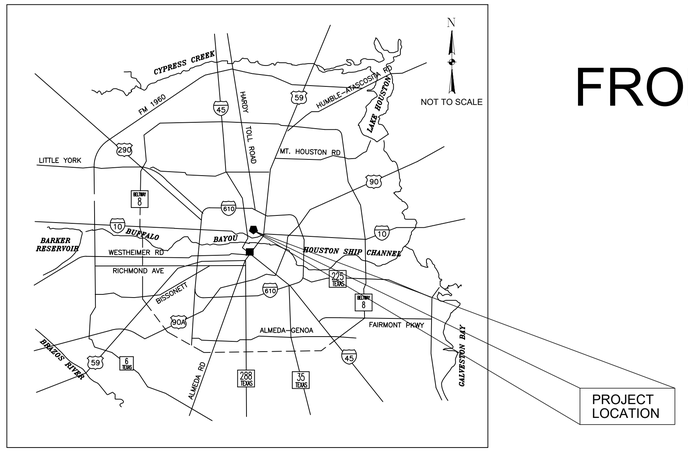
CITY OF HOUSTON

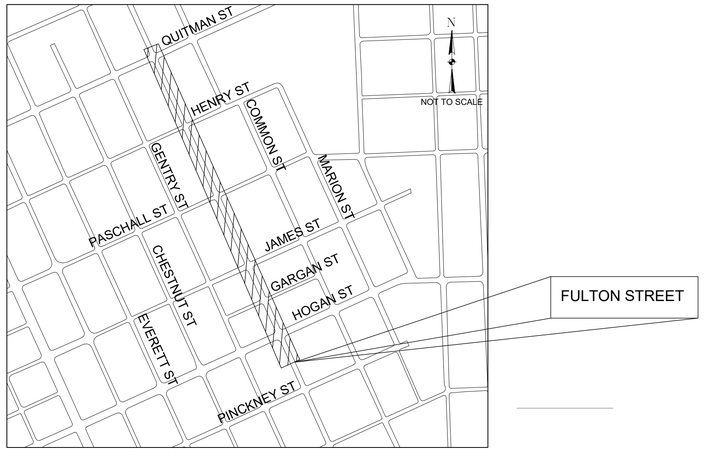
HOUSTON PUBLIC WORKS
ENGINEERING AND CONSTRUCTION DIVISION

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS
FROM QUITMAN STREET TO HOGAN STREET

WBS NO. N-000818-0001-3



LOCATION MAP



VICINITY MAP
KEY MAP NO. 493H AND 493D
GIMS MAP NO. 5458A AND 5458C

TDLR EABPR _____

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

NO.	DATE	REVISION	APP.

HATCH
750 TOWN & COUNTRY BLVD,
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY: AMANI ENGINEERING, INC.
FB NO. F-4528

90% DRAFT
2/3/26 UPDATE

FOR PRIVATE UTILITY REVIEW

NOT FOR CONSTRUCTION

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

10/2/2023 C:\PWWORKING\HATCH-DPD-SOUTH_CENTRAL_US\DMS31977\01 COVER.DWG

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FB NUMBER: P-6164

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

SHEET INDEX

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 2 OF 155	

PLOTTED: 10/2/2023 9:23 AM
PLOT STYLE: COH CIP.CTB
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\02 INDEX.dwg

ABBREVIATIONS:

&	AND
@	AT
AB	ALL BELL
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:

	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

NO.	DATE	REVISION	APP.

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

ABBREVIATIONS

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 3 OF 155	

PLOT STYLE: COH CIP.CTB PLOTTED: 10/2/2023 9:23 AM
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\03 ABBREVIATIONS.dwg

PLOTTED: 10/2/2023 9:24 AM

PLOT STYLE: COH CIP.CTB

FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\04 SYMBOLS.dwg

EXISTING PLAN VIEW

- WATER METER
- WATER VALVE (GATE)
- WATER VALVE (BUTTERFLY)
- FIRE HYDRANT/FLUSHING VALVE
- TAPPING SLEEVE & VALVE
- REDUCER (8" 6")
- ROUND CONNECTION
- SANITARY SEWER CLEANOUT & MANHOLE (CO, SAN MH)
- STORM SEWER MANHOLE (STM MH)
- STORM SEWER INLETS ('B' 'B–B' 'C' 'C–1' 'C–2' 'C–2A' 'GRATE')
- CULVERT PIPE AND HEADWALL
- TOP OF CURB ELEVATION (TC=XX.XX)
- GUTTER ELEVATION (G=XX.XX)
- TOP OF PAVEMENT ELEVATION (TP=XX.XX)
- CONTOUR LINE
- ROW LINE
- PROPERTY LINE
- LOT LINES
- EASEMENT LINE
- CENTER LINE OF ROW
- TRANSIT LINE
- EDGE OF DITCHES
- CENTER LINE OF DITCHES
- EDGE OF DITCHES
- FENCE LINE, WOOD
- FENCE LINE, CHAIN LINK
- FENCE LINE, BARBED WIRE
- FENCE LINE, HOG WIRE
- EDGE OF CONCRETE
- CURB LINE
- CONCRETE WALK
- EDGE OF ASPHALT
- EDGE OF SHELL OR GRAVEL
- DIMENSION LINE (28" 3–17)
- CENTERPOINT ENERGY AERIAL LINE
- CENTERPOINT ENERGY UNDERGROUND LINE
- GAS LINE
- MISC UNDERGROUND LINE
- PIPELINE OR WESTERN UNION CONDUIT (IDENTIFY CONDUIT)
- AT&T CONDUIT
- CABLE TV
- RAILROAD LINE
- WATER LINE (20" (AND SMALLER) WATER; 24" (LARGER THAN 20") WATER)
- SANITARY SEWER LINE (24" (AND SMALLER) SANITARY SEWER; 30" (LARGER THAN 24") SANITARY SEWER)
- STORM SEWER LINE (24" (AND SMALLER) STORM SEWER; 30" (LARGER THAN 24") STORM SEWER)
- SANITARY SEWER FORCE MAIN
- RECLAIMED WATER LINE (RWL)
- NON–POTABLE WATER LINE (NPW)
- GAS METER
- GAS VALVE
- MISC UNDERGROUND PIPELINE LABLE (A2)

PROPOSED PLAN VIEW

- WATER METER (WM)
- WATER VALVE (GATE) (WV)
- WATER VALVE (BUTTERFLY) (BFWV)
- FIRE HYDRANT/FLUSHING VALVE (FH, WV)
- TAPPING SLEEVE & VALVE (TS&V)
- REDUCER (12" 8")
- ROUND CONNECTION
- SANITARY SEWER CLEANOUT & MANHOLE (CO, SAN MH)
- STORM SEWER MANHOLE (STM MH)
- STORM SEWER INLETS ('B' 'B–B' 'C' 'C–1' 'C–2' 'C–2A' 'GRATE')
- CULVERT PIPE AND HEADWALL
- TOP OF CURB ELEVATION (TC=XX.XX)
- GUTTER ELEVATION (G=XX.XX)
- TOP OF PAVEMENT ELEVATION (TP=XX.XX)
- CONTOUR LINE
- ROW LINE
- PROPERTY LINE
- LOT LINES
- EASEMENT LINE
- CENTER LINE OF ROW
- TRANSIT LINE
- EDGE OF DITCHES
- CENTER LINE OF DITCHES
- EDGE OF DITCHES
- FENCE LINE, WOOD
- FENCE LINE, CHAIN LINK
- FENCE LINE, BARBED WIRE
- FENCE LINE, HOG WIRE
- EDGE OF CONCRETE
- CURB LINE
- CONCRETE WALK
- EDGE OF ASPHALT
- EDGE OF SHELL OR GRAVEL
- DIMENSION LINE (28" 3–17)
- CENTERPOINT ENERGY AERIAL LINE
- CENTERPOINT ENERGY UNDERGROUND LINE
- GAS LINE
- MISC UNDERGROUND LINE
- PIPELINE OR WESTERN UNION CONDUIT (IDENTIFY CONDUIT)
- AT&T CONDUIT
- CABLE TV
- MATCH LINE
- RAILROAD LINE
- WATER LINE (20" (AND SMALLER) WATER; 24" (LARGER THAN 20") WATER)
- SANITARY SEWER LINE (24" (AND SMALLER) SANITARY SEWER; 30" (LARGER THAN 24") SANITARY SEWER)
- STORM SEWER LINE (24" (AND SMALLER) STORM SEWER; 30" (LARGER THAN 24") STORM SEWER)
- SANITARY SEWER FORCE MAIN
- RECLAIMED WATER LINE (RWL)
- NON–POTABLE WATER LINE (NPW)
- GAS METER
- GAS VALVE
- MISC UNDERGROUND PIPELINE LABLE (A2)

EXISTING PLAN VIEW

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

PROPOSED PLAN VIEW

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

MISC STANDARD ELEMENTS

- COH NORTH ARROW (N)
- COH BAR SCALE (0' 10' 20' 40'; SCALE: 1"=20')
- REVISION CLOUD/DELTA (1)

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

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

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HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

SYMBOLS

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N–000818–0001–3	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 4 OF 155	

PRIVATE UTILITY NOTES:

AT&T TEXAS/ SWBT FACILITIES:

1. THE LOCATIONS OF AT&T TEXAS/SWBT FACILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.
2. THE CONTRACTOR SHALL CALL 1-800-344-8377 (TEXAS 811) A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE UNDERGROUND LINES FIELD LOCATED.
3. WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF AT&T TEXAS/SWBT FACILITIES, ALL EXCAVATIONS MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES. WHEN BORING, THE CONTRACTOR SHALL EXPOSE THE AT&T TEXAS/SWBT FACILITIES.
4. WHEN AT&T TEXAS/SWBT FACILITIES ARE EXPOSED, THE CONTRACTOR WILL PROVIDE SUPPORT TO PREVENT DAMAGE TO THE CONDUIT DUCTS OR CABLES. WHEN EXCAVATING NEAR TELEPHONE POLES THE CONTRACTOR SHALL BRACE THE POLE FOR SUPPORT.
5. THE PRESENCE OR ABSENCE OF AT&T TEXAS/SWBT UNDERGROUND CONDUIT FACILITIES OR BURIED CABLE FACILITIES SHOWN ON THESE PLANS DOES NOT MEAN THAT THERE ARE NO DIRECT BURIED CABLES OR OTHER CABLES IN CONDUIT IN THE AREA.
6. PLEASE CONTACT THE AT&T TEXAS DAMAGE PREVENTION MANAGER ROOSEVELT LEE JR. AT (713) 567-4552 OR EMAIL HIM AT RL7259@ATT.COM, IF THERE ARE QUESTIONS ABOUT BORING OR EXCAVATING NEAR 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 713-945-8036 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

GENERAL NOTES - METRO:

1. CONTRACTOR SHALL NOTIFY METRO AT 713-615-6195 TWO WEEKS PRIOR TO DISTURBING EXISTING BUS STOPS.

1. CONTRACTOR SHALL COORDINATE WITH METRO TO REMOVE EXISTING AMENITIES.

2. BUS STOPS SHALL CONSTRUCTED PER CITY OF HOUSTON INFRASTRUCTURE DESIGN MANUAL AND MEET CURRENT ADA REQUIREMENTS

GRADING NOTES:

1. GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE STARTING CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.
2. BEFORE STARTING CONSTRUCTION, CONTRACTOR SHALL VERIFY BENCHMARK ELEVATION AND NOTIFY ENGINEER IF ANY DISCREPANCY AND/OR CONFLICT IS FOUND.
3. CONTRACTOR SHALL ENSURE THERE IS POSITIVE DRAINAGE FROM THE PROPOSED BUILDINGS AND NO PONDING IN PAVED AREAS, AND SHALL NOTIFY ENGINEER IF ANY GRADING DISCREPANCIES ARE FOUND IN THE EXISTING AND PROPOSED GRADES PRIOR TO PLACEMENT OF PAVEMENT OR UTILITIES.
4. CONTRACTOR SHALL PROTECT ALL MANHOLE COVERS, VALVE COVERS, VAULT LIDS, FIRE HYDRANTS, POWER POLES, GUY WIRES, AND TELEPHONE BOXES THAT ARE TO REMAIN IN PLACE AND UNDISTURBED DURING CONSTRUCTION.
5. ALL EXISTING CONCRETE PAVING, SIDEWALK, AND CURB DEMOLITION SHALL BE REMOVED AND DISPOSED OF BY CONTRACTOR. DISPOSAL SHALL BE AT AN APPROVED OFF-SITE, LAWFUL LOCATION, UNLESS DIRECTED OTHERWISE BY THE OWNER.

WATER CONSTRUCTION NOTES:

1. ALL 4" THROUGH 12" WATER LINE TO BE AWWA C-900 PVC DR-18 BLUE PRESSURE RATED WATER MAIN WITH 2" AND SMALLER WATER SERVICE LINE TO BE CONTINUOUS TYPE K COPPER TUBING PER COH STANDARD SPECIFICATION SECTION 02503. ALL 4" THRU 54" DI PIPE WATER LINES SHALL BE AWWA C151 WITH INSIDE LINING WITH AWWA C104 AND DOUBLE WRAPPED WITH 8-MIL POLYETHYLENE SHEETS.
2. CONCRETE THRUST BLOCKS SHALL BE PROVIDED AS NECESSARY TO PREVENT PIPE MOVEMENT. USE RESTRAINED JOINTS WHERE PREVENTING PIPE MOVEMENT IS NECESSARY DUE TO THRUST.
3. ALL WATER LINES UNDER PROPOSED OR FUTURE PAVING AND TO A POINT OF ONE (1) FOOT BACK OF ALL PROPOSED OR FUTURE CURBS SHALL BE ENCASED IN BANK SAND TO 12" OVER PIPE AND BACKFILLED WITH CEMENT STABILIZED SAND TO WITHIN ONE (1) FOOT OF SUBGRADE.
4. ALL WATER LINE AND SEWER LINE CROSSINGS SHALL BE CONSTRUCTED PER CITY OF HOUSTON AND TCEQ REGULATIONS.
5. ALL WATER VALVES SHALL BE SUPPLIED AND INS TALLED IN ACCORDANCE WITH THE LATEST EDITION OF AWWA C-500 AND SHALL BE OF THE RESILIENT SEAT TYPE.
6. ALL WATER LINES TO BE DISINFECTED IN CONFORMANCE WITH AWWA C-651 AND THE TEXAS STATE DEPARTMENT OF HEALTH. AT LEAST ONE BACTERIOLOGICAL SAMPLE SHALL BE COLLECTED FOR EVERY 1,000 LINEAR FEET OF WATER LINE AND SHALL BE REPEATED IF CONTMINATION PERSISTS.
7. ALL BELOW GRADE VALVES SHALL BE GASKETED, HUB-END GATE VALVES WITH A CAST IRON BOX, EXCEPT WHERE FLANGES ARE CALLED OUT ON THE PLANS.
8. 4" THRU 12" FITTINGS SHALL BE CEMENT MORTAR LINED COMPACT DUCTILE IRON PRESSURE FITTINGS PER ANSI A21.53, OR PUSH ON FITTINGS PER ANSI A21.10 PRESSURE RATED AT 250 PSIG.
9. HYDROSTATIC TESTING: ALL WATER PIPE SHALL BE TESTED FOR LEAKAGE IN ACCORDANCE WITH THE LATEST CITY OF HOUSTON STANDARD CONSTRUCTION SPECIFICATIONS. TESTS ARE TO BE PERFORMED ON THE ENTIRE FOOTAGE OF WATER PIPE INCLUDED IN THE PROJECT.
10. ALL WATER LINES TO HAVE 4' MINIMUM COVER TO FINISHED GRADE AND MINIMUM 12" CLEARANCE TO OTHER UTILITIES AT CROSSING UNLESS OTHERWISE NOTED ON PLANS. ALL WATER LINE INSTALLED OVER 8' DEEP SHALL UTILIZE RESTRAINED JOINT FITTINGS.
11. CONTRACTOR SHALL KEEP WATER PIPE CLEAN AND CAPPED (OR OTHERWISE EFFECTIVELY COVERED) OPEN PIPE ENDS TO EXCLUDE INSECTS, ANIMALS OR OTHER SOURCES OF CONTAMINATION FROM UNFINISHED LINES AT TIMES WHEN CONSTRUCTION IS NOT IN PROGRESS.

STORM SEWER 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.

SANITARY SEWER 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.

NO.	DATE	REVISION	APP.

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

GENERAL NOTES
1 OF 2

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 5 OF 155	

PLOTTED: 10/2/2023 9:24 AM
PLOT STYLE: COH CIP.CTB
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\05 GENERAL NOTES.dwg

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.

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.

NO.	DATE	REVISION	APP.

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
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90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

GENERAL NOTES
2 OF 2

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
N.T.S.
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. 6 OF 155

PLOTTED: 10/2/2023 9:24 AM
PLOT STYLE: COH CIP.CTB
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\05 GENERAL NOTES.dwg

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMQN STREET TO HOGAN STREET WBS NO. N-000818-0001-3 60% QUANTITY ESTIMATE DATE: 10/2023					ESTIMATED QUANTITY	STA. 1+00 TO 5+00	STA. 5+00 TO 9+00	STA. 9+00 TO 13+50	STA. 13+50 TO 17+00	STA. 17+00 TO 21+00	STA. 21+00 TO 24+00	TOTAL
Item No.	Spec. Ref.	Category	Base Unit Short Title	Unit								
24	02221	Paving Items	Remove and Dispose of Existing Concrete Pavement with or Without Asphalt Overlay	SY		0						0
25	02221	Paving Items	Remove and Dispose of Existing Driveways	SY		0						0
26	02221	Paving Items	Remove/Dispose Concrete Sidewalk	SY		0						0
27	02221	Paving Items	Remove and Dispose of Existing Miscellaneous Concrete of Masonry	CY		0						0
28	02714	Paving Items	Flexible Base Course/Temp Driveways Residential	EA		0						0
29	02714	Paving Items	Flexible Base Course/Temp Driveways Commercial	EA		0						0
30	02714	Paving Items	Flexible Base Course/Temp Driveways Custom Width	EA		0						0
31	02741	Paving Items	Detour Road Including 6-inch Flexible Base	SY		0						0
32	02762	Paving Items	Blast Cleaning Pavement Markers 4-inch Wide Lines	LF		0						0
33	02762	Paving Items	Blast Cleaning Pavement Markers 6-inch Wide Lines	LF		0						0
34	02762	Paving Items	Blast Cleaning Pavement Markers 24-inch Wide Lines	LF		0						0
35	02762	Paving Items	Blast Cleaning Pavement Markers TURNING ARROW	SF		0						0
36	02762	Paving Items	Blast Cleaning Pavement Markers ONLY	SF		0						0
37	02762	Paving Items	Removal of Raised Pavement Markers All Types	LS		0						0
38	02765	Paving Items	Temporary and removable reflectorized pavement rnarking 4-inch Yellow)	LF		0						0
39	02765	Paving Items	Temporary and Removable Reflectorized Pavement Marking (4-inch White)	LF		0						0
40	02765	Paving Items	Temporary and Removable Reflectorized Pavement Marking (6-inch \!\hite)	LF		0						0
41	02765	Paving Items	Temporary and Removable Reflectorized Pavement Marking (24-inch White)	LF		0						0
42	02764	Paving Items	Raised Pavement Markers Type II Two Face Reflective (Y)	EA		0						0
43	02315	Paving Items	Roadway Excavation With or Without Subgrade	CY		0						0
44	02775	Paving Items	Reinforced Concrete Sidewalk	SF		0						0
45	02336	Paving Items	Lime Stabilized Subgrade 8-inch Thick	SY		0						0
46	02336	Paving Items	6% Lime Treor Stabilized Subgrade (Dry Weight)	TON		0						0
47	02751	Paving Items	Reinforced Concrete Driveways (11")-inch Thick	SY		0						0
48	02754	Paving Items	Reinforced Concrete Driveways (7")	SF		0						0
49	02771	Paving Items	6" Reinforced Concrete Curbs	LF		0						0
50	02771	Paving Items	Esplandade Curbs	LF		0						0
51	02775	Paving Items	Wheelchair Ramps	SF		0						0
52	02752	Paving Items	Board Expansion Joint with Load Transfer Device	LF		0						0
53	02752	Paving Items	Horízontal 18" Dowels, 1" Diameter	EA		0						0
54	01554	Paving Items	TrafficSigns	EA		0						0
55	01554	Paving Items	Traffic Sign - Plaque	EA		0						0
56	01554	Paving Items	Street Narrie Signs	EA		0						0
57	01554	Paving Items	Relocate Traffic Signs	EA		0						0
58	02221	Paving Items	Remove Traffic Signs	EA		0						0
59	02764	Paving Items	Raised Pavement Marker Type II-C-R	EA		0						0
60	02767	Paving Items	Thermoplastic Pavement Marking 4-inch Wide White (BRK)	LF		0						0
61	02767	Paving Items	Thermoplastic Pavement Marking 6-inch Wide White (SLD)	LF		0						0
62	02767	Paving Items	Thermoplastic Pavement Marking 12-inch Wide White (SLD)	LF		0						0
63	02767	Paving Items	Thermoplastic Pavement Marking 12-inch Wide Yellow (SLD)	LF		0						0
64	02767	Paving Items	Thermoplastic Pavement Marking 24-inch Wide White (SLD)	LF		0						0
65	02767	Paving Items	Thermoplastic Pavement Marking 24-inch Wide Green (SLD)	LF		0						0
66	02767	Paving Items	Thermoplastic Pavement Marking Symbol Arrow	EA		0						0
67	02767	Paving Items	Thermoplastic Pavement Marking Elongated Word Only	EA		0						0
68	02754	Paving Items	CNP-11SW LED Cobra Luminaire Street Light	EA		0						0
69	01554	Paving Items	Type III Barricade	EA		0						0

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMQN STREET TO HOGAN STREET WBS NO. N-000818-0001-3 60% QUANTITY ESTIMATE DATE: 10/2023					ESTIMATED QUANTITY	STA. 1+00 TO 5+00	STA. 5+00 TO 9+00	STA. 9+00 TO 13+50	STA. 13+50 TO 17+00	STA. 17+00 TO 21+00	STA. 21+00 TO 24+00	TOTAL
Item No.	Spec. Ref.	Category	Base Unit Short Title	Unit								
1	01502	General Items	Mobilization	LS		0						0
2	01554	General Items	Installation or Replacement of Permanent Signs (signs, poles, anchors and hardware provided by city)	LS		0						0
3	01555	General Items	Traffic Control and Regulation	LS		0						0
4	01555	General Items	Flagmen	LS		0						0
5	01555	General Items	Install Low Profile Concrete Barriers	LF		0						0
6	01555	General Items	Relocate Low Profile Concrete Barriers	LF		0						0
7	01555	General Items	Remove Low Profile Concrete Barriers	LF		0						0
8	02233	General Items	Clearing and Grubbing	LS		0						0
9	01570	General Items	Bagged Gravel Bag	LF		0						0
10	01570	General Items	Reinforced Filter Fabric barrier	LF		0						0
11	01570	General Items	Filter Fabric Fence	LF		0						0
12	01570	General Items	Implementation and maintenance of Storm Water Pollution Prevention Structures (SWPPP)	LS		0						0
13	01570	General Items	Inlet Protection Barrier	LF		0						0
14	01578	General Items	Groundwater Control for Open-Cut Construction	LF		0						0
15	01740	General Items	SiteRestoration	LF		0						0
16	02105 02120	General Items	Transportation and Disposal of Type I Soil at Approval Facility	CY		0						0
17	02105 02120	General Items	Transportation and Disposal of Type II Soil at Approval Facility	CY		0						0
18	02120	General Items	Transportation and Disposal of Contaminated Groundwater at Approved Facility	GAL		0						0
19	02581	General Items	Street Light Conduit	LF		0						0
20	01575	General Items	Stabilized Construction Exit	SY		0						0
21	01562	General Items	Tree and Plant Protection	LS		0						0
22	02922	General Items	Solid Sod - Bermuda Grass	SY		0						0
23	02921	General Items	Hydro Mulch Seeding	AC		0						0

NO.	DATE	REVISION	APP.

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

GENERAL AND PAVING QUANTITIES

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
N.T.S.
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. 7 OF 155

PLOTTED: 10/2/2023 9:24 AM
PLOT STYLE: COH CIP.CTB
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\06 QUANTITY TABLES.dwg

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMQN STREET TO HOGAN STREET WBS NO. N-000818-0001-3 60% QUANTITY ESTIMATE DATE: 10/2023					ESTIMATED QUANTITY	STA. 1+00 TO 5+00	STA. 5+00 TO 9+00	STA. 9+00 TO 13+50	STA. 13+50 TO 17+00	STA. 17+00 TO 21+00	STA. 21+00 TO 24+00	TOTAL
Item No.	Spec. Ref.	Category	Base Unit Short Title	Unit								
70	02520	Water Items	Remove and Salvage EXisting Fire Hydrant	EA		0						0
71	02520	Water Items	Proposed Fire Hydrant	EA		0						0
72	02520	Water Items	6-inch diameter fire hydrant branch by open-cut	LF		0						0
73	02511	Water Items	12" Water Line by open cut (All materials)	LF		0						0
74	02513	Water Items	12" Wet Connection	EA		0						0
75	02516	Water Items	Cut, Plug, and Abandon Existing 12" Water Line	EA		0						0
76	02512	Water Items	3/4-inch to 1-inch Diameter Water Taps and Copper Service Line with Meter Box,Long Side	EA		0						0
77	02512	Water Items	3/4 inch to 1-inch Diameter Water Taps and Copper Service Line with Meter Box,Short Side	EA		0						0
78	02512	Water Items	1-1/2-inch to 2-inch Diameter Water Taps and Copper Service Line with Meter Box,Long Side	EA		0						0
79	02512	Water Items	1-1/2-inch to 2-inch Diameter Water Taps and Copper Service Line with Meter Box,Short Side	EA		0						0

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMQN STREET TO HOGAN STREET WBS NO. N-000818-0001-3 60% QUANTITY ESTIMATE DATE: 10/2023					ESTIMATED QUANTITY	STA. 1+00 TO 5+00	STA. 5+00 TO 9+00	STA. 9+00 TO 13+50	STA. 13+50 TO 17+00	STA. 17+00 TO 21+00	STA. 21+00 TO 24+00	TOTAL
Item No.	Spec. Ref.	Category	Base Unit Short Title	Unit								
97	02221	Wastewater Items	Remove and Dispose of Sanitary Sewer (10") and Smaller	LF		0						0
98	02221	Wastewater Items	Remove and Dispose of Sanitary Sewer Manhole	EA		0						0
99	02221	Wastewater Items	Remove and Dispose of Sanitary Sewer Manhole in PPCA	EA		0						0
100	02511	Wastewater Items	8" Sanitary Sewer by Open Cut	LF		0						0
101	02082	Wastewater Items	4' Dia Sanitary Sewer Manhole, 8' depth and less	EA		0						0
102	02082	Wastewater Items	4' Dia Sanitary Sewer Manhole, 8' depth and less in PPCA	EA		0						0
103	02082	Wastewater Items	Extra Depth 4' Dia Sanitary Sewer MH	VF		0						0
104	02082	Wastewater Items	5' Dia Sanitary Sewer Manhole	EA		0						0
105	02082	Wastewater Items	Extra Depth S' Dia Sanitary Sewer	VF		0						0
106	02082	Wastewater Items	Manhole Drops, up to 12", All Depth	EA		0						0
107	02260	Wastewater Items	Trench Safety System for Sanitary Sewer Excavations	LF		0						0
108	02086	Wastewater Items	Adjust sanitary sewer MH to new grade	EA		0						0

NO.	DATE	REVISION	APP.

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

WATER AND WASTEWATER QUANTITIES

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
N.T.S.
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. 8 OF 155

PLOT STYLE: COH CIP.CTB
PLOTTED: 10/2/2023 9:24 AM
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\06 QUANTITY TABLES.dwg

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS
FROM QUITMQN STREET TO HOGAN STREET

WBS NO. N-000818-0001-3

60% QUANTITY ESTIMATE
DATE: 10/2023

Item No.	Spec. Ref.	Category	Base Unit Short Title	Unit	ESTIMATED QUANTITY	FULTON ST. STA. 1+00 TO 5+00	FULTON ST. STA. 5+00 TO 9+00	FULTON ST. STA. 9+00 TO 13+50	FULTON ST. STA. 13+50 TO 17+00	FULTON ST. STA. 17+00 TO 21+00	FULTON ST. STA. 21+00 TO 24+00	HOGAN ST. STA. 1+00 TO 5+00	GARGAN ST. STA. 1+50 TO 4+50	JAMES ST. STA. 1+50 TO 4+50	PASCHALL ST. STA. 4+50 TO 7+50	HENRY ST. STA. 2+00 TO 4+50	QUITMAN ST. STA. 1+50 TO 6+00	TOTAL
109	02631	Storm Sewer Items	Adjust storm sewer MH to new grade	EA		0												0
110	02221	Storm Sewer Items	Remove & Dispose of Existing Storm Sewers (12" RCP)	LF		0												0
111	02221	Storm Sewer Items	Remove & Dispose of Existing Storm Sewers (18" RCP)	LF		0												0
112	02221	Storm Sewer Items	Remove & Dispose of Existing Storm Sewers (24" RCP)	LF		0												0
113	02221	Storm Sewer Items	Remove & Dispose of Existing Storm Sewers (30" RCP)	LF		0												0
114	02221	Storm Sewer Items	Remove & Dispose of Existing Storm Sewers (36" RCP)	LF		0												0
115	02221	Storm Sewer Items	Remove & Dispose of Existing Storm Sewers (48" RCP)	LF		0												0
116	02221	Storm Sewer Items	Remove & Dispose of Existing Storm Sewers (54" RCP)	LF		0												0
117	02221	Storm Sewer Items	Remove & Dispose of Existing Storm Sewers (90" RCP)	LF		0												0
118	02221	Storm Sewer Items	Remove & Dispose of Existing Storm Sewers (96" RCP)	LF		0												0
119	02221	Storm Sewer Items	Remove & Dispose of Existing Storm Sewers (10'x8' RCB)	LF		0												0
120	02221	Storm Sewer Items	Remove & Dispose of Existing Storm Sewers (Les Than 24")	LF		0												0
121	02221	Storm Sewer Items	Remove & Dispose of Existing Storm Sewers (24" to 36")	LF		0												0
122	02221	Storm Sewer Items	Remove & Dispose of Existing Storm Sewers (42" to 54")	LF		0												0
123	02221	Storm Sewer Items	Remove & Dispose of Existing Storm Sewers (larger than 60")	LF		0												0
124	02221	Storm Sewer Items	Remove & Dispose of Existing Storm Sewer Inlets	EA		0												0
125	02221	Storm Sewer Items	Remove & Dispose of Existing Storm Sewer Manholes	EA		0												0
126	02631	Storm Sewer Items	24" RCP (ASTM C76, Class III) (Rubber Gasketed)	LF		0												0
42	02631	Storm Sewer Items	30" RCP (ASTM C76, Class III) (Rubber Gasketed)	LF		0												0
43	02631	Storm Sewer Items	36" RCP (ASTM C76, Class III) (Rubber Gasketed)	LF		0												0
44	02631	Storm Sewer Items	42" RCP (ASTM C76, Class III) (Rubber Gasketed)	LF		0												0
45	02631	Storm Sewer Items	48" RCP (ASTM C76, Class III) (Rubber Gasketed)	LF		0												0
46	02631	Storm Sewer Items	54" RCP (ASTM C76, Class III) (Rubber Gasketed)	EA		0												0
47	02081	Storm Sewer Items	Manhole Type "C"	EA		0												0
48	02081	Storm Sewer Items	Manhole Type "C" on Proposed Concrete Box Sewer	EA		0												0
49	02633	Storm Sewer Items	Precast Type "B-B" Inlet	EA		0												0
50	02632 02633 02105	Storm Sewer Items	Precast Type "8-B" Inlet in PPCA	EA		0												0
51	02633	Storm Sewer Items	Junction Boxfor RCB	EA		0												0
52	02633	Storm Sewer Items	Type'A'Junction Box	EA		0												0
53	02633	Storm Sewer Items	Type'B'Junction Box	EA		0												0
54	02633	Storm Sewer Items	Type'C'Junction Box	EA		0												0
55	02633	Storm Sewer Items	Type'D'Junctïon Box	EA		0												0
56	02633	Storm Sewer Items	Type'E'Junction Box	EA		0												0
57	02632	Storm Sewer Items	Junction Box for 42" and smaller sewers with lïd or grate top	EA		0												0
58	02260	Storm Sewer Items	Trench Protection for Storm Sewers	LF		0												0

NO.	DATE	REVISION	APP.

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

STORM SEWER QUANTITIES

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
N.T.S.
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. 9 OF 155

PLOT STYLE: COH CIP.CTB
PLOTTED: 10/2/2023 10:18 AM
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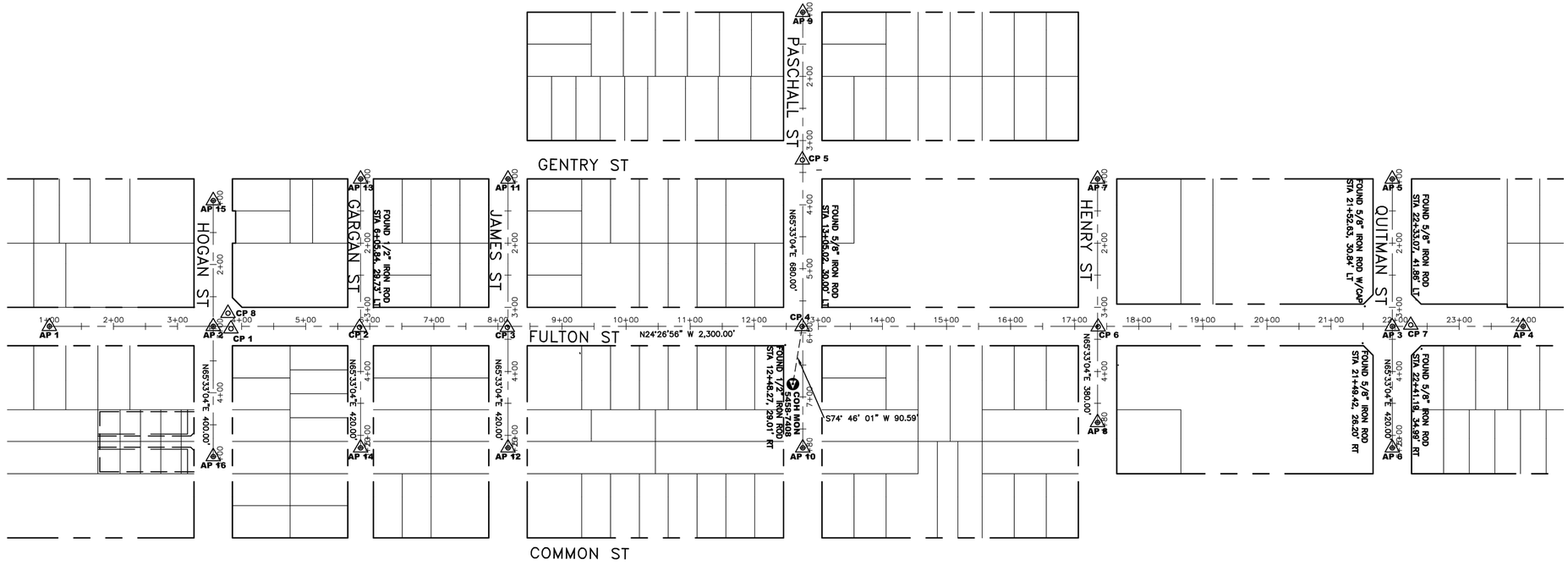


GRAPHIC SCALE

0 100 200

SCALE IN FEET
FULL SIZE: H. 1"=100'

NO.	DATE	REVISION	APP.

NOTE:

ALL BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204) NORTH AMERICAN DATUM OF 1983 (2011 ADJ) 2010 EPOCH. COORDINATES SHOWN HEREON ARE GRID VALUES AND ALL DISTANCES SHOWN ARE SURFACE VALUES. THE COMBINED SCALE FACTOR IS 0.99989533.

HORIZONTAL COORDINATES BASED ON GPS FIELD DATA COLLECTED NOVEMBER 2019.

ALL ELEVATIONS SHOWN HEREON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) GEOID 18 AND HAVE BEEN TRANSFERRED FROM THE PROJECT BENCHMARK TO CONTROL POINTS VIA DIFFERENTIAL LEVELING.

PROJECT BENCHMARK:

CITY OF HOUSTON BRASS DISK 5458-7408 BRASS DISK LOCATED ON THE SOUTH SIDE ON PASCHALL ST. APPROXIMATELY 100' EAST OF THE INTERSECTION OF PASCHALL ST. AND FULTON ST.
ELEV.= 47.22' GEOID 18

KEY MAP: 493D, 493H

HATCH

SURVEYED BY:
AMANI ENGINEERING, INC.

STATE OF TEXAS
REGISTERED
WILLIAM H. REIMER III
4044
PROFESSIONAL
LAND SURVEYOR
07-11-2022

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

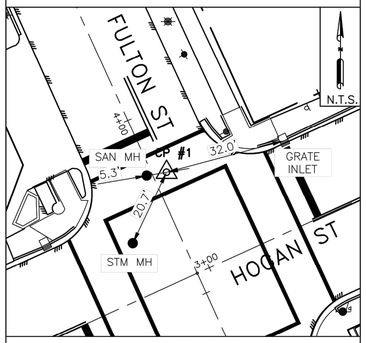
SURVEY CONTROL MAP
SHEET 1 OF 3

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
1"=100'
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. 10 OF 155

PLOT STYLE: COH CIP.CTB PLOTTED: 10/2/2023 9:24 AM

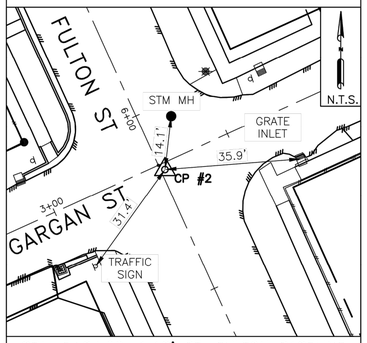
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\07 SURVEY CONTROL MAP.dwg

CP-1 -- MAG NAIL



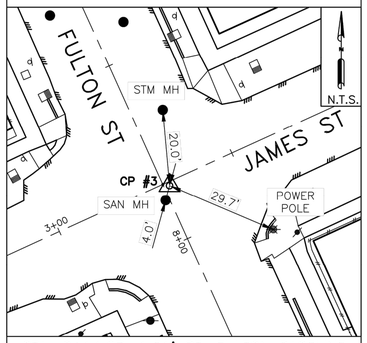
STA. 3+83.32, 3.68' RT,
FULTON BASELINE

CP-2 -- MAG NAIL



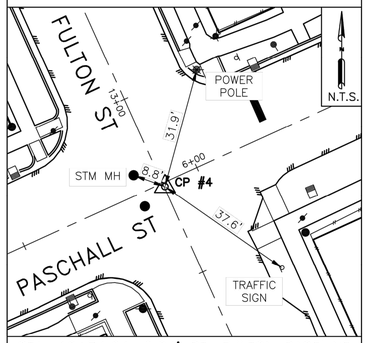
STA. 5+84.00, 1.18' RT, FULTON BASELINE
STA. 3+31.18, 1.70' RT, GARGAN BASELINE

CP-3 -- MAG NAIL



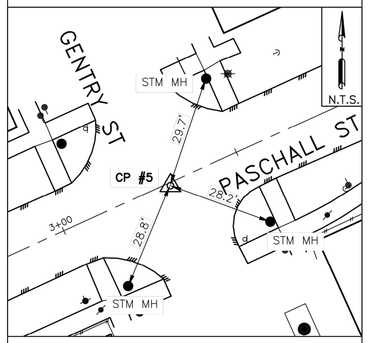
STA. 8+14.67, 1.51' RT, FULTON BASELINE
STA. 3+31.51, 1.03' RT JAMES BASELINE

CP-4 -- MAG NAIL



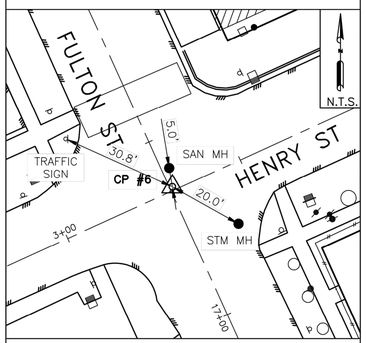
STA. 12+74.64, 0.24' RT, FULTON BASELINE
STA. 5+90.24, 1.06' RT PASCHALL BASELINE

CP-5 -- MAG NAIL



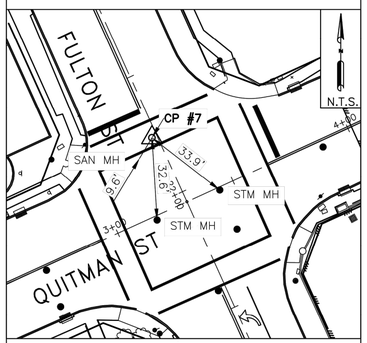
STA. 3+30.44, 0.67' RT,
PASCHALL ST BASELINE

CP-6 -- MAG NAIL



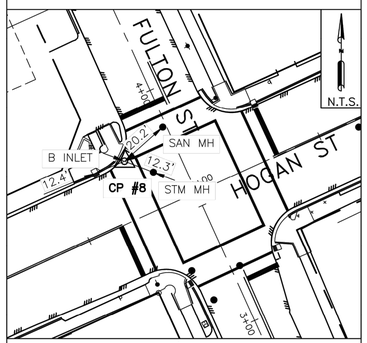
STA.17+36.68, 0.76' RT, FULTON BASELINE
STA.3+30.76, 0.98' LT, HENRY BASELINE

CP-7 -- X-CUT



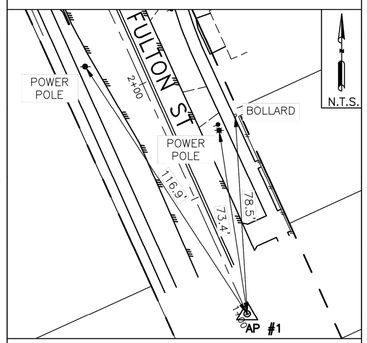
STA. 22+24.47, 2.06' LT, FULTON BASELINE
STA. 3+27.94, 28.77' LT, QUITMAN BASELINE

CP-8 -- MAG NAIL



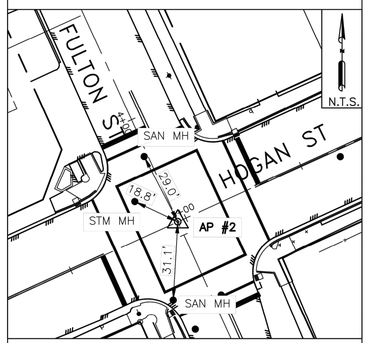
STA. 3+78.70, 20.80' LT, FULTON BASELINE
STA. 2+75.70, 23.01' LT, HOGAN BASELINE

AP-1 -- MAG NAIL



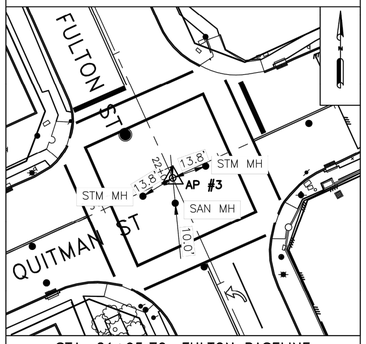
STA. 1+00.00,
FULTON ST BASELINE

AP-2 -- MAG NAIL



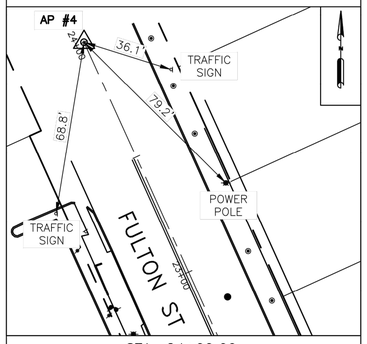
STA. 3+55.70, FULTON ST BASELINE
STA. 2+96.50, HOGAN BASELINE

AP-3 -- X-CUT



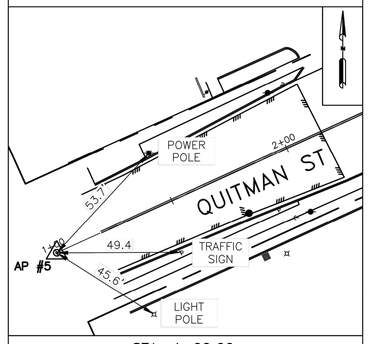
STA. 21+95.70, FULTON BASELINE
STA 3+30.00, QUITMAN BASELINE

AP-4 -- X-CUT



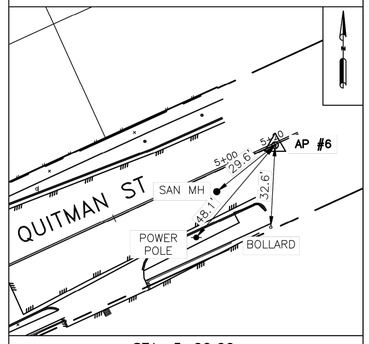
STA. 24+00.00,
FULTON ST BASELINE

AP-5 -- MAG NAIL



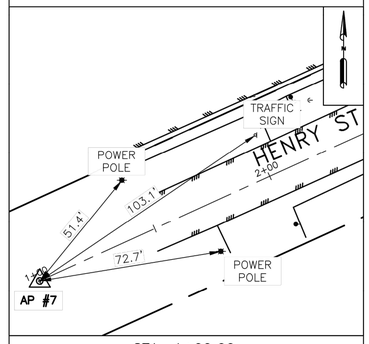
STA. 1+00.00,
QUITMAN ST BASELINE

AP-6 -- MAG NAIL



STA. 5+20.00,
QUITMAN ST BASELINE

AP-7 -- MAG NAIL



STA. 1+00.00,
HENRY ST BASELINE

NOTE:

ALL BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204) NORTH AMERICAN DATUM OF 1983 (2011 ADJ) 2010 EPOCH. COORDINATES SHOWN HEREON ARE GRID VALUES AND ALL DISTANCES SHOWN ARE SURFACE VALUES. THE COMBINED SCALE FACTOR IS 0.99989533.

HORIZONTAL COORDINATES BASED ON GPS FIELD DATA COLLECTED NOVEMBER 2019.

ALL ELEVATIONS SHOWN HEREON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) GEOID 18 AND HAVE BEEN TRANSFERRED FROM THE PROJECT BENCHMARK TO CONTROL POINTS VIA DIFFERENTIAL LEVELING.

PROJECT BENCHMARK:

CITY OF HOUSTON BRASS DISK 5458-7408 BRASS DISK LOCATED ON THE SOUTH SIDE ON PASCHALL ST. APPROXIMATELY 100' EAST OF THE INTERSECTION OF PASCHALL ST. AND FULTON ST.
ELEV.= 47.22' GEOID 18

NO.	DATE	REVISION	APP.

KEY MAP: 493D, 493H

HATCH

SURVEYED BY:
AMANI ENGINEERING, INC.

STATE OF TEXAS REGISTERED WILLIAM H. REIMER III 4044 PROFESSIONAL LAND SURVEYOR
07-11-2022

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

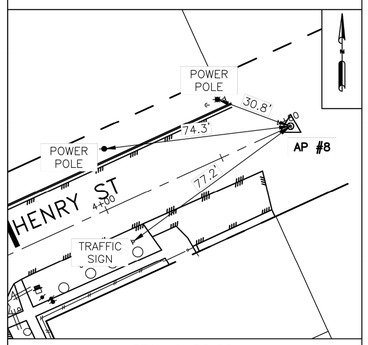
SURVEY CONTROL MAP
SHEET 2 OF 3

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
N.T.S.
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. 11 OF 155

PLOTTED: 10/2/2023 9:24 AM
PLOT STYLE: COH CIP.CTB
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\07 SURVEY CONTROL MAP.dwg

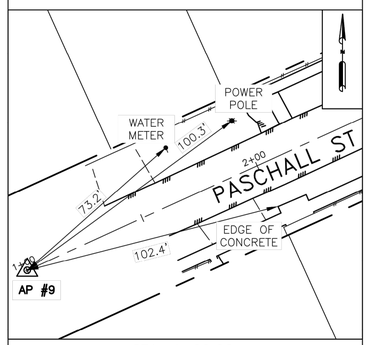
PLOT STYLE: COH CIP.CTB
PLOTTED: 10/2/2023 9:24 AM
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\07 SURVEY CONTROL MAP.dwg

AP-8 -- MAG NAIL



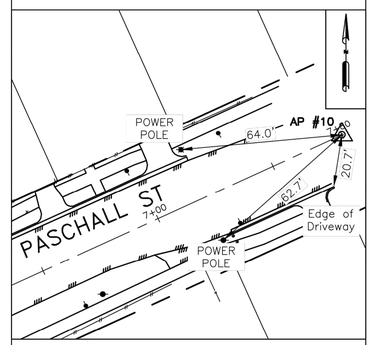
STA. 4+80.00,
HENRY ST BASELINE

AP-9 -- MAG NAIL



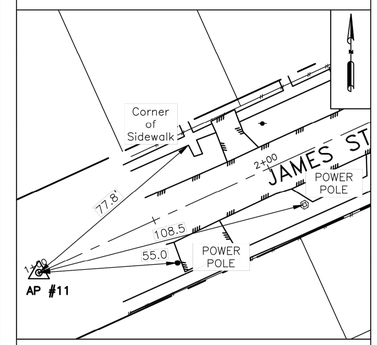
STA. 1+00.00,
PASCHALL ST BASELINE

AP-10 -- MAG NAIL



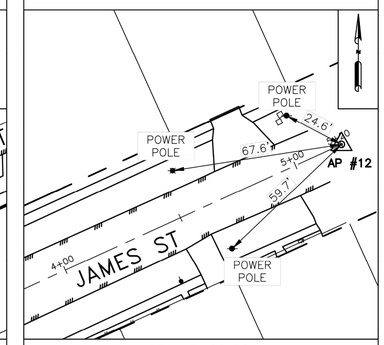
STA. 7+80.00,
PASCHALL ST BASELINE

AP-11 -- MAG NAIL



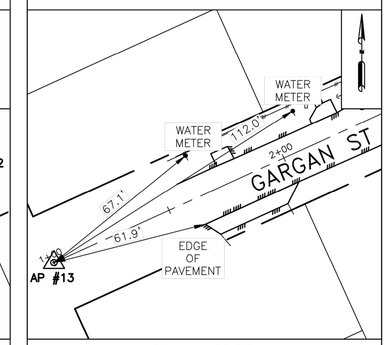
STA. 1+00.00,
JAMES ST BASELINE

AP-12 -- MAG NAIL



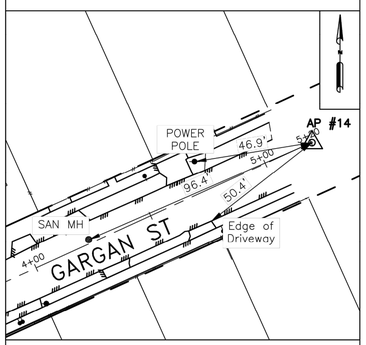
STA. 5+20.00,
JAMES ST BASELINE

AP-13 -- MAG NAIL



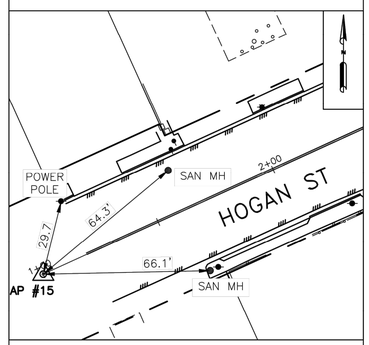
STA. 1+00.00,
GARGAN BASELINE

AP-14 -- MAG NAIL



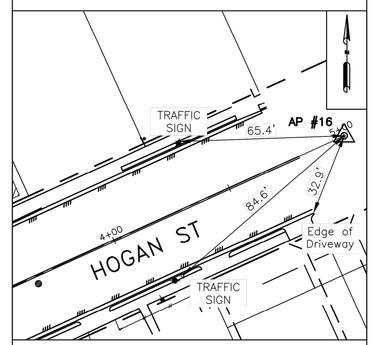
STA. 5+20.00,
GARGAN BASELINE

AP-15 -- MAG NAIL



STA. 1+00.00,
HOGAN ST BASELINE

AP-16 -- MAG NAIL



STA. 5+00.00,
HOGAN ST BASELINE

CONTROL POINTS & TEMPORARY BENCHMARKS (GRID COORDINATES)

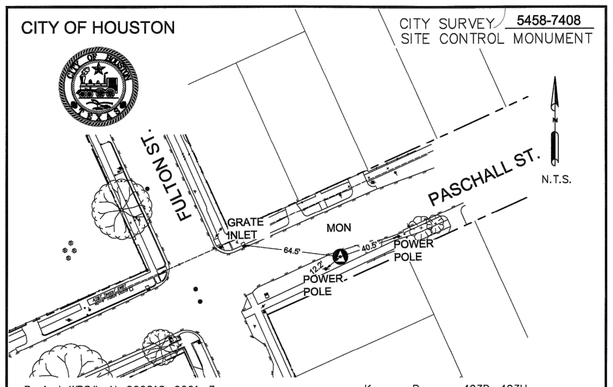
CP	(GRID) Northing	(GRID) Easting	Elevation	Description	Station	Remarks
1	13,848,264.87	3,123,715.83	46.61	MAG NAIL	STA. 3+83.32, 3.68' RT	FULTON ST
2	13,848,446.50	3,123,630.51	47.23	MAG NAIL	SAT. 5+84.00, 1.18' RT	FULTON ST
3	13,848,656.60	3,123,535.35	47.59	MAG NAIL	STA. 8+14.67, 1.51' RT	FULTON ST
4	13,849,074.75	3,123,343.84	48.34	MAG NAIL	STA. 12+74.64, 0.24' RT	FULTON ST
5	13,848,967.59	3,123,107.20	48.63	MAG NAIL	STA. 3+30.44, 0.67' RT	PASCHALL ST
6	13,849,495.53	3,123,153.10	48.55	MAG NAIL	STA. 17+36.68, 0.76' RT	FULTON ST
7	13,849,938.37	3,122,948.66	46.54	X-CUT	STA. 22+24.47, 2.06' LT	FULTON ST
8	13,848,250.54	3,123,695.45	46.19	MAG NAIL	STA. 3+78.70, 20.80' LT	FULTON ST

ADDITIONAL CONTROL POINTS (GRID COORDINATES)

AP	(GRID) Northing	(GRID) Easting	Description	Station	Remarks
1	13,848,005.46	3,123,829.73	MAG NAIL	STA. 1+00.00	FULTON ST
2	13,848,238.20	3,123,723.91	MAG NAIL	STA. 3+55.70	FULTON ST
3	13,849,913.03	3,122,962.45	X-CUT	STA. 21+95.70	FULTON ST
4	13,850,099.00	3,122,877.90	X-CUT	STA. 24+00.00	FULTON ST
5	13,849,817.85	3,122,753.09	MAG NAIL	STA. 1+00.00	QUITMAN ST
6	3,123,135.39	3,123,135.39	MAG NAIL	STA. 5+20.00	QUITMAN ST
7	13,849,399.14	3,122,943.46	MAG NAIL	STA. 1+00.00	HENRY ST
8	13,849,556.40	3,123,289.35	MAG NAIL	STA. 4+80.00	HENRY ST
9	13,848,872.84	3,122,897.16	MAG NAIL	STA. 1+00.00	PASCHALL ST
10	13,849,154.25	3,123,516.12	MAG NAIL	STA. 7+80.00	PASCHALL ST
11	13,848,561.73	3,123,324.19	MAG NAIL	STA. 1+00.00	JAMES ST
12	13,848,735.54	3,123,706.49	MAG NAIL	STA. 5+20.00	JAMES ST
13	13,848,352.37	3,123,419.37	MAG NAIL	STA. 1+00.00	GARGAN ST
14	13,848,526.19	3,123,801.67	MAG NAIL	STA. 5+20.00	GARGAN ST
15	13,848,156.88	3,123,545.05	MAG NAIL	STA. 1+00.00	HOGAN ST
16	13,848,322.42	3,123,909.14	MAG NAIL	STA. 5+00.00	HOGAN ST

CITY OF HOUSTON

CITY SURVEY 5458-7408
SITE CONTROL MONUMENT



Project WBS# N-000818-0001-3
Texas Coordinate System of 1983,
South Central Zone, U. S. Survey Feet
X= 3,123,431.24
Y= 13,849,098.55
Lat.= N 29° 46' 47.6373"
Lon.= W 95° 21' 30.9477"

Keymap Page: 493D, 493H
Orthometric Elevation = 47.22
Ellipsoid Height= -42.49
Geoid: GEOID 18
Datum Source & Adjustment:
2-HR STATIC GPS OBSERVATION
MADE ON MONUMENT ON 12/11/2019

Reference Frame Used: NAD_83(2011)(EPOCH: 2010.0000)
Vertical Adjustment used: NAVD 88 GEOID 18
General Location: LOCATED ON THE SOUTH SIDE ON PASCHALL ST. APPROXIMATELY 100' EAST OF THE INTERSECTION OF PASCHALL ST AND FULTON ST.

Date Set: 12/11/2019 Type of Mark: COH BRASS DISK

3 Nearest project control points (bearings and distances stated below):
1. CP #4, S 74° 46' 01" W, 90.59'
2. CP #5, S 67° 59' 38" W, 349.54'
3. CP #3, S 13° 15' 20" E, 454.09'

NOTE:
1. Bearings are grid bearings.
2. Scale Factor (S.F)= 0.99989533.

Surface= Grid / S.F.

Surveyed By: Amani Engineering, Inc.
8303 Southwest Freeway Suite # 600
Houston, TX 77074
Tel. (713)270-5700 & TBPELS# 10028200

STATE OF TEXAS REGISTERED CHRISTINA I. WEAVER 6753 PROFESSIONAL LAND SURVEYOR 2.5.20

P:\Codd\2019\19037 - Hatch-Fulton\Monuments\5458-7408.dwg

NOTE:

ALL BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204) NORTH AMERICAN DATUM OF 1983 (2011 ADJ) 2010 EPOCH. COORDINATES SHOWN HEREON ARE GRID VALUES AND ALL DISTANCES SHOWN ARE SURFACE VALUES. THE COMBINED SCALE FACTOR IS 0.99989533.

HORIZONTAL COORDINATES BASED ON GPS FIELD DATA COLLECTED NOVEMBER 2019.

ALL ELEVATIONS SHOWN HEREON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) GEOID 18 AND HAVE BEEN TRANSFERRED FROM THE PROJECT BENCHMARK TO CONTROL POINTS VIA DIFFERENTIAL LEVELING.

PROJECT BENCHMARK:

CITY OF HOUSTON BRASS DISK 5458-7408 BRASS DISK LOCATED ON THE SOUTH SIDE ON PASCHALL ST. APPROXIMATELY 100' EAST OF THE INTERSECTION OF PASCHALL ST. AND FULTON ST.
ELEV.= 47.22' GEOID 18

NO.	DATE	REVISION	APP.

KEY MAP: 493D, 493H

HATCH

SURVEYED BY:
AMANI ENGINEERING, INC.

STATE OF TEXAS REGISTERED WILLIAM H. REIMER III 4044 PROFESSIONAL LAND SURVEYOR 07-11-2022

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

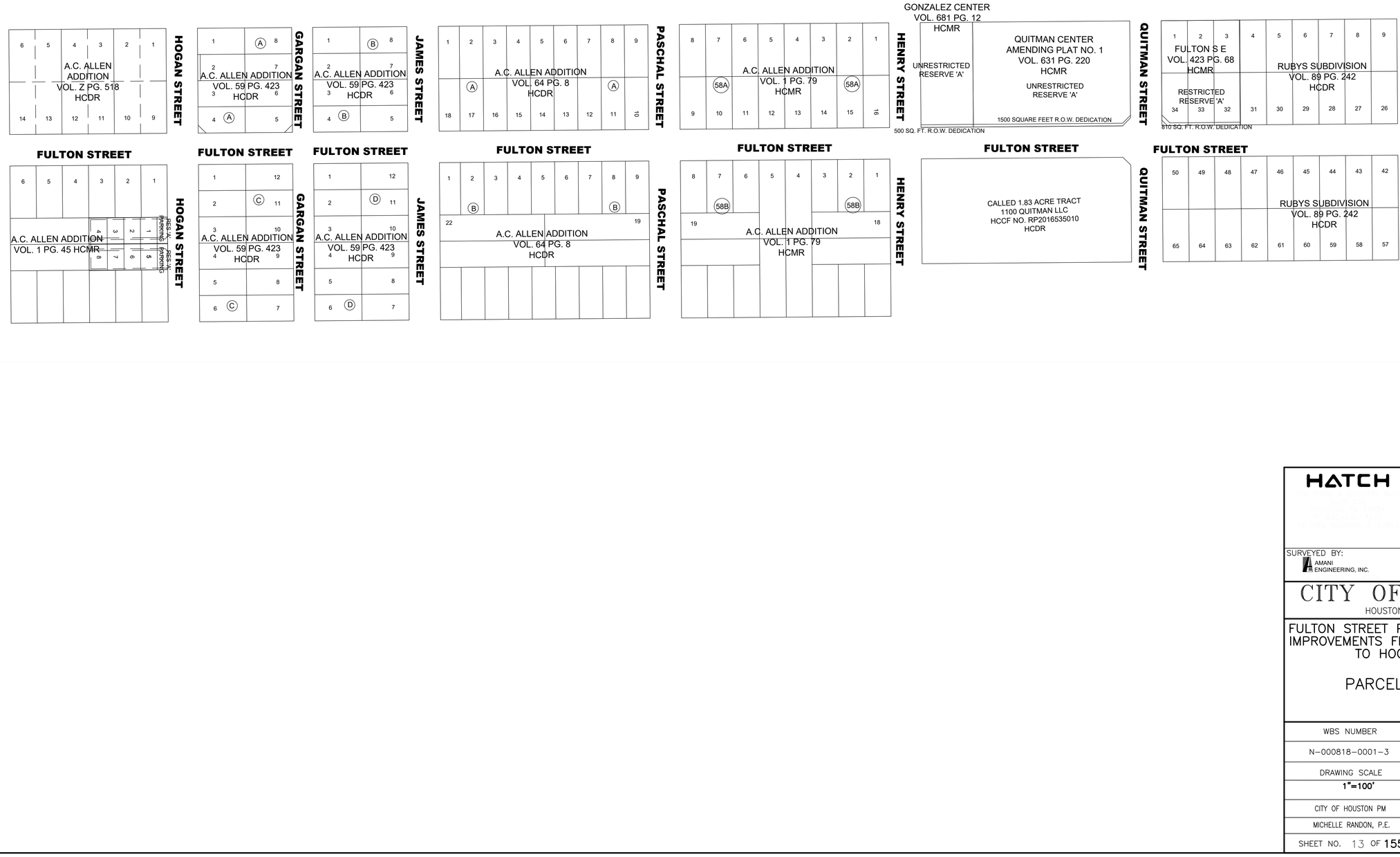
SURVEY CONTROL MAP
SHEET 3 OF 3

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
N.T.S.
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.

SHEET NO. 12 OF 155

GRAPHIC SCALE
0 100 200
(IN FEET)
FULL SIZE: H. 1"=100'
HALF SIZE: H. 1"=200'

NO.	DATE	REVISION	APP.



HATCH

SURVEYED BY:
AMANI ENGINEERING, INC.

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE
UTILITY REVIEW
NOT FOR
CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

PARCEL INDEX MAP

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
1"=100'
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. 13 OF 155

PLOTTED: 10/2/2023 9:24 AM
PLOT STYLE: COH CIP.CTB
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\08 PARCEL INDEX PLAN.dwg

PLOT STYLE: COH CIP.CTB
PLOTTED: 10/2/2023 3:44 PM
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\11 EXISTING AND PROPOSED TYPICAL SECTIONS.dwg

GRAPHIC SCALE
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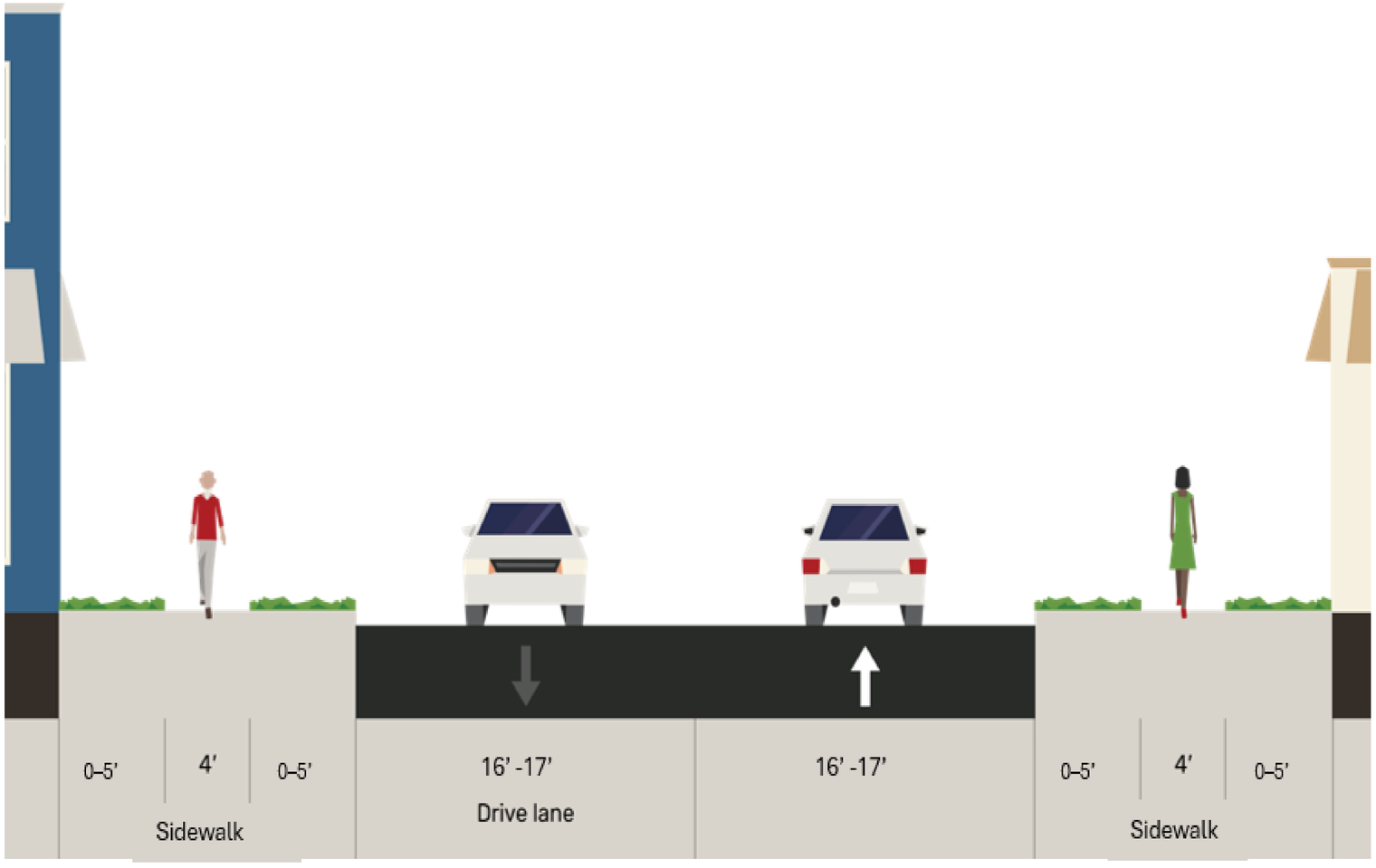
(IN FEET)
FULL SIZE: H. 1"=4'
HALF SIZE: H. 1"=8'

NO.	DATE	REVISION	APP.



HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE
UTILITY REVIEW
NOT FOR
CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

EXISTING TYPICAL SECTIONS

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
1"=4'
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. 16 OF 155

GRAPHIC SCALE
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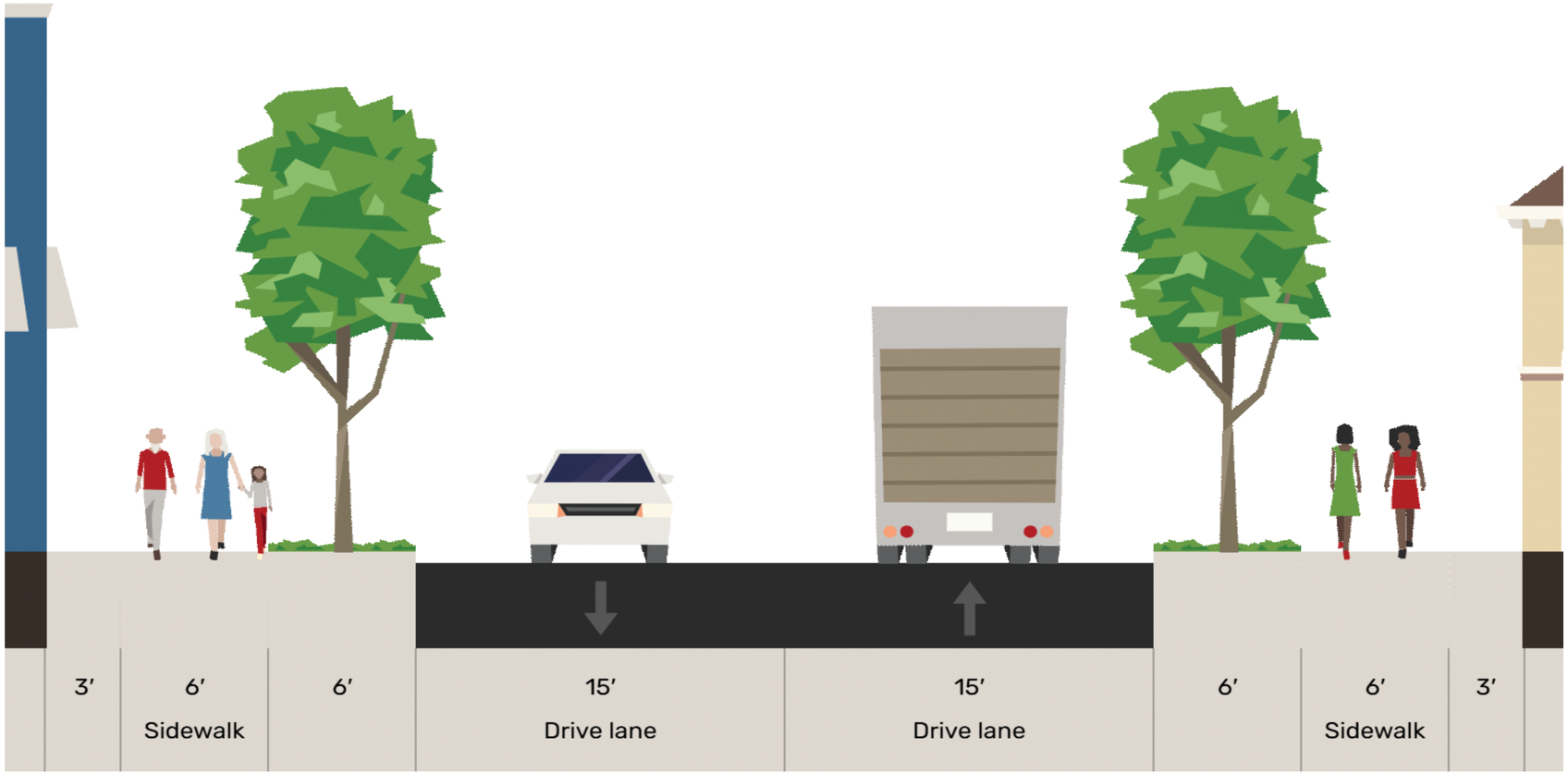
(IN FEET)
FULL SIZE: H. 1"=4'
HALF SIZE: H. 1"=8'

NO.	DATE	REVISION	APP.



HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE
UTILITY REVIEW
NOT FOR
CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

PROPOSED TYPICAL SECTIONS

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
1"=4'
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. 17 OF 155

PLOT STYLE: COH CIP.CTB PLOTTED: 10/2/2023 3:45 PM
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\11 EXISTING AND PROPOSED TYPICAL SECTIONS.dwg

CONSTRUCTION KEY NOTES

(01) EXISTING STORM SEWER TO REMAIN IN PLACE
(02) EXISTING INLET TO REMAIN IN PLACE
(03) EXISTING SANITARY SEWER TO REMAIN IN PLACE
(04) EXISTING WATER MAIN TO REMAIN IN PLACE
(05) EXISTING FIRE HYDRANT TO REMAIN IN PLACE
(06) CRITICAL LOCATION. SEE COH SPEC SECTION 02317
(07) EXISTING TRAFFIC SIGN TO REMAIN IN PLACE
(10) GROUT AND ABANDON SANITARY SEWER
(11) GROUT AND ABANDON SANITARY SEWER MANHOLE
(12) PROTECT AND BRACE EXISTING POWER POLE/STREET LIGHT
(13) PROCEED WITH CAUTION – BRACE AND SUPPORT CONDUITS DURING CONSTRUCTION
(14) PROCEED WITH CAUTION – WORK IN THE VICINITY OF GAS MAIN
(15) EXISTING POWER POLES/STREET LIGHTS AND/OR GUY WIRE TO BE REMOVED AND RELOCATED BY CENTERPOINT PRIOR TO OTHER CONSTRUCTION
(16) EXISTING TRAFFIC SIGNALS TO BE REMOVED. SEE SIGNALIZATION PLANS
(17) EXISTING TRAFFIC SIGNALS POLES TO BE REMAIN. SIGNALS AND SIGNAL CONTROL BOXES TO BE MODIFIED AND/OR RELOCATED. SEE SIGNALIZATION PLANS
(18) EXISTING FENCE TO BE REMOVED AND RELOCATED AT RIGHT-OF-WAY LINE
(19) REMOVE, SALVAGE AND RELOCATE EXISTING FLASHING BEACON SIGN POST
(20) REMOVE AND DISPOSE EXISTING SANITARY SEWER
(21) REMOVE AND DISPOSE EXISTING SANITARY SEWER MANHOLE
(22) REMOVE AND DISPOSE EXISTING STORM SEWER
(23) REMOVE AND DISPOSE EXISTING STORM SEWER MANHOLE
(24) REMOVE AND DISPOSE EXISTING INLET/CATCH BASIN
(25) REMOVE AND DISPOSE EXISTING WATER LINE
(26) REMOVE AND SALVAGE EXISTING FIRE HYDRANT
(27) REMOVE AND SALVAGE EXISTING TRAFFIC SIGN
(28) REMOVE AND DISPOSE OF EXISTING BOLLARD
(30) SAW CUT EXISTING PAVEMENT
(31) REMOVE AND DISPOSE OF EXISTING CONCRETE CURB OR CURB AND GUTTER
(32) REMOVE AND DISPOSE OF EXISTING SIDEWALK AND/OR WHEELCHAIR RAMP
(33) REMOVE AND DISPOSE OF EXISTING DRIVEWAY. SAW CUT AT R/W LINE, UNLESS NOTED OTHERWISE
(34) REMOVE AND DISPOSE OF EXISTING CONCRETE PAVEMENT WITH OR WITHOUT ASPHALT SURFACING (ALL THICKNESSES), INCLUDING BASE AND SUBGRADE
(35) REMOVE AND DISPOSE OF EXISTING CONCRETE PLANTER
(36) REMOVE AND SALVAGE EXISTING PRIVATE SIGN. RELOCATE OUTSIDE OF RIGHT-OF-WAY. COORDINATE LOCATION WITH OWNER.
(37) REMOVE EXISTING BUS STOP PAD AND BENCHES. COORDINATE WITH METRO FOR SALVAGE OR DISPOSAL
(38) REMOVE EXISTING TREE AND TREE ROOTS
(40) ADJUST EXISTING FRAME AND COVER TO MATCH NEW GRADE
(41) ADJUST EXISTING SANITARY MANHOLE RIM TO MATCH FINISHED GRADE
(42) ADJUST EXISTING CLEANOUT TOP TO MATCH FINISHED GRADE
(43) ADJUST EXISTING WATER METER TO MATCH FINISHED GRADE
(44) ADJUST EXISTING WATER VALVE ASSEMBLY (INCLUDING BOX IF PRESENT) TO MATCH FINISHED GRADE
(45) ADJUST EXISTING TELEPHONE/COMMUNICATION MANHOLE RIM TO MATCH FINISHED GRADE
(46) EXISTING CENTERPOINT GAS APPURTENANCES TO BE ADJUSTED TO FINISHED GRADE BY CENTERPOINT
(47) EXISTING TELEPHONE/COMMUNICATION MANHOLE/HANDHOLE TOP TO BE ADJUSTED TO FINISHED GRADE BY UTILITY OWNER
(50) MATCH EXISTING CURB AND GUTTER
(51) MATCH EXISTING SIDEWALK IN LINES AND ELEVATIONS
(52) MILL AND OVERLAY EXISTING ASPHALT TO MATCH EXISTING PAVEMENT ELEVATIONS AT TRANSITION TO NEW CONSTRUCTION
(53) END CONCRETE CURB NOSE DOWN TO MATCH EXISTING PAVEMENT ELEVATIONS
(54) CONNECT EXISTING SANITARY SEWER TO PROPOSED MANHOLE WITH NEW SEWER STUB AND STANDARD RESILIENT CONNECTOR
(55) CONNECT PROPOSED SANITARY SEWER TO EXISTING MANHOLE WITH STANDARD RESILIENT CONNECTOR
(56) CONNECT PROPOSED STORM SEWER TO EXISTING MANHOLE OR JUNCTION BOX
(57) CONNECT EXISTING STORM SEWER TO PROPOSED MANHOLE. PROVIDE WATERTIGHT CONNECTION WITH NON-SHRINK GROUT
(58) MATCH EXISTING CONCRETE PAVEMENT
(60) PROPOSED 6" CONCRETE CURB AND GUTTER
(61) PROPOSED 6" CONCRETE CURB
(62) PROPOSED 4" CONCRETE CURB
(63) PROPOSED VARIABLE HEIGHT CONCRETE CURB
(64) PROPOSED CONCRETE SIDEWALK, 4-1/2" THICK
(65) PROPOSED BIKE PATH PAVEMENT. SEE DETAILS
(66) PROPOSED CONCRETE DRIVEWAY, 7" THICK. SEE DRIVEWAY TABLE
(67) PROPOSED CONCRETE WHEELCHAIR RAMP
(68) PROPOSED DETECTABLE SURFACE, 2' WIDE
(69) PROPOSED 9" CONCRETE BUS STOP PAD AND LANDING
(70) PROPOSED ASPHALT PAVEMENT WITH CRUSHED CONCRETE BASE AND LIME STABILIZED SUBGRADE. SEE TYPICAL PAVEMENT SECTION
(71) PROPOSED CONCRETE PAVEMENT WITH LIME STABILIZED SUBGRADE. SEE TYPICAL PAVEMENT SECTION
(72) PROPOSED GREEN SPACE. PROVIDE MIN. OF 4" TOPSOIL AND SOD. SEE LANDSCAPING PLANS FOR TREE SPACE TREATMENT
(73) PROPOSED STRUCTURAL SOIL UNDER TREE STRIP AND BIKE PATH
(74) PROPOSED CONCRETE STORM MANHOLE. SEE STRUCTURE SCHEDULE FOR SIZES.
(75) PROPOSED DOUBLE ASSEMBLY TYPE BB INLET AND GRATE
(76) PROPOSED TYPE A INLET AND GRATE
(77) PROPOSED 24" RCP STORM SEWER (UNO)
(78) PROPOSED TYPE C INLET
(81) PROPOSED WATER MAIN RELOCATION
(82) PROPOSED FIRE HYDRANT
(83) PROPOSED STREET LIGHT, SEE ELECTRICAL PLANS
(90) PROPOSED PVC SANITARY SEWER, SIZES AS NOTED
(91) PROPOSED SANITARY SEWER MANHOLE
(92) PROPOSED SANITARY SEWER REHABILITATION
(93) PROPOSED SANITARY SEWER MANHOLE REHABILITATION

NO.	DATE	REVISION	APP.

