATE, FINALELEVATIONS AND LOCATIONS SHALL BE FIELD VERIFIED BY THE ENGINEER PROIR 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. BACKFILL IN ACCORDANCE WITH THE HARRIS COUNTY FLOOD CONTROL DISTRICT STANDARD SPECIFICATION, SECTION 02315-EXCAVATING AND BACKFILLING, OR EQUIVALENT.

8. EXCAVATE CHANNEL FLOWLINE TO DESIGN ELEVATION AS SHOWN ON PLANS AND DOWNSTREAM, AS NECESSARY, TO ENSURE NO WATER REMAINS IN THE FACILITY (STORM SEWER, LATERAL CHANNEL, OR DRY BOTTOM DENTION 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.

PRIVATE UTILITY NOTES:

AT&T TEXAS/ SWBT FACILITIES:

1. THE LOCATIONS OF AT&T TEXAS/SWBT FACILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.

2. THE CONTRACTOR SHALL CALL 1-800-344-8377 (TEXAS 811) A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE UNDERGROUND LINES FIELD LOCATED.

3. WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF AT&T TEXAS/SWBT FACILITIES, ALL EXCAVATIONS MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES. WHEN BORING, THE CONTRACTOR SHALL EXPOSE THE AT&T TEXAS/SWBT FACILITIES.

4. WHEN AT&T TEXAS/SWBT FACILITIES ARE EXPOSED, THE CONTRACTOR WILL PROVIDE SUPPORT TO PREVENT DAMAGE TO THE CONDUIT DUCTS OR CABLES. WHEN EXCAVATING NEAR TELEPHONE POLES THE CONTRACTOR SHALL BRACE THE POLE FOR SUPPORT.

5. THE PRESENCE OR ABSENCE OF AT&T TEXAS/SWBT UNDERGROUND CONDUIT FACILITIES OR BURIED CABLE FACILITIES SHOWN ON THESE PLANS DOES NOT MEAN THAT THERE ARE NO DIRECT BURIED CABLES OR OTHER CABLES IN CONDUIT IN THE AREA.

6. PLEASE CONTACT THE AT&T TEXAS DAMAGE PREVENTION MANAGER KEVIN RAY AT (713) 614-1983 OR EMAIL HIM AT KR7896@ATT.COM, IF CABLE LOCATE REQUESTS ARE NOT COMPLETED FOR OUR AT&T TEXAS/SWBT FACILITIES.

CENTERPOINT ENERGY NOTES:

CAUTION: UNDERGROUND GAS FACILITIES

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

WARNING: OVERHEAD ELECTRICAL LINES:

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

ACTIVITIES ON/OR ACROSS CENTERPOINT ENERGY FEE OR EASEMENT PROPERTY

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

NOTICE:

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

VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

Signature valid for six months.

Date

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

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
FB NO.: P-6406

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MAHESH DUTTA — NAME
114252 — P.E. NO.
05/15/2026 — DATE
TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

GENERAL NOTES (1 OF 2)

WBS NO.	R-001000-0036-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	SABEEN SHAIKH, P.E.
SHEET NO. 5 OF 195	

ORIGINAL SCALE IN INCHES
0 1 2 3
FOR REDUCED PLANS

P:\Cadd\2024\24014 – COH FY23 CRMP Area 6 & 12\CAD_DWG\STD Drawings\5-GENERAL NOTES.dwg May 15, 2026 2:56pm

CITY OF HOUSTON TRAFFIC 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. NO WORK SHALL BE PERFORMED IN RESIDENTIAL AREAS FROM 7:00PM TO 7:00AM.

3. CONTRACTOR SHALL MAINTAIN APPROVED NUMBER OF LANES OF TRAFFIC IN EACH DIRECTION DURING CONSTRUCTION WORKING HOURS. TRAFFIC CONTROL PLANS SHALL INCLUDE ONE-WAY AND/OR DETOUR PLANS. CONTRACTOR SHALL MAINTAIN ADA COMPLAINT PEDESTRIAN ACCESS TO BUS STOPS AND ADEQUATE BUS ACCESS TO THE BUS STOP.

4. CONTRACTOR SHALL COVER OPEN PAVEMENT EXCAVATIONS FOR MINOR UTILITY WORK WITH ANCHORED STEEL PLATES DURING NON-WORKING HOURS, OPEN LANES FOR NORMAL TRAFFIC FLOW WHEN FEASIBLE.

5. CONTRACTOR SHALL SECURE ROADWAY/SIDEWALK/STREET/BICYCLE FACILITY PERMITS AS DESCRIBED IN CITY OF HOUSTON ORDINANCE, CHAPTER 40 – STREETS & SIDEWALKS, SECTION 40-361 FROM HOUSTON PERMITTING CENTER (MOBILITY PERMIT SECTION AT HTTPS://GEOHUB.HOUSTONTX.GOV) BEFORE IMPLEMENTING THE TRAFFIC CONTROL PLAN. THE APPLICATION MUST BE SUBMITTED AT LEAST TEN BUSINESS DAYS PRIOR TO THE IMPLEMENTATION OF THE TRAFFIC CONTROL PLAN AND/OR BEGINNING CONSTRUCTION WORK. THE CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL PLANS, CONSTRUCTION SEQUENCING, AND CONSTRUCTION SCHEDULE WITH THE APPLICATION.

6. CONTRACTOR SHALL HAVE APPROVED TRAFFIC CONTROL PLAN AND PERMIT AT THE JOB SITE FOR INSPECTION AT ALL TIMES.

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 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.

CITY OF HOUSTON STORM CONSTRUCTION NOTES:

1. STORM SEWER SHALL BE REINFORCED CONCRETE PIPE (C-76, CLASS III), AND SHALL BE INSTALLED, BEDDED, AND BACK FILLED IN ACCORDANCE WITH THE CITY OF HOUSTON DRAWING NOS. 2317-02, 02317-3, 02317-05, 02317-06, AND 02317-07 (JULY 2019) AS APPLICABLE UNLESS OTHERWISW SHOWN ON THE DRAWINGS.

2. ALL STORM SEWER CONSTRUCTED IN SIDELOT EASMENT SHALL BE R.C.P (C-76, CLASSIII) AND SHALL BE EMBEDDED IN ACCORDANCE WITH THE CITY OF HOUSTON DRAWING NOS. 02317-02, 02317-03, 02317-05, 02317-06, AND 02317-07 AS APPLICABLE.

3. ALL SEWER UNDER PROPOSED OR FUTURE PAVEMENT AND TO A POINT ONE (1) FOOT BACK OF ALL PROPOSED OR FUTURE CURBS SHALL BE BACKFILLED WITH 1-1/2 SACK CEMENT/C.Y. STABLIZED SAND TO WITHIN ONE (1) FOOT OF SUBGRADE. THE REMAINING DEPTH OF TRENCH SHALL BE BACKFILLED WITH SUITABLE EARTH MATERIAL.

4. ALL TRENCH BACKFILL SHALL BE IN 8" LIFTS, WITH TESTS TAKEN AT 100 FOOT INTERVALS IN EACH LIFT, AND MECHNICALLY COMPACTED TO A DENSITY OF NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR COMACTION TEST (ASTM D-698/AASHTO T99).

5. CIRCULAR AND ELLIPTICAL REINFORCED CONCRETE PIPE SHALL BE INSTALLED USING RUBBER GASKET JOINT CONFORMING TO ASTM C443 AND ASTM C877 RESPECTIVELY.

6. ALL STORM SEWER PIPES AND INLET LEADS SHALL BE 24" AND LARGER R.C.P. (C-76, CLASSIII).

7. ALL PRPOSED PIPE STUB-OUTS FROM MANHOLES AND INLET LEADS ARE TO BE PLUGGED WITH 8" BRICK WALLS UNLESS OTHERWISE NOTED.

8. MINIMUM HORIZONTAL CLEARANCE BETWEEN ANY STORM PIPE AND BOX SHALL BE AT LEAST 48-INCHES FROM EXTERIOR OF THE STORM PIPE OR BOX TO THE EXTERIOR OF THE EXISTING OR PROPOSED PUBLIC OR PRIVATE UTILITY AND OTHER APPURTENANCES. MINIMUM VERTICAL CLEARANCE BETWEEN ANY STORM PIPE AND BOX SHALL BE AT LEAST 24-INCHES FROM EXTERIOR OF THE STORM PIPE OR BOX TO THE EXTERIOR OF THE EXISTING OR PROPOSED PUBLIC OR PRIVATE UTILITY AND OTHER APPURTENANCES.

9. ADJUST MANHOLE COVERS TO GRADE CONFORMING TO REQUIREMENTS OF SECTION 02086-ADJUSTING MANHOLES, INLETS, AND VALAVE BOXES TO GRADE.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING, MAINTAINING, AND RESTORING ANY BACK SLOPE DRAINAGE SYSTEM DISTURBED AS A RESULT OF THIS WORK.

11. ALL DITCHES SHALL BE GRADED TO PROPOSED ELEVATIONS TO INSURE PROPER DRAINAGE. ALL OUTFALLS SHALL BE PROPERLY BACKFILLED AND COMPACTED. ALL DISTURBED AREA SHALL BE REGRADED, SEEDED, AND FERTILIZED.

12. ALL DRIVEWAYS WILL BE LOCATED TO AVOID EXISTING CURB INLET STRUCTURES.

CITY OF HOUSTON SWPPP CONSTRUCTION NOTES:

1. CONTRACTOR SHALL IMPLEMENT INLET PROTECTION DEVICES AND REINFORCED FILTER FABRIC BARRIER ALONG ROAD AND SIDE DITECHES AT LOCATIONS SHOWN ON THE TYPICAL STORM WATER POLLUTION PREVENTION (SWPP) PLANS TO KEEP SILT AND OR EXCAVATED MATERIALS FROM ENTERING INTO THE STORM WATER INLETS AND DITCHED EVENTUALLY POLLUTING THE RECEIVING STORM.

2. DURING THE EXCAVATION PHASE OF THE PROJECT, CONTRACTOR SHALL SCHEDULE THE WORK IN SHORT SEGMENTSSO THAT EXCAVATION MATERIAL CAN BE QUICKLY HAULED AWAY FROM THE SITE AND TO PREVENT IT FROM STAYING UNCOLLECTED ON THE EXISTING PAVEMENT. ANY LOOSE EXCAVATED MATERIAL WHICH FALLS ON PAVEMENTS OR DRIVEWAYS SHALL BE SWEPT BACK INTO THE EXCAVATED AREA.

3. CONTRACTOR SHALL CLEAN UP THE EXISTING STREET INTERSECTIONS AND DRIVEWAYS DAILY, AS NECESSARY, TO REMOVE ANY EXCESS MUD, SILT OR ROCK TRACKED FORM THE EXCAVATED AREA.

4. CONTRACTOR SHALL FOLLOW GOOD HOUSEKEEPING PRACTICES DURING THE CONSTRUCTION OF THE PROJECT, ALWAYS CLEANING UP DIRT AND LOOSE MATERIAL AS CONSTRUCTION PROGRESSES.

5. CONTRACTOR TO INSPECT AND MAINTAIN THE AREAS LISTED BELOW AT LEAST ONCE EVERY FOURTEEN (14) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM EVENT OF 0.5 INCHES OR GREATER.

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

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

7. CONTRACTOR SHALL REMOVE AND REPLACE INLET PROTECTION BEFORE AND/OR AFTER A SEVERE RAIN EVENT PER REQUEST BY CITY OF HOUSTON.

NOTICE:

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

VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

Signature valid for six months.

Date

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

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
FB NO.: P-6406

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MAHESH DUTTA 114252
NAME P.E. NO.

DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5 SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

GENERAL NOTES (2 OF 2)

WBS NO.
R-001000-0036-3

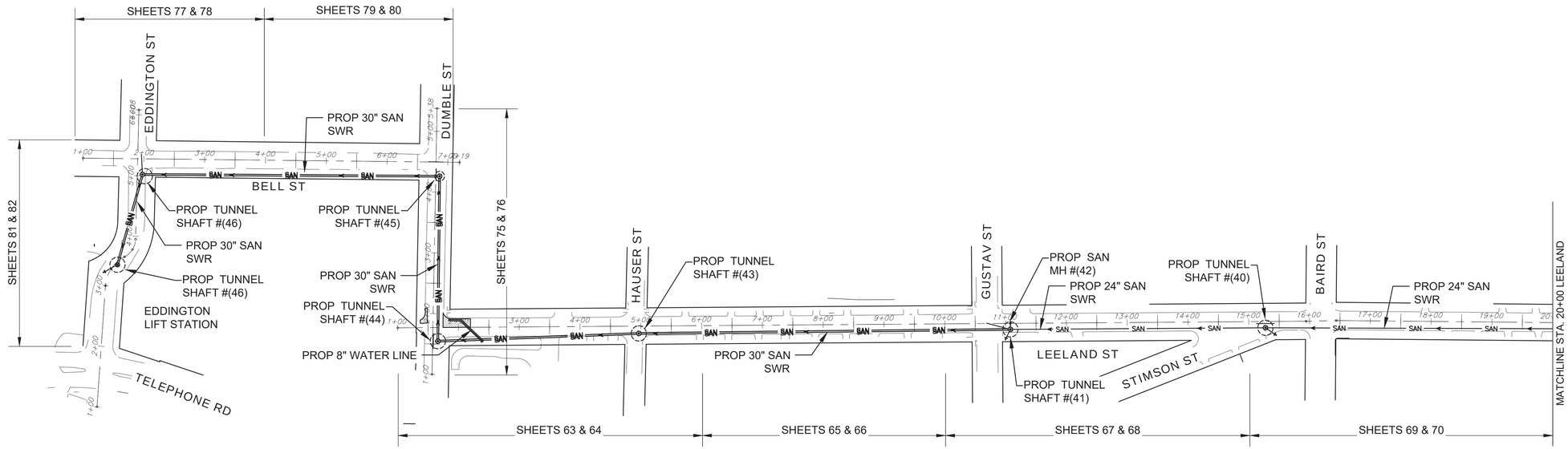
DRAWING SCALE
1"=20'

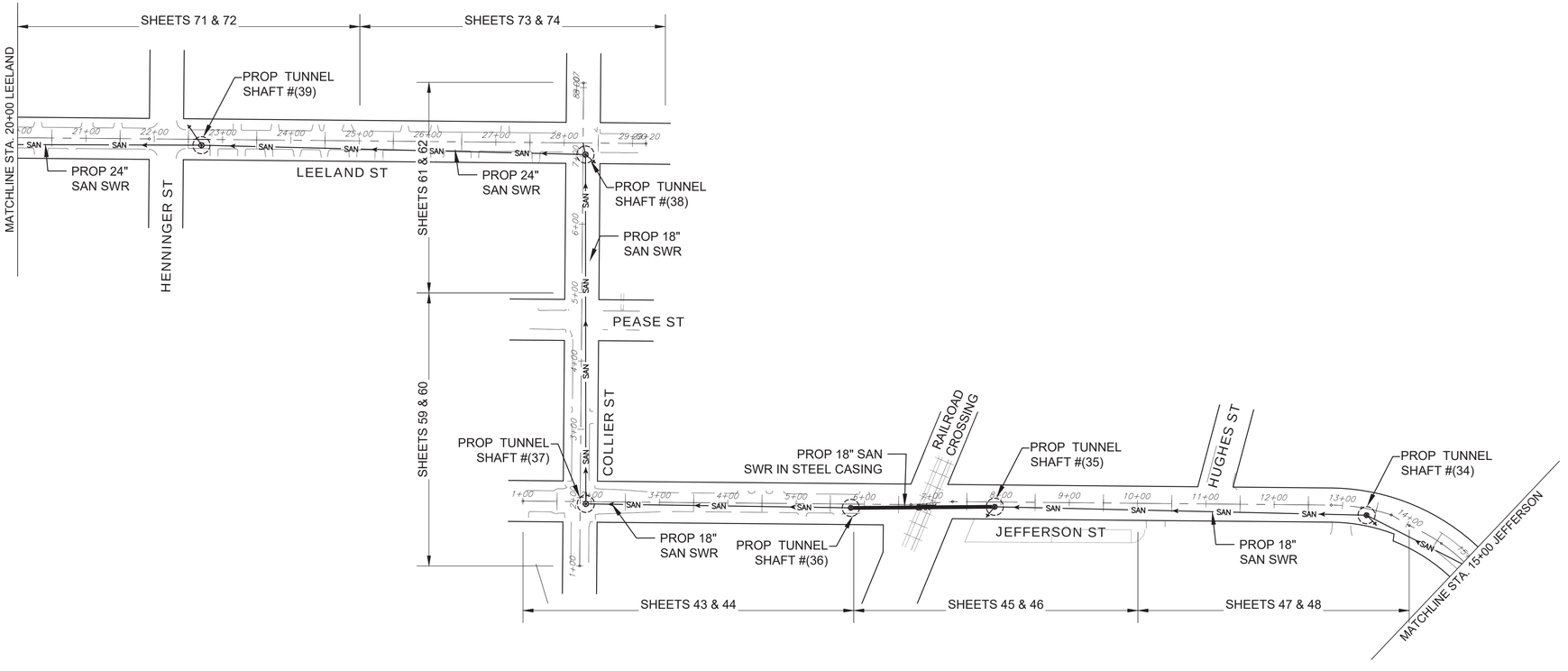
CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

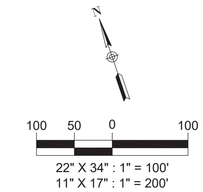
SHEET NO. 6 OF 195

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\STD Drawings\5-GENERAL NOTES.dwg May 15, 2026 2:58pm

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3







LEGEND

- PROPOSED SANITARY MANHOLE
- PROPOSED TUNNEL SHAFT
- SAN — PROPOSED SANITARY SEWER BY TRENCHLESS METHOD
- W — PROPOSED WATER LINE
- SAN — PROPOSED SANITARY SEWER BY OPEN CUT METHOD
- FLOW DIRECTION

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5 SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

PROJECT OVERALL LAYOUT (1 OF 2)

WBS NO.
R-001000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. 7 OF 195

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

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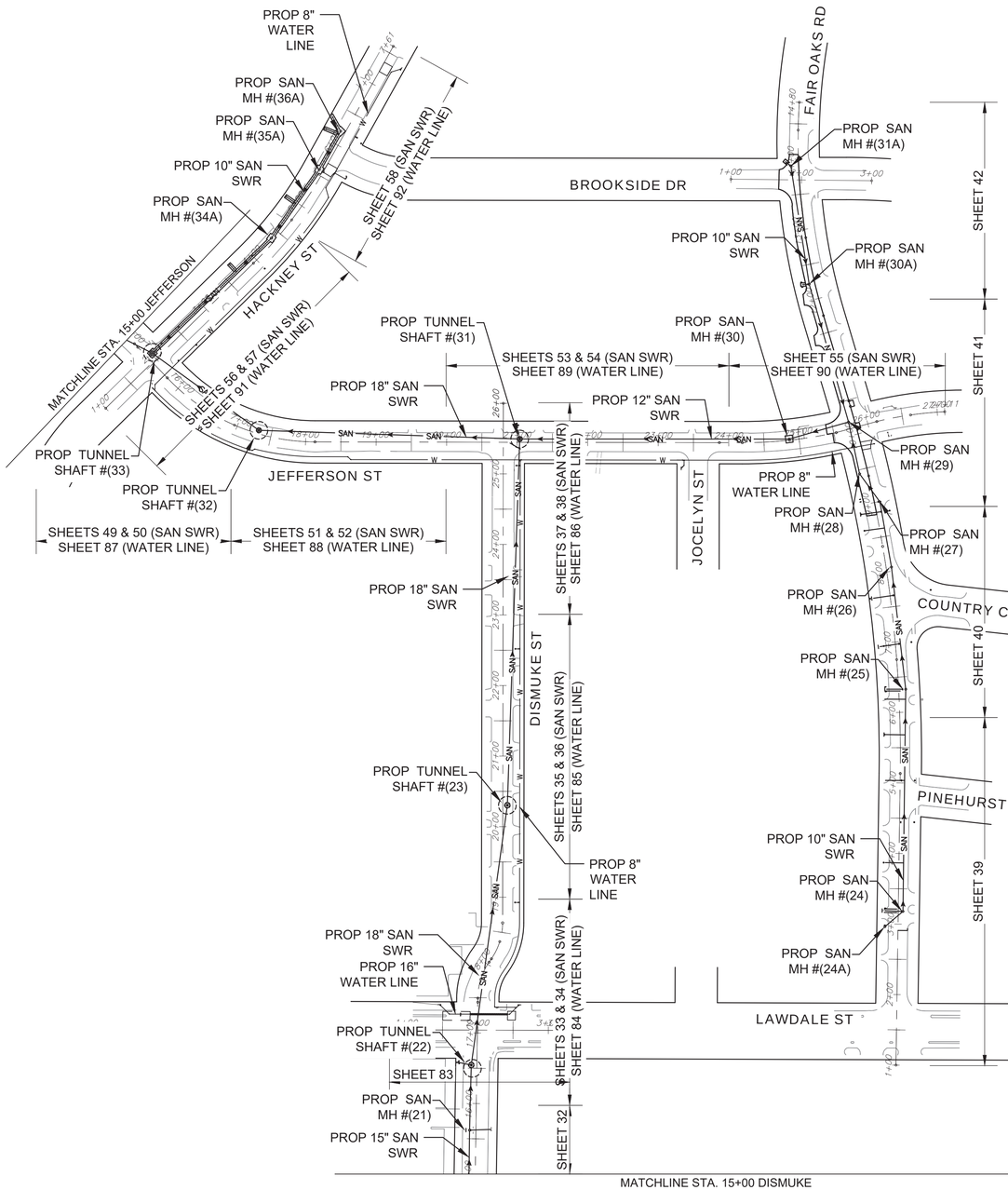

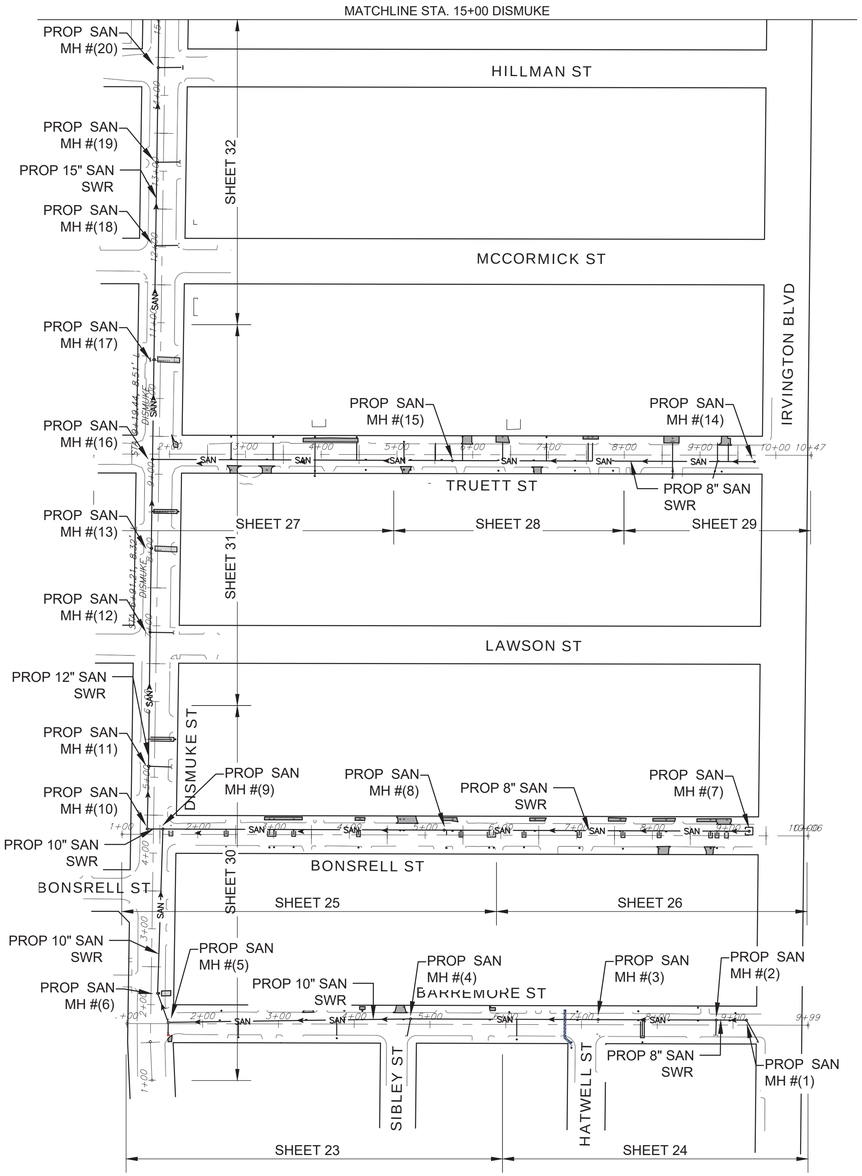

100 50 0 100

22" X 34" : 1" = 100'
11" X 17" : 1" = 200'

LEGEND

- PROPOSED SANITARY MANHOLE
- PROPOSED TUNNEL SHAFT
- SAN — PROPOSED SANITARY SEWER BY TRENCHLESS METHOD
- W — PROPOSED WATER LINE
- SAN — PROPOSED SANITARY SEWER BY OPEN CU METHOD
- FLOW DIRECTION

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

PROJECT OVERALL LAYOUT
(2 OF 2)

WBS NO.	R-001000-0036-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	SABEEN SHAIKH, P.E.
SHEET NO. 8 OF 195	

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

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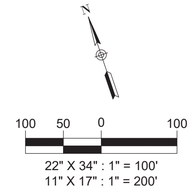
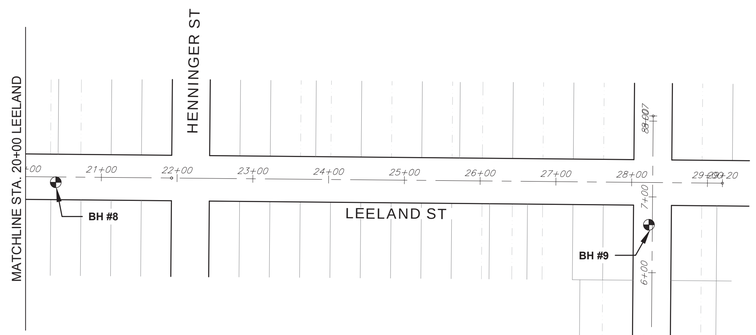
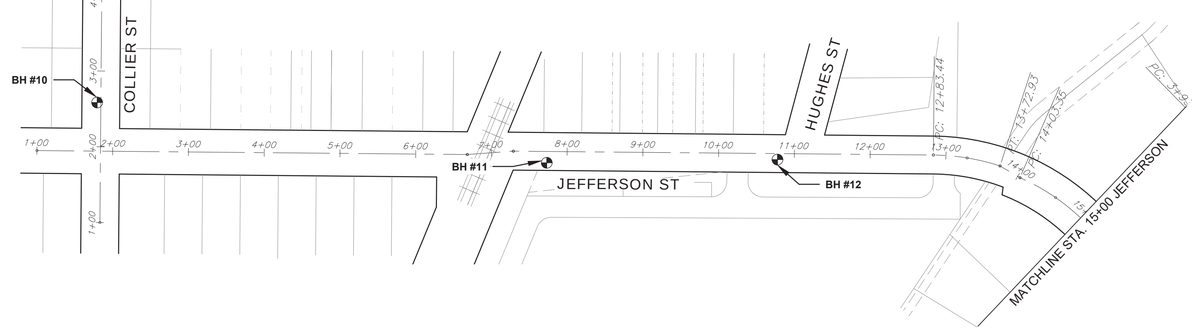


LEGEND

SOIL BORING LOCATION (BH)





BH #	BASELINE	STATION	OFFSET	NORTHING	EASTING	ELEVATION (FT)
BH - 1	EDDINGTON ST	2+63.13	13.66 LT	13834710.08'	3133002.20'	32.18'
BH - 2	BELL ST	2+53.20	5.64 RT	13834899.58'	3133198.30'	32.55'
BH - 3	BELL ST	5+98.93	7.17 RT	13834793.91'	3133527.49'	32.47'
BH - 4	LEELAND ST	2+24.62	6.81 RT	13834491.57'	3133585.27'	32.70'
BH - 5	LEELAND ST	5+33.03	5.03 RT	13834405.71'	3133881.49'	33.97'
BH - 6	LEELAND ST	11+89.82	5.27 RT	13834219.00'	3134511.18'	34.89'
BH -7	LEELAND ST	16+97.94	6.98 RT	13834073.04'	3134997.75'	34.45'
BH - 8	LEELAND ST	20+39.94	7.08 RT	13833970.40'	3135323.99'	34.10'
BH - 9	COLLIER ST	6+63.19	4.49 LT	13833689.04'	3136056.74'	34.89'
BH - 10	COLLIER ST	2+58.35	4.88 LT	13833302.78'	3135935.49'	33.55'
BH - 11	JEFFERSON ST	7+73.24	14.93 RT	13833054.10'	3136480.11'	35.09'
BH - 12	JEFFERSON ST	10+77.73	7.92 RT	13832969.55'	3136772.70'	34.06'

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NAME P.E. NO.

DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5 SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

GEOTECHNICAL BOREHOLES LAYOUT (1 OF 2)

WBS NO.
R-001000-0036-3

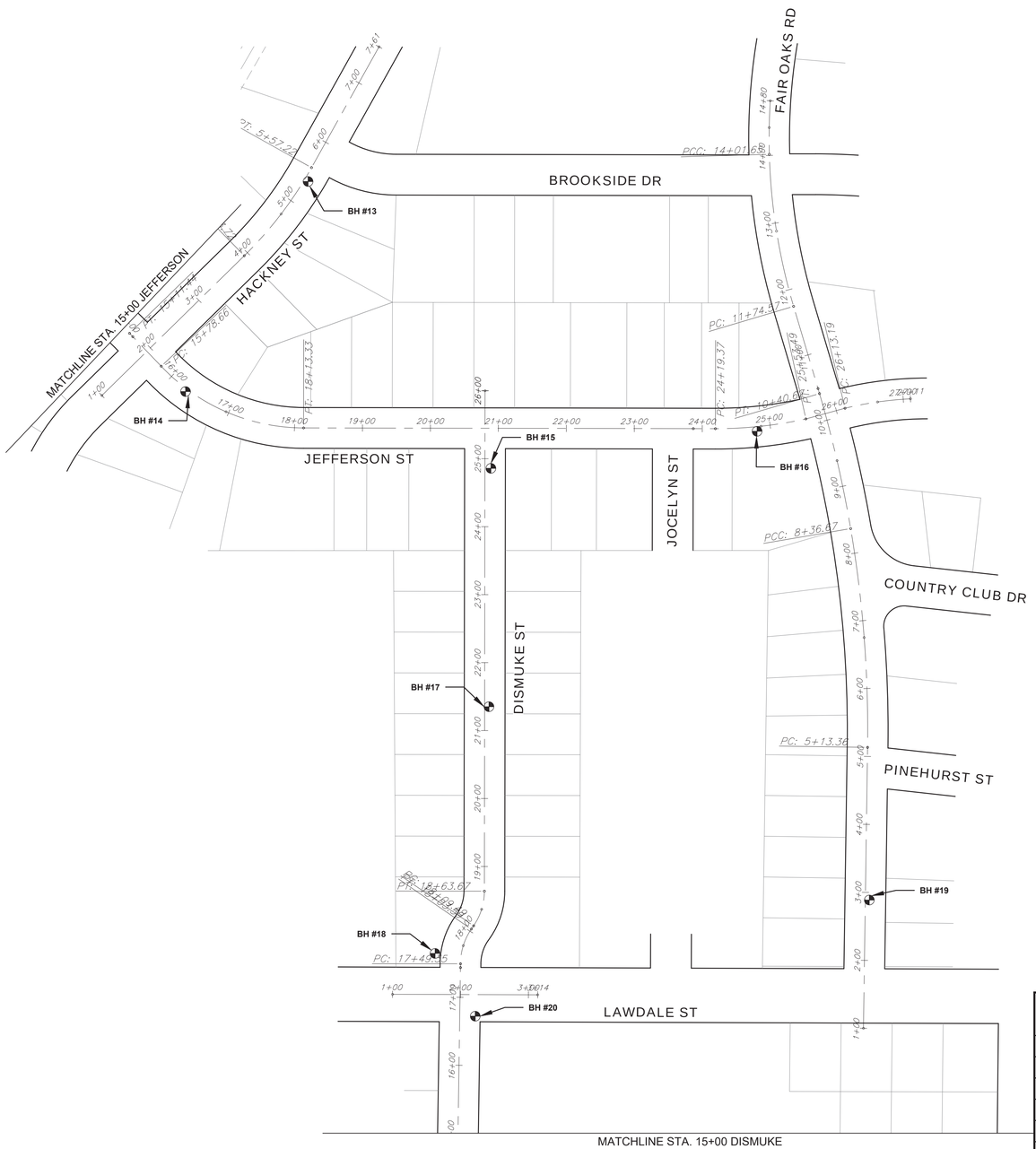
DRAWING SCALE
1"=20'

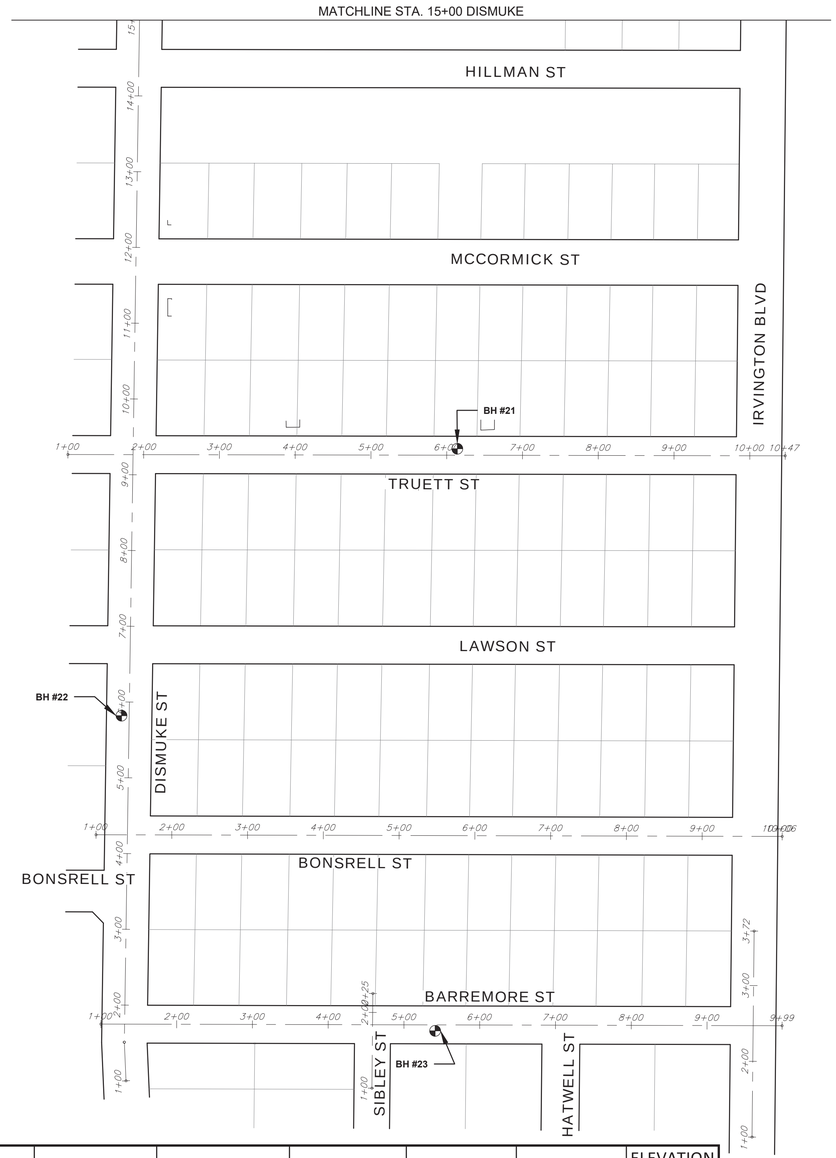
CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

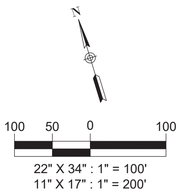
SHEET NO. 9 OF 195

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\STD Drawings\6-BORE LAYOUT.dwg May 15, 2026 2:59pm







LEGEND

SOIL BORING LOCATION (BH)

BH #	BASELINE	STATION	OFFSET	NORTHING	EASTING	ELEVATION (FT)
BH - 13	HACKNEY ST	5+37.15	5.86 RT	13832906.80'	3137454.86'	30.21'
BH - 14	JEFFERSON ST	16+29.86	4.05 RT	13832663.54'	3137192.49'	30.89'
BH - 15	DISMUKE ST	24+85.81	8.79 RT	13832424.73'	3137589.53'	31.45'
BH - 16	JEFFERSON ST	24+80.13	6.79 RT	13832362.98'	3137980.13'	30.70'
BH - 17	DISMUKE ST	21+35.13	6.38 RT	13832090.05'	3137484.78'	31.72'
BH - 18	DISMUKE ST	17+60.04	38.33 LT	13831765.77'	3137303.33'	35.35'
BH - 19	FAIR OAKS RD	2+88.76	5.86 RT	13831655.08'	3137937.51'	32.74'
BH - 20	DISMUKE ST	16+72.57	22.85 RT	13831660.23'	3137333.04'	30.72'
BH - 21	TRUETT ST	6+13.95	8.51 LT	13830839.64'	3137495.42'	33.83'
BH - 22	DISMUKE ST	5+81.81	10.12 LT	13830631.51'	3136968.92'	33.65'
BH - 23	BARREMORE ST	5+41.16	7.90 RT	13830113.17'	3137243.95'	33.72'

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DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

GEOTECHNICAL BOREHOLES LAYOUT (2 OF 2)

WBS NO.
R-001000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM

SABEEN SHAIKH, P.E.

SHEET NO. 10 OF 195

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3

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LOG OF BORING B-1

PROJECT: G/S for Sanitary Sewer Improvement Upstream of Eddington Lift Station, CRMP CIP Package 5, City of Houston, Texas. WBS No. S-001000-0036-3
PROJECT NO.: 23-845E

LOCATION: N 13834710.08; E 3133002.2 Eddington St.
COMPLETION DEPTH: 50 FT

SURFACE ELEVATION: 32.2 FT
DATE: 10/3/2025

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 50 FT
WET ROTARY: TO FT

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTICITY INDEX, %	UNDRAINED SHEAR STRENGTH, TSF
30	0		1	ASPHALT PAVMENT (3.5" in thickness)		74		20	47	18	29
				CONCRETE PAVMENT (7.5" in thickness)				18			
	5			FILL: LEAN CLAY WITH SAND (CL), brown, light brown, with root fibers to 2', sand seams and layers				20			
25				FAT CLAY WITH SAND (CH), stiff, brown, reddish brown, with root fibers to 12', gravels			103	22			
	10					83	105	23	51	19	32
20				- very stiff 4' to 6'				23			
	15			- firm 14' to 16'			97	22			
15				LEAN CLAY (CL), stiff, reddish brown, light gray, with gravels, sand seams and layers				25			
	20			- soft 18' to 20'		98		26			
10				FAT CLAY (CH), very stiff, reddish brown, light gray, with gravels				29	65	21	44
	25			- stiff 22' to 26'				31			
5				LEAN CLAY WITH SAND (CL), stiff, reddish brown, light gray, with gravels, sand seams and layers			113	29			
	30					81		19			
0				FAT CLAY (CH), very stiff, reddish brown, light gray, with calcareous nodules, gravels			108	21	34	16	18
	35							18			
-5								17			
	40							17			
-10				- stiff 42' to 48'		98		22	55	20	35
	45							22			
-15								25			
	50							26			
								18			
								17			

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 50.0 FT. ON 10/3/2025

Drilled By: Blake,(T) Logged By: Dafen

Geotech Engineering & Testing

PLATE A-16

LOG OF BORING B-2

PROJECT: G/S for Sanitary Sewer Improvement Upstream of Eddington Lift Station, CRMP CIP Package 5, City of Houston, Texas. WBS No. S-001000-0036-3
PROJECT NO.: 23-845E

LOCATION: N 13834899.58; E 3133198.3 Bell St.
COMPLETION DEPTH: 50 FT

SURFACE ELEVATION: 32.6 FT
DATE: 10/3/2025

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 50 FT
WET ROTARY: TO FT

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTICITY INDEX, %	UNDRAINED SHEAR STRENGTH, TSF
30	0		1	ASPHALT PAVMENT (4" in thickness)		35		10			
				BASE COURES (9" in thickness)				10			
	5			FILL: SILTY SAND (SM), brown, light brown, with root fibers to 2'				29			
25				SANDY LEAN CLAY (CL), firm, dark brown, light brown, with root fibers to 8', gravels, sand seams and layers		61	118	13	35	16	19
	10			- hard 6' to 8'				37			
20				FAT CLAY (CH), very stiff, brown, dark brown, with root fibers to 12', gravels			88	28			
	15			- stiff 10' to 14'				34			
15				- reddish brown 12' to 50'			89	34			
	20					97		22	62	21	41
10								14			
	25							16			
5				- stiff 26' to 30'			104	24			
	30							24			
0				- stiff 32' to 34'				33			
	35					97		25			
-5				- firm 36' to 40'				31			
	40							21	64	21	43
-10				- soft 40' to 42'				26			
	45			- firm 42' to 44'		91		26			
-15				- soft 44' to 46'				25	63	21	42
	50			- firm 46' to 48'				31			
								23			
								23			

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 50.0 FT. ON 10/3/2025

Drilled By: Blake,(T) Logged By: Dafen

Geotech Engineering & Testing

PLATE A-17

LOG OF BORING B-3

PROJECT: G/S for Sanitary Sewer Improvement Upstream of Eddington Lift Station, CRMP CIP Package 5, City of Houston, Texas. WBS No. S-001000-0036-3
PROJECT NO.: 23-845E

LOCATION: N 13834793.91; E 3133527.49 Dumble St.
COMPLETION DEPTH: 50 FT

SURFACE ELEVATION: 32.5 FT
DATE: 10/15/2025

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 50 FT
WET ROTARY: TO FT

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTICITY INDEX, %	UNDRAINED SHEAR STRENGTH, TSF
30	0		1	ASPHALT PAVMENT (2.5" in thickness)		95		26	66	21	45
				BASE COURES (6.5" in thickness)				24			
	5			FILL: FAT CLAY (CH), very stiff, brown, dark brown, with root fibers to 2', gravels				26			
25				FAT CLAY (CH), stiff, brown, dark brown, with root fibers to 12', gravels		96		27			
	10							36	76	23	53
20				- very stiff 12' to 14', reddish brown, gray 12' to 50				35			
	15			- firm 14' to 16'		86		22			
15								24			
	20					98		23			
10				- very stiff 20' to 22'				33			
	25					99		25	63	21	42
5						96		29			
	30							29			
0				- firm 30' to 32'				26	65	21	44
	35					87		29			
-5				- very stiff 36' to 44'				24			
	40					99		22	52	19	33
-10								19			
	45			- firm 44' to 46'				17			
-15								17			
	50			- firm 48' to 50'				23			
								22			
								27			
								25			
								23			

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 50.0 FT. ON 10/15/2025

Drilled By: Blake,(T) Logged By: Dafen

Geotech Engineering & Testing

PLATE A-18

LOG OF BORING B-4

PROJECT: G/S for Sanitary Sewer Improvement Upstream of Eddington Lift Station, CRMP CIP Package 5, City of Houston, Texas. WBS No. S-001000-0036-3
PROJECT NO.: 23-845E

LOCATION: N 13834491.57; E 3133585.27 Dumble St.
COMPLETION DEPTH: 50 FT

SURFACE ELEVATION: 32.7 FT
DATE: 10/15/2025

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 40 FT
WET ROTARY: TO FT

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	UNDRAINED SHEAR STRENGTH, TSF
30	0		1	ASPHALT PAVMENT (5" in thickness)		72		25			
				BASE COURES (7.5" in thickness)				27	68	22	46
	5			FILL: SILTY SAND (SM), dark gray, gray, with root fibers to 2'			88	33			
25				FAT CLAY WIH SAND (CH), dark gray, gray, with root fibers to 4', gravels				31			
	10			- stiff 4' to 8'		97		32	61	21	40
20				- redish brown 6' to 50'				34			
	15			FAT CLAY (CH), stiff, dark gray, gray, with root fibers to 4', gravels			101	27			
15								24			
	20					99		28			
10				- very stiff 20' to 22'			107	25	58	20	38
	25					99		21			
5							99	24	56	20	36
	30			- very stiff 28' to 30'				26			
0				- firm 30' to 32'		99		23			
	35							32	59	20	39
-5				- very stiff 34' to 38'				23			
	40							20			
-10				- soft 38' to 40'				19			
	45			- soft 42' to 48'				20			
-15								19			
	50			- very stiff 48' to 50'				21			
								25			
								26			
								19			

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 50.0 FT. ON 10/15/2025

Drilled By: Blake,(T) Logged By: Dafen

Geotech Engineering & Testing

PLATE A-19

LOG OF BORING B-5

PROJECT: G/S for Sanitary Sewer Improvement Upstream of Eddington Lift Station, CRMP CIP Package 5, City of Houston, Texas. WBS No. S-001000-0036-3
PROJECT NO.: 23-845E

LOCATION: N 13834405.71; E 3133881.49 Leeland St.
COMPLETION DEPTH: 40 FT

SURFACE ELEVATION: 34.0 FT
DATE: 10/3/2025

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 40 FT
WET ROTARY: TO FT

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	UNDRAINED SHEAR STRENGTH, TSF
30	0		1	ASPHALT PAVMENT (2-inch thickness)		89		31	73	22	51
				BASE COURES (7.0-inch thickness)				27			
	5			FILL: FAT CLAY (CH), stiff, brown, dark brown, with root fibers to 2', gravels				26			
25				FAT CLAY (CH), very stiff, brown, dark brown, with root fibers to 14', gravels		99	88	24			
	10			- light gray, reddish brown 8' to 40'				33	86	24	62
20								21			
	15							27			
15								23			
	20					94		20			
10								21	66	21	45
	25						103	25			
5				- hard 26' to 28'				18			
	30			- soft 28' to 30'				21			
0				- stiff 30' to 32'		98		29			
	35						103	28	78	23	55
-5				- stiff 36' to 38'				20			
	40							20			
								26			
								29			

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 40.0 FT. ON 10/3/2025

Drilled By: Blake,(T) Logged By: Dafen

Geotech Engineering & Testing

PLATE A-20

LOG OF BORING B-6

PROJECT: G/S for Sanitary Sewer Improvement Upstream of Eddington Lift Station, CRMP CIP Package 5, City of Houston, Texas. WBS No. S-001000-0036-3
PROJECT NO.: 23-845E

LOCATION: N 13834219; E 3134511.18 Leeland St.
COMPLETION DEPTH: 50 FT

SURFACE ELEVATION: 34.9 FT
DATE: 10/24/2025

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 50 FT
WET ROTARY: TO FT

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	UNDRAINED SHEAR STRENGTH, TSF
30	0		1	ASPHALT PAVMENT (4-inch thickness)		94		32	79	23	56
				BASE COURES (9.5-inch thickness)				28			
	5			FILL: FAT CLAY (CH), firm, gray, dark gray, with root fibers to 2', gravels				28			
25				FAT CLAY (CH), firm, gray, dark gray, with root fibers to 12', gravels		94		31	70	22	48
	10			- stiff 8' to 10'				26			
20				- stiff 12' to 14'		98		36			
	15							30			
15				- soft 16' to 18'		91		36			
	20							31	78	23	55
10				- stiff 20' to 22'		93		32			
	25			- soft 22' to 24'				28			
5				- stiff 24' to 28'		88		27			
	30							21			
0				LEAN CLAY (CL), stiff, reddish brown, brown,gravels, sand seams and layers		99		20	55	20	35
	35			- soft 34' to 38'				28			
-5				FAT CLAY (CH), very stiff, gray, dark gray, with root fibers to 12', gravels		102		26	56	20	36
	40							22			
-10				- soft 42' to 44'				26			
	45							23			
-15				- stiff 46' to 48'				27			
	50							28			
								35			
								26			
								19			
								25			

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 50.0 FT. ON 10/24/2025

Drilled By: Blake,(T) Logged By: Dafen

Geotech Engineering & Testing

PLATE A-21

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\STD Drawings\7-BORE LOGS.dwg May 15, 2026 2:59pm

0 1 2 3
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
FB NO.: P-6406

PRELIMINARY

FOR INTERIM REVIEW ONLY

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND NOT INTENDED FOR REGULATORY APPROVAL, PERMIT, BIDDING OR CONSTRUCTION PURPOSES. THEY WERE PREPARED BY OR UNDER THE SUPERVISION OF:

MAHESH DUTTA — NAME
114252 — P.E. NO.
05/15/2026 — DATE
TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

GEOTECHNICAL BORE LOGS (1 OF 4)

WBS NO.
R-001000-0036-3

DRAWING SCALE
NTS

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. 11 OF 195

LOG OF BORING B-7

PROJECT: G/S for Sanitary Sewer Improvement Upstream of Eddington Lift Station, CRMP CIP Package 5, City of Houston, Texas. WBS No. S-001000-0036-3
PROJECT NO.: 23-845E

LOCATION: N 13834073.04; E 3134997.75 Leeland St.
COMPLETION DEPTH: 40 FT

SURFACE ELEVATION: 34.5 FT
DATE: 10/3/2025

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 40 FT
WET ROTARY: TO FT

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTICITY INDEX, %	PLASTIC LIMIT, %
	0			ASPHALT PAVMENT (3.5-inch thickness)		95	102	22	67	21	46
				CONCRETE PAVMENT (7-inch thickness)				22			
30	5			FILL: FAT CLAY (CH), very stiff, brown, dark brown, with root fibers to 2', gravels		95		27	76	23	53
				FAT CLAY (CH), very stiff, brown, dark brown, with root fibers to 14', gravels				25			
25	10			- stiff 4' to 6'			91	30			
				- stiff 8' to 16'				26			
20	15					96		32	80	24	56
				- firm 16' to 20'			94	29			
15	20			- reddish brown 18' to 40'				29			
				- stiff 20' to 28'				25			
10	25					98	93	27	69	22	47
								30			
5	30					98		25	67	21	46
								21			
0	35			- stiff 32' to 36'				23			
								21			
-5	40			- firm 36' to 38'				25			
								22			

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 40.0 FT. ON 10/3/2025

Drilled By: Blake,(J) Logged By: Dalton

Geotech Engineering & Testing

PLATE A-22

LOG OF BORING B-8

PROJECT: G/S for Sanitary Sewer Improvement Upstream of Eddington Lift Station, CRMP CIP Package 5, City of Houston, Texas. WBS No. S-001000-0036-3
PROJECT NO.: 23-845E

LOCATION: N 13833970.4; E 3135323.99 Leeland St.
COMPLETION DEPTH: 40 FT

SURFACE ELEVATION: 31.1 FT
DATE: 10/30/2025

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 40 FT
WET ROTARY: TO FT

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTICITY INDEX, %	PLASTIC LIMIT, %
	0			ASPHALT PAVMENT (3.5-inch thickness)		94		29	74	23	51
30				BASE COURES (4.5-inch thickness)				28			
	5			FILL: FAT CLAY (CH), stiff, gray, dark gray, with root fibers to 2', gravels		101		27			
25				FAT CLAY (CH), stiff, gray, dark gray, gravels				29			
	10			- reddish brown, brown 6' to 40'		96		22	56	20	36
20				- very stiff 8' to 10'				32			
	15					96		26			
15						100		26			
	20			- soft 18' to 20'				25	55	20	35
10				- very stiff 20' to 22'		104		30			
	25			- firm 22' to 24'				22			
5				- very stiff 24' to 26'				18			
	30					105		20	54	19	35
0				- very stiff 28' to 30'				19			
				- soft 30' to 32'		93		17			
-5	35			- firm 34' to 36'				29	60	20	40
								27			
	40			- soft 38' to 40'				24			
								25			
								30			

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 40.0 FT. ON 10/30/2025

Drilled By: Blake,(J) Logged By: Dalton

Geotech Engineering & Testing

PLATE A-23

LOG OF BORING B-9

PROJECT: G/S for Sanitary Sewer Improvement Upstream of Eddington Lift Station, CRMP CIP Package 5, City of Houston, Texas. WBS No. S-001000-0036-3
PROJECT NO.: 23-845E

LOCATION: N 13833689.04; E 3136056.74 Collier St.
COMPLETION DEPTH: 50 FT

SURFACE ELEVATION: 34.9 FT
DATE: 10/30/2025

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 50 FT
WET ROTARY: TO FT

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTICITY INDEX, %	PLASTIC LIMIT, %
	0			ASPHALT PAVMENT (5-inch thickness)		92		30	73	22	51
				BASE COURES (4.5-inch thickness)			94	30			
30	5			FILL: FAT CLAY (CH), very stiff, gray, dark gray, with root fibers to 2', gravels		93	99	29			
				FAT CLAY (CH), stiff, gray, dark gray, with root fibers to 8', gravels				28	63	21	42
25	10			- very stiff 10' to 12'				29			
							100	25			
20	15			- very stiff 14' to 16'				29	80	24	56
							96	26			
15	20			- very stiff 18' to 32'		98		28			
								24			
10	25						105	30	81	24	57
								27			
5	30					86		21			
								25	52	19	33
0	35			- stiff 32' to 34'			105	22			
				- very stiff 34' to 36'		93		26			
-5	40			- very stiff 38' to 44'				26	68	22	46
								18			
-10	45							21			
								24			
-15	50			- very stiff 48' to 50'				23			
								18			
								19			
								27			

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 50.0 FT. ON 10/30/2025

Drilled By: Blake,(J) Logged By: Dalton

Geotech Engineering & Testing

PLATE A-24

LOG OF BORING B-10

PROJECT: G/S for Sanitary Sewer Improvement Upstream of Eddington Lift Station, CRMP CIP Package 5, City of Houston, Texas. WBS No. S-001000-0036-3
PROJECT NO.: 23-845E

LOCATION: N 13833302.78; E 3135935.49 Collier St.
COMPLETION DEPTH: 50 FT

SURFACE ELEVATION: 33.6 FT
DATE: 10/31/2025

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 50 FT
WET ROTARY: TO FT

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTICITY INDEX, %	PLASTIC LIMIT, %
	0			ASPHALT PAVMENT (4.5-inch thickness)				30			
				BASE COURES (4.5-inch thickness)				29			
30	5			FILL: FAT CLAY (CH), very stiff, gray, dark gray, with root fibers to 2', gravels		89	100	29	71	22	49
				FAT CLAY (CH), very stiff, gray, dark gray, gravels				29			
25	10			- stiff 6' to 8'		93		27	66	21	45
							101	28			
20	15			- stiff 12' to 14'				22			
				- stiff 16' to 22'			104	23			
15	20			LEAN CLAY (CL), stiff, reddish brown, gray, gravels		99		23	31	16	15
				FAT CLAY (CH), stiff, gray, dark gray, gravels			103	23			
10	25			- very stiff 22' to 24'				22			
				LEAN CLAY (CL), soft, reddish brown, gray, gravels				20			
5	30			FAT CLAY WITH SAND (CH), stiff, reddish brown, gray, gravels		81		20	57	20	37
								20			
0	35			FAT CLAY (CH), stiff, reddish brown, gray, gravels		86		19			
				- firm 34' to 40'				23	56	20	36
-5	40							27			
				- stiff 40' to 44'				24			
-10	45			- firm 44' to 46'				36			
				- stiff 46' to 50'				31			
-15	50							29			
								36			
								18			
								19			

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 50.0 FT. ON 10/31/2025

Drilled By: Blake,(J) Logged By: Dalton

Geotech Engineering & Testing

PLATE A-25

LOG OF BORING B-11

PROJECT: G/S for Sanitary Sewer Improvement Upstream of Eddington Lift Station, CRMP CIP Package 5, City of Houston, Texas. WBS No. S-001000-0036-3
PROJECT NO.: 23-845E

LOCATION: N 13833054.1; E 3136480.11 Collier St.
COMPLETION DEPTH: 50 FT

SURFACE ELEVATION: 35.1 FT
DATE: 10/21/2025

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 24 FT
WET ROTARY: 24 TO 50 FT

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTICITY INDEX, %	PLASTIC LIMIT, %
	0			FILL: SILTY SAND (SM), gray, light gray, with root fibers to 6'		45		6			
35								4			
	5							5			
30				FAT CLAY WITH SAND (CH), very stiff, gray, light gray, with root fibers to 8', gravels		79		24	69	22	47
				- stiff 8' to 10'			96	27			
25	10							34			
				- firm 12' to 14'			91	27			
20	15							25			
				FAT CLAY (CH), very stiff, gray, light gray, gravels		89		22	74	23	51
							100	26			
15	20			LEAN CLAY (CL), stiff, gray, light gray, gravels, sand seams and layers			110	18	32	16	16
				- soft 22' to 24'				26			
10	25			SILTY SAND (SM), medium dense, gray, light gray, gravels		21	19	20			
						24		18			
5	30					27		23			
						29	13	22			
0	35			FAT CLAY (CH), soft, gray, reddish brown, gravels				31	75	23	52
				- stiff 34' to 42'				20			
-5	40							18			
								20			
-10	45			LEAN CLAY (CL), soft, gray, reddish brown, gravels, sand seams and layers				35			
								16			
	50			- very stiff 48' to 50'				21			
								21			
								21			

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 50.0 FT. ON 10/21/2025

Drilled By: Blake,(J) Logged By: Dalton

Geotech Engineering & Testing

PLATE A-26

LOG OF BORING B-12

PROJECT: G/S for Sanitary Sewer Improvement Upstream of Eddington Lift Station, CRMP CIP Package 5, City of Houston, Texas. WBS No. S-001000-0036-3
PROJECT NO.: 23-845E

LOCATION: N 13832969.55; E 3136772.7 Collier St.
COMPLETION DEPTH: 50 FT

SURFACE ELEVATION: 34.1 FT
DATE: 10/24/2025

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 50 FT
WET ROTARY: TO FT

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTICITY INDEX, %	PLASTIC LIMIT, %
	0			ASPHALT PAVMENT (7-inch thickness)		92		23	61	21	40
				BASE COURES (7-inch thickness)			95	26			
30	5			FILL: FAT CLAY (CH), very stiff, dark gray, gray, with root fibers to 2', with calcareous and ferrous noules, gravels		93		26			
				FAT CLAY (CH), very stiff, dark gray, gray, with root fibers to 14', with calcareous and ferrous noules, gravels				22	59	20	39
25	10			- stiff 4' to 6'			93	22			
				- stiff 12' to 14'				26			
20	15						97	23			
				LEAN CLAY (CL), very stiff, light brown, brown, with calcareous and ferrous noules, gravels		96		21	46	18	28
15	20			- firm 18' to 20'			110	17			
				SANDY SILT (ML), medium dense, light brown, brown, with calcareous and ferrous noules, gravels	15			21			
10	25				14			22			
					15			22			
5	30			LEAN CLAY (CL), very stiff, light brown, brown, with calcareous and ferrous noules, gravels	15	69		22			
								24			
0	35			- stiff 32' to 34'		94	110	22	44	18	26
								21			
-5	40			FAT CLAY (CH), very stiff, light brown, brown, with calcareous and ferrous noules, gravels				22			
								26			
-10	45							28			
								18			
-15	50							22			
								23			
								18			

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 50.0 FT. ON 10/24/2025

Drilled By: Blake,(J) Logged By: Dalton

Geotech Engineering & Testing

PLATE A-27

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
FB NO.: P-6406

PRELIMINARY

FOR INTERIM REVIEW ONLY
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MAHESH DUTTA 114252
NAME P.E. NO.
DATE 05/15/2026
TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

GEOTECHNICAL BORE LOGS (2 OF 4)

WBS NO.
R-001000-0036-3

DRAWING SCALE
NTS

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. 12 OF 195

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\STD Drawings\7-BORE LOGS.dwg May 15, 2026 3:00pm

0 1 2 3
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

PAGE 1 OF 1

LOG OF BORING B-13

PROJECT: G/S for Sanitary Sewer Improvement Upstream of Eddington Lift Station, CRMP CIP Package 5, City of Houston, Texas. WBS No. S-001000-0036-3
PROJECT NO.: 23-845E

LOCATION: N 13832906.8, E 3137454.86 Hackney St.
COMPLETION DEPTH: 15 FT

SURFACE ELEVATION: 30.2 FT
DATE: 11/7/2025

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 15 FT
WET ROTARY: TO FT

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
30	0			ASPHALT PAVMENT (4-inch thickness)		81		28	54	19	35
				CONCRETE PAVMENT (6-inch thickness)				23			
25	5			FILL: FAT CLAY WITH SAND (CH), stiff, brown, dark brown, with root fibers to 2', gravels			99	26			
						89		29	67	21	46
20	10			FAT CLAY (CH), stiff, brownish yellow, gray, with root fibers to 15', gravels - very stiff 8' to 12'				28			
								19			
								18			
	15							24			

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 15.0 FT. ON 11/7/2025

Drilled By: Blake,(T) Logged By: Dylan

Geotech Engineering & Testing

PLATE A-28

PAGE 1 OF 1

LOG OF BORING B-14

PROJECT: G/S for Sanitary Sewer Improvement Upstream of Eddington Lift Station, CRMP CIP Package 5, City of Houston, Texas. WBS No. S-001000-0036-3
PROJECT NO.: 23-845E

LOCATION: N 13832663.54, E 3137192.49 Collier St.
COMPLETION DEPTH: 40 FT

SURFACE ELEVATION: 30.9 FT
DATE: 10/31/2025

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 40 FT
WET ROTARY: TO FT

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
30	0			ASPHALT PAVMENT (4-inch thickness)		95		30	72	22	50
	5			CONCRETE PAVMENT (5-inch thickness)				28			
25				FILL: FAT CLAY (CH), firm, brown, dark brown, with root fibers to 2', gravels		94		29			
	10			FAT CLAY (CH), stiff, brown, light brown, with root fibers to 14', gravels - reddish brown, brown 6' to 40'				30			
20						93		30	76	23	53
	15			- very stiff 8' to 10'				21			
				- very stiff12' to 16'		98		25	72	22	50
15								21			
	20						99	27			
10				- very stiff 20' to 22'		99		25	60	20	40
	25							24			
				- firm 24' to 26'				23			
5				LEAN CLAY WITH SAND (CL), soft, light brown, brown, gravels		77		18	29	15	14
	30			FAT CLAY (CH), firm, brown, light brown, gravels			97	24			
0				- stiff 30' to 32'				25			
	35			- soft 32' to 34'				22			
				- stiff 34' to 36'				16			
-5				- very stiff 36' to 38'				16			
	40			- stiff 38' to 40'				18			

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 40.0 FT. ON 10/31/2025

Drilled By: Blake,(T) Logged By: Dylan

Geotech Engineering & Testing

PLATE A-29

PAGE 1 OF 1

LOG OF BORING B-15

PROJECT: G/S for Sanitary Sewer Improvement Upstream of Eddington Lift Station, CRMP CIP Package 5, City of Houston, Texas. WBS No. S-001000-0036-3
PROJECT NO.: 23-845E

LOCATION: N 13832424.73, E 3137589.53 Dismuke St.
COMPLETION DEPTH: 40 FT

SURFACE ELEVATION: 31.5 FT
DATE: 10/24/2025

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 40 FT
WET ROTARY: TO FT

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
30	0			ASPHALT PAVMENT (4.5-inch thickness)			94	32	77	23	54
	5			CONCRETE PAVMENT (5.5-inch thickness)				32			
25				FILL: FAT CLAY (CH), stiff, brown, dark brown, with root fibers to 2', gravels			84	35			
	10			FAT CLAY (CH), stiff, light brown, brown, gravels - firm 4' to 6'			94	35	76	23	53
20				- soft 10' to 12'				38			
	15						87	36			
				- very stiff 14' to 18'			95	35	82	24	58
15	18							23			
							102	22			
	20							22	57	20	37
10							90	22			
	25			LEAN CLAY (CL), stiff, light gray, gray, gravels				19			
5				FAT CLAY (CH), firm, light gray, gray, gravels - very stiff 26' to 30'			99	101	33	77	23	54
	30							28			
0				- stiff 30' to 36'				24			
	35							30			
-5				- very stiff 36' to 40'				34			
	40							34			
								31			
								30			

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 40.0 FT. ON 10/24/2025

Drilled By: Blake,(T) Logged By: Dylan

Geotech Engineering & Testing

PLATE A-30

PAGE 1 OF 1

LOG OF BORING B-16

PROJECT: G/S for Sanitary Sewer Improvement Upstream of Eddington Lift Station, CRMP CIP Package 5, City of Houston, Texas. WBS No. S-001000-0036-3
PROJECT NO.: 23-845E

LOCATION: N 13832362.86, E 3137980.13 Fair Oaks Road
COMPLETION DEPTH: 20 FT

SURFACE ELEVATION: 30.7 FT
DATE: 11/7/2025

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 20 FT
WET ROTARY: TO FT

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
30	0			ASPHALT PAVMENT (3" in thickness)				27			
				CONCRETE PAVMENT (6-inch thickness)		91		23	68	22	46
25	5			FILL: FAT CLAY (CH), very stiff, brown, dark brown, with root fibers to 2', gravels				20			
							103	21			
	10			FAT CLAY (CH), stiff, brownish yellow, gray, with root fibers to 20', gravels - very stiff 4' to 6'		93		27	80	24	56
20				- hard 6' to 8'				26			
	15			- very stiff 8' to 18'				27			
								27			
15								24			
	20							25			

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 20.0 FT. ON 11/7/2025

Drilled By: Blake,(T) Logged By: Dylan

Geotech Engineering & Testing

PLATE A-31

PAGE 1 OF 1

LOG OF BORING B-17

PROJECT: G/S for Sanitary Sewer Improvement Upstream of Eddington Lift Station, CRMP CIP Package 5, City of Houston, Texas. WBS No. S-001000-0036-3
PROJECT NO.: 23-845E

LOCATION: N 13832090.05, E 13832090.05 Dismuke St.
COMPLETION DEPTH: 50 FT

SURFACE ELEVATION: 31.7 FT
DATE: 10/31/2025

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 50 FT
WET ROTARY: TO FT

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
30	0			ASPHALT PAVMENT (3-inch thickness)		95		30	76	23	53
				BASE COURES (7-inch thickness)			94	29			
25	5			FILL: FAT CLAY (CH), firm, brown, dark brown, with root fibers to 2', gravels		94		31			
	10			FAT CLAY (CH), stiff, brown, dark brown, gravels - firm 4' to 6'				30	76	23	53
20				- firm 8' to 12'		97	84	32			
	15							38			
				LEAN CLAY (CL), stiff, reddish brown, brown, gravels - soft 18' to 20'				37	87	25	62
15							109	33			
	20							23			
10				FAT CLAY WITH SAND (CH), firm, reddish brown, brown, gravels - stiff 22' to 30'		76		21			
	25							18	52	19	33
5							85	34			
	30							35			
0				FAT CLAY (CH), stiff, reddish brown, gray, gravels		97		27			
	35							30			
-5				- firm 38' to 40'				40	108	28	80
	40							32			
-10				LEAN CLAY (CL), soft, reddish brown, brown, gravels - firm 44' to 48'				24			
	45							25			
-15				-stiff 48' to 50'				33			
	50							27			
								19			
								16			
								19			
								20			

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 50.0 FT. ON 10/31/2025

Drilled By: Blake,(T) Logged By: Dylan

Geotech Engineering & Testing

PLATE A-32

PAGE 1 OF 1

LOG OF BORING B-18

PROJECT: G/S for Sanitary Sewer Improvement Upstream of Eddington Lift Station, CRMP CIP Package 5, City of Houston, Texas. WBS No. S-001000-0036-3
PROJECT NO.: 23-845E

LOCATION: N 13831765.77, E 3137303.33 Dismuke St.
COMPLETION DEPTH: 54 FT

SURFACE ELEVATION: 35.4 FT
DATE: 10/21/2025

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 50 FT
WET ROTARY: TO FT

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
35	0			FILL: SANDY LEAN CLAY (CL), brown, light brown, gravels, with root fibers to 8', sand seams and layers		57		7	28	15	13
	5							6			
30								5			
	10			FAT CLAY (CH), very stiff, brownish yellow, light brown, gravels - stiff 12' to 14'		95		38	82	24	58
25							84	39			
	15							31			
20								39			
	20					99		25	65	21	44
15							101	26			
	25					99		24			
10								22	71	22	49
	30			LEAN CLAY WITH SAND (CL), stiff, gray, light gray, gravels, sand seams and layers - very stiff 36' to 38'		83	112	31			
5								18			
	35							20			
0								17	38	17	21
	40			FAT CLAY (CH), very stiff, gray, reddish brown, gravels - firm 44' to 46' - stiff 46' to 48'				15			
-5								30			
	45					102		27			
-10								28			
	50							22			
-15								30			
								19			
								20			
								21			

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE
0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 54.0 FT. ON 10/21/2025

Drilled By: Blake,(T) Logged By: Dylan

Geotech Engineering & Testing

PLATE A-33

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
FB NO.: P-6406

PRELIMINARY

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MAHESH DUTTA 114252
NAME P.E. NO.

DATE 05/15/2026
TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

GEOTECHNICAL BORE LOGS (3 OF 4)

WBS NO.
R-001000-0036-3

DRAWING SCALE
NTS

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. 13 OF 195

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\STD Drawings\7-BORE LOGS.dwg May 15, 2026 3:00pm

0 1 2 3
ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS

LOG OF BORING B-19

PROJECT: G/S for Sanitary Sewer Improvement Upstream of Eddington Lift Station, CRMP CIP Package 5, City of Houston, Texas. WBS No. S-001000-0036-3
PROJECT NO.: 23-845E

LOCATION: N 13831655.08; E 3137937.51 Fair Oaks Road
COMPLETION DEPTH: 15 FT

SURFACE ELEVATION: 32.7 FT
DATE: 11/7/2025

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 15 FT
WET ROTARY: TO FT

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %	UNDRAINED SHEAR STRENGTH, TSF
	0			CONCRETE PAVMENT (10-inch thickness)								
30	5			BASE COURES (4-inch thickness)				24				
				FILL: FAT CLAY (CH), stiff, brown, dark brown, with root fibers to 2', gravels		91		25				
25	10			FAT CLAY (CH), stiff, brownish yellow, gray, with root fibers to 15', gravels - very stiff 8' to 14'			99	28	65	21	44	
								23				
20	15						101	25				
								20				
								19				
								24				

UNDRAINED SHEAR STRENGTH, TSF: ○ HAND PENETROMETER ● UNCONFINED COMPRESSION ■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION △ TORVANE — 0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 15.0 FT. ON 11/7/2025

Drilled By: Blake.D Logged By: Dylan

Geotech Engineering & Testing

PLATE A-34

LOG OF BORING B-20

PROJECT: G/S for Sanitary Sewer Improvement Upstream of Eddington Lift Station, CRMP CIP Package 5, City of Houston, Texas. WBS No. S-001000-0036-3
PROJECT NO.: 23-845E

LOCATION: N 13831660.23; E 3137333.04 Dismuke St.
COMPLETION DEPTH: 20 FT

SURFACE ELEVATION: 30.7 FT
DATE: 9/17/2025

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 20 FT
WET ROTARY: TO FT

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %	UNDRAINED SHEAR STRENGTH, TSF
	0			ASPHALT PAVMENT (4-inch thickness)		22		5				
30	5			BASE COURES (6-inch thickness)			93	29				
				FILL: SILTY SAND (SM), brown, light brown, with root fibers to 2'				33	78	23	55	
25	10			FAT CLAY (CH), stiff, brownish yellow, light gray, with root fibers to 8', gravels - firm 8' to 10'			91	30				
						95		29	77	23	54	
20	15							38				
								36				
15				- firm 16' to 18'				36				
	20							33				
								35				

UNDRAINED SHEAR STRENGTH, TSF: ○ HAND PENETROMETER ● UNCONFINED COMPRESSION ■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION △ TORVANE — 0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 20.0 FT. ON 9/17/2025

Drilled By: Blake.D Logged By: Dylan

Geotech Engineering & Testing

PLATE A-35

LOG OF BORING B-21

PROJECT: G/S for Sanitary Sewer Improvement Upstream of Eddington Lift Station, CRMP CIP Package 5, City of Houston, Texas. WBS No. S-001000-0036-3
PROJECT NO.: 23-845E

LOCATION: N 13830839.64; E 3137495.42 Truett St.
COMPLETION DEPTH: 15 FT

SURFACE ELEVATION: 33.8 FT
DATE: 9/17/2025

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 15 FT
WET ROTARY: TO FT

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %	UNDRAINED SHEAR STRENGTH, TSF
	0			ASPHALT PAVMENT (5-inch thickness)				7				
30	5			BASE COURES (4-inch thickness)		96		29	71	22	49	
				FILL: SILTY SAND (SM), brown, light brown, with root fibers to 2'		95		28				
25	10			FAT CLAY (CH), very stiff, light brown, brown, gravels - stiff 6' to 10'				29				
								32				
20	15			- stiff 12' to 14'				27				
								31				
								32				

UNDRAINED SHEAR STRENGTH, TSF: ○ HAND PENETROMETER ● UNCONFINED COMPRESSION ■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION △ TORVANE — 0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 15.0 FT. ON 9/17/2025

Drilled By: Blake.D Logged By: Dylan

Geotech Engineering & Testing

PLATE A-36

LOG OF BORING B-22

PROJECT: G/S for Sanitary Sewer Improvement Upstream of Eddington Lift Station, CRMP CIP Package 5, City of Houston, Texas. WBS No. S-001000-0036-3
PROJECT NO.: 23-845E

LOCATION: N 13830631.91; E 3136968.92 Bonsrell St.
COMPLETION DEPTH: 20 FT

SURFACE ELEVATION: 33.7 FT
DATE: 9/17/2025

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 20 FT
WET ROTARY: TO FT

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %	UNDRAINED SHEAR STRENGTH, TSF
	0			ASPHALT PAVMENT (7-inch thickness)		23		5				
30	5			BASE COURES (3-inch thickness)			83	37				
				FILL: SILTY SAND (SM), brown, light brown, with root fibers to 2'				33				
25	10			FAT CLAY (CH), firm, light brown, brown, gravels - stiff 4' to 20'				32				
							90	31				
20	15					98		38	95	26	69	
								39				
								38				
15	20							38				
								35				

UNDRAINED SHEAR STRENGTH, TSF: ○ HAND PENETROMETER ● UNCONFINED COMPRESSION ■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION △ TORVANE — 0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 20.0 FT. ON 9/17/2025

Drilled By: Blake.D Logged By: Dylan

Geotech Engineering & Testing

PLATE A-37

LOG OF BORING B-23

PROJECT: G/S for Sanitary Sewer Improvement Upstream of Eddington Lift Station, CRMP CIP Package 5, City of Houston, Texas. WBS No. S-001000-0036-3
PROJECT NO.: 23-845E

LOCATION: N 13830113.17; E 3137243.95 Barremore St.
COMPLETION DEPTH: 15 FT

SURFACE ELEVATION: 33.7 FT
DATE: 9/17/2025

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 15 FT
WET ROTARY: TO FT

ELEVATION, FT	DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %	UNDRAINED SHEAR STRENGTH, TSF
	0			ASPHALT PAVMENT (4-inch thickness)			98	5				
30	5			BASE COURES (4-inch thickness)		95		27				
				FILL: SILTY SAND (SM), brown, light brown, with root fibers to 2'				25	67	21	46	
25	10			FAT CLAY (CH), very stiff, dark gray, gray, with root fibers to 10', gravels - stiff 4' to 6'		94	100	24				
								26	65	21	44	
20	15			- stiff 10' to 14', light gray 10' to 15'				30				
								29				
								29				

UNDRAINED SHEAR STRENGTH, TSF: ○ HAND PENETROMETER ● UNCONFINED COMPRESSION ■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION △ TORVANE — 0.5 1.0 1.5 2.0 2.5

DEPTH TO WATER IN BORING:
▽ FREE WATER 1ST ENCOUNTERED AT FT. DURING DRILLING; AFTER 15.0 MIN. AT FT.
▼ WATER DEPTH AT FT., HOLE OPEN TO 15.0 FT. ON 9/17/2025

Drilled By: Blake.D Logged By: Dylan

Geotech Engineering & Testing

PLATE A-38

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
FB NO.: P-6406

PRELIMINARY

FOR INTERIM REVIEW ONLY

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND NOT INTENDED FOR REGULATORY APPROVAL, PERMIT, BIDDING OR CONSTRUCTION PURPOSES. THEY WERE PREPARED BY OR UNDER THE SUPERVISION OF:

MAHESH DUTTA — NAME
114252 — P.E. NO.
DATE 05/15/2026
TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

GEOTECHNICAL BORE LOGS (4 OF 4)

WBS NO.
R-001000-0036-3

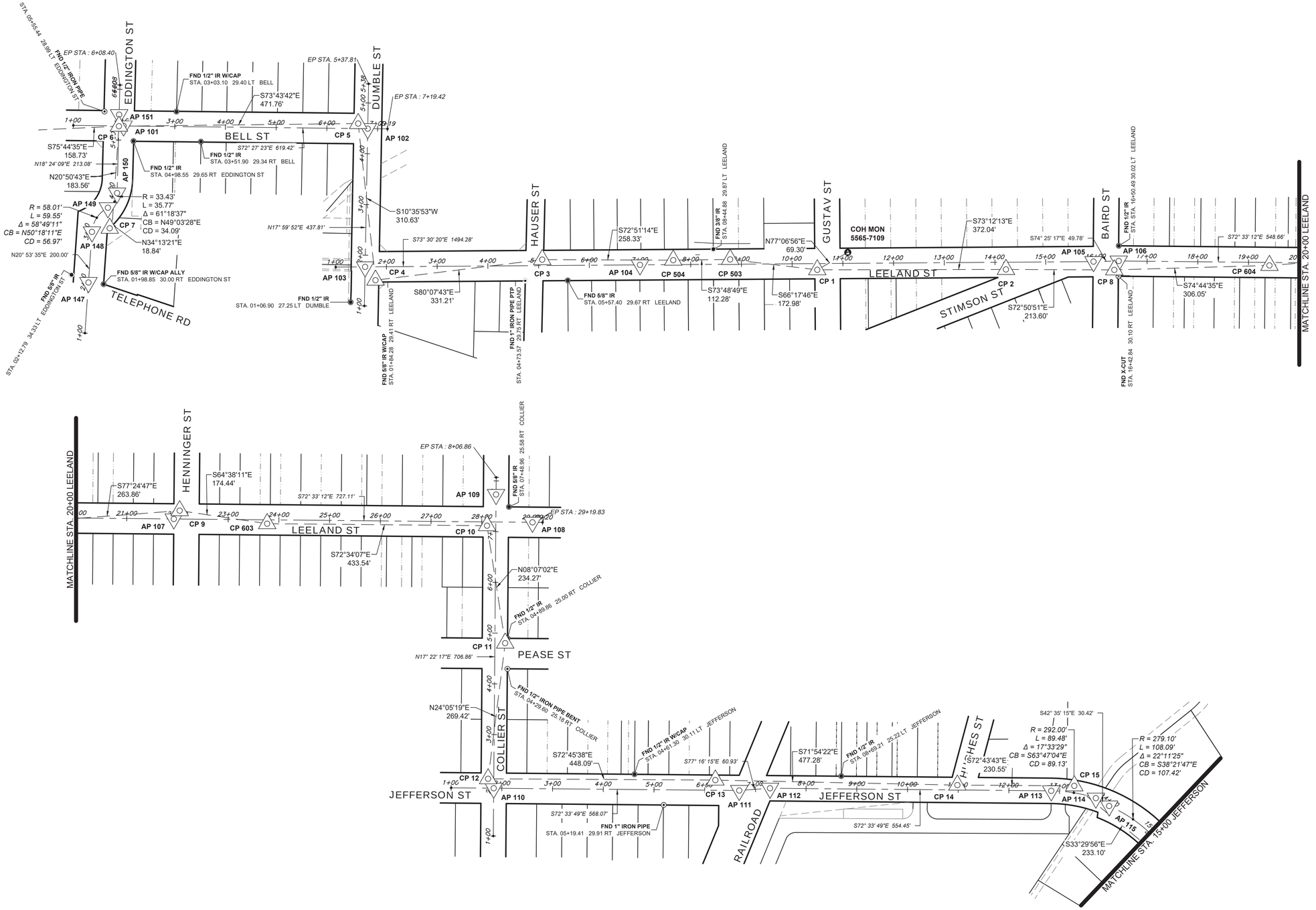
DRAWING SCALE
NTS

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. 14 OF 195

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\STD Drawings\7-BORE LOGS.dwg May 15, 2026 3:00pm



NO.	DATE	REVISION	APP.

NOTES :

ALL BEARINGS AND COORDINATES ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204), NORTH AMERICAN DATAUM OF 1983 (2011 ADJ.) 2010 EPOCH.
COORDINATES SHOWN HEREON ARE GRID VALUES AND MAY BE CONVERTED TO SURFACE BY APPLYING THE COMBINED SCALE FACTOR OF 0.999889376.

GRID COORDINATES/SCALE FACTOR = SURFACE COORDINATES.

HORIZONTAL COORDINATES BASED ON GPS FIELD DATA COLLECTED AUGUST 2025.

ALL ELEVATIONS SHOWN HEREON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (2001 ADJ.), WITH ALL CONTROL NETWORK ELEVATIONS TIED VIA DIFFERENTIAL LEVELING TO THE PROJECT BENCH MARK AS PUBLISHED BY AGS, INC.

PROJECT BENCH MARK :

CITY OF HOUSTON REFERENCE MONUMENT 5556-7109.
AN ALUMINUM DISC AT THE NORTHEAST CORNER OF LEELAND STREET AND GUSTAV STREET INTERSECTION.

PUBLISHED ELEVATION : 34.16' (NAVD 88 (2001 ADJ.)), AGS, INC.

OBSERVED ELEVATION : 33.96' (NAVD 88 GEOID 18), AMANI

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77042
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No.100282-00

SURVEYED BY: AMANI
FB NO. P-6406

INTERIM REVIEW ONLY
DOCUMENT INCOMPLETE, NOT INTENDED FOR PERMIT, BIDDING, OR CONSTRUCTION

WILLIAM H. REIMER III, R.P.L.S.
Surveyor
4044
Registration Number
5/15/2026
Date

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

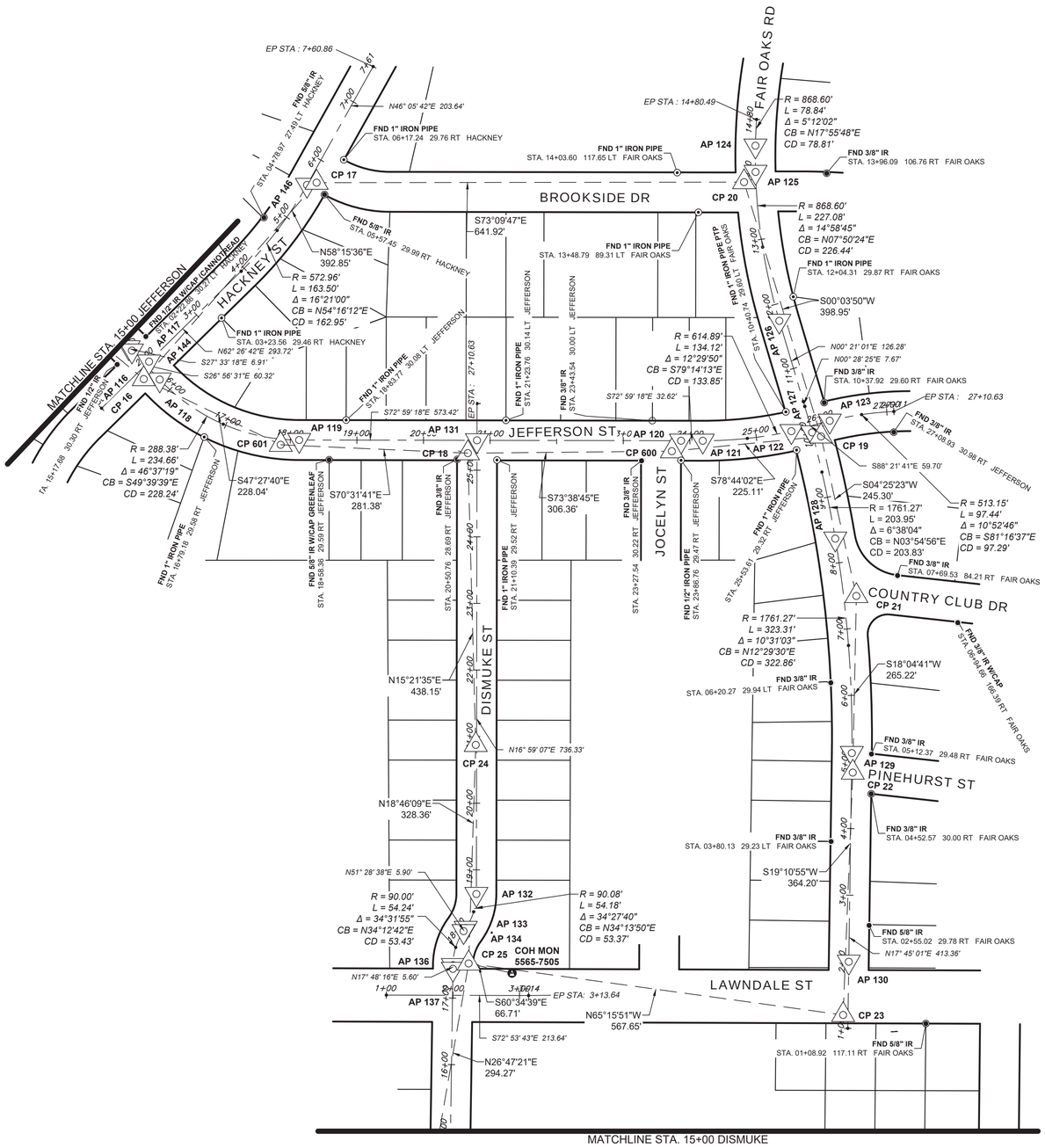
CRMP CIP PACKAGE 5 SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

SURVEY CONTROL
OVERALL MAP
(SHEET 1 OF 8)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-01000-0036-3	
DRAWING SCALE	
CITY OF HOUSTON PM	
SABEEN SHAIKH, P.E.	
SHEET NO. 15 OF 195	

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

FILE PATH: P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Survey Control Drawings\24014-SurveyControl-Overall.dwg



NOTES :

ALL BEARINGS AND COORDINATES ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204), NORTH AMERICAN DATAUM OF 1983 (2011 ADJ.) 2010 EPOCH.
COORDINATES SHOWN HEREON ARE GRID VALUES AND MAY BE CONVERTED TO SURFACE BY APPLYING THE COMBINED SCALE FACTOR OF 0.999889376.

GRID COORDINATES/SCALE FACTOR = SURFACE COORDINATES.

HORIZONTAL COORDINATES BASED ON GPS FIELD DATA COLLECTED AUGUST 2025.

ALL ELEVATIONS SHOWN HEREON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (2001 ADJ.), WITH ALL CONTROL NETWORK ELEVATIONS TIED VIA DIFFERENTIAL LEVELING TO THE PROJECT BENCH MARK AS PUBLISHED BY AGS, INC.

PROJECT BENCH MARK :

CITY OF HOUSTON REFERENCE MONUMENT 5556-7109.
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PUBLISHED ELEVATION : 34.16' (NAVD 88 (2001 ADJ.)), AGS, INC.

OBSERVED ELEVATION : 33.96' (NAVD 88 GEOID 18), AMANI

NO.	DATE	REVISION	APP.

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77042
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No.100282-00

SURVEYED BY: AMANI
FB NO. P-6406

INTERIM REVIEW ONLY
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WILLIAM H. REIMER III, R.P.L.S.
Surveyor
4044
Registration Number
5/15/2026
Date

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

SURVEY CONTROL
OVERALL MAP
(SHEET 2 OF 8)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-01000-0036-3	
DRAWING SCALE	
CITY OF HOUSTON PM	
SABEEN SHAIKH, P.E.	
SHEET NO. 16 OF 195	

FILE PATH: P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Survey Control Drawings\24014-SurveyControl-Overall.dwg

0 1 2 3
ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS

CONTROL POINTS

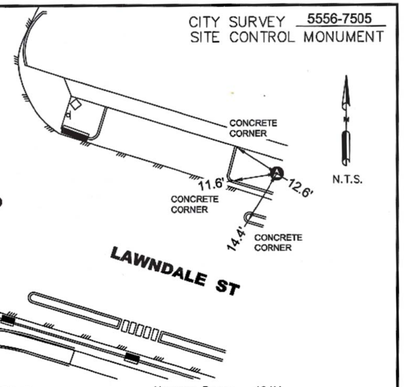
POINT	GRID NORTHING	GRID EASTING	ELEVATION	DESCRIPTION	STATION	BASELINE
1	13,832,721.75	3,134,027.90	33.80	MAG NAIL	STA. 10+49.49' 12.26' RT	Leeland
2	13,832,614.25	3,134,384.03	35.28	MAG NAIL	STA. 14+21.52' 14.22' RT	Leeland
3	13,832,898.73	3,133,514.88	33.98	MAG NAIL	STA. 5+07.27' 11.78' LT	Leeland
4	13,832,954.75	3,133,188.16	32.32	X-CUT	STA. 1+78.05' 27.27' RT	Leeland
5	13,833,260.80	3,133,245.74	32.21	MAG NAIL	STA. 6+61.61' 9.86' LT	Bell
6	13,833,392.97	3,132,792.92	32.51	MAG NAIL	STA. 1+89.97' 0.62' RT	Bell
7	13,833,205.86	3,132,717.02	32.19	X-CUT	STA. 3+22.24' 32.50' RT	Eddington
8	13,832,551.26	3,134,588.11	34.04	MAG NAIL	STA. 16+34.84' 17.32' RT	Leeland
9	13,832,413.24	3,135,140.82	33.46	MAG NAIL	STA. 22+04.14' 16.43' LT	Leeland
10	13,832,208.67	3,135,712.02	33.58	MAG NAIL	STA. 7+11.54' 17.31' LT	Collier
11	13,831,976.76	3,135,678.95	34.08	X-CUT	STA. 4+80.31' 20.37' RT	Collier
12	13,831,730.83	3,135,568.99	33.38	MAG NAIL	STA. 1+72.72' 18.51' LT	Jefferson
13	13,831,598.05	3,135,996.90	34.34	X-CUT	STA. 6+20.81' 20.05' LT	Jefferson
14	13,831,449.83	3,136,450.54	33.96	MAG NAIL	STA. 10+98.26' 9.58' LT	Jefferson
15	13,831,381.39	3,136,670.67	31.62	X-CUT	STA. 13+26.95' 13.63' LT	Jefferson
16	13,831,187.03	3,136,799.30	30.59	MAG NAIL	STA. 15+61.51' 16.79' RT	Jefferson
17	13,831,393.68	3,137,133.37	29.76	MAG NAIL	STA. 5+67.26' 10.91' RT	Hackney
18	13,830,939.08	3,137,232.57	31.10	MAG NAIL	STA. 20+66.66' 19.27' RT	Jefferson
19	13,830,808.85	3,137,747.26	30.50	X-CUT	STA. 9+90.75' 11.50' RT	FairOaks
20	13,831,207.76	3,137,747.70	30.07	X-CUT	STA. 13+87.12' 17.85' LT	FairOaks
21	13,830,564.31	3,137,728.34	32.12	X-CUT	STA. 7+47.47' 19.02' RT	FairOaks
22	13,830,312.21	3,137,646.05	32.17	X-CUT	STA. 4+84.09' 1.80' RT	FairOaks
23	13,829,968.27	3,137,526.40	33.18	758C	STA. 1+20.00' 7.30' LT	FairOaks
24	13,830,516.63	3,137,116.53	32.23	MAG NAIL	STA. 20+87.57' 1.23' LT	Dismuke
25	13,830,205.77	3,137,010.89	32.26	X-CUT	STA. 17+52.79' 23.49' RT	Dismuke
26	13,829,943.11	3,136,878.28	33.18	X-CUT	STA. 14+61.61' 22.68' LT	Dismuke
27	13,829,651.01	3,136,835.05	33.46	MAG NAIL	STA. 11+70.20' 25.26' RT	Dismuke
28	13,829,418.46	3,136,716.42	33.59	MAG NAIL	STA. 1+69.04' 13.79' RT	Truett
29	13,829,327.61	3,137,082.18	34.13	MAG NAIL	STA. 5+45.42' 6.35' LT	Truett
30	13,829,172.47	3,137,531.62	33.62	MAG NAIL	STA. 10+20.63' 10.50' RT	Truett
31	13,829,178.94	3,136,637.55	33.21	MAG NAIL	STA. 6+60.34' 18.84' LT	Dismuke
32	13,828,957.37	3,136,627.16	34.84	X-CUT	STA. 1+80.56' 20.93' LT	Bonsrell
33	13,828,700.83	3,136,480.31	33.99	X-CUT	STA. 1+08.35' 17.60' RT	Barremore
34	13,828,628.11	3,136,805.43	34.15	MAG NAIL	STA. 4+40.54' 8.20' LT	Barremore
35	13,828,531.57	3,137,038.10	33.25	MAG NAIL	STA. 6+91.32' 15.89' RT	Barremore
36	13,828,484.70	3,137,285.94	33.84	MAG NAIL	STA. 9+42.03' 11.96' LT	Barremore
37	13,828,723.03	3,137,360.26	33.61	MAG NAIL	STA. 9+50.23' 11.82' LT	Bonsrell
38	13,828,826.32	3,136,952.36	34.21	MAG NAIL	STA. 5+29.93' 9.03' RT	Bonsrell
502	13,829,274.21	3,137,255.93	33.66	MAG NAIL	STA. 7+27.21' 6.13' LT	Truett
503	13,832,791.28	3,133,869.53	34.15	MAG NAIL	STA. 8+77.87' 9.45' LT	Leeland
504	13,832,822.58	3,133,761.71	34.37	MAG NAIL	STA. 7+65.59' 8.85' LT	Leeland
600	13,830,852.83	3,137,526.51	32.04	MAG NAIL	STA. 23+73.00' 15.76' RT	Jefferson
601	13,831,032.87	3,136,967.31	31.17	MAG NAIL	STA. 17+86.29' 8.51' RT	Jefferson
603	13,832,338.53	3,135,298.43	33.72	MAG NAIL	STA. 23+76.92' 7.60' RT	Leeland
604	13,832,470.74	3,134,883.33	34.29	MAG NAIL	STA. 19+41.23' 5.92' RT	Leeland

ADDITIONAL POINTS

POINT	GRID NORTHING	GRID EASTING	DESCRIPTION	STATION	BASELINE
100	13,833,390.53	3,132,802.67	MAG NAIL	STA. 2+00.00'	Bell
102	13,833,245.69	3,133,260.82	MAG NAIL	STA. 6+80.55'	Bell
103	13,832,986.60	3,133,176.65	MAG NAIL	STA. 1+57.97'	Leeland
104	13,832,832.72	3,133,696.32	MAG NAIL	STA. 7+00.00'	Leeland
105	13,832,578.84	3,134,553.70	MAG NAIL	STA. 15+94.28'	Leeland
106	13,832,565.47	3,134,601.65	MAG NAIL	STA. 16+44.06'	Leeland
107	13,832,400.99	3,135,125.00	MAG NAIL	STA. 21+92.72'	Leeland
108	13,832,188.96	3,135,799.67	MAG NAIL	STA. 29+00.00'	Leeland
109	13,832,262.28	3,135,746.92	MAG NAIL	STA. 7+73.14'	Collier
110	13,831,709.83	3,135,574.10	MAG NAIL	STA. 1+94.22'	Collier
111	13,831,564.76	3,136,035.98	MAG NAIL	STA. 6+68.07'	Jefferson
112	13,831,551.34	3,136,095.41	MAG NAIL	STA. 7+29.00'	Jefferson
113	13,831,385.21	3,136,624.32	MAG NAIL	STA. 12+83.45'	Jefferson
114	13,831,345.84	3,136,704.28	MAG NAIL	STA. 13+72.93'	Jefferson
115	13,831,323.45	3,136,724.86	MAG NAIL	STA. 14+03.35'	Jefferson
116	13,831,239.23	3,136,791.52	MAG NAIL	STA. 15+11.44'	Jefferson
117	13,831,233.11	3,136,794.72	MAG NAIL	STA. 15+18.35'	Jefferson
118	13,831,179.35	3,136,822.04	MAG NAIL	STA. 15+78.66'	Jefferson
119	13,831,031.62	3,136,995.99	MAG NAIL	STA. 18+13.32'	Jefferson
120	13,830,863.87	3,137,544.26	MAG NAIL	STA. 23+86.75'	Jefferson
121	13,830,854.33	3,137,575.45	MAG NAIL	STA. 24+19.37'	Jefferson
122	13,830,829.34	3,137,706.94	X-CUT	STA. 25+53.49'	Jefferson
123	13,830,827.63	3,137,766.61	X-CUT	STA. 26+13.19'	Jefferson
124	13,831,255.14	3,137,780.00	X-CUT	STA. 14+41.07'	FairOaks
125	13,831,217.38	3,137,768.72	X-CUT	STA. 14+01.66'	FairOaks
126	13,830,993.08	3,137,737.84	MAG NAIL	STA. 11+74.57'	FairOaks
127	13,830,818.54	3,137,736.11	X-CUT	STA. 10+00.00'	FairOaks
128	13,830,655.81	3,137,723.08	X-CUT	STA. 8+36.67'	FairOaks
129	13,830,340.64	3,137,653.26	X-CUT	STA. 5+13.37'	FairOaks
130	13,830,042.22	3,137,557.73	X-CUT	STA. 2+00.00'	FairOaks
131	13,830,953.52	3,137,251.26	MAG NAIL	STA. 25+44.81'	Dismuke
132	13,830,302.16	3,137,052.30	MAG NAIL	STA. 18+63.67'	Dismuke
133	13,830,258.05	3,137,022.29	MAG NAIL	STA. 18+09.49'	Dismuke
134	13,830,254.37	3,137,017.67	MAG NAIL	STA. 18+03.59'	Dismuke
136	13,830,210.20	3,136,987.64	MAG NAIL	STA. 17+49.35'	Dismuke
137	13,830,204.87	3,136,985.93	MAG NAIL	STA. 17+43.76'	Dismuke
138	13,829,426.68	3,136,736.68	MAG NAIL	STA. 9+26.53'	Dismuke
139	13,829,188.54	3,137,514.96	MAG NAIL	STA. 10+00.00'	Truett
140	13,828,948.84	3,136,583.62	MAG NAIL	STA. 4+24.72'	Dismuke
141	13,828,715.90	3,137,343.21	MAG NAIL	STA. 9+36.02'	Bonsrell
142	13,828,710.93	3,136,507.42	MAG NAIL	STA. 1+74.88'	Dismuke
143	13,828,485.59	3,137,242.25	MAG NAIL	STA. 9+00.00'	Barremore
144	13,831,209.82	3,136,814.59	MAG NAIL	STA. 2+00.00'	Hackney
145	13,831,299.43	3,136,986.31	MAG NAIL	STA. 3+93.72'	Hackney
146	13,831,394.57	3,137,118.58	MAG NAIL	STA. 5+57.22'	Hackney
147	13,833,115.78	3,132,645.87	X-CUT	STA. 2+00.00'	Eddington
148	13,833,209.20	3,132,681.52	MAG NAIL	STA. 3+00.00'	Eddington
149	13,833,245.58	3,132,725.35	MAG NAIL	STA. 3+59.55'	Eddington
150	13,833,267.92	3,132,751.10	MAG NAIL	STA. 3+95.32'	Eddington
151	13,833,414.67	3,132,799.92	MAG NAIL	STA. 5+50.00'	Eddington
152	13,828,688.20	3,136,500.14	MAG NAIL	STA. 1+51.01'	Dismuke
153	13,828,467.73	3,137,300.47	MAG NAIL	STA. 9+60.91'	Barremore
154	13,828,375.15	3,137,271.29	MAG NAIL	STA. 1+50.00'	Sunnyland

CITY OF HOUSTON

CITY SURVEY 5556-7505
SITE CONTROL MONUMENT



Project WBS# R-001000-0036-3
Texas Coordinate System of 1983, South Central Zone, U. S. Survey Feet
X= 3,137,068.99
Y= 13,830,172.99
Lat.= N 29° 43' 36.1385"
Lon.= W 95° 19' 3.0157"

Keymap Page: 494Y
Orthometric Elevation = 31.99
Ellipsoid Height= -57.53
Geoid: GEOID 18
Datum Source & Adjustment: 2-HR STATIC GPS OBSERVATION
MADE ON MONUMENT ON 08/30/2025

Reference Frame Used: NAD_83(2011)(EPOCH: 2010.0000)
Vertical Adjustment used: NAVD 88 GEOID18
General Location: AT THE NORTH SIDE OF LAWNDALE ST. APPROXIMATELY 60 FEET EAST OF THE DISMUKE ST. INTERSECTION.

Date Set: Sept. 3, 2025 Type of Mark: Aluminum Disk

3 Nearest project control points (bearings and distances stated below):
1. CP #25, X-CUT, N 60° 34' 39" W, 66.71'
2. CP #26, X-CUT, S 39° 40' 45" W, 298.73'
3. CP #24, MAG NAIL, N 07° 52' 36" E, 346.94'

NOTE:
1. Bearings are grid bearings.
2. Combined Factor (C.F)= 0.99988929.

Surface= Grid
C.F.

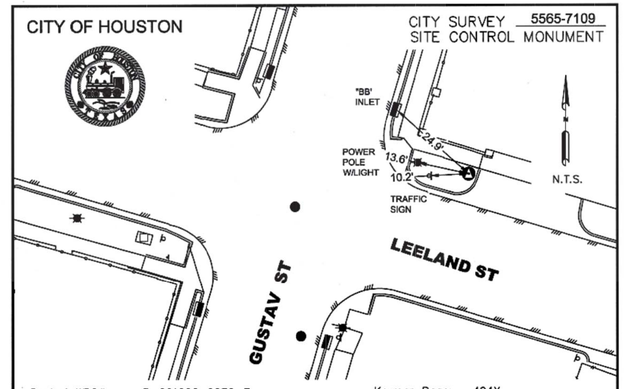
Surveyed By: Amani Engineering, Inc.
11011 Richmond Avenue, Suite 700
Houston, TX 77042
Tel. (713)270-5700
Texas Registered Survey Firm 10028200

STATE OF TEXAS REGISTERED CHRISTINA I. WEAVERS 6753 PROFESSIONAL LAND SURVEYOR
12.15.25

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\Monuments\5556-7505.dwg

CITY OF HOUSTON

CITY SURVEY 5565-7109
SITE CONTROL MONUMENT



Project WBS# R-001000-0036-3
Texas Coordinate System of 1983, South Central Zone, U. S. Survey Feet
X= 3,134,095.47
Y= 13,832,737.33
Lat.= N 29° 44' 2.4387"
Lon.= W 95° 19' 35.8136"

Keymap Page: 494X
Orthometric Elevation = 33.96
Ellipsoid Height= -55.59
Geoid: GEOID 18
Datum Source & Adjustment: 2-HR STATIC GPS OBSERVATION
MADE ON MONUMENT ON 08/23/2025

Reference Frame Used: NAD_83(2011)(EPOCH: 2010.0000)
Vertical Adjustment used: NAVD 88 GEOID18
General Location: AT NORTHEAST CORNER OF LEELAND STREET AND GUSTAV STREET INTERSECTION.

Date Set: APRIL 7, 2025 Type of Mark: ALUMINUM DISC SURVEY MARKER

3 Nearest project control points (bearings and distances stated below):
1. CP #1, MAG NAIL, S 77° 06' 56" W, 69.30'
2. CP #2, MAG NAIL, S 66° 55' 25" E, 313.72'
3. CP #8, MAG NAIL, S 69° 19' 22" E, 526.64'

NOTE:
1. Bearings are grid bearings.
2. Combined Factor (C.F)= 0.99989008.

Surface= Grid
C.F.

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Houston, TX 77042
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Texas Registered Survey Firm 10028200

STATE OF TEXAS REGISTERED CHRISTINA I. WEAVERS 6753 PROFESSIONAL LAND SURVEYOR
12.12.25

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\Monuments\Coh---5565-7109.dwg

NOTES :

ALL BEARINGS AND COORDINATES ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204), NORTH AMERICAN DATAUM OF 1983 (2011 ADJ.) 2010 EPOCH.
COORDINATES SHOWN HEREON ARE GRID VALUES AND MAY BE CONVERTED TO SURFACE BY APPLYING THE COMBINED SCALE FACTOR OF 0.999889376.

GRID COORDINATES/SCALE FACTOR = SURFACE COORDINATES.

HORIZONTAL COORDINATES BASED ON GPS FIELD DATA COLLECTED AUGUST 2025.

ALL ELEVATIONS SHOWN HEREON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (2001 ADJ.), WITH ALL CONTROL NETWORK ELEVATIONS TIED VIA DIFFERENTIAL LEVELING TO THE PROJECT BENCH MARK AS PUBLISHED BY AGS, INC.

PROJECT BENCH MARK :

CITY OF HOUSTON REFERENCE MONUMENT 5556-7109.
AN ALUMINUM DISC AT THE NORTHEAST CORNER OF LEELAND STREET AND GUSTAV STREET INTERSECTION.

PUBLISHED ELEVATION : 34.16' (NAVD 88 (2001 ADJ.)), AGS, INC.

OBSERVED ELEVATION : 33.96' (NAVD 88 GEOID 18), AMANI

NO.	DATE	REVISION	APP.

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77042
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No.100282-00

SURVEYED BY: AMANI
FB NO. P-6406

INTERIM REVIEW ONLY
DOCUMENT INCOMPLETE; NOT INTENDED FOR PERMIT, BIDDING, OR CONSTRUCTION

WILLIAM H. REIMER III, R.P.L.S.
Surveyor
4044
Registration Number
5/15/2026
Date

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

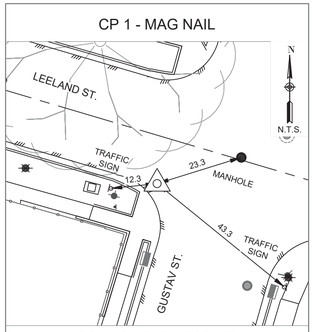
CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

SURVEY CONTROL
OVERALL MAP
(SHEET 3 OF 8)

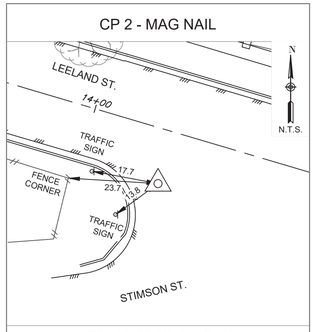
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-01000-0036-3	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
SABEEN SHAIKH, P.E.	
SHEET NO. 17 OF 195	

FILE PATH: P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Survey Control Drawings\24014-SurveyControl-Overall.dwg

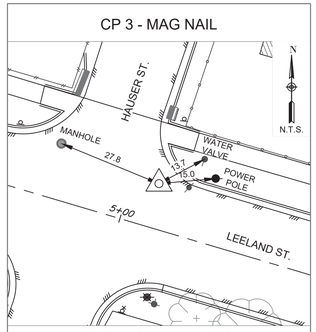
0 1 2 3
ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS



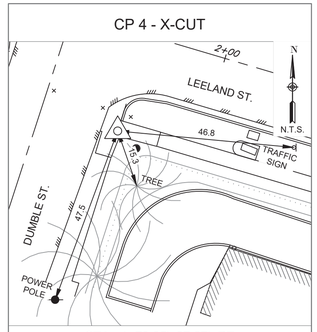
STA. 10+49.49' 12.26' RT
LEELAND



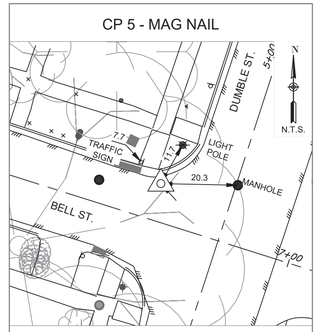
STA. 14+21.52' 14.22' RT
LEELAND



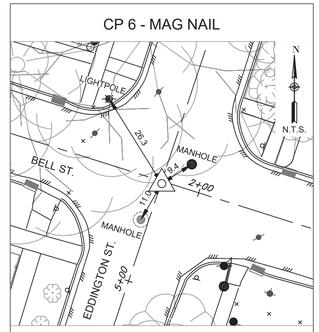
STA. 5+07.27' 11.78' LT
LEELAND



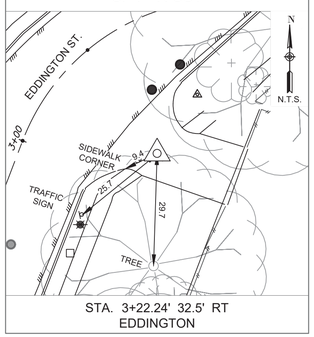
STA. 1+78.05' 27.27' RT
LEELAND



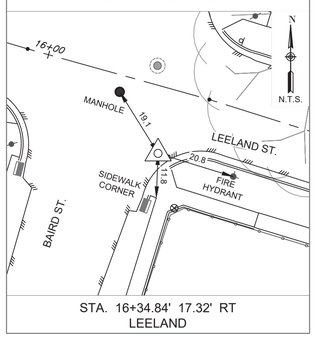
STA. 6+61.61' 9.86' LT
BELL



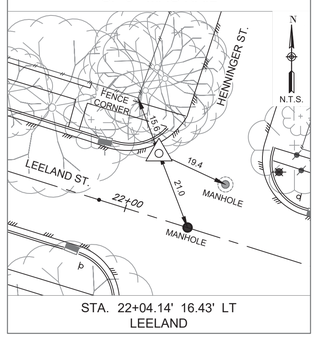
STA. 1+89.97' 0.62' RT
BELL



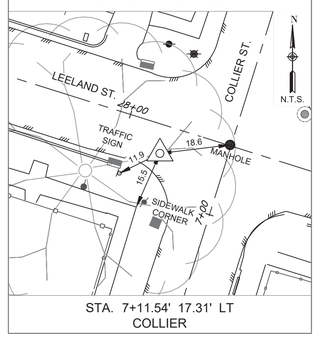
STA. 3+22.24' 32.5' RT
EDDINGTON



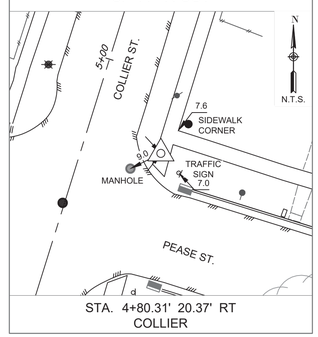
STA. 16+34.84' 17.32' RT
LEELAND



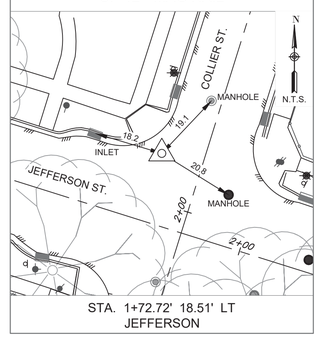
STA. 22+04.14' 16.43' LT
LEELAND



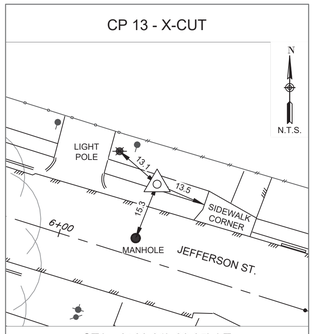
STA. 7+11.54' 17.31' LT
COLLIER



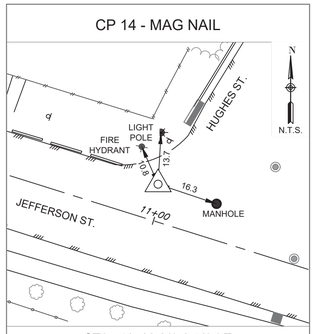
STA. 4+80.31' 20.37' RT
COLLIER



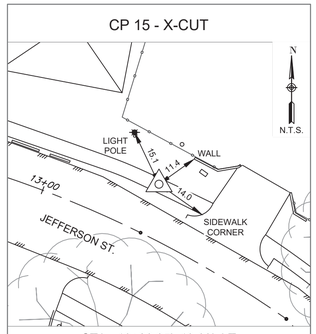
STA. 1+72.72' 18.51' LT
JEFFERSON



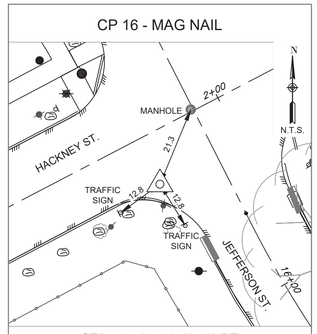
STA. 6+20.81' 20.05' LT
JEFFERSON



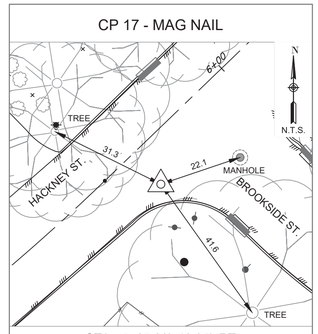
STA. 10+98.26' 9.58' LT
JEFFERSON



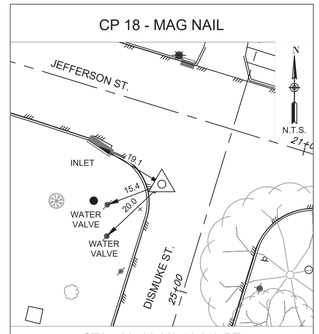
STA. 13+26.95' 13.63' LT
JEFFERSON



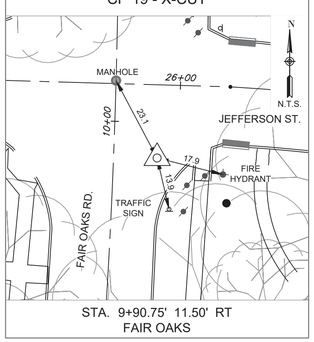
STA. 15+61.51' 16.79' RT
JEFFERSON



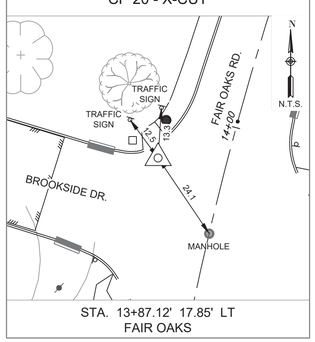
STA. 5+67.26' 10.91' RT
HACKNEY



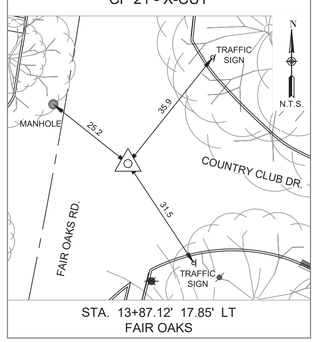
STA. 20+66.66' 19.27' RT
JEFFERSON



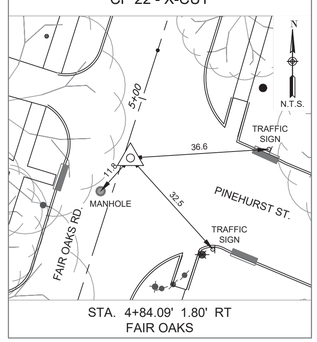
STA. 9+90.75' 11.50' RT
FAIR OAKS



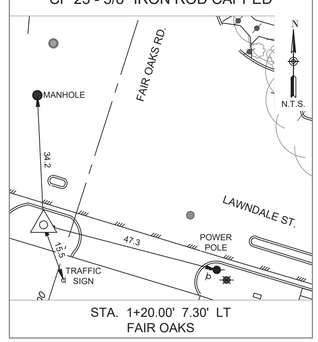
STA. 13+87.12' 17.85' LT
FAIR OAKS



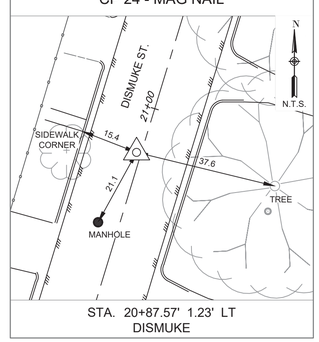
STA. 13+87.12' 17.85' LT
FAIR OAKS



STA. 4+84.09' 1.80' RT
FAIR OAKS



STA. 1+20.00' 7.30' LT
FAIR OAKS



STA. 20+87.57' 1.23' LT
DISMUKE

NOTES :

ALL BEARINGS AND COORDINATES ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204), NORTH AMERICAN DATAUM OF 1983 (2011 ADJ.) 2010 EPOCH.
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HORIZONTAL COORDINATES BASED ON GPS FIELD DATA COLLECTED AUGUST 2025.

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PROJECT BENCH MARK :

CITY OF HOUSTON REFERENCE MONUMENT 5556-7109.
AN ALUMINUM DISC AT THE NORTHEAST CORNER OF LEELAND STREET AND GUSTAV STREET INTERSECTION.

PUBLISHED ELEVATION : 34.16' (NAVD 88 (2001 ADJ.)), AGS, INC.

OBSERVED ELEVATION : 33.96' (NAVD 88 GEOID 18), AMANI

NO.	DATE	REVISION	APP.

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HOUSTON, TEXAS 77042
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
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SURVEYED BY: AMANI
FB NO. P-6406

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WILLIAM H. REIMER III, R.P.L.S.
Surveyor
4044
Registration Number
5/15/2026
Date

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

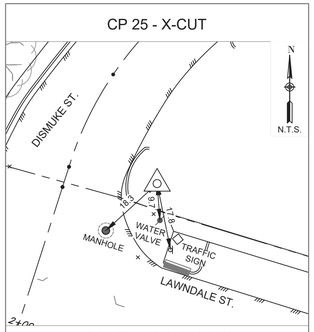
CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

SURVEY CONTROL
SWING TIES
(SHEET 4 OF 8)

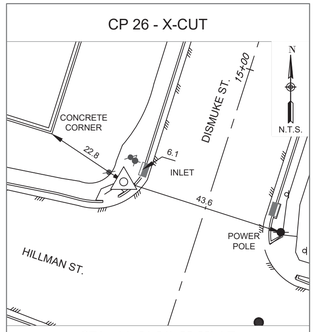
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-01000-0036-3	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
SABEEN SHAIKH, P.E.	
SHEET NO. 18 OF 195	

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3

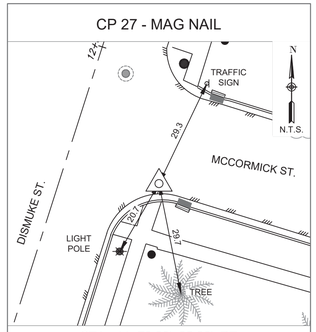
FILE PATH: P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Survey Control Drawings\24014-SurveyControl-Swingtes-CP-1.dwg



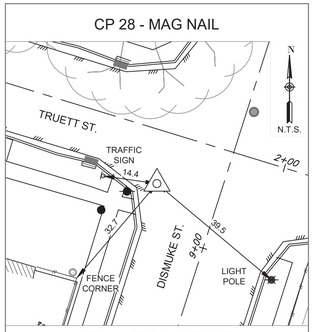
STA. 17+52.79' 23.49' RT
DISMUKE



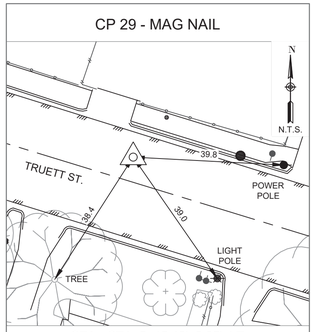
STA. 14+61.61' 22.68' LT
DISMUKE



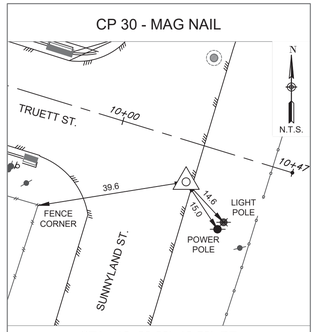
STA. 11+70.20' 25.26' RT
DISMUKE



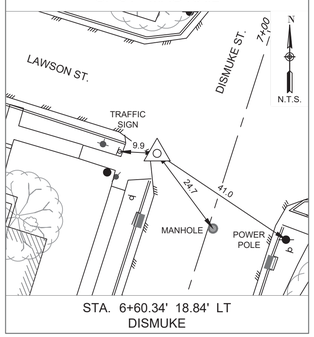
STA. 1+69.04' 13.79' RT
TRUETT



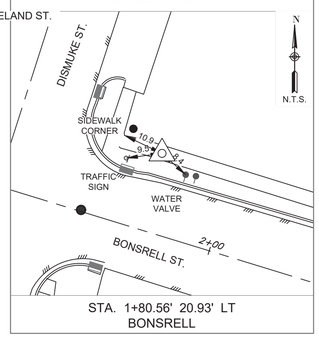
STA. STA. 5+45.42' 6.35' LT
TRUETT



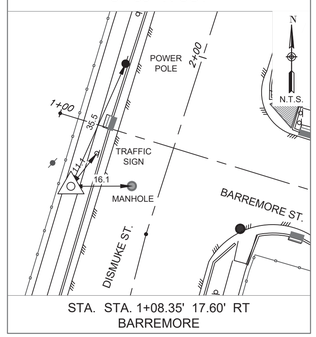
STA. 10+20.63' 10.50' RT
TRUETT



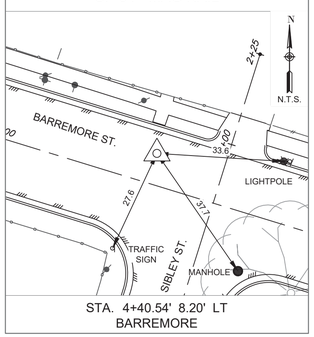
STA. 6+60.34' 18.84' LT
DISMUKE



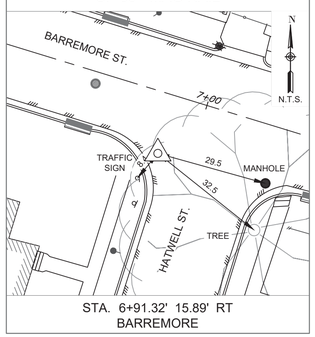
STA. 1+80.56' 20.93' LT
BONSRELL



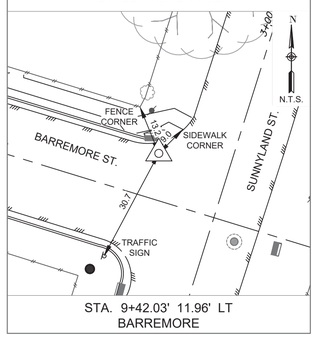
STA. STA. 1+08.35' 17.60' RT
BARREMORE



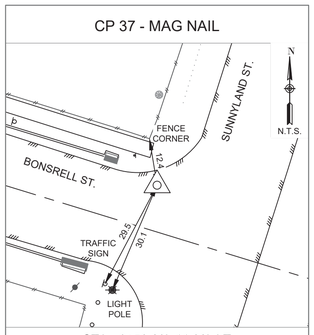
STA. 4+40.54' 8.20' LT
BARREMORE



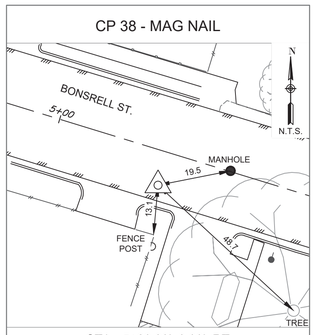
STA. 6+91.32' 15.89' RT
BARREMORE



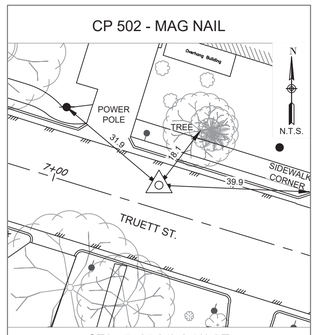
STA. 9+42.03' 11.96' LT
BARREMORE



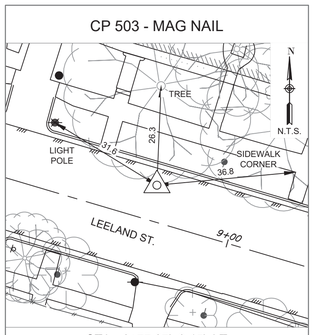
STA. 9+50.23' 11.82' LT
BONSRELL



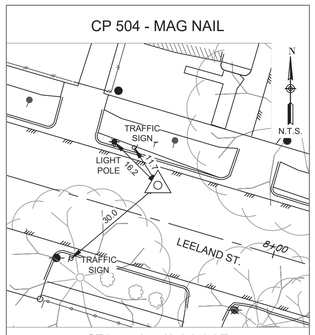
STA. 5+29.93' 9.03' RT
BONSRELL



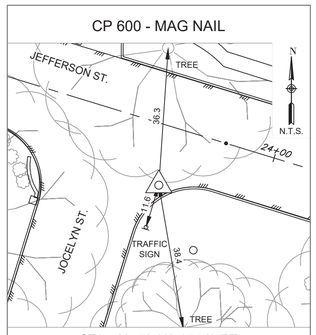
STA. 7+27.21' 6.13' LT
TRUETT



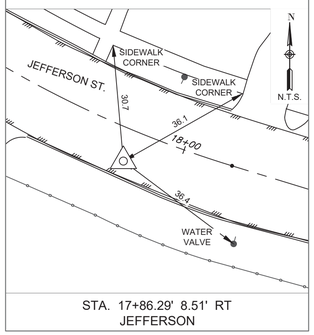
STA. 8+77.87' 9.45' LT
LEELAND



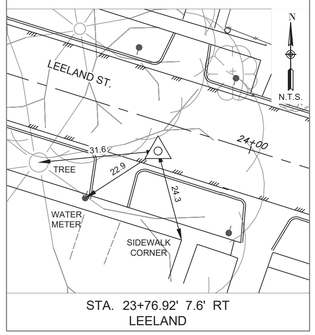
STA. 7+65.59' 8.85' LT
LEELAND



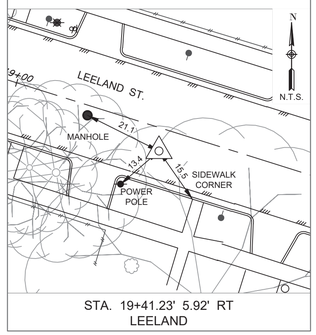
STA. 23+73.00' 15.76' RT
JEFFERSON



STA. 17+86.29' 8.51' RT
JEFFERSON



STA. 23+76.92' 7.6' RT
LEELAND



STA. 19+41.23' 5.92' RT
LEELAND

NOTES :

ALL BEARINGS AND COORDINATES ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204), NORTH AMERICAN DATAUM OF 1983 (2011 ADJ.) 2010 EPOCH.
COORDINATES SHOWN HEREON ARE GRID VALUES AND MAY BE CONVERTED TO SURFACE BY APPLYING THE COMBINED SCALE FACTOR OF 0.999889376.

GRID COORDINATES/SCALE FACTOR = SURFACE COORDINATES.

HORIZONTAL COORDINATES BASED ON GPS FIELD DATA COLLECTED AUGUST 2025.

ALL ELEVATIONS SHOWN HEREON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (2001 ADJ.), WITH ALL CONTROL NETWORK ELEVATIONS TIED VIA DIFFERENTIAL LEVELING TO THE PROJECT BENCH MARK AS PUBLISHED BY AGS, INC.

PROJECT BENCH MARK :

CITY OF HOUSTON REFERENCE MONUMENT 5556-7109.
AN ALUMINUM DISC AT THE NORTHEAST CORNER OF LEELAND STREET AND GUSTAV STREET INTERSECTION.

PUBLISHED ELEVATION : 34.16' (NAVD 88 (2001 ADJ.)), AGS, INC.

OBSERVED ELEVATION : 33.96' (NAVD 88 GEOID 18), AMANI

NO.	DATE	REVISION	APP.

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77042
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No.100282-00

INTERIM REVIEW ONLY
DOCUMENT INCOMPLETE; NOT INTENDED FOR PERMIT, BIDDING, OR CONSTRUCTION

WILLIAM H. REIMER III, R.P.L.S.
Surveyor
4044
Registration Number
5/15/2026
Date

SURVEYED BY: AMANI
FB NO. P-6406

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

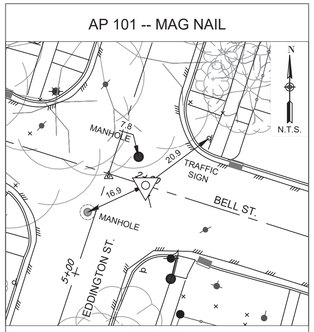
CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

SURVEY CONTROL
SWING TIES
(SHEET 5 OF 8)

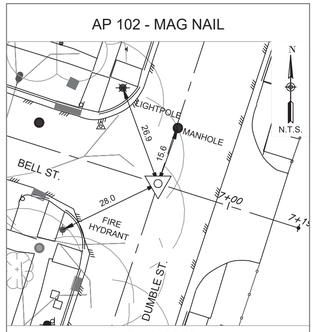
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-01000-0036-3	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
SABEEN SHAIKH, P.E.	
SHEET NO. 19 OF 195	

FILE PATH: P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Survey Control Drawings\24014-SurveyControl-Swingties-CP-2.dwg

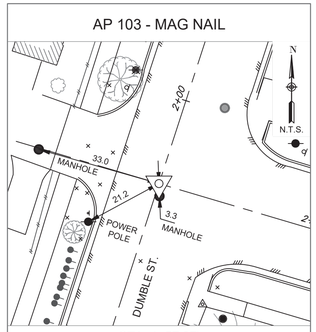
0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



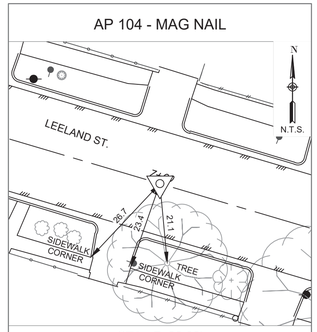
2+00.00'
BELL



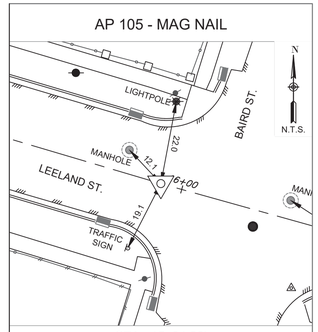
STA. 6+80.55'
BELL



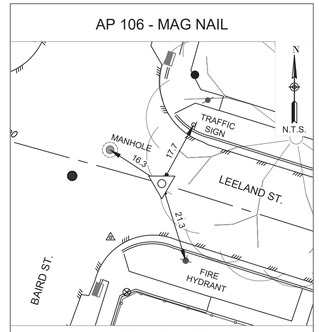
STA. 1+57.97'
LEELAND



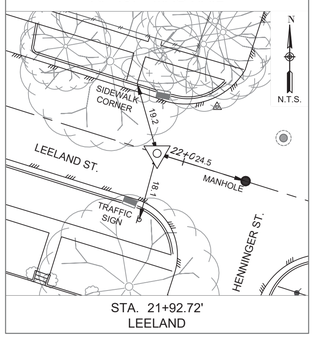
STA. 7+00.00'
LEELAND



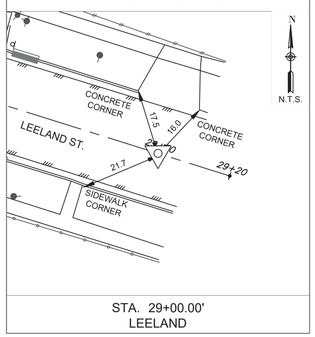
STA. 15+94.28'
LEELAND



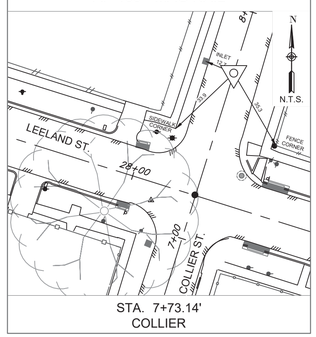
STA. 16+44.06'
LEELAND



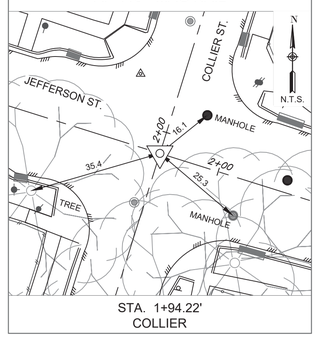
STA. 21+92.72'
LEELAND



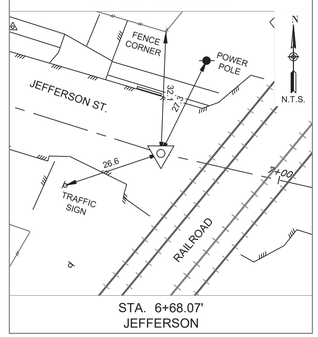
STA. 29+00.00'
LEELAND



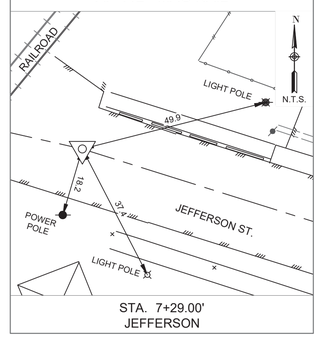
STA. 7+73.14'
COLLIER



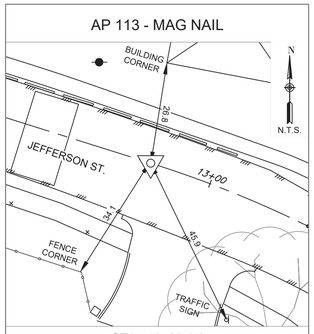
STA. 1+94.22'
COLLIER



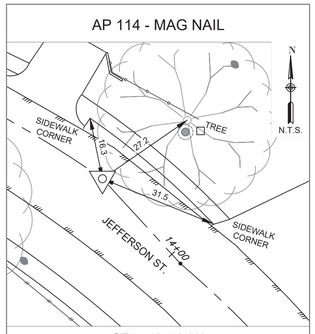
STA. 6+68.07'
JEFFERSON



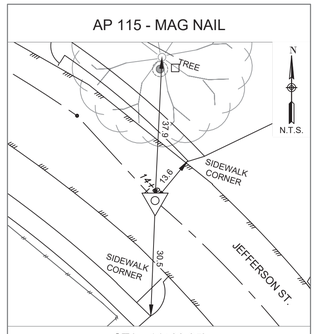
STA. 7+29.00'
JEFFERSON



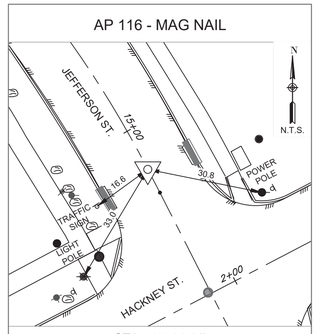
STA. 12+83.45'
JEFFERSON



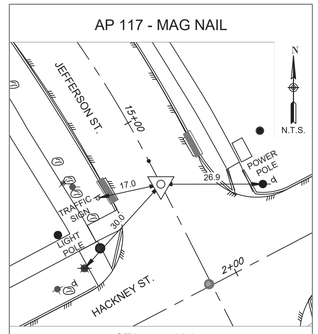
STA. 13+72.93'
JEFFERSON



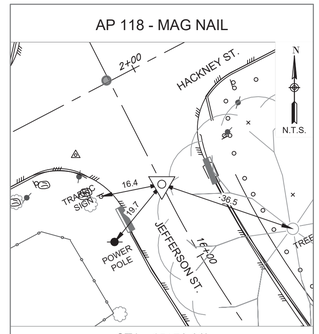
STA. 14+03.35'
JEFFERSON



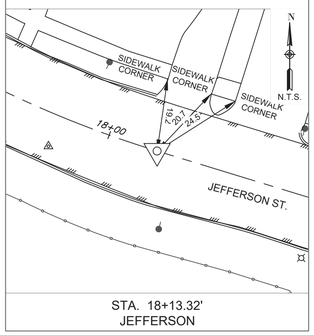
STA. 15+11.44'
JEFFERSON



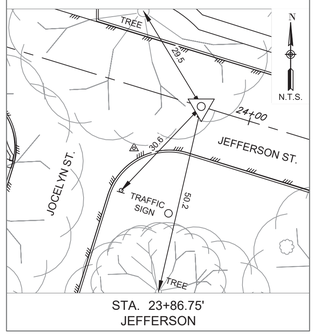
STA. 15+18.35'
JEFFERSON



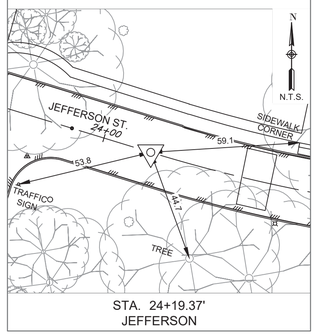
STA. 15+78.66'
JEFFERSON



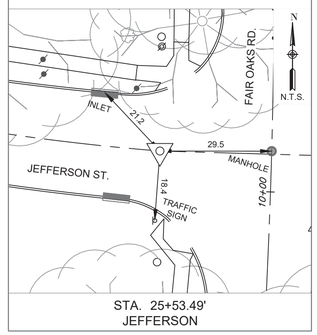
STA. 18+13.32'
JEFFERSON



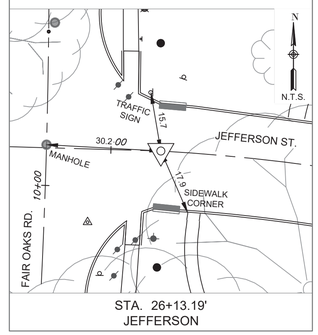
STA. 23+86.75'
JEFFERSON



STA. 24+19.37'
JEFFERSON



STA. 25+53.49'
JEFFERSON



STA. 26+13.19'
JEFFERSON

NO.	DATE	REVISION	APP.

NOTES :

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HORIZONTAL COORDINATES BASED ON GPS FIELD DATA COLLECTED AUGUST 2025.

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PROJECT BENCH MARK :

CITY OF HOUSTON REFERENCE MONUMENT 5556-7109.
AN ALUMINUM DISC AT THE NORTHEAST CORNER OF LEELAND STREET AND GUSTAV STREET INTERSECTION.

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WILLIAM H. REIMER III, R.P.L.S.
Surveyor
4044
Registration Number
5/15/2026
Date

SURVEYED BY: AMANI
FB NO. P-6406

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

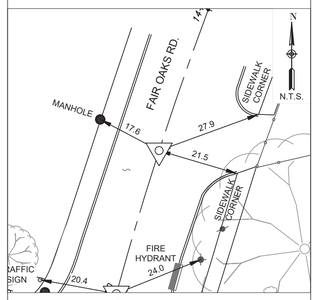
SURVEY CONTROL
SWING TIES
(SHEET 6 OF 8)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-01000-0036-3	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
SABEEN SHAIKH, P.E.	
SHEET NO. 20 OF 195	

FILE PATH: P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Survey Control Drawings\24014-SurveyControl-Swingties-AP-1.dwg

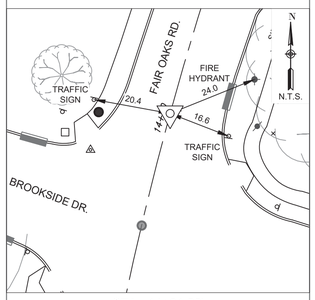
0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

AP 124 - X-CUT



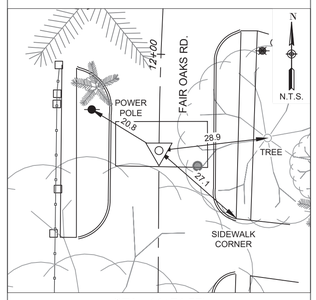
STA. 14+41.07'
FAIR OAKS

AP 125 - X-CUT



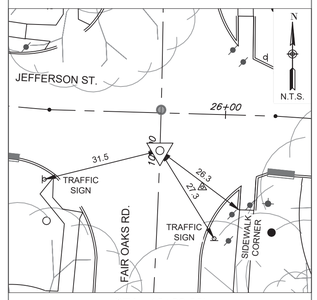
STA. 14+01.66'
FAIR OAKS

AP 126 - MAG NAIL



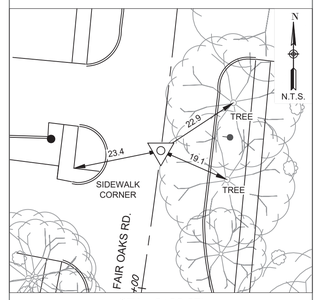
STA. 11+74.57'
FAIR OAKS

AP 127 - X-CUT



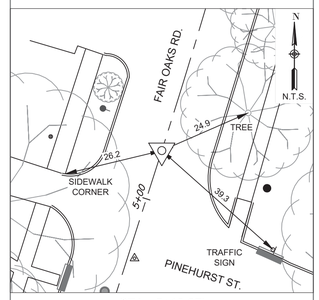
STA. 10+00.00'
FAIR OAKS

AP 128 - X-CUT



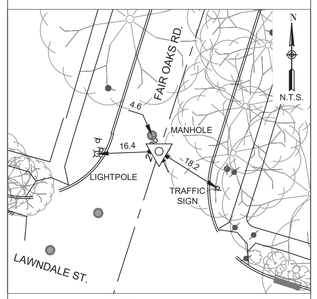
STA. 8+36.67'
FAIR OAKS

AP 129 - X-CUT



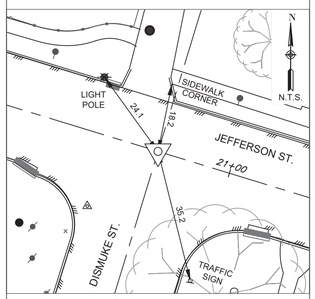
STA. 5+13.37'
FAIR OAKS

AP 130 - X-CUT



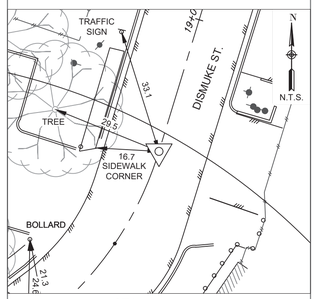
STA. 2+00.00'
FAIR OAKS

AP 131 - MAG NAIL



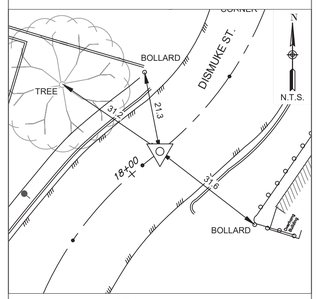
STA. 25+44.81'
DISMUKE

AP 132 - MAG NAIL



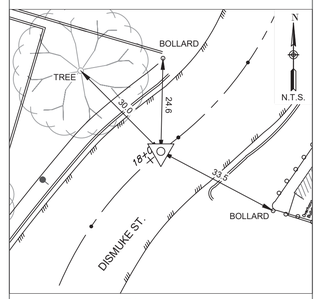
STA. 18+63.67'
DISMUKE

AP 133 - MAG NAIL



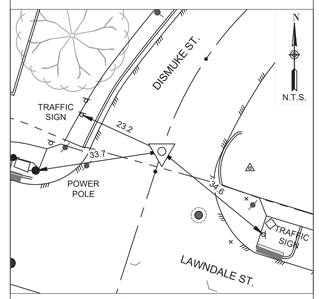
STA. 18+09.49'
DISMUKE

AP 134 - MAG NAIL



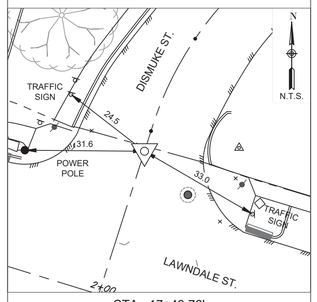
STA. 18+03.59'
DISMUKE

AP 136 - MAG NAIL



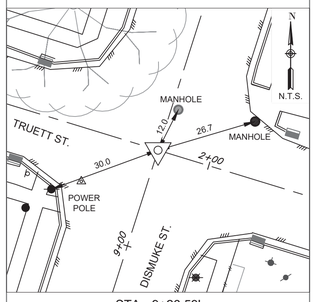
STA. 17+49.35'
DISMUKE

AP 137 - MAG NAIL



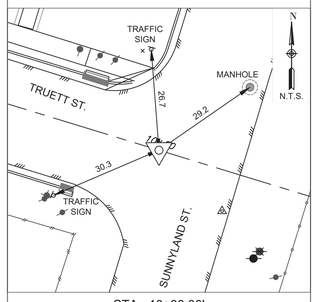
STA. 17+43.76'
DISMUKE

AP 138 - MAG NAIL



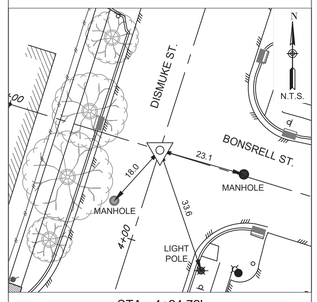
STA. 9+26.53'
DISMUKE

AP 139 - MAG NAIL



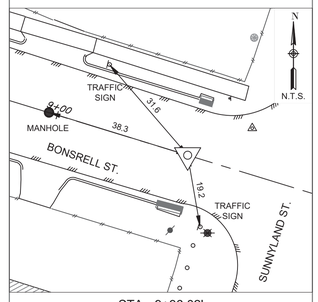
STA. 10+00.00'
TRUETT

AP 140 - MAG NAIL



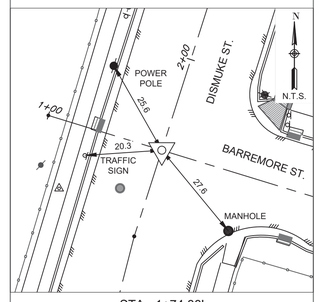
STA. 4+24.72'
DISMUKE

AP 141 - MAG NAIL



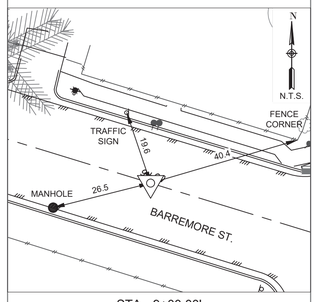
STA. 9+36.02'
BONSRELL

AP 142 - MAG NAIL



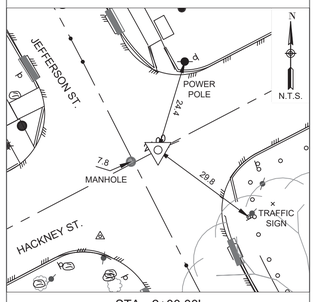
STA. 1+74.88'
DISMUKE

AP 143 - MAG NAIL



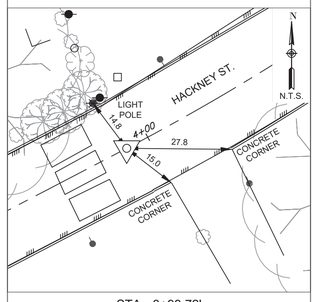
STA. 9+00.00'
BARREMORE

AP 144 - MAG NAIL



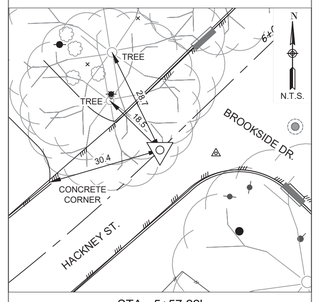
STA. 2+00.00'
HACKNEY

AP 145 - MAG NAIL



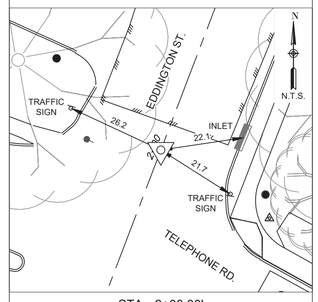
STA. 3+93.72'
HACKNEY

AP 146 - MAG NAIL



STA. 5+57.22'
HACKNEY

AP 147 - X-CUT



STA. 2+00.00'
EDDINGTON

NOTES :

ALL BEARINGS AND COORDINATES ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204), NORTH AMERICAN DATAUM OF 1983 (2011 ADJ.) 2010 EPOCH.
COORDINATES SHOWN HEREON ARE GRID VALUES AND MAY BE CONVERTED TO SURFACE BY APPLYING THE COMBINED SCALE FACTOR OF 0.999889376.

GRID COORDINATES/SCALE FACTOR = SURFACE COORDINATES.

HORIZONTAL COORDINATES BASED ON GPS FIELD DATA COLLECTED AUGUST 2025.

ALL ELEVATIONS SHOWN HEREON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (2001 ADJ.), WITH ALL CONTROL NETWORK ELEVATIONS TIED VIA DIFFERENTIAL LEVELING TO THE PROJECT BENCH MARK AS PUBLISHED BY AGS, INC.

PROJECT BENCH MARK :

CITY OF HOUSTON REFERENCE MONUMENT 5556-7109.
AN ALUMINUM DISC AT THE NORTHEAST CORNER OF LEELAND STREET AND GUSTAV STREET INTERSECTION.

PUBLISHED ELEVATION : 34.16' (NAVD 88 (2001 ADJ.)), AGS, INC.

OBSERVED ELEVATION : 33.96' (NAVD 88 GEOID 18), AMANI

NO.	DATE	REVISION	APP.

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77042
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No.100282-00

INTERIM REVIEW ONLY
DOCUMENT INCOMPLETE; NOT INTENDED FOR PERMIT, BIDDING, OR CONSTRUCTION

WILLIAM H. REIMER III, R.P.L.S.
Surveyor
4044
Registration Number
5/15/2026
Date

SURVEYED BY: AMANI
FB NO. P-6406

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

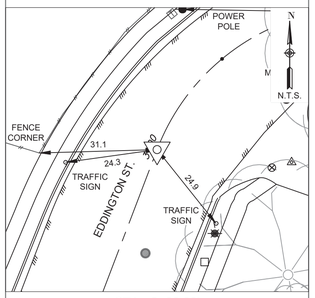
SURVEY CONTROL
SWING TIES
(SHEET 7 OF 8)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-01000-0036-3	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
SABEEN SHAIKH, P.E.	
SHEET NO. 21 OF 195	

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

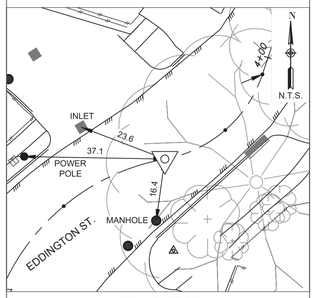
FILE PATH: P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Survey Control Drawings\24014-SurveyControl-Swingties-AP-2&3.dwg

AP 148 - MAG NAIL



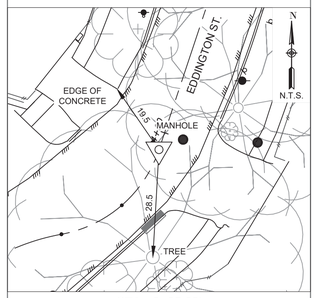
STA. 3+00.00'
EDDINGTON

AP 149 - MAG NAIL



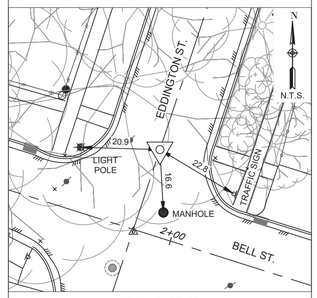
STA. 3+59.55'
EDDINGTON

AP 150 - MAG NAIL



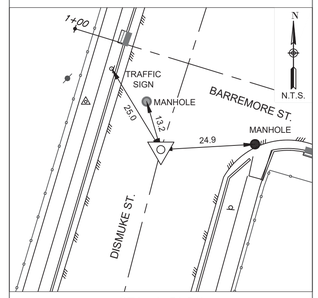
STA. 3+95.32'
EDDINGTON

AP 151 - MAG NAIL



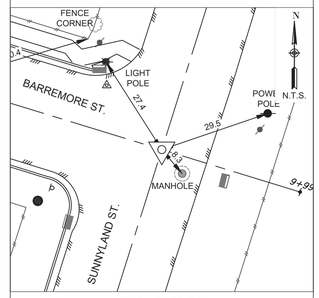
STA. 5+50.00'
EDDINGTON

AP 152 - MAG NAIL



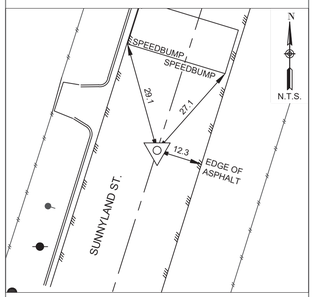
STA. 1+51.01'
DISMUKE

AP 153 - MAG NAIL



STA. 9+60.91'
BARREMORE

AP 154 - MAG NAIL



STA. 1+50.00'
SUNNYLAND

NOTES :

ALL BEARINGS AND COORDINATES ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204), NORTH AMERICAN DATAUM OF 1983 (2011 ADJ.) 2010 EPOCH.
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GRID COORDINATES/SCALE FACTOR = SURFACE COORDINATES.

HORIZONTAL COORDINATES BASED ON GPS FIELD DATA COLLECTED AUGUST 2025.

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PROJECT BENCH MARK :

CITY OF HOUSTON REFERENCE MONUMENT 5556-7109.
AN ALUMINUM DISC AT THE NORTHEAST CORNER OF LEELAND STREET AND GUSTAV STREET INTERSECTION.

PUBLISHED ELEVATION : 34.16' (NAVD 88 (2001 ADJ.)), AGS, INC.

OBSERVED ELEVATION : 33.96' (NAVD 88 GEOID 18), AMANI

NO.	DATE	REVISION	APP.

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77042
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No.100282-00

SURVEYED BY: AMANI
FB NO. P-6406

INTERIM REVIEW ONLY
DOCUMENT INCOMPLETE; NOT INTENDED FOR PERMIT, BIDDING, OR CONSTRUCTION

WILLIAM H. REIMER III, R.P.L.S.
Surveyor
4044
Registration Number
5/15/2026
Date

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

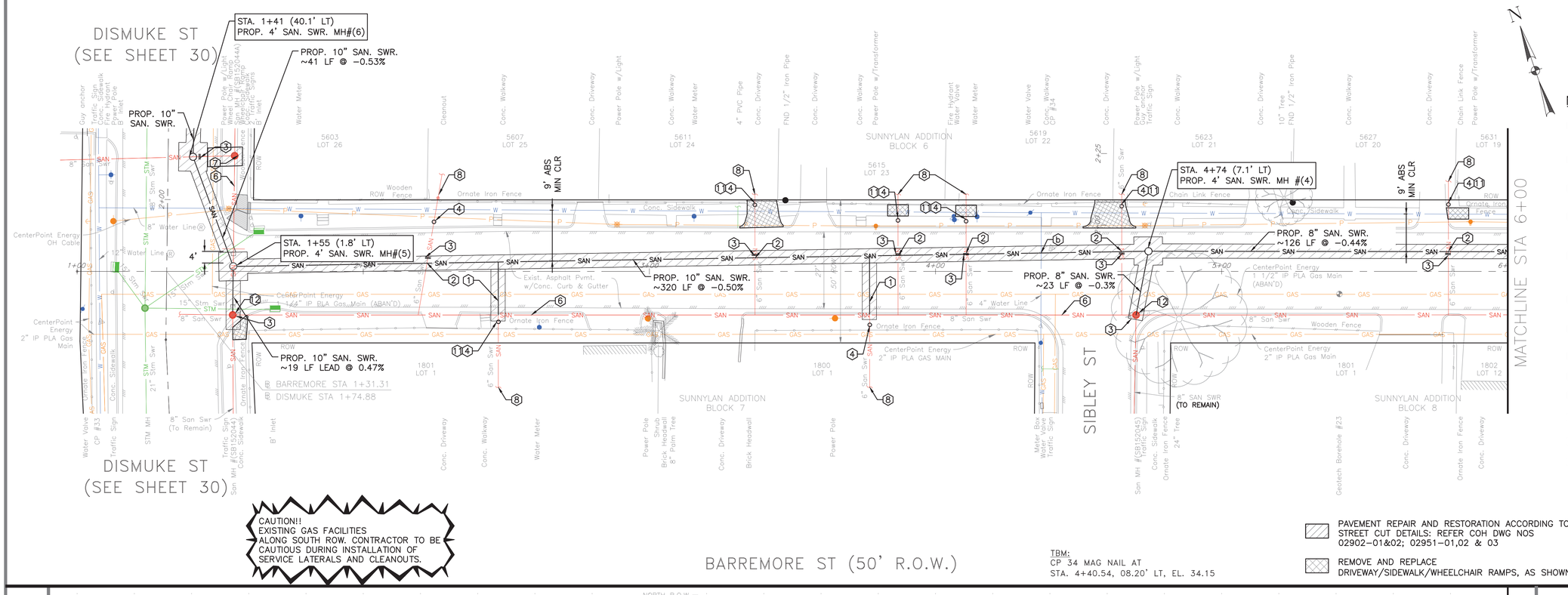
CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

SURVEY CONTROL
SWING TIES
(SHEET 8 OF 8)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-01000-0036-3	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
SABEEN SHAIKH, P.E.	
SHEET NO. 22 OF 195	

FILE PATH: P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Survey Control Drawings\24014-SurveyControl-Swingties-AP-2&3.dwg

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

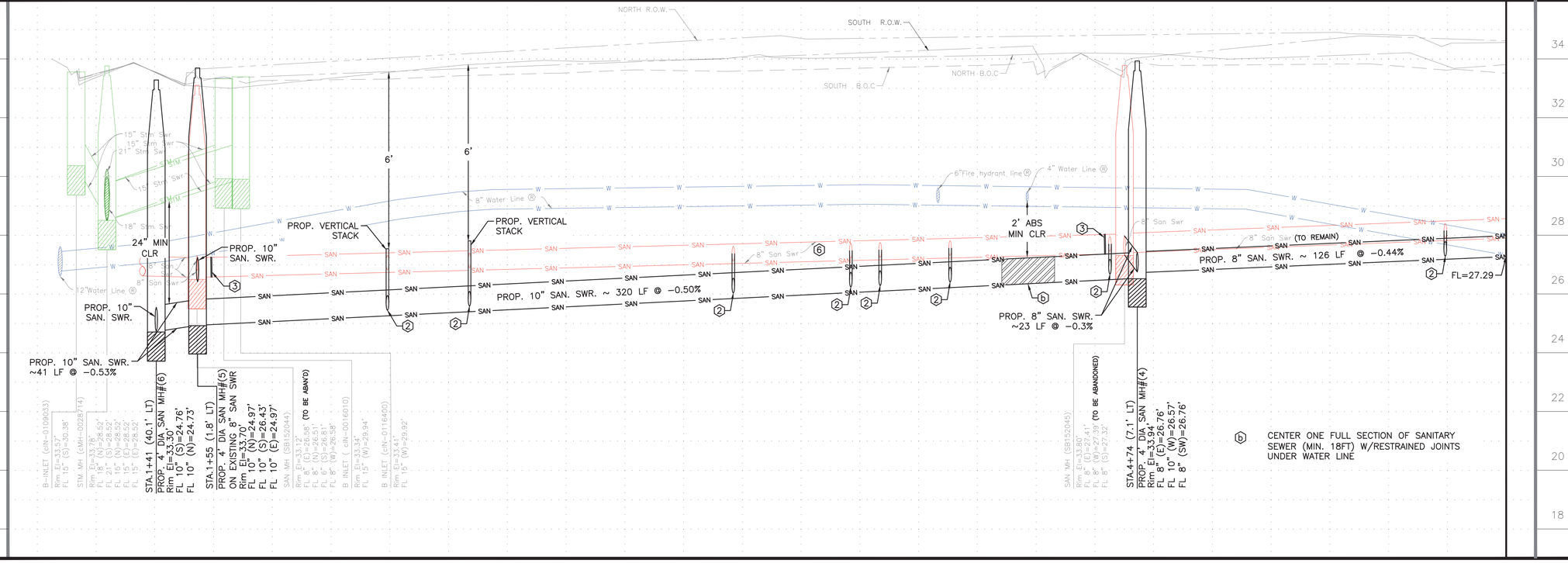


CAUTION!!
EXISTING GAS FACILITIES
ALONG SOUTH ROW. CONTRACTOR TO BE
CAUTIOUS DURING INSTALLATION OF
SERVICE LATERALS AND CLEANOUTS.

TBM:
CP 34 MAG NAIL AT
STA. 4+40.54, 08.20' LT, EL. 34.15

PAVEMENT REPAIR AND RESTORATION ACCORDING TO STREET CUT DETAILS: REFER COH DWG NOS 02902-01&02; 02951-01,02 & 03

REMOVE AND REPLACE DRIVEWAY/SIDEWALK/WHEELCHAIR RAMPS, AS SHOWN.



(b) CENTER ONE FULL SECTION OF SANITARY SEWER (MIN. 18FT) W/RESTRAINED JOINTS UNDER WATER LINE

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

NOTES

1. EXTEND EXISTING SANITARY SERVICE LATERAL TO PROPOSED SANITARY SEWER. MATCH EXISTING SIZE AND FLOWLINE
2. CONNECT EXISTING SANITARY SERVICE LATERAL TO PROPOSED SANITARY SEWER
3. CUT, PLUG & ABANDON EXISTING SANITARY SEWER PER COH SPEC 02222
4. INSTALL PROP C.O. ON EXISTING SANITARY SERVICE LATERAL. SEE DETAIL 98
5. 2"MILL AND OVERLAY FULL WIDTH OUTSIDE PAVEMENT REPAIR (HATCHED AREA) AND UP TO CURB RETURN AT INTERSECTING STREETS. SEE DETAIL 112
6. ABANDON EXISTING SANITARY SEWER PER COH SPEC 02222 AFTER PROPOSED SANITARY SEWER IS IN SERVICE.
7. ABANDON EXISTING SANITARY MANHOLE
8. EXISTING SANITARY SERVICE PER CCTV INSPECTION REPORTS. (NOT FIELD VERIFIED)
9. REMOVE AND REPLACE TRAFFIC SIGN AS NEEDED.
10. ADJUST METER BOX TO NEW GRADE
11. REMOVE AND REPLACE DRIVEWAY/SIDEWALK/ MONOLITHIC CURB & GUTTER/ WHEELCHAIR RAMPS, AS SHOWN.
12. REHAB EXISTING MANHOLE PER SPEC 02555
- BRACE AND SUPPORT POWER POLE.

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

VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

Signature valid for six months.

Date

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

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
FB NO.: P-6406

PRELIMINARY

FOR INTERIM REVIEW ONLY

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND NOT INTENDED FOR REGULATORY APPROVAL, PERMIT, BIDDING OR CONSTRUCTION PURPOSES. THEY WERE PREPARED BY OR UNDER THE SUPERVISION OF:

MAHESH DUTTA 114252
NAME P.E. NO.

DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

BARREMORE PLAN & PROFILE
STA 1+00 TO 6+00

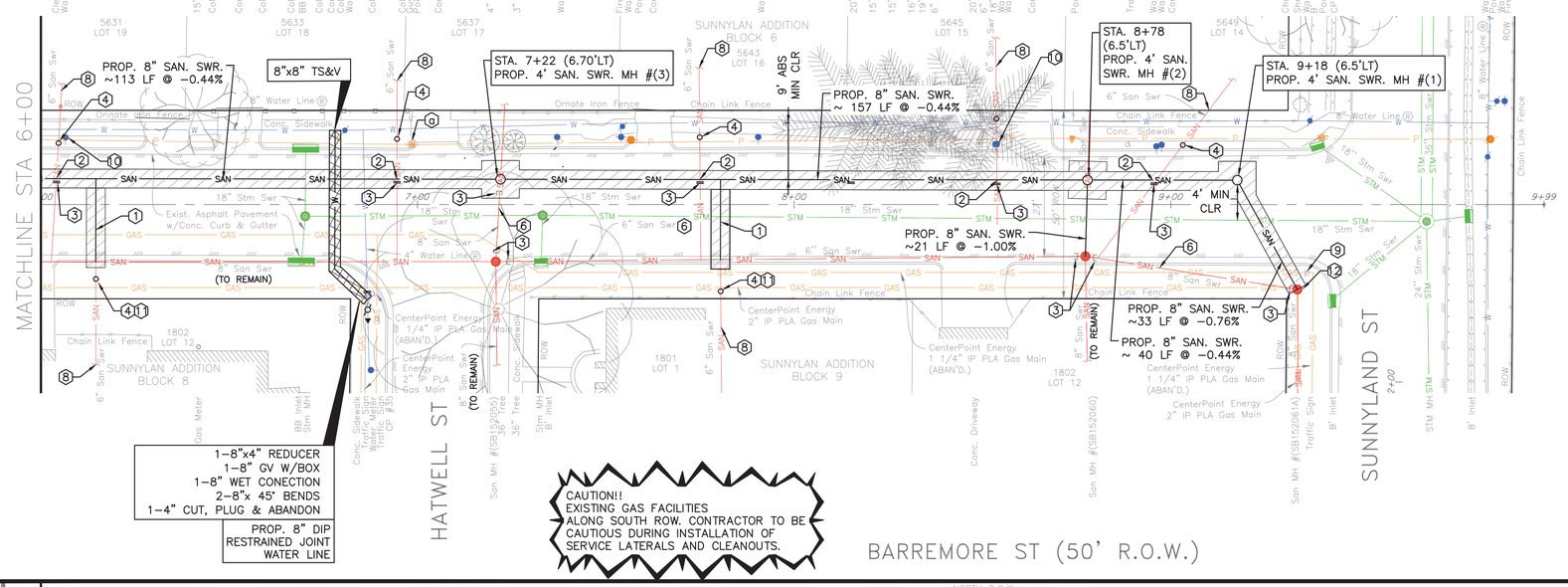
WBS NO.
R-001000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO.**23** OF 195

P:\Coda\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 1 - SAN.dwg May 15, 2026 3:27pm



PAVEMENT REPAIR AND RESTORATION ACCORDING TO STREET CUT DETAILS: REFER COH DWG NOS 02902-01&02; 02951-01,02 & 03

REMOVE AND REPLACE DRIVEWAY/SIDEWALK/WHEELCHAIR RAMPS, AS SHOWN.

TBM:
CP 030 MAG NAIL AT
STA. 10+20.63, 10.50' RT, EL. 33.62

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

NOTES

1. EXTEND EXISTING SANITARY SERVICE LATERAL TO PROPOSED SANITARY SEWER. MATCH EXISTING SIZE AND FLOWLINE
2. CONNECT EXISTING SANITARY SERVICE LATERAL TO PROPOSED SANITARY SEWER
3. CUT, PLUG & ABANDON EXISTING SANITARY SEWER PER COH SPEC 02222
4. INSTALL PROP C.O. ON EXISTING SANITARY SERVICE LATERAL. SEE DETAIL 98
5. 2"MILL AND OVERLAY FULL WIDTH OUTSIDE PAVEMENT REPAIR (HATCHED AREA) AND UP TO CURB RETURN AT INTERSECTING STREETS. SEE DETAIL 112
6. ABANDON EXISTING SANITARY SEWER PER COH SPEC 02222 AFTER PROPOSED SANITARY SEWER IS IN SERVICE.
7. ABANDON EXISTING SANITARY MANHOLE
8. EXISTING SANITARY SERVICE PER CCTV INSPECTION REPORTS. (NOT FIELD VERIFIED)
9. REMOVE AND REPLACE TRAFFIC SIGN AS NEEDED.
10. ADJUST METER BOX TO NEW GRADE
11. REMOVE AND REPLACE DRIVEWAY/SIDEWALK/ MONOLITHIC CURB & GUTTER/ WHEELCHAIR RAMPS, AS SHOWN.
12. REHAB EXISTING MANHOLE PER SPEC 02555
- BRACE AND SUPPORT POWER POLE.

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

VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

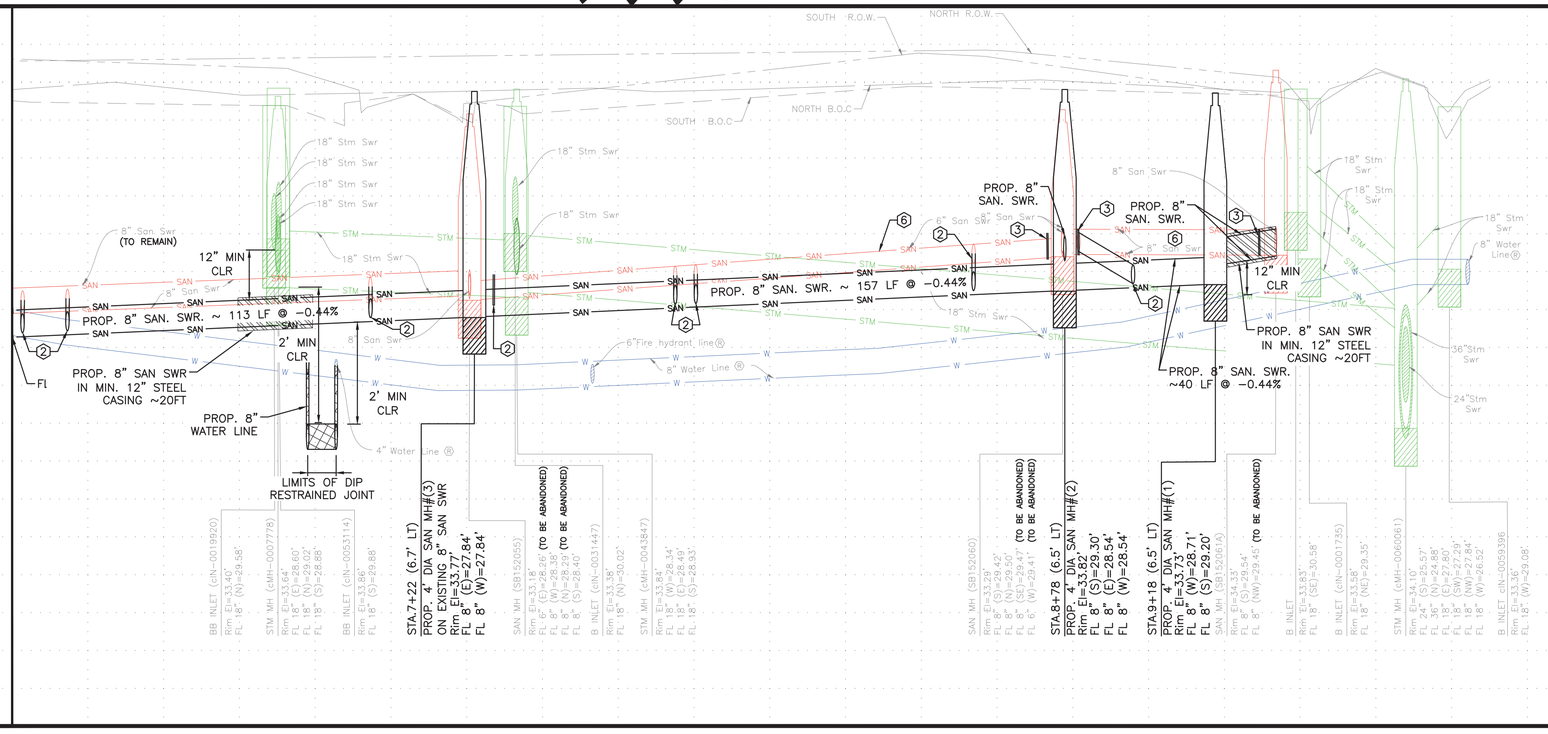
Date

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

Signature valid for six months.

Date

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



0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
FB NO.: P-6406

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MAHESH DUTTA 114252
NAME P.E. NO.

DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

BARREMORE PLAN & PROFILE
STA 6+00 TO END

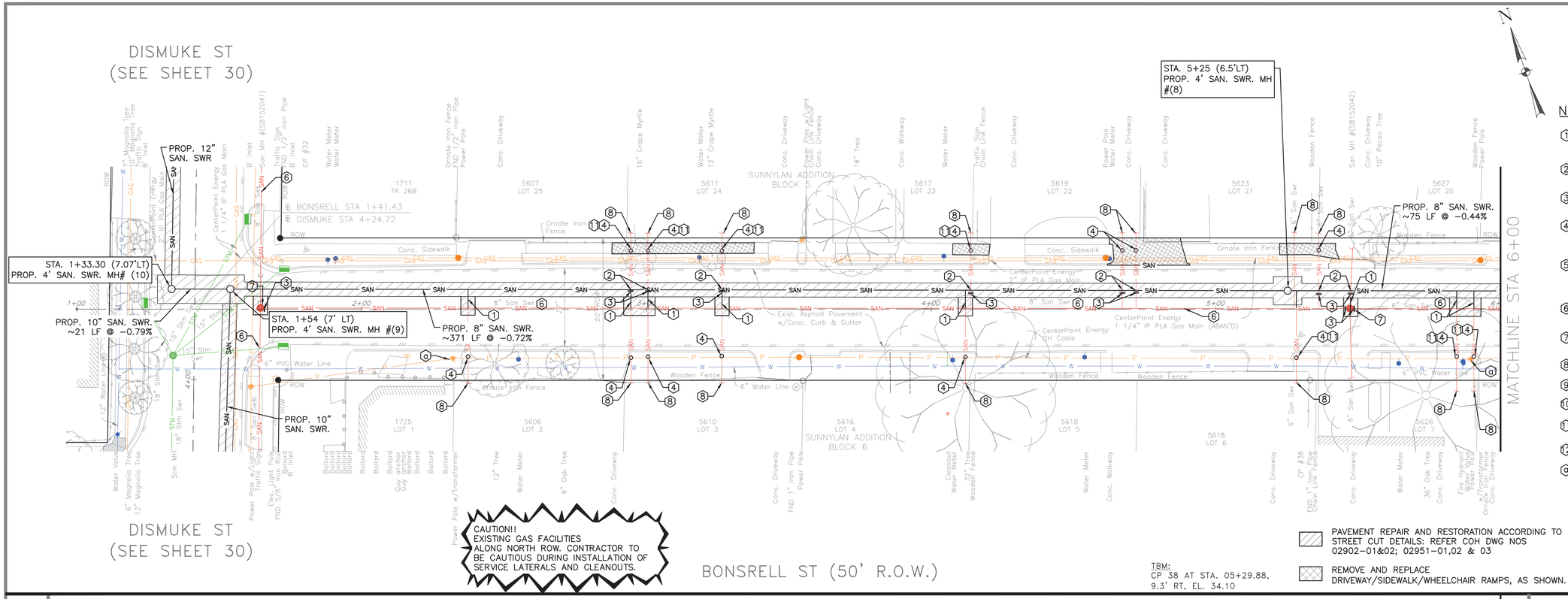
WBS NO.
R-001000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO.**24** OF **195**

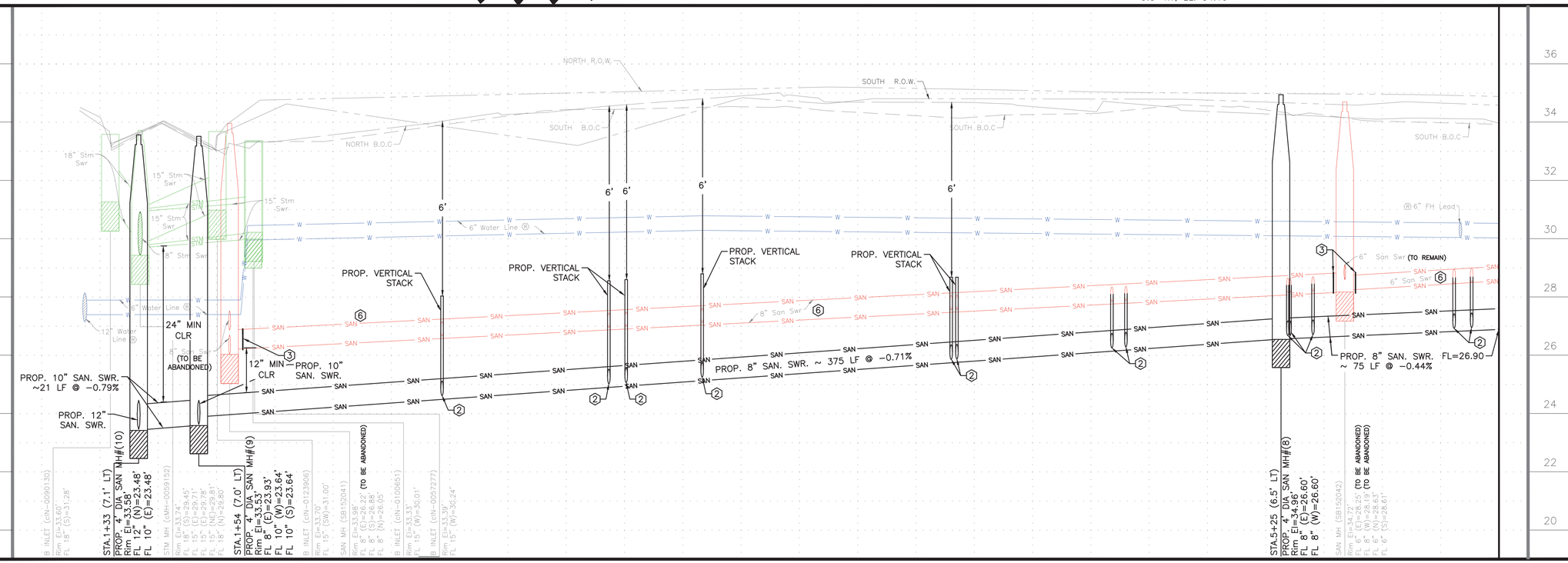
P:\Coda\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 1 - SAN.dwg May 15, 2026 3:27pm



TBM:
CP 38 AT STA. 05+29.88, 9.3' RT, EL. 34.10

PAVEMENT REPAIR AND RESTORATION ACCORDING TO STREET CUT DETAILS: REFER COH DWG NOS 02902-01&02; 02951-01,02 & 03

REMOVE AND REPLACE DRIVEWAY/SIDEWALK/WHEELCHAIR RAMPS, AS SHOWN.



ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE NORTHEAST CORNER OF LEELAND ST. AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

NOTES

1. EXTEND EXISTING SANITARY SERVICE LATERAL TO PROPOSED SANITARY SEWER. MATCH EXISTING SIZE AND FLOWLINE
2. CONNECT EXISTING SANITARY SERVICE LATERAL TO PROPOSED SANITARY SEWER
3. CUT, PLUG & ABANDON EXISTING SANITARY SEWER PER COH SPEC 02222
4. INSTALL PROP C.O. ON EXISTING SANITARY SERVICE LATERAL. SEE DETAIL 98
5. 2"MILL AND OVERLAY FULL WIDTH OUTSIDE PAVEMENT REPAIR (HATCHED AREA) AND UP TO CURB RETURN AT INTERSECTING STREETS. SEE DETAIL 112
6. ABANDON EXISTING SANITARY SEWER PER COH SPEC 02222 AFTER PROPOSED SANITARY SEWER IS IN SERVICE.
7. ABANDON EXISTING SANITARY MANHOLE
8. EXISTING SANITARY SERVICE PER CCTV INSPECTION REPORTS. (NOT FIELD VERIFIED)
9. REMOVE AND REPLACE TRAFFIC SIGN AS NEEDED.
10. ADJUST METER BOX TO NEW GRADE
11. REMOVE AND REPLACE DRIVEWAY/SIDEWALK/ MONOLITHIC CURB & GUTTER/ WHEELCHAIR RAMPS, AS SHOWN.
12. REHAB EXISTING MANHOLE PER SPEC 02555
- BRACE AND SUPPORT POWER POLE.

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VERIFICATION OF PRIVATE UTILITY LINES

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AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
FB NO.: P-6406

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MAHESH DUTTA 114252
NAME P.E. NO.
DATE 05/15/2026
TBPELS FIRM #F-4528

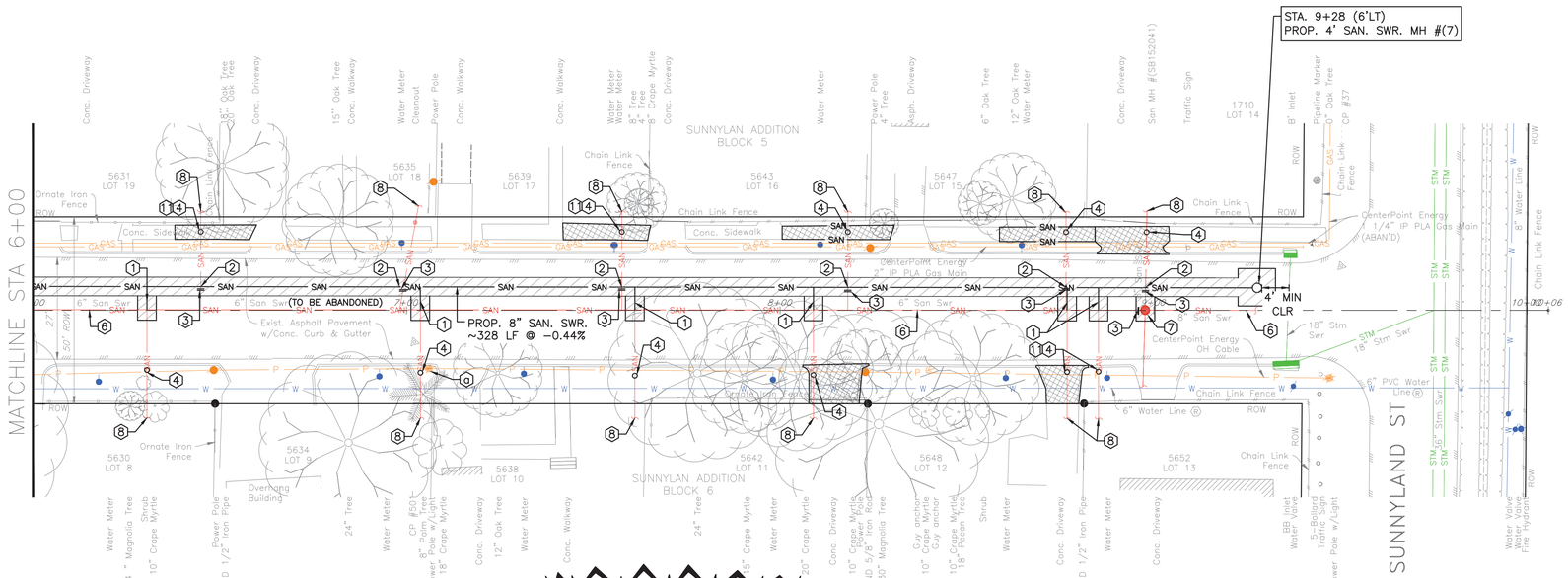
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

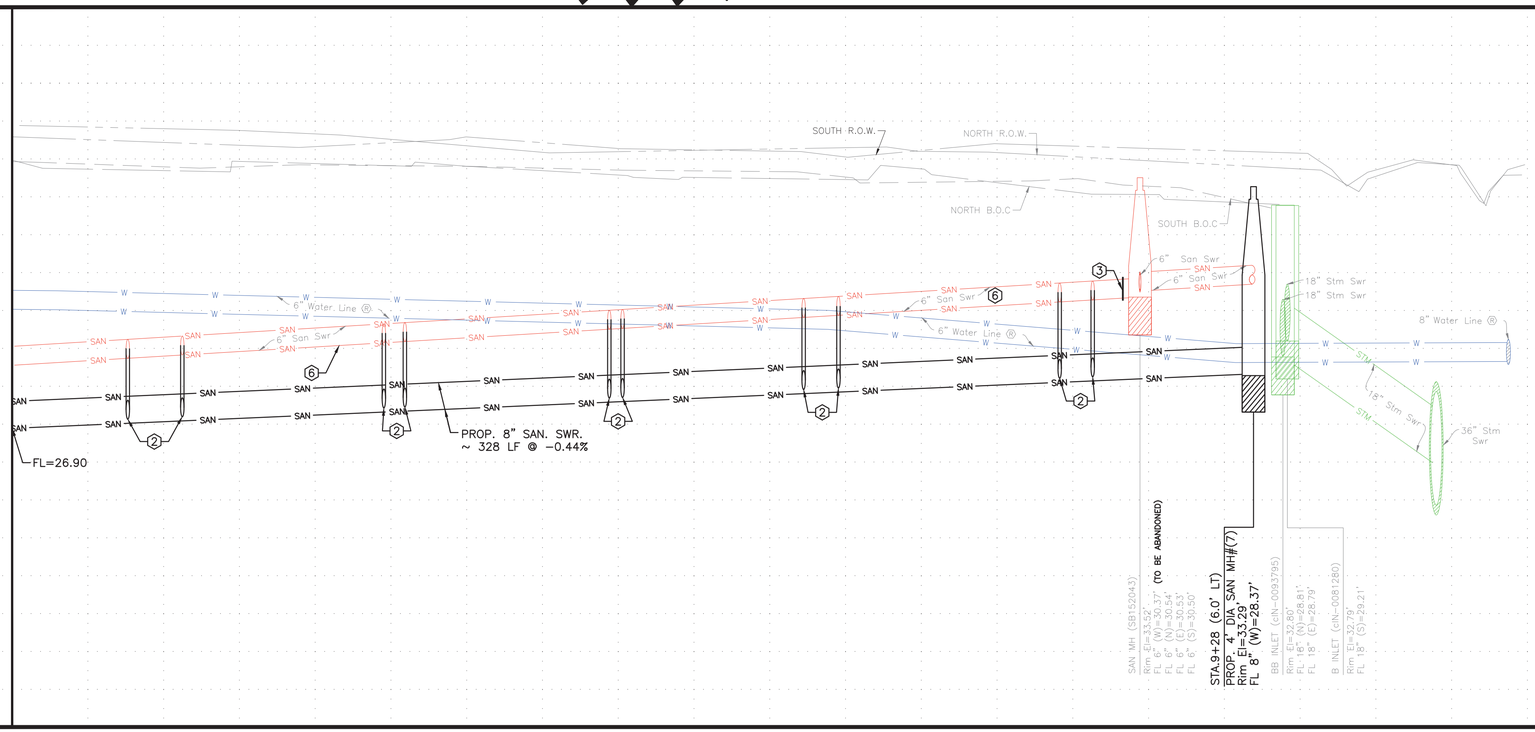
CRMP CIP PACKAGE 5
SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

BONSRELL PLAN & PROFILE
STA 1+00 TO 6+00

WBS NO.	R-001000-0036-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	SABEEN SHAIKH, P.E.
SHEET NO.	25 OF 195

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 1 - SAN.dwg May 15, 2026 3:28pm





NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

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12. REHAB EXISTING MANHOLE PER SPEC 02555
- BRACE AND SUPPORT POWER POLE.

PAVEMENT REPAIR AND RESTORATION ACCORDING TO STREET CUT DETAILS: REFER COH DWG NOS 02902-01&02; 02951-01,02 & 03

REMOVE AND REPLACE DRIVEWAY/SIDEWALK/WHEELCHAIR RAMPS, AS SHOWN.

TBM:
CP 030 MAG NAIL AT
STA. 10+20.63, 10.50' RT, EL. 33.62

NOTICE:
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DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

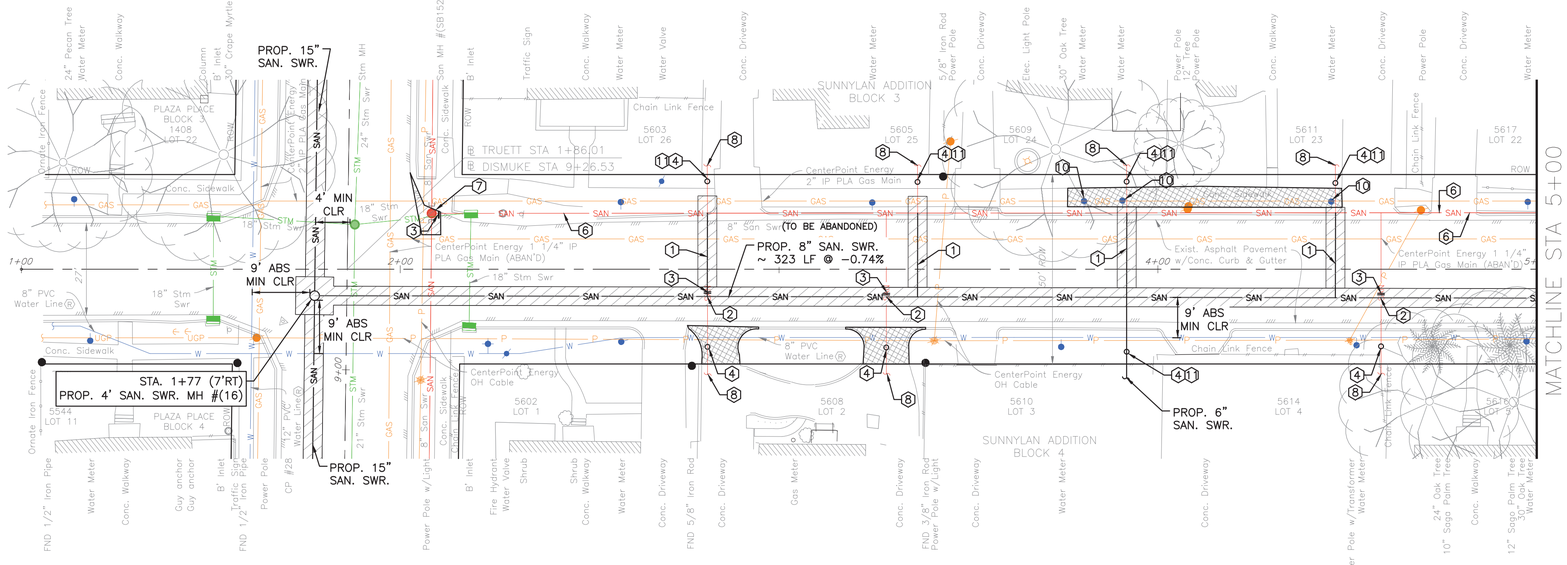
CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

BONSRELL PLAN & PROFILE
STA 6+00 TO END

WBS NO.	R-001000-0036-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	SABEEN SHAIKH, P.E.
SHEET NO.	26 OF 195

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 1 - SAN.dwg May 15, 2026 3:28pm



CAUTION!!
EXISTING GAS FACILITIES ALONG NORTH ROW. CONTRACTOR TO BE CAUTIOUS DURING INSTALLATION OF SERVICE LATERALS AND CLEANOUTS.

DISMUKE ST
(SEE SHEET 31)

TRUETT ST (50' R.O.W.)

TBM:
CP 028 MAG NAIL AT
STA. 01+69.04, 13.79' RT, EL. 33.59

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

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PAVEMENT REPAIR AND RESTORATION ACCORDING TO STREET CUT DETAILS: REFER COH DWG NOS 02902-01&02; 02951-01,02 & 03

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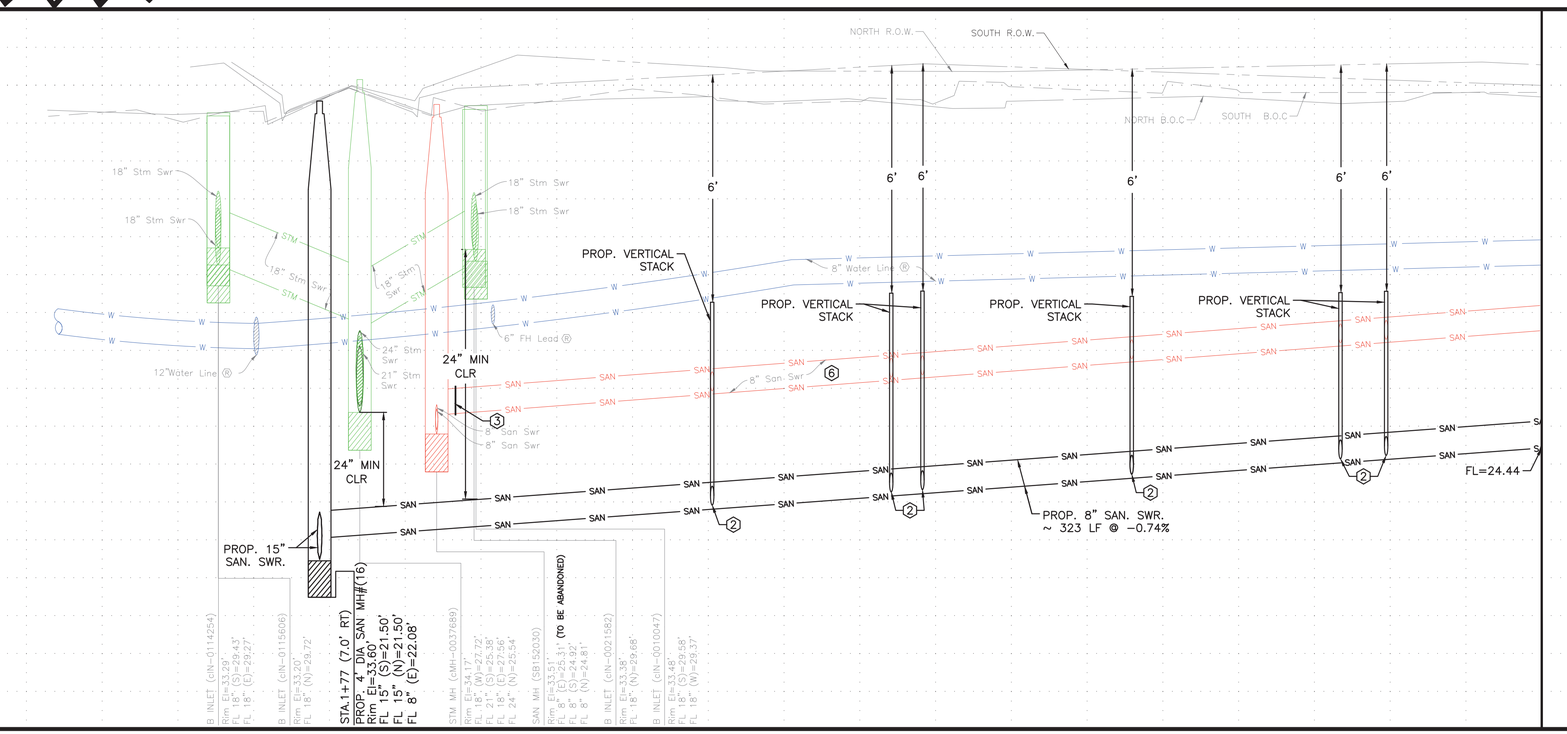

01+00 02+00 03+00 04+00 05+00

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3

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Date

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SURVEYED BY: AMANI
FB NO.: P-6406

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DATE 05/15/2026
TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

TRUETT PLAN & PROFILE
STA 1+00 TO 5+00

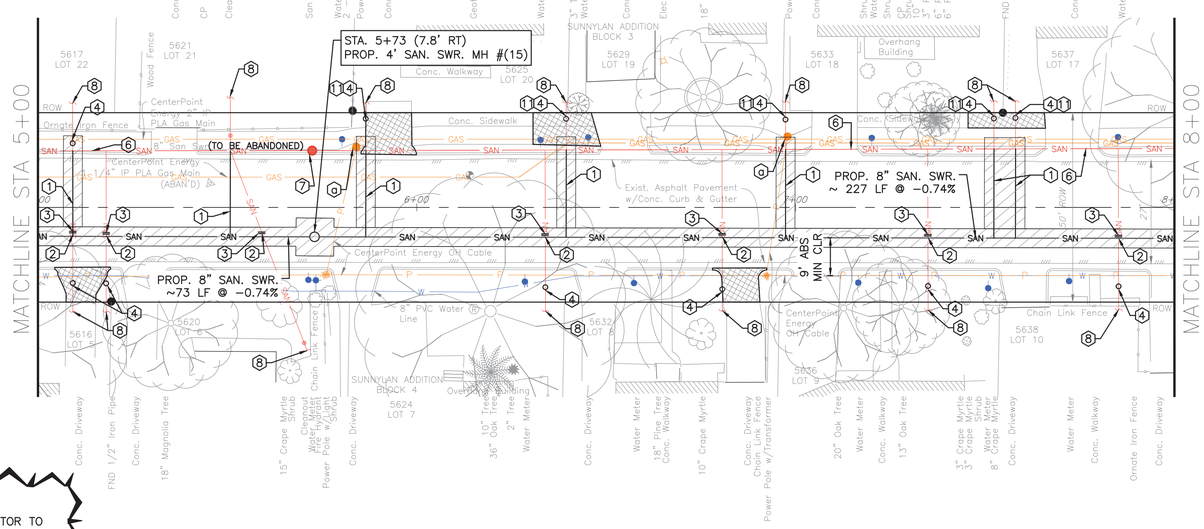
WBS NO.
R-001000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO.27 OF 195

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 1 - SAN.dwg May 15, 2026 3:29pm



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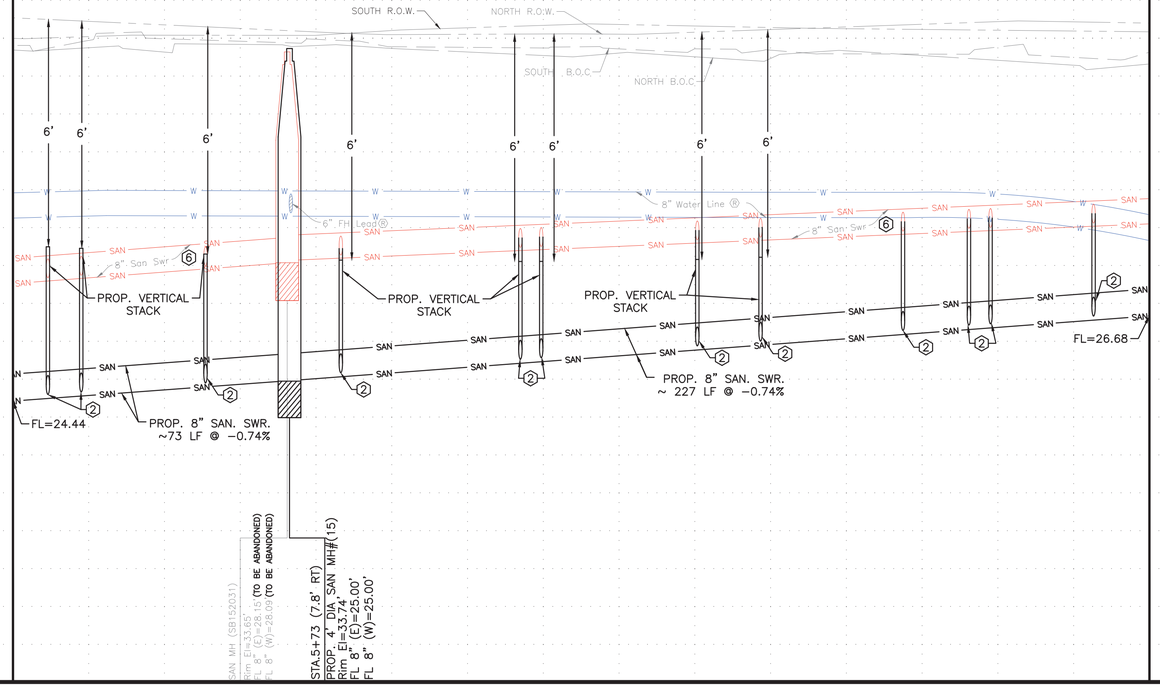

PAVEMENT REPAIR AND RESTORATION ACCORDING TO STREET CUT DETAILS: REFER COH DWG NOS 02902-01&02; 02951-01,02 & 03

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NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE NORTHEAST CORNER OF LEELAND ST. AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

TRUETT PLAN & PROFILE
STA 5+00 TO 8+00

WBS NO.
R-001000-0036-3

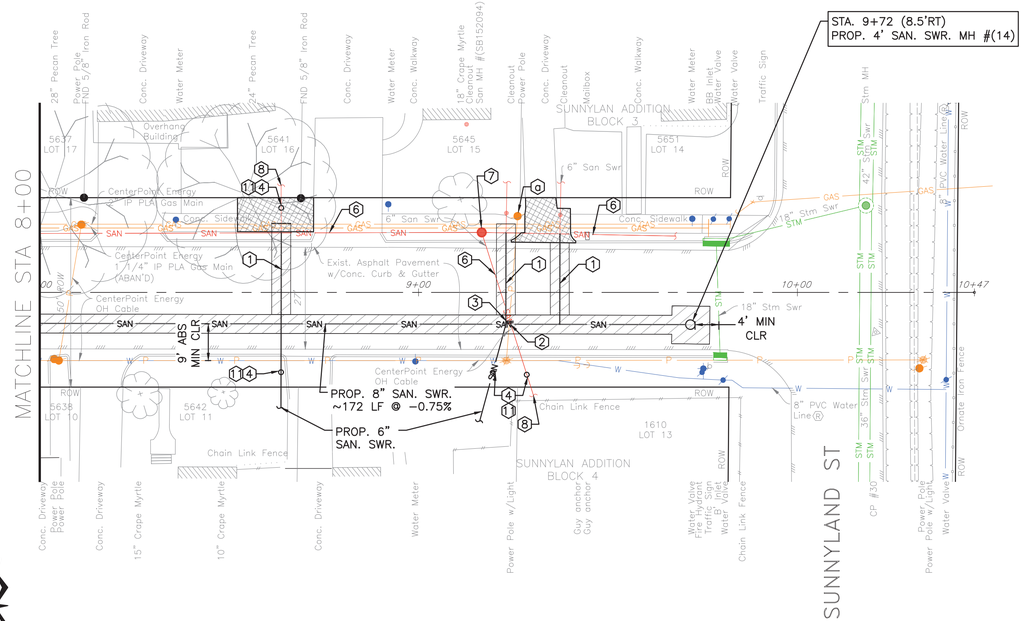
DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. 28 OF 195

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 1 - SAN.dwg May 15, 2026 3:29pm



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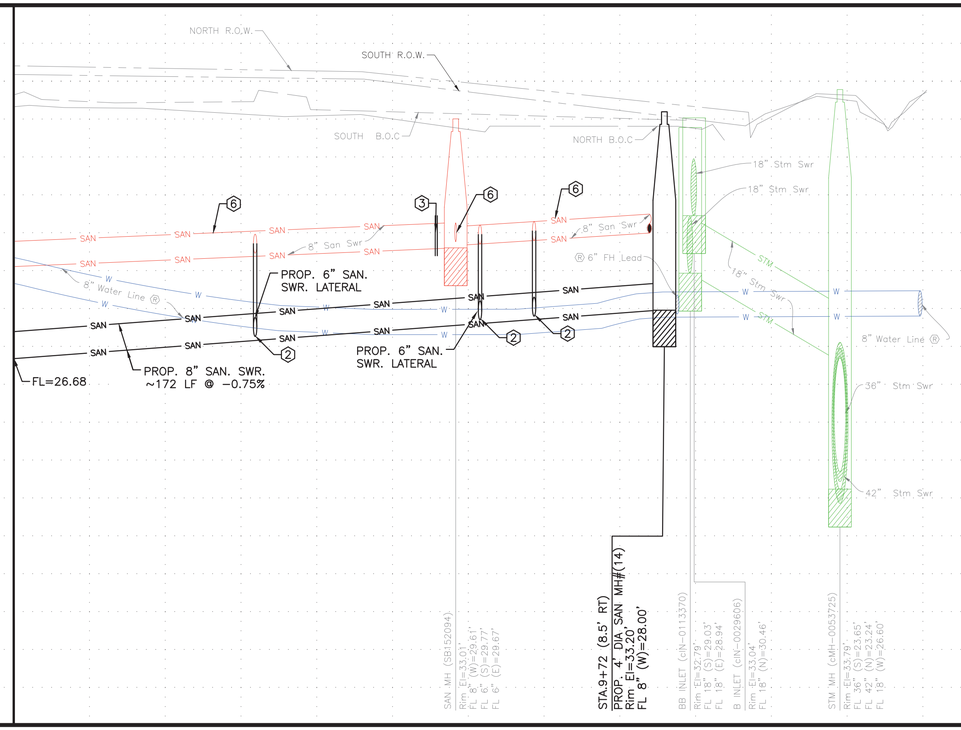

08+00 09+00 10+00 10+50

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 1 - SAN.dwg May 15, 2026 3:30pm

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DATE 05/15/2026

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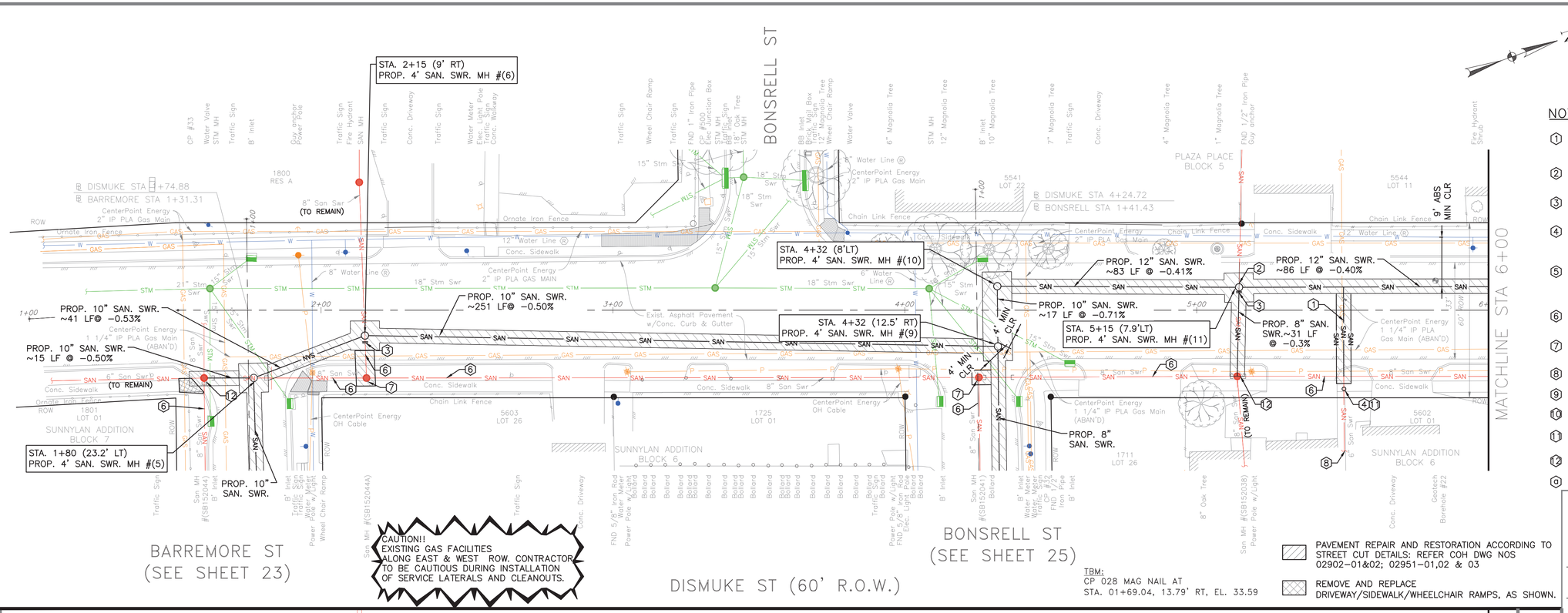
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

TRUETT PLAN & PROFILE
STA 8+00 TO END

WBS NO.	R-001000-0036-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	SABEEN SHAIKH, P.E.
SHEET NO.	29 OF 195



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CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

DISMUKE PLAN & PROFILE
STA 1+00 TO 6+00

WBS NO.
R-001000-0036-3

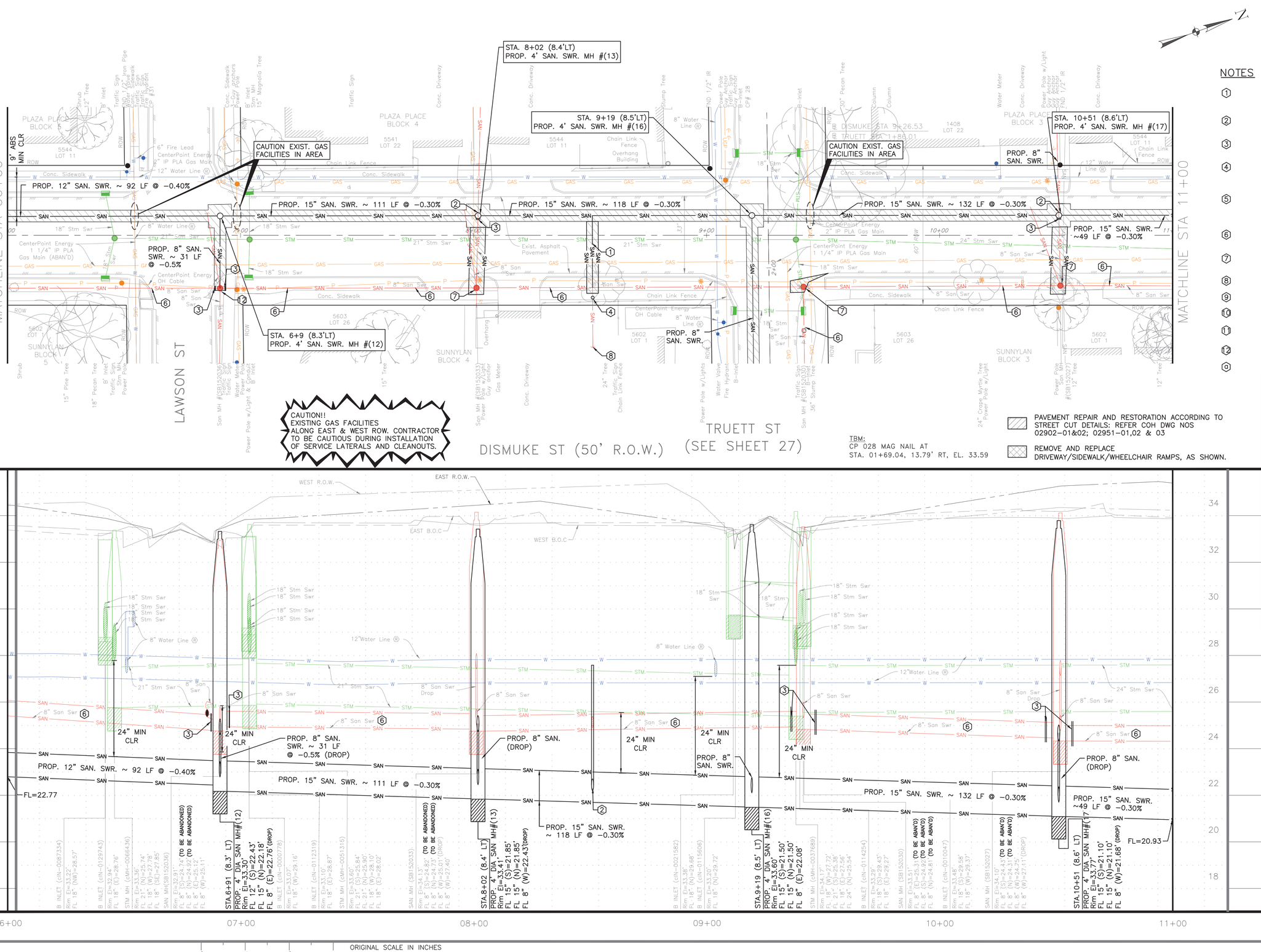
DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO.**30** OF 195

0 1 2 3
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

P:\Coda\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 1 - SAN.dwg May 15, 2026 3:30pm



NOTES

1. EXTEND EXISTING SANITARY SERVICE LATERAL TO PROPOSED SANITARY SEWER. MATCH EXISTING SIZE AND FLOWLINE
2. CONNECT EXISTING SANITARY SERVICE LATERAL TO PROPOSED SANITARY SEWER
3. CUT, PLUG & ABANDON EXISTING SANITARY SEWER PER COH SPEC 02222
4. INSTALL PROP C.O. ON EXISTING SANITARY SERVICE LATERAL. SEE DETAIL 98
5. 2"MILL AND OVERLAY FULL WIDTH OUTSIDE PAVEMENT REPAIR (HATCHED AREA) AND UP TO CURB RETURN AT INTERSECTING STREETS. SEE DETAIL 112
6. ABANDON EXISTING SANITARY SEWER PER COH SPEC 02222 AFTER PROPOSED SANITARY SEWER IS IN SERVICE.
7. ABANDON EXISTING SANITARY MANHOLE
8. EXISTING SANITARY SERVICE PER CCTV INSPECTION REPORTS. (NOT FIELD VERIFIED)
9. REMOVE AND REPLACE TRAFFIC SIGN AS NEEDED.
10. ADJUST METER BOX TO NEW GRADE
11. REMOVE AND REPLACE DRIVEWAY/SIDEWALK/ MONOLITHIC CURB & GUTTER/ WHEELCHAIR RAMPS, AS SHOWN.
12. REHAB EXISTING MANHOLE PER SPEC 02555
9. BRACE AND SUPPORT POWER POLE.

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

NOTICE:

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

VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

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AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
FB NO.: P-6406

PRELIMINARY

FOR INTERIM REVIEW ONLY

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MAHESH DUTTA 114252
NAME P.E. NO.

DATE 05/15/2026

TBPELS FIRM #F-4526

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

DISMUKE PLAN & PROFILE
STA 6+00 TO 11+00

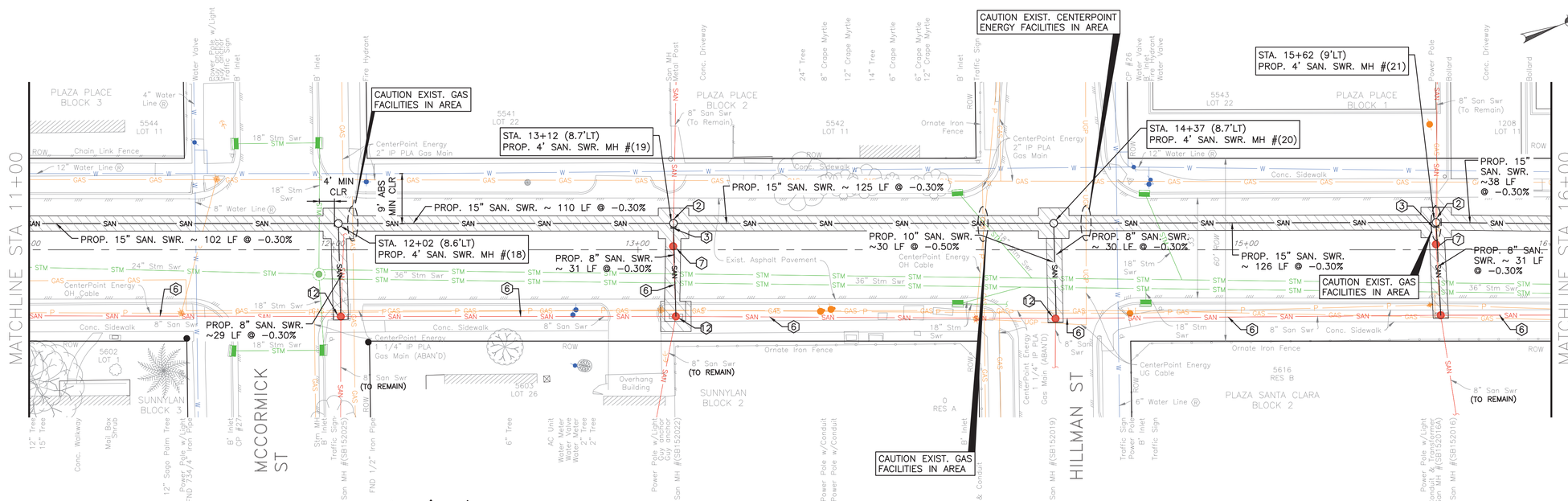
WBS NO.
R-001000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO.**31** OF 195

P:\Coda\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 1 SAN.dwg May 15, 2026 3:31pm



CAUTION!!
EXISTING GAS FACILITIES
ALONG EAST & WEST ROW. CONTRACTOR
TO BE CAUTIOUS DURING INSTALLATION
OF SERVICE LATERALS AND CLEANOUTS.

DISMUKE ST (R.O.W.)

TBM:
CP 028 MAG NAIL AT
STA. 01+69.04, 13.79' RT, EL. 33.59

PAVEMENT REPAIR AND RESTORATION ACCORDING TO STREET CUT DETAILS: REFER COH DWG NOS 02902-01&02; 02951-01,02 & 03

REMOVE AND REPLACE DRIVEWAY/SIDEWALK/WHEELCHAIR RAMPS, AS SHOWN.

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

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12. REHAB EXISTING MANHOLE PER SPEC 02555
9. BRACE AND SUPPORT POWER POLE.

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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Signature valid for six months.

Date

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Date

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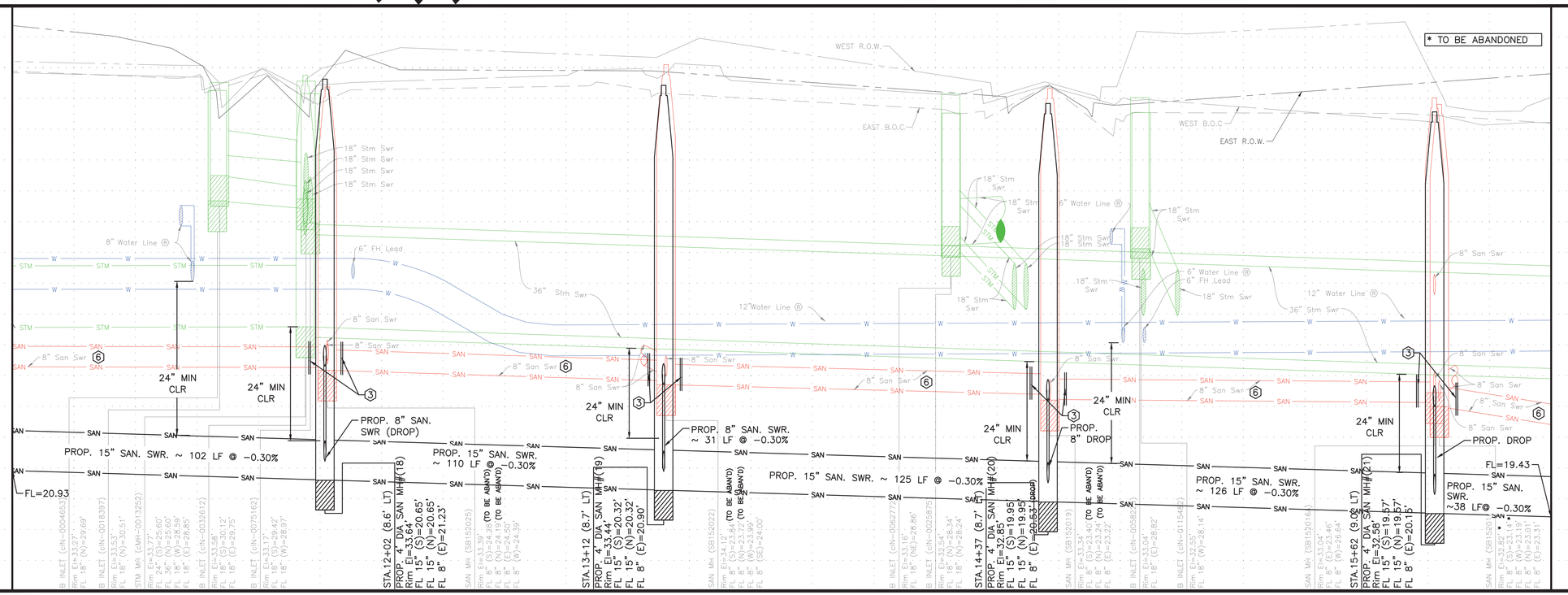

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Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
FB NO.: P-6406

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MAHESH DUTTA NAME
114252 P.E. NO.
05/15/2026 DATE
TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

DISMUKE PLAN & PROFILE
STA 11+00 TO 16+00

WBS NO.
R-001000-0036-3

DRAWING SCALE
1"=20'

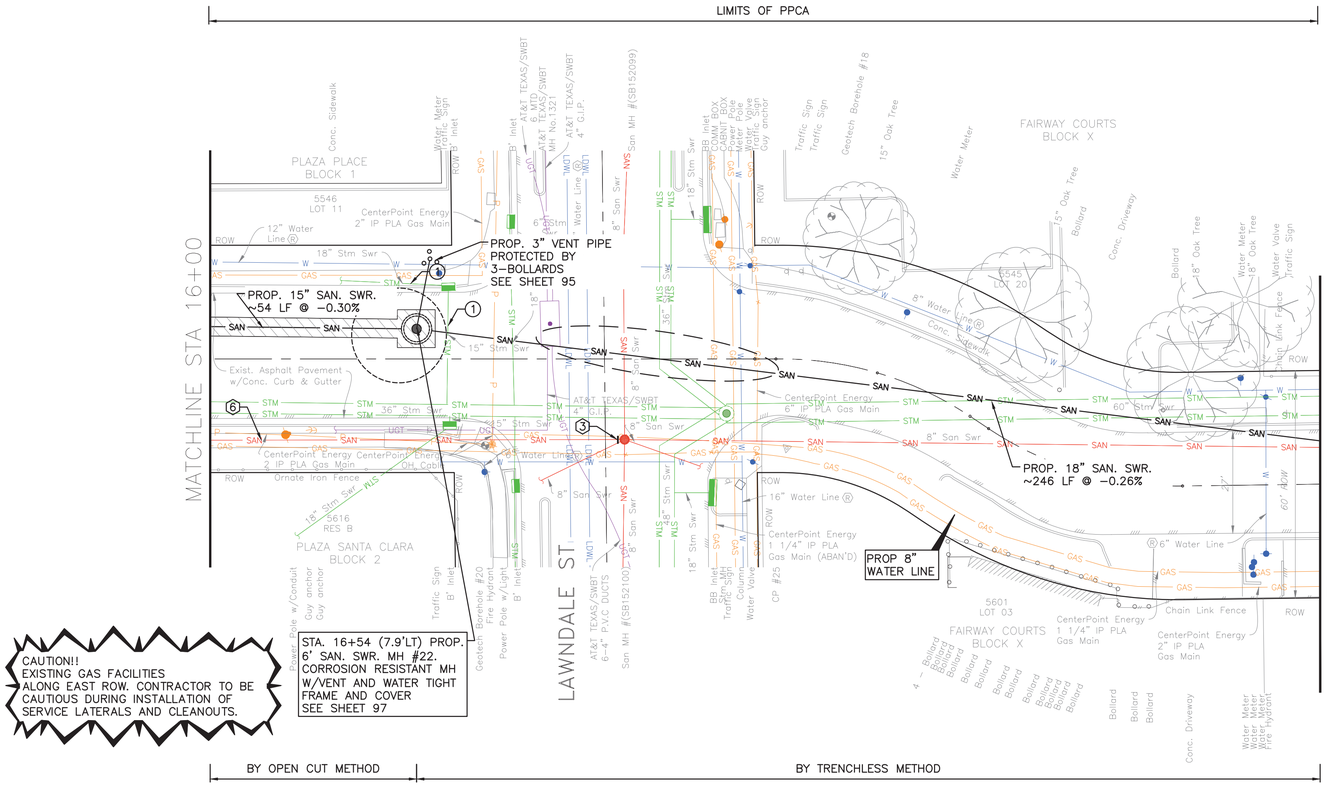
CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO.**32** OF 195

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 1 - SAN.dwg May 15, 2026 3:31pm

NOTE: REFER SHEET 84 FOR WATERLINE REPLACEMENT.



DISMUKE ST (60' R.O.W.)

SEE SHEET 34
FOR PROFILE

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE NORTHEAST CORNER OF LEELAND ST. AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

NOTES

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11. REMOVE AND REPLACE DRIVEWAY/SIDEWALK/ MONOLITHIC CURB & GUTTER/ WHEELCHAIR RAMPS, AS SHOWN.
12. REHAB EXISTING MANHOLE PER SPEC 02555
- BRACE AND SUPPORT POWER POLE.

SHAFT SHAPE, & SIZE SHOWN IN FOR REPRESENTATION PURPOSE ONLY. CONTRACTOR SHALL DETERMINE APPROPRIATE SIZE AND SHAPE. BACKFILL SHAFT PER COH STD DETAIL 02317-08.

CRITICAL LOCATION SEE COH SPEC 02317

(1) REMOVE AND REPLACE STORM SEWER AS NEEDED DURING CONSTRUCTION. COST OF REMOVAL, REPLACEMENT AND MAINTENANCE IS INCIDENTAL TO SHAFT.

PAVEMENT REPAIR AND RESTORATION ACCORDING TO STREET CUT DETAILS: REFER COH DWG NOS 02902-01&02; 02951-01,02 & 03

REMOVE AND REPLACE DRIVEWAY/SIDEWALK/WHEELCHAIR RAMPS, AS SHOWN.

TBM:

CP-X-CUT 025 AT STA. 17+52.78, 23.49' LT, EL. 32.15

NOTICE:

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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Signature valid for six months.

Date

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Signature valid for one year.

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Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
FB NO.: P-6406

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MAHESH DUTTA 114252
NAME P.E. NO.

DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

DISMUKE PLAN STA 16+00 TO 19+00

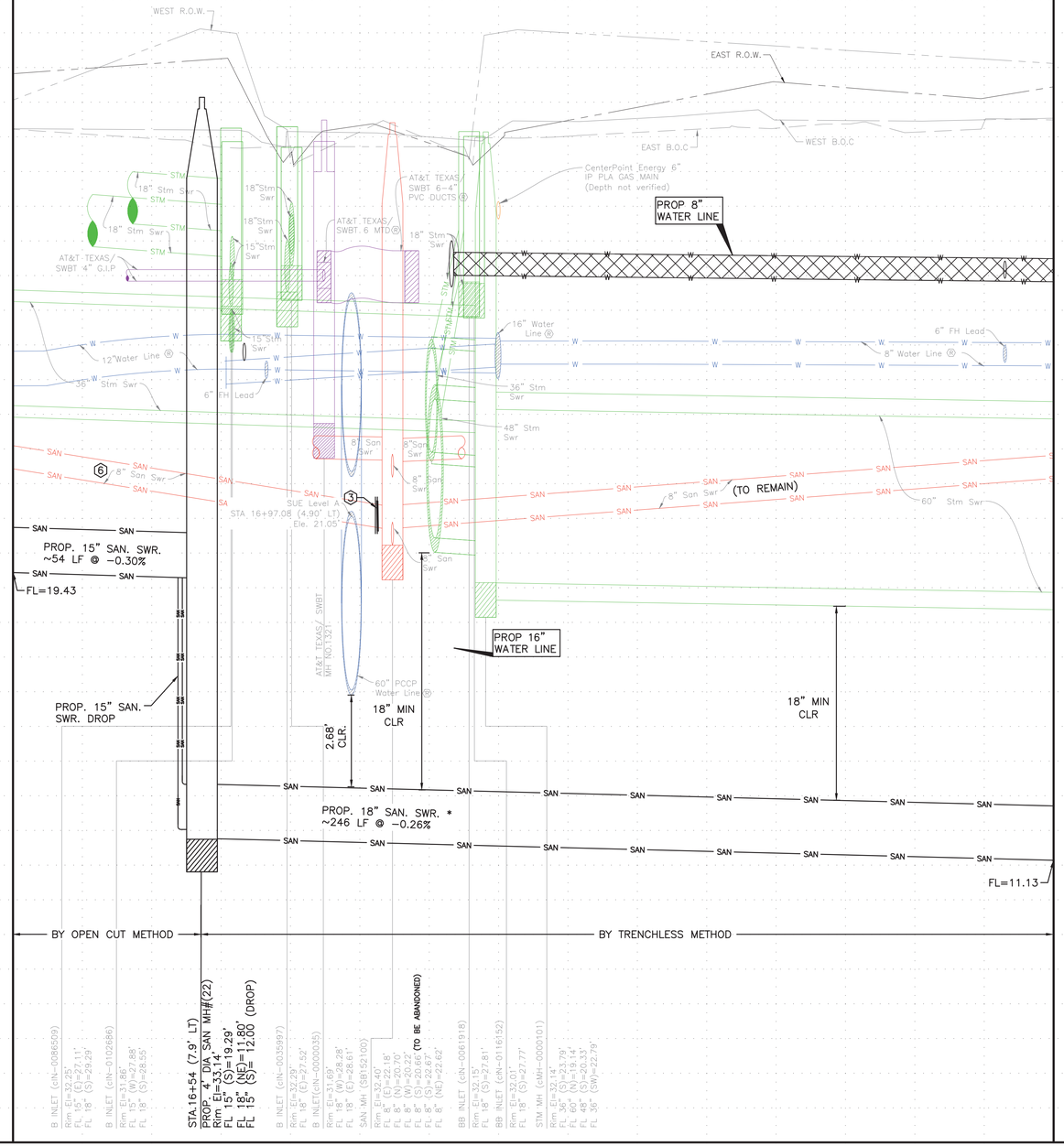
WBS NO. R-001000-0036-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON, PM	
SABEEN SHAIKH, P.E.	
SHEET NO. 33 OF 195	

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 1 - SAN.dwg May 15, 2026 3:32pm

SEE SHEET 33
FOR PLAN

NOTE: REFER SHEET 84 FOR WATERLINE REPLACEMENT.



* PIPE MATERIAL SHALL BE EXTRA STRENGTH CLAY PIPE OR FIBER GLASS PER SPEC 02441

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 1 - SAN.dwg May 15, 2026 3:32pm

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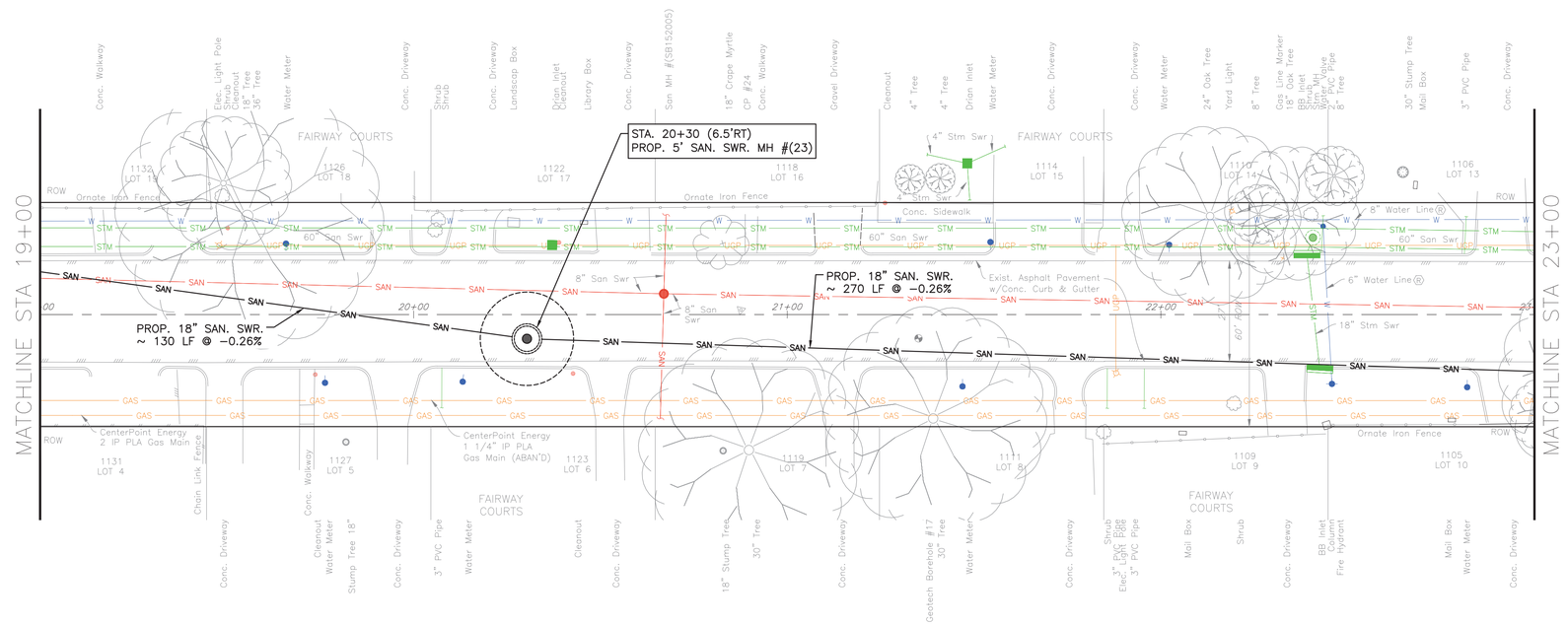
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

DISMUKE PROFILE STA 16+00 TO 19+00

WBS NO. R-001000-0036-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON, PM	
SABEEN SHAIKH, P.E.	
SHEET NO. 34 OF 195	



DISMUKE ST (60' R.O.W.)

SEE SHEET 36
FOR PROFILE

NOTE: REFER SHEET 85 FOR WATERLINE REPLACEMENT.

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

NOTES

SHAFT SHAPE, & SIZE SHOWN IN FOR REPRESENTATION PURPOSE ONLY. CONTRACTOR SHALL DETERMINE APPROPRIATE SIZE AND SHAPE. BACKFILL SHAFT PER COH STD DETAIL 02317-08.

TBM:

CP-MAG NAIL 024 AT STA. 20+87.59,
01.22' LT, EL. 32.17

NOTICE:

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

DISMUKE PLAN STA 19+00 TO 23+00

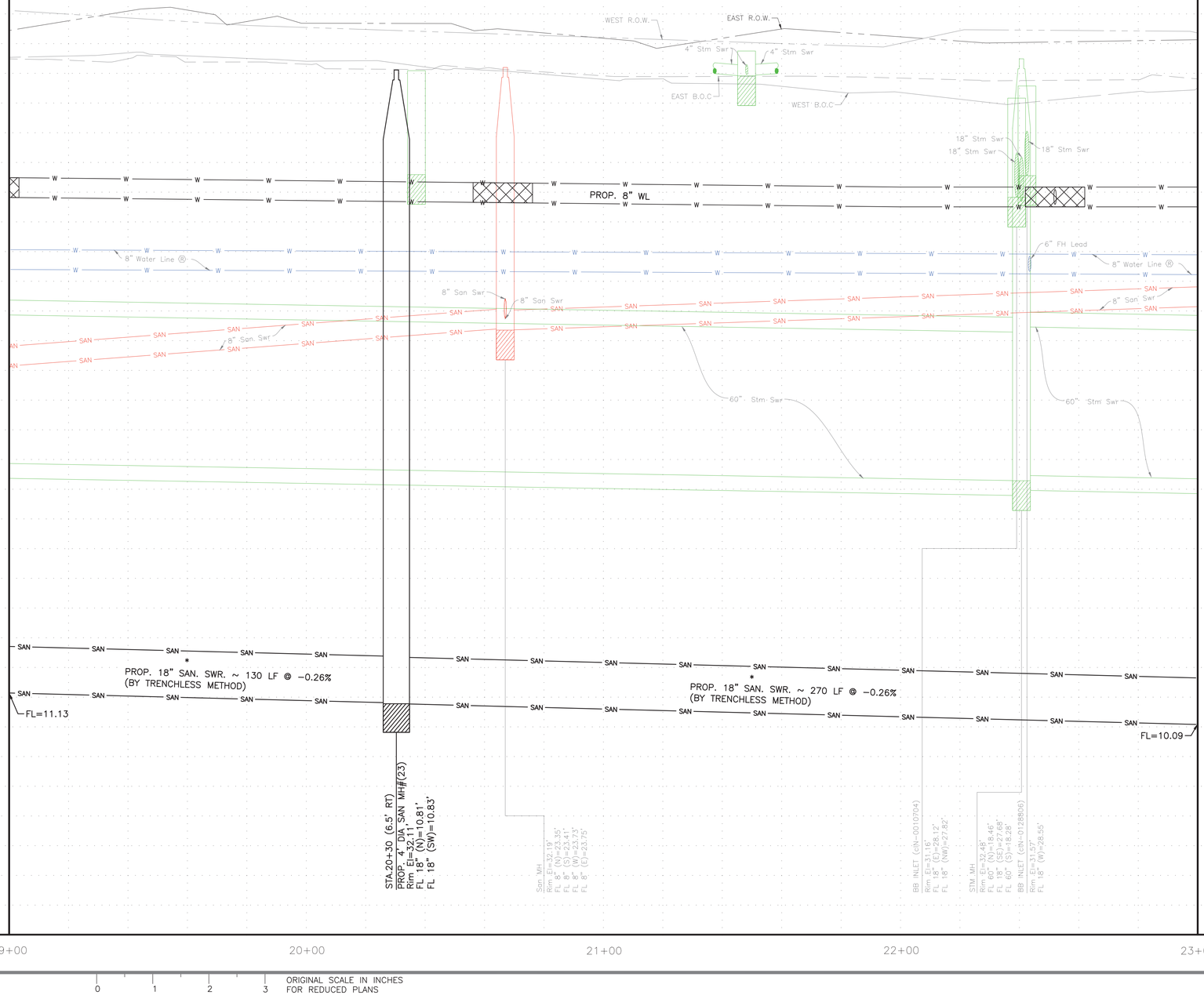
WBS NO. R-001000-0036-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON, PM	
SABEEN SHAIKH, P.E.	
SHEET NO. **35** OF 195	

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 1 - SAN.dwg May 15, 2026 3:32pm

SEE SHEET 35
FOR PROFILE

NOTE: REFER SHEET 85 FOR WATERLINE REPLACEMENT.



ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3

P:\Coda\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 1 - SAN.dwg May 15, 2026 3:32pm

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CRMP CIP PACKAGE 5 SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

DISMUKE PROFILE STA 19+00 TO 23+00

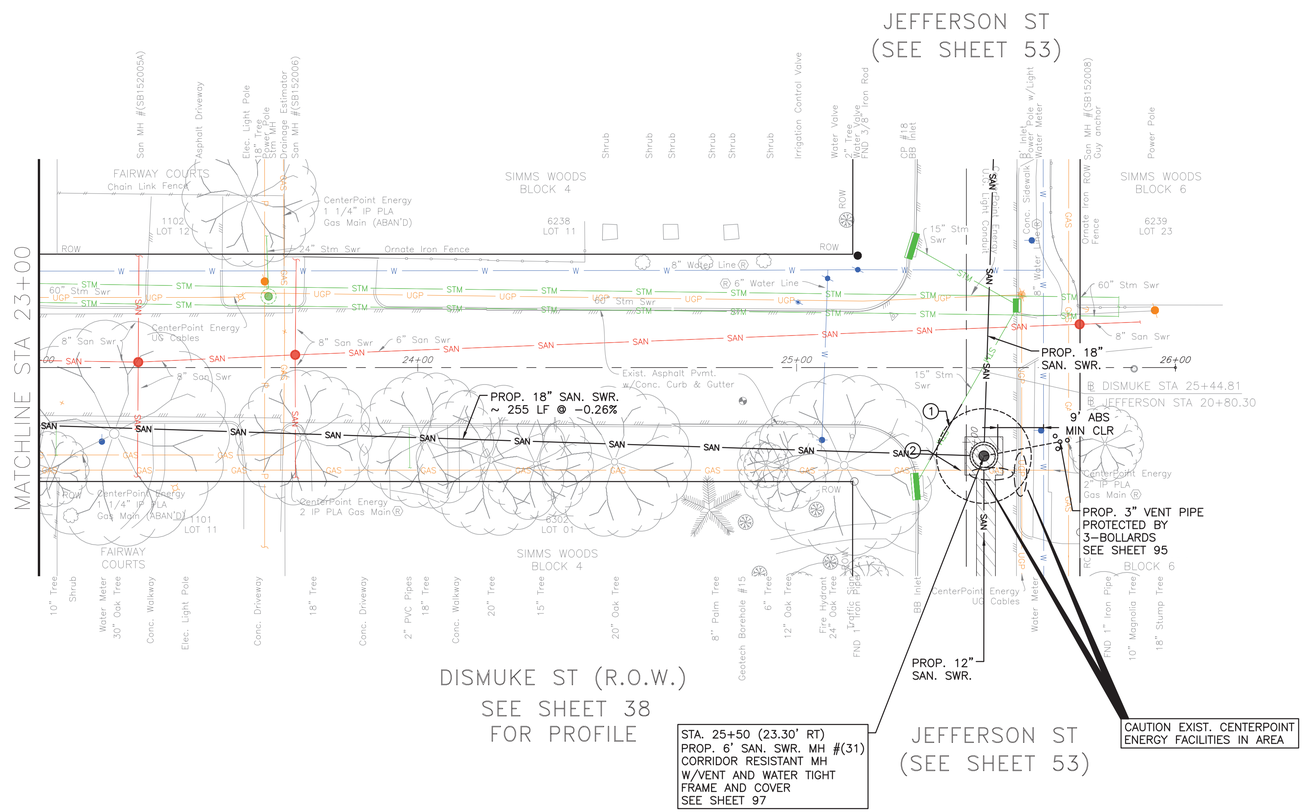
WBS NO.
R-001000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM

SABEEN SHAIKH, P.E.

SHEET NO. **36** OF 195



NOTE: REFER SHEET 86 FOR WATERLINE REPLACEMENT.

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

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PAVEMENT REPAIR AND RESTORATION ACCORDING TO STREET CUT DETAILS: REFER COH DWG NOS 02902-01&02; 02951-01,02 & 03

(1) REMOVE AND REPLACE STORM SEWER AS NEEDED DURING CONSTRUCTION. COST OF REMOVAL, REPLACEMENT AND MAINTENANCE IS INCIDENTAL TO SHAFT.

(2) UTILITY TO BE RELOCATED BY OTHERS

TBM:
CP-MAG NAIL 018 AT STA. 25+25.54,
13.63' LT, EL. 30.96

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DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

DISMUKE PLAN STA 23+00 TO END

WBS NO.
R-001000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

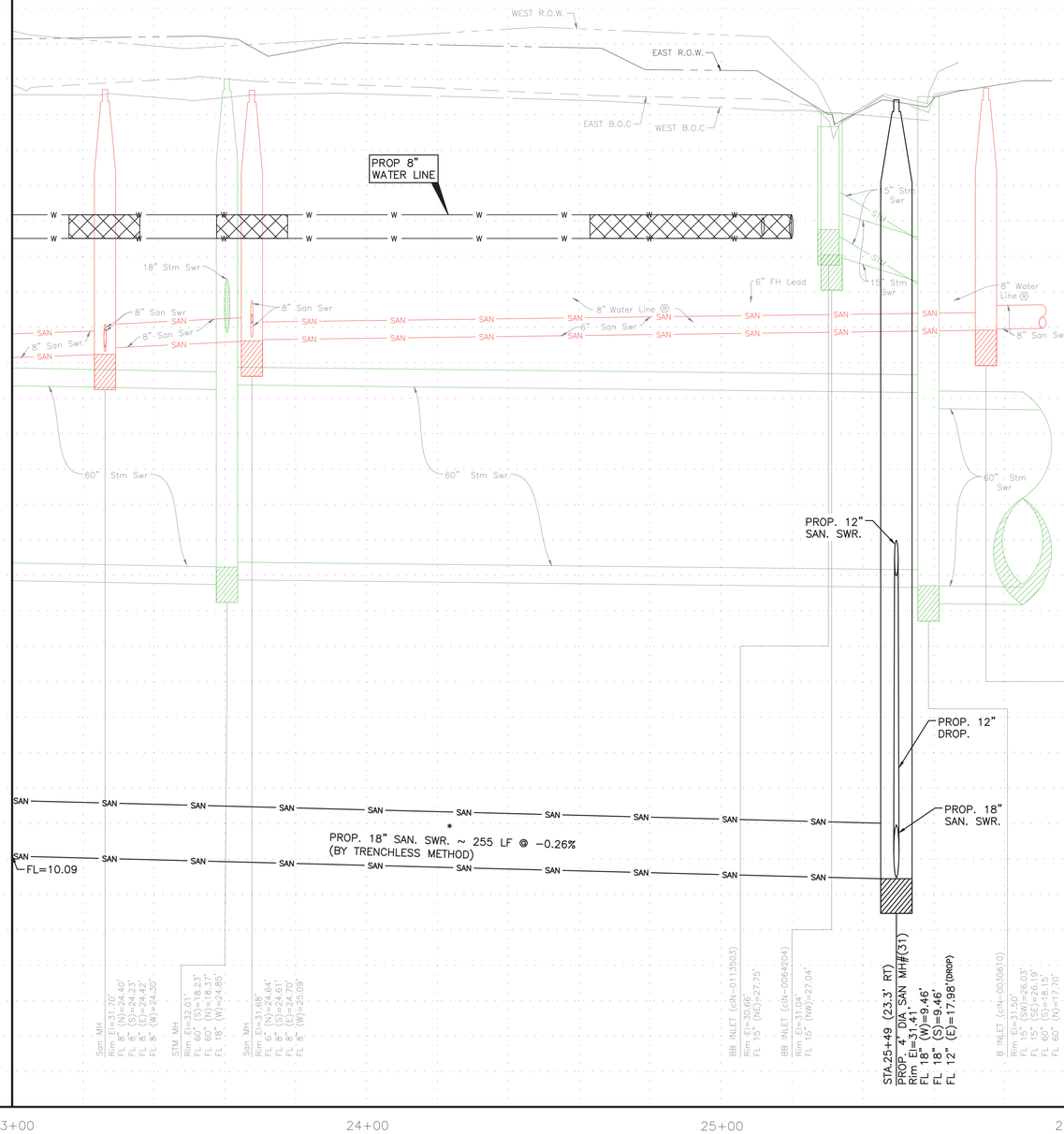
SHEET NO. **37** OF 195

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&P's\P&P Sheet 1 - SAN.dwg May 15, 2026 3:33pm

SEE SHEET 37
FOR PROFILE

NOTE: REFER SHEET 86 FOR WATERLINE REPLACEMENT.



* PIPE MATERIAL SHALL BE EXTRA STRENGTH CLAY PIPE OR FIBER GLASS PER SPEC 02441

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 1 - SAN.dwg May 15, 2026 3:33pm

NOTICE:

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

Signature valid for six months.

Date

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

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
FB NO.: P-6406

PRELIMINARY

FOR INTERIM REVIEW ONLY

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MAHESH DUTTA 114252
NAME P.E. NO.

DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

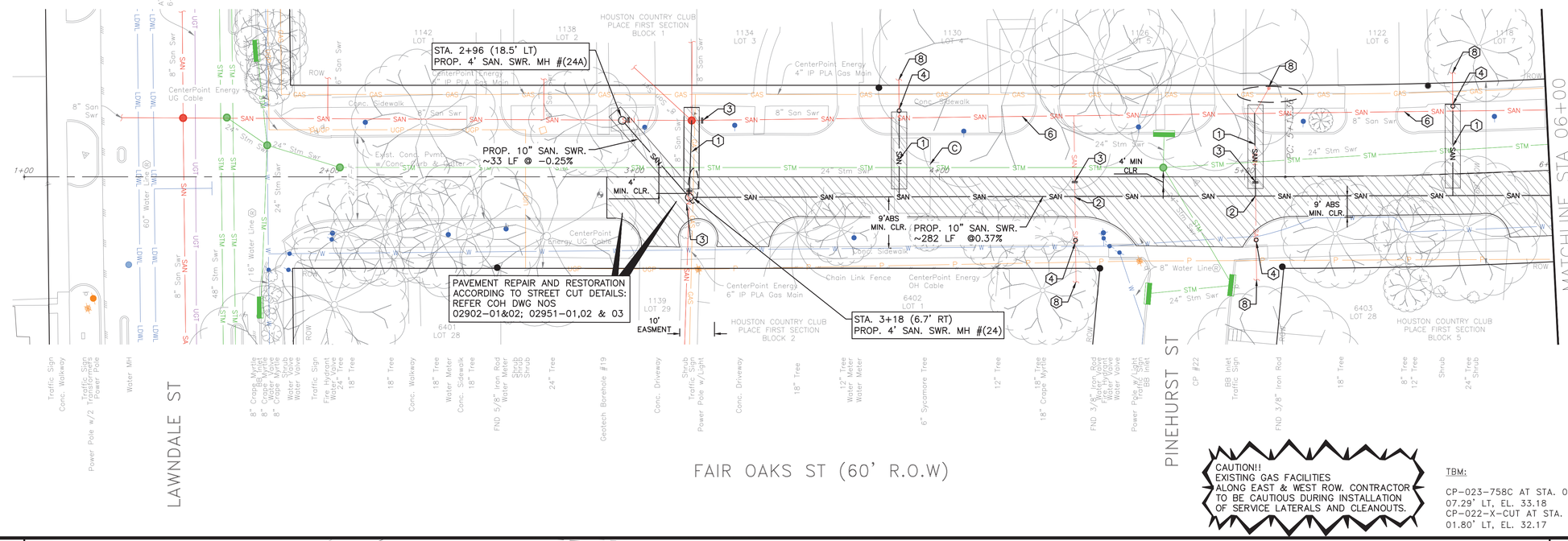
DISMUKE PROFILE STA 23+00 TO END

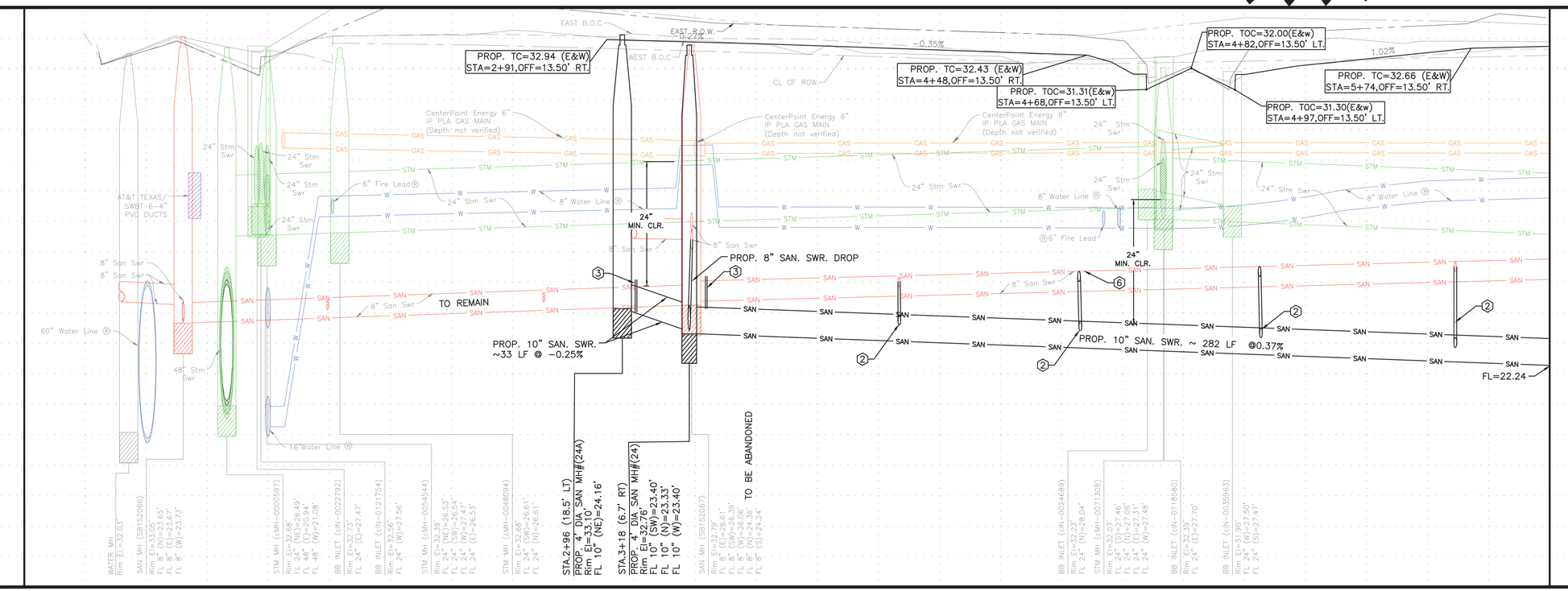
WBS NO.
R-001000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. **38** OF 195





0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

CAUTION!
EXISTING GAS FACILITIES ALONG EAST & WEST ROW. CONTRACTOR TO BE CAUTIOUS DURING INSTALLATION OF SERVICE LATERALS AND CLEANOUTS.

TBM:

CP-023-758C AT STA. 01+19.96, 07.29' LT, EL. 33.18
CP-022-X-CUT AT STA. 04+84.04, 01.80' LT, EL. 32.17

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109 ALUMINIUM DISK LOCATED ON THE NORTHEAST CORNER OF LEELAND ST. AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

NOTES

1. EXTEND EXISTING SANITARY SERVICE LATERAL TO PROPOSED SANITARY SEWER. MATCH EXISTING SIZE AND FLOWLINE
2. CONNECT EXISTING SANITARY SERVICE LATERAL TO PROPOSED SANITARY SEWER
3. CUT, PLUG & ABANDON EXISTING SANITARY SEWER PER COH SPEC 02222
4. INSTALL PROP C.O. ON EXISTING SANITARY SERVICE LATERAL. SEE DETAIL –
6. ABANDON EXISTING SANITARY SEWER PER COH SPEC 02222 AFTER PROPOSED SANITARY SEWER IS IN SERVICE.
7. ABANDON EXISTING SANITARY MANHOLE
8. EXISTING SANITARY SERVICE PER CCTV INSPECTION REPORTS. (NOT FIELD VERIFIED)

PAVEMENT REPAIR AND RESTORATION ACCORDING TO STREET CUT DETAILS: REFER COH DWG NOS 02902-01&02; 02951-01,02 & 03

CRITICAL LOCATIONS SEE SPEC 02317

(C) REMOVE AND REPLACE SPEED BUMP

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VERIFICATION OF PRIVATE UTILITY LINES

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11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-5700
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Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
FB NO.: P-6406

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MAHESH DUTTA 114252
NAME P.E. NO.
DATE 05/15/2026
TBPELS FIRM #F-4528

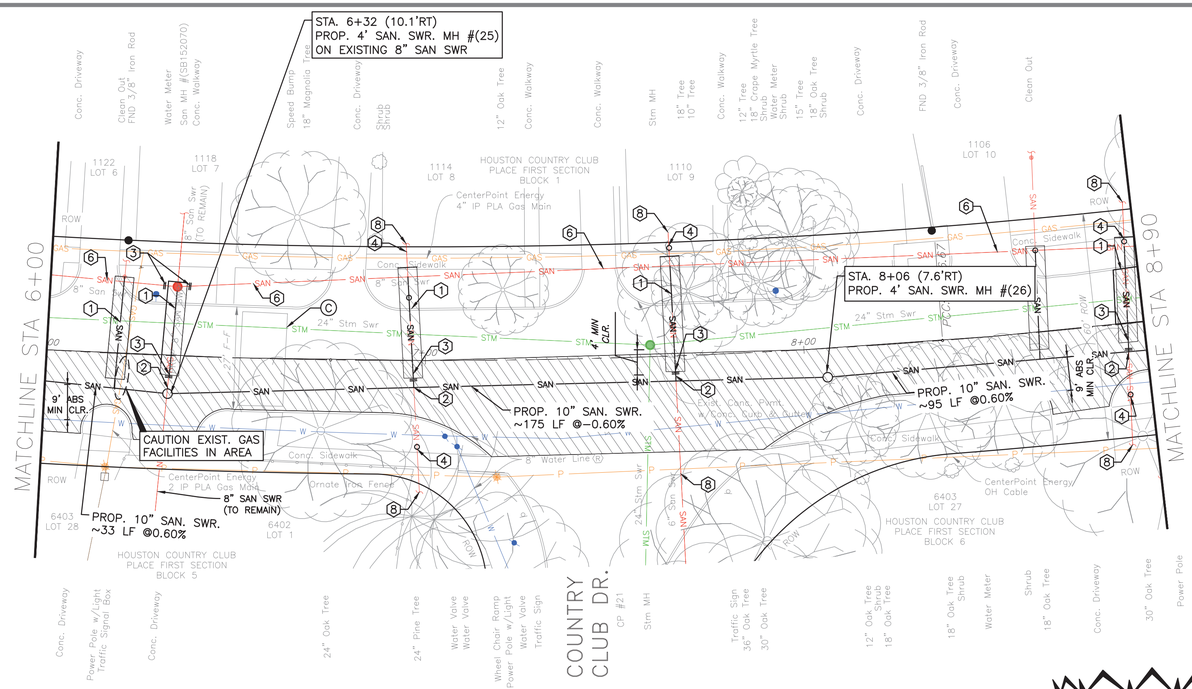
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

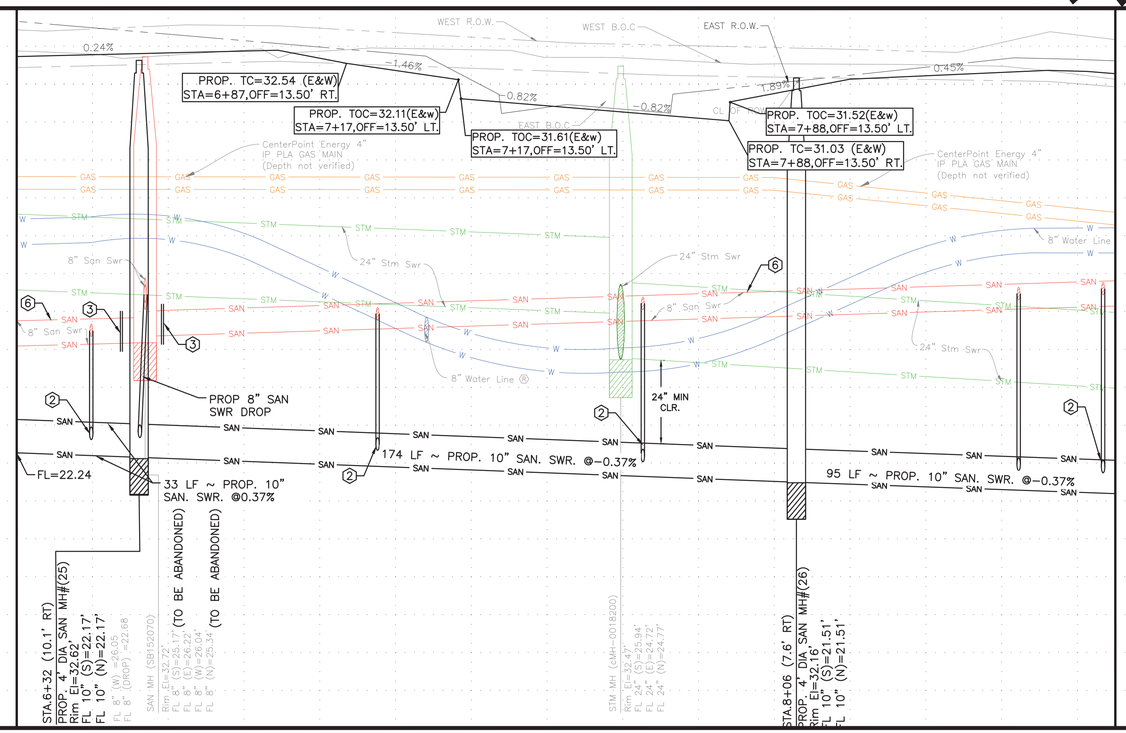
CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

FAIR OAKS PLAN & PROFILE
STA 1+00 TO 6+00

WBS NO.	R-001000-0036-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	SABEEN SHAIKH, P.E.
SHEET NO.	39 OF 195

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 2 - SAN.dwg May 15, 2026 3:34pm





CAUTION!!
EXISTING GAS FACILITIES
ALONG EAST & WEST ROW. CONTRACTOR
TO BE CAUTIOUS DURING INSTALLATION
OF SERVICE LATERALS AND CLEANOUTS.

TBM:

CP-021-X-CUT AT STA. 07+47.47,
19.02' R, EL. 32.12

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

NOTES

1. EXTEND EXISTING SANITARY SERVICE LATERAL TO PROPOSED SANITARY SEWER. MATCH EXISTING SIZE AND FLOWLINE
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7. ABANDON EXISTING SANITARY MANHOLE
8. EXISTING SANITARY SERVICE PER CCTV INSPECTION REPORTS. (NOT FIELD VERIFIED)

PAVEMENT REPAIR AND RESTORATION ACCORDING TO STREET CUT DETAILS: REFER COH DWG NOS 02902-01&02; 02951-01,02 & 03

Ⓒ REMOVE AND REPLACE SPEED BUMP

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Date

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Date

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Signature valid for one year.

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HOUSTON, TEXAS 77024
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
FB NO.: P-6406

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MAHESH DUTTA 114252
NAME P.E. NO.
DATE 05/15/2026
TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

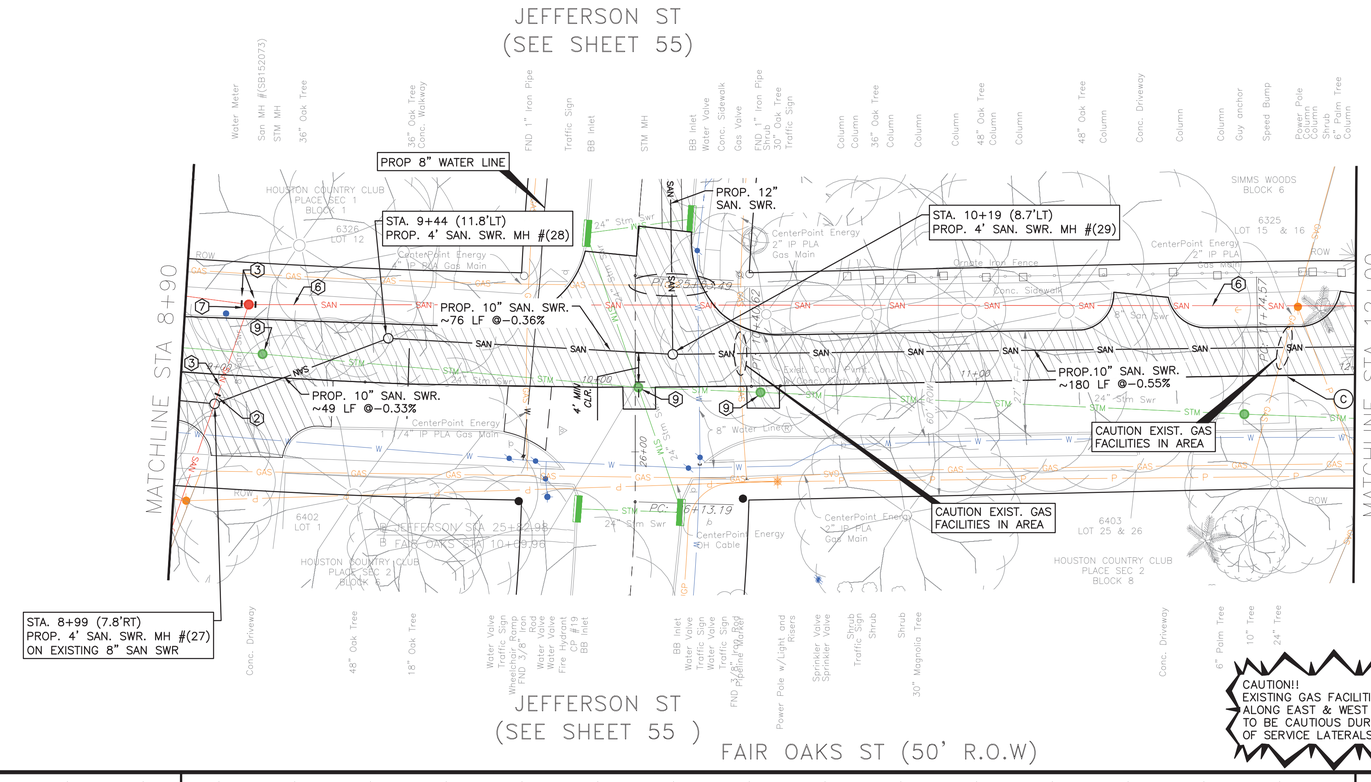
CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

FAIR OKAS PLAN & PROFILE
STA 6+00 TO 8+90

WBS NO.	R-001000-0036-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	SABEEN SHAIKH, P.E.
SHEET NO.	40 OF 195

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 2 - SAN.dwg May 15, 2026 3:35pm

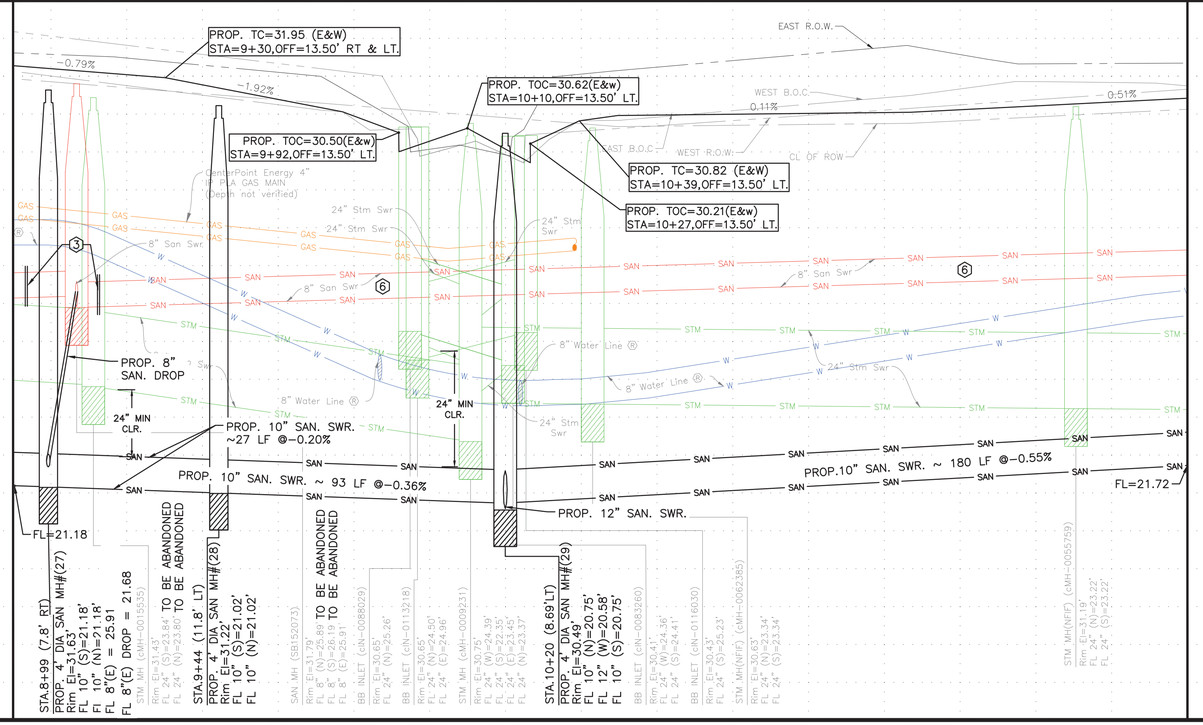


NOTE; REFER SHEET 90 FOR WATERLINE REPLACEMENT.

CAUTION!!
EXISTING GAS FACILITIES
ALONG EAST & WEST ROW. CONTRACTOR
TO BE CAUTIOUS DURING INSTALLATION
OF SERVICE LATERALS AND CLEANOUTS.

TBM:

CP-019-X-CUT AT STA. 09+90.70,
11.52' RT, EL. 30.50



9+00 10+00 11+00 12+00

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

NOTES

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8. EXISTING SANITARY SERVICE PER CCTV INSPECTION REPORTS. (NOT FIELD VERIFIED)
9. ADJUST MANHOLE FRAME AND COVER

PAVEMENT REPAIR AND RESTORATION ACCORDING TO STREET CUT DETAILS: REFER COH DWG NOS 02902-01&02; 02951-01,02 & 03

CRITICAL LOCATIONS SEE SPEC 02317

Ⓒ REMOVE AND REPLACE SPEED BUMP

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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Date

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HOUSTON, TEXAS 77024
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Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
FB NO.: P-6406

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MAHESH DUTTA 114252
NAME P.E. NO.

DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

FAIR OAKS PLAN & PROFILE
STA 8+90 TO 12+00

WBS NO.
R-001000-0036-3

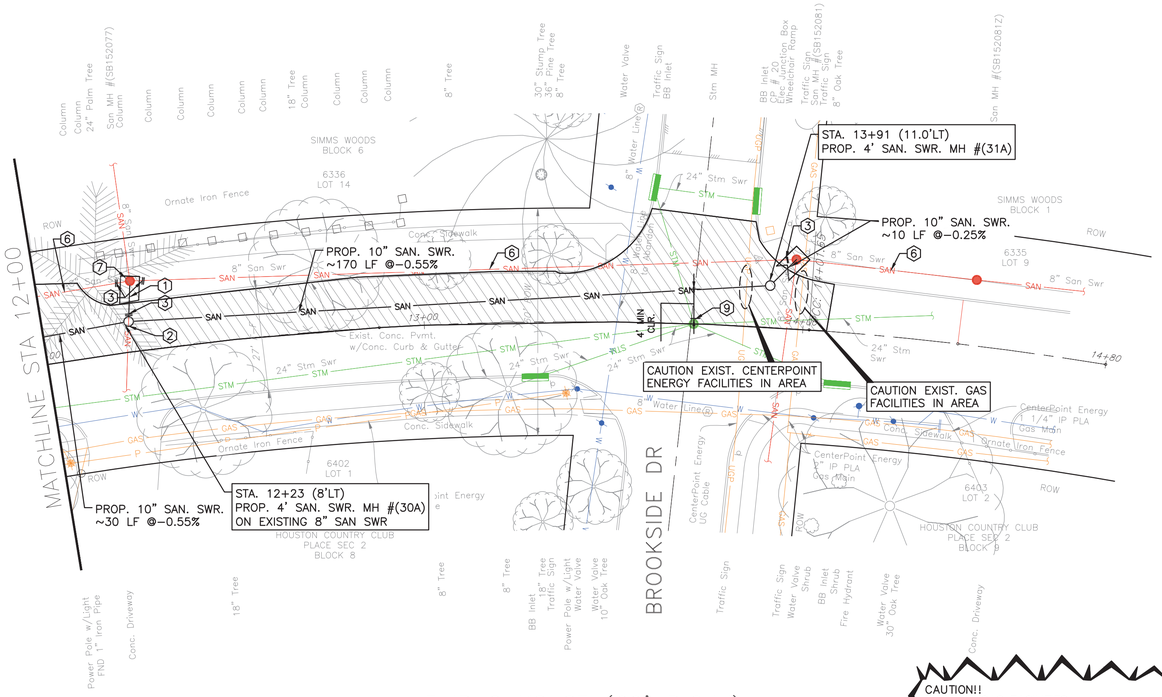
DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM

SABEEN SHAIKH, P.E.

SHEET NO.**41** OF 195

P:\Coda\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 2 - SAN.dwg May 15, 2026 3:35pm



CAUTION!!
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TBM:

CP-020-X-CUT AT STA. 13+87.16, 17.86' L, EL. 30.06

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109 ALUMINIUM DISK LOCATED ON THE NORTHEAST CORNER OF LEELAND ST. AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

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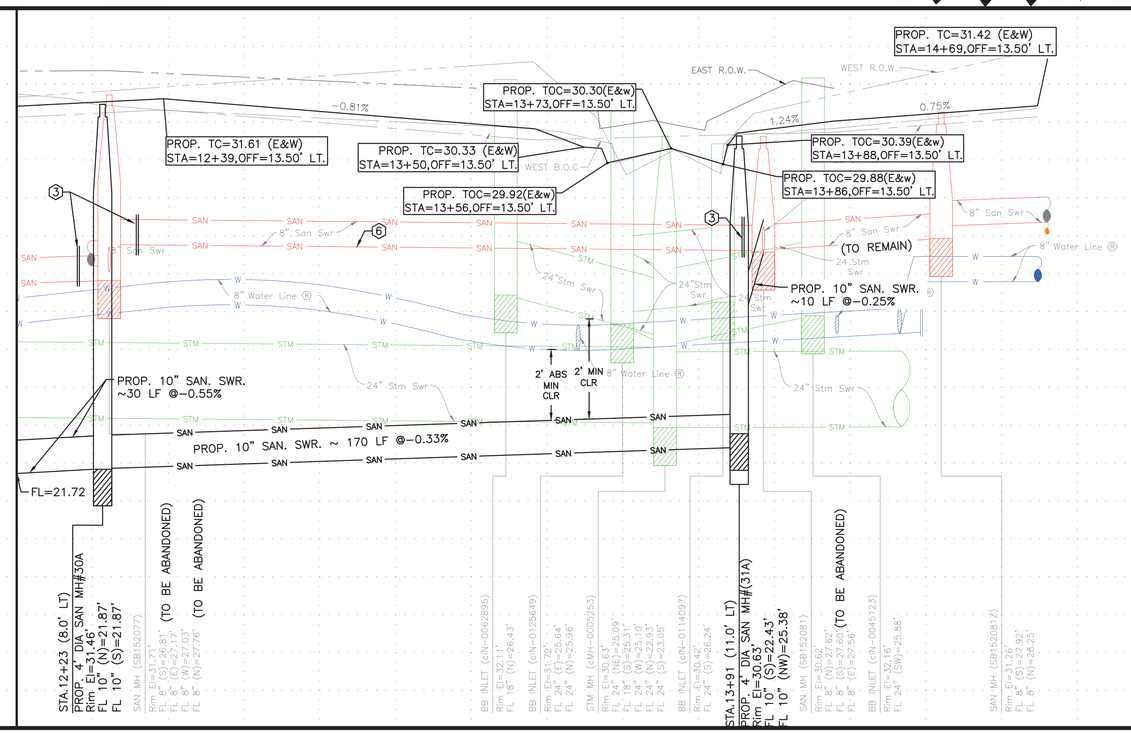
PAVEMENT REPAIR AND RESTORATION ACCORDING TO STREET CUT DETAILS: REFER COH DWG NOS 02902-01&02; 02951-01,02 & 03

CRITICAL LOCATIONS SEE SPEC 02317



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SURVEYED BY: AMANI
FB NO.: P-6406

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MAHESH DUTTA 114252
NAME P.E. NO.
DATE 05/15/2026
TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

FAIR OAKS PLAN & PROFILE
STA 12+00 TO END

WBS NO.	R-001000-0036-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	SABEEN SHAIKH, P.E.
SHEET NO.	42 OF 195

12+00 13+00 14+00 15+00

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 2 - SAN.dwg May 15, 2026 3:36pm

NOTE:

PROJECT BENCH MARK:

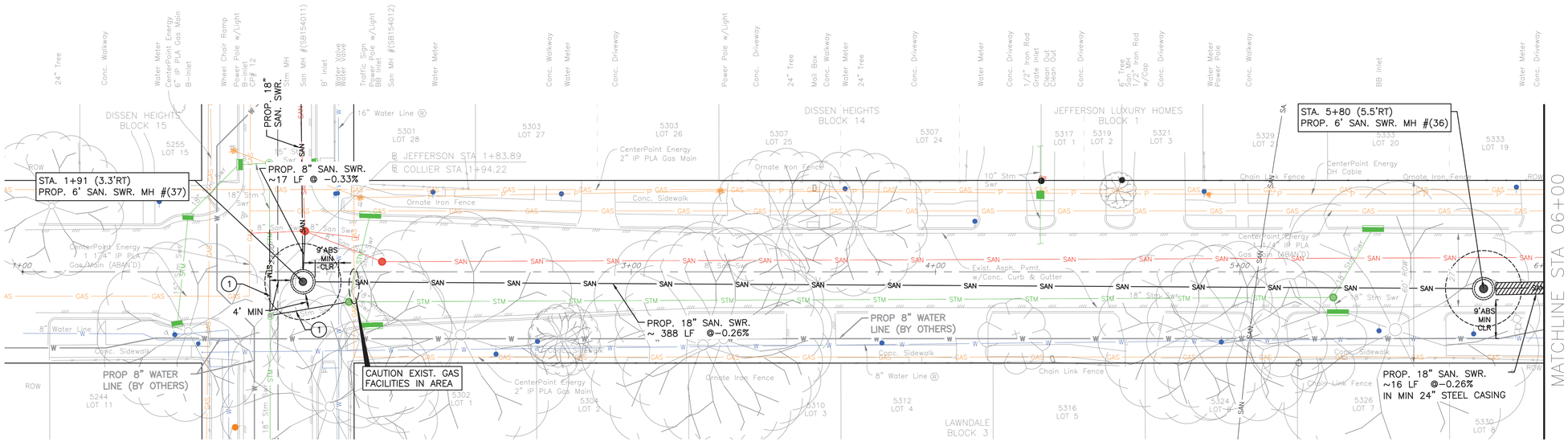
CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

NOTES

SHAFT SHAPE, & SIZE SHOWN IS FOR REPRESENTATION PURPOSE ONLY. CONTRACTOR SHALL DETERMINE APPROPRIATE SIZE AND SHAPE. BACKFILL SHAFT PER COH STD DETAIL 02317-08.