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

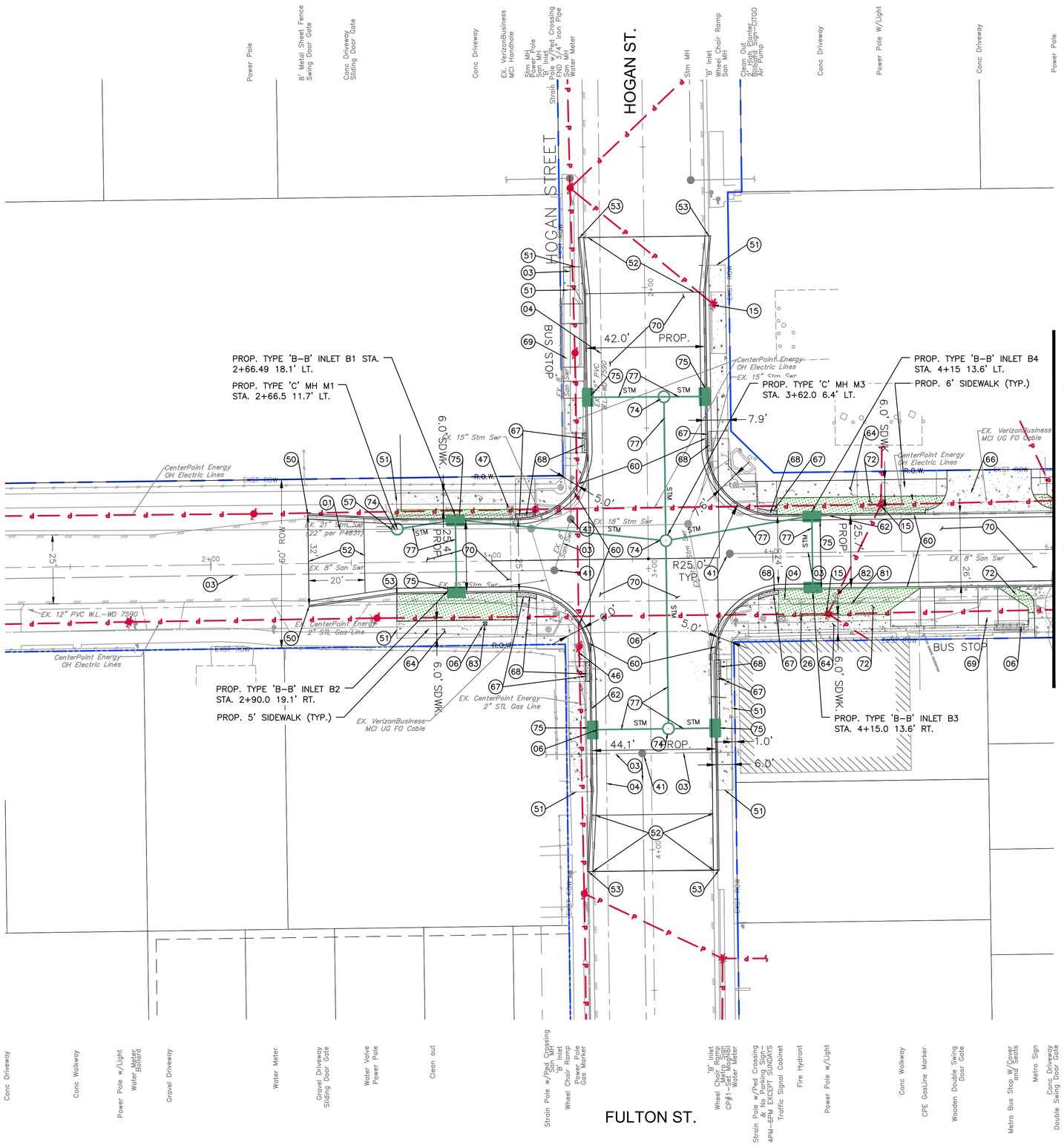
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

CONSTRUCTION KEY NOTES

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
N.T.S.
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. 18 OF 155

PLOTTED: 10/2/2023 9:25 AM
PLOT STYLE: COH CIP.CTB
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\12 CONSTRUCTION KEY NOTES.dwg



GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.

LEGEND:

- EXISTING RIGHT OF WAY
- P — CentrePoint Energy OH Electric Lines
- POWER POLE

NOTE:

CENTERPOINT ELECTRIC:
REQUESTING TO RELOCATE EXISTING POWER POLES TO THE BACK OF THE ROW APPROX. 1.5' FROM EDGE OF ROW

CENTERPOINT LIGHTING:
NEW LIGHT POLES PROPOSED W/ FIXTURES APPROX. 3' FROM BACK OF CURB

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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Date

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HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

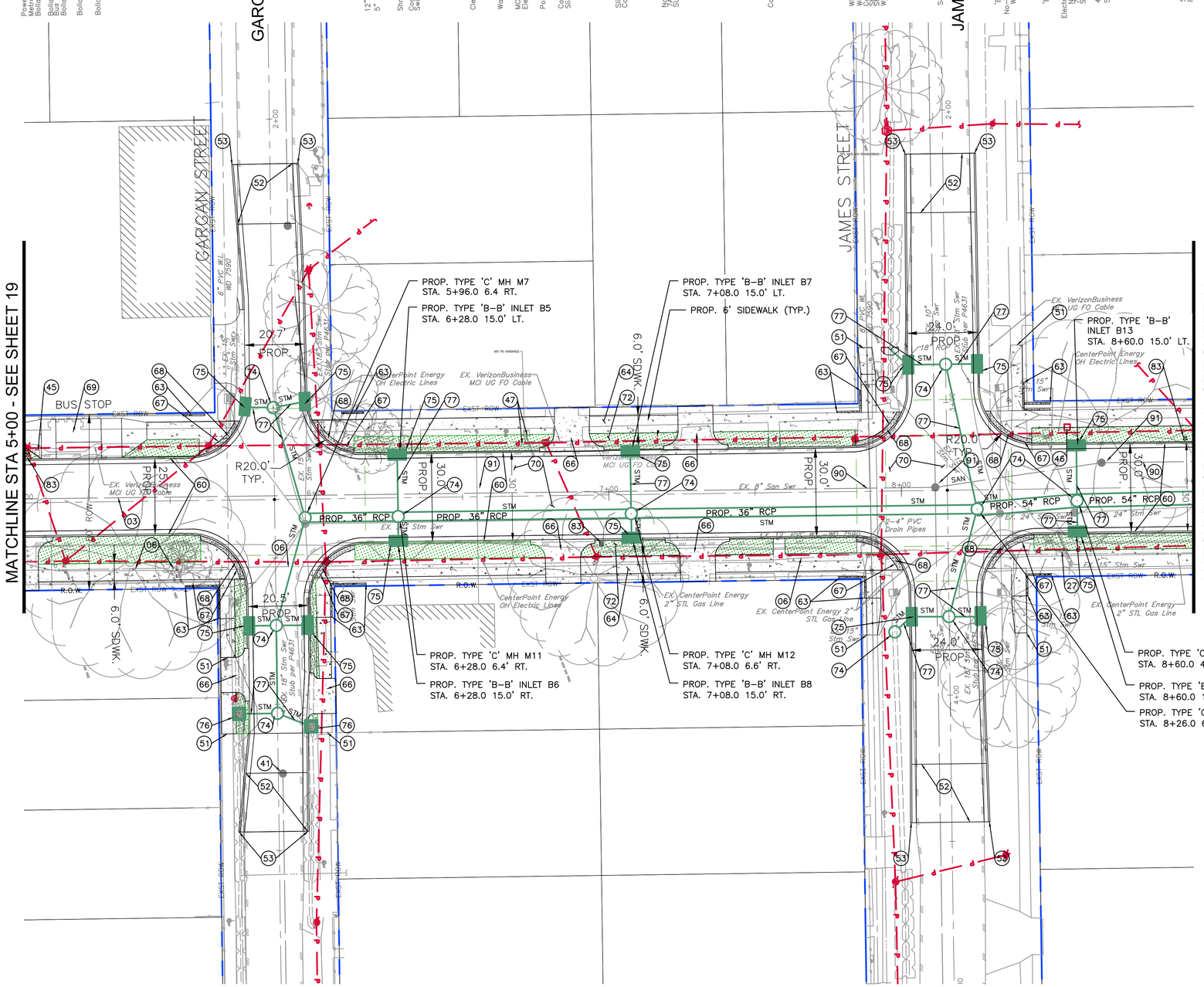
90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET
FULTON STREET
CENTERPOINT ELECTRIC
STA. 1+00 TO 5+00

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 19 OF 155	

PLOT STYLE: COH CIP.CTB
PLOTTED: 1/13/2026 10:01 AM
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms65210\13 FULTON PLAN_PROFILE.DWG



GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.

LEGEND:

EXISTING RIGHT OF WAY

CentrePoint Energy OH Electric Lines

POWER POLE

NOTE:

CENTERPOINT ELECTRIC:
REQUESTING TO RELOCATE EXISTING POWER POLES TO THE BACK OF THE ROW APPROX. 1.5' FROM EDGE OF ROW

CENTERPOINT LIGHTING:
NEW LIGHT POLES PROPOSED W/ FIXTURES APPROX. 3' FROM BACK OF CURB

NOTICE:
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VERIFICATION OF PRIVATE UTILITY LINES

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SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
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NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET
FULTON STREET
CENTERPOINT ELECTRIC
STA. 5+00 TO 9+00

WBS NUMBER	
N–000818–0001–3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 21 OF 155	

PLOTTED: 1/13/2026 9:43 AM
PLOT STYLE: COH CIP.CTB
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms65210\13 FULTON PLAN_PROFILE.DWG

PLOTTED: 1/13/2026 9:44 AM

PLOT STYLE: COH CIP.CTB

FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms65210\13 FULTON PLAN_PROFILE.DWG

GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.

LEGEND:

EXISTING RIGHT OF WAY

CentrePoint Energy OH Electric Lines

POWER POLE

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MATCHLINE STA 9+00 - SEE SHEET 21

MATCHLINE STA 13+50 - SEE S

FULTON STREET

PASCHALL STREET

PROP. 6' SIDEWALK (TYP.)

PROP. TYPE 'C' MH M19
STA. 12+81.0 2.6' RT.

PROP. TYPE 'C' MH M18
STA. 12+40.0 0.7' RT.

PROP. 54" RCP

PROP. 48" RCP

PROP. 30" STM SWR

PROP. 24" STM SWR

BUS STOP

R20.0' TYP.

35.7' PROP.

34.0' PROP.

Utility Buffer (TYP) (ROW to Sidewalk) (Mostly Grass)

5.0' Sidewalk (TYP) (Concrete)

Safety Buffer (TYP) (Sidewalk to Curb) (Mostly Grass)

6.0' SDWK.

FULTON ST.

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HATCH
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SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

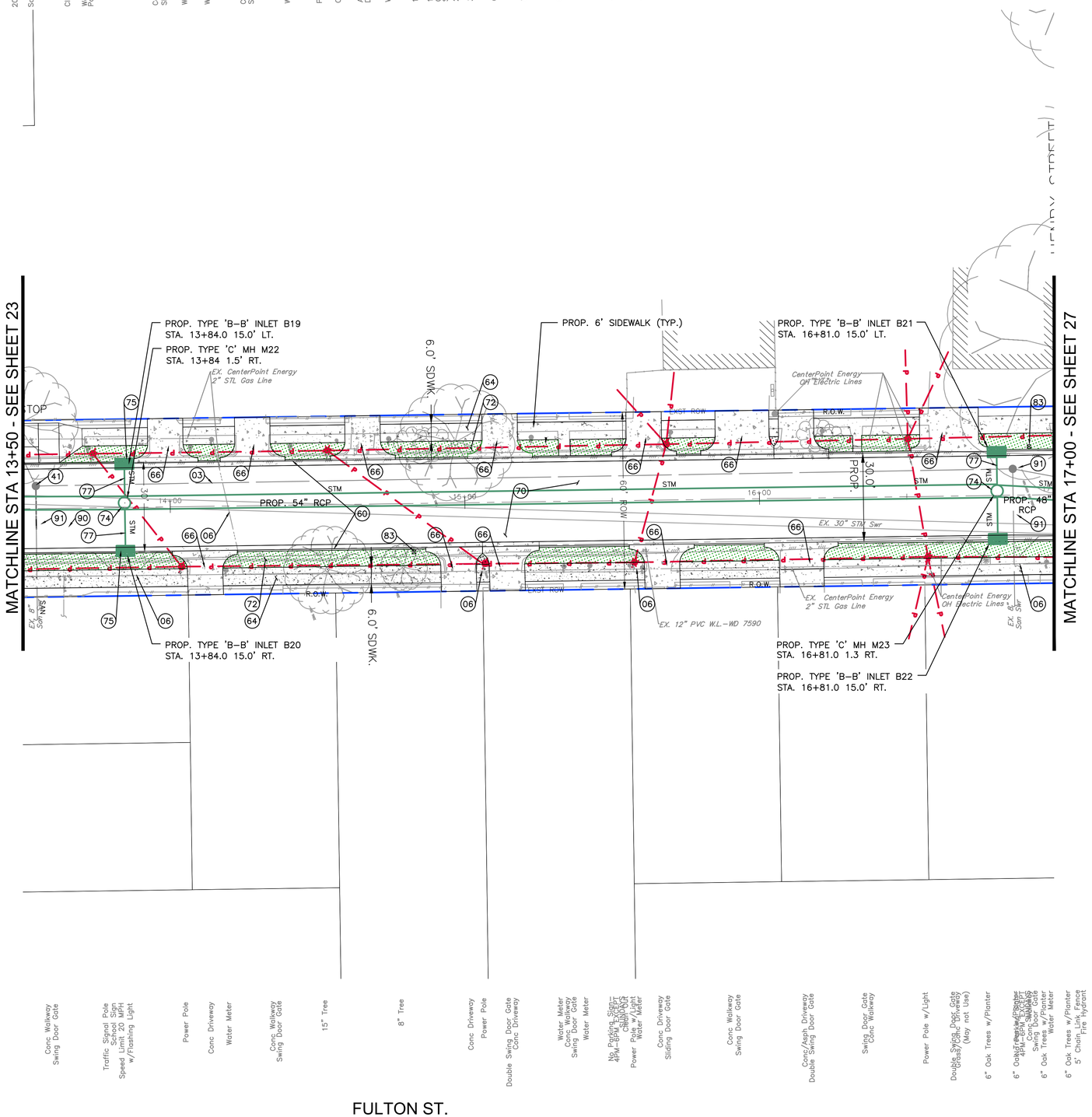
SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET
FULTON STREET
CENTERPOINT ELECTRIC
STA. 9+00 TO 13+50

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 23 OF 155	



GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.

LEGEND:

- EXISTING RIGHT OF WAY
- P — CentrePoint Energy OH Electric Lines
- POWER POLE

NOTE:

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SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET
FULTON STREET
CENTERPOINT ELECTRIC
STA. 13+50 TO 17+00

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 25 OF 155	

PLOT STYLE: COH CIP.CTB
PLOTTED: 1/13/2026 9:44 AM
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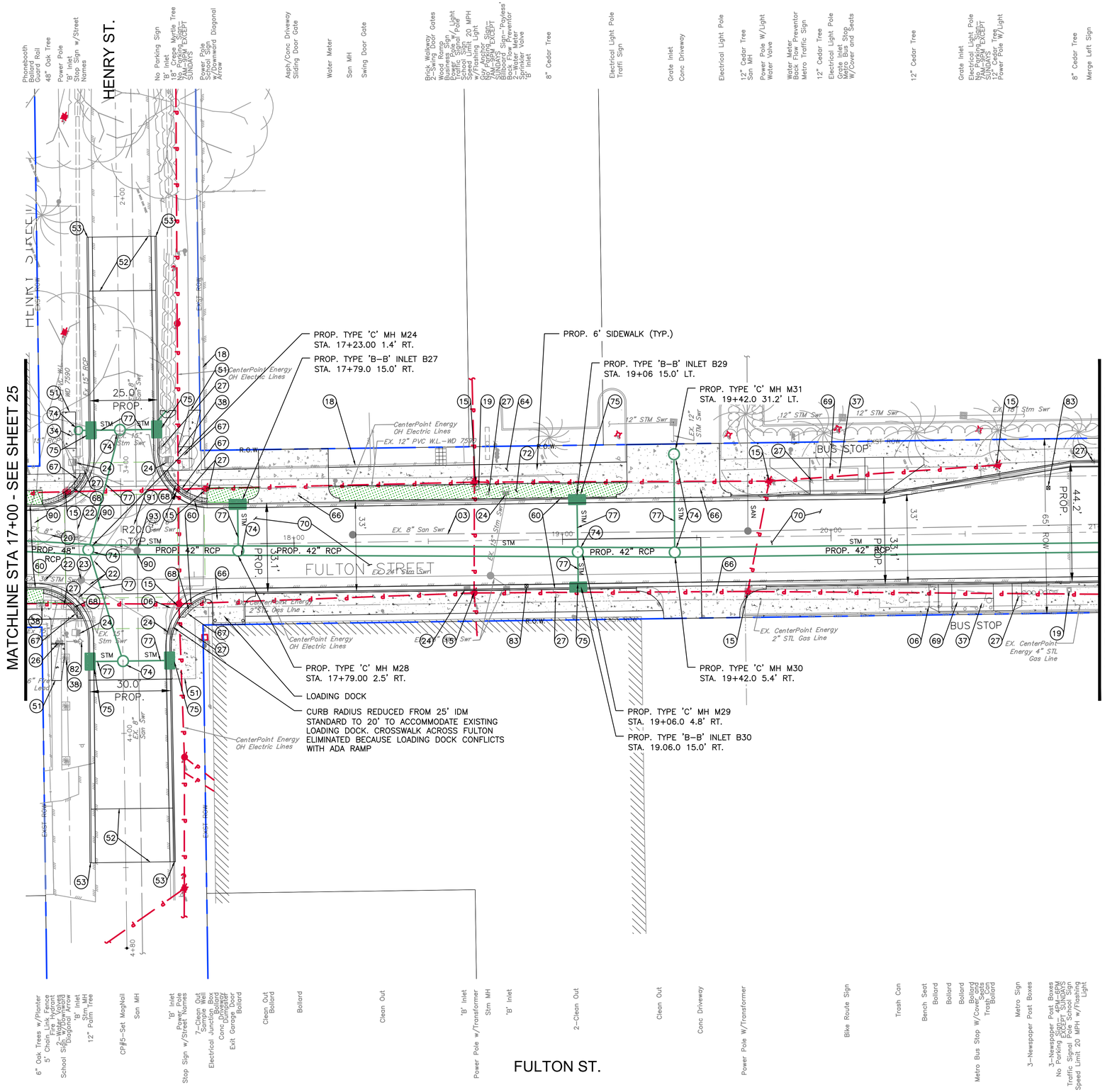

GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.

LEGEND:

EXISTING RIGHT OF WAY

CentrePoint Energy OH Electric Lines

POWER POLE

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SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET
FULTON STREET
CENTERPOINT ELECTRIC
STA. 17+00 TO 21+00

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 27 OF 155	

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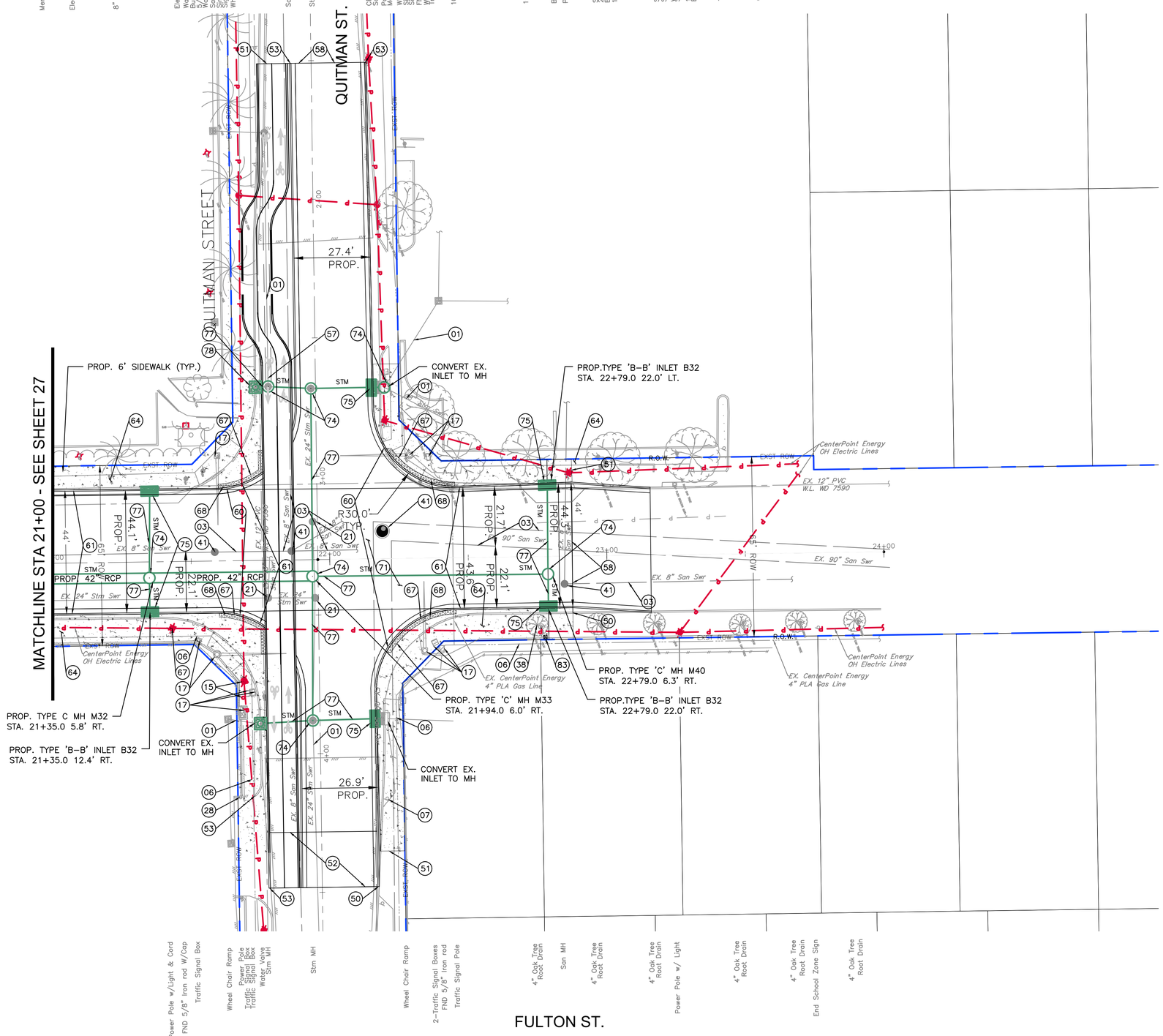

GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.

LEGEND:

- EXISTING RIGHT OF WAY
- P — CentrePoint Energy OH Electric Lines
- POWER POLE

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SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET
FULTON STREET
CENTERPOINT ELECTRIC
STA. 21+00 TO END

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 29 OF 155	

PLOTTED: 1/13/2026 9:45 AM
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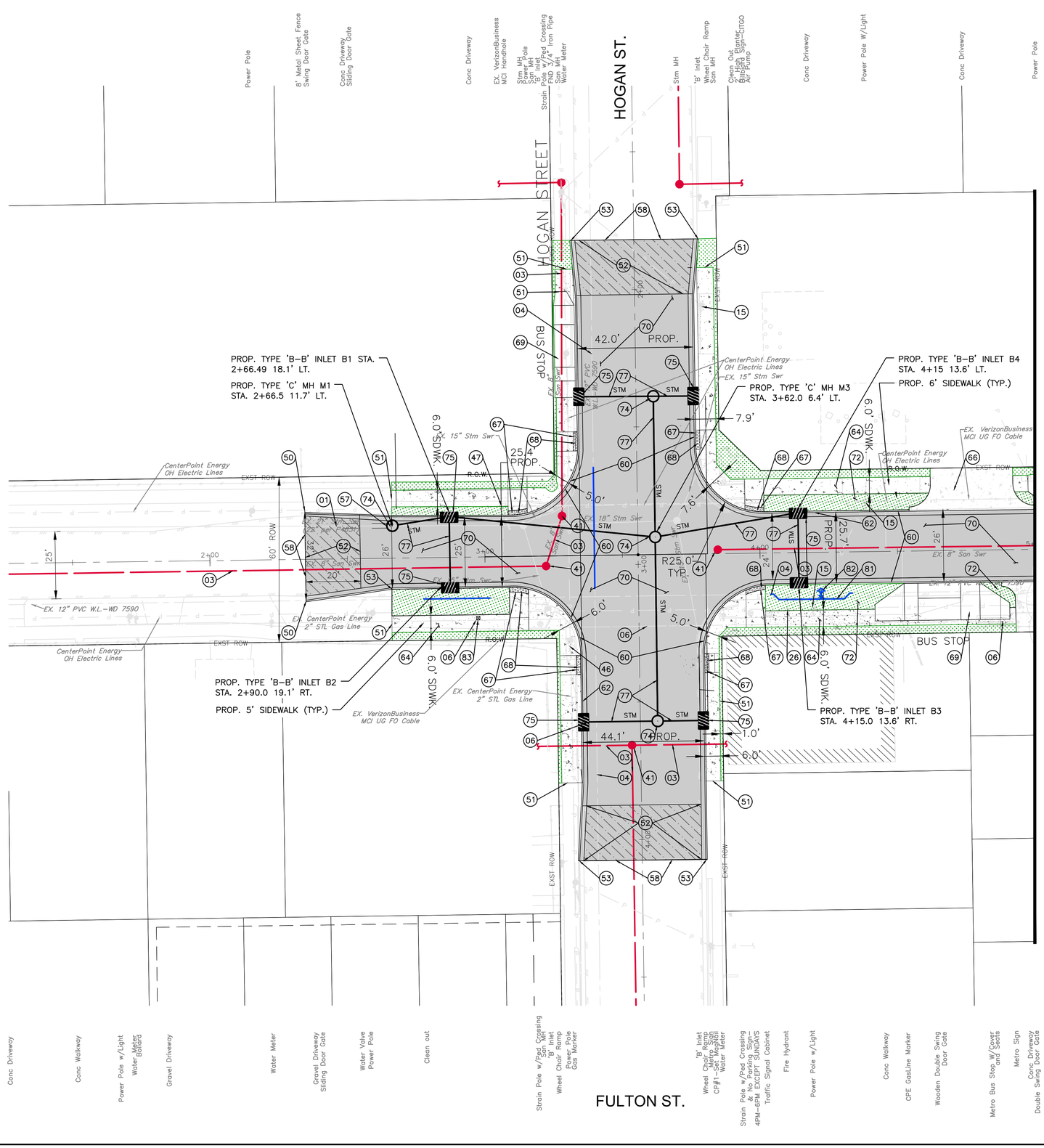

GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.

LEGEND:

- PROPOSED STORM
- PROPOSED WATER
- PROPOSED SANITARY

NOTE:

REFER TO CONSTRUCTION KEY NOTES SHEET XXX

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SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

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FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET
FULTON STREET DRAINAGE PLAN STA. 1+00 TO 5+00

WBS NUMBER	
N–000818–0001–3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 19 OF 155	

PLOTTED: 1/28/2026 2:14 PM
PLOT STYLE: COH CIP.CTB
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms60086\13 FULTON PLAN_PROFILE.DWG

PLOT STYLE: COH CIP.CTB
PLOTTED: 10/2/2023 9:26 AM
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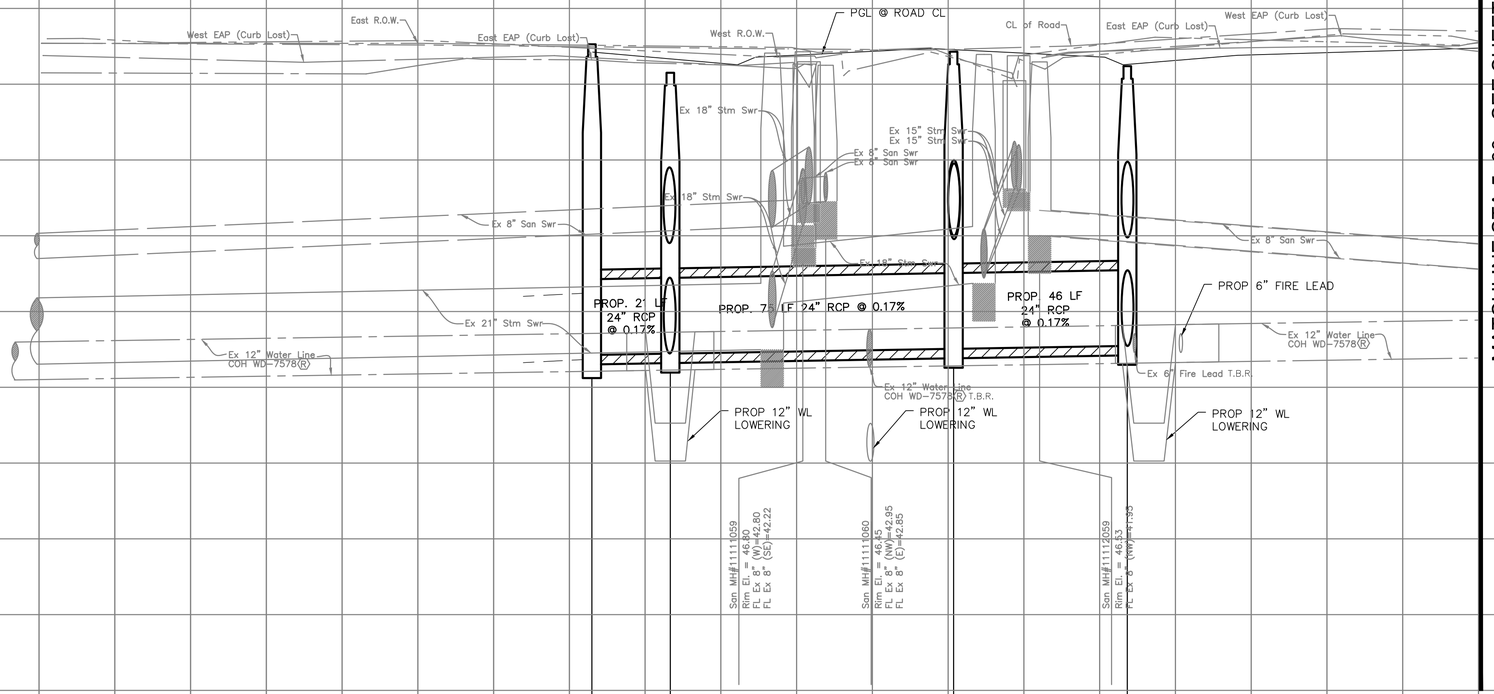
GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.



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SUITE 650
HOUSTON, TX 77024
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2/3/26 UPDATE
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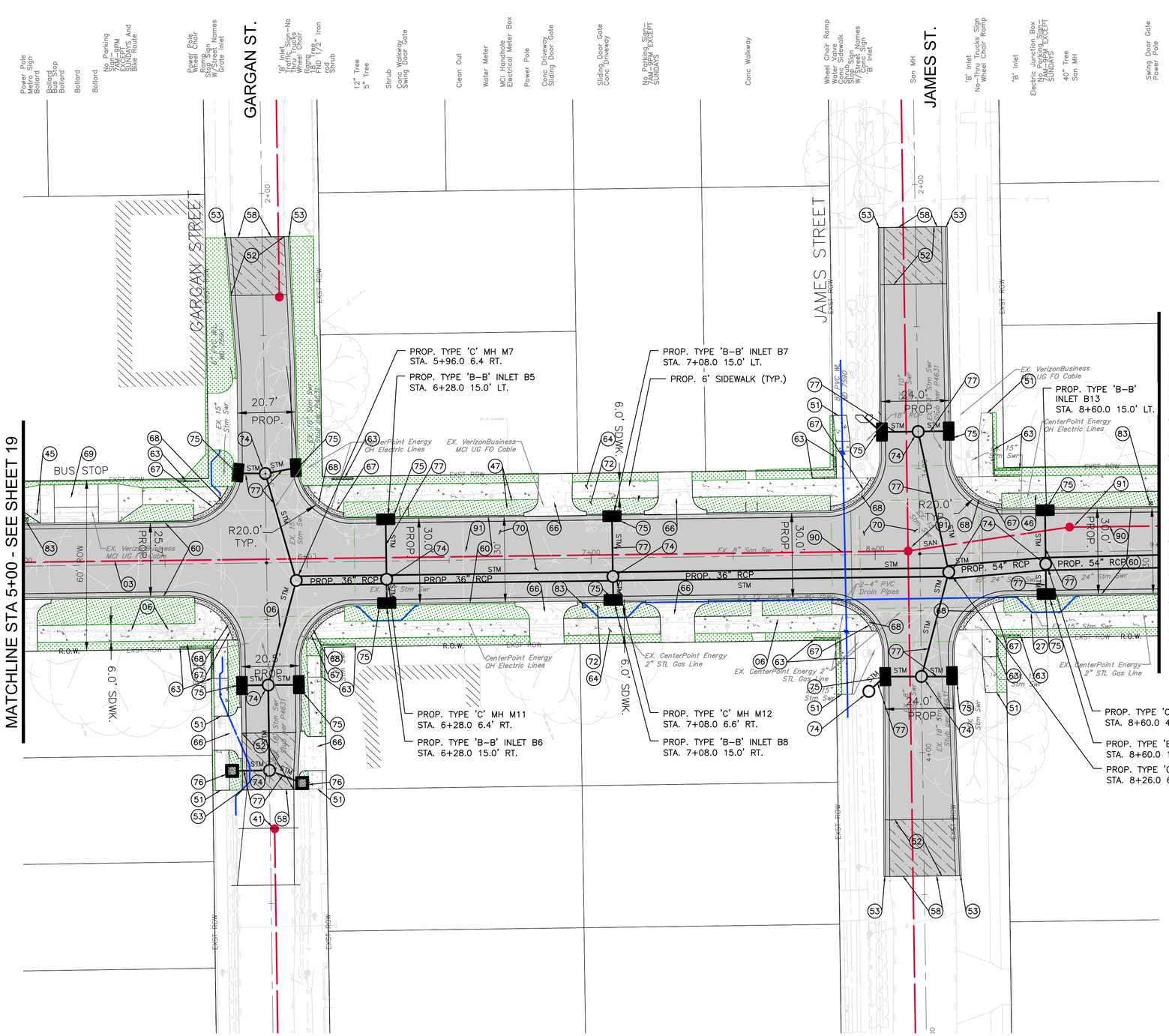
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

FULTON STREET
PROFILE
STA. 1+00 TO 5+00

WBS NUMBER	N-000818-0001-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON PM	MICHELLE RANDON, P.E.
SHEET NO.	20 OF 155



GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20'. V. 1"=2'
HALF SIZE: H. 1"=40'. V. 1"=4'

NO.	DATE	REVISION	APP.

LEGEND:

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- PROPOSED WATER
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NOTE:

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SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET
FULTON STREET
DRAINAGE PLAN
STA. 5+00 TO 9+00

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 21 OF 155	

PLOTTED: 1/28/2026 2:14 PM
PLOT STYLE: COH CIP.CTB
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms60086\13 FULTON PLAN_PROFILE.DWG

PLOT STYLE: COH CIP.CTB
PLOTTED: 10/2/2023 9:26 AM
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GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.

MATCHLINE STA 5+00 - SEE SHEET 20

MATCHLINE STA 9+00 - SEE SHEET 24

East EAP (Curb Lost)
West EAP (Curb Lost)
West TOC
East EAP (Curb Lost)
PGL @ ROAD CL
East TOC
East R.O.W.
West R.O.W.
CL of Road
Ex 2-4" PVC
West TOC

Ex 18" Stm Swr Ⓡ
Ex 18" Stm Swr Ⓡ
Ex 15" Stm Swr
Ex 15" Stm Swr
Ex 18" Stm Swr
Ex 18" Stm Swr
Ex 15" Stm Swr
Ex 15" Stm Swr
Ex 15" Stm Swr
Ex 15" Stm Swr

PROP. 32 LF 36" RCP @ 0.20%
PROP. 80 LF 36" RCP @ 0.20%
Ex 21" Stm Swr
PROP. 118 LF 36" RCP @ 0.20%
PROP. 54 LF 54" RCP @ 0.11%

Ex 8" San Swr
Ex 24" Stm Swr
Ex 8" San Swr

Ex 12" Water Line COH WD-7578Ⓡ
Ex 8" Water Line COH WD-7578Ⓡ
Ex 12" Water Line COH WD-7578Ⓡ
Ex 8" Water Line COH WD-7578Ⓡ

PROP. 157 LF 8" PVC SAN @ 0.73%
Ex 8" San Swr
Ex 10" San Swr
PROP. 57 LF 8" PVC SAN @ 0.44%

PROP. TYPE "C" SAN MH S54A
STA=6+55 OFF=1.2 L
RIM ELEV=46.92
INV=36.81(8")NW
INV=39.87(6")SE

PROP. TYPE "C" SAN MH S54
STA=8+12 OFF=1.1° L
RIM ELEV=47.57
INV=35.67(8")NW
INV=35.67(8")SE
INV=35.50(10")SW
INV=35.67(8")NE
San MH#11112054
Rim El. = 47.87
FL Ex 8" (N)=37.47
FL Ex 8" (NE)=35.67
FL Ex 8" (SE)=35.67
FL Ex 10" (SW)=35.50

PROP. TYPE "C" SAN MH S55
STA=8+69 OFF=8.7° L
RIM ELEV=46.83
INV=35.92(8")NW
INV=35.92(8")SE

PROP. TYPE "C" M7
STA=5+96 OFF=6.4' R
RIM ELEV=47.06
INV=42.50(24")SW
INV=41.31(36")NW
INV=41.81(24")E

PROP. TYPE "C" M11
STA=6+28 OFF=6.4' R
RIM ELEV=45.90
INV=42.50(24")SW
INV=41.24(36")SE
INV=42.50(24")NE
INV=41.24(36")NW

PROP. TYPE "C" M12
STA=7+08 OFF=6.6' R
RIM ELEV=46.66
INV=41.60(24")SW
INV=41.09(36")SE
INV=41.60(24")NE
INV=41.09(36")NW

PROP. TYPE "C" M13
STA=8+26 OFF=6.6' R
RIM ELEV=47.52
INV=40.85(36")SE
INV=41.10(24")SW
INV=40.00(54")NW
INV=41.10(24")E

PROP. TYPE "C" M17
STA=8+60 OFF=4.2' R
RIM ELEV=47.74
INV=39.96(54")SE
INV=42.10(24")SW
INV=39.96(54")NW
INV=42.10(24")NE

58 56 54 52 50 48 46 44 42 40 38 36 34 32 30 28 26 24 22 20
5+00 6+00 7+00 8+00 9+00

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VERIFICATION OF PRIVATE UTILITY LINES

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HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

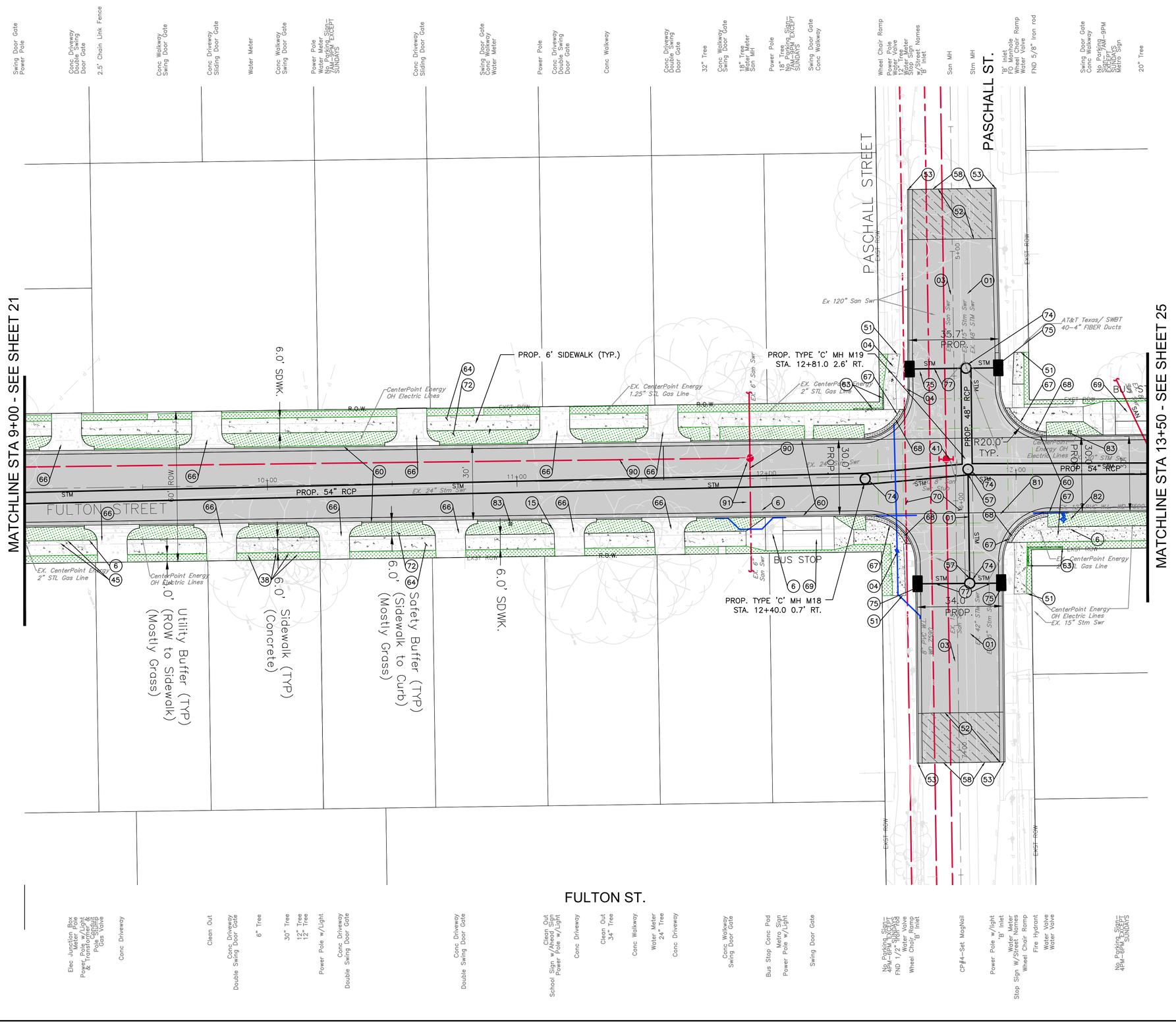
90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

FULTON STREET PROFILE STA. 5+00 TO 9+00

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	



LEGEND:

- PROPOSED STORM
- PROPOSED WATER
- PROPOSED SANITARY

NOTE:

REFER TO CONSTRUCTION KEY NOTES SHEET XXX

NO.	DATE	REVISION	APP.

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HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET
FULTON STREET
DRAINAGE PLAN
STA. 9+00 TO 13+50

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 23 OF 155	

PLOTTED: 1/28/2026 2:15 PM
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FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms60086\13 FULTON PLAN_PROFILE.DWG

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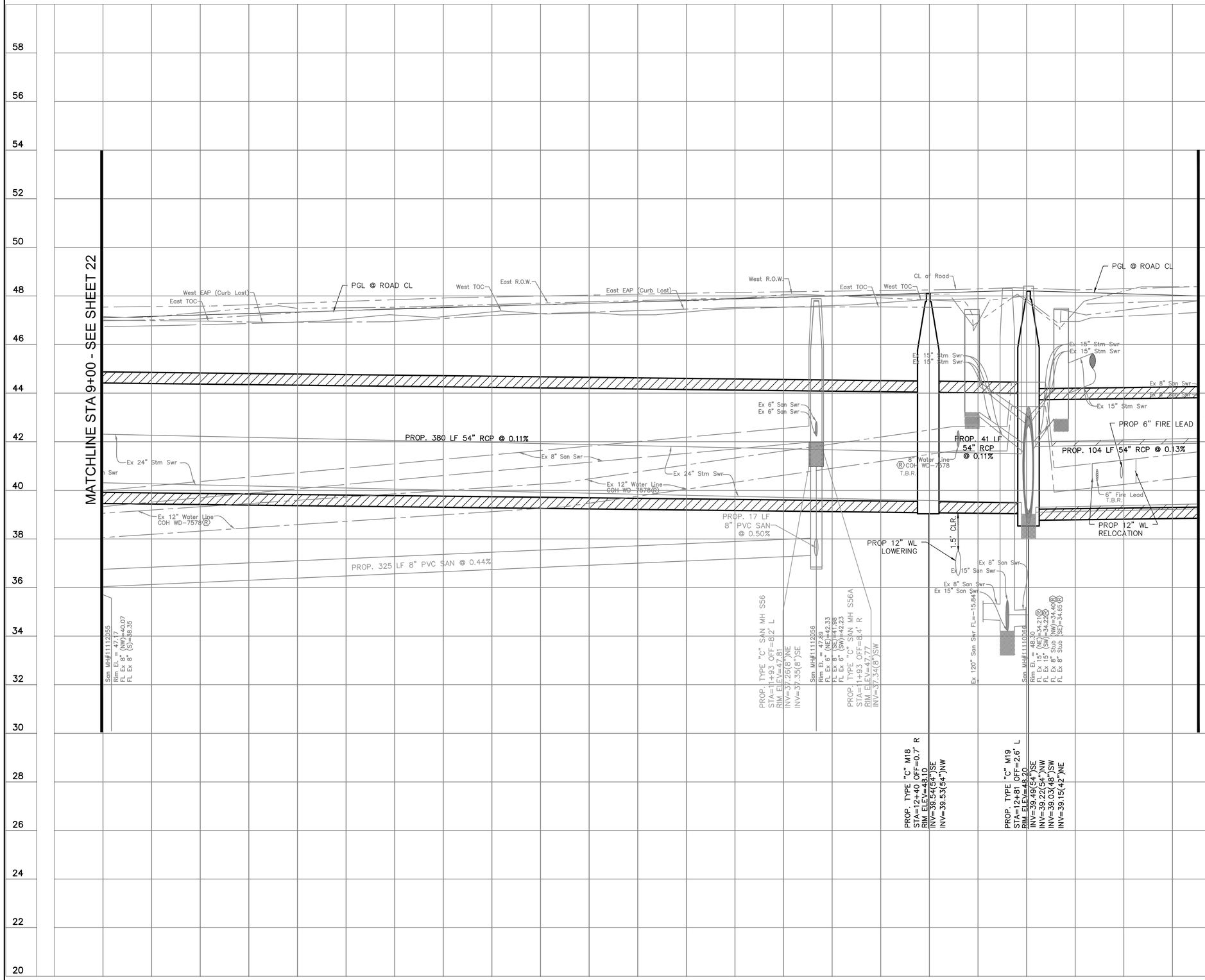

GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.

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HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
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90% DRAFT
2/3/26 UPDATE
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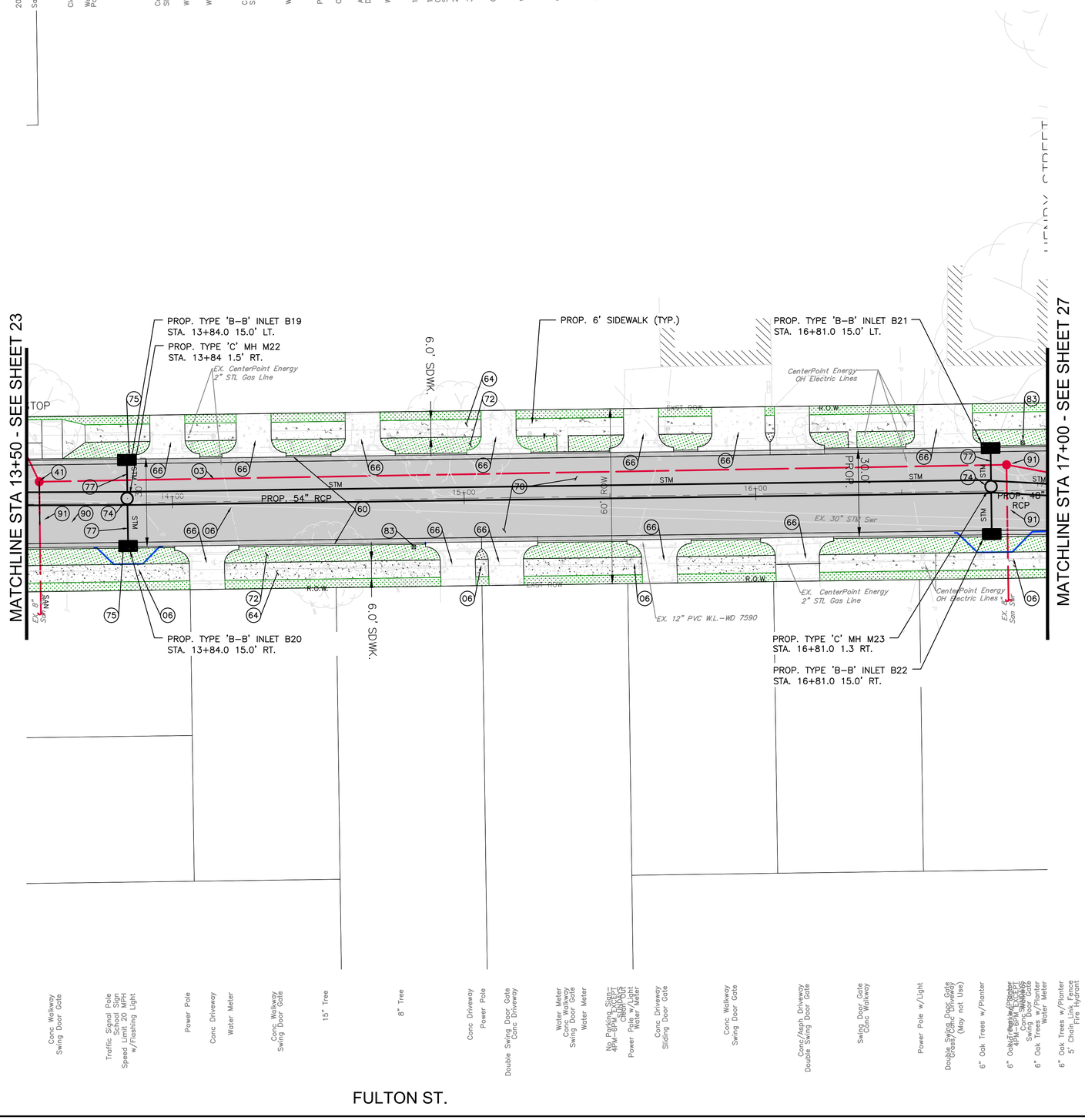
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

FULTON STREET
PROFILE
STA. 9+00 TO 13+50

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO.	24 OF 155



GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.

LEGEND:

- PROPOSED STORM
- PROPOSED WATER
- PROPOSED SANITARY

NOTE:

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750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

60% SUBMITTAL
2/3/26 UPDATE
FOR PRIVATE
UTILITY REVIEW
NOT FOR
CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET
FULTON STREET
DRAINAGE PLAN
STA. 13+50 TO 17+00

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 25 OF 155	

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PLOTTED: 10/2/2023 9:27 AM
PLOT STYLE: COH CIP.CTB
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\13 FULTON PLAN_PROFILE.DWG

GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.

MATCHLINE STA 13+50 - SEE SHEET 24

MATCHLINE STA 17+00 - SEE SHEET 28

East R.O.W.
PGL @ ROAD CL
East TOC
West TOC
East TOC
West EAP (Curb Lost)
East EAP (Curb Lost)
Ex 18"
Ex 15"
Ex 15"
Ex 15"
Ex 15"
PROP. 43 LF 48" RCP @ 0.09%
Ex 8" San Swr
Ex 8" San Swr
Ex 8" San Swr
Ex 12" Water Line COH WD-7578(R)
PROP. 332 LF 8" PVC SAN @ 0.44%
PROP. 296 LF 54" RCP @ 0.09%
Ex 30" Strm Swr
30" Strm Swr
40
PROP. 55 LF 8" PVC SAN @ 0.44%
PROP. 19 LF 8" PVC SAN @ 0.44%

San MH#11112084
Rim El. = 48.08
FL Ex 8" (NW)=42.93
FL Ex 8" (NE)=43.83
FL Ex 8" (SE)=43.03
PROP. TYPE "C" SAN MH S84A
STA=13+54 OFF=7.0' R
RIM ELEV=47.85
INV=43.20(8")NW
INV=41.46(8")NW

PROP. TYPE "C" M22
STA=13+84 OFF=-1.5' L
RIM ELEV=48.38
INV=40.00(24")SW
INV=43.30(24")NE
INV=39.35(54")NW
INV=39.35(54")SE

PROP. TYPE "C" SAN MH S83A
STA=16+86 OFF=9.8' R
RIM ELEV=47.40
INV=38.94(8")SW
INV=40.00(8")SE
INV=42.50(8")NE

PROP. TYPE "C" SAN MH S83
STA=16+86 OFF=9.0' L
RIM ELEV=47.42
INV=41.51(8")SE
INV=36.86(8")NW
INV=36.86(8")NE

San MH#11112083
Rim El. = 47.68
FL Ex 8" (W)=43.34
FL Ex 8" (NE)=42.13
FL Ex 8" (SE)=41.51

PROP. TYPE "C" M23
STA=16+81 OFF=11.3' R
RIM ELEV=48.08
INV=43.00(24")SW
INV=39.61(54")SE
INV=43.00(24")NE
INV=40.11(48")NW

58 56 54 52 50 48 46 44 42 40 38 36 34 32 30 28 26 24 22 20

13+00 14+00 15+00 16+00 17+00

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VERIFICATION OF PRIVATE UTILITY LINES

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HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

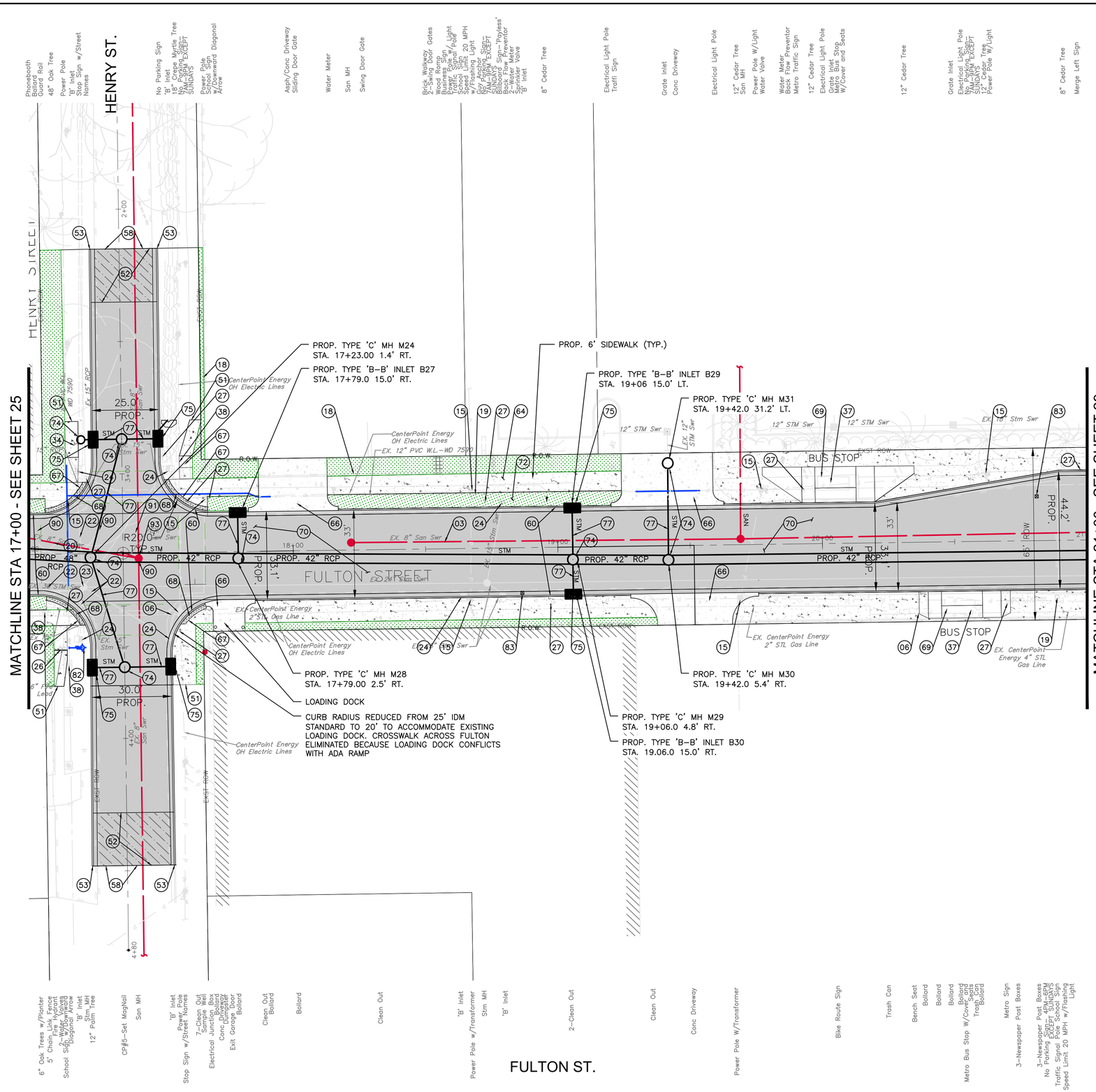
90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

FULTON STREET
PROFILE
STA. 13+50 TO 17+00

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 26 OF 155	



GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.

LEGEND:

- PROPOSED STORM
- PROPOSED WATER
- PROPOSED SANITARY

NOTE:

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HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET
FULTON STREET
DRAINAGE PLAN
STA. 17+00 TO 21+00

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 27 OF 155	

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PLOTTED: 10/2/2023 9:28 AM
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FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\13 FULTON PLAN_PROFILE.DWG

GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.

MATCHLINE STA 17+00 - SEE SHEET 26

MATCHLINE STA 21+00 - SEE SHEET 30

PROP. 43 LF 48" RCP @ 0.09%

PROP. 56 LF 42" RCP @ 0.11%

PROP. 126 LF 42" RCP @ 0.22%

PROP. 36 LF 42" RCP @ 0.28%

PROP. 193 LF 42" RCP @ 0.18%

PROP. 55 LF 8" PVC SAN @ 0.44%

1.2' CLR

PROP. 12" WL LOWERING

PROP. TYPE "C" M24
STA=17+23 OFF=1.4' R
RIM ELEV=47.89
INV=40.15(48")SE
INV=42.30(24")W
INV=40.65(42")NW
INV=42.50(24")NE

PROP. TYPE "C" M28
STA=17+79 OFF=2.5' R
RIM ELEV=47.83
INV=42.45(24")SW
INV=40.71(42")SE
INV=40.71(42")NW

PROP. TYPE "C" M29
STA=19+06 OFF=4.8' R
RIM ELEV=48.58
INV=40.99(42")SE
INV=43.20(24")SW
INV=40.99(42")NW
INV=43.20(24")NE

PROP. TYPE "C" M30
STA=19+42 OFF=5.4' R
RIM ELEV=47.82
INV=41.09(42")SE
INV=43.30(24")SW
INV=41.15(42")NW

San MH#11112082
Rim El. = 48.45
FL Ex 8" (NE)=36.68
FL Ex 8" (S)=43.65
FL Ex 8" (SW)=38.51
FL Ex 8" (NW)=38.51
TYPE "C" SAN MH

San MH#11113015
Rim El. = 48.24
FL Ex 8" (NW)=42.13

San MH#11113014
Rim El. = 48.16
FL Ex 8" (NW)=41.37
FL Ex 8" (SE)=41.52
FL Ex 8" (SW)=41.82

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TX FIRM NUMBER: F-10912

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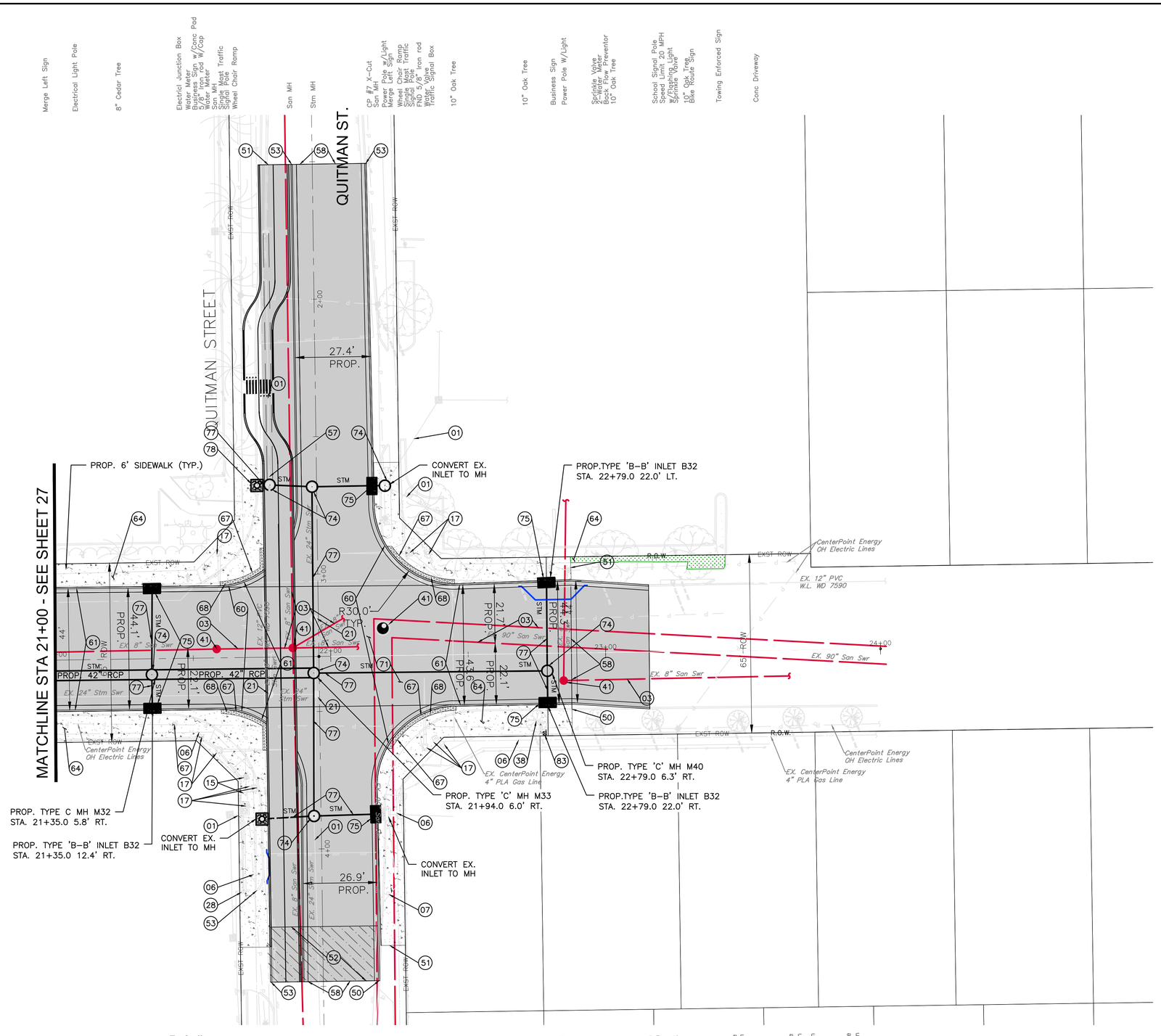
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

FULTON STREET PROFILE
STA. 17+00 TO 21+00

WBS NUMBER	N-000818-0001-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON PM	MICHELLE RANDON, P.E.
SHEET NO.	28 OF 155

PLOT STYLE: COH CIP.CTB
PLOTTED: 1/28/2026 2:17 PM
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms60086\13 FULTON PLAN_PROFILE_DWG



GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.

LEGEND:

- PROPOSED STORM
- PROPOSED WATER
- PROPOSED SANITARY

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FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET
FULTON STREET
DRAINAGE PLAN
STA. 21+00 TO END

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 29 OF 155	

PLOT STYLE: COH CIP.CTB
PLOTTED: 10/2/2023 9:29 AM
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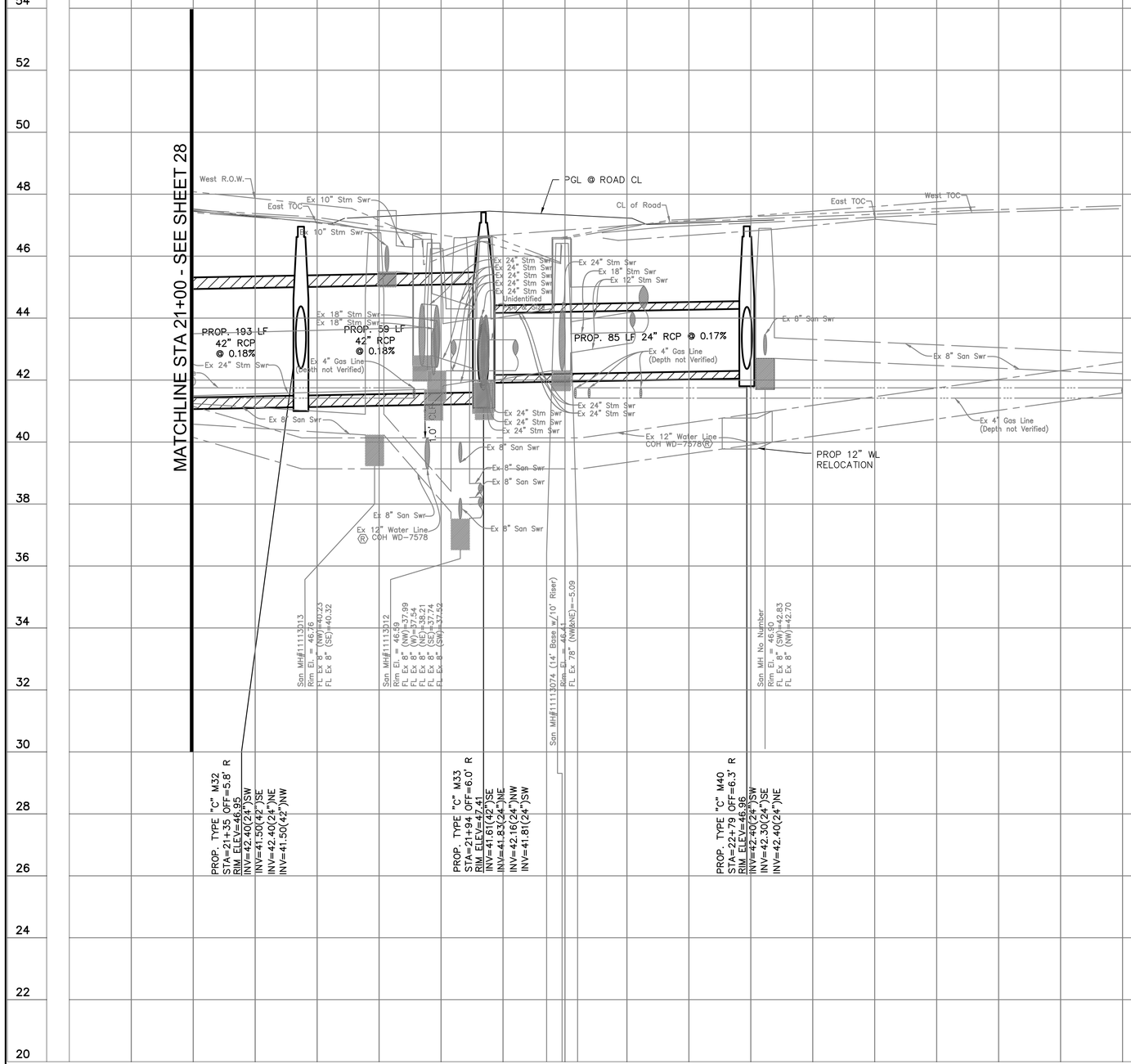
GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.



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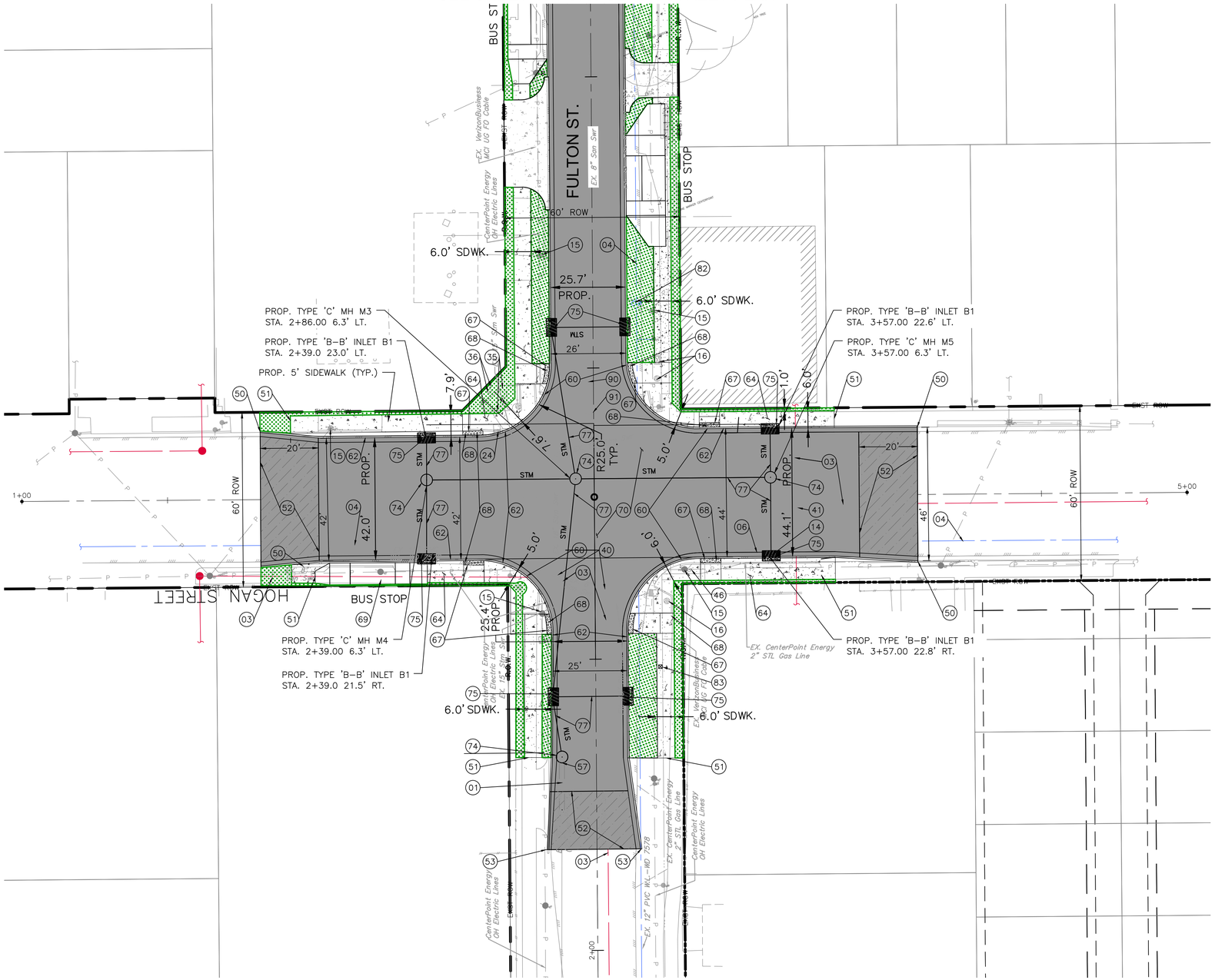
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET
FULTON STREET
PROFILE
STA. 21+00 TO END

WBS NUMBER	N-000818-0001-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON PM	MICHELLE RANDON, P.E.
SHEET NO.	30 OF 155

SEE SHEET 19 FOR FULTON STREET PLAN



HOGAN ST.

GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.