(1) REMOVE AND REPLACE STORM SEWER AS NEEDED DURING CONSTRUCTION. (THE COST OF REMOVAL AND REPLACEMENT IS INCIDENTAL TO SHAFT.)



CAUTION!!
EXISTING GAS FACILITIES
ALONG NORTH & SOUTH ROW. CONTRACTOR
TO BE CAUTIOUS DURING CONSTRUCTION.

SEE SHEET 44
FOR PROFILE

TBM:

CP-12-MAG NAIL AT STA. 01+72.72,
18.47' LT, EL. 33.38

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NAME P.E. NO.

DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

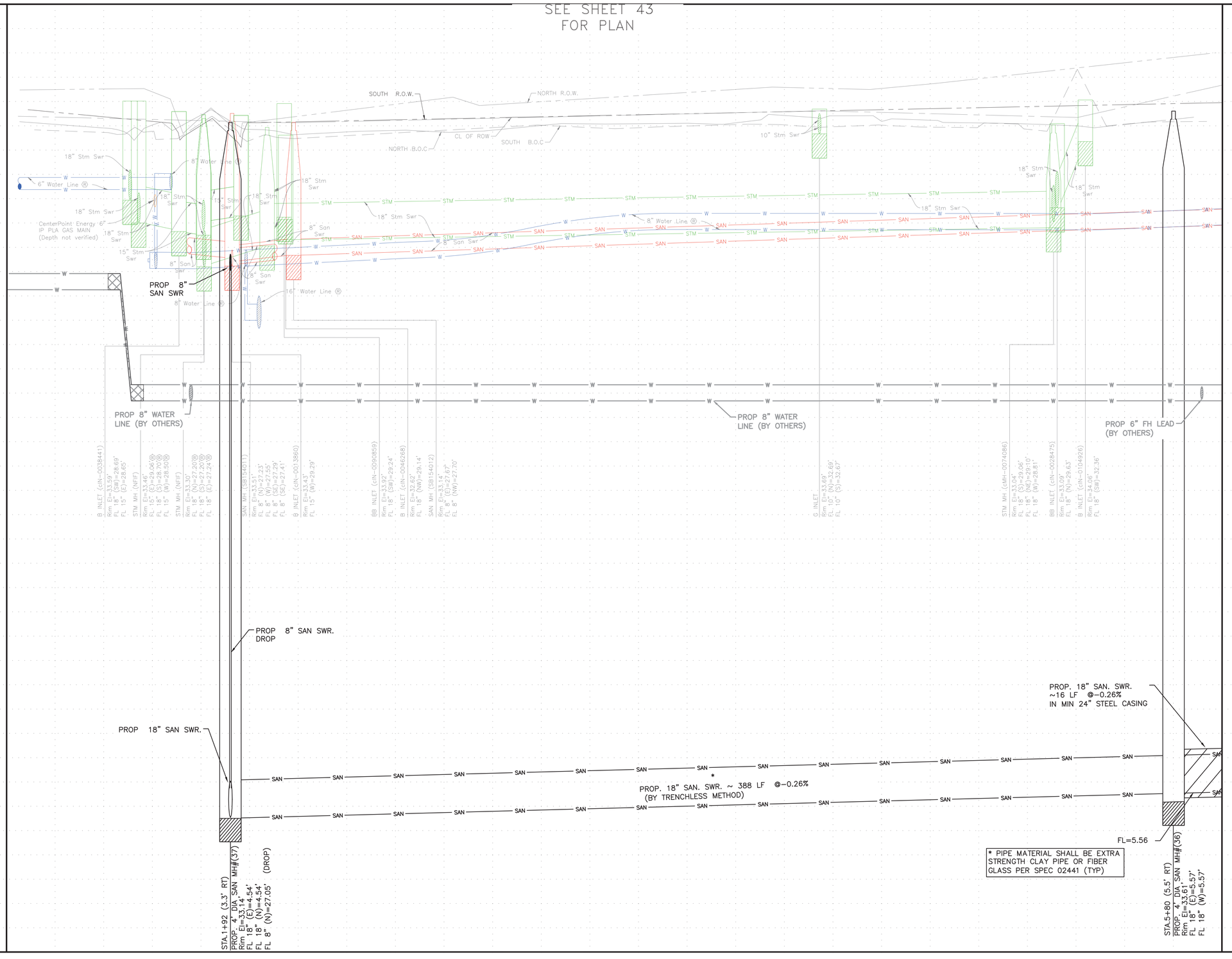
JEFFERSON PLAN STA
1+00 TO 6+00

WBS NO. R-001000-0036-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON, PM	
SABEEN SHAIKH, P.E.	
SHEET NO. **43** OF 195	

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&P's\P&P Sheet 2 - SAN.dwg May 15, 2026 3:36pm

SEE SHEET 43
FOR PLAN



0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 2 - SAN.dwg May 15, 2026 3:36pm

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DATE 05/15/2026

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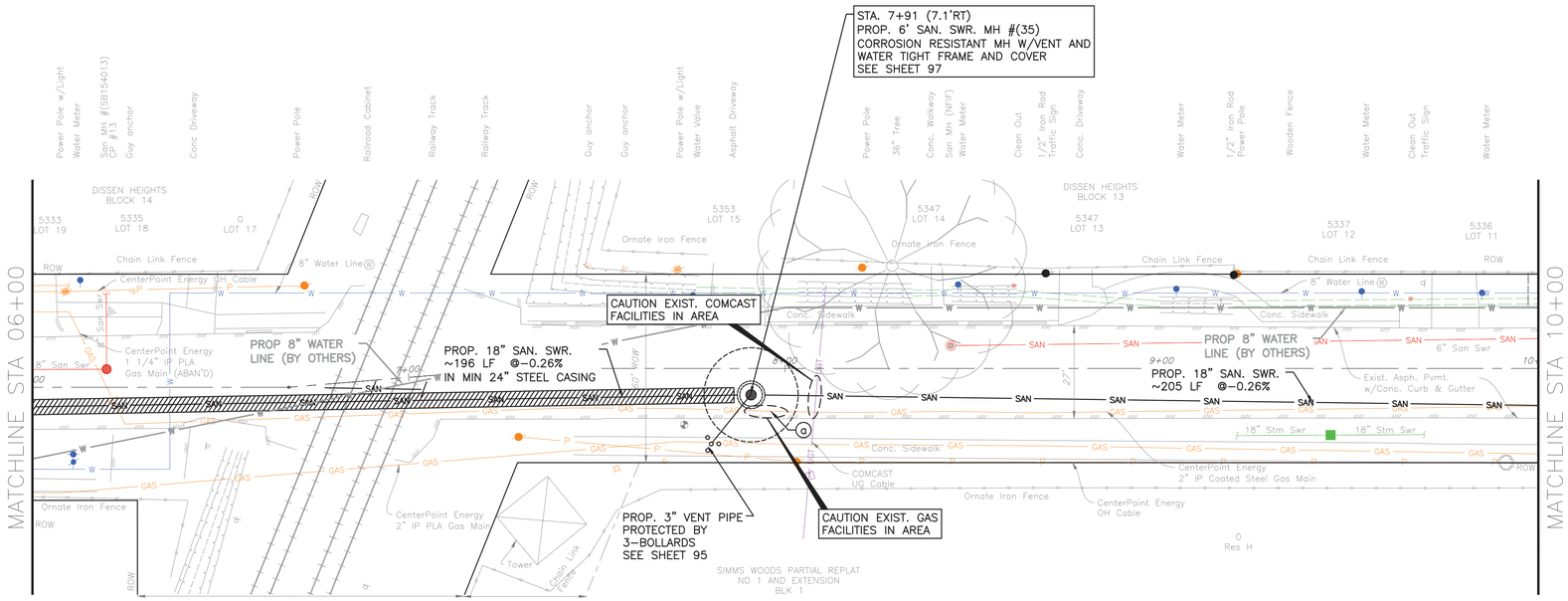
CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5 SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

JEFFERSON PROFILE STA 1+00 TO 6+00

WBS NO.	R-001000-0036-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	SABEEN SHAIKH, P.E.
SHEET NO.	44 OF 195



JEFFERSON ST (60' R.O.W)

SEE SHEET 46 FOR PROFILE

TBM:

CP-13-X-CUT AT STA. 06+20.80, 20.03' LT, EL. 34.33

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109 ALUMINIUM DISK LOCATED ON THE NORTHEAST CORNER OF LEELAND ST. AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

NOTES

SHAFT SHAPE, & SIZE SHOWN IN FOR REPRESENTATION PURPOSE ONLY. CONTRACTOR SHALL DETERMINE APPROPRIATE SIZE AND SHAPE. BACKFILL SHAFT PER COH STD DETAIL 02317-08.

(a) UTILITY TO BE RELOCATED BY OTHERS

CRITICAL LOCATIONS SEE SPEC 02317

NOTICE:

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

VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

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Date

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

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
FB NO.: P-6406

PRELIMINARY

FOR INTERIM REVIEW ONLY

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MAHESH DUTTA 114252
NAME P.E. NO.

DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

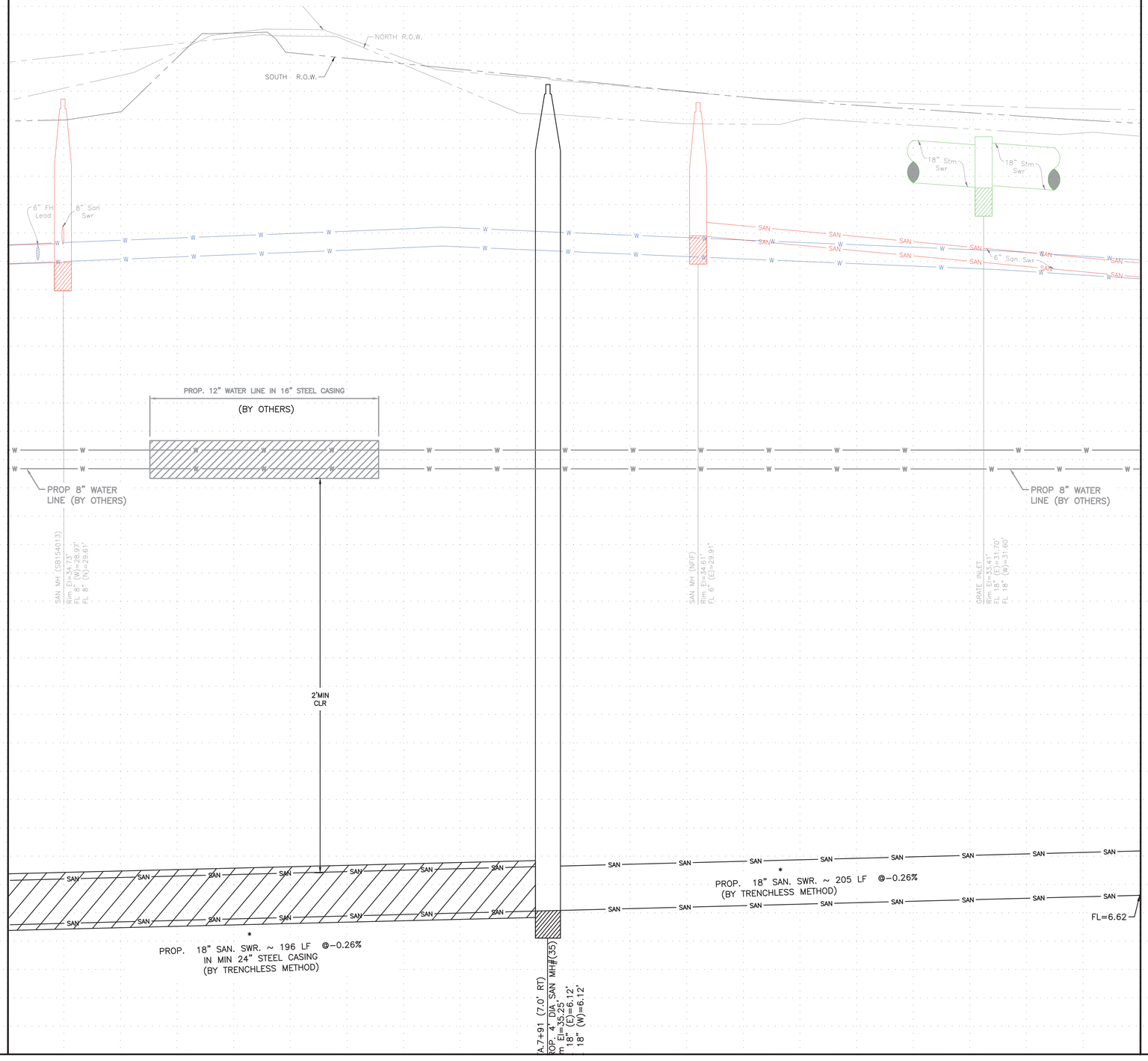
JEFFERSON PLAN STA 6+00 TO 10+00

WBS NO.	R-001000-0036-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	
SABEEN SHAIKH, P.E.	
SHEET NO.	45 OF 195

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 2 - SAN.dwg May 15, 2026 3:36pm

SEE SHEET 45 FOR PLAN



ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 2 - SAN.dwg May 15, 2026 3:37pm

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5 SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

JEFFERSON PROFILE
STA 6+00 TO 10+00

WBS NO.	R-001000-0036-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	SABEEN SHAIKH, P.E.
SHEET NO.	46 OF 195

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

NOTES

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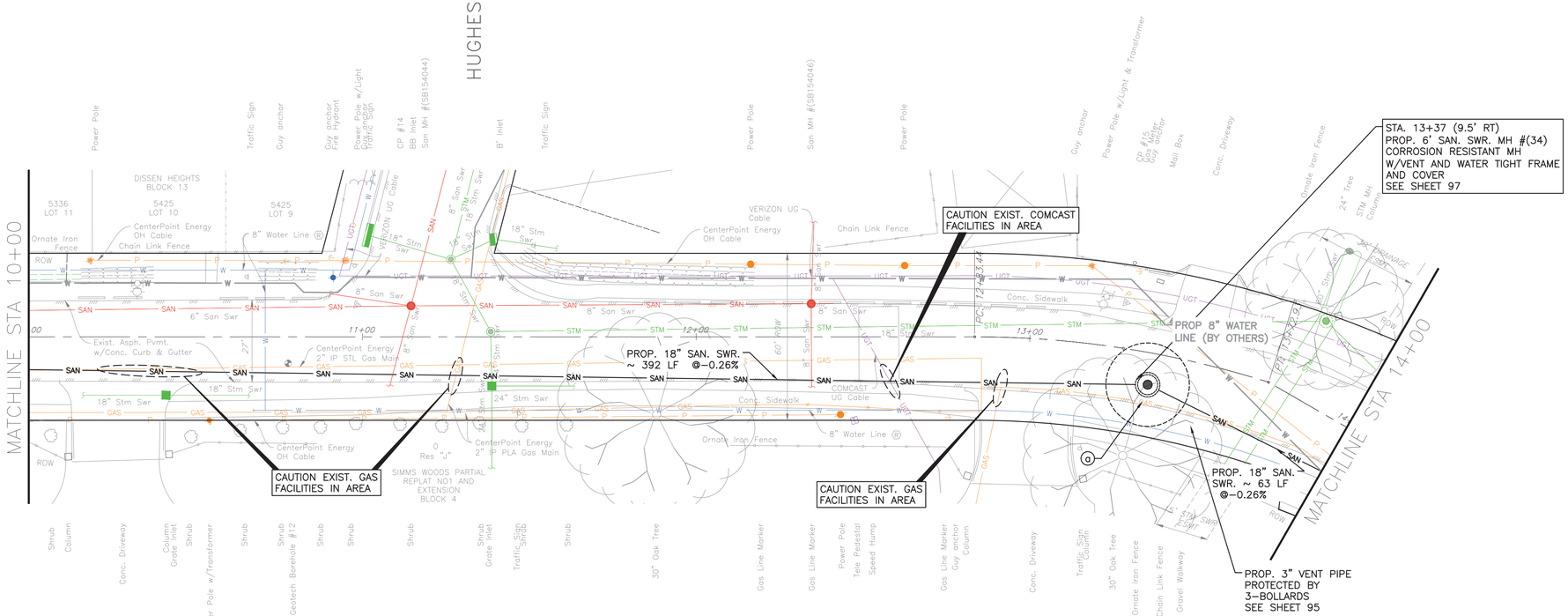
(a) UTILITY TO BE RELOCATED BY OTHERS

CRITICAL LOCATIONS
SEE SPEC 02317



JEFFERSON ST (60' R.O.W)

SEE SHEET 48 FOR PROFILE

TBM:

CP-14-MAG NAIL AT STA. 10+98.21, 09.58' LT, EL. 33.95
CP-15-X-CUT AT STA. 13+26.95, 13.63' L, EL. 31.62

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

NOTICE:

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DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

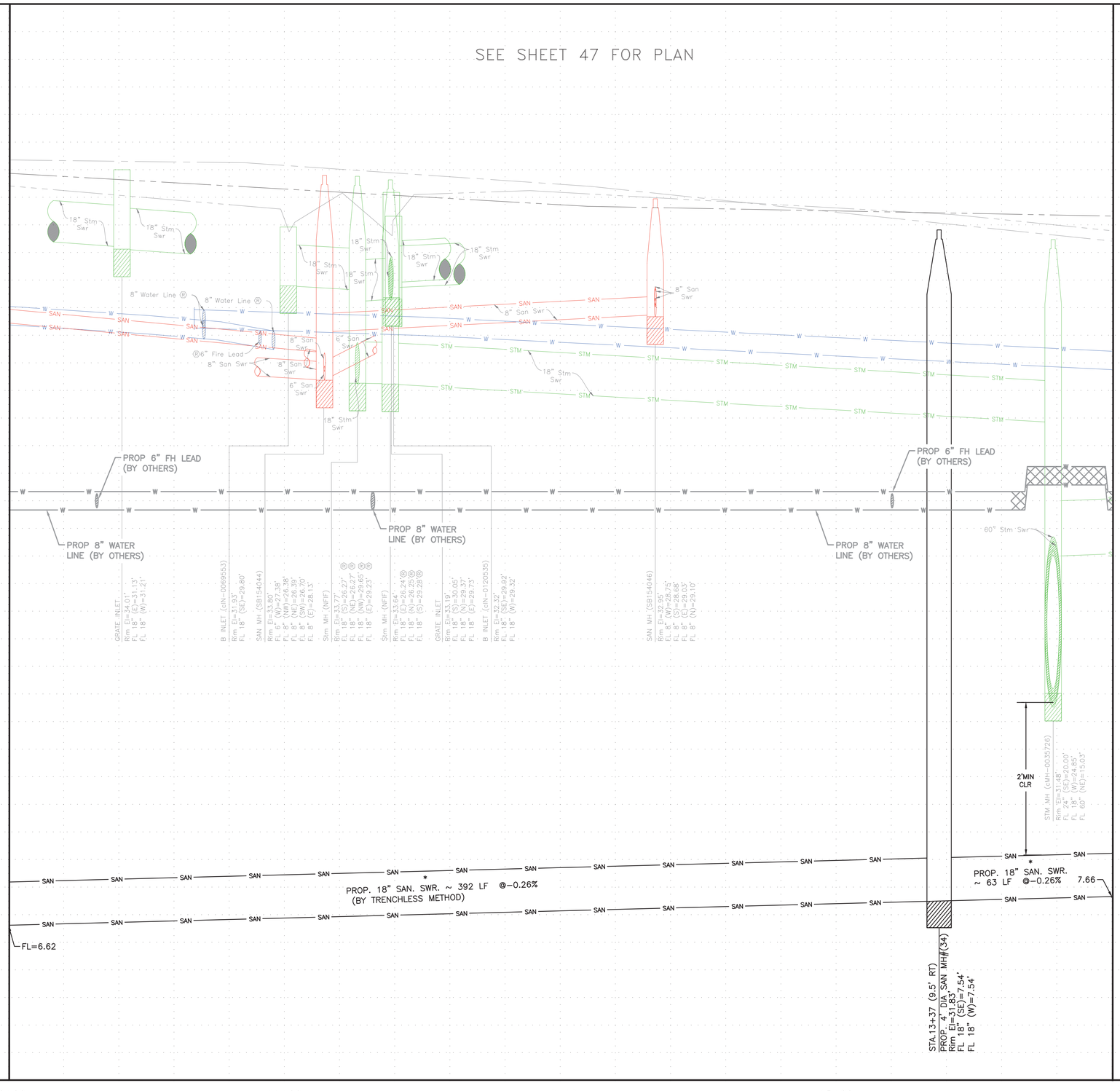
CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

JEFFERSON PLAN STA 10+00 TO 14+00

WBS NO. R-001000-0036-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON, PM	
SABEEN SHAIKH, P.E.	
SHEET NO. 47 OF 195	

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 2 - SAN.dwg May 15, 2026 3:37pm

SEE SHEET 47 FOR PLAN



* PIPE MATERIAL SHALL BE EXTRA STRENGTH CLAY PIPE OR FIBER GLASS PER SPEC 02441 (TYP)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

P:\Cadd\2024\24014 – COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&P\P&P Sheet 2 – SAN.dwg May 15, 2026 3:37pm

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TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5 SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

JEFFERSON PROFILE STA 10+00 TO 14+00

WBS NO.
R-001000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. **48** OF 195

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

NOTES

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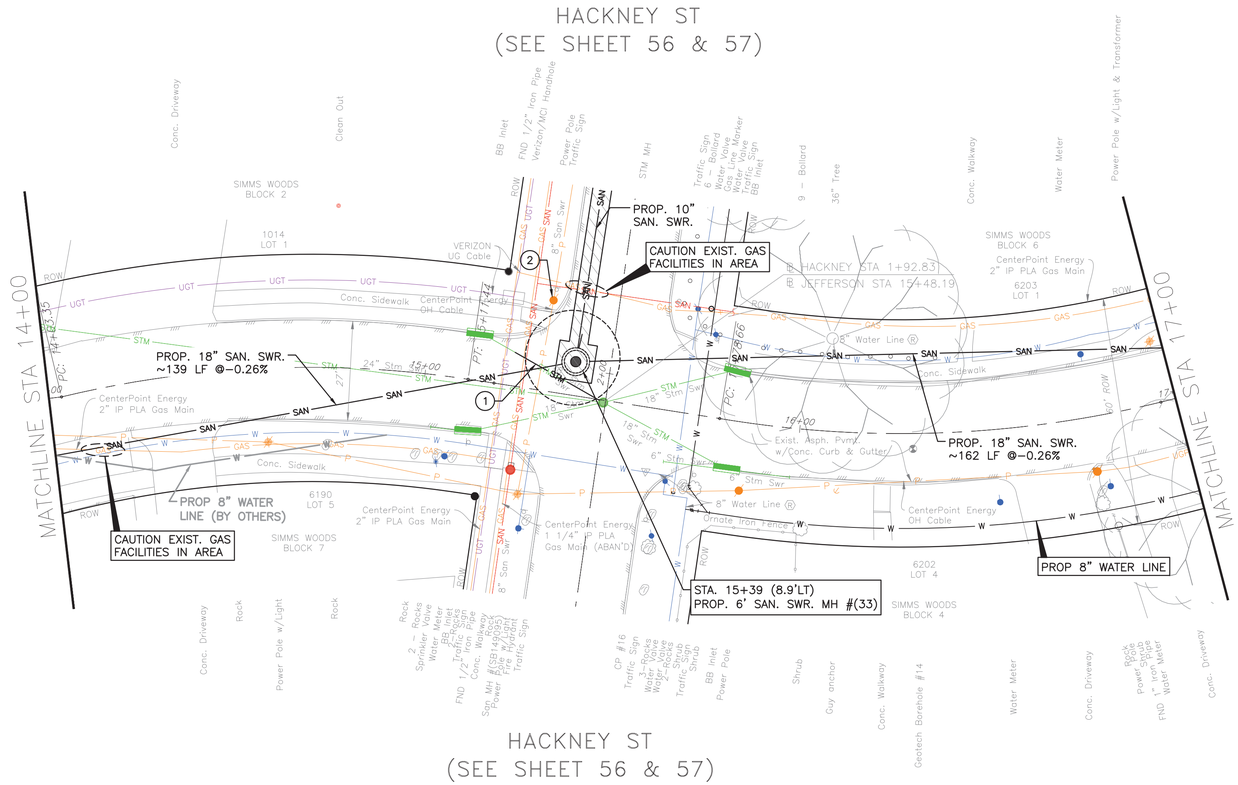
- (1) REMOVE AND REPLACE STORM SEWER AS NEEDED DURING CONSTRUCTION. (THE COST OF REMOVAL AND REPLACEMENT IS INCIDENTAL TO SHAFT.)
- (2) BRACE AND SUPPORT POWER POLE DURING CONSTRUCTION



NOTE: REFER SHEET 87 FOR WATERLINE REPLACEMENT.

TBM:

CP-16-MAG NAIL AT STA. 15+61.51,
16.79' R, EL. 30.59

NOTICE:

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FB NO.: P-6406

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TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

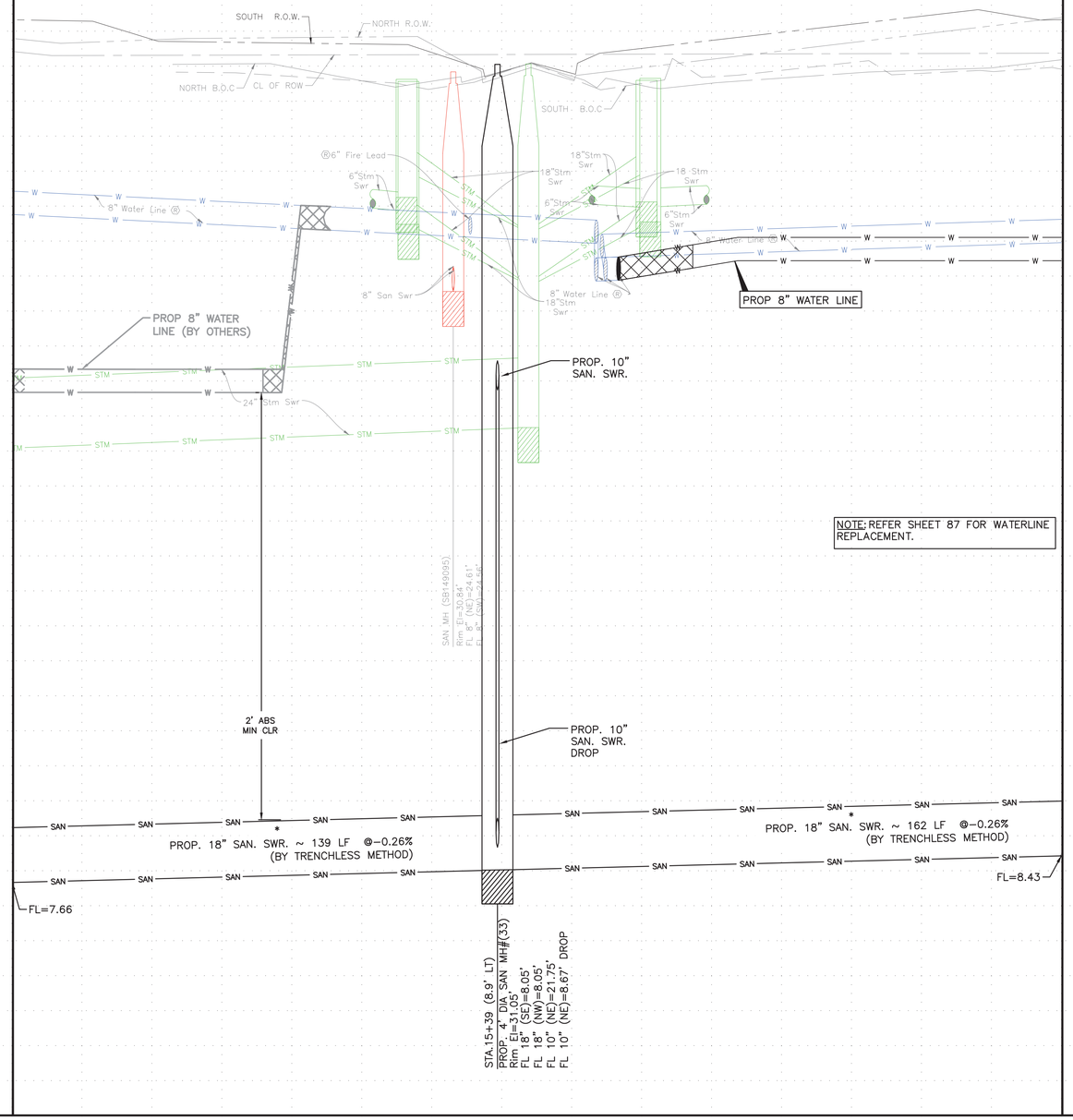
JEFFERSON PLAN STA 14+00 TO 17+00

WBS NO. R-001000-0036-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON, PM	
SABEEN SHAIKH, P.E.	
SHEET NO. 49 OF 195	

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 2 - SAN.dwg May 15, 2026 3:37pm

SEE SHEET 49 FOR PLAN



P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 2 - SAN.dwg May 15, 2026 3:38pm

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

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NAME P.E. NO.

DATE 05/15/2026
TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5 SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

JEFFERSON PROFILE STA 14+00 TO 17+00

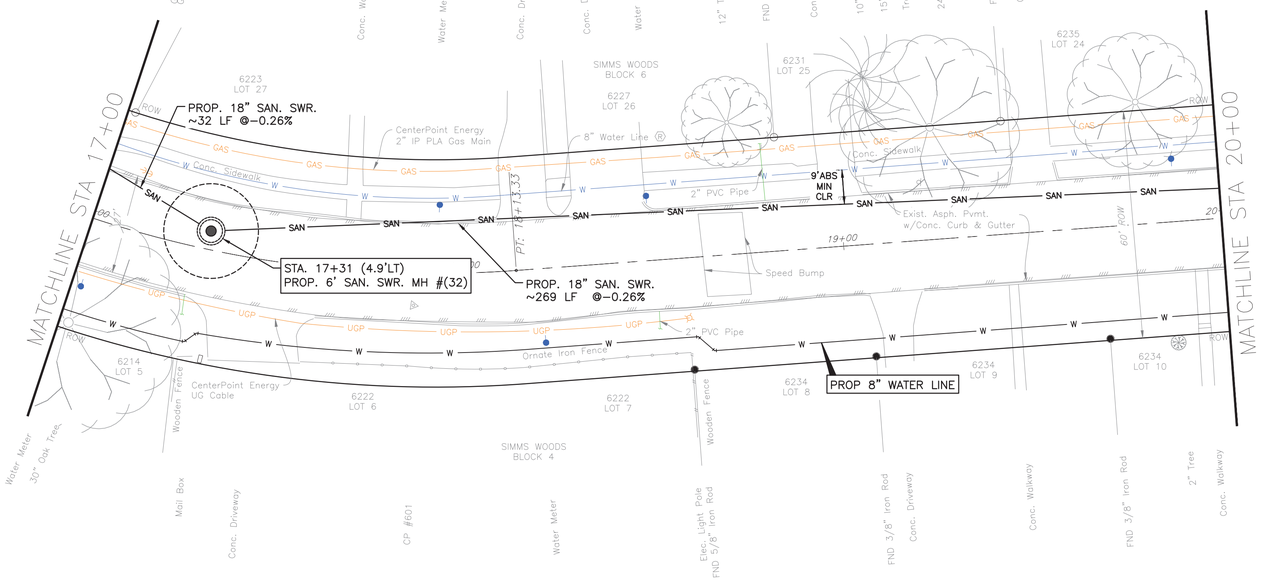
WBS NO.
R-001000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM

SABEEN SHAIKH, P.E.

SHEET NO. **50** OF 195



JEFFERSON ST (60' R.O.W)

SEE SHEET 52 FOR PROFILE

NOTE: REFER SHEET 88 FOR WATERLINE REPLACEMENT.

TBM:

CP-601-MAG NAIL AT STA. 17+86.28, 08.50' R, EL. 31.16

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

NOTES

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

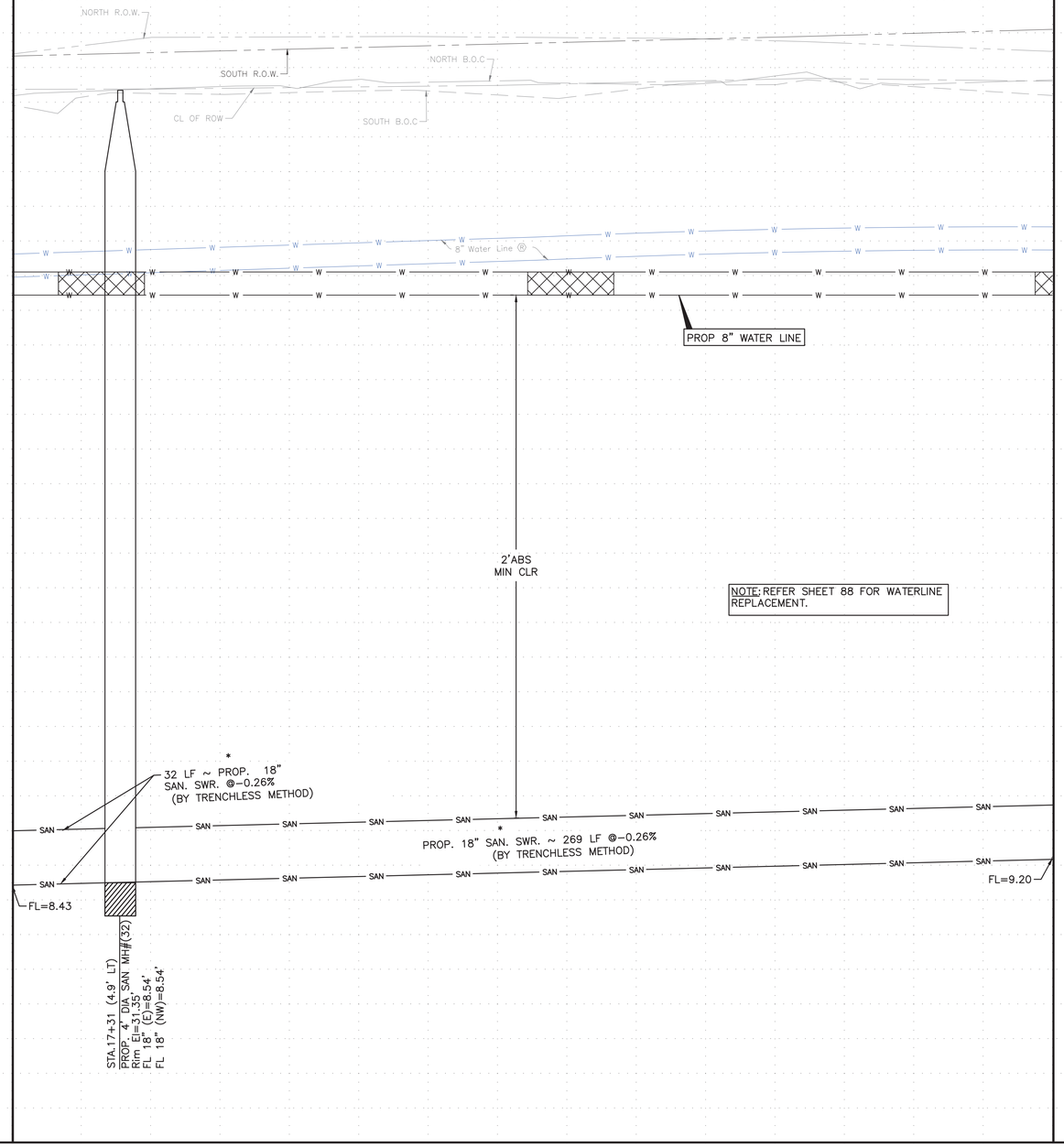
JEFFERSON PLAN STA 17+00 TO 20+00

WBS NO. R-001000-0036-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON, PM	
SABEEN SHAIKH, P.E.	
SHEET NO. 51 OF 195	

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 2 - SAN.dwg May 15, 2026 3:38pm

SEE SHEET 51 FOR PLAN



17+00 18+00 19+00 20+00

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&P\P&P Sheet 2 - SAN.dwg May 15, 2026 3:38pm

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

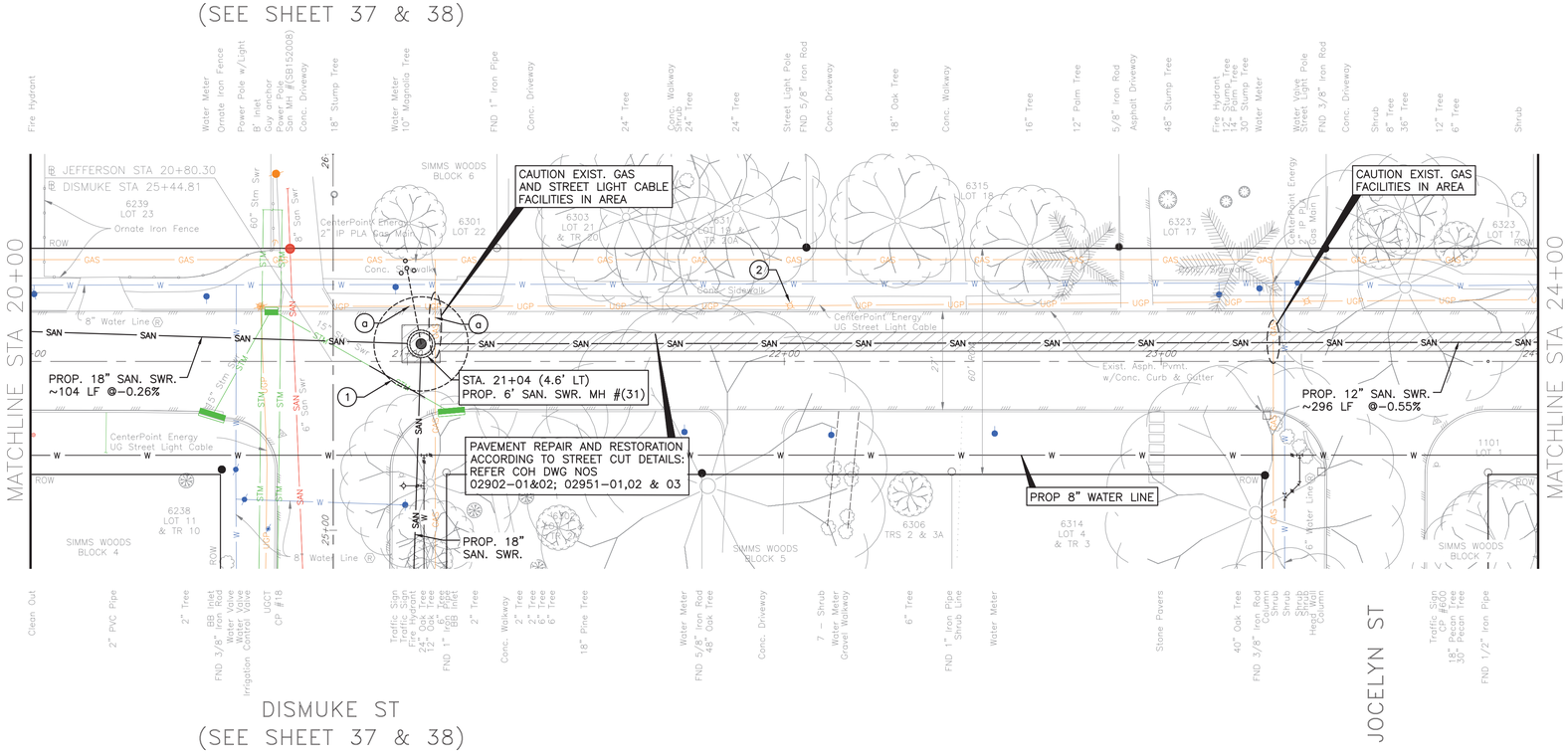
CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

JEFFERSON PROFILE
STA 17+00 TO 20+00

WBS NO.
R-001000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.



NOTE: REFER SHEET 89 FOR WATERLINE REPLACEMENT.

JEFFERSON ST (60' R.O.W)

SEE SHEET 54 FOR PROFILE

TBM:

CP-18-MAG NAIL AT STA. 20+66.68, 19.28' RT, EL. 31.097

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE NORTHEAST CORNER OF LEELAND ST. AND W. GUSTAV ST.

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DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

JEFFERSON PLAN STA 20+00 TO 24+00

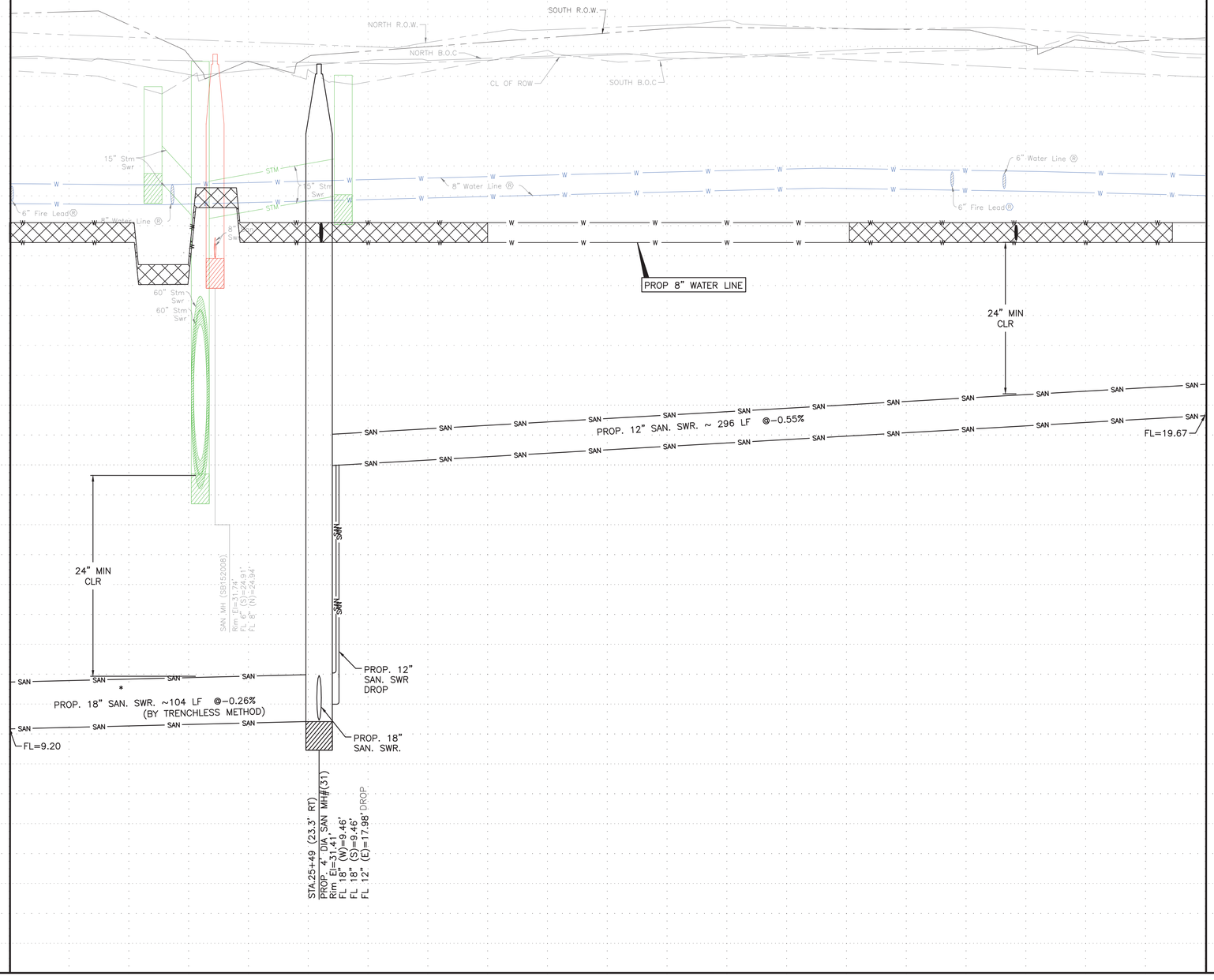
WBS NO. R-001000-0036-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON, PM	
SABEEN SHAIKH, P.E.	
SHEET NO. **53** OF 195	

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&P\P&P Sheet 2 - SAN.dwg May 15, 2026 3:38pm

SEE SHEET 53 FOR PLAN

NOTE: REFER SHEET 89 FOR WATERLINE REPLACEMENT.



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ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

NOTICE:

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

Signature valid for six months.

Date

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

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
FB NO.: P-6406

PRELIMINARY

FOR INTERIM REVIEW ONLY

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND NOT INTENDED FOR REGULATORY APPROVAL, PERMIT, BIDDING OR CONSTRUCTION PURPOSES. THEY WERE PREPARED BY OR UNDER THE SUPERVISION OF:

MAHESH DUTTA 114252
NAME P.E. NO.

DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5 SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

JEFFERSON PROFILE STA 20+00 TO 24+00

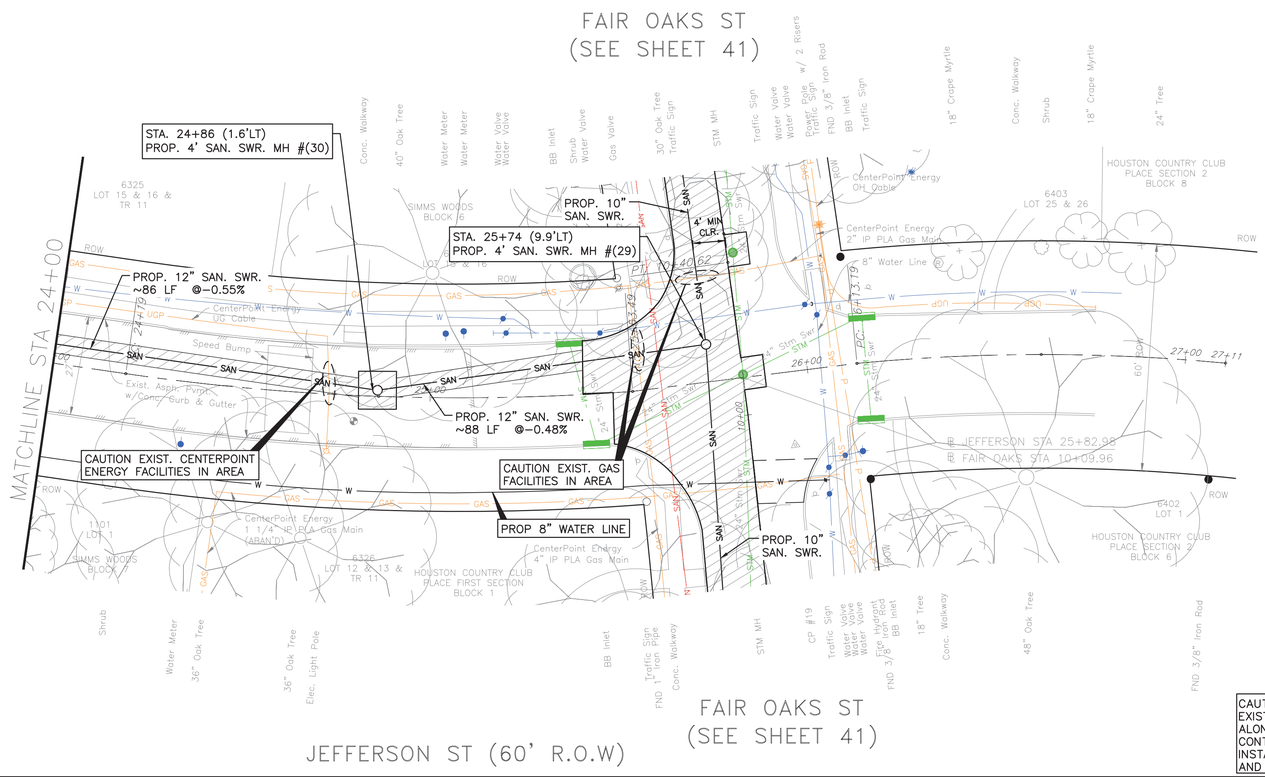
WBS NO.
R-001000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. **54** OF 195

P:\Cadd\2024\24014 – COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&P\P&P Sheet 2 – SAN.dwg May 15, 2026 3:39pm



NOTE: REFER SHEET 90 FOR WATERLINE REPLACEMENT.

CAUTION!!
EXISTING GAS FACILITIES ALONG NORTH & EAST ROW. CONTRACTOR TO BE CAUTIOUS DURING INSTALLATION OF SERVICE LATERALS AND CLEANOUTS.

TBM:

CP-19-X-CUT AT STA. 25+94.38, 19.32' RT, EL. 30.50

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE NORTHEAST CORNER OF LEELAND ST. AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

NOTES

1. EXTEND EXISTING SANITARY SERVICE LATERAL TO PROPOSED SANITARY SEWER. MATCH EXISTING SIZE AND FLOWLINE
2. CONNECT EXISTING SANITARY SERVICE LATERAL TO PROPOSED SANITARY SEWER
3. CUT, PLUG & ABANDON EXISTING SANITARY SEWER PER COH SPEC 02222
4. INSTALL PROP C.O. ON EXISTING SANITARY SERVICE LATERAL. SEE DETAIL –
5. 2"MILL AND OVERLAY FULL WIDTH OUTSIDE PAVEMENT REPAIR (HATCHED AREA) AND UP TO CURB RETURN AT INTERSECTING STREETS. SEE DETAIL –
6. ABANDON EXISTING SANITARY SEWER PER COH SPEC 02222 AFTER PROPOSED SANITARY SEWER IS IN SERVICE.
7. ABANDON EXISTING SANITARY MANHOLE
8. EXISTING SANITARY SERVICE PER CCTV INSPECTION REPORTS. (NOT FIELD VERIFIED)

▨ PAVEMENT REPAIR AND RESTORATION ACCORDING TO STREET CUT DETAILS: REFER COH DWG NOS 02902-01&02; 02951-01,02 & 03

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Texas Registered Surveying Firm No. 10028200

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FB NO.: P-6406

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DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

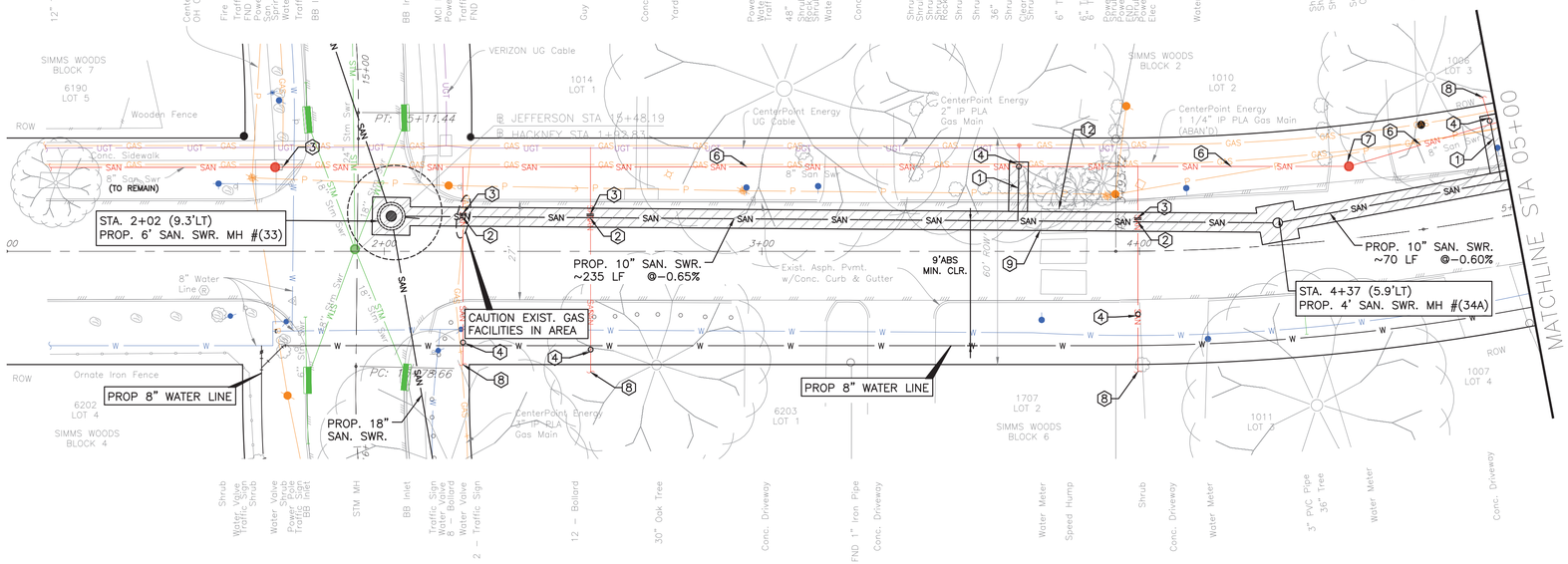
CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

JEFFERSON PLAN & PROFILE
STA 24+00 TO END

WBS NO.	R-001000-0036-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	SABEEN SHAIKH, P.E.
SHEET NO.	55 OF 195

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 2 - SAN.dwg May 15, 2026 3:39pm



NOTE: REFER SHEET 91 FOR WATERLINE REPLACEMENT.

CAUTION!!
EXISTING GAS FACILITIES
ALONG WEST ROW. CONTRACTOR TO BE
CAUTIOUS DURING INSTALLATION OF
SERVICE LATERALS AND CLEANOUTS.

TBM:

CP -016-MAG NAIL AT STA. 01+75.91,
13.14' RT, EL. 30.59

(1) REMOVE AND REPLACE DRIVEWAY/SIDEWALK/WHEELCHAIR RAMPS, AS SHOWN.

(9) BRACE AND SUPPORT POWER POLE.

(12) REMOVE AND REPLACE SPEED HUMP.

SHAFT SHAPE, & SIZE SHOWN IN FOR REPRESENTATION PURPOSE ONLY. CONTRACTOR SHALL DETERMINE APPROPRIATE SIZE AND SHAPE. BACKFILL SHAFT PER COH STD DETAIL 02317-08.

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

NOTES

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(2) CONNECT EXISTING SANITARY SERVICE LATERAL TO PROPOSED SANITARY SEWER

(3) CUT, PLUG & ABANDON EXISTING SANITARY SEWER PER COH SPEC 02222

(4) INSTALL PROP C.O. ON EXISTING SANITARY SERVICE LATERAL. SEE DETAIL 99 & 100

(5) 2"MILL AND OVERLAY FULL WIDTH OUTSIDE PAVEMENT REPAIR (HATCHED AREA) AND UP TO CURB RETURN AT INTERSECTING STREETS. SEE DETAIL 112

(6) ABANDON EXISTING SANITARY SEWER PER COH SPEC 02222 AFTER PROPOSED SANITARY SEWER IS IN SERVICE.

(7) ABANDON EXISTING SANITARY MANHOLE

(8) EXISTING SANITARY SERVICE PER CCTV INSPECTION REPORTS. (NOT FIELD VERIFIED)

(9) REMOVE AND REPLACE TRAFFIC SIGN

(10) REMOVE AND REPLACE WATER METER

PAVEMENT REPAIR AND RESTORATION ACCORDING TO STREET CUT DETAILS; REFER COH DWG NOS 02902-01&02; 02951-01,02 & 03

REMOVE AND REPLACE DRIVEWAY/SIDEWALK/WHEELCHAIR RAMPS, AS SHOWN.

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Date

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Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
FB NO.: P-6406

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NAME P.E. NO.

DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

HACKNEY PLAN STA 1+00 TO 5+00

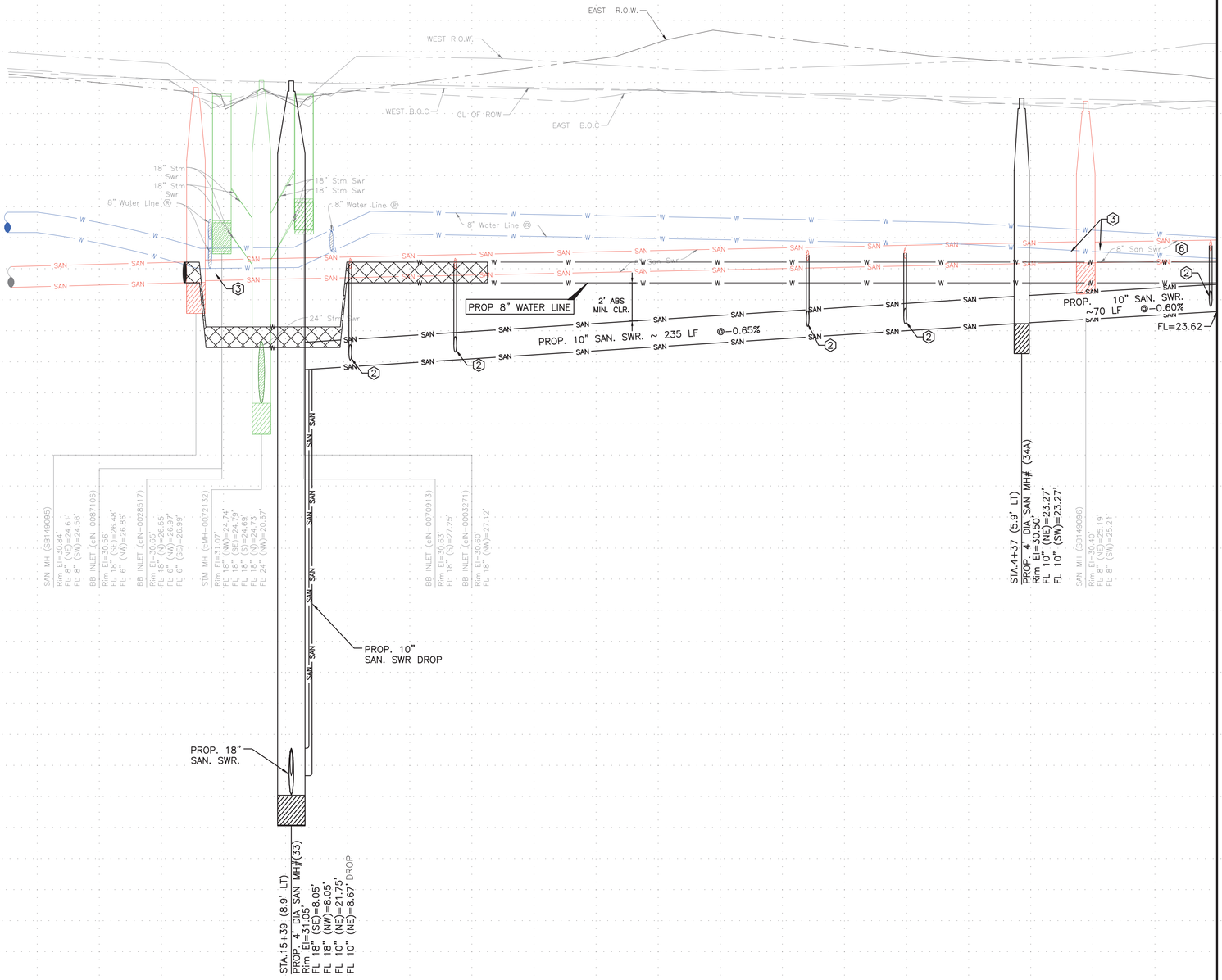
WBS NO. R-001000-0036-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON, PM	
SABEEN SHAIKH, P.E.	
SHEET NO. **56** OF 195	

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3

P:\Coda\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 2 - SAN.dwg May 15, 2026 3:39pm

SEE SHEET 56
FOR PROFILE

NOTE: REFER SHEET 91 FOR WATERLINE REPLACEMENT.



01+00 02+00 03+00 04+00 05+00

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3

P:\Cada\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 2 - SAN.dwg May 15, 2026 3:40pm

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

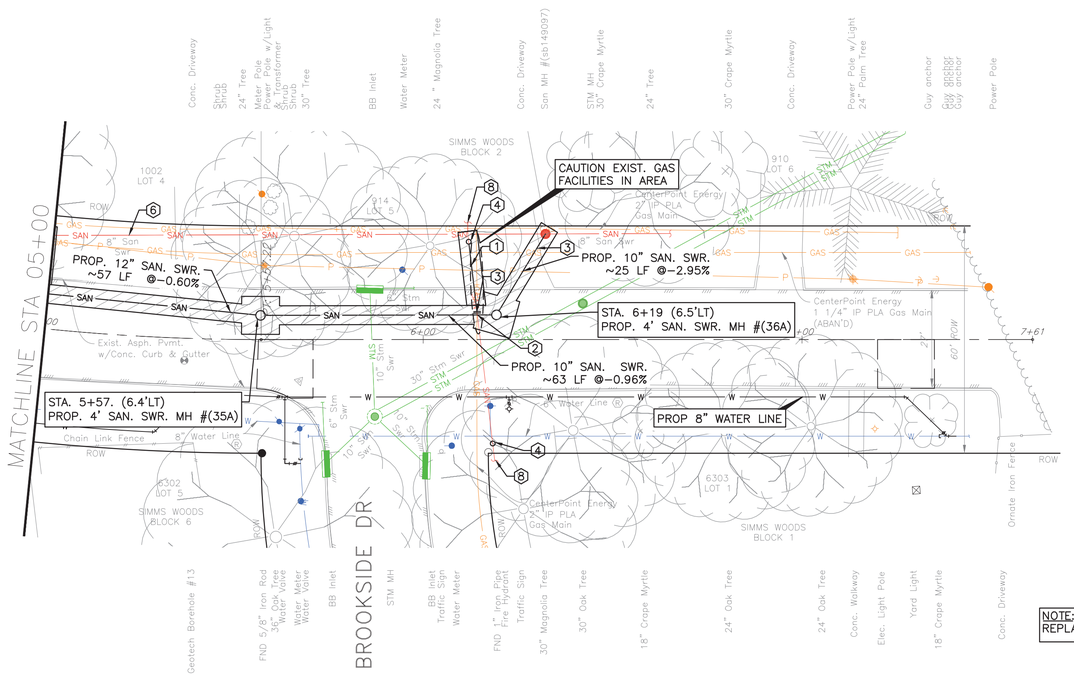
HACKNEY PROFILE
STA 1+00 TO 5+00

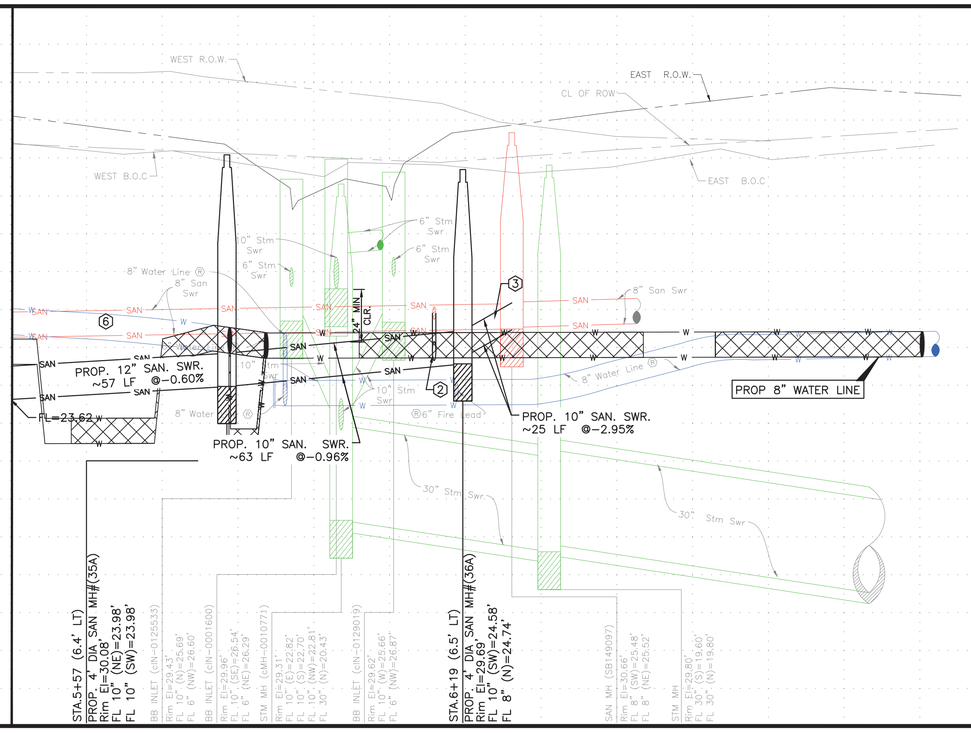
WBS NO.
R-001000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. **57** OF 195





NOTE:

PROJECT BENCH MARK:

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ALUMINIUM DISK LOCATED ON THE
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ELEVATION = 34.16' Geoid 18

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PAVEMENT REPAIR AND RESTORATION ACCORDING TO STREET CUT DETAILS: REFER COH DWG NOS 02902-01&02; 02951-01,02 & 03

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11. REMOVE AND REPLACE DRIVEWAY/SIDEWALK/WHEELCHAIR RAMPS, AS SHOWN.
12. BRACE AND SUPPORT POWER POLE.

NOTE: REFER SHEET 92 FOR WATERLINE REPLACEMENT.

CAUTION!!
EXISTING GAS FACILITIES
ALONG WEST ROW. CONTRACTOR TO BE
CAUTIOUS DURING INSTALLATION OF
SERVICE LATERALS AND CLEANOUTS.

TBM:

CP-017-MAG NAIL AT STA. 05+67.26,
10.91' RT, EL. 29.75

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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Texas Registered Engineering Firm No. F-4528
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SURVEYED BY: AMANI
FB NO.: P-6406

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MAHESH DUTTA 114252
NAME P.E. NO.

DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

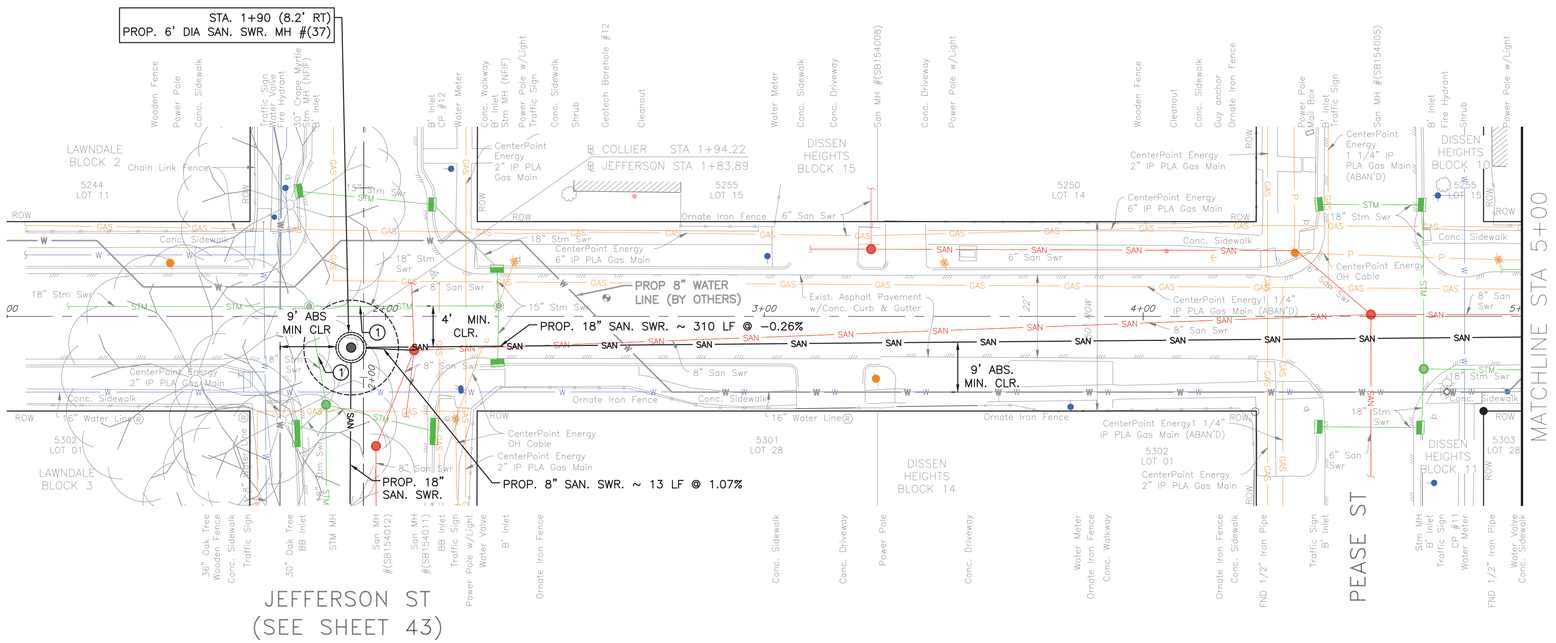
CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

HACKNEY PLAN & PROFILE STA 5+00 TO END

WBS NO.	R-001000-0036-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	SABEEN SHAIKH, P.E.
SHEET NO.	58 OF 195

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3

P:\Coda\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 2 - SAN.dwg May 15, 2026 3:40pm



COLLIER ST (50' R.O.W.)

SEE SHEET 60
FOR PROFILE

TBM:

CP 11 X-CUT AT STA. 04+80.33' 20.37' RT, EL. 34.08
CP 12 MAG NAIL AT STA. 2+12.73' 11.11' LT, EL. 33.38

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

NOTES

SHAFT SHAPE, & SIZE SHOWN IS FOR REPRESENTATION PURPOSE ONLY. CONTRACTOR SHALL DETERMINE APPROPRIATE SIZE AND SHAPE. BACKFILL SHAFT PER COH STD DETAIL 02317-08.

① REMOVE AND REPLACE STORM SEWER AS NEEDED DURING CONSTRUCTION. COST OF REMOVAL, REPLACEMENT AND MAINTENANCE IS INCIDENTAL TO SHAFT.

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NAME P.E. NO.

DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

COLLIER PLAN STA 1+00 TO 6+00

WBS NO.
R-001000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM

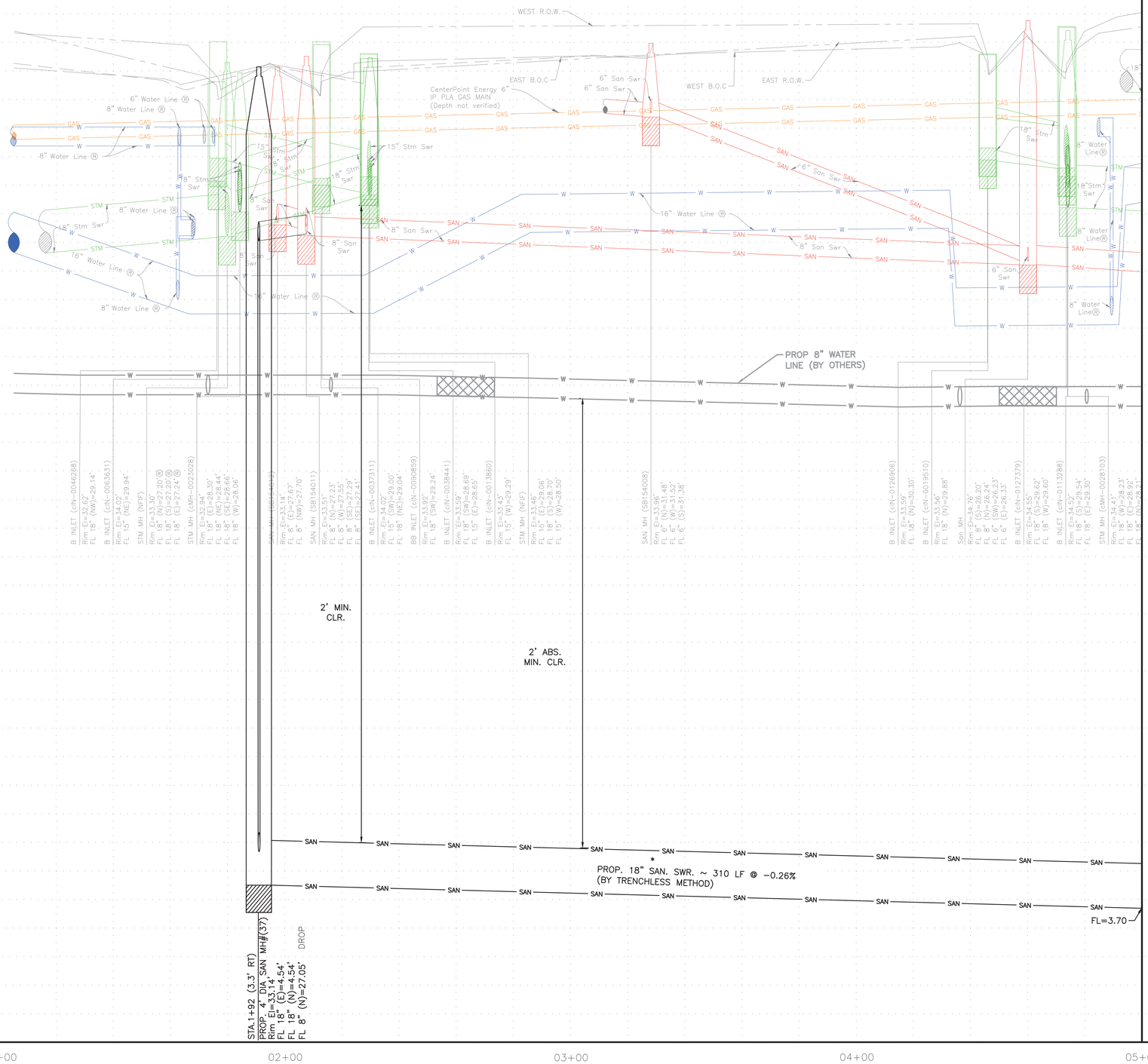
SABEEN SHAIKH, P.E.

SHEET NO. **59** OF 195

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 3 - SAN.dwg May 15, 2026 3:41pm

SEE SHEET 59
FOR PLAN



* PIPE MATERIAL SHALL BE EXTRA STRENGTH CLAY PIPE OR FIBER GLASS PER SPEC 02441

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

COLLIER PROFILE
STA 1+00 TO 6+00

WBS NO.
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DRAWING SCALE
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CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO.60 OF 195

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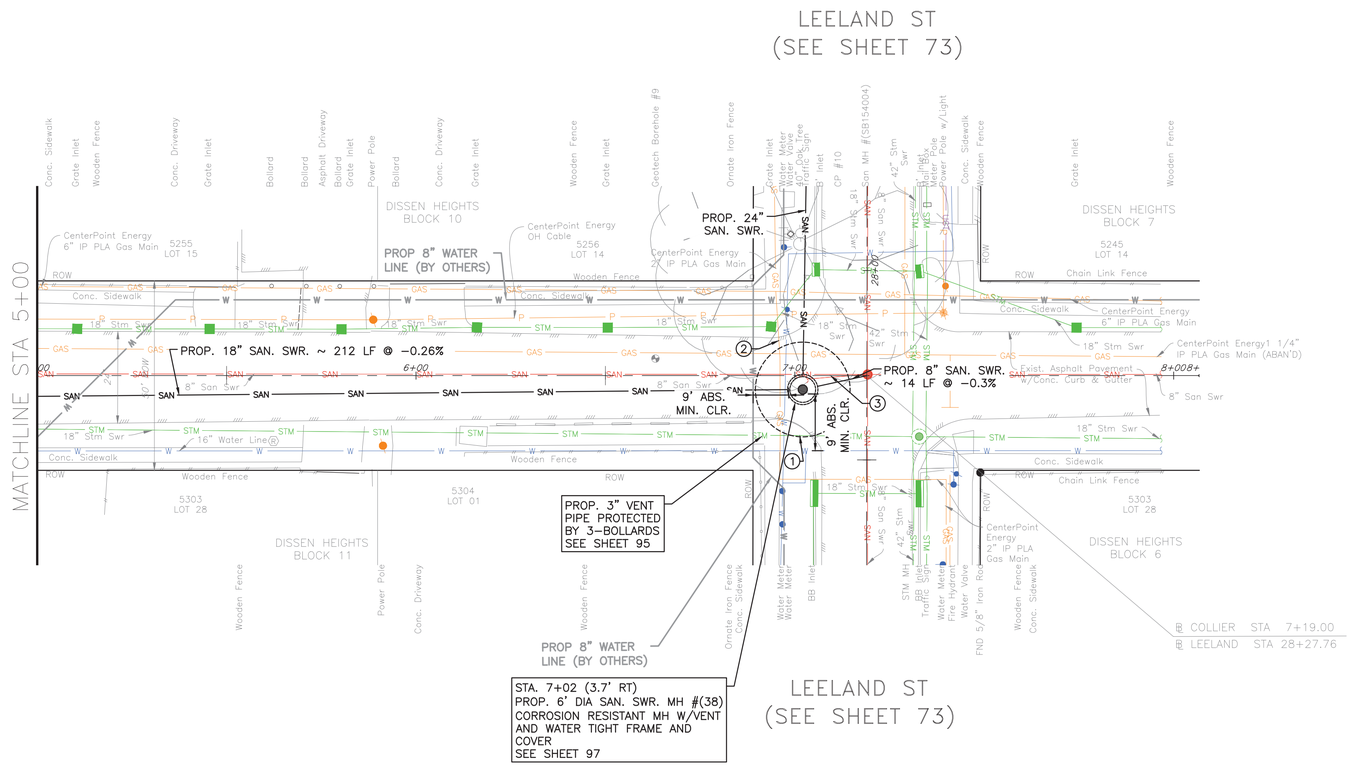

COLLIER ST (50' R.O.W.)

SEE SHEET 62
FOR PROFILE

NOTE:

PROJECT BENCH MARK:

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② UTILITY TO BE RELOCATED BY OTHERS

③ REMOVE AND REPLACE 8" SANITARY SEWER AS NEEDED. COST IS INCIDENTAL TO SHAFT.

TBM:

CP 10 MAG NAIL AT STA. 07+11.54' 17.31' LT, EL. 33.57

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MAHESH DUTTA 114252
NAME P.E. NO.

DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

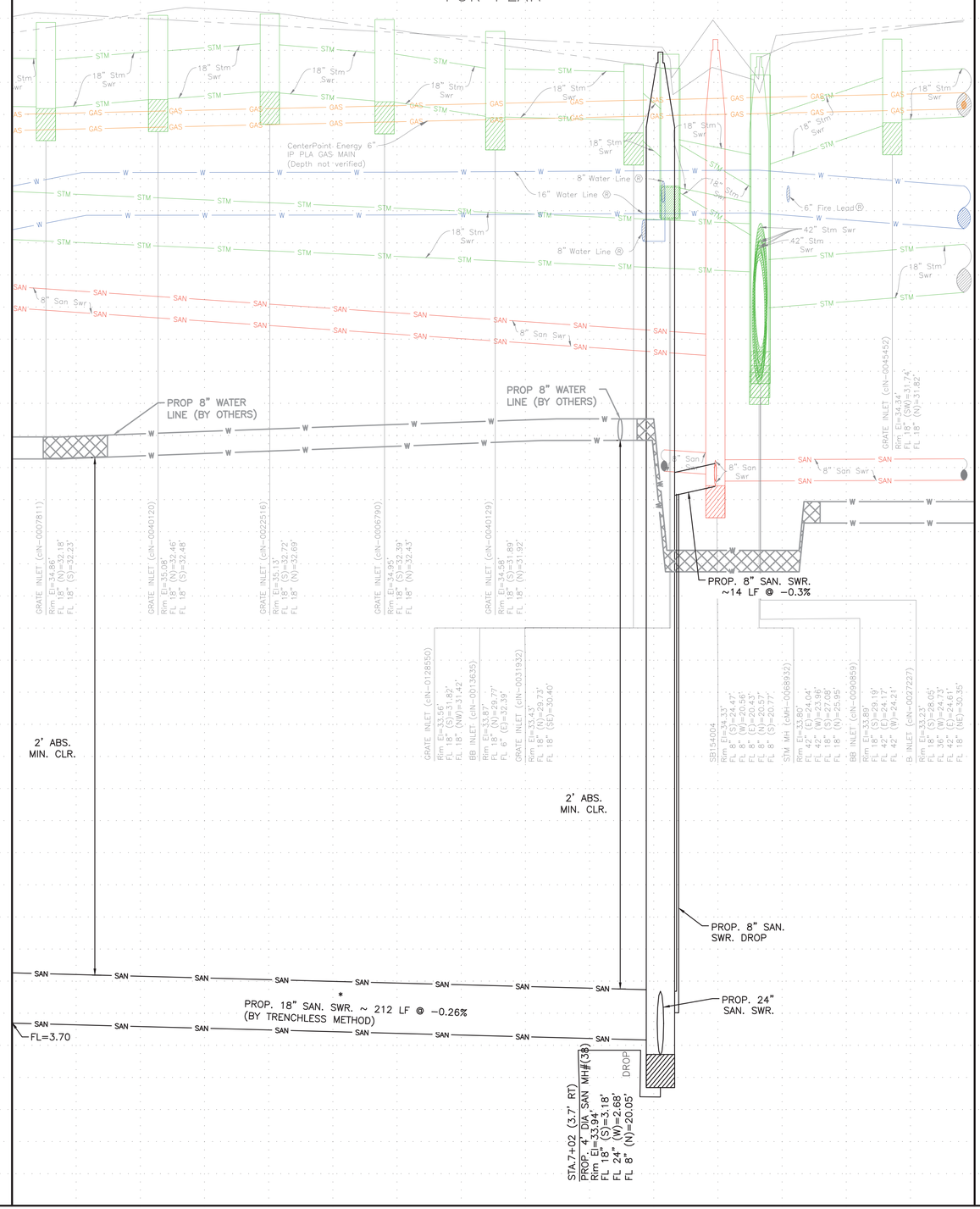
COLLIER PLAN STA 5+00 TO END

WBS NO. R-001000-0036-3
DRAWING SCALE
1"=20'
CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.
SHEET NO. **61** OF 195

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Prs\P&P Sheet 3 - SAN.dwg May 15, 2026 3:42pm

SEE SHEET 61
FOR PLAN



* PIPE MATERIAL SHALL BE EXTRA STRENGTH CLAY PIPE OR FIBER GLASS PER SPEC 02441 (TYP)

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VERIFICATION OF PRIVATE UTILITY LINES

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Signature valid for six months.

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AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
FB NO.: P-6406

PRELIMINARY

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HOUSTON PUBLIC WORKS

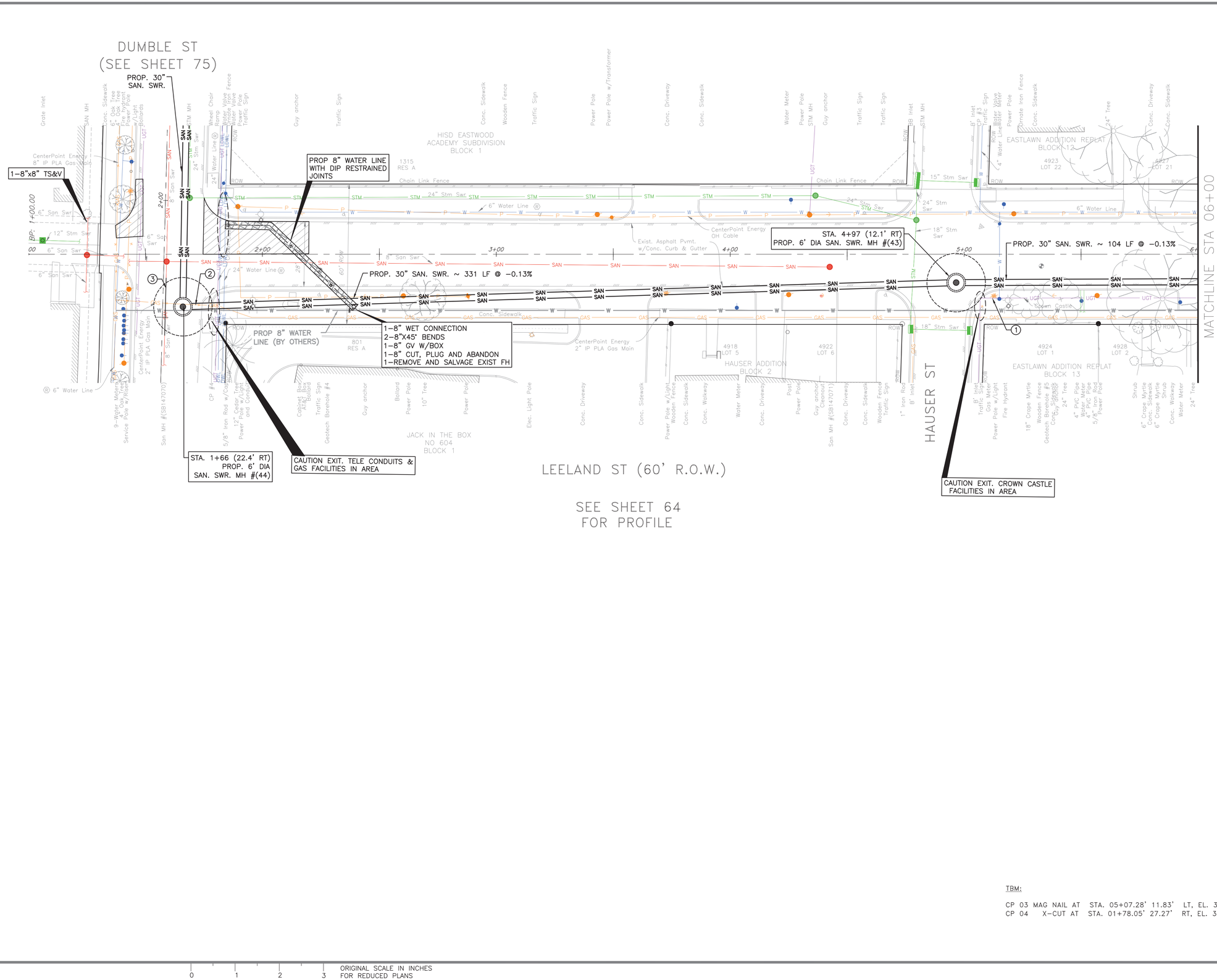
CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

COLLIER PROFILE
STA 5+00 TO END

WBS NO.	R-001000-0036-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	SABEEN SHAIKH, P.E.
SHEET NO.	62 OF 195

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 3 - SAN.dwg May 15, 2026 3:42pm

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



TBM:

CP 03 MAG NAIL AT STA. 05+07.28' 11.83' LT, EL. 33.97
CP 04 X-CUT AT STA. 01+78.05' 27.27' RT, EL. 32.32

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

NOTES

- SHAFT SHAPE, & SIZE SHOWN IN FOR REPRESENTATION PURPOSE ONLY. CONTRACTOR SHALL DETERMINE APPROPRIATE SIZE AND SHAPE. BACKFILL SHAFT PER COH STD DETAIL 02317-08.
- (1) BRACE AND SUPPORT POWER POLE DURING CONSTRUCTION
- (2) UTILITY TO BE RELOCATED BY OTHERS
- (3) REMOVE AND REPLACE 8" SANITARY SEWER AS NEEDED. COST IS INCIDENTAL TO SHAFT
- CRITICAL LOCATION SEE COH SPEC 02317
- PAVEMENT REPAIR AND RESTORATION ACCORDING TO STREET CUT DETAILS: REFER COH DWG NOS 02902-01&02; 02951-01,02 & 03

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TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

LEELAND PLAN STA 1+00 TO 6+00

WBS NO.
R-001000-0036-3

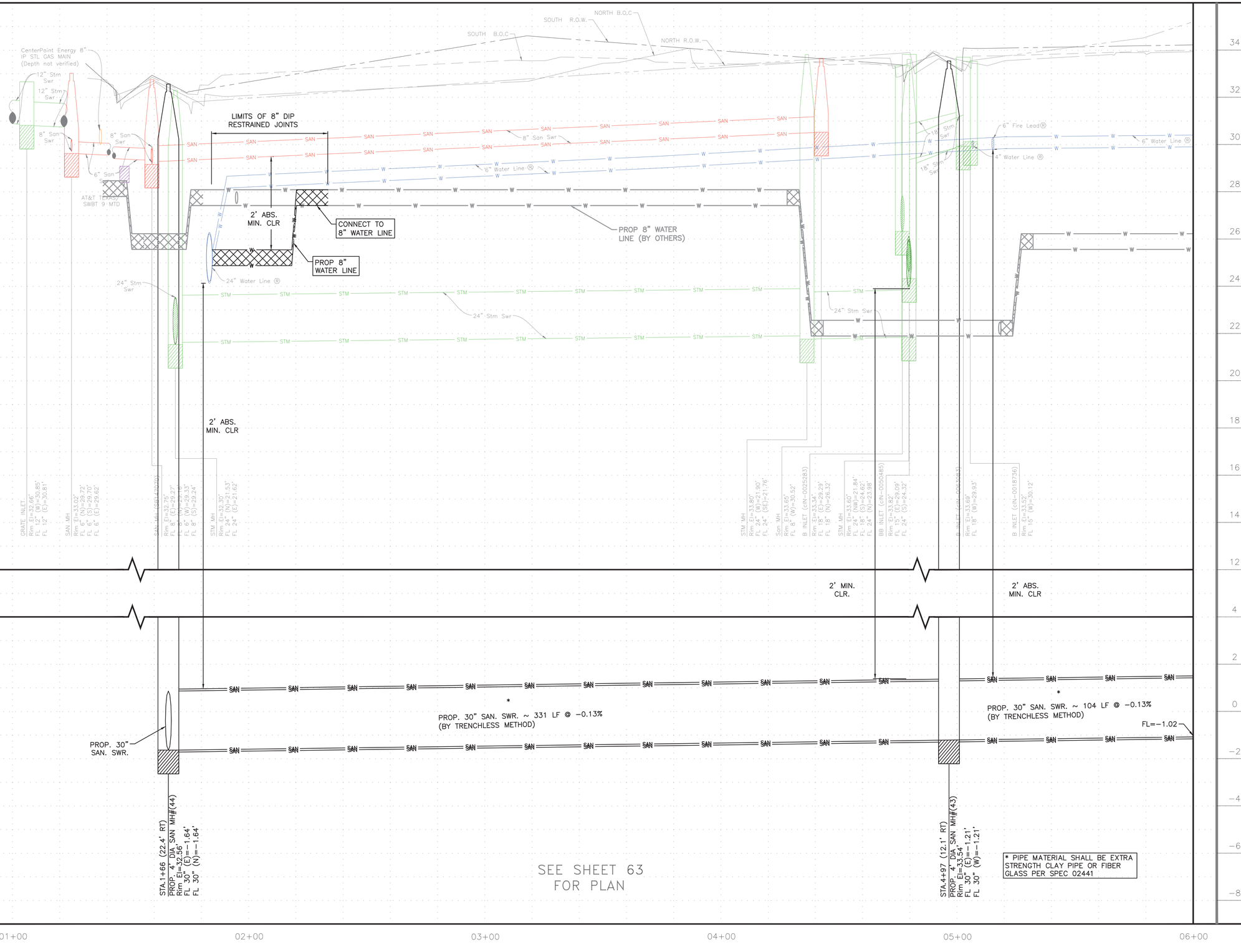
DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. 63 OF 195

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Prs\P&P Sheet 3 - SAN.dwg May 15, 2026 3:42pm



ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&P\P&P Sheet 3 - SAN.dwg May 15, 2026 3:43pm

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DATE 05/15/2026
TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5 SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

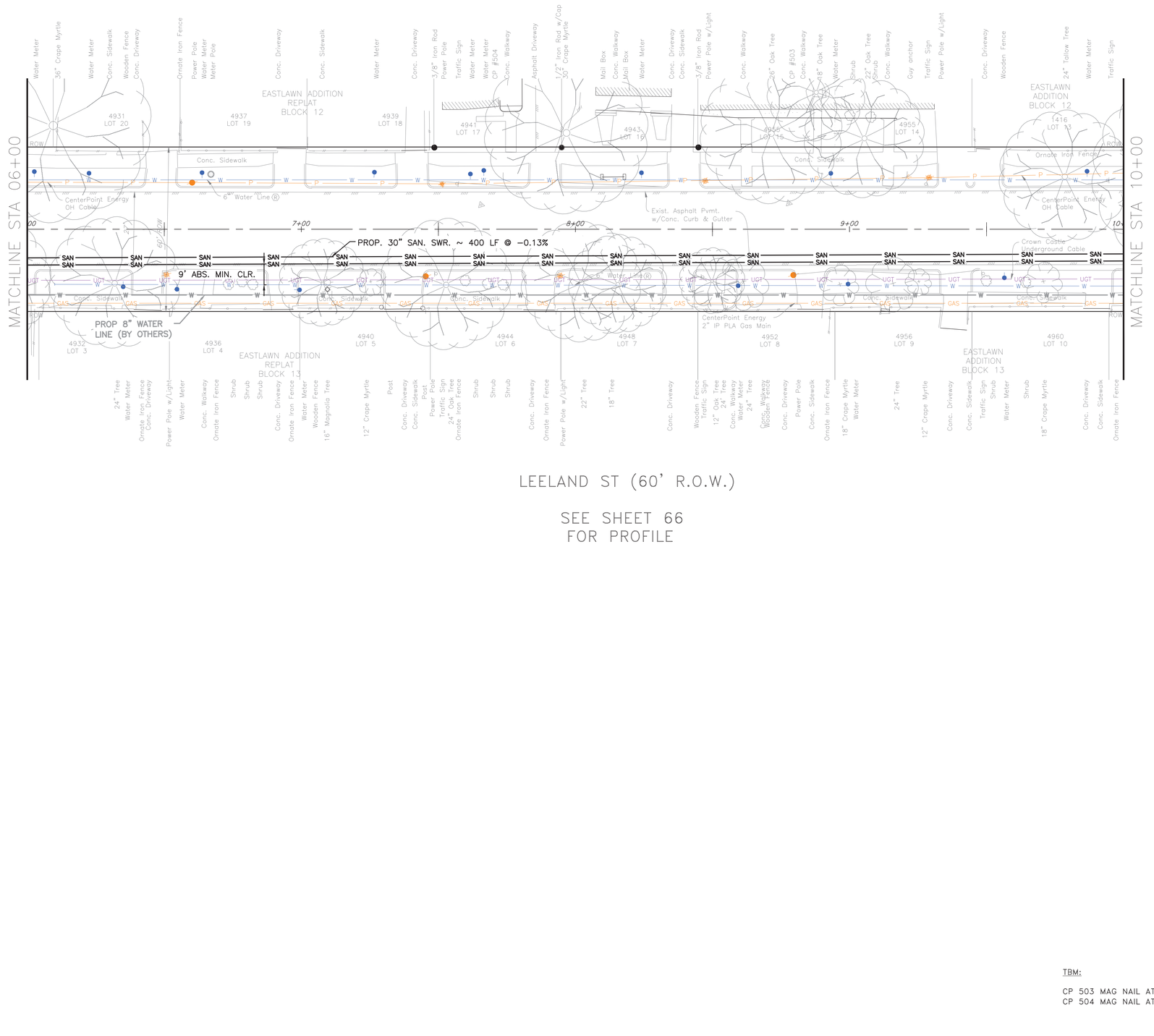
LEELAND PROFILE STA 1+00 TO 6+00

WBS NO.
R-001000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO.**64** OF 195



LEELAND ST (60' R.O.W.)

SEE SHEET 66
FOR PROFILE

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

TBM:

CP 503 MAG NAIL AT STA. 08+77.87' 9.45' LT, EL. 34.15
CP 504 MAG NAIL AT STA. 07+65.59' 8.85' LT, EL. 34.37

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HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

LEELAND PLAN STA 6+00 TO 10+00

WBS NO.
R-001000-0036-3

DRAWING SCALE
1"=20'

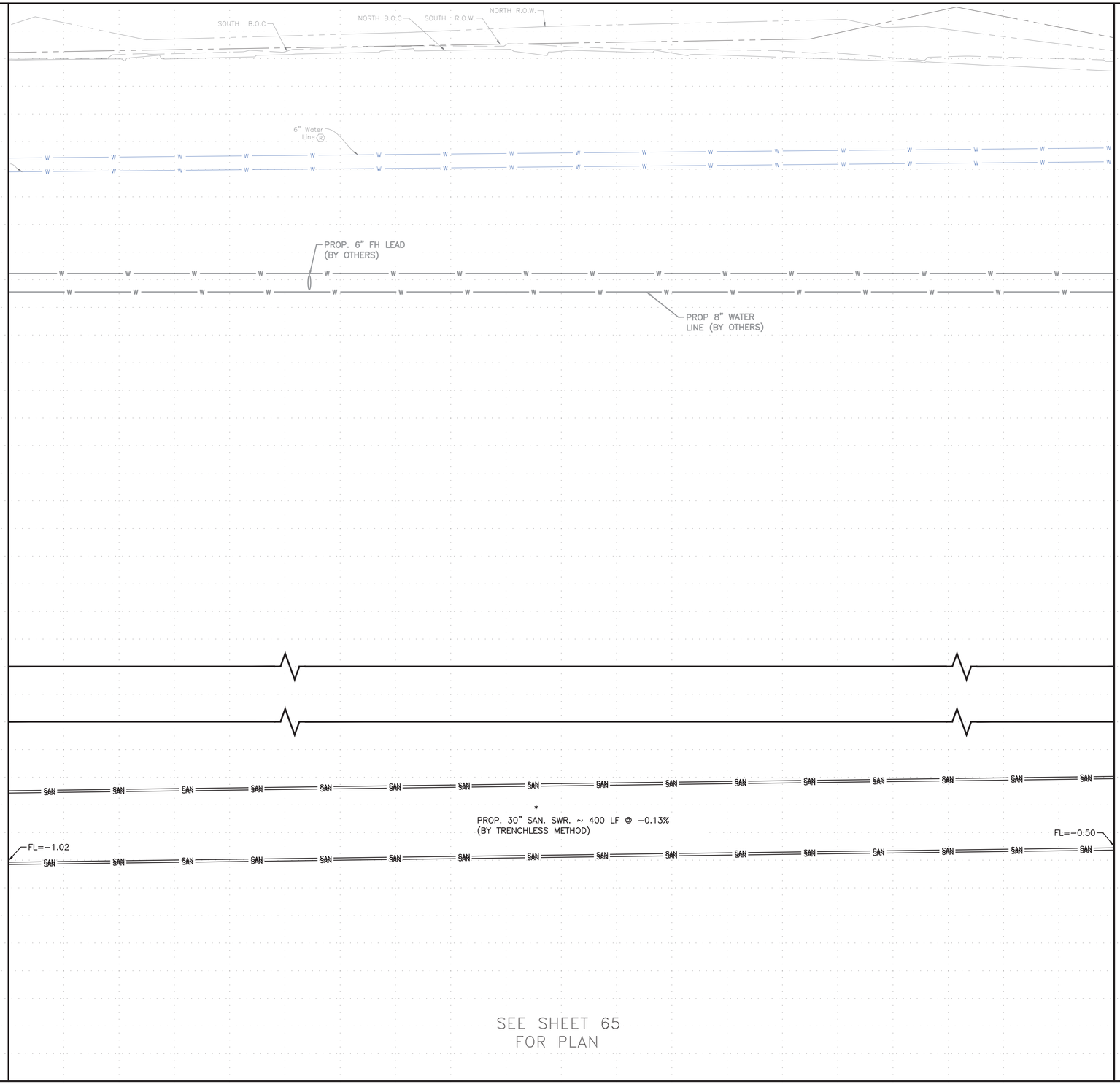
CITY OF HOUSTON, PM

SABEEN SHAIKH, P.E.

SHEET NO. **65** OF 195

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 3 - SAN.dwg May 15, 2026 3:43pm



P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&P\P&P Sheet 3 - SAN.dwg May 15, 2026 3:44pm

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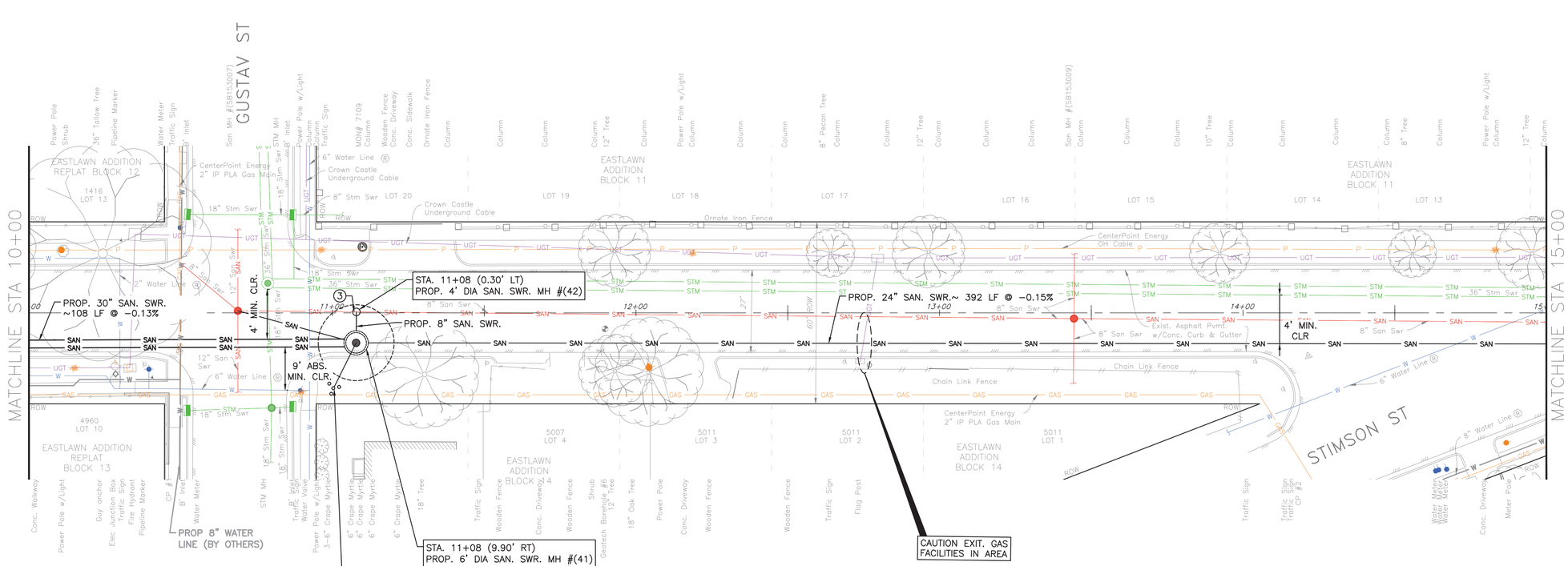
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5 SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

LEELAND PROFILE STA 6+00 TO 10+00

WBS NO.	R-001000-0036-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	SABEEN SHAIKH, P.E.
SHEET NO.	66 OF 195



TBM:

CP 01 MAG NAIL AT STA. 10+49.49' 12.26' RT, EL. 33.80
CP 02 MAG NAIL AT STA. 14+21.52' 14.22' RT, EL. 35.28

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109 ALUMINIUM DISK LOCATED ON THE NORTHEAST CORNER OF LEELAND ST. AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

NOTES

SHAFT SHAPE, & SIZE SHOWN IN FOR REPRESENTATION PURPOSE ONLY. CONTRACTOR SHALL DETERMINE APPROPRIATE SIZE AND SHAPE. BACKFILL SHAFT PER COH STD DETAIL 02317-08.

③ REMOVE AND REPLACE 8" SANITARY SEWER AS NEEDED. COST IS INCIDENTAL TO SHAFT

CRITICAL LOCATION SEE COH SPEC 02317

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

LEELAND PLAN STA 10+00 TO 15+00

WBS NO.
R-001000-0036-3

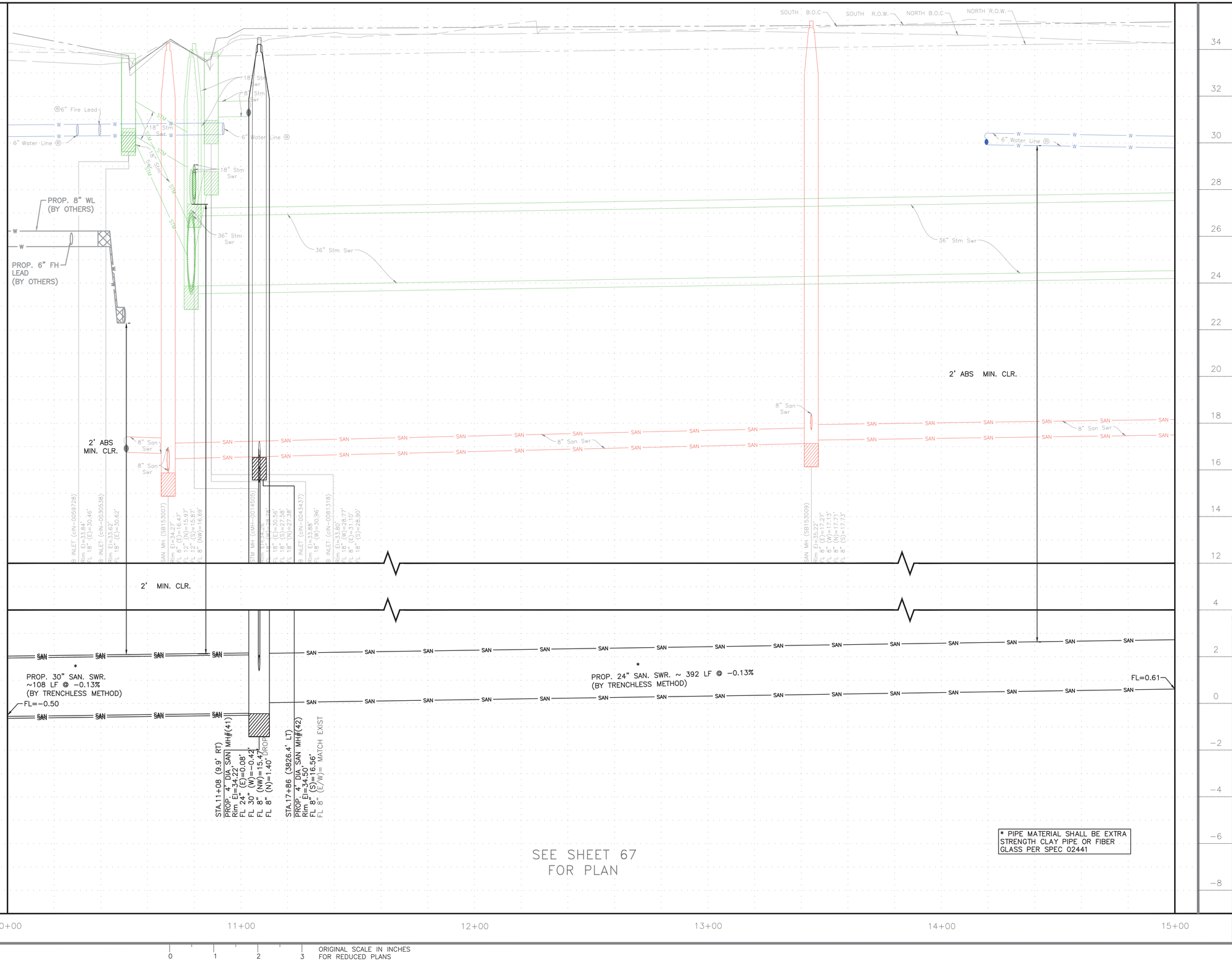
DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. 67 OF 195

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 3 - SAN.dwg May 15, 2026 3:44pm



0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 3 - SAN.dwg May 15, 2026 3:44pm

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

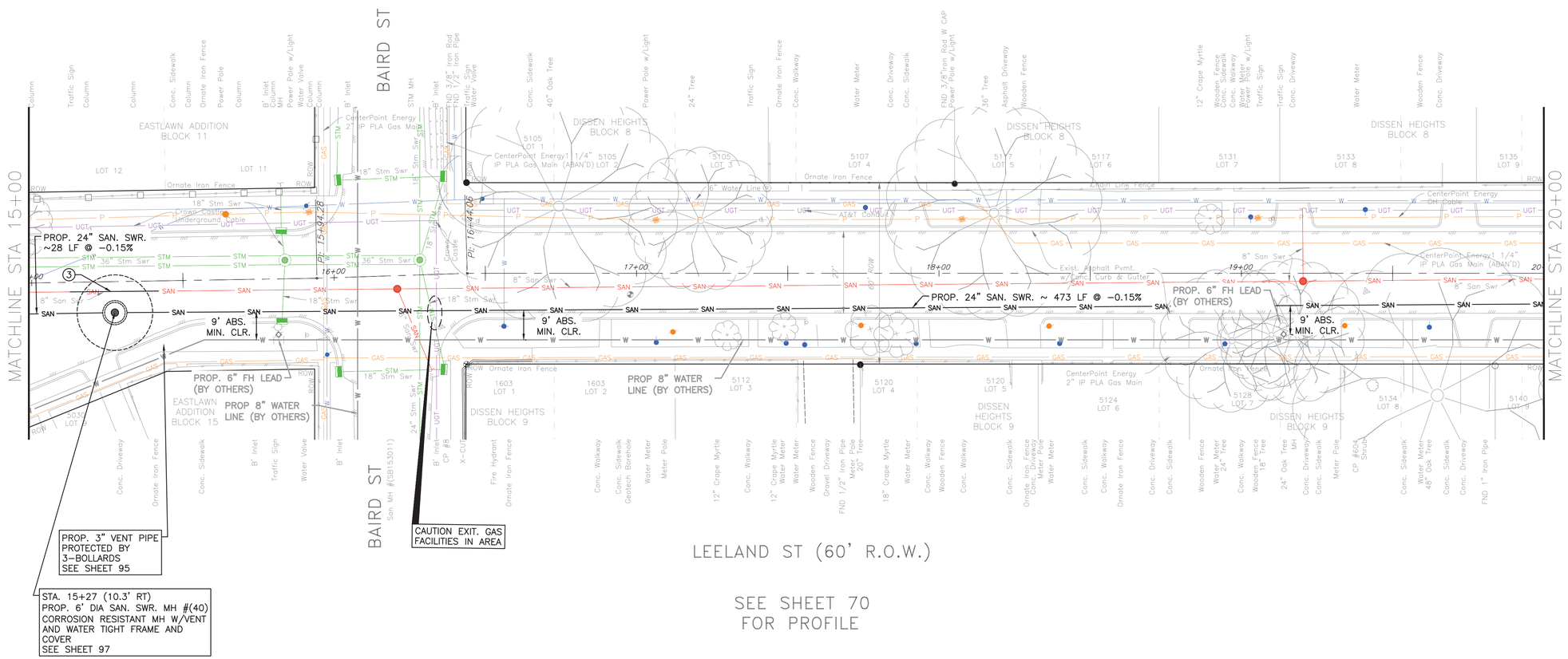
LEELAND PROFILE STA 10+00 TO 15+00

WBS NO.
R-001000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. **68** OF 195



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HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

LEELAND PLAN STA 15+00 TO 20+00

WBS NO. R-001000-0036-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON, PM	
SABEEN SHAIKH, P.E.	
SHEET NO. 69 OF 195	

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

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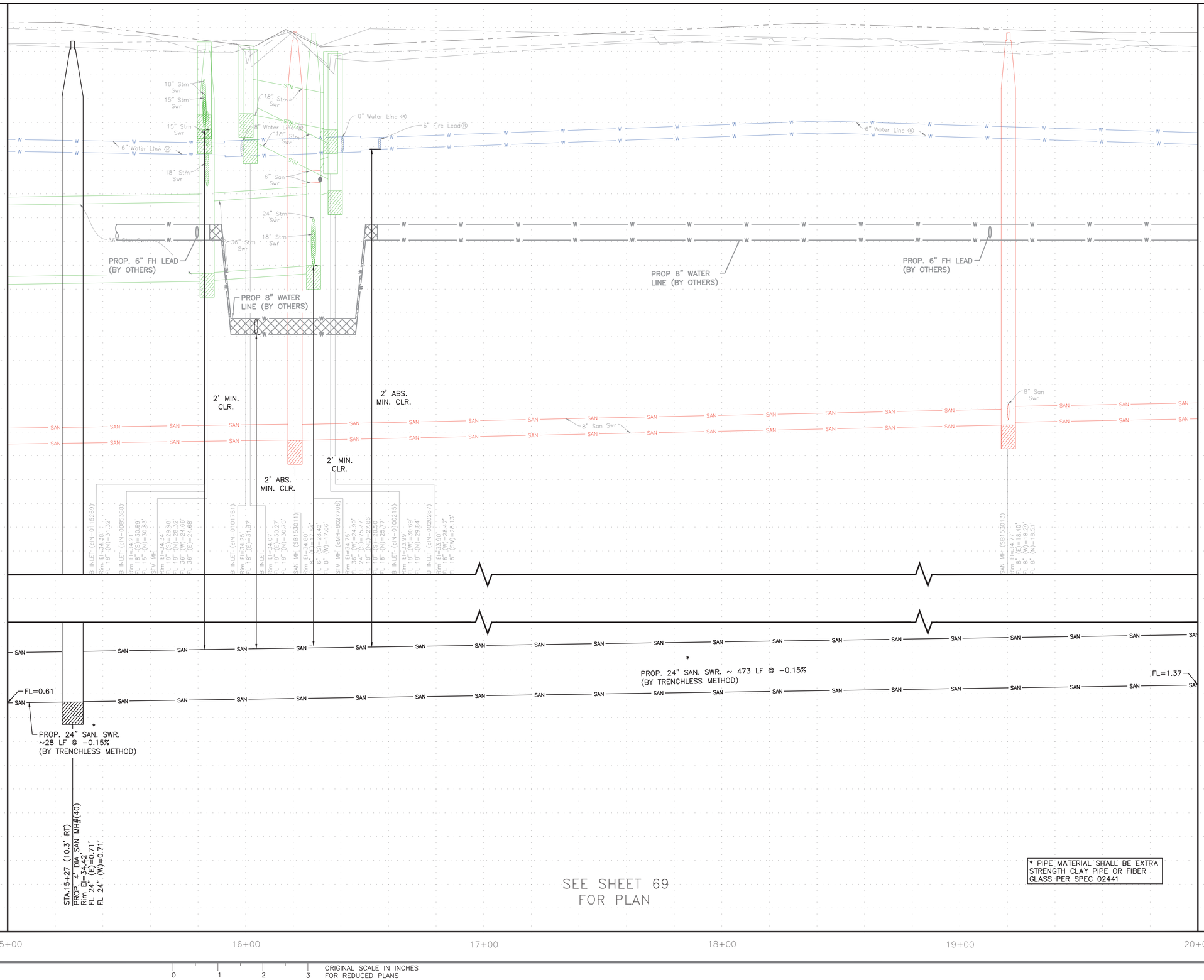

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 3 - SAN.dwg May 15, 2026 3:45pm

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5 SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

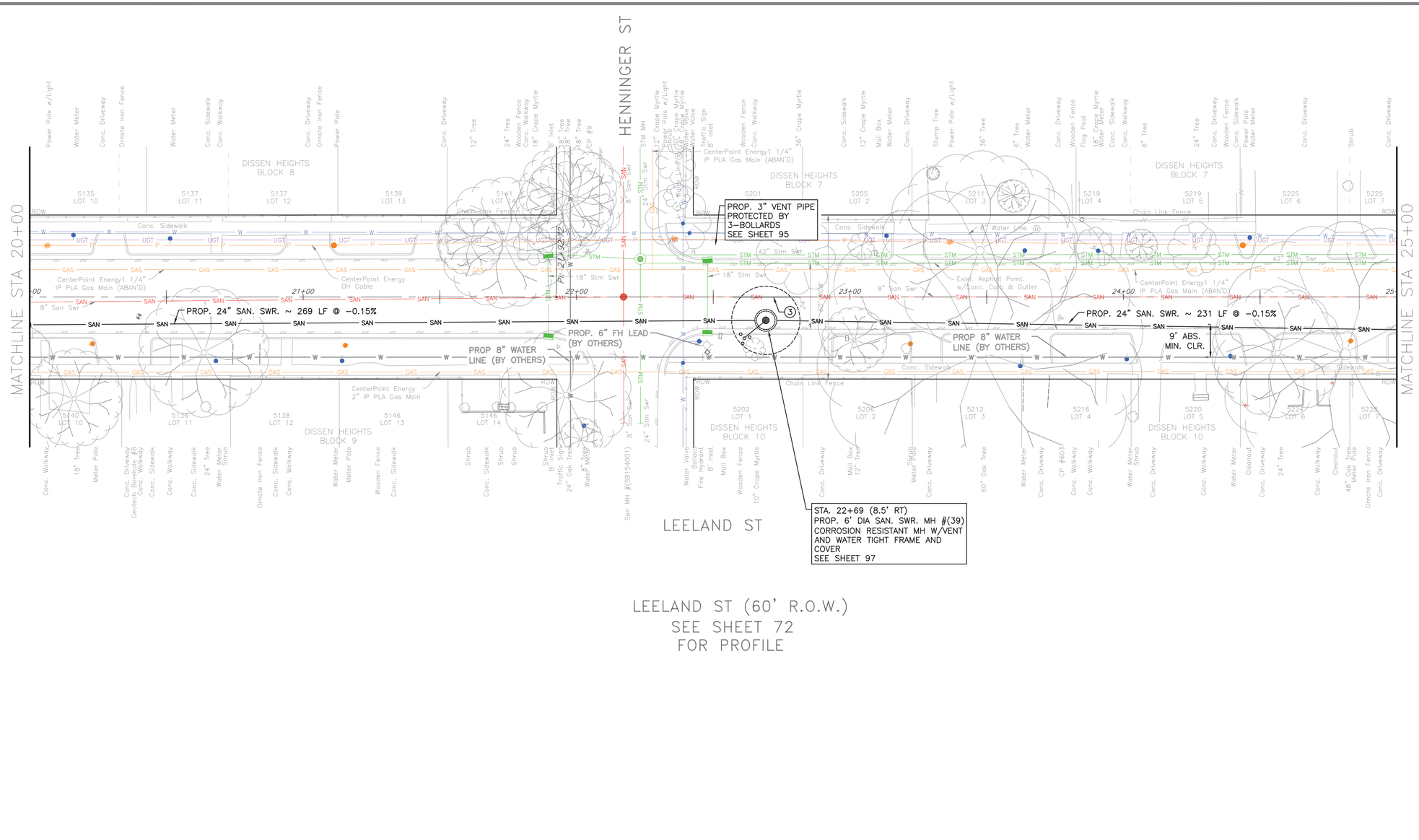
LEELAND PROFILE STA 15+00 TO 20+00

WBS NO.
R-001000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO.**70** OF **195**



LEELAND ST (60' R.O.W.)
SEE SHEET 72
FOR PROFILE

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE NORTHEAST CORNER OF LEELAND ST. AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

NOTES

SHAFT SHAPE, & SIZE SHOWN IN FOR REPRESENTATION PURPOSE ONLY. CONTRACTOR SHALL DETERMINE APPROPRIATE SIZE AND SHAPE. BACKFILL SHAFT PER COH STD DETAIL 02317-08.

③ REMOVE AND REPLACE 8" SANITARY SEWER AS NEEDED. COST IS INCIDENTAL TO SHAFT

TBM:

CP 09 MAG NAIL AT STA. 22+04.14' 16.43' LT, EL. 33.50

NOTICE:

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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Date

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

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
FB NO.: P-6406

PRELIMINARY

FOR INTERIM REVIEW ONLY

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MAHESH DUTTA 114252
NAME P.E. NO.

DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

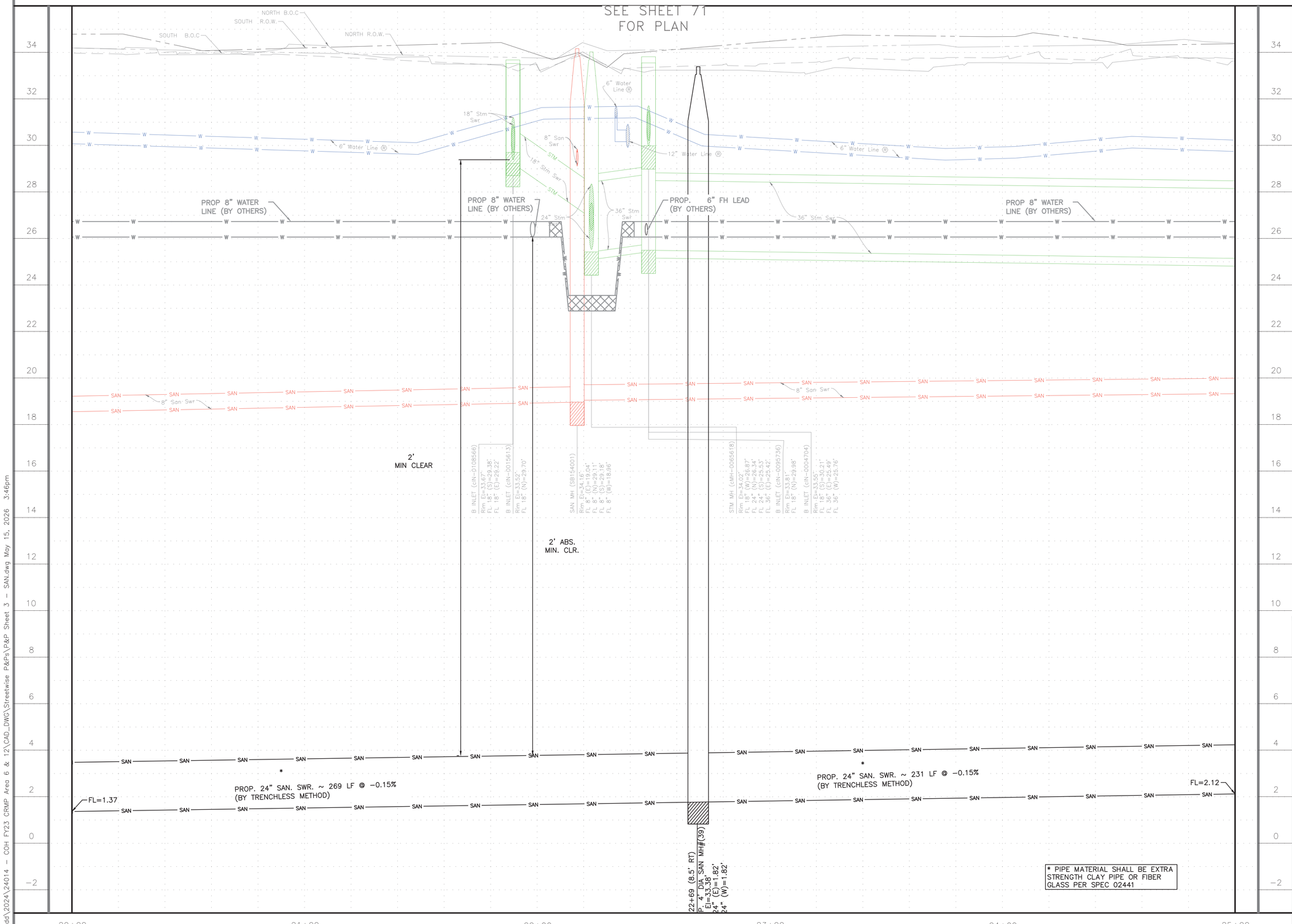
CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

LEELAND PLAN STA 20+00 TO 25+00

WBS NO. R-001000-0036-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON, PM	
SABEEN SHAIKH, P.E.	
SHEET NO. 71 OF 195	

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3

P:\Coda\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 3 - SAN.dwg May 15, 2026 3:46pm



P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&P\P&P Sheet 3 - SAN.dwg May 15, 2026 3:46pm

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

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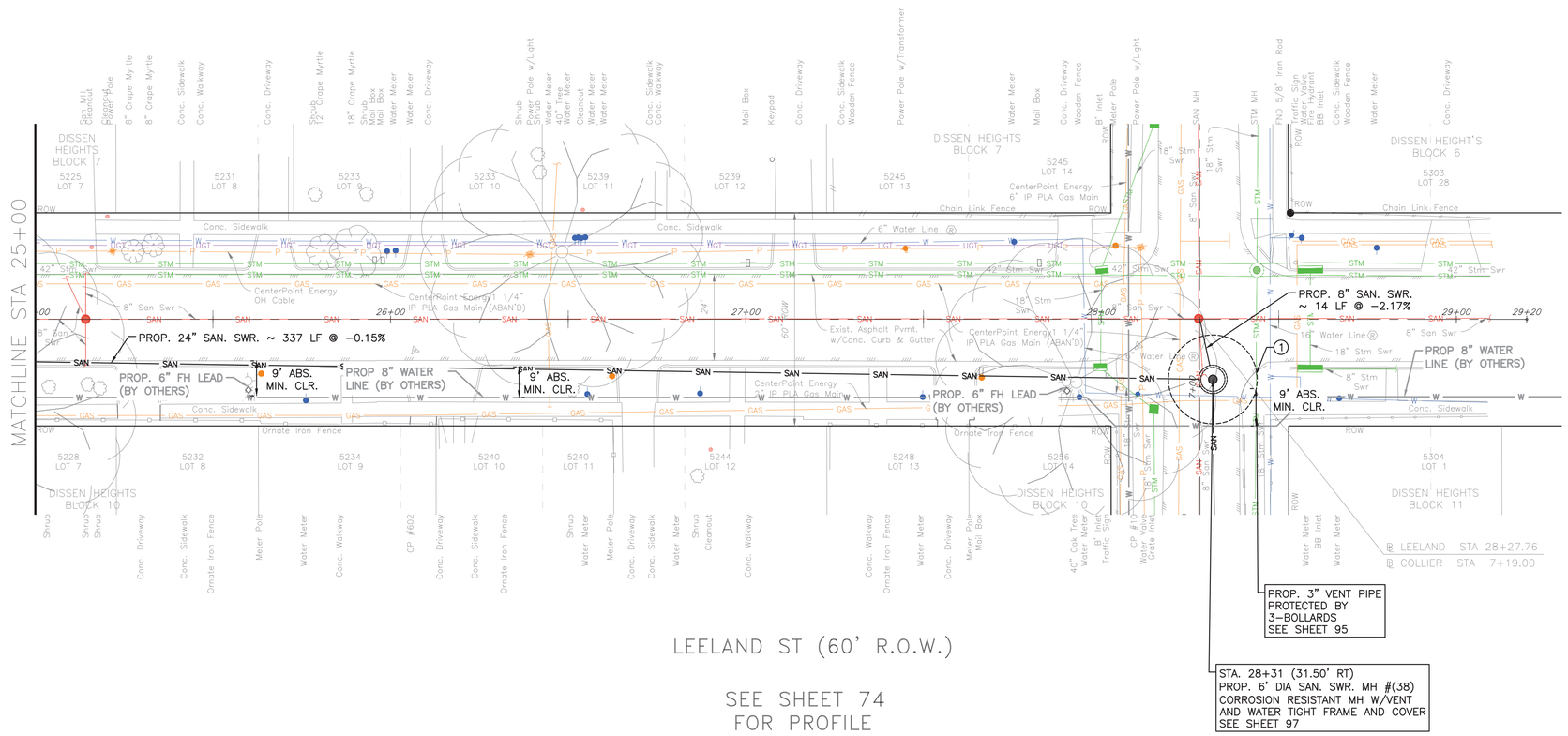
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

LEELAND PROFILE STA 20+00 TO 25+00

WBS NO. R-001000-0036-3	
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	SABEEN SHAIKH, P.E.
SHEET NO.**72** OF 195	



LEELAND ST (60' R.O.W.)