LEGEND:

- PROPOSED STORM
- EXISTING WATER
- EXISTING SANITARY

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SUITE 650
HOUSTON, TX. 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

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HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET
HOGAN STREET DRAINAGE PLAN
STA. 1+00 TO 5+00

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. ## OF 155	

PLOTTED: 1/29/2026 3:56 PM
PLOT STYLE: COH CIP.CTB
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms60086\14 SIDE ROADS PLAN_PROFILE.DWG

PLOTTED: 10/2/2023 9:29 AM
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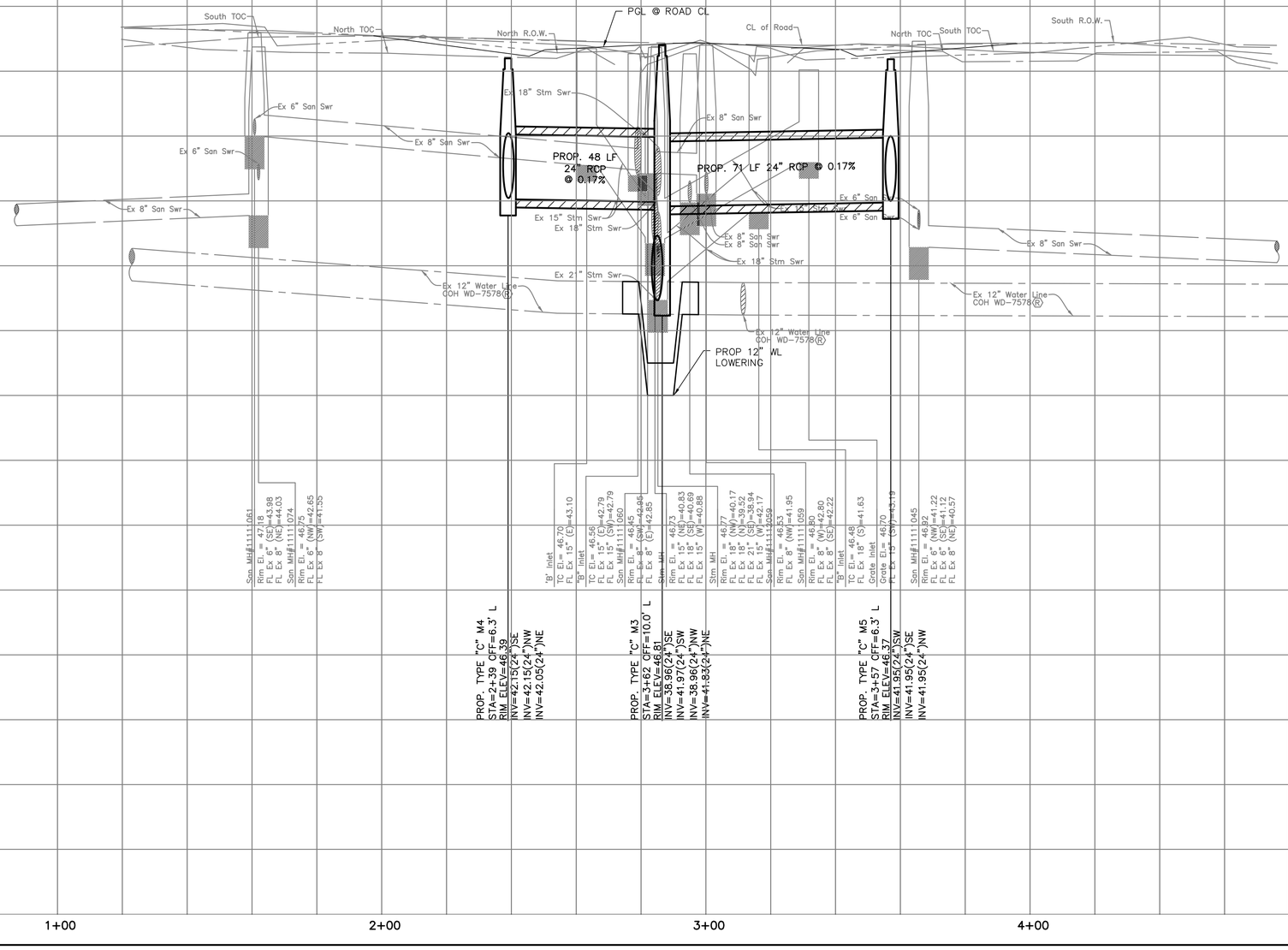
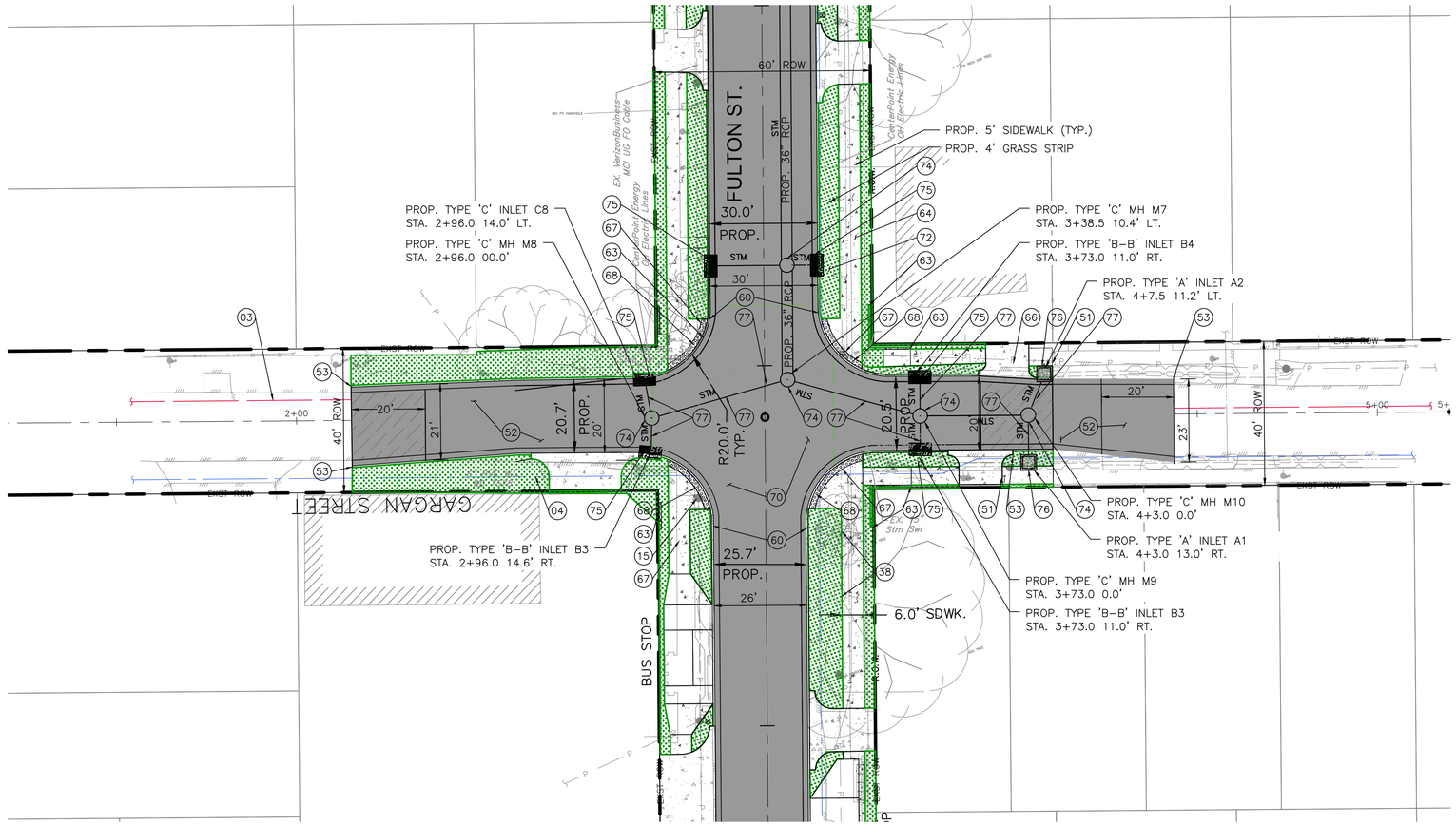

PGL @ ROAD CL
South TOC
North TOC
North R.O.W.
CL of Road
North TOC
South TOC
South R.O.W.
Ex 18" Stm Swr
Ex 6" San Swr
Ex 8" San Swr
Ex 6" San Swr
Ex 8" San Swr
PROP. 48 LF 24" RCP @ 0.17%
PROP. 71 LF 24" RCP @ 0.17%
Ex 6" San Swr
Ex 8" San Swr
Ex 15" Stm Swr
Ex 18" Stm Swr
Ex 8" San Swr
Ex 8" San Swr
Ex 18" Stm Swr
Ex 8" San Swr
Ex 21" Stm Swr
Ex 12" Water Line COH WD-7578®
Ex 12" Water Line COH WD-7578®
Ex 12" Water Line COH WD-7578®
Ex 12" Water Line COH WD-7578®
PROP 12" WL LOWERING
Ex 8" San Swr
Ex 8" San Swr
Ex 8" San Swr

SEE SHEET 21 FOR FULTON STREET PLAN



GARGAN ST.

GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.

LEGEND:

- PROPOSED STORM
- EXISTING WATER
- EXISTING SANITARY

NOTE:

REFER TO CONSTRUCTION KEY NOTES SHEET XXX

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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Date

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Signature valid for one year.

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET
GARGAN STREET
DRAINAGE PLAN
STA. 1+50 TO 4+50

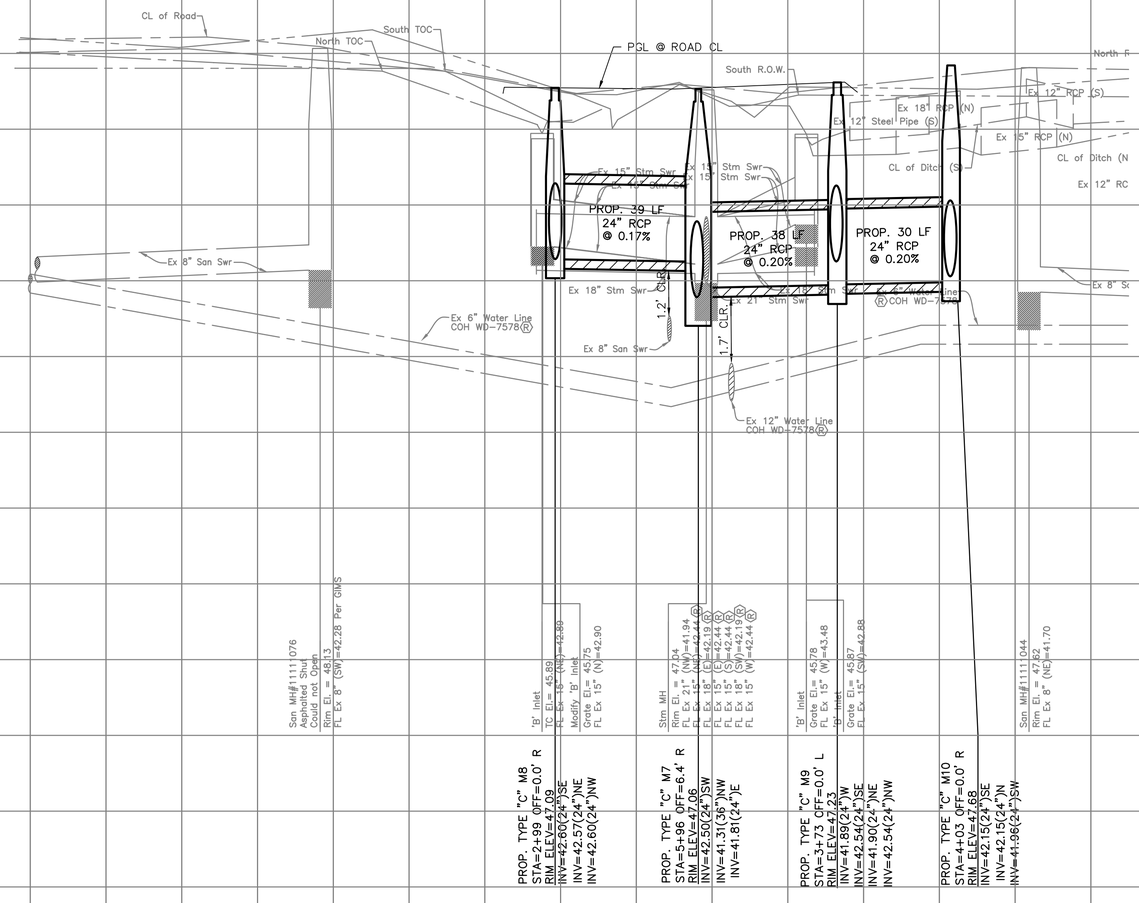
WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. ## OF 155	

PLOTTED: 1/29/2026 3:56 PM
PLOT STYLE: COH CIP.CTB
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms60086\14 SIDE ROADS PLAN_PROFILE.DWG

PLOTTED: 10/2/2023 9:30 AM
PLOT STYLE: COH CIP.CTB
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\14 SIDE ROADS PLAN_PROFILE.DWG

GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.



1+00 50 2+00 50 3+00 50 4+00 50

58 56 54 52 50 48 46 44 42 40 38 36 34 32 30 28 26 24 22 20

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SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
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UTILITY REVIEW
NOT FOR
CONSTRUCTION

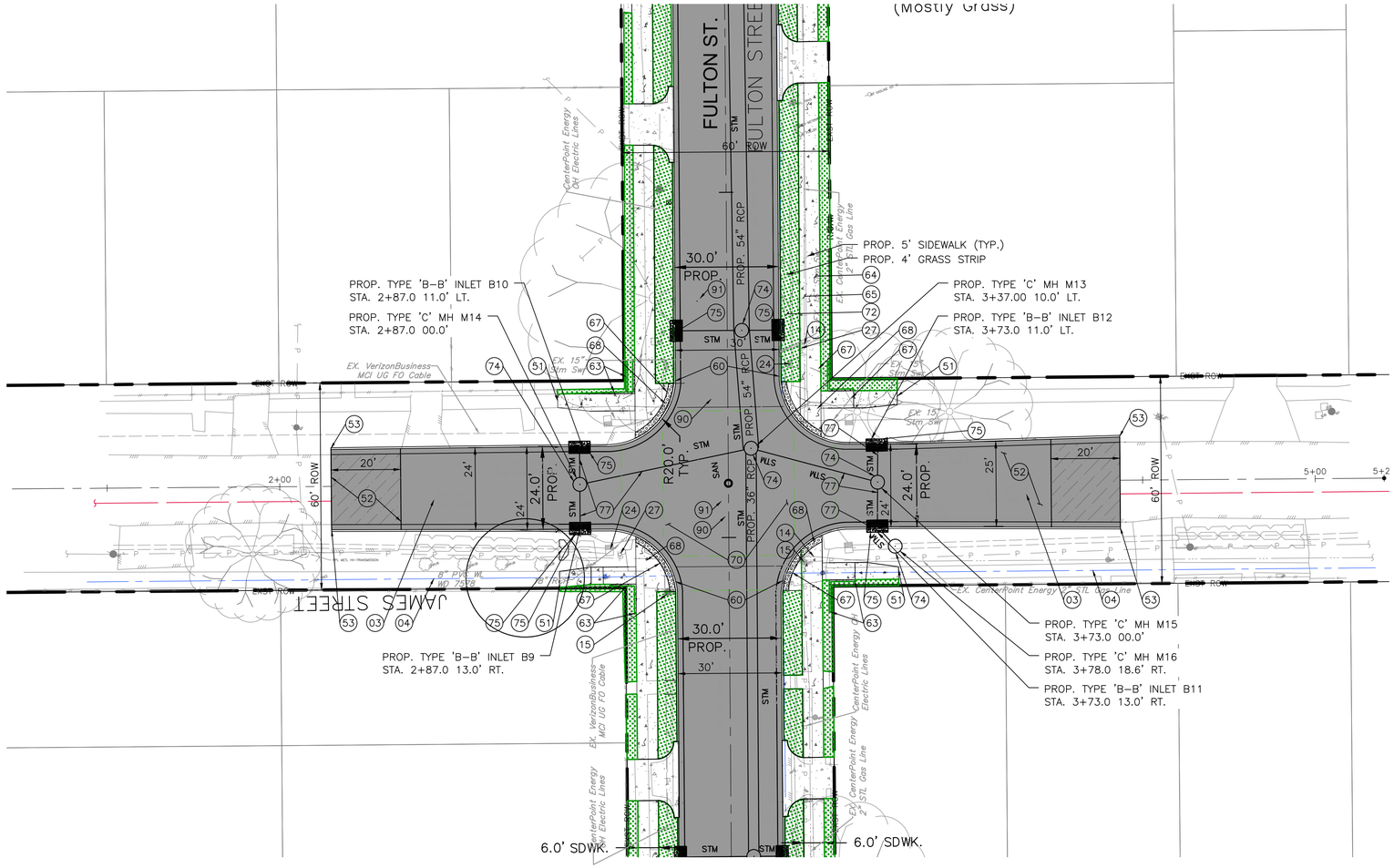
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

GARGAN STREET
PROFILE
STA. 1+50 TO 4+50

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 34 OF 155	

SEE SHEET 21 FOR FULTON STREET PLAN



JAMES ST.

GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.

LEGEND:

- PROPOSED STORM
- EXISTING WATER
- EXISTING SANITARY

NOTE:

REFER TO CONSTRUCTION KEY NOTES SHEET XXX

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HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

JAMES STREET DRAINAGE PLAN STA. 1+50 TO 4+50

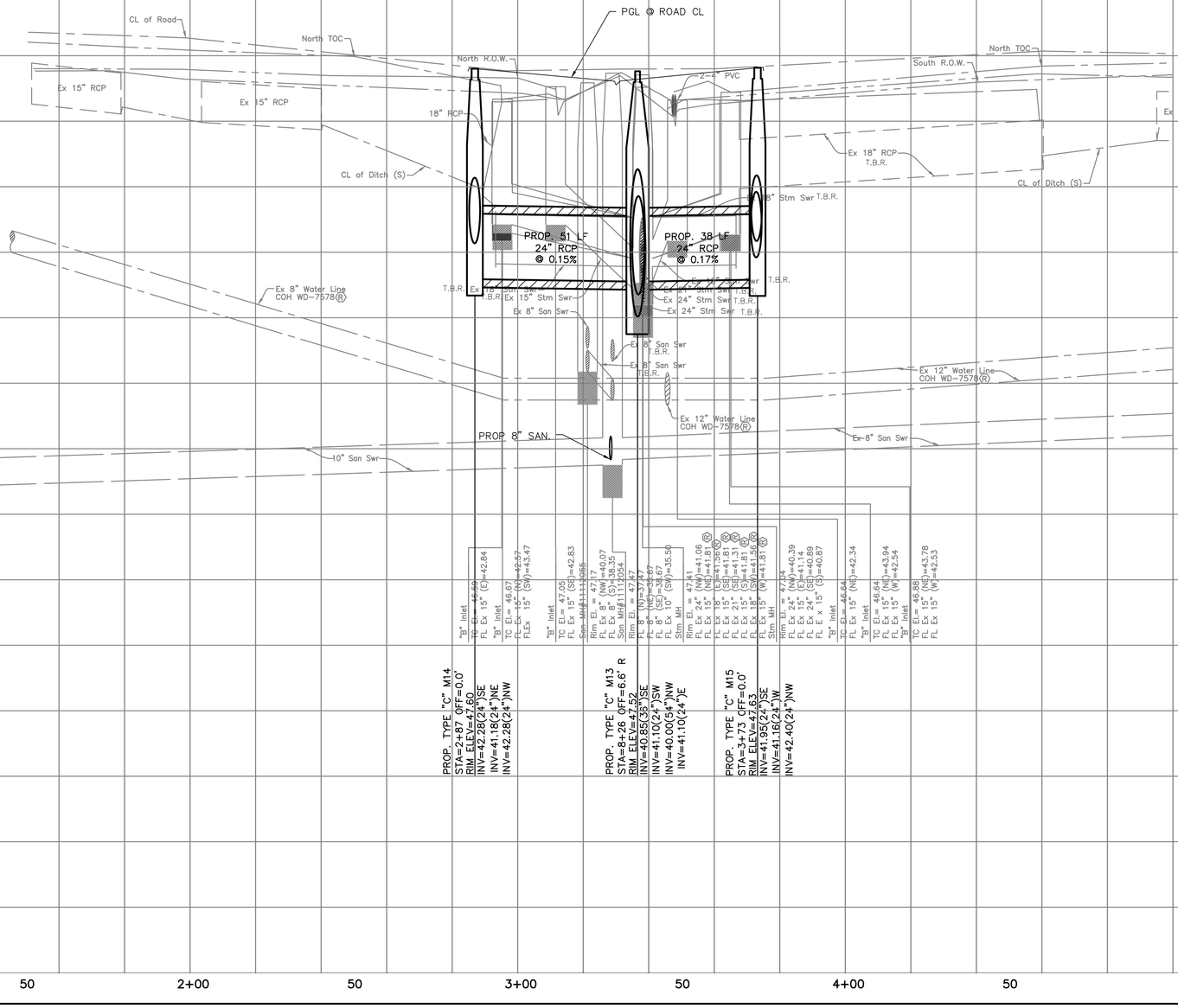
WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. ## OF 155	

PLOTTED: 1/29/2026 3:56 PM
PLOT STYLE: COH CIP.CTB
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms60086\14 SIDE ROADS PLAN_PROFILE.DWG

PLOTTED: 10/2/2023 9:31 AM
PLOT STYLE: COH CIP.CTB
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\14 SIDE ROADS PLAN_PROFILE.DWG

GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.



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SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

JAMES STREET
PROFILE
STA. 1+50 TO 4+50

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 36 OF 155	

PLOT STYLE: COH CIP.CTB
PLOTTED: 1/29/2026 3:57 PM
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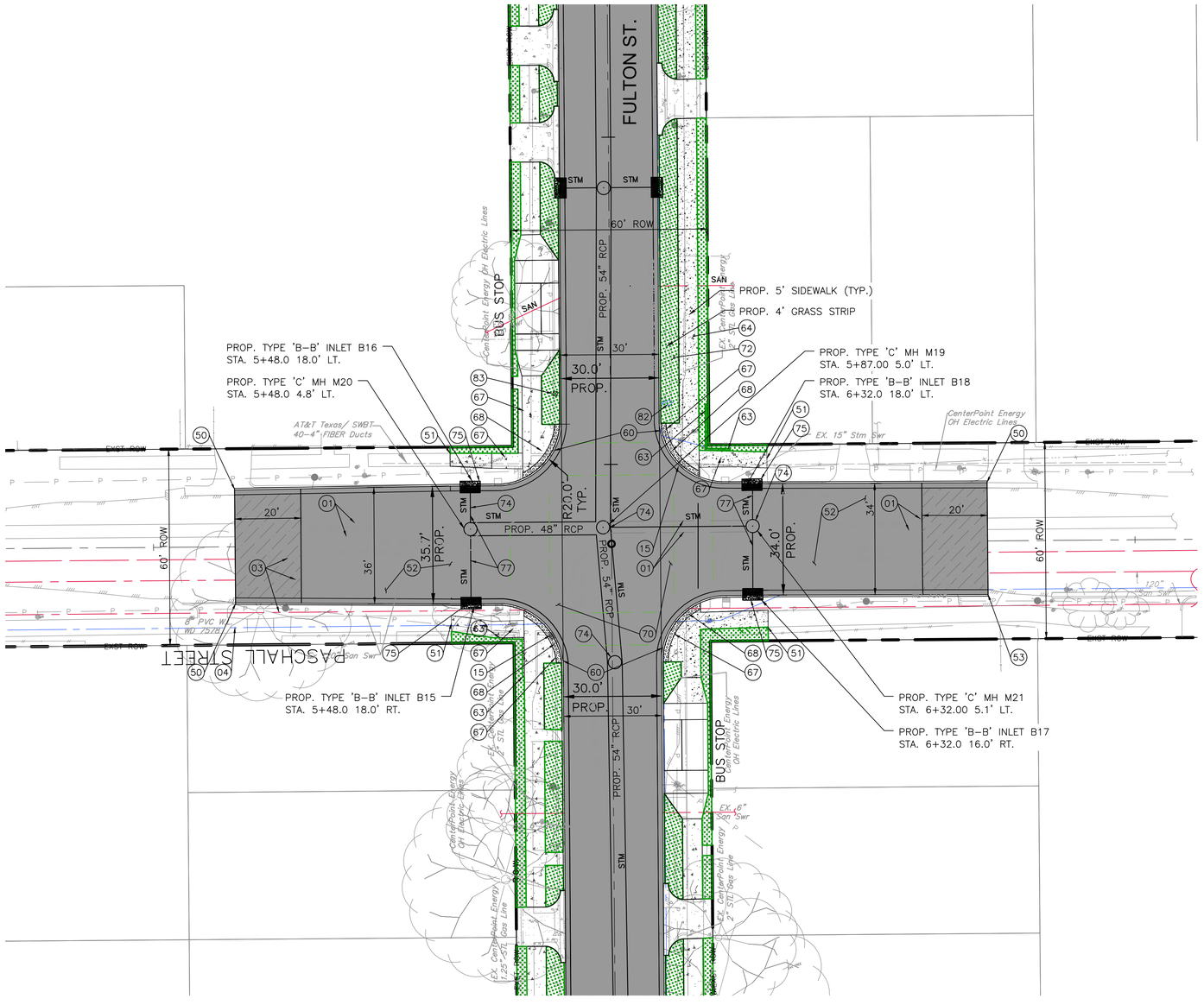
SEE SHEET 25 FOR FULTON STREET PLAN



PASCHALL ST.

GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.

LEGEND:
- PROPOSED STORM
- EXISTING WATER
- EXISTING SANITARY

NOTE:
REFER TO CONSTRUCTION KEY NOTES SHEET XXX

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HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

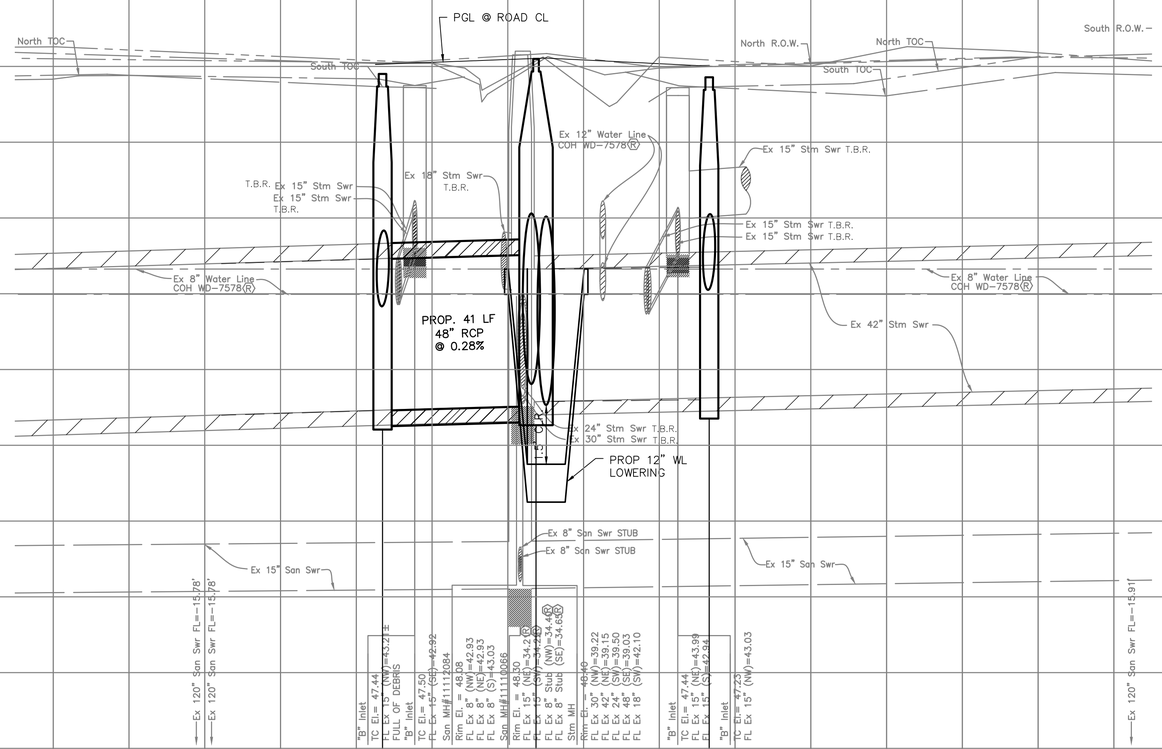
FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET
PACSHALL STREET DRAINAGE PLAN
STA. 4+50 TO 7+50

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. ## OF 155	

PLOTTED: 10/2/2023 9:31 AM
PLOT STYLE: COH CIP.CTB
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\14 SIDE ROADS PLAN_PROFILE.DWG

GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.



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HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

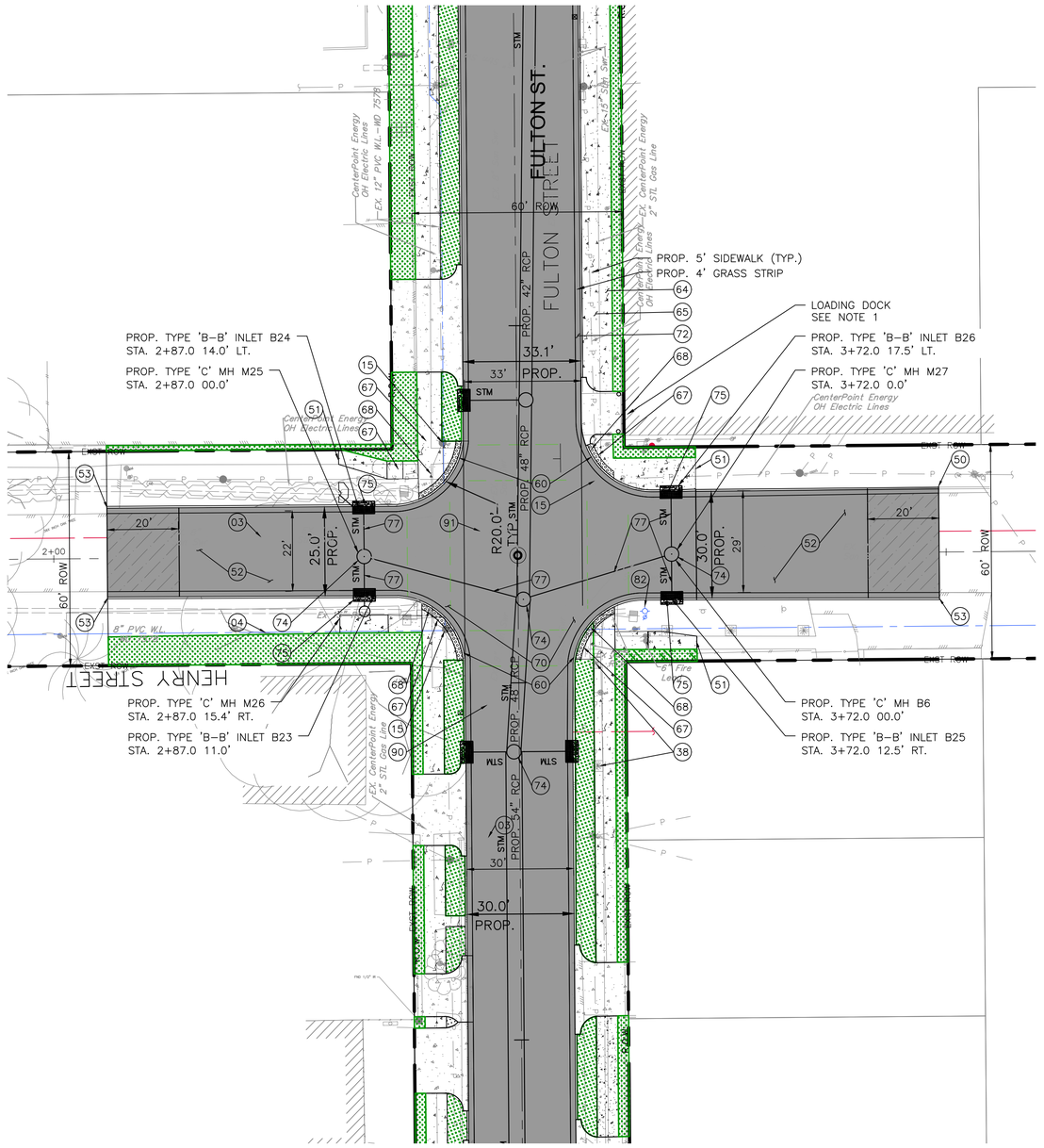
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

PACSHALL STREET
PROFILE
STA. 4+50 TO 7+50

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 38 OF 155	

SEE SHEET 27 FOR FULTON STREET PLAN



HENRY ST.

GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.

LEGEND:

- PROPOSED STORM
- EXISTING WATER
- EXISTING SANITARY

NOTE:

REFER TO CONSTRUCTION KEY NOTES
SHEET XXX

NOTES:

1. CURB RADIUS REDUCED FROM 30' IDM STANDARD TO 20' TO ACCOMMODATE EXISTING LOADING DOCK. CROSSWALK ACROSS FULTON ELIMINATED BECAUSE LOADING DOCK CONFLICTS WITH ADA RAMP

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HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET
HENRY STREET
DRAINAGE PLAN
STA. 2+00 TO 4+50

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. ## OF 155	

PLOTTED: 1/29/2026 3:57 PM
PLOT STYLE: COH CIP.CTB
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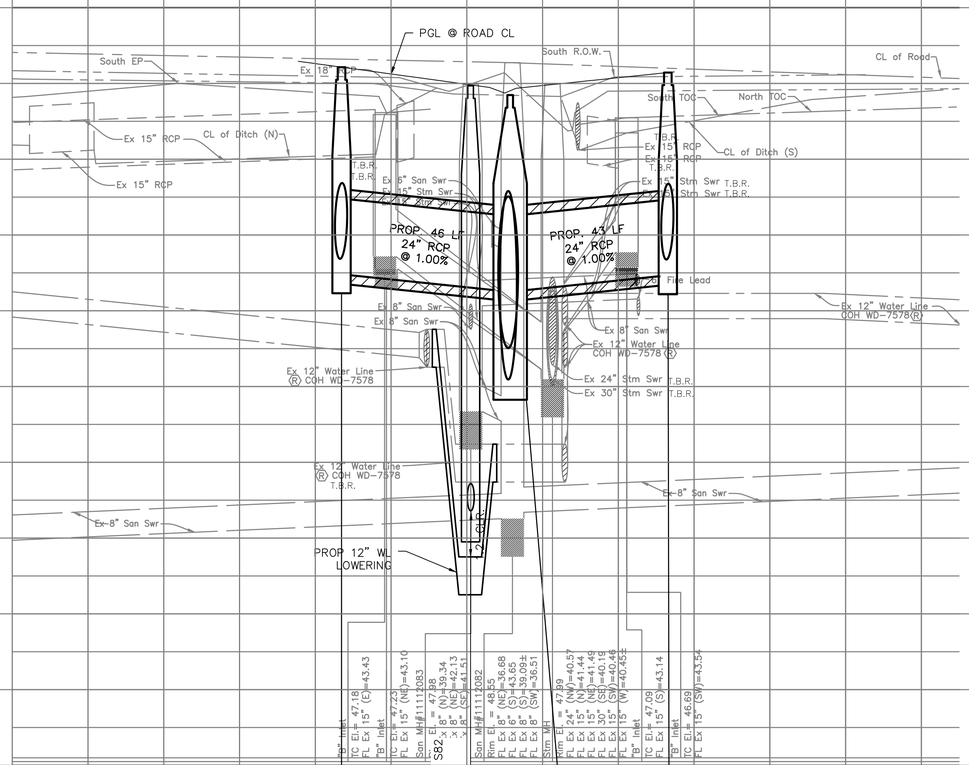

GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.

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TX FIRM NUMBER: F-10912

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FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
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NOT FOR CONSTRUCTION

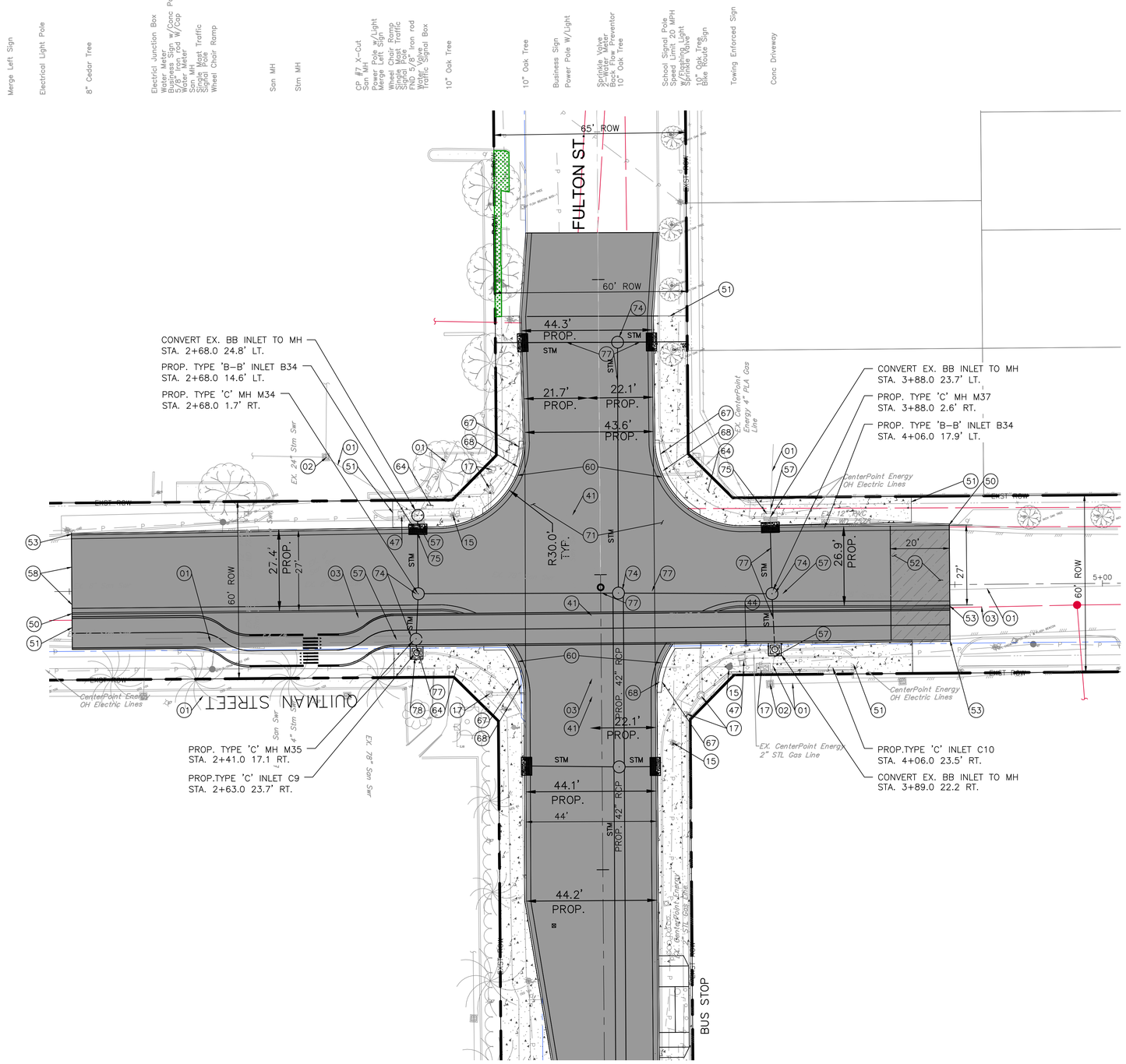
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

HENRY STREET
PROFILE
STA. 2+00 TO 4+50

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 40 OF 155	

PLOTTED: 10/2/2023 9:32 AM
PLOT STYLE: COH CIP.CTB
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\14 SIDE ROADS PLAN_PROFILE.DWG



GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.

LEGEND:

- PROPOSED STORM
- EXISTING WATER
- EXISTING SANITARY

NOTE:

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SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

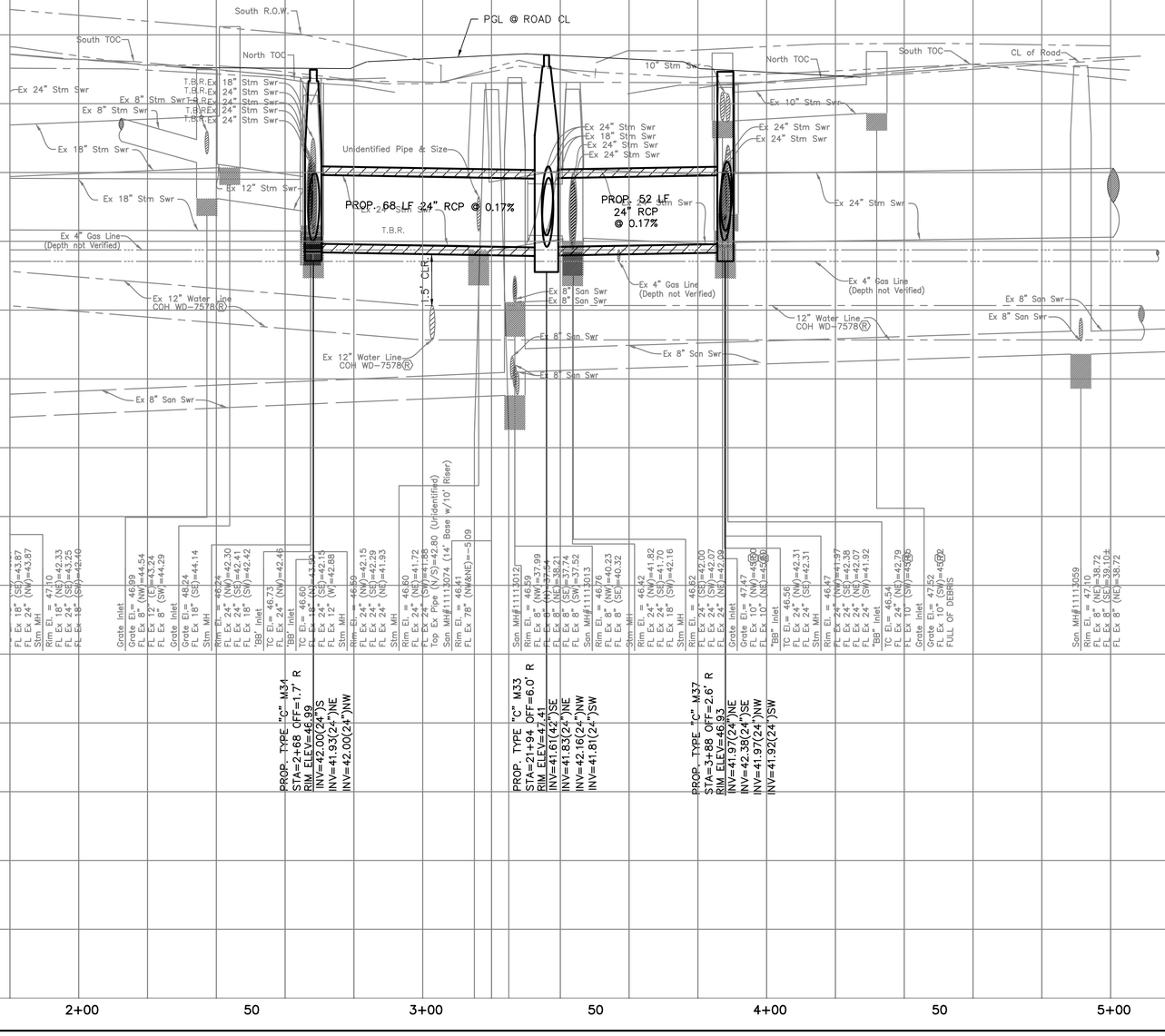
90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

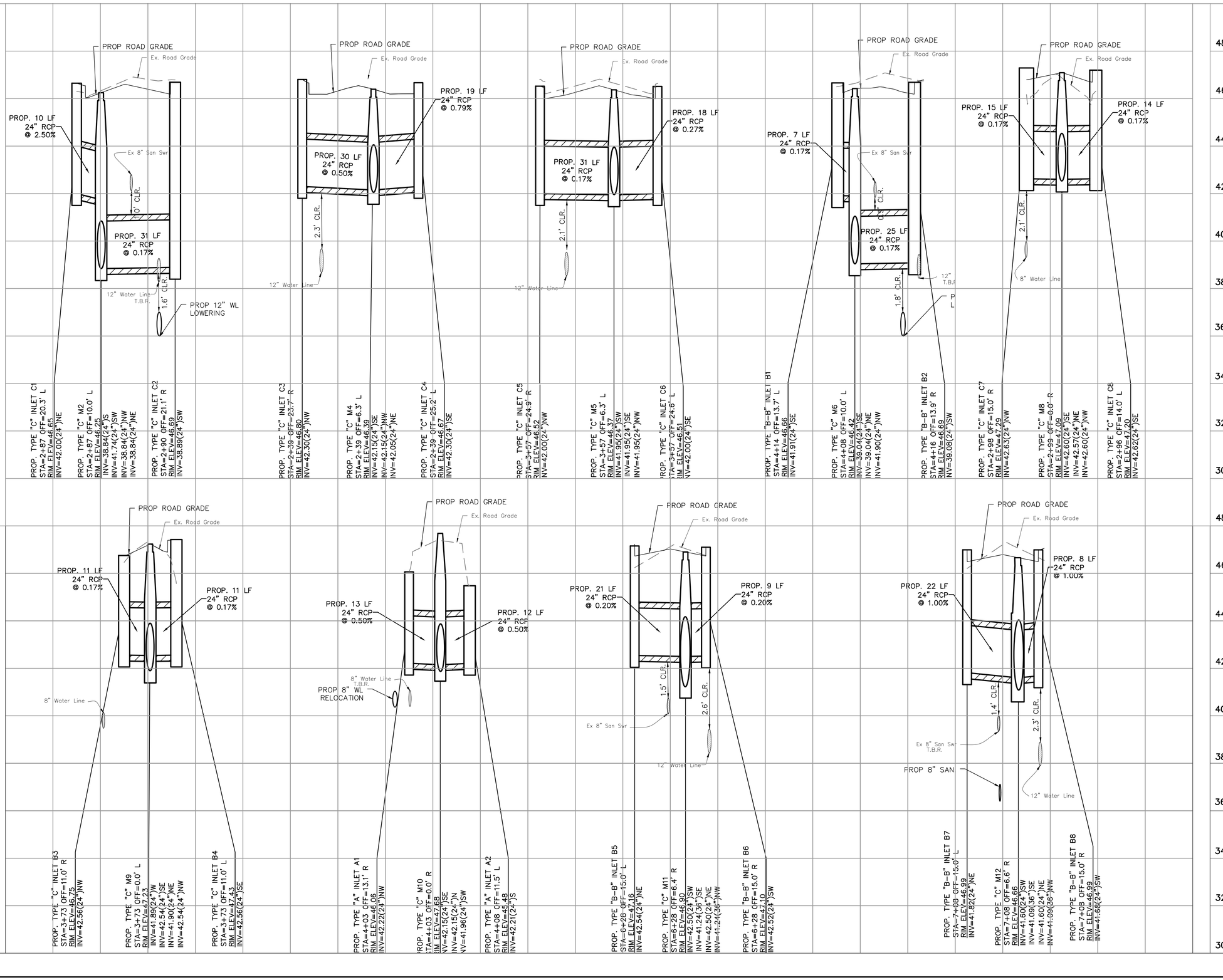
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET
QUITMAN STREET
DRAINAGE PLAN
STA. 1+50 TO 5+00

WBS NUMBER	N-000818-0001-3
DRAWING SCALE	1"=20'
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. ## OF 155	

PLOTTED: 1/29/2026 3:57 PM
PLOT STYLE: COH CIP.CTB
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms60086\14 SIDE ROADS PLAN_PROFILE.DWG


South R.O.W.
PGL @ ROAD CL
South TOC
North TOC
Ex 24" Stm Swr
T.B.R.Ex 18" Stm Swr
T.B.R.Ex 24" Stm Swr
Ex 8" Stm Swr T.B.R.Ex 24" Stm Swr
Ex 8" Stm Swr T.B.R.Ex 24" Stm Swr
T.B.R.Ex 24" Stm Swr
Ex 18" Stm Swr
Unidentified Pipe & Size
Ex 12" Stm Swr
Ex 18" Stm Swr
PROP. 68 LF 24" RCP @ 0.17%
Ex 24" Stm Swr
T.B.R.
PROP. 52 LF 24" RCP @ 0.17%
Ex 24" Stm Swr
Ex 18" Stm Swr
Ex 24" Stm Swr
Ex 24" Stm Swr
10" Stm Swr
North TOC
Ex 10" Stm Swr
South TOC
CL of Road
Ex 24" Stm Swr
Ex 24" Stm Swr
Ex 4" Gas Line (Depth not Verified)
11.5' CLR
Ex 12" Water Line COH WD-7578®
Ex 8" San Swr
Ex 8" San Swr
Ex 4" Gas Line (Depth not Verified)
Ex 4" Gas Line (Depth not Verified)
12" Water Line COH WD-7578®
Ex 8" San Swr
Ex 8" San Swr
Ex 8" San Swr
Ex 12" Water Line COH WD-7578®
Ex 8" San Swr
Ex 8" San Swr
Ex 8" San Swr



GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.

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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Signature valid for one year.

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

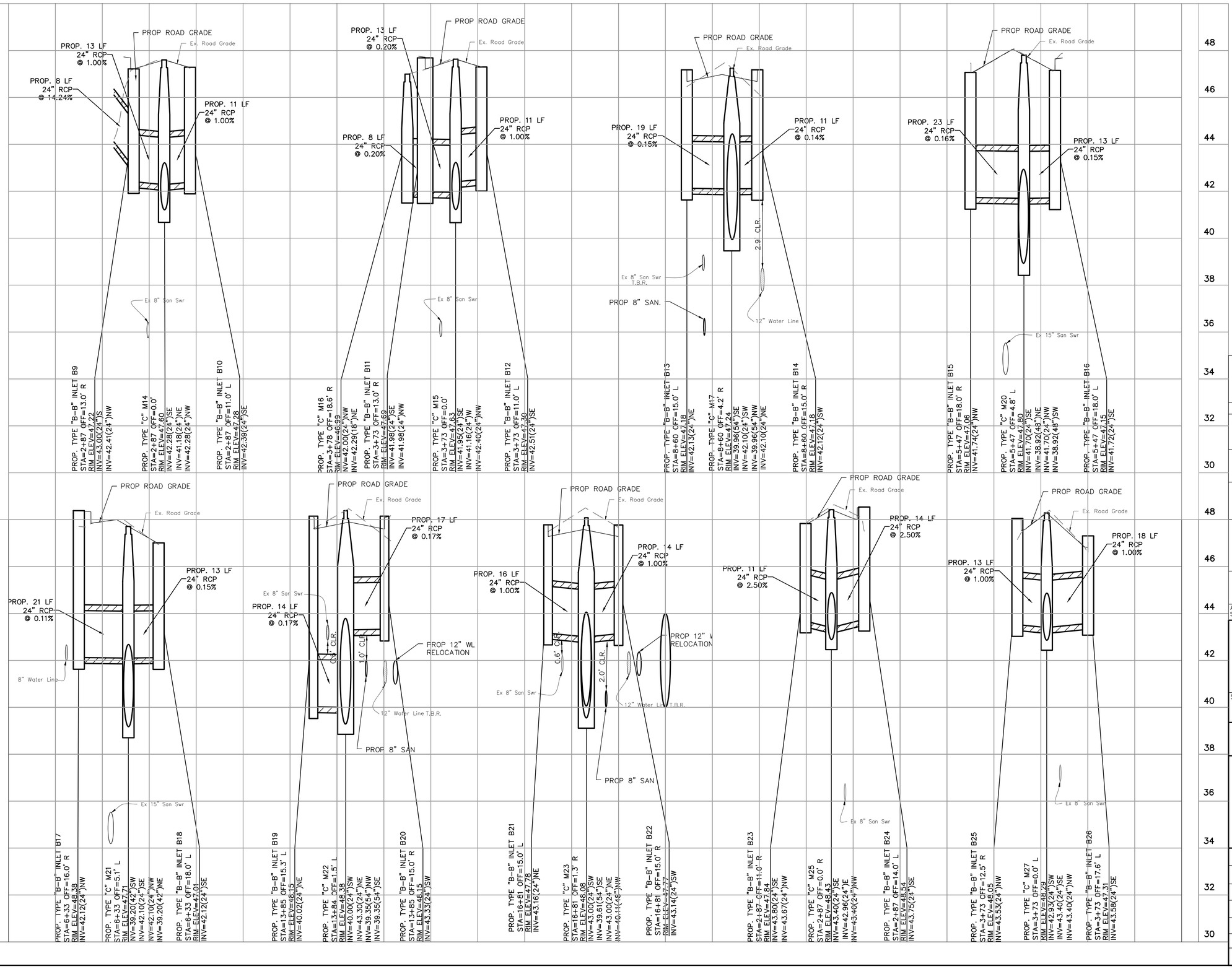
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

STORM DRAIN PROFILES SHEET 1 OF 3

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'H/1"=2'V	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 43 OF 155	

PLOTTED: 10/2/2023 9:35 AM
PLOT STYLE: COH CIP.CTB
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\15 STORM_DRAIN_PROFILE.DWG



GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.

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HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

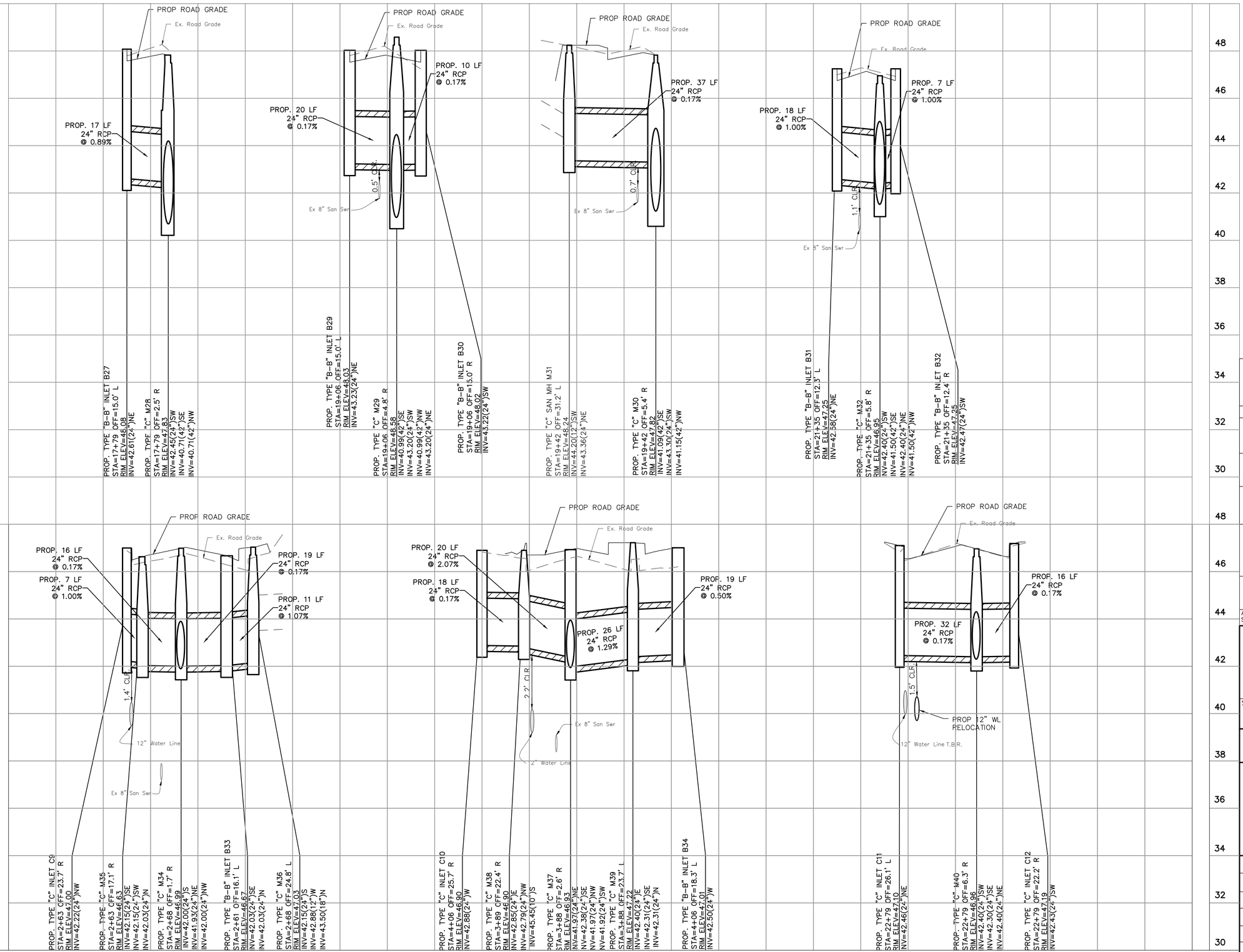
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

STORM DRAIN PROFILES SHEET 2 OF 3

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'H/1"=2'V	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 44 OF 155	

PLOTTED: 10/2/2023 9:37 AM
PLOT STYLE: COH CIP.CTB
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\15 STORM_DRAIN_PROFILE.DWG



GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.

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HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

STORM DRAIN PROFILES SHEET 3 OF 3

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'H/1"=2'V	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 45 OF 155	

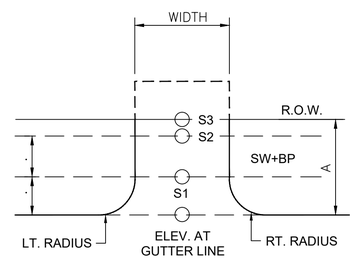
PLOTTED: 10/2/2023 9:38 AM
PLOT STYLE: COH CIP.CTB
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\15 STORM_DRAIN_PROFILE.DWG

Fulton Street

Existing												Proposed													
Sheet No.	Driveway No.	CL Station	Driveway Material	Width	Length A	Lt. Radius	Rt. Radius	Area (sf)	Elev. at ROW	Elev. at Gutter Line	Slope	CL Station	Driveway Material	Width	Length A	Lt. Radius	Rt. Radius	Area (sf)	Elev. at ROW	Elev. at Gutter Line	Slope	Elev. at S1	Sidewalk/ Bikepath Width	Elev. at S2	Slope at S3	Elev. at S3
19	D1	4+77 LT.	CONCRETE	37								4+77 LT.	CONCRETE	37	16.5											
21	D2	4+99 RT.	CONCRETE	11								4+99 RT.	CONCRETE	12	16.5											
21	D3	6+84 RT.	EARTH	10								6+84 RT.	CONCRETE	12	16.5											
21	D4	6+86 LT.	CONCRETE	10								6+86 LT.	CONCRETE	12	16.5											
21	D5	7+30 LT.	CONCRETE	10								7+30 LT.	CONCTETE	12	16.5											
21	D6	7+30 RT.	CONCRETE	10								7+30 RT.	CONCTETE	12	16.5											
23	D7	9+20 LT.	CONCRETE	11								9+20 LT.	CONCTETE	12	16.5											
23	D8	9+37 RT.	CONCRETE	12								9+37 RT.	CONCTETE	12	16.5											
23	D9	9+76 LT.	CONCRETE	8								9+76 LT.	CONCTETE	12	16.5											
23	D10	9+81 RT.	CONCRETE	10								9+81 RT.	CONCTETE	12	16.5											
23	D11	10+27 RT.	CONCRETE	10								10+27 RT.	CONCTETE	12	16.5											
23	D12	10+58 LT.	CONCRETE	9								10+58 LT.	CONCTETE	12	16.5											
23	D13	10+73 RT.	CONCRETE	11								10+73 RT.	CONCTETE	12	16.5											
23	D14	11+15 LT.	CONCRETE	10								11+15 LT.	CONCTETE	12	16.5											
23	D15	11+21 RT.	CONCRETE	9								11+21 RT.	CONCTETE	12	16.5											
23	D16	11+59 LT.	CONCRETE	9								11+59 LT.	CONCTETE	12	16.5											
23	D17	11+61 RT.	CONCRETE	9								11+61 RT.	CONCTETE	12	16.5											
25	D18	13+98 LT.	CONCRETE	10								13+98 LT.	CONCRETE	12	16.5											
25	D19	14+12 RT.	CONCRETE	11								14+12 RT.	CONCRETE	12	16.5											
25	D20	14+28 LT.	CONCRETE	11								14+28 LT.	CONCRETE	12	16.5											
25	D21	14+66 LT.	CONCRETE	8								14+66 LT.	CONCRETE	12	16.5											
25	D22	14+98 RT.	CONCRETE	9.5								14+98 RT.	CONCRETE	12	16.5											
25	D23	15+14 RT.	CONCRETE	10								15+14 RT.	CONCRETE	12	16.5											
25	D24	15+12 LT.	CONCRETE	12								15+12 LT.	CONCRETE	12	16.5											
25	D25	15+61 LT.	CONCRETE	12								15+61 LT.	CONCRETE	12	16.5											
25	D26	15+65 RT.	CONCRETE	8								15+65 RT.	CONCRETE	12	16.5											
25	D27	15+94 LT.	CONCRETE	18								15+94 LT.	CONCRETE	18	16.5											
25	D28	16+13 LT.	CONCRETE	9								16+13 LT.	CONCRETE	12	16.5											
25	D29	16+14 RT.	CONCRETE	15								16+14 RT.	CONCRETE	15	16.5											
25	D30	16+65 LT.	CONCRETE	11								16+65 LT.	CONCRETE	20	16.5											
27	D31	17+75 RT.	CONCRETE	11								17+75 RT.	CONCRETE	12	16.5											
27	D32	18+00 LT.	ASPHALT	55								18+00 LT.	CONCRETE	26	16.5											
27	D33	19+42 LT.	CONCRETE	35								19+42 LT.	CONCRETE	35	16.5											
27	D34	19+51 RT.	CONCRETE	28								19+51 RT.	CONCRETE	28	16.5											

Gargan Street

Existing												Proposed													
Sheet No.	Driveway No.	CL Station	Driveway Material	Width	Length A	Lt. Radius	Rt. Radius	Area (sf)	Elev. at ROW	Elev. at Gutter Line	Slope	CL Station	Driveway Material	Width	Length A	Lt. Radius	Rt. Radius	Area (sf)	Elev. at ROW	Elev. at Gutter Line	Slope	Elev. at S1	Sidewalk/ Bikepath Width	Elev. at S2	Slope at S3	Elev. at S3
33	D35	2+80 RT.	CONCRETE	21	8.5							2+80 RT.	CONCRETE	20	9											
33	D36	3+90 RT.	CONCRETE	13	8.5							3+90 RT.	CONCRETE	12	9											
33	D37	3+97 LT.	CONCRETE	8	11.5							3+97 LT.	CONCRETE	12	10.5											



DRIVEWAY DETAIL

NO.	DATE	REVISION	APP.

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

DRIVEWAY SCHEDULE

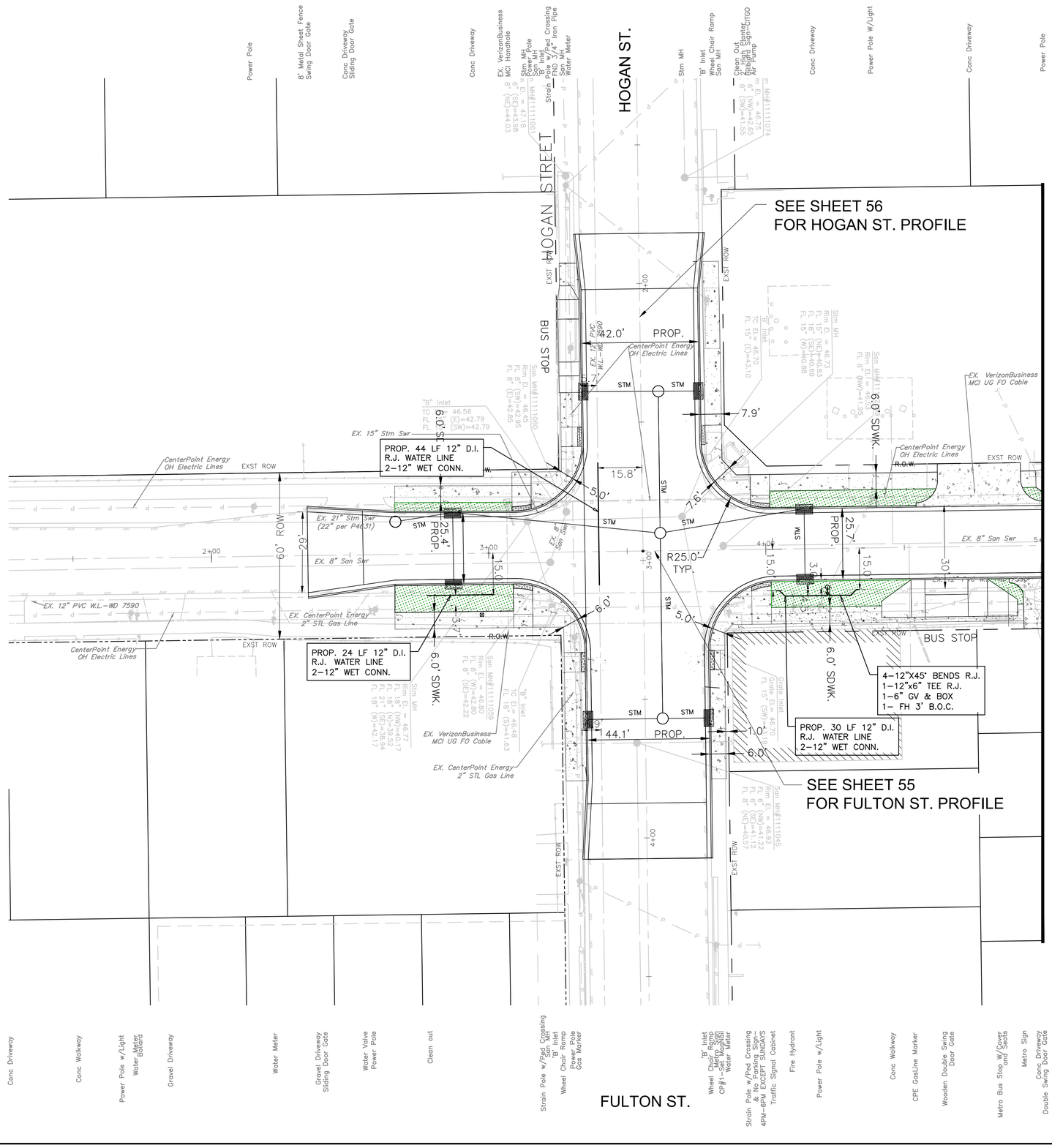
WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 51 OF 155	

PLOTTED: 10/2/2023 9:39 AM
PLOT STYLE: COH CIP.CTB
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\17 DRIVEWAY SCHEDULES AND POINT TABLES.dwg

PLOT STYLE: COH CIP.CTB PLOTTED: 12/22/2025 7:30 AM
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms60086\18 SANITARY SEWER PLAN AND PROFILE.dwg

GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.



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VERIFICATION OF PRIVATE UTILITY LINES

Date

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Date

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Signature valid for one year.

HATCH

SURVEYED BY:
AMANI ENGINEERING, INC.

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

SANITARY AND WATER PLAN STA. 1+00 TO 5+00

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 54 OF 155	

PLOTTED: 10/2/2023 3:32 PM
PLOT STYLE: COH CIP.CTB
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GRAPHIC SCALE
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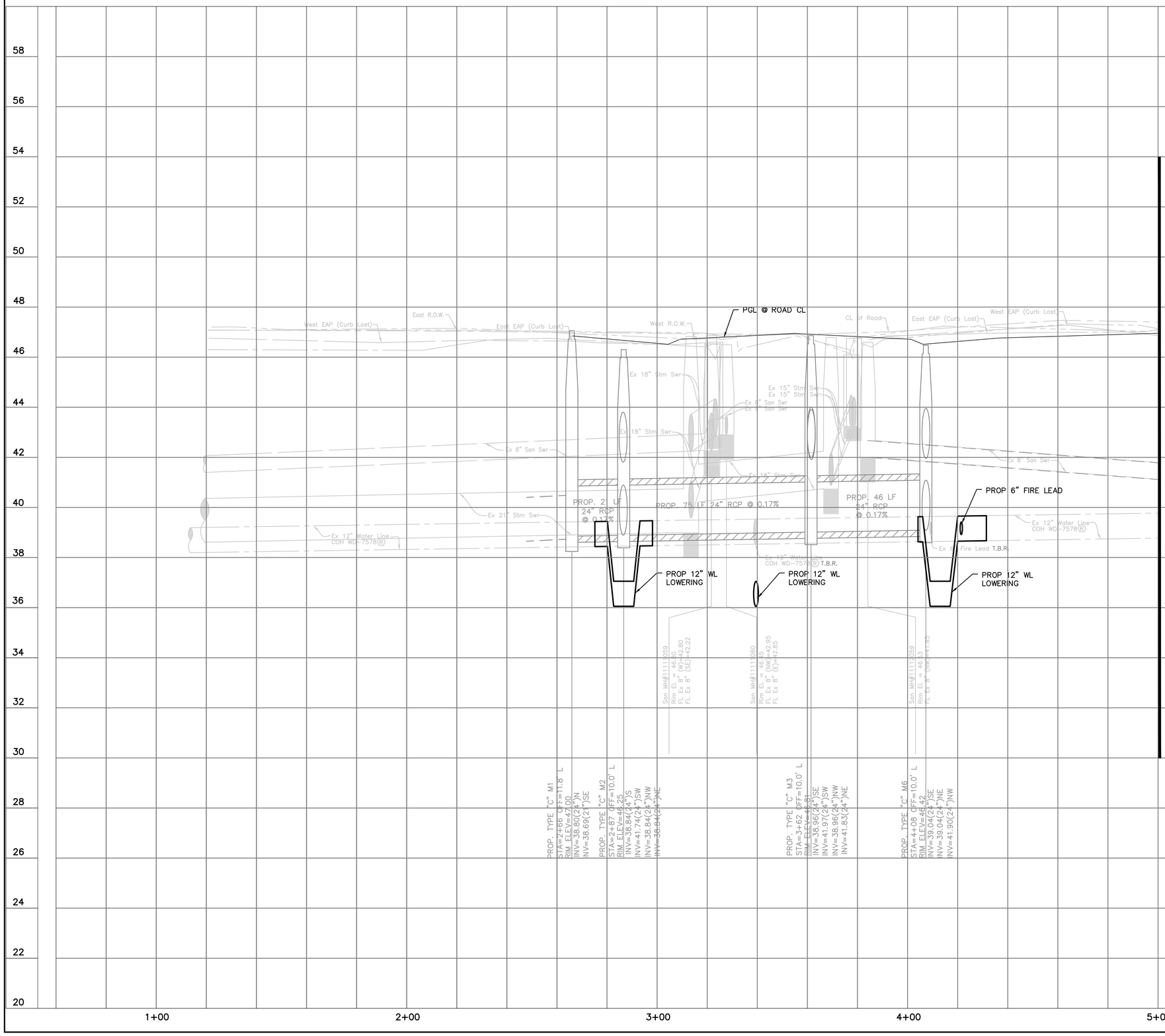
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.



HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

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HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

SANITARY AND WATER PROFILE STA. 1+00 TO 5+00

WBS NUMBER	
N-000818-0001-3	
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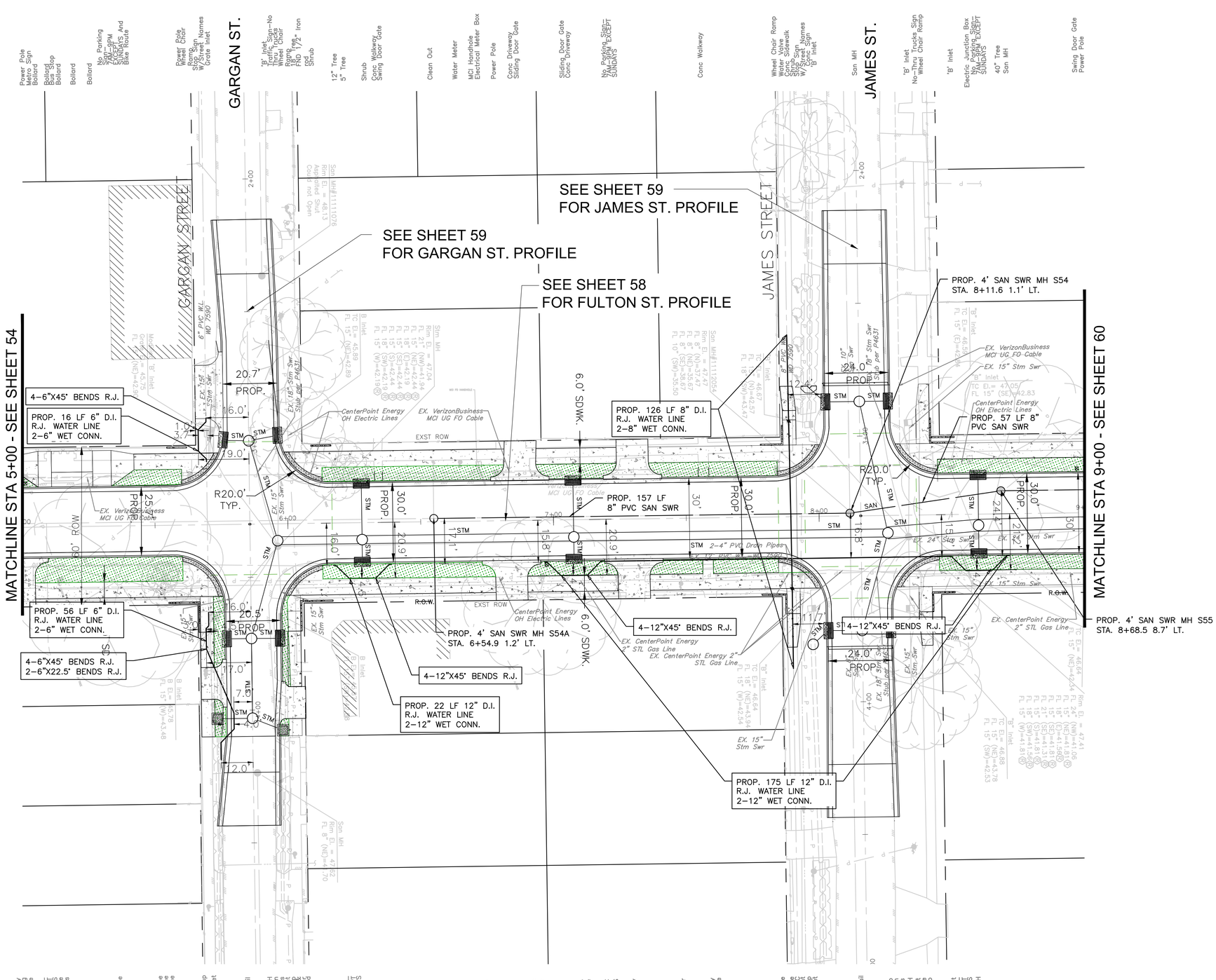
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 55 OF 155	



GRAPHIC SCALE
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(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.

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HATCH

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AMANI ENGINEERING, INC.