SEE SHEET 74
FOR PROFILE

COLLIER ST
(SEE SHEET 61)

TBM:

CP 010 MAG NAIL AT STA. 28+10.46' 7.48' RT, EL. 33.58
CP 602 MAG NAIL AT STA. 23+76.92' 7.59' RT, EL. 33.83

N

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE NORTHEAST CORNER OF LEELAND ST. AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

NOTES

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

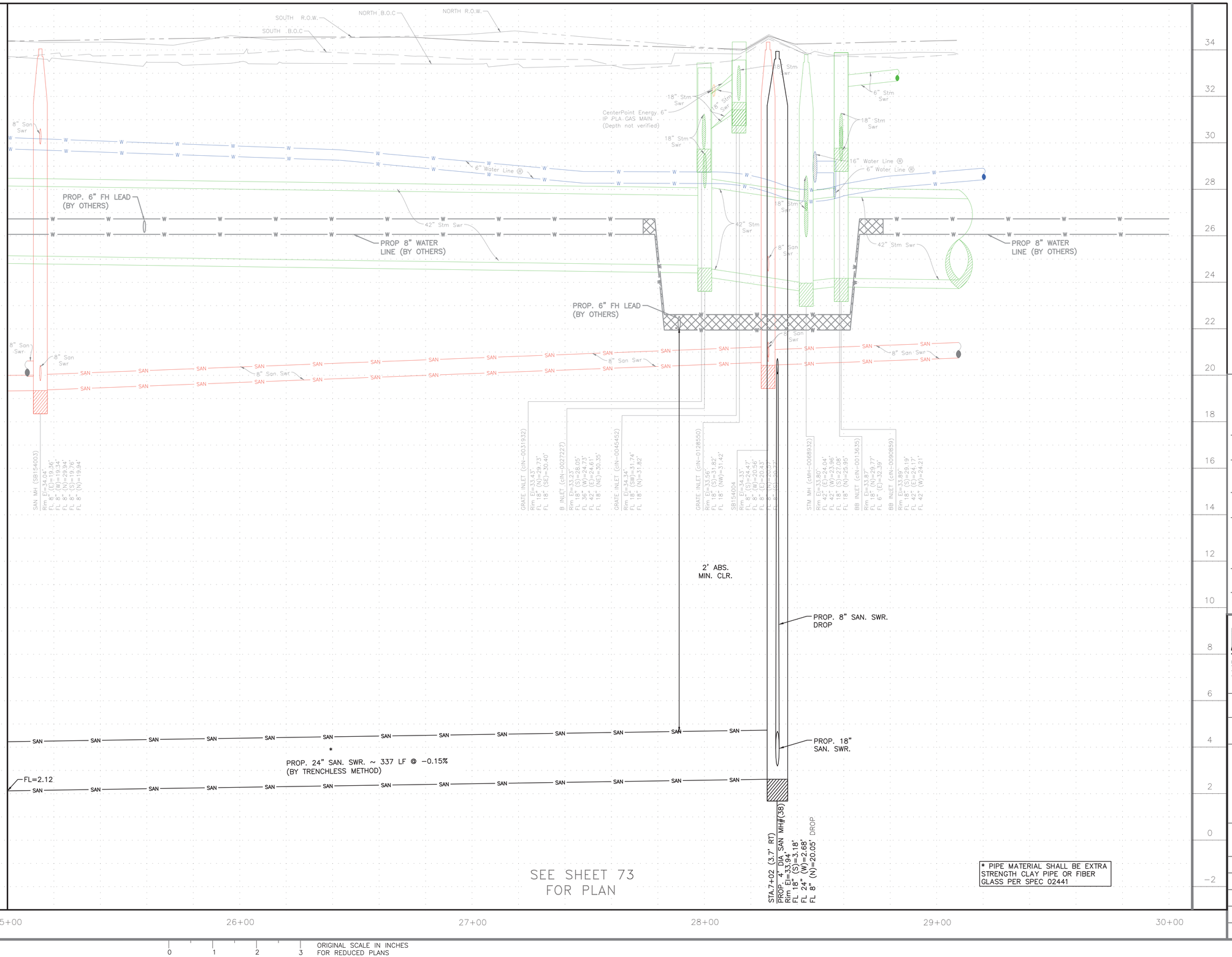
CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

LEELAND PLAN STA 25+00 TO END

WBS NO. R-001000-0036-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON, PM	
SABEEN SHAIKH, P.E.	
SHEET NO. **73** OF 195	

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Prs\P&P Sheet 3 - SAN.dwg May 15, 2026 3:46pm



P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 3 - SAN.dwg May 15, 2026 3:47pm

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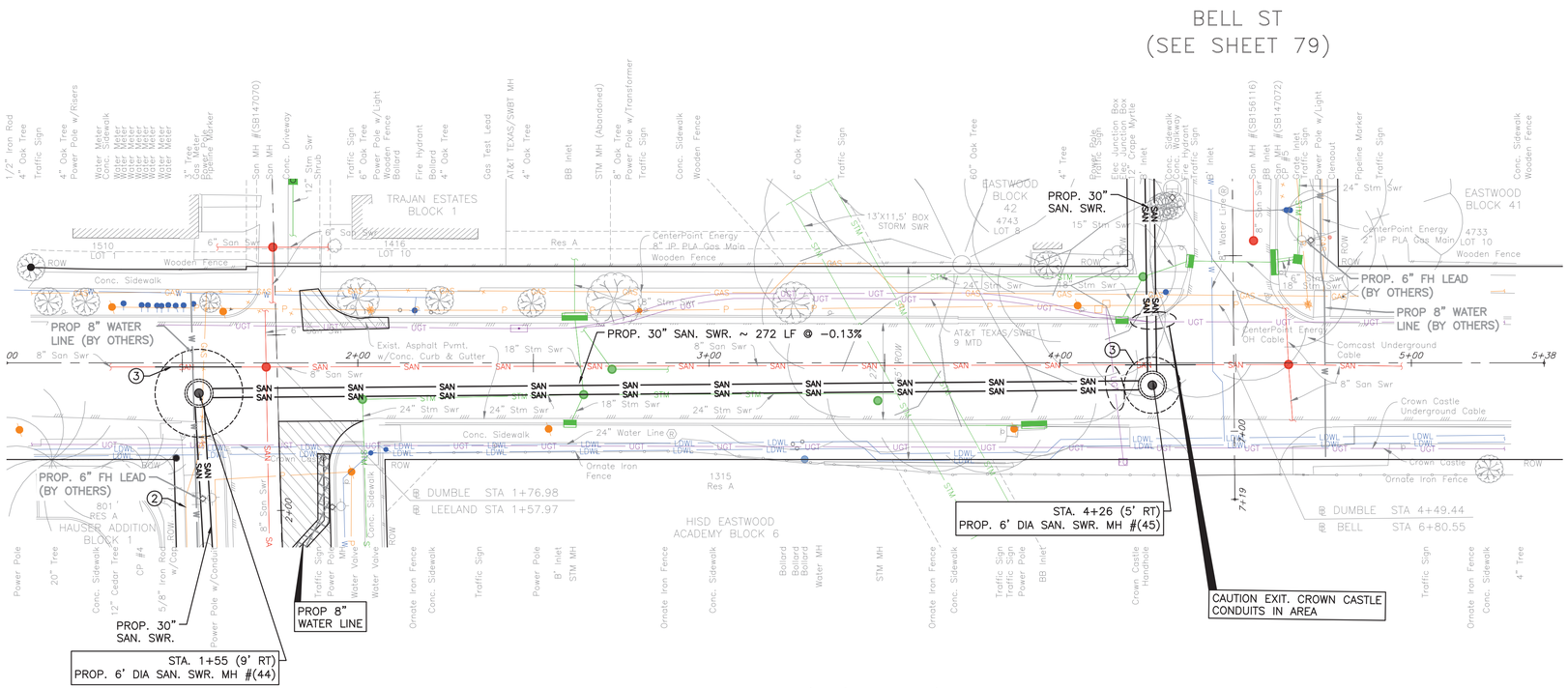
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

LEELAND PROFILE
STA 25+00 TO END

WBS NO.	R-001000-0036-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	SABEEN SHAIKH, P.E.
SHEET NO.	74 OF 195



TBM:

CP 04 X CUT AT STA. 01+50.18' 20.80' RT, EL. 32.32
CP 05 MAG NAIL AT STA. 04+59.15' 19.02' LT, EL. 32.21

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

NOTES

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② UTILITY TO BE RELOCATED BY OTHERS

③ REMOVE AND REPLACE 8" SANITARY SEWER AS NEEDED. COST IS INCIDENTAL TO SHAFT

CRITICAL LOCATION
SEE COH SPEC 02317

PAVEMENT REPAIR AND RESTORATION ACCORDING TO STREET CUT DETAILS: REFER COH DWG NOS 02902-01&02; 02951-01,02 & 03

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DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

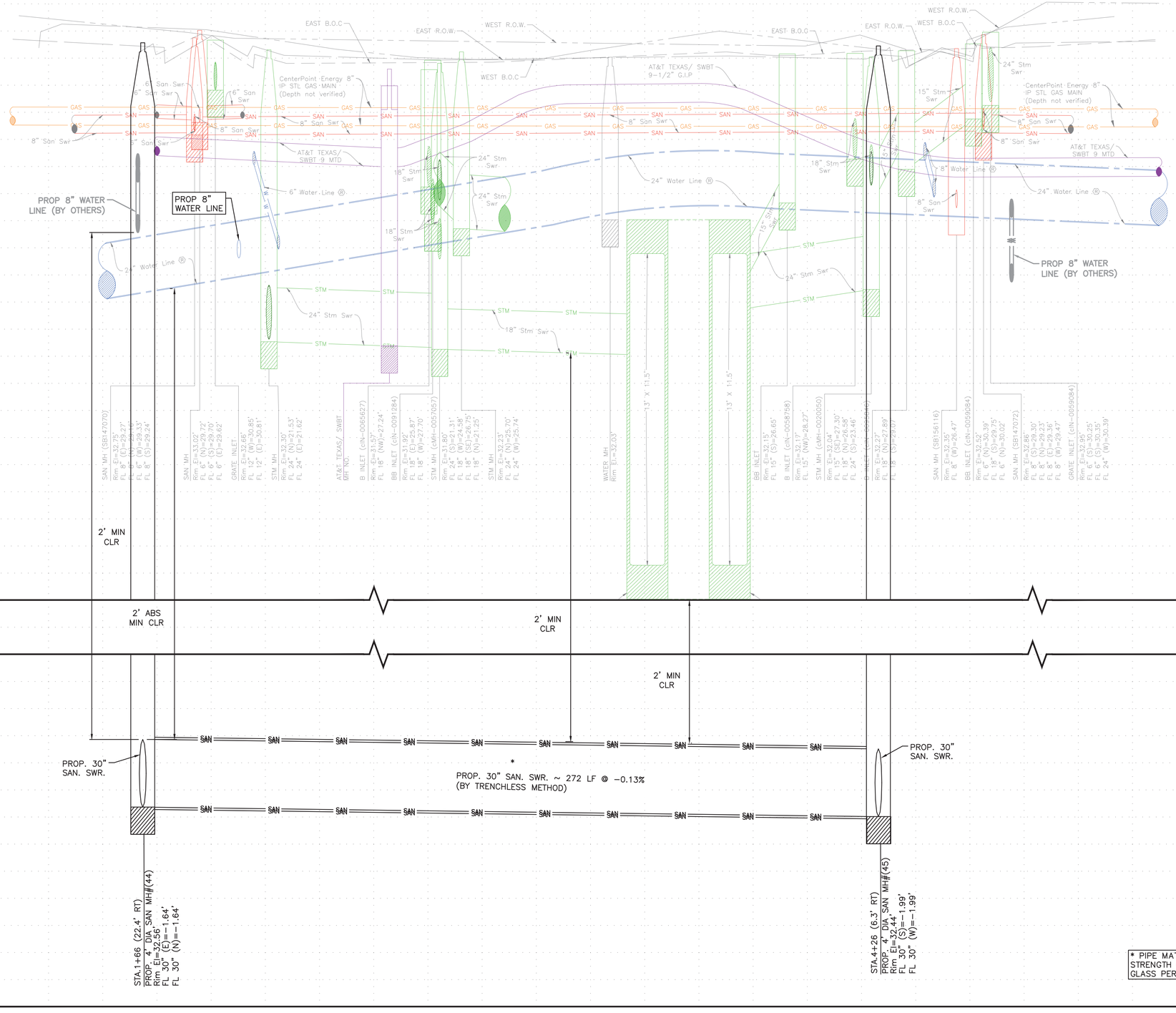
DUMBLE PLAN STA 1+00 TO END

WBS NO. R-001000-0036-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON, PM	
SABEEN SHAIKH, P.E.	
SHEET NO. **75** OF 195	

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

P:\Coda\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 3 - SAN.dwg May 15, 2026 3:47pm

SEE SHEET 75
FOR PLAN



0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

P:\Coda\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 3 - SAN.dwg May 15, 2026 3:47pm

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

DUMBLE PROFILE
STA 1+00 TO END

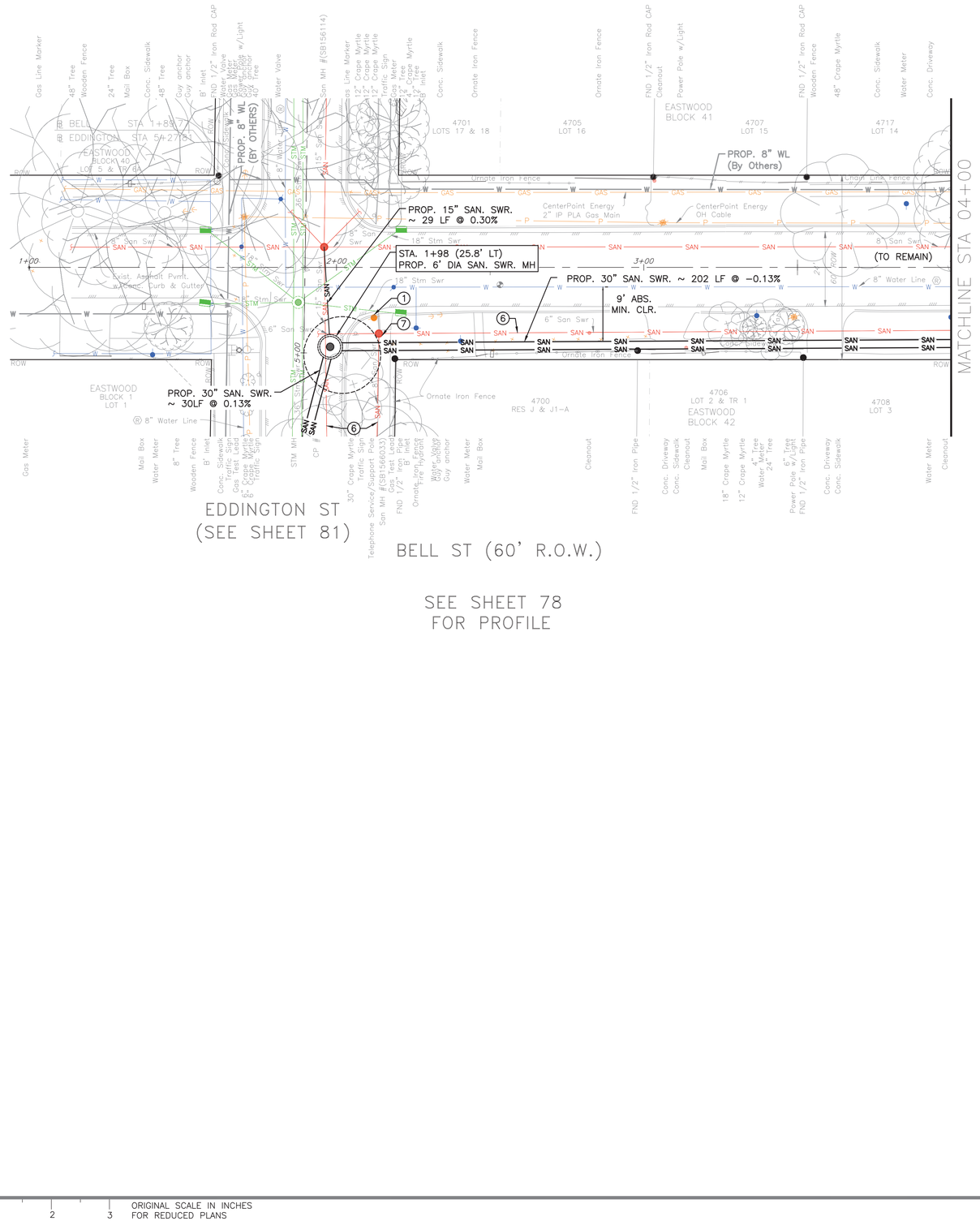
WBS NO.
R-001000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM

SABEEN SHAIKH, P.E.

SHEET NO.**76** OF 195



SEE SHEET 78
FOR PROFILE

TBM:

CP 6 MAG NAIL AT STA. 5+27.25' 0.21' RT, EL. 32.50

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

NOTES

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1. BRACE AND SUPPORT POWER POLE/TELE SERVICE POLE DURING CONSTRUCTION.
3. REMOVE AND REPLACE 15" SANITARY SEWER AS NEEDED. COST IS INCIDENTAL TO SHAFT
6. ABANDON EXISTING SANITARY SEWER PER COH SPEC 02222 AFTER PROPOSED SANITARY SEWER IS IN SERVICE.
7. ABANDON EXISTING SANITARY MANHOLE.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

BELL PLAN STA 1+00 TO 4+00

WBS NO. R-001000-0036-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON, PM	
SABEEN SHAIKH, P.E.	
SHEET NO. 77 OF 195	

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 3 - SAN.dwg May 15, 2026 3:48pm

SEE SHEET 77
FOR PLAN

SOUTH R.O.W.
NORTH R.O.W.
NORTH B.O.C
SOUTH B.O.C

18" Stm Swr
8" San Swr
18" Stm Swr
18" Stm Swr
36" Stm Swr
18" Stm Swr
8" San Swr
8" Water Line
6" Fire Lead
6" San Swr
36" Stm Swr
8" San Swr
PROP. 8" WL (BY OTHERS)
8" San Swr
8" San Swr
PROP. 8" WL (BY OTHERS)

B INLET (cN-0018735)
Rim El=32.67'
FL 18" (E)=27.80'

B INLET (cN-0101262)
Rim El=32.65'
FL 18" (SE)=27.70'

STM MH (cMH-0022805)
Rim El=32.54'
FL 36" (N)=24.43'
FL 36" (S)=24.39'
FL 18" (NW)=25.76'
FL 18" (SW)=25.86'
FL 18" (SE)=26.26'
FL 18" (W)=27.31'

B INLET (cN-0106419)
Rim El=32.28'
FL 18" (NW)=30.32'

B INLET (cN-0052963)
Rim El=32.05'
FL 18" (W)=28.65'

15" San Swr
8" San Swr
15" San Swr
8" San Swr
2' ABS. MIN. CLR.

SAN MH (SB156114)
Rim El=32.46'
FL 8" (E)=24.20'
FL 8" (W)=22.13'
FL 15" (N)=8.68'
FL 15" (S)=8.68'
FL 8" (SW)=8.48'
FL 8" (NW)=8.32'

PROP. 15" SAN. SWR. (DROP)
PROP. 15" SAN. SWR.
PROP. 30" SAN. SWR. ~ 30LF @ 0.13%

* PROP. 30" SAN. SWR. ~ 196 LF @ -0.13% (BY TRENCHLESS METHOD)

FL=-2.33

STA.1+98 (25.8' RT)
PROP. 4' DIA SAN MH#(46)
Rim El=32.39'
FL 30" (E)=-2.62'
FL 30" (SW)=-2.62'
FL 15" (N)=8.22' DROP
FL 15" (N)=-1.13' DROP

* PIPE MATERIAL SHALL BE EXTRA STRENGTH CLAY PIPE OR FIBER GLASS PER SPEC 02441 (TYP)

1+00 2+00 3+00 4+00

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3

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DATE 05/15/2026
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

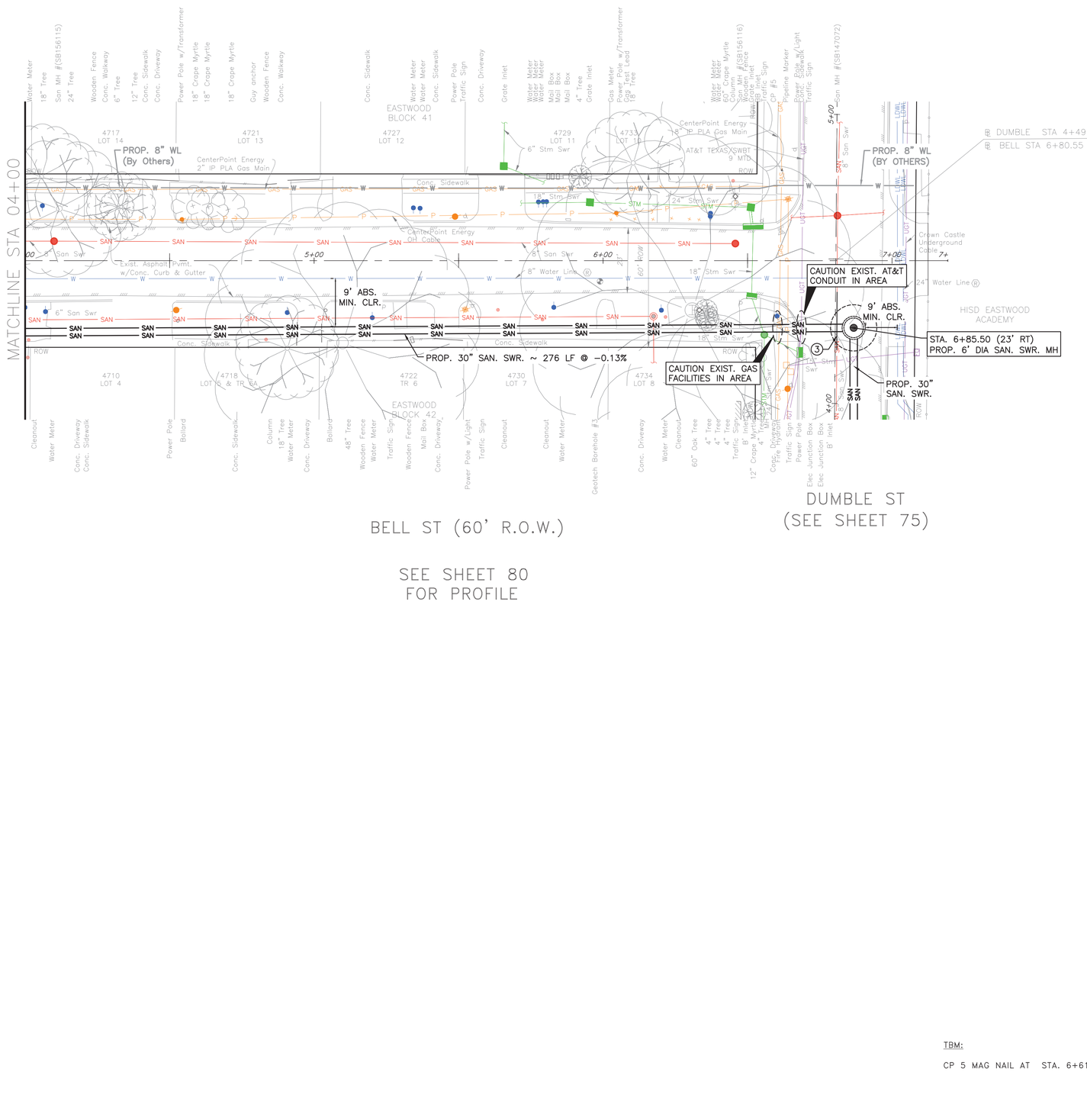
BELL PROFILE STA 1+00 TO 4+00

WBS NO.
R-001000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO.**78** OF 195



SEE SHEET 80
FOR PROFILE

TBM:

CP 5 MAG NAIL AT STA. 6+61.68' 9.86' LT, EL. 32.214

NOTE:

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AND W. GUSTAV ST.

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CRITICAL LOCATION
SEE COH SPEC 02317

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Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
FB NO.: P-6406

PRELIMINARY

FOR INTERIM REVIEW ONLY

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MAHESH DUTTA 114252
NAME P.E. NO.

DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

BELL PLAN STA 4+00 TO END

WBS NO.
R-001000-0036-3

DRAWING SCALE
1"=20'

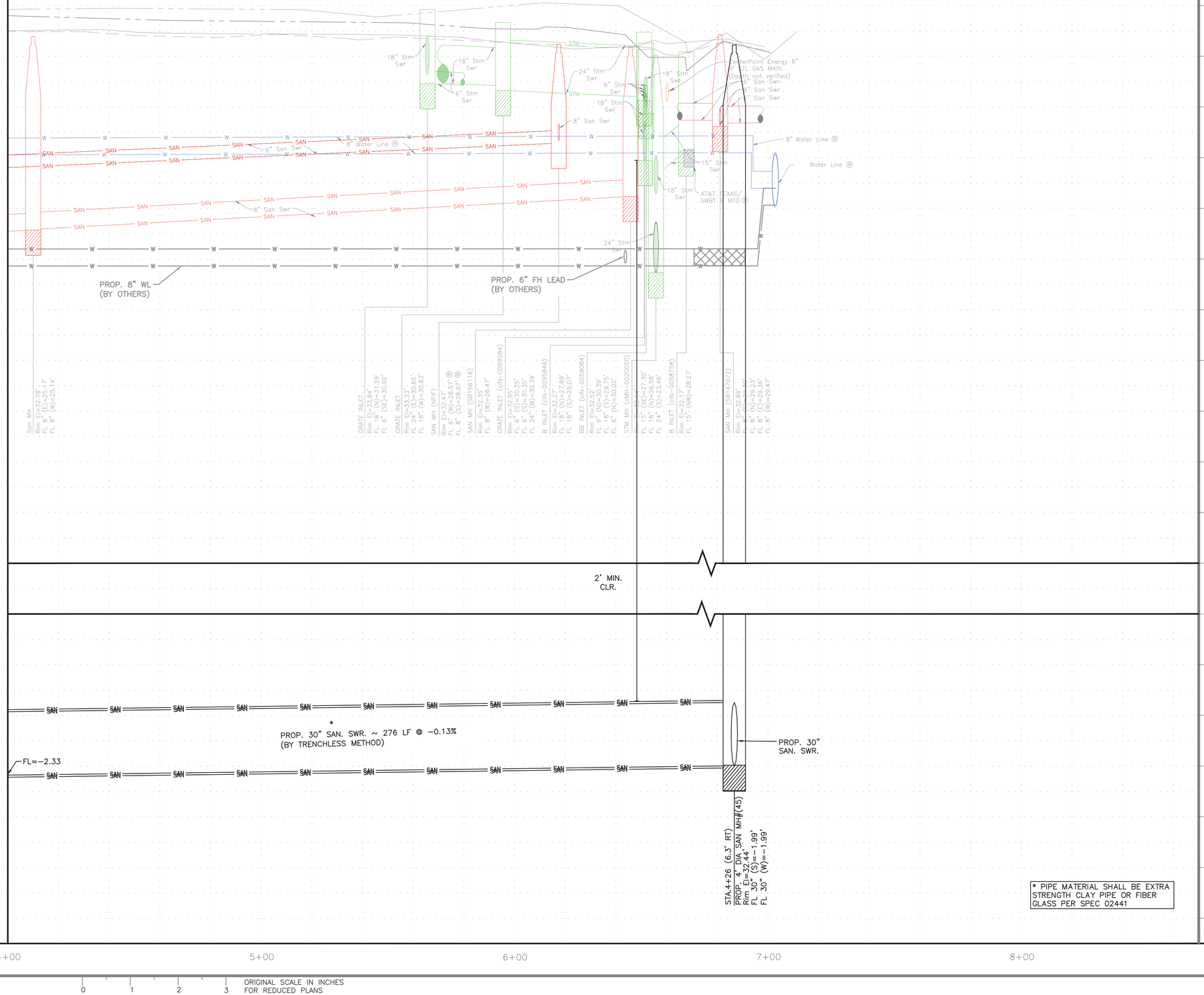
CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. **79** OF 195

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 3 - SAN.dwg May 15, 2026 3:49pm

SEE SHEET 79
FOR PLAN



ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&P\P&P Sheet 3 - SAN.dwg May 15, 2026 3:49pm

NOTICE:
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VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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Date

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Signature valid for one year.

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
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CITY OF HOUSTON
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CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

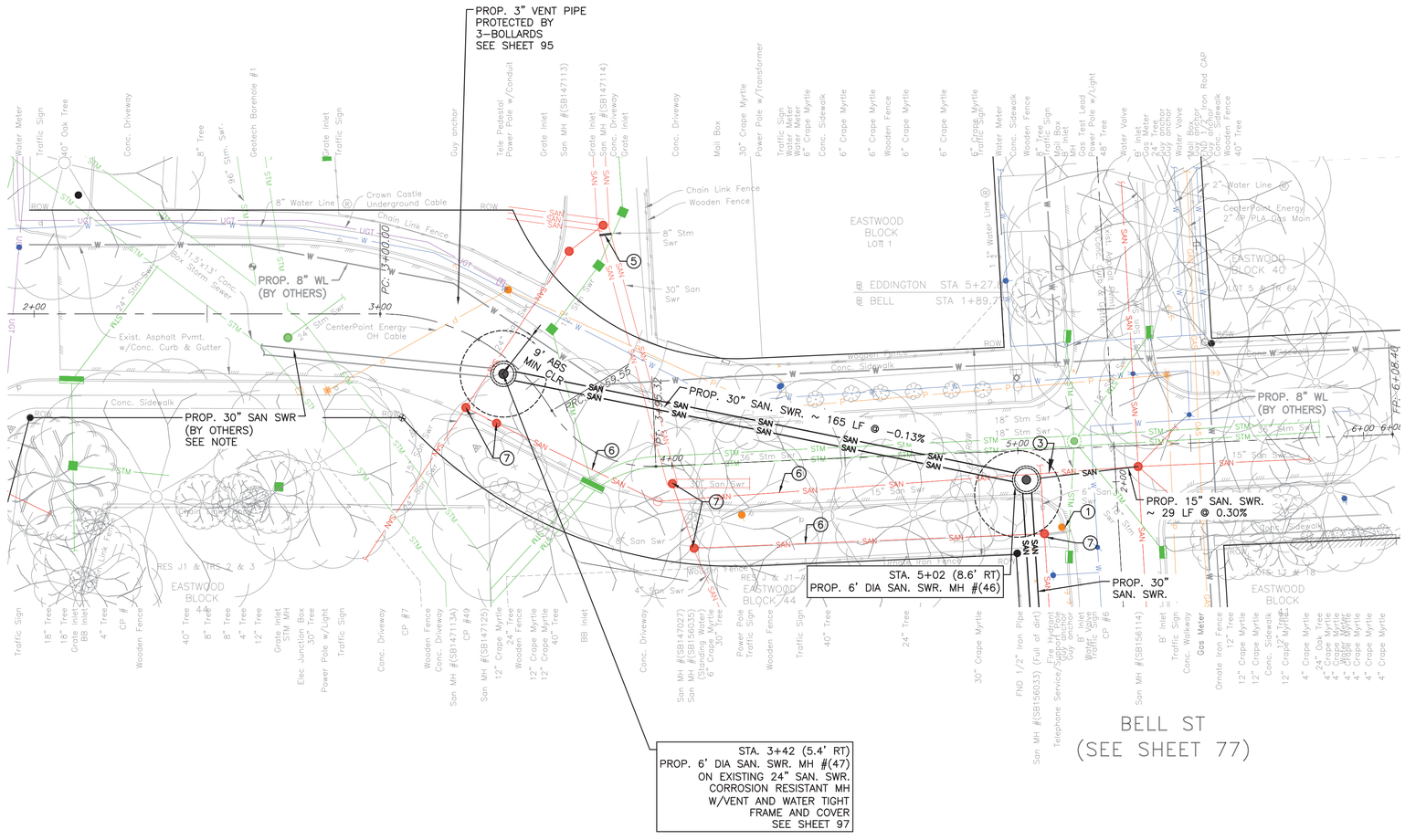
BELL PROFILE STA 4+00 TO END

WBS NO.
R-001000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO.**80** OF 195



NOTE:
CONTRACTOR SHALL COORDINATE WITH CRMP CIP PACKAGE 4, WBS R-01000-0035-3 DURING CONSTRUCTION FOR PROPOSED 30" SANITARY SEWER TIE-IN

TBM:

CP 6	MAG NAIL	AT	STA. 5+27.25'	00.21'	RT, EL. 32.50
CP 7	X-CUT	AT	STA. 3+22.14'	32.52'	RT, EL. 32.19
CP 48	X-CUT	AT	STA. 1+93.35'	33.21'	RT, EL. 33.18
CP 49	712C	AT	STA. 3+56.03'	24.17'	RT, EL. 31.80

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE NORTHEAST CORNER OF LEELAND ST. AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

NOTES

SHAFT SHAPE, & SIZE SHOWN IN FOR REPRESENTATION PURPOSE ONLY. CONTRACTOR SHALL DETERMINE APPROPRIATE SIZE AND SHAPE. BACKFILL SHAFT PER COH STD DETAIL 02317-08.

1. BRACE AND SUPPORT POWER POLE DURING CONSTRUCTION.
3. REMOVE AND REPLACE 15" SANITARY SEWER AS NEEDED. COST IS INCIDENTAL TO SHAFT.
5. CUT, PLUG & ABANDON EXISTING SANITARY SEWER PER COH SPEC 02222.
6. ABANDON EXISTING SANITARY SEWER PER COH SPEC 02222 AFTER PROPOSED SANITARY SEWER IS IN SERVICE.
7. ABANDON EXISTING SANITARY MANHOLE

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DATE 05/15/2026
TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

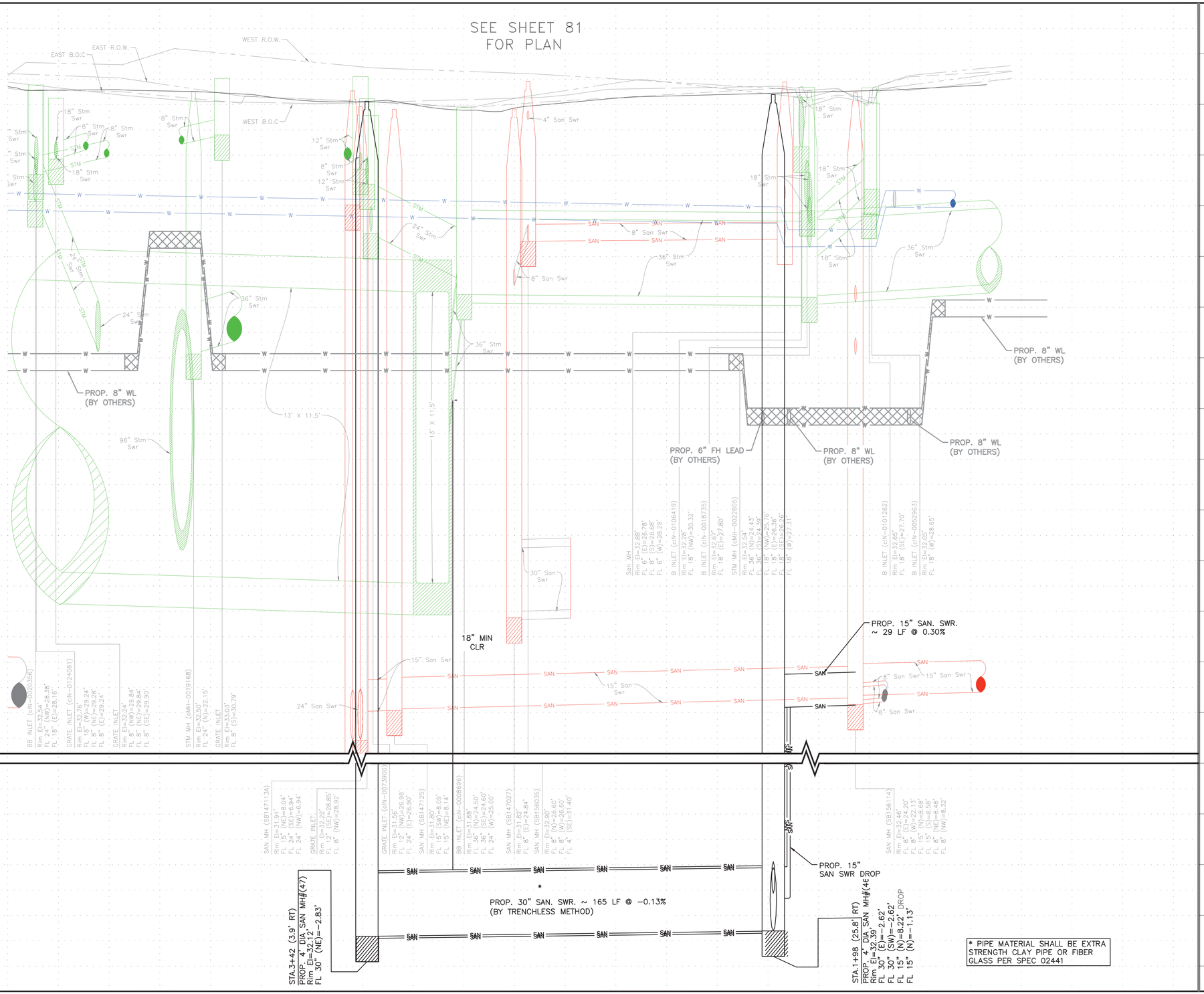
CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

EDDINGTON PLAN
STA 2+00 TO END

WBS NO. R-001000-0036-3	
DRAWING SCALE 1"=20'	
CITY OF HOUSTON, PM SABEEN SHAIKH, P.E.	
SHEET NO. **81** OF 195	

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&Ps\P&P Sheet 3 - SAN.dwg May 15, 2026 3:49pm



ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\Streetwise P&P\P&P Sheet 3 - SAN.dwg May 15, 2026 3:50pm

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DATE 05/15/2026

TBPELS FIRM #F-4528

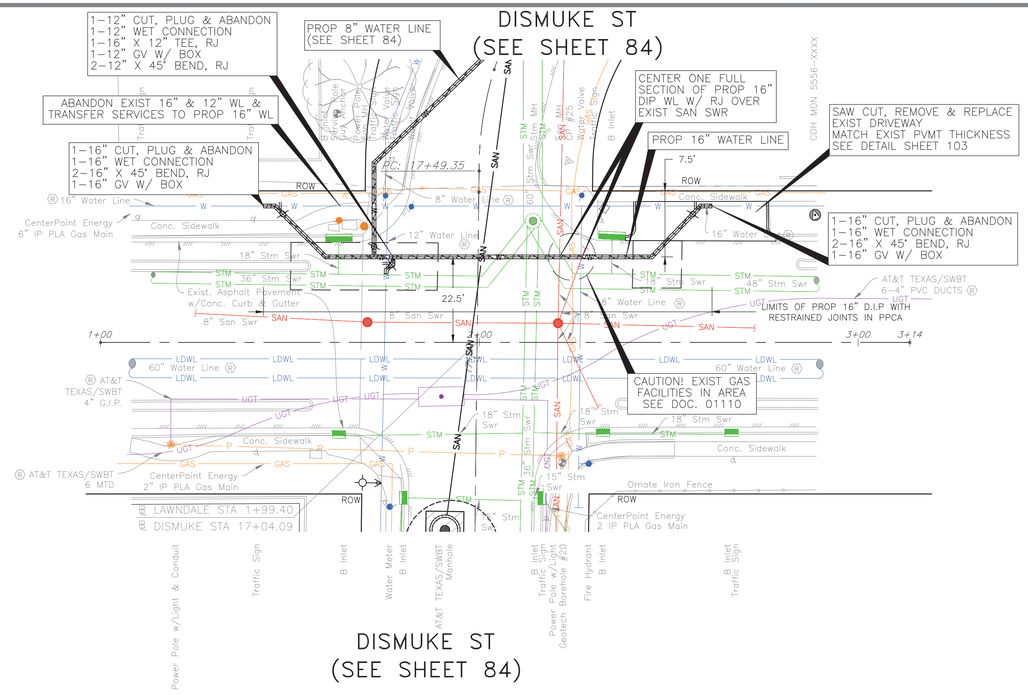
SURVEYED BY: AMANI
FB NO.: P-6406

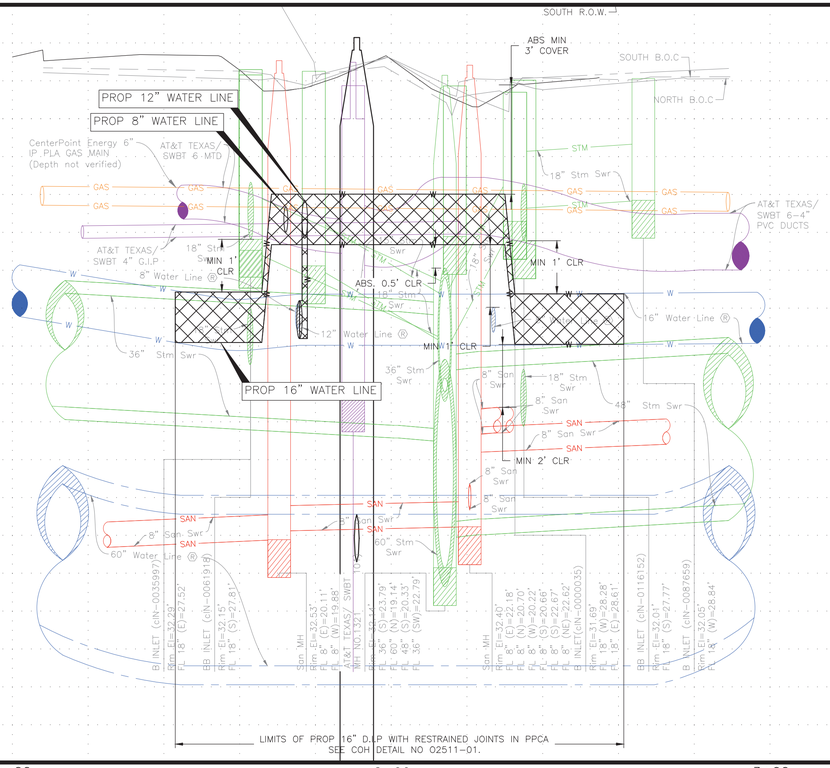
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

EDDINGTON PROFILE
STA 2+00 TO END

WBS NO.	R-001000-0036-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	SABEEN SHAIKH, P.E.
SHEET NO.	82 OF 195





NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

NOTE:

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2) MAINTAIN WATER SERVICES TO ALL CUSTOMERS, FIRE HYDRANTS, AND INTERCONNECTIONS, PROVIDE TEMPORARY CONNECTIONS AS NECESSARY DURING CONSTRUCTION.
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6) SEE SHEETS 23 TO 82 FOR PROPOSED SANITARY SEWER CONSTRUCTION SHEETS.

LEGEND

- EXIST WATER
- EXIST SANITARY
- EXIST STORM SEWER
- PROP WATER
- PROP SANITARY
- CRITICAL LOCATION, SEE SPEC. 02317
- DIP W/ RESTRAINED JOINTS
- PAVEMENT REPAIR, REFER COH DWG NOS. 02951-01, 02951-02, 02951-03

TBM:

CP-X-CUT 025 AT STA. 17+52.78, 23.49' LT, EL. 32.15

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Aurora Technical Services, LLC
engineering + construction management
TX FIRM NO. F-2059
2121 SAGE RD, SUITE 150
HOUSTON, TEXAS 77056
PHONE: 281-453-7700

SURVEYED BY: AMANI
FB NO.: P-6406

INTERIM REVIEW ONLY
Document incomplete; not intended for regulatory approval, permit, or construction.
WILLIAM M. WILSHIRE III, P.E.
Engineer
94193
Registration Number
05/08/2026
Date

Aurora Technical Services, LLC
Texas Registered Engineering Firm F-2059

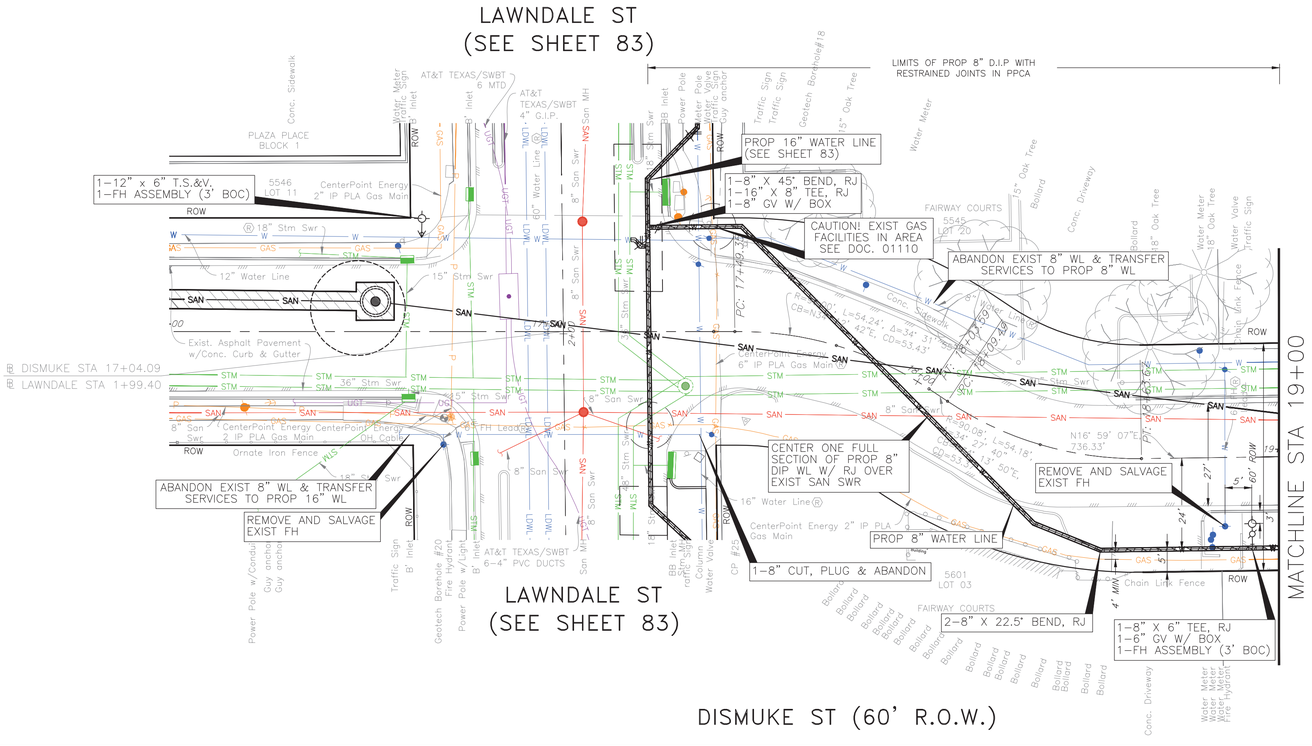
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

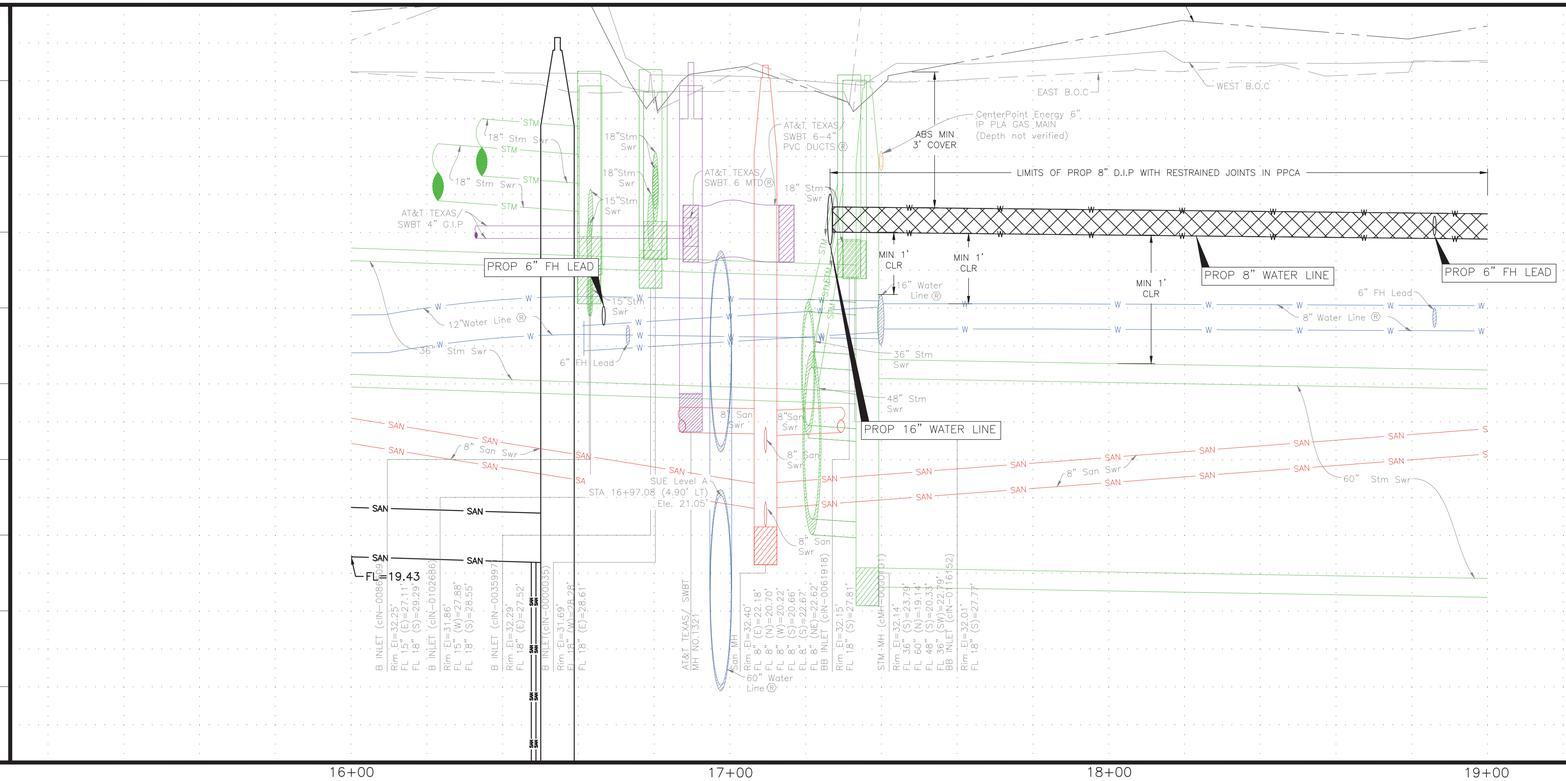
CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

LAWNDALE ST PLAN & PROFILE
STA 1+00 TO END

WBS NO.	R-01000-0036-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	SABEEN SHAIKH, P.E.
SHEET NO. 83 OF 195	

K:\Amani\CRMP Package 5\4-0 Production\4-1 Drawings\Sheet Set\P&P Sheet 1 - WATER.dwg May 11, 2026 3:12pm





NOTE:

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ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

NOTE:

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6) SEE SHEETS 23 TO 82 FOR PROPOSED SANITARY SEWER CONSTRUCTION SHEETS.

LEGEND

- EXIST WATER
- EXIST SANITARY
- EXIST STORM SEWER
- PROP WATER
- PROP SANITARY
- CRITICAL LOCATION, SEE SPEC. 02317
- DIP W/ RESTRAINED JOINTS
- PAVEMENT REPAIR, REFER COH DWG NOS. 02951-01, 02951-02, 02951-03

TBM:

CP-X-CUT 025 AT STA. 17+52.78, 23.49' LT, EL. 32.15

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SURVEYED BY: AMANI
FB NO.: P-6406

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WILLIAM M. WILSHIRE III, P.E.
Engineer
94193
Registration Number
05/08/2026
Date

Aurora Technical Services, LLC
Texas Registered Engineering Firm F-2059

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5 SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

DISMUKE ST PLAN & PROFILE STA 16+00 TO STA 19+00

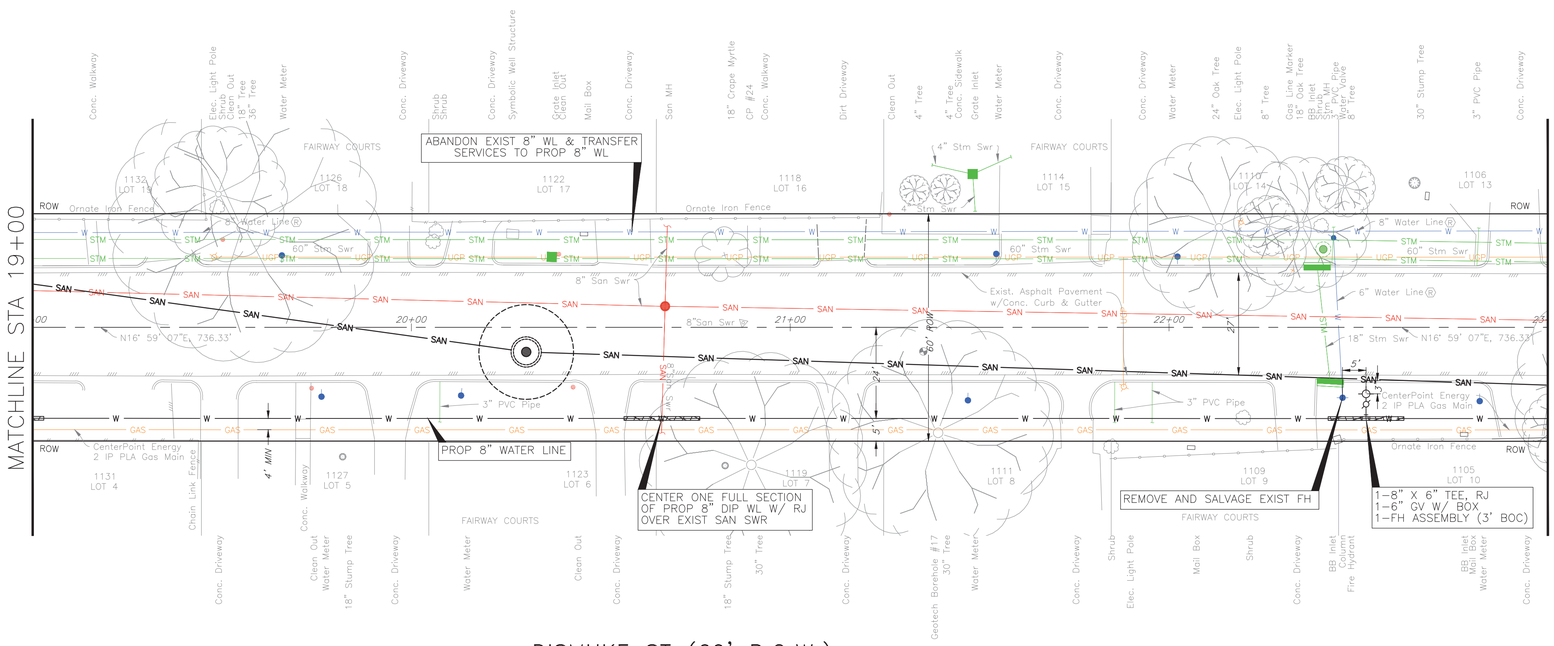
WBS NO.
R-01000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. 84 OF 195

K:\Amani\CRMP Package 5\4-0 Production\4-1 Drawings\Sheet Set\P&P Sheet 1 - WATER.dwg May 12, 2026 6:11pm



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TBM:

CP-MAG NAIL 024 AT STA. 20+87.59, 01.22' LT, EL. 32.17

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE NORTHEAST CORNER OF LEELAND ST. AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

LEGEND

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- EXIST SANITARY
- EXIST STORM SEWER
- PROP WATER
- PROP SANITARY
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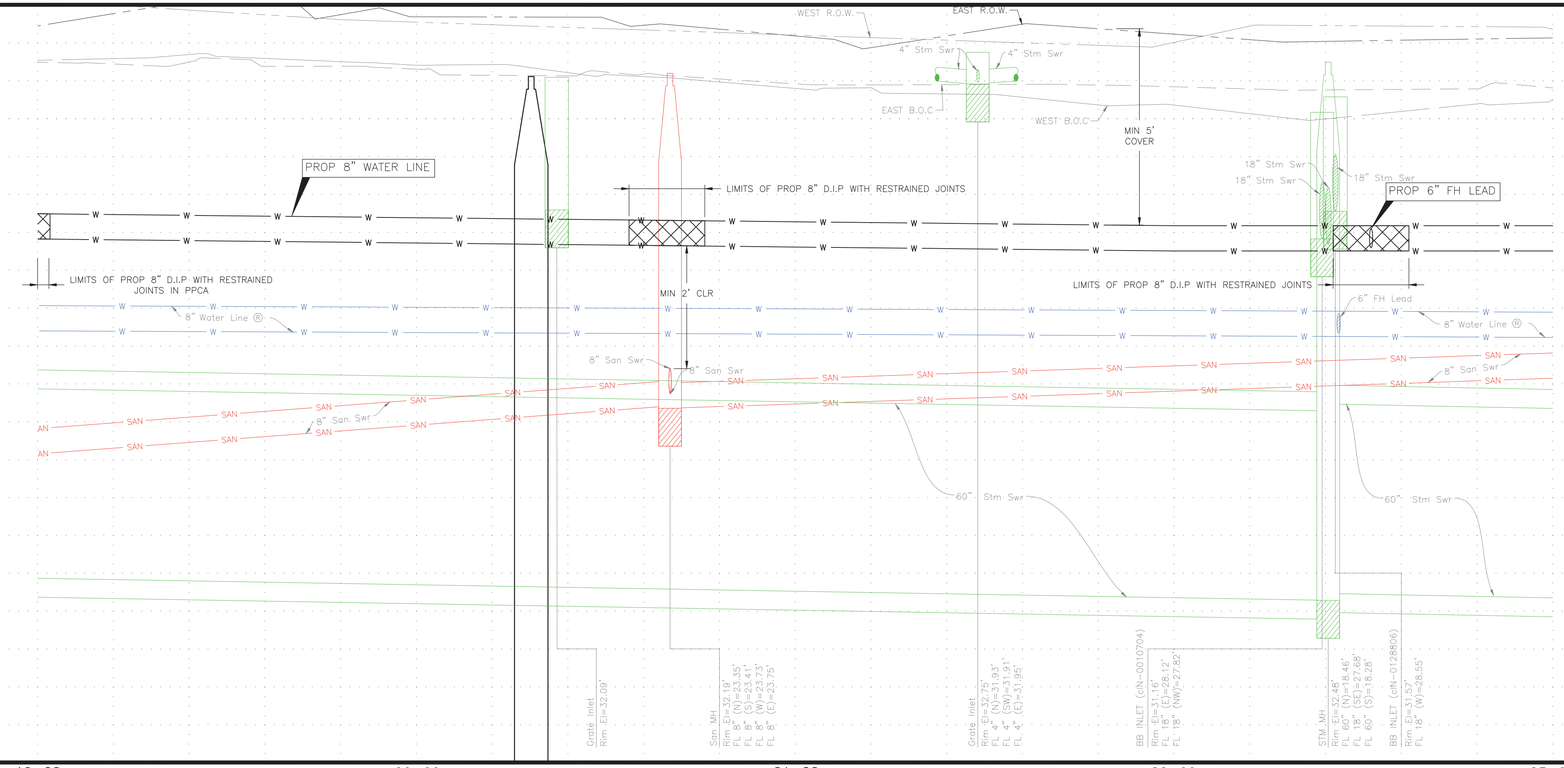

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

DISMUKE ST PLAN & PROFILE
STA 19+00 TO STA 23+00

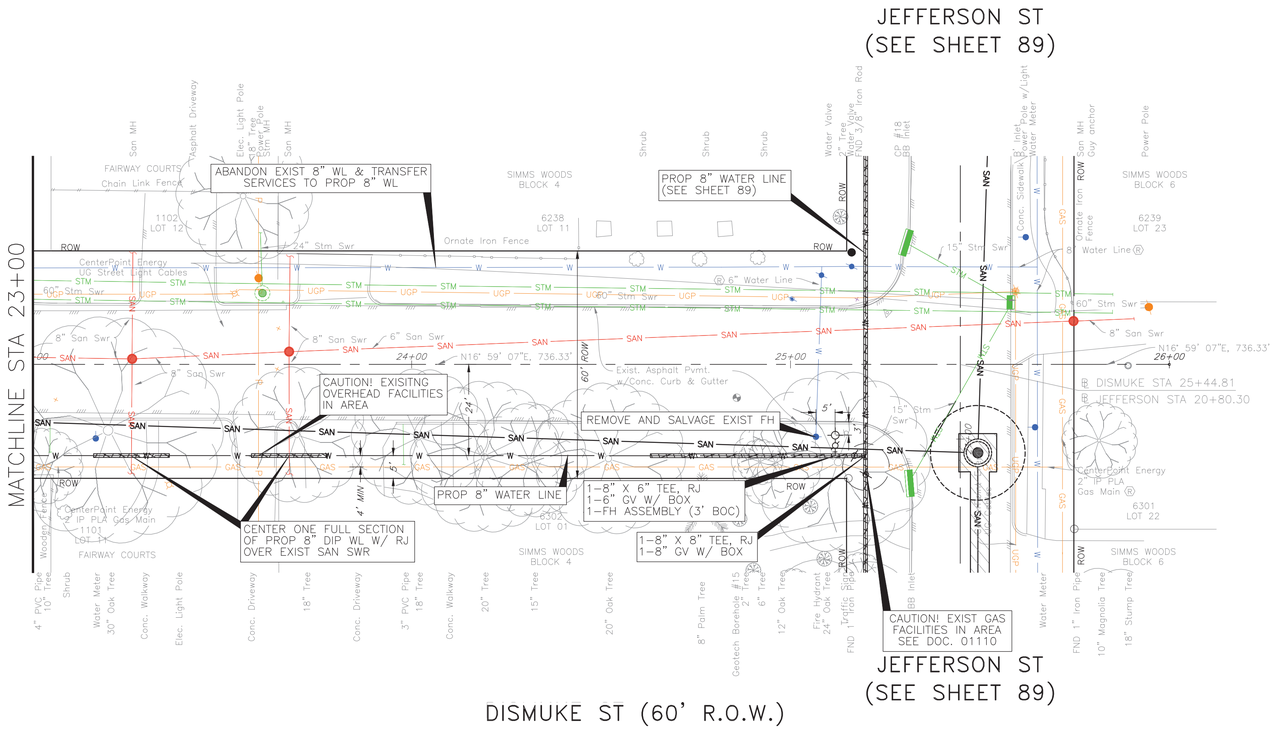
WBS NO.
R-01000-0036-3

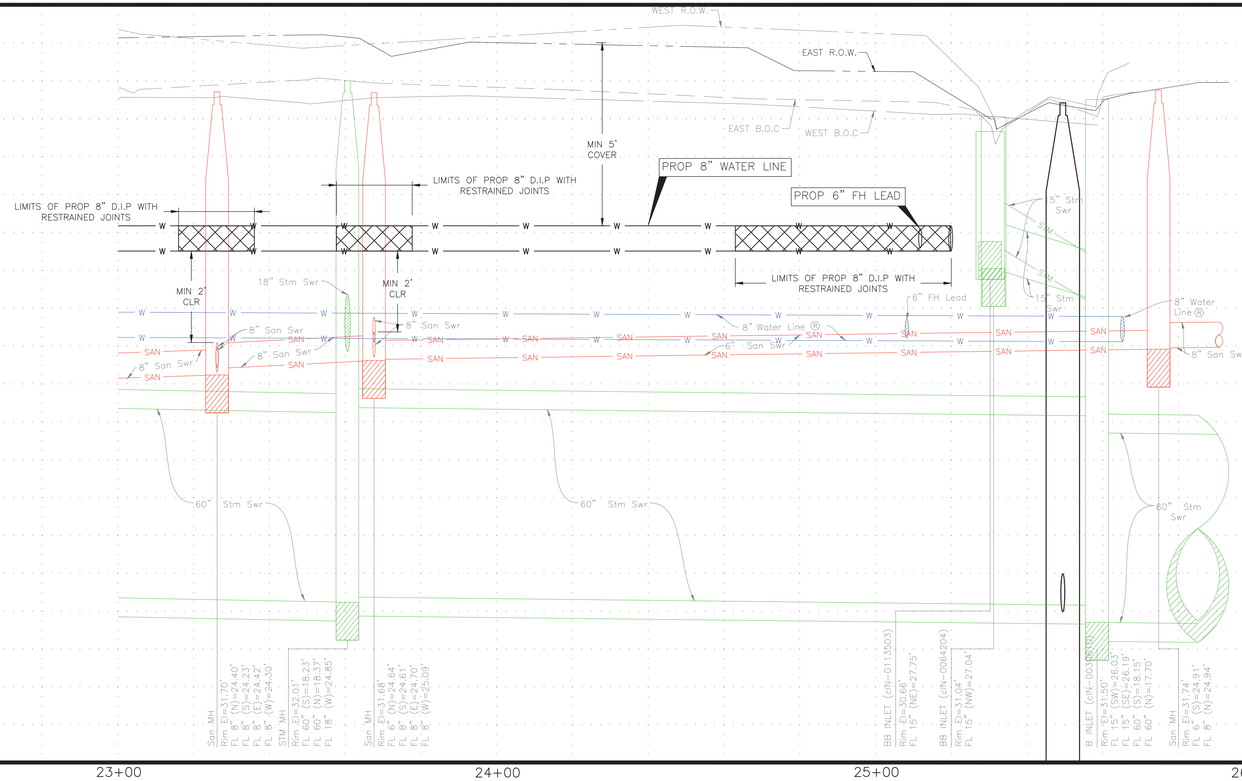
DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. 85 OF 195

K:\Amani\CRMP Package 5\4-0 Production\4-1 Drawings\Sheet Set\P&P Sheet 1 - WATER.dwg May 11, 2026 3:11pm





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- EXIST SANITARY
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- PROP SANITARY
- CRITICAL LOCATION, SEE SPEC. 02317
- DIP W/ RESTRAINED JOINTS
- PAVEMENT REPAIR, REFER COH DWG NOS. 02951-01, 02951-02, 02951-03

TBM:

CP-MAG NAIL 018 AT STA. 25+25.54, 13.63' LT, EL. 30.96

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TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

Aurora Technical Services, LLC
engineering + construction management
TX FIRM NO. F-2059
2121 SAGE RD, SUITE 150
HOUSTON, TEXAS 77056
PHONE: 281-453-7700

SURVEYED BY: AMANI
FB NO.: P-6406

INTERIM REVIEW ONLY
Document incomplete; not intended for regulatory approval, permit, or construction.
WILLIAM M. WILSHIRE III, P.E.
Engineer
94193
Registration Number
05/08/2026
Date

Aurora Technical Services, LLC
Texas Registered Engineering Firm
F-2059

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

DISMUKE ST PLAN & PROFILE
STA 23+00 TO END

WBS NO.
R-01000-0036-3

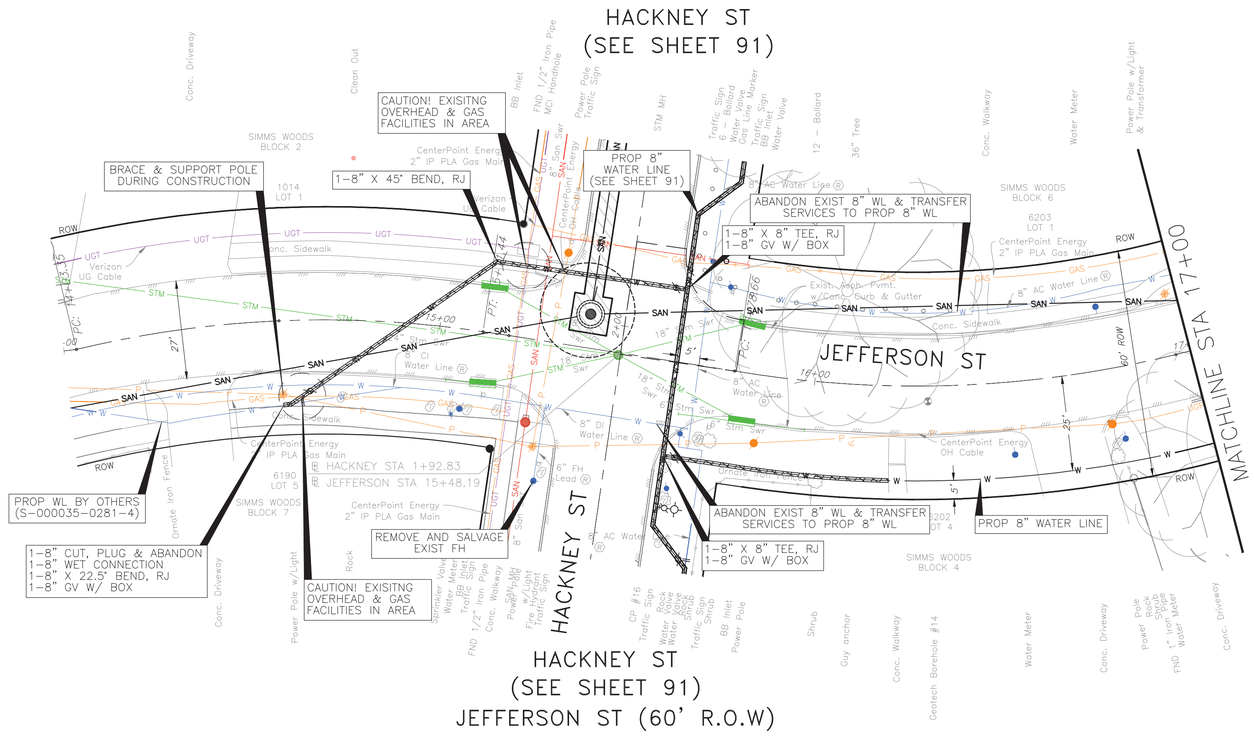
DRAWING SCALE
1"=20'

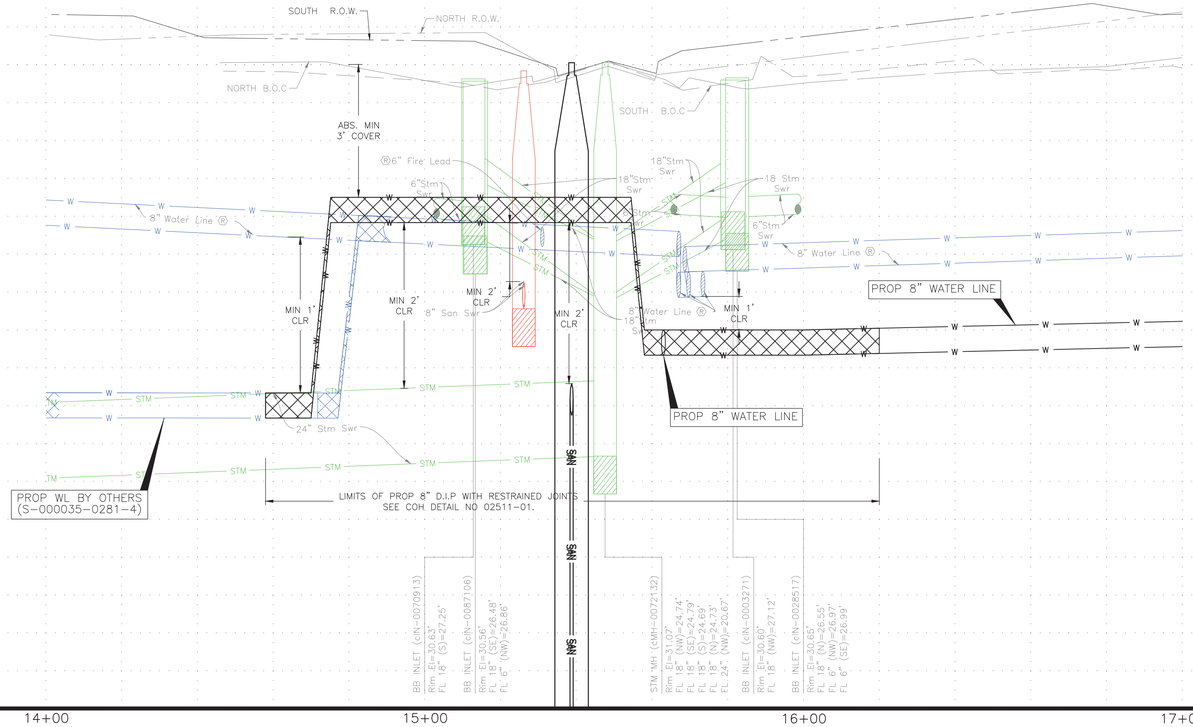
CITY OF HOUSTON, PM

SABEEN SHAIKH, P.E.

SHEET NO. 86 OF 195

K:\Amani\CRMP Package 5\4-0 Production\4-1 Drawings\Sheet Set\P&P Sheet 1 - WATER.dwg May 11, 2026 3:10pm





NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

NOTE:

1) CONTRACTOR TO DETERMINE LOCATION OF TRENCHLESS PITS IN FIELD SUBJECT TO THE CITY ENGINEER'S APPROVAL.
2) MAINTAIN WATER SERVICES TO ALL CUSTOMERS, FIRE HYDRANTS, AND INTERCONNECTIONS, PROVIDE TEMPORARY CONNECTIONS AS NECESSARY DURING CONSTRUCTION.
3) TREES ARE LOCATED IN THE VICINITY OF PROPOSED ALIGNMENT OF WATER LINE AND ITS APPURTENANCES. REFER TO THE TREE PROTECTION PLANS FOR APPROPRIATE PROTECTION MEASURES.
4) ALL EXISTING WATER LINE TO BE ABANDON & TRANSFERRED TO PROPOSED 16" AND 8" WATER LINES.
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6) SEE SHEETS 23 TO 82 FOR PROPOSED SANITARY SEWER CONSTRUCTION SHEETS.
7) FIELD VERIFY LOCATION OF ADJACENT 8" WATER LINE (WBS NO. S-000035-0281-4, BY OTHERS) AND MAKE NECESSARY ADJUSTMENT TO LINE AND GRADE TO ASSURE PROPER TIE IN.

LEGEND

- W — EXIST WATER
- SAN — EXIST SANITARY
- STM — EXIST STORM SEWER
- W — PROP WATER
- SAN — PROP SANITARY
- CRITICAL LOCATION, SEE SPEC. 02317
- DIP W/ RESTRAINED JOINTS
- PAVEMENT REPAIR, REFER COH DWG NOS. 02951-01, 02951-02, 02951-03

TBM:

CP-16-MAG NAIL AT STA. 15+61.51,
16.79' RT, EL. 30.59

NOTICE:

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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Signature valid for six months.

Date

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

JEFFERSON ST PLAN & PROFILE
STA 14+00 TO STA 17+00

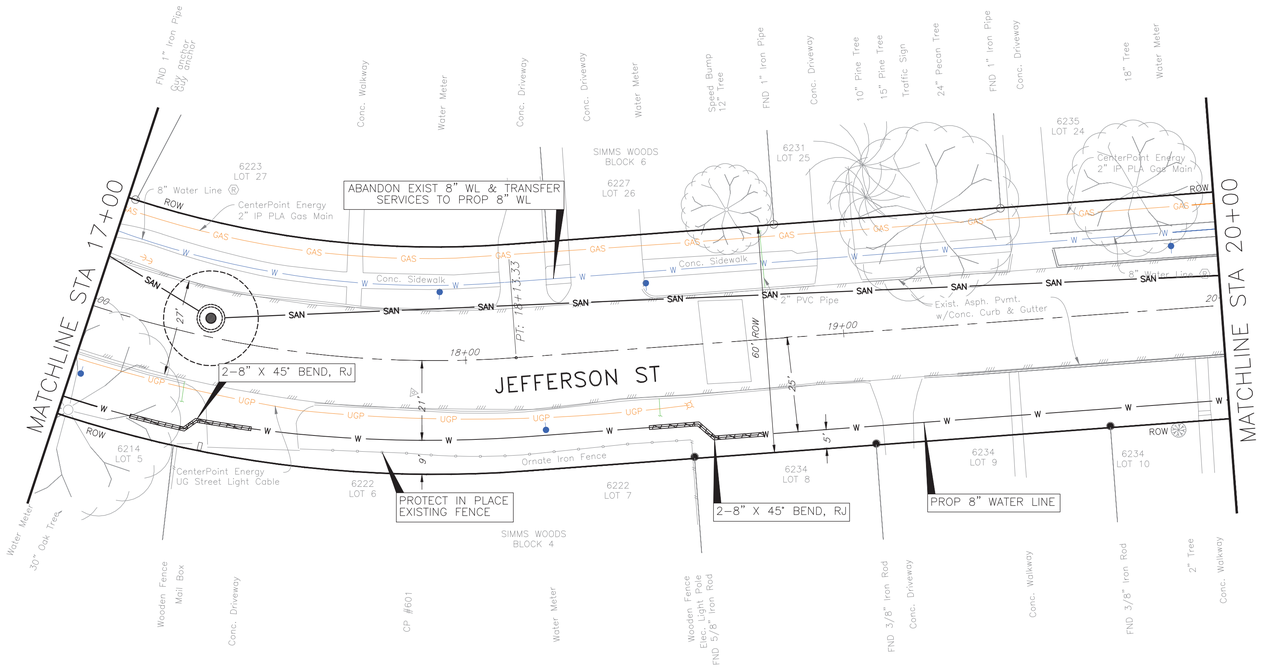
WBS NO.
R-01000-0036-3

DRAWING SCALE
1"=20'

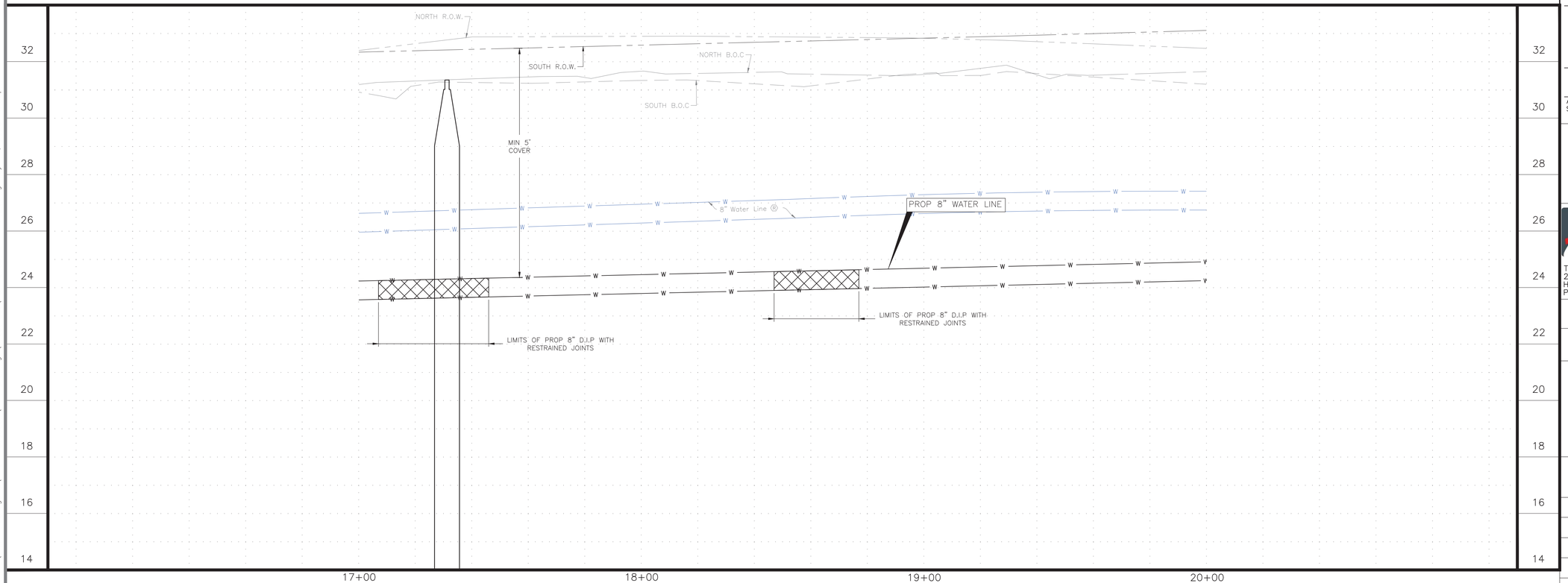
CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. 87 OF 195

K:\Amani\CRMP Package 5\4-0 Production\4-1 Drawings\Sheet Set\P&P Sheet 2 - WATER.dwg May 11, 2026 3:09pm



JEFFERSON ST (60' R.O.W)



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TBM:

CP-601-MAG NAIL AT STA. 17+86.28, 08.50' RT, EL. 31.16

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109 ALUMINIUM DISK LOCATED ON THE NORTHEAST CORNER OF LEELAND ST. AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

LEGEND

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- SAN — EXIST SANITARY
- STM — EXIST STORM SEWER
- W — PROP WATER
- SAN — PROP SANITARY
- CRITICAL LOCATION, SEE SPEC. 02317
- DIP W/ RESTRAINED JOINTS
- PAVEMENT REPAIR, REFER COH DWG NOS. 02951-01, 02951-02, 02951-03

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SURVEYED BY: AMANI
FB NO.: P-6406

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Engineer
94193
Registration Number
05/08/2026
Date

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Texas Registered Engineering Firm F-2059

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

JEFFERSON ST PLAN & PROFILE
STA 17+00 TO STA 20+00

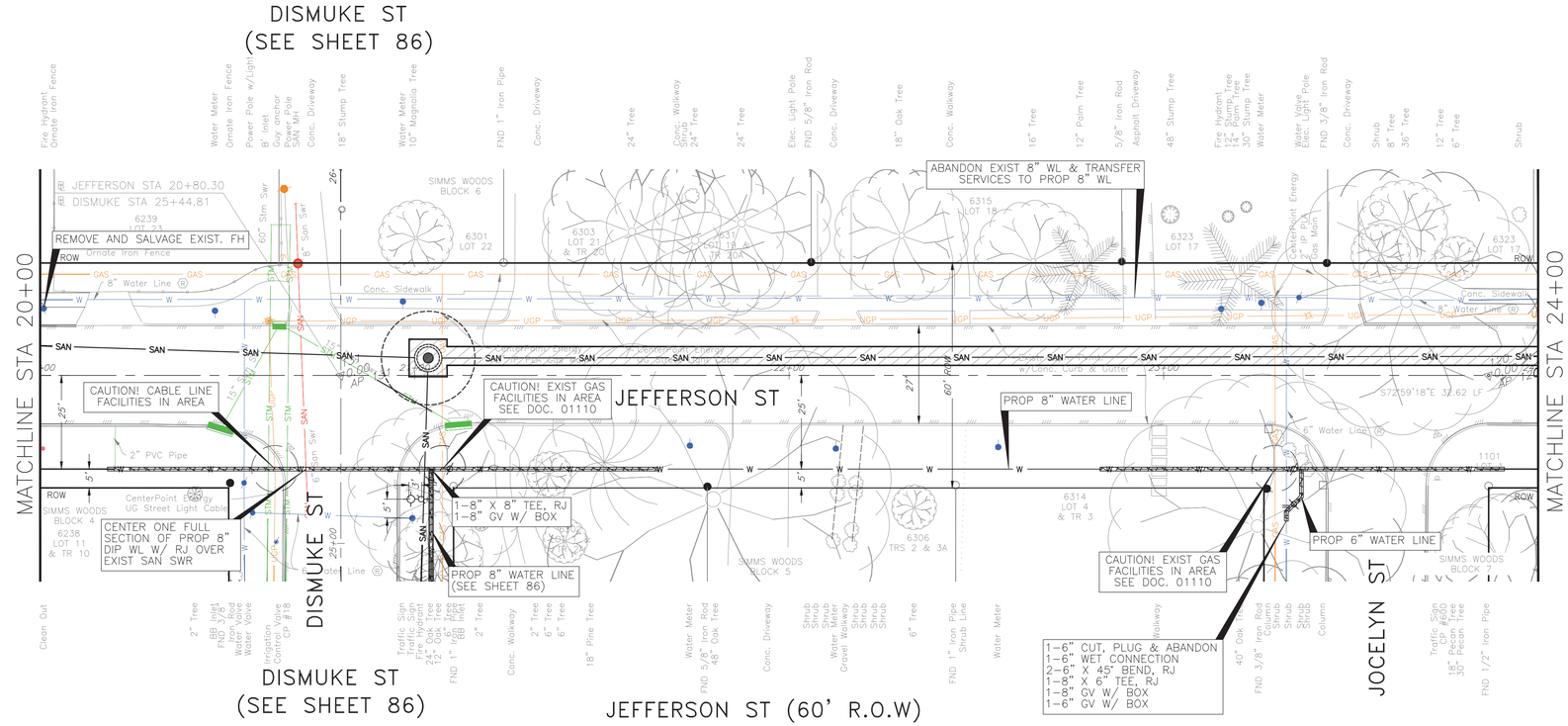
WBS NO.
R-01000-0036-3

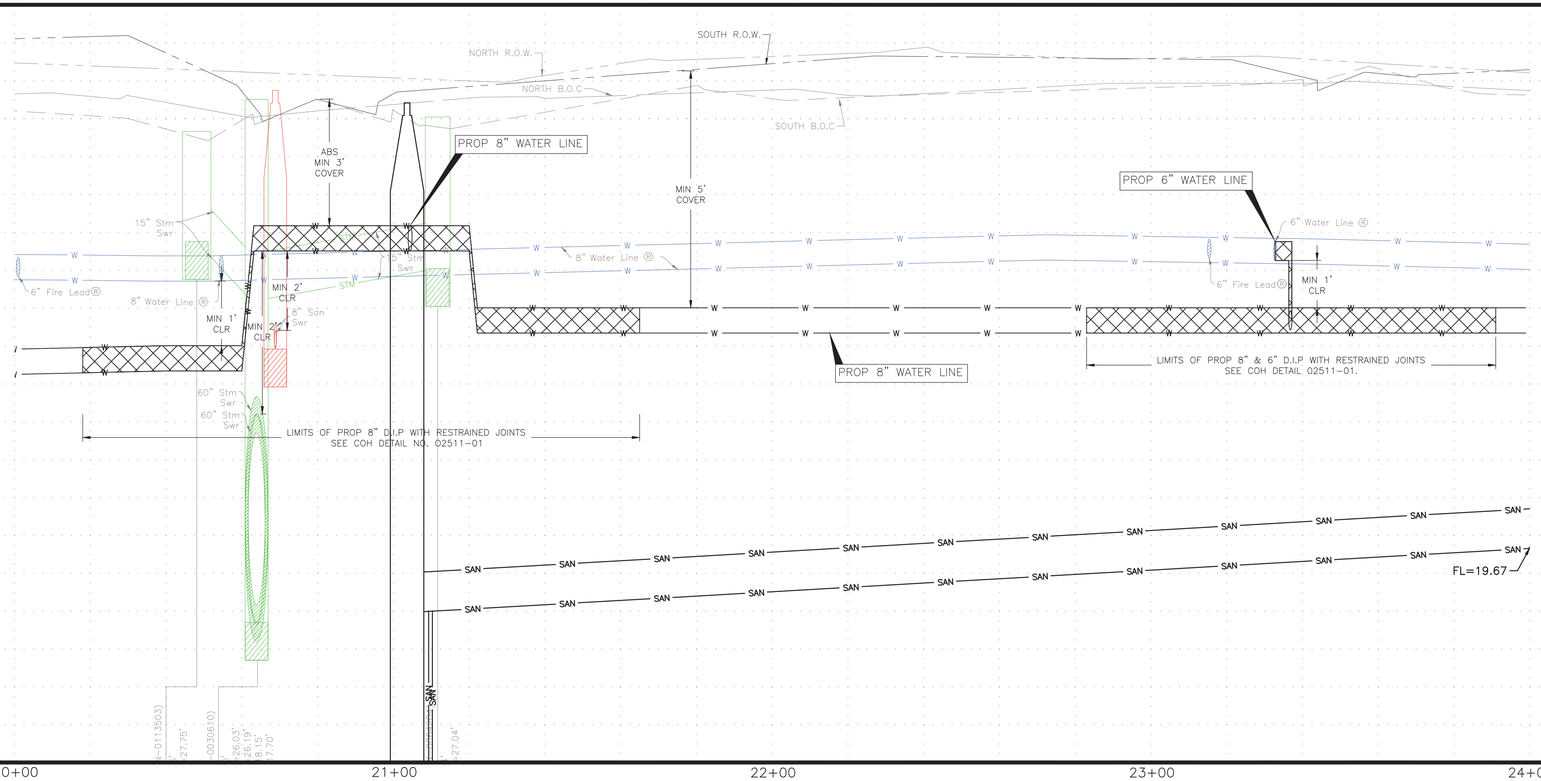
DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. 88 OF 195

K:\Amani\CRMP Package 5\4-0 Production\4-1 Drawings\Sheet Set\P&P Sheet 2 - WATER.dwg May 11, 2026 3:09pm





NOTE:

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LEGEND

- EXIST WATER
- EXIST SANITARY
- EXIST STORM SEWER
- PROP WATER
- PROP SANITARY
- CRITICAL LOCATION, SEE SPEC. 02317
- DIP W/ RESTRAINED JOINTS
- PAVEMENT REPAIR, REFER COH DWG NOS. 02951-01, 02951-02, 02951-03

TBM:

CP-18-MAG NAIL AT STA. 20+66.68, 19.28' RT, EL. 31.097

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FB NO.: P-6406

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WILLIAM M. WILSHIRE III, P.E.
Engineer
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Registration Number
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Date

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Texas Registered Engineering Firm F-2059

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

JEFFERSON ST PLAN & PROFILE
STA 20+00 TO STA 24+00

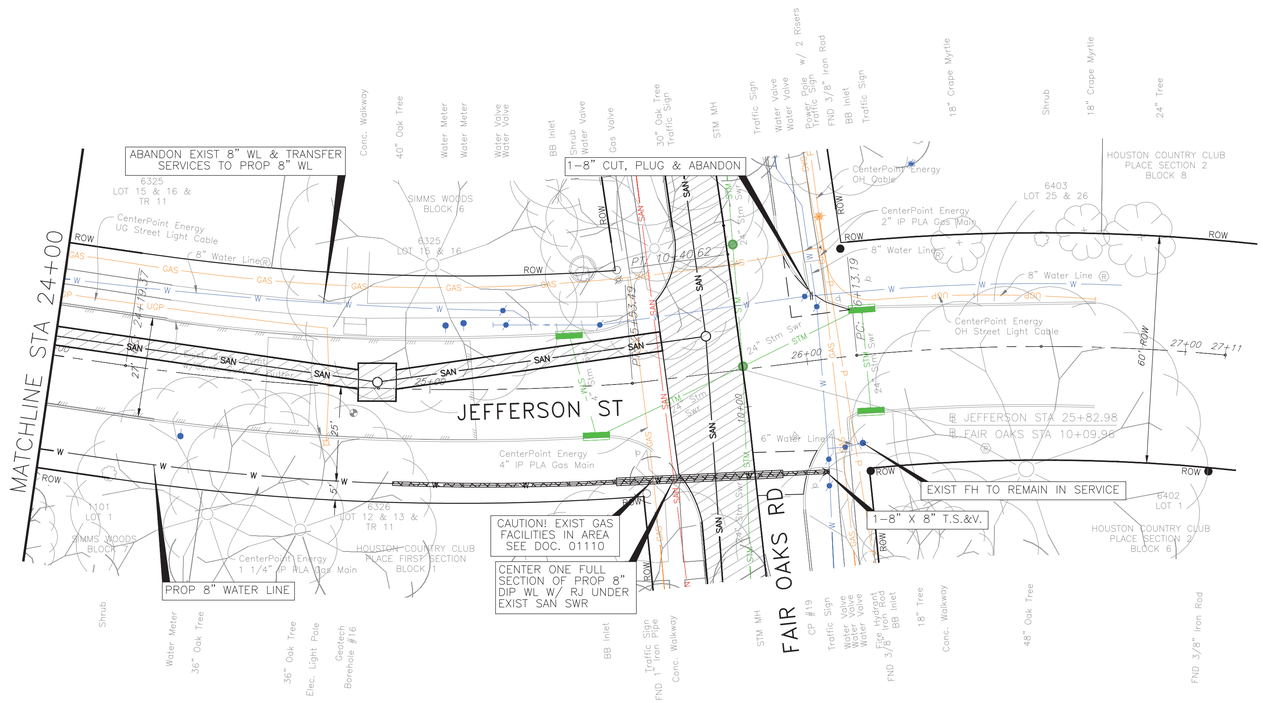
WBS NO.
R-01000-0036-3

DRAWING SCALE
1"=20'

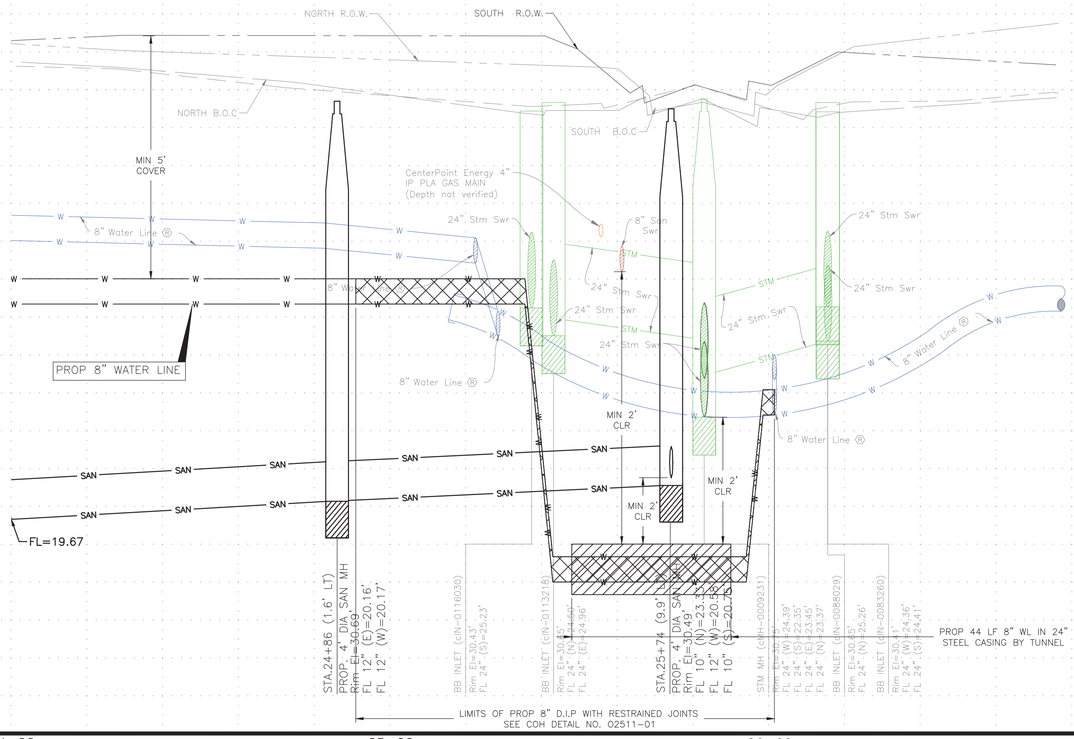
CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. 89 OF 195

K:\Amani\CRMP Package 5\4-0 Production\4-1 Drawings\Sheet Set\P&P Sheet 2 - WATER.dwg May 11, 2026 3:08pm



JEFFERSON ST (60' R.O.W)



N

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ALUMINIUM DISK LOCATED ON THE NORTHEAST CORNER OF LEELAND ST. AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

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LEGEND

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- CRITICAL LOCATION, SEE SPEC. 02317
- DIP W/ RESTRAINED JOINTS
- PAVEMENT REPAIR, REFER COH DWG NOS. 02951-01, 02951-02, 02951-03

TBM:

CP-19-X-CUT AT STA. 25+94.38, 19.32' RT, EL. 30.50

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Date

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

JEFFERSON ST PLAN & PROFILE
STA 24+00 TO END

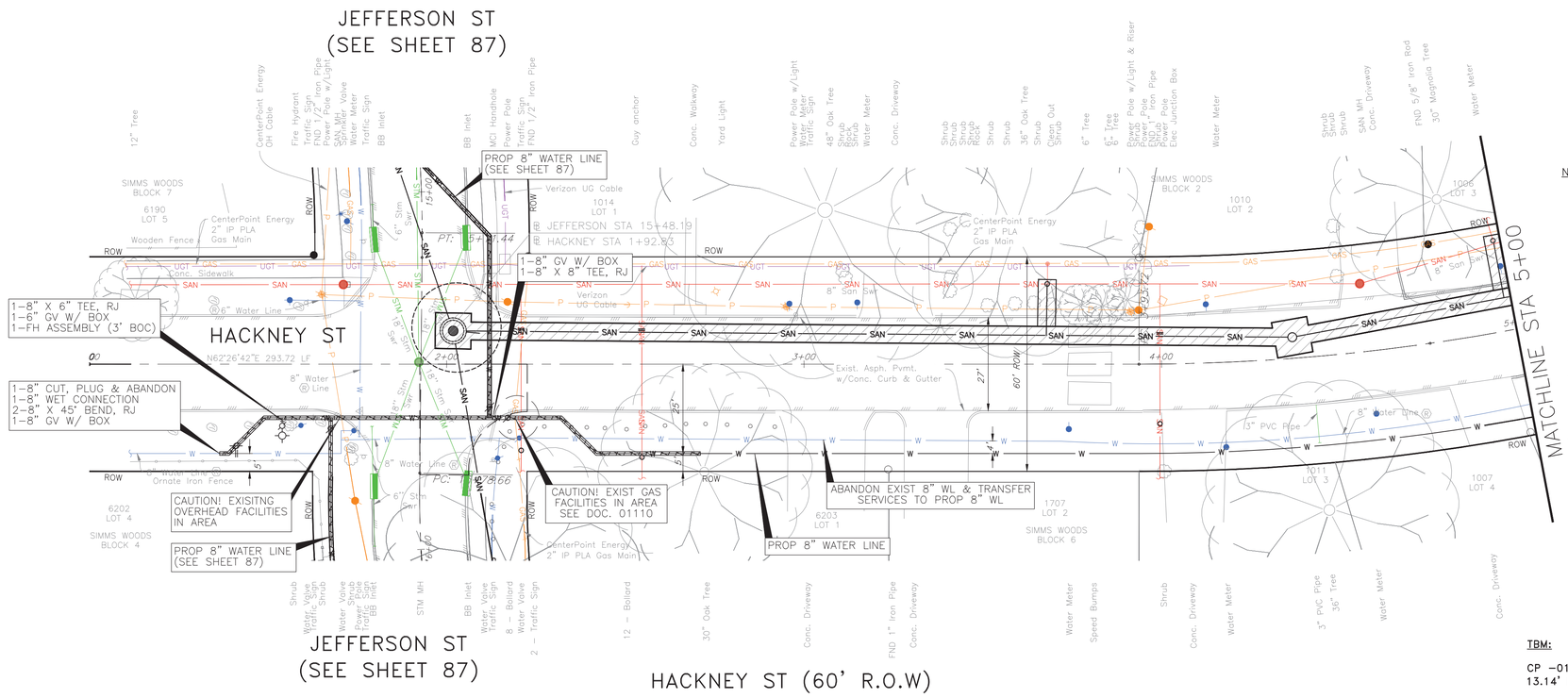
WBS NO.
R-01000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. 90 OF 195

K:\Amani\CRMP Package 5\4-0 Production\4-1 Drawings\Sheet Set\P&P Sheet 2 - WATER.dwg May 11, 2026 3:08pm



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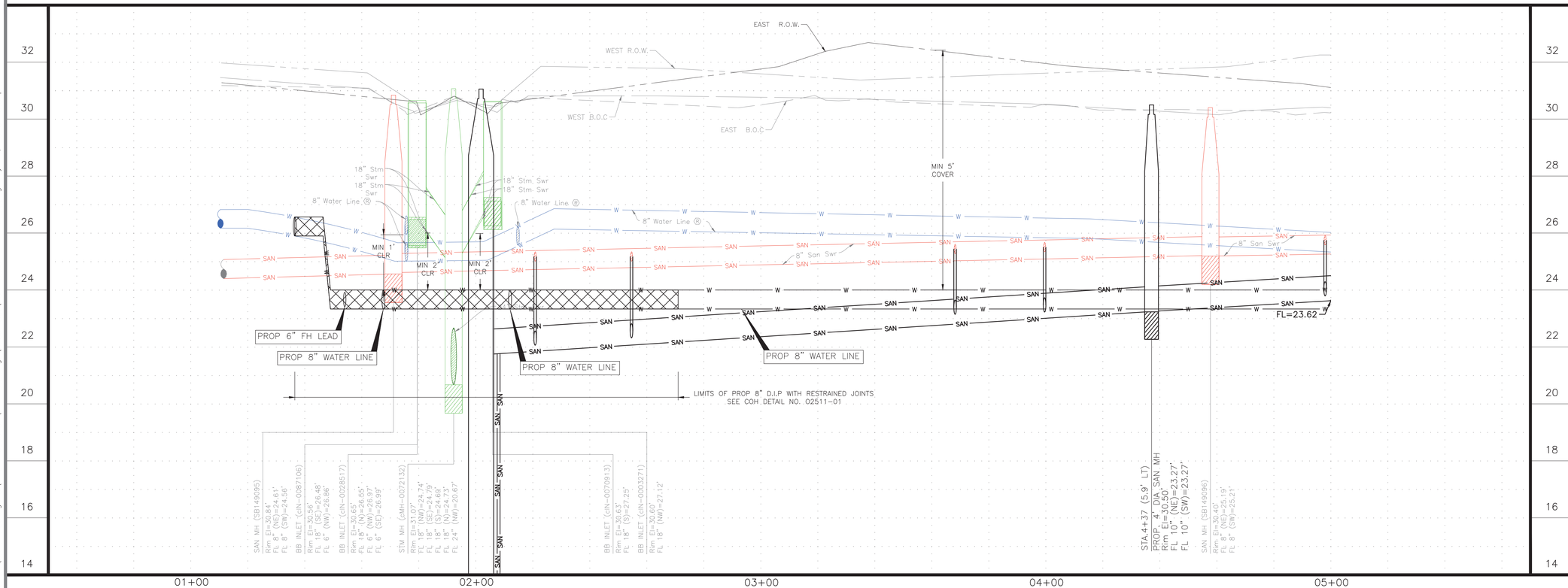
TBM:

CP -016-MAG NAIL AT STA. 01+75.91,
13.14' RT, EL. 30.59



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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5 SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

HACKNEY ST PLAN & PROFILE STA 1+00 TO STA 5+00

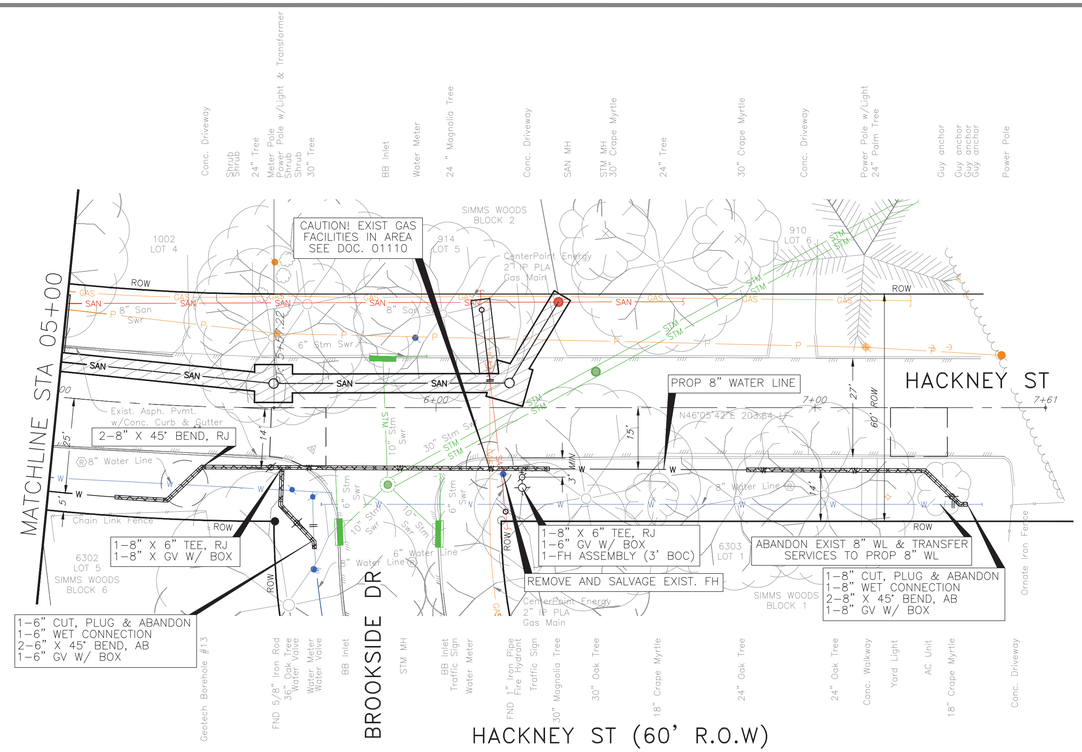
WBS NO.
R-01000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

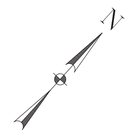
SHEET NO. 91 OF 195

K:\Amani\CRMP Package 5\4-0 Production\4-1 Drawings\Sheet Set\P&P Sheet 2 - WATER.dwg May 11, 2026 3:07pm



TBM:

CP-017-MAG NAIL AT STA. 05+67.26, 10.91' RT, EL. 29.75



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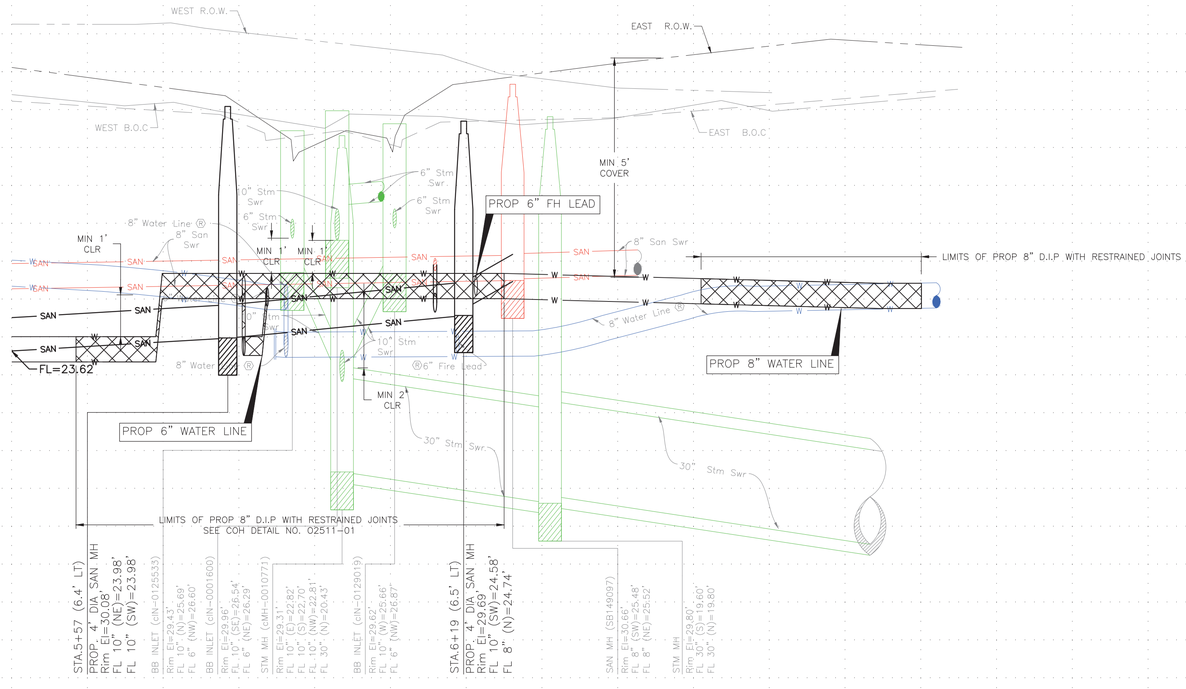
- DIP W/ RESTRAINED JOINTS
- PAVEMENT REPAIR, REFER COH DWG NOS. 02951-01, 02951-02, 02951-03



NOTICE:

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

VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

Signature valid for six months.

Date

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

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

Aurora Technical Services, LLC
engineering + construction management
TX FIRM NO. F-2059
2121 SAGE RD, SUITE 150
HOUSTON, TEXAS 77056
PHONE: 281-453-7700

SURVEYED BY: AMANI
FB NO.: P-6406

INTERIM REVIEW ONLY
Document incomplete; not intended for regulatory approval, permit, or construction.
WILLIAM M. WILSHIRE III, P.E.
Engineer
94193
Registration Number
05/08/2026
Date

Aurora Technical Services, LLC
Texas Registered Engineering Firm F-2059

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

HACKNEY ST PLAN & PROFILE
STA 5+00 TO END

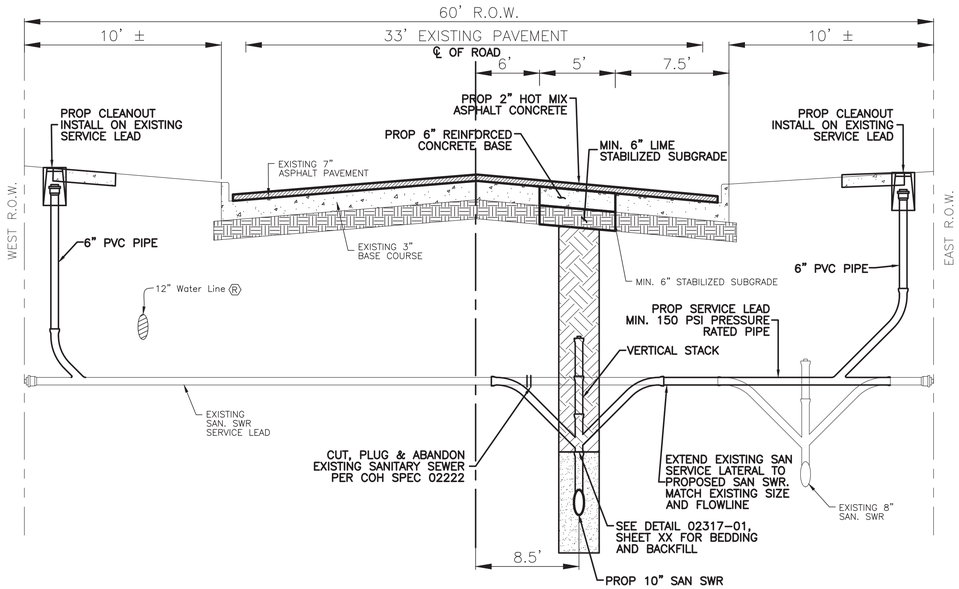
WBS NO.
R-01000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. 92 OF 195

K:\Amani\CRMP Package 5\4-0 Production\4-1 Drawings\Sheet Set\P&P Sheet 2 - WATER.dwg May 11, 2026 3:07pm



DISMUKE ST
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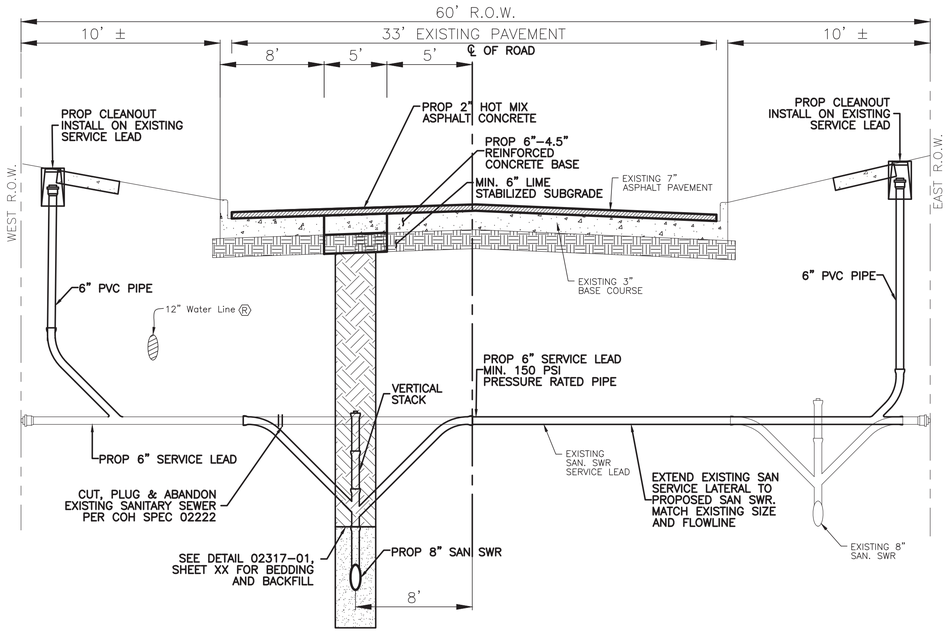
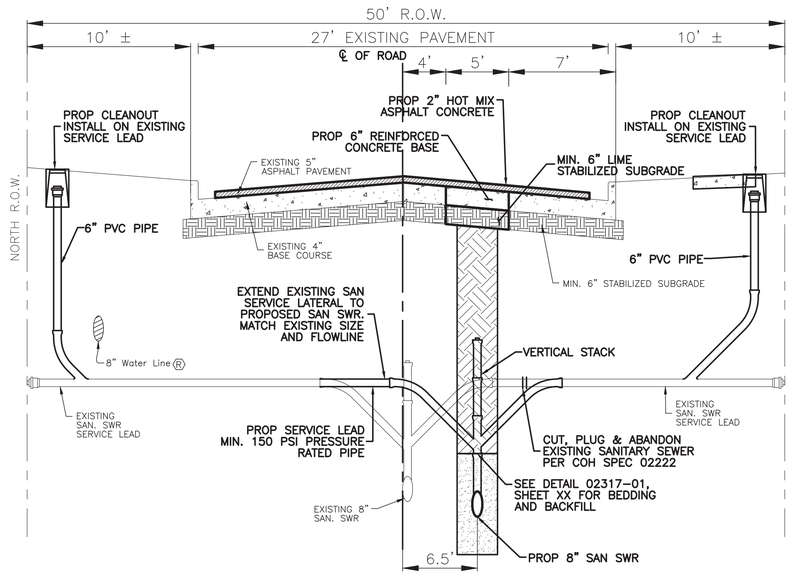
(LOOKING FROM SOUTH TO WEST)
STA 1+00 TO 4+32
N.T.S.



DISMUKE ST
TYPICAL CROSS SECTION
(LOOKING FROM SOUTH TO NORTH)
STA 4+32 TO 16+60
N.T.S.



BARREMORE AND BONSRELL ST
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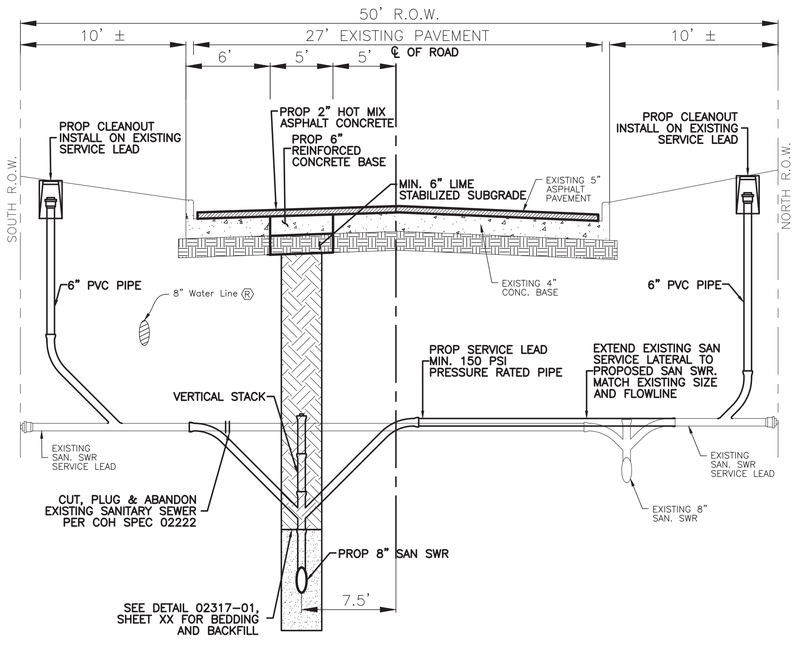

TRUETT STREET
TYPICAL CROSS SECTION
(LOOKING FROM EAST TO WEST)
N.T.S.

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\STD Drawings\X-STD DETAILS.dwg May 15, 2026 3:58pm

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
FB NO.: P-6406

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MAHESH DUTTA — NAME — 114252 — P.E. NO.

DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

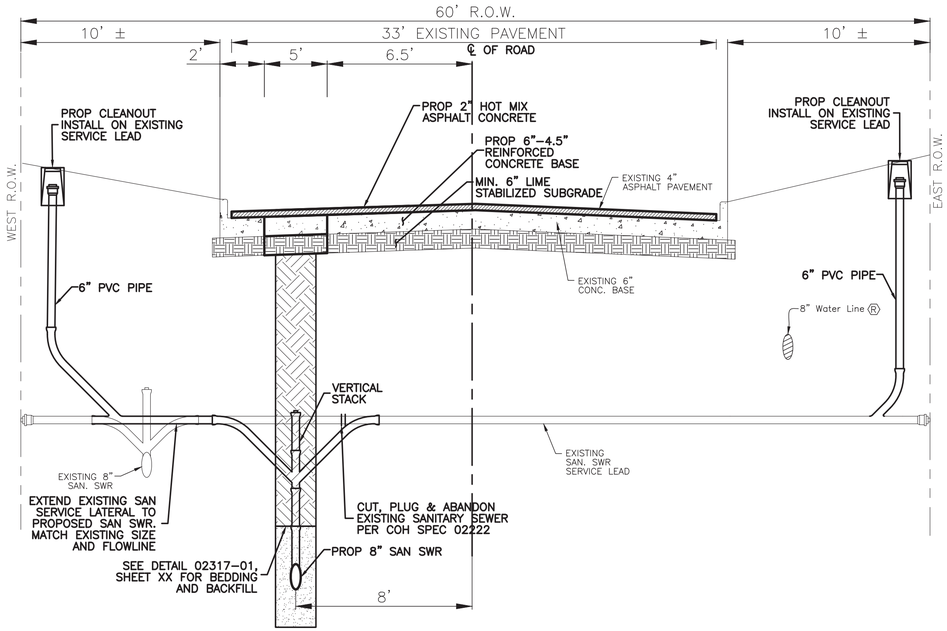
TYPICAL CROSS SECTION
(1 OF 2)

WBS NO.
R-001000-0036-3

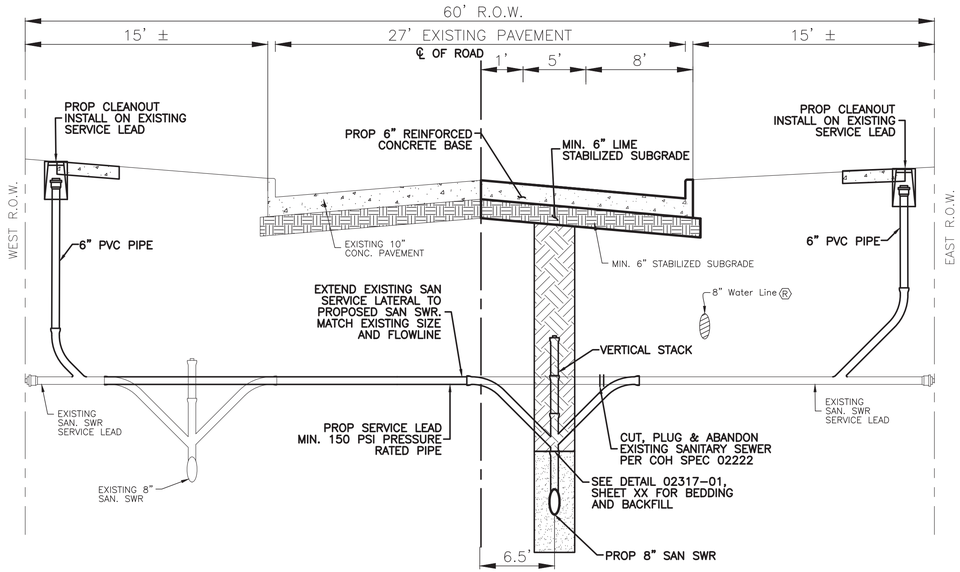
DRAWING SCALE
NTS

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. **93** OF 195



HACKNEY ST
TYPICAL CROSS SECTION
(LOOKING FROM SOUTH TO NORTH)
N.T.S.



FAIR OAKS ST
TYPICAL CROSS SECTION
(LOOKING FROM SOUTH TO NORTH)
N.T.S.

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
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SURVEYED BY: AMANI
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MAHESH DUTTA (NAME) 114252 (P.E. NO.)

DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

TYPICAL CROSS SECTION
(2 OF 2)

WBS NO.
R-001000-0036-3

DRAWING SCALE
NTS

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

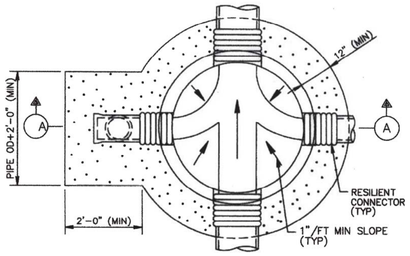
SHEET NO. **94** OF 195

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

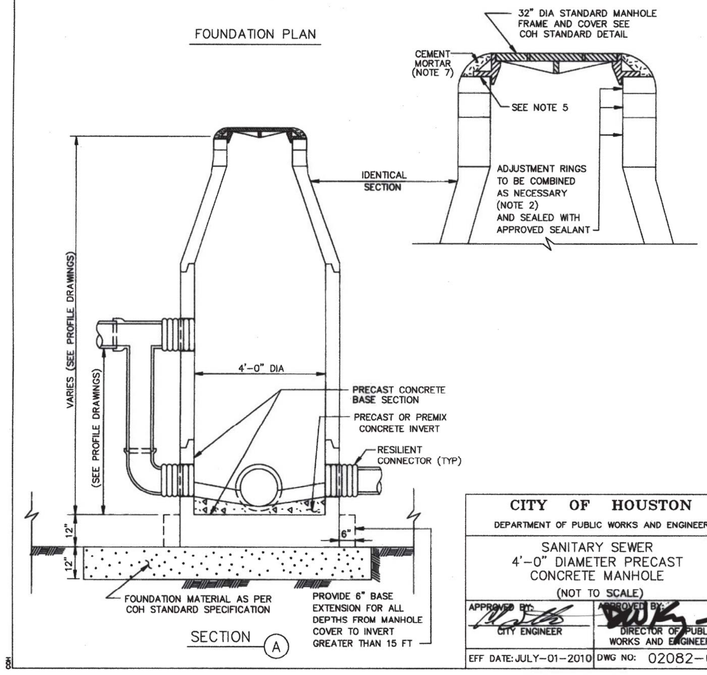
P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\STD Drawings\X-STD DETAILS.dwg May 15, 2026 3:58pm

NOTES:

1. DEPTH OF MANHOLE DETERMINES SECTIONS REQUIRED.
2. PRECAST CONCRETE RINGS SHALL BE PROVIDED FOR A COMBINED ADJUSTMENT HEIGHT OF AT LEAST 12". THE TOTAL HEIGHT OF THE ADJUSTMENT RINGS SHALL NOT EXCEED 1'-6".
3. MANHOLE WALL THICKNESS FOR DEPTH EXCEEDING 12'-0" SHALL BE DETERMINED TO MEET LOADING CONDITIONS. MIN THICKNESS 5".
4. MANHOLE DROP AND INTERSECTING PIPES SHALL BE INSTALLED ONLY WHEN CALLED FOR IN PLAN AND PROFILE DRAWING.
5. SEAT MANHOLE FRAME IN SEALANT PER COH STANDARD SPECIFICATION.
6. ECCENTRIC PRECAST CONCRETE MANHOLE MAY BE USED.
7. OMIT CEMENT MORTAR WHEN MANHOLE IS LOCATED IN PAVED AREAS.
8. MIN REINFORCING IN THE PRECAST CONCRETE BASE SHALL BE # 5 @ 8 EW.



FOUNDATION PLAN



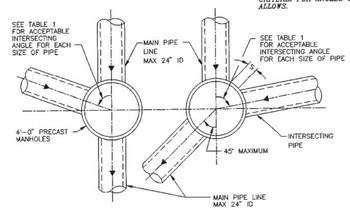
SECTION (A)

CITY OF HOUSTON	
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
SANITARY SEWER 4'-0" DIAMETER PRECAST CONCRETE MANHOLE (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JULY-01-2010	DWG NO: 02082-02

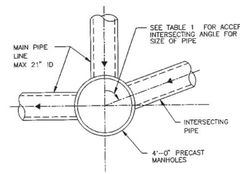
NOTES ON USE OF STANDARD DETAIL 02082-02

NOTES TO SPECIFIER:

1. "-" INDICATES THAT A SPECIAL DESIGN OR THE NEXT LARGER MANHOLE SIZE SHALL BE USED.
2. TABLE 1 IS BASED ON A MIN SEPARATION DISTANCE "S" OF 1.5 OR INTERSECTION PIPE OD/2, WHICHEVER IS GREATER, BETWEEN MAIN AND INTERSECTING PIPES ALONG THE MANHOLE INSIDE WALL ARC.
3. PIPE WALL THICKNESS USED IN TABLE 1 ARE BASED ON RCP. THE DESIGN ENGINEER MAY CALCULATE TO SEE IF THINNER WALL PIPES CAN MEET THE SEPARATION CRITERIA FOR ANGLES SMALLER THAN THE TABLE ALLOWS.



MAX 24" ID MAIN PIPE ALLOWED FOR STRAIGHT THROUGH TO 45° DEFLECTION



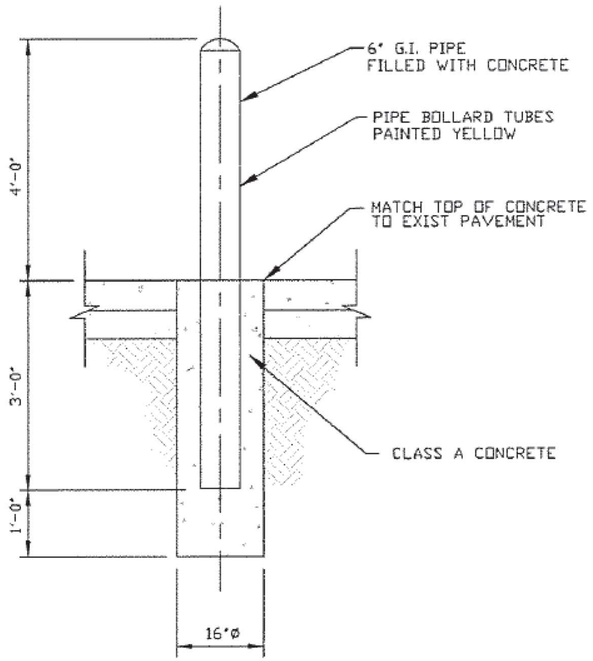
MAX 21" ID MAIN PIPE ALLOWED FOR 45° TO 90° DEFLECTION

TABLE 1
MIN ANGLE AND INTERSECTING PIPE SIZES FOR A 4'-0" DIA MANHOLE

INTERSECTING PIPE SIZE (INCHES)	MIN INTERSECTING ANGLE IN DEGREES FOR FOR VARIOUS MAIN PIPE SIZES IN INCHES							
	6"	8"	10"	12"	15"	18"	21"	24"
6	55	58	60	65	70	75	80	85
8		60	63	68	73	77	82	87
10			66	71	75	80	85	90
12				76	80	85	90	–
15					85	90	–	–
18						–	–	–
21							–	–
24								–

NOT APPLICABLE UNLESS HYDRAULICS DICTATE (INTERSECTING PIPE > MAIN PIPE)

CITY OF HOUSTON	
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION	
SANITARY SEWER 4'-0" DIAMETER PRECAST CONCRETE MANHOLE NOTES (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002	DWG NO: 02082N-02



BOLLARD DETAIL

N.T.S.

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

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MAHESH DUTTA 114252
NAME P.E. NO.
DATE 05/15/2026
TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

SANITARY SEWER MANHOLE DETAILS (1 OF 3)

WBS NO.
R-001000-0036-3

DRAWING SCALE
NTS

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. **95** OF 195

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

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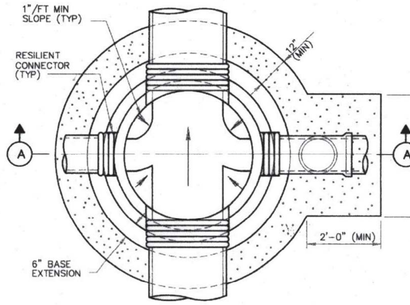
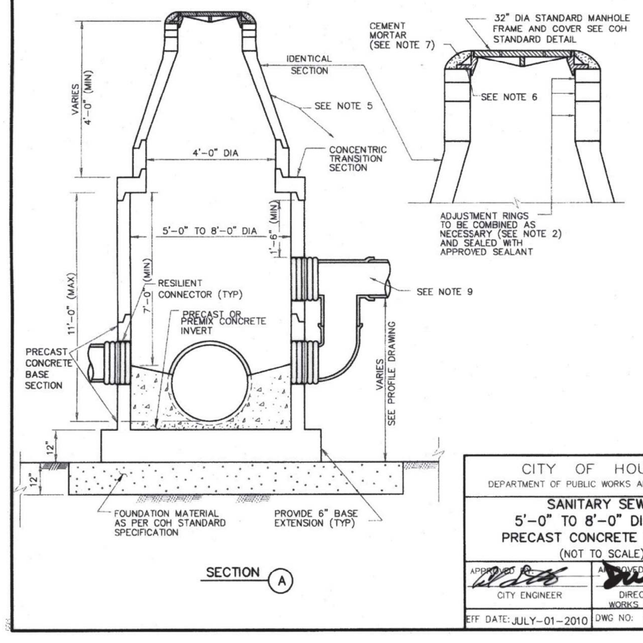


FOUNDATION PLAN

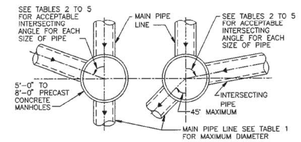
NOTES:

1. DEPTH OF MANHOLE DETERMINES SECTIONS REQUIRED.
2. PRECAST CONCRETE RINGS SHALL BE PROVIDED FOR A COMBINED ADJUSTMENT HEIGHT OF AT LEAST 12". THE TOTAL HEIGHT OF THE ADJUSTMENT RINGS SHALL NOT EXCEED 1'-6".
3. MANHOLE WALL THICKNESS FOR DEPTH EXCEEDING 12'-0" SHALL BE DETERMINED TO MEET LOADING CONDITIONS. MIN THICKNESS 5".
4. MANHOLE DROP AND INTERSECTING PIPES SHALL BE INSTALLED ONLY WHEN CALLED FOR IN PLAN AND PROFILE DRAWING.
5. ALTERNATE ECCENTRIC CONE AND/OR TRANSITION SECTION MAY BE USED.
6. SEAT MANHOLE FRAME IN SEALANT PER COH STANDARD SPECIFICATION.
7. OMIT CEMENT MORTAR WHEN MANHOLE IS LOCATED IN PAVED AREAS.
8. MIN REINFORCING IN THE PRECAST CONCRETE BASE SHALL BE # 5 @ 8 EW.
9. WHERE DIMENSIONAL RESTRICTIONS DICTATE, THE MANHOLE BASE HEIGHT SHALL BE ADJUSTED TO HAVE THE UPPER INLET PIPE OF THE DROP ENTER INTO THE 4'-0" DIAMETER RISER SECTION.

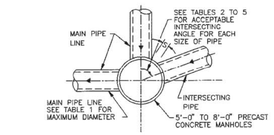


SECTION (A)

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
SANITARY SEWER 5'-0" TO 8'-0" DIAMETER PRECAST CONCRETE MANHOLE (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JULY-01-2010	DWG NO: 02082-03



FOR MAIN PIPES FROM STRAIGHT THROUGH TO 45° DEFLECTION



FOR MAIN PIPE WITH 45° TO 90° DEFLECTION

TABLE 1
MAXIMUM MAIN PIPE DIAMETER (I.D) IN INCHES

MANHOLE DIAMETER (FT)	STRAIGHT THROUGH TO 45° DEFLECTION	WITH 90° DEFLECTION	TABLE TO BE USED
5	36	27	2
6	42	33	3
7	48	36	4
8	60	42	5

TABLE 2
MINIMUM ANGLE AND INTERSECTING PIPE ID SIZES FOR 5'-0" DIA MANHOLE

INTERSECTING PIPE ID SIZES (INCHES)	MINIMUM INTERSECTING ANGLE IN DEGREES FOR VARIOUS MAIN PIPE ID SIZES IN INCHES											
	8"	10"	12"	15"	18"	21"	24"	27"	30"	33"	36"
8	49	50	54	58	61	66	69	73	77	82	86
10		53	57	61	64	68	71	76	79	84	88
12			61	65	68	72	75	80	83	88	–
15				68	71	75	79	83	87	–	–
18					75	79	82	87	90	–	–
21						83	86	90	–	–	–
24							90	–	–	–	–
27								–	–	–	–
30									–	–	–
33										–	–
36											–

* NOT APPLICABLE
(INTERSECTING PIPE GREATER THAN MAIN PIPE)

NOTES ON USE OF STANDARD DETAIL 02082-03

TABLE 3
MINIMUM ANGLE AND INTERSECTING PIPE ID SIZES FOR 6'-0" DIA MANHOLE

INTERSECTING PIPE ID SIZES (INCHES)	MINIMUM INTERSECTING ANGLE IN DEGREES FOR VARIOUS MAIN PIPE ID SIZES IN INCHES											
	8"	10"	12"	15"	18"	21"	24"	27"	30"	33"	36"	42"
8	40	42	45	49	51	54	57	61	63	67	70	76
10		44	47	50	53	56	59	62	65	69	72	79
12			50	54	56	60	62	66	68	72	75	83
15				57	59	62	65	69	71	75	78	85
18					62	65	68	71	74	78	81	88
21						68	71	74	77	81	84	–
24							74	77	80	84	87	–
27								83	85	89	–	–
30									–	–	–	–
33										–	–	–
36											–	–
42												–

TABLE 4
MINIMUM ANGLE AND INTERSECTING PIPE ID SIZES FOR 7'-0" DIA MANHOLE

INTERSECTING PIPE ID SIZES (INCHES)	MINIMUM INTERSECTING ANGLE IN DEGREES FOR VARIOUS MAIN PIPE ID SIZES IN INCHES												
	8"	10"	12"	15"	18"	21"	24"	27"	30"	33"	36"	42"	48"
8	35	36	39	42	44	47	49	52	54	57	59	65	71
10		38	40	43	45	48	50	53	55	59	61	67	73
12			43	46	48	51	53	56	58	61	64	70	76
15				48	50	53	55	58	61	64	66	72	78
18					55	56	58	61	63	66	69	74	81
21						58	60	63	66	69	71	77	83
24							63	66	68	71	74	79	86
27								70	72	76	78	84	90
30									78	81	83	89	–
33										86	88	–	–
36											–	–	–
42												–	–
48													–

TABLE 5
MINIMUM ANGLE AND INTERSECTING PIPE ID SIZES FOR 8'-0" DIA MANHOLE

INTERSECTING PIPE ID SIZES (INCHES)	MINIMUM INTERSECTING ANGLE IN DEGREES FOR VARIOUS MAIN PIPE ID SIZES IN INCHES													
	8"	10"	12"	15"	18"	21"	24"	27"	30"	33"	36"	42"	48"	54"	60"
8	30	32	34	36	38	41	43	45	47	50	52	56	61	67	74
10		33	35	38	40	42	44	46	48	51	53	58	63	68	77
12			38	40	42	44	46	49	51	53	55	60	65	71	79
15				42	44	47	48	51	53	56	58	62	67	73	81
18					46	49	51	53	55	58	56	64	70	75	83
21						51	53	55	57	60	62	67	72	77	85
24							55	57	59	62	64	69	74	79	89
27								61	63	66	68	73	78	83	–
30									67	70	72	77	82	87	–
33										74	76	81	86	–	–
36											81	86	–	–	–
42												–	–	–	–
48													–	–	–
54														–	–
60															–

NOTES TO SPECIFIER:

1. "–" INDICATES THAT A SPECIAL DESIGN OR THE NEXT LARGER MANHOLE SIZE SHALL BE USED.
2. TABLES 2 TO 5 ARE BASED ON A MIN SEPARATION DISTANCE "S" OF 15.5" OR INTERSECTION PIPE OD/2, WHICHEVER IS GREATER, BETWEEN MAIN AND INTERSECTING PIPES ALONG THE MANHOLE INSIDE WALL ARC.
3. PIPE WALL THICKNESS USED IN TABLES 2 TO 5 ARE BASED ON RCP. THE DESIGN ENGINEER MAY CALCULATE TO SEE IF THINNER WALL PIPES CAN MEET THE SEPARATION CRITERIA FOR ANGLES SMALLER THAN THE TABLES ALLOW.
4. LIMITATIONS TO BASE HEIGHT ARE BASED ON RESISTING BUOYANT UPLIFT FORCES BASED ON WATER AT GROUND SURFACE AND A SAFETY FACTOR OF 1.20.
5. A SPECIAL DESIGN IS REQUIRED IF MANHOLE ID IS GREATER THAN 6 FT.

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE GROUP	
SANITARY SEWER 5'-0" TO 8'-0" DIAMETER PRECAST CONCRETE MANHOLE NOTES (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002	DWG NO: 02082N-03

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
FB NO.: P-6406

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MAHESH DUTTA 114252
NAME P.E. NO.

DATE 05/15/2026
TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

SANITARY SEWER
MANHOLE DETAILS
(2 OF 3)

WBS NO.
R-001000-0036-3

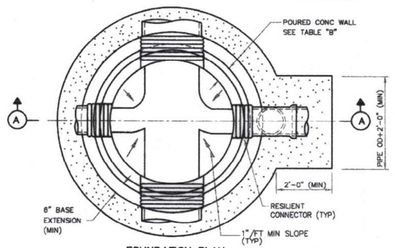
DRAWING SCALE
NTS

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

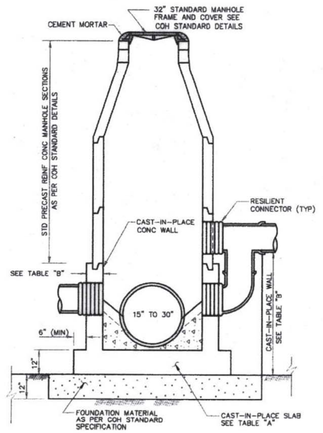
SHEET NO. **96** OF 195

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\STD Drawings\X-STD DETAILS.dwg May 15, 2026 3:59pm



FOUNDATION PLAN



ELEVATION (A)

NOTES:

1. SEAT MANHOLE FRAME IN SEALANT PER COH STANDARD SPECIFICATION.
2. OMIT CEMENT MORTAR WHEN MANHOLE IS LOCATED IN PAVED AREAS.
3. MANHOLE DROP AND INTERSECTING PIPES SHALL BE INSTALLED ONLY WHEN CALLED FOR IN PLAN AND PROFILE DRAWING.

NOTES ON USE OF STANDARD DETAIL

TABLE "A"

BASE SLAB REINFORCING AND THICKNESS			
MH INSIDE DIA (FT)	DEPTH TO INV (FT)	BASE THICKNESS	REINFORCING (E W, T & B)
8	≤ 20	1'-0"	# 6 @ 10"
	≤ 25	1'-2"	# 6 @ 8"
	≤ 30	1'-4"	# 6 @ 7"
	≤ 40	1'-6"	# 6 @ 7"
	≤ 50	1'-8"	# 6 @ 6"
	≤ 60	1'-10"	# 6 @ 6"
6	≤ 15	1'-0"	# 5 @ 8"
	≤ 20	1'-0"	# 5 @ 8"
	≤ 25	1'-2"	# 5 @ 7"
	≤ 30	1'-2"	# 5 @ 6"
	≤ 40	1'-4"	# 6 @ 8"
	≤ 50	1'-4"	# 6 @ 7"
	≤ 60	1'-6"	# 6 @ 7"
5	≤ 15	1'-0"	# 5 @ 8"
	≤ 20	1'-0"	# 5 @ 7"
	≤ 25	1'-0"	# 5 @ 6"
	≤ 30	1'-0"	# 6 @ 10"
	≤ 40	1'-2"	# 6 @ 10"
	≤ 50	1'-2"	# 6 @ 9"
	≤ 60	1'-2"	# 6 @ 8"
4	≤ 20	1'-0"	# 5 @ 8"
	≤ 25	1'-0"	# 5 @ 8"
	≤ 30	1'-0"	# 5 @ 7"
	≤ 40	1'-0"	# 6 @ 10"

TABLE "B"

WALL REINFORCING AND THICKNESS					
MH INSIDE DIA (FT)	DEPTH TO PIPE INV (FT)	MAXIMUM CAST-IN-PLACE WALL HEIGHT	WALL THICKNESS	REINFORCING AT EACH FACE	
				VERTICAL	HORIZONTAL
8	≤ 20	6'-0"	0'-10"	# 6 @ 12"	
	≤ 25	6'-6"	0'-10"	# 6 @ 10"	
	≤ 30	7'-0"	0'-10"	# 6 @ 8"	
	≤ 40	8'-0"	1'-0"	# 6 @ 8"	
	≤ 50	9'-0"	1'-2"	# 6 @ 8"	
	≤ 60	10'-0"	1'-4"	# 6 @ 8"	
6	≤ 15	5'-0"	0'-8"	# 5 @ 12"	# 5 @ 12"
	≤ 20	5'-6"	0'-8"	# 5 @ 8"	
	≤ 25	6'-0"	0'-9"	# 5 @ 8"	
	≤ 30	6'-0"	0'-9"	# 5 @ 6"	# 5 @ 8"
	≤ 40	7'-0"	0'-10"	# 5 @ 8"	
	≤ 50	8'-0"	1'-0"	# 6 @ 8"	
	≤ 60	8'-0"	1'-2"	# 6 @ 7"	
5	≤ 15	5'-0"	0'-8"	# 5 @ 8"	# 4 @ 12"
	≤ 20	5'-4"	0'-8"	# 5 @ 7"	
	≤ 25	5'-8"	0'-10"	# 5 @ 6"	
	≤ 30	6'-0"	0'-10"	# 6 @ 10"	# 5 @ 12"
	≤ 40	6'-4"	0'-10"	# 6 @ 10"	
	≤ 50	6'-8"	1'-0"	# 6 @ 8"	
	≤ 60	7'-0"	1'-2"	# 6 @ 8"	
4	≤ 20	4'-6"	0'-8"	# 5 @ 12"	# 4 @ 12"
	≤ 25	5'-0"	0'-8"	# 5 @ 10"	
	≤ 30	5'-4"	0'-10"	# 6 @ 12"	
	≤ 40	6'-0"	0'-10"	# 6 @ 12"	

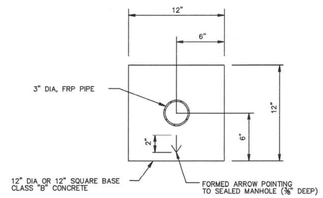
NOTE TO SPECIFIER:

1. TABLES "A" AND "B" WILL BE USED TO DESIGN THE CAST-IN-PLACE BASE AND WALL FOR VARIOUS MANHOLE DIAMETER AND DEPTH.

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

SANITARY SEWER
PRECAST CONCRETE MANHOLE
WITH CAST-IN-PLACE BASE
(NOT TO SCALE)

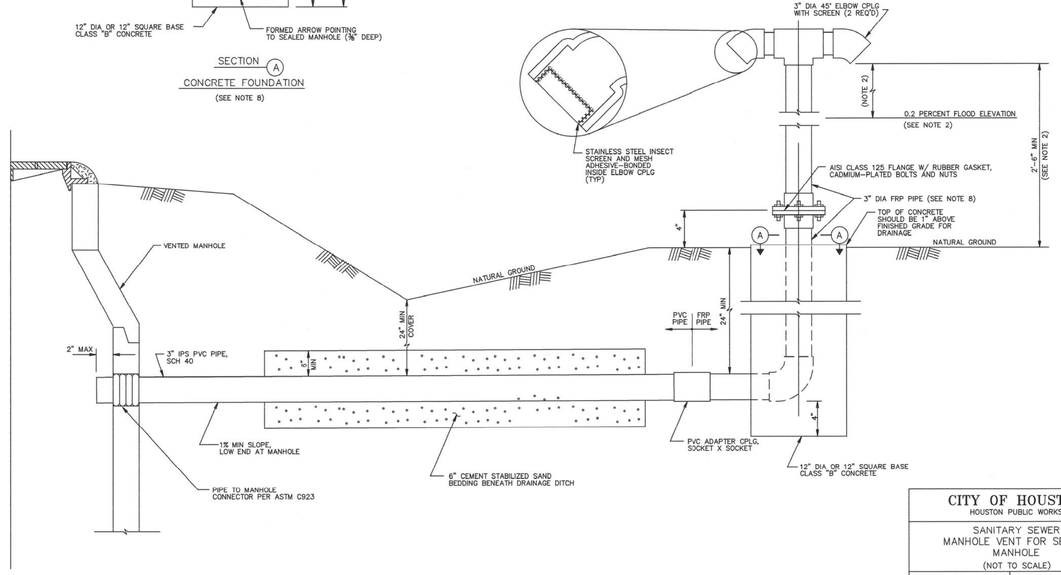
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JULY-01-2010	DWG NO: 02082-08



SECTION (A)
CONCRETE FOUNDATION
(SEE NOTE 8)

NOTES:

1. INSTALL AT LOCATION AND BASED ON 0.2 PERCENT FLOOD ELEVATION SHOWN ON PLAN AND PROFILE DWGS.
2. MINIMUM VENT HEIGHT ELEVATION IS TO BE 2'-6" ABOVE THE NATURAL GROUND OR AS REQUIRED BY CHAPTER 19 SECTION 19-33 OF THE CITY OF HOUSTON CODE OF ORDINANCES, WHICHEVER IS HIGHER.
3. WHEN FLOODPROOFED VENTS ARE SPECIFIED BY THE EOR, REFER TO THE CONTRACT DOCUMENTS FOR CONSTRUCTION REQUIREMENTS.
4. DRAIN TO VENTED (ADJACENT) MH AT MIN 1% SLOPE. CONNECT TO MANHOLE WITH SPECIFIED CONNECTOR.
5. WHEN VENT CROSSES DRAINAGE DITCH, PROVIDE CEMENT STABILIZED SAND BEDDING
6. THE VENT IS TO BE INSTALLED WITHIN THE RIGHT OF WAY.
7. SEE COH STANDARD SPECIFICATIONS FOR PROTECTIVE COATING REQUIREMENTS FOR EXPOSED FRP PIPE.
8. THIS STANDARD DETAIL SETS THE MINIMUM REQUIREMENTS FOR THE MANHOLE VENT'S CONCRETE FOUNDATION, AND YOUR PEN'S CONCRETE EOR IS RESPONSIBLE FOR THE ADEQUACY AND DESIGN OF THE CONCRETE FOUNDATION, AND VENT PIPE SIZE AND SHALL PROVIDE CONSTRUCTION DETAILS IN THE DRAWINGS.



CITY OF HOUSTON
HOUSTON PUBLIC WORKS

SANITARY SEWER
MANHOLE VENT FOR SEALED MANHOLE
(NOT TO SCALE)

APPROVED BY: Suhail Kanwar CITY ENGINEER	APPROVED BY: DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2021	DWG NO: 02082-06

AMANI ENGINEERING, INC.
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Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
FB NO.: P-6406

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MAHESH DUTTA — NAME
114252 — P.E. NO.
DATE 05/15/2026
TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

SANITARY SEWER
MANHOLE DETAILS
(3 OF 3)

WBS NO.
R-001000-0036-3

DRAWING SCALE
NTS

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. **97** OF 195

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

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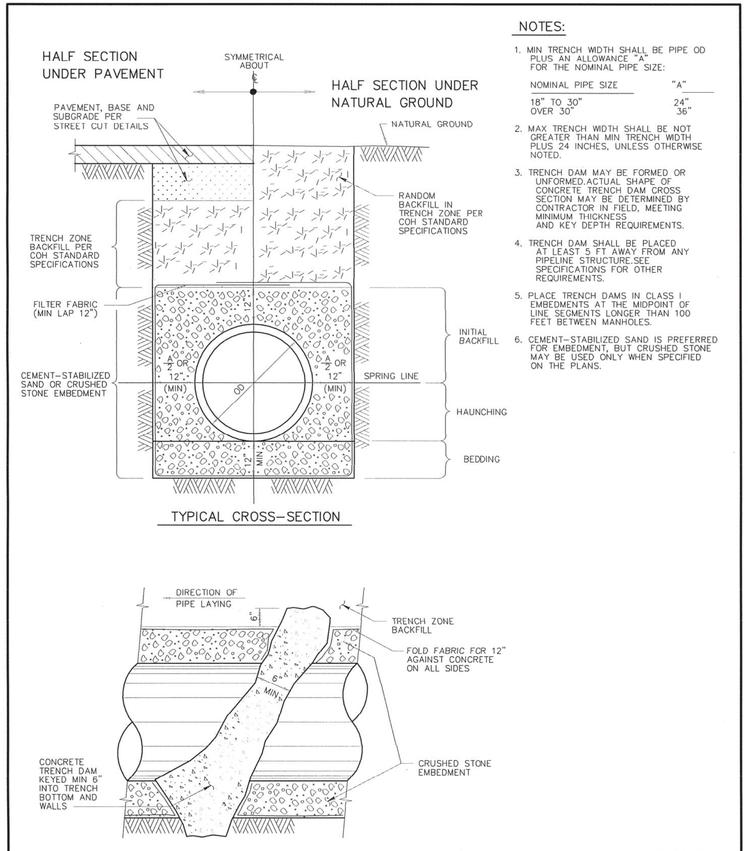


NOTES:

1. MIN TRENCH WIDTH SHALL BE PIPE OD PLUS AN ALLOWANCE "A" FOR THE NOMINAL PIPE SIZE:

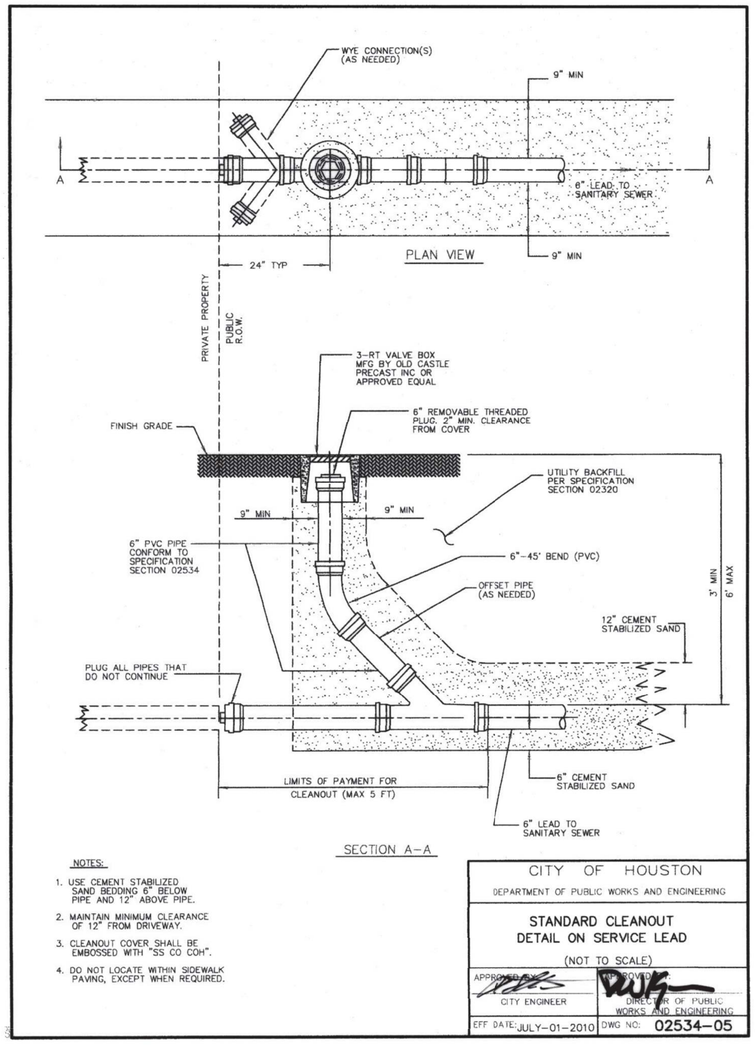
NOMINAL PIPE SIZE	"A"
18" TO 30"	24"
OVER 30"	36"

2. MAX TRENCH WIDTH SHALL BE NOT GREATER THAN MIN TRENCH WIDTH PLUS 24 INCHES, UNLESS OTHERWISE NOTED.
3. TRENCH DAM MAY BE FORMED OR UNFORMED. ACTUAL SHAPE OF CONCRETE TRENCH DAM CROSS SECTION MAY BE DETERMINED BY CONTRACTOR IN FIELD, MEETING MINIMUM THICKNESS AND KEY DEPTH REQUIREMENTS.
4. TRENCH DAM SHALL BE PLACED AT LEAST 5 FT AWAY FROM ANY PIPELINE STRUCTURE. SEE SPECIFICATIONS FOR OTHER REQUIREMENTS.
5. PLACE TRENCH DAMS IN CLASS I EMBEDMENTS AT THE MIDPOINT OF LINE SEGMENTS LONGER THAN 100 FEET BETWEEN MANHOLES.
6. CEMENT-STABILIZED SAND IS PREFERRED FOR EMBEDMENT, BUT CRUSHED STONE MAY BE USED ONLY WHEN SPECIFIED ON THE PLANS.

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

SANITARY SEWER EMBEDMENT
AND TRENCH ZONE BACKFILL
FOR DRY OR WET STABLE TRENCH
(NOT TO SCALE)

APPROVED BY: CITY ENGINEER	APPROVED: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2016	DWG NO: 02317-01



NOTES:

1. USE CEMENT STABILIZED SAND BEDDING 6" BELOW PIPE AND 12" ABOVE PIPE.
2. MAINTAIN MINIMUM CLEARANCE OF 12" FROM DRIVEWAY.
3. CLEANOUT COVER SHALL BE EMBOSSED WITH "SS CO COH".
4. DO NOT LOCATE WITHIN SIDEWALK PAVING, EXCEPT WHEN REQUIRED.

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

STANDARD CLEANOUT
DETAIL ON SERVICE LEAD
(NOT TO SCALE)

APPROVED BY: CITY ENGINEER	APPROVED: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JULY-01-2010	DWG NO: 02534-05

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
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Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
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MAHESH DUTTA 114252
NAME P.E. NO.

DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

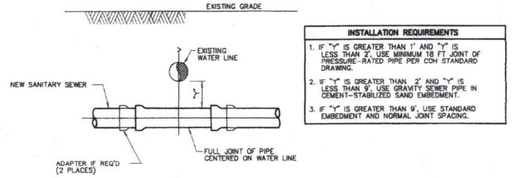
CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

SANITARY SEWER CONSTRUCTION & PIPE BEDDING DETAILS

WBS NO. R-001000-0036-3	
DRAWING SCALE	
NTS	
CITY OF HOUSTON, PM	
SABEEN SHAIKH, P.E.	
SHEET NO. **98** OF 195	

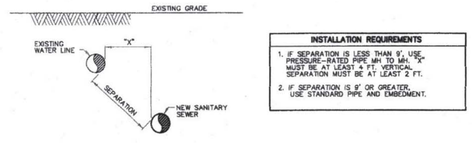
P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\STD Drawings\X-STD DETAILS.dwg May 15, 2026 3:59pm

0 1 2 3 ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS



NEW SANITARY SEWER CROSSING EXISTING WATER LINE

INSTALLATION REQUIREMENTS
1. IF "Y" IS GREATER THAN 1' AND "Y" IS LESS THAN 2', USE MINIMUM 18 FT JOINT OF PRESSURE-RATED PIPE PER COH STANDARD DRAWING.
2. IF "Y" IS GREATER THAN 2' AND "Y" IS LESS THAN 9', USE GRAVITY SEWER PIPE IN CEMENT-STABILIZED SAND EMBEDMENT.
3. IF "Y" IS GREATER THAN 9', USE STANDARD EMBEDMENT AND NORMAL JOINT SPACING.



NEW SANITARY SEWER PARALLEL TO EXISTING WATER LINE

INSTALLATION REQUIREMENTS
1. IF SEPARATION IS LESS THAN 9', USE PRESSURE-RATED PIPE MH TO MH. "X" MUST BE AT LEAST 4 FT. VERTICAL SEPARATION MUST BE AT LEAST 2 FT.
2. IF SEPARATION IS 9' OR GREATER, USE STANDARD PIPE AND EMBEDMENT.

NOTES:

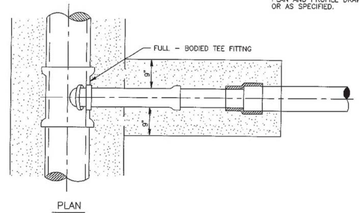
1. SANITARY SEWER MUST BE BELOW WATER LINE WHEREVER POSSIBLE. WHEN WATERLINE IS BELOW THE SANITARY SEWER PROVIDE MINIMUM 2 FT SEPARATION AND INSTALL PIPE IN ACCORDANCE TO CHAPTER 7 TABLE 7.3 OF COH DESIGN MANUAL.
2. WHEN PRESSURE-RATED PIPE IS REQUIRED, PROVIDE PIPE WITH MINIMUM 150 psi PRESSURE RATING.
3. ADAPTERS MUST BE FACTORY MOLDED OR FABRICATED, WITH RING STIFFNES AT LEAST EQUAL TO THE ADJOINING SANITARY SEWER PIPE, AND USING RESILIENT GASKET OR SEAL MATERIAL. FLEXIBLE RUBBER "BOOT" TYPE ADAPTERS WILL NOT BE ACCEPTED.
4. INSTALL FORCE MAINS SAME AS FOR GRAVITY SEWER, USING SPECIFIED PRESSURE PIPE.
5. "Y" MUST ALWAYS BE GREATER THAN OR EQUAL TO 1 FT FOR PRESSURE RATED SS AND 2 FT FOR NON-PRESSURE RATED SS.
6. "X" MUST BE GREATER THAN OR EQUAL TO 4 FT.
7. ALTERNATIVES MAY BE SHOWN ON THE DRAWINGS OR DESCRIBED IN THE SPECIFICATIONS.
8. SEPARATION REQUIREMENTS SHOWN HERE DO NOT APPLY TO SERVICE CONNECTIONS - REFER TO PLUMBING CODE FOR APPLICABLE REQUIREMENTS.

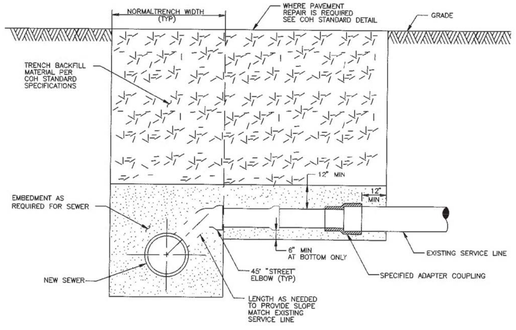
INSTALLING SANITARY SEWERS CROSSING OR PARALLEL TO WATER LINES

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
SANITARY SEWER INSTALLING SANITARY SEWERS CROSSING OR PARALLEL TO WATER LINES (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2010	DWG NO: 02531-05

NOTE:

1. REPLACE EXISTING SERVICE LINE TO EXTENT SHOWN ON PLAN AND PROFILE DRAWINGS, OR AS SPECIFIED.





CROSS-SECTION OF SEWER AT SERVICE CONNECTION

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION	
SANITARY SEWER SERVICE RECONNECTION ON NEW OR REPLACEMENT SEWER (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002	DWG NO: 02534-04

AMANI ENGINEERING, INC.
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Texas Registered Surveying Firm No. 100282-00

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FB NO.: P-6406

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MAHESH DUTTA — NAME
114252 — P.E. NO.
05/15/2026 — DATE
TBPELS FIRM #F-4528

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

SANITARY SEWER SERVICE RECONNECTION DETAILS (1 OF 2)

WBS NO.
R-001000-0036-3

DRAWING SCALE
NTS

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

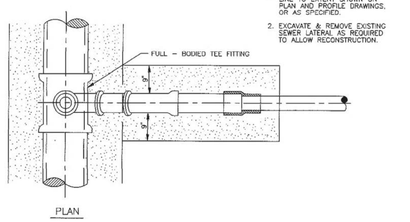
SHEET NO. **99** OF 195

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\STD Drawings\X-STD DETAILS.dwg May 15, 2026 3:59pm

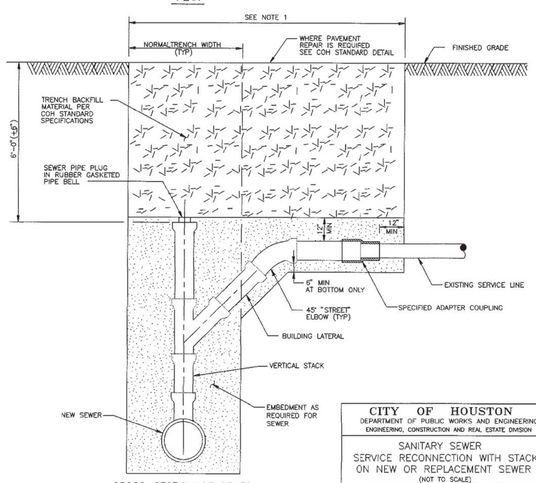
0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

NOTES:

1. REPLACE EXISTING SERVICE LINE TO EXTENT SHOWN ON PLAN AND PROFILE DRAWINGS, OR AS SPECIFIED.
2. EXCAVATE & REMOVE EXISTING SEWER LATERAL AS REQUIRED TO ALLOW RECONSTRUCTION.

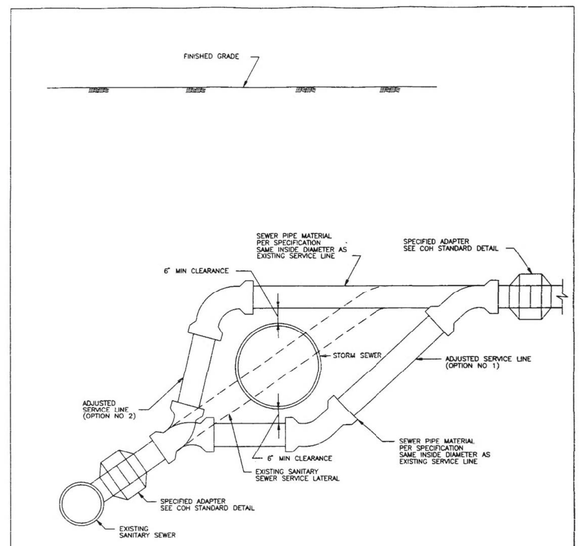


PLAN



CROSS-SECTION OF SEWER AT SERVICE CONNECTION

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION	
SANITARY SEWER SERVICE RECONNECTION WITH STACK ON NEW OR REPLACEMENT SEWER (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF. DATE: OCT-01-2002	DWG NO: 02534-02



CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION	
SANITARY SEWER SERVICE LINE RECONNECTION FOR STORM SEWER CONFLICTS (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF. DATE: OCT-01-2002	DWG NO: 02534-03

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
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Texas Registered Surveying Firm No. 100282-00

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MAHESH DUTTA 114252
NAME P.E. NO.

DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5 SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

SANITARY SEWER SERVICE RECONNECTION DETAILS (2 OF 2)

WBS NO.
R-001000-0036-3

DRAWING SCALE
NTS

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. **100** OF 195

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

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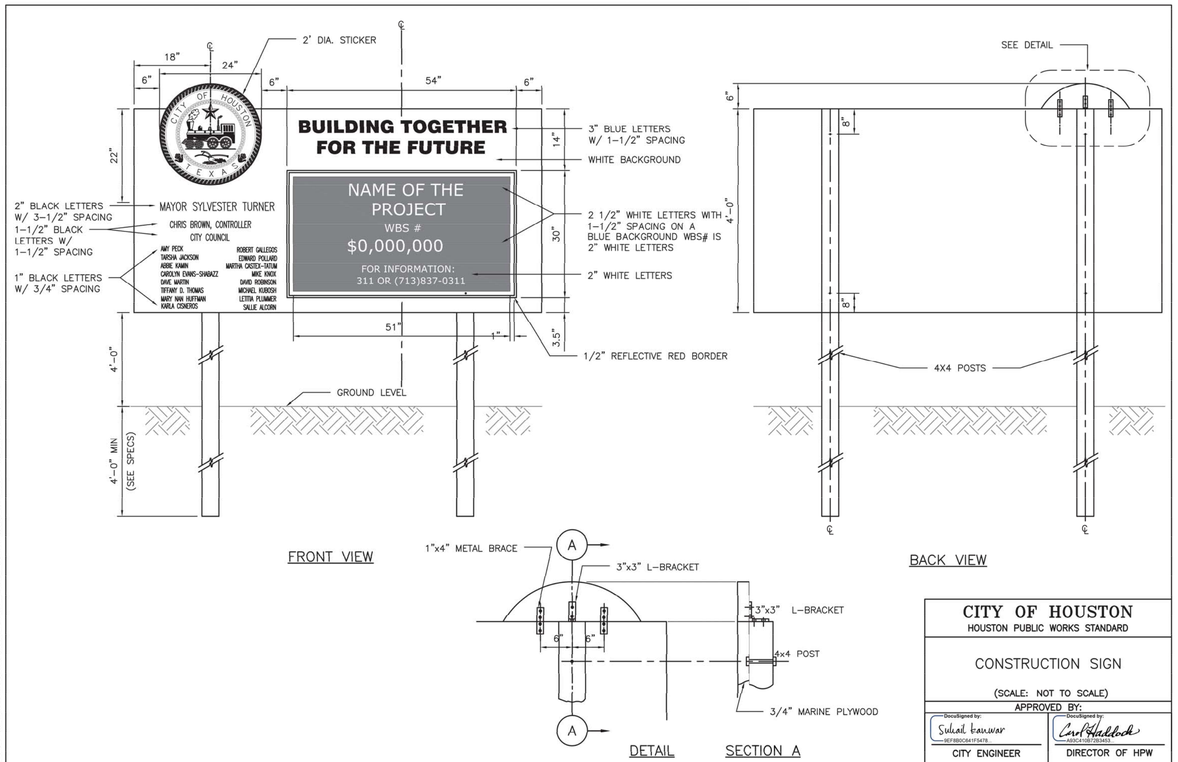

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

CONSTRUCTION SIGN

(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Sukat Barwar	DocuSigned by: Carl Haddock
CITY ENGINEER	DIRECTOR OF HPW
EFF DATE: NOV-27-2023	DWG NO: 01580-01

DISCLAIMER:
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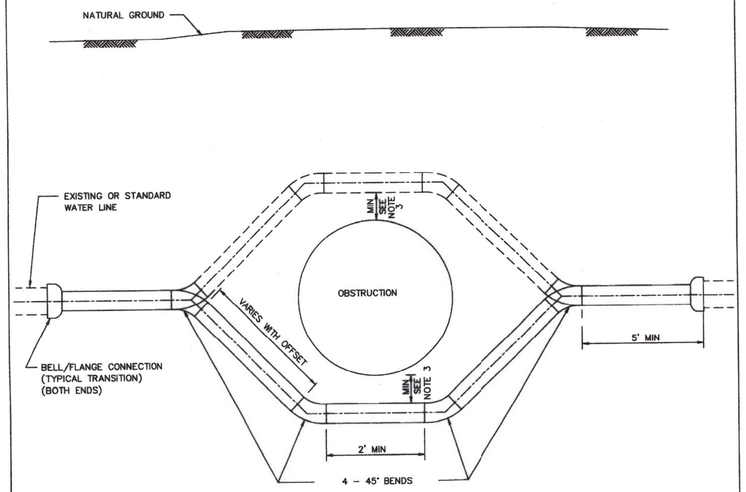
NOTE:

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:	APPROVED
CITY ENGINEER	DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JULY-01-2010	DWG NO: 02511-01

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
FB NO.: P-6406

PRELIMINARY

FOR INTERIM REVIEW ONLY

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND NOT INTENDED FOR REGULATORY APPROVAL, PERMIT, BIDDING OR CONSTRUCTION PURPOSES. THEY WERE PREPARED BY OR UNDER THE SUPERVISION OF:

MAHESH DUTTA (NAME) 114252 (P.E. NO.)
DATE 05/15/2026
TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

CONSTRUCTION SIGN & PIPE OFFSET FOR WATER LINES DETAILS

WBS NO.
R-001000-0036-3

DRAWING SCALE
NTS

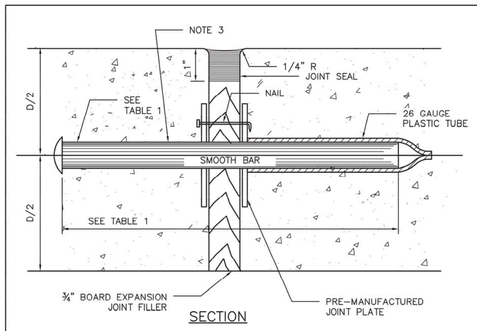
CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. **101** OF 195

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3

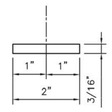
P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\STD Drawings\X-STD DETAILS.dwg May 15, 2026 4:00pm

Sign Envelope ID: 9B122261-CF05-457B-9A65-2650F40B66D5



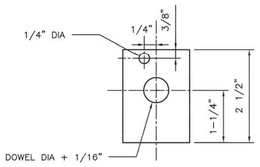
SECTION

DOWEL TYPE EXPANSION JOINT



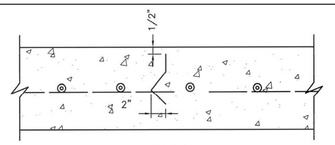
PLAN VIEW

JOINT PLATE



ELEVATION VIEW

JOINT PLATE



SECTION

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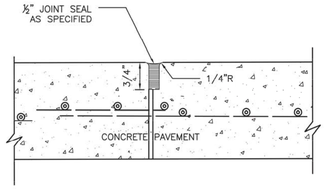

SECTION

CONSTRUCTION JOINT SEAL

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: Sukat Barwar — CITY ENGINEER

DocuSigned by: Carl Haddock — DIRECTOR OF HPW

DocuSigned by: HANG NGUYEN — CITY TRAFFIC ENGINEER

EFF DATE: NOV-27-2023 | DWG NO: 02752-01

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.

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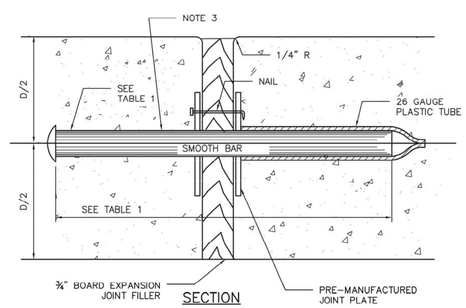
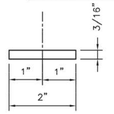


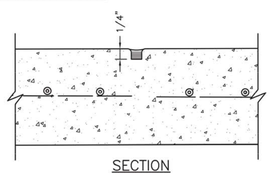
SECTION

DOWEL TYPE EXPANSION JOINT



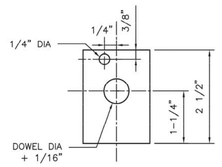
PLAN VIEW

JOINT PLATE



SECTION

CONTROL JOINT

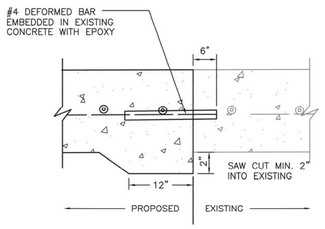


ELEVATION VIEW

JOINT PLATE

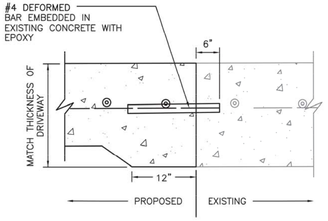
TABLE 1

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



SECTION

SIDEWALK TO EXISTING SIDEWALK



SECTION

SIDEWALK TO EXISTING DRIVEWAY

NOTES:

1. STEEL TO MEET ASTM STANDARD SPECIFICATIONS FOR CONCRETE REINFORCING BARS.
2. EXPANSION JOINT TO BE PLACED AT THE END OF EACH CURB RADIUS AND SPACED AT A MAXIMUM DISTANCE OF 3 FEET MAXIMUM SPACING FOR CONTROL JOINTS SHALL BE 5 FEET.
3. CENTER DOWEL HORIZONTALLY ON JOINT.
4. CENTER DOWEL VERTICALLY IN CONCRETE AS NEEDED TO MAINTAIN A 2 INCH MINIMUM COVER.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

SIDEWALK EXPANSION AND CONSTRUCTION JOINT DETAILS

(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Sukat Barwar — CITY ENGINEER

DocuSigned by: HANG NGUYEN — CITY TRAFFIC ENGINEER

DocuSigned by: Carl Haddock — DIRECTOR OF HPW

EFF DATE: NOV-27-2023 | DWG NO: 02752-02

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SURVEYED BY: AMANI
FB NO.: P-6406

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MAHESH DUTTA 114252
NAME P.E. NO.

DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

CONSTRUCTION & EXPANSION JOINT DETAILS

WBS NO.
R-001000-0036-3

DRAWING SCALE
NTS

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. **102** OF 195

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3

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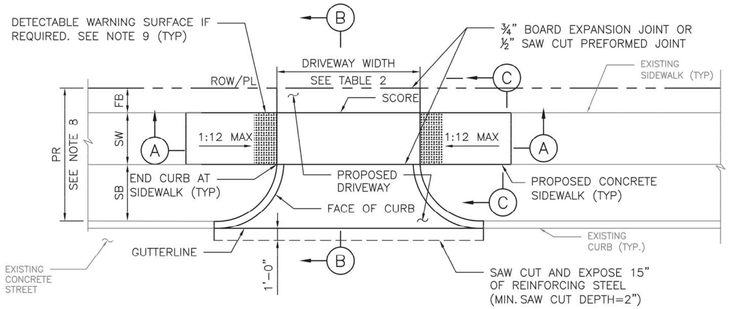
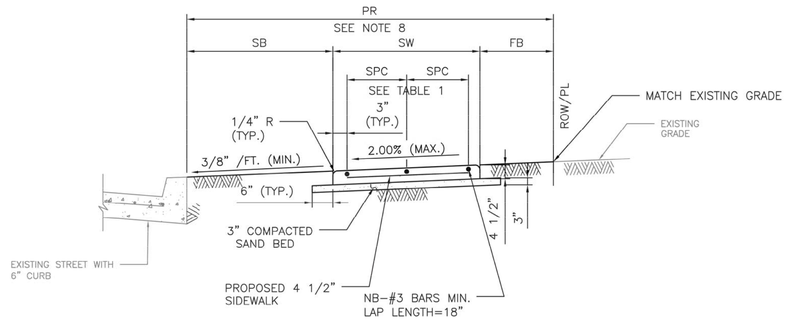
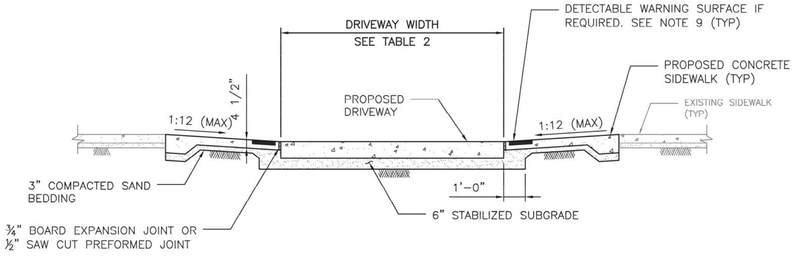


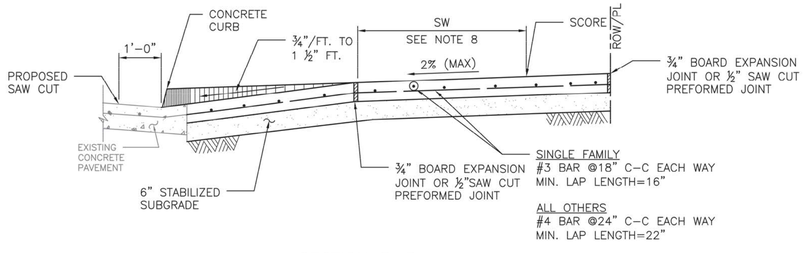
PLAN VIEW
DRIVEWAY



SECTION C–C
TYPICAL SIDEWALK SECTION



SECTION A–A
PROPOSED SIDEWALK THROUGH DRIVEWAY
WITH EXCESSIVE ELEVATION DIFFERENCE
WITH EXISTING SIDEWALK



SECTION B–B
TYPICAL DRIVEWAY SECTION

TABLE 1

REINFORCING STEEL INFORMATION
FOR 4 ½ " THICK SIDEWALKS
EXPANSION JOINT SPACING = 40 FT
fc' = 3,500 PSI AND fy = 60,000 PSI
REFER TO CONTRACT DRAWINGS FOR SIDEWALKS WIDER THAN 6 FEET.

SIDEWALK THICKNESS (IN)	SIDEWALK WIDTH (FT)	LONGITUDINAL STEEL			TRANSVERSE STEEL #3 BARS SPACING (IN)
		#3 BARS			
		NO. OF BARS "NB"	SPACING "SPC" (IN)	END BAR SPACING (IN)	
4.5	5	3	27	3	48
4.5	6	4	22	3	48

TABLE 2

DRIVEWAY DESIGN CRITERIA (1)(2)

TRAFFIC TYPE	TYPE A DRIVEWAY (FOR SINGLE FAMILY RESIDENTIAL HOUSES OR DUPLEXES)				TYPE B DRIVEWAY (SHARED ACCESS/SHARED DRIVEWAY)				TYPE C DRIVEWAY (COMMERCIAL DRIVEWAY)			
	WIDTH (FT)		RADIUS (FT)		WIDTH (FT)		RADIUS (FT)		WIDTH (FT)		RADIUS (FT)	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
ONE–WAY	10	12	4	10	12(5)	16(5)	4(5)	10(5)	15	20	10	20
TWO–WAY	10(3)	24(4)	4	10	16(6)	24	4	10	24	35	10	20

(1) REFER TO INFRASTRUCTURE DESIGN MANUAL ARTICLE 15.2.07.C.1.F FOR DRIVEWAYS THAT REQUIRE A VEHICLE SWEPT PATH ANALYSIS.
(2) REFER TO INFRASTRUCTURE DESIGN MANUAL ARTCILES 15.2.07.C.1.G.(1) AND 15.2.07.C.1.G.(2) FOR TYPE 1 PAE AND TYPE 2 PAE REQUIREMENTS.
(3) THE MINIMUM WIDTH FOR JOINT ACCESS DRIVEWAY IS 12 FT.
(4) REFER TO CHAPTER 42 OF THE CODE OF ORDINANCES FOR DRIVEWAY WIDTHS FOR NARROW LOTS.
(5) ONLY MURS AND COURTYARD STYLE DEVELOPMENTS ON CORNER LOTS CAN HAVE ONE–WAY DRIVEWAYS.
(6) REFER TO CHAPTER 42, SECTION 42–146 OF THE CODE OF ORDINANCES FOR EXCEPTIONS TO THE MINIMUM DRIVEWAY WIDTH FOR SHARED DRIVEWAYS.

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: Suhail Kanwar 9EF8B0C641F5478...	DocuSigned by: KHANG NGUYEN 95A29EFDA75B4CD...
CITY ENGINEER	CITY TRAFFIC ENGINEER

APPROVED BY:
DocuSigned by: Curt Hahlbeck A93C410B72B3453...
DIRECTOR OF HOUSTON PUBLIC WORKS

EFF DATE: NOV–27–2023 | DWG NO: 02754–01B

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270–5700
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SURVEYED BY: AMANI
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

DRIVEWAY AND SIDEWALK DETAILS

WBS NO. R–001000–0036–3	
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CITY OF HOUSTON, PM	
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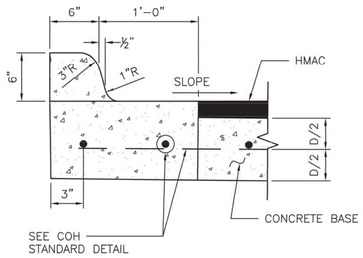
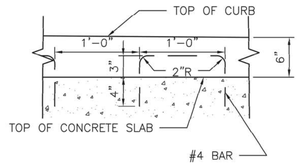
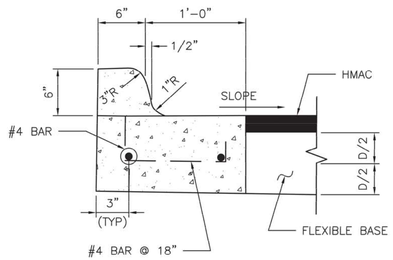


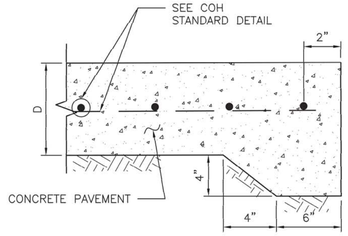
ESPLANADE CURB CONNECTED TO CONCRETE BASE



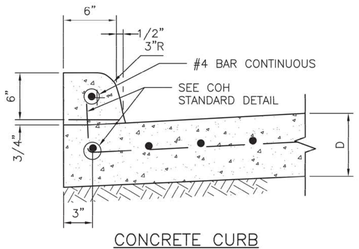
ALTERNATE CONCRETE CURB REINFORCEMENT



ESPLANADE CURB CONNECTED TO FLEXIBLE BASE

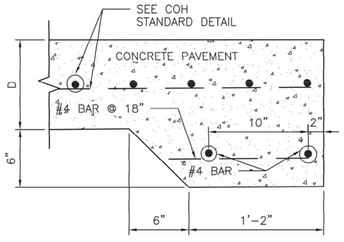


STANDARD CONCRETE PAVING HEADER

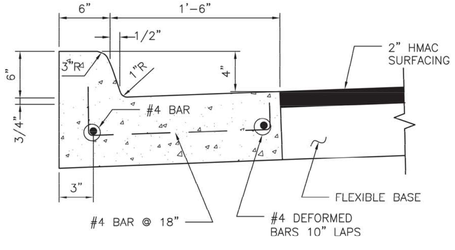


CONCRETE CURB

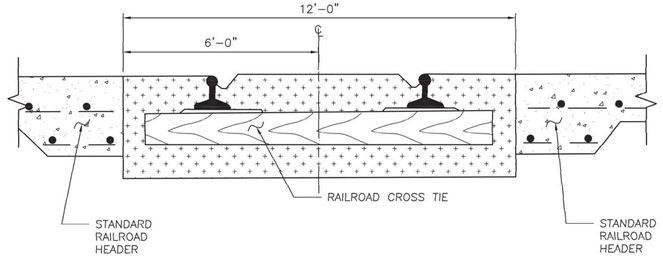
WHEN CONCRETE CURB IS TO BE PLACED EXISTING CONCRETE USE BASE #4 BAR @ 18x10" LONG, DOWELED AND SET IN EPOXY GROUT. SET #4 DOWEL BARS, 25" LONG AT 12" C–C WHEN PAVEMENT SECTION POURED.



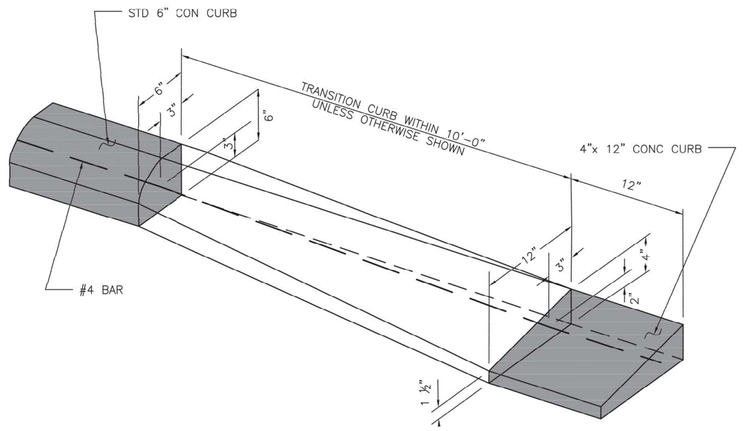
STANDARD RAILROAD HEADER



MONOLITHIC CURB AND GUTTER

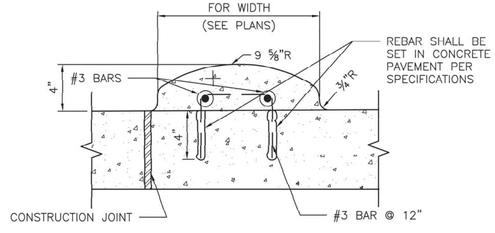


STANDARD RAILROAD CROSSING – SINGLE TRACK

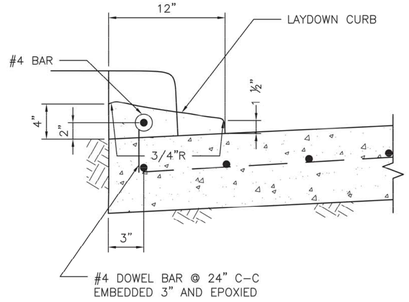


CURB TRANSITION

(SEE NOTES)

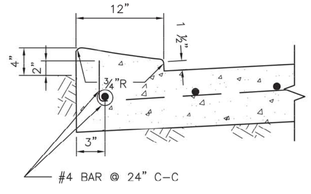


MOUNTABLE CURB



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: Sulail Kanwar 9EFB80C641F5478...	DocuSigned by: KHANG NGUYEN 95A29EFDA75B4CD...
CITY ENGINEER	CITY TRAFFIC ENGINEER

APPROVED BY:
DocuSigned by: Carol Haddock A83C410E72B3433...
DIRECTOR OF HOUSTON PUBLIC WORKS

EFF DATE: NOV–27–2023 | DWG NO: 02771–01

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
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Texas Registered Surveying Firm No. 100282–00

SURVEYED BY: AMANI
FB NO.: P–6406

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MAHESH DUTTA (NAME) 114252 (P.E. NO.)
DATE 05/15/2026
TBPELS FIRM #F–4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

CURB, CURB AND GUTTER AND HEADER DETAILS

WBS NO.	R–001000–0036–3
DRAWING SCALE	NTS
CITY OF HOUSTON, PM	SABEEN SHAIKH, P.E.
SHEET NO. **104** OF 195	

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

P:\Cadd\2024\24014 – COH FY23 CRMP Area 6 & 12\CAD_DWG\STD Drawings\X–STD DETAILS.dwg May 15, 2026 4:00pm

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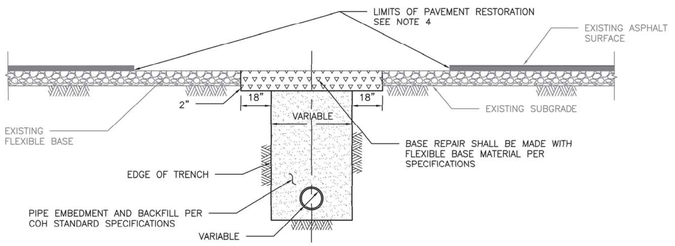
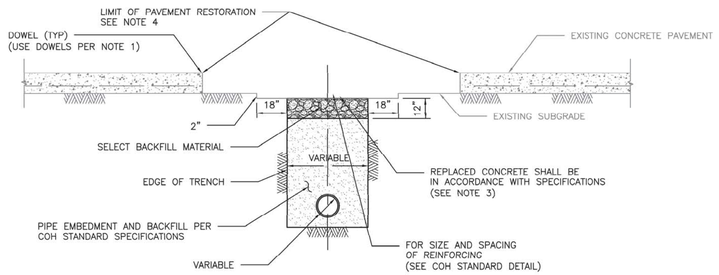


ELEVATION A
REPAIR OF FLEXIBLE BASE PAVEMENT



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: Suhail 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

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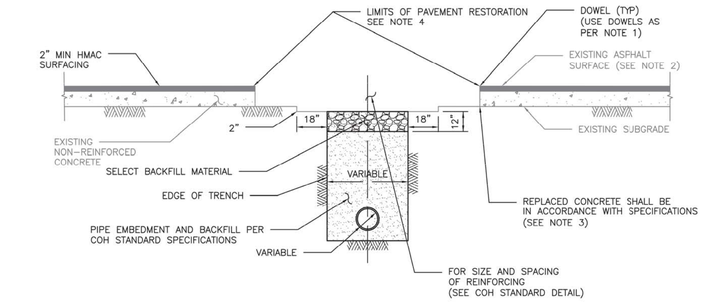
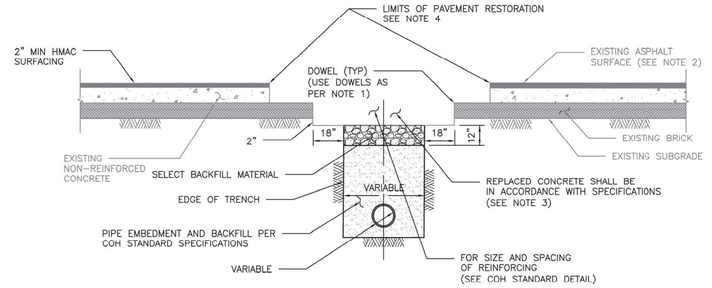


ELEVATION C
REPAIR OF NON–REINFORCED CONCRETE PAVEMENT



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: Suhail 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

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SURVEYED BY: AMANI
FB NO.: P–6406

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MAHESH DUTTA (NAME) 114252 (P.E. NO.)
DATE 05/15/2026
TBPELS FIRM #F–4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

PAVEMENT REPAIR DETAILS
(1 OF 3)

WBS NO.
R–001000–0036–3

DRAWING SCALE
NTS

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. **105** OF 195

0 1 2 3 ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS

P:\Cadd\2024\24014 – COH FY23 CRMP Area 6 & 12\CAD_DWG\STD Drawings\X–STD DETAILS.dwg May 15, 2026 4:00pm

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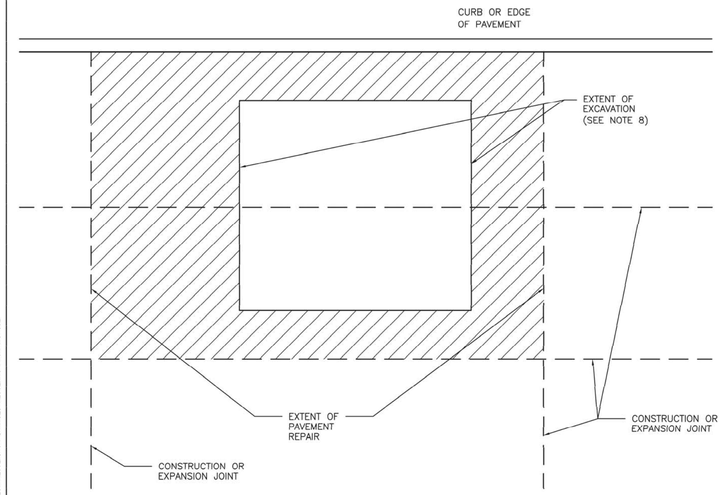

NOTES:

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: Suhail Kanwar — CITY ENGINEER
DocuSigned by: Karina Nguyen — CITY TRAFFIC ENGINEER
DocuSigned by: Carl Stockbrook — DIRECTOR OF HPW

EFF DATE: NOV–27–2023 | DWG NO: 02951–01

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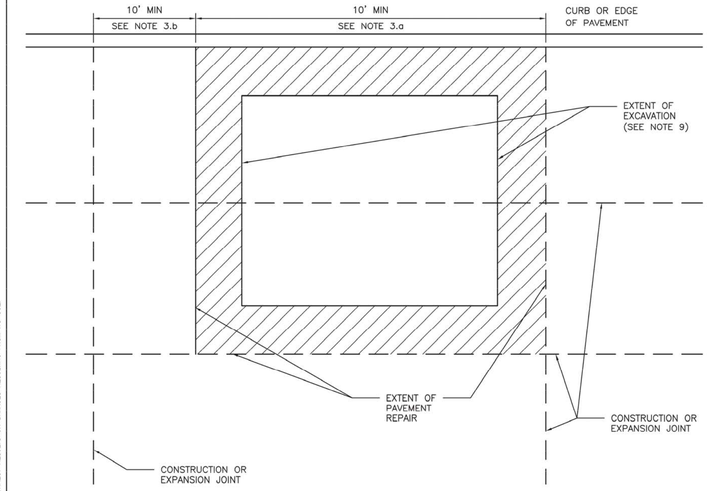

NOTES:

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: Suhail Kanwar — CITY ENGINEER
DocuSigned by: Karina Nguyen — CITY TRAFFIC ENGINEER
DocuSigned by: Carl Stockbrook — DIRECTOR OF HPW

EFF DATE: NOV–27–2023 | DWG NO: 02951–02

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MAHESH DUTTA (NAME) 114252 (P.E. NO.)
DATE 05/15/2026
TBPELS FIRM #F–4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

PAVEMENT REPAIR DETAILS
(2 OF 3)

WBS NO.
R–001000–0036–3

DRAWING SCALE
NTS

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. **106** OF 195

0 1 2 3 ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS

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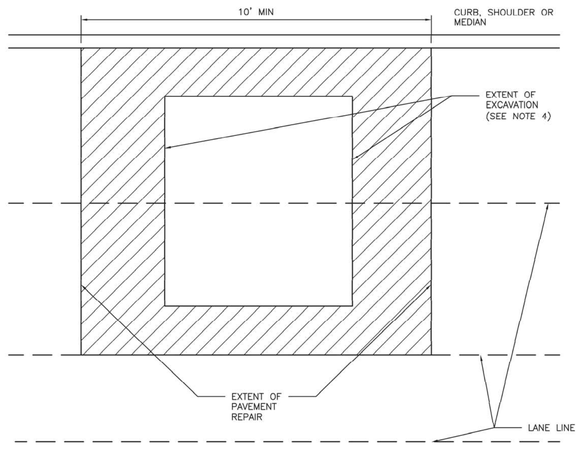

NOTES:

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: Sukat Kanwar 5EFB50C841F547B... CITY ENGINEER	DocuSigned by: Curt Hollock 4B9C41B7E0A843... DIRECTOR OF HPW
DocuSigned by: HANG NGUYEN 95A29EFDA75B4CD... CITY TRAFFIC ENGINEER	
EFF DATE: NOV–27–2023	DWG NO: 02951–03

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SURVEYED BY: AMANI
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MAHESH DUTTA (NAME) 114252 (P.E. NO.)
DATE 05/15/2026
TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION
PAVEMENT REPAIR DETAILS
(3 OF 3)

WBS NO.
R–001000–0036–3

DRAWING SCALE
NTS

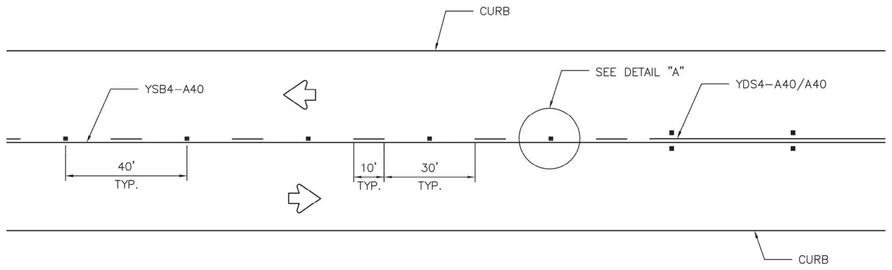
CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. **107** OF 195

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

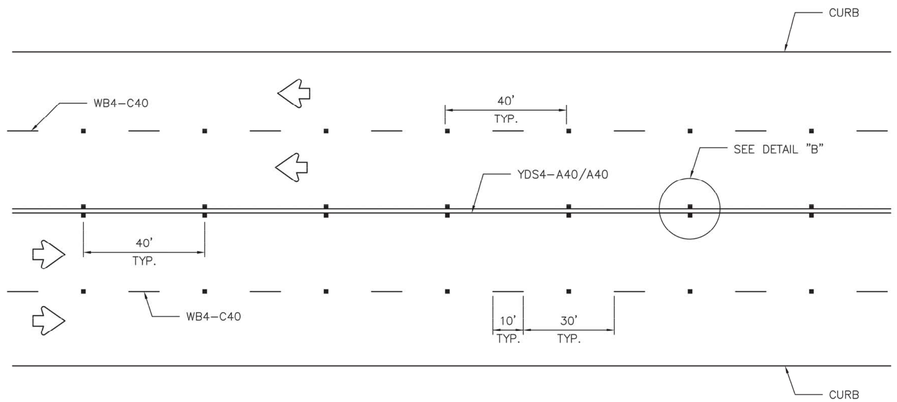
P:\Cadd\2024\24014 – COH FY23 CRMP Area 6 & 12\CAD_DWG\STD Drawings\X–STD DETAILS.dwg May 15, 2026 4:00pm

CENTERLINE & FOR ALL TWO LANE STREETS WITH PASSING ZONE

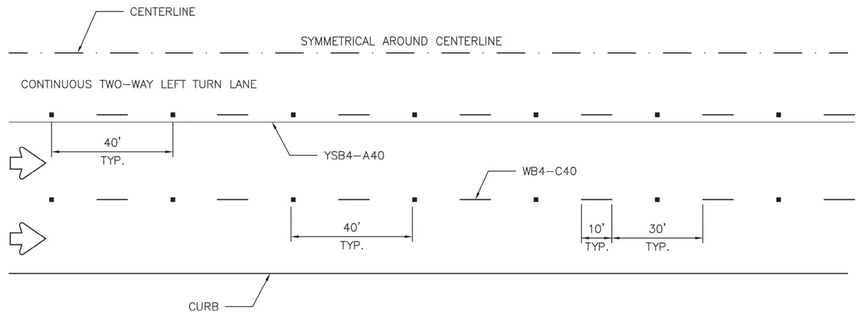


CENTERLINE & LANE LINES FOR FOUR LANE TWO–WAY STREETS

RRPM TYPE C, CLEAR FACE TOWARD NORMAL TRAFFIC, SHALL BE PLACED ON 40–FOOT CENTERS.

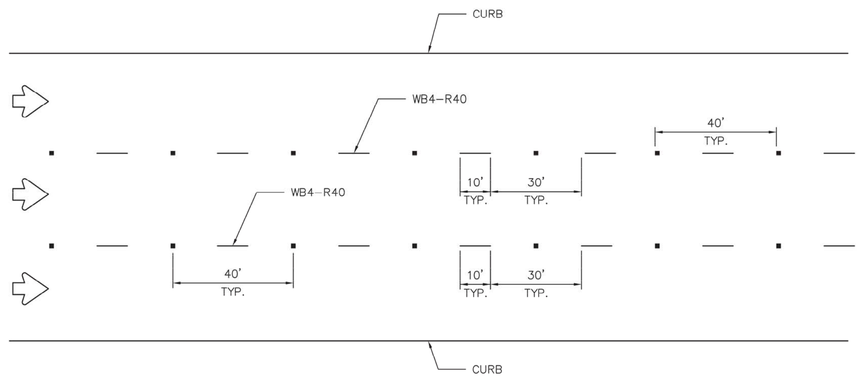


CENTERLINE & LANE LINES FOR TWO–WAY LEFT TURN LANE



LANE LINES FOR ONE–WAY MULTILANE STREET

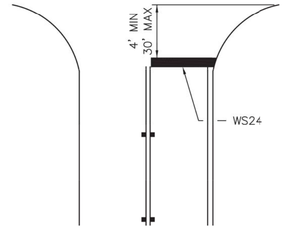
RRPM TYPE R SHALL HAVE CLEAR FACE TOWARD NORMAL TRAFFIC AND RED FACE TOWARD WRONG–WAY TRAFFIC.



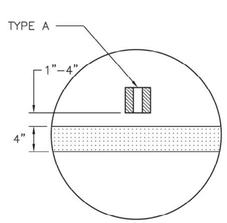
GENERAL NOTES:

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 SPECFICATIONS.

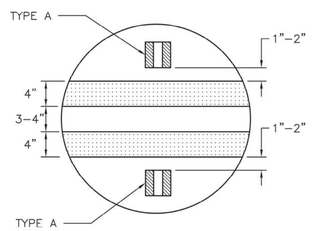
GUIDE FOR PLACEMENT OF STOP LINES & CENTERLINE



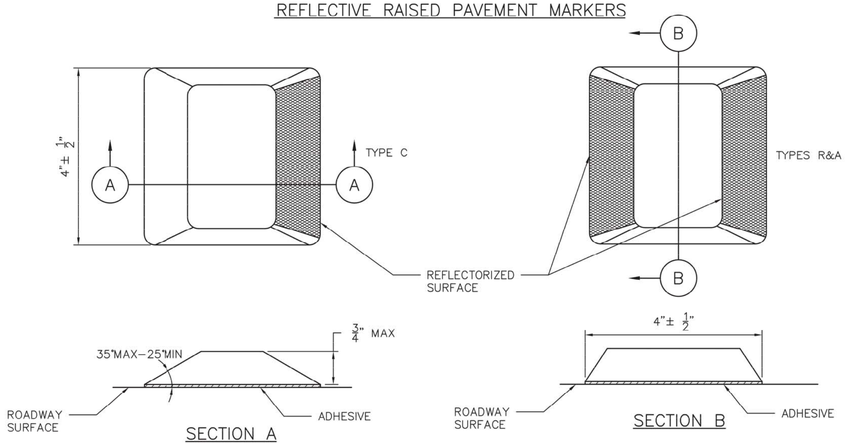
DETAIL "A"



DETAIL "B"



REFLECTIVE RAISED PAVEMENT MARKERS



APPROVED BY:	APPROVED BY:
DocuSigned by: Suhail Kanwar 9EFB80C641F5478...	DocuSigned by: KHANG NGUYEN 95A29ICFDA75B4CD...
CITY ENGINEER	CITY TRAFFIC ENGINEER

APPROVED BY:
DocuSigned by: Carol Haddock A93C4108729B453...
DIRECTOR OF HOUSTON PUBLIC WORKS

EFF DATE: NOV–27–2023 | DWG NO: 02760–05

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270–5700
Texas Registered Engineering Firm No. F–4528
Texas Registered Surveying Firm No. 100282–00

SURVEYED BY: AMANI
FB NO.: P–6406

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MAHESH DUTTA (NAME) 114252 (P.E. NO.)
DATE 05/15/2026
TBPELS FIRM #F–4528

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

PAVEMENT MARKINGS DETAILS

WBS NO.	R–001000–0036–3
DRAWING SCALE	NTS
CITY OF HOUSTON, PM	SABEEN SHAIKH, P.E.
SHEET NO. **108** OF 195	

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

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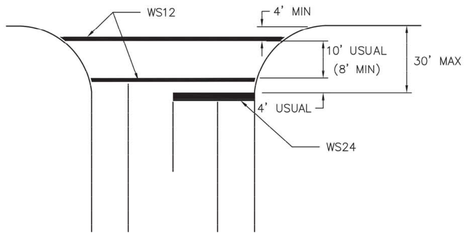
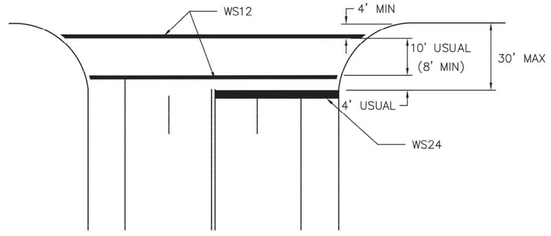
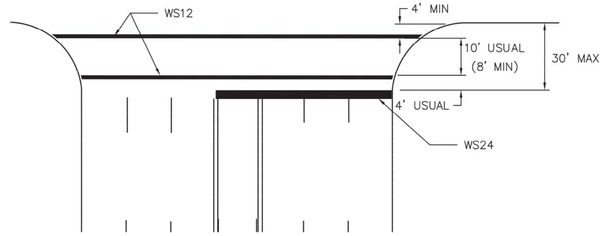
TWO LANES WITH SHOULDERS



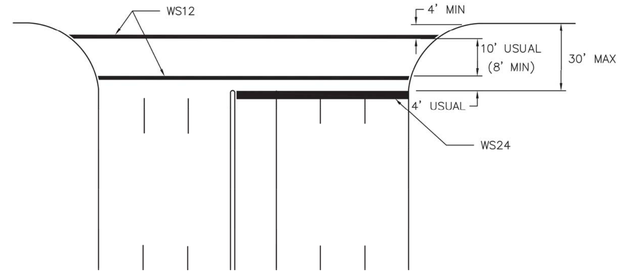
FOUR LANES WITH SHOULDERS



MULTI – LANES



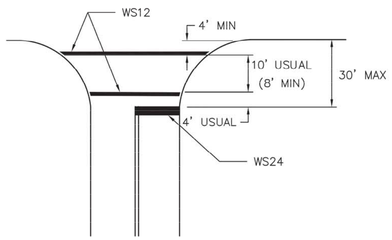
MULTI – LANE WITH MEDIAN



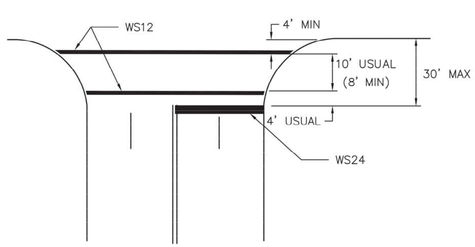
NOTES:

1. CROSSWALKS AND STOP LINES SHALL BE WHITE.
2. "D" IS EQUAL TO ONE HALF THE WIDTH OF TRAVEL LANE.

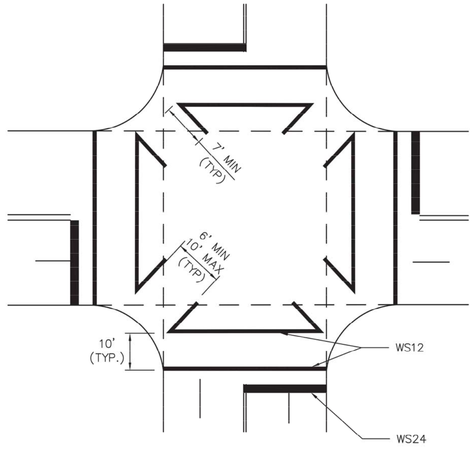
TWO LANES



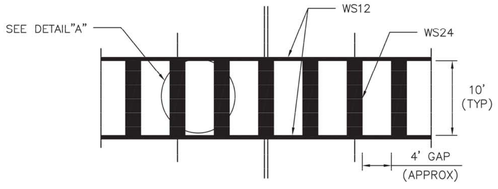
FOUR LANES



EXCLUSIVE PEDESTRIAN PHASE

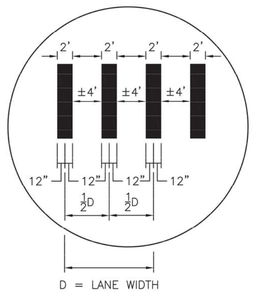


HIGH VISIBILITY CROSSWALK DETAIL



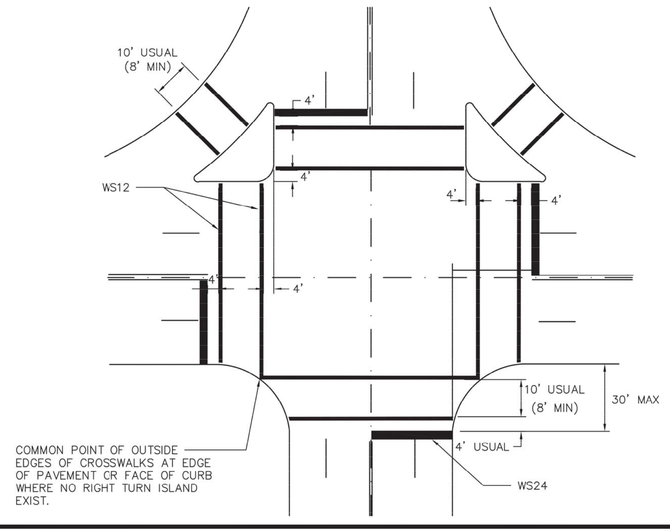
TYPICALLY USED AT SIGNALIZED AND NON–SIGNALIZED CROSSINGS ON COLLECTOR AND ARTERIAL ROADWAYS AND AT LOCATIONS REQUIRING EXTRA EMPHASIS.

DETAIL "A"



D = LANE WIDTH

INTERSECTION WITH RIGHT – TURN ISLANDS



COMMON POINT OF OUTSIDE EDGES OF CROSSWALKS AT EDGE OF PAVEMENT CR FACE OF CURB WHERE NO RIGHT TURN ISLAND EXIST.

APPROVED BY:	APPROVED BY:
DocuSigned by: Sukait Kanwar 9EFBB0B641F5478...	DocuSigned by: KHANG NGUYEN 95A29EFDA75B4CD...
CITY ENGINEER	CITY TRAFFIC ENGINEER

APPROVED BY:

DocuSigned by: Carol Haddock A80C410B7284A9...

DIRECTOR OF HOUSTON PUBLIC WORKS

EFF DATE: NOV–27–2023 | DWG NO: 02760–12

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270–5700
Texas Registered Engineering Firm No. F–4528
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FB NO.: P–6406

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MAHESH DUTTA — NAME — 114252 — P.E. NO.

DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

CROSSWALK DETAILS

WBS NO.	R–001000–0036–3
DRAWING SCALE	NTS
CITY OF HOUSTON, PM	SABEEN SHAIKH, P.E.
SHEET NO.	109 OF 195

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

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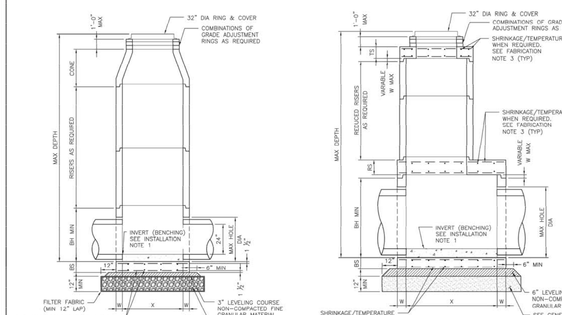
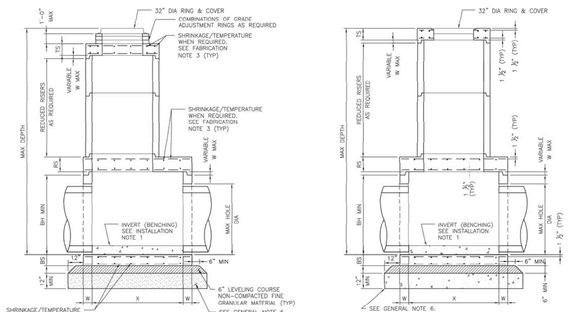
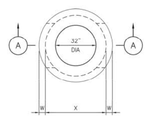


ELEVATION A–A
CONE TOP WITH SHIP LOOSE RING & COVER OPTION

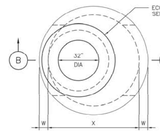


ELEVATION B–B
FLAT SLAB TOP WITH SHIP LOOSE RING & COVER OPTION

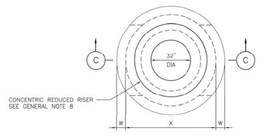
ELEVATION C–C
FLAT SLAB TOP WITH INVERTED RING & COVER OPTION



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
ECCENTRIC 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 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. 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.

APPROVED BY:	APPROVED BY:
CITY ENGINEER	DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: MAR–02–2026	DWG NO: 02082–12

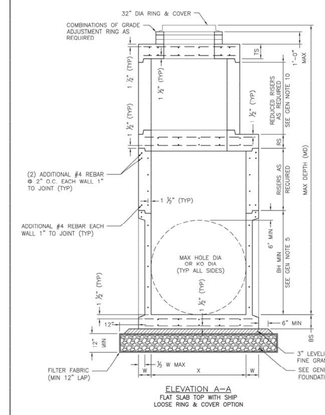
CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

STORM SEWER TYPE "C" PRECAST ROUND MANHOLE

FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE

NOT TO SCALE



ELEVATION A–A
FLAT SLAB TOP WITH SHIP LOOSE RING & COVER OPTION

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. PROVICE 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 MANUFACTURER'S 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/INLET. REFER TO CITY OF HOUSTON SPECIFICATION SECTION 02082 FOR INVERT (BENCHING) REQUIREMENTS FOR MANHOLES AND SECTION 02633 FOR INVERT (BENCHING) REQUIREMENTS FOR INLETS.
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.

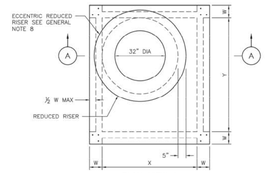
GENERAL NOTES:

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 INLET/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 AND FOR PRECAST INLETS PER SECTION 02633 PRECAST CONCRETE INLETS, HEADWALLS, AND WINGWALLS.
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'–8".
6. FOUNDATION/SUBGRADE TO BE DESIGNED BY ENGINEER AND MEET MINIMUM REQUIREMENTS ACCORDING TO SECTION 02082.
7. ALL STORM WATER INLETS/MANHOLES ARE TO BE PRECAST CONCRETE, UNLESS OTHERWISE NOTED ELSEWHERE IN THE PLANS.
8. ECCENTRIC REDUCED RISER WITH RESPECT TO BASE IS THE PREFERRED INLET/MANHOLE CONFIGURATION. CONCENTRIC REDUCED RISER WITH RESPECT TO BASE INLET/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 INLETS/MANHOLES LARGER THAN B–11D1 BY B–11D2.
10. REFER TO STORM SEWER TYPE "C PRECAST ROUND MANHOLE DETAIL (02082–12) FOR REDUCED RISER DESIGN REQUIREMENTS.

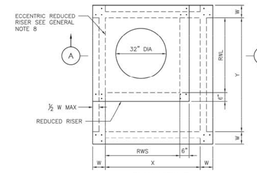
TABLE–1
PRECAST BOX INLET (PBI) OR PRECAST BOX MANHOLE (PBM) MINIMUM REQUIREMENTS FOR 24 IN. TO 78 IN. INTERNAL DIA STORM SEWER PIPES.

	SIZE	BASE SLAB THICKNESS	BASE UNIT OR RISE WALL THICKNESS		REDUCED RISER DIA	REDUCED RISER SIZE	REDUCING SLAB THICKNESS	TOP SLAB THICKNESS	MIN HEIGHT (SEE GEN NOTE 5)	MAX HOLE DIA (SEE TAB NOTE 12)	MAX KO DIA (SEE TAB NOTE 12)
			MD ≤15 FT	15 FT < MD ≤ 25 FT (2)							
	X & Y	BS	W		ID	RWS x RWL	RS	TS	BH MIN	MAX HOLE DIA	KO DIA
	FT.	IN.	IN.		IN.	FT.	IN.	IN.	FT.	IN.	IN.
PBI/PBM	2X3 (1)	6	6		N/A	N/A	N/A	9	3.50	36	36
	4X4 (1)	6	6		N/A	N/A	N/A	9	4.50	48	48
	3X5 (1)	6	6		N/A	3X3	N/A	9	3.50	36/60	36/60
	4X5 (1)	6	6		48	3X3 / 4X4 / 3X5	9	9	4.50	48/60	48/60
	5X5 (1)	6	6		48	3X3 / 4X4 / 3X5	9	9	5.50	60	60
	5X6	9	6		48	3X3 / 4X4 / 3X5	9	9	5.50	60/72	60/72
	6X6	9	6		48	3X3 / 4X4 / 3X5	9	9	6.50	72	72
	8X8	9	8		10	48	3X3 / 4X4 / 3X5	12	9	8.50	96	72

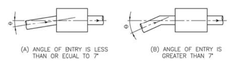
TABLE–1 NOTES:
(1) ROUND MANHOLES ARE PREFERRED FOR THESE SIZES.
(2) MAX DEPTH (MD) DENOTES THE MAX INSTALLATION DEPTH MEASURED TO THE TOP OF BASE SLAB.



PLAN VIEW A
(ROUND REDUCED OPTION)
COVER NOT SHOWN



PLAN VIEW B
(SQUARE REDUCED OPTION)
COVER NOT SHOWN



(A) ANGLE OF ENTRY IS LESS THAN OR EQUAL TO 7°

(B) ANGLE OF ENTRY IS GREATER THAN 7°

CONNECT PIPES WITHIN 7° OF NORMAL TO PRECAST BASE WALL. IF NECESSARY, USE PIPE ELBOW OR CURVED APPROACH ALIGNMENT TO STAY WITHIN THIS LIMIT.

PIPE CONNECTION DETAIL

APPROVED BY:	APPROVED BY:
CITY ENGINEER	DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: MAR–02–2026	DWG NO: 02082–13

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

STORM SEWER PRECAST BOX INLET/MANHOLE

FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE

NOT TO SCALE

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270–5700
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MAHESH DUTTA 114252
NAME P.E. NO.

DATE 05/15/2026

TBPELS FIRM #F–4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

STORM SEWER DETAILS
(1 OF 2)

WBS NO.
R–001000–0036–3

DRAWING SCALE
NTS

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. **110** OF 195

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

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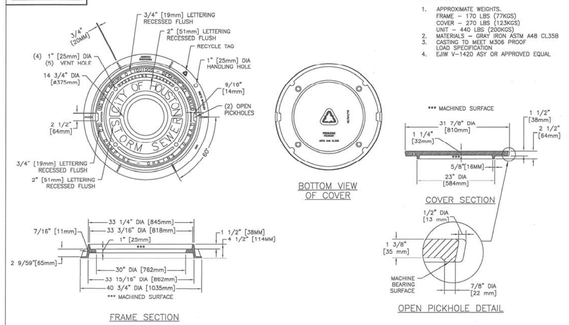
02084-02

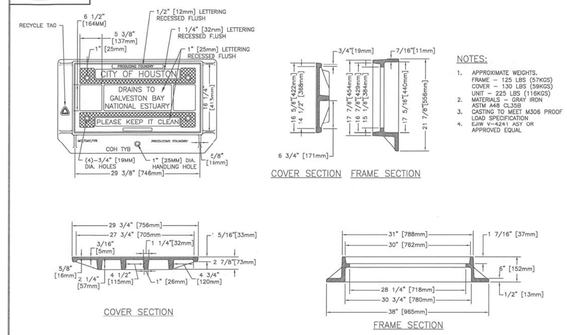


NOTES:

1. APPROXIMATE WEIGHTS.
   FRAME – 170 LBS (77KGS)
   COVER – 270 LBS (123KGS)
   UNIT – 440 LBS (200KGS)
2. MATERIALS – GRAY IRON ASTM A48 CL35B
3. CASTING TO MEET M306 PROOF LOAD SPECIFICATION
4. EJIW V-1420 ASY OR APPROVED EQUAL

STORM SEWER MANHOLE FRAME AND COVER
NTS

02084-03

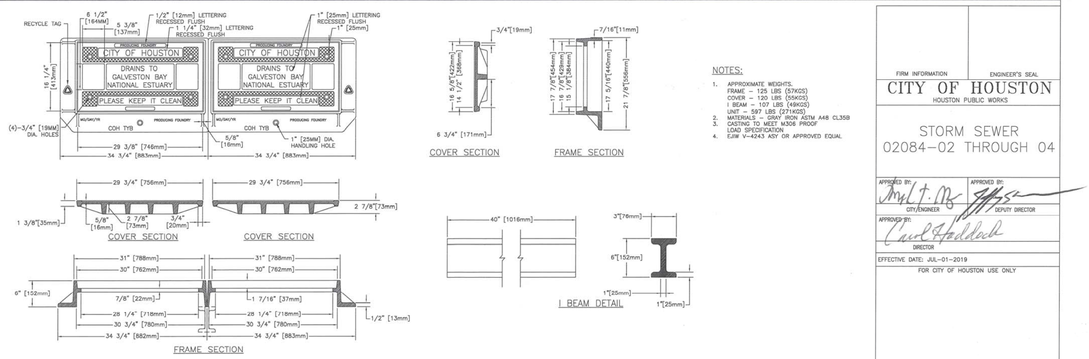


NOTES:

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

STORM SEWER TYPE "B" INLET ASSEMBLY
NTS

02084-04



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

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

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AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
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MAHESH DUTTA — NAME
114252 — P.E. NO.
05/15/2026 — DATE
TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

STORM SEWER DETAILS
(2 OF 2)

WBS NO.
R-001000-0036-3

DRAWING SCALE
NTS

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. **111** OF 195

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3

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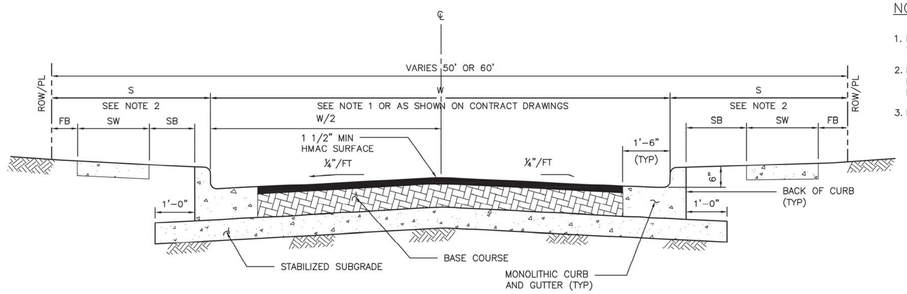
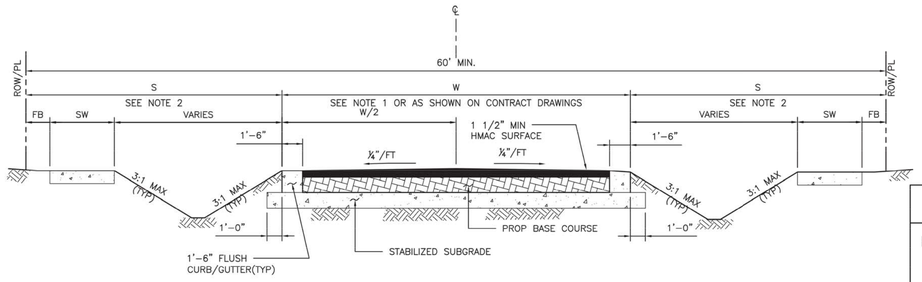


HMAC PAVEMENT – CURB & GUTTER SECTION

(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: 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: 02741-01

AMANI ENGINEERING, INC.
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Texas Registered Surveying Firm No. 100282-00

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MAHESH DUTTA (NAME) 114252 (P.E. NO.)

DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

HOT MIX ASPHALTIC CONCRETE PAVEMENT DETAILS

WBS NO.
R-001000-0036-3

DRAWING SCALE
NTS

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. 112 OF 195

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

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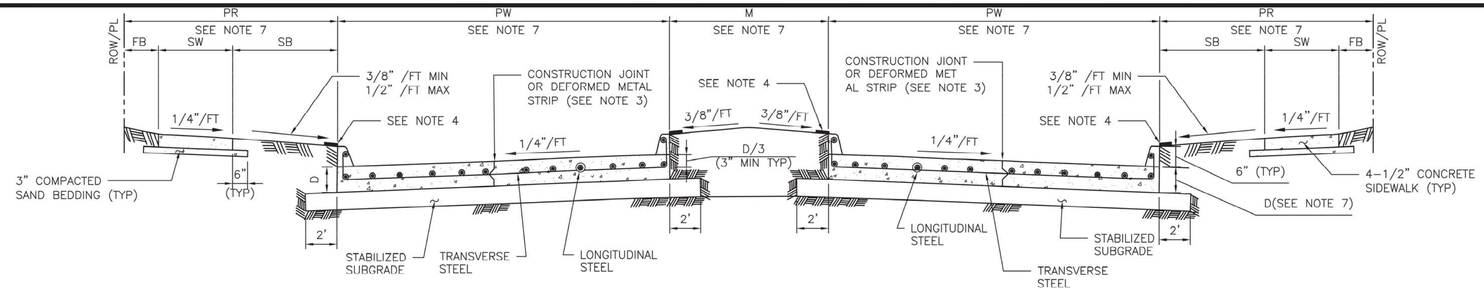
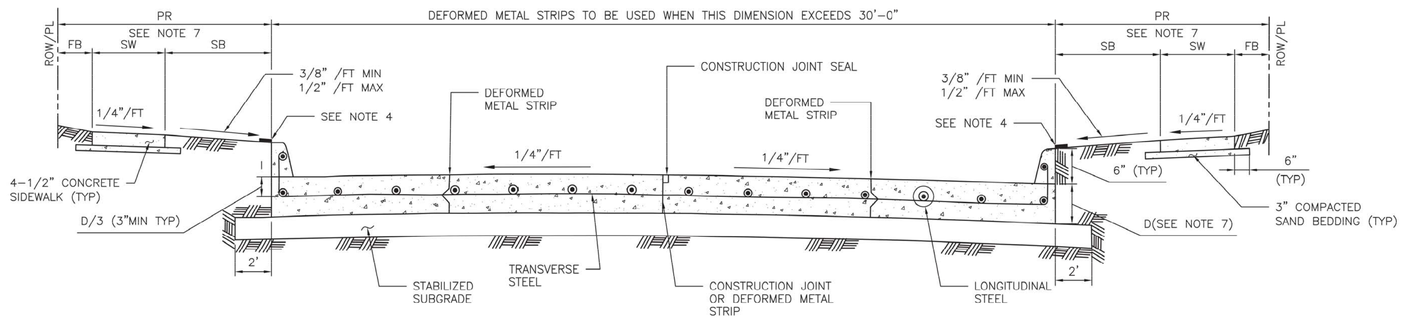


TYPICAL DOUBLE ROADWAY SECTION FOR CONCRETE PAVEMENT WITH CURBS



TYPICAL SINGLE ROADWAY SECTION FOR CONCRETE PAVEMENT WITH CURBS

TABLE 1

REINFORCING STEEL BAR SIZES AND SPACINGS FOR VARIOUS PAVEMENT THICKNESSES (D) WITH: MAXIMUM TRANSVERSE CONTROL JOINT SPACING = 20'-0"
MAXIMUM EXPANSION JOINT SPACING = 80'-0"
fc' = 4,000 PSI/28 DAYS AND FY = 60,000 PSI

PAVEMENT THICKNESS 'D' (IN)	PAVEMENT WIDTH 'PW' (FT)	LONGITUDINAL STEEL									TRAVERSE STEEL		
		#4 BARS			#5 BARS			#6 BARS			#4 BARS	#5 BARS	#6 BARS
		NUMBER OF BARS	SPACING (IN)	END BAR SPACING (IN)	NUMBER OF BARS	SPACING (IN)	END BAR SPACING (IN)	NUMBER OF BARS	SPACING (IN)	END BAR SPACING (IN)	SPACING (IN)	SPACING (IN)	SPACING (IN)
6	28	17	20.50	4.00	–	–	–	–	–	–	36	–	–
7	25	17	18.25	4.00	–	–	–	–	–	–	36	–	–
7	35	24	18.00	3.00	–	–	–	–	–	–	36	–	–
7	36	25	17.75	3.00	–	–	–	–	–	–	36	–	–
7	37	25	18.25	3.00	–	–	–	–	–	–	36	–	–
7	41	28	18.00	3.00	–	–	–	–	–	–	36	–	–
7	45	31	17.75	3.75	–	–	–	–	–	–	36	–	–
8	25	20	15.50	2.75	13	24.50	3.0	–	–	–	36	36	–
8	34	27	15.50	2.50	17	25.00	4.0	–	–	–	36	36	–
8	35	27	16.00	2.00	18	24.25	4.0	–	–	–	36	36	–
8	36	28	15.75	3.25	18	25.00	3.0	–	–	–	30	36	–
8	44	24	15.75	4.00	22	24.75	4.0	–	–	–	30	36	–
8	45	35	15.75	2.25	23	24.25	3.0	–	–	–	30	36	–
9	25	22	14.00	3.00	14	22.50	4.0	–	–	–	36	36	–
9	34	31	13.50	2.00	19	22.25	3.5	–	–	–	30	36	–
9	35	31	13.75	3.75	20	21.75	3.5	–	–	–	30	36	–
9	36	32	13.75	3.00	21	21.25	3.5	–	–	–	30	36	–
9	44	39	13.75	2.75	25	21.75	3.0	–	–	–	24	36	–
9	45	39	14.00	4.00	26	21.25	4.5	–	–	–	24	36	–
10	25	24	12.75	3.50	17	18.25	4.0	–	–	–	36	36	36
10	34	33	12.50	4.00	21	20.00	4.0	–	–	–	30	36	36
10	35	34	12.50	3.75	23	18.75	4.0	–	–	–	30	36	36
10	36	35	12.50	3.50	24	18.50	3.0	–	–	–	30	36	36
10	44	44	12.00	4.00	29	18.50	4.5	–	–	–	24	36	36
10	45	44	12.50	3.00	29	19.00	3.0	–	–	–	24	36	36
11	25	27	11.25	3.00	17	18.25	4.0	12	26.75	3	36	36	36
11	34	36	11.50	2.75	24	17.50	2.5	17	25.00	4	24	36	36
11	35	37	11.50	3.00	24	18.00	3.0	17	25.75	4	24	36	36
11	36	40	11.00	2.00	25	17.75	3.0	17	26.50	4	24	36	36
11	44	48	11.125	2.50	30	18.00	3.0	21	26.00	4	24	36	36
11	45	49	11.125	3.00	31	17.75	4.0	22	25.50	3	24	36	36
12	25	–	–	–	19	16.25	4.0	13	24.50	3	36	36	36
12	34	–	–	–	26	16.00	4.0	18	23.50	4	24	36	36
12	35	–	–	–	26	16.50	4.0	19	23.00	3	24	36	36
12	36	–	–	–	27	16.25	4.5	20	22.25	4.5	24	36	36
12	44	–	–	–	33	16.25	4.0	24	22.50	5	24	30	36
12	45	–	–	–	35	15.75	3.0	25	22.25	3	24	30	36

MINIMUM LAP LENGTH (L):
A. # 4 BARS ; L = 22 INCHES
B. # 5 BARS ; L = 27 INCHES
C. # 6 BARS ; L = 32 INCHES

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

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:
DocuSigned by: Sulaf Kanwar
8EF8B0C641F547B...
CITY ENGINEER

APPROVED BY:
DocuSigned by: KHANG NGUYEN
95A29EFDA75B4CD...
CITY TRAFFIC ENGINEER

APPROVED BY:
DocuSigned by: Carol Haddock
A82C4158D7283453...
DIRECTOR OF HOUSTON PUBLIC WORKS

EFF DATE: NOV-27-2023
DWG NO: 02751-01

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MAHESH DUTTA 114252
NAME P.E. NO.
DATE 05/15/2026
TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

CONCRETE PAVEMENT DETAILS

WBS NO.
R-001000-0036-3

DRAWING SCALE
NTS

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

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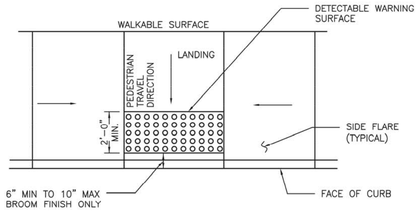
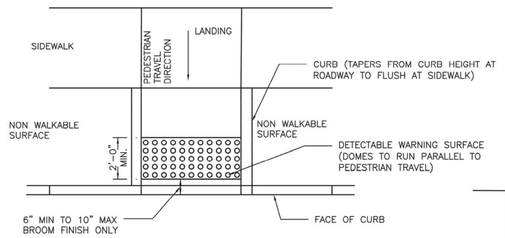
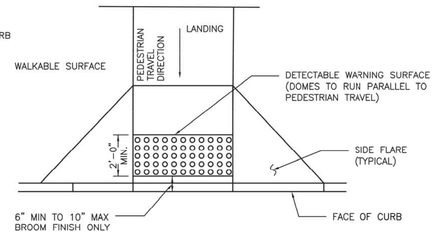


TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING AT STREET EDGE





TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN

GENERAL NOTES FOR DETECTABLE WARNINGS:

1. DETECTABLE WARNING SURFACES MUST BE FULLY ADA COMPLIANT.
2. ALL NEW CURB RAMPS MUST CONTAIN A DETECTABLE WARNING SURFACE THAT CONSISTS OF RAISED TRUNCATED DOMES. THE SURFACE MUST CONTRAST VISUALLY WITH ADJOINING SURFACE, INCLUDING SIDE FLARES. FURNISH DARK BROWN OR DARK RED DETECTABLE WARNING SURFACE ADJACENT TO UNCOLORED CONCRETE, UNLESS SPECIFIED ELSEWHERE IN THE PLANS.
3. DETECTABLE WARNING SURFACES MUST MAINTAIN A SLIP RESISTANCE WITH FA-VALUE OF EQUAL TO OR GREATER THAN 0.8.
4. DETECTABLE WARNING SURFACES MUST MAINTAIN A WATER ABSORPTION RATE OF LESS THAN 1%, DETECTABLE WARNING SHALL NOT ALLOW WATER TO ACCUMULATE.
5. DETECTABLE WARNINGS INSTALLED INTO FRESH CONCRETE SHALL BE WITHOUT VOIDS AND UTILIZING AN ACCEPTABLE ANCHORING SYSTEM.
6. ALIGN TRUNCATED DOMES IN THE DIRECTION OF PEDESTRIAN TRAVEL WHEN ENTERING THE STREET.
7. DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24" IN DEPTH IN THE DIRECTION OF PEDESTRIAN TRAVEL, AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR LANDING WHERE THE PEDESTRIAN ACCESS ROUTE ENTERS THE STREET.
8. DETECTABLE WARNING SURFACES SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6" MIN TO 10" MAX FROM THE DETECTABLE WARNING SURFACES MAY BE CURVED ALONG THE CORNER RADIUS.
9. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOUSTON PUBLIC WORKS STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
10. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

DETECTABLE WARNING CURB RAMP DETAILS

(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Suhail Kanwar — CITY ENGINEER

DocuSigned by: HUNG NGUYEN — CITY TRAFFIC ENGINEER

DocuSigned by: Carol Haddock — DIRECTOR OF HPW

EFF DATE: NOV-27-2023 | DWG NO: 02775-06

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Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
FB NO.: P-6406

PRELIMINARY

FOR INTERIM REVIEW ONLY

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MAHESH DUTTA (NAME) 114252 (P.E. NO.)

DATE 05/15/2026

TBPELS FIRM #F-4528

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

DETECTABLE WARNING CURB RAMP DETAILS

WBS NO.
R-001000-0036-3

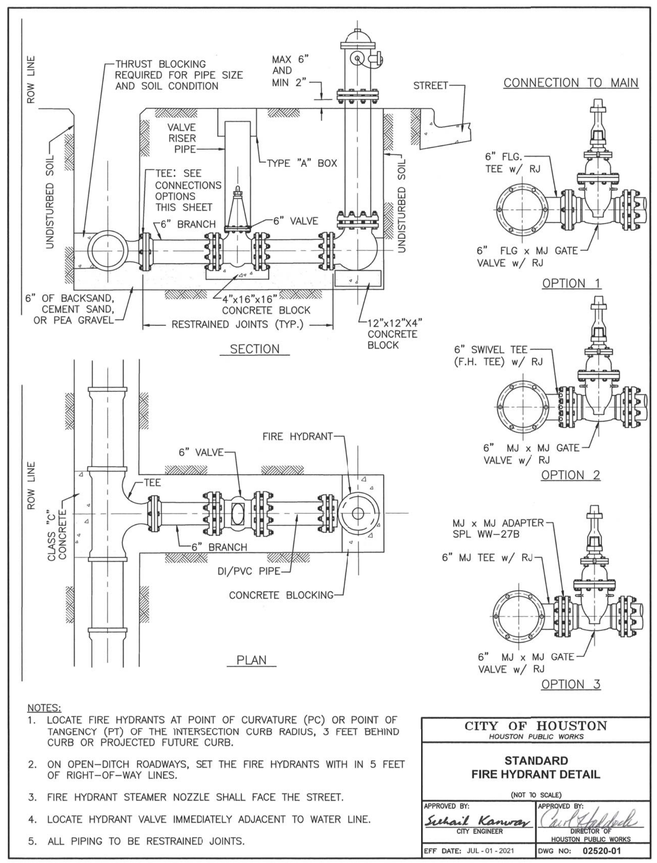
DRAWING SCALE
NTS

CITY OF HOUSTON, PM
SABEEN SHAIKH, P.E.

SHEET NO. **114** OF 195

P:\Cadd\2024\24014 - COH FY23 CRMP Area 6 & 12\CAD_DWG\STD Drawings\X-STD DETAILS.dwg May 15, 2026 4:01pm

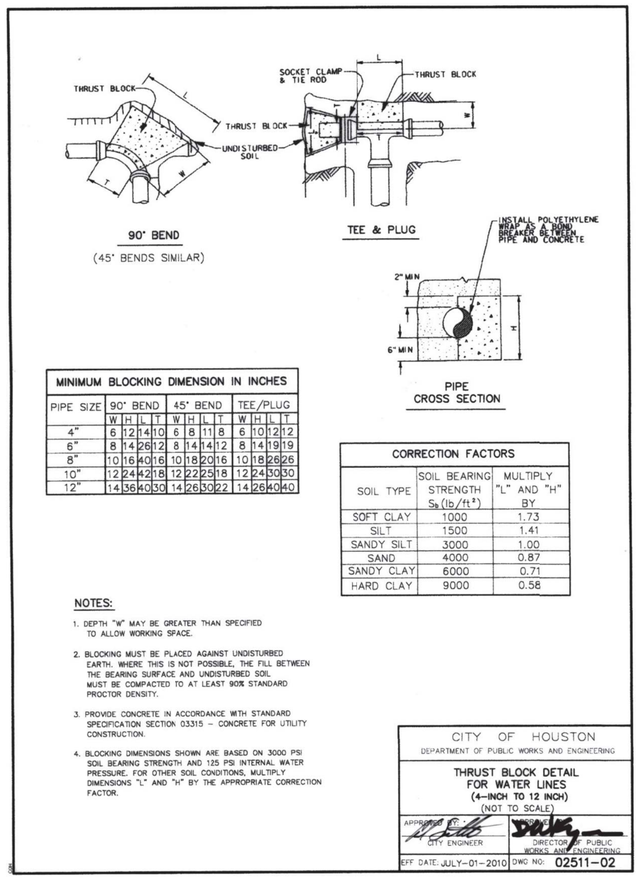
0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



NOTES:

1. LOCATE FIRE HYDRANTS AT POINT OF CURVATURE (PC) OR POINT OF TANGENCY (PT) OF THE INTERSECTION CURB RADIUS, 3 FEET BEHIND CURB OR PROJECTED FUTURE CURB.
2. ON OPEN-DITCH ROADWAYS, SET THE FIRE HYDRANTS WITH IN 5 FEET OF RIGHT-OF-WAY LINES.
3. FIRE HYDRANT STEAMER NOZZLE SHALL FACE THE STREET.
4. LOCATE HYDRANT VALVE IMMEDIATELY ADJACENT TO WATER LINE.
5. ALL PIPING TO BE RESTRAINED JOINTS.

CITY OF HOUSTON HOUSTON PUBLIC WORKS	
STANDARD FIRE HYDRANT DETAIL (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2021	DWG NO: 02520-01



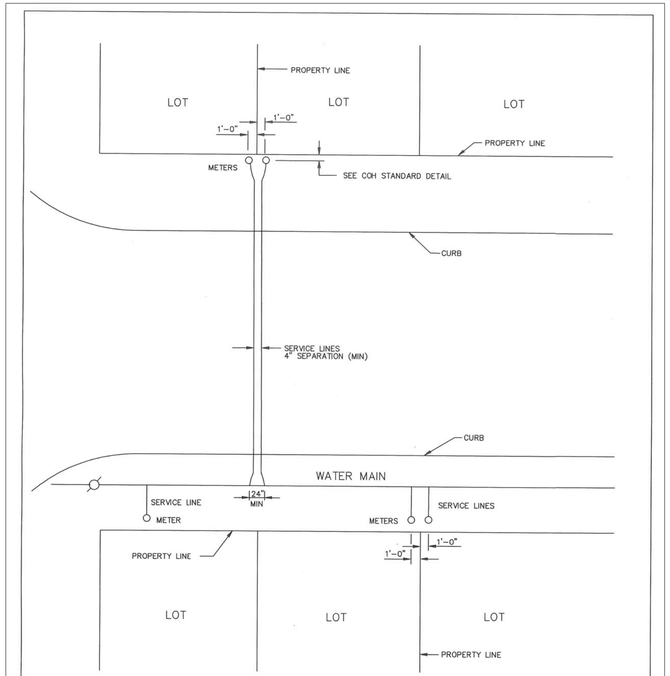
MINIMUM BLOCKING DIMENSION IN INCHES												
PIPE SIZE	90° BEND				45° BEND				TEE/PLUG			
	W	H	L	T	W	H	L	T	W	H	L	T
4"	6	12	14	10	6	8	11	8	6	10	12	12
6"	8	14	26	12	8	14	14	12	8	14	19	19
8"	10	16	40	16	10	18	20	16	10	18	26	26
10"	12	24	42	18	12	22	25	18	12	24	30	30
12"	14	36	40	30	14	26	30	22	14	26	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



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

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SURVEYED BY: AMANI
FB NO.: P-6406

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WILLIAM M. WILSHIRE III, P.E.
Engineer
94193
Registration Number
05/08/2026
Date

Aurora Technical Services, LLC
Texas Registered Engineering Firm F-2059

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

STANDARD WATER LINE DETAILS
SHEET (1 OF 3)

WBS NO. R-01000-0036-3	
DRAWING SCALE	
AS SHOWN	
CITY OF HOUSTON, PM	
SABEEN SHAIKH, P.E.	
SHEET NO. 115 OF 195	

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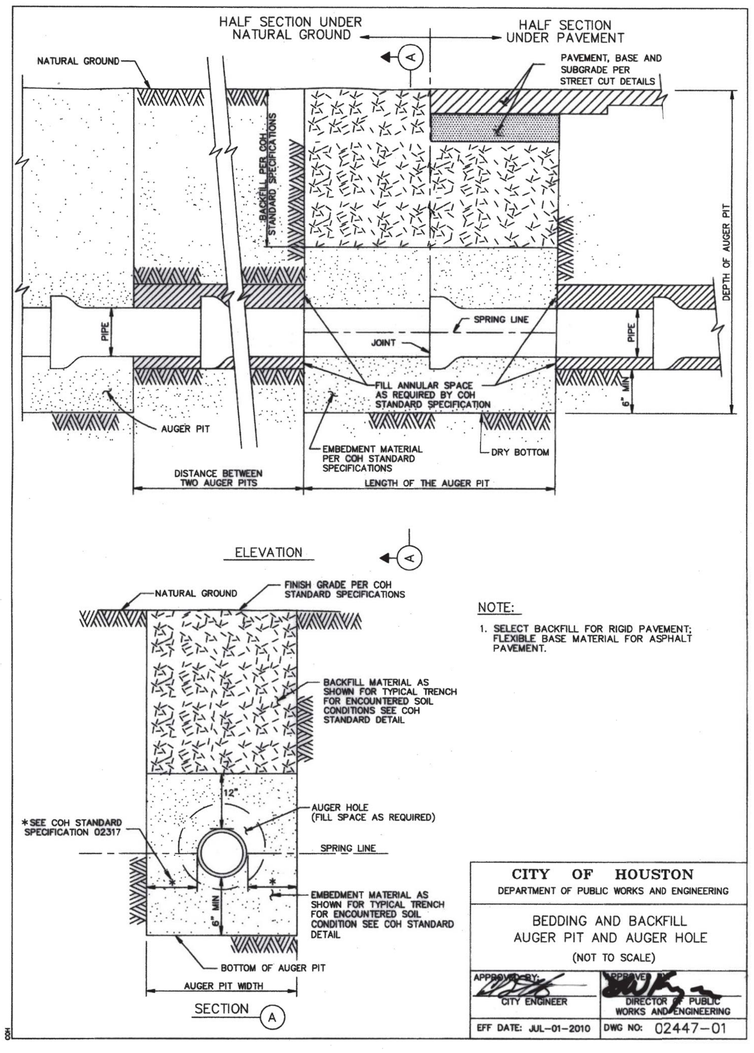


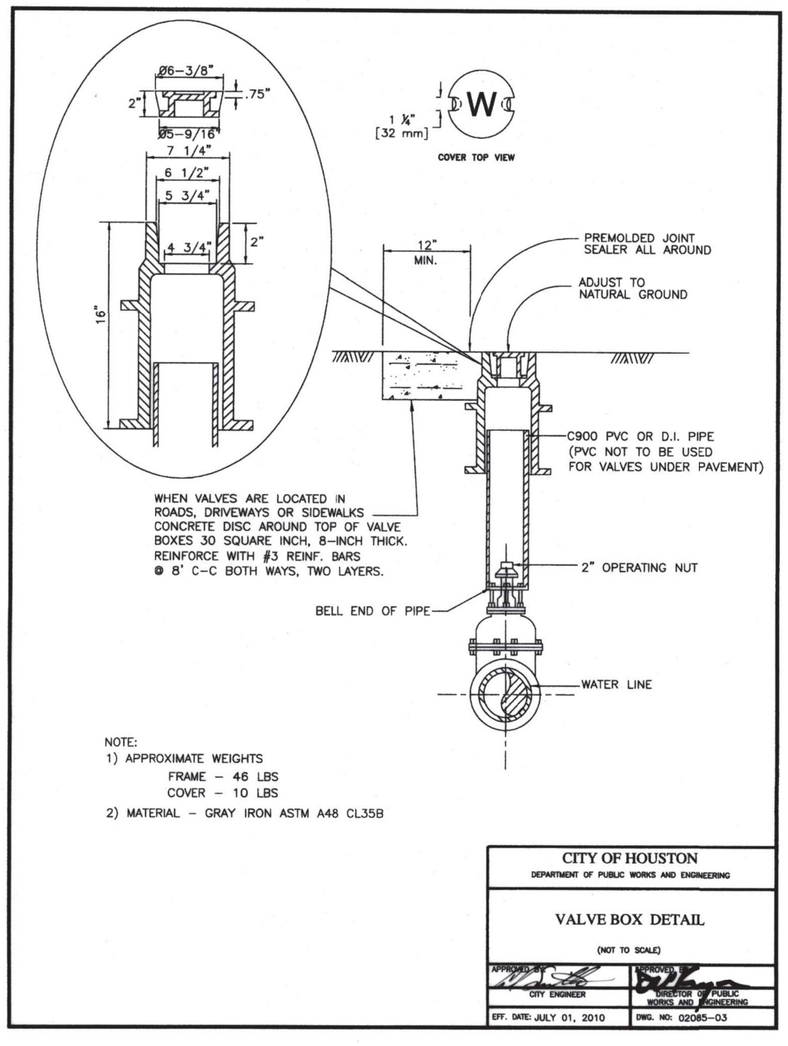
NOTE:

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



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

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WILLIAM M. WILSHIRE III, P.E.
Engineer
94193
Registration Number
05/08/2026
Date
Aurora Technical Services, LLC
Texas Registered Engineering Firm F-2059

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

STANDARD WATER LINE DETAILS
SHEET (2 OF 3)

WBS NO. R-01000-0036-3	
DRAWING SCALE	
AS SHOWN	
CITY OF HOUSTON, PM	
SABEEN SHAIKH, P.E.	
SHEET NO. 116 OF 195	

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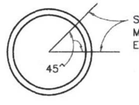
PIPE TAPPING SCHEDULE

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

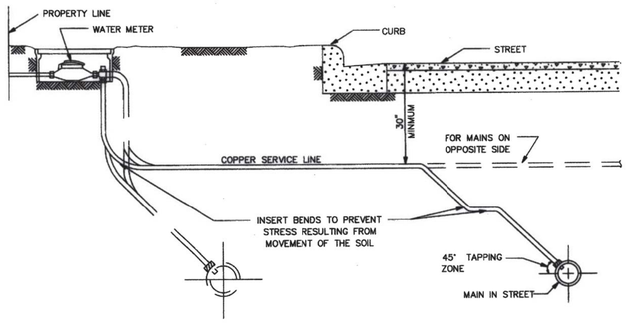
SERVICE TAPS

(NOT TO SCALE)

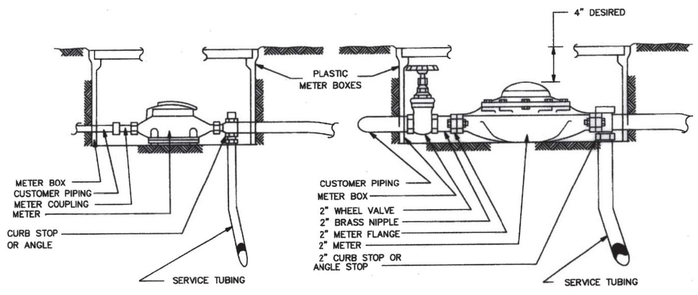
APPROVED BY: CITY ENGINEER	APPROVED: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2010	DWG NO: 02512-02

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)

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EFF DATE: JULY-01-2010	DWG NO: 02526-01

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

STANDARD WATER LINE DETAILS
SHEET (3 OF 3)

WBS NO. R-01000-0036-3	
DRAWING SCALE	
AS SHOWN	
CITY OF HOUSTON, PM	
SABEEN SHAIKH, P.E.	
SHEET NO. 117 OF 195	

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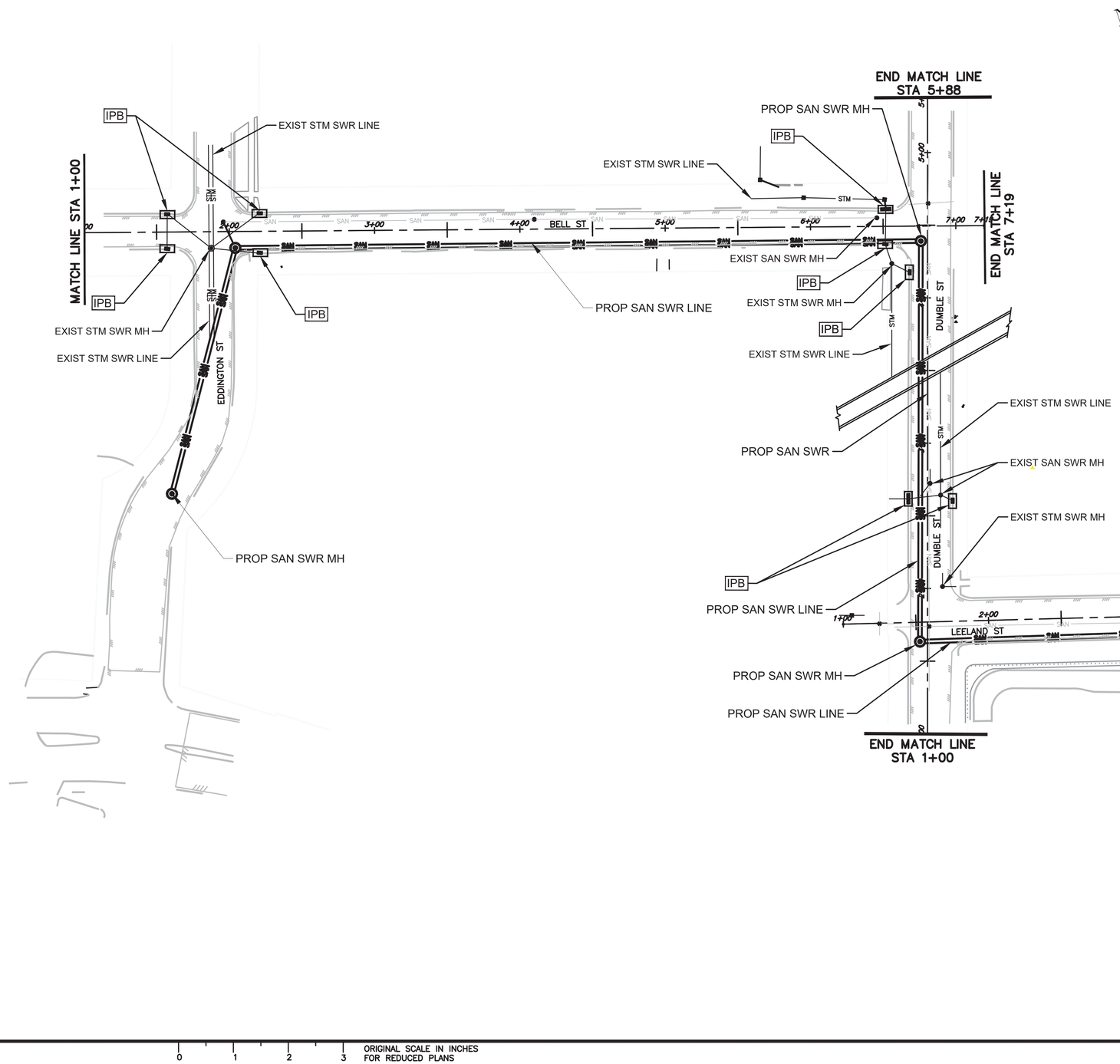

NOTE:

1. SEE SHEET 9 OF 9 FOR STORM WATER POLLUTION PREVENTION PLAN NOTES AND DETAILS.
2. CONTRACTOR SHALL PROVIDE A STABILIZED CONSTRUCTION EXIT, INCLUDING TRUCK WASHING AREA, VERIFIED IN THE FIELD AND AUTHORIZED BY ENGINEER.

LEGEND

IPB — INLET PROTECTION BARRER

0 1 2 3
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

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Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
FB NO.: P-

FCM Engineers, P.C.
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F- 713-706-4410
Tx Firm No. F-13481

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ENGINEER: FRANK C. MBACHU
P.E. SERIAL No.: 108363
04/29/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5 SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

STORM WATER POLLUTION PLAN
BELL ST STA 1+00 TO STA 7+19

WBS NO.	R-01000-0036-3
DRAWING SCALE	1"=40'
CITY OF HOUSTON, PM	SABEEN SHAIK, P.E.
SHEET NO. 118 OF 195	

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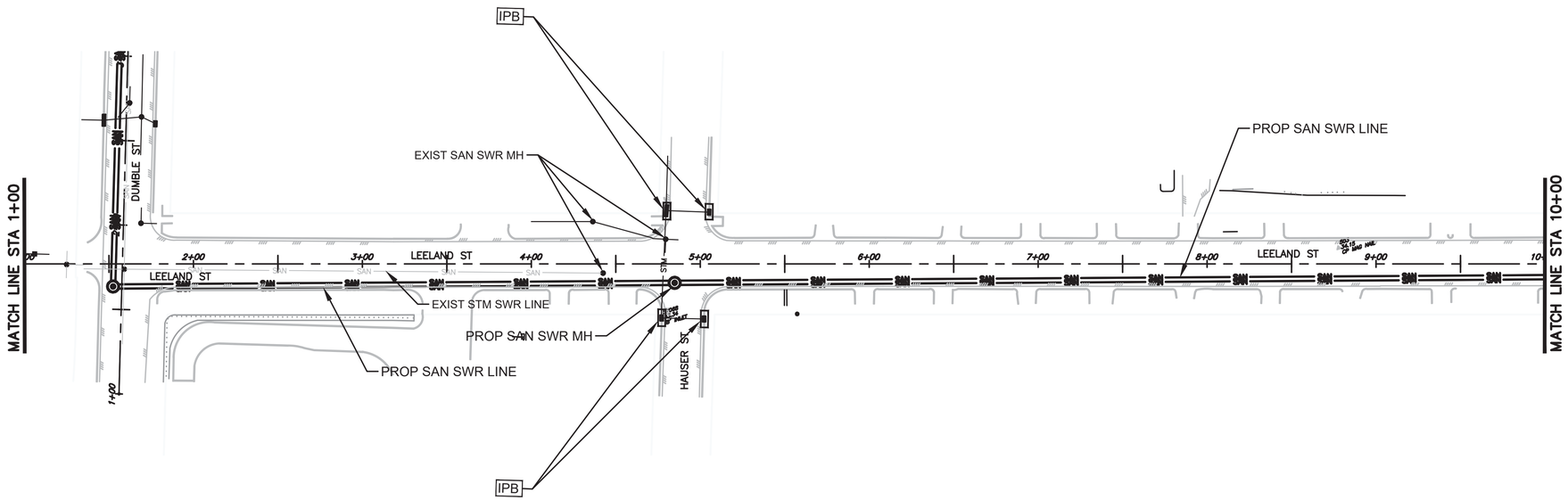

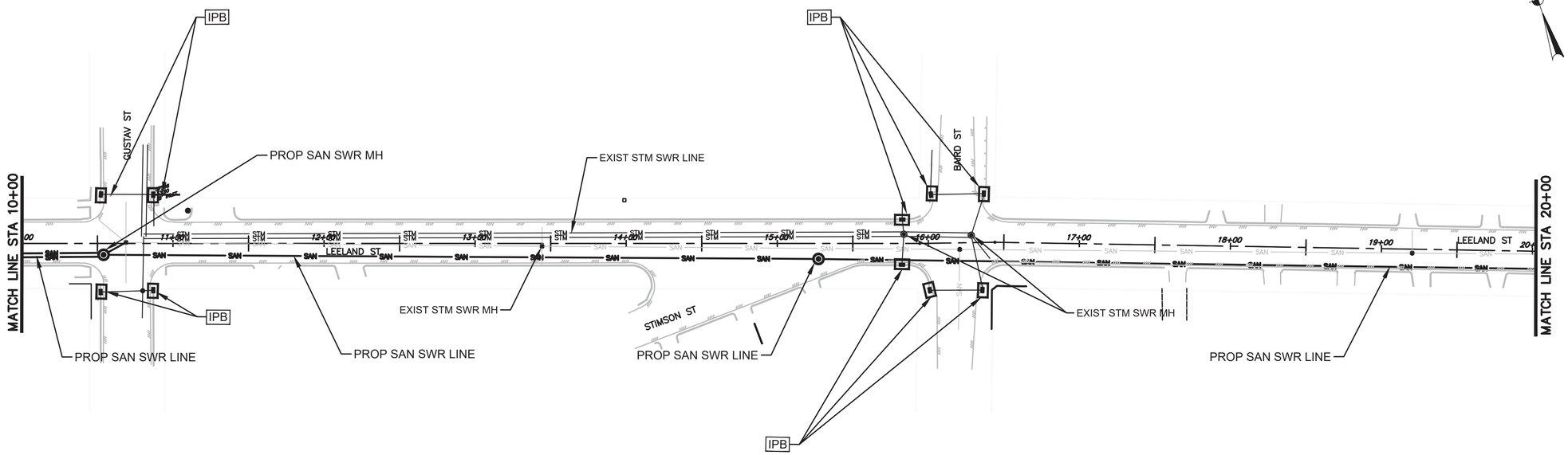

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

NOTE:

1. SEE SHEET 9 OF 9 FOR STORM WATER POLLUTION PREVENTION PLAN NOTES AND DETAILS.
2. CONTRACTOR SHALL PROVIDE A STABILIZED CONSTRUCTION EXIT, INCLUDING TRUCK WASHING AREA, VERIFIED IN THE FIELD AND AUTHORIZED BY ENGINEER.

LEGEND

IPB INLET PROTECTION BARRER

0 40 80 Feet

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Texas Registered Engineering Firm No. F-4528
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FB NO.: P-

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5 SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

STORM WATER POLLUTION PLAN
LEELAND ST STA 1+00 TO STA 10+00
LEE LAND ST STA 10+00 TO STA 20+00

WBS NO.
R-01000-0036-3

DRAWING SCALE
1"=40'

CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.

SHEET NO. 119 OF 195

SHEET 2 OF 9

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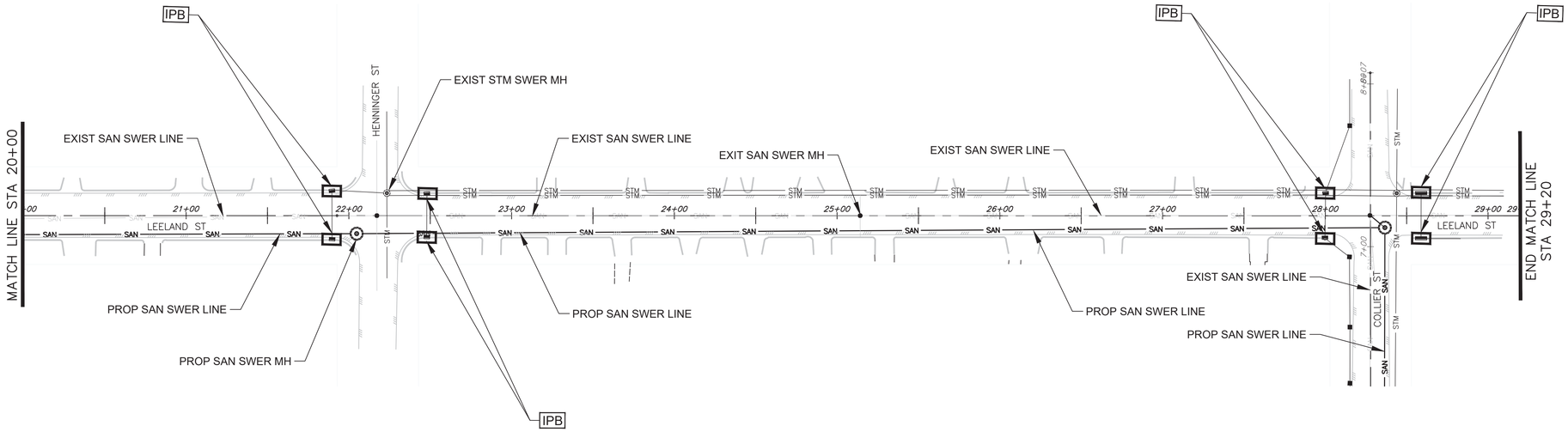

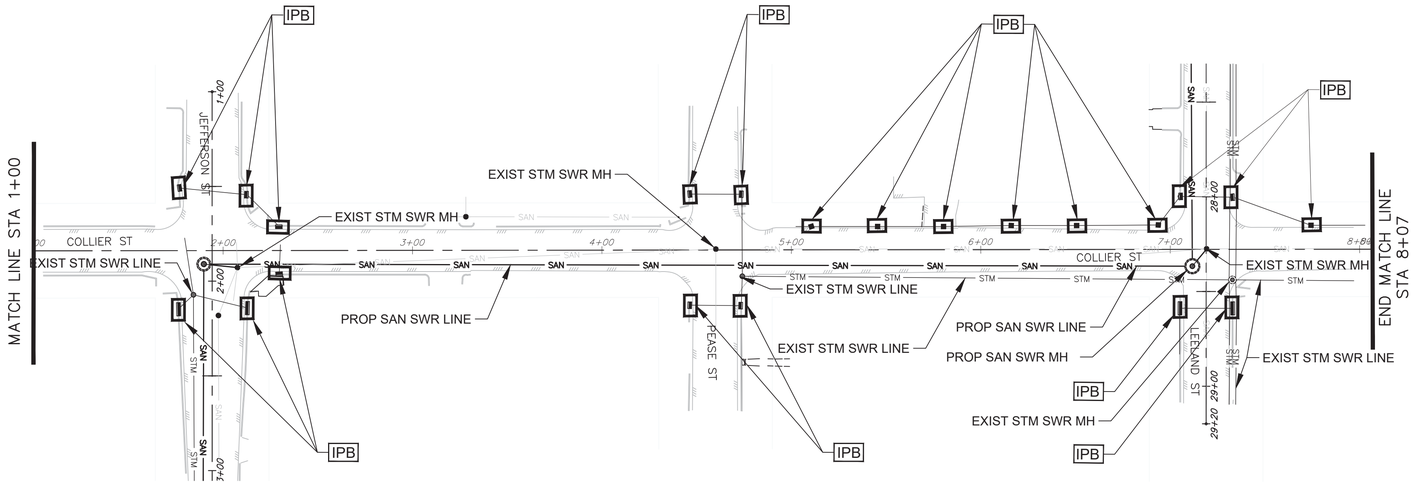

NOTE:

1. SEE SHEET 9 OF 9 FOR STORM WATER POLLUTION PREVENTION PLAN NOTES AND DETAILS.
2. CONTRACTOR SHALL PROVIDE A STABILIZED CONSTRUCTION EXIT, INCLUDING TRUCK WASHING AREA, VERIFIED IN THE FIELD AND AUTHORIZED BY ENGINEER.

LEGEND

IPB — INLET PROTECTION BARRER

0 40 80 Feet

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
FB NO.: P-

FCM Engineers, P.C.
3300 S. Gessner Rd.
Suite 249
Houston, Texas 77063
T- 713-706-4412
F- 713-706-4410
Tx Firm No. F-13481

INTERIM REVIEW ONLY
DOCUMENT INCOMPLETE: NOT INTENDED FOR PERMIT, BIDDING OR CONSTRUCTION.

ENGINEER: FRANK C. MBACHU
P.E. SERIAL No.: 108363
04/29/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5 SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

STORM WATER POLLUTION PLANT
LEELAND ST STA 20+00 TO STA 29+20
COLLIER ST STA 1+00 TO STA 8+07

WBS NO.
R-01000-0036-3

DRAWING SCALE
1"=40'

CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.

SHEET NO.120 OF 195

Y:\2023111 Sanitary Sewer Imprmnt Upstream Eddington LS\CAD\1-TCP PLAN.dwg, Layout1 (3), 4/29/2026 9:49:22 AM
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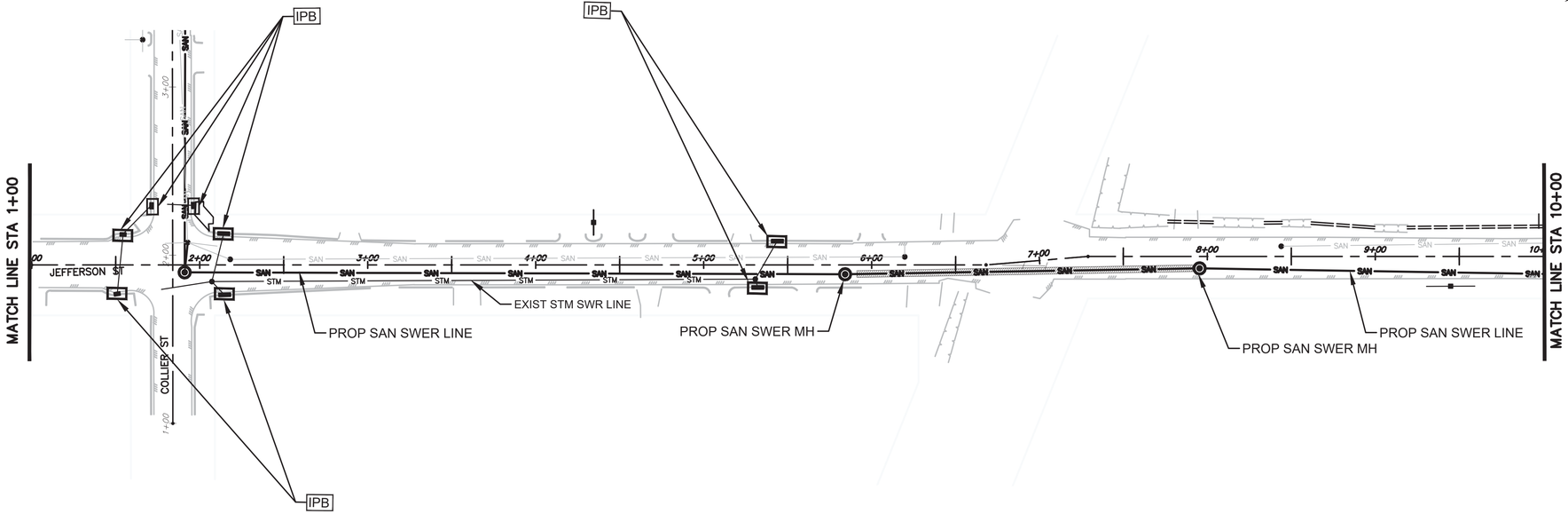

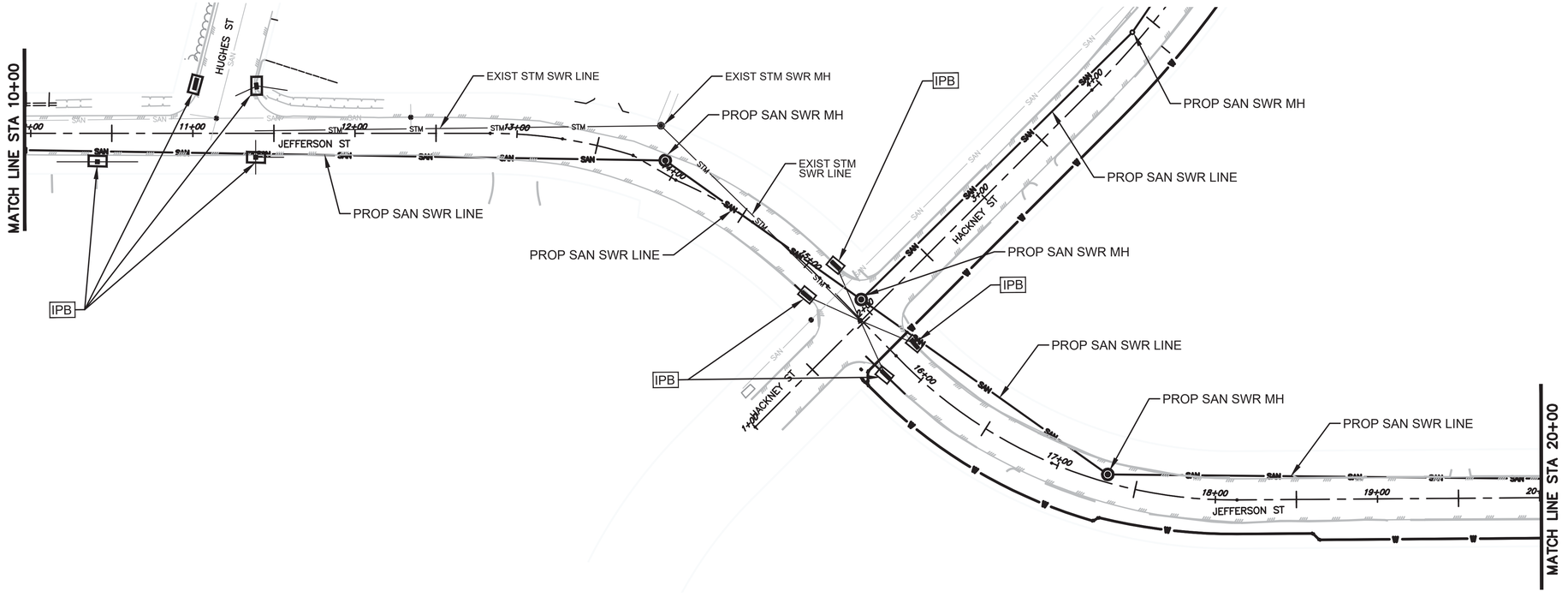

NOTE:

1. SEE SHEET 9 OF 9 FOR STORM WATER POLLUTION PREVENTION PLAN NOTES AND DETAILS.
2. CONTRACTOR SHALL PROVIDE A STABILIZED CONSTRUCTION EXIT, INCLUDING TRUCK WASHING AREA, VERIFIED IN THE FIELD AND AUTHORIZED BY ENGINEER.

LEGEND

IPB INLET PROTECTION BARRER

0 40 80 Feet

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4628
Texas Registered Surveying Firm No. 100282-00

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FB NO.: P-

FCM Engineers, P.C.
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F- 713-706-4410
Tx Firm No. F-13481

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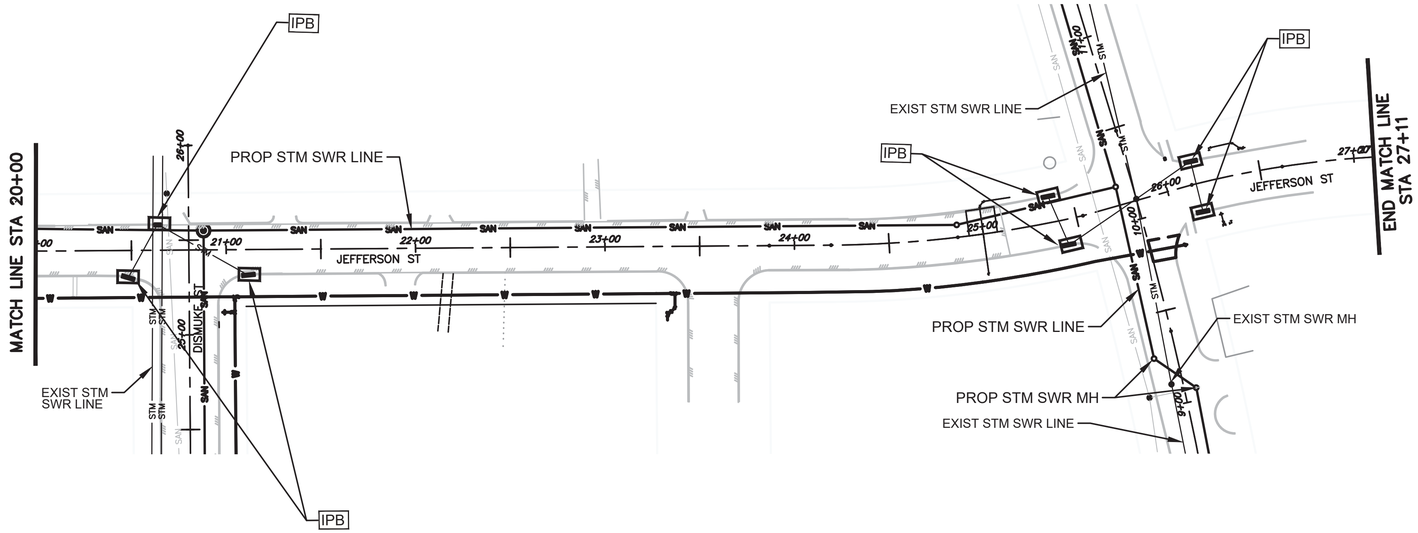
ENGINEER: FRANK C. MBACHU
P.E. SERIAL No.: 108363
04/29/2026

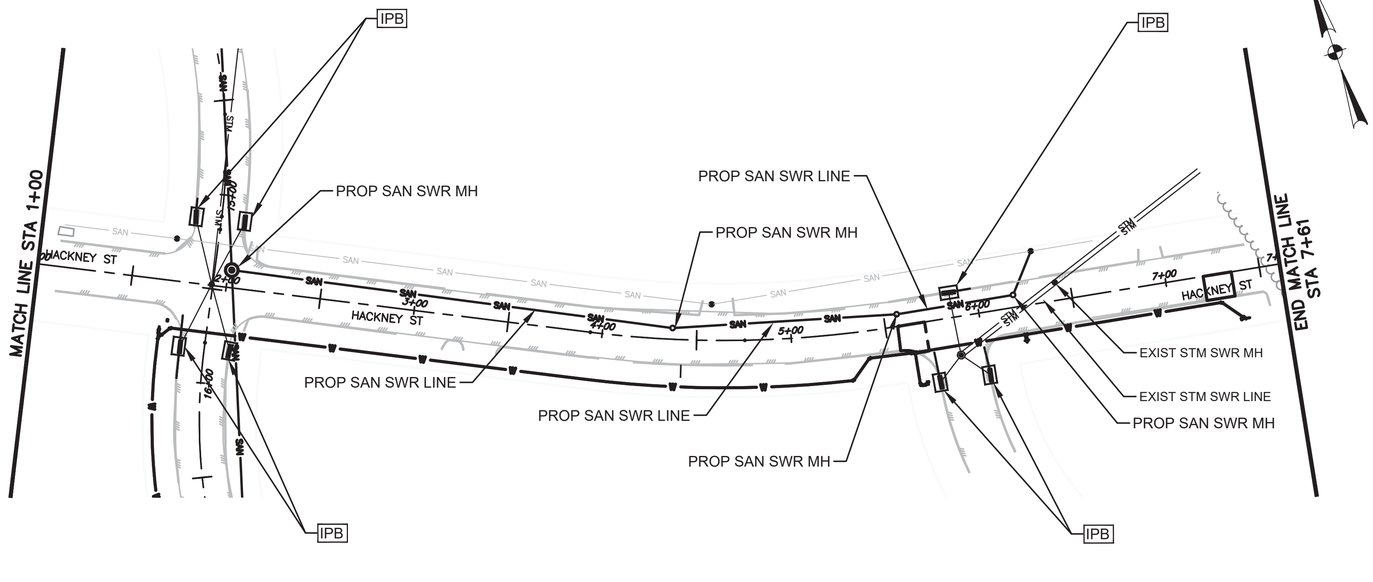
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5 SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

STORM WATER POLLUTION PLAN
JEFFERSON ST STA 1+00 TO STA 1+00
JEFFERSON ST STA 10+00 TO STA 20+00

WBS NO. R-01000-0036-3
DRAWING SCALE 1"=40'
CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.
SHEET NO. 121 OF 195





NOTE:

1. SEE SHEET 9 OF 9 FOR STORM WATER POLLUTION PREVENTION PLAN NOTES AND DETAILS.
2. CONTRACTOR SHALL PROVIDE A STABILIZED CONSTRUCTION EXIT, INCLUDING TRUCK WASHING AREA, VERIFIED IN THE FIELD AND AUTHORIZED BY ENGINEER.

LEGEND

IPB — INLET PROTECTION BARRER

0 40 80 Feet

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

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ENGINEER: FRANK C. MBACHU
P.E. SERIAL No.: 108363
04/29/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5 SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

STORM WATER POLLUTION PLAN
JEFFERSON ST STA 20+00 TO END STA 27+11 HACKNEY ST
ST 1+00 TO STA 7+61

WBS NO.
R-01000-0036-3

DRAWING SCALE
1"=40'

CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.

SHEET NO. 122 OF 195

SHEET 5 OF 9

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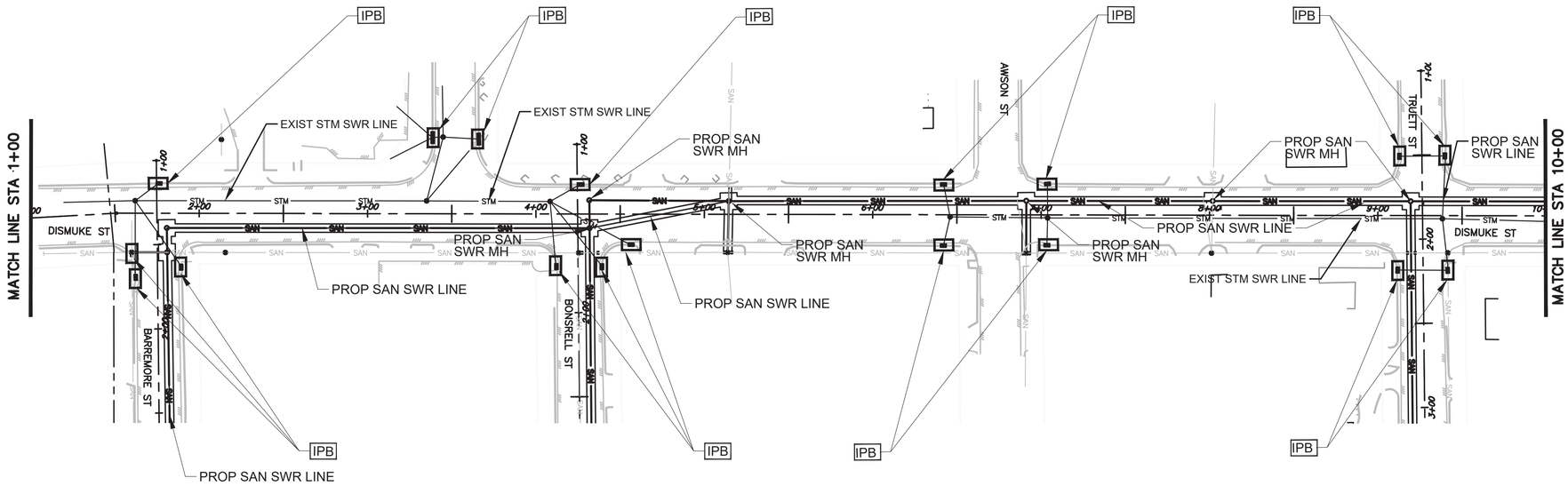

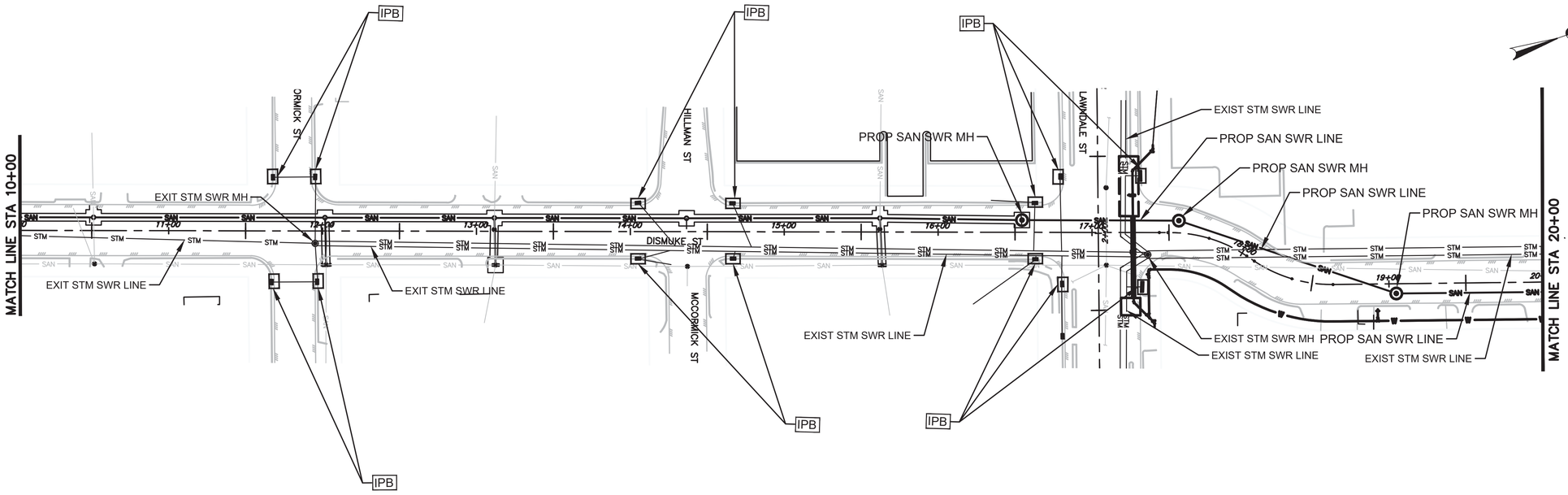

NOTE:

1. SEE SHEET 9 OF 9 FOR STORM WATER POLLUTION PREVENTION PLAN NOTES AND DETAILS.
2. CONTRACTOR SHALL PROVIDE A STABILIZED CONSTRUCTION EXIT, INCLUDING TRUCK WASHING AREA, VERIFIED IN THE FIELD AND AUTHORIZED BY ENGINEER.