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE
UTILITY REVIEW
NOT FOR
CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

SANITARY AND WATER PLAN STA. 5+00 TO 9+00

WBS NUMBER	
N–000818–0001–3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 57 OF 155	

PLOT STYLE: COH CIP.CTB PLOTTED: 12/22/2025 7:31 AM

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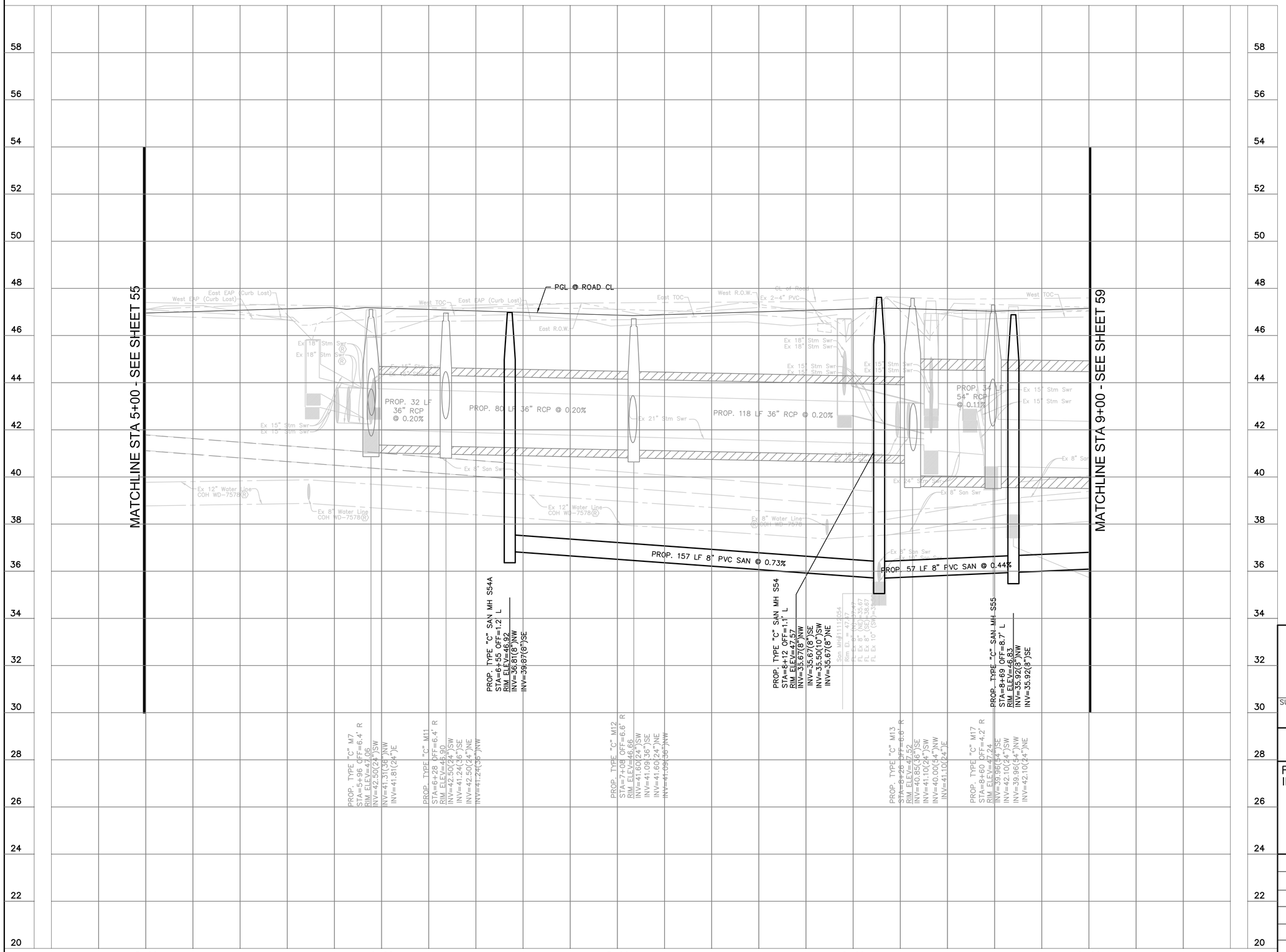

GRAPHIC SCALE
0 20
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE
UTILITY REVIEW
NOT FOR
CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

SANITARY AND WATER PROFILE
STA. 5+00 TO 9+00

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 57 OF 155	

PLOTTED: 10/2/2023 3:32 PM
PLOT STYLE: COH CIP.CTB
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\18 SANITARY SEWER PLAN AND PROFILE.dwg

PLOT STYLE: COH CIP.CTB
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GRAPHIC SCALE
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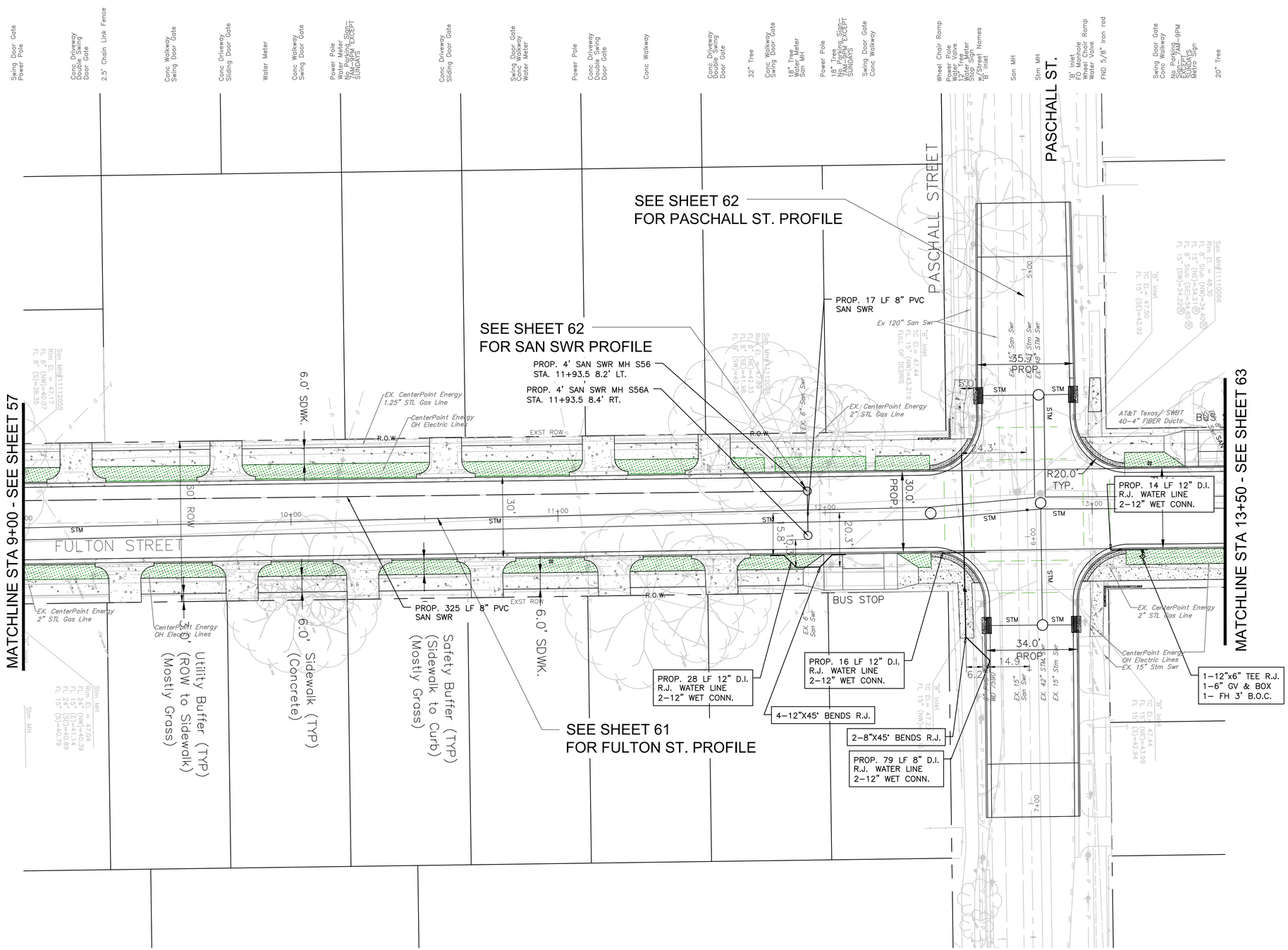
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.



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HATCH

SURVEYED BY:
AMANI ENGINEERING, INC.

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

SANITARY AND WATER PLAN
STA. 9+00 TO 13+50

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 60 OF 155	

PLOTTED: 10/2/2023 3:33 PM
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GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.

MATCHLINE STA 9+00 - SEE SHEET 57

MATCHLINE STA 13+50 - SEE SHEET 61

PGL @ ROAD CL

West EAP (Curb Lost)
East TOC
West TOC
East R.O.W.
East EAP (Curb Lost)
West R.O.W.
CL of Road
East TOC
West TOC

Ex 24" Stm Swr
Ex 12" Water Line COH WD-7578®
Ex 6" San Swr
Ex 8" San Swr
Ex 15" Stm Swr
Ex 8" San Swr
Ex 15" Stm Swr
Ex 8" San Swr
Ex 15" Stm Swr
Ex 8" San Swr
Ex 15" Stm Swr
Ex 120" San Swr FL=-15.84'(E)
8" Water Line ® COH WD-7578 T.B.R.
6" Fire Lead T.B.R.

PROP. 380 LF 54" RCP @ 0.11%
PROP. 41 LF 54" RCP @ 0.11%
PROP. 104 LF 54" RCP @ 0.13%
PROP 6" FIRE LEAD
PROP 12" WL RELOCATION
PROP 12" WL LOWERING
1.5' CLR.
PROP. 17 LF 8" PVC SAN @ 0.50%
PROP. 325 LF 8" PVC SAN @ 0.44%

PROP. TYPE "C" SAN MH S56
STA=11+93.3 OFF=8.2' L
RIM ELEV=47.81
INV=37.26(8")NE
INV=37.35(8")SE

PROP. TYPE "C" SAN MH S56A
STA=11+93 OFF=8.4' R
RIM ELEV=47.77
INV=37.34(8")SW

PROP. TYPE "C" MH18
STA=12+40 OFF=0.7' R
RIM ELEV=48.10
INV=39.54(54")SE
INV=39.53(54")NW

PROP. TYPE "C" MH19
STA=12+81 OFF=2.6' L
RIM ELEV=48.20
INV=39.49(54")SE
INV=39.22(54")NW
INV=39.03(48")SW
INV=39.15(42")NE

San MH#11112555
Rim El.= 47.40
FL Ex 8" (NW)=40.07
FL Ex 8" (S)=38.35

San MH#11112556
Rim El.= 47.49
FL Ex 6" (NE)=42.33
FL Ex 8" (SE)=42.23
FL Ex 8" (SW)=42.95

San MH#11112554
Rim El.= 48.15
FL Ex 15" (E)=34.21®
FL Ex 15" (SW)=34.22®
FL Ex 8" Stub (NW)=34.40®
FL Ex 8" Stub (SE)=34.66®

58 56 54 52 50 48 46 44 42 40 38 36 34 32 30 28 26 24 22 20

9+00 10+00 11+00 12+00 13+50

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

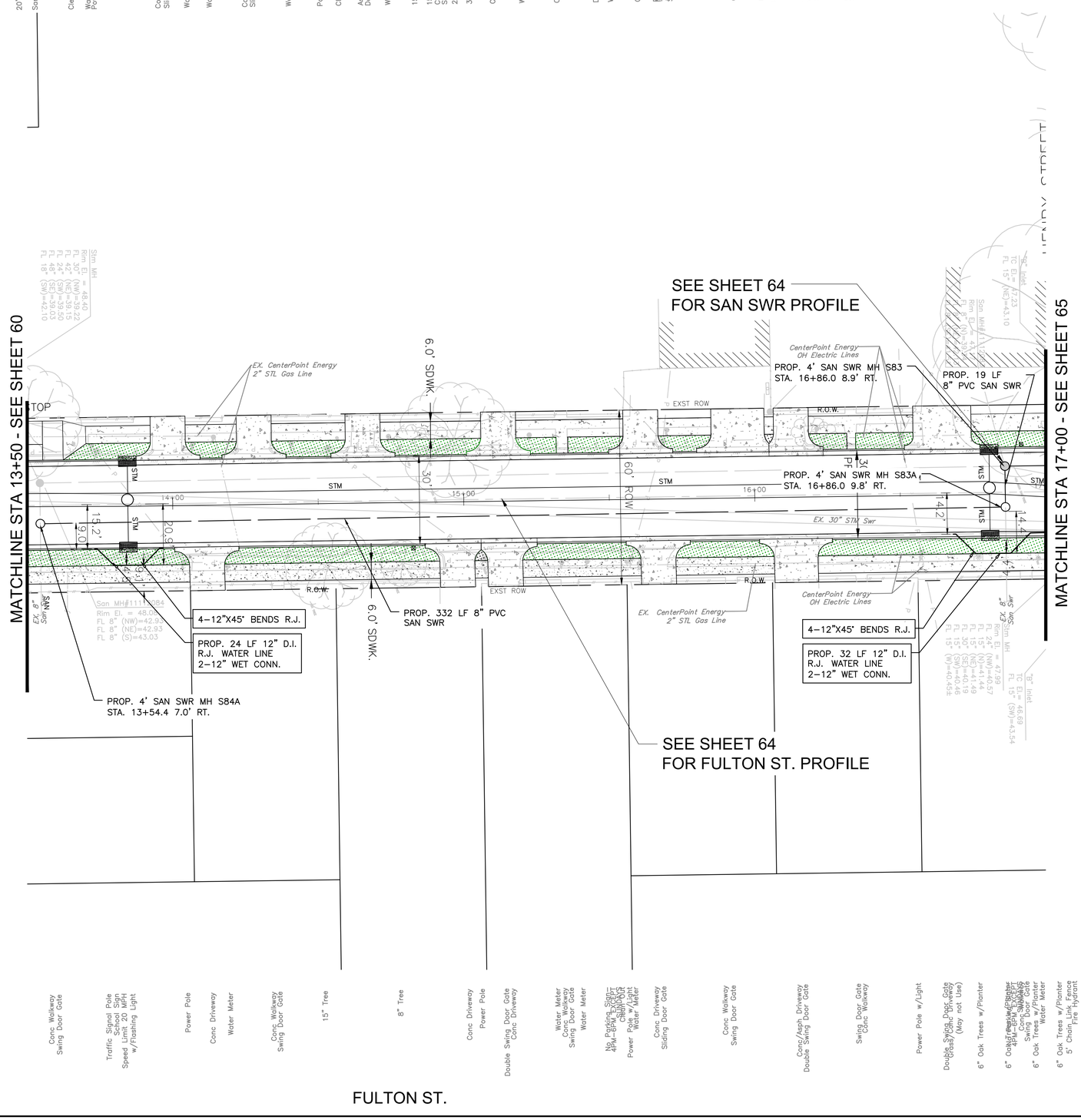
90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

SANITARY AND WATER PROFILE STA. 9+00 TO 13+50

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 59 OF 155	



GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.

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

VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

Signature valid for six months.

Date

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Signature valid for one year.

HATCH

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AMANI ENGINEERING, INC.

90% DRAFT
2/3/26 UPDATE
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

SANITARY AND WATER PLAN
STA. 13+50 TO 17+00

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 63 OF 155	

PLOT STYLE: COH CIP.CTB
PLOTTED: 12/22/2025 7:32 AM
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms60086\18 SANITARY SEWER PLAN AND PROFILE.dwg

PLOT STYLE: COH CIP.CTB

PLOTTED: 10/2/2023 3:34 PM

FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\18 SANITARY SEWER PLAN AND PROFILE.dwg

GRAPHIC SCALE

0 20 40

(IN FEET)

FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.

MATCHLINE STA 13+50 - SEE SHEET 59

MATCHLINE STA 17+00 - SEE SHEET 63

PGL @ ROAD CL

East R.O.W.

East TOC

West TOC

East TOC

West EAP (Curb Lost)

East EAP (Curb Lost)

West EAP (Curb

Ex 18"

Ex 15"

Ex 15"

Ex 15"

Ex 15"

Ex 8" San Swr

Ex 8" San Swr

Ex 8" San Swr

Ex 8" San Swr

Ex 8" San Swr

Ex 12" Water Line
COH WD-7578®

30" San Swr

PROP. 43 LF
48" RCP
@ 0.09%

PROP. 296 LF 54" RCP @ 0.09%

PROP. 332 LF 8" PVC SAN @ 0.44%

PROP. 55 LF
8" PVC SAN
@ 0.44%

PROP. 19 LF
8" PVC SAN
@ 0.44%

San MH#11112884
Rim El.= 48.08
FL Ex 8" (W)=40.93
FL Ex 8" (NE)=42.83
FL Ex 8" (S)=43.03

PROP. TYPE "C" SAN MH S84A
STA=13+54 OFF=7.0' R
RIM ELEV=47.85
INV=43.20(8")NE
INV=41.46(8")NW

PROP. TYPE "C" SAN MH S83A
STA=16+86 OFF=9.8' R
RIM ELEV=47.40
INV=38.94(8")SW
INV=40.00(8")SE
INV=42.50(8")NE

PROP. TYPE "C" SAN MH S83
STA=16+86 OFF=9.0' L
RIM ELEV=47.52
INV=41.51(8")SE
INV=36.86(8")NW
INV=36.86(8")NE

San MH#11112883
Rim El.= 47.28
FL Ex 8" (N)=39.34
FL Ex 8" (NE)=42.13
FL Ex 8" (SE)=41.51

PROP. TYPE "C" M22
STA=13+84 OFF=1.6' L
RIM ELEV=48.38
INV=40.00(24")SW
INV=43.30(24")NE
INV=39.35(54")NW
INV=39.35(54")SE

PROP. TYPE "C" M23
STA=16+81 OFF=1.3' R
RIM ELEV=48.08
INV=43.00(24")SW
INV=39.61(54")SE
INV=43.00(24")NE
INV=40.11(48")NW

40 38 36 34 32 30 28 26 24 22 20

58 56 54 52 50 48 46 44 42

13+00 14+00 15+00 16+00 17+00

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE
UTILITY REVIEW
NOT FOR
CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

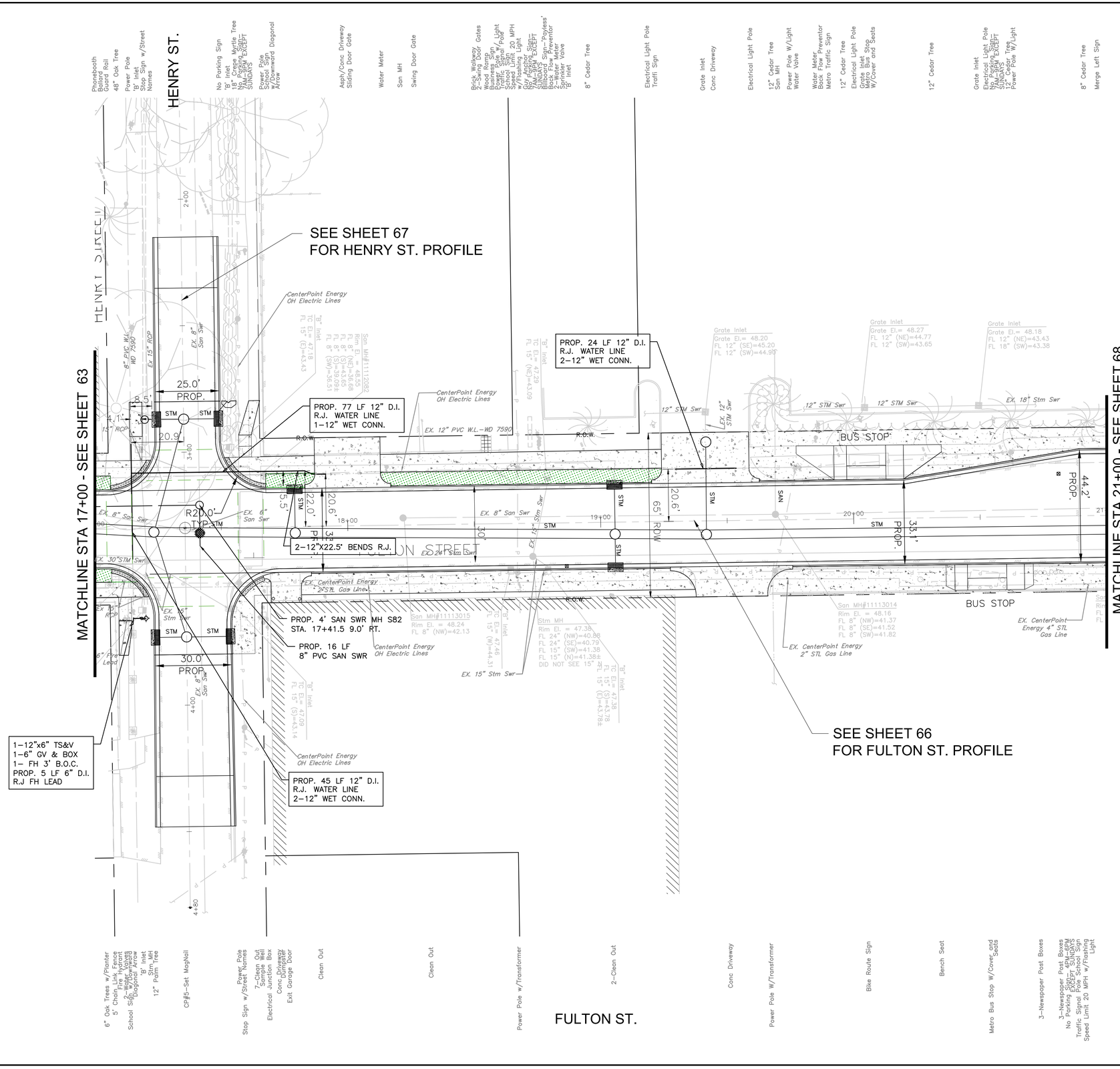
SANITARY AND WATER PROFILE
STA. 13+50 TO 17+00

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
1"=20'
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. 61 OF 155

PLOT STYLE: COH CIP.CTB
PLOTTED: 12/22/2025 7:33 AM
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms60086\18 SANITARY SEWER PLAN AND PROFILE.dwg

GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.



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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

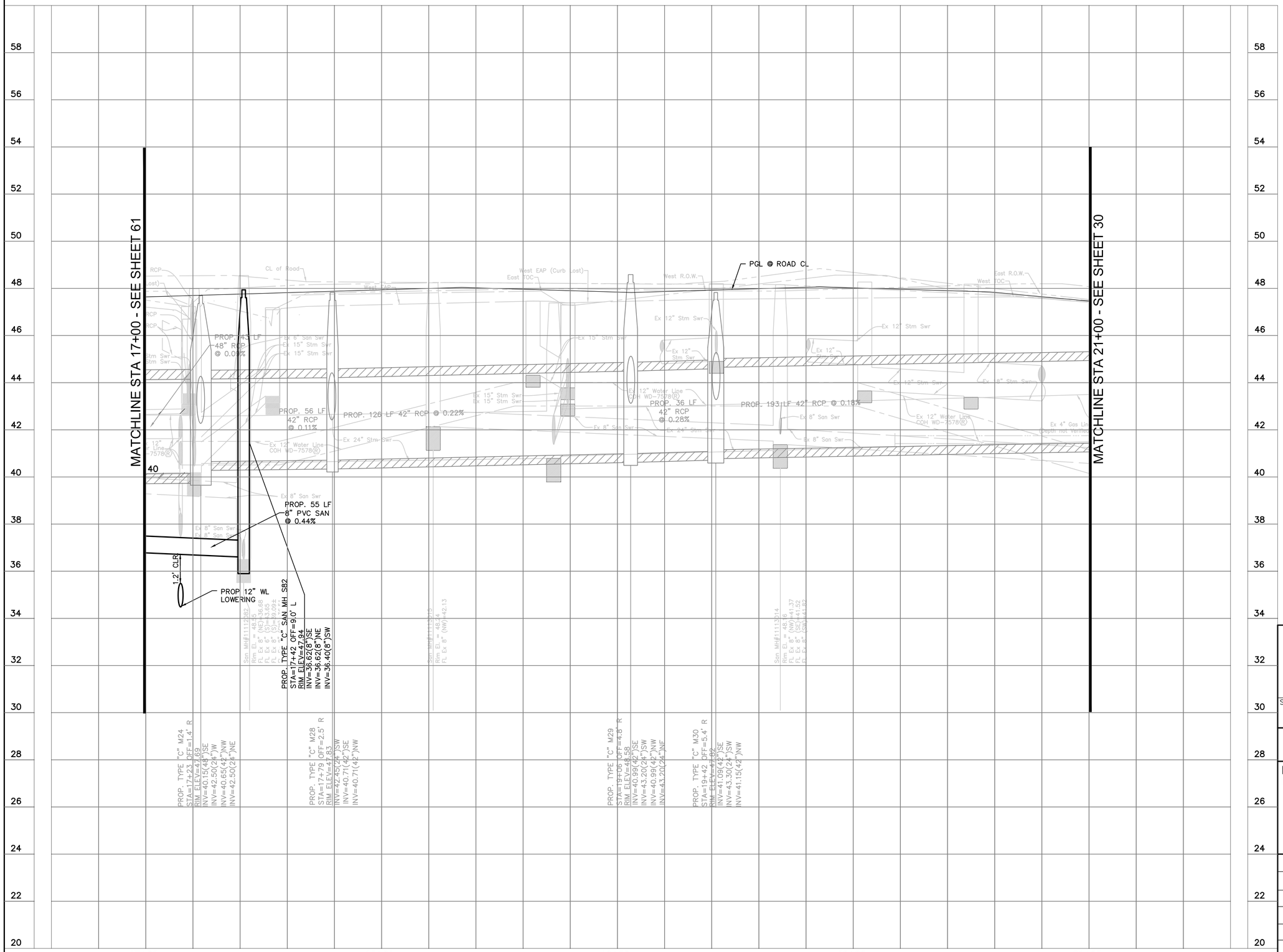
SANITARY AND WATER PLAN STA. 17+00 TO 21+00

WBS NUMBER	
N–000818–0001–3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 65 OF 155	

PLOTTED: 10/2/2023 3:34 PM
PLOT STYLE: COH CIP.CTB
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\18 SANITARY SEWER PLAN AND PROFILE.dwg

GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.



HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE
UTILITY REVIEW
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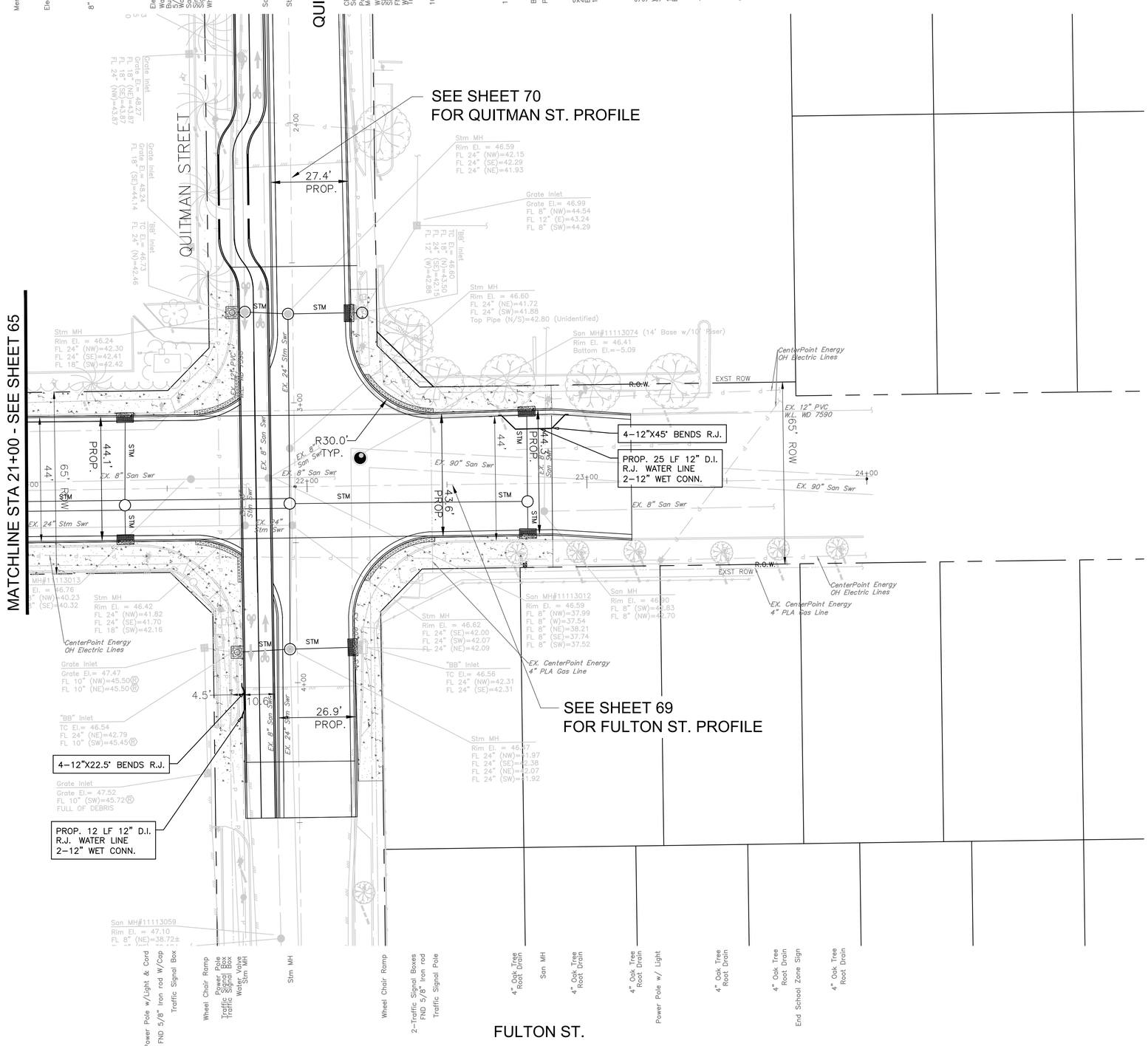
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

SANITARY AND WATER PROFILE
STA. 17+00 TO 21+00

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
1"=20'
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. 63 OF 155

PLOT STYLE: COH CIP.CTB
PLOTTED: 12/22/2025 7:34 AM
FILE PATH: C:\pwworking\hotch-dpd-south_central_us\dms60086\18 SANITARY SEWER PLAN AND PROFILE.dwg



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(IN FEET)
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AMANI ENGINEERING, INC.

90% DRAFT
2/3/26 UPDATE
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

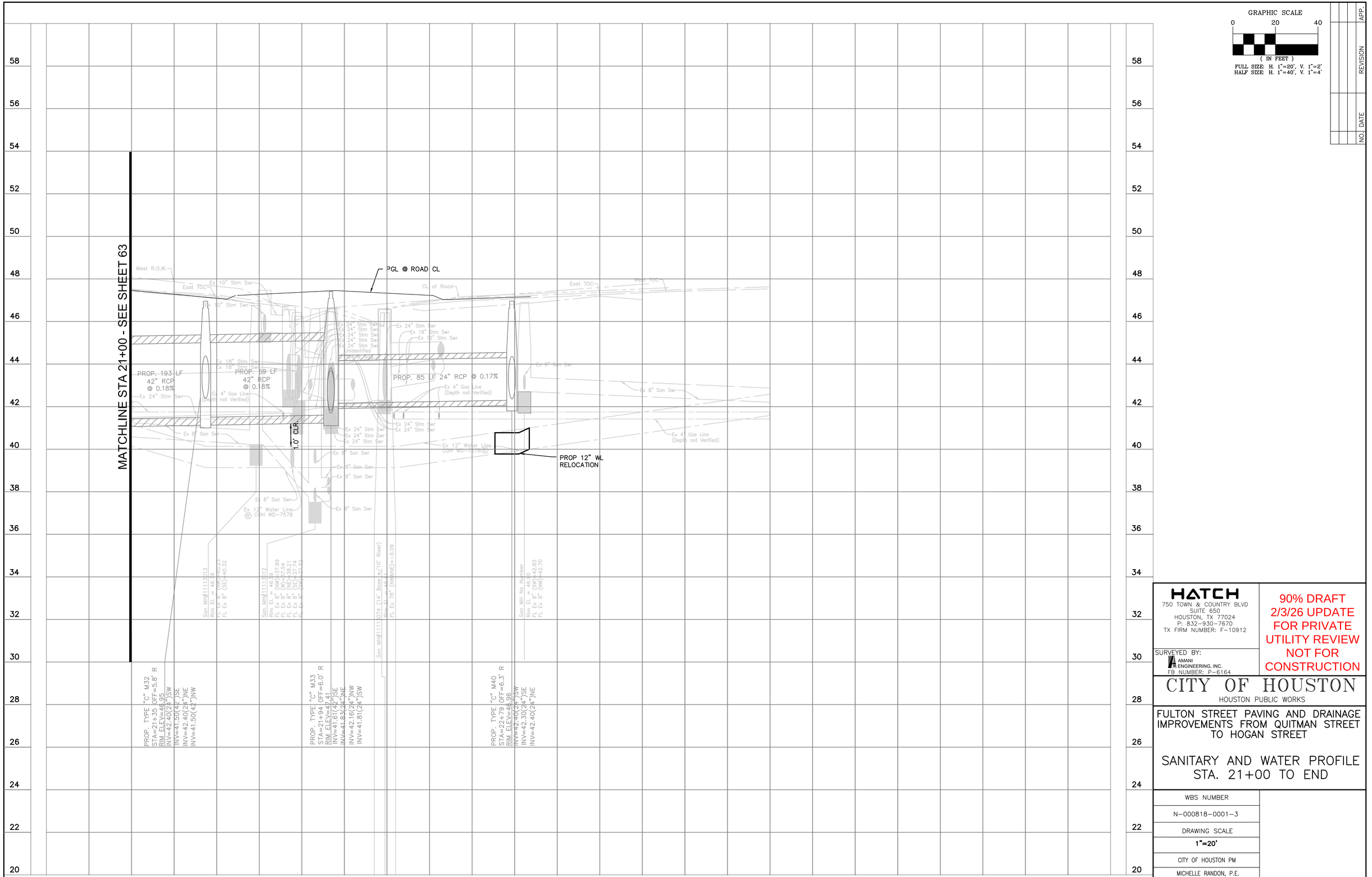
SANITARY AND WATER PLAN STA. 21+00 TO END

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 68 OF 155	

PLOTTED: 10/2/2023 9:43 AM
PLOT STYLE: COH CIP.CTB
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\18 SANITARY SEWER PLAN AND PROFILE.dwg

GRAPHIC SCALE
0 20 40
(IN FEET)
FULL SIZE: H. 1"=20', V. 1"=2'
HALF SIZE: H. 1"=40', V. 1"=4'

NO.	DATE	REVISION	APP.



HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

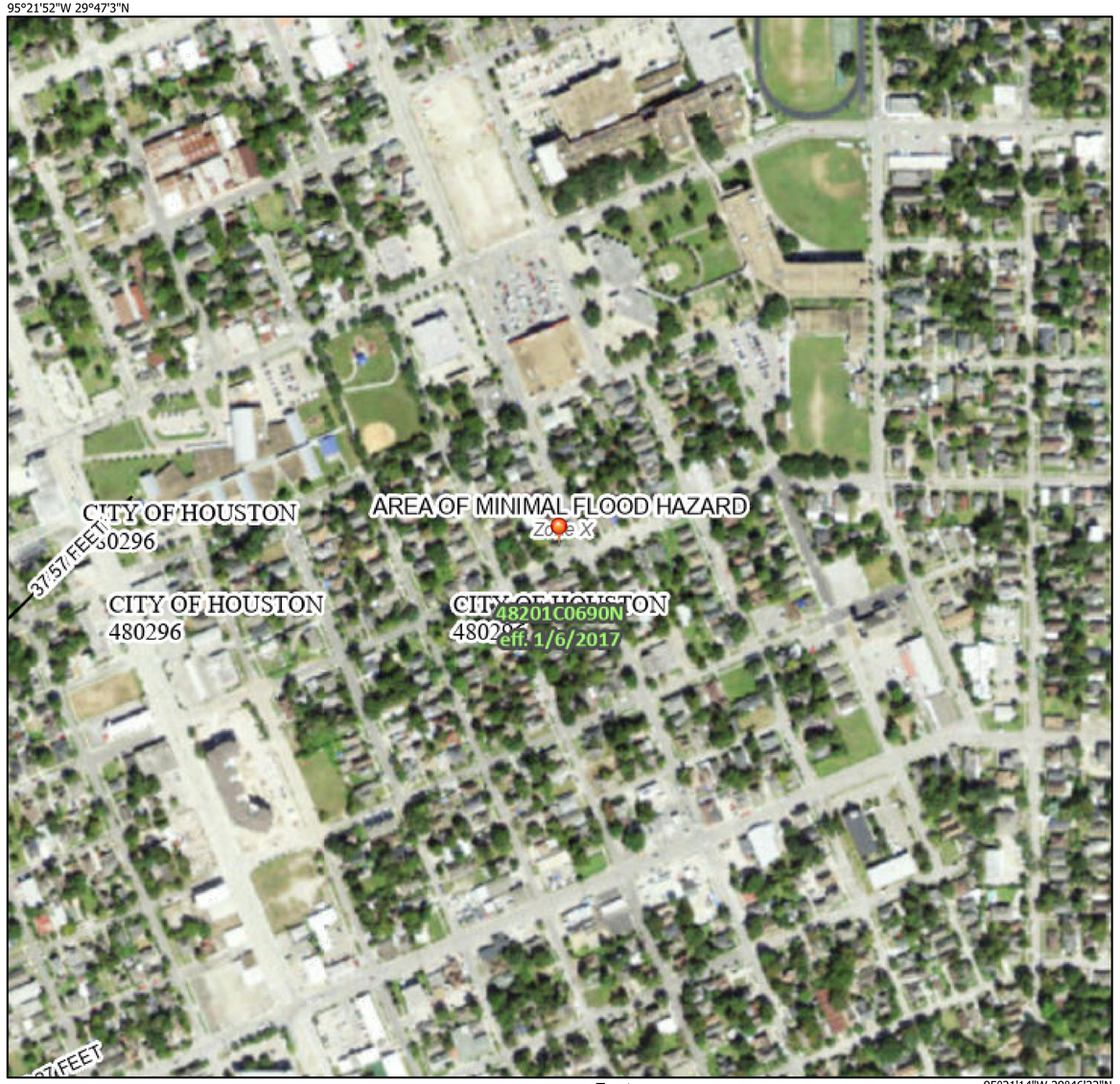
SANITARY AND WATER PROFILE STA. 21+00 TO END

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
1"=20'
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. 65 OF 155

National Flood Hazard Layer FIRMette

FEMA

95°21'52"W 29°47'3"N



0 250 500 1,000 1,500 2,000 Feet

1:6,000

95°21'14"W 29°46'32"N

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 — Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/11/2023 at 10:24 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

NO.	DATE	REVISION	APP.

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

FIRM MAP

WBS NUMBER	N-000818-0001-3
DRAWING SCALE	N.T.S.
CITY OF HOUSTON PM	MICHELLE RANDON, P.E.
SHEET NO.	67 OF 155

PLOTTED: 10/2/2023 9:44 AM
PLOT STYLE: COH CIP.CTB
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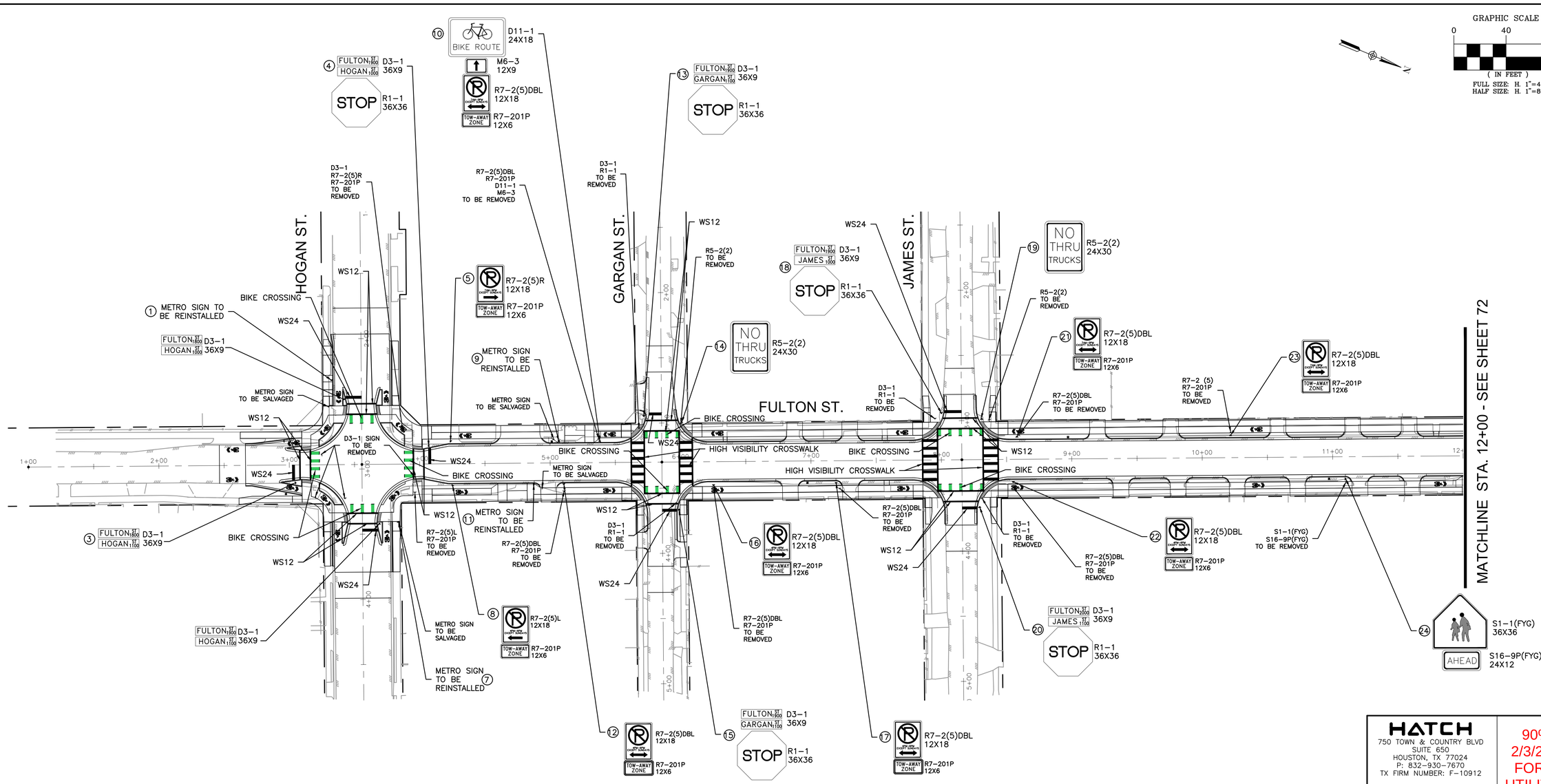

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SUITE 650
HOUSTON, TX 77024
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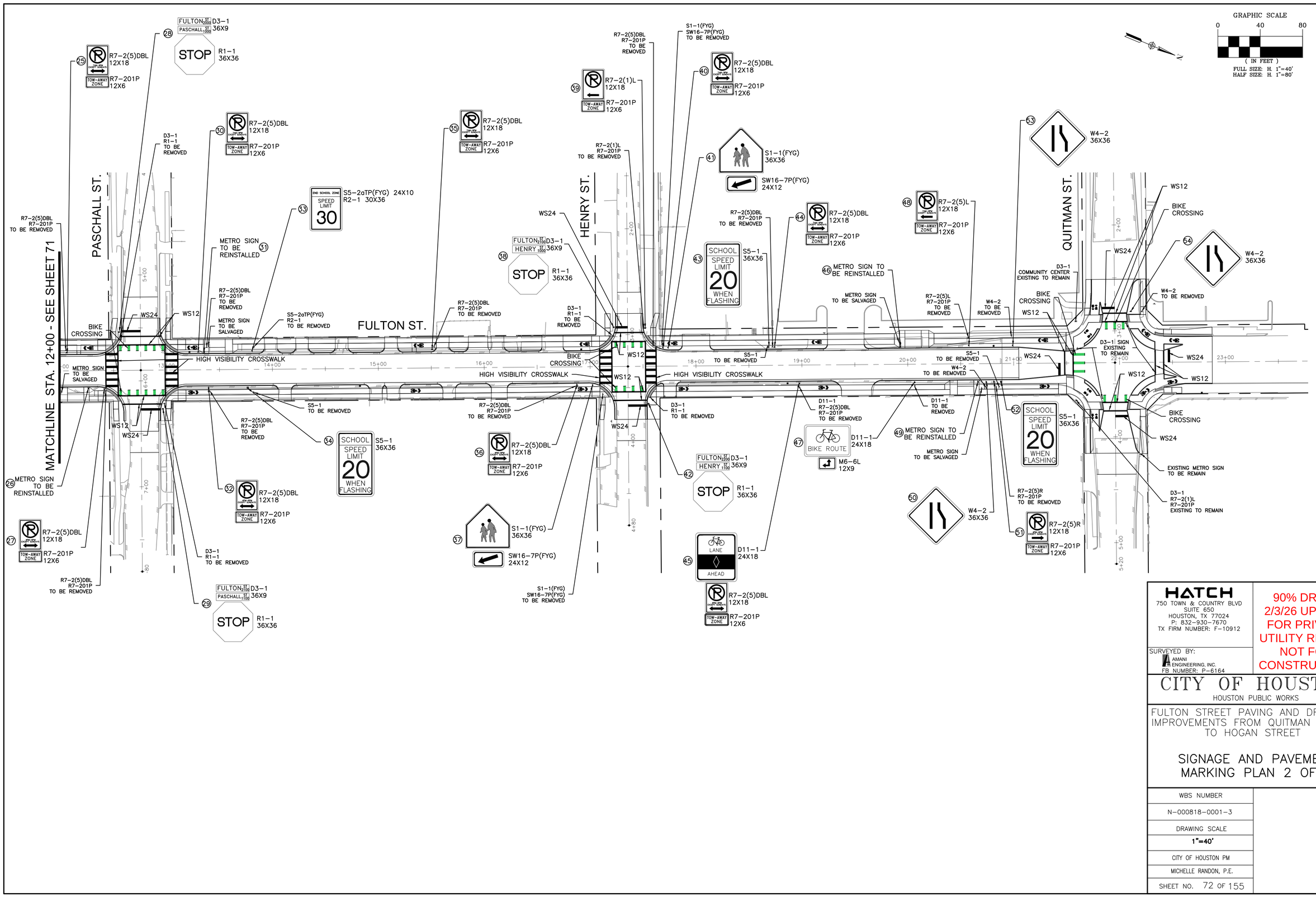
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

SIGNAGE AND PAVEMENT MARKING PLAN 1 OF 2

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
1"=50'
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. 71 OF 155

PLOTTED: 10/3/2023 9:34 AM
PLOT STYLE: COH CIP.CTB
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\22 SIGNING_PAVEMENT MARKING.dwg



PLOT STYLE: COH CIP.CTB PLOTTED: 10/3/2023 9:34 AM

FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\22 SIGNING_PAVEMENT MARKING.dwg

NO.	DATE	REVISION	APP.

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
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90% DRAFT
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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

SIGNAGE AND PAVEMENT MARKING PLAN 2 OF 2

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=40'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 72 OF 155	

PLOT STYLE: COH CIP.CTB
PLOTTED: 10/2/2023 9:44 AM
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\23 SIGNING AND MARKING NOTES AND DETAILS.dwg

NO.	DATE	REVISION	APP.

GENERAL NOTES

1. THE EXISTING SIGNS LOCATED ON PUBLIC CONSTRUCTION SITE ARE THE PROPERTY OF THE CITY OF HOUSTON. THROUGHOUT THE PERIOD OF THE CONTRACT, THE CONTRACTOR SHALL PROTECT THESE SIGNS SUCH THAT THEY ARE NOT DAMAGED IN THE COURSE OF CONSTRUCTION ACTIVITY. SUCH PROTECTION SHALL INCLUDE THE PERIOD AFTER SIGNS ARE REMOVED FROM INSTALLATION AND STORED BY THE CONTRACTOR OR DELIVERED TO THE TRAFFIC OPERATIONS CENTER (2200 PATTERSON). THE GENERAL TRAFFIC SUPERINTENDENT (832-395-6728/6756) MUST BE NOTIFIED 48 HOURS IN ADVANCE PRIOR TO DELIVERY.
2. AFTER SIGNS ARE REMOVED FROM INSTALLATION AND ARE BEING STORED BY THE CONTRACTOR, THE CONTRACTOR SHALL CONTACT THE TRAFFIC OPERATIONS DIVISION OF THE PUBLIC WORKS AND ENGINEERING DEPARTMENT (832-395-6728/6756) AND ARRANGE FOR A CONVENIENT TIME TO DELIVER ONLY CITY SIGNS AND POSTS IDENTIFIED BY TRAFFIC OPERATIONS DIVISION TO 2200 PATTERSON.
3. PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SIGNS WITHIN THE AREA OF CONSTRUCTION WILL BE INVENTORIED AND DOCUMENTED JOINTLY BY THE CITY INSPECTOR AND THE CONTRACTOR. THIS DOCUMENT WILL BE JOINTLY SIGNED BY BOTH PARTIES REFLECTING THE SIGN TYPE, SIGN SIZE, SIGN CONDITION, SIGN LOCATION, REFLECTIVITY ADEQUACY, ETC. THE CONTRACTOR IS HELD ACCOUNTABLE FOR THESE SIGNS THROUGHOUT THE PROJECT AND AT THE PROJECTS COMPLETION.
4. ALL GROUND MOUNTED STOP SIGNS, WARNING SIGNS, AND OTHER REGULATORY SIGNS SHALL USE AT A MINIMUM HIGH INTENSITY PRISMATIC REFLECTIVE SHEETING.
5. ALL OVERHEAD SIGNS SHALL USE DIAMOND GRADE REFLECTIVE SHEETING.
6. ALL OTHER SIGNS SHALL USE SUPER ENGINEER GRADE SHEETING.
7. ALL BLANKS TO BE INSTALLED SHALL BE OF THE 3000, 5000 OR 6000 SERIES ALUMINUM WITH A YEILD STRENGTH OF 3003-H14 ALLOY.
8. "T" DENOTES THICKNESS OF SIGN BLANKS.
9. ALL HOLES SHALL BE ⅝" DIAMETER DRILLED OR PUNCHED AS SHOWN ON EACH BLANK DETAIL AND SHALL BE FREE OF BURRS AND / OR ROUGH EDGES.
10. SIGN BLANK CORNERS TO BE ROUNDED AS SHOWN ON EACH DETAIL ON SHEET 01509-03.
11. ALL SIGN BLANK ARE TO BE ETCHED, DEGREASED, AND HAVE AN ALODINE FINISH PRIOR TO APPLICATION OF LEGENDS.
12. ALL DETAILS ARE NOT TO SCALE.
13. ALL SIGNS SHALL BE MANUFACTURED AND INSTALLED IN CONFORMANCE TO THE LATEST TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) AND STANDARD HIGHWAY SIGNS LATEST EDITION.
14. REINSTALLATION OF PREVIOUSLY EXISTING SIGNS, WHERE REQUIRED PER PLANS, SHALL BE AT THE CONTRACTOR'S EXPENSE.

TYPICAL GROUND SIGN INSTALLATION PERFORATED SQUARE METAL TUBING

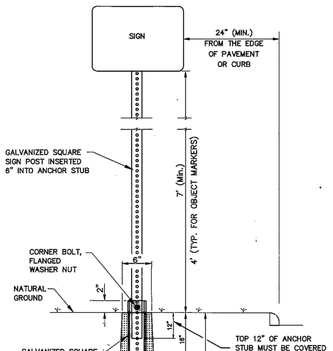
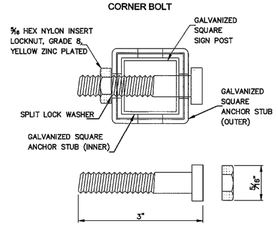
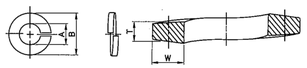


TABLE A	
GALVANIZED SQUARE SIGN POST (PERFORATED)	1-¾" x 1-¾" (14 GAUGE)
GALVANIZED SQUARE ANCHOR STUB (PERFORATED) (INNER)	2" x 2" x 36" (14 GAUGE)
GALVANIZED SQUARE ANCHOR STUB (PERFORATED) (OUTER)	2½" x 2½" x 18" (14 GAUGE)

CORNER BOLT



5/16" SPLIT LOCK WASHER, HIGH ALLOY MECHANICAL DEPOSITED YELLOW SINK



NOMINAL WASHER SIZE	A INSIDE DIAMETER MAX	A INSIDE DIAMETER MIN	B OUTSIDE DIAMETER MAX	T MEAN SECTION (Minimum)	W SECTION WIDTH
⅝"	0.322	0.314	0.583	0.078	0.125

DIMENSIONS: ASME B18.21.1
MATERIAL: ALLOY STEEL PER ASME B18.211
FINISH: MECHANICAL ZINC PER ASME B695, CLASS 5, TYPE 2 (YELLOW)

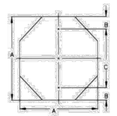
CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

GENERAL NOTES AND GROUND SIGN MOUNTING

(NOT TO SCALE)

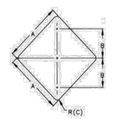
APPROVED BY: CITY ENGINEER
APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: SEP-2016
DWG NO: 01509-01

OCTAGONAL



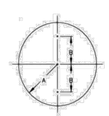
A	B	C	T
36	13	30	0.080

DIAMOND



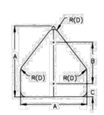
A	B	C	T
24	12	1⅛	0.080
30	15	1⅜	0.080
36	18	1¾	0.080

CIRCLE



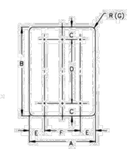
A	B	T
15	15	0.080
18	12	0.080

PENTAGON (SCHOOL)



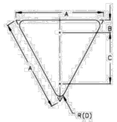
A	B	C	D	T
36	24	3	24	0.080

VERTICAL RECTANGLE



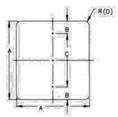
A	B	C	D	E	F	G	T
36	48	6	36	6	24	3⅝	0.080
48	60	6	48	9	30	3	0.080

EQUILATERAL TRIANGLE



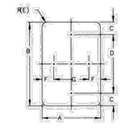
A	B	C	D	T
36	3	21	2	0.080

SQUARE (A)



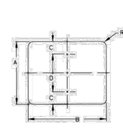
A	B	C	D	T
18	3	12	1½	0.080
24	3	18	1½	0.080
30	3	24	1½	0.080

VERTICAL / HORIZONTAL RECTANGLE



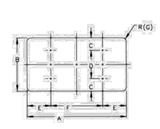
A	B	C	D	E	F	G	T
12	18	1½	15	1½	15	9	0.080
12	36	3	30	1½	15	9	0.080
18	24	3	18	1½	15	15	0.080
24	30	3	24	3½	3	18	0.080
24	36	3	30	1½	3	18	0.080
24	48	6	36	1¾	3	18	0.080
30	36	3	30	1¾	3	24	0.080

HORIZONTAL RECTANGLE



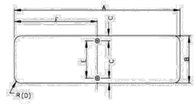
A	B	C	D	E	T
24	12	1½	9	1½	0.080
24	18	3	12	1½	0.080
30	24	3	18	1½	0.080
36	12	1½	9	1½	0.080

HORIZONTAL RECTANGLE



A	B	C	D	E	F	G	T
36	24	3	18	6	24	1⅛	0.080
48	24	3	18	9	30	1⅛	0.080
48	36	6	24	9	30	2⅛	0.080
60	24	3	18	12	36	1⅛	0.080
60	36	6	24	12	36	2⅛	0.080

TABLE - D3 SIGNS



A	B	C	D	E	F	G	T
30	9	1⅜	⅝	8	15	15	0.125
36	9	1⅜	⅝	8	18	18	0.125
42	9	1⅜	⅝	8	21	18	0.125
48	9	1⅜	⅝	8	24	18	0.125

NOTE:
1. A 30" LONG OR GREATER PLATE SHALL BE USED WHEN A "NO OUTLET" SUPPLEMENT IS REQUIRED.
2. THE CITY OF HOUSTON "STOP" AND "YIELD" SIGNS SHALL BE A MINIMUM 36". SPECIAL PERMISSION FROM THE CITY TRAFFIC ENGINEER IS REQUIRED FOR LESS THAN 36" SIGNS.

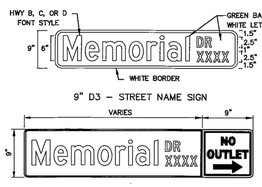
CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

GROUND MOUNTED SIGN SIZES

(NOT TO SCALE)

APPROVED BY: CITY ENGINEER
APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2012
DWG NO: 01509-03

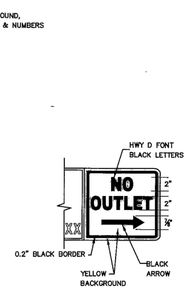
D3 W/ NO OUTLET SIGNAGE

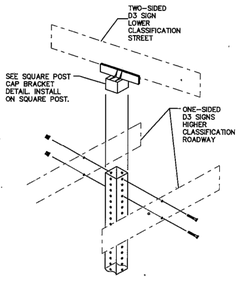


D3 - STREET NAME SIGN

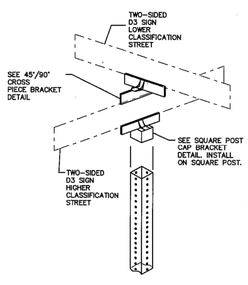
HEIGHT	SEE SIGN SIZES
LENGTH	30" MIN. * 48" MAX.** 1" INCREMENTS OF LENGTH
THICKNESS	0.125"
SUBSTRATE	ALUMINUM ALLOY, 5052-H38 (ASTM B-209)
SIGN FACE MATERIALS	GREEN FILM OVER HIGH INTESITY GRADE VIP SHEETING
LEGENDS AND SYMBOLS	SERIES D (USUAL) SERIES C OR B FOR MAXIMUM LENGTH SIGN BLANK
COLOR	LETTERS -WHITE REFLECTIVE BORDER -WHITE REFLECTIVE BACKGROUND -GREEN REFLECTIVE

NOTES:
- TYPICAL SIGN PLATE SHOULD BE 42".
- SIGN PLATE LONGER THAN 48" MUST BE APPROVED BY THE CITY ENGINEER.
- ALL DIMENSIONS ARE IN INCHES.

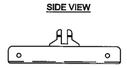




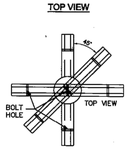
D3 SIGNS GREATER THAN 42" PLATES IN LENGTH

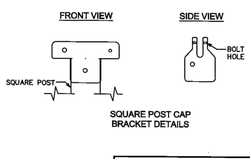


D3 SIGNS LESS THAN OR EQUAL TO 42" PLATES IN LENGTH



45°/90° CROSS PIECE SIGN BRACKET





SQUARE POST CAP BRACKET DETAILS

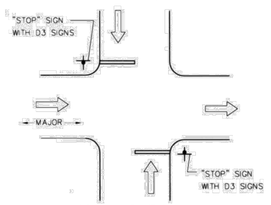
CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

STREET NAME SIGN AND SIGN MOUNTING

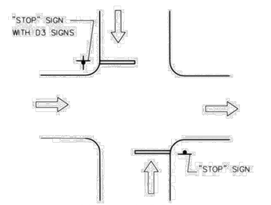
(NOT TO SCALE)

APPROVED BY: CITY ENGINEER
APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: SEP-2016
DWG NO: 01509-02

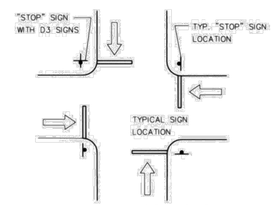
TYPICAL SIGN PLACEMENT



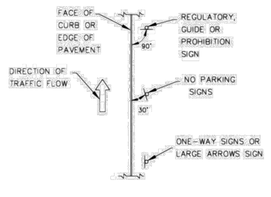
TWO-WAY STOP AND ONE-WAY OPERATION ON MAJOR/LOCAL INTERSECTION



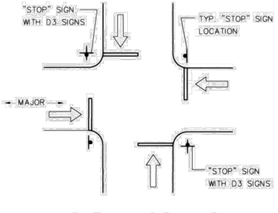
TWO-WAY STOP AND ONE-WAY OPERATION ON LOCAL/LOCAL INTERSECTION



FOUR-WAY STOP CONTROL ON LOCAL/LOCAL INTERSECTION



MAST ARM INSTALLATION
REFER TO TRAFFIC SIGNAL DETAILS FOR ADDITIONAL INFORMATION.



FOUR-WAY STOP CONTROL ON MAJOR/LOCAL INTERSECTION

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

TYPICAL SIGN PLACEMENT

(NOT TO SCALE)

APPROVED BY: CITY ENGINEER
APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2012
DWG NO: 01509-04

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

STANDARD SIGNING NOTES AND DETAILS

WBS NUMBER	N-000818-0001-3
DRAWING SCALE	N.T.S.
CITY OF HOUSTON PM	MICHELLE RANDON, P.E.
SHEET NO.	73 OF 155

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE (COH)	SIGN TEXT	DIMENSIONS	SQUARE POST	SIGNAL MOUNT	ROUND POST (PERMISSION NEEDED FROM CITY TRAFFIC ENGINEER)	NUMBER OF POSTS (1 OR 2)	SIGN AREA SQ. FT. ——— (FOR INFORMATION ONLY, NOT INTENDED FOR BID)	SIGN POST SIZE (TABLE A)
71	1	CUSTOM	METRO (SALVAGE AND REINSTALL)	N/A	X			1		
71	2	R1-1	STOP	36X36	X			1		
		D3-1	STREET NAME (1 LINE) (FULTON ST, 1800)	36X9						
		D3-1	STREET NAME (1 LINE) (HOGAN ST, 1000)	36X9						
71	3	R1-1	STOP	36X36	X			1		
		D3-1	STREET NAME (1 LINE) (FULTON ST, 1800)	36X9						
		D3-1	STREET NAME (1 LINE) (HOGAN ST, 1100)	36X9						
71	4	R1-1	STOP	36X36	X			1		
		D3-1	STREET NAME (1 LINE) (FULTON ST, 1900)	36X9						
		D3-1	STREET NAME (1 LINE) (HOGAN ST, 1000)	36X9						
71	5	R7-2(5)R	NO PARKING 7AM-9PM EXCEPT SUNDAYS	12X18	X			1		
		R7-201P	TOW AWAY ZONE (PLAQUE)	12X6						
71	6	R1-1	STOP	36X36	X			1		
		D3-1	STREET NAME (1 LINE) (FULTON ST, 1900)	36X9						
		D3-1	STREET NAME (1 LINE) (HOGAN ST, 1100)	36X9						
71	7	CUSTOM	METRO (SALVAGE AND REINSTALL)	N/A	X			1		
71	8	R7-2(5)L	NO PARKING 4PM-6PM EXCEPT SUNDAYS	12X18	X			1		
		R7-201P	TOW AWAY ZONE (PLAQUE)	12X6						
71	9	CUSTOM	METRO (SALVAGE AND REINSTALL)	N/A	X			1		
71	10	R7-2(5)DBL	NO PARKING 7AM-9PM EXCEPT SUNDAYS	12X18	X			1		
		R7-201P	TOW AWAY ZONE (PLAQUE)	12X6						
		D11-1	BIKE ROUTE	24X18						
		M6-3	BICYCLE ROUTE (THRU ARROW)	12X9						
71	11	CUSTOM	METRO (SALVAGE AND REINSTALL)	N/A	X			1		
71	12	R7-2(5)DBL	NO PARKING 4PM-6PM EXCEPT SUNDAYS	12X18	X			1		
		R7-201P	TOW AWAY ZONE (PLAQUE)	12X6						
71	13	R1-1	STOP	36X36	X			1		
		D3-1	STREET NAME (1 LINE) (FULTON ST, 1900)	36X9						
		D3-1	STREET NAME (1 LINE) (GARGAN ST, 1100)	36X9						
71	14	R5-2 (2)	NO THRU TRUCKS (TEXT)	24X30	X			1		
71	15	R1-1	STOP	36X36	X			1		
		D3-1	STREET NAME (1 LINE) (FULTON ST, 1900)	36X9						
		D3-1	STREET NAME (1 LINE) (GARGAN ST, 1100)	36X9						
71	16	R7-2(5)DBL	NO PARKING 4PM-6PM EXCEPT SUNDAYS	12X18	X			1		
		R7-201P	TOW AWAY ZONE (PLAQUE)	12X6						
71	17	R7-2(5)DBL	NO PARKING 4PM-6PM EXCEPT SUNDAYS	12X18	X			1		
		R7-201P	TOW AWAY ZONE (PLAQUE)	12X6						
71	18	R1-1	STOP	36X36	X			1		
		D3-1	STREET NAME (1 LINE) (FULTON ST, 1900)	36X9						
		D3-1	STREET NAME (1 LINE) (JAMES ST, 1000)	36X9						
71	19	R5-2 (2)	NO THRU TRUCKS (TEXT)	24X30	X			1		
71	20	R1-1	STOP	36X36	X			1		
		D3-1	STREET NAME (1 LINE) (FULTON ST, 2000)	36X9						
		D3-1	STREET NAME (1 LINE) (JAMES ST, 1100)	36X9						
71	21	R7-2(5)DBL	NO PARKING 7AM-9PM EXCEPT SUNDAYS	12X18	X			1		
		R7-201P	TOW AWAY ZONE (PLAQUE)	12X6						
71	22	R7-2(5)DBL	NO PARKING 4PM-6PM EXCEPT SUNDAYS	12X18	X			1		
		R7-201P	TOW AWAY ZONE (PLAQUE)	12X6						
71	23	R7-2(5)DBL	NO PARKING 7AM-9PM EXCEPT SUNDAYS	12X18	X			1		
		R7-201P	TOW AWAY ZONE (PLAQUE)	12X6						
71	24	S1-1 (FYG)	SCHOOL	36X36	X			1		
		S16-9P (FYG)	AHEAD (PLAQUE)	24X12						

HATCH
750 TOWN & COUNTRY BLVD
SUITE 1500
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
KAMAN ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE
UTILITY REVIEW
NOT FOR
CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

SUMMARY OF SMALL SIGNS
1 OF 2

WBS NUMBER	N-000818-0001-3
DRAWING SCALE	N.T.S.
CITY OF HOUSTON PM	MICHELLE RANDON, P.E.
SHEET NO.	74 OF 155

NO.	DATE	REVISION	APP.

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE (COH)	SIGN TEXT	DIMENSIONS	SQUARE POST	SIGNAL MOUNT	ROUND POST (PERMISSION NEEDED FROM CITY TRAFFIC ENGINEER)	NUMBER OF POSTS (1 OR 2)	SIGN AREA SQ. FT. ____ (FOR INFORMATION ONLY, NOT INTENDED FOR BID)	SIGN POST SIZE (TABLE A)
72	25	R7-2(5)DBL	NO PARKING 7AM-9PM EXCEPT SUNDAYS	12X18	X			1		
		R7-201P	TOW AWAY ZONE (PLAQUE)	12X6						
72	26	CUSTOM	METRO (SALVAGE AND REINSTALL)	N/A	X			1		
72	27	R7-2(5)DBL	NO PARKING 4PM-6PM EXCEPT SUNDAYS	12X18	X			1		
		R7-201P	TOW AWAY ZONE (PLAQUE)	12X6						
72	28	R1-1	STOP	36X36	X			1		
		D3-1	STREET NAME (1 LINE) (FULTON ST, 2000)	36X9						
		D3-1	STREET NAME (1 LINE) (PASCHALL ST, 1000)	36X9						
72	29	R1-1	STOP	36X36	X			1		
		D3-1	STREET NAME (1 LINE) (FULTON ST, 2100)	36X9						
		D3-1	STREET NAME (1 LINE) (PASCHALL ST, 1100)	36X9						
72	30	R7-2(5)DBL	NO PARKING 7AM-9PM EXCEPT SUNDAYS	12X18	X			1		
		R7-201P	TOW AWAY ZONE (PLAQUE)	12X6						
72	31	CUSTOM	METRO (SALVAGE AND REINSTALL)	N/A	X			1		
72	32	R7-2(5)DBL	NO PARKING 4PM-6PM EXCEPT SUNDAYS	12X18	X			1		
		R7-201P	TOW AWAY ZONE (PLAQUE)	12X6						
72	33	S5-2aTP (FYG)	END SCHOOL ZONE (PLAQUE)	24X10	X			1		
		R2-1	SPEED LIMIT 30	30X36						
72	34	S5-1	SCHOOL SPEED LIMIT 20 WHEN FLASHING	36X36	X			1		
72	35	R7-2(5)DBL	NO PARKING 7AM-9PM EXCEPT SUNDAYS	12X18	X			1		
		R7-201P	TOW AWAY ZONE (PLAQUE)	12X6						
72	36	R7-2(5)DBL	NO PARKING 4PM-6PM EXCEPT SUNDAYS	12X18	X			1		
		R7-201P	TOW AWAY ZONE (PLAQUE)	12X6						
72	37	S1-1 (FYG)	SCHOOL	36X36	X			1		
		SW16-7P (FYG)	DIAGONAL ARROW (PLAQUE)	24X12						
72	38	R1-1	STOP	36X36	X			1		
		D3-1	STREET NAME (1 LINE) (FULTON ST, 2100)	36X9						
		D3-1	STREET NAME (1 LINE) (HENRY ST, 1000)	36X9						
72	39	R7-2(1)L	NO PARKING ARROW	12X18	X			1		
		R7-201P	TOW AWAY ZONE (PLAQUE)	12X6						
72	40	R7-2(5)DBL	NO PARKING 7AM-9PM EXCEPT SUNDAYS	12X18	X			1		
		R7-201P	TOW AWAY ZONE (PLAQUE)	12X6						
72	41	S1-1 (FYG)	SCHOOL	36X36	X			1		
		SW16-7P (FYG)	DIAGONAL ARROW (PLAQUE)	24X12						
72	42	R1-1	STOP	36X36	X			1		
		D3-1	STREET NAME (1 LINE) (FULTON ST, 2200)	36X9						
		D3-1	STREET NAME (1 LINE) (HENRY ST, 1100)	36X9						
72	43	S5-1	SCHOOL SPEED LIMIT 20 WHEN FLASHING	36X36	X			1		
72	44	R7-2(5)DBL	NO PARKING 7AM-9PM EXCEPT SUNDAYS	12X18	X			1		
		R7-201P	TOW AWAY ZONE (PLAQUE)	12X6						
72	45	R7-2(5)DBL	NO PARKING 4PM-6PM EXCEPT SUNDAYS	12X18	X			1		
		R7-201P	TOW AWAY ZONE (PLAQUE)	12X6						
		D11-1	BIKE LANE AHEAD	12X9						
72	46	CUSTOM	METRO (SALVAGE AND REINSTALL)	N/A	X			1		
72	47	D11-1	BIKE ROUTE	24X18	X			1		
		M6-6L	THRU AND LEFT ARROW	12X9						
72	48	R7-2(5)L	NO PARKING 7AM-9PM EXCEPT SUNDAYS	12X18	X			1		
		R7-201P	TOW AWAY ZONE (PLAQUE)	12X6						
72	49	CUSTOM	METRO (SALVAGE AND REINSTALL)	N/A	X			1		
72	50	W4-2	LANE ENDS	36X36	X			1		
72	51	R7-2(5)R	NO PARKING 4PM-6PM EXCEPT SUNDAYS	12X18	X			1		
		R7-201P	TOW AWAY ZONE (PLAQUE)	12X6						
72	52	S5-1	SCHOOL SPEED LIMIT 20 WHEN FLASHING	36X36	X			1		
72	53	W4-2	LANE ENDS	36X36	X			1		
72	54	W4-2	LANE ENDS	36X36	X			1		

HATCH
750 TOWN & COUNTRY BLVD
SUITE 800
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
KAMAN ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE
UTILITY REVIEW
NOT FOR
CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

SUMMARY OF SMALL SIGNS
2 OF 2

WBS NUMBER	N-000818-0001-3
DRAWING SCALE	N.T.S.
CITY OF HOUSTON PM	MICHELLE RANDON, P.E.
SHEET NO.	75 OF 155

NO.	DATE	REVISION	APP.

PLOT STYLE: COH CIP.CTB
PLOTTED: 10/2/2023 9:45 AM
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\24 PAVEMENT MARKING DETAILS.dwg

NO.	DATE	REVISION	APP.

GENERAL PAVEMENT MARKING NOTES:

1. PRIOR TO START OF CONSTRUCTION, ALL EXISTING PAVEMENT MARKINGS WITHIN THE AREA OF CONSTRUCTION SHALL BE INVENTORIED AND DOCUMENTED JOINTLY BY THE CITY INSPECTOR AND THE CONTRACTOR. THIS DOCUMENT WILL BE JOINTLY SIGNED BY BOTH PARTIES REFLECTING ALL EXISTING PAVEMENT MARKINGS AND LANE CONFIGURATIONS WILL BE DUPLICATED AGAIN. THIS REVIEW CAN BE DONE IN CONJUNCTION WITH SIGN INVENTORY. THE CONTRACTOR IS HELD ACCOUNTABLE FOR EXISTING AND TEMPORARY CONSTRUCTION PAVEMENT MARKINGS THROUGHOUT THE PROJECT AND AT THE PROJECT'S COMPLETION.
2. ALL PAVEMENT MARKINGS SHALL CONFORM TO CITY OF HOUSTON STANDARDS AND SPECIFICATIONS AND GENERAL GUIDELINES OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).
3. THE PERMANENT PAVEMENT MARKINGS MAY BE MODIFIED AS DIRECTED BY THE CITY TRAFFIC ENGINEER.
4. THE DESIGN SPEED FOR THE ROAD IS: ____. THE POSTED SPEED LIMIT IS: ____.
5. ALL LANE DIMENSIONS ARE FROM CENTER OF LANE LINE, CENTER OF DOUBLE LANE LINE, FACE OF CURB, OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
6. THE PAVEMENT MARKING DRAWINGS ARE SCHEMATIC ONLY. THE CONTRACTOR SHALL FOLLOW ALL DIMENSIONS, DETAILS, AND STANDARDS WHEN INSTALLING PAVEMENT MARKINGS AND SYMBOLS.
7. THE FINAL LONGITUDINAL STRIPINGS SHALL BE 60 MIL (0.060") THICK HOT-SPRAYED THERMOPLASTIC PLACED OVER THE TEMPORARY STRIPING WITHIN 14 TO 30 CALENDAR DAYS AFTER COMPLETION OF THE FINAL PAVEMENT SURFACE, OR AS DIRECTED BY THE CITY TRAFFIC ENGINEER. ALL OTHER PAVEMENT MARKINGS SHALL BE APPLIED AT THE SAME TIME. TEMPORARY STRIPING SHALL BE WATER BASED PAINT.
8. ALL FINAL TRANSVERSE MARKINGS SHALL BE 90 MIL (0.090") HOT-SPRAYED THERMOPLASTIC. ALL PAVEMENT ARROWS AND LEGENDS SHALL ALSO BE 90 MIL (0.090") HOT-SPRAYED THERMOPLASTIC. PREFORMED THERMOPLASTIC APPLICATIONS MAY BE USED IF ONLY APPROVED BY THE CITY TRAFFIC ENGINEER.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT AND INSTALLATION OF PAVEMENT MARKINGS OF FINAL SURFACE COURSE FOLLOWING CONTROL POINTS THAT HAVE BEEN SET NO MORE THAN 50 FEET APART ALONG THE LINES TO BE IMPLEMENTED. IN TANGENT SECTIONS OF A ROAD WHERE THE PAVEMENT MARKING PATTERN DOES NOT CHANGE, CONTROL POINTS CAN BE SET AT 200 FEET SPACING. THE LAYOUT AND INSPECTION OF ALL PAVEMENT MARKINGS SHALL BE APPROVED BY CITY OF HOUSTON REPRESENTATIVE PRIOR TO THE APPLICATION OF MATERIALS.
10. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE FINAL SURFACE COURSE IS PLACED SO THAT THE STRIPING IS OFFSET NO MORE THAN ONE FOOT CLEAR OF THE CONSTRUCTION JOINT, UNLESS OTHERWISE DIRECTED BY THE CITY TRAFFIC ENGINEER.
11. ALL RAISED PAVEMENT MARKERS (RPMS) SHALL BE INSTALLED SO THAT THE REFLECTIVE FACE OF EACH MARKER IS FACING THE DIRECTION OF TRAFFIC AND IS PERPENDICULAR TO THE DIRECTION OF TRAFFIC FLOW. TYPE C PAVEMENT MARKERS SHALL BE INSTALLED SO THAT THE CLEAR FACE OF EACH MARKER IS FACING THE APPROACHING TRAFFIC FLOW AND PERPENDICULAR TO THE DIRECTION OF TRAFFIC FLOW.
12. ALL REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL BE ACCOMPLISHED IN ACCORDANCE TO CITY OF HOUSTON STANDARD SPECIFICATION 02762. APPLYING OVER EXISTING PAVEMENT MARKINGS DOES NOT CONSTITUTE AS APPROVED OBLITERATION METHOD.
13. THE ENGINEER OF RECORD SHALL BE REQUIRED TO PRODUCE AS-BUILT OF PAVEMENT MARKING PLANS WITHIN 30 DAYS AFTER COMPLETION OF PAVEMENT MARKING IMPLEMENTATION.
14. BLUE RPMS MAY BE PLACED ADJACENT TO FIRE HYDRANTS WITH THE APPROVAL OF THE CITY TRAFFIC ENGINEER.
15. FOR ALL CONSTRUCTION, ALL PAVEMENT MARKINGS AND SIGNING SHALL BE INSTALLED AND SHALL BE PAID BY THE PROJECT OWNER/DEVELOPER.
16. FINAL INSPECTION AND ACCEPTANCE OF PAVEMENT MARKINGS SHALL BE PERFORMED BY TRAFFIC OPERATIONS DIVISION REPRESENTATIVE (713-803-3054).