LEGEND

IPB — INLET PROTECTION BARRER

0 40 80 Feet

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

SURVEYED BY: AMANI
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ENGINEER: FRANK C. MBACHU
P.E. SERIAL No.: 108363
04/29/2026

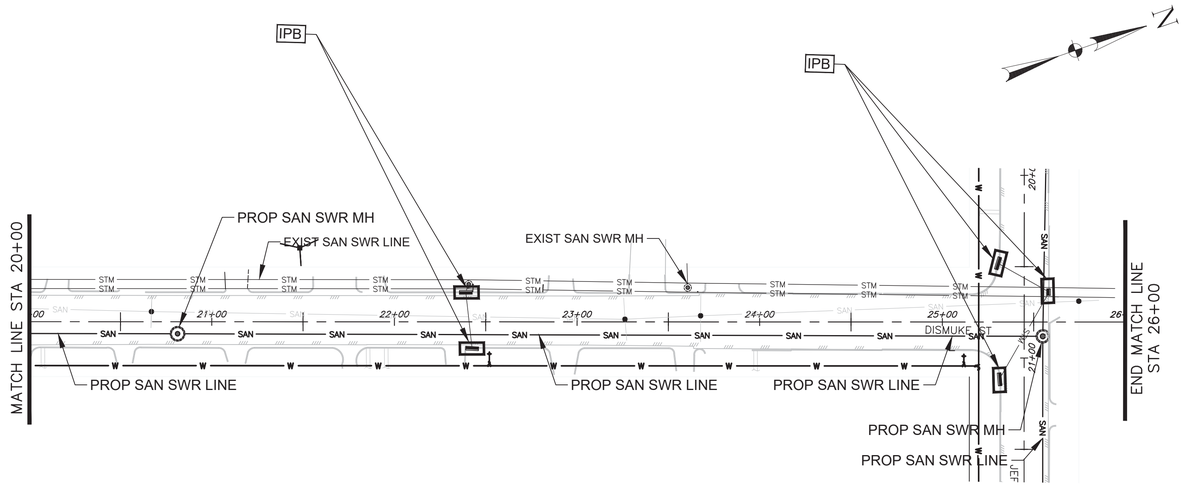
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

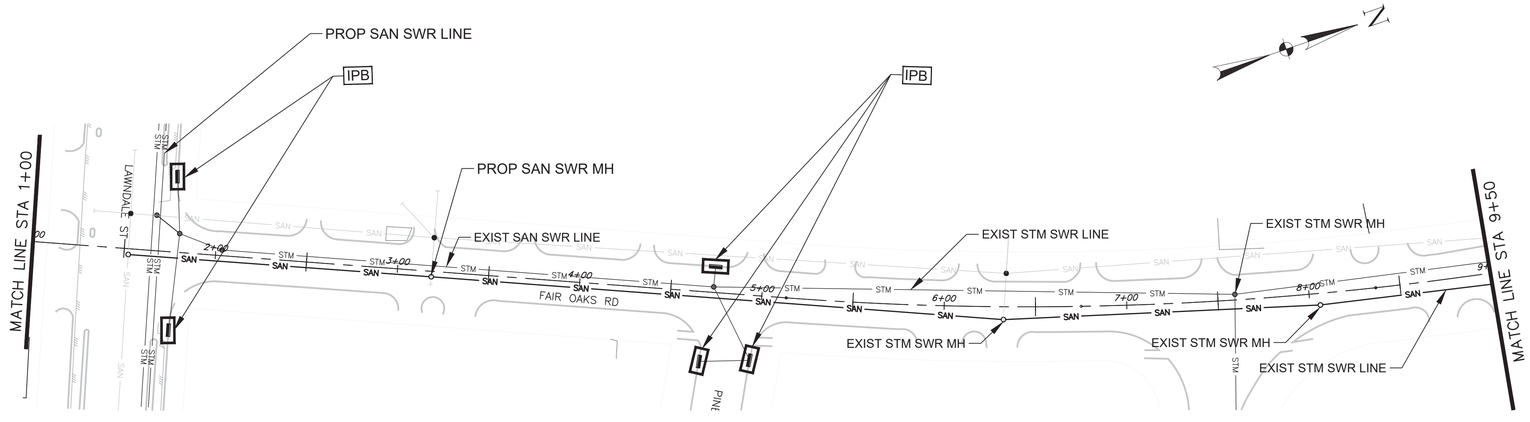
CRMP CIP PACKAGE 5 SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

STORM WASTER POLLUTION PLAN
DISMUKE ST STA 1+00 TO STA 10+00
DISMUKE ST STA 10+00 TO STA 20+00

WBS NO.	R-01000-0036-3
DRAWING SCALE	1"=40'
CITY OF HOUSTON, PM	SABEEN SHAIK, P.E.
SHEET NO.	123 OF 195

SHEET 6 OF 9





0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

NOTE:

1. SEE SHEET 9 OF 9 FOR STORM WATER POLLUTION PREVENTION PLAN NOTES AND DETAILS.
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LEGEND

IPB — INLET PROTECTION BARRER

0 40 80 Feet

AMANI ENGINEERING, INC.
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HOUSTON, TEXAS 77024
TEL: (713) 270-5700
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ENGINEER: FRANK C. MBACHU
P.E. SERIAL No.: 108363
04/29/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5 SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

STORM WATER POLLUTION PREVENTION PLAN
DISMUKE ST STA 20+00 TO END STA 26+00 - FAIR OAK ST STA 1+00 TO STA 9+50

WBS NO.	R-01000-0036-3
DRAWING SCALE	1"=40'
CITY OF HOUSTON, PM	SABEEN SHAIK, P.E.
SHEET NO.	124 OF 195

SHEET 7 OF 9

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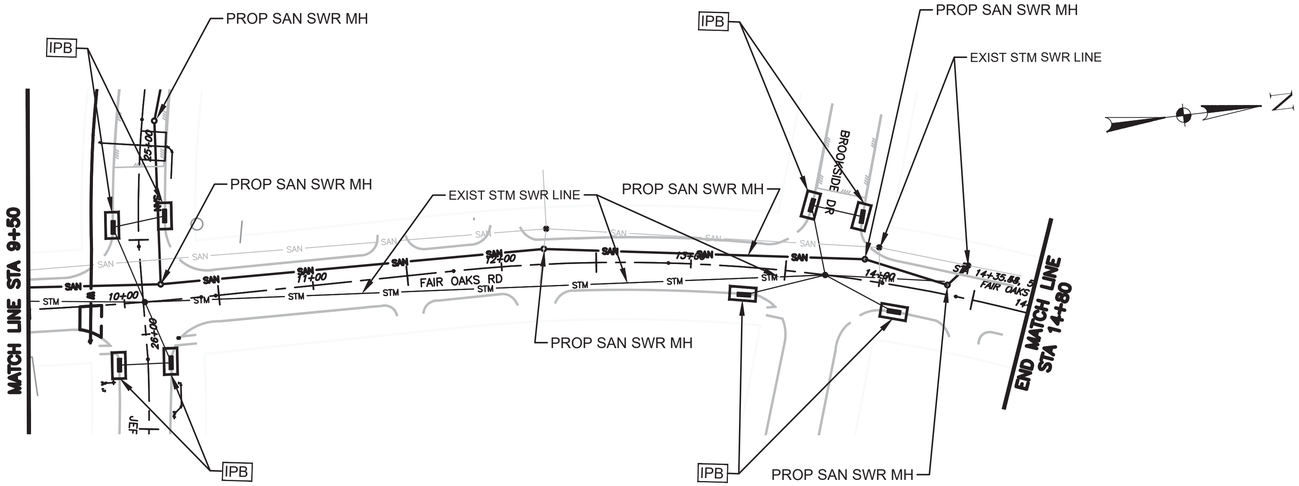

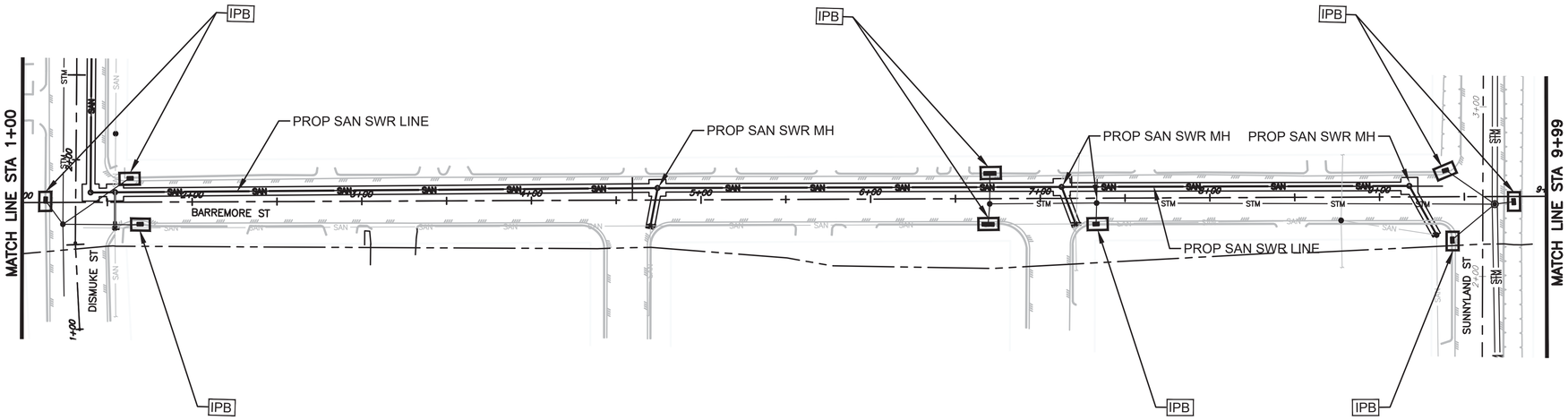

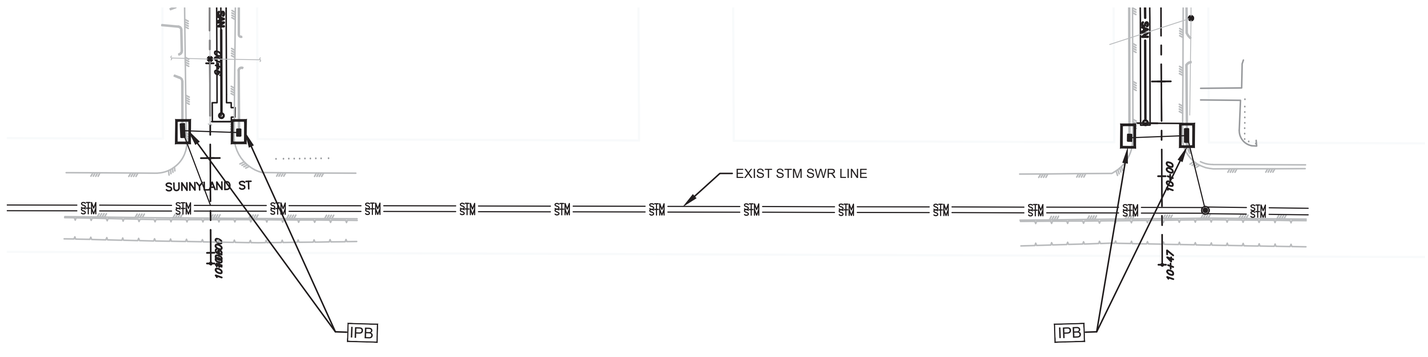

NOTE:

1. SEE SHEET 9 OF 9 FOR STORM WATER POLLUTION PREVENTION PLAN NOTES AND DETAILS.
2. CONTRACTOR SHALL PROVIDE A STABILIZED CONSTRUCTION EXIT, INCLUDING TRUCK WASHING AREA, VERIFIED IN THE FIELD AND AUTHORIZED BY ENGINEER.

LEGEND

IPB — INLET PROTECTION BARRER

0 40 80 Feet

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

SHEET 8 OF 9

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-6700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

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ENGINEER: FRANK C. MBACHU
P.E. SERIAL No.: 108363
04/29/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5 SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

STORM WATER POLLUTION PREVENTION PLAN
FAIR OAK RD STA 1+00 TO STA 9+99
BARREMORE ST STA 1+00 TO STA 9+50
BARREMORE ST TO SUNNYLAND ST STA 9+00 TO 10+00
TRUETT ST STA 9+00 TO SUNNYLAND ST 10+47

WBS NO.
R-01000-0036-3

DRAWING SCALE
1"=40'

CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.

SHEET NO. 125 OF 195

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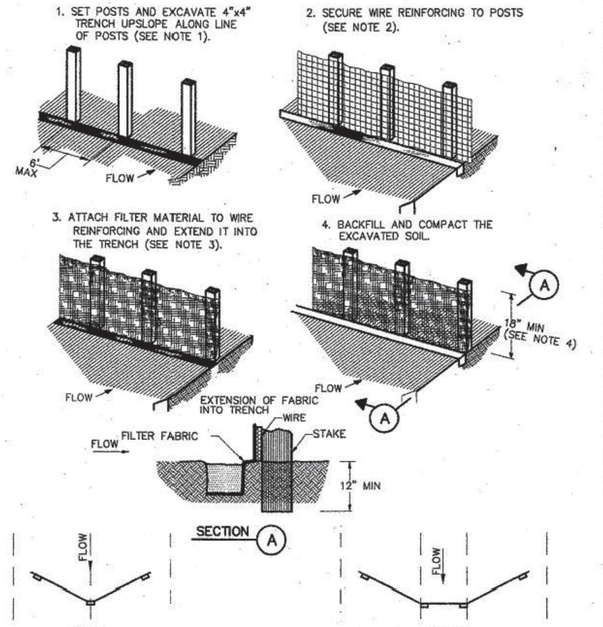
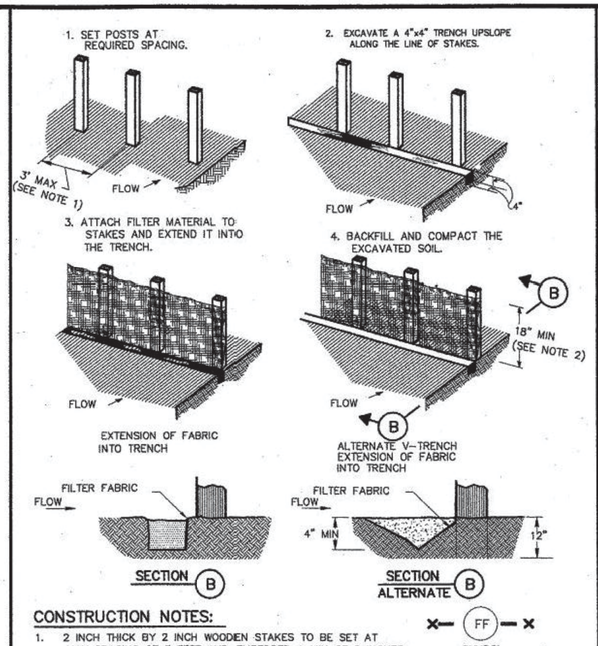


CONSTRUCTION NOTES:

1. SET 2 INCH BY 2 INCH WOODEN STAKES SPACED A MAX OF 6 FEET APART AND EMBEDDED A MIN OF 12 INCHES.
2. WOVEN WIRE REINFORCING TO BE FASTENED SECURELY TO BARRIER POSTS WITH STAPLES.
3. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE REINFORCING, WITH TIES SPACED EVERY 24 INCHES AT TOP AND MIDSECTION.
4. MINIMUM HEIGHT OF FILTER SHOULD BE 18 INCHES AND A MAXIMUM OF 36 INCHES ABOVE NATURAL GROUND.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.
6. SEE COH STANDARD SPECIFICATION FOR FILTER FABRIC BARRIER.

SYMBOL

REINFORCED FILTER FABRIC BARRIER

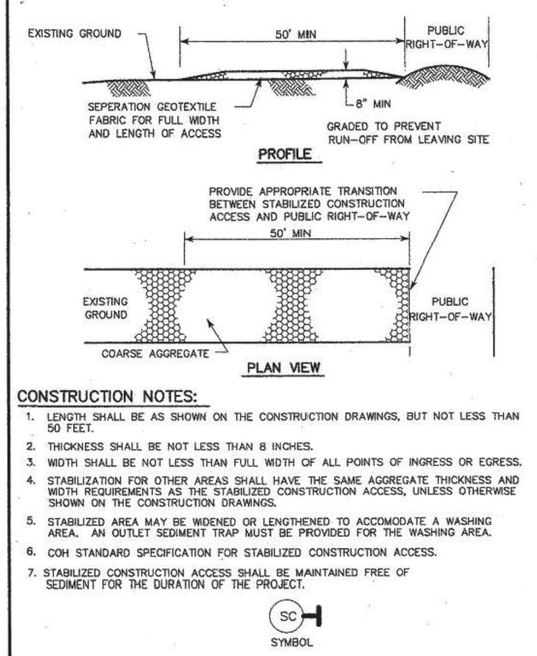


CONSTRUCTION NOTES:

1. 2 INCH THICK BY 2 INCH WOODEN STAKES TO BE SET AT MAX SPACING OF 3 FEET AND EMBEDDED A MIN OF 8 INCHES. IF PREASSEMBLED BARRIER WITH SUPPORT NETTING IS USED, SPACING OF POST MAY BE INCREASED TO 8 FEET MAX.
2. ATTACH FILTER FABRIC TO WOODEN STAKES. FILTER FABRIC BARRIER SHALL HAVE A MIN HEIGHT OF 18 INCHES AND MAX HEIGHT OF 36 INCHES ABOVE NATURAL GROUND.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHOULD BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.
4. SEE COH STANDARD SPECIFICATION FOR FILTER FABRIC BARRIER.

SYMBOL

FILTER FABRIC BARRIER

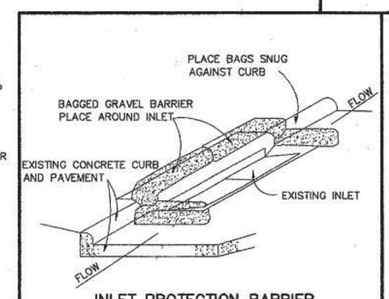


CONSTRUCTION NOTES:

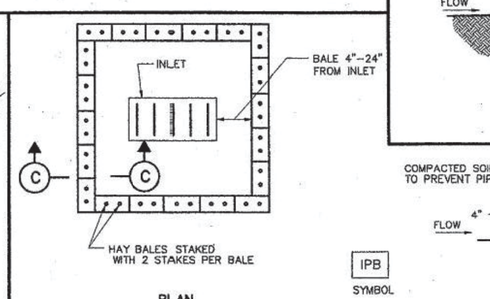
1. LENGTH SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS, BUT NOT LESS THAN 50 FEET.
2. THICKNESS SHALL BE NOT LESS THAN 8 INCHES.
3. WIDTH SHALL BE NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
4. STABILIZATION FOR OTHER AREAS SHALL HAVE THE SAME AGGREGATE THICKNESS AND WIDTH REQUIREMENTS AS THE STABILIZED CONSTRUCTION ACCESS, UNLESS OTHERWISE SHOWN ON THE CONSTRUCTION DRAWINGS.
5. STABILIZED AREA MAY BE WIDENED OR LENGTHENED TO ACCOMODATE A WASHING AREA. AN OUTLET SEDIMENT TRAP MUST BE PROVIDED FOR THE WASHING AREA.
6. COH STANDARD SPECIFICATION FOR STABILIZED CONSTRUCTION ACCESS.
7. STABILIZED CONSTRUCTION ACCESS SHALL BE MAINTAINED FREE OF SEDIMENT FOR THE DURATION OF THE PROJECT.

SC
SYMBOL

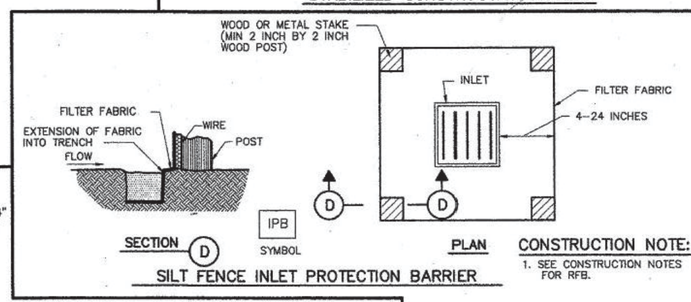
STABILIZED CONSTRUCTION ACCESS



INLET PROTECTION BARRIER
(FOR STAGE II INLETS)
BAGGED GRAVEL BARRIER



HAY BALE INLET PROTECTION BARRIER



SILT FENCE INLET PROTECTION BARRIER

CONSTRUCTION NOTE:

1. SEE CONSTRUCTION NOTES FOR RFB.

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

STORM WATER POLLUTION PREVENTION PLAN DETAILS

(NOT TO SCALE)

APPROVED — CITY ENGINEER
APPROVED — DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JULY-01-2010
DWG NO: 01571-01

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

NOTE:

1. SEE SHEET 9 OF 9 FOR STORM WATER POLLUTION PREVENTION PLAN NOTES AND DETAILS.
2. CONTRACTOR SHALL PROVIDE A STABILIZED CONSTRUCTION EXIT, INCLUDING TRUCK WASHING AREA, VERIFIED IN THE FIELD AND AUTHORIZED BY ENGINEER.

LEGEND

IPB — INLET PROTECTION BARRER

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
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Texas Registered Engineering Firm No. F-4528
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ENGINEER: FRANK C. MBACHU
P.E. SERIAL No.: 108363
04/29/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5 SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

STORM WATER POLLUTION PREVENTION PLANT

WBS NO. R-01000-0036-3
DRAWING SCALE 1"=40'
CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.
SHEET NO. 126 OF 195

GENERAL NOTES

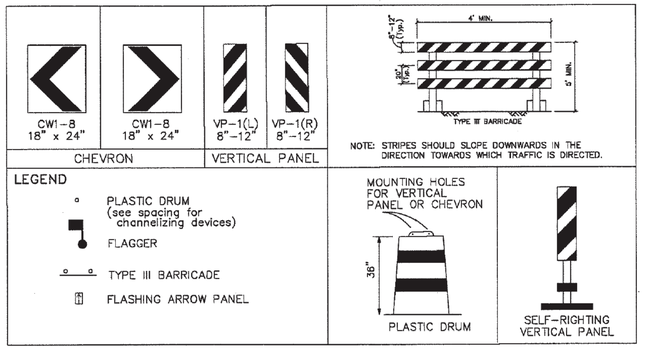
1. The Contractor shall provide and install traffic control devices in conformance with Part VI of the Texas Manual on Traffic Control Devices (TMUTCD)
2. All signs and traffic control devices shall conform the latest version of the TMUTCD
3. No lanes shall be closed during the hours of 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM Monday thru Friday without approval of the City Traffic Engineer.
4. No work shall be performed in residential areas from 7:00 PM to 7:00 AM.
5. Contractor shall maintain approved number of through lanes of traffic in each direction during construction working hours. Traffic control plans shall include one-way and/or detour plans. Contractor shall maintain ADA compliant pedestrian access to bus stops and adequate bus access to all the bus stops.
6. Contractor shall maintain traffic lanes and detours according to traffic control plans during working hours.
7. Contractor shall cover open pavement excavations for minor utility work with anchored steel plate 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 for 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 and reproducible in mylars and shall be sealed by a Licensed Engineer in the State of Texas. Transportation & Drainage Operations representative approval is required to accept the proposed changes.
9. Contractor shall secure lane/sidewalk/bicycle facility closure permits from Transportation & Drainage Operations (Mobility Permit Section at http://www.gims.houstontx.gov/portalWS/MainPortal.aspx) before implementing the 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 Transportation & Drainage Operations (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 yield to public traffic with 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 delineators may be required to delineate the driveway access route through the construction zone. A minimum of a 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.

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.

CHANNELIZATION AND BARRICADES



TYPICAL SIGN SPACING, TAPER LENGTHS, AND SUGGESTED SPACING OF CHANNELIZATION DEVICES

		Min. Desirable Taper Length "L"			Suggested Maximum Spacing Of Device	
Posted Speed (mph)	Sign Spacing "X"	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'

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

TCP NOTES
CHANNELIZING DEVICES
AND BARRICADES
(NOT TO SCALE)

CITY TRAFFIC ENGINEER
CITY ENGINEER

DIRECTOR OF
HOUSTON PUBLIC WORKS

EFF DATE: JUL-01-2018

DWG NO: 01512-01

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Houston, Texas 77494

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND NOT FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES.

RESPONSIBLE ENGINEER:
TRANSCEND ENGINEERS & PLANNERS, LLC.
RAJASEKHAR BASAVARAJU
TEXAS REGISTRATION NO. 112149

1/28/2026

SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

WBS NO.
R-01000-0036-3

FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE
N.T.S.

CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.

SHEET NO. 127 OF 195

$DATE$
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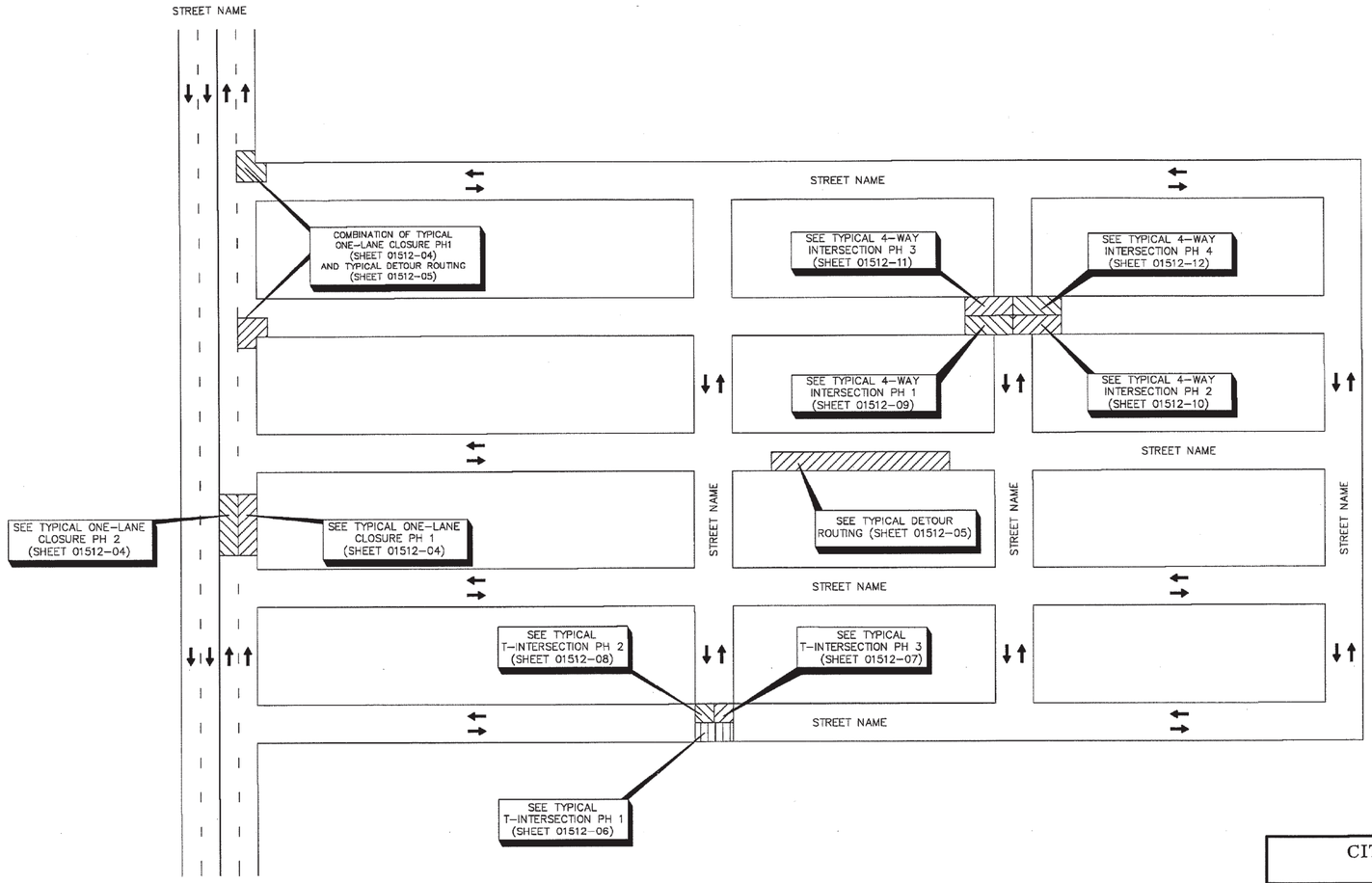

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

TCP OVERALL
TRAFFIC CONTROL LAYOUT

(NOT TO SCALE)

CITY TRAFFIC ENGINEER
CITY ENGINEER

DIRECTOR OF
HOUSTON PUBLIC WORKS

EFF DATE: JUL-01-2018

DWG NO: 01512-02

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RESPONSIBLE ENGINEER:
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RAJASEKHAR BASAVARAJU
TEXAS REGISTRATION NO. 112149

1/28/2026

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

WBS NO. R-01000-0036-3	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON, PM	
SABEEN SHAIK, P.E.	
SHEET NO. 128 OF 195	

$DATE$

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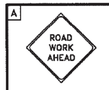
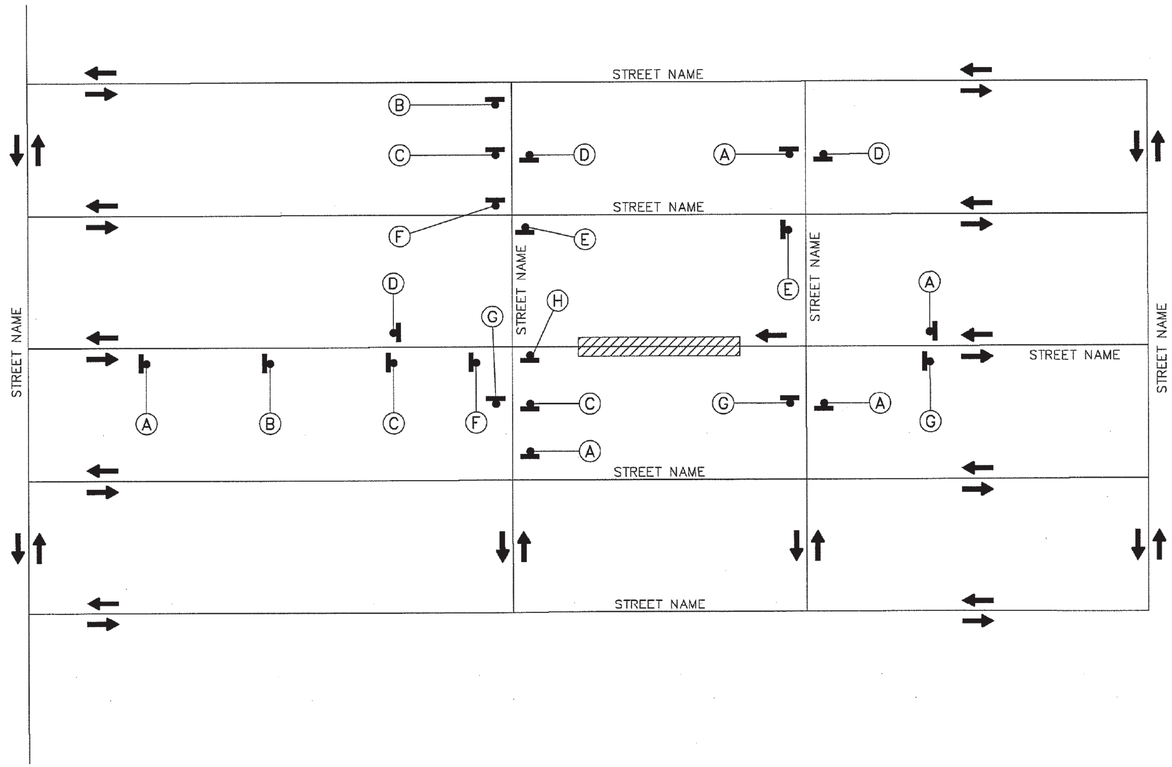
							
CW20-1	CW20-4	CW20-2	G20-2	M4-9R	M4-9L	M4-8a	M4-9T

LEGEND

- SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- TRAFFIC FLOW
- CONSTRUCTION AREA



CITY OF HOUSTON
HOUSTON PUBLIC WORKS

TRAFFIC CONTROL LAYOUT

(NOT TO SCALE)

CITY TRAFFIC ENGINEER / CITY ENGINEER	DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2018	DWG NO: 01512-03

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RAJASEKHAR BASAVARAJU
TEXAS REGISTRATION NO. 112149

1/28/2026

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

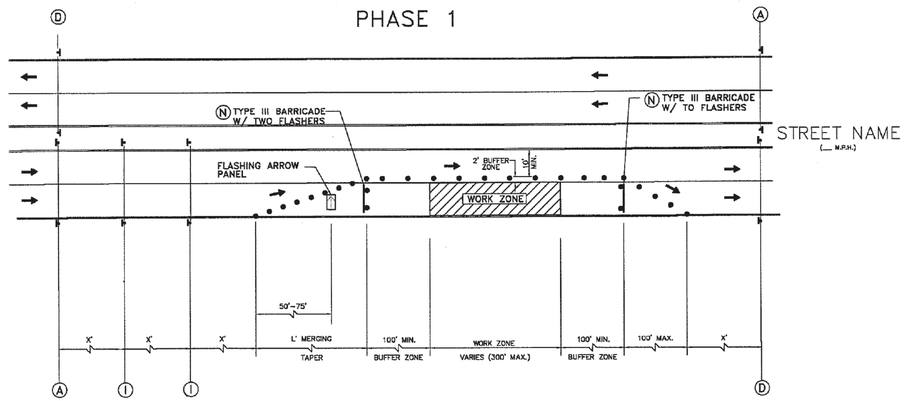
WBS NO. R-01000-0036-3	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON, PM	
SABEEN SHAIK, P.E.	
SHEET NO. 129 OF 195	

$DATE$

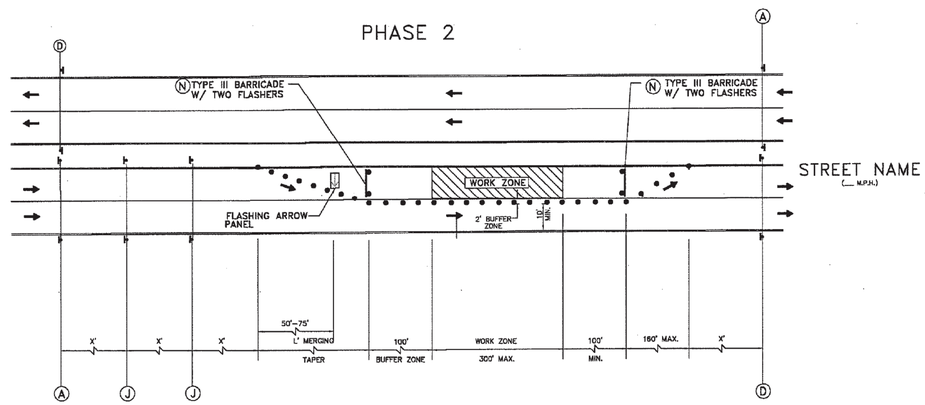
$FILEABBREV$

A	D	I	J	N
ROAD WORK AHEAD CW20-1	END ROAD WORK G20-2	RIGHT LANE CLOSED AHEAD CW20-5(2) CW16-3	LEFT LANE CLOSED AHEAD CW20-5(1) CW16-3	ROAD CLOSED R11-2

PHASE 1



PHASE 2



LEGEND

- SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- TRAFFIC FLOW
- CONSTRUCTION AREA

NOTE:

1. RETURN TAPERS AND DOWNSTREAM BARRICADES ARE OPTIONAL ON A DIVIDED ROADWAY SECTION.
2. DOUBLE SIGNS SHALL BE USED ONLY ON ROADWAYS WITH MEDIANS.
3. FOR DIMENSIONS REFER TO SHEET 01512-01.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

TCP ONE LANE CLOSURE
PHASE 1 & 2

(NOT TO SCALE)

CITY TRAFFIC ENGINEER

CITY ENGINEER

DIRECTOR OF HOUSTON PUBLIC WORKS

EFF. DATE: JUL-01-2018

DWG NO: 01512-04

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Houston, Texas 77494

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RESPONSIBLE ENGINEER:
TRANSCEND ENGINEERS & PLANNERS, LLC.
RAJASEKHAR BASAVARAJU
TEXAS REGISTRATION NO. 112149

1/28/2026

SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

WBS NO. R-01000-0036-3	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE N.T.S.	
CITY OF HOUSTON, PM SABEEN SHAIK, P.E.	
SHEET NO. 130 OF 195	

$DATE$

$FILEABBREV$

A	B	C	D	E	F	G	H	I	J
ROAD WORK AHEAD CW20-1	ROAD CLOSED AHEAD CW20-3	DETOUR AHEAD CW20-2	END ROAD WORK G20-2	STREET NAME DETOUR → M4-9R	STREET NAME DETOUR ← M4-9L	END DETOUR M4-8a	STREET NAME DETOUR ↑ M4-9T	RIGHT LANE CLOSED AHEAD CW20-5(2) CW16-3	LEFT LANE CLOSED AHEAD CW20-5(1) CW16-3

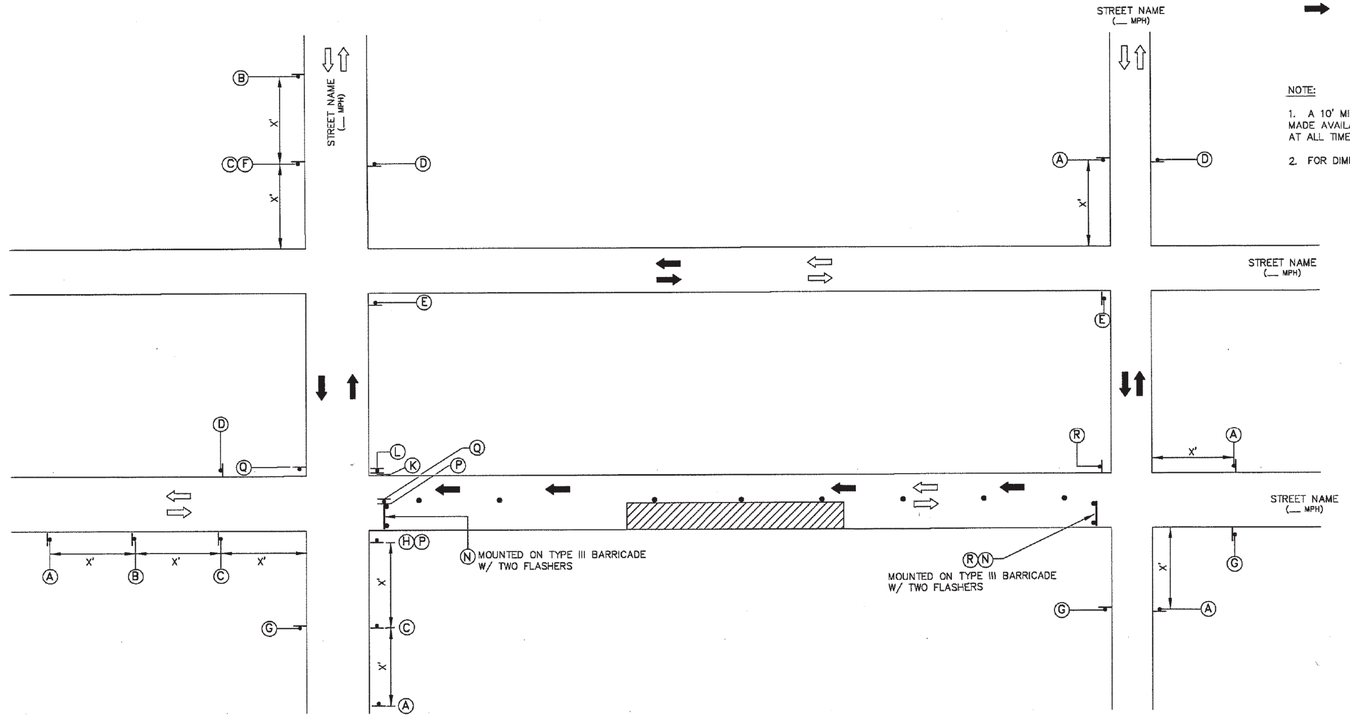
K	L	M	N	O	P	Q	R
ONE WAY ← R6-2(L)	ONE WAY → R6-2(R)	DO NOT ENTER R5-1	ROAD CLOSED R11-2	DETOUR ← M4-10(L)	 R3-1	 R3-2	BEGIN ONE WAY R6-6

LEGEND

- SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- BARRICADE
- FLASHING ARROW PANEL
- AREA UNDER CONSTRUCTION
- EXISTING TRAVELWAY
- TRAFFIC CONTROL PLAN DETOUR TRAVEL WAY

NOTE:

1. A 10' MINIMUM LANE WIDTH FOR EMERGENCY SHALL BE MADE AVAILABLE AND MAINTAINED BY THE CONTRACTOR AT ALL TIMES.
2. FOR DIMENSIONS REFER TO SHEET 01512-01.



CITY OF HOUSTON
HOUSTON PUBLIC WORKS

TCP ONE LANE CLOSURE

(NOT TO SCALE)

CITY TRAFFIC ENGINEER CITY ENGINEER	DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2018	DWG NO: 01512-05

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Houston, Texas 77494

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RESPONSIBLE ENGINEER:
TRANSCEND ENGINEERS & PLANNERS, LLC.
RAJASEKHAR BASAVARAJU
TEXAS REGISTRATION NO. 112149

1/28/2026

SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

WBS NO. R-01000-0036-3	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE N.T.S.	
CITY OF HOUSTON, PM SABEEN SHAIK, P.E.	
SHEET NO. 131 OF 195	

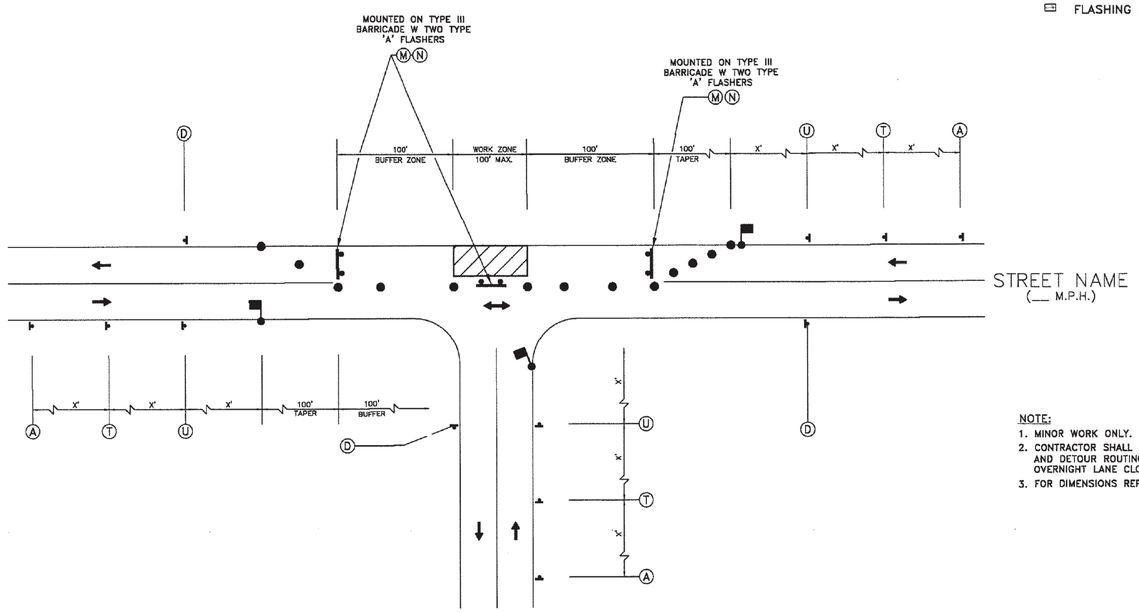
$DATE$

$FILEABBREV$

A	T	U	D	M	N
ROAD WORK AHEAD	ONE LANE ROAD		END ROAD WORK	DO NOT ENTER	ROAD CLOSED
CW20-1	CW20-4	CW20-7	G20-2	R5-1	R11-2

LEGEND

- SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- TRAFFIC FLOW
- BARRICADE
- FLASHING ARROW PANEL



NOTE:

1. MINOR WORK ONLY.
2. CONTRACTOR SHALL USE ONE-LANE ROAD CLOSURE AND DETOUR ROUTING FOR MAJOR OPERATIONS AND OVERNIGHT LANE CLOSURES.
3. FOR DIMENSIONS REFER TO SHEET 01512-01

PHASE 1 OF 3
TYPICAL CONSTRUCTION ZONE
AT A T-INTERSECTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

TCP TYPICAL 3-WAY INTERSECTION
PHASE 1 OF 3
(NOT TO SCALE)

CITY TRAFFIC ENGINEER / CITY ENGINEER	DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2018	DWG NO: 01512-06

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TBPLS Firm Reg. No.: 100262-00

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RAJASEKHAR BASAVARAJU
TEXAS REGISTRATION NO. 112149
1/28/2026

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

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DRAWING SCALE: N.T.S.	
CITY OF HOUSTON, PM: SABEEN SHAIK, P.E.	
SHEET NO. 132 OF 195	

$DATE$
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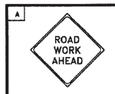
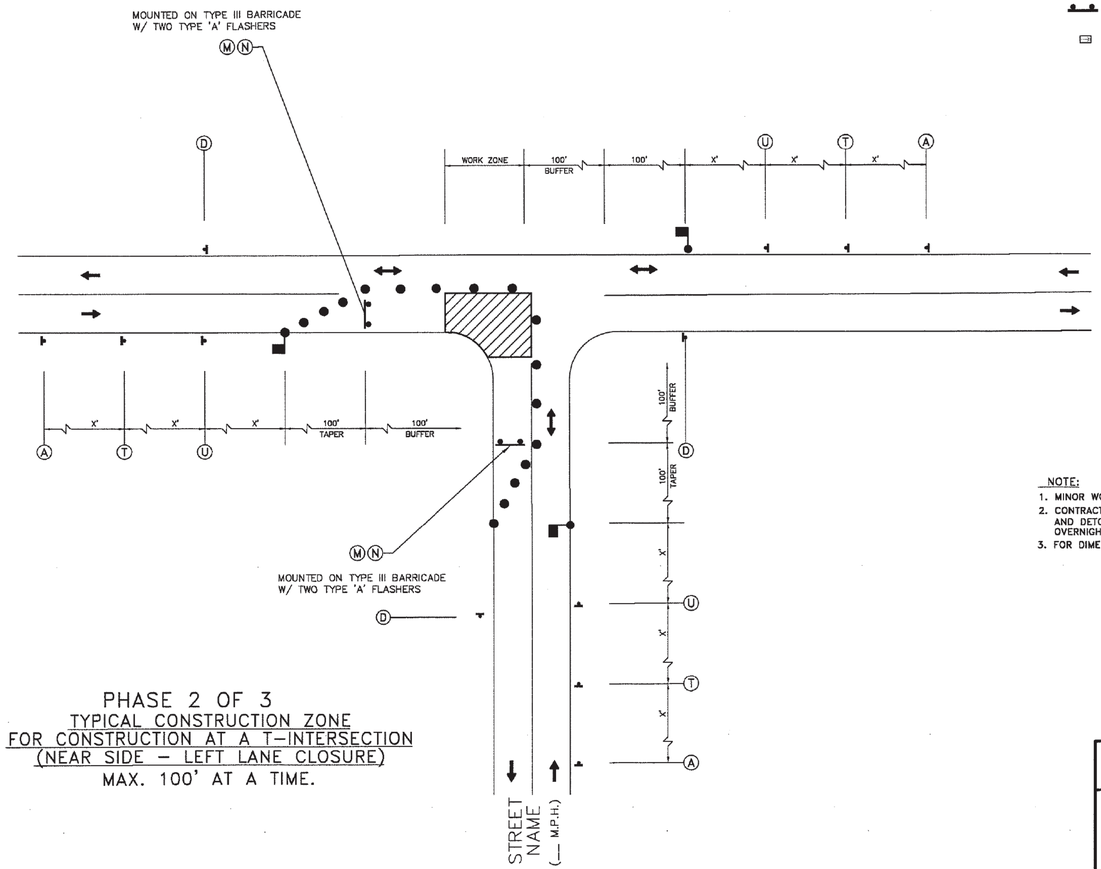
					
CW20-1	CW20-4	CW20-7	G20-2	R5-1	R11-2



PHASE 2 OF 3
TYPICAL CONSTRUCTION ZONE
FOR CONSTRUCTION AT A T-INTERSECTION
(NEAR SIDE - LEFT LANE CLOSURE)
MAX. 100' AT A TIME.

LEGEND

- SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- TRAFFIC FLOW
- BARRICADE
- FLASHING ARROW PANEL

NOTE:
1. MINOR WORK ONLY.
2. CONTRACTOR SHALL USE ONE-LANE ROAD CLOSURE AND DETOUR ROUTING FOR MAJOR OPERATIONS AND OVERNIGHT LANE CLOSURES.
3. FOR DIMENSIONS REFER TO SHEET 01512-01

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

TCP TYPICAL 3-WAY INTERSECTION
PHASE 2 OF 3
(NOT TO SCALE)

CITY TRAFFIC ENGINEER / CITY ENGINEER	DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2018	DWG NO: 01512-07

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TBPLS Firm Reg. No.: 100282-00

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RESPONSIBLE ENGINEER:
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RAJASEKHAR BASAVARAJU
TEXAS REGISTRATION NO. 112149
1/28/2026

SURVEYED BY: AMANI
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

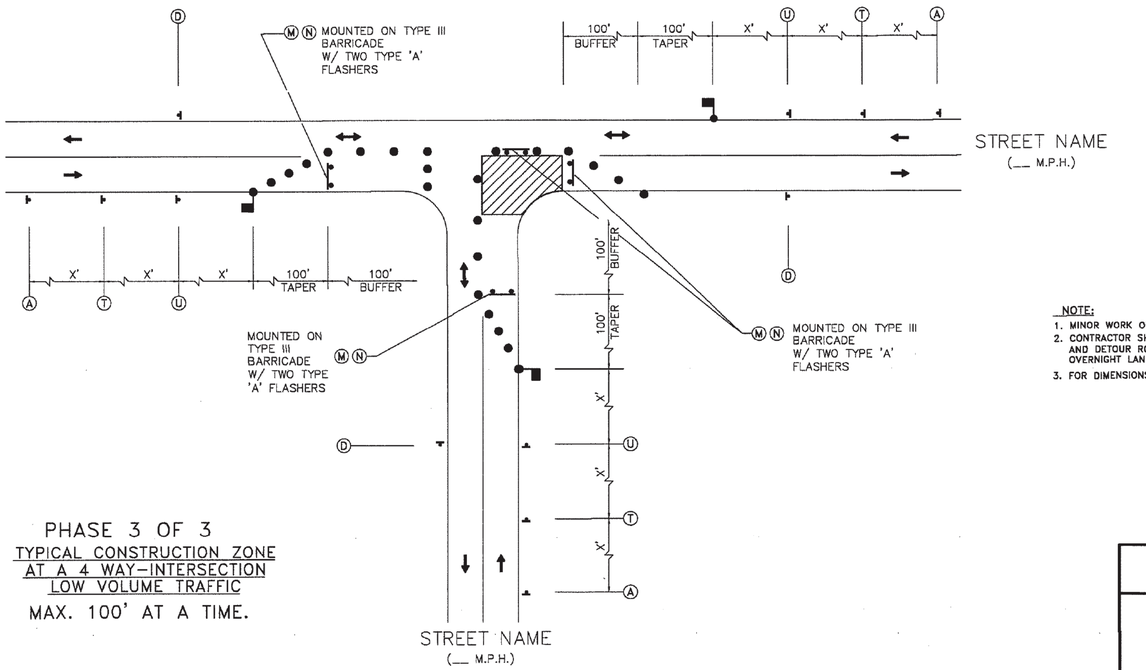
WBS NO. R-01000-0036-3	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON, PM	
SABEEN SHAIK, P.E.	
SHEET NO. 133 OF 195	

$DATE$
$FILEABBREV$

A	T	U	D	M	N
ROAD WORK AHEAD	ONE LANE ROAD		END ROAD WORK	DO NOT ENTER	ROAD CLOSED
CW20-1	CW20-4	CW20-7	G20-2	R5-1	R11-2

LEGEND

- SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- TRAFFIC FLOW
- BARRICADE
- FLASHING ARROW PANEL



PHASE 3 OF 3

TYPICAL CONSTRUCTION ZONE AT A 4 WAY-INTERSECTION LOW VOLUME TRAFFIC

MAX. 100' AT A TIME.

NOTE:

1. MINOR WORK ONLY.
2. CONTRACTOR SHALL USE ONE-LANE ROAD CLOSURE AND DETOUR ROUTING FOR MAJOR OPERATIONS AND OVERNIGHT LANE CLOSURES.
3. FOR DIMENSIONS REFER TO SHEET 01512-01

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

TCP TYPICAL 3-WAY INTERSECTION
PHASE 3 OF 3
(NOT TO SCALE)

CITY TRAFFIC ENGINEER / CITY ENGINEER	DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2018	DWG NO: 01512-08

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RESPONSIBLE ENGINEER:
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RAJASEKHAR BASAVARAJU
TEXAS REGISTRATION NO. 112149

1/28/2026

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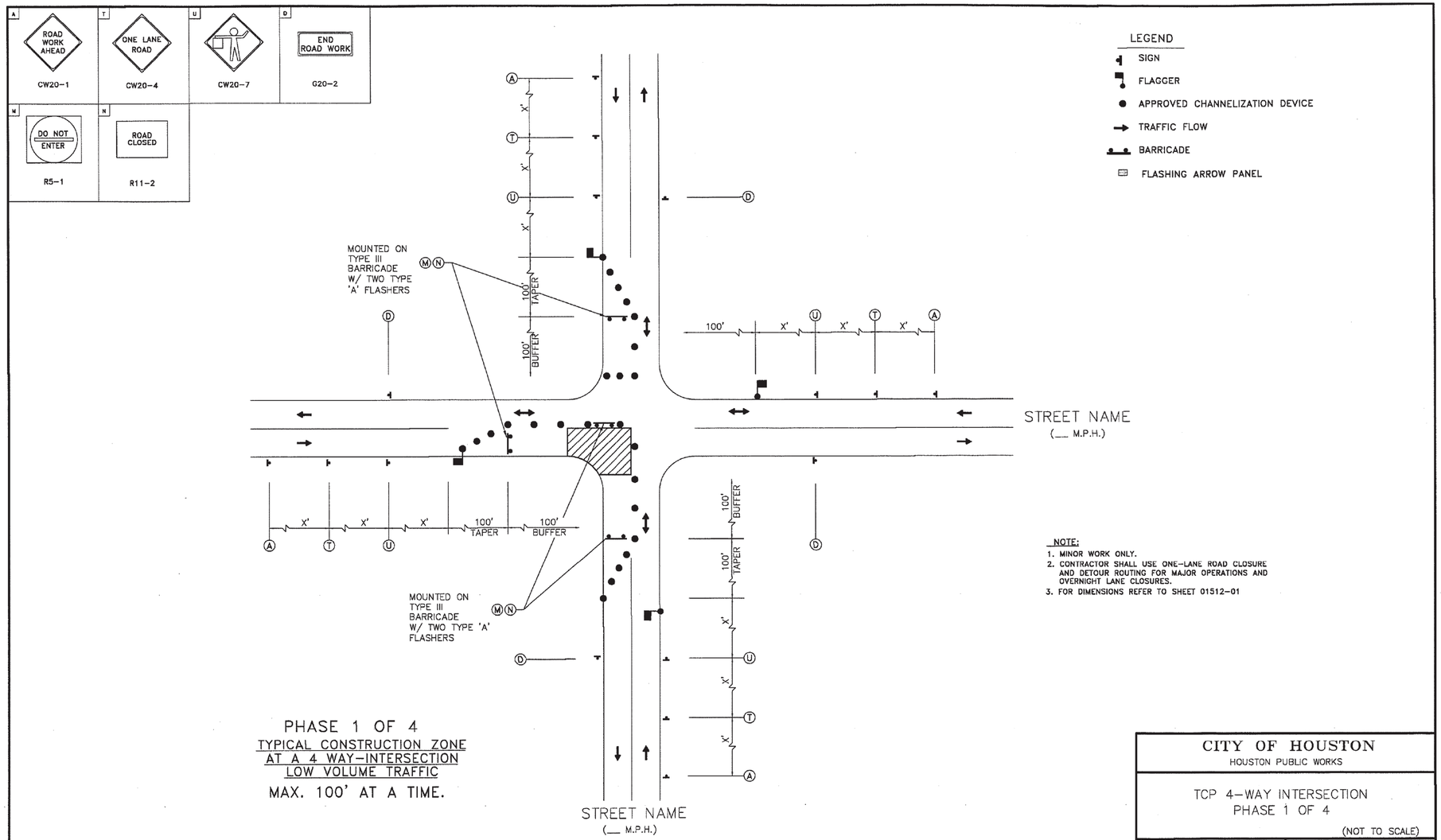
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

WBS NO. R-01000-0036-3	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON, PM	
SABEEN SHAIK, P.E.	
SHEET NO. 134 OF 195	

$DATE$

$FILEABBREV$



NOTE:
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PHASE 1 OF 4
TYPICAL CONSTRUCTION ZONE AT A 4 WAY-INTERSECTION LOW VOLUME TRAFFIC
MAX. 100' AT A TIME.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

TCP 4-WAY INTERSECTION
PHASE 1 OF 4

(NOT TO SCALE)

CITY TRAFFIC ENGINEER
CITY ENGINEER

DIRECTOR OF HOUSTON PUBLIC WORKS

EFF DATE: JUL-01-2018

DWG NO: 01512-09

Amani Engineering, Inc.
• Engineers • Surveyors • Construction Managers
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Tel (713) 270-5700 Fax (713) 271-3487
TBPE Firm Reg. No.: F-4528
TBPLS Firm Reg. No.: 100282-00

TRANSCEND engineers + planners
Transcend Engineers & Planners, LLC
TPBE Reg. No. F-19299
23410 Grand Reserve Dr., Suite 101
Houston, Texas 77494

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RESPONSIBLE ENGINEER:
TRANSCEND ENGINEERS & PLANNERS, LLC.
RAJASEKHAR BASAVARAJU
TEXAS REGISTRATION NO. 112149

1/28/2026

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

WBS NO.
R-01000-0036-3

FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE
N.T.S.

CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.

SHEET NO. 135 OF 195

$DATE$
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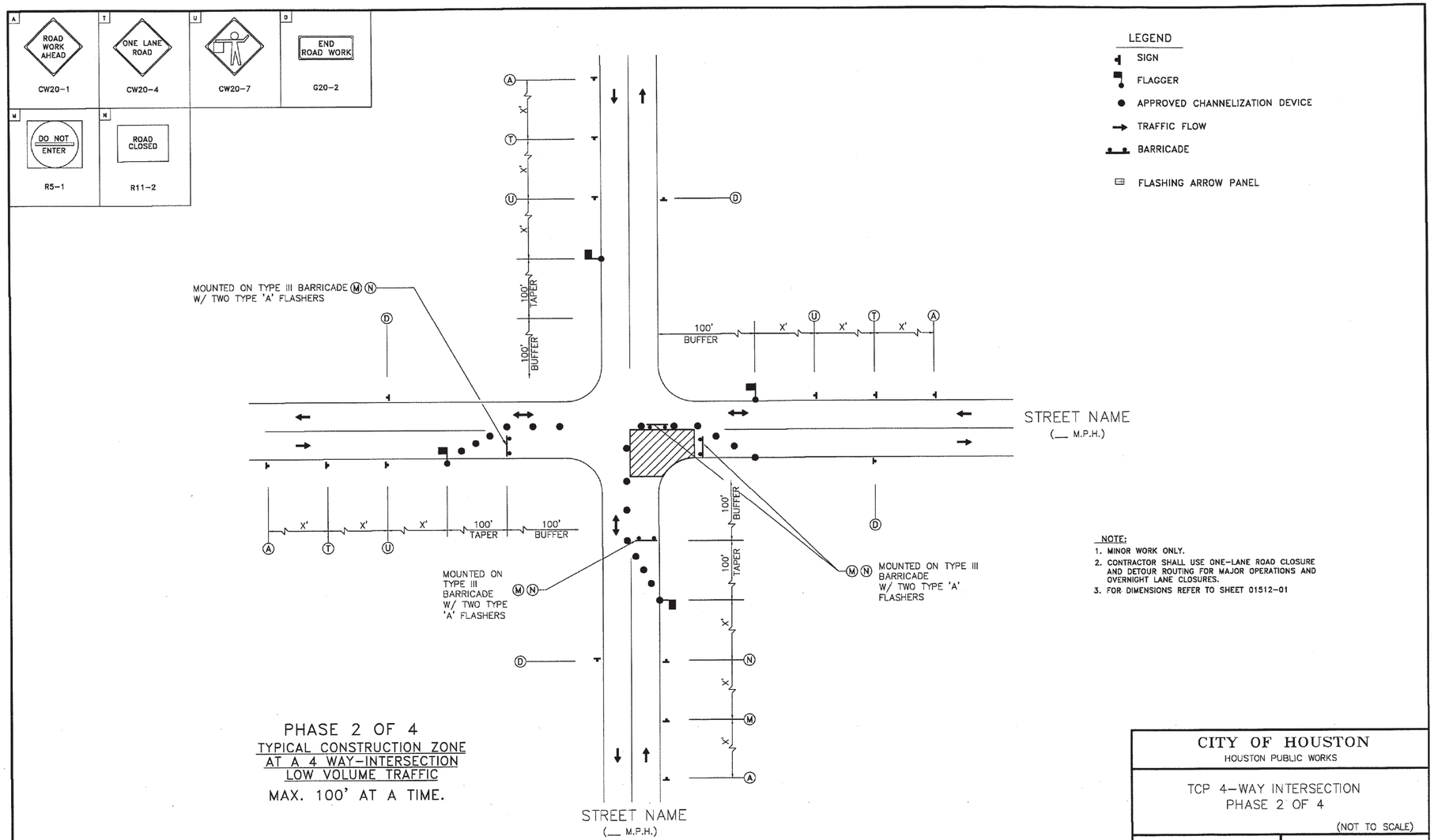

NOTE:
1. MINOR WORK ONLY.
2. CONTRACTOR SHALL USE ONE-LANE ROAD CLOSURE AND DETOUR ROUTING FOR MAJOR OPERATIONS AND OVERNIGHT LANE CLOSURES.
3. FOR DIMENSIONS REFER TO SHEET 01512-01

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

TCP 4-WAY INTERSECTION
PHASE 2 OF 4

(NOT TO SCALE)

CITY TRAFFIC ENGINEER / CITY ENGINEER	DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2018	DWG NO: 01512-10

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HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

WBS NO. R-01000-0036-3	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE N.T.S.	
CITY OF HOUSTON, PM SABEEN SHAIK, P.E.	
SHEET NO. 136 OF 195	

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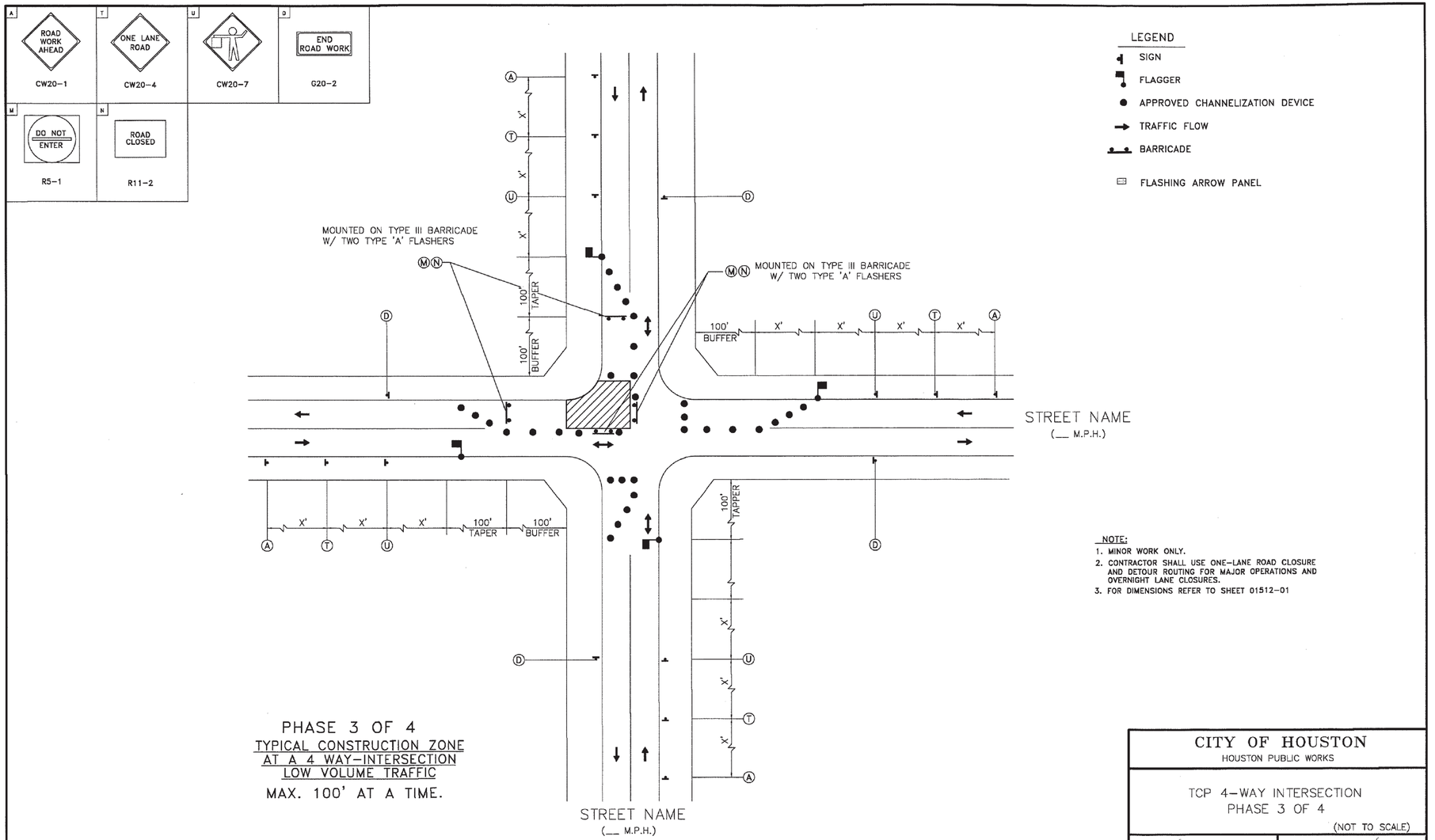

LEGEND

- SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- TRAFFIC FLOW
- BARRICADE
- FLASHING ARROW PANEL

NOTE:

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PHASE 3 OF 4

TYPICAL CONSTRUCTION ZONE AT A 4 WAY-INTERSECTION LOW VOLUME TRAFFIC

MAX. 100' AT A TIME.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

TCP 4-WAY INTERSECTION
PHASE 3 OF 4

(NOT TO SCALE)

CITY TRAFFIC ENGINEER / CITY ENGINEER	DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2018	DWG NO: 01512-11

$DATE$

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HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5 SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

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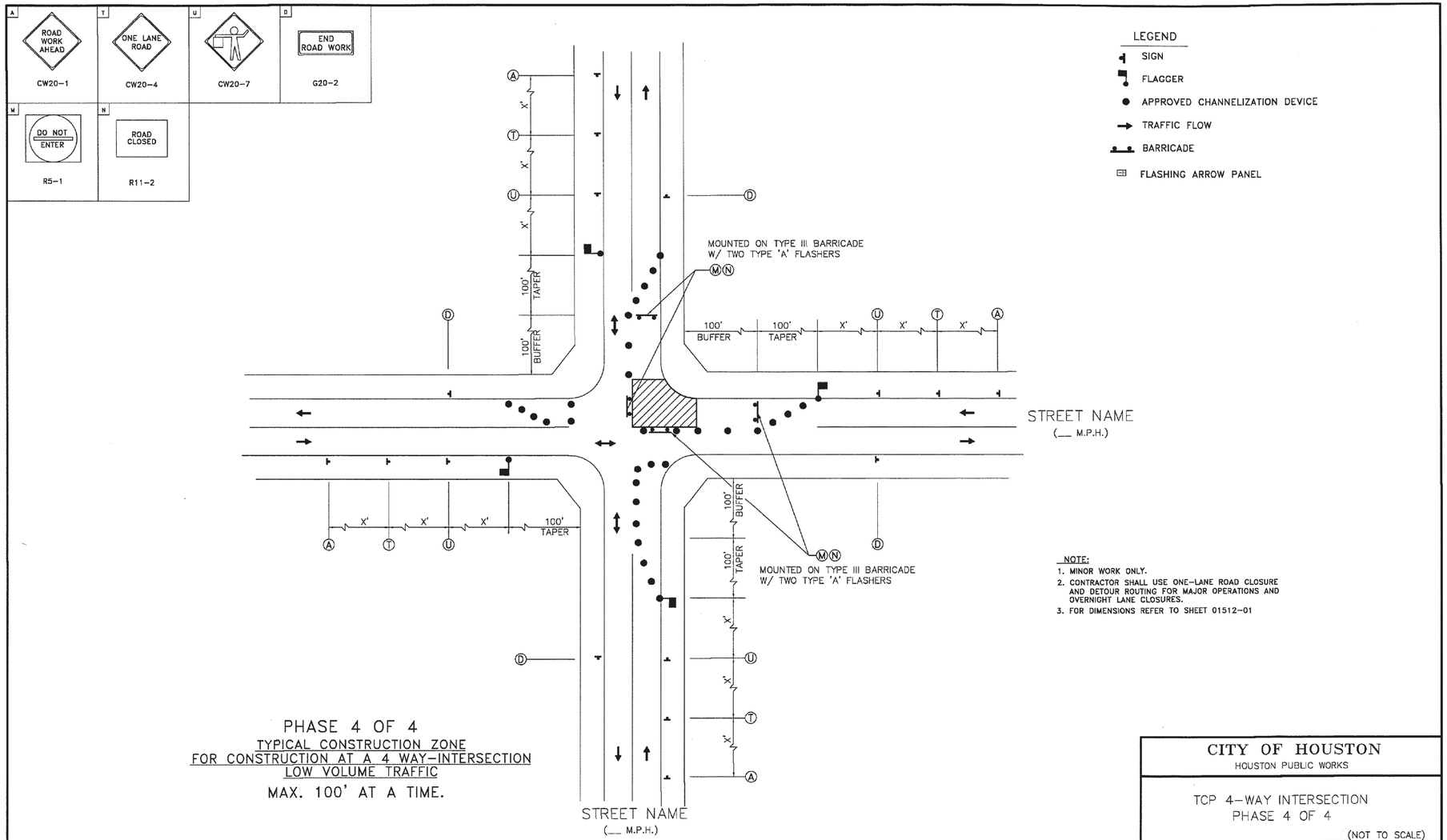

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3. FOR DIMENSIONS REFER TO SHEET 01512-01

PHASE 4 OF 4
TYPICAL CONSTRUCTION ZONE
FOR CONSTRUCTION AT A 4 WAY-INTERSECTION
LOW VOLUME TRAFFIC
MAX. 100' AT A TIME.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

TCP 4-WAY INTERSECTION
PHASE 4 OF 4
(NOT TO SCALE)

CITY TRAFFIC ENGINEER

CITY ENGINEER

DIRECTOR OF HOUSTON PUBLIC WORKS

EFF DATE: JUL-01-2018

DWG NO: 01512-12

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TEXAS REGISTRATION NO. 112149

1/28/2026

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

WBS NO.
R-01000-0036-3

FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE
N.T.S.

CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.

SHEET NO. 138 OF 195

$DATE$
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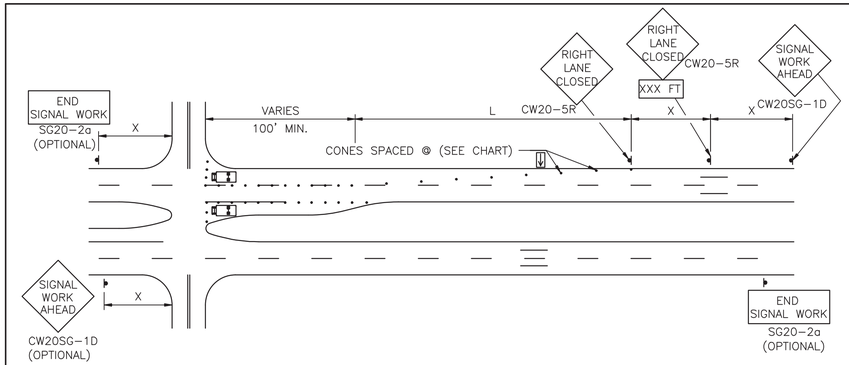
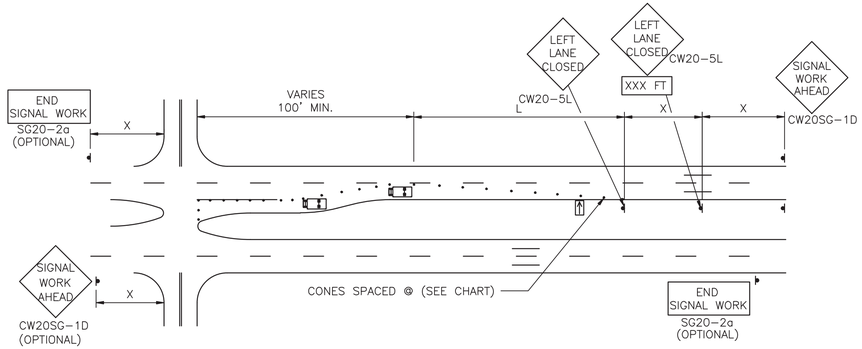
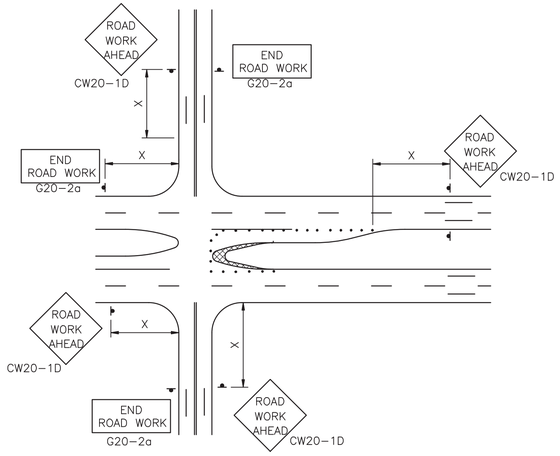


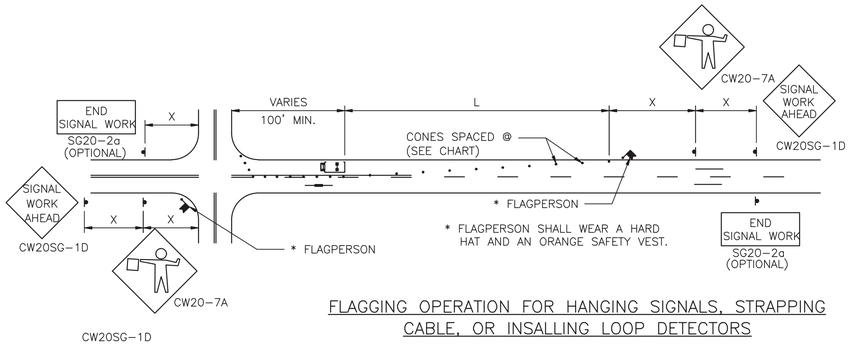
ONE LANE CLOSURE W/ RIGHT LANE AND/OR LEFT TURN LANE CLOSED



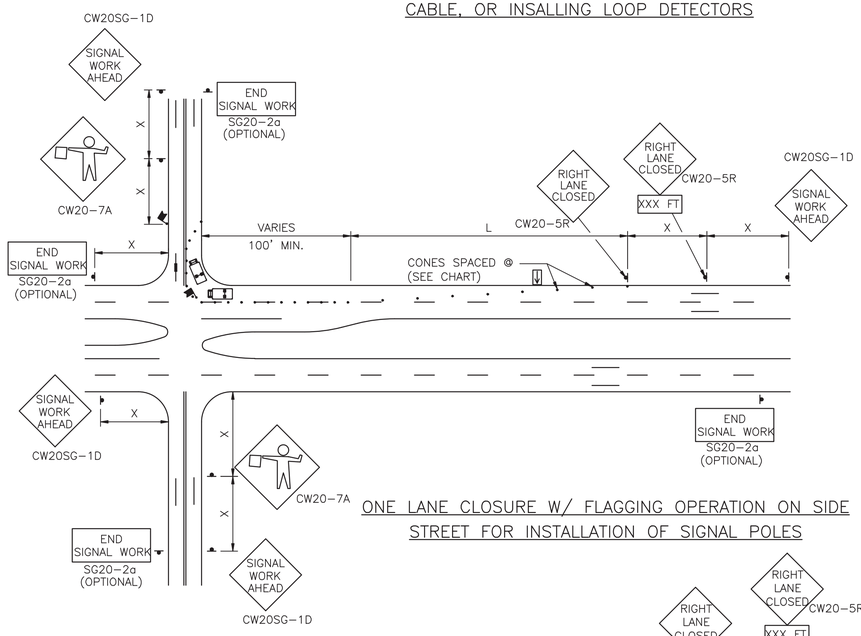
ONE LANE CLOSURE W/ LEFT LANE AND/OR LEFT TURN LANE CLOSED



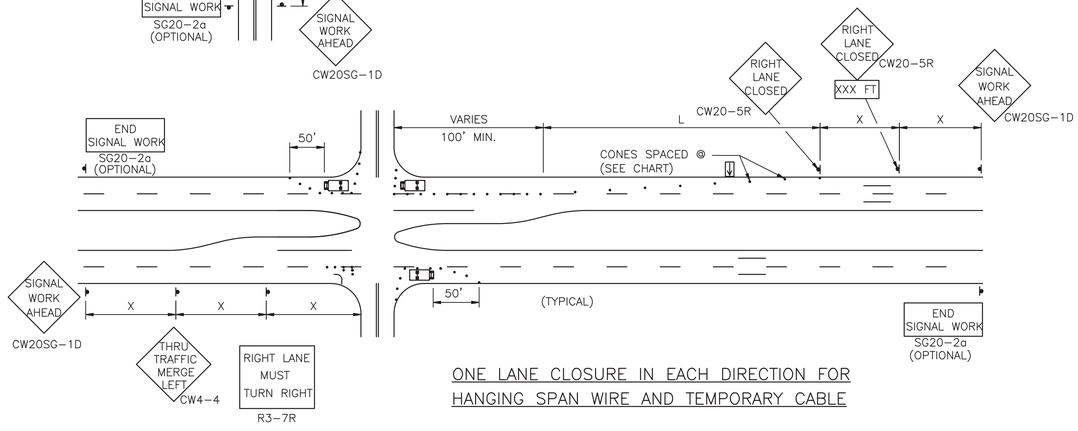
MEDIAN NOSE MODIFICATION



FLAGGING OPERATION FOR HANGING SIGNALS, STRAPPING CABLE, OR INSALLING LOOP DETECTORS



ONE LANE CLOSURE W/ FLAGGING OPERATION ON SIDE STREET FOR INSTALLATION OF SIGNAL POLES



ONE LANE CLOSURE IN EACH DIRECTION FOR HANGING SPAN WIRE AND TEMPORARY CABLE

NOTES:

1. ALL TRAFFIC CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST REVISION.
2. THE MINIMUM LANE WIDTH ALLOWED IS 10 FEET. THE MINIMUM BUFFER ZONE BETWEEN THE WORK ZONE AND ADJACENT TRAFFIC IS 2 FEET.
3. FLORESCENT ORANGE SHALL BE THE BACKGROUND COLOR ON ALL WORK ZONE SIGNS.
4. THE CONTRACTOR SHALL REMOVE ADVANCE SIGNS WHEN NO CONSTRUCTION OPERATIONS ARE UNDERWAY.
5. OBSTRUCTIONS OR HAZARDS AT THE WORK AREA SHALL BE CLEARLY MARKED AND DELINEATED AT ALL TIMES.
6. ALL HOLES, TRENCHES OR OTHER HAZARDOUS AREAS SHALL BE ADEQUATELY PROTECTED BY LIGHTS OR OTHER PROTECTIVE DEVICES.
7. TRENCHES SHALL BE COVERED OR SURROUNDED WITH ORANGE PLASTIC CONSTRUCTION FENCE AS DIRECTED BY THE ENGINEER.
8. FLAGGER AND FCW20-7a SIGN MAY BE REQUIRED ACCORDING TO FIELD CONDITIONS.
9. VEHICLES PARKED IN ROADWAY SHALL BE EQUIPPED WITH TWO STROBES.

LEGEND:

HEAVY WORK VEHICLE

FLASHING ARROW PANEL

TYPICAL TRANSITION LENGTHS

SUGGESTED MAXIMUM SPACING OF DEVICES

POSTED SPEED	FORMULA	MINIMUM DESIRABLE TAPER LENGTHS **			SUGGESTED MAXIMUM SPACING OF DEVICE		MINIMUM SIGN SPACING X DISTANCE
		10' OFFSET	11' OFFSET	12' OFFSET	ON A TAPER	ON A TANGENT	
30	L=WS²/60	150'	165'	180'	30'	60'–75'	120'
35		205'	225'	245'	35'	70'–90'	160'
40		265'	295'	320'	40'	80'100'	240'
45	L=WS	450'	495'	540'	45'	90'–110'	320'
50		500'	550'	600'	50'	100'–125'	400'
55		550'	605'	660'	55'	100'–140'	500'
60		600'	660'	720'	60'	120'–150'	600'

** TAPER LENGTHS HAVE BEEN ROUNDED OFF
L=LENGTH OF TAPER (FT.)
W=WIDTH OF OFFSET (FT.)
S=POSTED SPEED(MPH)

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CITY ENGINEER	CITY TRAFFIC ENGINEER

APPROVED BY:
DocuSigned by: Carol Haddock A83C41097290545...
DIRECTOR OF HOUSTON PUBLIC WORKS

EFF DATE: NOV–27–2023 | DWG NO: 01555–13

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RAJASEKHAR BASAVARAJU
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1/28/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

TRAFFIC CONTROL PLAN FOR SIGNAL CONSTRUCTION

WBS NO. R-01000-0036-3	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE N.T.S.	
CITY OF HOUSTON, PM SABEEN SHAIK, P.E.	
SHEET 139 OF 195	

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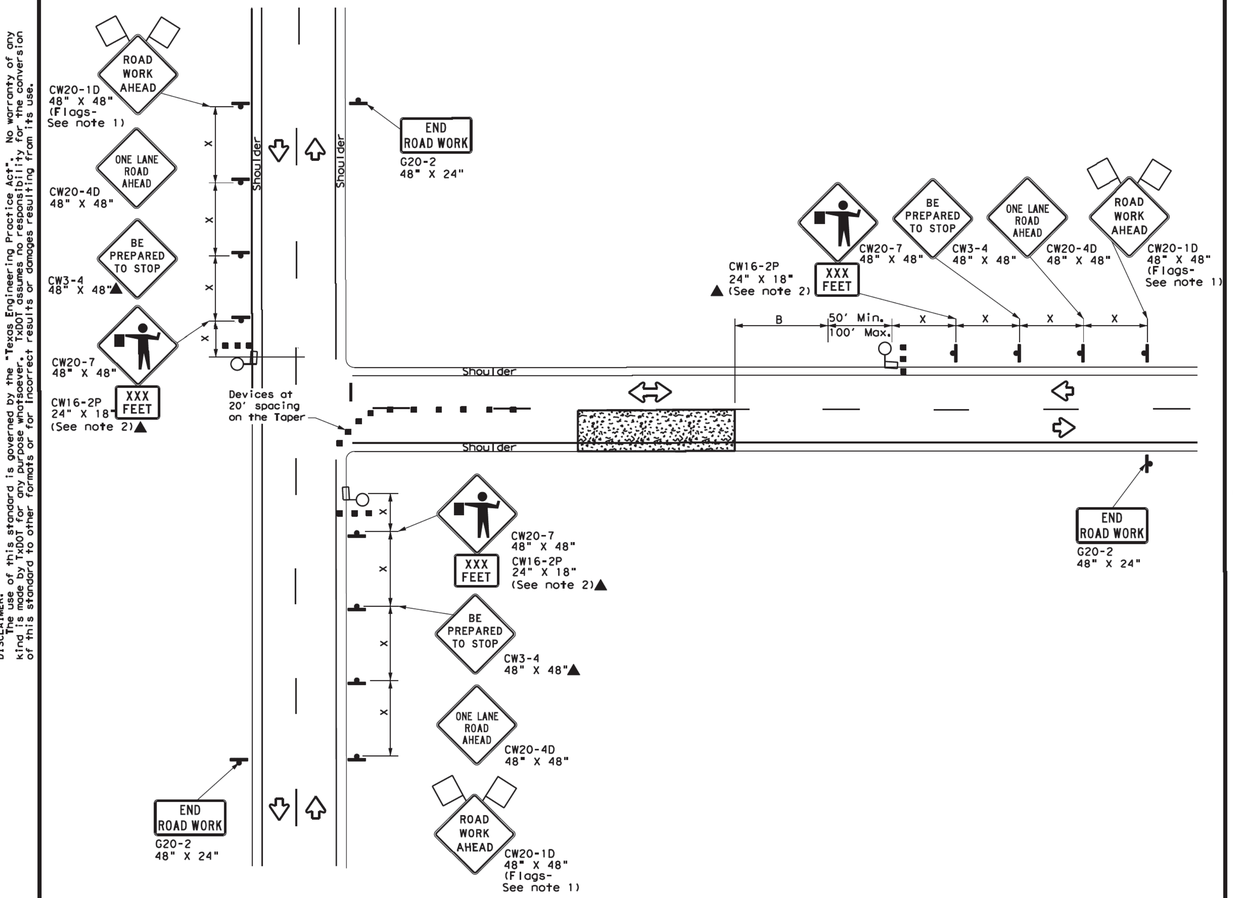

ONE LANE TWO-WAY (T-INTERSECTION) CONTROL WITH PILOT VEHICLE

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. Flaggers should use two-way radios or other methods of communication at all times to control traffic.
5. Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.
6. 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).
7. Temporary rumble strips are not required on seal coat operations.
8. Pilot car is used to guide vehicles through traffic control zone, vehicle shall have an identification name displayed and "PILOT CAR, FOLLOW ME" (G20-4) sign or message board mounted in a conspicuous position on rear.

Texas Department of Transportation | Traffic Safety Division Standard

TRAFFIC CONTROL PLAN SEAL COAT OPERATIONS

TCP(SC-4)-21

FILE: tcpsc-4-21.dgn	DN:	CK:	DW:	CK:
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REVISIONS	DIST	COUNTY		SHEET NO.

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TEXAS REGISTRATION NO. 112149

1/28/2026

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

WBS NO. R-01000-0036-3	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON, PM	
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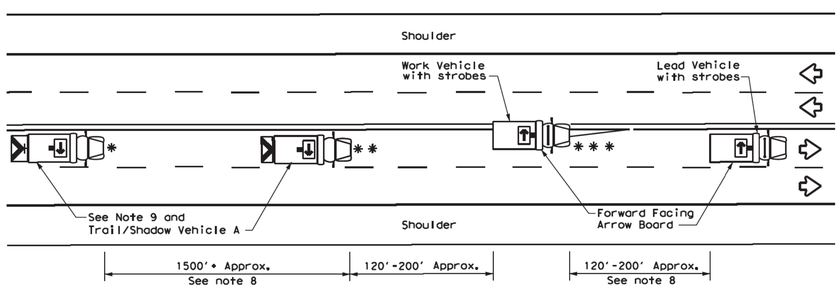
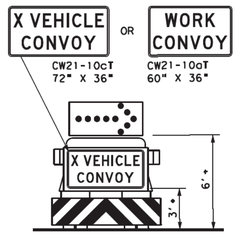


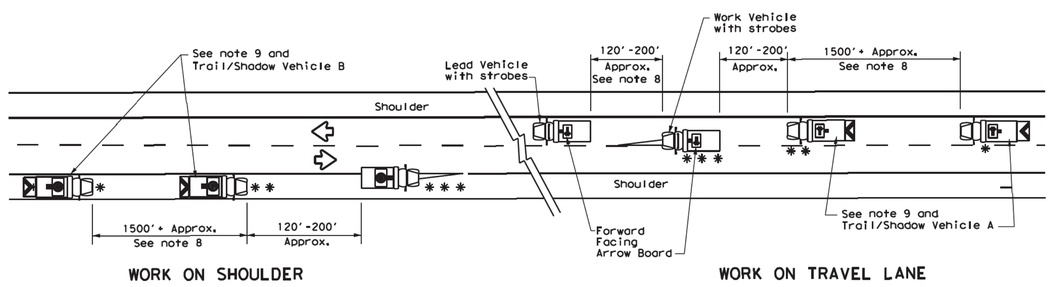
TCP (3-1a)

UNDIVIDED MULTILANE ROADWAY



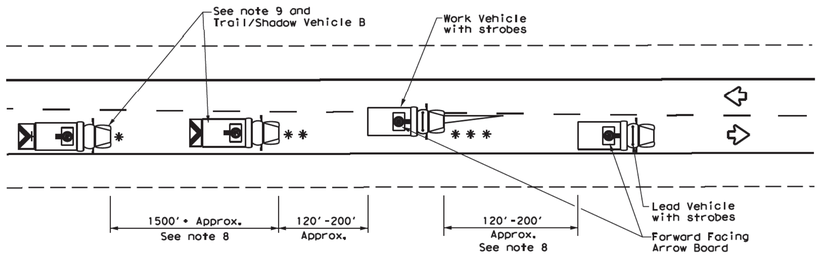
TRAIL/SHADOW VEHICLE A

with RIGHT Directional display Flashing Arrow Board



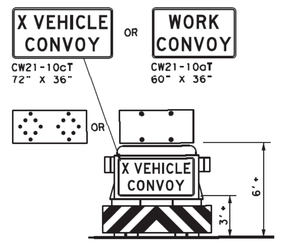
TCP (3-1b)

TWO-WAY ROADWAY WITH PAVED SHOULDERS



TCP (3-1c)

TWO-WAY ROADWAY WITHOUT PAVED SHOULDERS



TRAIL/SHADOW VEHICLE B

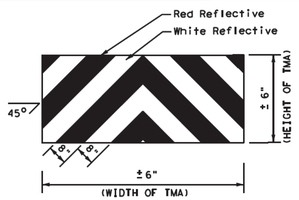
with Flashing Arrow Board in CAUTION display

LEGEND			
*	Trail Vehicle	ARROW BOARD DISPLAY	
**	Shadow Vehicle		
***	Work Vehicle		RIGHT Directional
	Heavy Work Vehicle		LEFT Directional
	Truck Mounted Attenuator (TMA)		Double Arrow
	Traffic Flow		CAUTION (Alternating Diamond or 4 Corner Flash)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
✓				

GENERAL NOTES

1. TRAIL, SHADOW, and LEAD vehicles shall be equipped with arrow boards as illustrated. When a LEAD vehicle is not used the WORK vehicle must be equipped with an arrow board. The Engineer will determine if the LEAD VEHICLE and/or TRAIL VEHICLE are required based on prevailing roadway conditions, traffic volume, and sight distance restrictions.
2. The use of amber high intensity rotating, flashing, oscillating, or strobe lights on vehicles are required. Blue high intensity rotating, flashing, oscillating or strobe lights when mounted on the driver's side of the vehicle may be operated simultaneously with the amber beacons or strobe lights.
3. The use of truck mounted attenuators (TMA) on the SHADOW VEHICLE and TRAIL VEHICLE are required.
4. Reflective sheeting on the rear of the TMA shall meet or exceed the reflectivity and color requirements of DEPARTMENTAL MATERIAL SPECIFICATION DMS 8300, Type A.
5. Flashing arrow boards shall be Type B or Type C as per the Barricade and Construction (BC) standards. The board shall be controlled from inside the vehicle.
6. Each vehicle shall have two-way radio communication capability.
7. When work convoys must change lanes, the TRAIL VEHICLE should change lanes first to shadow the other convoy vehicles.
8. Vehicle spacing between the TRAIL VEHICLE and the SHADOW VEHICLE will vary depending on sight distance restrictions. Motorists approaching the work convoy should be able to see the TRAIL VEHICLE in time to slow down and/or change lanes as they approach the TRAIL VEHICLE. Vehicle spacing between the WORK VEHICLE and SHADOW VEHICLE and vehicle spacing between WORK VEHICLE and LEAD VEHICLE may vary according to terrain, work activity and other factors.
9. "X VEHICLE CONVOY" (CW21-10cT) or "WORK CONVOY" (CW21-10aT) signs shall be used on TRAIL VEHICLES and SHADOW VEHICLES as shown. As an option 48" X 48" diamond shaped "WORK CONVOY"(CW21-10T) or "X VEHICLE CONVOY" (CW21-10bT) signs may be used where adequate mounting space exists. When used, the X VEHICLE CONVOY sign shall have the number of the convoy vehicles displayed on the sign in the number designation "X" location. The "X VEHICLE CONVOY" sign shall not be used on the SHADOW VEHICLE if a TRAIL VEHICLE is used.
10. On two-lane two-way roadways, the work and protection vehicles should pull over periodically to allow motor vehicle traffic to pass. If motorists are not allowed to pass the work convoy, a "DO NOT PASS" (R4-1) sign should be placed on the back of the rearmost protection vehicle.



STRIPING FOR TMA

Texas Department of Transportation — Traffic Operations Division Standard

TRAFFIC CONTROL PLAN MOBILE OPERATIONS UNDIVIDED HIGHWAYS

TCP(3-1)-13

FILE: tcp3-1.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS 2-94 4-98 8-95 7-13 1-97	DIST	COUNTY		SHEET NO.
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TEXAS REGISTRATION NO. 112149

1/28/2026

SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

WBS NO. R-01000-0036-3	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON, PM	
SABEEN SHAIK, P.E.	
SHEET 141 OF 195	

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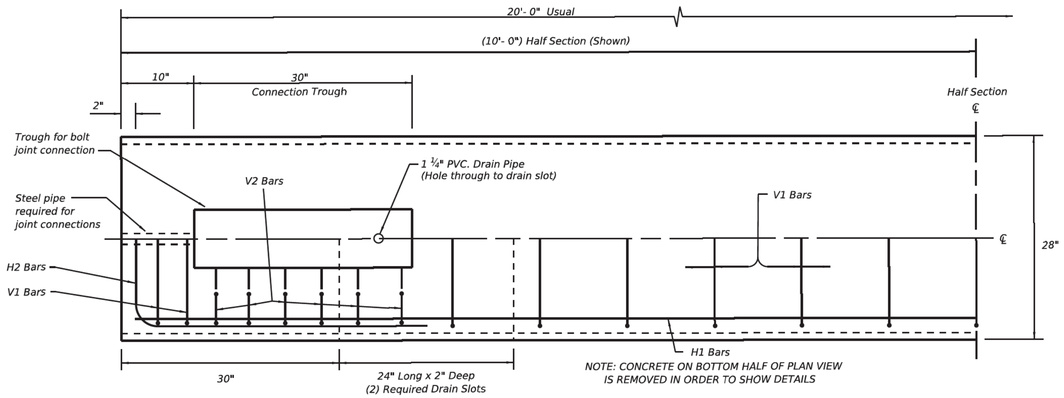
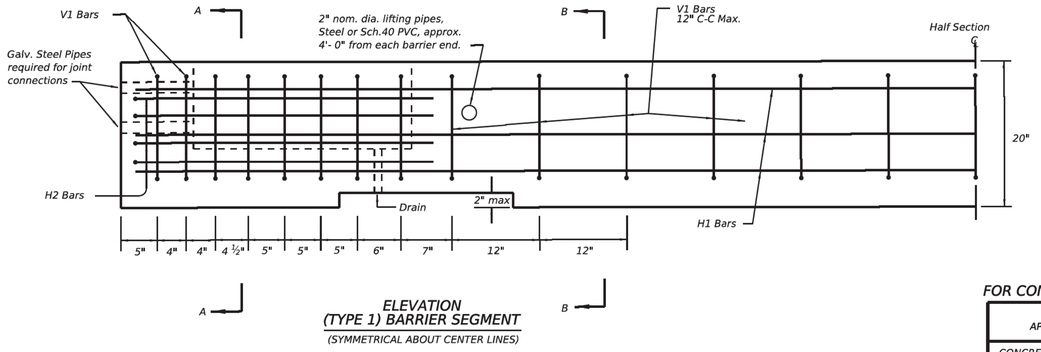
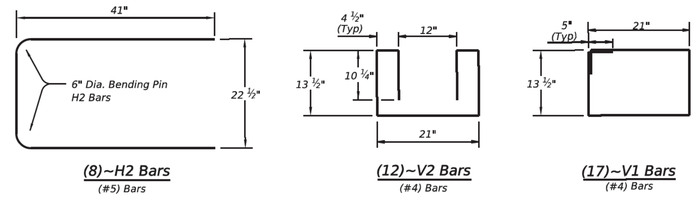


PLAN
(TYPE 1) BARRIER SEGMENT
(SYMMETRICAL ABOUT CENTER LINES)



ELEVATION
(TYPE 1) BARRIER SEGMENT
(SYMMETRICAL ABOUT CENTER LINES)



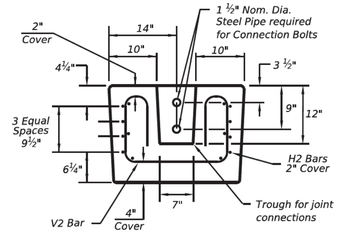
(8)~H2 Bars (#5) Bars

(12)~V2 Bars (#4) Bars

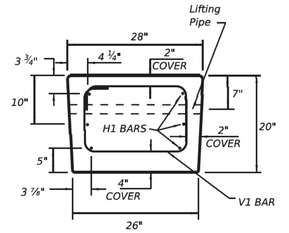
(17)~V1 Bars (#4) Bars

REINFORCING STEEL DETAILS
TYPE 1 - BARRIER SEGMENT

Note: Use 2" Dia. Bending Pin, unless otherwise shown



SECTION A-A



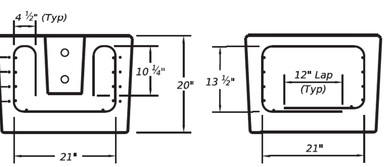
SECTION B-B

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

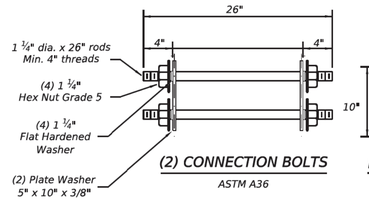
(WWR) GENERAL NOTES

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

Note: Rods, Hex nuts and Washers shall be Galvanized.

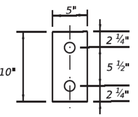


PLATE WASHER
5" x 10" x ⅜"

SHEET 1 OF 2

Texas Department of Transportation — Design Division Standard

LOW PROFILE CONCRETE BARRIER
PRECAST BARRIER (TYPE 1)
LPCB-13

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TEXAS REGISTRATION NO. 112149

1/28/2026

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

WBS NO.
R-01000-0036-3

FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE
N.T.S.

CITY OF HOUSTON, PM
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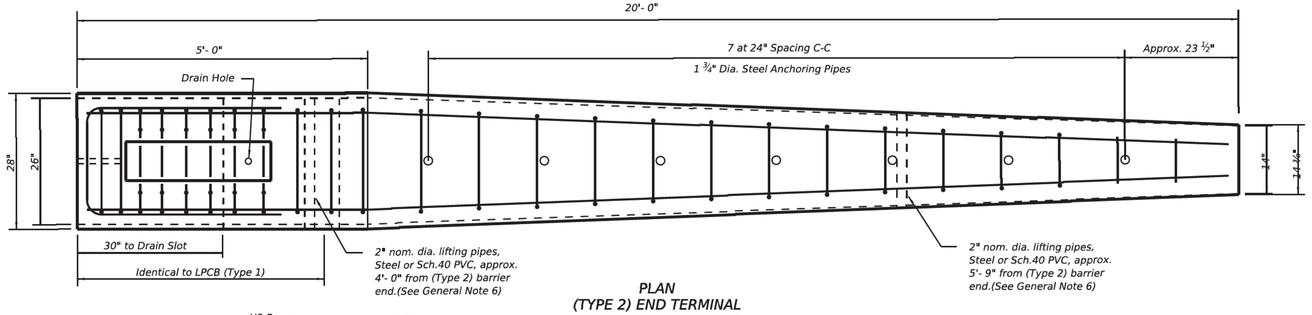
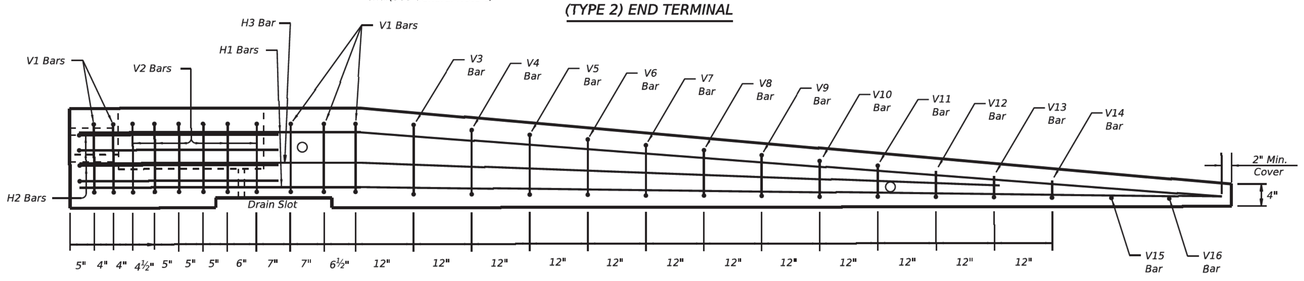
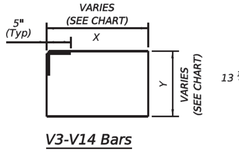


PLAN
(TYPE 2) END TERMINAL

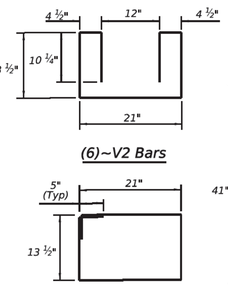


ELEVATION
(TYPE 2) END TERMINAL

Note:
Anchoring pipes not shown in Elevation View



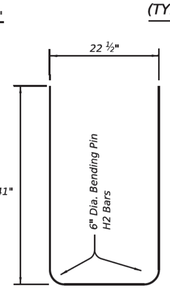
V3-V14 Bars



(6)~V2 Bars

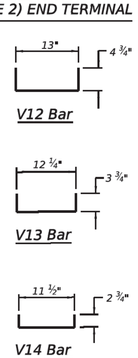
BAR(#4)	X (IN.)	Y (IN.)
V3 BAR	20 ¼	14 ½
V4 BAR	19 ½	13 ½
V5 BAR	18 ½	12 ¾
V6 BAR	17 ½	11 ¼
V7 BAR	17	10 ¼
V8 BAR	16 ¼	9
V9 BAR	15 ½	8
V10 BAR	14 ½	7
V11 BAR	13 ¾	6

(5)~V1 Bars

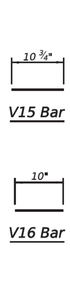


(4)~H2 Bars
(#5) Bars

REINFORCING STEEL DETAILS
TYPE 2 - END TERMINAL

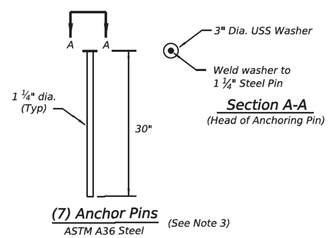


V12 Bar
V13 Bar
V14 Bar



V15 Bar
V16 Bar

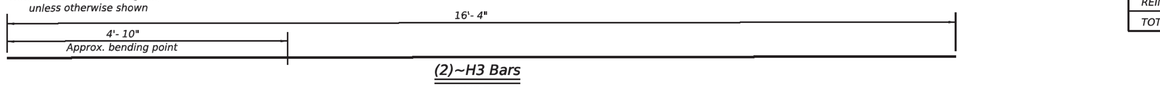
Note: All V Bars are (#4)



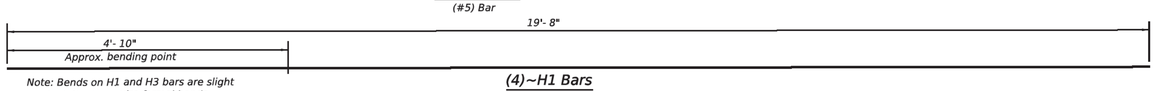
Section A-A
(Head of Anchoring Pin)

(7) Anchor Pins
ASTM A36 Steel
(See Note 3)

Note: Use 2" Dia. Bending Pin, unless otherwise shown

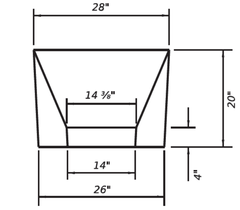


(2)~H3 Bars
(#5) Bar



(4)~H1 Bars
(#5) Bar

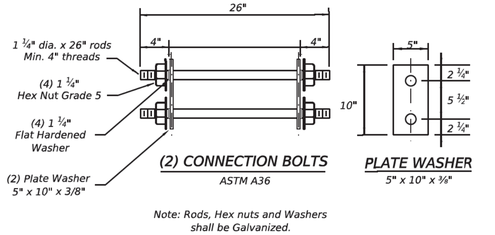
Note: Bends on H1 and H3 bars are slight and do not require formal bends.



APPROACH VIEW

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.



(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

Texas Department of Transportation — Design Division Standard

LOW PROFILE CONCRETE BARRIER
PRECAST BARRIER (TYPE 2)
LPCB-13

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EDDINGTON LIFT STATION

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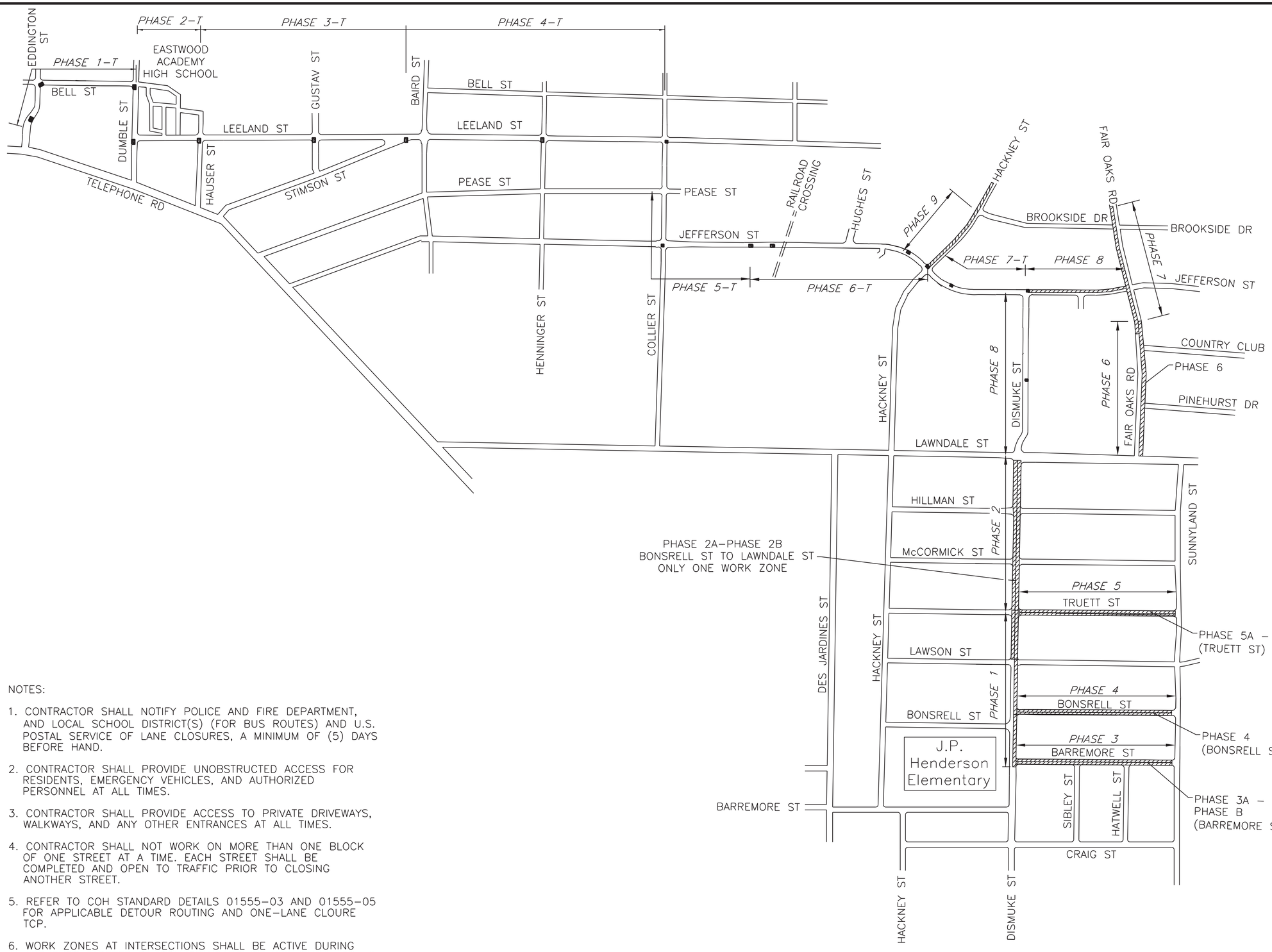

NOTES:

1. CONTRACTOR SHALL NOTIFY POLICE AND FIRE DEPARTMENT, AND LOCAL SCHOOL DISTRICT(S) (FOR BUS ROUTES) AND U.S. POSTAL SERVICE OF LANE CLOSURES, A MINIMUM OF (5) DAYS BEFORE HAND.
2. CONTRACTOR SHALL PROVIDE UNOBSTRUCTED ACCESS FOR RESIDENTS, EMERGENCY VEHICLES, AND AUTHORIZED PERSONNEL AT ALL TIMES.
3. CONTRACTOR SHALL PROVIDE ACCESS TO PRIVATE DRIVEWAYS, WALKWAYS, AND ANY OTHER ENTRANCES AT ALL TIMES.
4. CONTRACTOR SHALL NOT WORK ON MORE THAN ONE BLOCK OF ONE STREET AT A TIME. EACH STREET SHALL BE COMPLETED AND OPEN TO TRAFFIC PRIOR TO CLOSING ANOTHER STREET.
5. REFER TO COH STANDARD DETAILS 01555–03 AND 01555–05 FOR APPLICABLE DETOUR ROUTING AND ONE–LANE CLOURE TCP.
6. WORK ZONES AT INTERSECTIONS SHALL BE ACTIVE DURING WEEKENDS, REFER TO COH STANDARD DETAILS 01555–06 TO 01555–12.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

OVERALL TCP LAYOUT

WBS NO. R-01000-0036-3	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON, PM	
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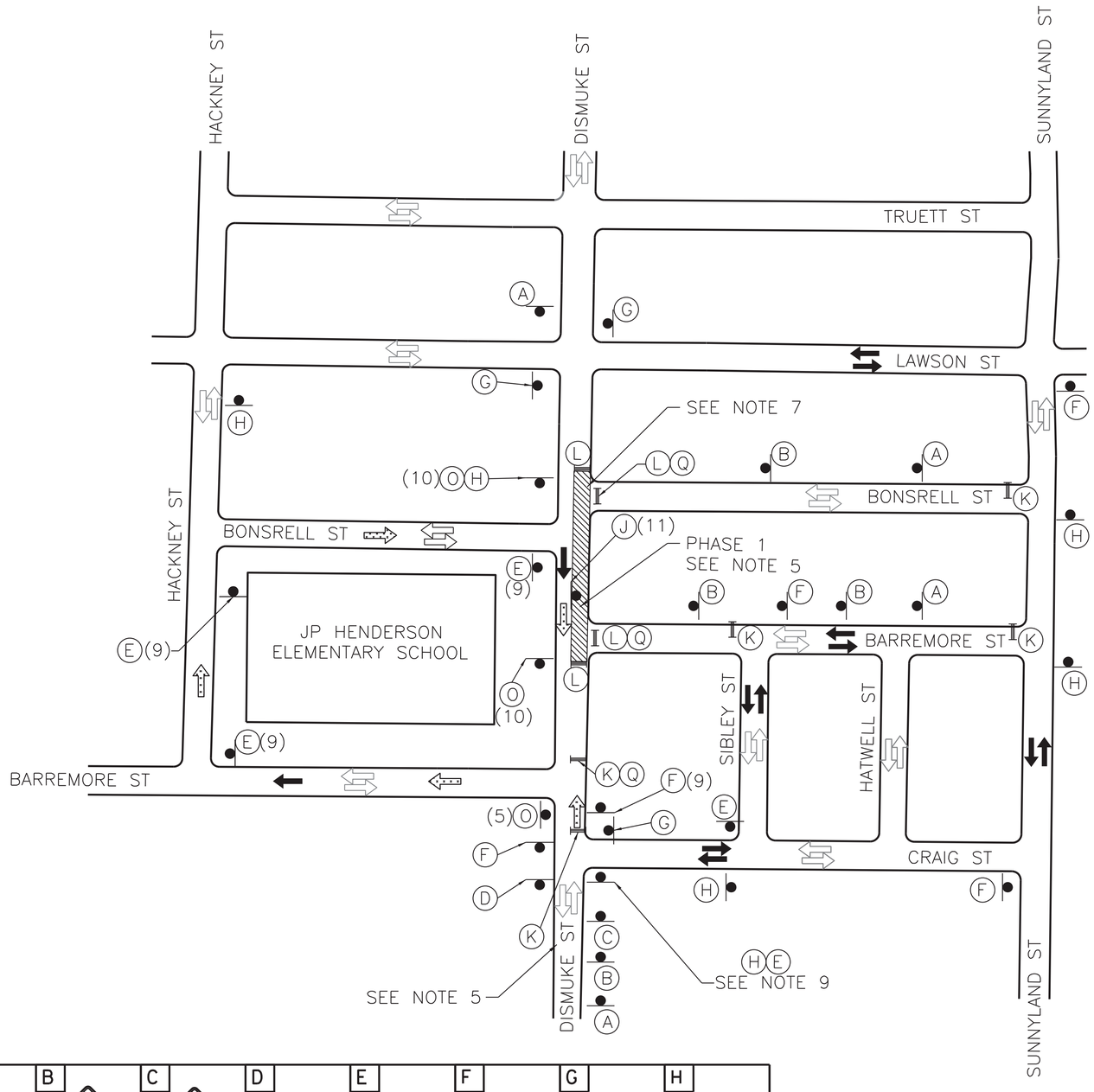

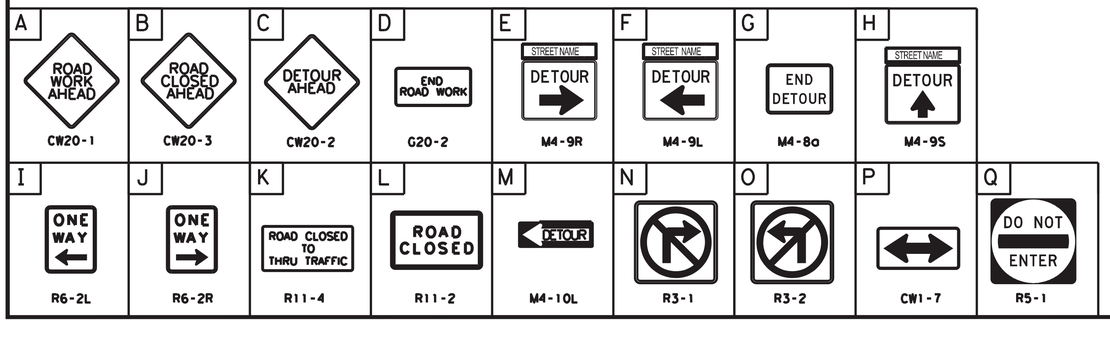

CONSTRUCTION SANITARY SEWER, MANHOLES AND SERVICE LINE

CONSTRUCT LONG SIDE SERVICES AND PAVEMENT MILL/OVERLAY

N

LEGEND

- TEMPORARY SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- FLASHING ARROW PANEL
- TYPE III BARRICADE
- WORK ZONE 1
- EXISTING TRAVEL WAY
- PROPOSED DETOUR ROUTE
- SCHOOL TRAFFIC CIRCULATION

NOTES:

1. CONTRACTOR SHALL NOTIFY POLICE AND FIRE DEPARTMENT, AND LOCAL SCHOOL DISTRICT(S) (FOR BUS ROUTES) AND U.S. POSTAL SERVICE, AFFECTED RESIDENTS, BUSINESSES OF LANE CLOSURES, PARKING RESTRICTIONS, OR ACCESS IMPACTS. A MINIMUM OF (5) DAYS ADVANCE NOTICE SHALL BE PROVIDED TO AGENCIES, AND A MINIMUM OF 48 HOURS TO RESIDENTS AND BUSINESS.
2. CONTRACTOR SHALL MAINTAIN UNOBSTRUCTED ACCESS FOR RESIDENTS, EMERGENCY VEHICLES, AND AUTHORIZED PERSONNEL, INLCUDING ACCESS TO PRIVATE DRIVEWAYS, WALKWAYS, AND BUILDING ENTRANCES AT ALL TIMES.
3. CONTRACTOR SHALL NOT WORK ON MORE THAN ONE BLOCK OF ONE STREET AT A TIME. EACH STREET SHALL BE COMPLETED AND OPEN TO TRAFFIC PRIOR TO CLOSING ANOTHER STREET.
4. REFER TO COH STANDARD DETAILS FOR APPLICABLE DETOUR ROUTING AND ONE-LANE CLOSURE TCP.
5. DISMUKE ST INTERSECTION WORK ZONE SHALL BE ACTIVE DURING WEEKENDS, REFER TO COH STANDARD DETAILS 01555-06 TO 01555-12.
6. CONTRACTOR TO MAINTAIN INTERSECTION OPEN TO TRAFFIC UNTIL WORK BEGINS AT THE INTERSECTION AREA.
7. REFER TO COH STANDARDS FOR ROAD CLOSURE TCP.
8. STREET NAME OVER DETOUR SIGN SHALL BE "SCHOOL" FOR SCHOOL TRAFFIC DETOUR AND CIRCULATION , OTHERWISE STREET NAME "DISMIUKE ST" FOR ALL OTHER DETOUR SIGNS ON THIS PHASE.
9. INSTALL R6-2R SIGN IN FRONT OF SCHOOL DRIVEWAY.
10. CONTRACTOR SHALL USE STEEL PLATES TO COVER OPEN PITS WHEN CONSTRUCTION IS NOT ACTIVE.
11. CONTRACTOR SHALL INSTALL CONCRETE BARRIERS AROUND EXCAVATION
12. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 10FT LANE WIDTH FOR ALL LANES OPEN TO TRAFFIC DURING CONSTRUCTION.
13. CONTRACTOR SHALL USE FLAGGERS AND INSTALL CORRESPONDING TRAFFIC CONTROL DEVICES PER COH STANDARDS FOR ALL WORK ZONES WITH LIMITED SPACE BETWEEN TRAVEL LANE AND WORK ZONE SUCH AS RESIDENT ACCESS IN CONSTRAINT SPACE AREAS OR CONSTRUCTION OF LATERAL CONNECTIONS TO MAIN LINES.

DRAFT
90% PRELIMINARY

Amani Engineering, Inc.
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TBPE Firm Reg. No.: F-4520
TBPLS Firm Reg. No.: 100262-00

TRANSCEND engineers + planners
Transcend Engineers & Planners, LLC
TPBE Reg. No. F-19299
23410 Grand Reserve Dr., Suite 101
Houston, Texas 77494

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RESPONSIBLE ENGINEER:
TRANSCEND ENGINEERS & PLANNERS, LLC.
RAJASEKHAR BASAVARAJU
TEXAS REGISTRATION NO. 112149
5/15/2026

SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

TCP FOR DISMUKE STREET PHASE 1

WBS NO.
R-01000-0036-3

DRAWING SCALE
N.T.S.

CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.

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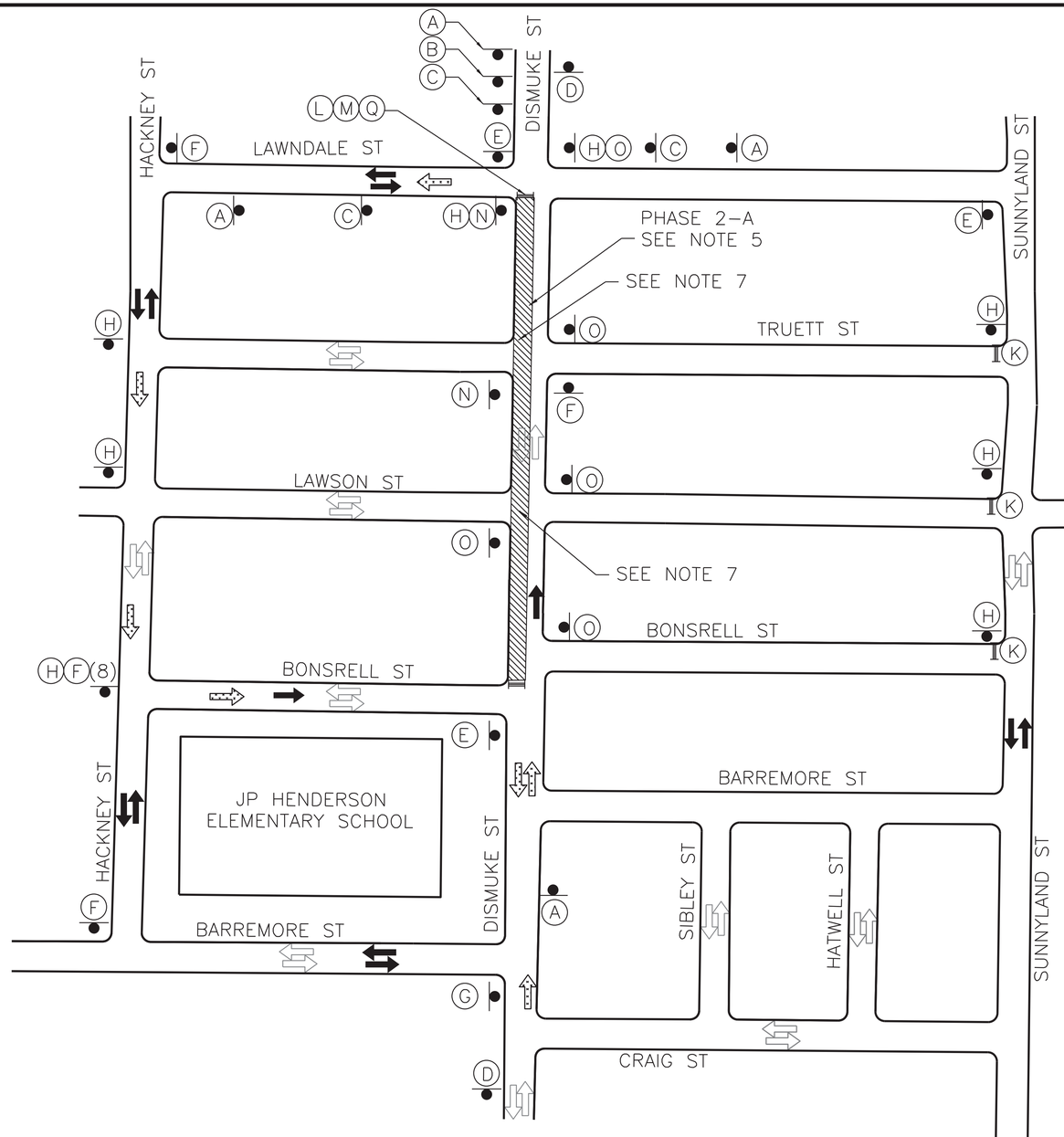

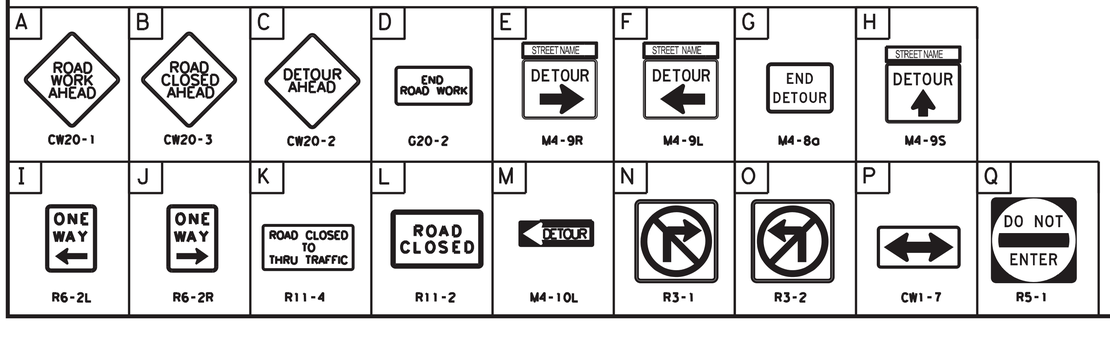

CONSTRUCTION SANITARY SEWER, MANHOLES AND SERVICE LINE

N

LEGEND

- TEMPORARY SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- FLASHING ARROW PANEL
- TYPE III BARRICADE
- WORK ZONE 2-A
- EXISTING TRAVEL WAY
- PROPOSED DETOUR ROUTE
- SCHOOL TRAFFIC CIRCULATION

NOTES:

1. CONTRACTOR SHALL NOTIFY POLICE AND FIRE DEPARTMENT, AND LOCAL SCHOOL DISTRICT(S) (FOR BUS ROUTES) AND U.S. POSTAL SERVICE, AFFECTED RESIDENTS, BUSINESSES OF LANE CLOSURES, PARKING RESTRICTIONS, OR ACCESS IMPACTS. A MINIMUM OF (5) DAYS ADVANCE NOTICE SHALL BE PROVIDED TO AGENCIES, AND A MINIMUM OF 48 HOURS TO RESIDENTS AND BUSINESS.
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4. REFER TO COH STANDARD DETAILS FOR APPLICABLE DETOUR ROUTING AND ONE-LANE CLOSURE TCP.
5. DISMUKE ST INTERSECTION WORK ZONE SHALL BE ACTIVE DURING WEEKENDS, REFER TO COH STANDARD DETAILS 01555-06 TO 01555-12.
6. CONTRACTOR TO MAINTAIN INTERSECTION OPEN TO TRAFFIC UNTIL WORK BEGINS AT THE INTERSECTION AREA.
7. STREET NAME OVER DETOUR SIGN SHALL BE "SCHOOL" FOR SCHOOL TRAFFIC DETOUR AND CIRCULATION , OTHERWISE STREET NAME "DISMIUKE ST" FOR ALL OTHER DETOUR SIGNS ON THIS PHASE.
8. CONTRACTOR SHALL USE STEEL PLATES TO COVER OPEN PITS WHEN CONSTRUCTION IS NOT ACTIVE.
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RESPONSIBLE ENGINEER:
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RAJASEKHAR BASAVARAJU
TEXAS REGISTRATION NO. 112149

5/15/2026

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

TCP FOR DISMUKE STREET PHASE 2-A

WBS NO.
R-01000-0036-3

DRAWING SCALE
N.T.S.

CITY OF HOUSTON, PM
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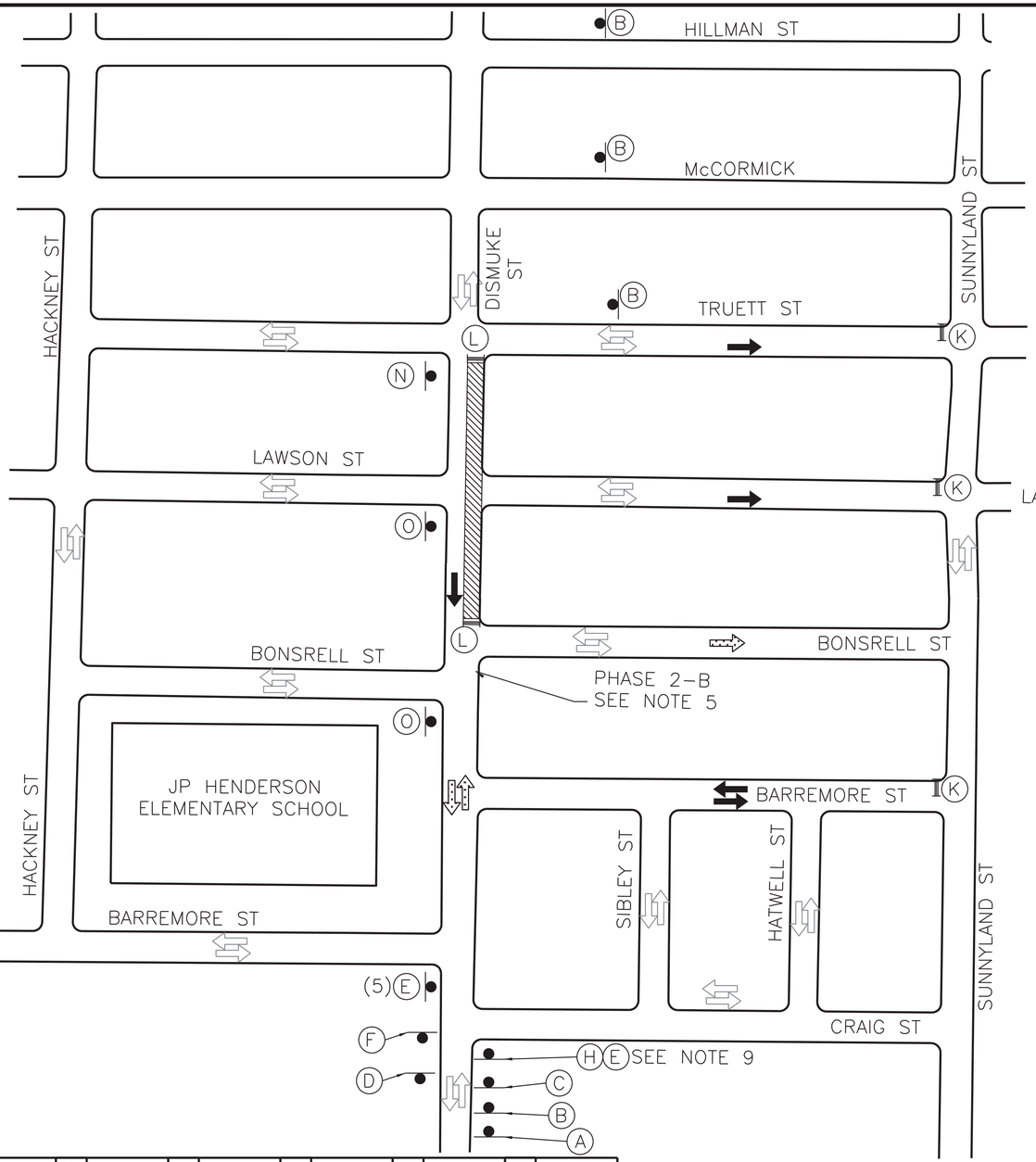
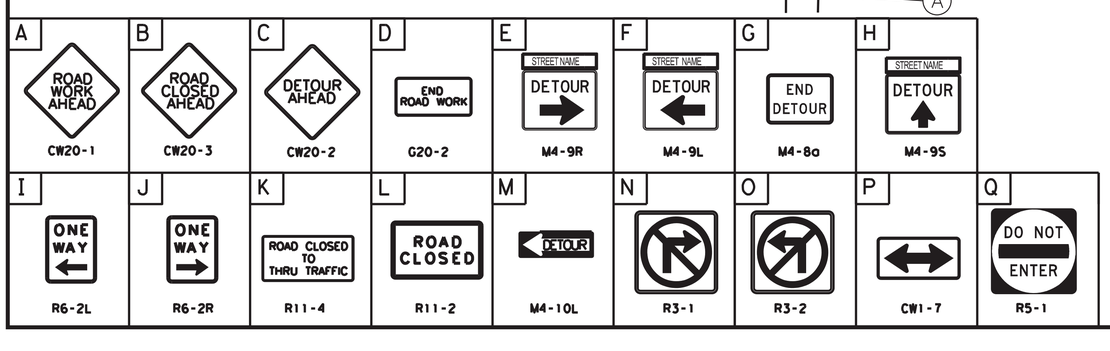


CONSTRUCT LONG SIDE SERVICES AND PAVEMENT MILL/OVERLAY

LEGEND

- TEMPORARY SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- FLASHING ARROW PANEL
- TYPE III BARRICADE
- WORK ZONE 2-B
- EXISTING TRAVEL WAY
- PROPOSED DETOUR ROUTE
- SCHOOL TRAFFIC CIRCULATION



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RAJASEKHAR BASAVARAJU
TEXAS REGISTRATION NO. 112149
5/15/2026

SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

TCP FOR DISMUKE STREET PHASE 2-B

WBS NO.
R-01000-0036-3

DRAWING SCALE
N.T.S.

CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.