Description and Application of Pavement Marking Lines

Line Series	Color	Description	Width Inches	Typical Applications
WB	White	Broken (10' stripe w/ 30' gap)	4"	- Lane lines between travel lanes in the same direction where changing of lanes is permitted.
WS	White	Solid	4" 6" 12" 24" 24" 12", 24"	- Edge lines to delineate the right edge of the roadway. - Left edge of bicycle lane and lane lines between travel lanes in the same direction where changing of lanes is discouraged. - Perpendicular crosswalk lines. - Stop bars at intersections (signalized and unsignalized). - Hatching at high visibility crosswalks. - Diagonal hatching used in gores between same direction of travel lanes.
WG	White	Guide (2' stripe w/6' gap)	6" 6"	- Guide lines through intersections. - Taper lines for turn lanes.
YS	Yellow	Solid	4" 12", 24"	- Edge lines to delineate the left edge of a divided roadway, a one-way road, or ramp. - Diagonal hatching used in gores between opposing direction of travel lanes.
YDS	Yellow	Double Solid	4" - (4") - 4" (gap)	- Centerline that separates opposing travel lanes and delineation of median islands.
YDB	Yellow	Double Broken	4" - (4") - 4" (gap)	- Defines the edges of center reversible lanes that are used as TWLTLs during intermittent periods.
YB	Yellow	Broken (10' stripe w/ 30' gap)	4"	- Separates travel lanes in opposite directions where passing is permitted in both directions of travel.
YSB	Yellow	Solid & Broken Broken (10' stripe w/ 30' gap)	4" - (4") - 4" (gap)	- Separates travel lanes in opposite directions where passing is permitted in one direction and prohibited in the opposite direction. - Used for edge of two-way left-turn lanes (TWLTL).

Description and Application of Reflective Raised Pavement Markers (RRPM)

RRPM Types	Color	COH Stand. Spec. Sec. 02764 Equivalent	Description
C	Clear	Type I-C	- Approach face that reflects white light, and the other side does not reflect.
R	Clear & Red	Type II-C-R	- Approach face that reflects white light, and the other side reflects red light.
A	Amber & Amber	Type II-A-A	- Approach face and the other side both reflect amber light.

Line Style Designation : YSB4 - A40/A40

- Color
- Pattern
- Width of stripe
- RPM spacing
- RPM type
- RPM spacing
- RPM Type

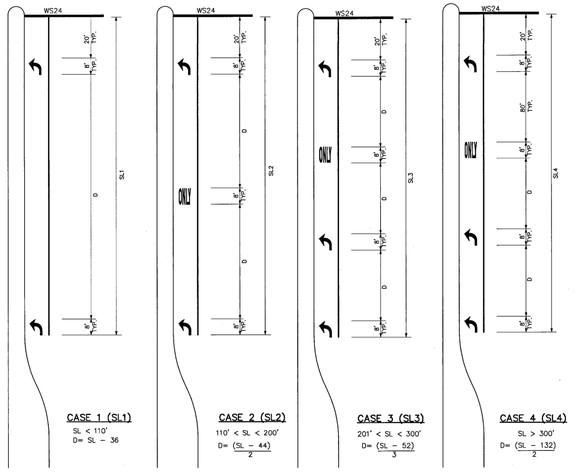
CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

GENERAL NOTES AND LEGENDS

(NOT TO SCALE)

APPROVED BY: CITY ENGINEER — DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: JUL-01-2012 | DWG NO: 01510-01



KEY (FOR TURN LANES ONLY):

SL = STORAGE LENGTH (FEET)

D = DISTANCE BETWEEN ARROWS AND/OR WORDS (FEET)

GENERAL NOTES:

1. ALL CASES AND DETAILS ALSO APPLY TO RIGHT-TURN LANES.
2. FOR DUAL-TURN LANES, DIMENSIONS SHALL BE THE SAME FOR EACH LANE.
3. SL DIMENSION IS FROM BACK OF STOP LINE TO END OF TURN LANE. NOTE: DO NOT INCLUDE TAPER LENGTH.
4. PAVEMENT ARROWS AND "ONLY" LEGEND MARKINGS ARE TYPICALLY USED AT ALL SIGNALIZED INTERSECTIONS AND AT ALL UNSIGNALIZED INTERSECTIONS THAT HAVE TURN LANES.
5. MINIMUM SL= 100'. SL MAY BE LESS THAN 100 FEET ONLY BY APPROVAL OF THE CITY TRAFFIC ENGINEER.

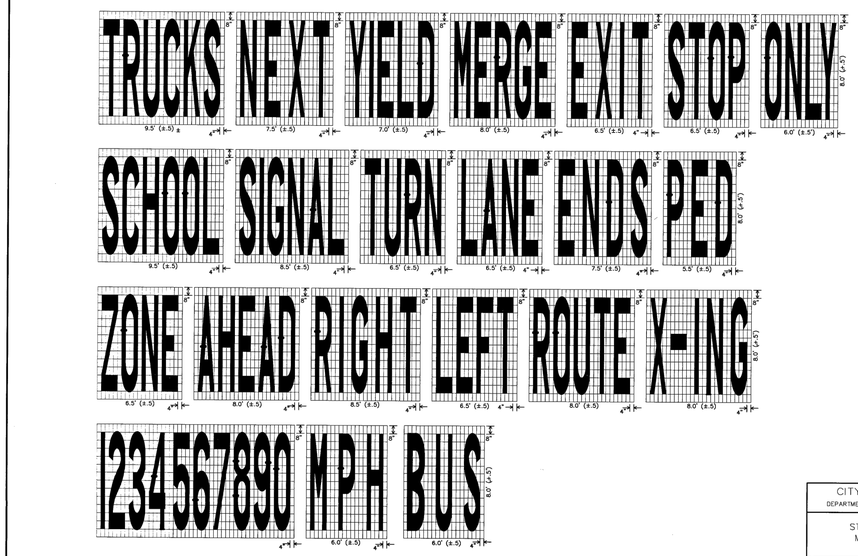
CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

LEFT/RIGHT-TURN "ONLY" AND ARROW SPACING

(NOT TO SCALE)

APPROVED BY: CITY ENGINEER — DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: JUL-01-2012 | DWG NO: 01510-02



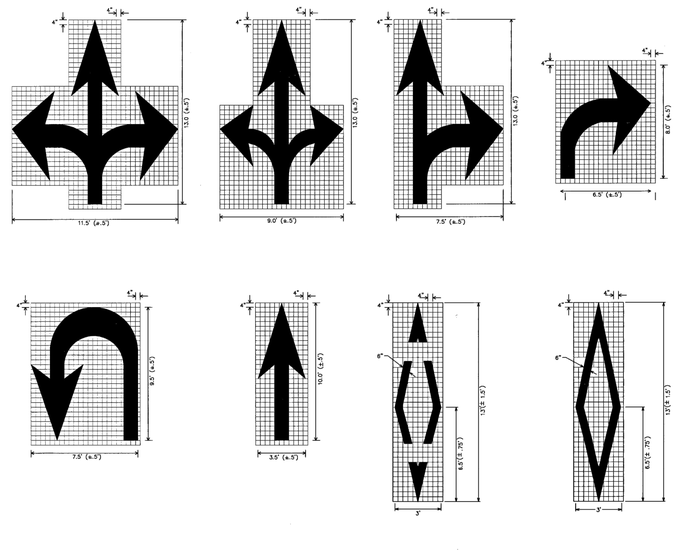
CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

STANDARD PAVEMENT MARKING (WORDS)

(NOT TO SCALE)

APPROVED BY: CITY ENGINEER — DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: JUL-01-2012 | DWG NO: 01510-03



NOTES FOR PAVEMENT MARKINGS "SYMBOLS" AND "ARROWS":

1. MINIMUM 8 FOOT WHITE MARKINGS SHALL BE USED, UNLESS OTHERWISE NOTED. IF MESSAGE CONSISTS OF MORE THAN ONE WORD, IT SHOULD BE PLACED WITH FIRST WORD NEAREST THE DRIVER.
2. THESE DETAILS ARE STANDARD SIZE FOR NORMAL INSTALLATION; SIZES MAY BE REDUCED APPROXIMATELY ONE-THIRD DEPENDING ON CONDITIONS. SPECIAL PERMISSION NEEDED BY CITY TRAFFIC ENGINEER FOR REDUCTION BELOW ONE-THIRD OF STANDARD SIZES.
3. THE LONGITUDINAL SPACE BETWEEN MARKINGS SHOULD BE 30 FEET.
4. MARKINGS CONSIDERED APPROPRIATE FOR USE WHEN WARRANTED INCLUDE THE FOLLOWING:
   A. REGULATORY
      STOP
      RIGHT (LEFT) TURN ONLY
      SYMBOL ARROWS
   B. WARNING
      STOP AHEAD
      SIGNAL AHEAD
      SCHOOL
      SCHOOL X-ING
      PED X-ING
      R X R (SEE SHEET 01510-08 DETAILS)
      OTHER WORDS OR SYMBOLS MAY BE NECESSARY UNDER CERTAIN CONDITIONS. SPECIAL PERMISSION NEEDED BY CITY TRAFFIC ENGINEER FOR SPECIAL CONDITIONS.
5. UNCONTROLLED USE OF PAVEMENT MARKINGS CAN RESULT IN DRIVER CONFUSION. WORD AND SYMBOL MARKINGS SHOULD BE NO MORE THAN THREE LINES.
6. THE WORD "STOP" SHALL NOT BE USED ON THE PAVEMENT UNLESS ACCOMPANIED BY A STOP LINE AND STOP SIGN. THE WORD "STOP" SHALL NOT BE PLACED ON THE PAVEMENT IN ADVANCE TO A STOP LINE, UNLESS EVERY VEHICLE IS REQUIRED TO STOP AT ALL TIMES (ALL-WAY STOP).
7. PAVEMENT MARKINGS SHOULD GENERALLY BE NO MORE THAN ONE LANE IN WIDTH, WITH SCHOOL MESSAGES BEING THE EXCEPTION. FOR DETAILS OF SCHOOL AND SCHOOL CROSSING PAVEMENT MARKINGS, REFER TO PART VII OF THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
8. SPACING BETWEEN STANDARD SIZE LETTERS SHOULD BE 4 INCHES (MIN). THE WIDTH OF NON-STANDARD SIZE LETTERS MAY VARY (DEPENDING ON THE WIDTH OF THE TRAVEL LANES. APPROVAL BY CITY TRAFFIC ENGINEER, SPECIAL PERMISSION NEEDED FOR NON-STANDARD SIZE "LETTER" AND/OR "ARROWS".
9. LANE-USE ARROW MARKINGS MAY BE USED TO CONVEY EITHER GUIDANCE OR MANDATORY MESSAGES. SINGLE TURN ARROWS USED TO CONVEY A MANDATORY MOVEMENT MUST BE ACCOMPANIED STANDARD SIGNS AND THE PAVEMENT MARKING WORD "ONLY".
10. PAVEMENT MARKINGS ARE TO BE LOCATED AS SPECIFIED IN THE DESIGN PLANS.

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

STANDARD PAVEMENT MARKING - SYMBOLS

(NOT TO SCALE)

APPROVED BY: CITY ENGINEER — DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: JUL-01-2012 | DWG NO: 01510-04

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

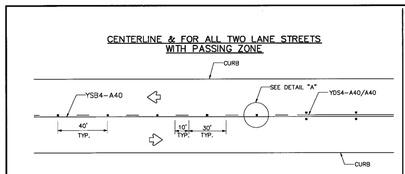
STANDARD PAVEMENT MARKINGS NOTES AND DETAILS 1 OF 2

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 76 OF 155	

PLOTTED: 10/2/2023 9:45 AM
PLOT STYLE: COH CIP.CTB
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\24 PAVEMENT MARKING DETAILS.dwg

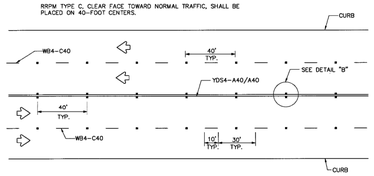
NO.	DATE	REVISION	APP.

CENTERLINE & FOR ALL TWO LANE STREETS WITH PASSING ZONE

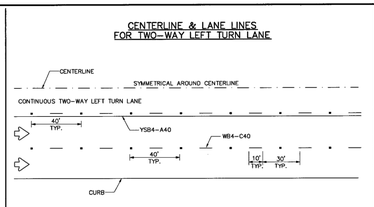


CENTERLINE & LANE LINES FOR FOUR LANE TWO-WAY STREETS

RRPM TYPE C, CLEAR FACE TOWARD NORMAL TRAFFIC, SHALL BE PLACED ON 40-FOOT CENTERS.

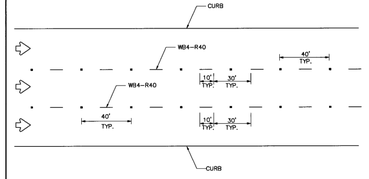


CENTERLINE & LANE LINES FOR TWO-WAY LEFT TURN LANE



LANE LINES FOR ONE-WAY MULTILANE STREET

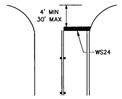
RRPM TYPE R SHALL HAVE CLEAR FACE TOWARD NORMAL TRAFFIC AND RED FACE TOWARD WRONG-WAY TRAFFIC.



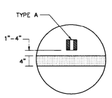
GENERAL NOTES:

1. EDGELINE ADJACENT TO CURB AND GUTTER IS NOT REQUIRED IN ALL CASES, HOWEVER SHALL BE PLACED AS DIRECTED BY CITY TRAFFIC ENGINEER.
2. THE TRAVELED WAY INCLUDES ONLY THAT PORTION OF THE ROADWAY USED FOR VEHICULAR TRAVEL AND NOT THE PARKING LANES, SIDEWALKS, BERMS AND SHOULDERS. THE TRAVELED WAYS SHALL BE MEASURED FROM THE INSIDE OF EDGELINE TO INSIDE OF EDGELINE OF A TWO LANE ROADWAY.
3. ALL RAISED PAVEMENT MARKERS PLACED IN BROKEN LINES SHALL BE PLACED IN LINE WITH AND MIDWAY BETWEEN THE STRIPES.
4. ON CONCRETE PAVEMENTS THE RAISED PAVEMENT MARKERS SHOULD BE PLACED TO ONE SIDE OF THE LONGITUDINAL JOINTS.
5. ALL PAVEMENT MARKING MATERIAL SHALL MEET THE REQUIRED MATERIAL SPECIFICATIONS AS SPECIFIED BY CITY OF HOUSTON STANDARD SPECIFICATIONS.

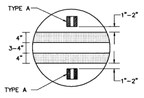
GUIDE FOR PLACEMENT OF STOP LINES & CENTERLINE



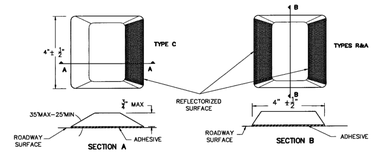
DETAIL "A"



DETAIL "B"



REFLECTIVE RAISED PAVEMENT MARKERS



CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

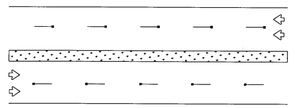
STANDARD PAVEMENT MARKINGS WITH REFLECTIVE RAISED PAVEMENT MARKERS FOR POSITION GUIDANCE

(NOT TO SCALE)

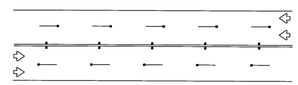
APPROVED BY: CITY ENGINEER — DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: JUL-01-2012 | DWG NO: 01510-05

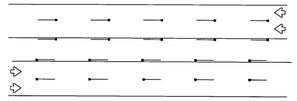
LANE LINES FOR DIVIDED STREET



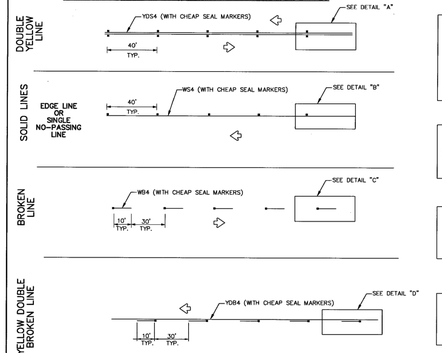
LANE & CENTER LINES FOR MULTILANE UNDIVIDED STREETS



TWO-WAY LEFT TURN LANE



TEMPORARY PAVEMENT MARKINGS PLACEMENT DETAILS



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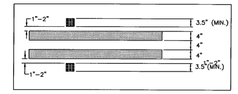
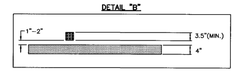


DETAIL "B"



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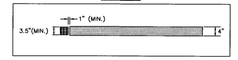
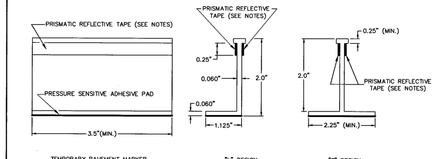


DETAIL "D"

NOTES:

1. YELLOW MARKERS SHALL HAVE YELLOW BODIES AND YELLOW REFLECTIVE TAPE.
2. WHITE MARKERS SHALL HAVE WHITE BODIES AND WHITE REFLECTIVE TAPE.
3. ONE-WAY OR TWO-WAY REFLECTIVE SHALL BE USED AS NECESSARY FOR APPLICATION.
4. THE CLEAR PLASTIC COVER MAY VARY FROM ONE MANUFACTURER TO ANOTHER IF DEEMED NECESSARY BY SPECIFIC PROJECT.
5. ALL TEMPORARY PAVEMENT MARKERS SHALL BE PLACED WITH REFLECTIVE SIDE FACING ON COMING TRAFFIC.
6. ALL TEMPORARY STRIPING SHALL BE WATER BASED PAINT.

TEMPORARY CHIP SEAL MARKER DETAIL



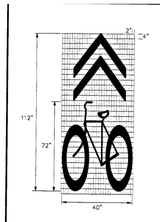
CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

REFLECTIVE CHIP SEAL MARKER USE FOR TEMPORARY MARKINGS

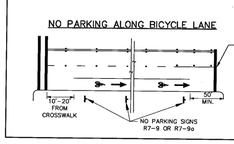
(NOT TO SCALE)

APPROVED BY: CITY ENGINEER — DIRECTOR OF PUBLIC WORKS AND ENGINEERING

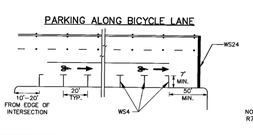
EFF DATE: JUL-01-2012 | DWG NO: 01510-06



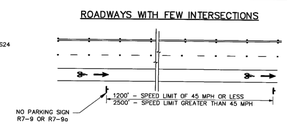
NO PARKING ALONG BICYCLE LANE

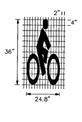


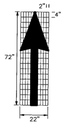
PARKING ALONG BICYCLE LANE

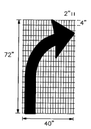


ROADWAYS WITH FEW INTERSECTIONS

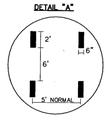








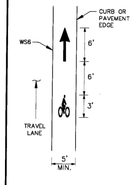
DETAIL "A"



NOTES:

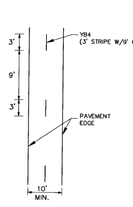
1. ALL PAVEMENT MARKINGS SHALL BE WHITE EXCEPT WHEN NOTED OTHERWISE ON PLANS.
2. PAVEMENT MARKINGS SHALL BE OF THE MATERIALS SPECIFIED AND SHALL BE IN CONFORMANCE WITH MATERIAL SPECIFICATIONS AS SPECIFIED BY CITY OF HOUSTON STANDARD SPECIFICATIONS.
3. EXACT SIGN PLACEMENT AND DETAILS ARE SHOWN ELSEWHERE IN THE PLANS.
4. ADDITIONAL REFERENCES: TMUTCD (TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL) GUIDE FOR THE DEVELOPMENT OF BICYCLES FACILITIES, AASHTO, 1991.
5. FOR PLACEMENT OF PAVEMENT ARROWS AND WORDS SEE TURN LANE LEFT/(RIGHT) SPACING WORKSHEET.
6. SHARED LANE MARKING SHALL BE IMPLEMENTED ONLY ON ROADWAY SEGMENT BUT NOT WITHIN THE FUNCTIONAL LIMITS OF AN INTERSECTION.

ADJACENT TO TRAVEL LANE

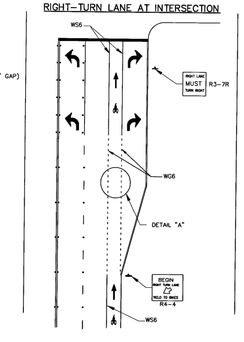


SHARED USE PATH

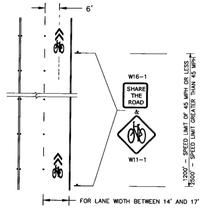
(SEPARATE FROM ROADWAY WITH NO MOTORIZED TRAFFIC)



RIGHT-TURN LANE AT INTERSECTION



ROADWAY WITH SHARED LANE



CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

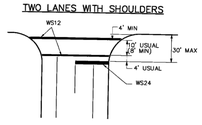
BICYCLE LANE PAVEMENT MARKINGS

(NOT TO SCALE)

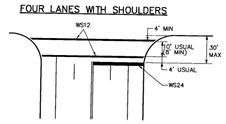
APPROVED BY: CITY ENGINEER — DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF DATE: JUL-01-2012 | DWG NO: 01510-09

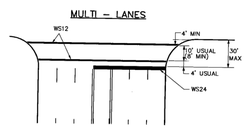
TWO LANES WITH SHOULDERS



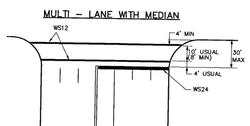
FOUR LANES WITH SHOULDERS



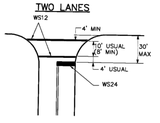
MULTI - LANES



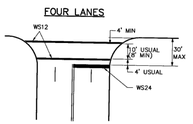
MULTI - LANE WITH MEDIAN



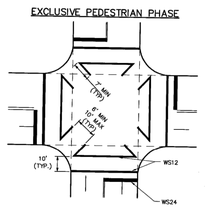
TWO LANES



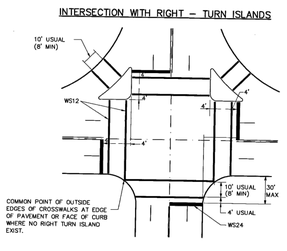
FOUR LANES



EXCLUSIVE PEDESTRIAN PHASE

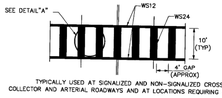


INTERSECTION WITH RIGHT - TURN ISLANDS



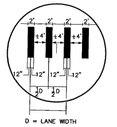
COMMON POINT OF OUTSIDE EDGES OF CROSSWALKS AT EDGE OF PAVEMENT OR FACE OF CURB WHERE NO RIGHT TURN ISLAND EXIST.

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"



NOTES:

1. CROSSWALKS AND STOP LINES SHALL BE WHITE.
2. "D" IS EQUAL TO ONE HALF THE WIDTH OF TRAVEL LANE.

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

TYPICAL CROSSWALK DETAILS

(NOT TO SCALE)

APPROVED BY: CITY ENGINEER — DIRECTOR OF PUBLIC WORKS AND ENGINEERING

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

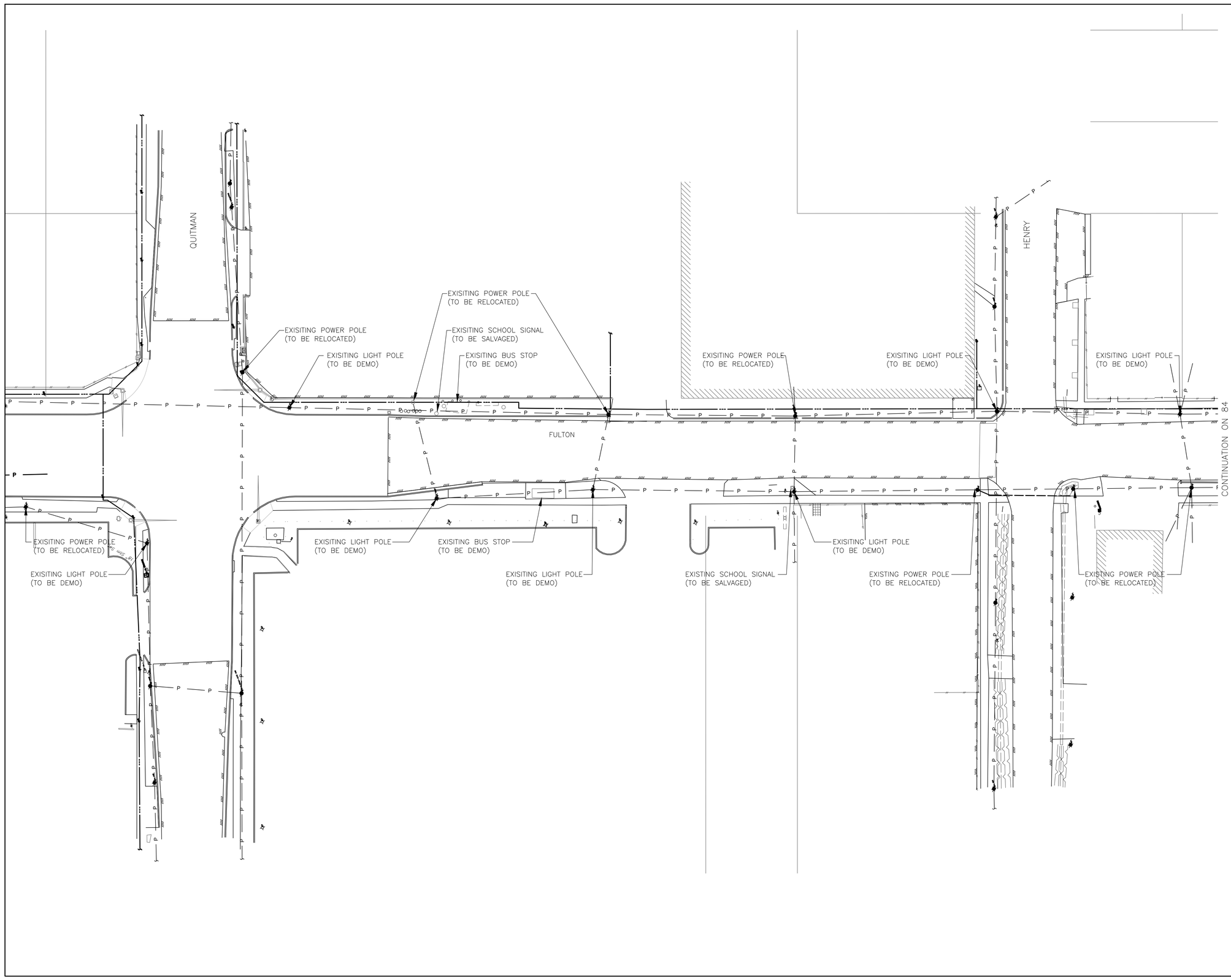
90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

STANDARD PAVEMENT MARKINGS NOTES AND DETAILS 2 OF 2

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 77 OF 155	



PLOTTED: 12/1/2023 5:07 PM

PLOT STYLE: COH CIP.CTB

FILE PATH: P:\Projects\0106 - City Of Houston\15010 - Fulton Street Lighting\4.0 CAD\4.2 Electrical Drawings\4.2.1 30 PC\80.dwg

NO.	DATE	REVISION	APP.

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2/3/26 UPDATE
FOR PRIVATE
UTILITY REVIEW
NOT FOR
CONSTRUCTION

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.

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

MBROH ENGINEERING
11757 KATY FREEWAY RD., STE. 625
HOUSTON, TX 77079
PHONE: 713.468.2545
TBPE FIRM NO. 9439

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

ELECTRICAL DEMOLATION PLAN SHEET 1

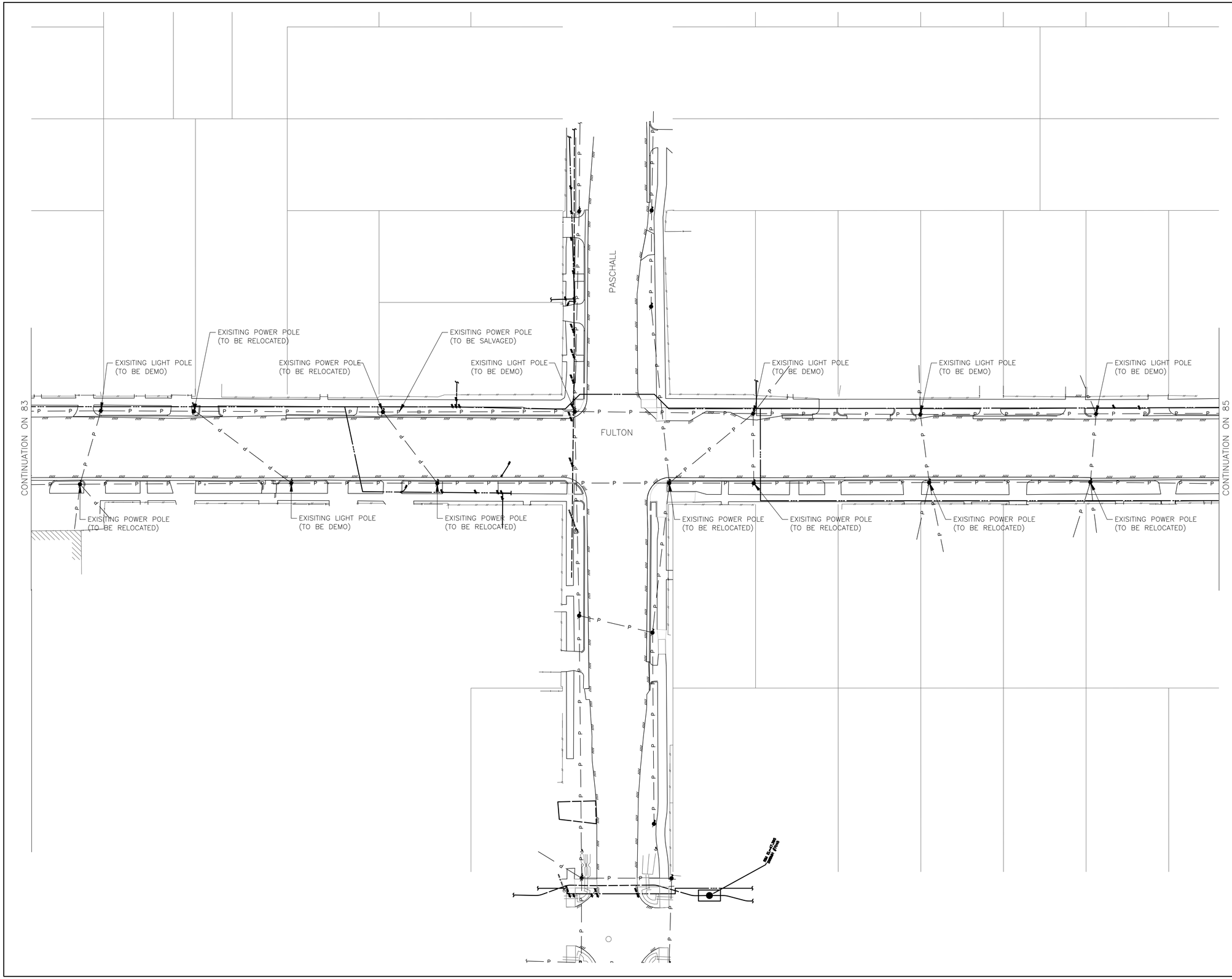
WBS NUMBER
N-000818-0001-3
DRAWING SCALE
1'=40'
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. 80 OF 155

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND ARE NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.

P.E. HANS POURES
TEXAS PE No: 131630

DATE: 12/01/2023

FILE PATH: P:\Projects\0106 - City Of Houston\15010 - Fulton Street Lighting\4.0 CAD\4.2 Electrical Drawings\4.2.1 30 PC\81.dwg
PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 12/1/2023 5:07 PM



NO.	DATE	REVISION	APP.

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TX FIRM NUMBER: F-10912

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11757 KATY FREEWAY RD., STE. 625
HOUSTON, TX 77079
PHONE: 713.468.2545
TBPE FIRM NO. 9439

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

ELECTRICAL DEMOLATION PLAN SHEET 2

WBS NUMBER	N-000818-0001-3
DRAWING SCALE	1'=40'
CITY OF HOUSTON PM	MICHELLE RANDON, P.E.
SHEET NO.	81 OF 155

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P.E. HANS POURES
TEXAS PE No: 131630

DATE: 12/01/2023

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 12/1/2023 5:07 PM
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JAMES

GARGAN

HOGAN

FULTON

CONTINUATION ON 84

EXISITING LIGHT POLE (TO BE DEMO)

EXISITING LIGHT POLE (TO BE DEMO)

EXISITING LIGHT POLE (TO BE DEMO)

EXISITING LIGHT POLE (TO BE DEMO)

EXISITING LIGHT POLE (TO BE DEMO)

EXISITING POWER POLE (TO BE RELOCATED)

EXISITING POWER POLE (TO BE RELOCATED)

EXISITING POWER POLE (TO BE RELOCATED)

EXISITING POWER POLE (TO BE RELOCATED)

EXISITING POWER POLE (TO BE RELOCATED)

EXISITING POWER POLE (TO BE RELOCATED)

EXISITING POWER POLE (TO BE RELOCATED)

EXISITING POWER POLE (TO BE RELOCATED)

EXISITING LIGHT POLE (TO BE DEMO)

NO.	DATE	REVISION	APP.

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE
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NOT FOR
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Date

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TX FIRM NUMBER: F-10912

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11757 KATY FREEWAY RD. STE 625
HOUSTON, TX 77079
PHONE: 713.468.2545
TBPE FIRM NO. 9439

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

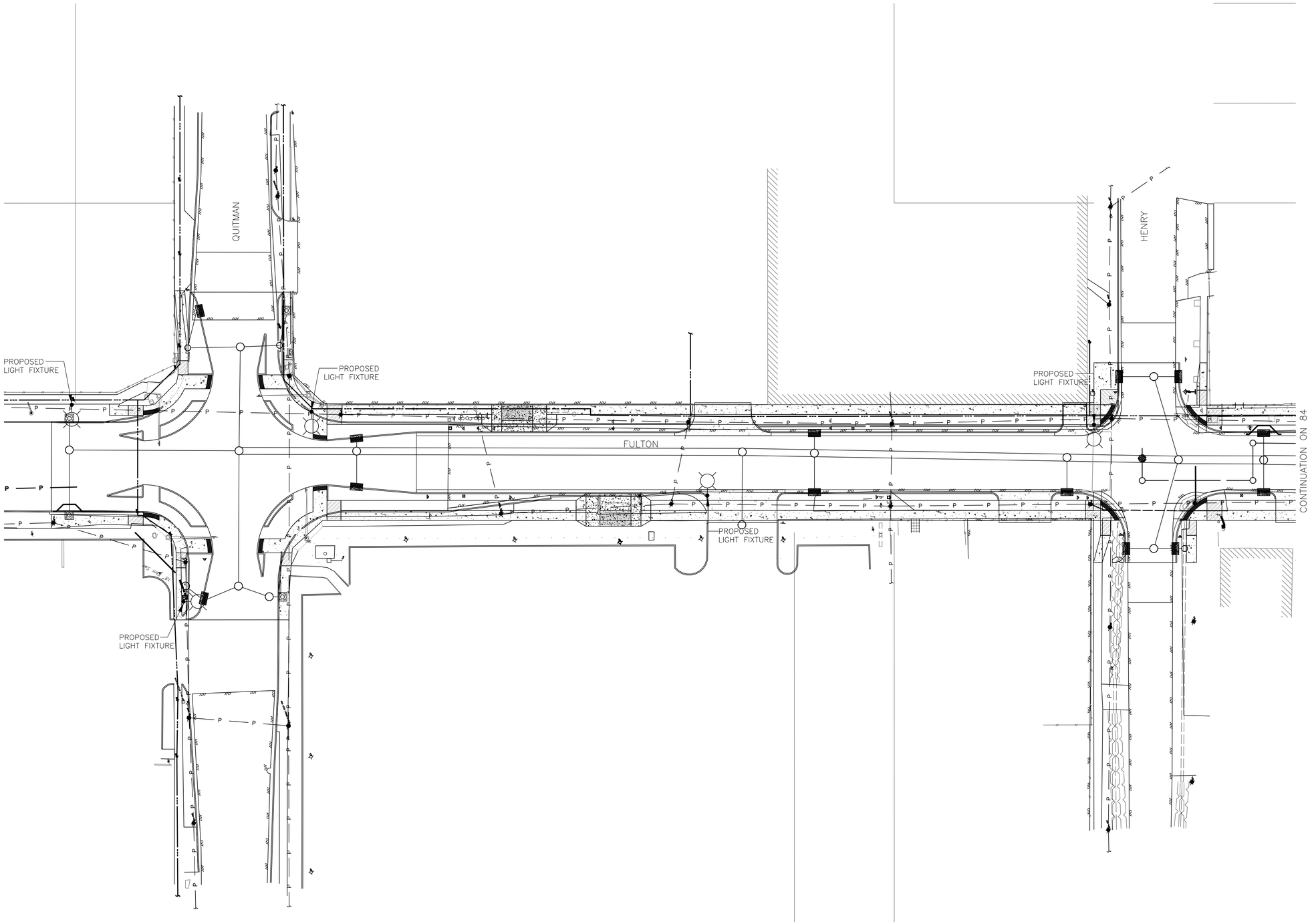
ELECTRICAL DEMOLATION PLAN SHEET 3

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
1'=40'
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. 82 OF 155

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND ARE NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.

P.E. HANS POURES
TEXAS PE No: 131630

DATE: 12/01/2023



NO.	DATE	REVISION	APP.

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE
UTILITY REVIEW
NOT FOR
CONSTRUCTION

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HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

MBROH ENGINEERING
11757 KATY FREEWAY RD., STE. 625
HOUSTON, TX 77079
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SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

ELECTRICAL PROPOSED PLAN SHEET 1

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
1'=40'
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. 83 OF 155

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND ARE NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.

P.E. HANS POURES
TEXAS PE No: 131630

DATE: 12/01/2023

PLOT STYLE: Coh_ctb_220714.ctb PLOTTED: 12/1/2023 5:07 PM

FILE PATH: P:\Projects\0106 – City Of Houston\15010 – Fulton Street Lighting\4.0 CAD\4.2 Electrical Drawings\4.2.1 30 PC\83.dwg

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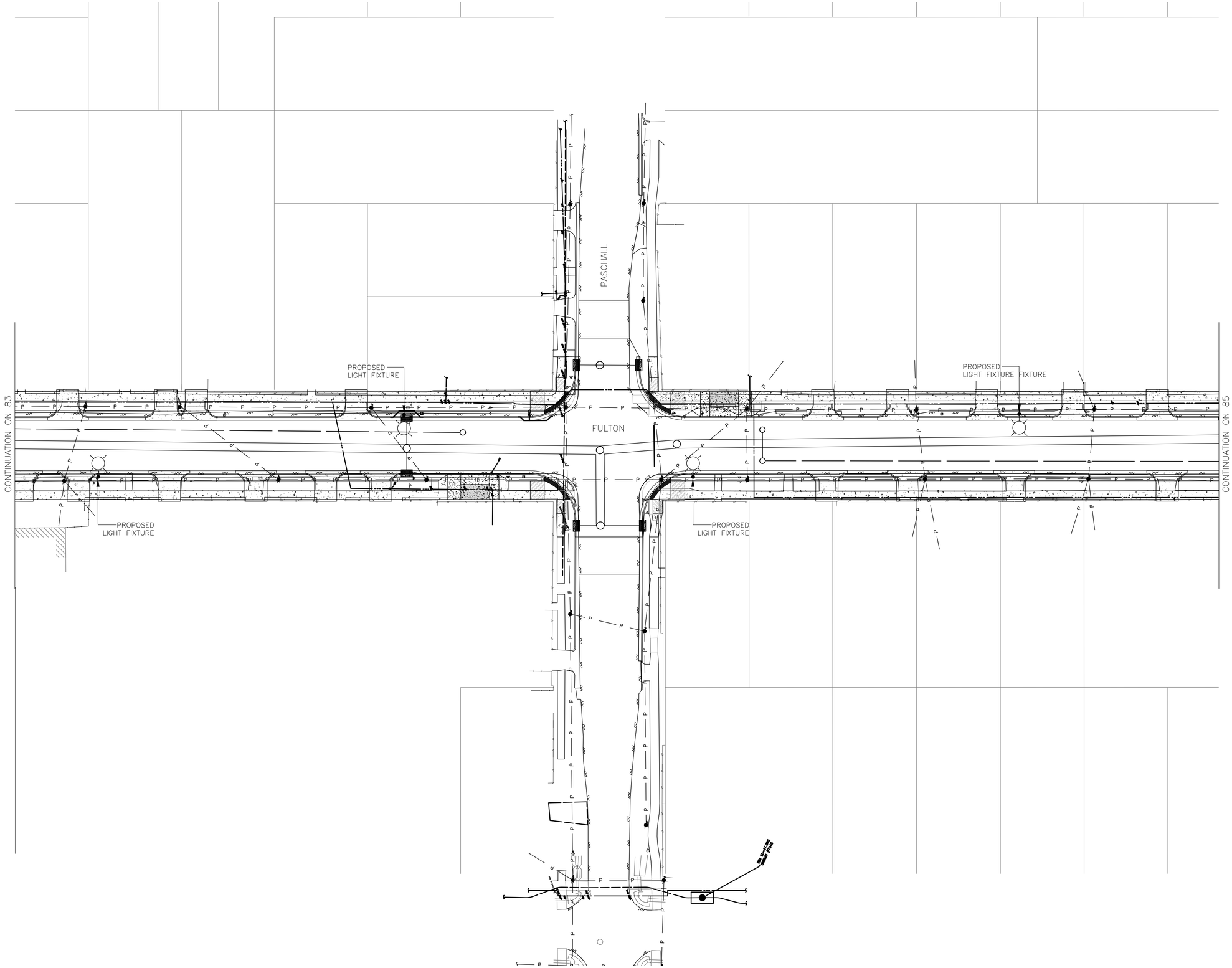
FILE PATH: P:\Projects\0106 - City Of Houston\15010 - Fulton Street Lighting\4.0 CAD\4.2 Electrical Drawings\4.2.1 30 PC\84.dwg



NO.	DATE	REVISION	APP.

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE
UTILITY REVIEW
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VERIFICATION OF PRIVATE UTILITY LINES

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HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

MBROH ENGINEERING
11757 KATY FREEWAY RD., STE. 625
HOUSTON, TX 77079
PHONE: 713.468.2645
TBPE FIRM NO. 9439

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

PROPOSED

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
1'=40'
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. **84** OF **155**

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P.E. HANS POURES
TEXAS PE No: 131630

DATE: 12/01/2023

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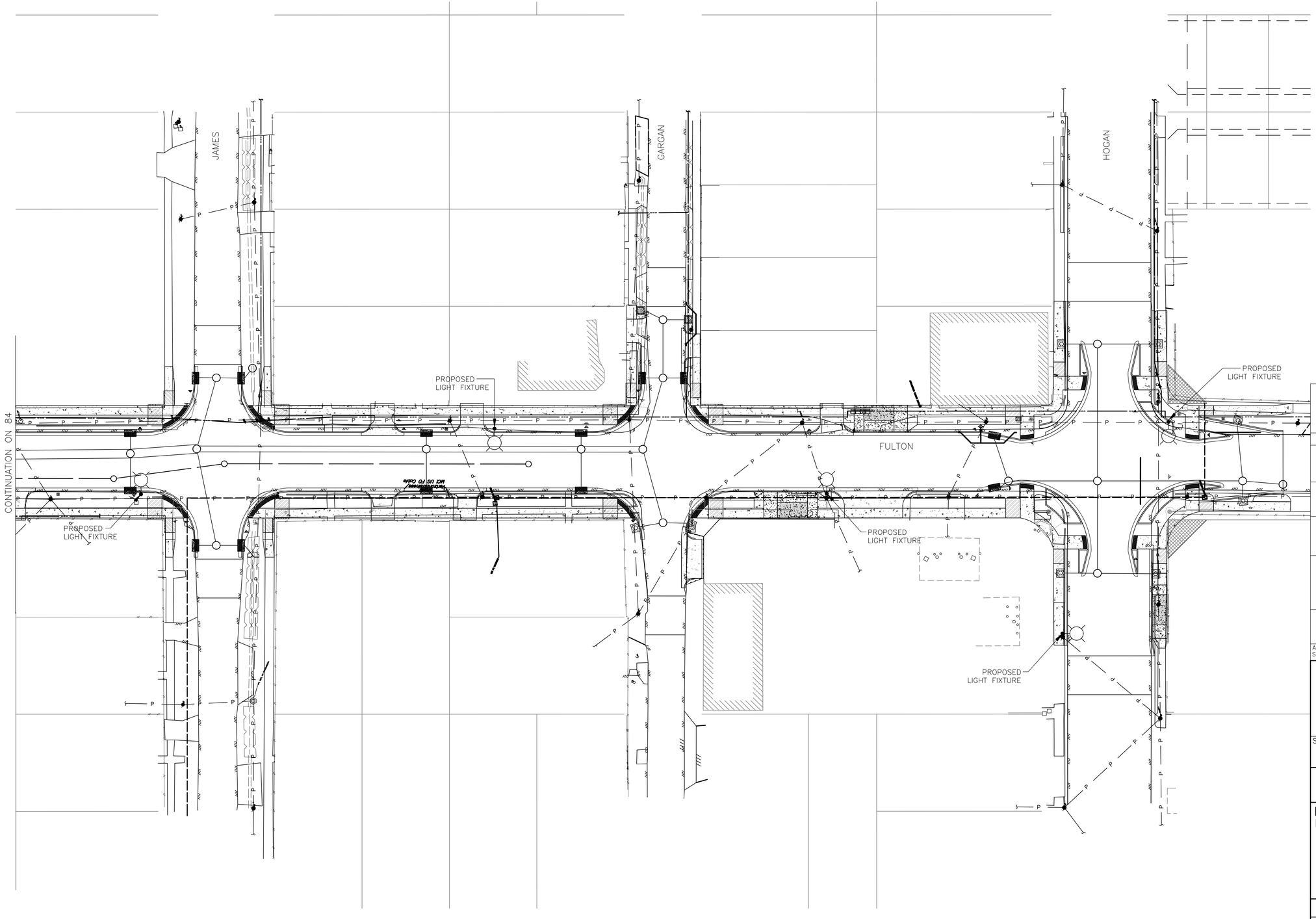

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FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

ELECTRICAL PROPOSED PLAN SHEET 3

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
1'=40'
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. 85 OF 155

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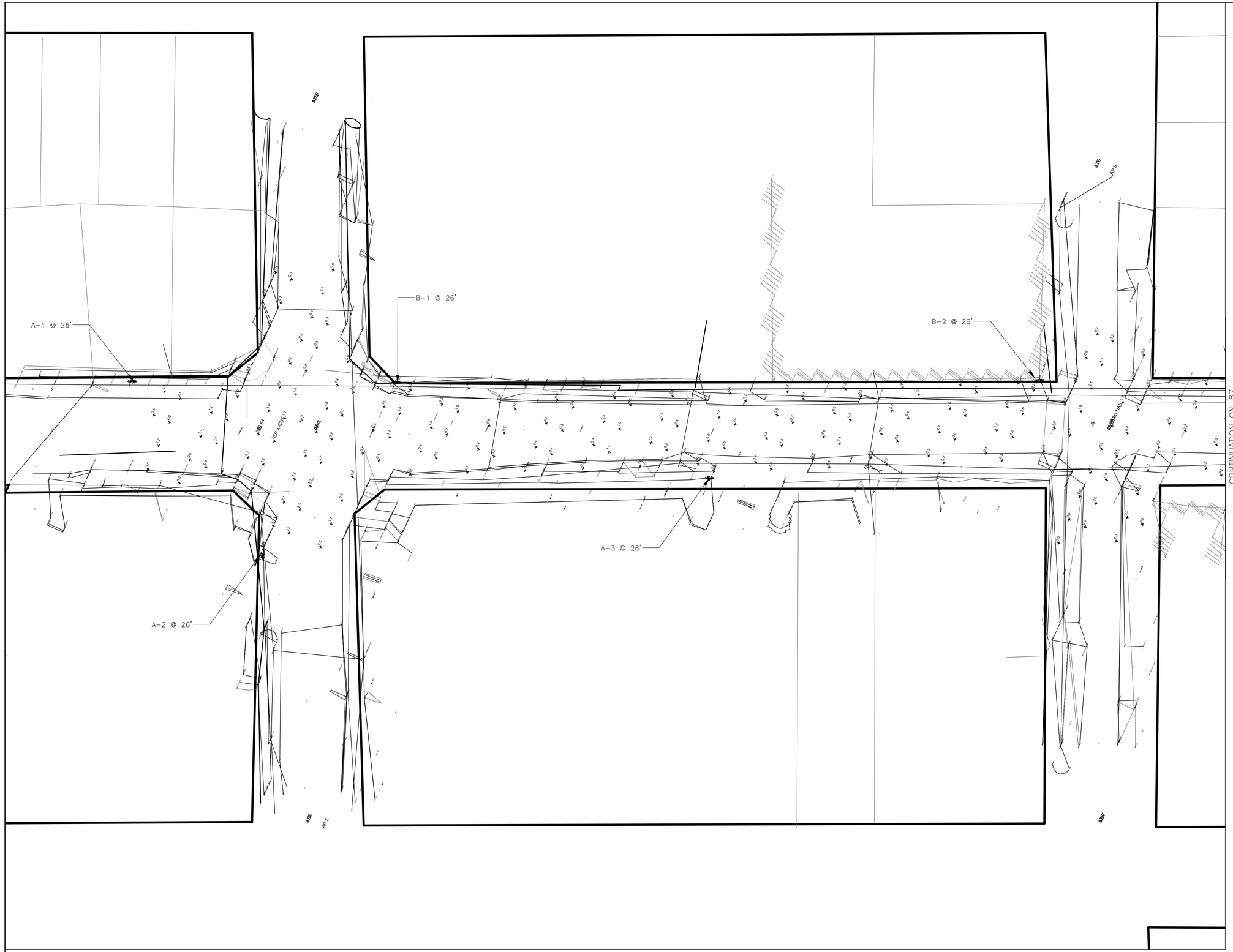

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

ELECTRICAL LIGHTING CALCULATIONS SHEET 1

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
1'=40'
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. 86 OF 155

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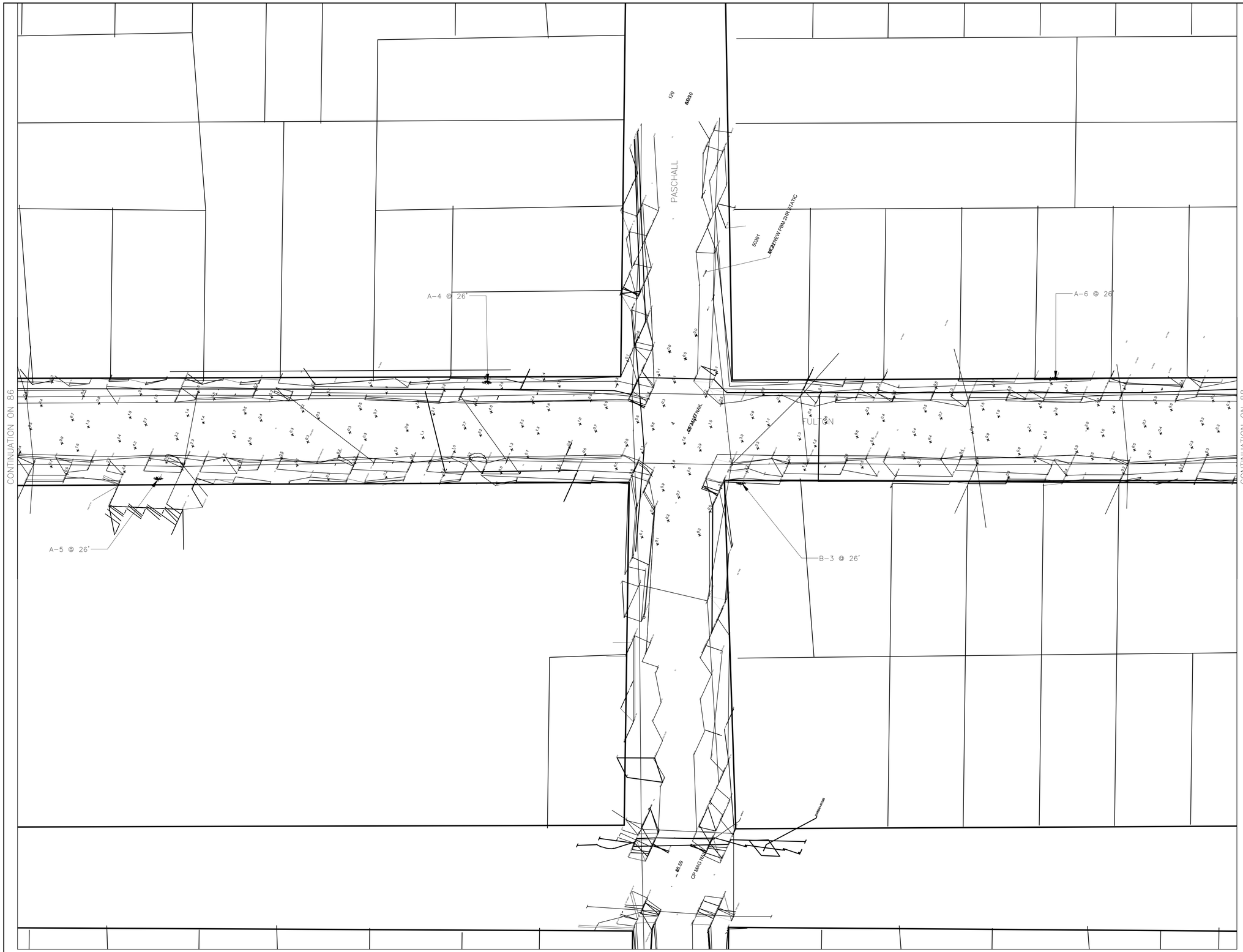

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

ELECTRICAL LIGHTING CALCULATIONS SHEET 2

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
1'=40'
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. 87 OF 155

FOR CITY OF HOUSTON USE ONLY

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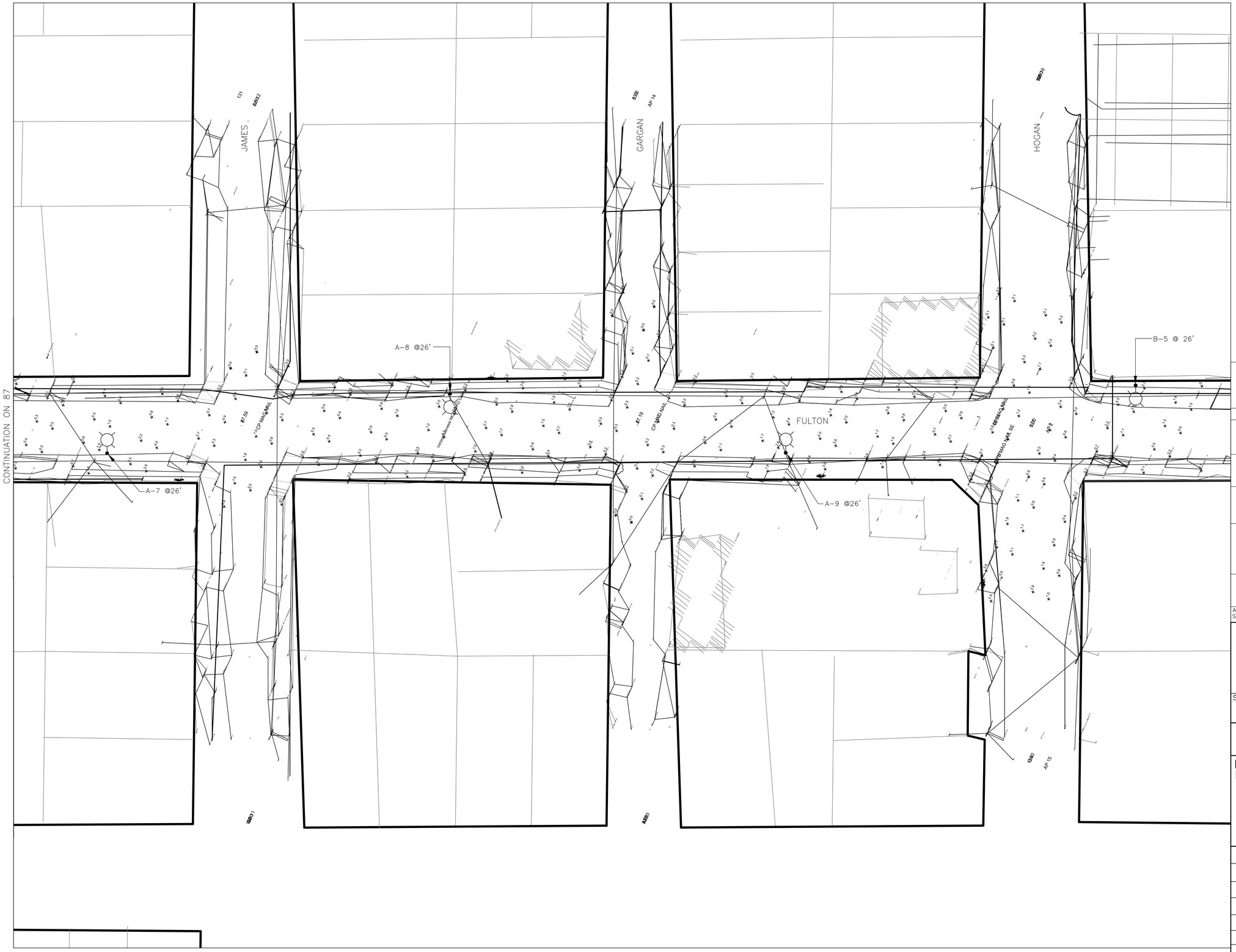

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FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

ELECTRICAL LIGHTING CALCULATIONS SHEET 3

WBS NUMBER
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DRAWING SCALE
1'=40'
CITY OF HOUSTON PM
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Luminare Fixture Schedule					
MARK	FIXTURE DESCRIPTION	LAMP TYPE	WATTAGE	VOLTAGE	COMMENTS
A	AMERICAN ELECTRICAL LIGHTING #ATBM P30 XXXX R2 4K/5K UMR-XX	LED	118	120V	MOUNT 26FT. , GREY PAINT, STANDARD SURGE PROTECTION, ROADWAY TYPE 2, 3 PIN NEMA PHOTOCONTROL,
B	AMERICAN ELECTRICAL LIGHTING #ATB0 P451 R3L 4K UMR-XX	LED	105	120V	MOUNT 26FT. , GREY PAINT, STANDARD SURGE PROTECTION, ROADWAY TYPE 3 LONG, 3 PIN NEMA PHOTOCONTROL

CONDUIT TAG	FROM	TO	CONDUIT SIZE	CABLE SIZE & TYPE
STL100	STREET FIXTURE A-1	(OVERHEAD SUPPLY)	(OVERHEAD)	2 # 10 AWG + # 14 AWG GRD
STL101	STREET FIXTURE A-2	(OVERHEAD SUPPLY)	(OVERHEAD)	2 # 10 AWG + # 14 AWG GRD
STL102	STREET FIXTURE A-3	(OVERHEAD SUPPLY)	(OVERHEAD)	2 # 10 AWG + # 14 AWG GRD
STL103	STREET FIXTURE A-4	(OVERHEAD SUPPLY)	(OVERHEAD)	2 # 10 AWG + # 14 AWG GRD
STL104	STREET FIXTURE A-5	(OVERHEAD SUPPLY)	(OVERHEAD)	2 # 10 AWG + # 14 AWG GRD
STL105	STREET FIXTURE A-6	(OVERHEAD SUPPLY)	(OVERHEAD)	2 # 10 AWG + # 14 AWG GRD
STL106	STREET FIXTURE A-7	(OVERHEAD SUPPLY)	(OVERHEAD)	2 # 10 AWG + # 14 AWG GRD
STL107	STREET FIXTURE A-8	(OVERHEAD SUPPLY)	(OVERHEAD)	2 # 10 AWG + # 14 AWG GRD
STL108	STREET FIXTURE A-9	(OVERHEAD SUPPLY)	(OVERHEAD)	2 # 10 AWG + # 14 AWG GRD
ISL100	INTERSECTION FIXTURE B-1	(OVERHEAD SUPPLY)	(OVERHEAD)	2 # 10 AWG + # 14 AWG GRD
ISL101	INTERSECTION FIXTURE B-2	(OVERHEAD SUPPLY)	(OVERHEAD)	2 # 10 AWG + # 14 AWG GRD
ISL102	INTERSECTION FIXTURE B-3	(OVERHEAD SUPPLY)	(OVERHEAD)	2 # 10 AWG + # 14 AWG GRD
ISL103	INTERSECTION FIXTURE B-4	(OVERHEAD SUPPLY)	(OVERHEAD)	2 # 10 AWG + # 14 AWG GRD
ISL104	INTERSECTION FIXTURE B-5	(OVERHEAD SUPPLY)	(OVERHEAD)	2 # 10 AWG + # 14 AWG GRD

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

ELECTRICAL SCHEDULES

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1'=40'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 89 OF 155	

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PLOT STYLE: COH.ctb
FILE PATH: P:\Projects\0106 - City Of Houston\15010 - Fulton Street Lighting\4.0 CAD\4.5 Signal Drawings\COH CP Title Block.dwg

TRAFFIC SIGNAL GENERAL NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

20. ONLY NEW CONDUIT AND CABLE SHALL BE INSTALLED.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

36. ALL VEHICLE AND PEDESTRIAN INDICATIONS SHALL BE LED.

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

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

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

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

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

PRIVATE UTILITY NOTES
CAUTION: SBC CABLES

1. THE LOCATION OF SBC 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 HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND FACILITIES.

2. THE CONTRACTOR SHALL CALL 311 (PUBLIC UNDERGROUND UTILITY) OR 811 (PRIVATE UNDERGROUND UTILITY) A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE UNDERGROUND UTILITY LINES FIELD LOCATED.

3. WHEN EXCAVATING WITHIN EIGHTEEN (18) INCHES OF THE INDICATED LOCATION OF SBC FACILITIES, ALL EXCAVATIONS MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES. WHEN BORING, THE CONTRACTOR SHALL EXPOSE THE SBC FACILITIES.

4. WHEN SBC FACILITIES ARE EXPOSED, THE CONTRACTOR SHALL PROVIDE SUPPORT TO PREVENT DAMAGE TO THE CONDUIT DUCTS OR CABLES. WHEN EXCAVATING NEAR TELEPHONE POLES, THE CONTRACTOR SHALL BRACE THE POLE FOR SUPPORT.

CAUTION: UNDERGROUND GAS FACILITIES

1. LOCATIONS OF CENTERPOINT ENERGY GAS MAIN LINES (TO INCLUDE UNIT GAS TRANSMISSION AND/OR INDUSTRIAL GAS SUPPLY CORPORATION WHERE APPLICABLE) ARE SHOWN IN AN APPROXIMATE LOCATION ONLY. SERVICE LINES ARE USUALLY NOT SHOWN. THE CONTRACTOR SHALL CONTACT LONE STAR NOTIFICATION CENTER AT (713) 223-4567 OR 1-800-669-8344 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO MAIN AND SERVICE LINES FIELD LOCATED.

2. WHEN CENTERPOINT ENERGY GAS PIPE LINE MARKINGS ARE NOT VISIBLE, CALL (713) 967-8037 (7:00 AM TO 4:30 PM) FOR STATUS OF LINE LOCATION REQUESTS BEFORE EXCAVATION BEGINS.

3. WHEN EXCAVATING WITHIN EIGHTEEN (18) INCHES OF THE INDICATED LOCATION OF CENTERPOINT ENERGY GAS FACILITIES, ALL EXCAVATION MUST BE ACCOMPLISHED USING NONMECHANIZED EXCAVATION PROCEDURES.

4. WHEN CENTERPOINT ENERGY GAS FACILITIES ARE EXPOSED, SUFFICIENT SUPPORT MUST BE PROVIDED TO THE FACILITIES TO PREVENT EXCESSIVE STRESS ON THE PIPING.

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

WARNING: OVERHEAD ELECTRICAL FACILITIES

1. OVERHEAD LINES MAY EXIST ON THE PROPERTY. WE HAVE NOT ATTEMPTED TO MARK THOSE LINES SINCE THEY ARE CLEARLY VISIBLE, BUT YOU SHOULD LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTION. TEXAS LAW SECTION 752, HEALTH & SAFETY CODE, FORBIDS ALL ACTIVITIES IN WHICH PERSONS OR THINGS MAY COME WITHIN SIX (6) FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES. PARTIES RESPONSIBLE FOR THE WORK, INCLUDING CONTRACTORS, ARE LEGALLY RESPONSIBLE FOR THE SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS LAW CARRIES BOTH CRIMINAL AND CIVIL LIABILITY. TO ARRANGE FOR LINES TO BE TURNED OFF OR REMOVED, CALL CENTERPOINT ENERGY ELECTRIC AT (713) 207-7777.

2. CONTRACTOR TO NOTIFY LONE STAR NOTIFICATION CENTER AT (713) 223-4567, 48 HOURS BEFORE STARTING WORK IN STREET RIGHT-OF-WAY OR EASEMENTS.

RESPONSIBILITIES:

1. THE CONTRACTOR SHALL SUPPLY AND INSTALL THE FOLLOWING EQUIPMENT AND MATERIALS AS SPECIFIED IN THE PLANS: STEEL POLE ANCHOR BOLTS (WITH NUTS AND WASHERS), CONCRETE POLE FOUNDATIONS WITH REINFORCEMENT (WHERE SPECIFIED), TRAFFIC SIGNAL CONTROLLER CABINET(S) WITH CONTROLLER(S) AND ALL AUXILIARY EQUIPMENT, CONTROLLER CABINET CONCRETE FOUNDATION(S), CONCRETE PULL BOXES, ELECTRICAL CONDUIT, GROUND RODS AND CONNECTORS, BARE BOND WIRE AND ALL OTHER CONDUCTORS, POLES, MAST ARMS, TRAFFIC SIGNALS AND MOUNTING ASSEMBLIES, PEDESTRIAN SIGNALS AND MOUNTING ASSEMBLIES, PEDESTRIAN PUSH BUTTON STATIONS WITH SIGNS, LUMINARIES, PHOTOCELLS, ELECTRIC SERVICE PEDESTAL(S) AND CONCRETE FOUNDATION(S), VIDEO DETECTION SYSTEM EQUIPMENT, VEHICLE DETECTION LOOPS, AND ALL OTHER APPURTENANCES NECESSARY FOR THE OPERATION OF THE TRAFFIC SIGNAL INSTALLATION(S), EXCEPT AS MODIFIED IN THE PLANS. (MODIFY THE LIST OF MATERIALS AS APPROPRIATE)

2. THE CITY OF HOUSTON WILL SUPPLY AND THE CONTRACTOR SHALL INSTALL THE FOLLOWING EQUIPMENT AND MATERIALS AS SPECIFIED IN THE PLANS: STEEL POLE ANCHOR BOLTS (WITH NUTS AND WASHERS), CONCRETE POLE FOUNDATIONS WITH REINFORCEMENT (WHERE SPECIFIED), TRAFFIC SIGNAL CONTROLLER CABINET(S) WITH CONTROLLER(S) AND ALL AUXILIARY EQUIPMENT, CONTROLLER CABINET CONCRETE FOUNDATION(S), CONCRETE PULL BOXES, ELECTRICAL CONDUIT, GROUND RODS AND CONNECTORS, BARE BOND WIRE AND ALL OTHER CONDUCTORS, POLES, MAST ARMS, TRAFFIC SIGNALS AND MOUNTING ASSEMBLIES, PEDESTRIAN SIGNALS AND MOUNTING ASSEMBLIES, PEDESTRIAN PUSH BUTTON STATIONS WITH SIGNS, LUMINARIES, PHOTOCELLS, ELECTRIC SERVICE PEDESTAL(S) AND CONCRETE FOUNDATION(S), VIDEO DETECTION SYSTEM EQUIPMENT, VEHICLE DETECTION LOOPS, AND ALL OTHER APPURTENANCES NECESSARY FOR THE OPERATION OF THE TRAFFIC SIGNAL INSTALLATION(S), EXCEPT AS MODIFIED IN THE PLANS. (MODIFY THE LIST OF MATERIALS AS APPROPRIATE)

3. THE CONTRACTOR SHALL DELIVER THE CONTROLLER CABINET(S) WITH THE CONTROLLER(S) AND AUXILIARY EQUIPMENT SPECIFIED IN THE PLANS TO THE CITY OF HOUSTON TRAFFIC OPERATIONS CENTER, 2200 PATTERSON STREET FOR TESTING, A MINIMUM OF THREE WEEKS PRIOR TO THE INSTALLATION(S) AT THE INTERSECTION(S). CONTACT THE TRAFFIC MAINTENANCE BRANCH AT LEAST 2 WORKING DAYS PRIOR TO THE DELIVERY OF THE CONTROLLER CABINET(S) TO THE CITY OF HOUSTON. THE CONTRACTOR SHALL PICK UP AND TRANSPORT THE CONTROLLER CABINET(S) FROM THE CITY OF HOUSTON TRAFFIC OPERATIONS CENTER TO THE INTERSECTION(S) AFTER CITY OF HOUSTON STAFF HAS TESTED THE EQUIPMENT AND APPROVED IT FOR INSTALLATION.

4. THE CONTRACTOR SHALL INSTALL EACH TRAFFIC CONTROLLER CABINET ON ITS FOUNDATION AND ROUTE ALL OF THE CONDUCTORS INTO THE CONTROLLER CABINET. CONDUCTORS SHALL BE TERMINATED IN THE CABINET BY THE CONTRACTOR UNDER THE OBSERVATION OF AN APPROVED CITY OF HOUSTON REPRESENTATIVE.

5. THE CONTRACTOR SHALL CAREFULLY DISASSEMBLE AND SALVAGE ALL EXISTING TRAFFIC SIGNAL AND STREET LIGHTING EQUIPMENT THAT IS NOT TO REMAIN OR BE RELOCATED. ALL OF THE EQUIPMENT TO BE INSPECTED BY TRAFFIC OPERATIONS INSPECTOR TO IDENTIFY SALVAGE ITEMS. ITEMS TO BE SALVAGED SHALL BE RETURNED TO THE CITY OF HOUSTON TRAFFIC OPERATIONS CENTER, 2200 PATTERSON STREET, OR UPPER BRAES, 18211 WEST HOUSTONCENTER BLVD., AND UNLOADED BY THE CONTRACTOR. CONTACT THE TRAFFIC MAINTENANCE BRANCH AT LEAST 2 WORKING DAYS PRIOR TO RETURNING THE EQUIPMENT. ALL NON-SALVAGE ITEMS TO BE DELIVERED BY THE CONTRACTOR TO AN APPROVED CITY OF HOUSTON RECYCLE FACILITY.

6. THE CONTRACTOR SHALL SALVAGE AND REPLANT ANY LANDSCAPING VEGETATION THAT MAY BE DAMAGED BY CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL OBTAIN PRIOR APPROVAL FROM AN APPROVED CITY OF HOUSTON REPRESENTATIVE BEFORE ANY PLANTS ARE MOVED.

7. THE CONTRACTOR SHALL REPAIR/RESTORE ANY LANDSCAPE IRRIGATION COMPONENTS DAMAGED BY CONSTRUCTION ACTIVITY TO THEIR ORIGINAL CONDITION.

8. THE LOCATION OF PUBLIC AND PRIVATE UTILITIES IS SHOWN IN AN APPROXIMATE LOCATION ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATIONS BEFORE COMMENCING WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES TO UTILITIES THAT ARE THE RESULT OF HIS FAILURE TO EXACTLY LOCATE AND PRESERVE UNDERGROUND FACILITIES.

NO.	DATE	REVISION	APP.

NOTICE:

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

Signature valid for six months.

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

MBROH ENGINEERING
TBPE FIRM NO. 9439

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

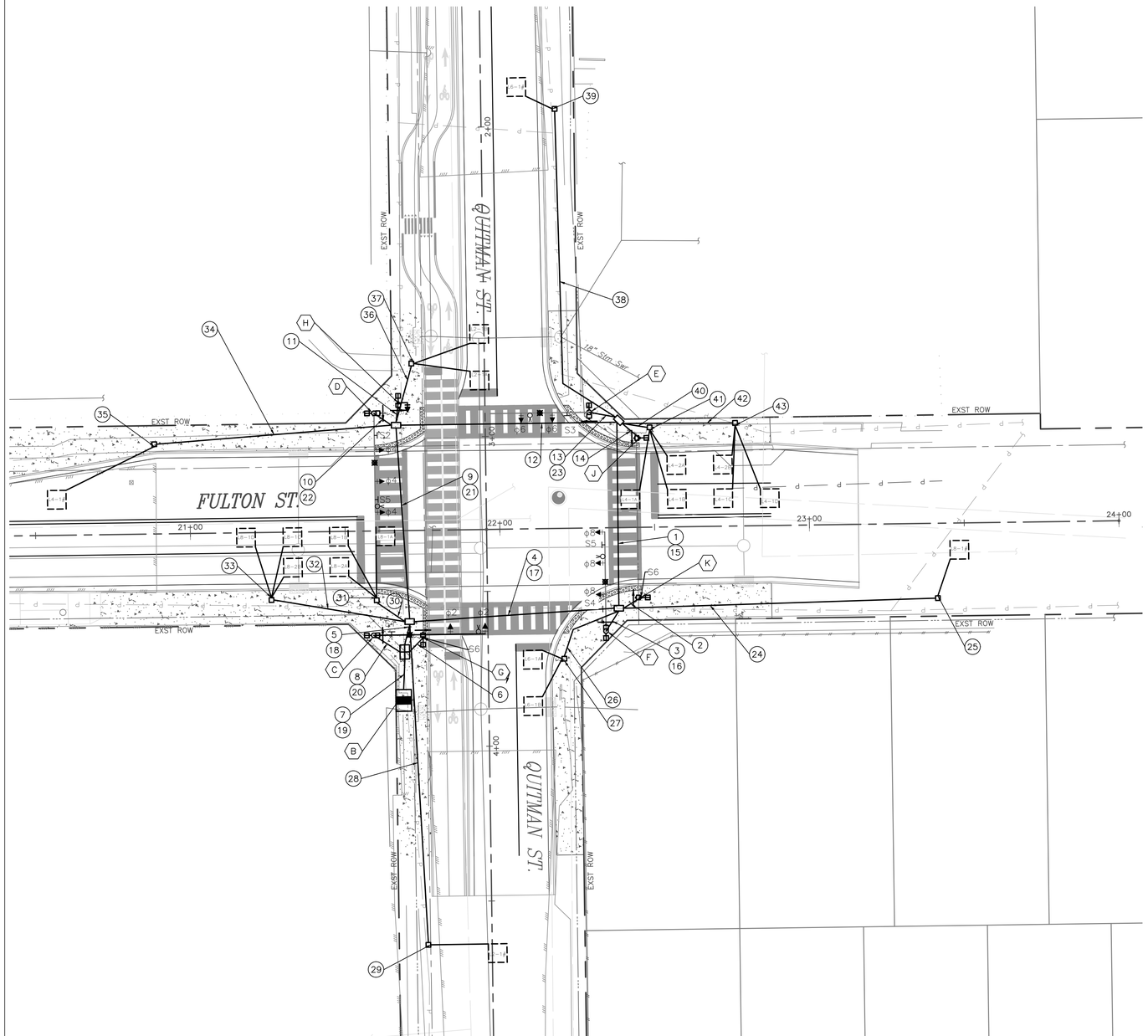
TRAFFIC SIGNAL GENERAL NOTES

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
N.T.S	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. XX OF XX	

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND ARE NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.

KARI HUI-SHAN CAI, P.E.
TEXAS PE No: 152599

DATE: 01/30/2026



PROPOSED TRAFFIC SIGNAL PHASING

φ2+φ6	φ4+φ8
φ2 PED, φ6B, φ6, φ6 PED, φ2B, φ2	φ4 PED, φ4, φ8, φ8 PED

0' 10' 20' 40'

SCALE: 1"=20'

POSTED SPEED LIMITS:
FULTON ST: 30 MPH
QUITMAN ST: 30 MPH

R10-12
30X24

S5

S6

S1=STREET NAME "FULTON ST", BLOCK NUMBERS 2300 AND 2200
S2=STREET NAME "QUITMAN ST", BLOCK NUMBERS 1000 AND 1100
S3=STREET NAME "FULTON ST", BLOCK NUMBERS 2200 AND 2300
S4=STREET NAME "QUITMAN ST", BLOCK NUMBERS 1100 AND 1000

PROPOSED TRAFFIC BICYCLE HEAD WITH BACKPLATE

PROPOSED PRE-FORMED LOOP DETECTOR

(K) PROPOSED POLE IDENTIFICATION

(#) PROPOSED RUN NUMBER

NO.	DATE	REVISION	APP.

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Signature valid for six months.

Date

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MBROH ENGINEERING
TBPE FIRM NO. 9439

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

FULTON ST. AT QUITMAN ST.

PROPOSED TRAFFIC SIGNAL PLAN

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
1"=20'
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. XX OF XX

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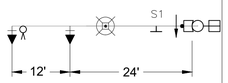
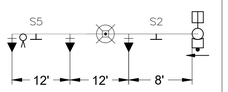
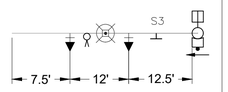
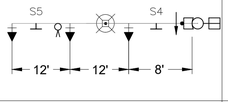
KARI HUI-SHAN CAI, P.E.
TEXAS PE No: 152599

DATE: 01/30/2026

FILE PATH: P:\Projects\0106 - City Of Houston\15010 - Fulton Street Lighting\4.0 CAD\4.5 Signal Drawings\02 Proposed Traffic Signal Plan\FULTON ST AT QUITMAN St.dwg PLOTTED: 1/29/2026 4:29 PM

PROPOSED TRAFFIC SIGNAL POLE SCHEDULE

POLE NUMBER	POLE TYPE	MAST ARM		SIGNALS		LUMINAIRE TYPE	PED PB TYPE/SIGN	REMARKS	LOCATION	STANDARDS
		SIGNAL	LUMINAIRE	MOUNTING	FACE					
(C) 	1	36'	15'	2 – ASTROBRAC' 1 – SIDE OF POLE	2–H3 1–CDP	115 WATT LED COBRA HEAD LUMINAIRE 1/PHOTOCELL	POLARA NAVIGATOR R10–3E(R)	SIGNS: S1 – STREET NAME	BY ENGINEER IN FIELD AT APPROX: POLE C: 3+63.71, 60.06'RT QUITMAN ST. CONST ℄	01554–08 01554–11 16742–01 02465–01 02582–01 02582–02 02582–03 02893–01
(D) 	1	32'	15'	3 – ASTROBRAC' 1 – SIDE OF POLE	3–H3 1–CDP	115 WATT LED COBRA HEAD LUMINAIRE 1/PHOTOCELL	POLARA NAVIGATOR R10–3E(L)	SIGNS: S5 – R10–12 S2 – STREET NAME	BY ENGINEER IN FIELD AT APPROX: POLE D: 21+59.84, 60.31'LT FULTON ST. CONST ℄	01554–08 01554–11 16742–01 02465–01 02582–01 02582–02 02582–03 02893–01
(E) 	1	32'	15'	2 – ASTROBRAC' 1 – SIDE OF POLE	2–H3 1–CDP	115 WATT LED COBRA HEAD LUMINAIRE 1/PHOTOCELL	POLARA NAVIGATOR R10–3E(L)	SIGNS: S3 – STREET NAME	BY ENGINEER IN FIELD AT APPROX: POLE E: 2+92.63, 57.52' LT QUITMAN ST. CONST ℄	01554–08 01554–11 16742–01 02465–01 02582–01 02582–02 02582–03 02893–01
(F) 	1	32'	15'	3 – ASTROBRAC' 1 – SIDE OF POLE	3–H3 1–CDP	115 WATT LED COBRA HEAD LUMINAIRE 1/PHOTOCELL	POLARA NAVIGATOR R10–3E(R)	SIGNS: S5 – R10–12 S4 – STREET NAME	BY ENGINEER IN FIELD AT APPROX: POLE F: 22+33.85, 57.05'RT FULTON ST. CONST ℄	01554–08 01554–11 16742–01 02465–01 02582–01 02582–02 02582–03 02893–01
(G)	PED POLE 15'	–	–	2– SIDE OF POLE	1–CDP 1–B3	–	POLARA NAVIGATOR R10–3E(L)	S6–R10–10b	BY ENGINEER IN FIELD AT APPROX: POLE G: 3+64.61, 20.99'RT QUITMAN ST. CONST ℄	01554–08 02465–02 02582–01 02582–04 02893–01
(H)	PED POLE 15'	–	–	2– SIDE OF POLE	1–CDP 1–B3	–	POLARA NAVIGATOR R10–3E(R)	S6–R10–10b	BY ENGINEER IN FIELD AT APPROX: POLE H: 2+88.63, 27.99'RT QUITMAN ST. CONST ℄	01554–08 02465–02 02582–01 02582–04 02893–01
(J)	PED POLE 15'	–	–	1– SIDE OF POLE	1–CDP	–	POLARA NAVIGATOR R10–3E(R)	–	BY ENGINEER IN FIELD AT APPROX: POLE J: 22+45.49, 28.85'LT FULTON ST. CONST ℄	01554–08 02465–02 02582–01 02582–04 02893–01
(K)	PED POLE 15'	–	–	1– SIDE OF POLE	1–CDP	–	POLARA NAVIGATOR R10–3E(L)	–	BY ENGINEER IN FIELD AT APPROX: POLE K: 22+45.26, 22.66'RT FULTON ST. CONST ℄	01554–08 02465–02 02582–01 02582–04 02893–01

NOTES:
1. ALL SIGNAL HEADS WILL BE 12" WITH LOUVERED BACK PLATES AND YELLOW HOUSING.

NO.	DATE	REVISION	APP.

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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Signature valid for six months.

Date

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MBROH ENGINEERING
TBPE FIRM NO. 9439

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832–930–7670
TX FIRM NUMBER: F–10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P–6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

FULTON ST. AT QUITMAN ST.
TRAFFIC SIGNAL SCHEDULE
(SHEET 1 OF 2)

WBS NUMBER	N–000818–0001–3
DRAWING SCALE	N.T.S.
CITY OF HOUSTON PM	MICHELLE RANDON, P.E.
SHEET NO.	XX OF XX

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KARI HUI-SHAN CAI, P.E.
TEXAS PE No: 152599

DATE: 01/30/2026

FILE PATH: P:\Projects\0106 – City Of Houston\15010 – Fulton Street Lighting\4.0 CAD\4.5 Signal Drawings\03 Traffic Signal Schedule – Fulton St (1).dwg PLOTTED: 2/4/2026 10:25 AM

TRAFFIC SIGNAL CONTROLLER

CABINET	TYPE	CONTROLLER	AUX. CONTROL	REMARKS	LOCATION	STANDARDS
(A)	–	–	–	–	–	–
(B)	TYPE 340 ITS	2070L WITH GPS SERIAL COMMUNICATIONS MODULE	–	–	BY ENGINEER IN FIELD AT APPROX: 3+84.88, 48.56'RT (CENTER OF CABINET) QUITMAN ST. CONST ℄	16730-03

STOP LINE AND LOOP DETECTOR LOCATIONS		
ITEM BY DIRECTION	STATION OF APPROACH EDGE FULTON ST	OFFSET
NORTHBOUND		
STOPLINE @ GUTTER	STA. 21+55.98	16.79' LT
STOPLINE @ CENTERLINE	STA. 21+55.98	4.70' LT
NORTHBOUND (THRU LANE)		
PHASE 8 CALL LOOP		
L8-2A SENSOR (6'X6')	STA. 21+50.98	CENTERED IN LANE
L8-2B SENSOR (6'X6')	STA. 21+50.98	CENTERED IN LANE
PHASE 8 DOWNSTREAM LOOPS		
L8-1# (6'X6')	STA. 23+51.31	CENTERED IN LANE
NORTHBOUND (LEFT TURN/THRU LANE)		
PHASE 8 PRESENCE LOOPS		
L8-1A (6'X6')	STA. 21+65.98	CENTERED IN LANE
L8-1B (6'X6')	STA. 21+50.98	CENTERED IN LANE
L8-1C (6'X6')	STA. 21+35.98	CENTERED IN LANE
L8-1D (6'X6')	STA. 21+20.98	CENTERED IN LANE
SOUTHBOUND		
STOPLINE @ GUTTER	STA. 22+50.18	20.93' RT
STOPLINE @ CENTERLINE	STA. 22+50.18	2.96' RT
SOUTHBOUND (THRU LANE)		
PHASE 4 CALL LOOP		
L4-2A SENSOR (6'X6')	STA. 22+54.30	CENTERED IN LANE
L4-2B SENSOR (6'X6')	STA. 22+69.30	CENTERED IN LANE
PHASE 4 DOWNSTREAM LOOPS		
L4-1# (6'X6')	STA. 20+60.02	CENTERED IN LANE
SOUTHBOUND (LEFT TURN/THRU LANE)		
PHASE 4 PRESENCE LOOPS		
L4-1A (6'X6')	STA. 22+39.30	CENTERED IN LANE
L4-1B (6'X6')	STA. 22+54.30	CENTERED IN LANE
L4-1C (6'X6')	STA. 22+69.30	CENTERED IN LANE
L4-1D (6'X6')	STA. 22+84.30	CENTERED IN LANE

STOP LINE AND LOOP DETECTOR LOCATIONS		
ITEM BY DIRECTION	STATION OF APPROACH EDGE QUITMAN ST	OFFSET
EASTBOUND		
STOPLINE @ GUTTER	STA. 2+85.86	7.64' LT
STOPLINE @ CENTERLINE	STA. 2+85.86	4.01' LT
EASTBOUND (THRU LANE)		
PHASE 2 CALL LOOP		
L2-1A SENSOR (6'X6')	STA. 2+84.86	CENTERED IN LANE
L2-2B SENSOR (6'X6')	STA. 2+69.86	CENTERED IN LANE
PHASE 6 DOWNSTREAM LOOPS		
L2-1# (6'X6')	STA. 4+63.86	CENTERED IN LANE
WESTBOUND		
STOPLINE @ GUTTER	STA. 3+68.25	11.09' RT
STOPLINE @ CENTERLINE	STA. 3+68.25	8.99' RT
WESTBOUND (THRU LANE)		
PHASE 6 CALL LOOP		
L6-1A SENSOR (6'X6')	STA. 3+69.25	CENTERED IN LANE
L6-2B SENSOR (6'X6')	STA. 3+84.25	CENTERED IN LANE
PHASE 6 DOWNSTREAM LOOPS		
L6-1# (6'X6')	STA. 1+90.01	CENTERED IN LANE

NO.	DATE	REVISION	APP.

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MBROH ENGINEERING
TBPE FIRM NO. 9439

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

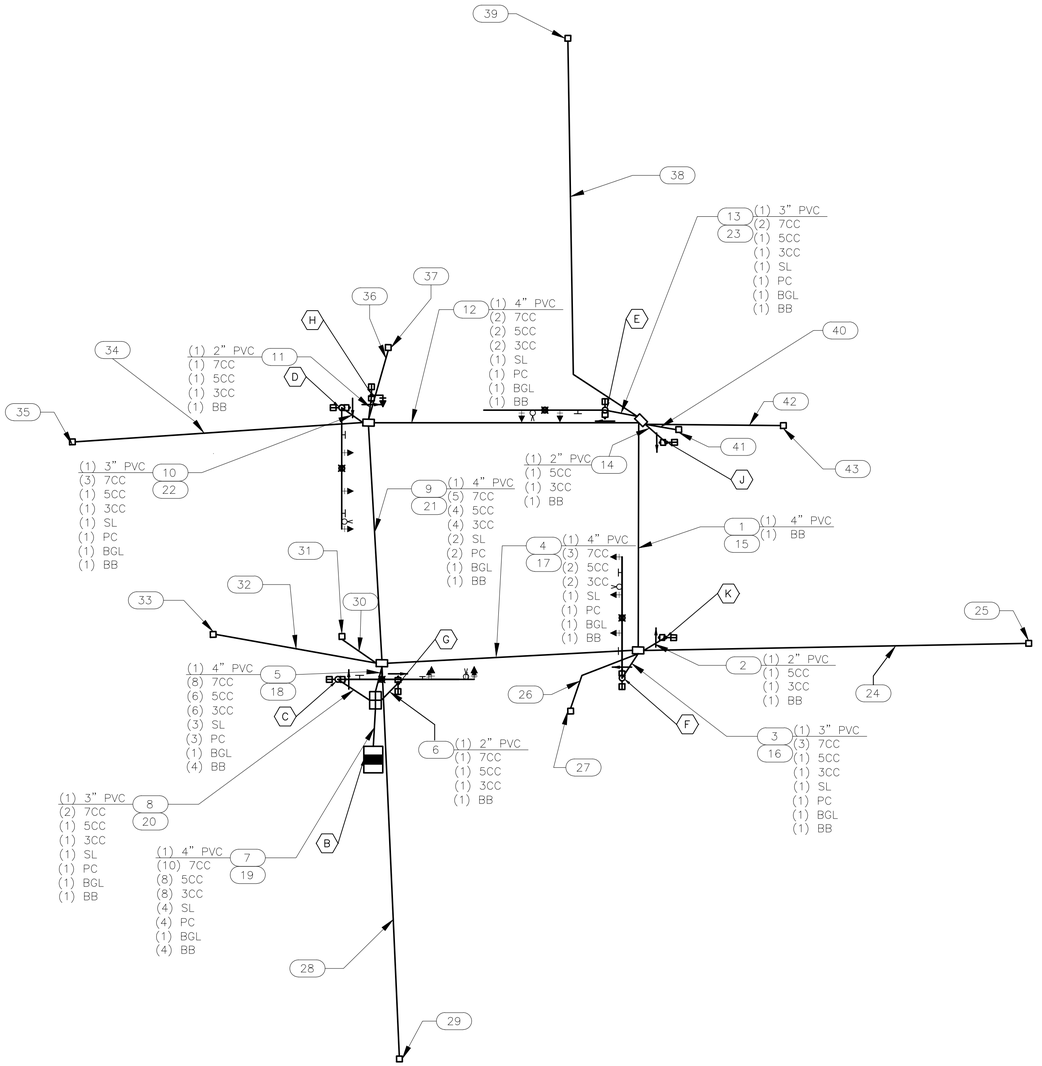
FULTON ST. AT QUITMAN ST.
TRAFFIC SIGNAL SCHEDULE
(SHEET 2 OF 2)

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
N.T.S.
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. XX OF XX

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND ARE NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.
KARI HUI-SHAN CAI, P.E.
TEXAS PE No: 152599
DATE: 01/30/2026

PLOTTED: 1/29/2026 9:31 AM

FILE PATH: P:\Projects\0106 - City Of Houston\15010 - Fulton Street Lighting\4.0 CAD\4.5 Signal Drawings\04 Traffic Signal Schedule Fulton ST 15010 2026-01-29.dwg



HIGH VOLTAGE CIRCUIT

(X)Y"C =NUMBER, SIZE, AND TYPE OF CONDUIT
(X) =NUMBER OF CABLES (SIGNAL)
CC =#14 AWG SOLID CONDUCTOR CABLE
BB =BARE BOND #8 AWG SOLID
BG =BARE GROUND #8 AWG SOLID
BGL =BARE GROUND LIGHTING #12 AWG THHN
SP =SIGNAL POWER (SEE NOTES)
SL =STREET LIGHTING (2-#10 AWG THHN)
PC =PHOTO CELL (2-#10 AWG THHN)

NOTES:
SP1 SHALL CONSIST OF: 6-#4 AWG THHN
2 - WHITE
1 - BLACK
1 - RED
2 - GREEN

SP2 SHALL CONSIST OF: 3-#4 AWG THHN WIRE WITH GROUND

0' 10' 20' 40'
SCALE: 1"=20'

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HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET
FULTON ST. AT QUITMAN ST.
CABLE SCHEMATIC
(SHEET 1 OF 2)

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. XX OF XX	

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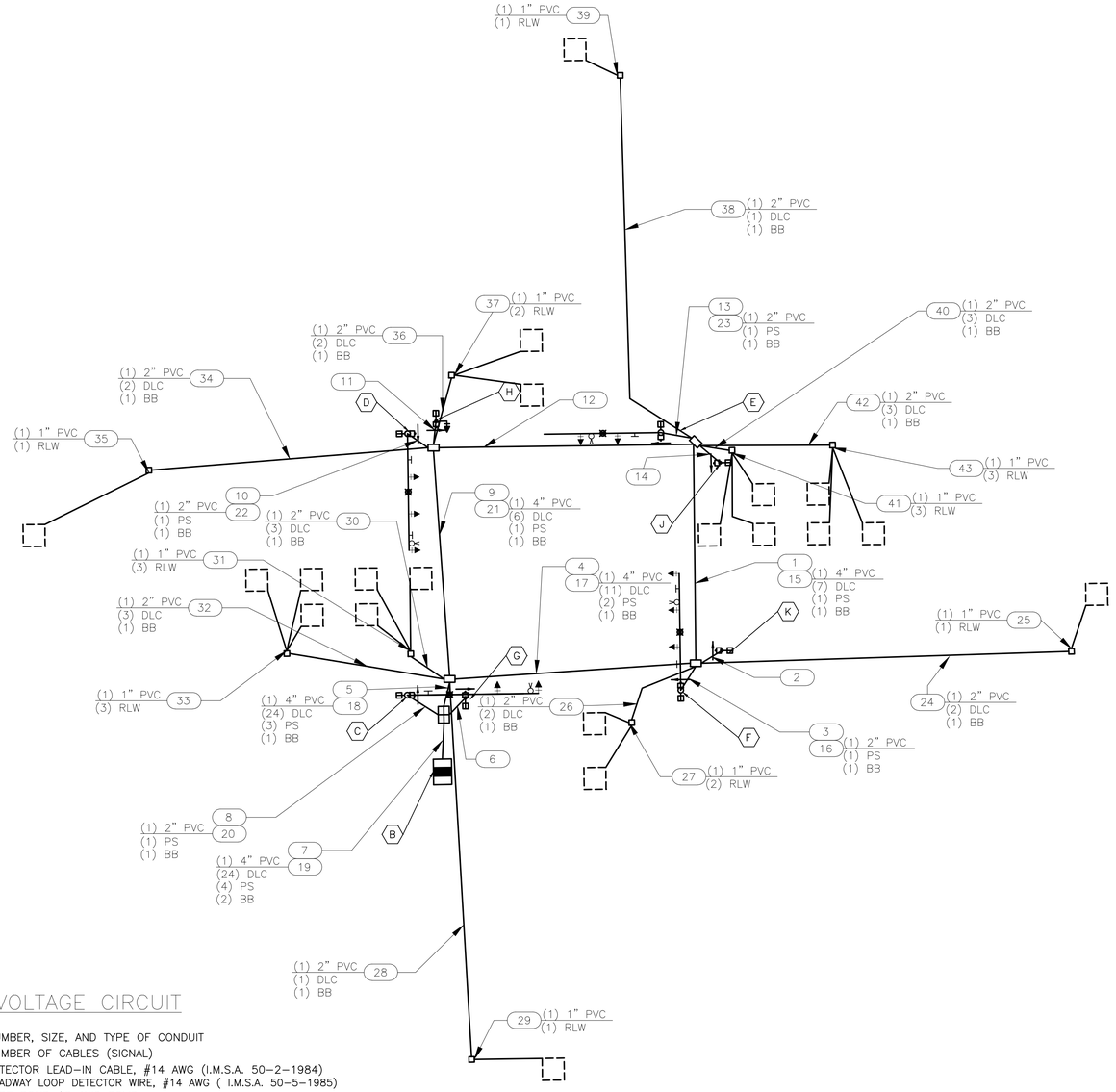
TEXAS PE No: 152599

DATE: 01/30/2026

FILE PATH: P:\Projects\0106 - City Of Houston\15010 - Fulton Street Lighting\4.0 CAD\4.5 Signal Drawings\05 Cable Schematic Sheet Fulton St (1).dwg
PLOTTED: 1/30/2026 10:08 AM



LOW VOLTAGE CIRCUIT

(X)Y"C =NUMBER, SIZE, AND TYPE OF CONDUIT
(X) =NUMBER OF CABLES (SIGNAL)
DLC =DETECTOR LEAD-IN CABLE, #14 AWG (I.M.S.A. 50-2-1984)
RLW =ROADWAY LOOP DETECTOR WIRE, #14 AWG (I.M.S.A. 50-5-1985)
BB =BARE BOND #8 AWG SOLID
PS = PRE-EMPTION SENSOR, OPTICOM, #20 3CC SHIELDED CABLE (3M MODEL 138)

0' 10' 20' 40'
SCALE: 1"=20'

NO.	DATE	REVISION	APP.

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TBPE FIRM NO. 9439

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SUITE 650
HOUSTON, TX 77024
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TX FIRM NUMBER: F-10912

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

FULTON ST. AT QUITMAN ST.

CABLE SCHEMATIC (SHEET 2 OF 2)

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. XX OF XX	

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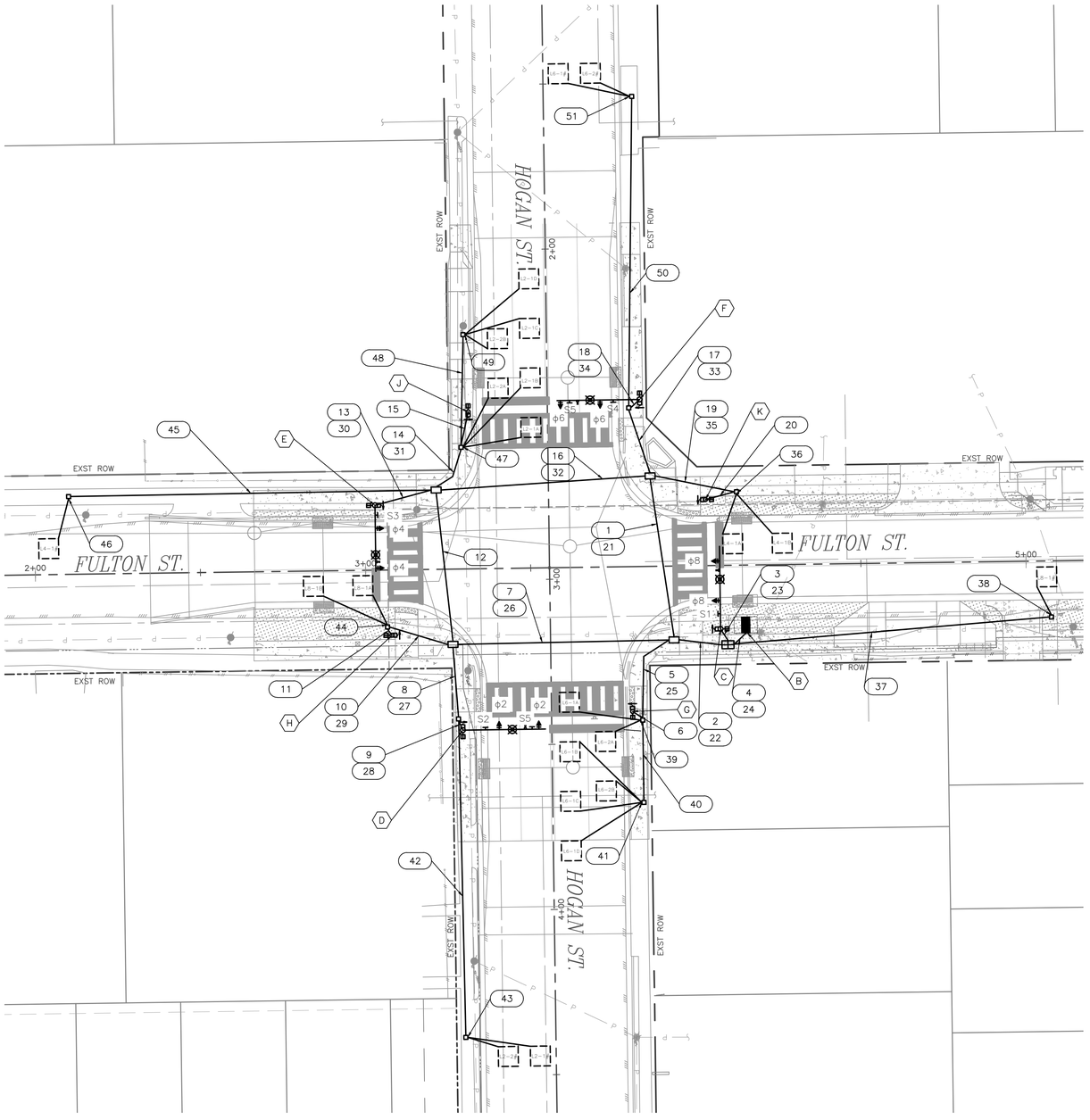
FILE PATH: P:\Projects\0106 - City Of Houston\15010 - Fulton Street Lighting\4.0 CAD\4.5 Signal Drawings\06 Cable Schematic Sheet Ful
PLOTTED: 1/30/2026 10:09 AM



PROPOSED TRAFFIC SIGNAL PHASING

φ2+φ6	φ4+φ8
φ6, φ2 PED, φ6 PED, φ2	φ4 PED, φ4, φ8, φ8 PED

0' 10' 20' 40'

SCALE: 1"=20'

POSTED SPEED LIMITS:
FULTON ST: 30 MPH
HOGAN ST: 30 MPH

R10-12
30X24

S5

S1=STREET NAME "HOGAN ST", BLOCK NUMBERS 1000 AND 1100
S2=STREET NAME "FULTON ST", BLOCK NUMBERS 1900 AND 1800
S3=STREET NAME "HOGAN ST", BLOCK NUMBERS 1100 AND 1000
S4=STREET NAME "FULTON ST", BLOCK NUMBERS 1800 AND 1900

PROPOSED TRAFFIC BICYCLE HEAD WITH BACKPLATE

PROPOSED PRE-FORMED LOOP DETECTOR

(X) PROPOSED POLE IDENTIFICATION

(#) PROPOSED RUN NUMBER

NO.	DATE	REVISION	APP.

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P: 832-930-7670
TX FIRM NUMBER: F-10912

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90% DRAFT
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

FULTON STREET AT HOGAN STREET

PROPOSED TRAFFIC SIGNAL PLAN

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. XX OF XX	

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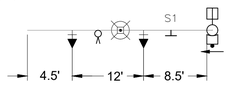
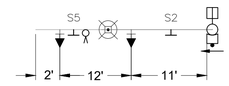
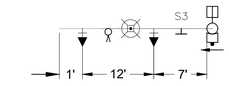
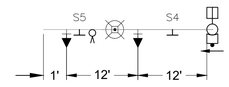
KARI HUI-SHAN CAI, P.E.
TEXAS PE No: 152599

DATE: 01/30/2026

FILE PATH: P:\Projects\0106 - City Of Houston\15010 - Fulton Street Lighting\4.0 CAD\4.5 Signal Drawings\07 Proposed Traffic Signal Plan\PLOTFIXTURE.SCR
PLOTTED: 2/3/2026 3:17 PM
PLOTFIXTURE.stb
Hogan St.dwg

PROPOSED TRAFFIC SIGNAL POLE SCHEDULE

POLE NUMBER	POLE TYPE	MAST ARM		SIGNALS		LUMINAIRE TYPE	PED PB TYPE/SIGN	REMARKS	LOCATION	STANDARDS
		SIGNAL	LUMINAIRE	MOUNTING	FACE					
(C) 	1	25'	15'	2 – ASTROBRAC' 1 – SIDE OF POLE	2–H3 1–CDP	115 WATT LED COBRA HEAD LUMINAIRE W/PHOTOCELL	POLARA NAVIGATOR R10–3E(L)	SIGNS: S1 – STREET NAME	BY ENGINEER IN FIELD AT APPROX: POLE C: 4+07.26, 19.22'RT FULTON ST. CONST ℄	01554–08 01554–11 16742–01 02465–01 02582–01 02582–02 02582–03 02893–01
(D) 	1	25'	15'	3 – ASTROBRAC' 1 – SIDE OF POLE	2–H3 1–CDP	115 WATT LED COBRA HEAD LUMINAIRE W/PHOTOCELL	POLARA NAVIGATOR R10–3E(L)	SIGNS: S5 – R10–12 S2 – STREET NAME	BY ENGINEER IN FIELD AT APPROX: POLE D: 3+45.32, 26.90'RT HOGAN ST. CONST ℄	01554–08 01554–11 16742–01 02465–01 02582–01 02582–02 02582–03 02893–01
(E) 	1	20'	15'	2 – ASTROBRAC' 1 – SIDE OF POLE	2–H3 1–CDP	115 WATT LED COBRA HEAD LUMINAIRE W/PHOTOCELL	POLARA NAVIGATOR R10–3E(L)	SIGNS: S3 – STREET NAME	BY ENGINEER IN FIELD AT APPROX: POLE E: 3+03.13, 19.62' LT FULTON ST. CONST ℄	01554–08 01554–11 16742–01 02465–01 02582–01 02582–02 02582–03 02893–01
(F) 	1	25'	15'	2 – ASTROBRAC' 1 – SIDE OF POLE	2–H3 1–CDP	115 WATT LED COBRA HEAD LUMINAIRE W/PHOTOCELL	POLARA NAVIGATOR R10–3E(L)	SIGNS: S5 – R10–12 S4 – STREET NAME	BY ENGINEER IN FIELD AT APPROX: POLE F: 2+45.91, 27.97'LT HOGAN ST. CONST ℄	01554–08 01554–11 16742–01 02465–01 02582–01 02582–02 02582–03 02893–01
(G)(H)(J)(K)	PED POLE 15'	–	–	1– SIDE OF POLE	1–CDP	–	POLARA NAVIGATOR R10–3E(R)	–	BY ENGINEER IN FIELD AT APPROX: POLE G: 3+40.30, 24.57'LT HOGAN ST. CONST ℄ POLE H: 3+07.72, 19.78'RT FULTON ST. CONST ℄ POLE J: 2+48.95, 23.98'RT HOGAN ST. CONST ℄ POLE K: 4+03.22, 19.99'LT FULTON ST. CONST ℄	01554–08 02465–01 02582–01 02582–04 02893–01

NOTES:
1. ALL SIGNAL HEADS WILL BE 12" WITH LOUVERED BACK PLATES AND YELLOW HOUSING.

NO.	DATE	REVISION	APP.

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TBPE FIRM NO. 9439

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832–930–7670
TX FIRM NUMBER: F–10912

SURVEYED BY:
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FB NUMBER: P–6164

90% DRAFT
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

FULTON STREET AT HOGAN STREET TRAFFIC SIGNAL POLE SCHEDULE (SHEET 1 OF 2)

WBS NUMBER	
N–000818–0001–3	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. XX OF XX	

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KARI HUI-SHAN CAI, P.E.
TEXAS PE No: 152599

DATE: 01/30/2026

FILE PATH: P:\Projects\0106 – City Of Houston\15010 – Fulton Street Lighting\4.0 CAD\4.5 Signal Drawings\08 Traffic Signal Pole Schedule_FULTON ST & HOGAN St.dwg PLOTTED: 2/3/2026 9:33 AM

TRAFFIC SIGNAL CONTROLLER

CABINET	TYPE	CONTROLLER	AUX. CONTROL	REMARKS	LOCATION	STANDARDS
(A)	–	–	–	–	–	–
(B)	TYPE 340 ITS	2070L WITH GPS SERIAL COMMUNICATIONS MODULE	–	–	BY ENGINEER IN FIELD AT APPROX: 4+14.86, 18.12'RT (CENTER OF CABINET) FULTON ST. CONST ℄	16730-03

STOP LINE AND LOOP DETECTOR LOCATIONS		
ITEM BY DIRECTION	STATION OF APPROACH EDGE HOGAN ST	OFFSET
EASTBOUND		
STOPLINE @ GUTTER	STA. 4+45.92	19.51' RT
STOPLINE @ CENTERLINE	STA. 4+45.92	0.50' LT
EASTBOUND (THRU LANE)		
PHASE 2 CALL LOOP		
L2-2A SENSOR (6'X6')	STA. 2+44.92	CENTERED IN LANE
L2-2B SENSOR (6'X6')	STA. 2+29.92	CENTERED IN LANE
PHASE 2 DOWNSTREAM LOOPS		
L2-1# (6'X6')	STA. 4+47.30	CENTERED IN LANE
L2-2# (6'X6')	STA. 4+47.30	CENTERED IN LANE
EASTBOUND (LEFT TURN/THRU LANE)		
PHASE 2 PRESENCE LOOPS		
L2-1A (6'X6')	STA. 2+56.92	CENTERED IN LANE
L2-1B (6'X6')	STA. 2+41.92	CENTERED IN LANE
L2-1C (6'X6')	STA. 2+26.92	CENTERED IN LANE
L2-1D (6'X6')	STA. 2+11.92	CENTERED IN LANE
WESTBOUND		
STOPLINE @ GUTTER	STA. 3+45.32	21.69' LT
STOPLINE @ CENTERLINE	STA. 3+45.32	0.49' RT
WESTBOUND (THRU LANE)		
PHASE 6 CALL LOOP		
L6-2A SENSOR (6'X6')	STA. 3+46.32	CENTERED IN LANE
L6-2B SENSOR (6'X6')	STA. 3+61.32	CENTERED IN LANE
PHASE 6 DOWNSTREAM LOOPS		
L6-1# (6'X6')	STA. 1+43.95	CENTERED IN LANE
L6-2# (6'X6')	STA. 1+43.95	CENTERED IN LANE
WESTBOUND (LEFT TURN/THRU LANE)		
PHASE 6 PRESENCE LOOPS		
L6-1A (6'X6')	STA. 3+34.30	CENTERED IN LANE
L6-1B (6'X6')	STA. 3+49.30	CENTERED IN LANE
L6-1C (6'X6')	STA. 3+64.30	CENTERED IN LANE
L6-1D (6'X6')	STA. 3+79.30	CENTERED IN LANE

STOP LINE AND LOOP DETECTOR LOCATIONS		
ITEM BY DIRECTION	STATION OF APPROACH EDGE FULTON ST	OFFSET
NORTHBOUND		
STOPLINE @ GUTTER	STA. 3+03.13	9.29' RT
STOPLINE @ CENTERLINE	STA. 3+03.13	0.48' LT
NORTHBOUND (THRU LANE)		
PHASE 8 CALL LOOP		
L8-1A SENSOR (6'X6')	STA. 3+02.13	CENTERED IN LANE
L8-1B SENSOR (6'X6')	STA. 2+87.13	CENTERED IN LANE
PHASE 8 DOWNSTREAM LOOPS		
L8-1# (6'X6')	STA. 5+09.21	CENTERED IN LANE
SOUTHBOUND		
STOPLINE @ GUTTER	STA. 4+07.27	12.98' LT
STOPLINE @ CENTERLINE	STA. 4+07.27	0.52' RT
SOUTHBOUND (THRU LANE)		
PHASE 4 CALL LOOP		
L4-1A SENSOR (6'X6')	STA. 4+08.25	CENTERED IN LANE
L4-2B SENSOR (6'X6')	STS. 4+23.25	CENTERED IN LANE
PHASE 4 DOWNSTREAM LOOPS		
L4-1# (6'X6')	STA. 2+01.16	CENTERED IN LANE

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FULTON ST. AT HOGAN ST.
TRAFFIC SIGNAL CONTROLLER
(SHEET 2 OF 2)

WBS NUMBER	
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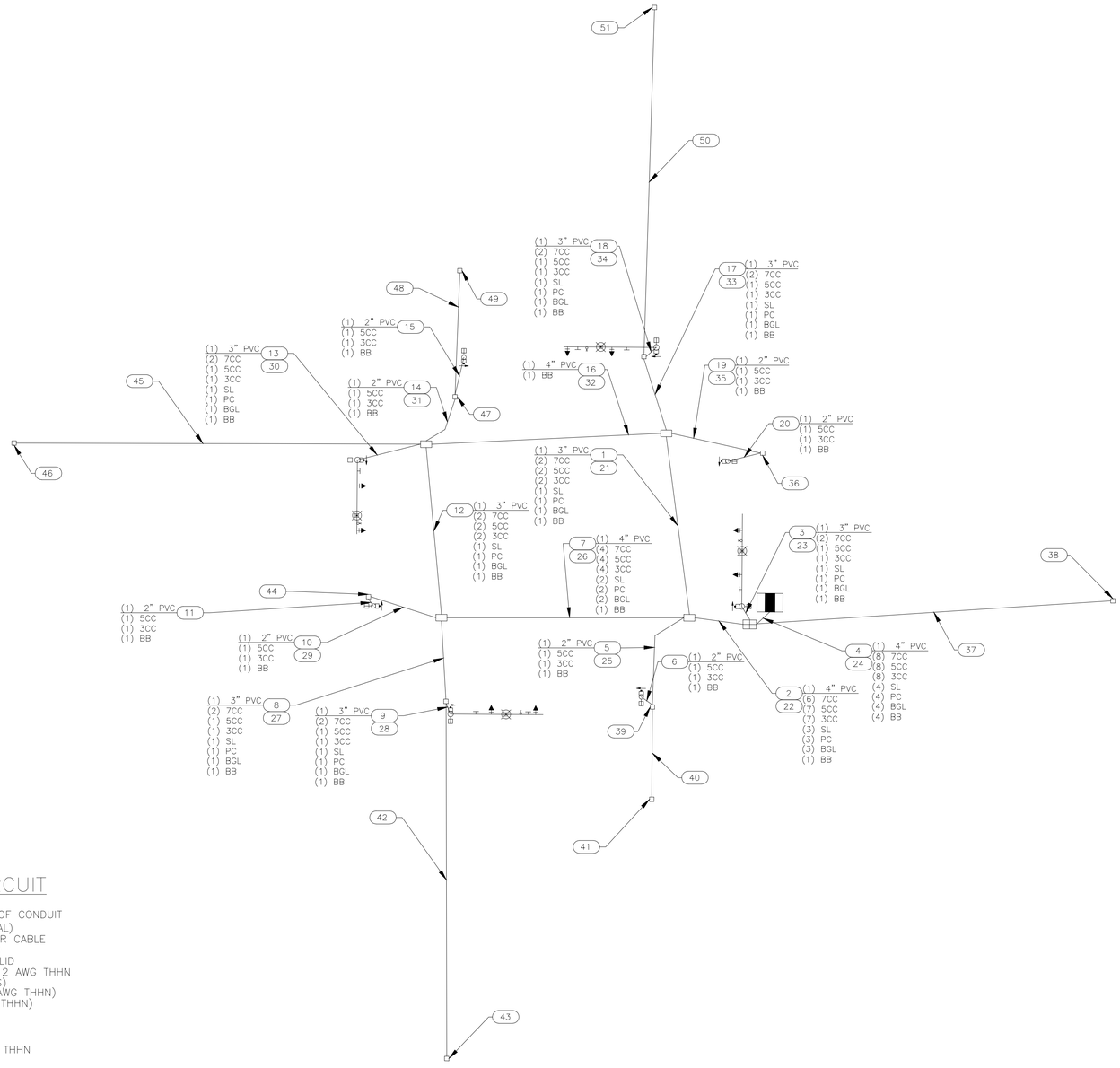
PLOTTED: 2/2/2026 4:10 PM

FILE PATH: P:\Projects\0106 - City Of Houston\15010 - Fulton Street Lighting\4.0 CAD\4.5 Signal Drawings\Traffic Signal Controller Fulton ELOA 3706in 30x42.dwg



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(X)	=NUMBER OF CABLES (SIGNAL)
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BB	=BARE BOND #8 AWG SOLID
BG	=BARE GROUND #8 AWG SOLID
BGL	=BARE GROUND LIGHTING #12 AWG THHN
SP	=SIGNAL POWER (SEE NOTES)
SL	=STREET LIGHTING (2-#10 AWG THHN)
PC	=PHOTO CELL (2-#10 AWG THHN)

NOTES:
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1 - BLACK
1 - RED
2 - GREEN

SP2 SHALL CONSIST OF: 3-#4 AWG THHN WIRE WITH GROUND

NO.	DATE	REVISION	APP.

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

Signature valid for six months.

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

MBROH ENGINEERING
TBPE FIRM NO. 9439

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

FULTON ST. AT HOGAN ST.

CABLE SCHEMATIC
(SHEET 1 OF 2)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-000818-0001-3	
DRAWING SCALE	THESE DOCUMENTS ARE FOR INTERIM REVIEW AND ARE NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.
	KARI HUI-SHAN CAI, P.E. TEXAS PE No: 152599
CITY OF HOUSTON PM	DATE: 01/30/2026
MICHELLE RANDON, P.E.	

PLOT STYLE: COH.ctb
PLOTTED: 2/3/2026 10:35 AM
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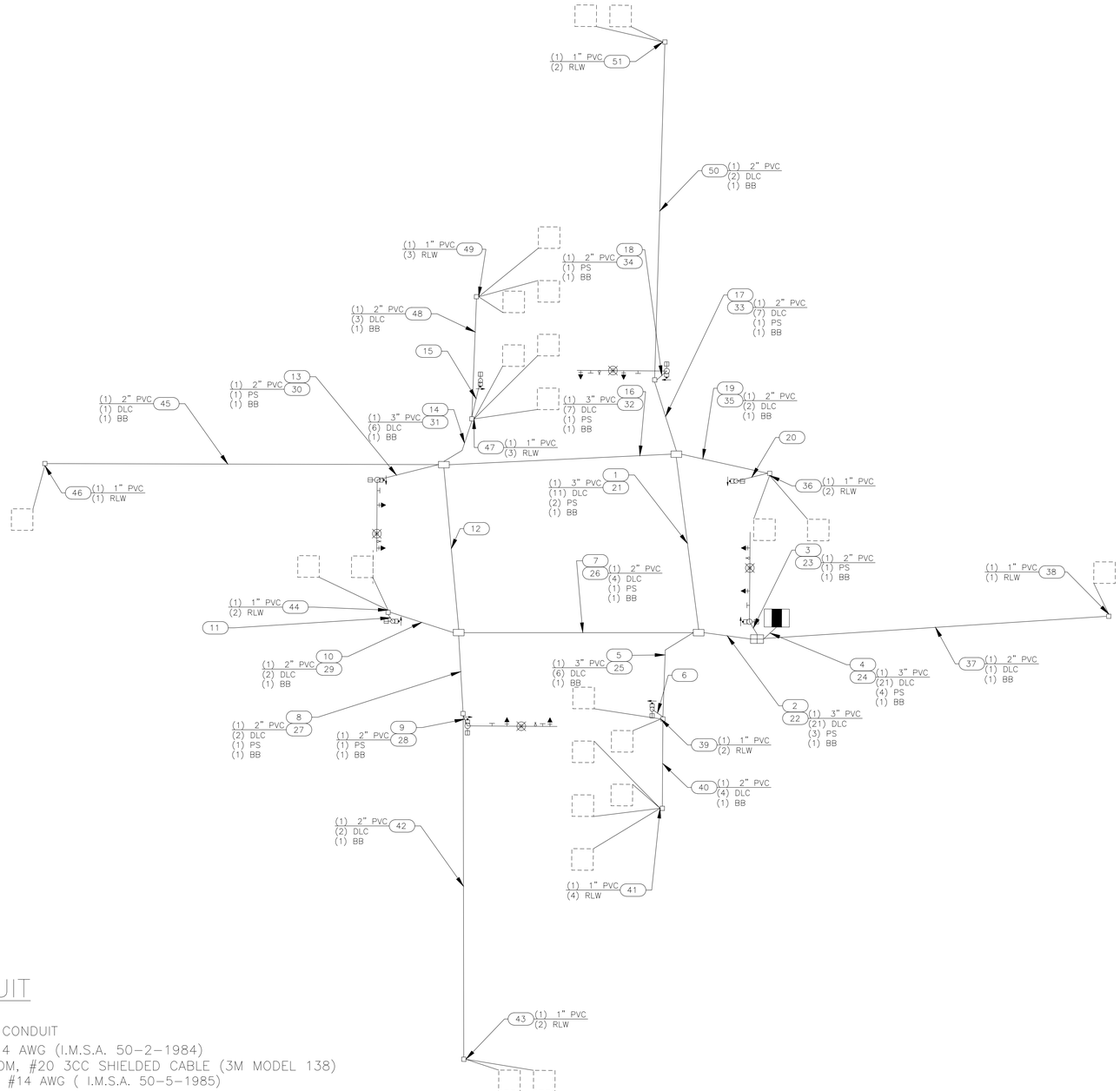

LOW VOLTAGE CIRCUIT

(X)Y"C =NUMBER, SIZE, AND TYPE OF CONDUIT
DLC =DETECTOR LEAD-IN CABLE, #14 AWG (I.M.S.A. 50-2-1984)
PS =PRE-EMPTION SENSOR, OPTICOM, #20 3CC SHIELDED CABLE (3M MODEL 138)
RLW =ROADWAY LOOP DETECTOR WIRE, #14 AWG (I.M.S.A. 50-5-1985)
BB =BARE BOND #8 AWG SOLID

NO.	DATE	REVISION	APP.

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

VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

Signature valid for six months.

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

MBROH ENGINEERING
TBPE FIRM NO. 9439

HATCH
750 TOWN & COUNTRY BLVD
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90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

FULTON ST. AT HOGAN ST.

CABLE SCHEMATIC
(SHEET 2 OF 2)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
N-000818-0001-3	
DRAWING SCALE	THESE DOCUMENTS ARE FOR INTERIM REVIEW AND ARE NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.
	KARI HUI-SHAN CAI, P.E. TEXAS PE No: 152599
CITY OF HOUSTON PM	DATE: 01/30/2026
MICHELLE RANDON, P.E.	

PLOTTED: 2/3/2026 10:37 AM
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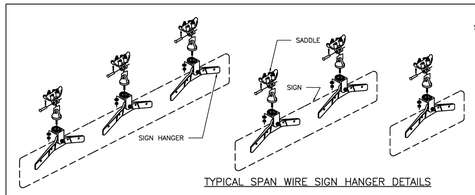
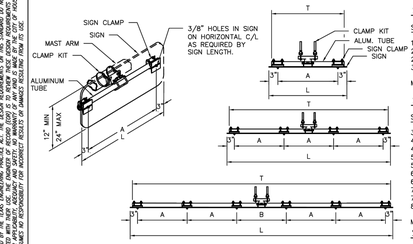


TYPICAL SPAN WIRE SIGN HANGER DETAILS

NOTES:

1. CONTRACTOR SHALL USE PELCO PARTS OR AN APPROVED EQUAL.
2. CONTRACTOR SHALL FURNISH ALL HARDWARE FOR A COMPLETE INSTALLATION.
3. THE 90 DEGREE SPAN WIRE CLAMPS (SADDLES) ARE ATTACHED TO TETHERS (SWAY CABLES).
4. CONTRACTOR SHALL FURNISH ONE (1) ADJUSTABLE FREE SWINGING SIGN HANGER PER STREET NAME SIGN SMALLER THAN 3'-0". SIGNS 3'-0" TO 6'-0" REQUIRE TWO (2) HANGERS. SIGNS LARGER THAN 6'-0" REQUIRE THREE (3) HANGERS.
5. SEE SIGN MOUNTING SERIES FOR STREET NAME SIGN DETAILS.



TYPICAL MAST ARM SIGN MOUNT DETAILS

SIGNS (1'-6" TO 3'-0" LONG)

SIGN LENGTH (L)	TUBE LENGTH (T)	A
1'-6"	16"	12"
2'-0"	22"	18"
2'-6"	28"	24"
3'-0"	34"	30"

MAXIMUM SIGN HEIGHT: 48"

SIGNS (3'-6" TO 8'-0" LONG)

SIGN LENGTH (L)	TUBE LENGTH (T)	A
3'-6"	40"	12"
4'-0"	46"	14"
4'-6"	52"	16"
5'-0"	58"	18"
5'-6"	64"	20"
6'-0"	70"	22"
6'-6"	76"	24"
7'-0"	82"	26"
7'-6"	88"	28"
8'-0"	94"	30"

MAXIMUM SIGN HEIGHT: 24"

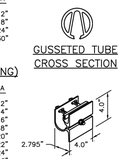
SIGNS (8'-6" TO 10'-0" LONG)

SIGN LENGTH (L)	TUBE LENGTH (T)	A	B
8'-6"	100"	19"	20"
9'-0"	106"	20"	22"
9'-6"	112"	21"	24"
10'-0"	118"	22"	26"

MAXIMUM SIGN HEIGHT: 16"

SIGN SQUARE FOOTAGE NOT TO EXCEED ROTATIONAL RESISTANCE CAPACITY DEFINED BY MOUNTING HARDWARE MANUFACTURER.

GUSSETED TUBE CROSS SECTION



SIGN CLAMP DETAIL

DISCLAIMER:
ANY USE OF THIS STANDARD IS GOVERNED BY THE TEXAS ENGINEERING PRACTICE ACT. THE USER'S REQUIREMENTS ON THIS STANDARD DO NOT PURPORT TO ADDRESS ALL OF THE SAFETY CONCERNS ASSOCIATED WITH ITS USE OR APPLICATION. IT IS THE RESPONSIBILITY OF THE USER OF THIS STANDARD TO ESTABLISH APPROPRIATE SAFETY AND HEALTH PRACTICES AND DETERMINE THE APPLICABILITY OF REGULATORY LIMITATIONS PRIOR TO USE. ANY USE OF THIS STANDARD IS AT THE SOLE RISK OF THE USER AND THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR ANY INCIDENT, ISSUES OR DAMAGES RESULTING FROM ITS USE OR MISINTERPRETATION. ANY USE OF THIS STANDARD FOR ANY PURPOSES OTHER THAN THOSE INTENDED BY THE CITY OF HOUSTON IS PROHIBITED.

CITY OF HOUSTON HOUSTON PUBLIC WORKS STANDARD	
OVERHEAD STREET NAME SIGN MOUNTING DETAILS (SCALE: NOT TO SCALE)	
APPROVED BY:	
Developed by: Salud Issivar CITY ENGINEER	Developed by: Carl Haddock DIRECTOR OF HPW
Approved by: Hiking Huijfen CITY TRAFFIC ENGINEER	
EFF DATE: NOV-27-2023	DWG NO: 01554-11

DocuSign Envelope ID: CB71C116-B716-4899-A5EE-0D2F2CC55AF6

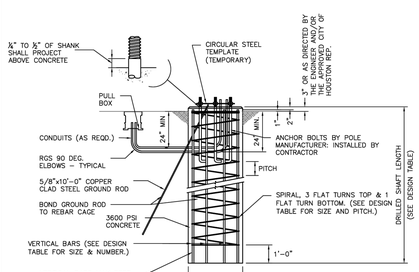
FOUNDATION DESIGN TABLE									
POLE MARK	DRILLED SHAFT DIA.	REINFORCING STEEL		DRILLED SHAFT LENGTH FT.	BOLT CIRCLE DIA.	FOUNDATION DESIGN LOADS (1)			TYPICAL APPLICATION
		VERT. BARS	SPIRAL & PITCH			MOMENT K-FT.	SHEAR KIPS	TORQUE K-FT.	
HOU 1	30"	8-#9 BAR	#3 BAR @9"	14'-0"	18"	72.2	3.4	51.9	MAST ARM ASSEMBLY (25'-35') IN COHESIVE SOILS
HOU 2	30"	8-#9 BAR	#3 BAR @9"	18'-0"	18"	89.9	4.0	98.0	MAST ARM ASSEMBLY (40'-55') IN COHESIVE SOILS. MAST ARM ASSEMBLY (25'-55') IN NON-COHESIVE SOILS

FOUNDATION DESIGN TABLE NOTES:

(1) FOUNDATION DESIGN LOADS ARE THE ALLOWABLE MOMENTS, SHEARS AND TORQUES AT THE TOP OF THE FOUNDATION.

(2) CONSTRUCT IN ACCORDANCE WITH CITY OF HOUSTON SPECIFICATION SECTION 02465, "DRILLED SHAFT FOUNDATIONS".

(3) FOUNDATION DESIGN IS BASED UPON AN UNDRAINED SHEAR STRENGTH OF 1500 PSF FOR COHESIVE SOILS AND A TEXAS CONE PENETROMETER MINIMUM OF 10 BLOWS/FOOT IN NON-COHESIVE SOILS. WHERE COHESIVE AND NON-COHESIVE LAYERS EXIST WITHIN THE SPECIFIED SHAFT LENGTH, THE NON-COHESIVE SOILS SHALL GOVERN. LOWER SOIL PARAMETERS WILL REQUIRE A SPECIAL DESIGN.



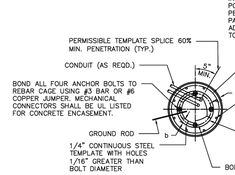
FOUNDATION DETAILS

GENERAL NOTES:

1. DESIGN IS FOR CITY OF HOUSTON STANDARD TRAFFIC SIGNAL MAST ARM SUPPORT STRUCTURES BY VALMONT INDUSTRIES, INC.
2. DESIGN CONFORMS TO 2001 AASHTO "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS" AND INTERIM REVISIONS THERETO FOR A 90 MPH WIND ZONE WITH A 1.3 GUST FACTOR AND ACI "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318-02).
3. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.
4. CONCRETE SHALL BE 6 SACK, 3600 PSI.
5. ALL ANCHOR BOLTS SHALL BE GALVANIZED THE ENTIRE LENGTH OF BOLT. EXPOSED NUTS AND WASHERS SHALL ALSO BE GALVANIZED.

INSTALLATION PROCEDURE

THREADS OF ANCHOR BOLTS SHALL BE COATED WITH PIPE JOINT COMPOUND PRIOR TO INSTALLATION OF UPPER NUTS WHEN ERECTING POLE. AFTER POLE IS PLUMBED AND IN PERMANENT ALIGNMENT, THE EXPOSED THREADS OF PAINTED BOLTS SHALL BE CLEANED AND AN ADDITIONAL COATING OF ZINC-RICH PAINT APPLIED TO SEAL THE BOLT THREAD–NUT JOINT.



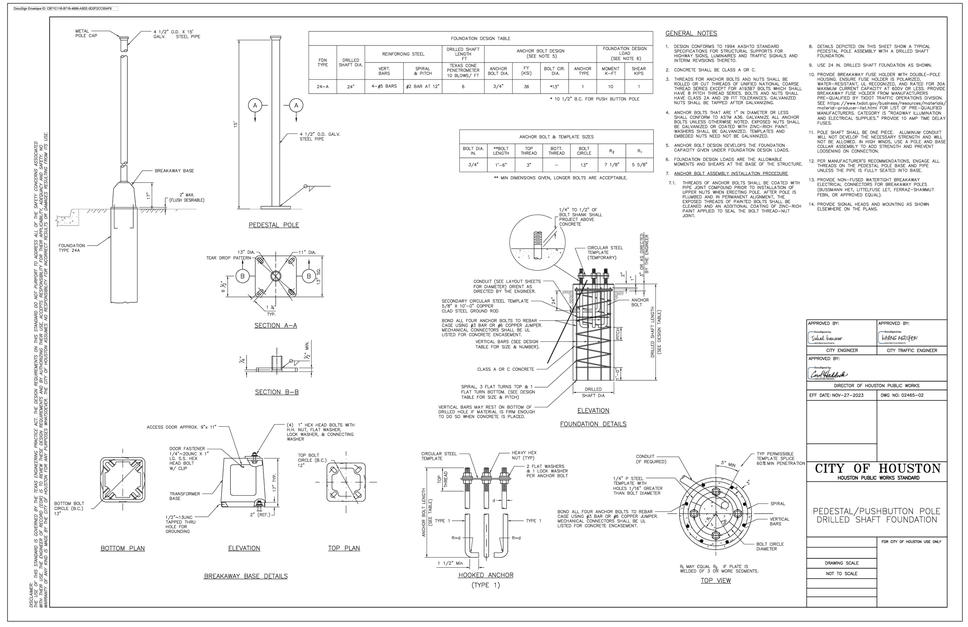
TOP VIEW

NOTE:

1. b = MINIMUM STEEL TEMPLATE WIDTH EQUAL TO TWO TIMES ANCHOR BOLT DIAMETER.
2. STEEL TEMPLATE MAY BE OF CONTINUOUS WIDTH OR SEGMENTED WIDTH.
3. SEE FOUNDATION DESIGN TABLE FOR BOLT CIRCLE DIAMETER.
4. BOLTS SHOULD BE CHECKED FOR PLUMB AFTER CONCRETE IS POURED AND BEFORE INITIAL SET.

CITY OF HOUSTON HOUSTON PUBLIC WORKS STANDARD	
DRILLED SHAFT FOUNDATIONS (SCALE: NOT TO SCALE)	
APPROVED BY:	
Developed by: Salud Issivar CITY ENGINEER	Developed by: Carl Haddock DIRECTOR OF HPW
Approved by: Hiking Huijfen CITY TRAFFIC ENGINEER	
EFF DATE: NOV-27-2023	DWG NO: 02465-01

DocuSign Envelope ID: CB71C116-B716-4899-A5EE-0D2F2CC55AF6



FOUNDATION DESIGN TABLE							
FDN TYPE	DRILLED SHAFT DIA.	REINFORCING STEEL		DRILLED SHAFT LENGTH FT	ANCHOR BOLT DESIGN (SEE NOTE 5)		FOUNDATION DESIGN LOAD (SEE NOTE 6)	
		VERT. BARS	SPIRAL & PITCH	TEXAS CONE PENETROMETER 10 BLOWS/ FT	ANCHOR BOLT DIA.	FT (VSS)	BOLT CIR. DIA.	ANCHOR TYPE	MOMENT K-FT	SHEAR KIPS
24-A	24"	4-#5 BARS	#3 BAR AT 12"	6	3/4"	36	*13"	1	10	1

* TO 1/2" B.C. FOR PUSH BUTTON POLE

ANCHOR BOLT & TEMPLATE SIZES						
BOLT DIA.	**BOLT LENGTH	TOP THREAD	BOTTOM THREAD	BOLT CIRCLE	R_2	R_1
3/4"	1'-6"	2"	-	13"	7 1/8"	5 5/8"

** MIN DIMENSIONS GIVEN, LONGER BOLTS ARE ACCEPTABLE.

GENERAL NOTES

1. DESIGN CONFORMS TO 1994 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS AND INTERIM REVISIONS THERETO.
2. CONCRETE SHALL BE CLASS A OR C.
3. THREADS FOR ANCHOR BOLTS AND NUTS SHALL BE 8 UN 2A FOR BOLTS LESS THAN 1 1/2" DIAMETER, COARSE THREAD SERIES EXCEPT FOR AASHTO BOLTS WHICH SHALL HAVE 8 PITCH THREAD SERIES. BOLTS AND NUTS SHALL BE HOT DIP GALVANIZED AFTER FABRICATION. NUTS SHALL BE TAPPED AFTER GALVANIZING.
4. ANCHOR BOLTS THAT ARE 1" IN DIAMETER OR LESS SHALL CONFORM TO ASTM A36. GALVANIZE ALL ANCHOR BOLTS UNLESS OTHERWISE NOTED. EXPOSED NUTS SHALL BE GALVANIZED. ALL ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. TEMPLATES AND EMBEDED NUTS NEED NOT BE GALVANIZED.
5. ANCHOR BOLT DESIGN DEVELOPS THE FOUNDATION CAPACITY GIVEN UNDER FOUNDATION DESIGN LOADS.
6. FOUNDATION DESIGN LOADS ARE THE ALLOWABLE MOMENTS AND SHEARS AT THE BASE OF THE STRUCTURE.
7. ANCHOR BOLT ASSEMBLY INSTALLATION PROCEDURE
   7.1. THREADS OF ANCHOR BOLTS SHALL BE COATED WITH PIPE JOINT COMPOUND PRIOR TO INSTALLATION OF UPPER NUTS WHEN ERECTING POLE. AFTER POLE IS PLUMBED AND IN PERMANENT ALIGNMENT, THE EXPOSED THREADS OF PAINTED BOLTS SHALL BE CLEANED AND AN ADDITIONAL COATING OF ZINC-RICH PAINT APPLIED TO SEAL THE BOLT THREAD-NUT JOINT.
8. DETAILS DEPICTED ON THIS SHEET SHOW A TYPICAL PEDESTAL POLE ASSEMBLY WITH A DRILLED SHAFT FOUNDATION.
9. USE 24 IN. DRILLED SHAFT FOUNDATION AS SHOWN.
10. PROVIDE BREAKAWAY FUSE HOLDER WITH DOUBLE-POLE HOUSING. ENSURE FUSE HOLDER IS POLARIZED. PROVIDE TWO (2) FUSES RATED AT 600V AND 10A FOR 30A MAXIMUM CURRENT CAPACITY AT 600V OR LESS. PROVIDE BREAKAWAY FUSE HOLDER FROM MANUFACTURER'S LISTED IN THE CITY OF HOUSTON APPROVED EQUIPMENT LIST. SEE https://www.houstontx.gov/finance/purchasing/material-producer-list.html FOR LIST OF PRE-QUALIFIED MATERIAL PRODUCERS UNDER "TRAFFIC SIGNAL MATERIALS AND ELECTRICAL SUPPLIES." PROVIDE 10 AMP TIME DELAY FUSES.
11. POLE SHAFT SHALL BE ONE PIECE. ALUMINUM CONDUIT WILL NOT DEVELOP THE NECESSARY STRENGTH AND WILL NOT BE ALLOWED. USE A GALVANIZED STEEL CONDUIT BASE COLLAR ASSEMBLY TO ADD STRENGTH AND PREVENT LOOSENING ON CONNECTION.
12. PER MANUFACTURER'S RECOMMENDATIONS, ENGAGE ALL THREADS ON THE PEDESTAL POLE BASE AND PIPE UNLESS THE PIPE IS FULLY SEATED INTO BASE.
13. PROVIDE NON-FUSED WATERTIGHT BREAKAWAY DISCONNECTS CONFORMING FOR BREAKAWAY POLES (SLIPSTREAM NEMA 1, SINGLE LET, FERRAZ-SHAWMUT TRON, OR APPROVED EQUAL).
14. PROVIDE SIGNAL HEADS AND MOUNTING AS SHOWN ELSEWHERE ON THE PLANS.

FOUNDATION DETAILS

APPROVED BY:	APPROVED BY:
Developed by: Salud Issivar CITY ENGINEER	Developed by: Hiking Huijfen CITY TRAFFIC ENGINEER
APPROVED BY: Developed by: Carl Haddock DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 02465-02

CITY OF HOUSTON HOUSTON PUBLIC WORKS STANDARD	
PEDESTAL/PUSHBUTTON POLE DRILLED SHAFT FOUNDATION	
	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE NOT TO SCALE	

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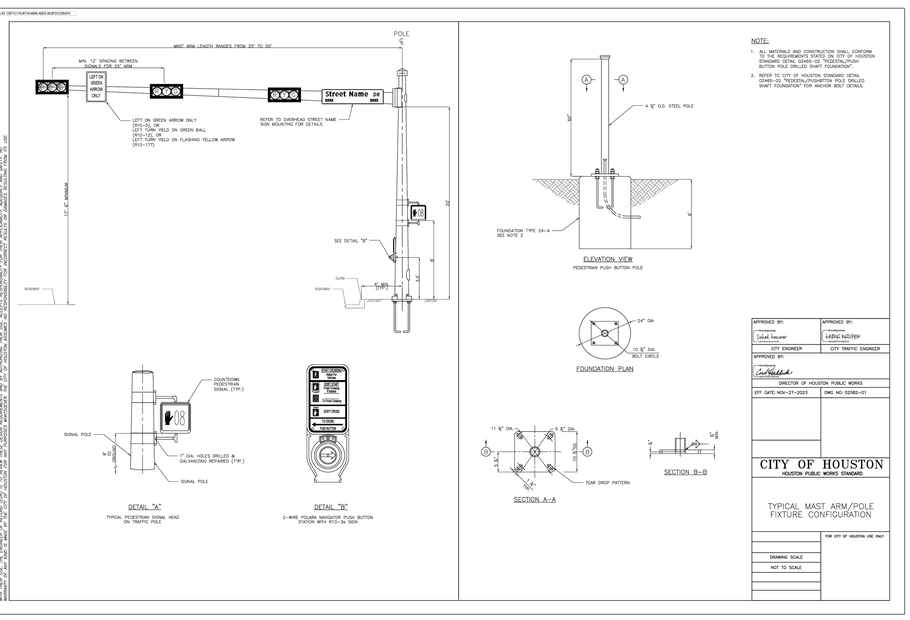

NOTE:

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS STATED ON CITY OF HOUSTON STANDARD DETAIL 02465-02 "PEDESTAL/PUSH BUTTON POLE DRILLED SHAFT FOUNDATION".
2. REFER TO CITY OF HOUSTON STANDARD DETAIL 02465-02 "PEDESTAL/PUSHBUTTON POLE DRILLED SHAFT FOUNDATION" FOR ANCHOR BOLT DETAILS.

APPROVED BY:	APPROVED BY:
Developed by: Salud Issivar CITY ENGINEER	Developed by: Hiking Huijfen CITY TRAFFIC ENGINEER
APPROVED BY: Developed by: Carl Haddock DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 02582-01

CITY OF HOUSTON HOUSTON PUBLIC WORKS STANDARD	
TYPICAL MAST ARM/POLE FIXTURE CONFIGURATION	
	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE NOT TO SCALE	

NO.	DATE	REVISION	APP.

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

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

MBROH ENGINEERING
TBPE FIRM NO. 9439

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

CITY OF HOUSTON STANDARD DETAILS TRAFFIC SIGNAL DETAIL 1 OF 3

WBS NUMBER	N-000818-0001-3
DRAWING SCALE	N.T.S.
CITY OF HOUSTON PM	MICHELLE RANDON, P.E.
SHEET NO.	XX OF XX

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND ARE NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.

KARI HUI-SHAN CAI, P.E.
TEXAS PE No: 152599

DATE: 01/30/2026

FILE PATH: P:\Projects\0106 – City Of Houston\15010 – Fulton Street Lighting\4.0 CAD\4.5 Signal Drawings\12 COH STANDARDS (1).dwg PLOT STYLE: COH.ctb PLOTTED: 2/4/2026 10:45 AM

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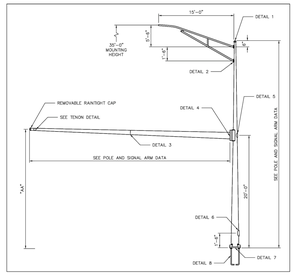
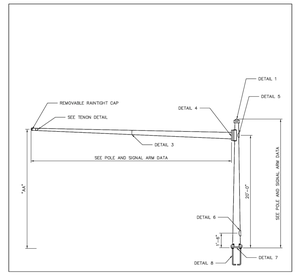
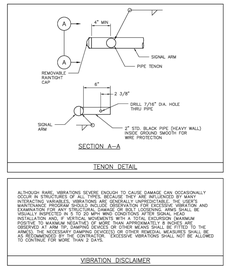






TENON DETAIL

ALTHOUGH MARC VIBRATIONS REVERE ENOUGH TO CAUSE DAMAGE CAN OCCASIONALLY OCCUR IN STRUCTURES OF ALL TYPES, BECAUSE THEY ARE INFLUENCED BY MANY INTERACTING VARIABLES, VIBRATIONS ARE GENERALLY UNPREDICTABLE. THE USER'S RESPONSIBILITY IS LIMITED TO PERIODIC VISUAL INSPECTION OF THE STRUCTURE AND EXAMINATION FOR ANY STRUCTURAL DAMAGE OR BOLT LOOSENING. ARMS SHALL BE VISUALLY INSPECTED IN 15 TO 20 MPH WIND CONDITIONS AFTER SIGNAL HEAD INSTALLATION. IF THE TIP OF THE ARM IS OBSERVED TO MOVE THROUGH A MAXIMUM POSITIVE TO MAXIMUM NEGATIVE OF MORE THAN APPROXIMATELY 8 INCHES, ARE OBSERVED AT ANY TIP, DAMPING DEVICES OR OTHER MEANS SHALL BE FITTED TO THE ARM TO REDUCE VIBRATIONS TO ACCEPTABLE LEVELS. IF DAMPING DEVICES ARE NOT AS RECOMMENDED BY THE CONTRACTOR, EXCESSIVE VIBRATIONS SHALL NOT BE ALLOWED TO CONTINUE FOR MORE THAN 2 DAYS.

VIBRATION DISCLAIMER

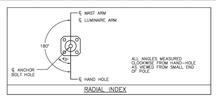
POLE AND MAST ARM DATA

DESIGNATION KEY			POLE TUBE						POLE BASE			ANCHOR BOLT			SIGNAL ARM TUBE				
POLE SERIES	POLE TYPE	SIGNAL ARM SPAN (FT)	BASE DIA. (IN)	TOP DIA. (IN) WITH LUM ARM	TOP DIA. (IN) WITHOUT LUM ARM	LENGTH (FT) WITH LUM ARM	LENGTH (FT) WITHOUT LUM ARM	GAUGE OR THK. (IN)	SQUARE "A" (IN)	BOLT CIRCLE "A" (IN)	THK. "M" (IN)	HOLE / SLOT "E" (IN)	DIA. "A" (IN)	LENGTH "J" (IN)	HOOK "K" (IN)	THREAD LENGTH "L" (IN)	FIXED END DIA. (IN)	FREE END DIA. (IN)	GAUGE OR THICK (IN)	SPAN (FT)	TIP HEIGHT "AA" (FT)
HOU	1	25	13.00	8.80	10.00	30.00	21.50	3	18.00	18.00	2.25	2.50	2.25	89.00	7.00	9.00	8.00	3.50	7	25.00	20.2
		30															9.00	4.80	7	30.00	20.3
		35															10.00	5.10	7	35.00	20.3
		40															10.50	4.90	7	40.00	20.3
HOU	2	45	13.00	8.80	10.00	30.00	21.50	0.375									10.14	3.84	3	45.00	20.4
		50															11.00	4.00	3	50.00	20.4
		55															11.50	4.16	DET. 3	55.00	20.5

MATERIAL DATA

COMPONENT	ASTM DESIGNATION	MIN. YIELD (KSI)	COMPONENT	ASTM DESIGNATION	MIN. YIELD (KSI)
POLE SHAFT – 3 GAUGE	A595 GR.A	55	MAST ARM CONN. BOLTS	F3125 GR. A325*	
POLE SHAFT – 0.375"	A572 GR.55	55	LUM. ARM CONN. BOLTS	SAE GR.5	36
MAST ARM SHAFT	A595 GR.A	55	ANCHOR BOLTS	F1554 GR.55	55
LUMINAIRE ARM SHAFT	2" SCH. 80 PIPE		GALVANIZING	A123 & A153	
ARM ATTACHMENT PLATE	A36	36			
BASEPLATE	A36	36			

*LUBRICATE IN FIELD IF NECESSARY IN LIEU OF THE REQUIREMENTS IN F3125 GR.A325.



RADIAL INDEX

APPROVED BY: Suhail Kassar — CITY ENGINEER
APPROVED BY: LIDING NGUYEN — CITY TRAFFIC ENGINEER
APPROVED BY: Carl Haddock — DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: NOV-27-2023 DWG NO: 02582-02

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TRAFFIC SIGNAL STRUCTURES

SHEET 01 OF 02
FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE
NOT TO SCALE

DISCLAIMER:
THE USE OF THIS STANDARD IS GOVERNED BY THE TEXAS ENGINEERING PRACTICE ACT. THE JOSHEN REQUIREMENTS ON THIS STANDARD DO NOT PURPORT TO ADDRESS ALL OF THE SAFETY CONCERN ASSOCIATED WITH ITS USE. THE OWNER'S OF RECORD (OOR) IS TO REVIEW THESE JOSHEN REQUIREMENTS AND BY AUTHORIZING THEIR APPLICATION ON A SPECIFIC PROJECT ASSUMES RESPONSIBILITY FOR APPROPRIATE, SAFE AND LAWFUL USE. ACCESS TO THIS STANDARD DOES NOT AUTHORIZE ANY USE. ALL USERS ASSUME ALL RISK AND LIABILITY WHATSOEVER IN CONNECTION WITH ANY USE OF THIS STANDARD. IN NO EVENT SHALL THE CITY OF HOUSTON BE LIABLE FOR ANY DAMAGES RESULTING FROM ITS USE.

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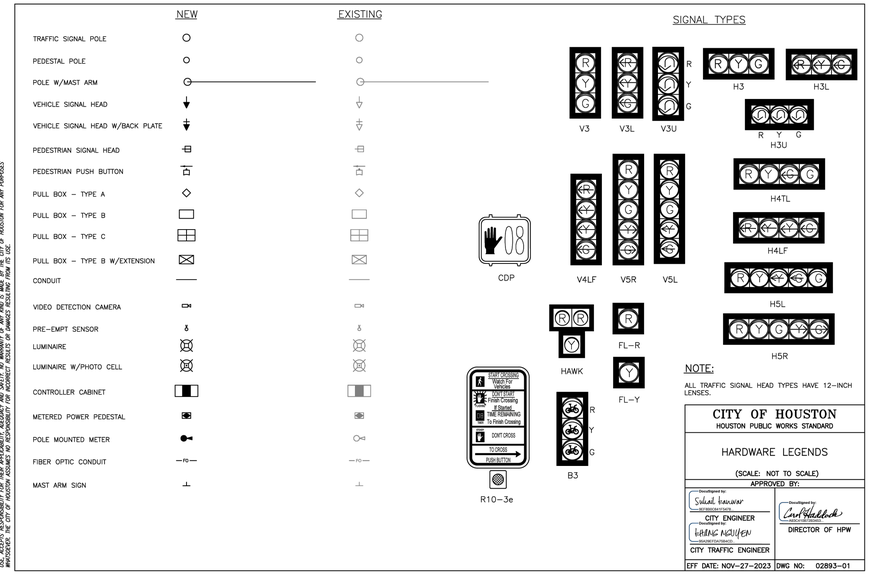

SIGNAL TYPES

NOTE:
ALL TRAFFIC SIGNAL HEAD TYPES HAVE 12-INCH LENSES.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

HARDWARE LEGENDS

(SCALE: NOT TO SCALE)

APPROVED BY:
Developed by: Suhail Kassar — CITY ENGINEER
Developed by: LIDING NGUYEN — CITY TRAFFIC ENGINEER
Developed by: Carl Haddock — DIRECTOR OF HPW

EFF DATE: NOV-27-2023 DWG NO: 02893-01

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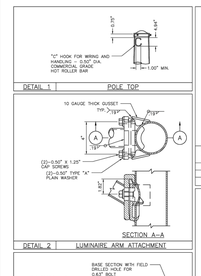
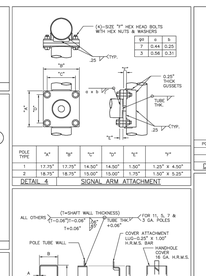


ITEM	BASE SECTION		END SECTION	
	LENGTH	GAUGE	LENGTH	GAUGE
55.00"	26.42"	3	30.71"	7



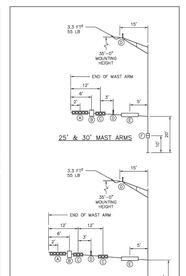
POLE TYPE	A	B	C	D
1	7 GA.	3.00"	5.00"	1.50"
2	0.50"	4.00"	6.00"	2.50"

DETAIL 5 HANDHOLE

DESIGN NOTE:
DESIGNS ARE BASED ON THE LOADING CHART SHOWN ON THIS DRAWING AND ARE IN ACCORDANCE WITH MATERIALS AND ALLOWABLE STRESS REQUIREMENTS OF THE AASHTO "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS,LUMINAIRES AND TRAFFIC SIGNALS" FOR A 90 MPH WIND ZONE WITH A 1.3 GUST FACTOR.