SHEET 147 OF 195

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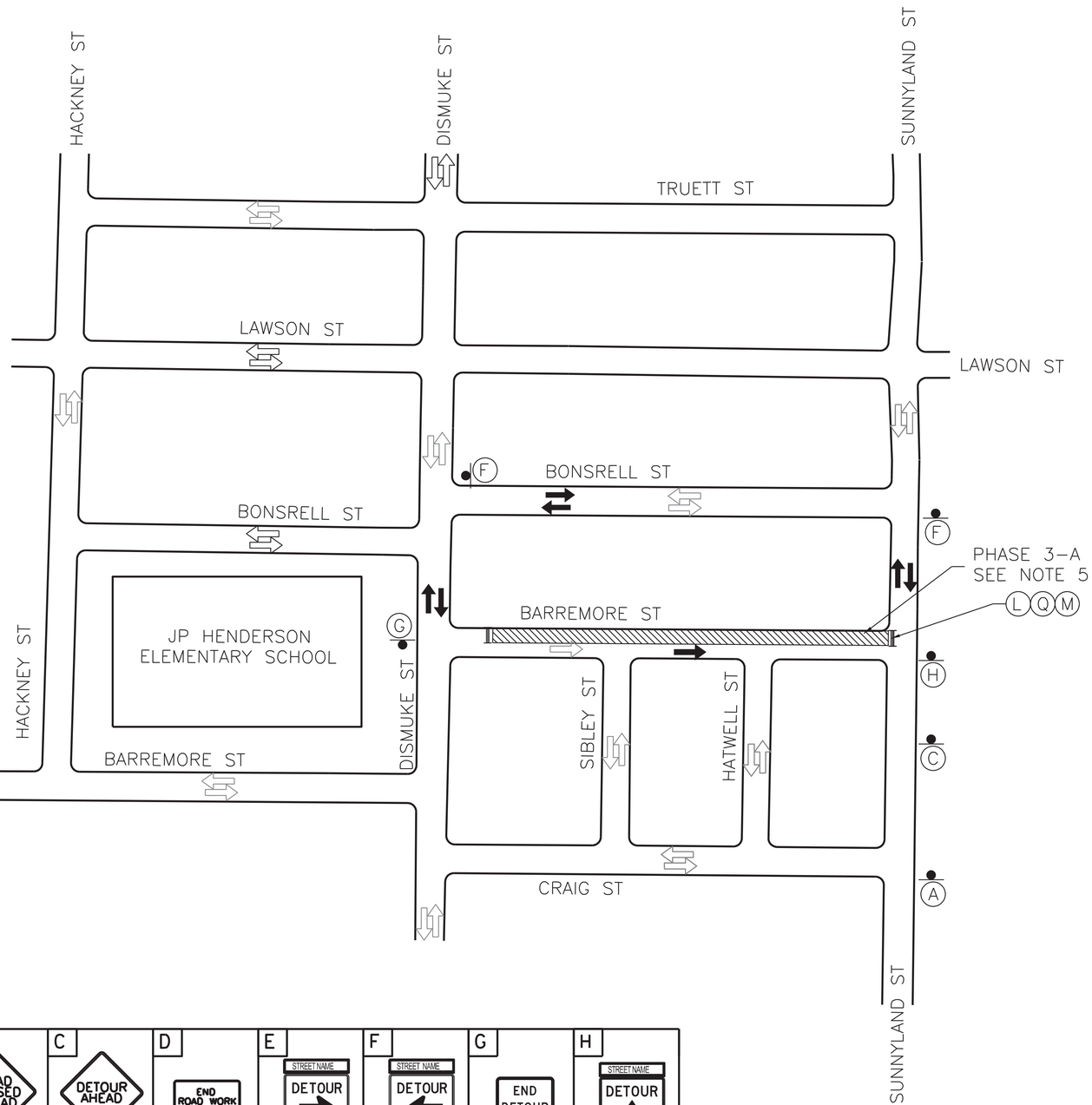

CONSTRUCTION SANITARY SEWER, MANHOLES AND SERVICE LINE

N

LEGEND

- TEMPORARY SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- FLASHING ARROW PANEL
- TYPE III BARRICADE
- WORK ZONE 3-A
- EXISTING TRAVEL WAY
- PROPOSED DETOUR ROUTE
- SCHOOL TRAFFIC CIRCULATION

NOTES:

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A ROAD WORK AHEAD CW20-1	B ROAD CLOSED AHEAD CW20-3	C DETOUR AHEAD CW20-2	D END ROAD WORK G20-2	E STREET NAME DETOUR M4-9R	F STREET NAME DETOUR M4-9L	G END DETOUR M4-8a	H STREET NAME DETOUR M4-9S
I ONE WAY R6-2L	J ONE WAY R6-2R	K ROAD CLOSED TO THRU TRAFFIC R11-4	L ROAD CLOSED R11-2	M DETOUR M4-10L	N R3-1	O R3-2	P CW1-7	Q DO NOT ENTER R5-1

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RESPONSIBLE ENGINEER:
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RAJASEKHAR BASAVARAJU
TEXAS REGISTRATION NO. 112149

5/15/2026

SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

TCP FOR BARREMORE STREET PHASE 3-A

WBS NO. R-01000-0036-3	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON, PM	
SABEEN SHAIK, P.E.	
SHEET NO. 148 OF 195	

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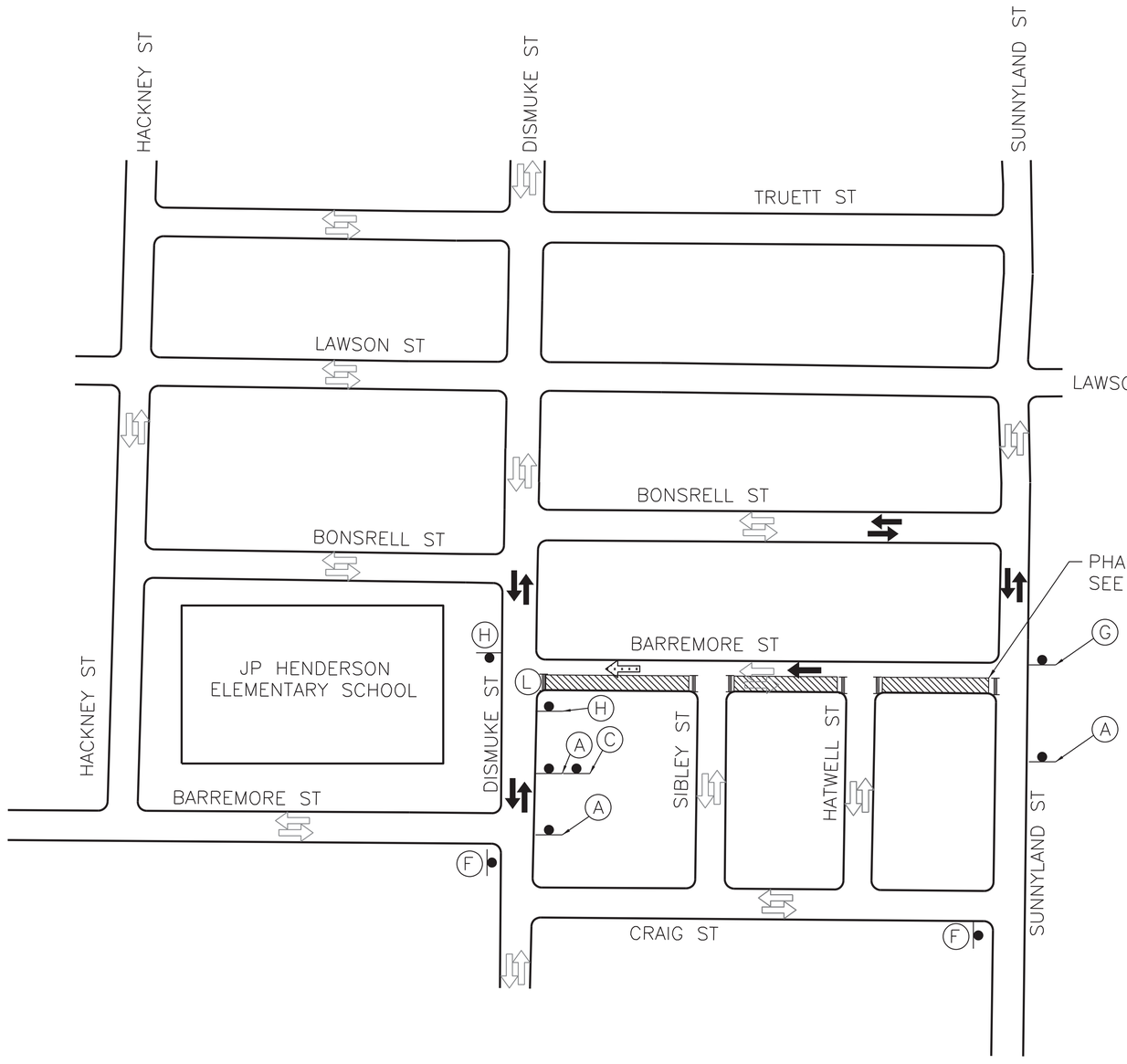

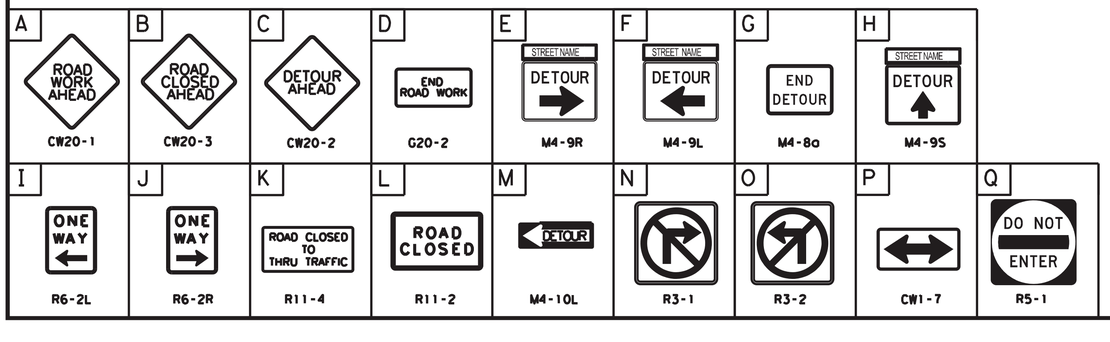

CONSTRUCTION SANITARY SEWER, MANHOLES AND SERVICE LINE

N

LEGEND

- TEMPORARY SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- FLASHING ARROW PANEL
- TYPE III BARRICADE
- WORK ZONE 3-B
- EXISTING TRAVEL WAY
- PROPOSED DETOUR ROUTE
- SCHOOL TRAFFIC CIRCULATION

NOTES:

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TEXAS REGISTRATION NO. 112149

5/15/2026

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

TCP FOR BARREMORE STREET PHASE 3-B

WBS NO.
R-01000-0036-3

DRAWING SCALE
N.T.S.

CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.

SHEET NO. 149 OF 195

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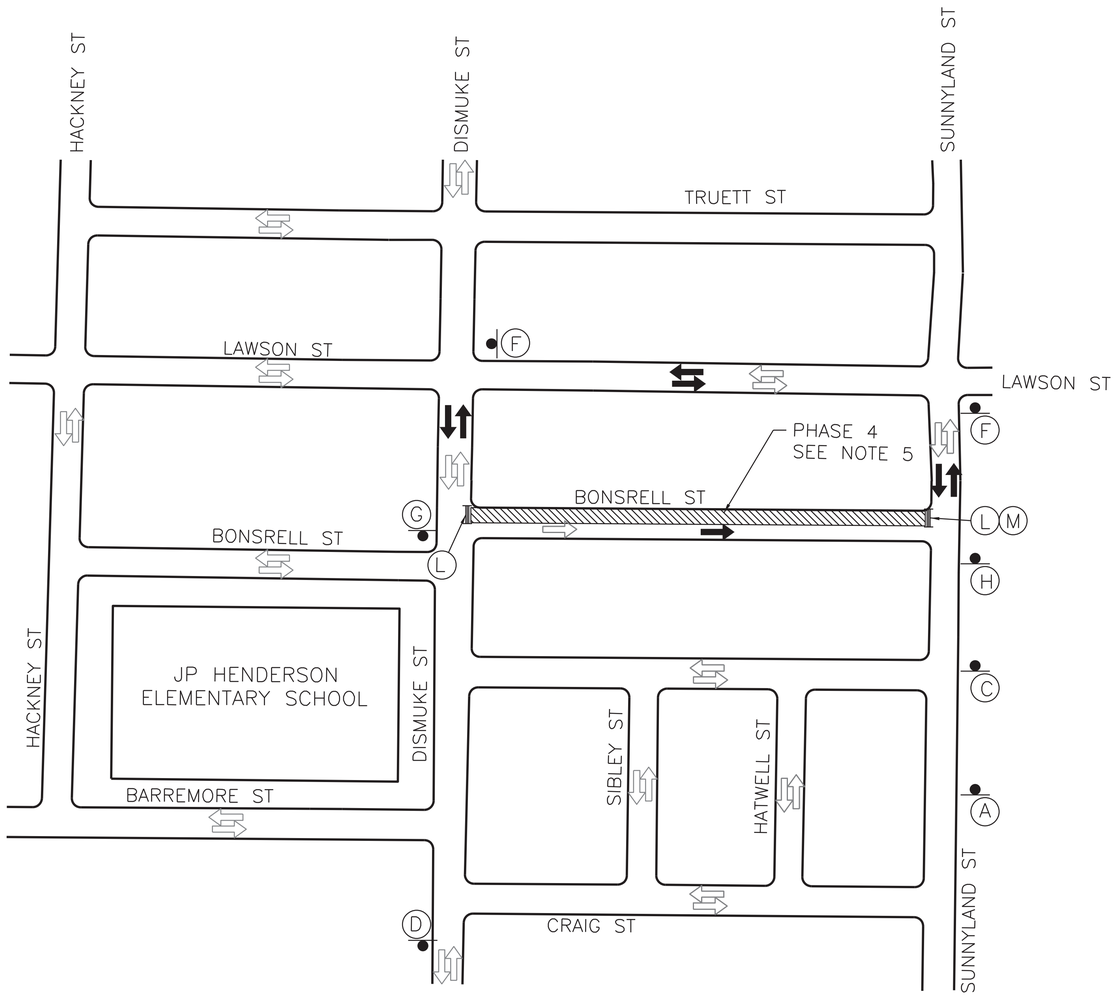

CONSTRUCT LONG SIDE SERVICES AND PAVEMENT MILL/OVERLAY

N

LEGEND

- TEMPORARY SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- FLASHING ARROW PANEL
- TYPE III BARRICADE
- WORK ZONE 4
- EXISTING TRAVEL WAY
- PROPOSED DETOUR ROUTE
- SCHOOL TRAFFIC CIRCULATION

A	B	C	D	E	F	G	H	
ROAD WORK AHEAD	ROAD CLOSED AHEAD	DETOUR AHEAD	END ROAD WORK	STREET NAME DETOUR →	STREET NAME DETOUR ←	END DETOUR	STREET NAME DETOUR ↑	
CW20-1	CW20-3	CW20-2	G20-2	M4-9R	M4-9L	M4-8a	M4-9S	
I	J	K	L	M	N	O	P	Q
ONE WAY ←	ONE WAY →	ROAD CLOSED TO THRU TRAFFIC	ROAD CLOSED	DETOUR				DO NOT ENTER
R6-2L	R6-2R	R11-4	R11-2	M4-10L	R3-1	R3-2	CW1-7	R5-1

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5/15/2026

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FB NO.: P-

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

TCP FOR BONSRELL STREET PHASE 4

WBS NO.	R-01000-0036-3
DRAWING SCALE	N.T.S.
CITY OF HOUSTON, PM	SABEEN SHAIK, P.E.
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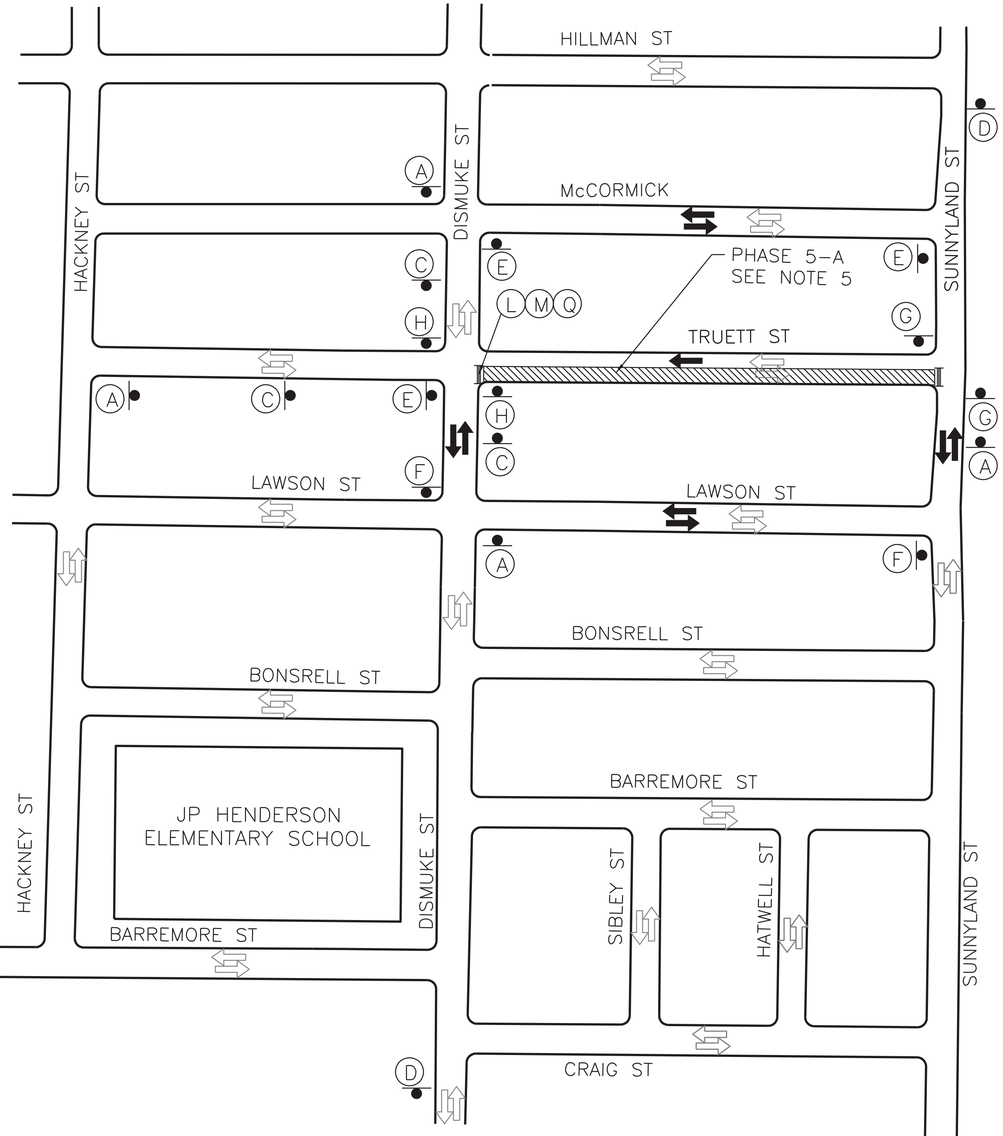

CONSTRUCTION SANITARY SEWER, MANHOLES AND SERVICE LINE

N

LEGEND

- TEMPORARY SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- FLASHING ARROW PANEL
- TYPE III BARRICADE
- WORK ZONE 5-A
- EXISTING TRAVEL WAY
- PROPOSED DETOUR ROUTE
- SCHOOL TRAFFIC CIRCULATION

NOTES:

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A	B	C	D	E	F	G	H
ROAD WORK AHEAD	ROAD CLOSED AHEAD	DETOUR AHEAD	END ROAD WORK	STREET NAME DETOUR →	STREET NAME DETOUR ←	END DETOUR	STREET NAME DETOUR ↑
CW20-1	CW20-3	CW20-2	G20-2	M4-9R	M4-9L	M4-8a	M4-9S

I	J	K	L	M	N	O	P	Q
ONE WAY ←	ONE WAY →	ROAD CLOSED TO THRU TRAFFIC	ROAD CLOSED	DETOUR				DO NOT ENTER
R6-2L	R6-2R	R11-4	R11-2	M4-10L	R3-1	R3-2	CW1-7	R5-1

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Houston, Texas 77494

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RAJASEKHAR BASAVARAJU
TEXAS REGISTRATION NO. 112149
5/15/2026

SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

TCP FOR TRUETT STREET PHASE 5-A

WBS NO.
R-01000-0036-3

DRAWING SCALE
1"=250'

CITY OF HOUSTON, PM

SABEEN SHAIK, P.E.

SHEET NO. 151 OF 195

5/15/2026
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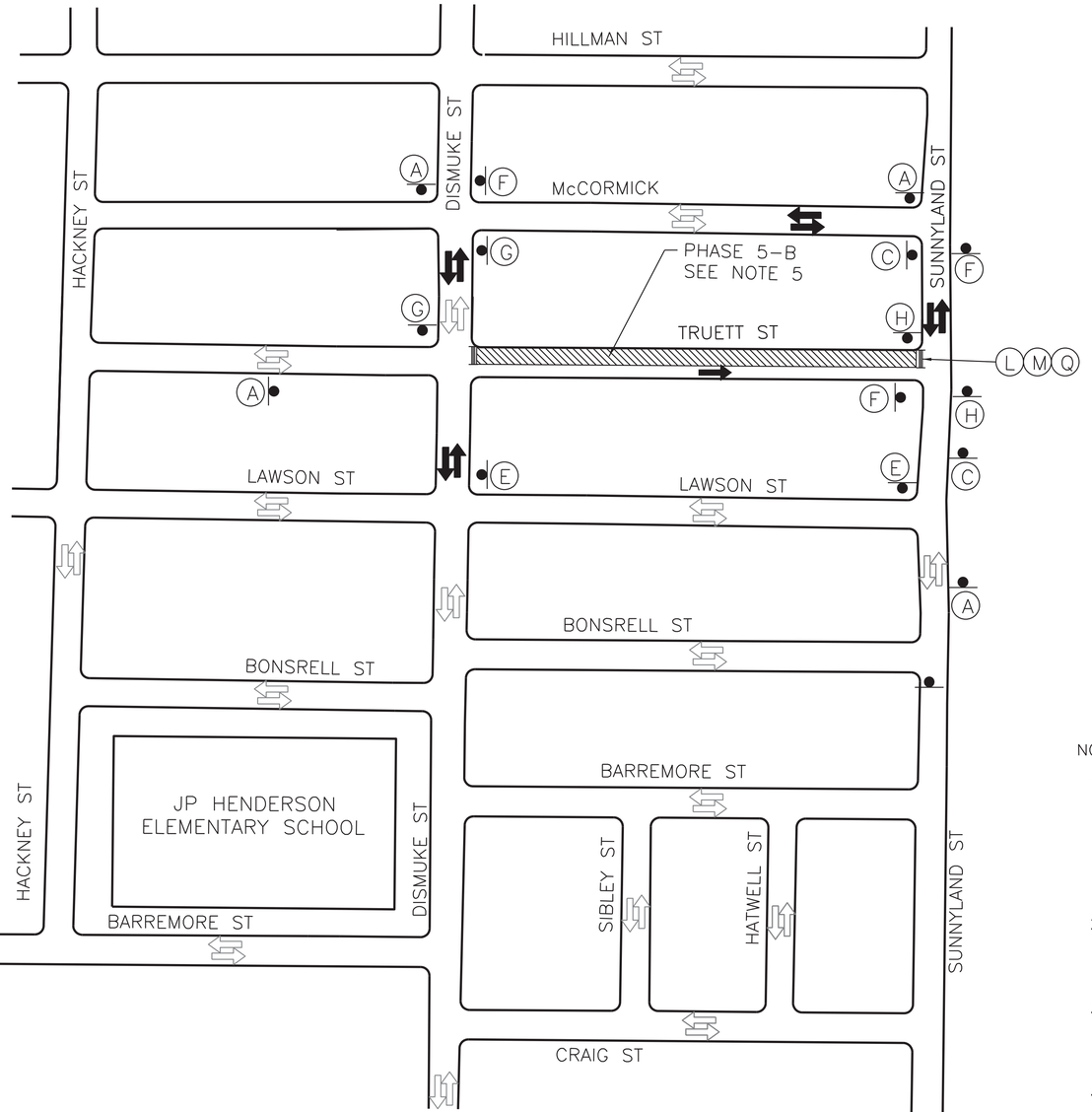

CONSTRUCT LONG SIDE SERVICES AND PAVEMENT MILL/OVERLAY

N

LEGEND

- TEMPORARY SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- FLASHING ARROW PANEL
- TYPE III BARRICADE
- WORK ZONE 5-B
- EXISTING TRAVEL WAY
- PROPOSED DETOUR ROUTE
- SCHOOL TRAFFIC CIRCULATION

A	B	C	D	E	F	G	H
ROAD WORK AHEAD CW20-1	ROAD CLOSED AHEAD CW20-3	DETOUR AHEAD CW20-2	END ROAD WORK G20-2	STREET NAME DETOUR → M4-9R	STREET NAME DETOUR ← M4-9L	END DETOUR M4-8a	STREET NAME DETOUR ↑ M4-9S

I	J	K	L	M	N	O	P	Q
ONE WAY ← R6-2L	ONE WAY → R6-2R	ROAD CLOSED TO THRU TRAFFIC R11-4	ROAD CLOSED R11-2	DETOUR M4-10L	 R3-1	 R3-2	 CW1-7	DO NOT ENTER R5-1

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TEXAS REGISTRATION NO. 112149

5/15/2026

SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

TCP FOR TRUETT STREET
PHASE 5-B

WBS NO. R-01000-0036-3	
DRAWING SCALE	
N.T.S	
CITY OF HOUSTON, PM	
SABEEN SHAIK, P.E.	
SHEET NO. 152 OF 195	

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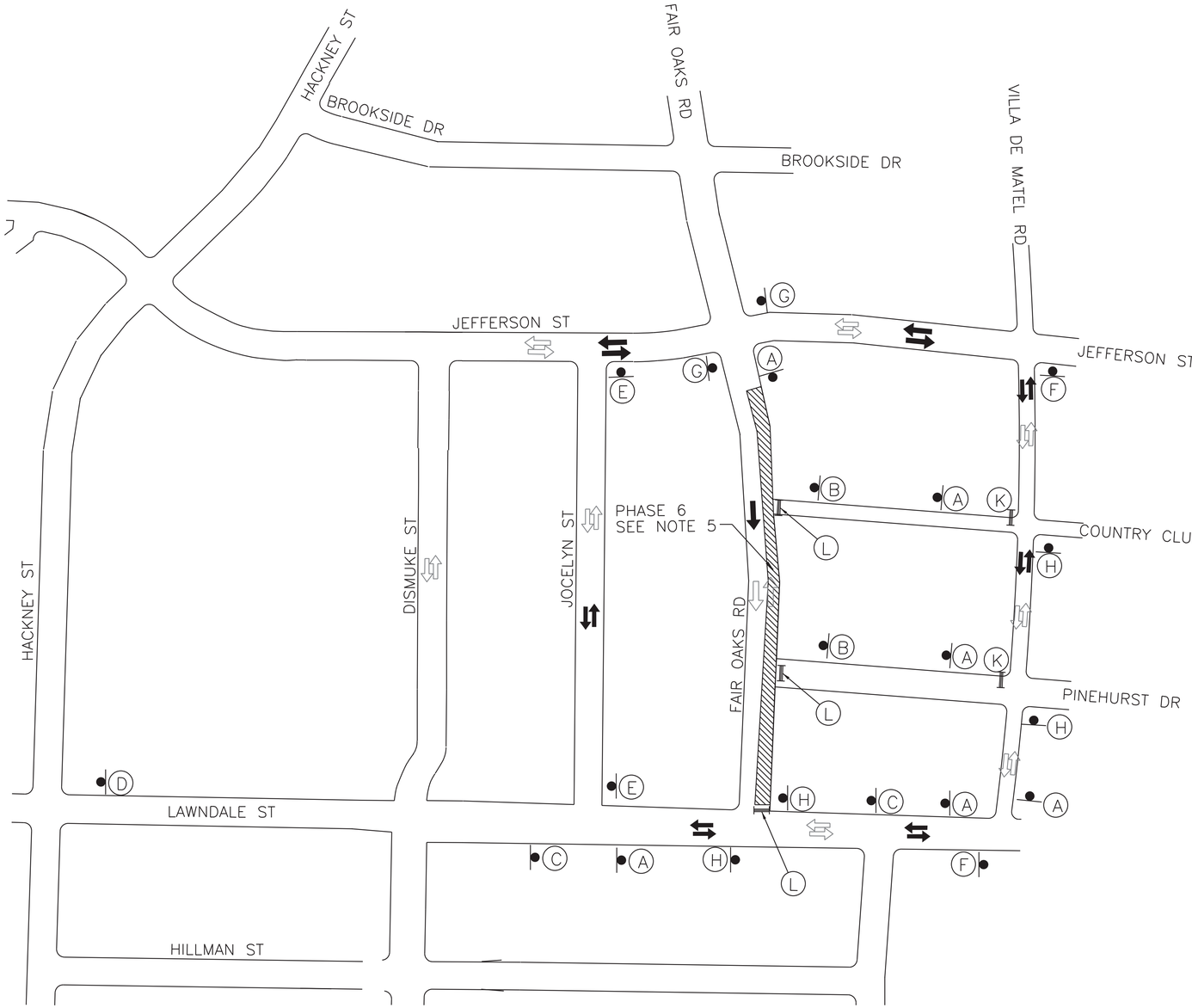

CONSTRUCT LONG SIDE SERVICES AND PAVEMENT MILL/OVERLAY

CONSTRUCTION SANITARY SEWER, MANHOLES AND SERVICE LINE

N

LEGEND

- TEMPORARY SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- FLASHING ARROW PANEL
- TYPE III BARRICADE
- WORK ZONE 6
- EXISTING TRAVEL WAY
- PROPOSED DETOUR ROUTE
- SCHOOL TRAFFIC CIRCULATION

NOTES:

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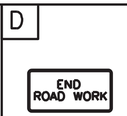
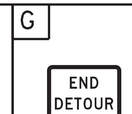
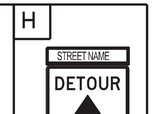
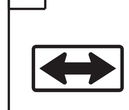
								
CW20-1	CW20-3	CW20-2	G20-2	M4-9R	M4-9L	M4-8a	M4-9S	
I	J	K	L	M	N	O	P	Q
								
R6-2L	R6-2R	R11-4	R11-2	M4-10L	R3-1	R3-2	CW1-7	R5-1

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

TCP FOR FAIR OAKS STREET PHASE 6

WBS NO. R-01000-0036-3	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON, PM	
SABEEN SHAIK, P.E.	
SHEET NO. 153 OF 195	

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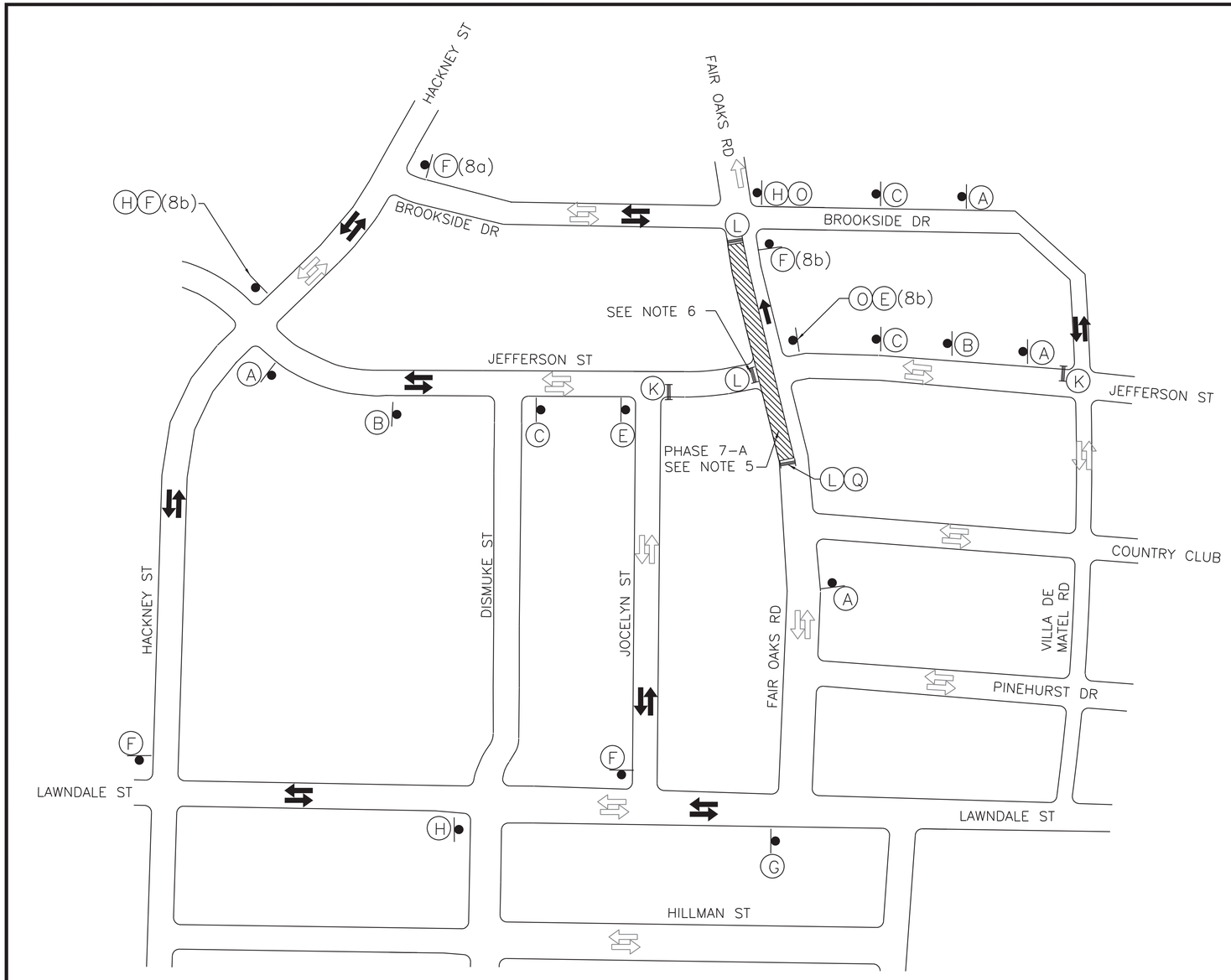

CONSTRUCT LONG SIDE SERVICES AND PAVEMENT MILL/OVERLAY

CONSTRUCTION SANITARY SEWER, MANHOLES AND SERVICE LINE

N

LEGEND

- TEMPORARY SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- FLASHING ARROW PANEL
- TYPE III BARRICADE
- WORK ZONE 7-A
- EXISTING TRAVEL WAY
- PROPOSED DETOUR ROUTE
- SCHOOL TRAFFIC CIRCULATION

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12. INSTALL FAIR OAK RD STREET NAME SIGN OVER ALL DETOUR SIGNS EXCEPT FOR THE FOLLOWING MODIFICATIONS
(8a) TWO STREET NAMES: FAIR OAK RD AND JEFFERSON ST
(8b) INSTALL JEFFERSON ST ONLY.

A ROAD WORK AHEAD CW20-1	B ROAD CLOSED AHEAD CW20-3	C DETOUR AHEAD CW20-2	D END ROAD WORK G20-2	E STREET NAME DETOUR M4-9R	F STREET NAME DETOUR M4-9L	G END DETOUR M4-8a	H STREET NAME DETOUR M4-9S
I ONE WAY R6-2L	J ONE WAY R6-2R	K ROAD CLOSED TO THRU TRAFFIC R11-4	L ROAD CLOSED R11-2	M DETOUR M4-10L	N R3-1	O R3-2	P CW1-7	Q DO NOT ENTER R5-1

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HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
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TCP FOR FAIR OAKS STREET PHASE 7-A

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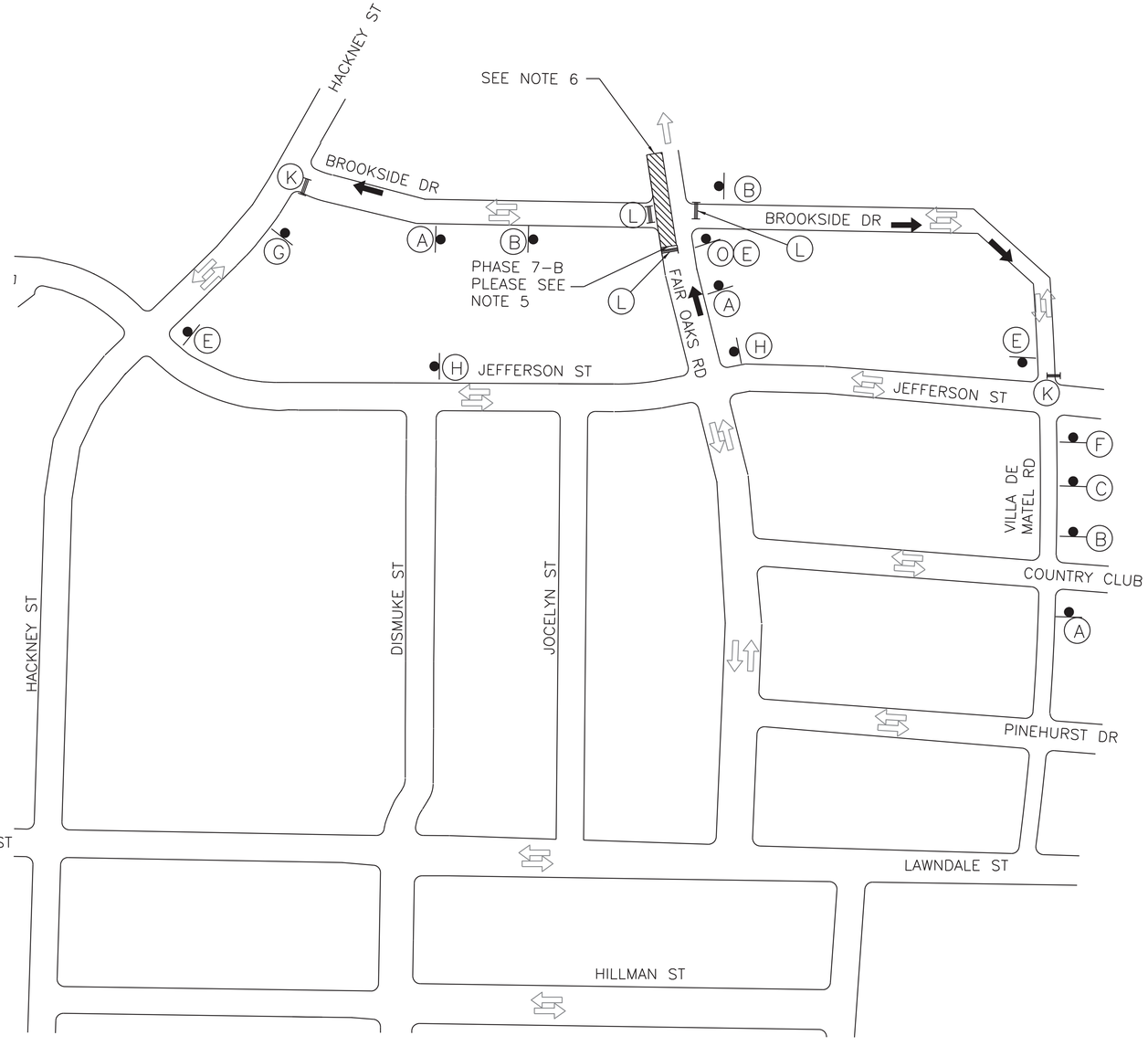

CONSTRUCT LONG SIDE SERVICES AND PAVEMENT MILL/OVERLAY

CONSTRUCTION SANITARY SEWER, MANHOLES AND SERVICE LINE

N

LEGEND

- TEMPORARY SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
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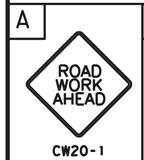
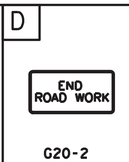
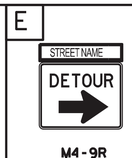
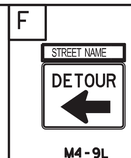
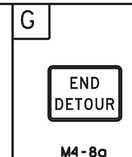
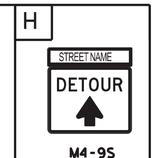
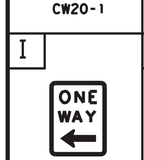
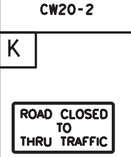
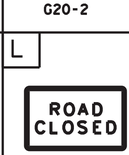
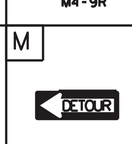
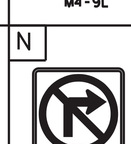
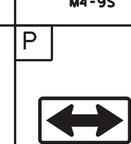
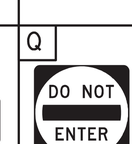
							
CW20-1	CW20-3	CW20-2	G20-2	M4-9R	M4-9L	M4-8a	M4-9S
I	J	K	L	M	N	O	P	Q
								
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RAJASEKHAR BASAVARAJU
TEXAS REGISTRATION NO. 112149

5/15/2026

SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

TCP FOR FAIR OAKS STREET PHASE 7-B

WBS NO.	R-01000-0036-3
DRAWING SCALE	N.T.S.
CITY OF HOUSTON, PM	SABEEN SHAIK, P.E.
SHEET NO. 155 OF 195	

5/15/2026
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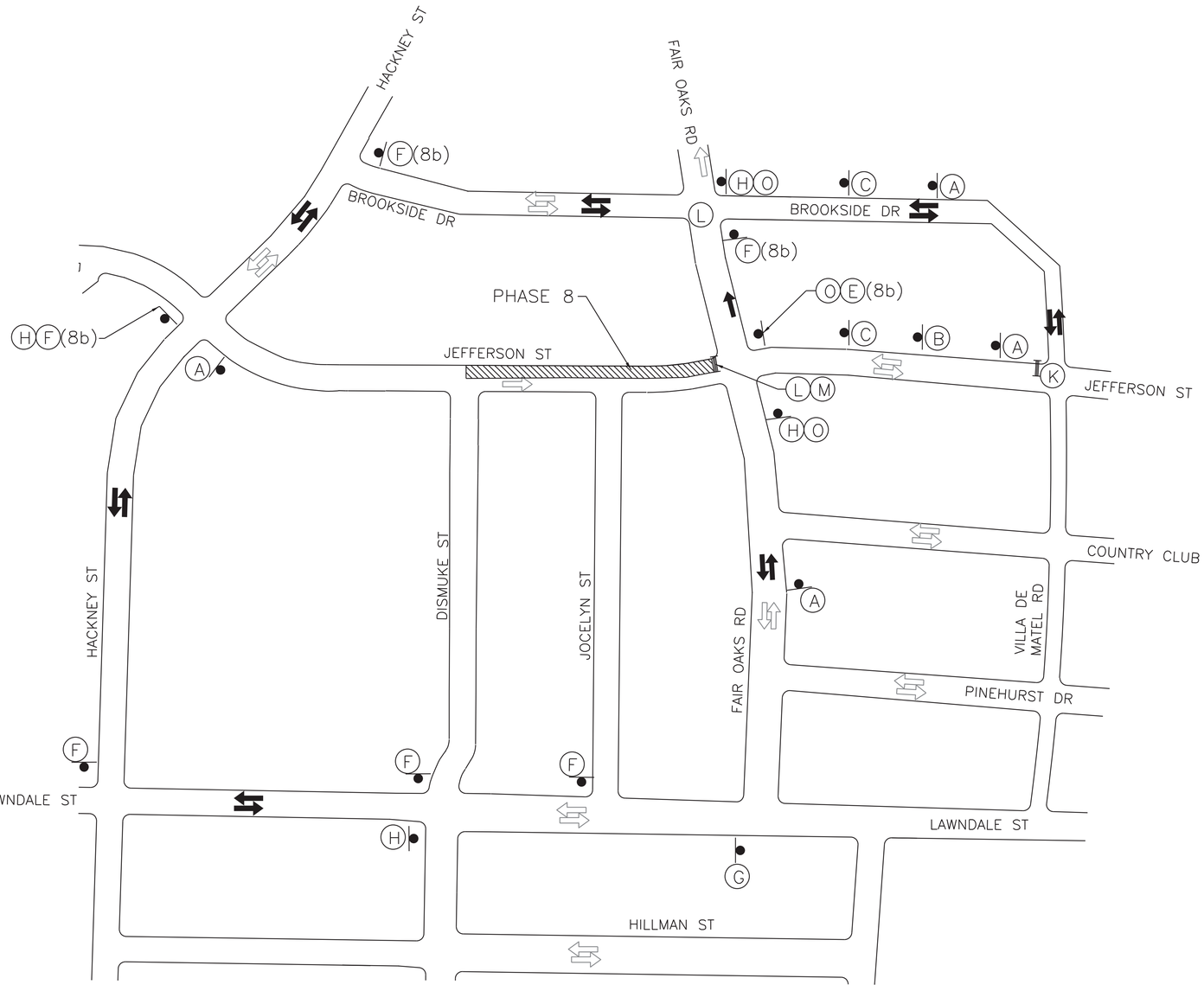

CONSTRUCT LONG SIDE SERVICES AND PAVEMENT MILL/OVERLAY

CONSTRUCTION SANITARY SEWER, MANHOLES AND SERVICE LINE

N

LEGEND

- TEMPORARY SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- FLASHING ARROW PANEL
- TYPE III BARRICADE
- WORK ZONE 8
- EXISTING TRAVEL WAY
- PROPOSED DETOUR ROUTE
- SCHOOL TRAFFIC CIRCULATION

NOTES:

1. CONTRACTOR SHALL NOTIFY POLICE AND FIRE DEPARTMENT, AND LOCAL SCHOOL DISTRICT(S) (FOR BUS ROUTES) AND U.S. POSTAL SERVICE OF LANE CLOSURES, A MINIMUM OF (5) DAYS PRIOR TO BEGINNING WORK..
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5. REFER TO COH STANDARD DETAILS FOR APPLICABLE DETOUR ROUTING AND ONE–LANE CLOURE TCP.
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7. CONTRACTOR SHALL MAINTAIN INTERSECTION OPEN TO TRAFFIC UNTIL WORK AT INTERSECTION BEGINS. INSTALL DETOUR SIGNS AS SHOWN.
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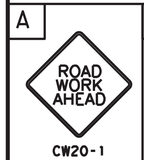
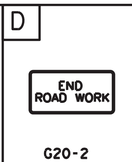
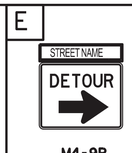
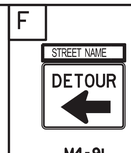
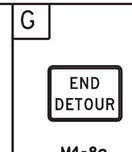
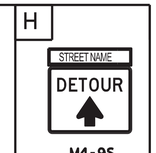
A	B	C	D	E	F	G	H	
								
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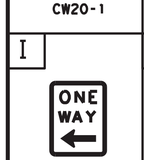
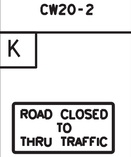
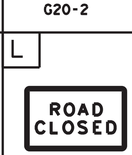
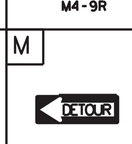
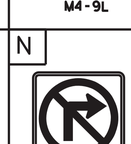
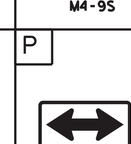
I	J	K	L	M	N	O	P	Q
								
R6-2L	R6-2R	R11-4	R11-2	M4-10L	R3-1	R3-2	CW1-7	R5-1

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RAJASEKHAR BASAVARAJU
TEXAS REGISTRATION NO. 112149

5/15/2026

SURVEYED BY: AMANI
FB NO.: P–

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

TCP FOR JEFFERSON STREET PHASE 8

WBS NO.	R-01000-0036-3
DRAWING SCALE	N.T.S.
CITY OF HOUSTON, PM	SABEEN SHAIK, P.E.
SHEET NO. 156 OF 195	

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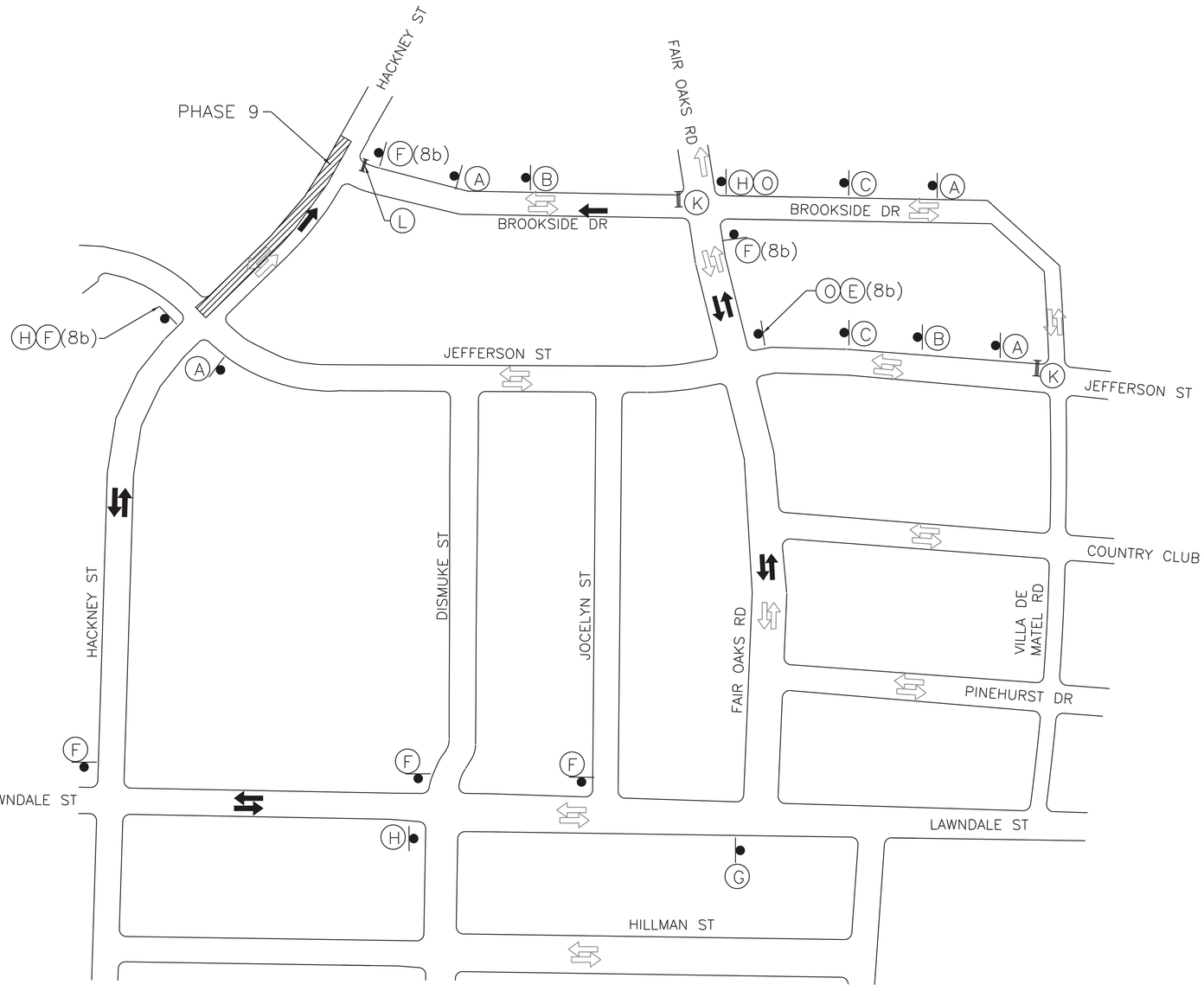

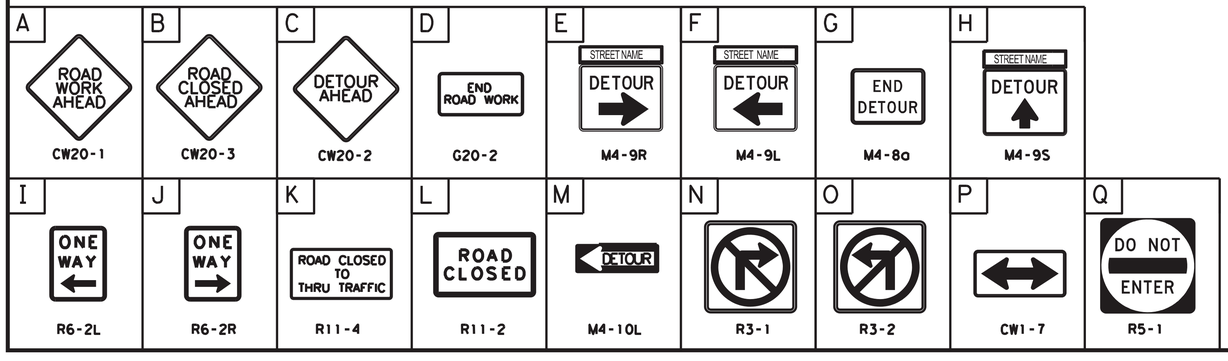

CONSTRUCT LONG SIDE SERVICES AND PAVEMENT MILL/OVERLAY

CONSTRUCTION SANITARY SEWER, MANHOLES AND SERVICE LINE

N

LEGEND

- TEMPORARY SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- FLASHING ARROW PANEL
- TYPE III BARRICADE
- WORK ZONE 9
- EXISTING TRAVEL WAY
- PROPOSED DETOUR ROUTE
- SCHOOL TRAFFIC CIRCULATION

NOTES:

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RAJASEKHAR BASAVARAJU
TEXAS REGISTRATION NO. 112149

5/15/2026

SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

TCP FOR HACKNEY STREET PHASE 9

WBS NO. R-01000-0036-3
DRAWING SCALE
N.T.S.
CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.
SHEET NO. 157 OF 195

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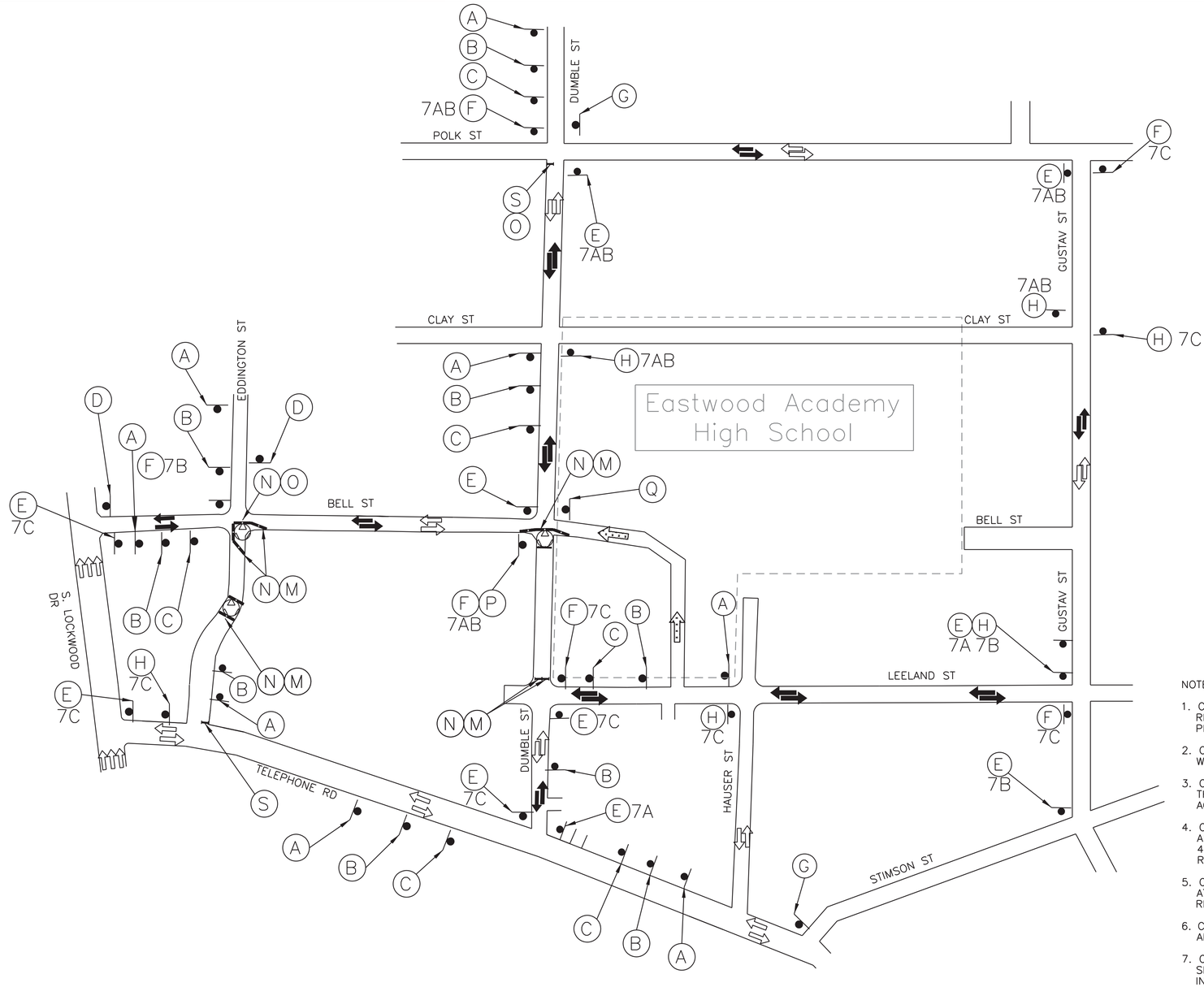

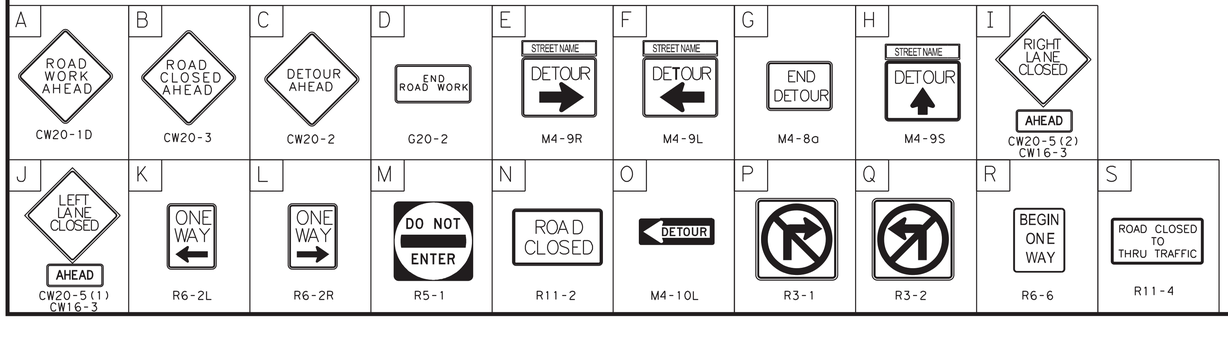

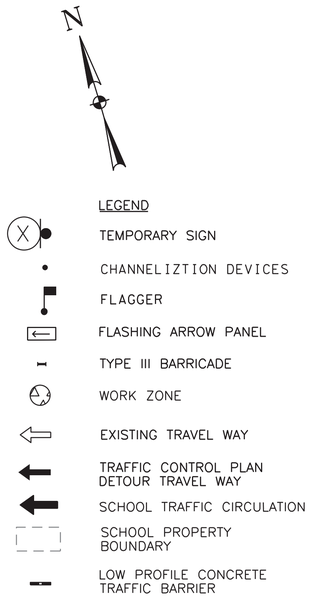

NOTES:

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3. CONTRACTOR TO PROVIDE A SECURITY FENCE THAT SURROUND THE SURFACE WORK SITE FOR THE TUNNEL SHAFTS IN ACCORDANCE WITH THE CITY OF HOUSTON SPECIFICATIONS.
4. CONTRACTORS SHALL PROVIDE WRITTEN NOTIFICATION TO AFFECTED RESIDENTS AND BUSINESSES A MINIMUM OF 48-HOURS IN ADVANCE OF ANY LANE CLOSURES, PARKING RESTRICTIONS, OR ACCESS IMPACTS.
5. CONTRACTOR SHALL MAINTAIN THIS ROAD CLOSED TO TRAFFIC AT ALL TIMES DURING CONSTRUCTION EXCEPT AS NEEDED FOR RESIDENT ACCESS.
6. CONTRACTOR SHALL MAINTAIN OPEN ACCESS TO SIDEWALKS AND CROSSING FOR PEDESTRIANS THROUGH THE WORK ZONES.
7. CONTRACTOR SHALL INSTALL THE FOLLOWING STREET NAME SIGNS OVER THE DETOUR SIGNS AS SHOWN ON THE PLANS AS INDICATED BELOW

   DETOUR SIGN STREET NAME
   A – LEELAND ST
   B – TELEPHONE RD
   C – DUMBLE ST
8. CONTRACTOR SHALL PHASE WORK TO CONSTRUCT NO MORE THAN ONE SANITARY LINE SEGMENT AT A TIME AND NO MORE THAN TWO ACTIVE ZONES AT A TIME, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
9. CONTRACTOR SHALL MANAGE TRAFFIC ADJACENT TO ACTIVE WORK ZONE USING FLAGGER OPERATION DURING DAY TIME AND INSTALL BARRIERS AROUND THE PERIMETER DURING NON-ACTIVE WORK ZONE AT NIGHT OR WEEKENDS.
10. CONTRACTOR TO PROVIDE A SECURITY FENCE THAT SURROUNDS THE SURFACE WORK SITE FOR THE TUNNEL SHAFTS IN ACCORDANCE WITH THE CITY OF HOUSTON SPECIFICATIONS.
11. CONTRACTOR SHALL INSTALL CONCRETE BARRIERS AROUND EXCAVATION.

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TEXAS REGISTRATION NO. 112149

5/15/2026

SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

TCP PHASE 1-T
EDDINGTON ST AND BELL ST

WBS NO.	R-01000-0036-3
DRAWING SCALE	N.T.S.
CITY OF HOUSTON, PM	SABEEN SHAIK, P.E.
SHEET NO. 158 OF 195	

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NOTES:

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2. CONTRACTOR SHALL PROVIDE ACCESS TO PRIVATE DRIVEWAYS, WALKWAYS, AND ANY OTHER ENTRANCES AT ALL TIMES.
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5. CONTRACTOR SHALL NOTIFY THE ENGINEER AND EASTWOOD ACADEMY HIGH SCHOOL SUPERINTENDENT OF ALL ROAD CLOSURES WITHIN THIS WORK ZONE AND COORDINATE CORRESPONDING SCHOOL TRAFFIC REROUTING WITH A MINIMUM OF TWO WEEKS BEFORE BEGINNING OF WORK IN THIS AREA.
6. CONTRACTOR SHALL MAINTAIN OPEN ACCESS TO SIDEWALKS AND CROSSING FOR PEDESTRIANS THROUGH THE WORK ZONES.
7. CONTRACTOR SHALL INSTALL THE FOLLOWING STREET NAME SIGNS OVER THE DETOUR SIGNS AS SHOWN ON THE PLANS AS INDICATED BELOW

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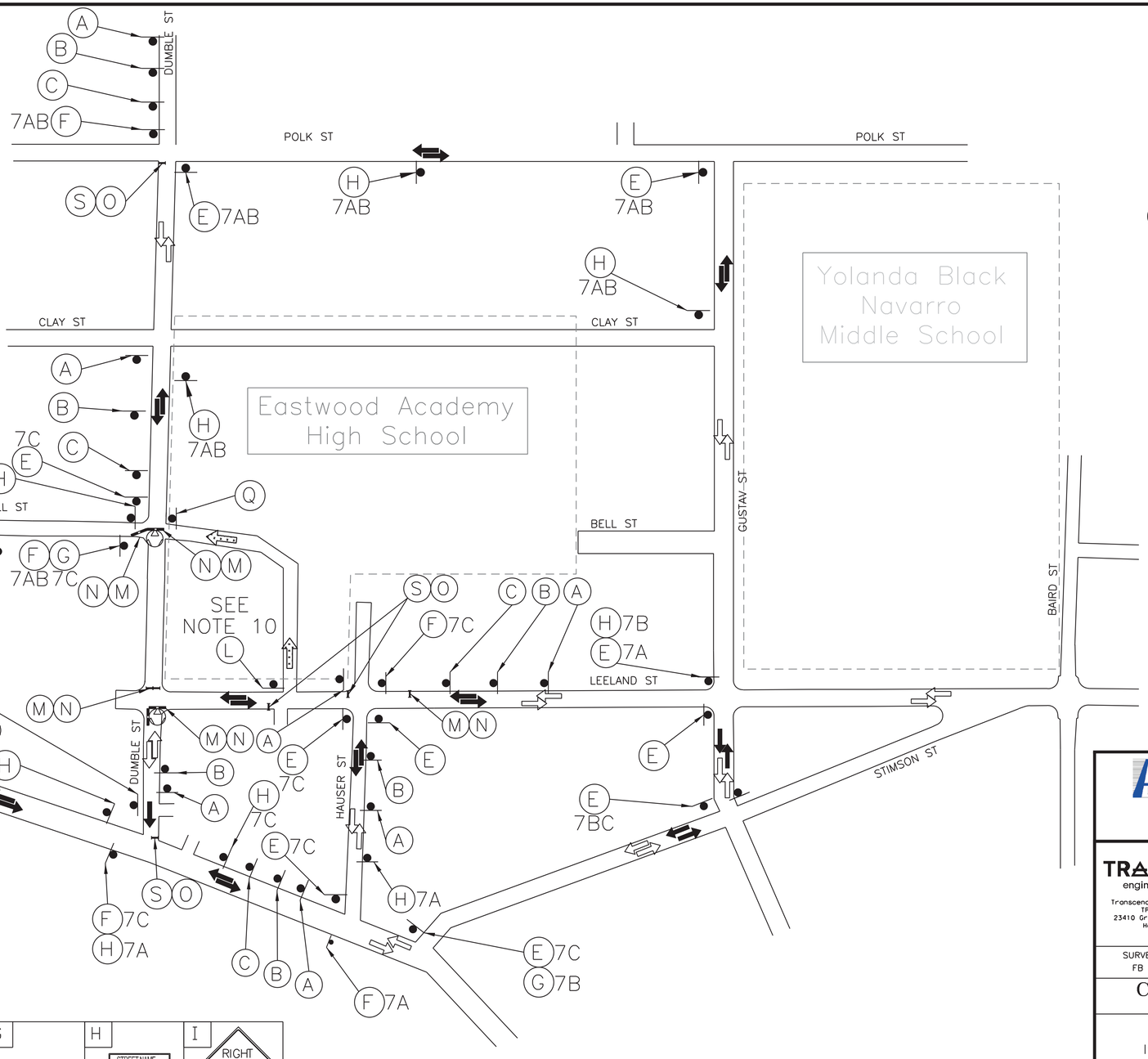
10. INSTALL SIGN R6-2R OR R6-2L (K) IN FRONT OF FAST FOOD/COMMERCIAL DRIVEWAY.
11. CONTRACTOR TO PROVIDE A SECURITY FENCE THAT SURROUNDS THE SURFACE WORK SITE FOR THE TUNNEL SHAFTS IN ACCORDANCE WITH THE CITY OF HOUSTON SPECIFICATIONS.
12. CONTRACTOR SHALL INSTALL CONCRETE BARRIERS AROUND EXCAVATION.



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LEGEND

- TEMPORARY SIGN
- CHANNELIZTION DEVICES
- FLAGGER
- FLASHING ARROW PANEL
- TYPE III BARRICADE
- WORK ZONE
- EXISTING TRAVEL WAY
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- SCHOOL PROPERTY BOUNDARY
- LOW PROFILE CONCRETE TRAFFIC BARRIER

A ROAD WORK AHEAD CW20-1D	B ROAD CLOSED AHEAD CW20-3	C DETOUR AHEAD CW20-2	D END ROAD WORK G20-2	E STREET NAME DETOUR M4-9R	F STREET NAME DETOUR M4-9L	G END DETOUR M4-8a	H STREET NAME DETOUR M4-9S	I RIGHT LANE CLOSED AHEAD CW20-5(2) CW16-3	
J LEFT LANE CLOSED AHEAD CW20-5(1) CW16-3	K ONE WAY R6-2L	L ONE WAY R6-2R	M DO NOT ENTER R5-1	N ROAD CLOSED R11-2	O DETOUR M4-10L	P R3-1	Q R3-2	R BEGIN ONE WAY R6-6	S ROAD CLOSED TO THRU TRAFFIC R11-4

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• Engineers • Surveyors • Construction Managers
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RAJASEKHAR BASAVARAJU
TEXAS REGISTRATION NO. 112149

5/15/2026

SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

TCP PHASE 2-T
DUMBLE ST AT BELL ST

WBS NO.	R-01000-0036-3
DRAWING SCALE	N.T.S.
CITY OF HOUSTON, PM	SABEEN SHAIK, P.E.
SHEET NO. 159 OF 195	

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5. CONTRACTOR SHALL NOTIFY THE ENGINEER AND EASTWOOD ACADEMY HIGH SCHOOL SUPERINTENDENT OF ALL ROAD CLOSURES WITHIN THIS WORK ZONE AND COORDINATE CORRESPONDING SCHOOL TRAFFIC REROUTING WITH A MINIMUM OF TWO WEEKS BEFORE BEGINNING OF WORK IN THIS AREA.

   CONTRACTOR SHALL MAINTAIN OPEN ACCESS TO SIDEWALKS AND CROSSING FOR PEDESTRIANS THROUGH THE WORK ZONES.
7. CONTRACTOR SHALL INSTALL THE FOLLOWING STREET NAME SIGNS OVER THE DETOUR SIGNS AS SHOWN ON THE PLANS AS INDICATED BELOW

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   A – LEELAND ST
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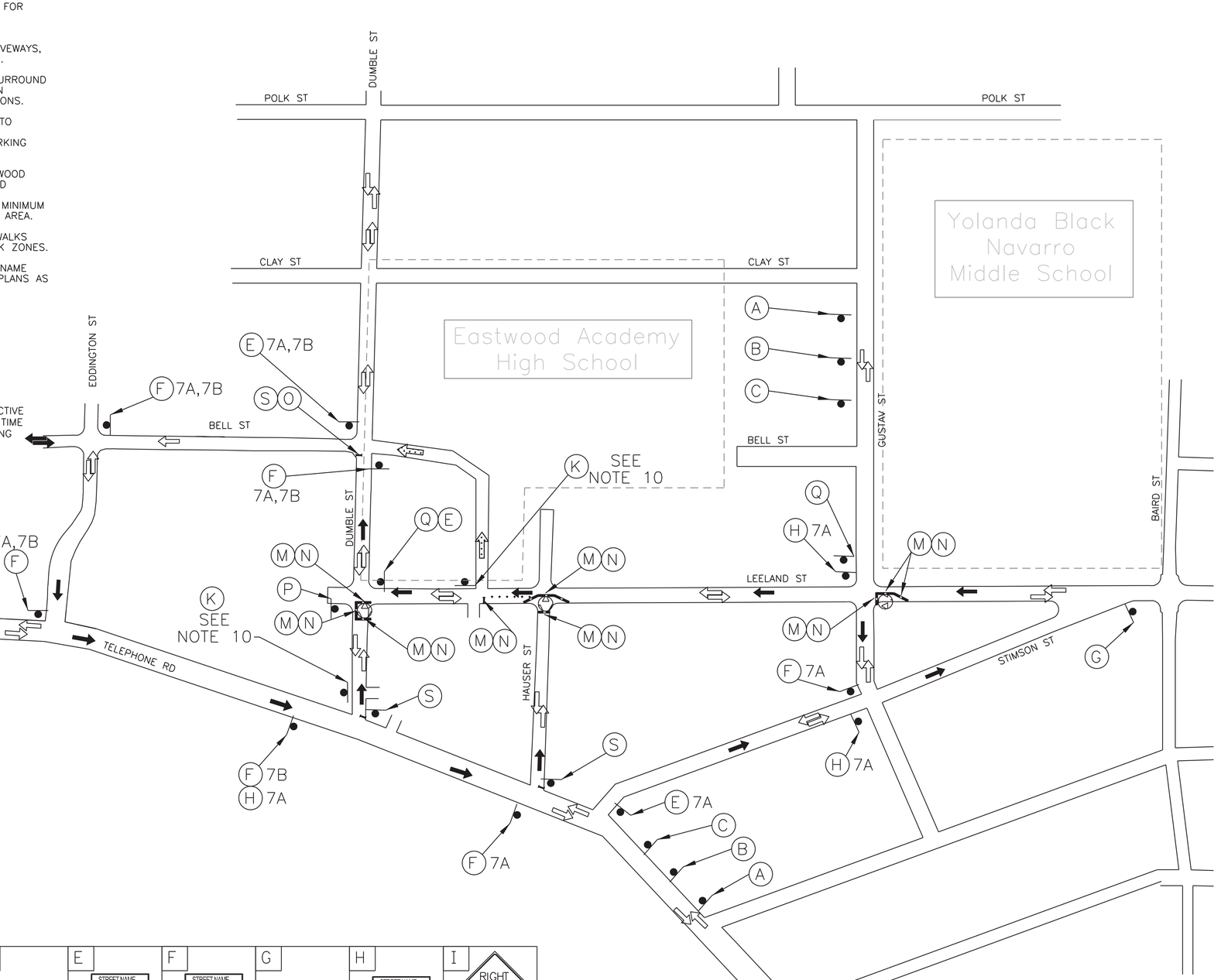

A	B	C	D	E	F	G	H	I
ROAD WORK AHEAD	ROAD CLOSED AHEAD	DETOUR AHEAD	END ROAD WORK	STREET NAME DETOUR →	STREET NAME DETOUR ←	END DETOUR	STREET NAME DETOUR ↑	RIGHT LANE CLOSED AHEAD
CW20-1D	CW20-3	CW20-2	G20-2	M4-9R	M4-9L	M4-8a	M4-9S	CW20-5(2) CW16-3

J	K	L	M	N	O	P	Q	R	S
LEFT LANE CLOSED AHEAD	ONE WAY ←	ONE WAY →	DO NOT ENTER	ROAD CLOSED	DETOUR ←			BEGIN ONE WAY	ROAD CLOSED TO THRU TRAFFIC
CW20-5(1) CW16-3	R6-2L	R6-2R	R5-1	R11-2	M4-10L	R3-1	R3-2	R6-6	R11-4

LEGEND

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

TCP PHASE 3–T
DUMBLE ST AT LEELAND ST

WBS NO.
R–01000–0036–3

DRAWING SCALE
N.T.S.

CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.

SHEET NO. 160 OF 195

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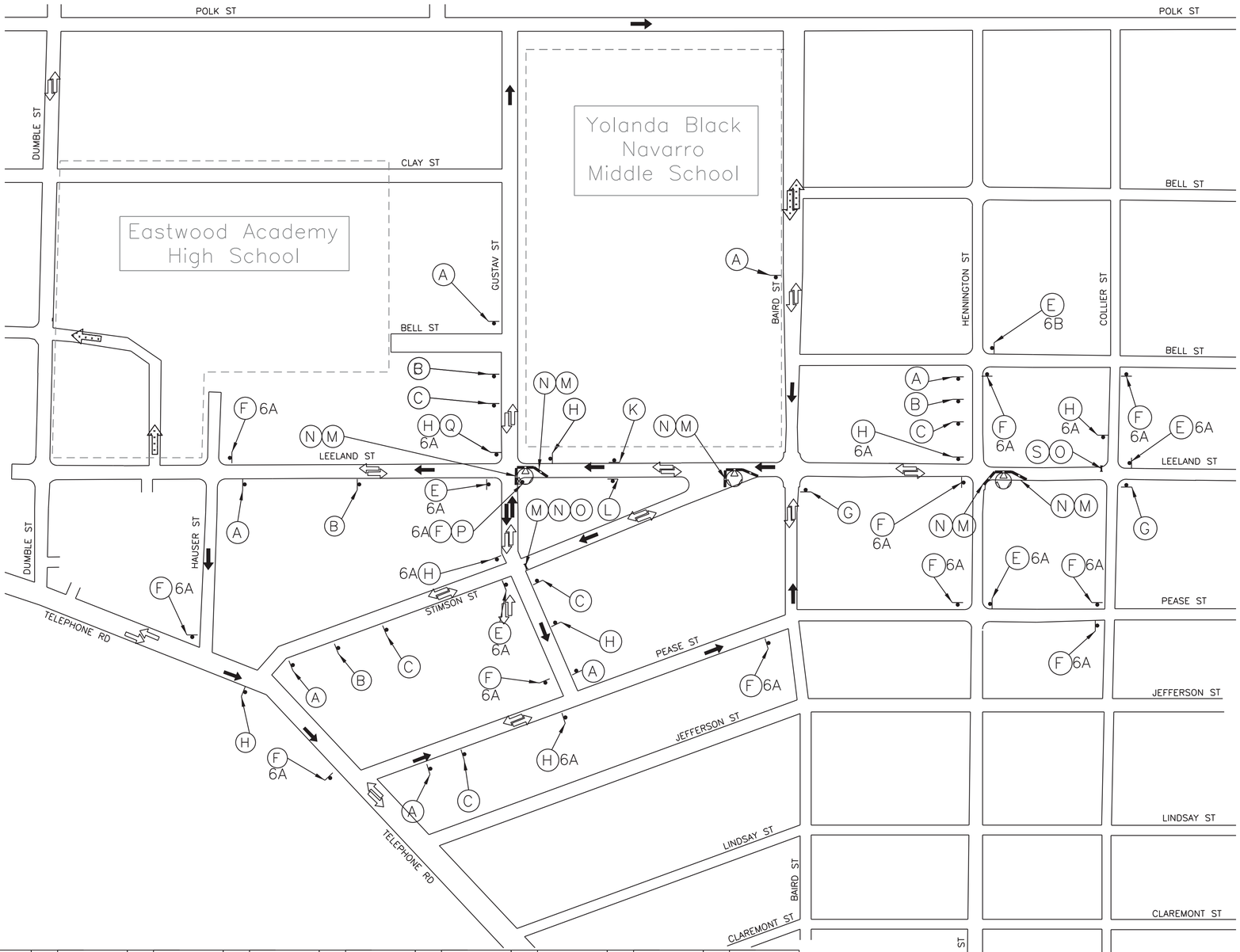

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A: ROAD WORK AHEAD — CW20-1D	B: ROAD CLOSED AHEAD — CW20-3	C: DETOUR AHEAD — CW20-2	D: END ROAD WORK — G20-2	E: STREET NAME DETOUR → — M4-9R	F: STREET NAME DETOUR ← — M4-9L	G: END DETOUR — M4-8a	H: STREET NAME DETOUR ↑ — M4-9S	I: RIGHT LANE CLOSED AHEAD — CW20-5(2) CW16-3
J: LEFT LANE CLOSED AHEAD — CW20-5(1) CW16-3	K: ONE WAY ← — R6-2L	L: ONE WAY → — R6-2R	M: DO NOT ENTER — R5-1	N: ROAD CLOSED — R11-2	O: DETOUR ← — M4-10L	P: R3-1	Q: R3-2	R: BEGIN ONE WAY — R6-6
S: ROAD CLOSED TO THRU TRAFFIC — R11-4								

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SURVEYED BY: AMANI
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION
TCP PHASE 4-T
LEELAND ST AT HENNINGTON ST

WBS NO.	R-01000-0036-3
DRAWING SCALE	
CITY OF HOUSTON, PM	SABEEN SHAIK, P.E.
SHEET NO. 161 OF 195	

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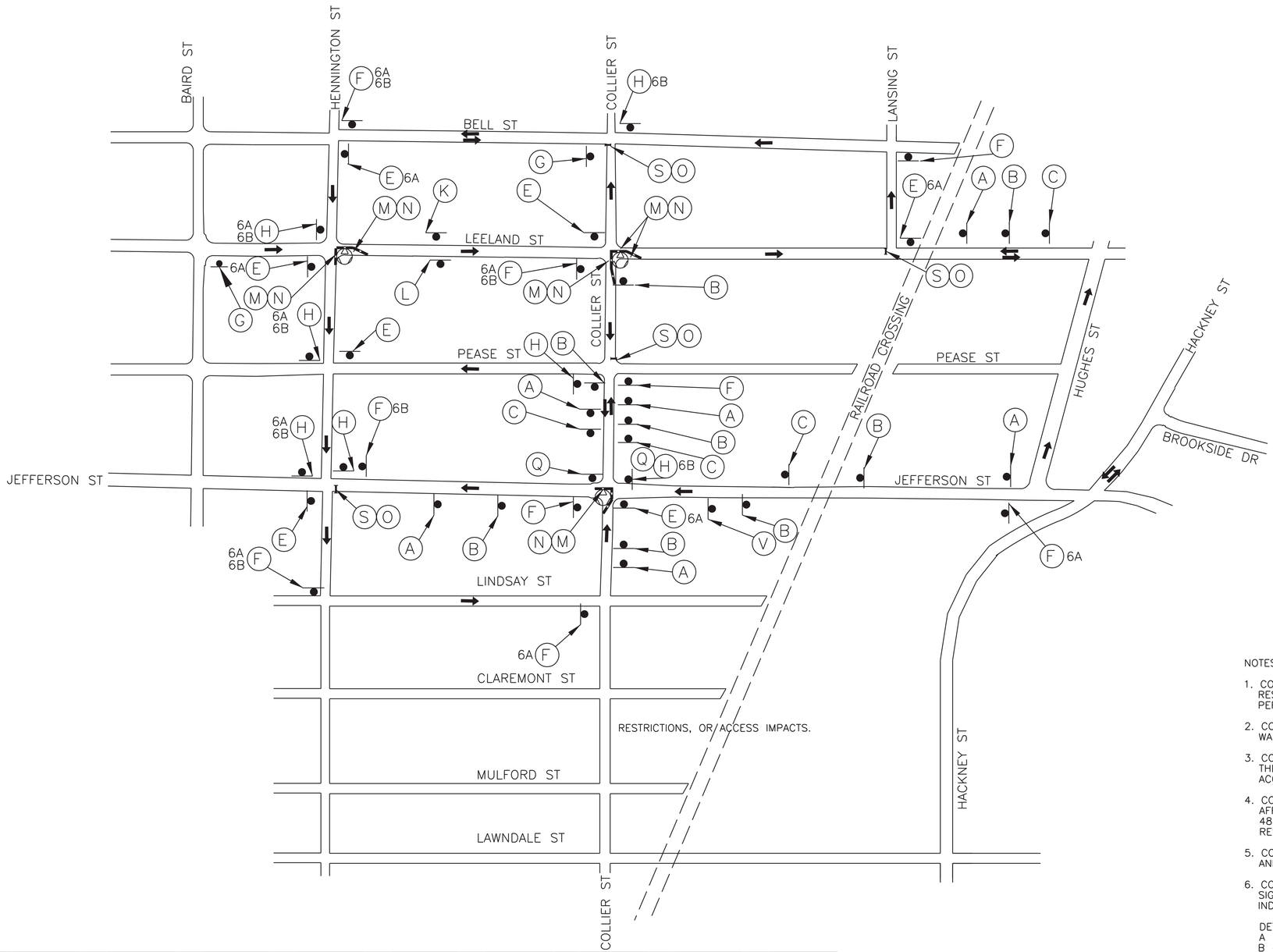

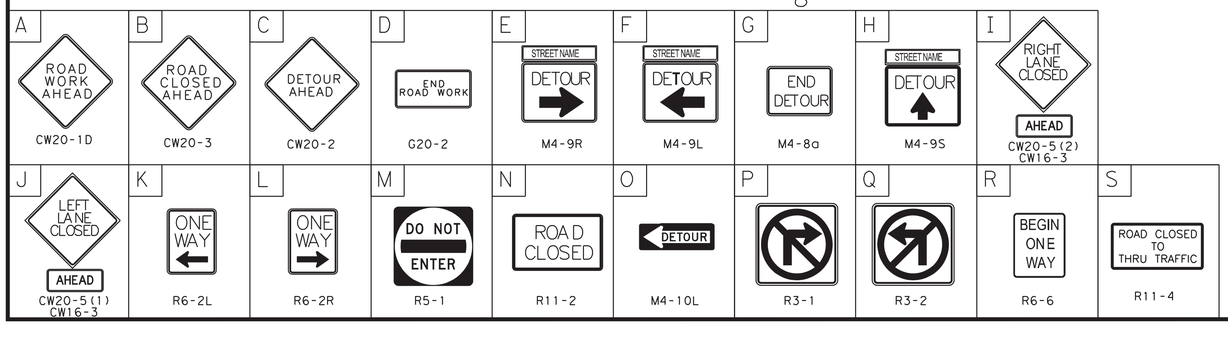

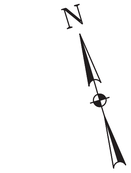

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION
TCP PHASE 5-T
LEELAND ST AT COLLIER ST

WBS NO.	R-01000-0036-3
DRAWING SCALE	N.T.S.
CITY OF HOUSTON, PM	SABEEN SHAIK, P.E.
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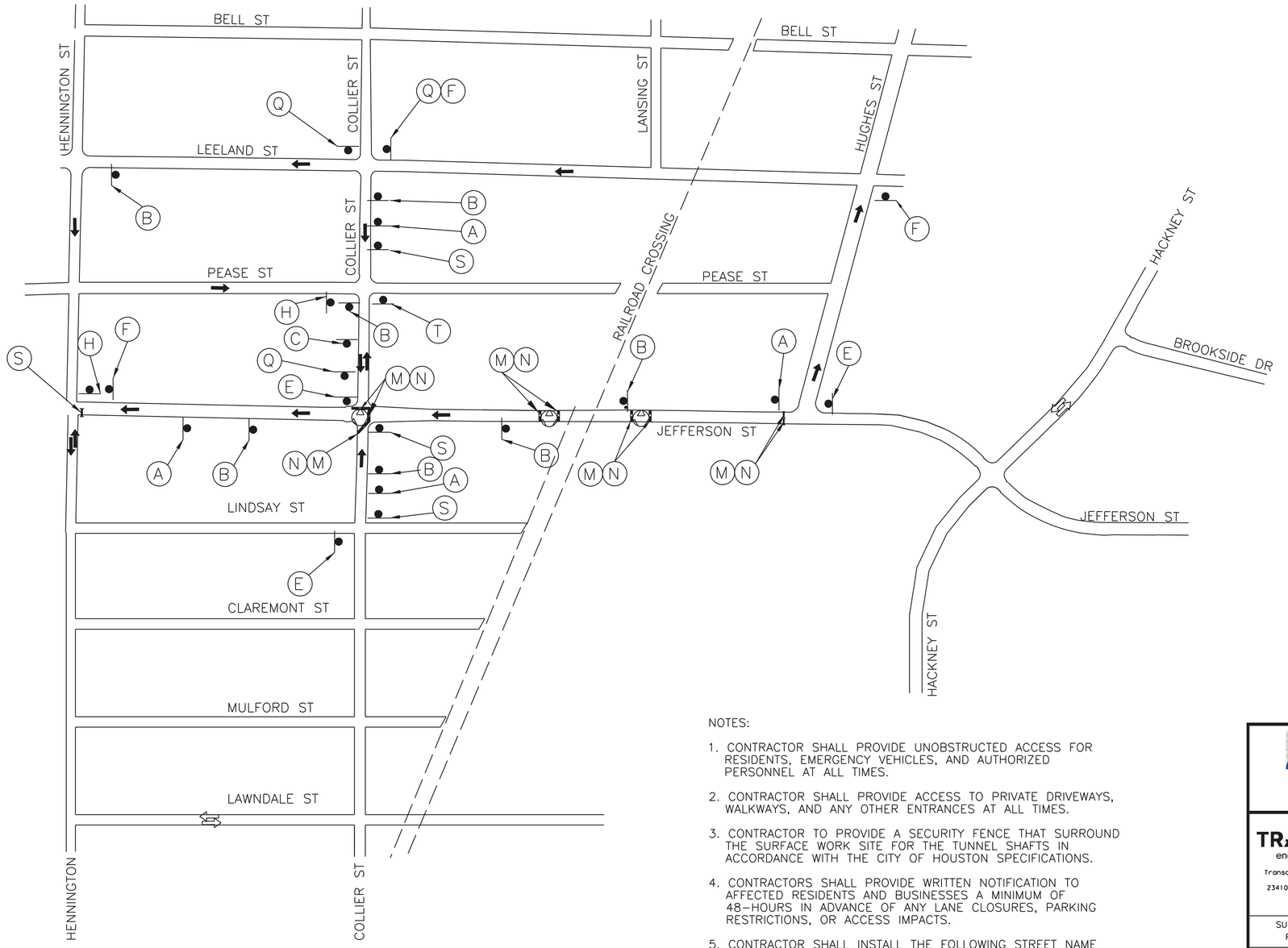

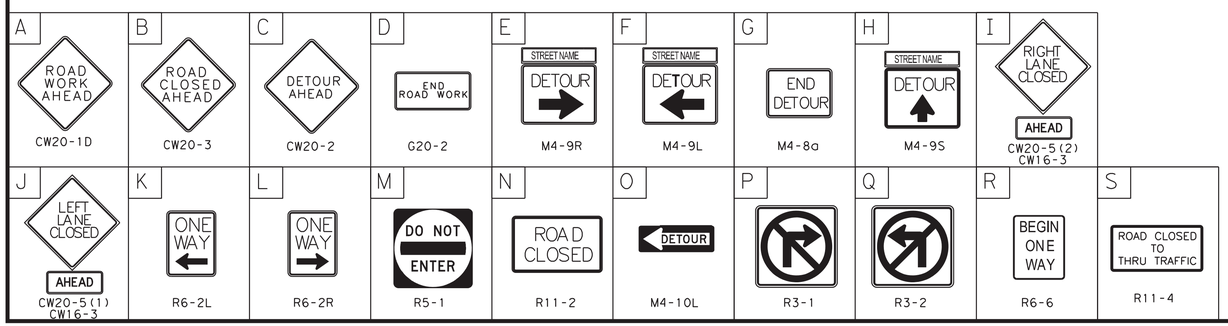

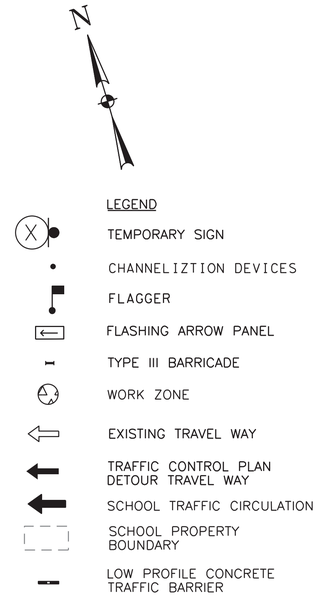

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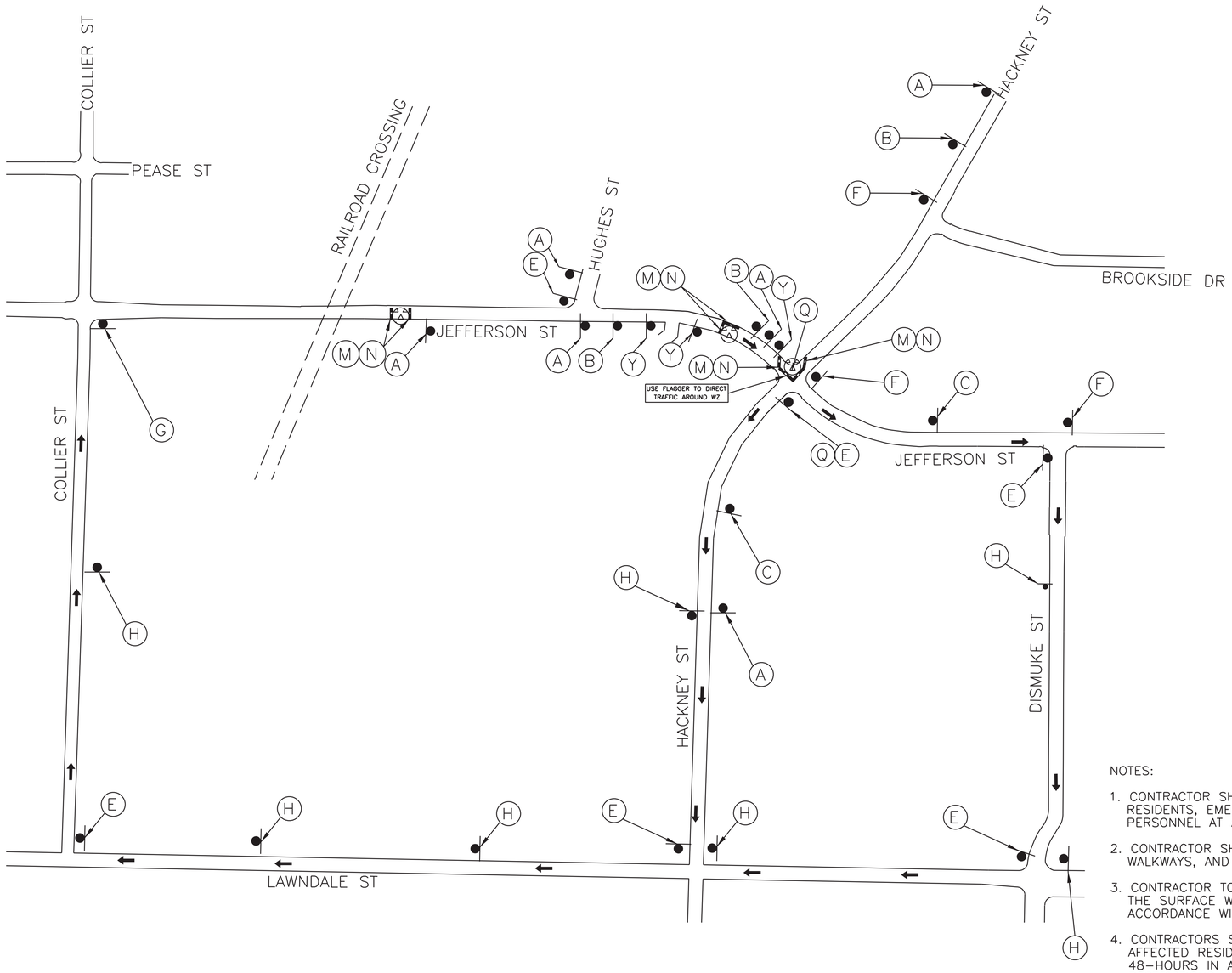

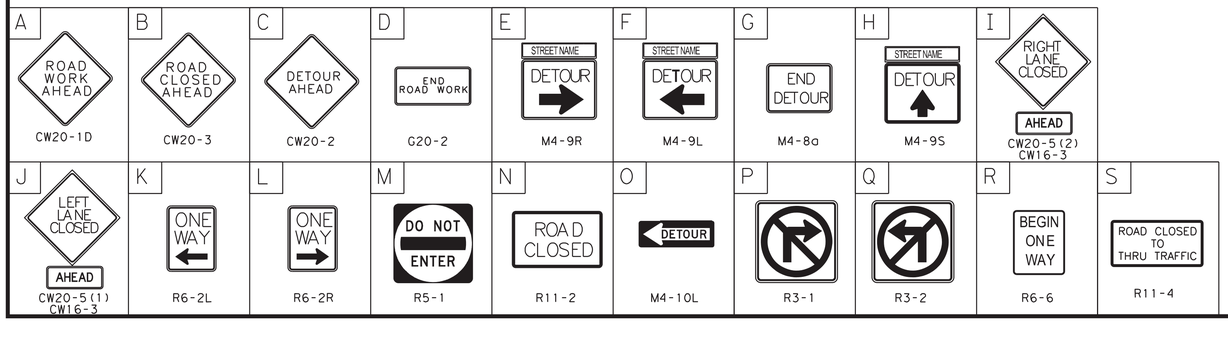

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TBPE Firm Reg. No.: F-4528
TBPLS Firm Reg. No.: 100282-00

TRANSCEND engineers + planners
Transcend Engineers & Planners, LLC
TPBE Reg. No. F-19299
23410 Grand Reserve Dr., Suite 101
Houston, Texas 77494

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RESPONSIBLE ENGINEER:
TRANSCEND ENGINEERS & PLANNERS, LLC.
RAJASEKHAR BASAVARAJU
TEXAS REGISTRATION NO. 112149

5/15/2026

SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION
TCP PHASE 7-T
HENNINGTON ST AT JEFFERSON ST

WBS NO. R-01000-0036-3	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON, PM	
SABEEN SHAIK, P.E.	
SHEET NO. 164 OF 195	

5/15/2026
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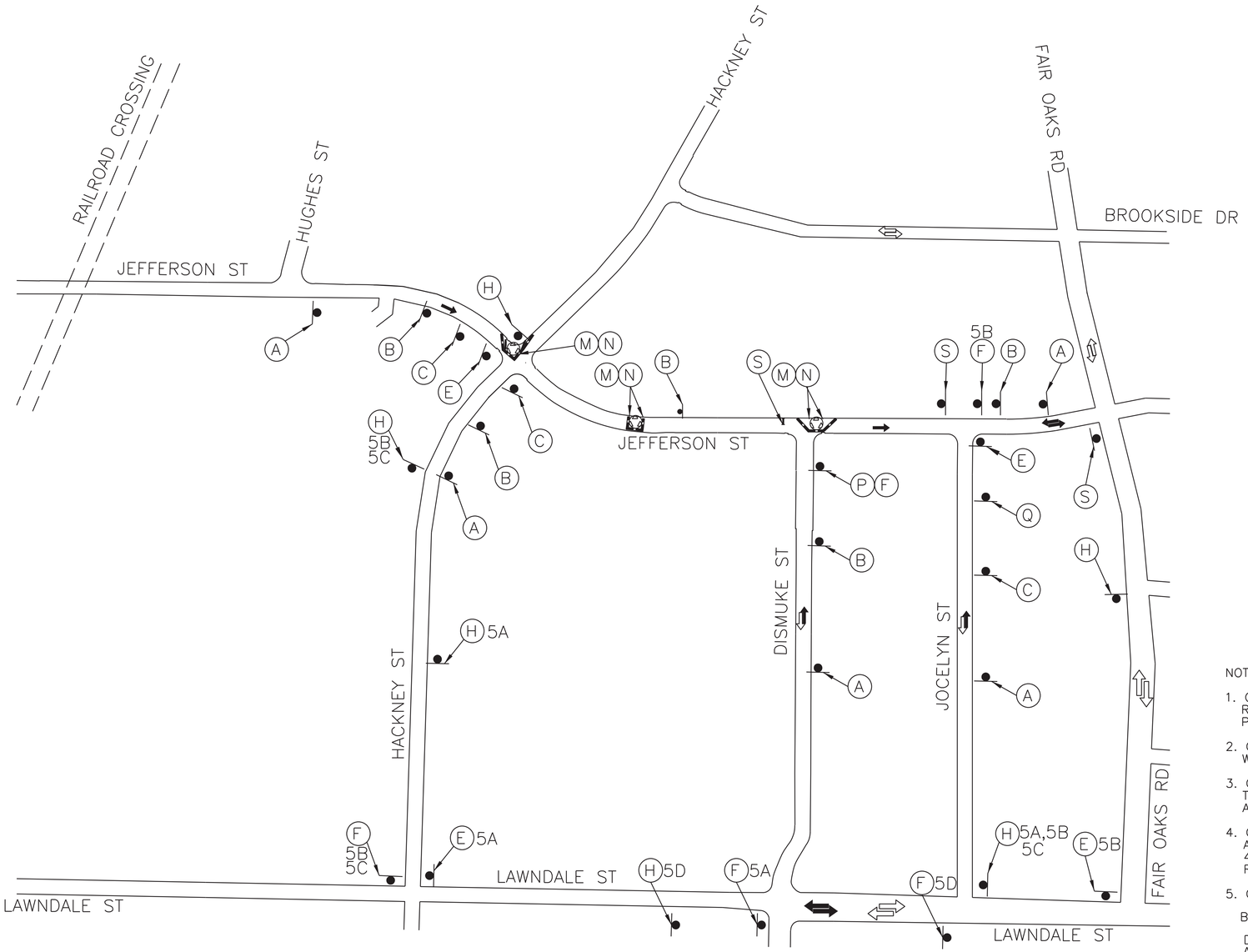

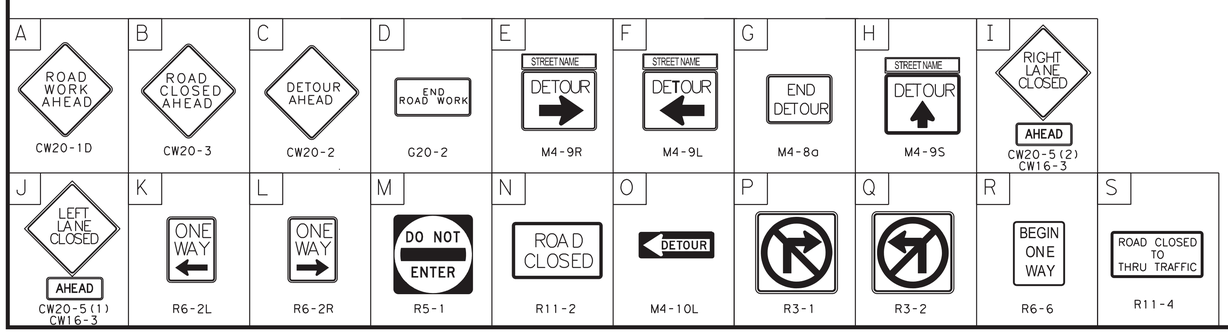

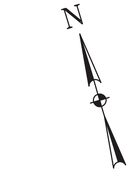

LEGEND

- TEMPORARY SIGN
- CHANNELIZTION DEVICES
- FLAGGER
- FLASHING ARROW PANEL
- TYPE III BARRICADE
- WORK ZONE
- EXISTING TRAVEL WAY
- TRAFFIC CONTROL PLAN DETOUR TRAVEL WAY
- SCHOOL TRAFFIC CIRCULATION
- SCHOOL PROPERTY BOUNDARY
- LOW PROFILE CONCRETE TRAFFIC BARRIER

NOTES:

1. CONTRACTOR SHALL PROVIDE UNOBSTRUCTED ACCESS FOR RESIDENTS, EMERGENCY VEHICLES, AND AUTHORIZED PERSONNEL AT ALL TIMES.
2. CONTRACTOR SHALL PROVIDE ACCESS TO PRIVATE DRIVEWAYS, WALKWAYS, AND ANY OTHER ENTRANCES AT ALL TIMES.
3. CONTRACTOR TO PROVIDE A SECURITY FENCE THAT SURROUND THE SURFACE WORK SITE FOR THE TUNNEL SHAFTS IN ACCORDANCE WITH THE CITY OF HOUSTON SPECIFICATIONS.
4. CONTRACTORS SHALL PROVIDE WRITTEN NOTIFICATION TO AFFECTED RESIDENTS AND BUSINESSES A MINIMUM OF 48-HOURS IN ADVANCE OF ANY LANE CLOSURES, PARKING RESTRICTIONS, OR ACCESS IMPACTS.
5. CONTRACTOR SHALL INSTALL THE FOLLOWING STREET NAME SIGNS BELOW

   DETOUR SIGN STREET NAME
   A - JEFFERSON ST
   B - DISMUKE ST
   C - HACKNEY ST
   D - JOCELYN ST
6. CONTRACTOR SHALL PHASE WORK TO CONSTRUCT NO MORE THAN ONE SANITARY LINE SEGMENT AT A TIME AND NO MORE THAN TWO ACTIVE WORK ZONES AT AT TIME, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
7. CONTRACTOR SHALL MANAGE TRAFFIC ADJACENT TO ACTIVE WORK ZONE USING FLAGGER OPERATION DURING DAY TIME AND INSTALL BARRIERS AROUND THE PERIMETER DURING NON-ACTIVE WORK ZONE AT NIGHT OR WEEKENDS.
8. CONTRACTOR TO PROVIDE A SECURITY FENCE THAT SURROUNDS THE SURFACE WORK SITE FOR THE TUNNEL SHAFTS IN ACCORDANCE WITH THE CITY OF HOUSTON SPECIFICATIONS.
9. CONTRACTOR SHALL INSTALL CONCRETE BARRIERS AROUND EXCAVATION.

DRAFT
90% PRELIMINARY

Amani Engineering, Inc.
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TBPE Firm Reg. No.: F-4528
TBPLS Firm Reg. No.: 100282-00

TRANSCEND engineers + planners
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TPBE Reg. No. F-19299
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Houston, Texas 77494

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RESPONSIBLE ENGINEER:
TRANSCEND ENGINEERS & PLANNERS, LLC.
RAJASEKHAR BASAVARAJU
TEXAS REGISTRATION NO. 112149
5/15/2026

SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION
TCP PHASE 8-T
JEFFERSON ST AT DISMUKE ST

WBS NO.	R-01000-0036-3
DRAWING SCALE	N.T.S.
CITY OF HOUSTON, PM	SABEEN SHAIK, P.E.
SHEET NO. 165 OF 195	

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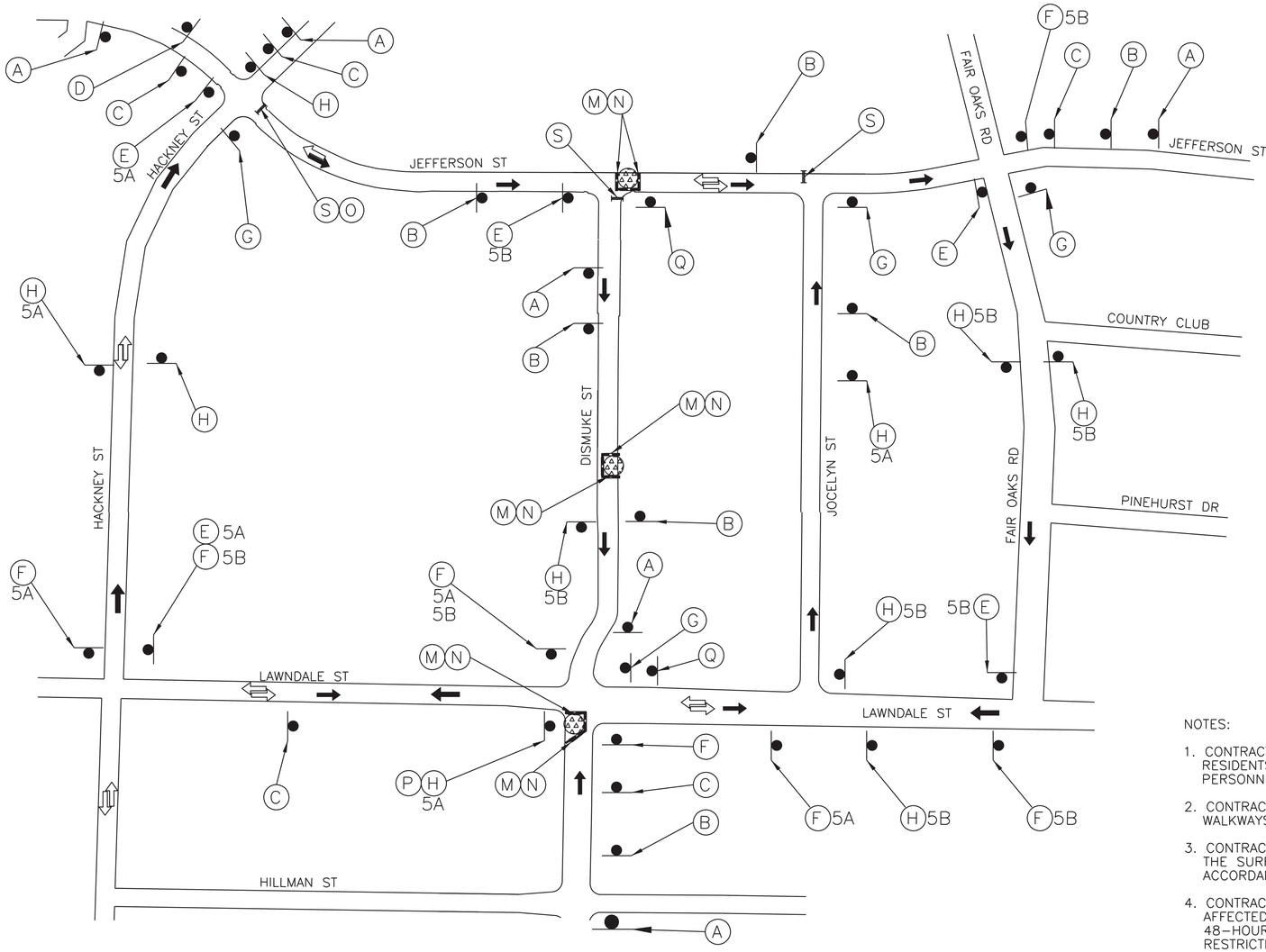

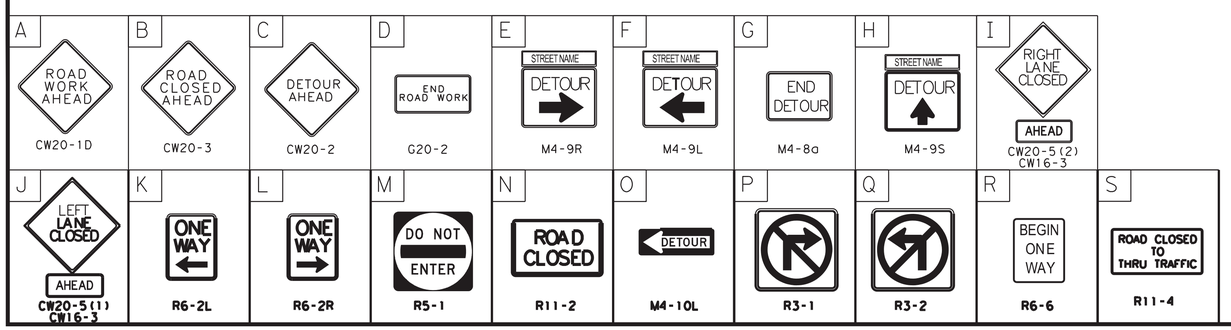

N

LEGEND

- TEMPORARY SIGN
- CHANNELIZTION DEVICES
- FLAGGER
- FLASHING ARROW PANEL
- TYPE III BARRICADE
- WORK ZONE
- EXISTING TRAVEL WAY
- TRAFFIC CONTROL PLAN DETOUR TRAVEL WAY
- SCHOOL TRAFFIC CIRCULATION
- SCHOOL PROPERTY BOUNDARY
- LOW PROFILE CONCRETE TRAFFIC BARRIER

NOTES:

1. CONTRACTOR SHALL PROVIDE UNOBSTRUCTED ACCESS FOR RESIDENTS, EMERGENCY VEHICLES, AND AUTHORIZED PERSONNEL AT ALL TIMES.
2. CONTRACTOR SHALL PROVIDE ACCESS TO PRIVATE DRIVEWAYS, WALKWAYS, AND ANY OTHER ENTRANCES AT ALL TIMES.
3. CONTRACTOR TO PROVIDE A SECURITY FENCE THAT SURROUND THE SURFACE WORK SITE FOR THE TUNNEL SHAFTS IN ACCORDANCE WITH THE CITY OF HOUSTON SPECIFICATIONS.
4. CONTRACTORS SHALL PROVIDE WRITTEN NOTIFICATION TO AFFECTED RESIDENTS AND BUSINESSES A MINIMUM OF 48-HOURS IN ADVANCE OF ANY LANE CLOSURES, PARKING RESTRICTIONS, OR ACCESS IMPACTS.
5. CONTRACTOR SHALL INSTALL THE FOLLOWING STREET NAME SIGNS OVER THE DETOUR SIGNS AS SHOWN ON THE PLANS AS INDICATED BELOW

   DETOUR SIGN STREET NAME
   A – JEFFERSON ST
   B – DISMUKE ST
6. CONTRACTOR SHALL PHASE WORK TO CONSTRUCT NO MORE THAN ONE SANITARY LINE SEGMENT AT A TIME AND NO MORE THAN TWO ACTIVE ZONES AT A TIME, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
9. CONTRACTOR SHALL MANAGE TRAFFIC ADJACENT TO ACTIVE WORK ZONE USING FLAGGER OPERATION DURING DAY TIME AND INSTALL BARRIERS AROUND THE PERIMETER DURING NON-ACTIVE WORK ZONE AT NIGHT OR WEEKENDS.
10. CONTRACTOR TO PROVIDE A SECURITY FENCE THAT SURROUNDS THE SURFACE WORK SITE FOR THE TUNNEL SHAFTS IN ACCORDANCE WITH THE CITY OF HOUSTON SPECIFICATIONS.
11. CONTRACTOR SHALL INSTALL CONCRETE BARRIERS AROUND EXCAVATION.

DRAFT
90% PRELIMINARY

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TBPLS Firm Reg. No.: 100282-00

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Houston, Texas 77494

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RESPONSIBLE ENGINEER:
TRANSCEND ENGINEERS & PLANNERS, LLC.
RAJASEKHAR BASAVARAJU
TEXAS REGISTRATION NO. 112149

5/15/2026

SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION
TCP PHASE 9-T
DISMUKE ST, JEFFERSON ST & LAWNDALE ST

WBS NO. R-01000-0036-3	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON, PM	
SABEEN SHAIK, P.E.	
SHEET NO. 166 OF 195	

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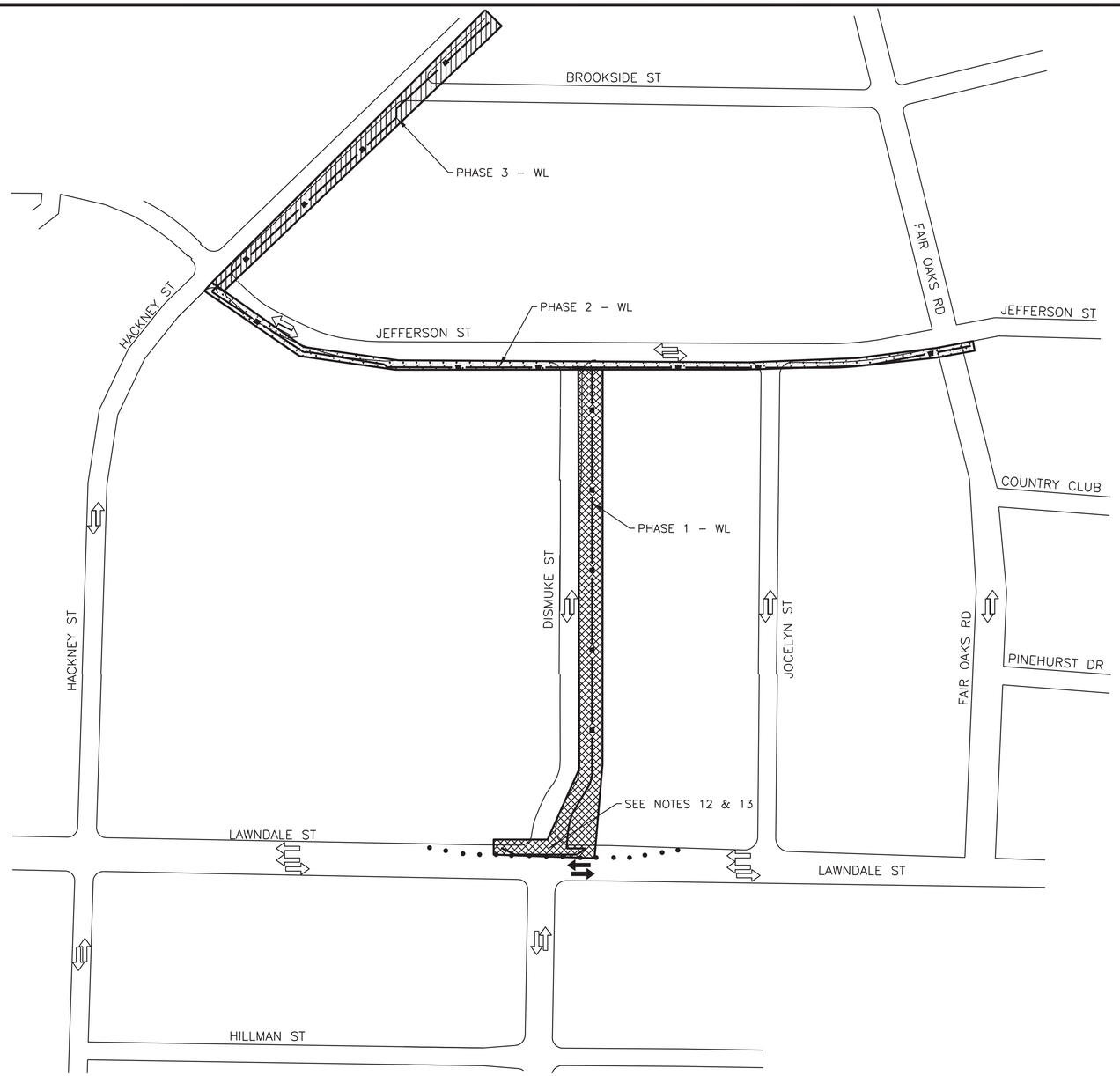

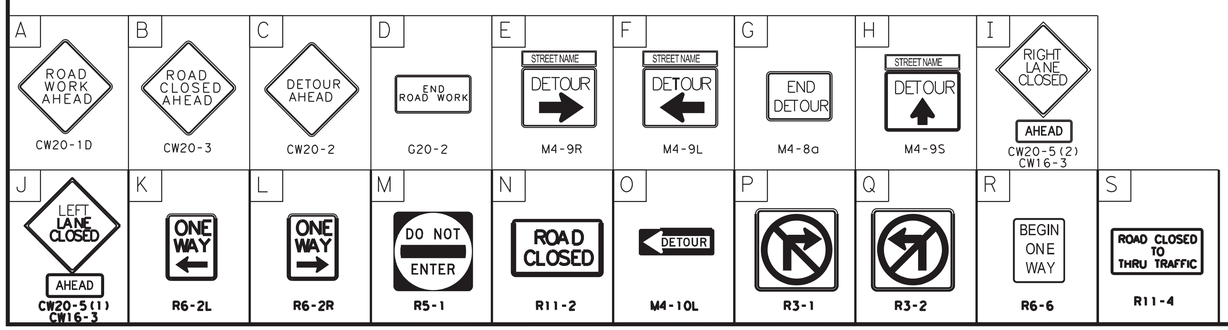

NOTES:

1. CONTRACTOR SHALL PROVIDE UNOBSTRUCTED ACCESS FOR RESIDENTS, EMERGENCY VEHICLES, AND AUTHORIZED PERSONNEL AT ALL TIMES.
2. CONTRACTOR SHALL PROVIDE ACCESS TO PRIVATE DRIVEWAYS, WALKWAYS, AND ANY OTHER ENTRANCES AT ALL TIMES.
3. CONTRACTORS SHALL PROVIDE WRITTEN NOTIFICATION TO AFFECTED RESIDENTS AND BUSINESSES A MINIMUM OF 48–HOURS IN ADVANCE OF ANY LANE CLOSURES, PARKING RESTRICTIONS, OR ACCESS IMPACTS.
4. CONTRACTOR SHALL PHASE WATER LINE CONSTRUCTION TO WORK ALONG ONE STREET AT A TIME AS SHOWN ON PLANS. WATER LINE WORK SHALL NOT OCCUR ALONG MULTIPLE STREETS A THE SAME TIME.
5. CONTRACTOR SHALL MANAGE TRAFFIC ADJACENT TO ACTIVE WORK ZONE USING FLAGGER OPERATION DURING DAY TIME AND INSTALL BARRIERS AROUND THE PERIMETER DURING NON–ACTIVE WORK ZONE AT NIGHT OR WEEKENDS.
6. CONTRACTOR TO PROVIDE A SECURITY FENCE THAT SURROUNDS THE SURFACE WORK SITE FOR THE TUNNEL SHAFTS IN ACCORDANCE WITH THE CITY OF HOUSTON SPECIFICATIONS.
7. CONTRACTOR SHALL INSTALL CONCRETE BARRIERS AROUND EXCAVATION.
8. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 10 FT LANES ON EACH DIRECTION OF TRAFFIC ADJACENT TO WORK ZONE THROUGH ALL PHASES.
9. CONTRACTOR SHALL INSTALL TRAFFIC CONTROL DEVICES AS LAID OUT ON COH STANDARD DETAIL FOR OFF ROAD WORK ADJACENT TO TRAFFIC AND USE FLAGGER OPERATION CONTROL TO MANAGE TRAFFIC ADJACENT TO ACTIVE WORK ZONES.
10. CONTRACTOR SHALL MANAGE TRAFFIC ADJACENT TO ACTIVE WORK ZONES USING FLAGGER OPERATION.
11. CONTRACTOR SHALL PHASE WORK ACROSS INTERSECTIONS TO KEEP ONE LANE OPEN TO TRAFFIC AT ALL TIME AND MANAGE TRAFFIC DURING ACTIVE WORK HOURS USING FLAGGER OPERATION CONTROL.
12. CONTRACTOR SHALL INSTALL TRAFFIC CONTROL DEVICES TO CLOSE BIKE LANE DURING THE WORK AT INTRESECTION OF DISMUKE ST AND LAWNDALE ST. ALSO, INSTALL TRAFFIC CONTROL DEVICE FOR LANE CLOSURE. THE INTERSECTION SHALL REMAIN OPEN TO TRAFFIC UNTIL WORK AT INTERSECTION BEGINS.
13. REFER TO COH STANDARD DETAILS 01555–03 AND 01555–05 FOR APPLICABLE DETOUR ROUTING, ONE–LANE CLOSURE, FLAGGER OPERATION, AND INTERSECTION TRAFFIC CONTROL PLAN DURING CONSTRUCTION.
14. CONTRACTOR SHALL USE STEEL PLATES TO COVER OPEN PITS WHEN CONSTRUCTION IS NOT ACTIVE.

N

LEGEND

- TEMPORARY SIGN
- CHANNELIZTION DEVICES
- FLAGGER
- FLASHING ARROW PANEL
- TYPE III BARRICADE
- WORK ZONE
- EXISTING TRAVEL WAY
- TRAFFIC CONTROL PLAN DETOUR TRAVEL WAY
- SCHOOL TRAFFIC CIRCULATION
- SCHOOL PROPERTY BOUNDARY
- LOW PROFILE CONCRETE TRAFFIC BARRIER
- PHASE 1 – WL
- PHASE 2 – WL
- PHASE 3 – WL

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90% PRELIMINARY

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TBPLS Firm Reg. No.: 100262-00

TRANSCEND engineers + planners
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TPBE Reg. No. F-19299
23410 Grand Reserve Dr., Suite 101
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RESPONSIBLE ENGINEER:
TRANSCEND ENGINEERS & PLANNERS, LLC.
RAJASEKHAR BASAVARAJU
TEXAS REGISTRATION NO. 112149

5/15/2026

SURVEYED BY: AMANI
FB NO.: P–

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION
TCP FOR WATER LINE
CONSTRUCTION (PHASE 1 – 3 WL)
DISMUKE ST, JEFFERSON ST & HACKNEY ST

WBS NO.	R-01000-0036-3
DRAWING SCALE	N.T.S.
CITY OF HOUSTON, PM	SABEEN SHAIK, P.E.
SHEET NO. 167 OF 195	

5/15/2026
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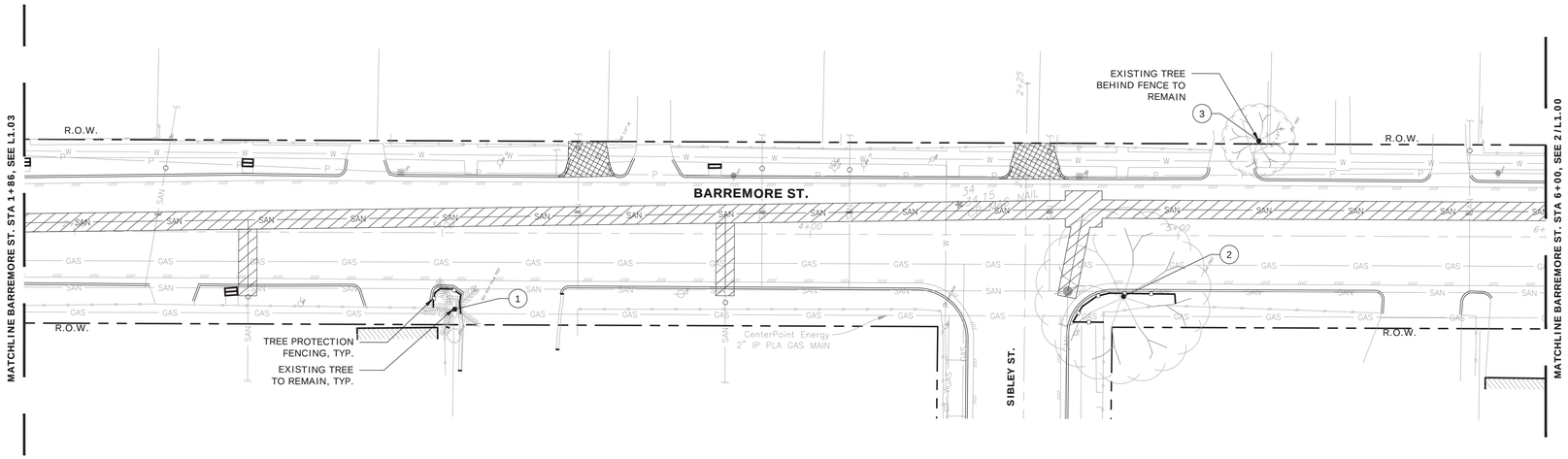
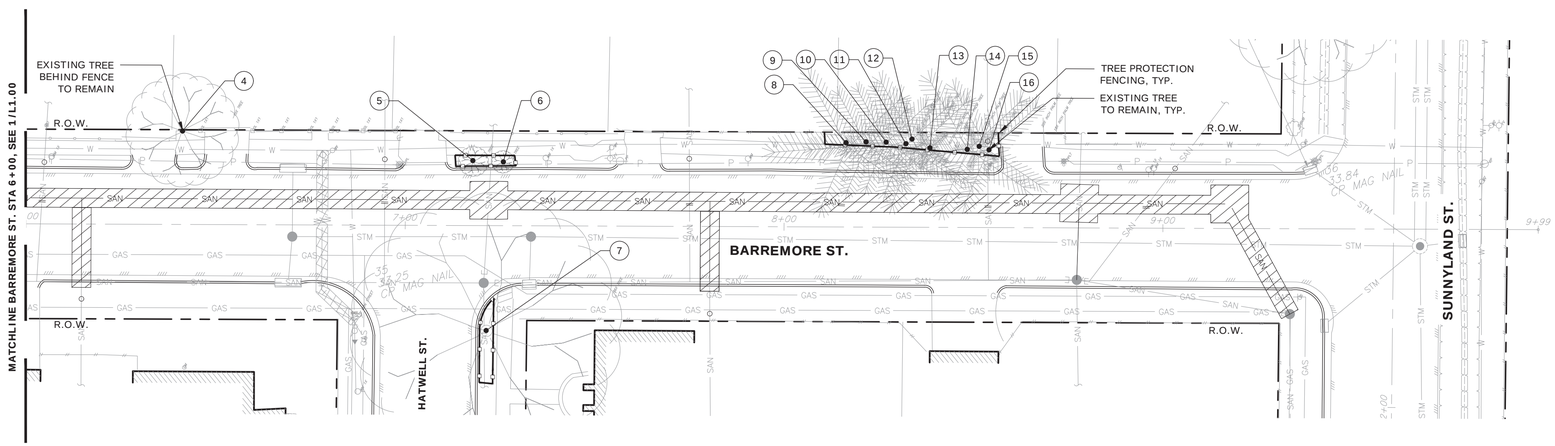


1 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0" 0 20' 40'



2 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0" 0 20' 40'

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

LEGEND

- MATCHLINE
- # TREE NUMBER
- EXISTING TREES TO REMAIN
- EXISTING TREES TO BE REMOVED
- TREE PROTECTION FENCING RE: DETAIL 1/L1.22
- ROOT PRUNING RE: DETAIL 1/L1.23
- ZERO CURB CUT RE: DETAIL 1/L1.24
- WHITE OAK 4" CAL.

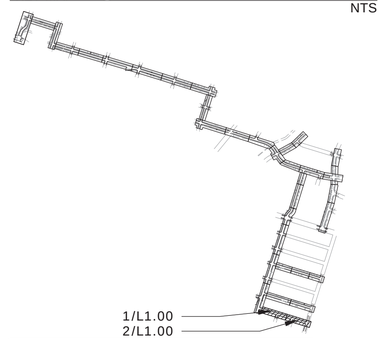
NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

KEY MAP NTS



NOTICE:

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

VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

Signature valid for six months.

Date

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

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

ASAKURA ROBINSON
2500 Summer Street, Suite 3228 Houston Texas 77007
P: 713.337.5830 www.asakurarobinson.com

SURVEYED BY: AMANI
FB NO.: P-

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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

L1.00 TREE MITIGATION PLAN

WBS NO.	R-01000-0036-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	
SABEEN SHAIK, P.E.	
SHEET NO.	168 of 195

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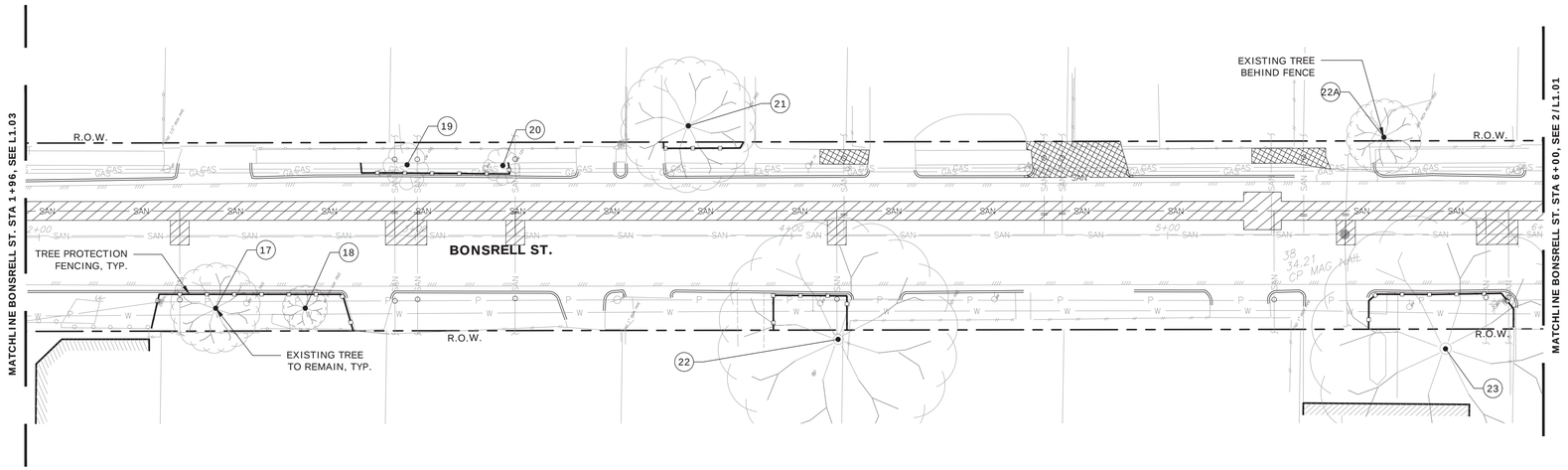
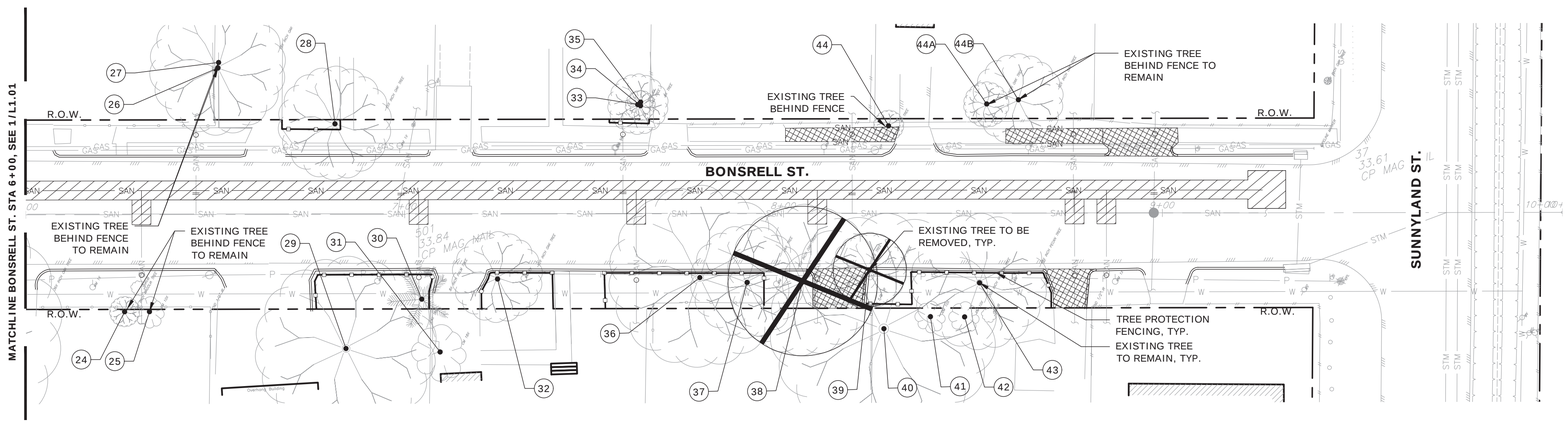


1 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0" 0 20' 40'



2 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0" 0 20' 40'

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

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LEGEND

- MATCHLINE
- # TREE NUMBER
- EXISTING TREES TO REMAIN
- EXISTING TREES TO BE REMOVED
- TREE PROTECTION FENCING RE: DETAIL 1/L1.22
- ROOT PRUNING RE: DETAIL 1/L1.23
- ZERO CURB CUT RE: DETAIL 1/L1.24
- WHITE OAK 4" CAL.

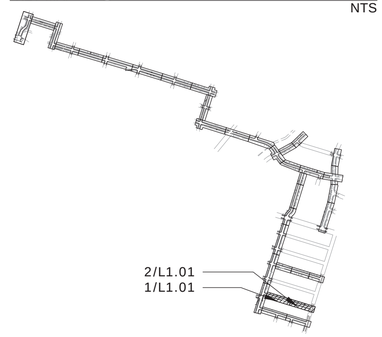
NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

KEY MAP NTS



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VERIFICATION OF PRIVATE UTILITY LINES

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Signature valid for six months.

Date

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Signature valid for six months.

Date

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

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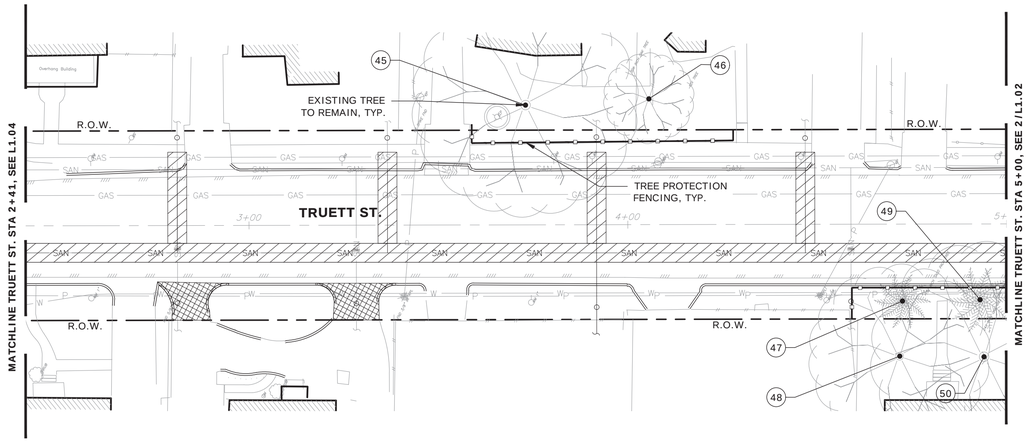
CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

L1.01 TREE MITIGATION PLAN

WBS NO.	R-01000-0036-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	
SABEEN SHAIK, P.E.	
SHEET NO.	169 of 195

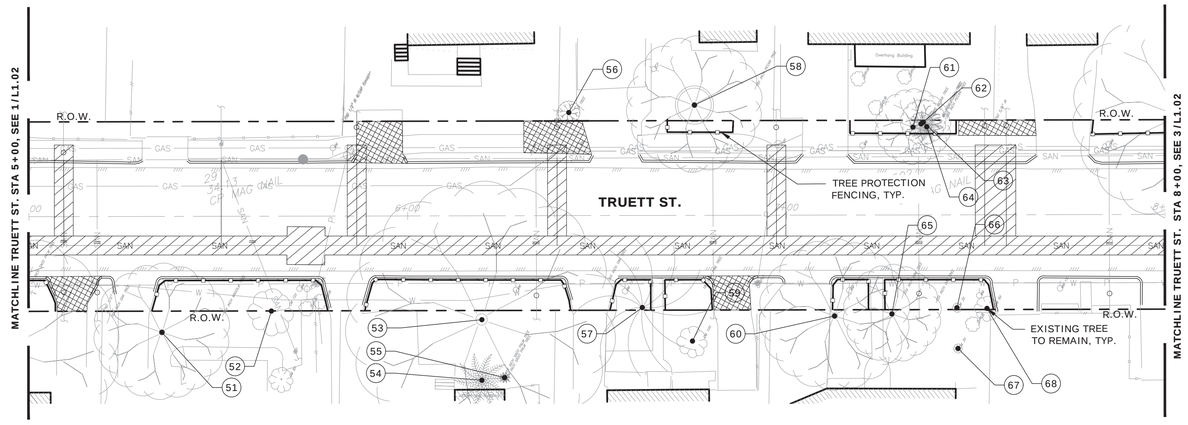


1 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0"

0 20' 40'

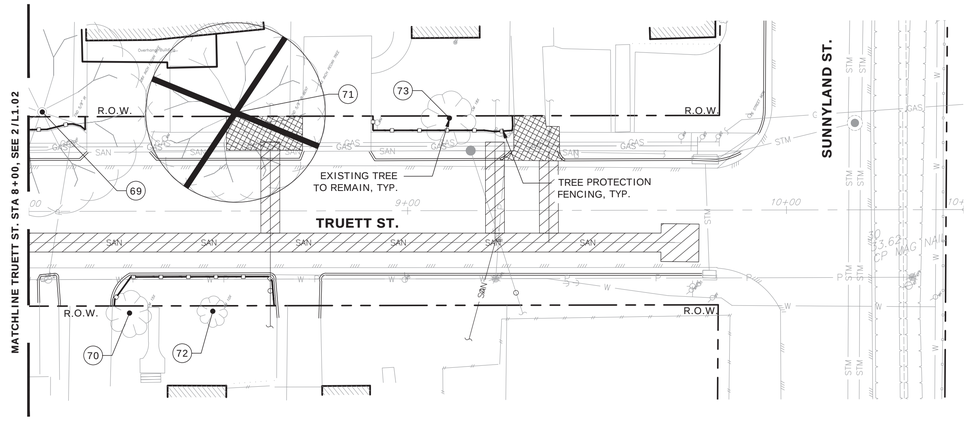


2 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0"

0 20' 40'



3 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0"

0 20' 40'

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

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LEGEND

- MATCHLINE
- # TREE NUMBER
- EXISTING TREES TO REMAIN
- EXISTING TREES TO BE REMOVED
- TREE PROTECTION FENCING RE: DETAIL 1/L1.22
- ROOT PRUNING RE: DETAIL 1/L1.23
- ZERO CURB CUT RE: DETAIL 1/L1.24
- WHITE OAK 4" CAL.