DEVICE	DESCRIPTION	PROJ. AREA (FT²)	WEIGHT (LBS)
Ⓐ	12"–5 SEC. SIGNAL WITH BACKPLATE'S	13.33	96
Ⓑ	30" 4 3ET SIGNAL ARM MOUNTED SIGN	7.50	15
Ⓒ	12"–3 SEC. SIGNAL WITH BACKPLATE'S	8.67	53
Ⓓ	HVDS CAMERA	1.00	15
Ⓔ	24" X 72" STREET NAME SIGN	12.00	30
Ⓕ	PEDESTRIAN SIGNAL	4.00	40

MAXIMUM LOADING INFORMATION



APPROVED BY: Suhail Kassar — CITY ENGINEER
APPROVED BY: LIDING NGUYEN — CITY TRAFFIC ENGINEER
APPROVED BY: Carl Haddock — DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: NOV-27-2023 DWG NO: 02582-03

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TRAFFIC SIGNAL STRUCTURES

SHEET 02 OF 02
FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE
NOT TO SCALE

DISCLAIMER:
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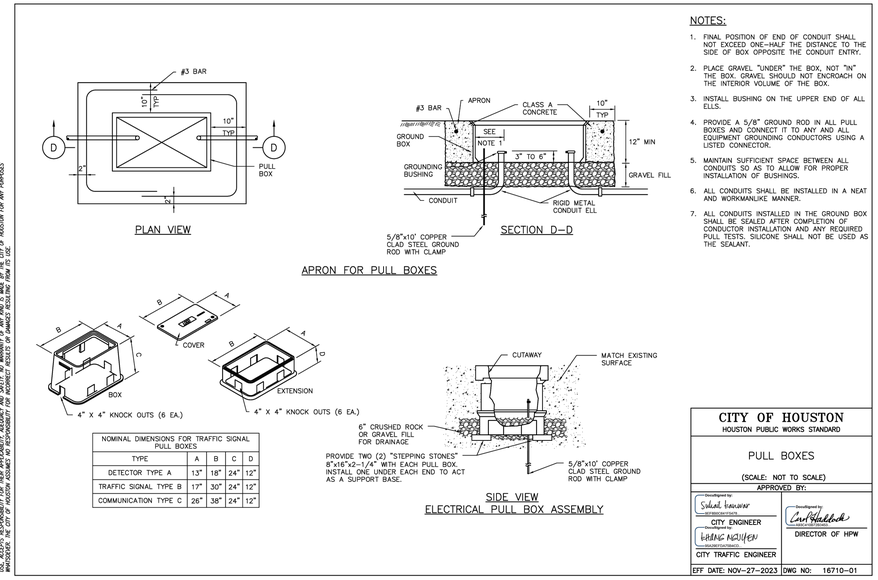

NOMINAL DIMENSIONS FOR TRAFFIC SIGNAL PULL BOXES				
TYPE	A	B	C	D
DETECTOR TYPE A	13"	18"	24"	12"
TRAFFIC SIGNAL TYPE B	17"	30"	24"	12"
COMMUNICATION TYPE C	26"	38"	24"	12"

NOTES:
1. FINAL POSITION OF END OF CONDUIT SHALL NOT EXCEED ONE–HALF THE DISTANCE TO THE SIDE OF BOX OPPOSITE THE CONDUIT ENTRY.
2. PLACE GRAVEL "UNDER" THE BOX, NOT "IN" THE BOX. GRAVEL SHOULD NOT ENCROACH ON THE INTERIOR VOLUME OF THE BOX.
3. INSTALL BUSHING ON THE UPPER END OF ALL ELLS.
4. PROVIDE A 5/8" GROUND ROD IN ALL PULL BOXES AND CONNECT IT TO ANY AND ALL EQUIPMENT GROUNDING CONDUCTORS USING A LISTED CONNECTOR.
5. MAINTAIN SUFFICIENT SPACE BETWEEN ALL CONDUITS SO AS TO ALLOW FOR PROPER INSTALLATION OF BUSHINGS.
6. ALL CONDUITS SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER.
7. ALL CONDUITS INSTALLED IN THE GROUND BOX SHALL BE SEALED AFTER COMPLETION OF CONDUCTOR INSTALLATION AND ANY REQUIRED PULL TESTS. SILICONE SHALL NOT BE USED AS THE SEALANT.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

PULL BOXES

(SCALE: NOT TO SCALE)

APPROVED BY:
Developed by: Suhail Kassar — CITY ENGINEER
Developed by: LIDING NGUYEN — CITY TRAFFIC ENGINEER
Developed by: Carl Haddock — DIRECTOR OF HPW

EFF DATE: NOV-27-2023 DWG NO: 16710-01

NO.	DATE	REVISION	APP.

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

VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

Signature valid for six months.

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

MBROH ENGINEERING
TBPE FIRM NO. 9439

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

CITY OF HOUSTON STANDARD DETAILS
TRAFFIC SIGNAL DETAIL 2 OF 3

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
N.T.S.
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. XX OF XX

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND ARE NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.

KARI HUI-SHAN CAI, P.E.
TEXAS PE No: 152599

DATE: 01/30/2026

FILE PATH: P:\Projects\0106 – City Of Houston\15010 – Fulton Street Lighting\4.0 CAD\4.5 Signal Drawings\13 COH STANDARDS (2).dwg PLOT STYLE: COH.ctb PLOTTED: 2/4/2026 10:47 AM

DocuSign Envelope ID: 9E1220F1-CF7E-4E7B-B46E-2E5F4D8B8E1E

DISCLAIMER:
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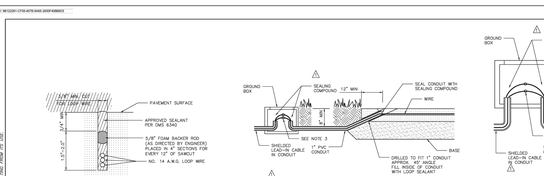
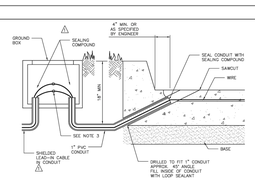


LOOP SAW CUT CROSS-SECTION

* SAWCUTS IN BRIDGE DECKS ARE TYPICALLY 1" DEPTH MAXIMUM
SAWCUTS IN BRIDGE DECKS AND ACROSS EXPANSION JOINTS SHALL BE AS APPROVED BY ENGINEER

TYPICAL LEAD IN CONFIGURATION (WITHOUT CURBING)



TYPICAL LEAD IN CONFIGURATION (WITH CURBING)

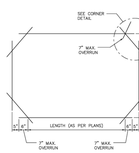
GENERAL NOTES:

1. THE PAVEMENT CUT IS TO BE MADE WITH A CONCRETE SAW TO NEAT LINES AND LOOSE MATERIAL REMOVED. THE CUT SHALL BE CLEAN AND DRY WHEN THE WIRE AND SEALING ARE PLACED.
2. LOOP WIRE SHALL BE 14 AWG STRANDED TYPE XHHW WIRE FROM THE LOOP TO THE GROUND BOX SHALL BE TWISTED AT LEAST 5 TURNS PER FOOT. NO SPLICES SHALL BE PERMITTED IN THE LOOP OR IN THE RUN TO THE GROUND BOX.
3. LEAD-IN HOME RUN CABLE FROM THE PULL BOX TO THE CONTROLLER SHALL BE NEMA 50-7 SHIELDED CABLE AND SHALL BE SOLDERED TO THE LOOP WIRE. THE SOLDER SHALL BE COVERED WITH HEAT SHRINK TUBING OR OTHER METHOD ACCEPTABLE TO THE ENGINEER. THE CABLE SHALL BE GROUNDED ONLY AT THE CONTROLLER END. LOOP HOME RUN SHALL CONSIST OF TWO CONDUCTOR 14 AWG SHIELDED, TYPE XHHW.
4. ALL WIRE PLACED IN THE SAW CUT SHALL BE SEALED BY THE SEALING COMPOUND. THE TYPE OF SEALING COMPOUND TO BE USED, SEALING COMPOUND SHALL BE IN ACCORDANCE WITH DMS 8340.
5. THE CONFIGURATION, DIMENSIONS AND NUMBER OF TURNS SHALL BE AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

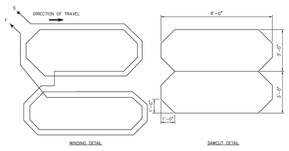
RECOMMENDED NUMBER OF TURNS FOR LOOP DETECTORS

LOOPS PERIMETER SIZE (FT.)	NUMBER OF TURNS	APPROXIMATE LOOP SIZES INCLUDED
24' or Less	3 or 4	5' x 5', 6' x 6'
25' – 110'	2 or 3	6' x 10', 6' x 45'
110' or More	1 or 2	6' x 50' or Longer

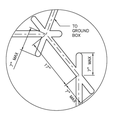
6. A SEPARATE SAW CUT SHALL BE MADE FROM EACH LOOP TO THE EDGE OF PAVEMENT OR AS SPECIFIED BY THE ENGINEER. THE SAWCUT SHALL BE SEALED AS SPECIFIED IN NOTE 4.
7. THE LOOP SYSTEM SHALL BE MADE ONLY IN THE GROUND BOX NEAR THE LOOP IT IS SERVING.
8. ALL CONDUCTORS IN THE SAME PERIMEAND LOOPS ENDED IN CONTROLLER PVC TUBING. SAWCUT WIDTH MAY BE ADJUSTED AS APPROVED BY ENGINEER.
9. THE LEAD-IN WIRE IN THE CIRCULAR LOOP SHALL BE COILED AT THE 3 INCH DRILLED CORNER TO REDUCE BENDING STRESS.
10. LOOP DUCT MAY BE USED AS SPECIFIED BY ENGINEER. FOR ADDITIONAL INFORMATION REFER TO DETAIL TRAFFIC SIGNAL ADDITIONAL INFORMATION NOTES (TSAIN).
11. ROUND CORNERS OF ACUTE ANGLES TO PREVENT DAMAGE TO LOOP WIRES.
12. INSTALL 2 TURNS WHEN ONLY ONE TYPE D LOOP IS ON A SINGLE CHANNEL. INSTALL 5 TURNS WHEN ONE TYPE D IS CONNECTED IN "I-WIRE" LOOPS ON A SINGLE CHANNEL.



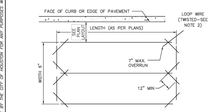
RECTANGULAR



QUADRUPOLE (Q) TYPE LOOP DETECTOR CONFIGURATION

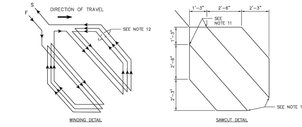


RECTANGULAR & HEXIGON LOOP



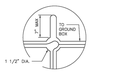
QUADRAPOLE

TYPICAL VEHICULAR LOOP DETECTOR LAYOUT
(AS SPECIFIED IN PLANS)



DIAGONAL SLASHED (D) TYPE LOOP DETECTOR CONFIGURATION

TYPICAL BICYCLE LOOP DETECTOR LAYOUT
(AS SPECIFIED IN PLANS. SEE PAVEMENT MARKINGS DETAILS FOR LOCATION RELATIVE TO BICYCLE SYMBOL)



RECTANGULAR & HEXIGON LOOP (ALT.)
DRILLED CORNER DETAIL

TYPICAL CORNER DETAILS

APPROVED BY:	APPROVED BY:
Gabriel Isaacson	Ludmila Mikityuk
CITY ENGINEER	CITY TRAFFIC ENGINEER

APPROVED BY:

DIRECTOR OF HOUSTON PUBLIC WORKS

EFF DATE: NOV-27-2023 | DWG NO. 18727-01

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

LOOP DETECTOR INSTALLATION DETAILS

FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE

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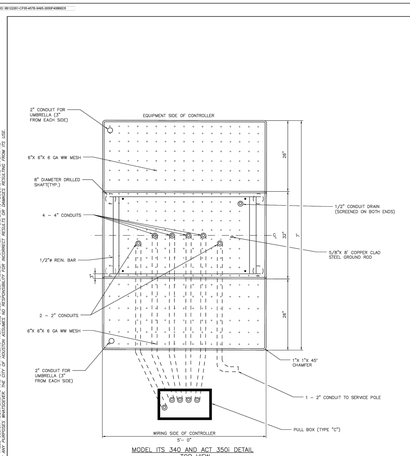
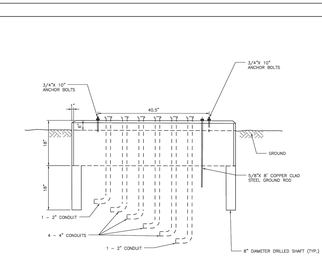
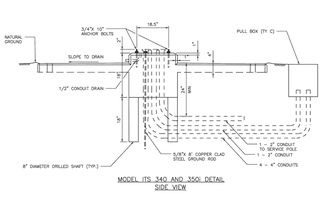


MODEL ITS 340 AND ACT 350I DETAIL
TOP VIEW



MODEL ITS 340 AND 350I DETAIL
FRONT VIEW



MODEL ITS 340 AND 350I DETAIL
SIDE VIEW

NOTES:

1. ALL CONCRETE TO BE IN ACCORDANCE WITH CITY OF HOUSTON SPECIFICATION SECTION 03370.
2. SET THE TOP OF THE STEP OF THE CONTROLLER FOUNDATION NOT LESS THAN 1" TO LEVEL OF THE PAVEMENT SURFACE. ANY NECESSARY ADJUSTMENT SHALL BE APPROVED BY THE ENGINEER.
3. CENTER THE CABINET ON THE FOUNDATION.
4. THE FOUNDATION SHALL BE SUPPORTED BY UNDISTURBED SOIL OR BY SOIL THAT HAS BEEN COMPACTED TO 90% PROCTOR DENSITY IN 6" LIFTS.
5. ALL CONDUIT ELBOWS TO BE RGS.

APPROVED BY:	APPROVED BY:
Gabriel Isaacson	Ludmila Mikityuk
CITY ENGINEER	CITY TRAFFIC ENGINEER

APPROVED BY:

DIRECTOR OF HOUSTON PUBLIC WORKS

EFF DATE: NOV-27-2023 | DWG NO. 18730-03

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

CONTROLLER FOUNDATIONS

SHEET 3 OF 3

FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE

NOT TO SCALE

NO.	DATE	REVISION	APP.

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

Signature valid for six months.

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

MBROH ENGINEERING
TBPE FIRM NO. 9439

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

CITY OF HOUSTON STANDARD DETAILS
TRAFFIC SIGNAL DETAIL 3 OF 3

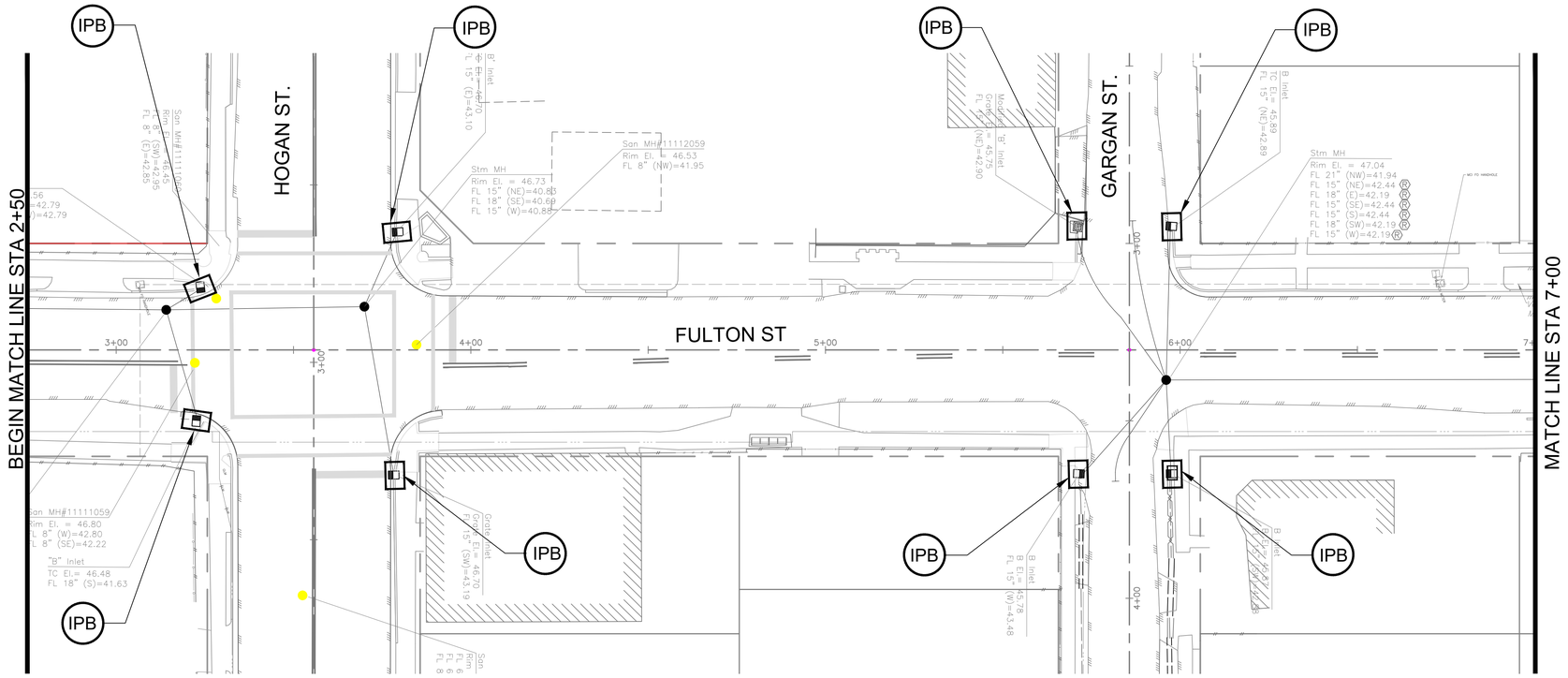
WBS NUMBER
N-000818-0001-3
DRAWING SCALE
N.T.S.
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. XX OF XX

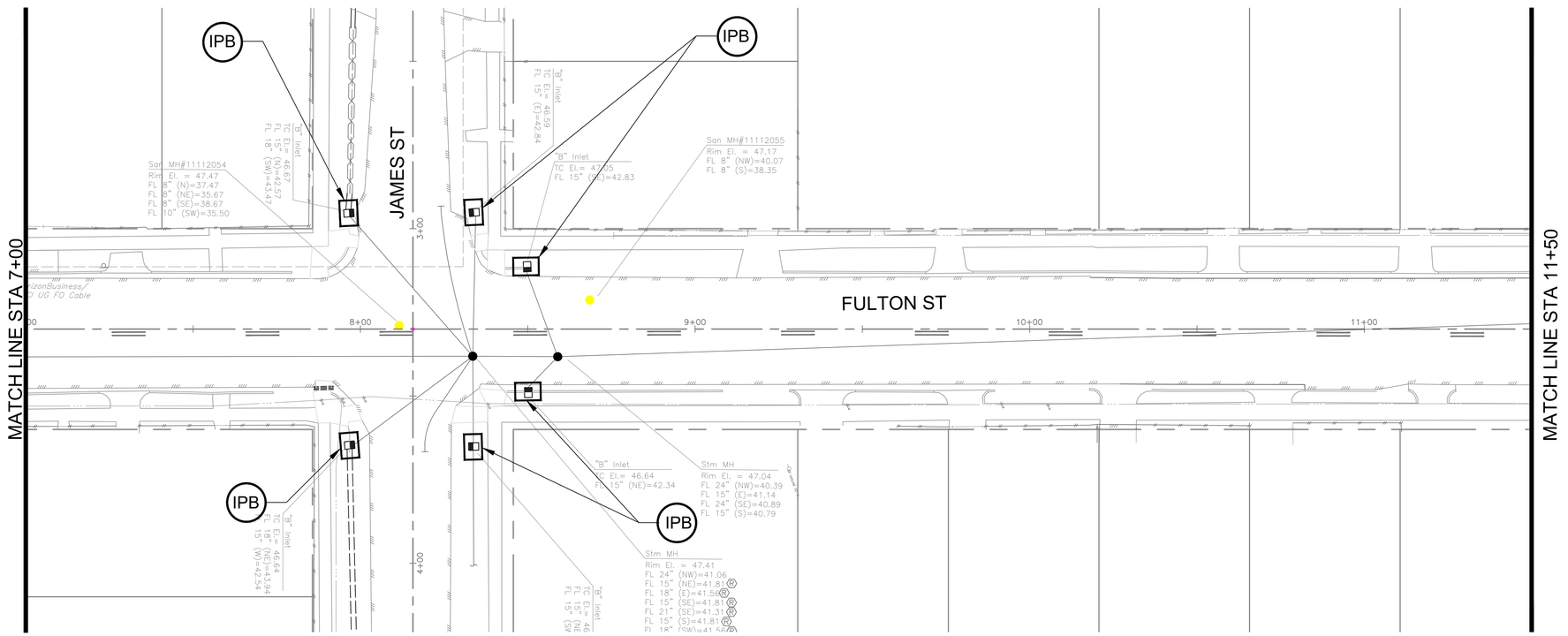
THESE DOCUMENTS ARE FOR INTERIM REVIEW AND ARE NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.

KARI HUI-SHAN CAI, P.E.
TEXAS PE No: 152599

DATE: 01/30/2026

FILE PATH: P:\Projects\0106 – City Of Houston\15010 – Fulton Street Lighting\4.0 CAD\4.5 Signal Drawings\14 COH STANDARDS (3).dwg PLOT STYLE: COH.ctb PLOTTED: 2/4/2026 10:50 AM





NOTE:

STORM WATER POLLUTION PLAN SHALL CONFORM TO SPECIFICATIONS AND DRAWINGS.

ALL DISTURBED AREAS THAT ARE NOT PAVED OR COVERED BY STRUCTURE SHALL BE SODDED OR HYDROMULCH SEEDED.

CONTRACTOR'S LAY DOWN/STORAGE AREA SHALL HAVE A STABILIZED CONSTRUCTION EXIT.

LEGEND

IPB — INLET PROTECTION BARRIER

SC — STABILIZED CONSTRUCTION ACCESS

NO.	DATE	REVISION	APP.

NOTICE:

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

VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

Signature valid for six months.

Date

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

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6170

FCM Engineers, P.C.
TX FIRM No.: F-13481

DESIGN ENGINEER NAME
FCM ENGINEERS, P.C.
ADDRESS:
3300 S. GESSNER ROAD
SUITE 249
TEL.No.:713-706-4412
Fax No.:713-706-4410

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

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

ENGINEER: FRANK C. MBACHU
P.E. SERIAL No.: 108363
09/6/2023

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

STORMWATER POLLUTION PREVENTION PLAN (SHEET 1 OF 2)

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO.	OF 165

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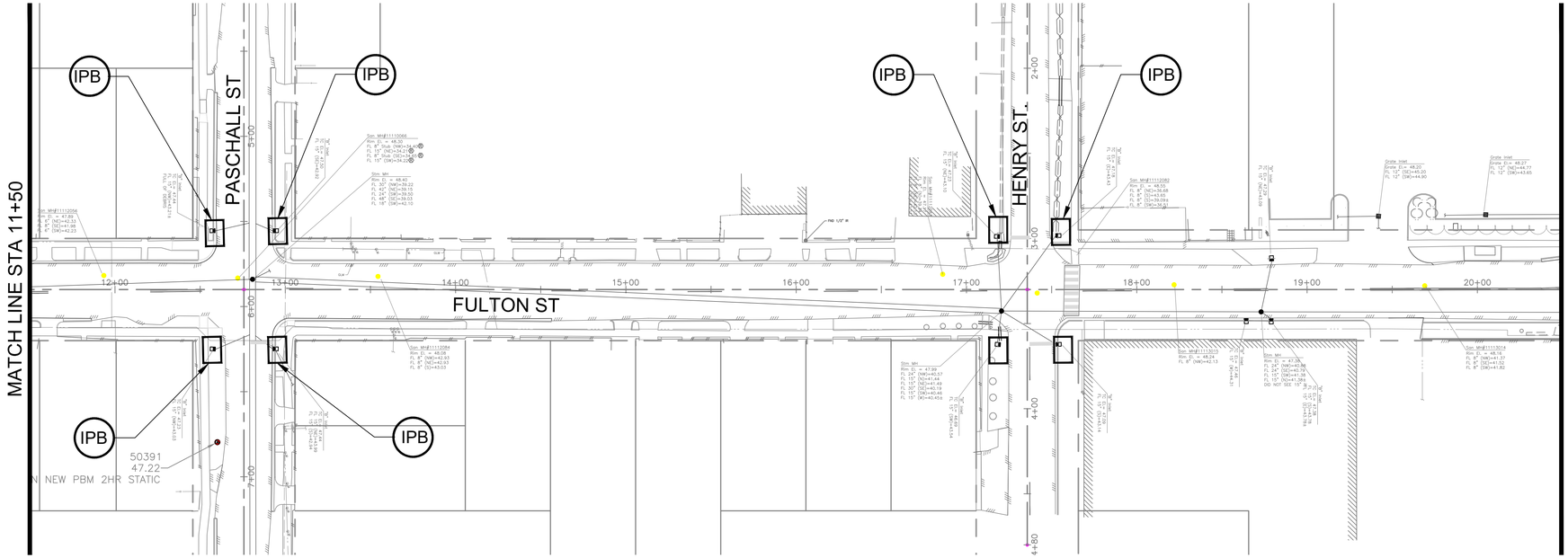

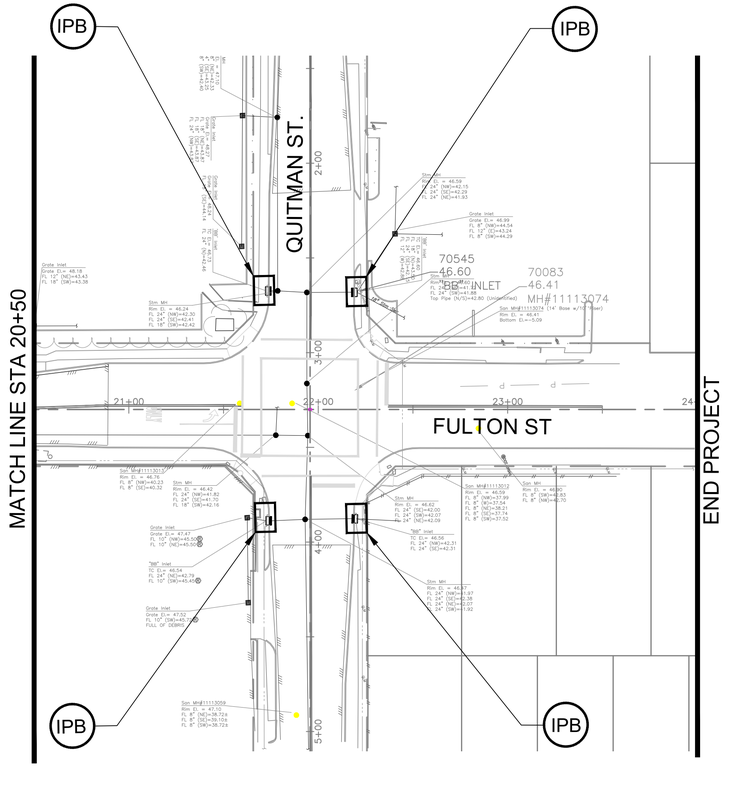

NOTE:

STORM WATER POLLUTION PLAN SHALL CONFORM TO SPECIFICATIONS AND DRAWINGS.

ALL DISTURBED AREAS THAT ARE NOT PAVED OR COVERED BY STRUCTURE SHALL BE SODDED OR HYDROMULCH SEEDED.

CONTRACTOR'S LAY DOWN/STORAGE AREA SHALL HAVE A STABILIZED CONSTRUCTION EXIT.

LEGEND

IPB — INLET PROTECTION BARRIER

SC — STABILIZED CONSTRUCTION ACCESS

NO.	DATE	REVISION	APP.

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HATCH
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HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

90% DRAFT
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SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6170

FCM Engineers, P.C.
TX FIRM No.: F-13481

DESIGN ENGINEER NAME
FCM ENGINEERS, P.C.
ADDRESS:
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SUITE 249
TEL.No.:713-706-4412
Fax No.:713-706-4410

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ENGINEER: FRANK C. MBACHU
P.E. SERIAL No.: 108363
09/6/2023

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

STORMWATER POLLUTION PREVENTION PLAN (SHEET 2 OF 2)

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO.	OF 165

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GENERAL NOTES

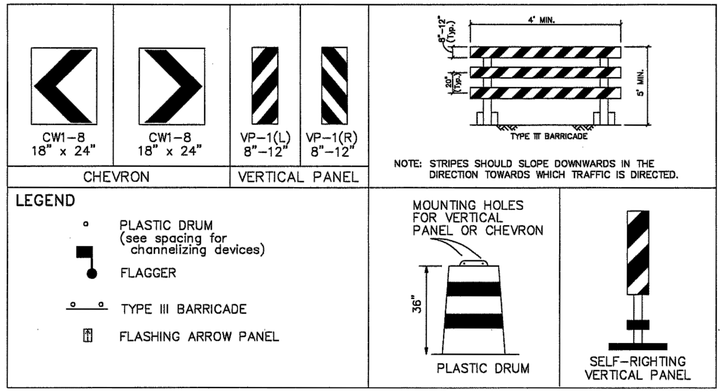
1. The Contractor shall provide and install traffic control devices in conformance with Part VI of the Texas Manual on Traffic Control Devices (TMUTCD)
2. All signs and traffic control devices shall conform the latest version of the TMUTCD
3. No lanes shall be closed during the hours of 7:00 AM to 9:00 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

NO.	DATE	REVISION	APP.

HATCH
750 TOWN & COUNTRY BLVD, SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
8303 SOUTHWEST FREEWAY
SUITE 600
HOUSTON, TEXAS 77074
TEL: (713) 270-5700
TBPE REG. NO. F-4528
TEXAS SURVEY FIRM NO.10028200
FB. NO. P-6170

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE
UTILITY REVIEW
NOT FOR
CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

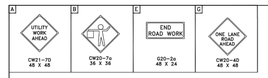
FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

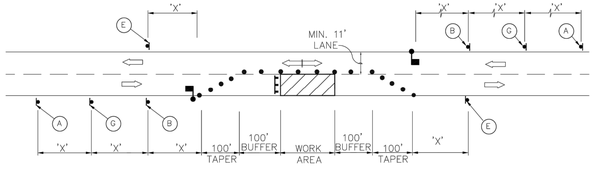
TRAFFIC CONTROL PLAN NOTES AND DETAILS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
PARESHKUMAR BHATT	
SHEET NO. 26 OF 30	

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS
0 1 2 3

7/19/23 C:\PWWORKING\HATCH-DPD-SOUTH_CENTRAL_US\DMS31840\26-29 TRAFFIC CONTROL PLAN NOTES AND DETAILS.DWG





ONE LANE – TWO WAY/FLAGGING OPERATION

(DAY TIME WORKING HOURS ONLY)

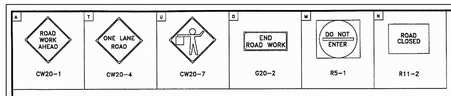
LEGEND (TYPICAL)

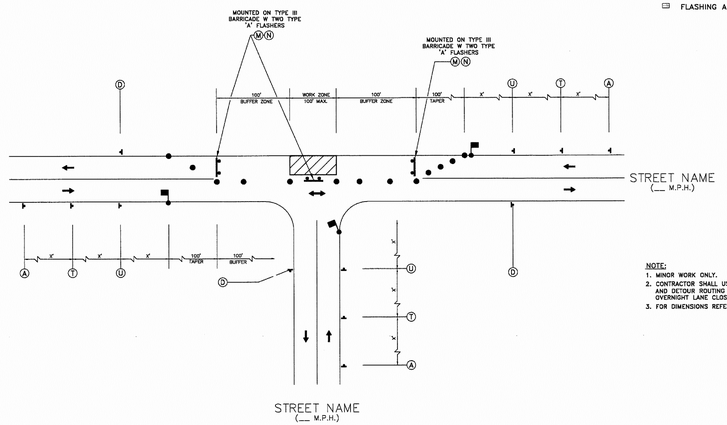
- SIGN
- APPROVED CHANNELIZATION DEVICE
- OFF-DUTY UNIFORMED POLICE OFFICER OR FLAGGER
- TRAFFIC FLOW
- TYPE III BARRICADE

NOTES:

1. MINOR WORK ONLY.
2. CONTRACTOR SHALL USE ONE-LANE ROAD CLOSURE AND DETOUR ROUTING FOR MAJOR OPERATIONS AND OVERNIGHT LANE CLOSURES.
3. A 10' MIN LANE WIDTH FOR EMERGENCY SHALL BE MADE AVAILABLE AND MAINTAINED BY THE CONTRACTOR AT ALL TIMES.
4. FOR DIMENSIONS REFER TO SHEET 01512-01.

NO.	DATE	REVISION	APP.





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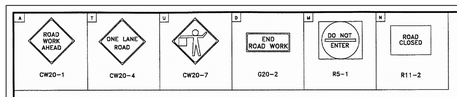
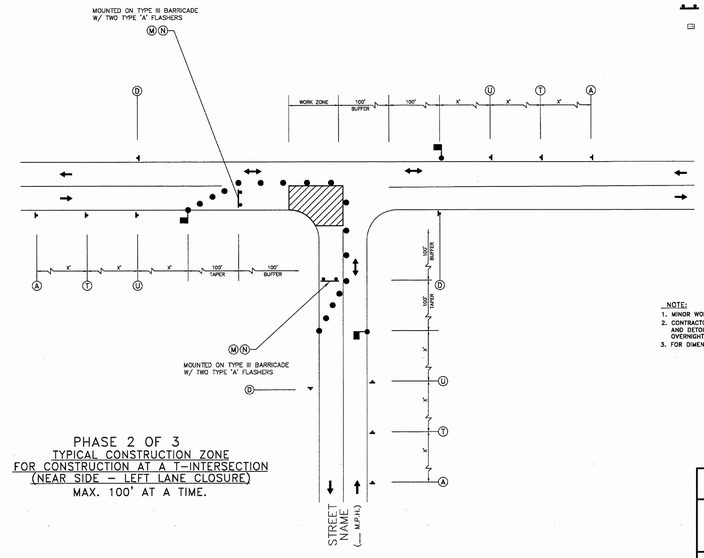
PHASE 1 OF 3
TYPICAL CONSTRUCTION ZONE
AT A T-INTERSECTION

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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3. FOR DIMENSIONS REFER TO SHEET 01512-01

PHASE 2 OF 3
TYPICAL CONSTRUCTION ZONE
FOR CONSTRUCTION AT A T-INTERSECTION
(NEAR SIDE – LEFT LANE CLOSURE)
MAX. 100' AT A TIME.

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

HATCH
750 TOWN & COUNTRY BLVD, SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
8303 SOUTHWEST FREEWAY
SUITE 600
HOUSTON, TEXAS 77074
TEL: (713) 270-5700
TBPE REG. NO. F-4528
TEXAS SURVEY FIRM NO.10028200
FB. NO. P-6170

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

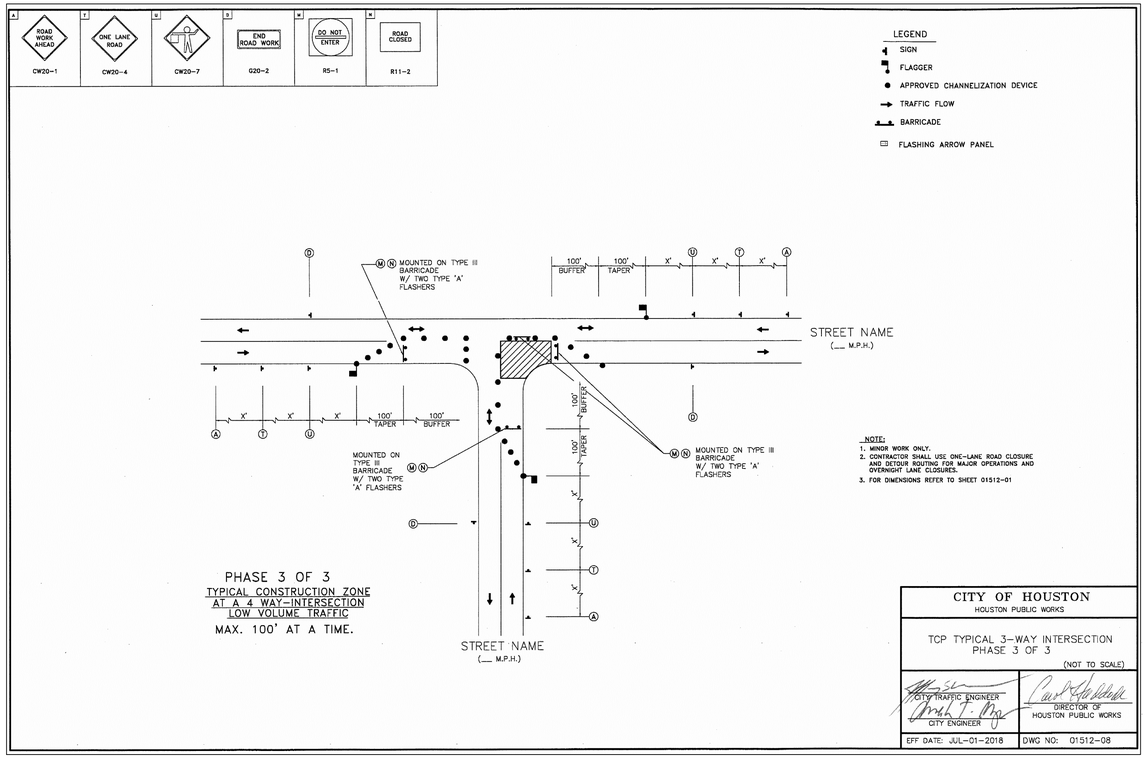
FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

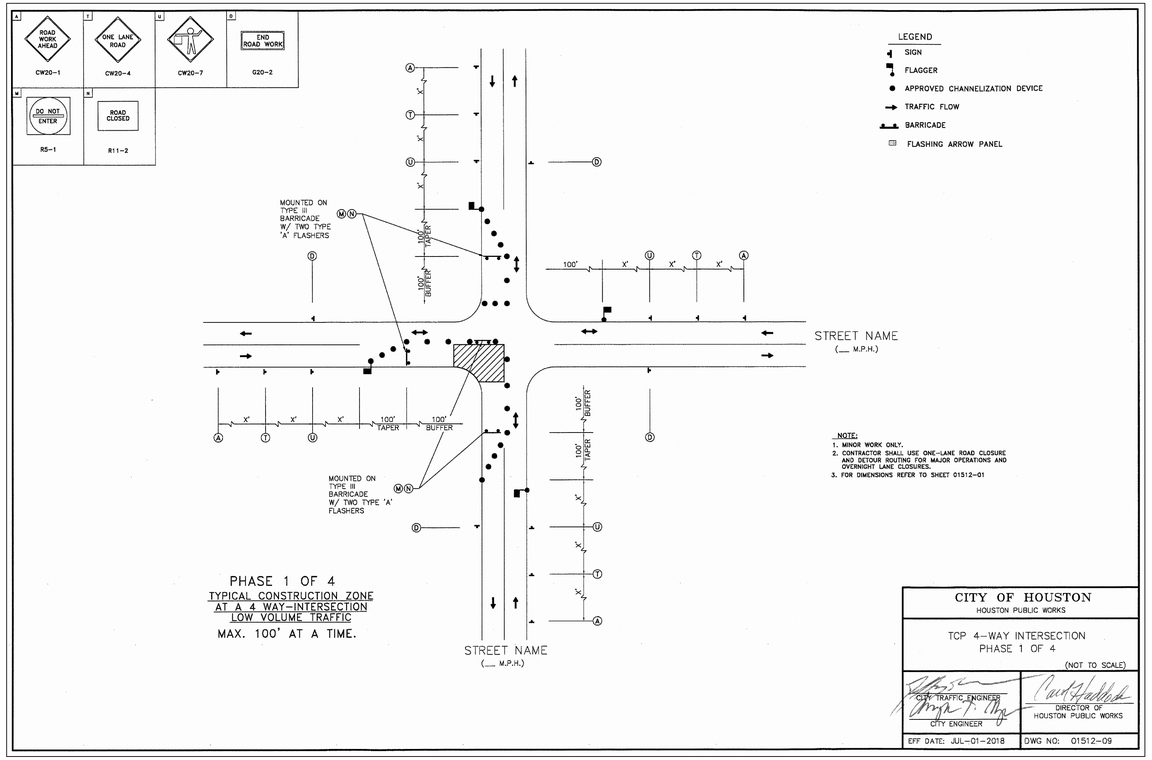
TRAFFIC CONTROL PLAN NOTES AND DETAILS

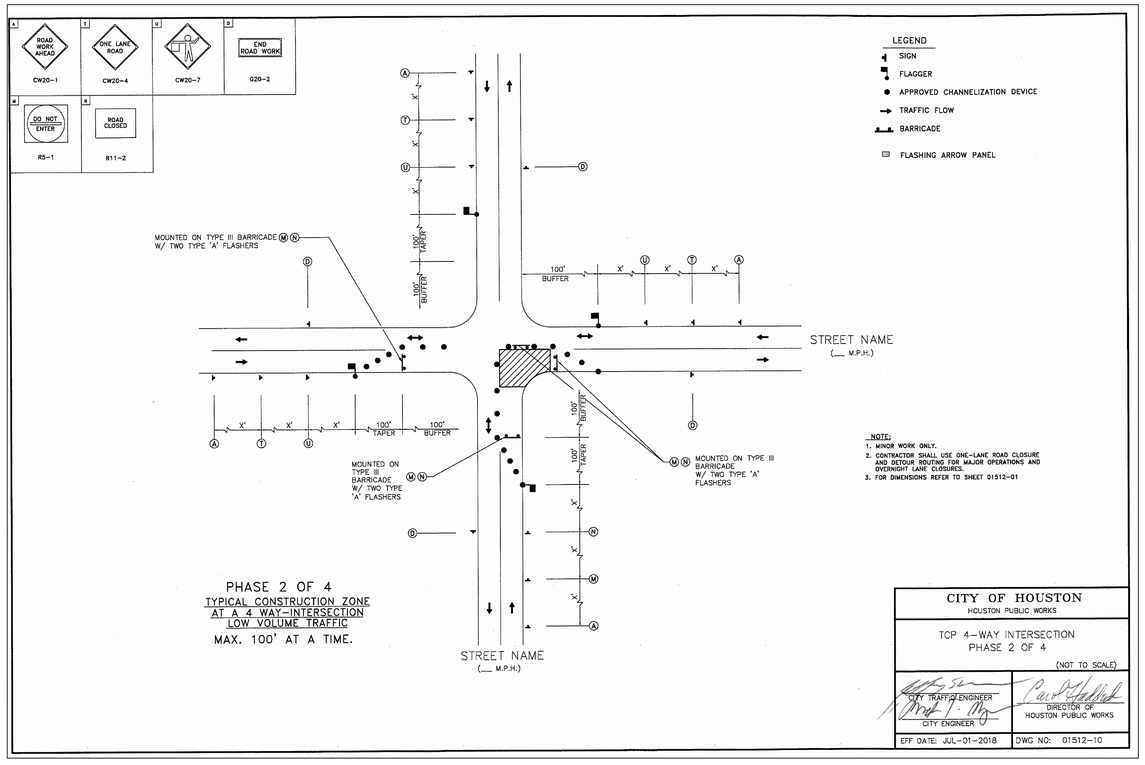
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
SHEET NO. OF	

7/19/23 C:\PWWORKING\HATCH-DPD-SOUTH_CENTRAL_US\DMS31840\26-29 TRAFFIC CONTROL PLAN NOTES AND DETAILS.DWG

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS







NO.	DATE	REVISION	APP.

HATCH
750 TOWN & COUNTRY BLVD, SUITE 650
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P: 832-930-7670
TX FIRM NUMBER: F-10912

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HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

TRAFFIC CONTROL PLAN NOTES AND DETAILS

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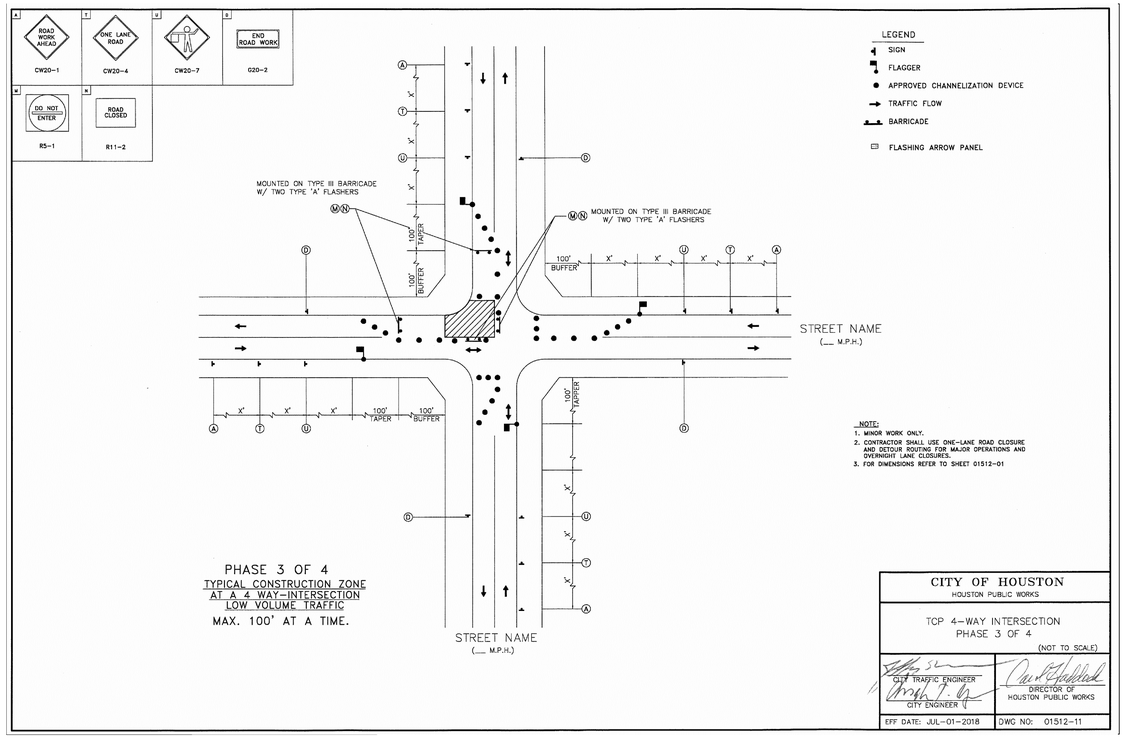
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
SHEET NO. OF	

7/19/23 C:\PWWORKING\HATCH-DPD-SOUTH_CENTRAL_US\DMS31840\26-29 TRAFFIC CONTROL PLAN NOTES AND DETAILS.DWG

0 1 2 3 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



NOTE:
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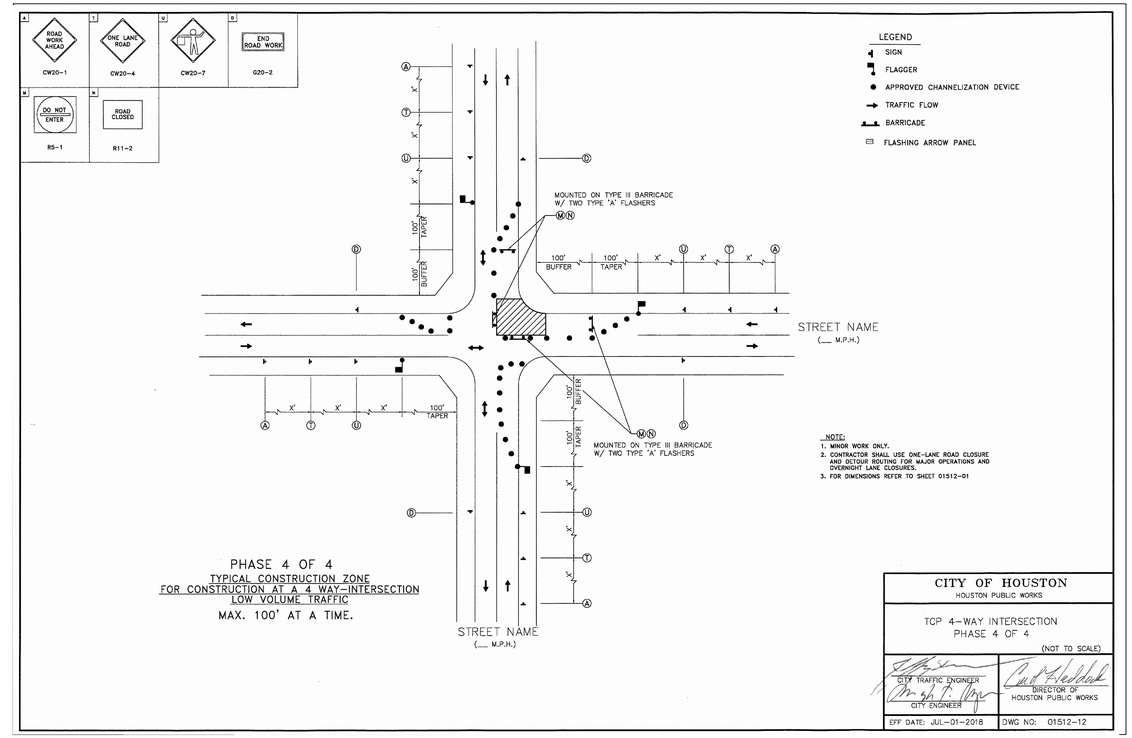
2. CONTRACTOR SHALL USE ONE-LANE ROAD CLOSURE AND DETOUR ROUTING FOR MAJOR OPERATIONS AND OVERNIGHT LANE CLOSURES.
3. FOR DIMENSIONS REFER TO SHEET 01512-01

PHASE 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



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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

NO.	DATE	REVISION	APP.

HATCH
750 TOWN & COUNTRY BLVD, SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
8303 SOUTHWEST FREEWAY
SUITE 600
HOUSTON, TEXAS 77074
TEL: (713) 270-5700
TBPE REG. NO. F-4528
TEXAS SURVEY FIRM NO.10028200
FB. NO. P-6170

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE
UTILITY REVIEW
NOT FOR
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

TRAFFIC CONTROL PLAN NOTES AND DETAILS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-420126-0094-3	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
SHEET NO. OF	

7/19/23 C:\PWWORKING\HATCH-DPD-SOUTH_CENTRAL_US\DMS31840\26-29 TRAFFIC CONTROL PLAN NOTES AND DETAILS.DWG

0 1 2 3 ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS

Station	Caliper (inches)	Street	Species/Comments	Impact?	Proposed Action
5+35R	40	FULTON	Shrub	YES	Remove
5+50R	5, 6, 10	FULTON	Shrub	YES	Remove
6+05L	18	GARGAN	Shrub	POSSIBLE	Prune & Protect
6+20L	12	FULTON	Shrub	YES	Remove
6+25L	5	FULTON	Shrub	YES	Remove
6+95R	30	FULTON	OAK	YES	Remove
8+35R	24	JAMES	Shrub	YES	Remove
8+70L	?	FULTON	Shrub	YES	Remove
9+90R	6	FULTON	Shrub	YES	Remove
10+00R	30	FULTON	Shrub	YES	Remove
10+05R	12	FULTON	Shrub	YES	Remove
10+10R	12	FULTON	Shrub	YES	Remove
11+35R	34	FULTON	Just outside RW	YES	Prune & Protect
11+55R	24	FULTON	Just outside RW	YES	Prune & Protect
11+75L	32	FULTON	Just outside RW	YES	Prune & Protect
11+90L	18	FULTON	Just outside RW	YES	Prune & Protect
12+05L	18	FULTON	Shrub	YES	Remove
12+55L	12	PASCHALL	Shrub	POSSIBLE	Prune & Protect
13+50L	20	FULTON	Shrub	YES	Remove
14+55R	15	FULTON	Shrub	YES	Remove
14+75R	8	FULTON	Shrub	YES	Remove
14+85L	15	FULTON	CRAPE MYRTLE	YES	Remove
14+90L	15	FULTON	CRAPE MYRTLE	YES	Remove
14+95L	20	FULTON	CRAPE MYRTLE	YES	Remove
16+20L	15	FULTON	Shrub	YES	Remove
16+75R	4-6	FULTON	OAK	YES	Protect
16+85R	4-6	FULTON	OAK	YES	Protect
16+95R	4-6	FULTON	OAK	YES	Protect
17+05R	4-6	FULTON	OAK	YES	Protect
17+10L	48	HENRY	OAK	YES	Prune & Protect
17+15R	12	HENRY	PALM	POSSIBLE	Remove
17+60L	18	HENRY	CRAPE MYRTLE	POSSIBLE	Remove
18+95L	8	FULTON	CEDAR, Just outside RW	NO	Protect
19+70L	12	FULTON	CEDAR, Just outside RW	NO	Protect
20+00L	12	FULTON	CEDAR, Just outside RW	NO	Protect
20+35L	12	FULTON	CEDAR, Just outside RW	NO	Protect
20+70L	12	FULTON	CEDAR, Just outside RW	NO	Protect
20+95L	?	FULTON	CEDAR, Just outside RW	NO	Protect
21+25L	8	FULTON	CEDAR, Just outside RW	NO	Protect
21+65L	?	QUITMAN	CEDAR, Just outside RW	NO	Protect
22+45L	10	FULTON	OAK	UNKNOWN	Protect
22+75L	10	FULTON	OAK	UNKNOWN	Protect
23+05L	10	FULTON	OAK	UNKNOWN	Protect
23+30L	10	FULTON	OAK	UNKNOWN	Protect

YES = within improvement construction
POSSIBLE = side street impacts unknown at this time
UNKNOWN = possibly outside limits of improvements
NO = outside of improvement construction

APP. | REVISION | NO. | DATE

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE
UTILITY REVIEW
NOT FOR
CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

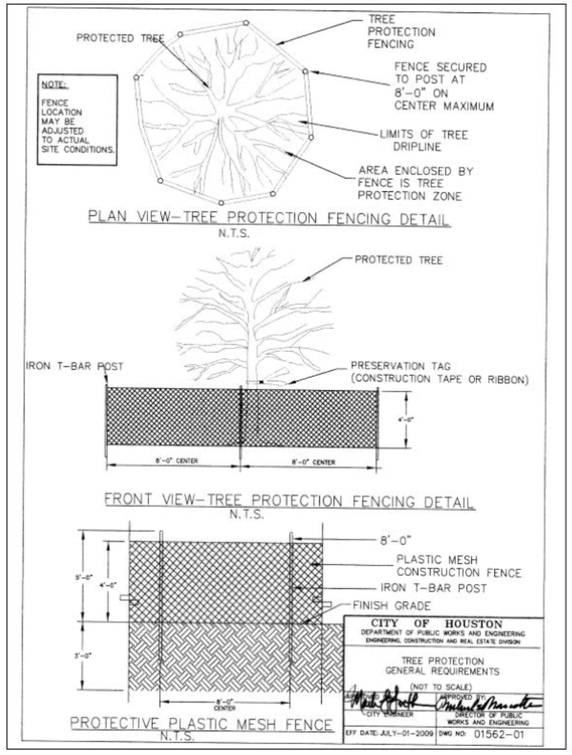
TREES TO REMOVE AND PROTECT

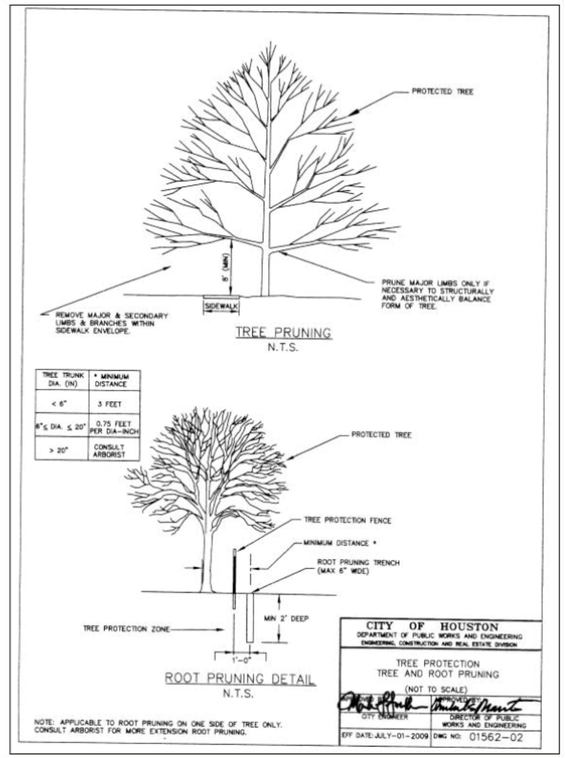
WBS NUMBER
N-000818-0001-3
DRAWING SCALE
N.T.S.
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. OF 155

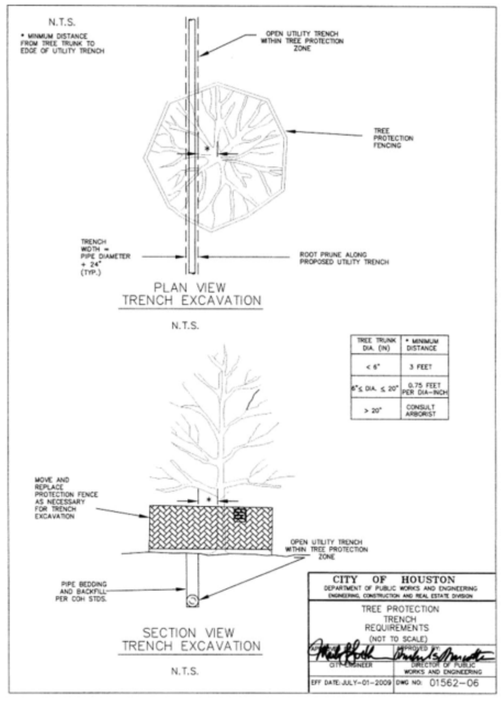
Fulton Street Reconstruction and Drainage Improvements

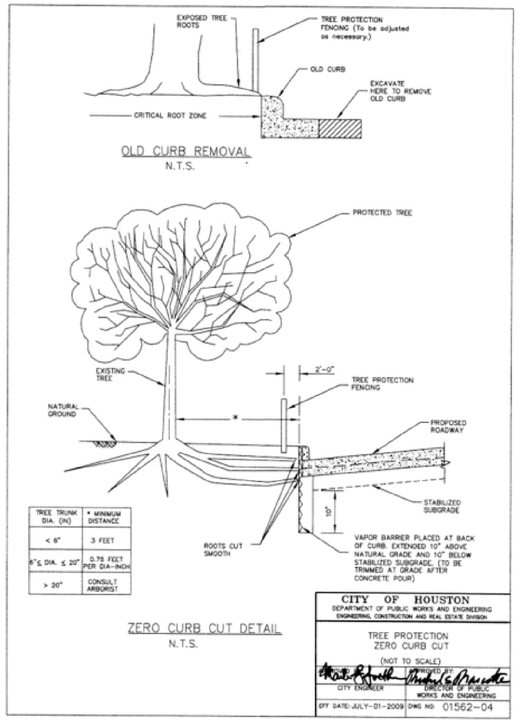
Tree Protection Plan

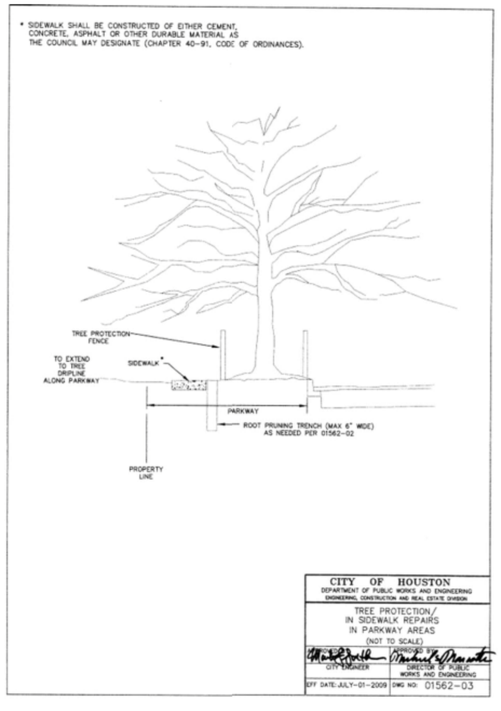
- Based on the preliminary tree assessment, trees located within the City ROW limits which have been identified as being permanently impacted by the project will be considered for removal.
- Trees located outside the City's ROW limits or within the ROW but not being directly impacted by the project, but have a canopy or root system that could be impacted by the project, will be considered for protection or tree/ root pruning.
- Provided below and continuing on the next page includes the City's standard details for tree protection and tree/ root pruning for the type of construction involved with this project. These details will be inserted into the design plans and referenced in the SWPPP during the next design phase.
- Moving forward from this preliminary analysis, trees identified for 1) removal, 2) tree/ root pruning, and 3) protection will be evaluated further during the next design phase as the SWPPP is developed.
- New trees are anticipated to be planted within the proposed grass strip. Size and type of proposed trees will also be evaluated in the next design phase.











NO.	DATE	REVISION	APP.

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832–930–7670
TX FIRM NUMBER: F–10912

SURVEYED BY:
AMANI ENGINEERING, INC.
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90% DRAFT
2/3/26 UPDATE
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

TREE PROTECTION PLAN

WBS NUMBER
N–000818–0001–3
DRAWING SCALE
N.T.S.
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. 140 OF 155

P C
I I

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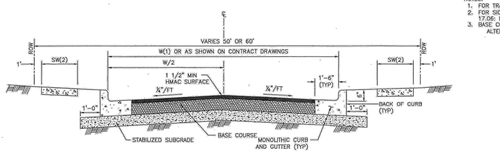
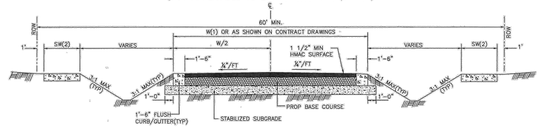
NO.	DATE	REVISION	APP.

02741-01



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)

HOT-MIX ASPHALTIC CONCRETE PAVEMENT DETAILS
NTS

NOTES:
1. FOR TRAVEL WAY WIDTH (W) REFER TO IDM SECTION 10.3.03.A
2. FOR SIDEWALK (SW) DESIGN GUIDANCE REFER TO IDM SECTION 17.06 PEDESTRIAN DESIGN REQUIREMENTS.
3. BASE COURSE SHALL BE:
ALTERNATES: A) 6" (MIN) HOT MIX ASPHALTIC CONCRETE.
B) 8" (MIN) CRUSHED CONCRETE.

02741-04

PUBLIC USE ALLEY REMOVED
ANY PUBLIC USE ALLEY ROW SHOULD MEET CITY ROADWAY STANDARDS

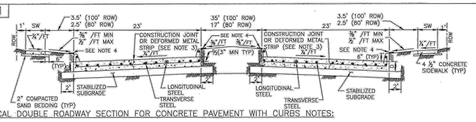
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STREET PAVING AND SIDEWALK
02632-11 THROUGH 02741-04

APPROVED BY: CITY ENGINEER
APPROVED BY: DEPUTY DIRECTOR
APPROVED BY: DIRECTOR OF HOUSTON PUBLIC WORKS
EFFECTIVE DATE: JUL-01-2020
FOR CITY OF HOUSTON USE ONLY

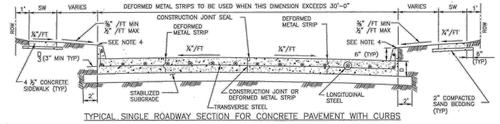
SHEET NO.

02751-01



TYPICAL DOUBLE ROADWAY SECTION FOR CONCRETE PAVEMENT WITH CURBS 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.



TYPICAL SINGLE ROADWAY SECTION FOR CONCRETE PAVEMENT WITH CURBS

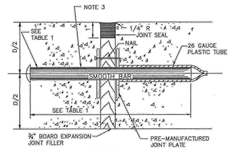
TABLE 1
REINFORCING STEEL BAR SIZES AND SPACINGS FOR VARIOUS PAVEMENT THICKNESSES (D) WITH:
MAXIMUM TRANSVERSE CONTROL JOINT SPACING = 20'-0"
MAXIMUM EXPANSION JOINT SPACING = 80'-0"
fc' = 4,000 PSI/28 DAYS AND FY = 60,000 PSI

PAVEMENT THICKNESS D (IN)	PAVEMENT WIDTH (T)	LONGITUDINAL STEEL # 4 BARS NUMBER OF BARS	# 4 BARS SPACING (IN)	# 4 BARS END BAR SPACING (IN)	# 5 BARS NUMBER OF BARS	# 5 BARS SPACING (IN)	# 5 BARS END BAR SPACING (IN)	# 6 BARS NUMBER OF BARS	# 6 BARS SPACING (IN)	# 6 BARS END BAR SPACING (IN)	TRANSVERSE STEEL # 4 BARS SPACING (IN)	# 5 BARS SPACING (IN)	# 6 BARS SPACING (IN)
6	28	17	20.50	4	–	–	–	–	–	–	36	–	–
7	25	17	18.25	4	–	–	–	–	–	–	36	–	–
7	35	24	18.00	3	–	–	–	–	–	–	36	–	–
7	36	25	17.75	3	–	–	–	–	–	–	36	–	–
7	37	25	18.25	3	–	–	–	–	–	–	36	–	–
7	41	28	18.00	3	–	–	–	–	–	–	36	–	–
7	45	31	17.75	3.75	–	–	–	–	–	–	36	–	–
8	25	20	15.50	2.75	13	24.50	3	–	–	–	36	36	–
8	34	27	15.50	2.50	17	25.00	4	–	–	–	36	36	–
8	35	27	16.00	2	18	24.25	4	–	–	–	36	36	–
8	36	28	15.75	3.25	18	25.00	3	–	–	–	30	36	–
8	44	24	15.75	4	22	24.75	4	–	–	–	30	36	–
8	45	35	15.75	2.25	23	24.25	3	–	–	–	30	36	–
9	23	22	14.00	3	14	22.50	4	–	–	–	36	36	–
9	34	31	13.50	2	19	22.25	3.50	–	–	–	30	36	–
9	35	31	13.75	3.75	20	21.75	3.50	–	–	–	30	36	–
9	36	32	13.75	3	21	21.25	3.50	–	–	–	30	36	–
9	44	39	13.75	2.75	25	21.75	3	–	–	–	24	36	–
9	45	39	14.00	4	26	21.25	4.50	–	–	–	24	36	–
10	25	24	12.75	3.5	17	18.25	4	–	–	–	36	36	36
10	34	33	12.50	4	21	20.00	4	–	–	–	30	36	36
10	35	34	12.50	3.75	23	18.75	4	–	–	–	30	36	36
10	36	35	12.50	3.5	24	18.50	3	–	–	–	30	36	36
10	44	44	12.00	4	29	18.50	4.50	–	–	–	24	36	36
10	45	44	12.50	3	29	19.00	3	–	–	–	24	36	36
11	25	27	11.25	3	17	18.25	4	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	24	18.00	3	17	25.75	4	24	36	36
11	36	40	11.00	2	25	17.75	3	17	26.50	4	24	36	36
11	44	48	11.125	2.5	30	18.00	3	21	26.00	4	24	36	36
11	45	49	11.125	3	31	17.75	4	22	25.50	3	24	36	36
12	25	–	–	–	19	16.25	4	13	24.50	3	36	36	36
12	34	–	–	–	26	16.00	4	18	23.50	4	24	36	36
12	35	–	–	–	26	16.50	4	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	24	22.50	5	24	30	36
12	45	–	–	–	35	15.75	3	25	22.25	3	24	30	36

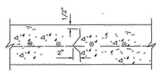
MINIMUM LAP LENGTH (LJ):
A. # 4 BARS ; L = 22 INCHES
B. # 5 BARS ; L = 27 INCHES
C. # 6 BARS ; L = 32 INCHES

CONCRETE PAVEMENT DETAILS
NTS

02752-01



SECTION
DOWEL TYPE EXPANSION JOINT
N.T.S.



SECTION
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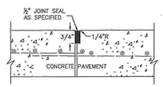
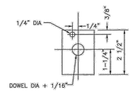
N.T.S.



SECTION
CONSTRUCTION JOINT SEAL
N.T.S.

PLAN – JOINT PLATE



ELEVATION – JOINT PLATE
N.T.S.

NOTES:
1. STEEL TO MEET ASTM STANDARD SPECIFICATIONS FOR CONCRETE REINFORCING BARS. UNITS TO BE SPACED ON 12" CENTRES.
2. EXPANSION JOINT TO BE PLACED AT THE END OF EACH CURB RADIUS.
3. CENTER DOWEL HORIZONTALLY ON JOINT.
4. CENTER DOWEL VERTICALLY IN CONCRETE BASE. EXTEND THICKENED CONCRETE AS NEEDED TO MAINTAIN 3" MIN COVER.
5. CITY OF HOUSTON APPROVED PRODUCTS MAY BE USED AS JOINT PLATE ALTERNATIVE.

TABLE 1

PAVEMENT THICKNESS (IN)	DOWEL SIZES AND SPACINGS DIAMETER (IN)	LENGTH (IN)	SPACING (IN)
6	3/4	18	12
7	1	18	12
8	1	18	12
9	1 1/4	18	12
10	1 1/4	18	12
11	1 1/4	18	12
12	1 1/4	18	12

PAVEMENT EXPANSION AND CONSTRUCTION JOINT DETAILS
NTS

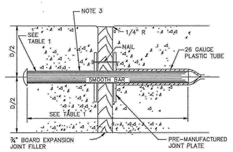
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STREET PAVING AND SIDEWALK
02751-01 THROUGH 02752-01

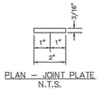
APPROVED BY: CITY ENGINEER
APPROVED BY: DEPUTY DIRECTOR
APPROVED BY: DIRECTOR OF HOUSTON PUBLIC WORKS
EFFECTIVE DATE: JUL-01-2020
FOR CITY OF HOUSTON USE ONLY

SHEET NO.

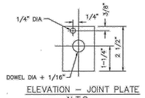
02752-02



SECTION
DOWEL TYPE EXPANSION JOINT
N.T.S

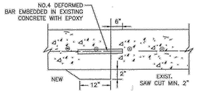


PLAN – JOINT PLATE
N.T.S.

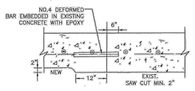


ELEVATION – JOINT PLATE
N.T.S.

NOTES:
1. STEEL TO MEET ASTM STANDARD SPECIFICATIONS FOR CONCRETE REINFORCING BARS.
2. EXPANSION JOINT TO BE PLACED AT THE END OF EACH CURB RADIUS AND SPACED AT A MAXIMUM DISTANCE OF 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.



SECTION
SIDEWALK TO EXISTING SIDEWALK
N.T.S



SECTION
SIDEWALK TO EXISTING DRIVEWAY
N.T.S.

SECTION
CONTROL JOINT
N.T.S.

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

SIDEWALK EXPANSION AND CONSTRUCTION JOINT DETAILS
NTS

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

PAVING DETAILS SHEET 1 OF 4

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO.	OF 155

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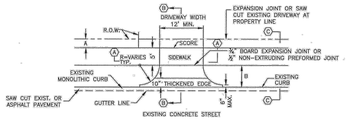
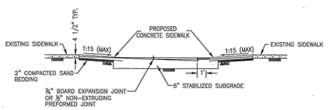
02754-01A

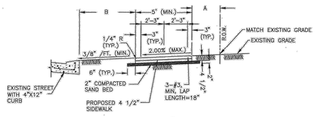


PLAN VIEW — DRIVEWAY



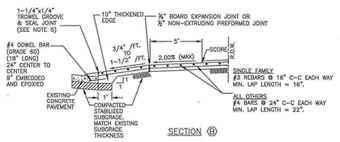
SECTION Ⓐ

PROPOSED SIDEWALK THROUGH DRIVEWAY WITH EXCESSIVE GRADES
N.T.S.



SECTION Ⓒ

TYPICAL SIDEWALKS SECTION
N.T.S.



SECTION Ⓑ

TYPICAL DRIVEWAY SECTION
N.T.S.

DRIVEWAY / LOCAL RESIDENTIAL STREETS
NTS

NOTES:

1. IF AVAILABLE ROW IS NOT SUFFICIENT TO ACCOMMODATE SIDEWALK WIDTH (SW) ACCORDING TO IDM REQUIREMENT, ENGINEER SHALL OBTAIN A VARIANCE FROM THE CITY ENGINEER.
2. DRIVEWAYS SHALL BE 6" THICK FOR SINGLE FAMILY.
3. DRIVEWAYS AND SIDEWALKS SHALL BE CONSTRUCTED WITH PORTLAND CEMENT CONCRETE AND INCLUDE 5 1/2 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE.
4. THE OUTER DOWEL BARS ARE TO BE LOCATED 12" FROM THE BACK OF CURB OR FACE OF DRIVEWAY RETURN. EXTEND DOWELS 3" INCHES INTO PROPOSED DRIVEWAY AND BEND REMAINING BAR TO EXTEND TO RADIUS RETURN BOTH SIDES.
5. TROWEL GROOVE SEALANT SHALL BE LOW MODULUS SILICONE OR POLYURETHANE SEALANT.
6. EXPANSION & CONSTRUCTION JOINTS ALONG SIDEWALK SHALL BE ACCORDING TO DRAWING No. 02752-02.
7. REFER CHAPTER 17 DESIGN REQUIREMENTS FOR A AND B.
8. CEMENT STABILIZED SAND 1.5 SACKS OF CEMENT PER TON OF DRY SAND.
9. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH AGENCY STANDARD DETAILS, 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 1:15 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON

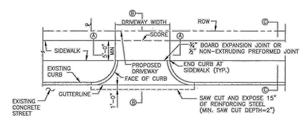
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STREET PAVING AND SIDEWALK
02752-02 THROUGH 02754-01A

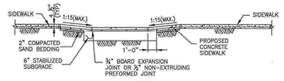
APPROVED BY:	APPROVED BY:
CITY ENGINEER	DEPUTY DIRECTOR
APPROVED BY:	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFFECTIVE DATE: JUL-01-2020	
FOR CITY OF HOUSTON USE ONLY	

SHEET NO.

02754-01B

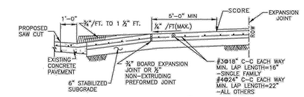


PLAN VIEW — DRIVEWAY
NTS



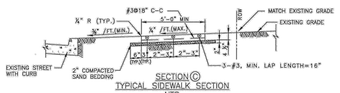
SECTION Ⓐ

PROPOSED SIDEWALK THROUGH DRIVEWAY WITH EXCESSIVE ELEVATION DIFFERENCE WITH EXISTING SIDEWALK
NTS



SECTION Ⓑ

TYPICAL DRIVEWAY SECTION
NTS



SECTION Ⓒ

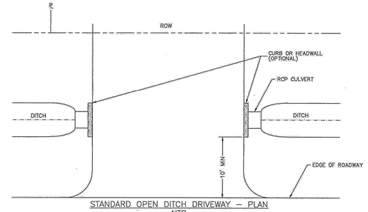
TYPICAL SIDEWALK SECTION
NTS

DRIVEWAY DETAIL WITH 6" CURBED STREETS
NTS

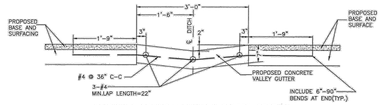
NOTES

1. ALL JOINTS SHALL CONFORM TO CITY OF HOUSTON 02752 STANDARD SPECIFICATION.
2. DRIVEWAYS SHALL BE MINIMUM 6" THICK FOR SINGLE FAMILY USE AND MINIMUM 7" THICK FOR ALL OTHERS (I.E. COMMERCIAL, INDUSTRIAL, ETC.)
3. DRIVEWAYS AND SIDEWALKS SHALL BE CONSTRUCTED WITH PORTLAND CEMENT CONCRETE AND INCLUDE 5-1/2 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE.
4. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH AGENCY STANDARD DETAILS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
5. CURB RAMPS THAT ARE STEEPER THAN A 1:15 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.

02754-02



STANDARD OPEN DITCH DRIVEWAY — PLAN
NTS



STANDARD CONCRETE VALLEY GUTTER SECTION
NTS

NOTES:

1. REINFORCED CONCRETE PIPE (RCP) CULVERTS AND CONCRETE VALLEY GUTTER GRADES SHALL BE SET BY CITY ENGINEER. PROFILE SHOWING THE PROPOSED AND EXISTING DITCH FLOWLINE WILL BE REQUIRED WHERE CONCRETE VALLEY GUTTERS ARE TO BE CONSTRUCTED IN LIEU OF CULVERTS.
2. CULVERT SIZE WILL BE APPROVED BY CITY ENGINEER WITH 24" DIAMETER MINIMUM.
3. SPACING OF TYPE "D" OR "D-1" INLETS SHALL BE DETERMINED BY CITY ENGINEER. SEE DRAWING NO. 02632-07 FOR TYPE "D" OR DRAWING NO. 02632-08 FOR TYPE "D-1".
4. DRIVEWAY MAY BE CONCRETE, ASPHALT OR ANY OTHER MATERIAL WHICH WILL NOT PERMIT WIND OR WATERBORNE EROSION.
5. A 3-FOOT CONCRETE VALLEY GUTTER SECTION SHALL BE CONSTRUCTED THROUGH THE PROPOSED DRIVEWAY WHERE THE CITY ENGINEER DETERMINES THE INSTALLATION OF DITCH CULVERTS TO BE IMPRACTICAL DUE TO INSUFFICIENT DEPTH. THE VALLEY GUTTER SECTION WILL BE CONSTRUCTED OF 5-1/2 SACK CEMENT PER CUBIC YARD OF CONCRETE.

DRIVEWAYS WITH CULVERTS OR VALLEY GUTTERS ON OPEN DITCH TYPE STREETS
NTS

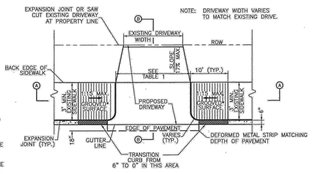
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STREET PAVING AND SIDEWALK
02754-01B THROUGH 02754-02

APPROVED BY:	APPROVED BY:
CITY ENGINEER	DEPUTY DIRECTOR
APPROVED BY:	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFFECTIVE DATE: JUL-01-2020	
FOR CITY OF HOUSTON USE ONLY	

SHEET NO.

02754-03



OPTION 1 — CURB LEVEL SIDEWALK
PLAN VIEW — DRIVEWAY

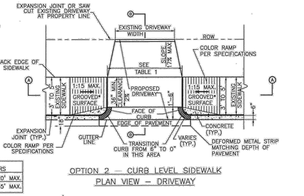
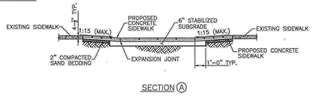


TABLE 1

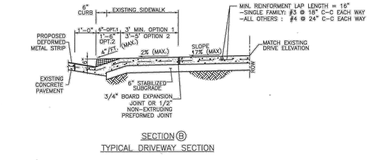
DRIVEWAY WIDTH	RESIDENTIAL	ALL OTHERS
ONE-WAY	12' MIN.-20' MAX.	15' MIN.-20' MAX.
TWO-WAY	12' MIN.-24' MAX.	24' MIN.-35' MAX.

OPTION 2 — CURB LEVEL SIDEWALK
PLAN VIEW — DRIVEWAY



SECTION Ⓐ

PROPOSED SIDEWALK THROUGH DRIVEWAY WITH EXCESSIVE ELEVATION DIFFERENCE WITH EXISTING SIDEWALK



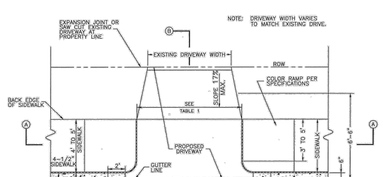
NOTE:
1. DRIVEWAYS SHALL BE 6" THICK FOR SINGLE FAMILY USE AND 7" FOR ALL OTHERS (I.E. COMMERCIAL, INDUSTRIAL, ETC.)

SECTION Ⓑ

TYPICAL DRIVEWAY SECTION

PROPOSED SIDEWALK THROUGH DRIVEWAY WITH EXCESSIVE ELEVATION DIFFERENCE
NTS

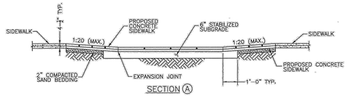
02754-04



PLAN VIEW — DRIVEWAY
NTS

TABLE 1

DRIVEWAY WIDTH	RESIDENTIAL	ALL OTHERS
ONE-WAY	12' MIN.-20' MAX.	15' MIN.-20' MAX.
TWO-WAY	12' MIN.-24' MAX.	24' MIN.-35' MAX.

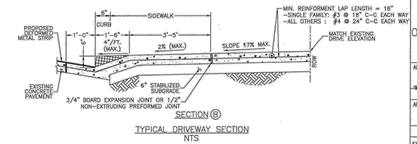


SECTION Ⓐ

PROPOSED SIDEWALK THROUGH DRIVEWAY WITH MINIMAL ELEVATION DIFFERENCE WITH EXISTING SIDEWALK
NTS

NOTES:

1. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH AGENCY STANDARD DETAILS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
2. CURB RAMPS THAT ARE STEEPER THAN A 1:15 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.



SECTION Ⓑ

TYPICAL DRIVEWAY SECTION
NTS

NOTE:
1. DRIVEWAYS SHALL BE 6" THICK FOR SINGLE FAMILY USE AND 7" FOR ALL OTHERS (I.E. COMMERCIAL, INDUSTRIAL, ETC.)

EXISTING/PROPOSED CURB LEVEL SIDEWALK CONDITIONS
NTS

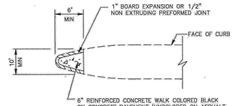
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STREET PAVING AND SIDEWALK
02754-03 THROUGH 02754-04

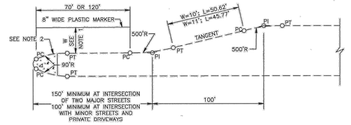
APPROVED BY:	APPROVED BY:
CITY ENGINEER	DEPUTY DIRECTOR
APPROVED BY:	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFFECTIVE DATE: JUL-01-2020	
FOR CITY OF HOUSTON USE ONLY	

SHEET NO.

02772-01



ESPLANADE NOSE



DETAIL OF LEFT TURN LANE

CURVE DATA

W=10' R=500' Δ = 5°42'38.14" L = 49.83' T=24.94'	W=11' R=500' Δ = 9°16'39.27" L = 54.78' T=27.42'

NOTES

1. 10 FT FOR 80 FT ROW; 11 FT FOR 100 FT ROW.
2. FOR MEDIANS WITH BULLET NOSE CONFIGURATION, PAINT CURB WITH YELLOW REFLECTORIZED PAINT AROUND THE ESPLANADE NOSE TO THE PT OF THE 90 FT R. FOR MEDIANS WITHOUT BULLET NOSE CONFIGURATION, PAINT CURB FROM PC TO PT AND 30 FT BACK OF PC/PT.

ESPLANADE NOSE AND LEFT TURN DETAILS
NTS

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

PAVING DETAILS
2 OF 4

WBS NUMBER	N-000818-0001-3
DRAWING SCALE	N.T.S.
CITY OF HOUSTON PM	MICHELLE RANDON, P.E.
SHEET NO.	141 OF 155

NO.	DATE	REVISION	APP.

PLOT STYLE: COH CIP.CTB
PLOTTED: 10/2/2023 9:46 AM
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NO.	DATE	REVISION	APP.

02775-01

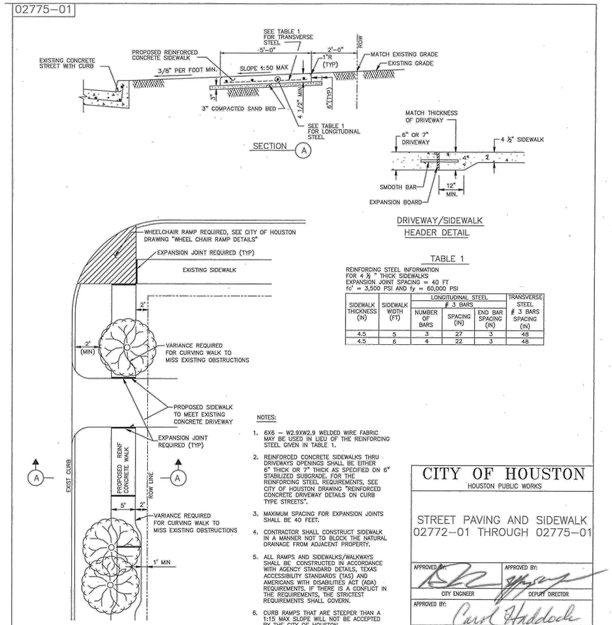


TABLE 1

REINFORCING STEEL INFORMATION FOR 4 ½ " THICK SIDEWALKS EXPANSION JOINT SPACING = 40 FT f'c = 3,500 PSI AND fy = 60,000 PSI

SIDEWALK THICKNESS (in)	SIDEWALK WIDTH (FT)	LONGITUDINAL STEEL, # 3 BARS: NUMBER OF BARS	SPACING (in)	END BAR SPACING (in)	TRANSVERSE STEEL, # 3 BARS SPACING (in)
4.5	5	3	27	3	48
4.5	6	4	22	3	48

NOTES:

1. 6X6 – W2.9XW2.9 WELDED WIRE FABRIC MAY BE USED IN LIEU OF THE REINFORCING STEEL GIVEN IN TABLE 1.
2. REINFORCED CONCRETE SIDEWALKS THRU DRIVEWAYS OPENINGS SHALL BE EITHER 6" THICK OR 7" THICK AS SPECIFIED ON 6" STABILIZED SUBGRADE, FOR THE REINFORCING STEEL REQUIREMENTS, SEE CITY OF HOUSTON DRAWING "REINFORCED CONCRETE DRIVEWAY DETAILS ON CURB TYPE STREETS".
3. MAXIMUM SPACING FOR EXPANSION JOINTS SHALL BE 40 FEET.
4. CONTRACTOR SHALL CONSTRUCT SIDEWALK IN A MANNER NOT TO BLOCK THE NATURAL DRAINAGE FROM ADJACENT PROPERTY.
5. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH AGENCY STANDARD DETAILS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
6. CURB RAMPS THAT ARE STEEPER THAN A 1:15 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.

CONCRETE SIDEWALK DETAILS FOR STREETS WITH CURBS
NTS

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STREET PAVING AND SIDEWALK
02772-01 THROUGH 02775-01

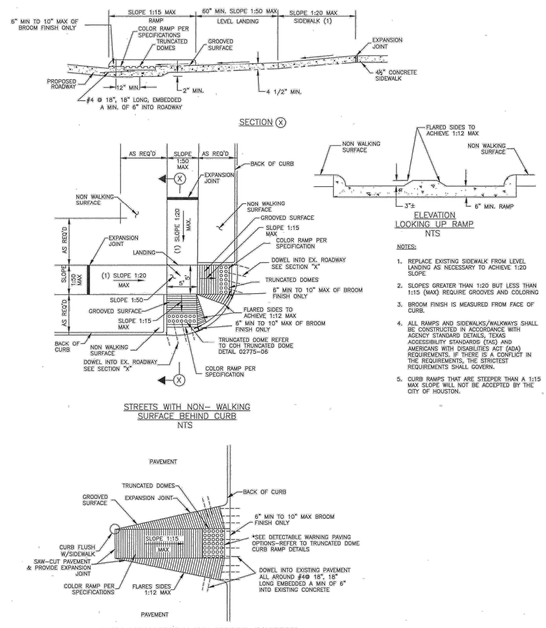
APPROVED BY:	APPROVED BY:
CITY ENGINEER	DEPUTY DIRECTOR

APPROVED BY: Carol Haddock
DIRECTOR OF HOUSTON PUBLIC WORKS

EFFECTIVE DATE: JUL-01-2020
FOR CITY OF HOUSTON USE ONLY

SHEET NO.

02775-02

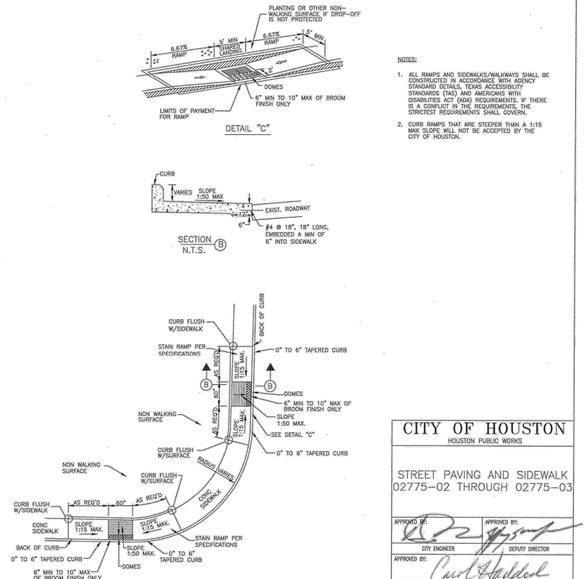


NOTES:

1. REPLACE EXISTING SIDEWALK FROM LEVEL LANDING AS NECESSARY TO ACHIEVE 1:20 SLOPE
2. SLOPES GREATER THAN 1:20 BUT LESS THAN 1:15 (MAX) REQUIRE GROOVES AND COLORING
3. BROOM FINISH IS MEASURED FROM FACE OF CURB.
4. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH AGENCY STANDARD DETAILS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
5. CURB RAMPS THAT ARE STEEPER THAN A 1:15 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.

WHEEL CHAIR RAMP DETAILS
NTS

02775-03



NOTES:

1. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH AGENCY STANDARD DETAILS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
2. CURB RAMPS THAT ARE STEEPER THAN A 1:15 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.

PARALLEL CURB RAMP
NTS

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STREET PAVING AND SIDEWALK
02775-02 THROUGH 02775-03

APPROVED BY:	APPROVED BY:
CITY ENGINEER	DEPUTY DIRECTOR

APPROVED BY: Carol Haddock
DIRECTOR OF HOUSTON PUBLIC WORKS

EFFECTIVE DATE: JUL-01-2020
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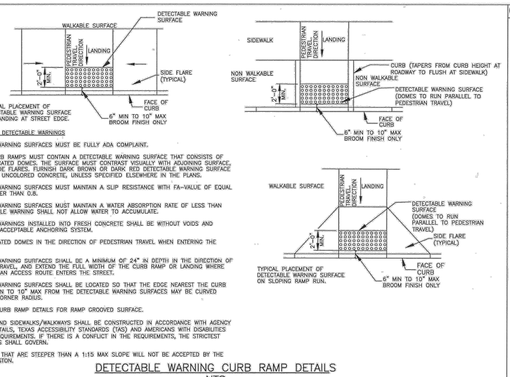
02775-06

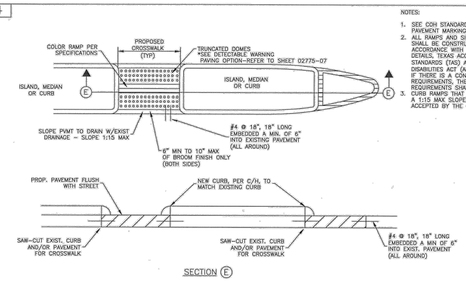


GENERAL NOTES FOR DETECTABLE WARNINGS

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. REFERENCE CURB RAMP DETAILS FOR RAMP GROOVED SURFACE.
10. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH AGENCY STANDARD DETAILS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
11. CURB RAMPS THAT ARE STEEPER THAN A 1:15 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.

DETECTABLE WARNING CURB RAMP DETAILS
NTS

02775-04



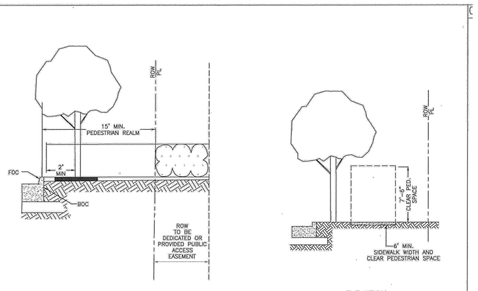
NOTES:

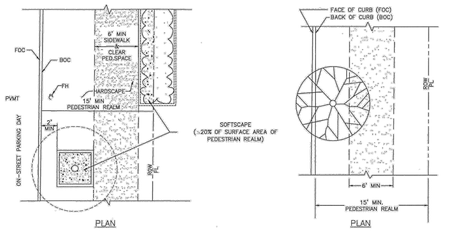
1. SEE COH STANDARD DETAIL FOR PAVEMENT MARKING DETAILS.
2. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH AGENCY STANDARD DETAILS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
3. CURB RAMPS THAT ARE STEEPER THAN A 1:15 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.

CURB MODIFICATIONS FOR WHEEL CHAIR RAMPS & CROSSWALKS
NTS

FOR ISLAND, MEDIAN, OR CURB MODIFICATIONS FOR CROSSWALKS

02775-08



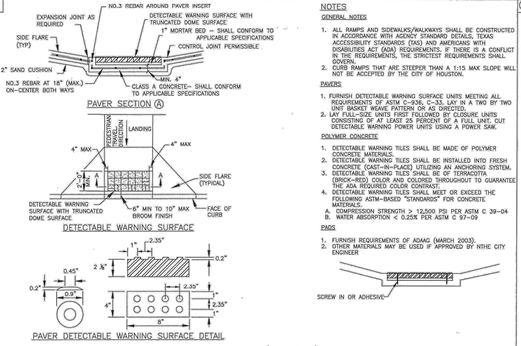


NOTES

1. REFER TO CHAPTER 42 OF THE CODE OF ORDINANCES, ARTICLE IV – TRANSIT CORRIDOR DEVELOPMENT.

SIDEWALKS AND CLEAR ZONE TRANSIT CORRIDOR STREET
NTS

02775-07



NOTES

GENERAL NOTES

1. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH AGENCY STANDARD DETAILS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
2. CURB RAMPS THAT ARE STEEPER THAN A 1:15 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.

PAVERS

1. FURNISH DETECTABLE WARNING SURFACE UNITS MEETING ALL REQUIREMENTS OF ASTM C-936, C-33. LAY IN A TWO BY TWO RUNNING BOND PATTERN OR AS DIRECTED.
2. LAY FULL-SIZE UNITS FIRST FOLLOWED BY CLOSURE UNITS CONSISTING OF AT LEAST 25 PERCENT OF A FULL UNIT, CUT DETECTABLE WARNING PAVER UNITS USING A POWER SAW.

POLYMER CONCRETE

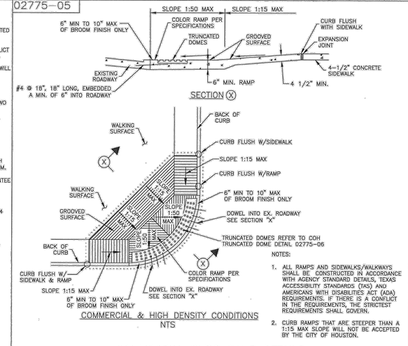
1. DETECTABLE WARNING TILES SHALL BE MADE OF POLYMER CONCRETE MATERIALS.
2. DETECTABLE WARNING TILES SHALL BE INSTALLED INTO FRESH CONCRETE (CAST-IN-PLACE) UTILIZING AN ANCHORING SYSTEM.
3. DETECTABLE WARNING TILES SHALL BE OF TERRACOTTA (BRICK-RED) COLOR AND COLORED THROUGHOUT TO GUARANTEE UNIFORMITY AND LONG-TERM DURABILITY.
4. DETECTABLE WARNING TILES SHALL MEET OR EXCEED THE FOLLOWING ASTM-BASED "STANDARDS" FOR CONCRETE MATERIALS.
   A. COMPRESSION STRENGTH > 12,500 PSI PER ASTM C 39-04
   B. WATER ABSORPTION < 0.25% PER ASTM C 97-09

PINS

1. FURNISH REQUIREMENTS OF ADAAG (MARCH 2003).
2. OTHER MATERIALS MAY BE USED IF APPROVED BY NTHE CITY ENGINEER

DETECTABLE WARNING SURFACE (OPTIONS)
NTS

02775-05



NOTES:

1. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH AGENCY STANDARD DETAILS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
2. CURB RAMPS THAT ARE STEEPER THAN A 1:15 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.

COMMERCIAL CURB RAMP DETAILS
NTS

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STREET PAVING AND SIDEWALK
02775-04 THROUGH 02775-07

APPROVED BY:	APPROVED BY:
CITY ENGINEER	DEPUTY DIRECTOR

APPROVED BY: Carol Haddock
DIRECTOR OF HOUSTON PUBLIC WORKS

EFFECTIVE DATE: JUL-01-2020
FOR CITY OF HOUSTON USE ONLY

SHEET NO.

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

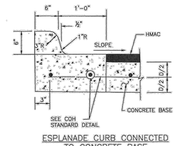
FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

PAVING DETAILS
3 OF 4

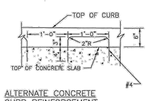
WBS NUMBER	N-000818-0001-3
DRAWING SCALE	N.T.S.
CITY OF HOUSTON PM	MICHELLE RANDON, P.E.
SHEET NO.	142 OF 155

PLOT STYLE: COH CIP.CTB
PLOTTED: 10/2/2023 11:11 AM
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\36 STANDARD DETAILS.dwg

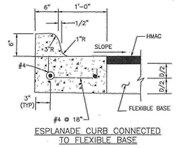
02771-01



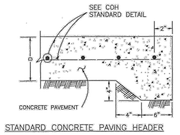
ESPLANADE CURB CONNECTED TO CONCRETE BASE



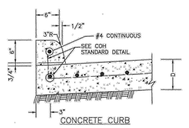
ALTERNATE CONCRETE CURB REINFORCEMENT



ESPLANADE CURB CONNECTED TO FLEXIBLE BASE

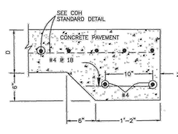


STANDARD CONCRETE PAVING HEADER

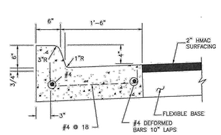


CONCRETE CURB

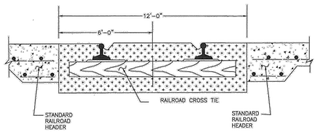
WHEN CONCRETE CURB IS TO BE PLACED EXISTING CONCRETE USE BASE #4 @ 18x10" LONG, DOWELED AND SET IN EPOXY GROUT. SET #4 DOWELS, 25" LONG AT 12" C-C WHEN PAVEMENT SECTION POURED.



STANDARD RAILROAD HEADER



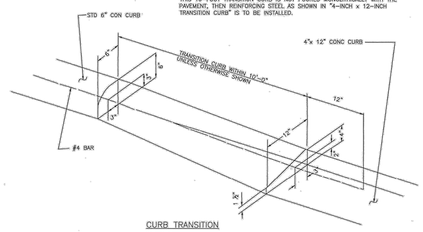
MONOLITHIC CURB AND GUTTER



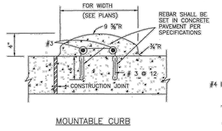
STANDARD RAILROAD CROSSING – SINGLE TRACK

4"x12" MONOLITHIC AND TRANSITION CURB NOTES:

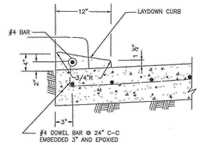
1. 6-INCH CONCRETE CURB TO BE CONSTRUCTED ON ALL ESPLANADES, ISLANDS NON-RESIDENTIAL STREETS, AND RESIDENTIAL STREETS.
2. TRANSITIONS FROM 6- INCH CONCRETE CURB TO 4-INCH x 12-INCH CONCRETE CURB TO BE ACCOMPLISHED WITHIN 10 FEET, UNLESS OTHERWISE SHOWN. IF THIS 10-FOOT TRANSITION CURB IS NOT POURED MONOLITHICALLY WITH THE PAVEMENT, THEN REINFORCING STEEL AS SHOWN IN "4-INCH x 12-INCH TRANSITION CURB" IS TO BE INSTALLED.



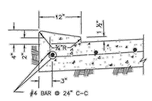
CURB TRANSITION



MOUNTABLE CURB



4-INCH x 12-INCH TRANSITION CURB



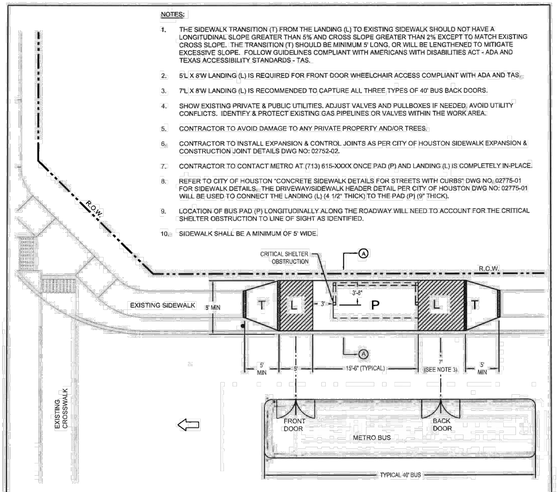
4-INCH x 12-INCH MONOLITHIC CURB

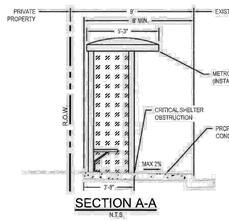
CURB, CURB AND GUTTER AND HEADER DETAILS
NTS

CITY OF HOUSTON HOUSTON PUBLIC WORKS	
STREET PAVING AND SIDEWALK 02771-01	
APPROVED BY: CITY ENGINEER	APPROVED BY: DEPUTY DIRECTOR
APPROVED BY: DIRECTOR OF HOUSTON PUBLIC WORKS	
EFFECTIVE DATE: JUL-01-2020	
FOR CITY OF HOUSTON USE ONLY	
SHEET NO.	

NOTES:

1. THE SIDEWALK TRANSITION (T) FROM THE LANDING (L) TO EXISTING SIDEWALK SHOULD NOT HAVE A LONGITUDINAL SLOPE GREATER THAN 5% AND CROSS SLOPE GREATER THAN 2% EXCEPT TO MATCH EXISTING CROSS SLOPE. THE TRANSITION (T) SHOULD BE MINIMUM 5' LONG, OR WILL BE LENGTHENED TO MITIGATE EXCESSIVE SLOPE. FOLLOW GUIDELINES COMPLIANT WITH AMERICANS WITH DISABILITIES ACT - ADA AND TEXAS ACCESSIBILITY STANDARDS - TAS.
2. 5'L X 8'W LANDING (L) IS REQUIRED FOR FRONT DOOR WHEELCHAIR ACCESS COMPLIANT WITH ADA AND TAS.
3. 7'L X 8'W LANDING (L) IS RECOMMENDED TO CAPTURE ALL THREE TYPES OF 40' BUS BACK DOORS.
4. SHOW EXISTING PRIVATE & PUBLIC UTILITIES. ADJUST VALVES AND PULLBOXES IF NEEDED; AVOID UTILITY CONFLICTS. IDENTIFY & PROTECT EXISTING GAS PIPELINES OR VALVES WITHIN THE WORK AREA.
5. CONTRACTOR TO AVOID DAMAGE TO ANY PRIVATE PROPERTY AND/OR TREES.
6. CONTRACTOR TO INSTALL EXPANSION & CONTROL JOINTS AS PER CITY OF HOUSTON SIDEWALK EXPANSION & CONSTRUCTION JOINT DETAILS DWG NO: 02752-02.
7. CONTRACTOR TO CONTACT METRO AT (713) 615-XXXX ONCE PAD (P) AND LANDING (L) IS COMPLETELY IN-PLACE.
8. REFER TO CITY OF HOUSTON "CONCRETE SIDEWALK DETAILS FOR STREETS WITH CURBS" DWG NO. 02775-01 FOR SIDEWALK DETAILS. THE DRIVEWAY/SIDEWALK HEADER DETAIL PER CITY OF HOUSTON DWG NO: 02775-01 WILL BE USED TO CONNECT THE LANDING (L) (4 1/2" THICK) TO THE PAD (P) (9" THICK).
9. LOCATION OF BUS PAD (P) LONGITUDINALLY ALONG THE ROADWAY WILL NEED TO ACCOUNT FOR THE CRITICAL SHELTER OBSTRUCTION TO LINE OF SIGHT AS IDENTIFIED.
10. SIDEWALK SHALL BE A MINIMUM OF 5' WIDE.





SECTION A-A
N.T.S.

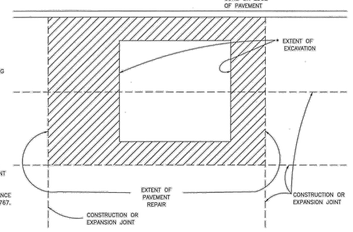
LEGEND:
- P 9" THICK BUS PAD (ALL SLOPES MAX 2%)
- 4 1/2" THICK BUS LANDING AREAS (ALL SLOPES MAX 2%)
- T 4 1/2" THICK TRANSITION TO EXISTING SIDEWALK
- BUS STOP SIGN
- DIRECTION OF TRAFFIC
- EXPANSION JOINT

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
STANDARD BUS PAD AND LANDINGS (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JAN-04-2017	DWG NO: 10.06-15

02951-01

CONCRETE PAVEMENT RESTORATION
AGE OF PAVEMENT
LESS THAN OR EQUAL TO 5 YEARS

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 02902-01) 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 SPECIFICATIONS 02764 AND 02767.
8. (*) EXTENT OF EXCAVATION INCLUDES 18" OVERCUT AS SHOWN ON STANDARD DETAIL 02902-01.

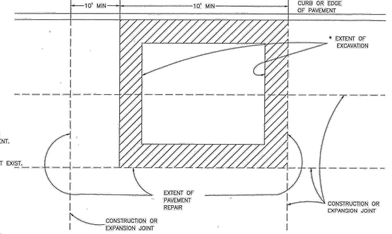


STREET CUT PAVEMENT REPLACEMENT – CONCRETE PAVEMENT LESS THAN 5 YEARS IN AGE
NTS

02951-02

CONCRETE PAVEMENT RESTORATION
AGE OF PAVEMENT
GREATER THAN 5 YEARS

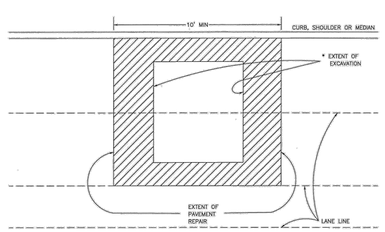
NOTES:
1. EXTENT OF PAVEMENT REPAIR SHALL BE PERPENDICULAR AND PARALLEL TO TRAVEL WAY.
2. WIDTH:
   REPLACE PANEL WIDTH TO NEAREST CONSTRUCTION OR EXPANSION JOINT BEYOND EDGE OF EXCAVATION.
3. LENGTH:
   a. MINIMUM LENGTH OF PAVEMENT REPAIR ALONG TRAVEL WAY IS 10' FROM THE NEAREST JOINT.
   b. IF EDGE OF EXCAVATION IS LESS THAN 10' FROM EXISTING CONSTRUCTION OR EXPANSION JOINT, REPLACE PAVEMENT TO EXISTING JOINT.
4. SAW CUT AND EXPOSE 15" OF REINFORCING STEEL AROUND EDGE OF PANEL REPLACEMENT. PROVIDE HORIZONTAL DOWELS (PER SPECIFICATION SECTION 02902-01) 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 SPECIFICATIONS 02764 AND 02767
9. (*) EXTENT OF EXCAVATION INCLUDES 18" OVERCUT AS SHOWN ON STANDARD DETAIL 02902-01.



STREET CUT PAVEMENT REPLACEMENT – CONCRETE PAVEMENT OVER THAN 5 YEARS IN AGE
NTS

02951-03

ASPHALT PAVEMENT RESTORATION
PAVEMENT OF ALL AGES



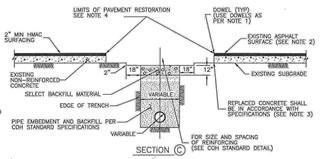
NOTES:
1. EXTENT OF PAVEMENT REPAIR SHALL BE PERPENDICULAR AND PARALLEL TO TRAVEL WAY.
2. FLEXIBLE BASE:
   REPLACE BASE TO SAME THICKNESS PLUS TWO INCHES (2") FOR EXTENT OF EXCAVATION. USE APPROVED BASE MATERIAL TYPE.*
3. SURFACE COURSE:
   A. WIDTH:
      SURFACE MILL AND OVERLAY FULL WIDTH OF LANE(S) TO NEAREST LANE DIVIDER BEYOND EDGE OF EXCAVATION.
   B. LENGTH:
      MINIMUM LENGTH OF SURFACE MILL ALONG TRAVEL WAY IS 10'.
   C. REPLACE PAVEMENT MARKINGS IN ACCORDANCE WITH CITY SPECIFICATION 02764 & 02767.
4. (*) EXTENT OF EXCAVATION INCLUDES 18" OVERCUT AS SHOWN ON STANDARD DETAIL 02902-01.

ADDITIONAL REQUIREMENTS FOR ASPHALT OVERLAY ON CONCRETE PAVEMENT:
1. REPLACE CONCRETE FOR EXTENT OF EXCAVATION. REPLACE TO SAME THICKNESS PLUS TWO INCHES (2").
2. WIDTH:
   IF EXCAVATION EXTENDS MORE THAN HALF OF A LANE, REPLACE ENTIRE LANE OF CONCRETE. OTHERWISE USE STANDARD DETAIL 02902-01.
3. SAW CUT AND EXPOSE 15" OF REINFORCING STEEL AROUND EDGE OF CONCRETE REPLACEMENT. IF NO REINFORCING STEEL EXISTS, USE HORIZONTAL DOWELS PER SPECIFICATIONS SECTION 02902.
4. REPLACE CURB WHEN ADJACENT LANE IS REPLACED.
5. MAINTAIN CONCRETE EXPANSION JOINTS AT EXISTING LOCATIONS UNLESS OTHERWISE APPROVED BY CITY ENGINEER.

STREET CUT PAVEMENT REPLACEMENT – ASPHALT PAVEMENT FOR PAVEMENT OF ALL AGES
NTS

CITY OF HOUSTON HOUSTON PUBLIC WORKS	
STREET PAVING AND SIDEWALK 02951-01 THROUGH 02951-03	
APPROVED BY: CITY ENGINEER	APPROVED BY: DEPUTY DIRECTOR
APPROVED BY: DIRECTOR OF HOUSTON PUBLIC WORKS	
EFFECTIVE DATE: JUL-01-2020	
FOR CITY OF HOUSTON USE ONLY	
SHEET NO.	

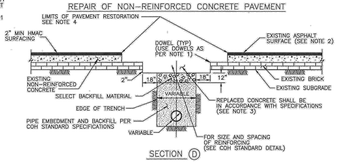
02902-02



NOTE:
1. EXPOSE 15" OF REINFORCING STEEL AT PROPOSED SAWED JOINT. IF NO REINFORCING STEEL EXISTS, USE HORIZONTAL DOWELS SHALL BE # 6 BARS, 24" LONG, 24" C-C, DRILLED AND EMBEDDED 8" INTO THE CENTER OF THE EXISTING SLAB. WITH "PO MOC" 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 FOR PAVEMENT RESTORATION LIMITS.

SECTION (C)

REPAIR OF NON-REINFORCED CONCRETE PAVEMENT

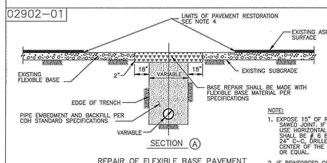


SECTION (D)

REPAIR OF NON-REINFORCED CONCRETE PAVEMENT WITH BRICK

PAVEMENT REPAIR DETAILS FOR STREET CUTS – NON REINFORCED CONCRETE AND BRICK PAVEMENT
NTS

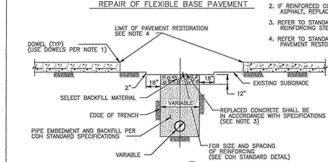
02902-01



SECTION (A)

REPAIR OF FLEXIBLE BASE PAVEMENT

NOTE:
1. EXPOSE 15" OF REINFORCING STEEL AT PROPOSED SAWED JOINT. IF NO REINFORCING STEEL EXISTS, USE HORIZONTAL DOWELS SHALL BE # 6 BARS, 24" LONG, 24" C-C, DRILLED AND EMBEDDED 8" INTO THE CENTER OF THE EXISTING SLAB. WITH "PO MOC" 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 FOR PAVEMENT RESTORATION LIMITS.



SECTION (B)

REPAIR OF REINFORCED CONCRETE PAVEMENT

PAVEMENT REPAIR DETAILS FOR STREET CUTS
NTS

CITY OF HOUSTON HOUSTON PUBLIC WORKS	
STREET PAVING AND SIDEWALK 02775-08 THROUGH 02902-02	
APPROVED BY: CITY ENGINEER	APPROVED BY: DEPUTY DIRECTOR
APPROVED BY: DIRECTOR OF HOUSTON PUBLIC WORKS	
EFFECTIVE DATE: JUL-01-2020	
FOR CITY OF HOUSTON USE ONLY	
SHEET NO.	

NO.	DATE	REVISION	APP.

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

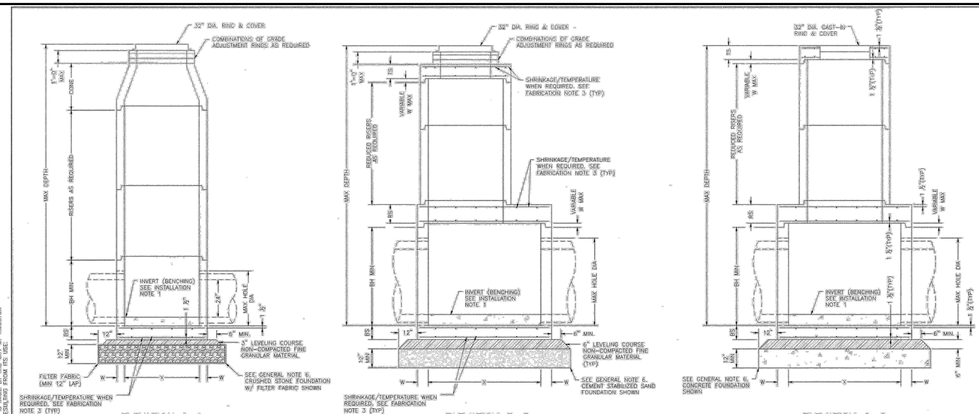
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

PAVING DETAILS
4 OF 4

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 143 OF **155**	

DISCLAIMER:
THE USE OF THIS STANDARD IS GOVERNED BY THE TEXAS ENGINEERING PRACTICE ACT. THE DESIGN REQUIREMENTS ON THIS STANDARD DO NOT EUROPE TO ADDRESS ALL OF THE SAFETY CONCERNS ASSOCIATED WITH THEIR USE. THE ENGINEER OF RECORD (EOR) IS TO REVIEW THESE DESIGN REQUIREMENTS AND BY INCORPORATING THEM INTO THE PROJECT PLANS ACCEPTS RESPONSIBILITY FOR SAFETY AND ADEQUACY OF MANHOLE IN THE INTENDED APPLICATION. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.



4-FT DIA MANHOLE

5-FT & 6-FT DIA MANHOLE
ECCENTRIC MANHOLE
(PREFERRED CONFIGURATION)

5-FT & 6-FT DIA MANHOLE
CONCENTRIC MANHOLE
(ALTERNATE CONFIGURATION)

TABLE 1
PRECAST ROUND MANHOLE (PRM) MINIMUM REQUIREMENTS FOR 24 IN. TO 42 IN. INTERNAL DIA STORM SEWER PIPES

	SIZE	BASE SLAB THICKNESS	BASE UNIT OR RISER THICKNESS	REDUCED RISER DIA	REDUCING SLAB THICKNESS	TOP SLAB THICKNESS	MAX DEPTH TO TOP OF BASE SLAB	MIN HEIGHT	MAX HOLE DIA
	X	BS	W	ID	RS	TS	MAX DEPTH	BH MIN	MAX HOLE DIA
	FT	IN.	IN.	IN.	IN.	IN.	FT.	IN.	IN.
PRM	4	9	5	~	9	9	25	42	35
	5	9	6	45	9	9	25	42	42
	6	9	7	40/60*	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 "B" 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. WALLS WITH A THICKNESS OF 8" OR GREATER REQUIRE A MINIMUM OF 1 IN² TO REINFORCING STEEL AT INTERIOR OR EXTERIOR WALLS.
4. SLABS WITH A THICKNESS OF 8" OR GREATER REQUIRE SHRINKAGE AND TEMPERATURE REINFORCING STEEL. PROVIDE STEEL AREA = 0.11 IN²/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 5/8".
7. PROVIDE LIFTING DEVICES IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS.
8. PROVIDE CAST IRON SOLID COVER, UNLESS NOTED OTHERWISE ELSEWHERE IN THE PLANS.
9. MAXIMUM SPACING OF REINFORCEMENT IS 8".
10. AT MANUFACTURERS OPTION, PROVIDE CAST OR CORED HOLES OR THIN WALL PANELS (KO) TO THE MAXIMUM DIA SHOWN FOR EACH. WHEN NO PENETRATION IS REQUIRED, IT IS ACCEPTABLE TO PROVIDE A WALL WITH NO SECTIONAL REDUCTION.
11. FOR CONE SECTIONS ONLY, FOR CAPPING THE MANHOLE RISER NEAR THE FINISHED GRADE ARE ALLOWED. COVER 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 WALES, 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 BMD ITEM. REFER TO CITY OF HOUSTON SPECIFICATION SECTION 02082 FOR INVERT (BENCHING) REQUIREMENTS.
2. SEAL TONGUE AND GROOVE JOINTS WITH PREFORMED OR BULK MASTIC IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS. TONGUE AND GROOVE JOINTS MAY BE GROUTED NO MORE THAN 1" BETWEEN EACH SECTION, OR ½ THE JOINT DEPTH, WHICHEVER IS GREATER.
3. DO NOT GROUT RUBBER GASKET JOINTS WITHOUT MANUFACTURER'S RECOMMENDATION.
4. MAXIMUM ADJUSTMENT 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'-0" WITH ADDITIONAL RISERS. ADJUSTMENTS MAY BE MADE UP TO THE MAX DEPTH OF 2'5"-0". STRUCTURE MUST BE EVALUATED IF MAX DEPTH WILL BE EXCEEDED.

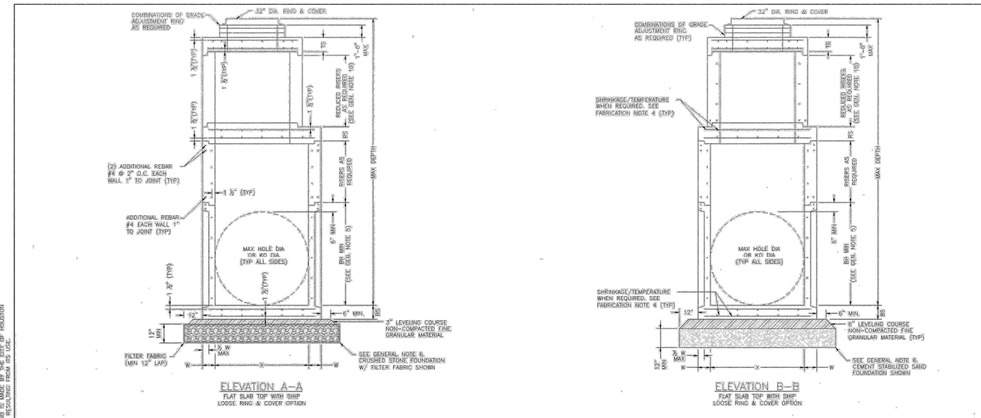
GENERAL NOTES:
1. SEE TABLE 1 FOR MINIMUM DESIGN REQUIREMENTS. CONCENTRIC RISER WITH RESPECT TO BASE (ALTERNATIVE CONFIGURATION) FALLS OUTSIDE THE SCOPE OF REQUIREMENTS PROVIDED. ENGINEER OF RECORD ACCEPTS RESPONSIBILITY FOR SAFETY AND ADEQUACY OF MANHOLE IF THE ALTERNATIVE CONFIGURATION IS USED.
2. 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.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STORM SEWER TYPE 'C'
PRECAST ROUND MANHOLE

(NOT TO SCALE)

APPROVED BY:	APPROVED BY:
Suhail Kanwar	Carol Haddock
CITY ENGINEER	DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2021	DWG NO: 02082-12



ECCENTRIC MANHOLE
(PREFERRED CONFIGURATION)

CONCENTRIC MANHOLE
(ALTERNATE CONFIGURATION)

TABLE 1
PRECAST BOX MANHOLE (PBM) MINIMUM REQUIREMENTS FOR 24 IN. TO 78 IN. INTERNAL DIA STORM SEWER PIPES

	SIZE	BASE SLAB THICKNESS	BASE UNIT OR RISER THICKNESS	REDUCED RISER DIA	REDUCING SLAB THICKNESS	TOP SLAB THICKNESS	MAX. DEPTH TO TOP OF BASE SLAB	MIN. HEIGHT (SEE GEN NOTE 5)	MAX HOLE DIA (SEE FAB NOTE 11)	MAX KO DIA (SEE FAB NOTE 11)
	X & Y	BS	W	ID	RS	TS	MAX DEPTH	BH MIN	MAX. HOLE DIA	KO DIA
	FT.	IN.	IN.	FT.*	IN.	IN.	FT.	FT.	IN.	IN.
PBM	3X3	8	6	N/A	N/A	9	25	3.50	36	36
	4X4	8	6	N/A	N/A	9	25	4.50	48	48
	3X6	8	6	N/A	N/A	9	25	3.50	36/60	36/60
	4X6	8	6	48 IN.	9	9	25	4.50	48/60	48/60
	5X5	9	6	48 IN.	9	9	25	5.50	60	60
	5X6	9	8	48 IN.	9	9	25	5.50	60/72	60/72
	6X6	9	8	48 IN.	9	9	25	5.50	72	72
	8X8	9	10	48 IN.	12	9	25	8.50	96	96

TABLE 1 NOTES:
1. (*) ROUND MANHOLES ARE PREFERRED FOR THESE SIZES.
2. (*) UNLESS OTHERWISE INDICATED.
3. TABLE IS VALID FOR UP TO 25 FT OF INSTALLATION DEPTH.

ANGLE OF ENTRY IS LESS THAN OR EQUAL TO 3° | ANGLE OF ENTRY IS GREATER THAN 3°

PIPE CONNECTION DETAIL
CONNECT PIPES WITHIN 3° OF NORMAL TO PRECAST BASE WALL. IF NECESSARY, USE PIPE ELBOW OR CURVED APPROACH ALIGNMENT TO STAY WITHIN THIS LIMIT.

FABRICATION NOTES:
1. PROVIDE CLASS "B" 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. WALLS WITH A THICKNESS OF 8" OR GREATER REQUIRE A MINIMUM OF 1 IN² TO REINFORCING STEEL AT INTERIOR OR EXTERIOR WALLS.
4. SLABS WITH A THICKNESS OF 8" OR GREATER REQUIRE SHRINKAGE AND TEMPERATURE REINFORCING STEEL. PROVIDE STEEL AREA = 0.11 IN²/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 5/8".
7. PROVIDE LIFTING DEVICES IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS.
8. PROVIDE CAST IRON SOLID COVER, UNLESS NOTED OTHERWISE ELSEWHERE IN THE PLANS.
9. MAXIMUM SPACING OF REINFORCEMENT IS 8".
10. AT MANUFACTURERS OPTION, PROVIDE CAST OR CORED HOLES OR THIN WALL PANELS (KO) TO THE MAXIMUM DIA SHOWN FOR EACH. WHEN NO PENETRATION IS REQUIRED, IT IS ACCEPTABLE TO PROVIDE A WALL WITH NO SECTIONAL REDUCTION.
11. FOR CONE SECTIONS ONLY, FOR CAPPING THE MANHOLE RISER NEAR THE FINISHED GRADE ARE ALLOWED. COVER 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 WALES, OR WITHIN 6" OF THE JOINT ABOVE OR BELOW.

INSTALLATION NOTES:
1. IF REQUIRED ELSEWHERE, INVERTS (BENCHING) TO BE PROVIDED BY CONTRACTOR. CONCRETE OR MORTAR USED FOR INVERT IS SUBSIDIARY TO MANHOLE. REFER TO CITY OF HOUSTON SPECIFICATION SECTION 02082 FOR INVERT (BENCHING) REQUIREMENTS.
2. SEAL TONGUE AND GROOVE JOINTS WITH PREFORMED OR BULK MASTIC IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS. TONGUE AND GROOVE JOINTS MAY BE GROUTED NO MORE THAN ½" 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) 6" 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'-0" WITH ADDITIONAL RISERS. ADJUSTMENTS MAY BE MADE UP TO THE MAX DEPTH OF 25'-0". STRUCTURE MUST BE EVALUATED IF MAX DEPTH WILL BE EXCEEDED.

GENERAL NOTES:
1. SEE TABLE 1 FOR MINIMUM DESIGN REQUIREMENTS. CONCENTRIC RISER WITH RESPECT TO BASE (ALTERNATIVE CONFIGURATION) FALLS OUTSIDE THE SCOPE OF REQUIREMENTS PROVIDED. ENGINEER OF RECORD ACCEPTS RESPONSIBILITY FOR SAFETY AND ADEQUACY OF MANHOLE IF THE ALTERNATIVE CONFIGURATION IS USED.
2. DESIGNED ACCORDING TO ASTM C478 AND/OR ASTM C913.
3. PAYMENT FOR PRECAST MANHOLE PER SECTION 02082 "PRECAST CONCRETE MANHOLES".
4. PRECAST BASE CONSISTS OF BASE SLAB, BASE UNIT, RISERS (AS REQUIRED), REDUCING SLAB (AS REQUIRED), AND REDUCED RISERS (AS REQUIRED).
5. MIN HEIGHT SHOWN FOR STOCK BASE UNITS. USE STOCK BASE UNITS WHENEVER PRACTICAL. SMALLER HEIGHT BASE UNITS CAN BE USED IN SPECIAL INSTALLATION CIRCUMSTANCES, WHEN NOTED ELSEWHERE IN THE PLANS. ABSOLUTE MINIMUM HEIGHT OF BASE UNITS IS 2'-6".
6. FOUNDATION/SUBGRADE TO BE DESIGNED BY ENGINEER AND MEET MINIMUM REQUIREMENTS ACCORDING TO SECTION 02082.
7. ALL STORM WATER MANHOLES ARE TO BE PRECAST CONCRETE, UNLESS OTHERWISE NOTED ELSEWHERE IN THE PLANS.
8. ECCENTRIC REDUCED RISER WITH RESPECT TO BASE IS THE PREFERRED MANHOLE CONFIGURATION. CONCENTRIC REDUCED RISER WITH RESPECT TO BASE MANHOLE CONFIGURATION IS AN ALTERNATIVE DESIGN THAT WILL BE ACCEPTED BASED ON THE NEEDS OF THE CITY OF HOUSTON.
9. MANHOLE SIZE SHALL CONSIDER ENGINEERING ECONOMY. THIS DETAIL IS NOT APPLICABLE TO BOX MANHOLES LARGER THAN 8-FOOT BY 8-FOOT.
10. REFER TO STORM SEWER TYPE 'C' PRECAST ROUND MANHOLE DETAIL (02082-12) FOR REDUCED RISER DESIGN REQUIREMENTS.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STORM SEWER
PRECAST BOX MANHOLE

(NOT TO SCALE)

APPROVED BY:	APPROVED BY:
Suhail Kanwar	Carol Haddock
CITY ENGINEER	DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2021	DWG NO: 02082-13

NO.	DATE	REVISION	APP.

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

STORM SEWER DETAILS
1 OF 6

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 144 OF **155**	

PLOT STYLE: COH CIP.CTB
PLOTTED: 10/2/2023 11:38 AM
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\36 STANDARD DETAILS.dwg

PLOT STYLE: COH CIP.CTB
PLOTTED: 10/2/2023 11:38 AM
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\36 STANDARD DETAILS.dwg

NO.	DATE	REVISION	APP.

02081-05

COH IS PHASING OUT BRICK. NEW DETAILS TO BE POSTED END OF 2019

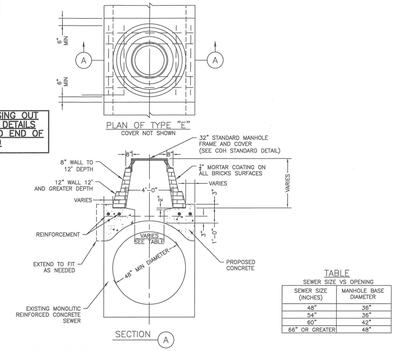
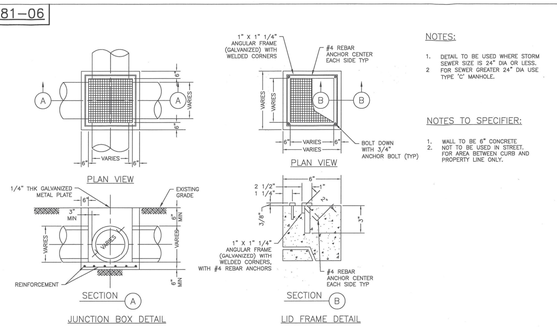


TABLE
SEWER SIZE VS OPENING

SEWER SIZE (INCHES)	MANHOLE BASE DIAMETER
48"	36"
54"	36"
60"	42"
66" OR GREATER	48"

STORM SEWER MANHOLE TYPE "E" FOR EXISTING MONOLITIC REINFORCED CONCRETE 48" DIAMETER AND GREATER
NTS

02081-06

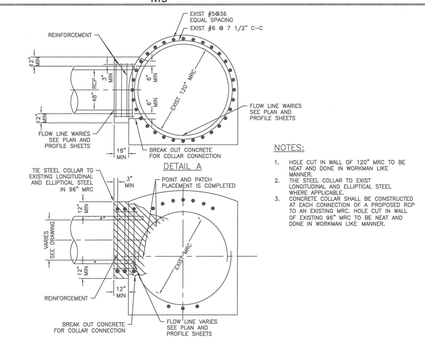


NOTES:
1. DETAIL TO BE USED WHERE STORM SEWER SIZE IS 24" DIA OR LESS.
2. FOR AREA BETWEEN CURB AND PROPERTY LINE ONLY.

NOTES TO SPECIFIER:
1. WALL TO BE 6" CONCRETE
2. NOT TO BE USED IN STREET.

STORM SEWER
JUNCTION BOX WITH LID OR GRATE TOP
FOR MAXIMUM OF 24" DIAMETER STORM SEWE4R5
NTS

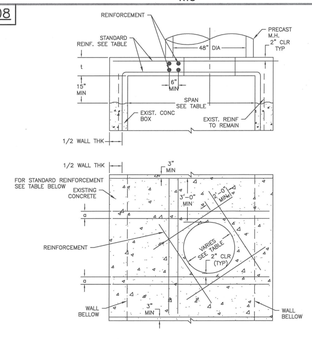
02081-07



NOTES:
1. HOLE CUT IN WALL OF 120° MRC TO BE NEAT AND DONE IN WORKMAN LIKE MANNER.
2. THE STEEL COLLAR TO EXIST LONGITUDINAL AND ELLIPTICAL STEEL WHERE APPLICABLE.
3. CONCRETE COLLAR SHALL BE CONSTRUCTED AT EACH CONNECTION OF A PROPOSED ROP TO AN EXISTING MH OR A CUT IN WALL OF EXISTING MH. MRC TO BE NEAT AND DONE IN WORKMAN LIKE MANNER.

LATERAL CONNECTION TO EXISTING
MONOLITHIC REINFORCED CONCRETE STORM SEWER
NTS

02081-08



PROPOSED MANHOLE ON
EXISTING BOX STORM SEWER
NTS

FIRM INFORMATION | ENGINEER'S SEAL

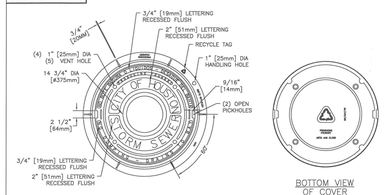
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

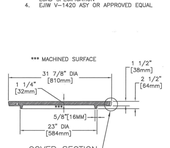
STORM SEWER
02081-05 THROUGH 08

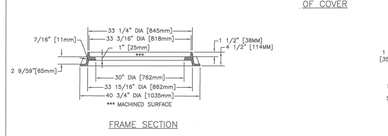
APPROVED BY: CITY ENGINEER | APPROVED BY: DEPUTY DIRECTOR
APPROVED BY: DIRECTOR
EFFECTIVE DATE: JUL-01-2019
FOR CITY OF HOUSTON USE ONLY

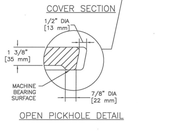
SHEET NO.

02084-02





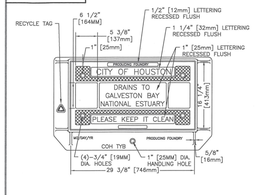


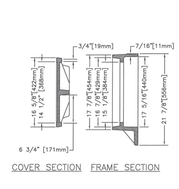


NOTES:
1. APPROXIMATE WEIGHTS.
   FRAME = 170 LBS (77KGS)
   COVER = 270 LBS (123KGS)
   UNIT = 440 LBS (200KGS)
2. MATERIALS = GRAY IRON ASTM A48 CL35B
3. CASTING TO MEET M306 PROOF LOAD SPECIFICATION
4. EJIW V-1420 ADT OR APPROVED EQUAL

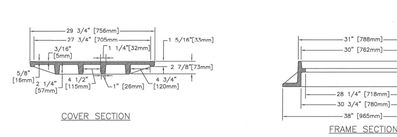
STORM SEWER MANHOLE FRAME AND COVER
NTS

02084-03



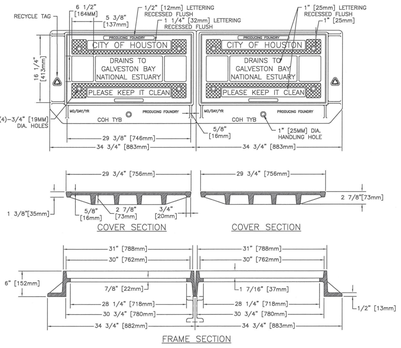


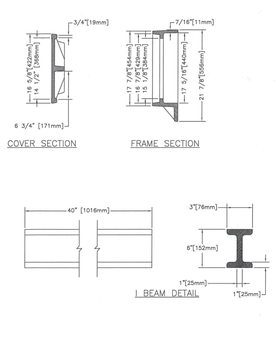
NOTES:
1. APPROXIMATE WEIGHTS.
   FRAME = 125 LBS (57KGS)
   COVER = 130 LBS (59KGS)
   UNIT = 225 LBS (116KGS)
2. MATERIALS = GRAY IRON ASTM A48 CL35B
3. CASTING TO MEET M306 PROOF LOAD SPECIFICATION
4. EJIW V-4241 ADT OR APPROVED EQUAL



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 ADT 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

SHEET NO.

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

STORM SEWER DETAILS 2 OF 6

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 145 OF 155	

PLOT STYLE: COH CIP.CTB
PLOTTED: 10/2/2023 11:38 AM
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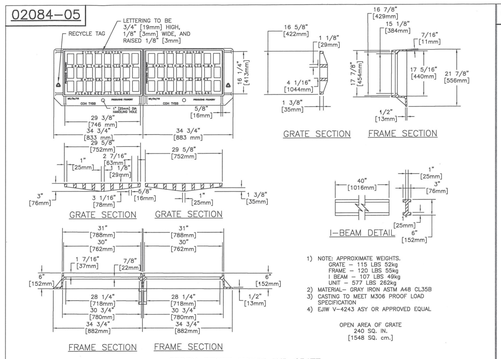
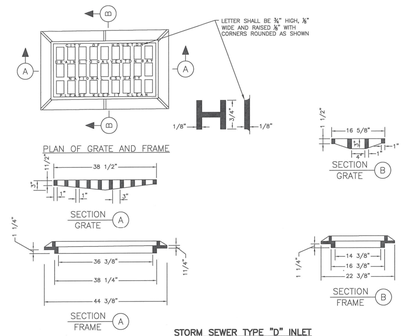
NO.	DATE	REVISION	APP.

02084-05



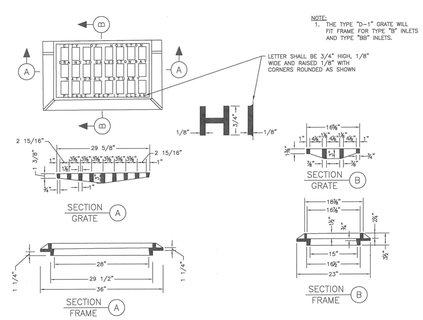
STORM SEWER FRAME AND GRATE
FOR TYPE B-B INLET DOUBLE ASSEMBLY
NTS

02084-06



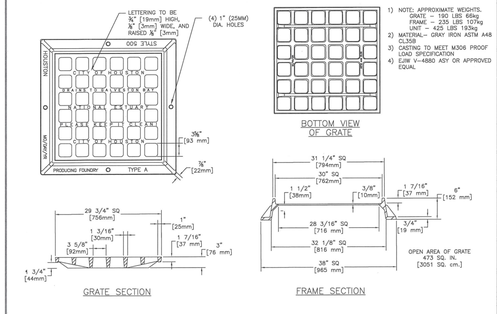
STORM SEWER TYPE "D" INLET
GRATE AND FRAME
NTS

02084-07



STORM SEWER TYPE "D-1" INLET
GRATE AND FRAME
NTS

02084-08



STORM SEWER TYPE "A"
INLET GRATE AND FRAME
NTS

FIRM INFORMATION	ENGINEER'S SEAL

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

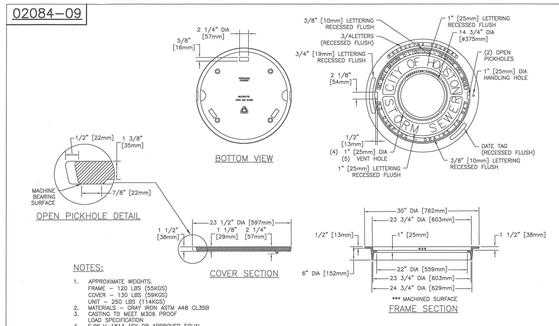
STORM SEWER
02084-05 THROUGH 08

APPROVED BY: CITY ENGINEER	APPROVED BY: DEPUTY DIRECTOR
APPROVED BY: DIRECTOR	

EFFECTIVE DATE: JUL-01-2019
FOR CITY OF HOUSTON USE ONLY

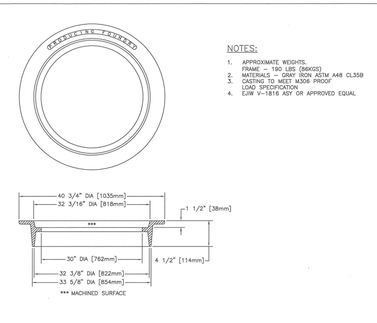
SHEET NO.

02084-09



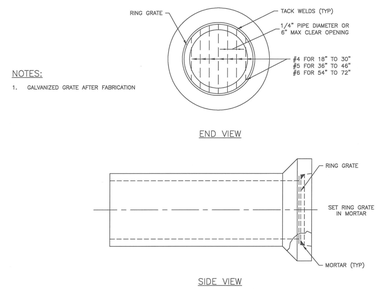
STORM SEWER TYPE "C-1, C-2, C-2A"
AND "H-2" INLET FRAME AND COVER
NTS

02084-10



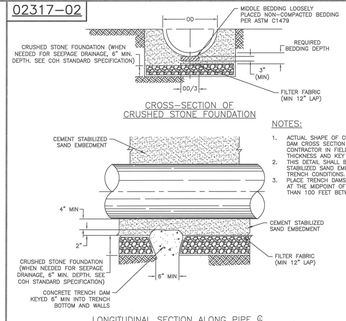
32" INVERTED MANHOLE FRAME
NTS

02084-11



STORM SEWER
RING GRATE FOR OPEN END
OF 18" TO 72" RCP STUBS TO DITCH
NTS

02317-02



SANITARY OR STORM SEWER CRUSHED STONE
FOUNDATION FOR WET STABLE TRENCH
NTS

FIRM INFORMATION	ENGINEER'S SEAL

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STORM SEWER
02084-09 THROUGH 11
AND 02317-02

APPROVED BY: CITY ENGINEER	APPROVED BY: DEPUTY DIRECTOR
APPROVED BY: DIRECTOR	

EFFECTIVE DATE: JUL-01-2019
FOR CITY OF HOUSTON USE ONLY

SHEET NO.

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE
UTILITY REVIEW
NOT FOR
CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

STORM SEWER DETAILS
3 OF 6

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
N.T.S.
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. 146 OF **155**

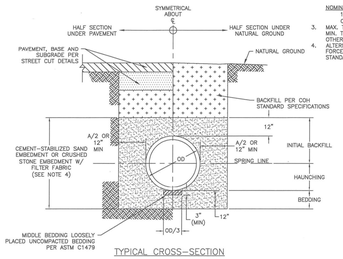
02317-03

NOTES:

1. THIS DETAIL MAY BE USED ONLY FOR DRY STABLE TRENCH CONDITIONS PER COH STANDARD. SEE GEOTECHNICAL ENGINEERING FOR SPECIAL REQUIREMENTS IN OTHER CONDITIONS.
2. MIN. TRENCH WIDTH SHALL BE PIPE OD PLUS AN ALLOWANCE "X" FOR THE NOMINAL PIPE SIZE:

NOMINAL PIPE SIZE	"X"
18" TO 30"	24"
OVER 30"	36"

3. MAX. TRENCH WIDTH SHALL BE NOT GREATER THAN MIN. TRENCH WIDTH PLUS 24 INCHES, UNLESS OTHERWISE NOTED.
4. ALTERNATIVE EMBEDMENT BACKFILL MATERIALS FOR TRENCH WIDTHS MAY BE ALLOWED. SEE COH STANDARD SPECIFICATIONS.



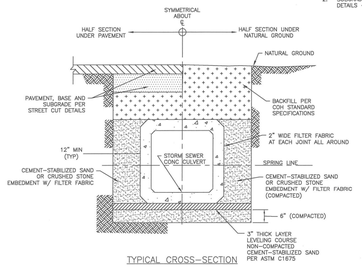
TYPICAL CROSS-SECTION

SANITARY OR STORM SEWER BEDDING AND BACKFILL FOR DRY STABLE TRENCH
NTS

02317-05

NOTES:

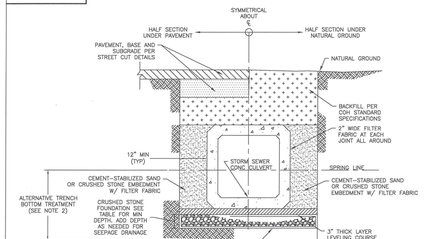
1. WHERE MULTIPLE BOX SEWER ARE USED IN THE SAME TRENCH, MIN. OUTSIDE TO OUTSIDE BOX SEWER SEPERATION SHALL BE 6".
2. SUBGRADE AND PAVEMENT FOR STREET CUT DETAILS – 02951.



TYPICAL CROSS-SECTION

PRECAST CONCRETE BOX STORM SEWER BEDDING AND BACKFILL FOR DRY STABLE TRENCH
NTS

02317-06



NOTES:

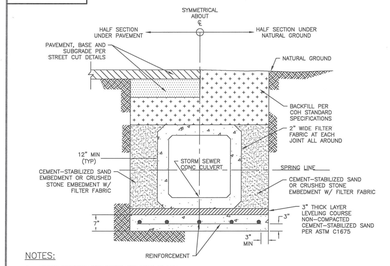
1. WHERE MULTIPLE BOX SEWER ARE USED IN THE SAME TRENCH, MIN. OUTSIDE TO OUTSIDE BOX SEWER SEPERATION SHALL BE 6".
2. ALTERNATIVE TRENCH BOTTOM TREATMENT MAY BE USED AS APPROVED BY THE CITY OF ENGINEERS AND AS PAID FOR IN THE PROPOSAL.

TABLE

CULVERT SIZE (T)	FOUNDATION DEPTH(INCHES)
3' X 2' TO 6' X 6'	12
6' X 6' AND LARGER	18

PRECAST CONCRETE BOX STORM SEWER BEDDING AND BACKFILL FOR WET STABLE TRENCH
NTS

02317-07



NOTES:

1. WHERE MULTIPLE BOX SEWER ARE USED IN THE SAME TRENCH, MIN OUTSIDE TO OUTSIDE BOX SEWER SEPERATION SHALL BE 6".
2. REINFORCED CONCRETE SLAB PIPE BEDDING TO BE PLACED IN DRY TRENCH ONLY.
3. CONCRETE IN SLAB TO REACH MIN COMPRESSIVE STRENGTH OF 1000 PSI BASED ON MAX DESIGN BEFORE PIPE IS LAID.
4. PRECAST SEAL SLAB MAYBE USED AS APPROVED BY CITY ENGINEER.

PRECAST CONCRETE BOX STORM SEWER BEDDING AND BACKFILL WITH SEAL SLAB
NTS

FIRM INFORMATION | ENGINEER'S SEAL

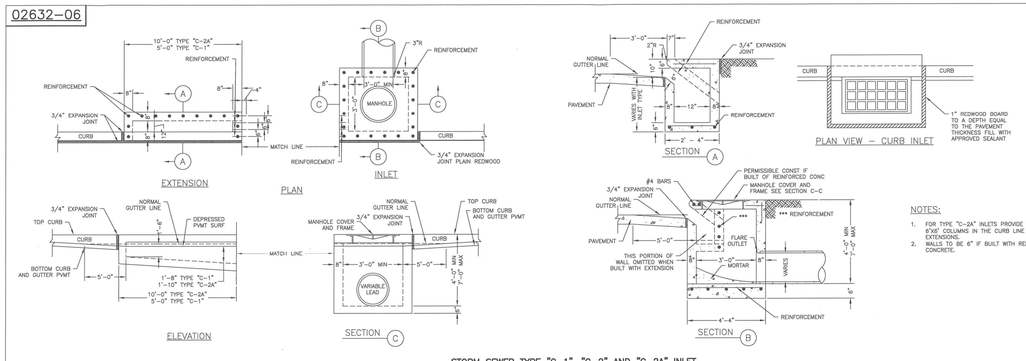
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STORM SEWER
02317-03 THROUGH 07

APPROVED BY: CITY ENGINEER | APPROVED BY: DEPUTY DIRECTOR
APPROVED BY: DIRECTOR
EFFECTIVE DATE: JUL-01-2019
FOR CITY OF HOUSTON USE ONLY

SHEET NO.

02632-06

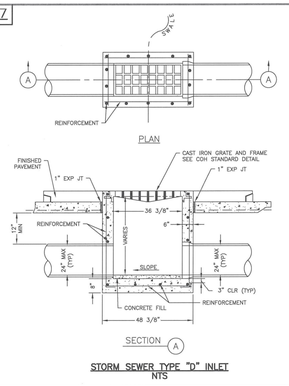


NOTES:

1. FOR TYPE "C-2A" INLETS PROVIDE A CENTER 6'X6' COLUMNS IN THE CURB LINE BETWEEN ALL EXTENSIONS.
2. WALLS TO BE 6" IF BUILT WITH REINFORCED CONCRETE.

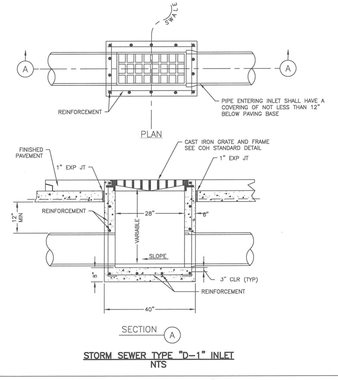
STORM SEWER TYPE "C-1", "C-2" AND "C-2A" INLET
NTS

02632-07



STORM SEWER TYPE "D" INLET
NTS

02632-08



STORM SEWER TYPE "D-1" INLET
NTS

FIRM INFORMATION | ENGINEER'S SEAL

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STORM SEWER
02632-06 THROUGH 08

APPROVED BY: CITY ENGINEER | APPROVED BY: DEPUTY DIRECTOR
APPROVED BY: DIRECTOR
EFFECTIVE DATE: JUL-01-2019
FOR CITY OF HOUSTON USE ONLY

SHEET NO.

NO.	DATE	REVISION	APP.

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

STORM SEWER DETAILS
4 OF 6

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
N.T.S.
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.

SHEET NO. 147 OF 155

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PLOTTED: 10/2/2023 9:46 AM
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PLOTTED: 10/2/2023 11:43 AM
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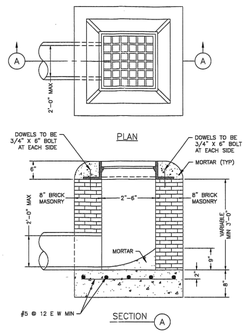
NO.	DATE	REVISION	APP.

02632-01

COH IS PHASING OUT BRICK. NEW DETAILS TO BE POSTED END OF 2019



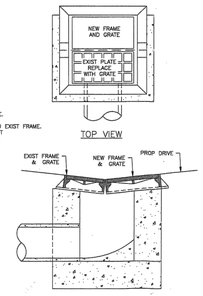
STORM SEWER TYPE "A" GRATE INLET
NTS

02632-03

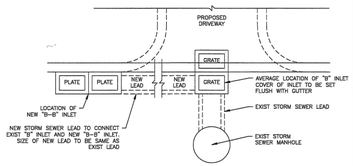
STEP 1: EXIST TYPE "B" INLET

STEP 2:

NOTES:
1. AFTER REMOVING EXIST CURB, RAISE EXIST FRAME TO GUTTER GRADE.
2. REPLACE EXIST PLATE WITH A GRATE.
3. ADD NEW FRAME AND GRATE NEXT TO EXIST FRAME.
4. BACKFILL INLET TO A POINT ONE FOOT BEHIND THE CURB WITH 1 SACK/TON CEMENT STABILIZED SAND.



STEP 3: CONSTRUCT NEW TYPE "B-B" INLET ON CURB RETURN OF PROPOSED DRIVEWAY



STORM SEWER TYPE "B" INLET RELOCATION
NTS

FIRM INFORMATION | ENGINEER'S SEAL

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

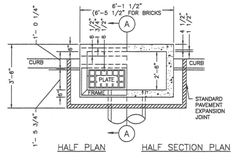
STORM SEWER
02632-01 AND 03

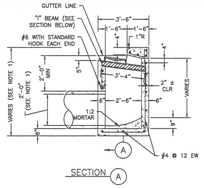
APPROVED BY: CITY ENGINEER
APPROVED BY: DEPUTY DIRECTOR
APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING

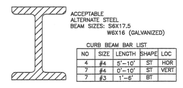
EFFECTIVE DATE: JUL-01-2019
FOR CITY OF HOUSTON USE ONLY

SHEET NO. XX OF XX

02632-04





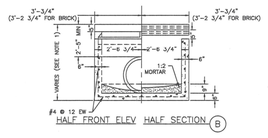


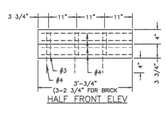
CURB BEAM BAR LIST

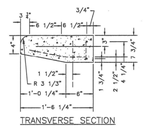
NO	SIZE	LENGTH	SHAPE	LOC
4	#4	5'-10"	ST	HOR
7	#4	1'-10"	ST	VERT
7	#3	1'-8"	BT	

NOTES:
1. DIMENSION VARIES BASED ON PIPE DIAMETER AND WALL THICKNESS.
2. CENTER REINFORCING IN SLAB AND WALLS. CENTER STEEL BEAM ON INLET AND CAST INTO WALLS AS SHOWN.
3. WHEN TOP OF CURB TO FLOWLINE IS GREATER THAN 8 FEET USE TYPE "C" INLET.

GENERAL NOTES:
USE STANDARD CAST IRON FRAME & PLATES. LEAD SHALL LEAVE INLET AT LOCATION AND GRADE REQUIRED.





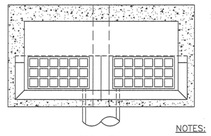


PRECAST CURB BEAM

STORM SEWER TYPE "B-B" INLET
NTS

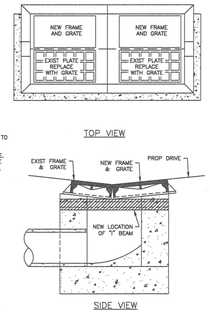
02632-05

STEP 1: EXIST TYPE "B" INLET

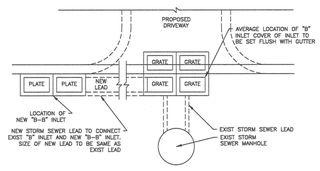


STEP 2:

NOTES:
1. AFTER REMOVING EXIST CURB, RAISE EXIST FRAME TO GUTTER GRADE.
2. REPLACE EXIST PLATE WITH A GRATE.
3. ADD NEW FRAME AND GRATE NEXT TO EXIST FRAME.
4. BACKFILL INLET TO A POINT ONE FOOT BEHIND THE CURB WITH 1 SACK/TON CEMENT STABILIZED SAND.



STEP 3: CONSTRUCT NEW TYPE "B-B" INLET ON CURB RETURN OF PROPOSED DRIVEWAY



STORM SEWER TYPE "B" INLET RELOCATION
NTS

FIRM INFORMATION | ENGINEER'S SEAL

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STORM SEWER
02632-04 THROUGH 05

APPROVED BY: CITY ENGINEER
APPROVED BY: DEPUTY DIRECTOR
APPROVED BY: DIRECTOR
EFFECTIVE DATE: JUL-01-2019
FOR CITY OF HOUSTON USE ONLY

SHEET NO.

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
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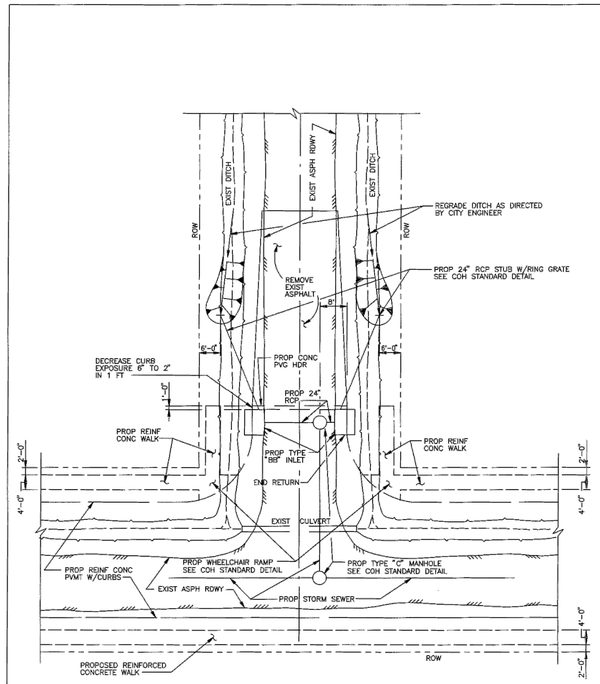
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