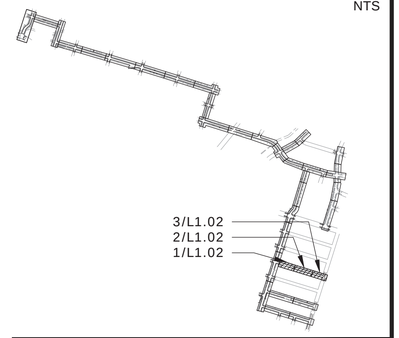
NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

KEY MAP NTS



NOTICE:

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

Signature valid for six months.

Date

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Signature valid for one year.

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

ASAKURA ROBINSON
2500 Summer Street, Suite 3228 Houston Texas 77007
P: 713.337.5830 www.asakurarobinson.com

SURVEYED BY: AMANI
FB NO.: P-

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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

L1.02 TREE MITIGATION PLAN

WBS NO.	R-01000-0036-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	SABEEN SHAIK, P.E.
SHEET NO.	170 of 195

LEGEND

- MATCHLINE
- TREE NUMBER
- EXISTING TREES TO REMAIN
- EXISTING TREES TO BE REMOVED
- TREE PROTECTION FENCING RE: DETAIL 1/L1.22
- ROOT PRUNING RE: DETAIL 1/L1.23
- ZERO CURB CUT RE: DETAIL 1/L1.24
- WHITE OAK 4" CAL.

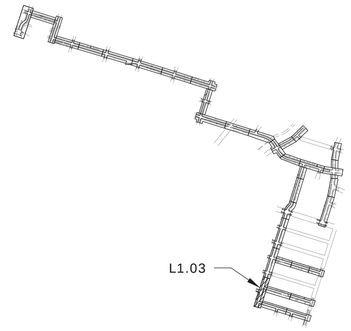
NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

KEY MAP NTS



1 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0" 0 20' 40'

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

NOTICE:

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SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5 SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

L1.03 TREE MITIGATION PLAN

WBS NO.
R-01000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.

SHEET NO. 171 of 195

J:\AMA2501 COH CRMP CIP Package 5\ARV03 CD\L100_TREE PROTECTION PLAN_AMA2501.dwg May 08, 2026 2:59pm

LEGEND

MATCHLINE

TREE NUMBER

EXISTING TREES TO REMAIN

EXISTING TREES TO BE REMOVED

TREE PROTECTION FENCING
RE: DETAIL 1/L1.22

ROOT PRUNING
RE: DETAIL 1/L1.23

ZERO CURB CUT
RE: DETAIL 1/L1.24

WHITE OAK
4" CAL.

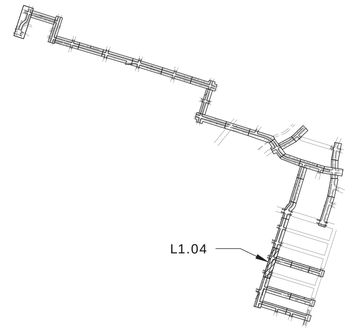
NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

KEY MAP NTS



1 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0"

0 20' 40'

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

NOTICE:

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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Signature valid for six months.

Date

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Date

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SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5 SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

L1.04 TREE MITIGATION PLAN

WBS NO.
R-01000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.

SHEET NO. 172 of 195

J:\AMA2501 COH CRMP CIP Package 5\ARV03 CD\L100_TREE PROTECTION PLAN_AMA2501.dwg May 08, 2026 2:59pm

LEGEND

MATCHLINE

TREE NUMBER

EXISTING TREES TO REMAIN

EXISTING TREES TO BE REMOVED

TREE PROTECTION FENCING
RE: DETAIL 1/L1.22

ROOT PRUNING
RE: DETAIL 1/L1.23

ZERO CURB CUT
RE: DETAIL 1/L1.24

WHITE OAK
4" CAL.

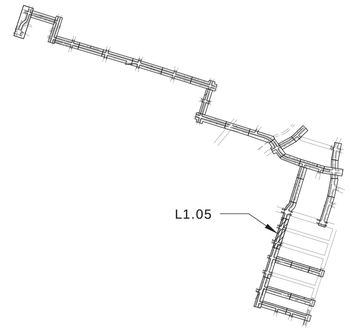
NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

KEY MAP NTS



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VERIFICATION OF PRIVATE UTILITY LINES

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Date

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Date

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SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

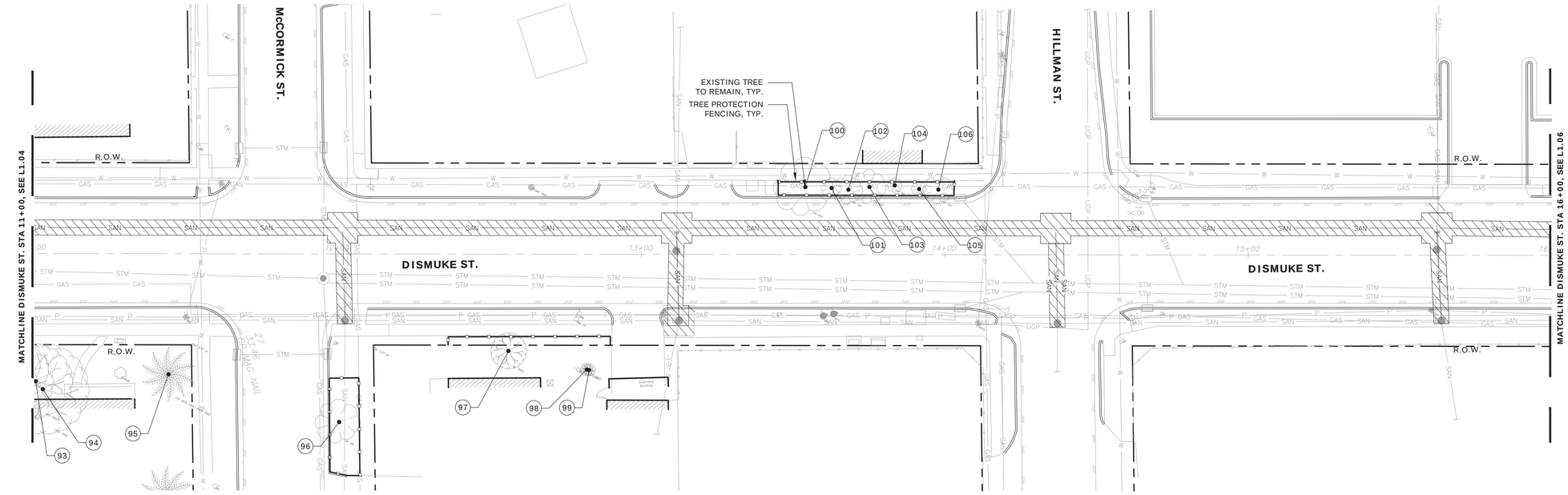
L1.05 TREE MITIGATION PLAN

WBS NO.
R-01000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.

SHEET NO. 173 of 195

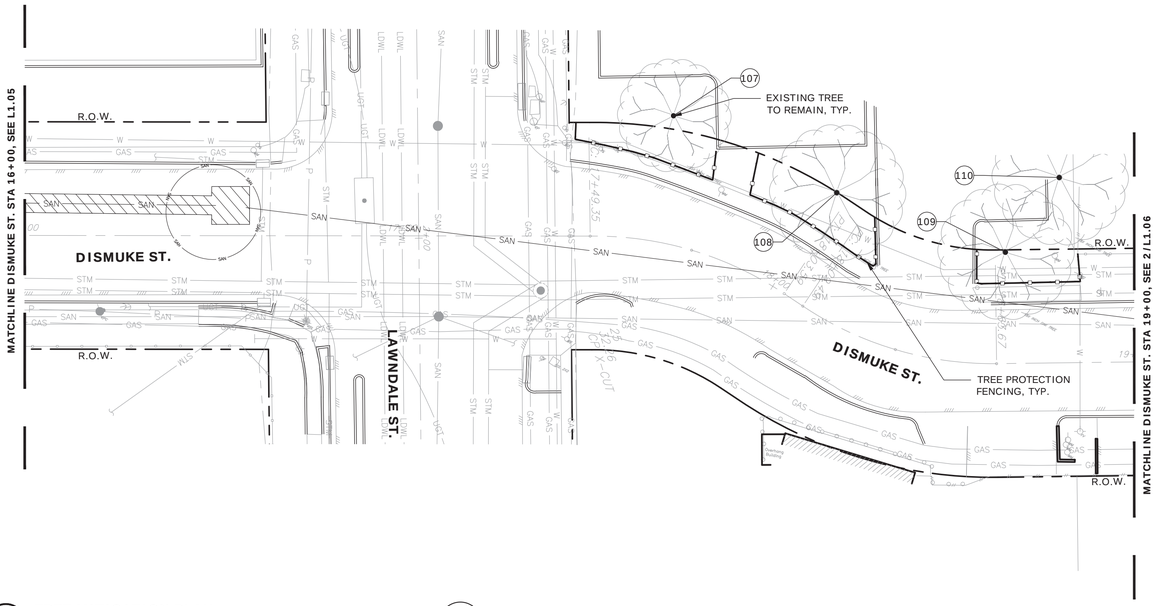


1 TREE MITIGATION PLAN
SCALE: 1" = 20'-0"

1" = 20'-0" 0 20' 40'

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

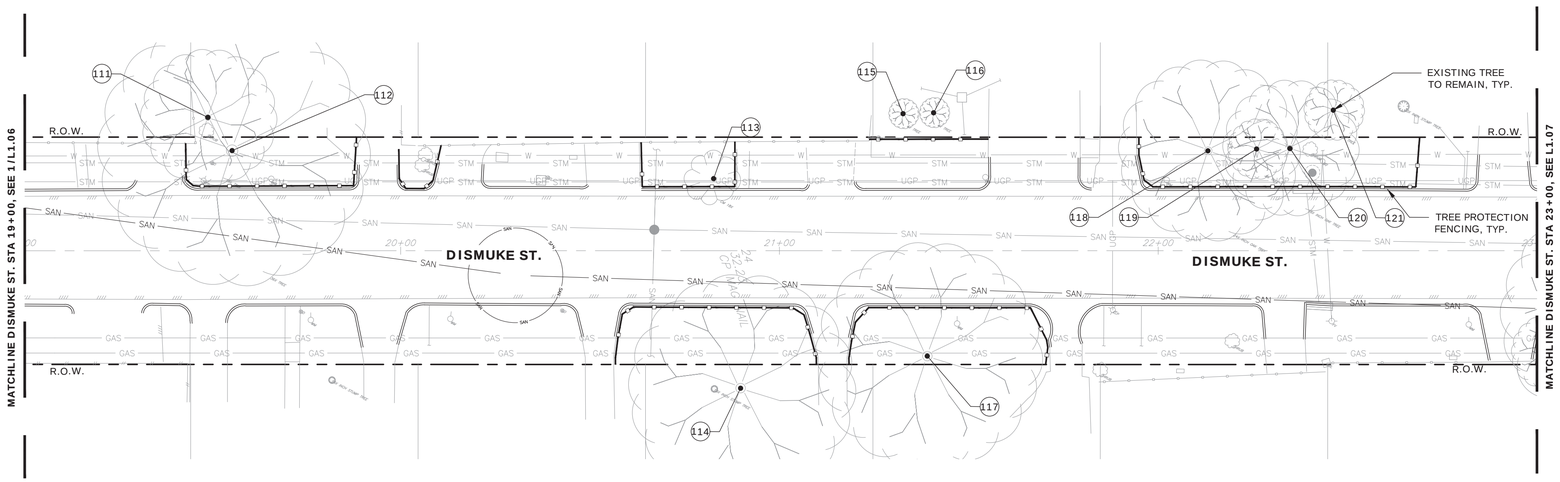
J:\AMA2501 COH CRMP CIP Package 5\AR\03 CD\L100_TREE PROTECTION PLAN_AMA2501.dwg May 08, 2026 3:00pm



1 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0" 0 20' 40'



2 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0" 0 20' 40'

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

LEGEND

- MATCHLINE
- TREE NUMBER
- EXISTING TREES TO REMAIN
- EXISTING TREES TO BE REMOVED
- TREE PROTECTION FENCING RE: DETAIL 1/L1.22
- ROOT PRUNING RE: DETAIL 1/L1.23
- ZERO CURB CUT RE: DETAIL 1/L1.24
- WHITE OAK 4" CAL.

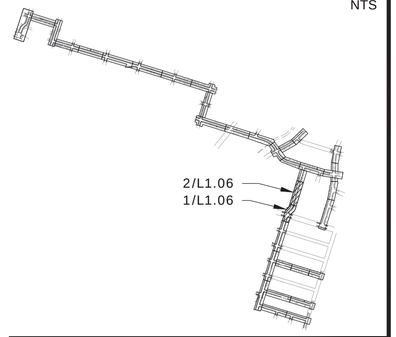
NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

KEY MAP NTS



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VERIFICATION OF PRIVATE UTILITY LINES

Date

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Signature valid for six months.

Date

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Date

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SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

L1.06 TREE MITIGATION PLAN

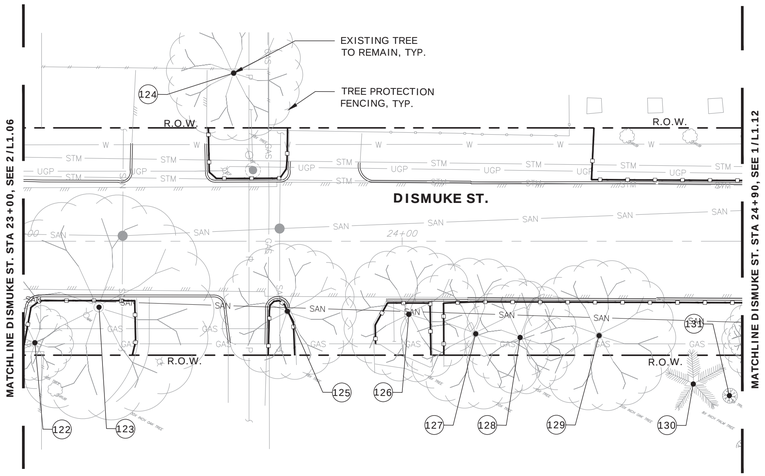
WBS NO.
R-01000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.

SHEET NO. 174 of 195

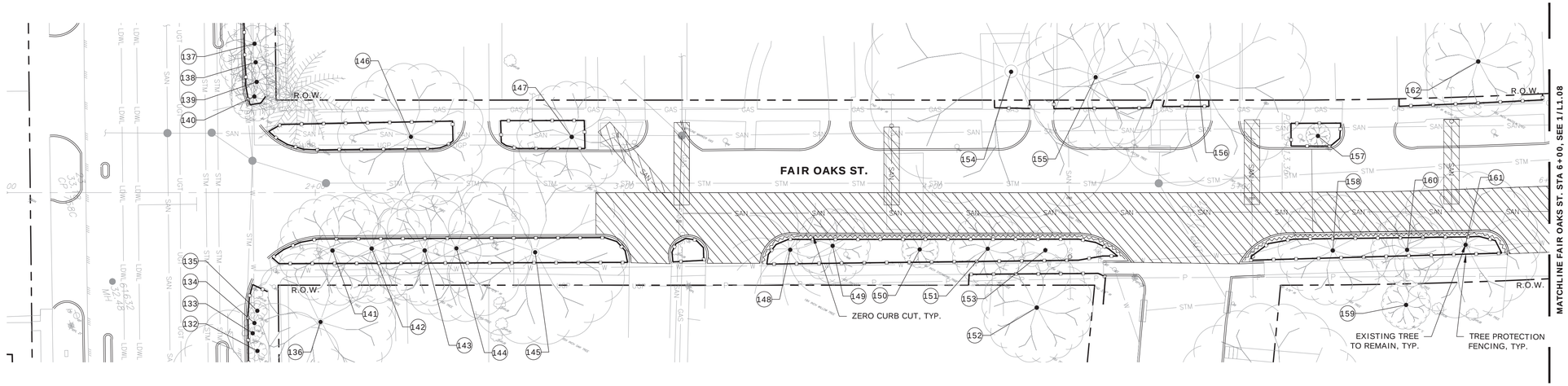
J:\AMA2501 COH CRMP CIP Package 5\ARV03 CD\L100_TREE PROTECTION PLAN_AMA2501.dwg May 08, 2026 3:00pm



1 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0" 0 20' 40'



2 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0" 0 20' 40'

LEGEND

- MATCHLINE
- TREE NUMBER
- EXISTING TREES TO REMAIN
- EXISTING TREES TO BE REMOVED
- TREE PROTECTION FENCING RE: DETAIL 1/L1.22
- ROOT PRUNING RE: DETAIL 1/L1.23
- ZERO CURB CUT RE: DETAIL 1/L1.24
- WHITE OAK 4" CAL.

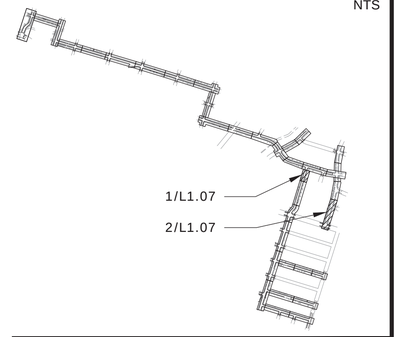
NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

KEY MAP NTS



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SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5 SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

L1.07 TREE MITIGATION PLAN

WBS NO.
R-01000-0036-3

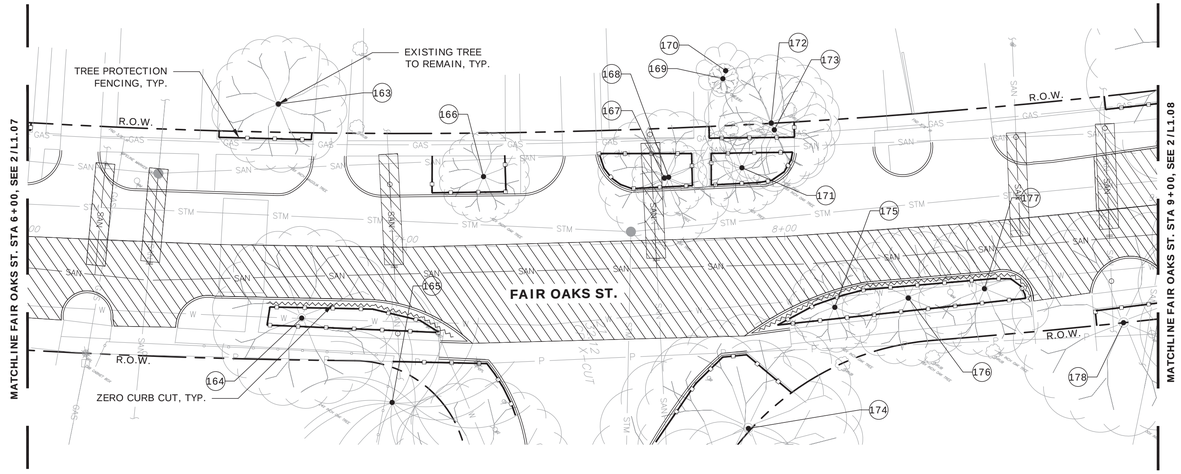
DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.

SHEET NO. 175 of 195

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

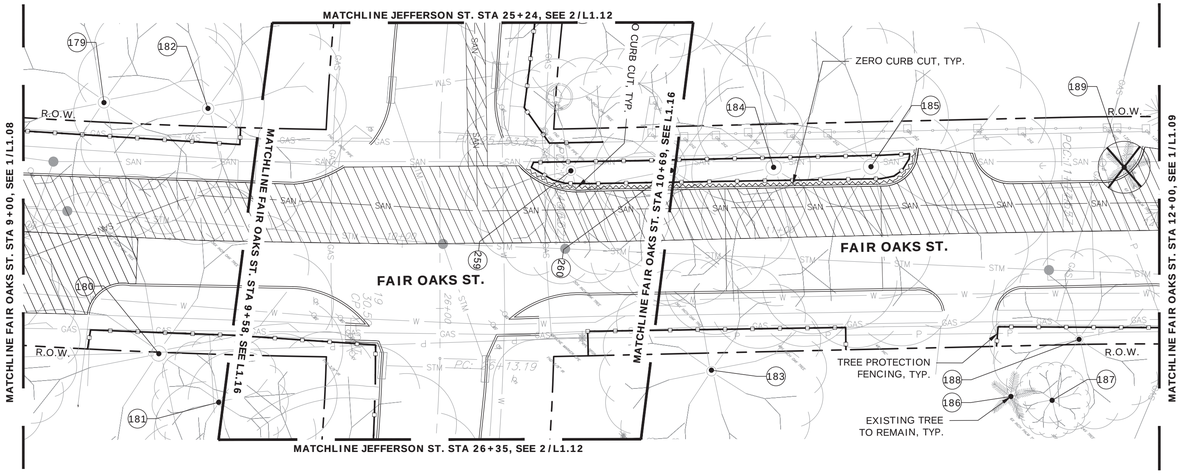
J:\AMA2501 COH CRMP CIP Package 5\ARV03 CD\L100_TREE PROTECTION PLAN_AMA2501.dwg May 08, 2026 2:58pm



1 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0" 0 20' 40'



2 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0" 0 20' 40'

LEGEND

- MATCHLINE
- # TREE NUMBER
- EXISTING TREES TO REMAIN
- EXISTING TREES TO BE REMOVED
- TREE PROTECTION FENCING RE: DETAIL 1/L1.22
- ROOT PRUNING RE: DETAIL 1/L1.23
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- WHITE OAK 4" CAL.

NOTE:

PROJECT BENCH MARK:

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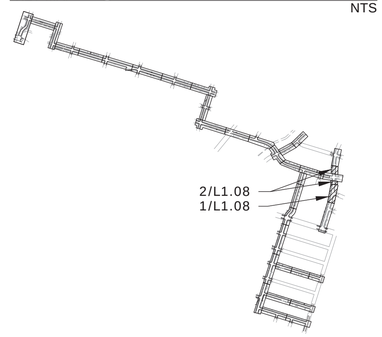
ELEVATION = 34.16' Geoid 18

KEY MAP NTS



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FB NO.: P-

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

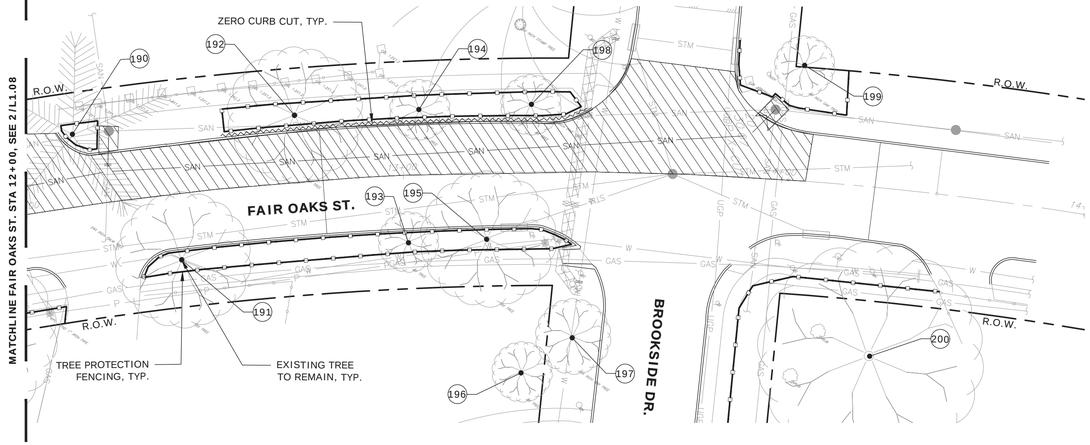
CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

L1.08 TREE MITIGATION PLAN

WBS NO.	R-01000-0036-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	SABEEN SHAIK, P.E.
SHEET NO.	176 of 195

J:\AMA2501 COH CRMP CIP Package 5\ARV03 CD\L100_TREE PROTECTION PLAN_AMA2501.dwg May 08, 2026 2:58pm

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



1 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0" 0 20' 40'

LEGEND

- MATCHLINE
- # TREE NUMBER
- EXISTING TREES TO REMAIN
- EXISTING TREES TO BE REMOVED
- TREE PROTECTION FENCING RE: DETAIL 1/L1.22
- ROOT PRUNING RE: DETAIL 1/L1.23
- ZERO CURB CUT RE: DETAIL 1/L1.24
- WHITE OAK 4" CAL.

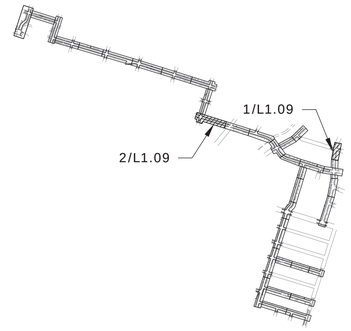
NOTE:

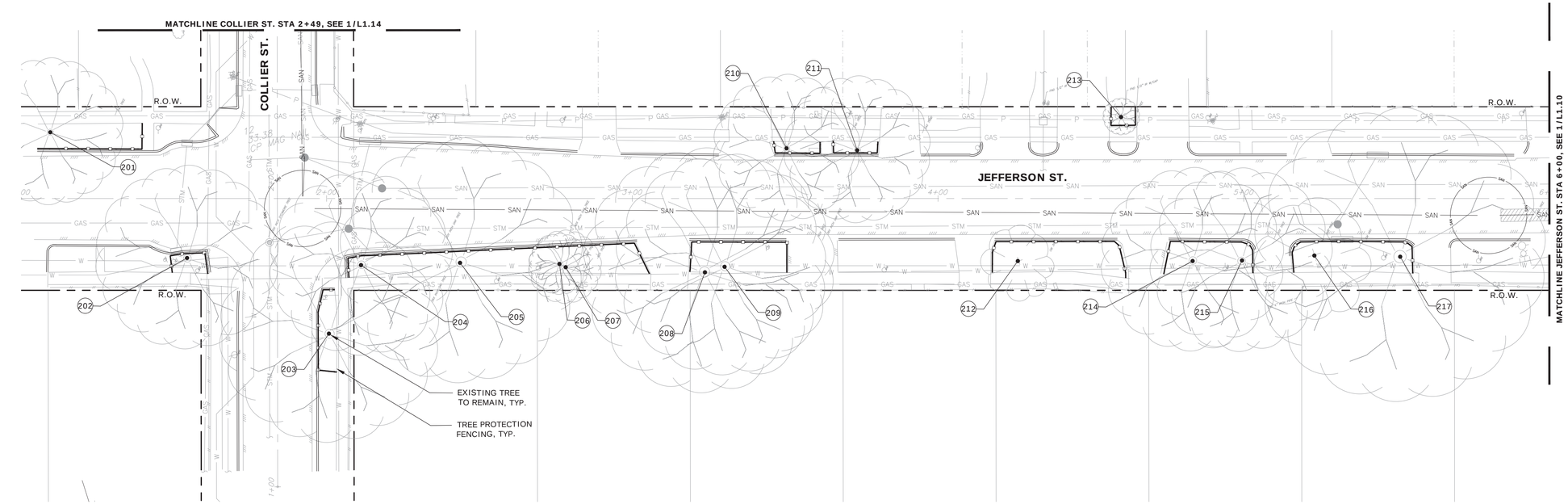
PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

KEY MAP NTS





2 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0" 0 20' 40'

NOTICE:

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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AMANI ENGINEERING, INC.
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HOUSTON, TEXAS 77024
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Texas Registered Surveying Firm No. 100282-00

ASAKURA ROBINSON
2500 Summer Street, Suite 3228 Houston Texas 77007
P: 713.337.5830 www.asakurarobinson.com

SURVEYED BY: AMANI
FB NO.: P-

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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

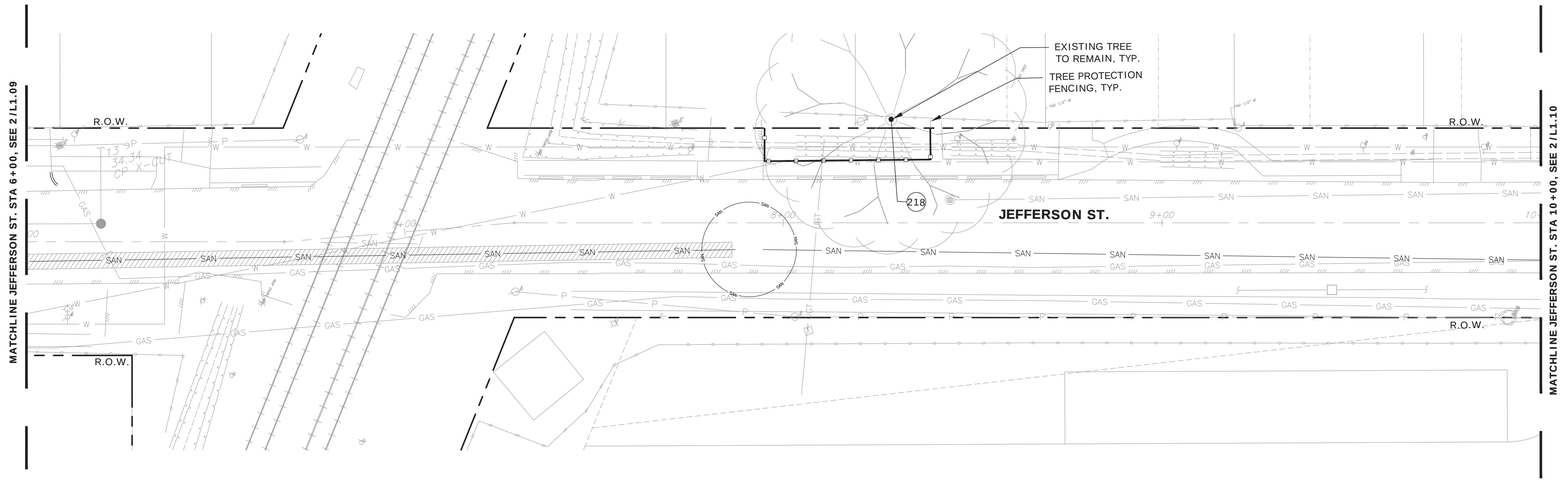
CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

L1.09 TREE MITIGATION PLAN

WBS NO.	R-01000-0036-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	SABEEN SHAIK, P.E.
SHEET NO.	177 of 195

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

J:\AMA2501 COH CRMP CIP Package 5\AR\03 CD\L100_TREE PROTECTION PLAN_AMA2501.dwg May 08, 2026 2:59pm

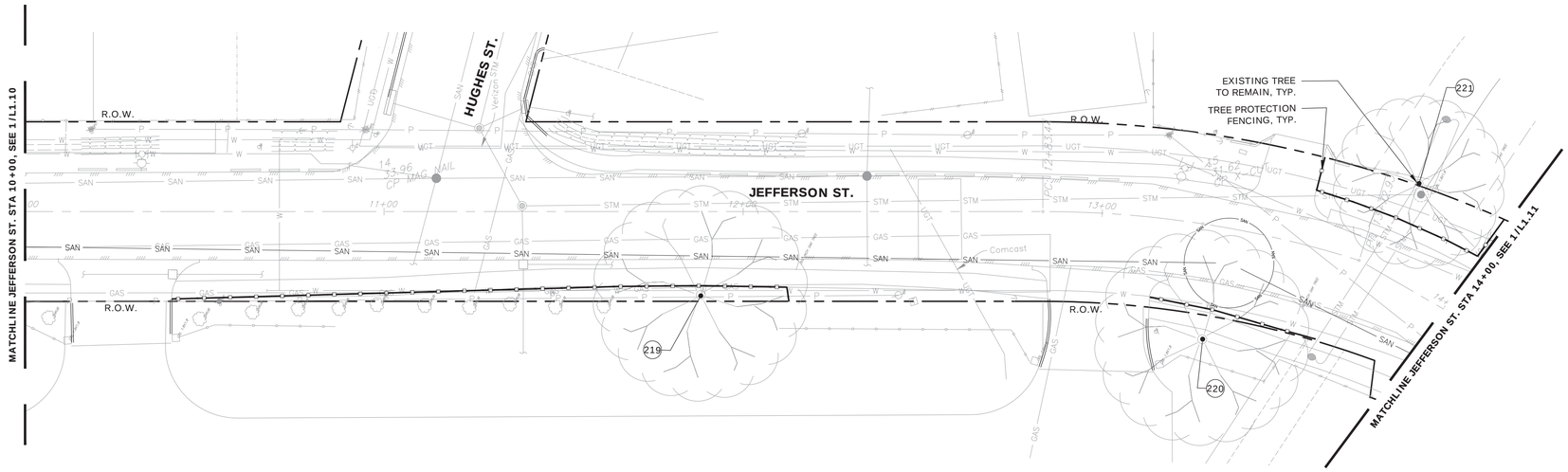


1 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0"

0 20' 40'



2 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0"

0 20' 40'

LEGEND

- MATCHLINE
- TREE NUMBER
- EXISTING TREES TO REMAIN
- EXISTING TREES TO BE REMOVED
- TREE PROTECTION FENCING RE: DETAIL 1/L1.22
- ROOT PRUNING RE: DETAIL 1/L1.23
- ZERO CURB CUT RE: DETAIL 1/L1.24
- WHITE OAK 4" CAL.

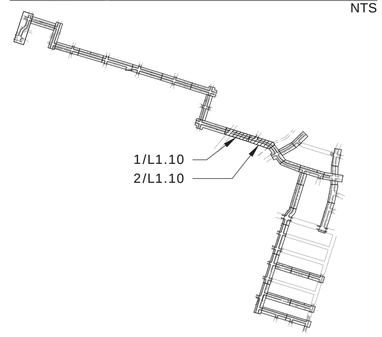
NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE NORTHEAST CORNER OF LEELAND ST. AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

KEY MAP NTS



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FB NO.: P-

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

L1.10 TREE MITIGATION PLAN

WBS NO.
R-01000-0036-3

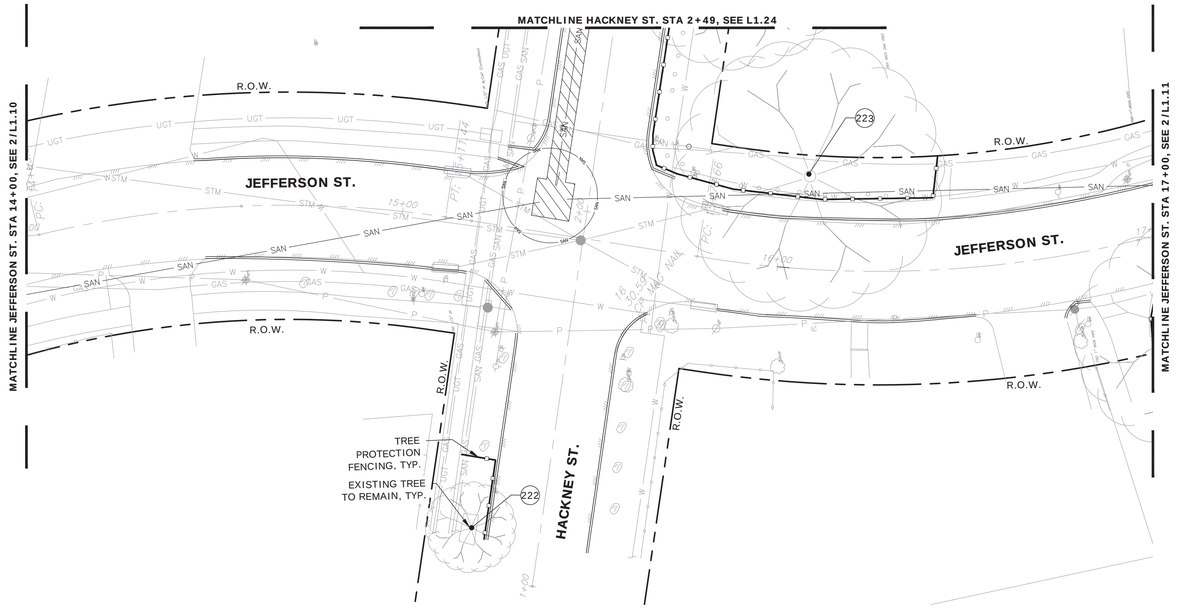
DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.

SHEET NO. 178 of 195

0 1 2 3
ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS

J:\AMA2501 COH CRMP CIP Package 5\ARV03 CD\L100_TREE PROTECTION PLAN_AMA2501.dwg May 08, 2026 2:59pm

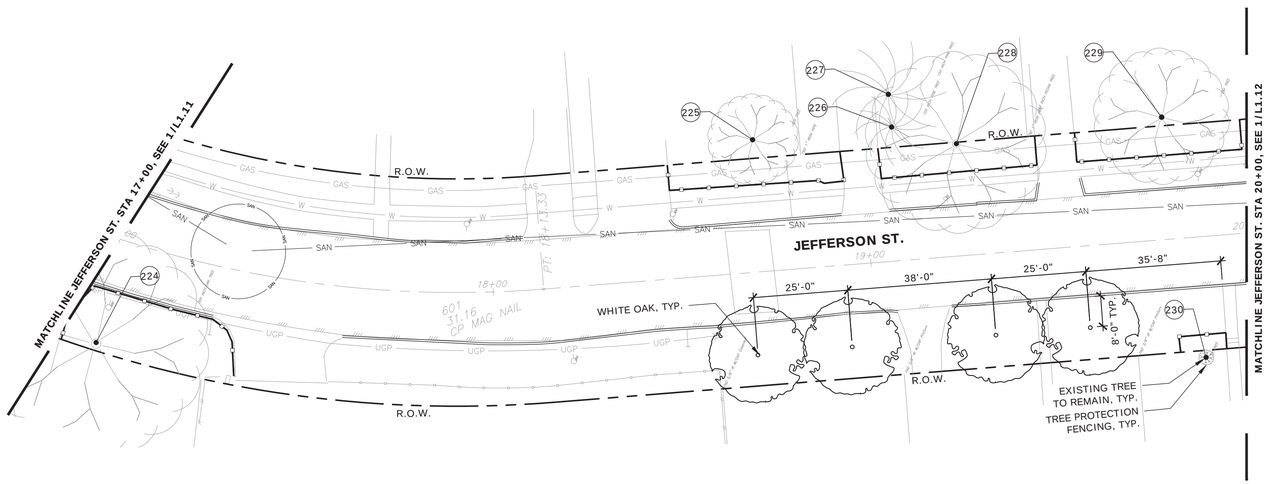


1 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0"

0 20' 40'



2 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0"

0 20' 40'

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

J:\AMA2501 COH CRMP CIP Package 5\AR\03 CD\L100_TREE PROTECTION PLAN_AMA2501.dwg May 08, 2026 2:58pm

LEGEND

- MATCHLINE
- TREE NUMBER
- EXISTING TREES TO REMAIN
- EXISTING TREES TO BE REMOVED
- TREE PROTECTION FENCING RE: DETAIL 1/L1.22
- ROOT PRUNING RE: DETAIL 1/L1.23
- ZERO CURB CUT RE: DETAIL 1/L1.24
- WHITE OAK 4" CAL.

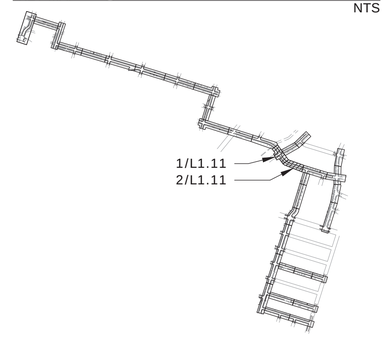
NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

KEY MAP NTS



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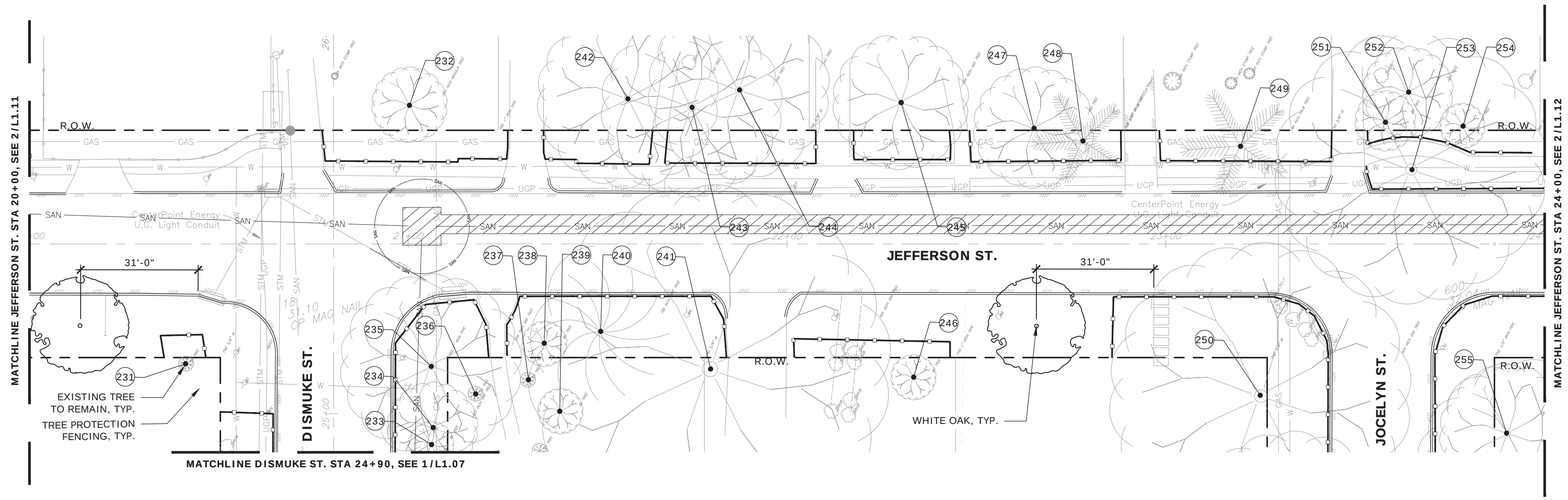
CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

L1.11 TREE MITIGATION PLAN

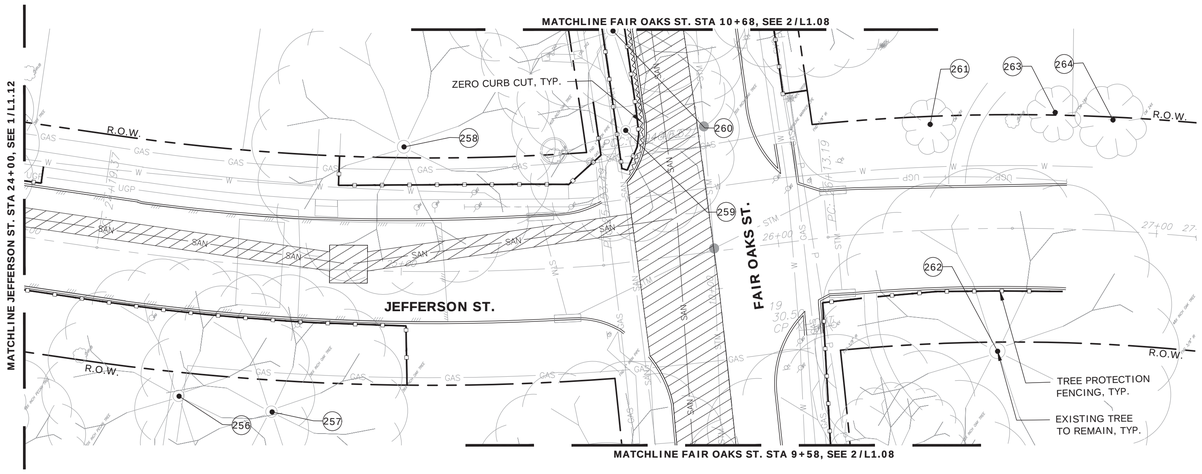
WBS NO.	R-01000-0036-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	SABEEN SHAIK, P.E.
SHEET NO.	179 of 195



1 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0" 0 20' 40'



2 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0" 0 20' 40'

LEGEND

- MATCHLINE
- TREE NUMBER
- EXISTING TREES TO REMAIN
- EXISTING TREES TO BE REMOVED
- TREE PROTECTION FENCING RE: DETAIL 1/L1.22
- ROOT PRUNING RE: DETAIL 1/L1.23
- ZERO CURB CUT RE: DETAIL 1/L1.24
- WHITE OAK 4" CAL.

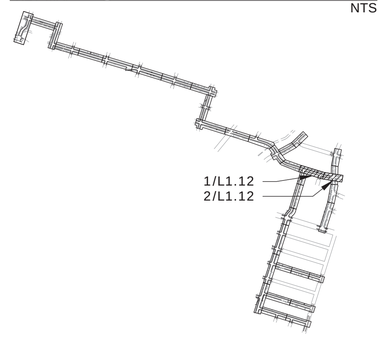
NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE NORTHEAST CORNER OF LEELAND ST. AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

KEY MAP NTS



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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

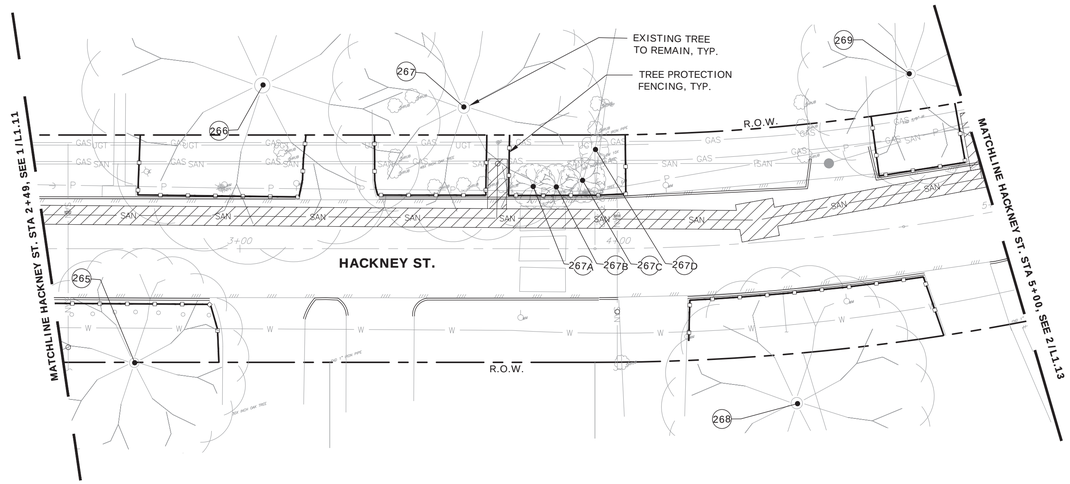
CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

L1.12 TREE MITIGATION PLAN

WBS NO.	R-01000-0036-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	SABEEN SHAIK, P.E.
SHEET NO.	180 of 195

J:\AMA2501 COH CRMP CIP Package 5\ARV03 CD\L100_TREE PROTECTION PLAN_AMA2501.dwg May 08, 2026 3:01pm

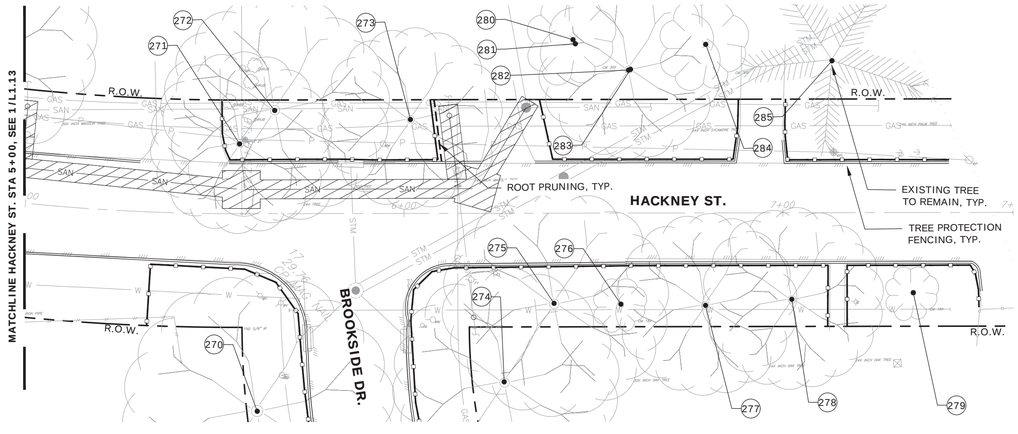
0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



1 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0" 0 20' 40'



2 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0" 0 20' 40'

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

LEGEND

- MATCHLINE
- TREE NUMBER
- EXISTING TREES TO REMAIN
- EXISTING TREES TO BE REMOVED
- TREE PROTECTION FENCING RE: DETAIL 1/L1.22
- ROOT PRUNING RE: DETAIL 1/L1.23
- ZERO CURB CUT RE: DETAIL 1/L1.24
- WHITE OAK 4" CAL.

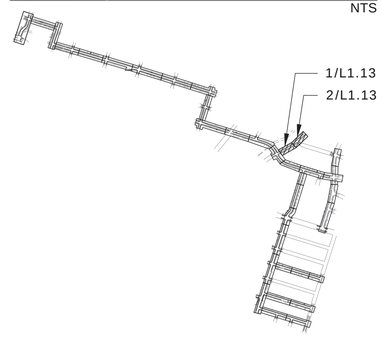
NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

KEY MAP NTS



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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

L1.13 TREE MITIGATION PLAN

WBS NO.
R-01000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.

SHEET NO. 181 of 195

J:\AMA2501 COH CRMP CIP Package 5\ARV03 CD\L100_TREE PROTECTION PLAN_AMA2501.dwg May 08, 2026 2:58pm

LEGEND

- MATCHLINE
- TREE NUMBER
- EXISTING TREES TO REMAIN
- EXISTING TREES TO BE REMOVED
- TREE PROTECTION FENCING
  RE: DETAIL 1/L1.22
- ROOT PRUNING
  RE: DETAIL 1/L1.23
- ZERO CURB CUT
  RE: DETAIL 1/L1.24
- WHITE OAK
  4" CAL.

NOTE:

PROJECT BENCH MARK:

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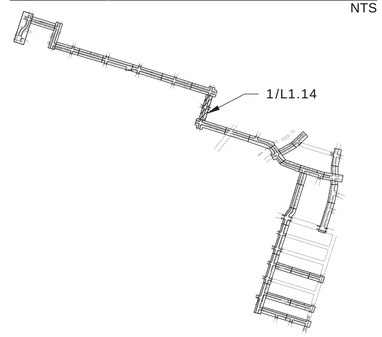
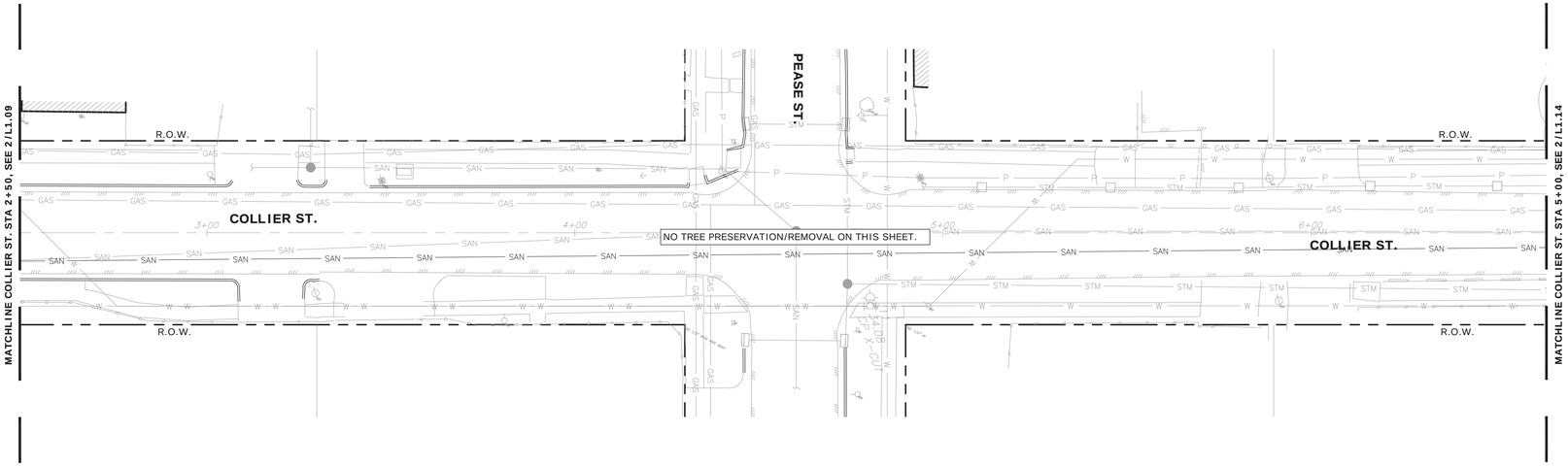
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

KEY MAP NTS





1 **TREE MITIGATION PLAN**

SCALE: 1" = 20'-0"

1" = 20'-0" 0 20' 40'

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

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FB NO.: P-

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

L1.14 TREE MITIGATION PLAN

WBS NO.
R-01000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.

SHEET NO. 182 of 195

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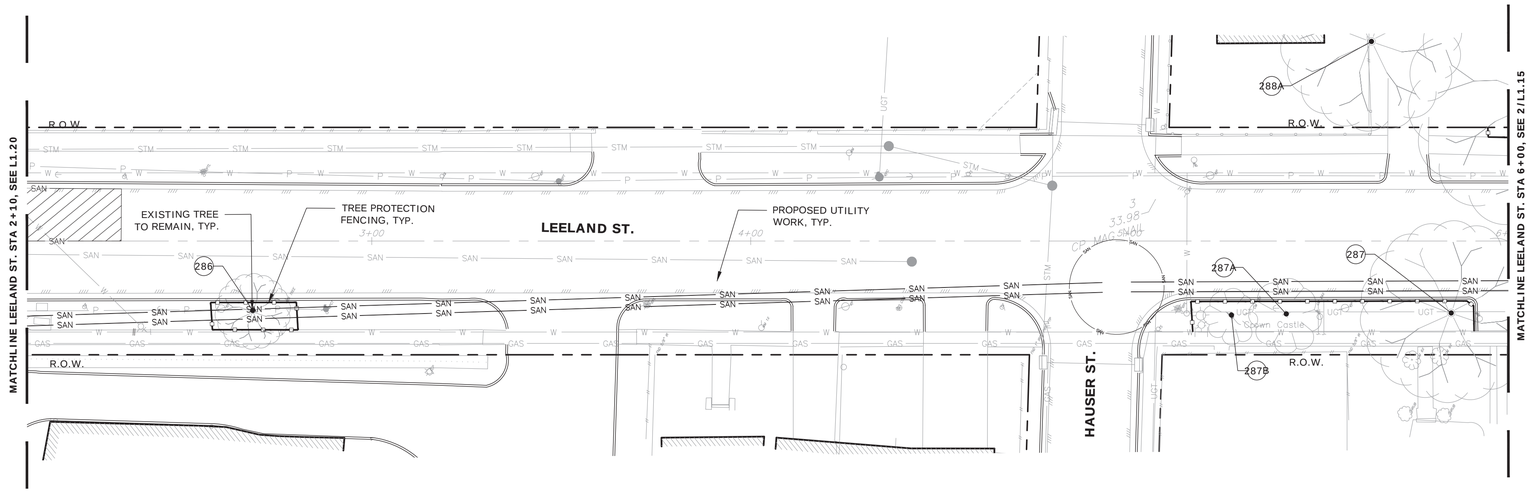
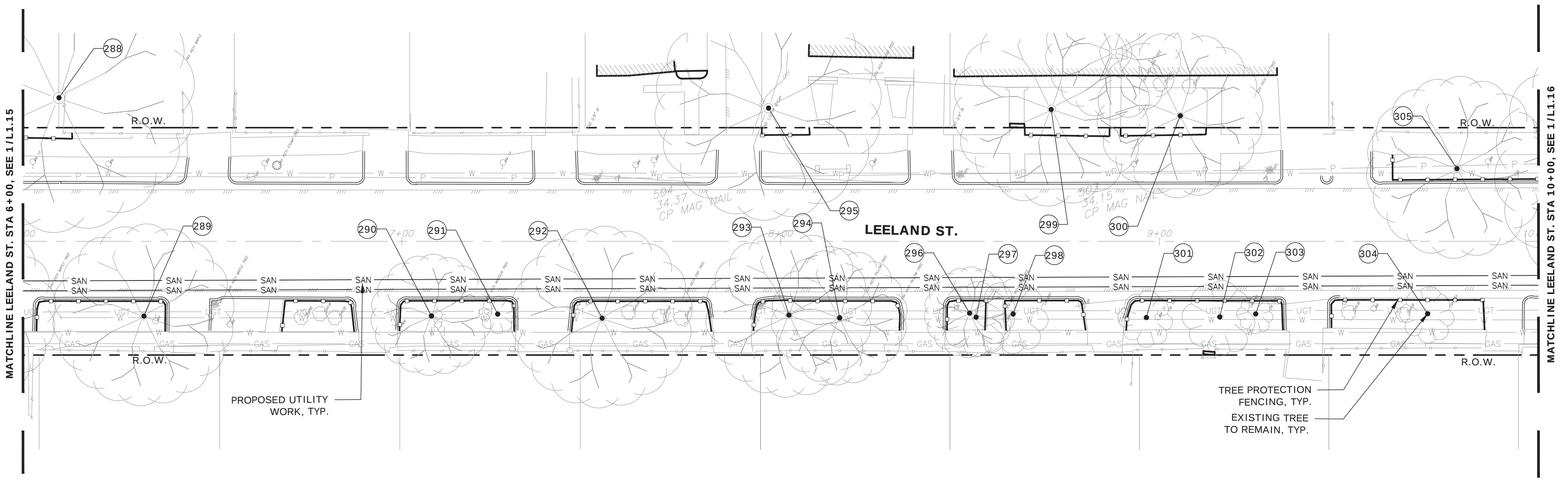


1 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0" 0 20' 40'



2 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0" 0 20' 40'

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

LEGEND

- MATCHLINE
- TREE NUMBER
- EXISTING TREES TO REMAIN
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- ZERO CURB CUT RE: DETAIL 1/L1.24
- WHITE OAK 4" CAL.

NOTE:

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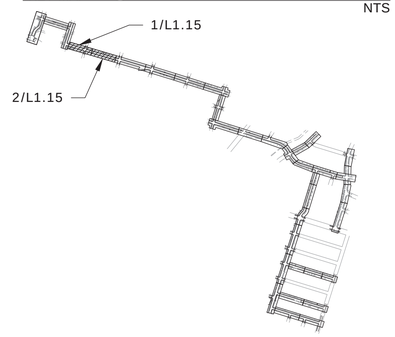
CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE NORTHEAST CORNER OF LEELAND ST. AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

KEY MAP NTS



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SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

L1.15 TREE MITIGATION PLAN

WBS NO.
R-01000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.

SHEET NO. 183 of 195

J:\AMA2501 COH CRMP CIP Package 5\AR\03 CD\L100_TREE PROTECTION PLAN_AMA2501.dwg May 08, 2026 3:01pm

LEGEND

- MATCHLINE
- TREE NUMBER
- EXISTING TREES TO REMAIN
- EXISTING TREES TO BE REMOVED
- TREE PROTECTION FENCING
  RE: DETAIL 1/L1.22
- ROOT PRUNING
  RE: DETAIL 1/L1.23
- ZERO CURB CUT
  RE: DETAIL 1/L1.24
- WHITE OAK
  4" CAL.

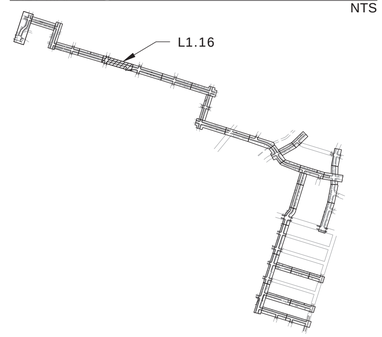
NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

KEY MAP NTS



NOTICE:

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

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Date

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Signature valid for one year.

AMANI ENGINEERING, INC.
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HOUSTON, TEXAS 77024
TEL: (713) 270-5700
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Texas Registered Surveying Firm No. 100282-00

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SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

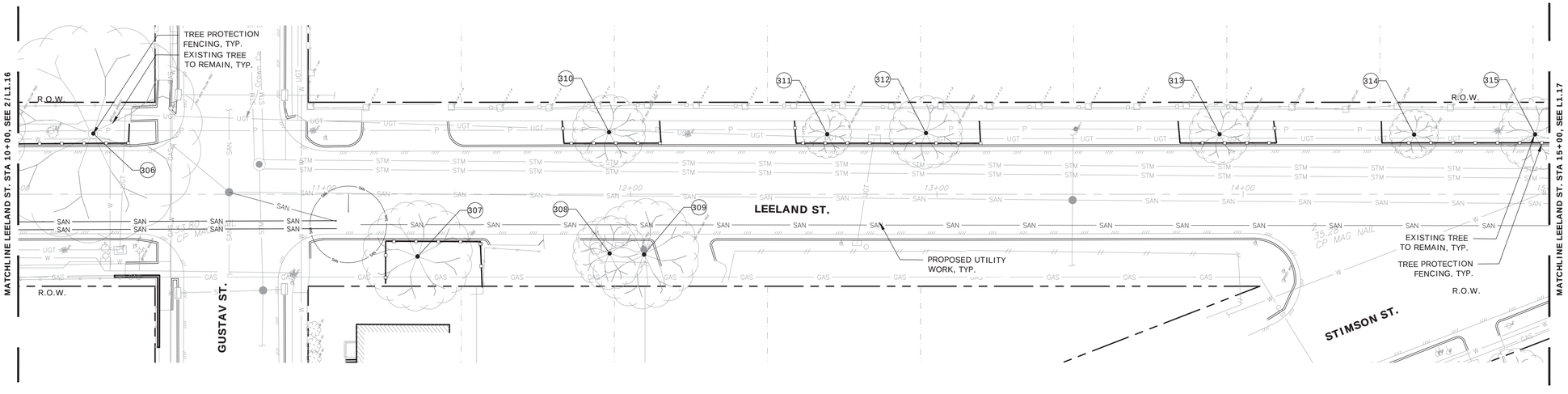
CRMP CIP PACKAGE 5
SANITARY SEWER IMPROVEMENTS UPSTREAM OF EDDINGTON LIFT STATION

L1.16 TREE MITIGATION PLAN

WBS NO.
R-01000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.



1 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0" 0 20' 40'

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

J:\AMA2501 COH CRMP CIP Package 5\AR\03 CD\L100_TREE PROTECTION PLAN_AMA2501.dwg May 08, 2026 2:59pm

LEGEND

MATCHLINE

TREE NUMBER

EXISTING TREES TO REMAIN

EXISTING TREES TO BE REMOVED

TREE PROTECTION FENCING
RE: DETAIL 1/L1.22

ROOT PRUNING
RE: DETAIL 1/L1.23

ZERO CURB CUT
RE: DETAIL 1/L1.24

WHITE OAK
4" CAL.

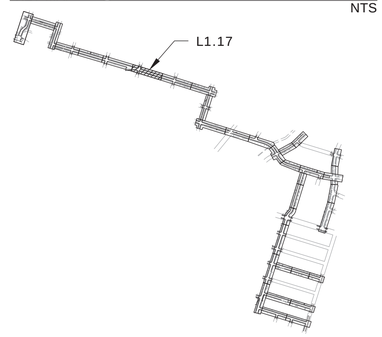
NOTE:

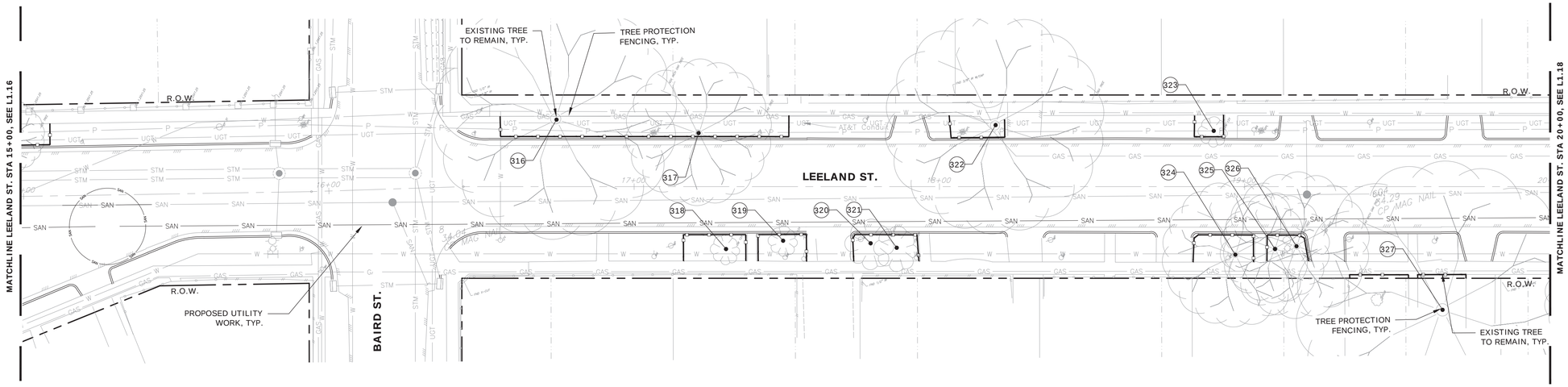
PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

KEY MAP NTS





1 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0" 0 20' 40'

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

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SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

L1.31 TREE MITIGATION PLAN

WBS NO.
R-01000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.

J:\AMA2501 COH CRMP CIP Package 5\ARV03 CD\L100_TREE PROTECTION PLAN_AMA2501.dwg May 08, 2026 2:58pm

LEGEND

MATCHLINE

TREE NUMBER

EXISTING TREES TO REMAIN

EXISTING TREES TO BE REMOVED

TREE PROTECTION FENCING
RE: DETAIL 1/L1.22

ROOT PRUNING
RE: DETAIL 1/L1.23

ZERO CURB CUT
RE: DETAIL 1/L1.24

WHITE OAK
4" CAL.

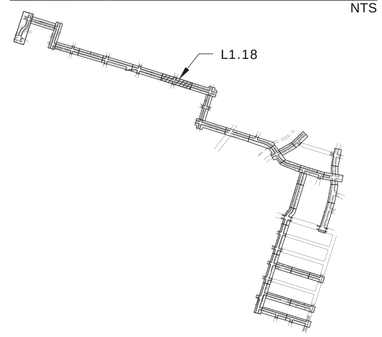
NOTE:

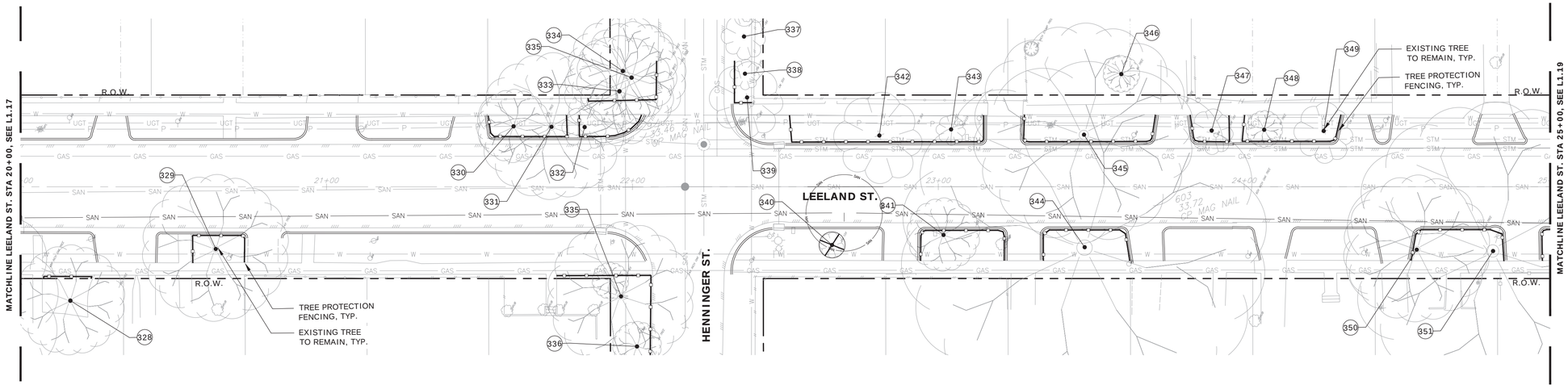
PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

KEY MAP NTS





1 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0" 0 20' 40'

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

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Date

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SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

L1.18 TREE MITIGATION PLAN

WBS NO.
R-01000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.

SHEET NO. 186 of 195

J:\AMA2501 COH CRMP CIP Package 5\ARV03 CD\L100_TREE PROTECTION PLAN_AMA2501.dwg May 08, 2026 2:58pm

LEGEND

MATCHLINE

TREE NUMBER

EXISTING TREES TO REMAIN

EXISTING TREES TO BE REMOVED

TREE PROTECTION FENCING
RE: DETAIL 1/L1.22

ROOT PRUNING
RE: DETAIL 1/L1.23

ZERO CURB CUT
RE: DETAIL 1/L1.24

WHITE OAK
4" CAL.

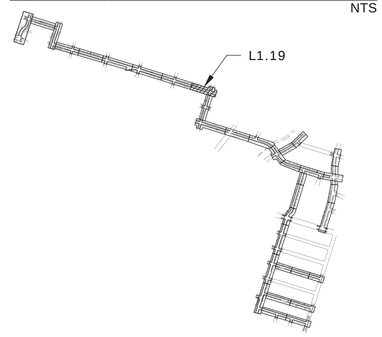
NOTE:

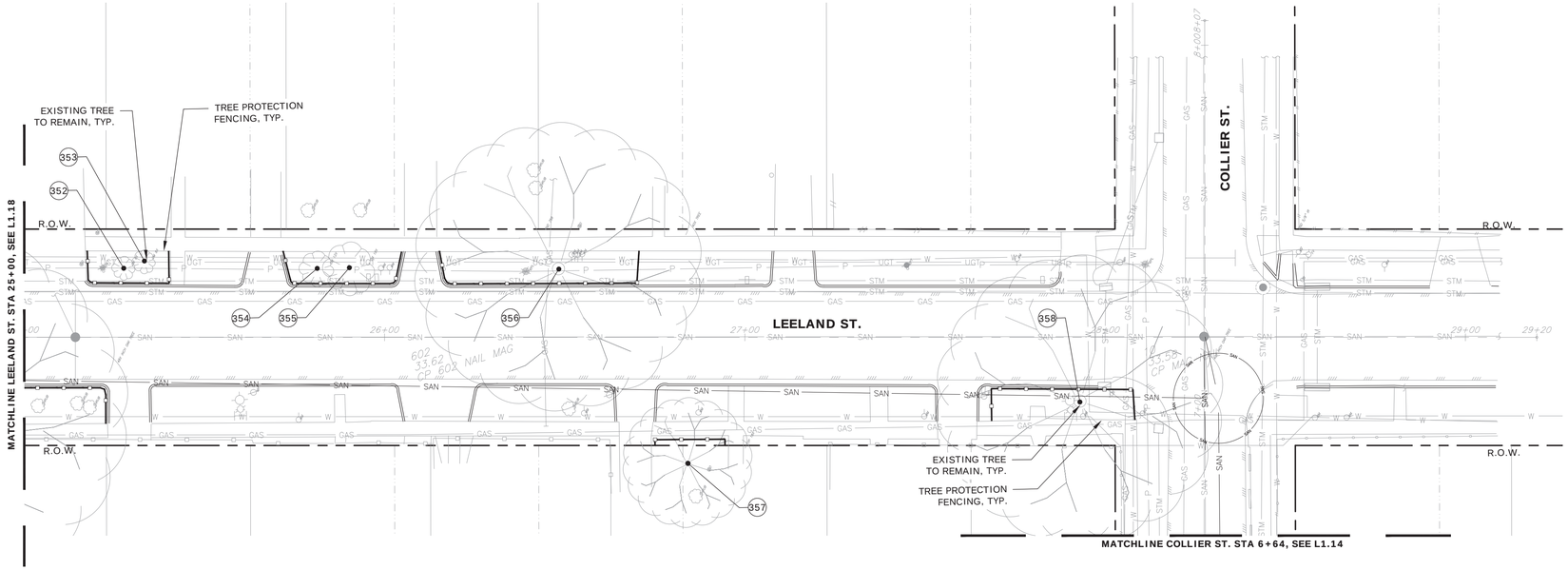
PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

KEY MAP NTS





1 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0"

0 20' 40'

0 1 2 3 ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS

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Date

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FB NO.: P-

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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

L1.19 TREE MITIGATION PLAN

WBS NO.	R-01000-0036-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	SABEEN SHAIK, P.E.
SHEET NO.	187 of 195

J:\AMA2501 COH CRMP CIP Package 5\AR\03 CD\L100_TREE PROTECTION PLAN_AMA2501.dwg May 08, 2026 2:58pm

LEGEND

MATCHLINE

TREE NUMBER

EXISTING TREES TO REMAIN

EXISTING TREES TO BE REMOVED

TREE PROTECTION FENCING
RE: DETAIL 1/L1.22

ROOT PRUNING
RE: DETAIL 1/L1.23

ZERO CURB CUT
RE: DETAIL 1/L1.24

WHITE OAK
4" CAL.

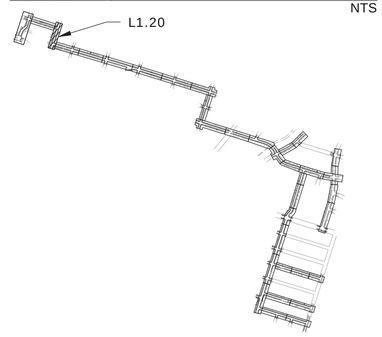
NOTE:

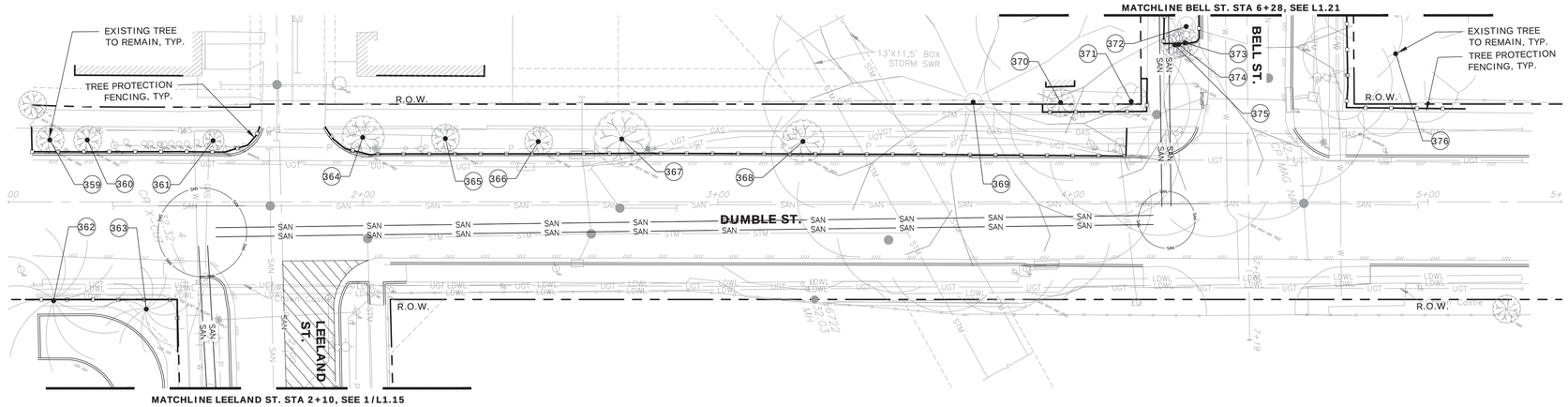
PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

KEY MAP NTS





1 TREE MITIGATION PLAN

SCALE: 1" = 20'-0"

1" = 20'-0" 0 20' 40'

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

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FB NO.: P-

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

L1.20 TREE MITIGATION PLAN

WBS NO.
R-01000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.

SHEET NO. 188 of 195

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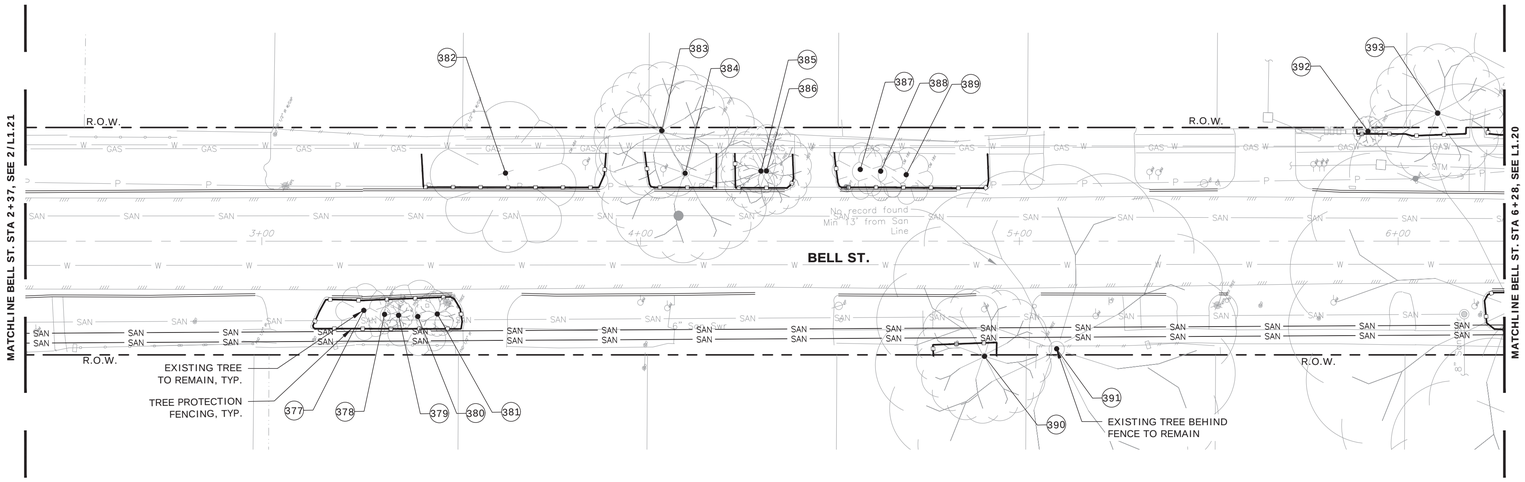
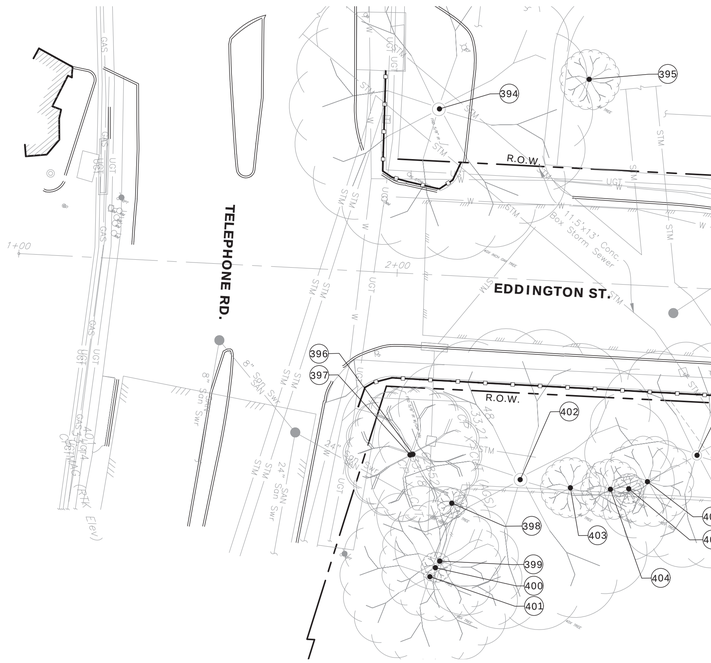


1 **TREE MITIGATION PLAN**

SCALE: 1" = 20'-0"

1" = 20'-0" 0 20' 40'



2 **TREE MITIGATION PLAN**

SCALE: 1" = 20'-0"

1" = 20'-0" 0 20' 40'

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

LEGEND

- MATCHLINE
- # TREE NUMBER
- EXISTING TREES TO REMAIN
- EXISTING TREES TO BE REMOVED
- TREE PROTECTION FENCING RE: DETAIL 1/L1.22
- ROOT PRUNING RE: DETAIL 1/L1.23
- ZERO CURB CUT RE: DETAIL 1/L1.24
- WHITE OAK 4" CAL.

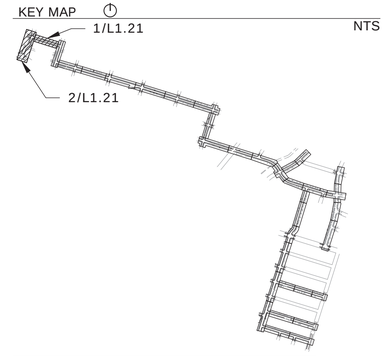
NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

KEY MAP NTS



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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

L1.21 TREE MITIGATION PLAN

WBS NO.
R-01000-0036-3

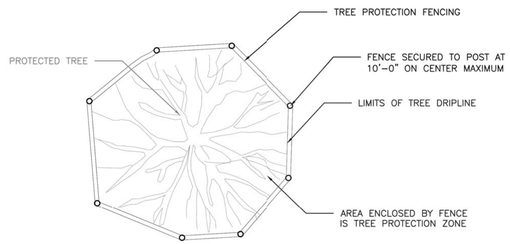
DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.

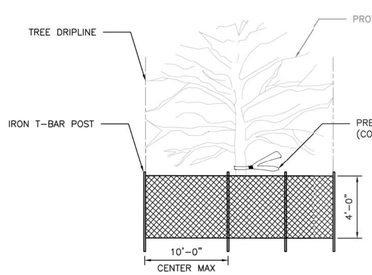
SHEET NO. 189 of 195

J:\AMA2501 COH CRMP CIP Package 5\ARV03 CD\L100_TREE PROTECTION PLAN_AMA2501.dwg May 08, 2026 2:58pm

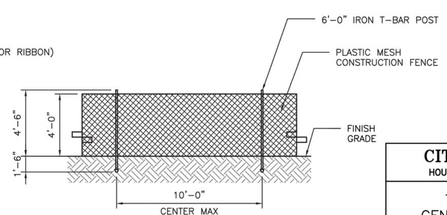
DocuSign Envelope ID: CB71C116-B716-4899-A5EE-0D2F2CC55AF6



PLAN VIEW
TREE PROTECTION FENCING DETAIL



FRONT VIEW
TREE PROTECTION FENCING DETAIL



DETAIL B-4
PROTECTIVE PLASTIC MESH FENCE

NOTES:

FENCE LOCATION MAY BE ADJUSTED TO ACTUAL SITE CONDITIONS.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TREE PROTECTION
GENERAL REQUIREMENTS

(SCALE: NOT TO SCALE)

APPROVED BY:

Docusigned by: Suhail Kanawar — SEF8B0C541F547B... CITY ENGINEER	Docusigned by: Carl Haddock — 4DCA15B7F5A43... DIRECTOR OF HPW

EFF DATE: NOV-27-2023 | DWG NO: 01562-01

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 BE 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.

1 TREE MITIGATION FENCING

SCALE: NTS

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

J:\AMA2501 COH CRMP CIP Package 5\AR\03 CD\L100_TREE PROTECTION PLAN_AMA2501.dwg May 08, 2026 3:00pm

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE NORTHEAST CORNER OF LEELAND ST. AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

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Date

Date

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Date

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Signature valid for one year.

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11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

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SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON

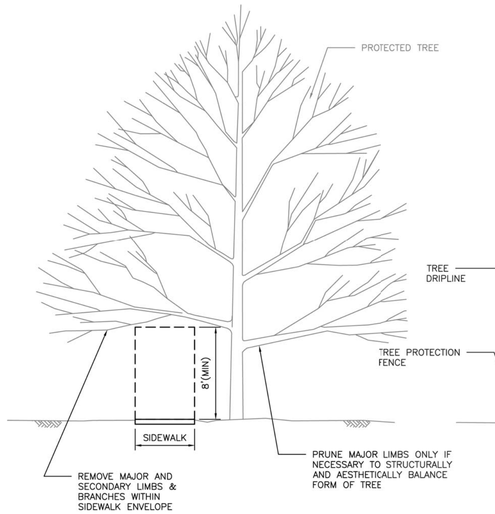
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

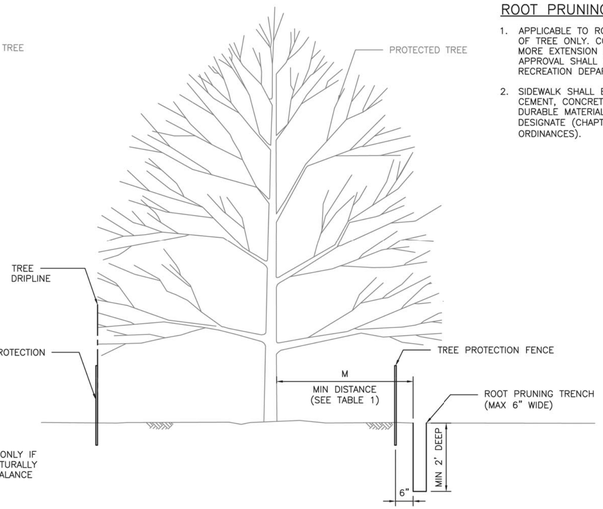
L1.22 TREE MITIGATION DETAILS

WBS NO.	R-01000-0036-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	SABEEN SHAIK, P.E.
SHEET NO.	190 of 195

DocuSign Envelope ID: CB71C116-B716-4899-A5EE-0D2F2CC55AF6



TREE PRUNING



ROOT PRUNING DETAIL

ROOT PRUNING NOTE:

1. APPLICABLE TO ROOT PRUNING ON ONE SIDE OF TREE ONLY. CONSULT CITY ARBORIST FOR MORE EXTENSION ROOT PRUNING. FINAL APPROVAL SHALL COME FROM PARKS AND RECREATION DEPARTMENT.
2. SIDEWALK SHALL BE CONSTRUCTED OF EITHER CEMENT, CONCRETE, ASPHALT OR OTHER DURABLE MATERIAL AS THE COUNCIL MAY DESIGNATE (CHAPTER 40-91, CODE OF ORDINANCES).

TABLE 1
"M" DISTANCE TABLE

TREE TRUNK DIA. (IN)	*MINIMUM DISTANCE 'M'
< 6"	3 FEET
6" ≤ DIA. ≤ 20"	0.75 FEET PER DIA.-INCH
> 20"	CONSULT CITY ARBORIST

*MINIMUM DISTANCE FROM TREE TRUNK TO EDGE OF TRENCH

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TREE PROTECTION
TREE AND ROOT PRUNING

(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER	DIRECTOR OF HPW
Digitally signed by: Sukut Kunwar, 02FB8DC5E41F5478	Digitally signed by: Carl Haddock, A42C41DE73E3453
EFF DATE: NOV-27-2023	DWG NO: 01562-02

DISCLAIMER:
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1 **ROOT PRUNING**
SCALE: NTS

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE NORTHEAST CORNER OF LEELAND ST. AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

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

VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

L1.23 TREE MITIGATION DETAILS

WBS NO.	R-01000-0036-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON, PM	SABEEN SHAIK, P.E.
SHEET NO.	191 of 195

J:\AM42501 COH CRMP CIP Package 5\AR\03 CD\L100_TREE PROTECTION PLAN_AM42501.dwg May 08, 2026 2:58pm

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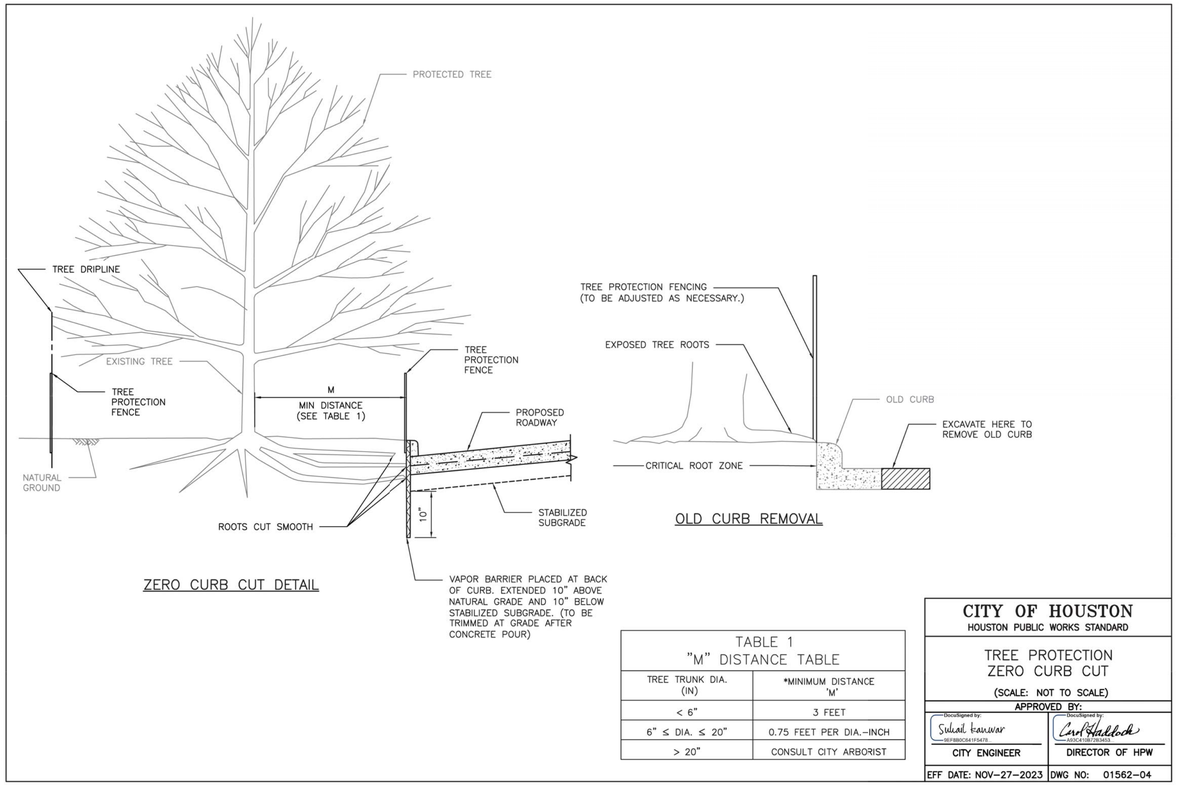

ZERO CURB CUT DETAIL

OLD CURB REMOVAL

TABLE 1 "M" DISTANCE TABLE	
TREE TRUNK DIA. (IN)	*MINIMUM DISTANCE 'M'
< 6"	3 FEET
6" ≤ DIA. ≤ 20"	0.75 FEET PER DIA.-INCH
> 20"	CONSULT CITY ARBORIST

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TREE PROTECTION
ZERO CURB CUT

(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER	DIRECTOR OF HPW
EFF DATE: NOV-27-2023	DWG NO: 01562-04

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1 ZERO CURB CUT

SCALE: NTS

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE NORTHEAST CORNER OF LEELAND ST. AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

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SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

L1.24 TREE MITIGATION DETAILS

WBS NO.
R-01000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.

SHEET NO. 192 of 195

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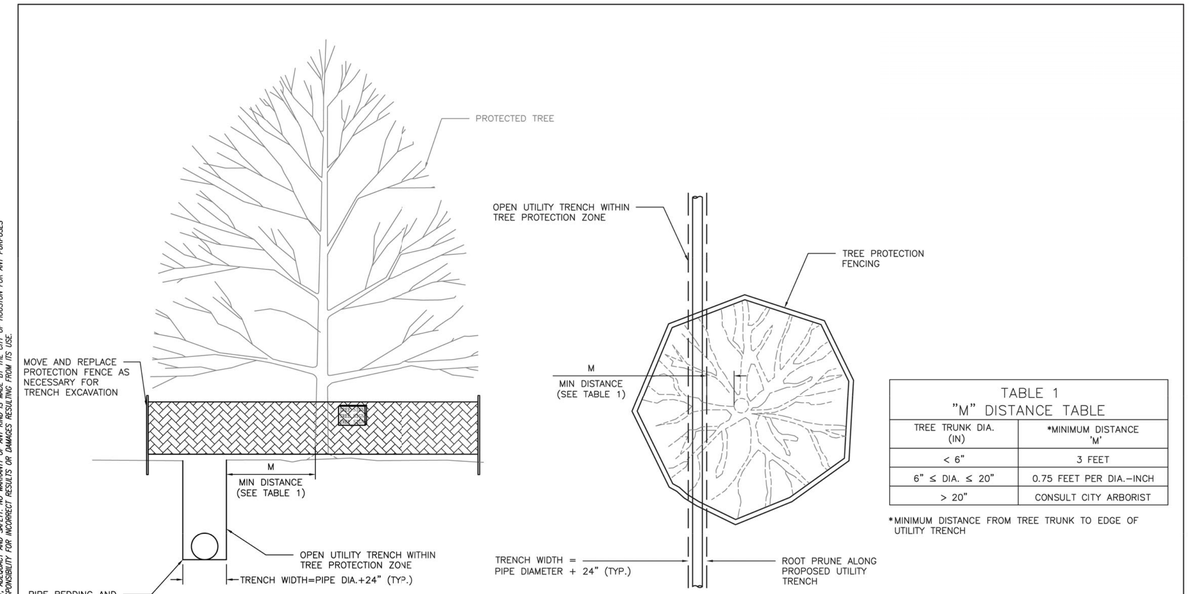

ELEVATION
TRENCH EXCAVATION

PLAN
TRENCH EXCAVATION

TABLE 1
"M" DISTANCE TABLE

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TREE PROTECTION
TRENCH REQUIREMENTS

(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER	DIRECTOR OF HPW
EFF DATE: NOV–27–2023	DWG NO: 01562–06

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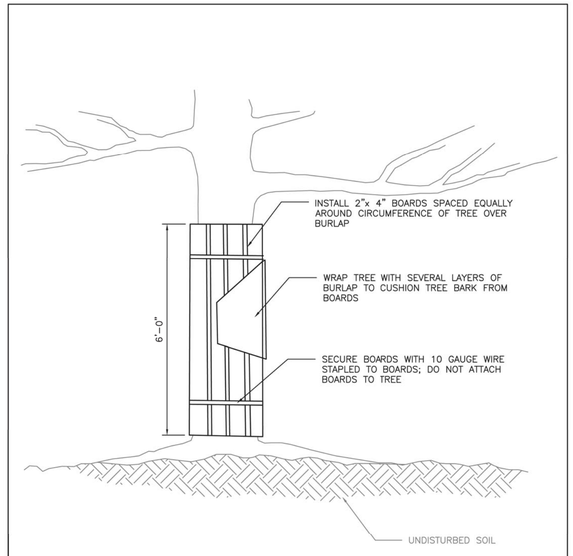

ELEVATION

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TREE BOARDING

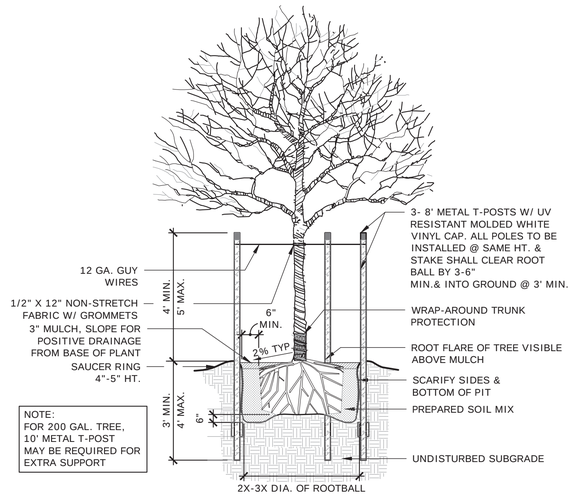
(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER	DIRECTOR OF HPW
EFF DATE: NOV–27–2023	DWG NO: 01562–07

1 TREE PROTECTION TRENCH REQUIREMENTS

SCALE: NTS



NOTE:
FOR 200 GAL. TREE, 10' METAL T-POST MAY BE REQUIRED FOR EXTRA SUPPORT

3 TYPICAL CANOPY TREE PLANTING DETAIL

SCALE: 3/8" = 1'-0"

2 TREE BOARDING

SCALE: NTS

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556–7109
ALUMINIUM DISK LOCATED ON THE NORTHEAST CORNER OF LEELAND ST. AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

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SURVEYED BY: AMANI
FB NO.: P–

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

L1.25 TREE MITIGATION DETAILS

WBS NO.
R–01000–0036–3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.

SHEET NO. 193 of 195

J:\AMA2501 COH CRMP CIP Package 5\AR\03 CD\L100_TREE PROTECTION PLAN_AMA2501.dwg May 08, 2026 2:59pm

Tree Assessment

TREE NUMBER	DBH (INCHES)	SPECIES	LOCATION	TREATMENT	TREATMENT/ NOTES
1		Palm	ROW	Protect	Tree Protection Fencing
2	24	Chinese Privet	ROW	Protect	Tree Protection Fencing
3	10	Tree of Heaven	ROW	Protect	Behind property fence
4	15	Hackberry	ROW	Protect	Behind property fence
5	4	Cedar Elm	ROW	Protect	Tree Protection Fencing
6	3	Cedar Elm	ROW	Protect	Tree Protection Fencing
7	36	Hackberry	ROW	Protect	Tree Protection Fencing
8	20	Palm	ROW	Protect	In a planter. Tree Protection Fencing
9	15	Palm	ROW	Protect	In a planter. Tree Protection Fencing
10	15	Palm	ROW	Protect	In a planter. Tree Protection Fencing
11	16	Palm	ROW	Protect	In a planter. Tree Protection Fencing
12	19	Palm	ROW	Protect	In a planter. Tree Protection Fencing
13	6	Palm	ROW	Protect	In a planter. Tree Protection Fencing
14	20	Palm	ROW	Protect	In a planter. Tree Protection Fencing
15	6	Palm	ROW	Protect	In a planter. Tree Protection Fencing
16	19	Palm	ROW	Protect	In a planter. Tree Protection Fencing
17	12	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
18	6	Oak	ROW	Protect	Tree Protection Fencing
19	15	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
20	12	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
21	18	Hackberry	Private	Protect	Tree Protection Fencing
22	32	Oak	Private	Protect	Tree Protection Fencing
22A	10	Pecan	Private	Protect	Behind property fence
23	36	Oak	Private	Protect	Tree Protection Fencing
24	4	Magnolia	Private	Protect	Behind property fence
25	10	Crepe Myrtle	Private	Protect	Behind property fence
26	18	Oak	Private	Protect	Tree Protection Fencing
27	20	Oak	Private	Protect	Tree Protection Fencing
28	15	Hackberry	ROW	Protect	Tree Protection Fencing
29	24	Chinese Tallow	Private	Protect	Tree Protection Fencing
30	8	Palm	ROW	Protect	Tree Protection Fencing
31	18	Crepe Myrtle	Private	Protect	Tree Protection Fencing
32	12	Oak	ROW	Protect	Tree Protection Fencing
33	8	Crepe Myrtle	Private	Protect	Behind property fence
34	8	Sycamore	Private	Protect	Behind property fence
35	4	Hackberry	Private	Protect	Behind property fence
36	24	Oak	ROW	Protect	Tree Protection Fencing
37	15	Chinese Tallow	ROW	Protect	Tree Protection Fencing
38	20	Crepe Myrtle	ROW	Remove	
39	10	Crepe Myrtle	ROW	Remove	
40	30	Magnolia	Private	Protect	Tree Protection Fencing
41	10	Crepe Myrtle	Private	Protect	Tree Protection Fencing
42	10	Crepe Myrtle	Private	Protect	Tree Protection Fencing
43	18	Pecan	ROW	Protect	Tree Protection Fencing
44	4	Redbud	ROW	Protect	Behind property fence
44A	6	Oak	Private	Protect	Behind property fence
44B	12	Oak	Private	Protect	Behind property fence
45	30	Oak	Private	Protect	Tree Protection Fencing
46	12	Western Soapberry	Private	Protect	Tree Protection Fencing
47	10	Sago Palm	ROW	Protect	Tree Protection Fencing
48	24	Oak	Private	Protect	Tree Protection Fencing
49	12	Sago Palm	ROW	Protect	Tree Protection Fencing
50	30	Oak	Private	Protect	Tree Protection Fencing
51	18	Magnolia	Private	Protect	Tree Protection Fencing
52	15	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
53	36	Oak	Private	Protect	Tree Protection Fencing
54	10	Sago Palm	Private	Protect	Tree Protection Fencing
55	2	Sago Palm	Private	Protect	Tree Protection Fencing
56	3	Japanese Privet	Private	Protect	Tree Protection Fencing
57	18	Yaupon Holly	ROW	Protect	Tree Protection Fencing
58	18	Pecan	Private	Protect	Tree Protection Fencing
59	10	Crepe Myrtle	Private	Protect	Tree Protection Fencing
60	20	Oak	ROW	Protect	Tree Protection Fencing
61	10	Pecan	ROW	Protect	Tree Protection Fencing
62	3	Pecan	ROW	Protect	Tree Protection Fencing
63	6	Pecan	ROW	Protect	Tree Protection Fencing
64	6	Sago Palm	ROW	Protect	Tree Protection Fencing
65	13	Oak	Private	Protect	Tree Protection Fencing
66	3	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
67	3	Crepe Myrtle	Private	Protect	Tree Protection Fencing
68	8	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
69	28	Pecan	Private	Protect	Tree Protection Fencing
70	15	Crepe Myrtle	Private	Protect	Tree Protection Fencing
71	24	Pecan	Private	Remove	
72	10	Crepe Myrtle	Private	Protect	Tree Protection Fencing
73	18	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
74	18	Chinese Elm	ROW	Protect	Tree Protection Fencing
75	12	Magnolia	ROW	Protect	Tree Protection Fencing
76	6	Magnolia	ROW	Protect	Tree Protection Fencing
77	12	Magnolia	ROW	Protect	Tree Protection Fencing
78	10	Magnolia	ROW	Protect	Tree Protection Fencing
79	7	Magnolia	ROW	Protect	Tree Protection Fencing
80	4	Magnolia	ROW	Protect	Tree Protection Fencing
81	1	Magnolia	ROW	Protect	Tree Protection Fencing
82	8	Oak	Private	Protect	Tree Protection Fencing
83	15	Pine	Private	Protect	Tree Protection Fencing
84	18	Pecan	Private	Protect	Tree Protection Fencing
85	12	Crepe Myrtle	Private	Protect	Tree Protection Fencing
86	15	Magnolia	Private	Protect	No Tree Protection Required (Outside Work Limits)
87	15	Hackberry	Private	Protect	Tree Protection Fencing
88	24	Crepe Myrtle	ROW	Remove	
89	30	Sweetgum	Private	Protect	Tree Protection Fencing
90	24	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
91	12	Wisteria	ROW	Protect	Tree Protection Fencing
92	12	Crepe Myrtle	Private	Protect	Tree Protection Fencing
93	12	Crepe Myrtle	Private	Protect	No Tree Protection Required (Outside Work Limits)
94	15	Columnar Cypress	Private	Protect	No Tree Protection Required (Outside Work Limits)
95	12	Sago Palm	Private	Protect	No Tree Protection Required (Outside Work Limits)
96	18	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
97	6	Magnolia	Private	Protect	Tree Protection Fencing
98	2	Yaupon Holly	Private	Protect	Tree Protection Fencing
99	2	Yaupon Holly	Private	Protect	Tree Protection Fencing
100	24	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
101	8	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
102	12	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
103	14	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
104	6	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
105	6	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
106	12	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
107	15	Oak	Private	Protect	Tree Protection Fencing
108	18	Oak	ROW	Protect	Tree Protection Fencing
109	18	Oak	ROW	Protect	Tree Protection Fencing
110	18	Oak	Private	Protect	Tree Protection Fencing
111	18	Yaupon Holly	Private	Protect	Tree Protection Fencing
112	36	Yaupon Holly	ROW	Protect	Tree Protection Fencing
113	18	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
114	30	Oak	Private	Protect	Tree Protection Fencing
115	30	Crepe Myrtle	Private	Protect	Tree Protection Fencing
116	4	Crepe Myrtle	Private	Protect	Tree Protection Fencing
117	4	Oak	ROW	Protect	Tree Protection Fencing
118	24	Oak	ROW	Protect	Tree Protection Fencing
119	8	Yaupon Holly	ROW	Protect	Tree Protection Fencing
120	18	Yaupon Holly	ROW	Protect	Tree Protection Fencing
121	8	Yaupon Holly	Private	Protect	Tree Protection Fencing
122	10	Japanese Privet	ROW	Protect	Tree Protection Fencing
123	30	Oak	ROW	Protect	Tree Protection Fencing
124	18	Cedar Elm	Private	Protect	Tree Protection Fencing
125	18	Yaupon Holly	ROW	Protect	Tree Protection Fencing
126	18	Yaupon Holly	ROW	Protect	Tree Protection Fencing
127	20	Eastern Redcedar	ROW	Protect	Tree Protection Fencing
128	15	Yaupon Holly	ROW	Protect	Tree Protection Fencing
129	20	Oak	ROW	Protect	Tree Protection Fencing
130	8	Palm	Private	Protect	Tree Protection Fencing
131	2	Japanese Privet	Private	Protect	Tree Protection Fencing
132	6	Chinese Elm	ROW	Protect	Tree Protection Fencing
133	8	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
134	8	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
135	8	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
136	8	Crepe Myrtle	Private	Protect	Tree Protection Fencing
137	24	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
138	24	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
139	8	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
140	8	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
141	18	Hackberry	ROW	Protect	Tree Protection Fencing
142	18	Hackberry	ROW	Protect	Tree Protection Fencing
143	18	Hackberry	ROW	Protect	Tree Protection Fencing
144	24	Hackberry	ROW	Protect	Tree Protection Fencing
145	30	Hackberry	ROW	Protect	Tree Protection Fencing
146	24	Oak	ROW	Protect	Tree Protection Fencing
147	18	Live Oak	ROW	Protect	Tree Protection Fencing
148	18	Bald Cypress	ROW	Protect	Tree Protection Fencing, Zero Curb Cut
149	12	Bradford Pear	ROW	Protect	Tree Protection Fencing, Zero Curb Cut
150	6	Sweetgum	ROW	Protect	Tree Protection Fencing, Zero Curb Cut
151	12	Chinese Pistache	ROW	Protect	Tree Protection Fencing, Zero Curb Cut
152	18	Crepe Myrtle	Private	Protect	Tree Protection Fencing
153	18	Crepe Myrtle	ROW	Protect	Tree Protection Fencing, Zero Curb Cut
154	48	Oak	Private	Protect	Tree Protection Fencing
155	24	Pecan	Private	Protect	Tree Protection Fencing
156	36	Hackberry	Private	Protect	Tree Protection Fencing
157	4	Bradford Pear	ROW	Protect	Tree Protection Fencing
158	18	Crepe Myrtle	ROW	Protect	Tree Protection Fencing, Zero Curb Cut
159	8	Yaupon Holly	Private	Protect	Tree Protection Fencing
160	12	Sweetgum	ROW	Protect	Tree Protection Fencing, Zero Curb Cut
161	24	Chinese Pistache	ROW	Protect	Tree Protection Fencing, Zero Curb Cut
162	18	Magnolia	Private	Protect	Tree Protection Fencing
163	18	Magnolia	Private	Protect	Tree Protection Fencing
164	24	Oak	ROW	Protect	Tree Protection Fencing, Zero Curb Cut
165	24	Loblolly Pine	Private	Protect	Tree Protection Fencing
166	12	Oak	ROW	Protect	Tree Protection Fencing
167	18	Cedar Elm	ROW	Protect	Tree Protection Fencing
168	10	Cedar Elm	ROW	Protect	Tree Protection Fencing
169	4	Magnolia	Private	Protect	Tree Protection Fencing
170	8	Crepe Myrtle	Private	Protect	Tree Protection Fencing
171	12	Cedar Elm	ROW	Protect	Tree Protection Fencing
172	18	Oak	ROW	Protect	Tree Protection Fencing
173	15	Oak	ROW	Protect	Tree Protection Fencing
174	30	Oak	Private	Protect	Tree Protection Fencing
175	12	Oak	ROW	Protect	Tree Protection Fencing, Zero Curb Cut
176	18	Oak	ROW	Protect	Tree Protection Fencing, Zero Curb Cut
177	18	Oak	ROW	Protect	Tree Protection Fencing, Zero Curb Cut
178	30	Oak	ROW	Protect	Tree Protection Fencing
179	36	Oak	Private	Protect	Tree Protection Fencing
180	48	Oak	ROW	Protect	Tree Protection Fencing
181	18	Oak	Private	Protect	Tree Protection Fencing
182	36	Oak	Private	Protect	Tree Protection Fencing
183	30	Magnolia	Private	Protect	Tree Protection Fencing
184	48	Oak	ROW	Protect	Tree Protection Fencing, Zero Curb Cut
185	48	Oak	ROW	Protect	Tree Protection Fencing, Zero Curb Cut
186	6	Palm	Private	Protect	Tree Protection Fencing
187	10	Crepe Myrtle	Private	Protect	Tree Protection Fencing
188	24	Chinese Pistache	ROW	Protect	Tree Protection Fencing
189	6	Palm	ROW	Remove	
190	24	Palm	ROW	Protect	Tree Protection Fencing
191	18	Chinese Pistache	ROW	Protect	Tree Protection Fencing
192	18	Oak	ROW	Protect	Tree Protection Fencing, Zero Curb Cut
193	8	Chinese Pistache	ROW	Protect	Tree Protection Fencing
194	8	Crepe Myrtle	ROW	Protect	Tree Protection Fencing, Zero Curb Cut
195	18	Chinese Pistache	ROW	Protect	Tree Protection Fencing
196	8	Green Ash	Private	Protect	Tree Protection Fencing
197	10	Chinese Pistache	Private	Protect	Tree Protection Fencing
198	8	Crepe Myrtle	ROW	Protect	Tree Protection Fencing, Zero Curb Cut
199	8	Oak	ROW	Protect	Tree Protection Fencing
200	30	Oak	Private	Protect	Tree Protection Fencing
201	24	Oak	ROW	Protect	Tree Protection Fencing
202	30	Sycamore	ROW	Protect	Tree Protection Fencing
203	36	Oak	Private	Protect	Tree Protection Fencing
204	30	Oak	ROW	Protect	Tree Protection Fencing
205	40	Oak	ROW	Protect	Tree Protection Fencing
206	10	Sweetgum	ROW	Protect	Tree Protection Fencing
207	12	Sweetgum	ROW	Protect	Tree Protection Fencing
208	40	Sweetgum	ROW	Protect	Tree Protection Fencing
209	36	Sweetgum	ROW	Protect	Tree Protection Fencing
210	24	Cedar Elm	ROW	Protect	Tree Protection Fencing
211	24	Green Ash	ROW	Protect	Tree Protection Fencing
212	30	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
213	6	Eastern Redcedar	ROW	Protect	Tree Protection Fencing
214	30	Hackberry	ROW	Protect	Tree Protection Fencing
215	30	Oak	ROW	Protect	Tree Protection Fencing
216	48	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
217	48	Oak	ROW	Protect	Tree Protection Fencing
218	36	Bradford Pear	Private	Protect	Tree Protection Fencing
219	30	Hackberry	ROW	Protect	Tree Protection Fencing
220	30	Oak	Private	Protect	Tree Protection Fencing
221	24	Bradford Pear	Private	Protect	Tree Protection Fencing
222	12	Chinese Pistache	ROW	Protect	Tree Protection Fencing
223	36	Oak	ROW	Protect	Tree Protection Fencing
224	30	Oak	ROW	Protect	Tree Protection Fencing
225	12	Bradford Pear	Private	Protect	Tree Protection Fencing
226	10	Pine	Private	Protect	Tree Protection Fencing
227	15	Pine	Private	Protect	Tree Protection Fencing
228	24	Pecan	ROW	Protect	Tree Protection Fencing
229	18	Chinese Pistache	Private	Protect	Tree Protection Fencing
230	2	Yaupon Holly	Private	Protect	Tree Protection Fencing
231	2	Yaupon Holly	Private	Protect	Tree Protection Fencing
232	10	Magnolia	Private	Protect	Tree Protection Fencing
233	6	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
234	12	Oak	ROW	Protect	Tree Protection Fencing
235	24	Oak	ROW	Protect	Tree Protection Fencing
236	2	Dwarf Juniper	Private	Protect	Tree Protection Fencing
237	2	Dwarf Juniper	Private	Protect	Tree Protection Fencing
238	6	Cedar Elm	ROW	Protect	Tree Protection Fencing
239	6	Chinese Pistache	Private	Protect	Tree Protection Fencing
240	18	Loblolly Pine	ROW	Protect	Tree Protection Fencing
241	48	Oak	Private	Protect	Tree Protection Fencing
242	24	Live Oak	Private	Protect	Tree Protection Fencing
243	24	Live Oak	Private	Protect	Tree Protection Fencing
244	24	Pecan	Private	Protect	Tree Protection Fencing
245	18	Oak	Private	Protect	Tree Protection Fencing
246	6	Chinese Pistache	Private	Protect	Tree Protection Fencing
247	16	Oak	ROW	Protect	Tree Protection Fencing
248	12	Palm	ROW	Protect	Tree Protection Fencing
249	14	Palm	ROW	Protect	Tree Protection Fencing
250	40	Oak	Private	Protect	Tree Protection Fencing
251	8	Bradford Pear	Private	Protect	Tree Protection Fencing
252	12	Oak	Private	Protect	Tree Protection Fencing
253	36	Oak	ROW	Protect	Tree Protection Fencing
254	6	Japanese Privet	ROW	Protect	Tree Protection Fencing
255	18	Oak	Private	Protect	Tree Protection Fencing
256	36	Oak	Private	Protect	Tree Protection Fencing
257	36	Oak	Private	Protect	Tree Protection Fencing
258	40	Oak	ROW	Protect	Tree Protection Fencing
259	30	Oak	ROW	Protect	Tree Protection Fencing, Zero Curb Cut
260	36	Oak	ROW	Protect	Tree Protection Fencing, Zero Curb Cut
261	18	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
262	48	Oak	Private	Protect	Tree Protection Fencing
263	18	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
264	24	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
265	30	Oak	ROW	Protect	Tree Protection Fencing
266	48	Oak	Private	Protect	Tree Protection Fencing
267	36	Oak	Private	Protect	Tree Protection Fencing
268	36	Tree	ROW	Protect	Tree Protection Fencing
269	30	Magnolia	Private	Protect	Tree Protection Fencing
270	36	Oak	Private	Protect	Tree Protection Fencing

1 TREE MITIGATION TABLE

SCALE: NTS

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

NOTICE:

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

VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

Signature valid for six months.

Date

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

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

ASAKURA ROBINSON
2500 Summer Street, Suite 3228 Houston Texas 77007
P: 713.337.5830 www.asakurarobinson.com

THESE DOCUMENTS ARE INCOMPLETE AND FOR INTERIM REVIEW ONLY. THEY ARE NOT TO BE USED FOR REGULATORY APPROVAL, PERMITTING OR CONSTRUCTION. KEIJI ASAKURA, RLA REGISTRATION NO. 1170.

SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

L1.26 TREE MITIGATION
NOTES, DETAILS, & TABLE

WBS NO.
R-01000-0036-3

DRAWING SCALE

1"=20'

CITY OF HOUSTON, PM

SABEEN SHAIK, P.E.

SHEET NO. 194 of 195

J:\AMA2501 COH CRMP CIP Package 5\ARV\03 CD\L100_TREE PROTECTION PLAN_AMA2501.dwg May 08, 2026 2:59pm

TREE NUMBER	DBH (INCHES)	SPECIES	LOCATION	TREATMENT	TREATMENT/ NOTES
271	24	Oak	ROW	Protect	Tree Protection Fencing
272	30	Oak	ROW	Protect	Tree Protection Fencing
273	24	Magnolia	ROW	Protect	Tree Protection Fencing, Root Pruning
274	30	Magnolia	Private	Protect	Tree Protection Fencing
275	30	Oak	ROW	Protect	Tree Protection Fencing
276	18	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
267A	6	Tree	ROW	Protect	Tree Protection Fencing
267B	6	Tree	ROW	Protect	Tree Protection Fencing
267C	6	Tree	ROW	Protect	Tree Protection Fencing
267D	10	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
277	24	Oak	ROW	Protect	Tree Protection Fencing
278	24	Oak	ROW	Protect	Tree Protection Fencing
279	18	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
280	30	Crepe Myrtle	Private	Protect	Tree Protection Fencing
281	30	Crepe Myrtle	Private	Protect	Tree Protection Fencing
282	24	Sycamore	Private	Protect	Tree Protection Fencing
283	24	Crepe Myrtle	Private	Protect	Tree Protection Fencing
284	30	Crepe Myrtle	Private	Protect	Tree Protection Fencing
285	24	Palm	Private	Protect	Tree Protection Fencing
286	10	Cedar Elm	ROW	Protect	Tree Protection Fencing
287	24	Sycamore	ROW	Protect	Tree Protection Fencing
287A	24	Crape Myrtle	ROW	Protect	Tree Protection Fencing
287B	18	Crape Myrtle	ROW	Protect	Tree Protection Fencing
288	36	Sycamore	Private	Protect	Tree Protection Fencing
288A	24	Sycamore	Private	Protect	No Tree Protection Required (Outside Work Limits)
289	24	Sycamore	ROW	Protect	Tree Protection Fencing
290	16	Magnolia	ROW	Protect	Tree Protection Fencing
291	12	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
292	24	Oak	ROW	Protect	Tree Protection Fencing
293	22	Tallow	ROW	Protect	Tree Protection Fencing
294	18	Tallow	ROW	Protect	Tree Protection Fencing
295	30	Pecan	Private	Protect	Tree Protection Fencing
296	12	Oak	ROW	Protect	Tree Protection Fencing
297	24	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
298	24	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
299	26	Oak	Private	Protect	Tree Protection Fencing
300	22	Oak	Private	Protect	Tree Protection Fencing
301	18	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
302	24	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
303	12	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
304	18	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
305	24	Tallow	ROW	Protect	Tree Protection Fencing
306	36	Tallow	ROW	Protect	Tree Protection Fencing
307	18	Chinese Tallow	ROW	Protect	Tree Protection Fencing
308	12	Cedar Elm	ROW	Protect	Behind property fence
309	18	Cedar Elm	ROW	Protect	Behind property fence
310	12	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
311	8	Pecan	ROW	Protect	Tree Protection Fencing
312	12	Pecan	ROW	Protect	Tree Protection Fencing
313	10	Pecan	ROW	Protect	Tree Protection Fencing
314	8	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
315	12	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
316	40	Oak	ROW	Protect	Tree Protection Fencing
317	24	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
318	12	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
319	12	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
320	20	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
321	18	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
322	36	Cedar Elm	ROW	Protect	Tree Protection Fencing
323	12	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
324	24	Pecan	ROW	Protect	Tree Protection Fencing
325	18	Pecan	ROW	Protect	Tree Protection Fencing
326	24	Oak	ROW	Protect	Tree Protection Fencing
327	48	Oak	Private	Protect	Tree Protection Fencing
328	18	Magnolia	Private	Protect	Tree Protection Fencing
329	24	Eastern Redbud	ROW	Protect	Tree Protection Fencing
330	12	Chinese Pistache	ROW	Protect	Tree Protection Fencing
331	24	Chinese Pistache	ROW	Protect	Tree Protection Fencing
332	18	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
333	18	Chinese Privet	ROW	Protect	Tree Protection Fencing
334	18	Chinese Privet	ROW	Protect	Tree Protection Fencing
335	24	Oak	Private	Protect	Tree Protection Fencing
336	8	Magnolia	Private	Protect	Tree Protection Fencing
337	18	Crepe Myrtle	Private	Protect	Tree Protection Fencing
338	12	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
339	30	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
340	10	Crepe Myrtle	ROW	Remove	
341	12	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
342	36	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
343	12	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
344	60	Oak	ROW	Protect	Tree Protection Fencing
345	36	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
346	6	Freeman Sycamore	ROW	Protect	Tree Protection Fencing
347	18	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
348	6	Yaupon Holly	ROW	Protect	Tree Protection Fencing
349	24	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
350	24	Pecan	ROW	Protect	Tree Protection Fencing
351	48	Oak	ROW	Protect	Tree Protection Fencing
352	8	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
353	8	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
354	12	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
355	18	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
356	40	Chinese Privet	ROW	Protect	Tree Protection Fencing
357	18	Bald Cypress	Private	Protect	Tree Protection Fencing
358	40	Oak	ROW	Protect	Tree Protection Fencing
359	4	Oak	ROW	Protect	Tree Protection Fencing
360	4	Oak	ROW	Protect	Tree Protection Fencing
361	3	Chinese Pistache	ROW	Protect	Tree Protection Fencing
362	20	Cedar	ROW	Protect	Tree Protection Fencing
363	12	Cedar	ROW	Protect	Tree Protection Fencing
364	6	Chinese Pistache	ROW	Protect	Tree Protection Fencing
365	4	Chinese Pistache	ROW	Protect	Tree Protection Fencing
366	4	Chinese Pistache	ROW	Protect	Tree Protection Fencing
367	8	Chinese Pistache	ROW	Protect	Tree Protection Fencing
368	6	Chinese Pistache	ROW	Protect	Tree Protection Fencing
369	60	Oak	ROW	Protect	Tree Protection Fencing
370	4	Oak	ROW	Protect	Tree Protection Fencing
371	12	Crepe Myrtle	Private	Protect	Tree Protection Fencing
372	60	Oak	ROW	Protect	Tree Protection Fencing
373	4	Yaupon Holly	ROW	Protect	Tree Protection Fencing
374	4	Yaupon Holly	ROW	Protect	Tree Protection Fencing
375	4	Yaupon Holly	ROW	Protect	Tree Protection Fencing
376	60	Crepe Myrtle	Private	Protect	Tree Protection Fencing
377	18	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
378	12	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
379	4	Japanese Privet	ROW	Protect	Tree Protection Fencing
380	24	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
381	6	Yaupon Holly	ROW	Protect	Tree Protection Fencing
382	48	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
383	18	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
384	24	Oak	ROW	Protect	Tree Protection Fencing
385	6	Chinese Tallow	ROW	Protect	Tree Protection Fencing
386	12	Chinese Tallow	ROW	Protect	Tree Protection Fencing
387	18	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
388	18	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
389	18	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
390	18	Hackberry	ROW	Protect	Tree Protection Fencing
391	48	Cedar Elm	ROW	Protect	Behind property fence
392	4	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
393	18	Chinese Pistache	Private	Protect	Tree Protection Fencing
394	40	Oak	Private	Protect	Tree Protection Fencing
395	8	Palm	Private	Protect	No Tree Protection Required (Outside Work Limits)
396	18	Crepe Myrtle	Private	Protect	Tree Protection Fencing
397	18	Chinaberry	Private	Protect	Tree Protection Fencing
398	4	Cedar Elm	Private	Protect	Tree Protection Fencing
399	16	Chinaberry	Private	Protect	Tree Protection Fencing
400	4	Cedar Elm	Private	Protect	Tree Protection Fencing
401	24	Hackberry	Private	Protect	Tree Protection Fencing
402	40	Oak	Private	Protect	Tree Protection Fencing
403	8	Cedar Elm	Private	Protect	Tree Protection Fencing
404	8	Cedar Elm	Private	Protect	Tree Protection Fencing
405	4	Cedar Elm	Private	Protect	Tree Protection Fencing
406	12	Cedar Elm	Private	Protect	Tree Protection Fencing
407	30	Chinese Pistache	Private	Protect	Tree Protection Fencing
408	24	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
409	12	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
410	12	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
411	12	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
412	40	Cedar Elm	ROW	Protect	Tree Protection Fencing
413	6	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
414	30	Hackberry	ROW	Protect	Tree Protection Fencing
415	40	Hackberry	ROW	Protect	Tree Protection Fencing
416	24	Hackberry	ROW	Protect	Tree Protection Fencing
417	30	Crepe Myrtle	ROW	Remove	
418	30	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
419	6	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
420	6	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
421	6	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
422	6	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
423	6	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
424	6	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
425	8	Chinese Pistache	ROW	Protect	Tree Protection Fencing
426	48	White Mulberry	ROW	Protect	Tree Protection Fencing
427	24	Cedar Elm	ROW	Protect	Tree Protection Fencing
428	48	White Mulberry	ROW	Protect	Tree Protection Fencing
429	40	Oak	ROW	Protect	Tree Protection Fencing
430	24	Oak	ROW	Protect	Tree Protection Fencing
431	12	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
432	12	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
433	12	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
434	24	Oak	ROW	Protect	Tree Protection Fencing
435	4	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
436	4	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
437	4	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
438	4	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
439	4	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
440	4	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
441	4	Crepe Myrtle	ROW	Protect	Tree Protection Fencing
442	12	Japanese Privet	ROW	Protect	Tree Protection Fencing
443	12	Japanese Privet	ROW	Protect	Tree Protection Fencing
TOTAL MITIGATION					**24**

1 TREE MITIGATION TABLE

SCALE: NTS

TREE MITIGATION NOTES :

1. IT IS CRITICAL TO ERECT TREE MITIGATION FENCES PRIOR TO THE BEGINNING OF ANY SITE DEMOLITION.
2. THE TREE MITIGATION FENCE SHALL BE A MIN. 4' HT. BRIGHT ORANGE, LIGHT WEIGHT, REUSABLE MESH SAFETY FENCING MADE OF HIGH DENSITY POLYETHYLENE WITH 1 1/2" X 3" SIZE MESH. REFER TO PLAN FOR LOCATIONS. T-POSTS AND FENCING SHALL BE LOCATED TO THE EXTENTS AND SHAPES NOTED ON PLAN. UNDER NO CIRCUMSTANCES SHALL FENCING BE WRAPPED AROUND OR AFFIXED TO PROTECTED TREES.
3. TREE MITIGATION FENCE SHALL BE PLACED AROUND CRITICAL ROOT ZONE OF ALL TREES TO REMAIN.
4. UNDER NO CIRCUMSTANCES SHOULD A CONTRACTOR DRIVE OR PARK MACHINERY ON TREE ROOTS OR UNDER THE TREE CANOPY DRIPLINE.
5. AVOID DISTURBING ROOTS IN CRITICAL ROOT ZONE. IF ROOT CUTTING IS NECESSARY OR ANY ROOTS ARE DAMAGED, THEY SHALL BE CUT CLEANLY WITH THE APPROPRIATE PRUNING SHEARS OR PRUNING SAWS A FEW INCHES ON THE SIDE CLOSER TO THE TRUNK. ANY EXPOSED OR PRUNED TREE ROOTS MUST BE COVERED IMMEDIATELY WITH DIRT AND MULCH TO PREVENT ROOTS FROM DRYING OUT.
6. NO STORAGE OR CONCRETE DUMPING IS PERMITTED ON TREE ROOTS AND/OR UNDER DRIPLINE.
7. NO BUILDING MATERIALS ARE TO BE STACKED OR STOCKPILED WITHIN THE DRIPLINE OR WITHIN 6 FEET OF ANY TREE TO BE PRESERVED, WHICHEVER DISTANCE IS GREATER.
8. NO TOPSOILS, COMPOST, OR MULCH ARE TO BE STOCKPILED WITHIN THE DRIP LINE OR WITHIN 6 FEET OF ANY TREE TO BE PRESERVED, WHICHEVER DISTANCE IS GREATER.
9. TREE BOARDING SHALL BE USED IF WORK IS REQUIRED WITHIN FENCING.
10. ANY UNDERSTORY CLEARING WITHIN SIX FEET OF EXISTING TREE TRUNKS SHALL BE DONE BY HAND.
11. CONTRACTOR TO NOTIFY LANDSCAPE ARCHITECT IF ROOT PRUNING IS DEEMED NECESSARY. CONTRACTOR SHALL NOT CUT ROOT LARGER THAN 2" PRIOR CONSULTING LANDSCAPE ARCHITECT.
12. CONTRACTOR IS REQUIRED TO HIRE A CERTIFIED ARBORIST TO MONITOR AND ASSIST WITH FIELD LAYOUT (EXACT LOCATIONS OF FENCING, ROOT PRUNING, AND ZERO CURB CUTBACK) OF THE TREE PRESERVATION PROGRAM DURING DEMOLITION AND CONSTRUCTION TO ENSURE TREE MITIGATION PROCEDURES AND TECHNIQUES ARE PRACTICED AS SPECIFIED TO ADDRESS CONCERNS AND CONDITIONS WHICH OCCUR IN THE FIELD. AT A MINIMUM, THE INDIVIDUAL RESPONSIBLE FOR MONITORING AND FIELD LAYOUT OF THE TREE MITIGATION SHALL HAVE A MINIMUM OF 5 YEARS OF EXPERIENCE AS A CONSULTANT, AND SHALL NOT BE AFFILIATED WITH A TREE CARE CONTRACTOR IN THE HARRIS COUNTY AREA. QUALIFICATIONS OF THE SELECTED CERTIFIED ARBORIST SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT.

PLANTING NOTES :

1. CONTRACTOR SHALL BE RESPONSIBLE FOR BECOMING FAMILIAR WITH ALL UNDERGROUND UTILITIES, PIPES, AND STRUCTURES. CONTRACTOR SHALL TAKE SOLE RESPONSIBILITY FOR ANY COST INCURRED DUE TO DAMAGE OF THESE UTILITIES.
2. CONTRACTOR SHALL NOT WILLFULLY PROCEED WITH CONSTRUCTION AS DESIGNED WHEN IT IS OBVIOUS THAT UNKNOWN OBSTRUCTIONS AND/OR GRADE DIFFERENCES EXIST THAT MAY NOT HAVE BEEN KNOWN DURING THE DESIGN. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT AND THE OWNER'S AUTHORIZED REPRESENTATIVE.
3. CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR NECESSARY REVISIONS DUE TO FAILURE TO GIVE SUCH NOTIFICATION.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH SUBCONTRACTORS AS REQUIRED TO ACCOMPLISH PLANTING.
5. CONTRACTOR SHALL NOTIFY OWNER'S AUTHORIZED REPRESENTATIVE 72 HOURS (WEEKENDS NOT INCLUDED) PRIOR TO COMMENCEMENT OF WORK TO COORDINATE PROJECT OBSERVATION SCHEDULE.
6. IF CONFLICTS ARISE BETWEEN SIZE OF AREAS ON PLANS OR LAYOUT OF PLANS, CONTRACTOR SHALL CONTACT LANDSCAPE ARCHITECT FOR RESOLUTION. FAILURE TO MAKE SUCH CONFLICTS KNOWN TO LANDSCAPE ARCHITECT WILL RESULT IN CONTRACTOR'S LIABILITY TO RELOCATE THE MATERIAL.
7. PROTECT ALL EXISTING TREES TO REMAIN. CONTRACTOR SHALL REPLACE ANY TREES DAMAGED DURING CONSTRUCTION. CONTRACTOR SHALL PROVIDE FENCING, IF NECESSARY, AT THE TREE CANOPY DRIP LINE TO PROTECT TRUNK AND ROOTS AND TO PREVENT COMPACTION FROM VEHICLE TRAFFIC AND/OR MATERIAL STORAGE BELOW TREES.
8. CONTRACTOR SHALL PROVIDE FOR THE FEEDING, WATERING, AND GENERAL MAINTENANCE OF TREES TO KEEP THEM IN A HEALTHY CONDITION DURING CONSTRUCTION DURATION.
9. CONTRACTOR SHALL SUBMIT PHOTOS/PDFS OF REPRESENTATIVE TREES, SHRUBS, GRASSES, GROUNDCOVERS, AND VINES SHOWN ON THE PLANTING PLAN AND SCHEDULE, WITH INDICATION OF SPECIES, HEIGHT, WIDTH, AND CALIPER/CONTAINER SIZE. IF A NURSERY VISIT IS REQUIRED, THE CONTRACTOR WILL ARRANGE TO HAVE THE PARTICULAR NURSERIES PREPARED TO SHOW PLANT MATERIAL. SHOULD CONTRACTOR INSTALL PLANT MATERIAL INFERIOR TO INDUSTRY STANDARD OR DRAWING SPECIFICATIONS, IT IS AT CONTRACTOR'S RISK. ALL SUBMITTALS ARE TO BE APPROVED PRIOR TO PLANTING. NO UNAPPROVED MATERIAL IS TO BE INSTALLED.
10. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FURNISH PLANT MATERIALS FREE OF PESTS AND DISEASES. PRE-SELECTED OR "TAGGED" MATERIAL MUST BE INSPECTED BY CONTRACTOR AND CERTIFIED PEST AND DISEASE FREE. IT IS THE CONTRACTOR'S OBLIGATION TO GUARANTEE ALL PLANT MATERIALS PER THE SPECIFICATIONS. TAGS PLACED BY THE LANDSCAPE ARCHITECT MUST REMAIN ON MATERIAL THROUGHOUT THE DURATION OF CONSTRUCTION.
11. CONTRACTOR SHALL STAKE ALL FINAL TREE LOCATIONS AND PLANTING BED LIMITS IN THE FIELD FOR APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
12. **STEEL / ALUMINUM** EDGING SHALL BE PLACED BETWEEN ALL SHRUB BEDS AND TURF AREAS, AS WELL AS BETWEEN GRAVEL BED AND PLANTING BEDS.
13. UPON INSTALLATION, ALL TREE MATERIALS SHALL BE STAKED BY THE METHOD INDICATED IN THE SPECIFICATIONS AND PLANTING DETAILS.
14. IF REQUESTED BY OWNER, CONTRACTOR SHALL INSTALL DEEP ROOT BARRIERS AT ALL TREES WITHIN 5'-0" OF CONCRETE WALKWAYS, STRUCTURES, WALLS, CURBS, ETC.
15. ALL PLANTS SHALL BE TRIANGULARLY SPACED, UNLESS OTHERWISE INDICATED.
16. ALL PLANTING BEDS SHALL RECEIVE A MINIMUM OF 3" OF APPROVED SHREDDED MULCH.
17. CONTRACTOR SHALL FINE GRADE ALL DISTURBED AREAS TO PROVIDE FOR PROPER DRAINAGE.

TREE REPLACEMENT LIST

QUANTITY	CALIPER SIZE (INCHES)	SPECIES	TOTAL
6	4	White Oak	24
TOTAL REPLACEMENT PROVIDED			**24**

PLANTING SCHEDULE

QTY	COMMON NAME/BOTANICAL NAME	CALIPER / CONT.SIZE	HEIGHT	SPREAD	COMMENTS
TREES					
6 EA	WHITE OAK *Quercus alba*	4"	14'-16'	8' - 10'	SINGLE TRUNK W/ STRONG CENTRAL LEADER. FULL, WELL-BRANCHED

NOTE:

PROJECT BENCH MARK:

CITY OF HOUSTON MARKER 5556-7109
ALUMINIUM DISK LOCATED ON THE
NORTHEAST CORNER OF LEELAND ST.
AND W. GUSTAV ST.

ELEVATION = 34.16' Geoid 18

NOTICE:

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

VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

Signature valid for six months.

Date

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

AMANI ENGINEERING, INC.
11011 RICHMOND AVENUE, SUITE 700
HOUSTON, TEXAS 77024
TEL: (713) 270-5700
Texas Registered Engineering Firm No. F-4528
Texas Registered Surveying Firm No. 100282-00

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THESE DOCUMENTS ARE INCOMPLETE AND FOR INTERIM REVIEW ONLY. THEY ARE NOT TO BE USED FOR REGULATORY APPROVAL, PERMITTING OR CONSTRUCTION. KEIJI ASAKURA, RLA REGISTRATION NO. 1170.

SURVEYED BY: AMANI
FB NO.: P-

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP CIP PACKAGE 5
SANITARY SEWER
IMPROVEMENTS UPSTREAM OF
EDDINGTON LIFT STATION

L1.27 TREE MITIGATION TABLE, NOTES, AND SCHEDULE

WBS NO.
R-01000-0036-3

DRAWING SCALE
1"=20'

CITY OF HOUSTON, PM
SABEEN SHAIK, P.E.

SHEET NO. 195 of 195

J:\AMA2501 COH CRMP CIP Package 5\AR\03 CD\L100_TREE PROTECTION PLAN_AMA2501.dwg May 08, 2026 2:58pm

0 1 2 3
ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS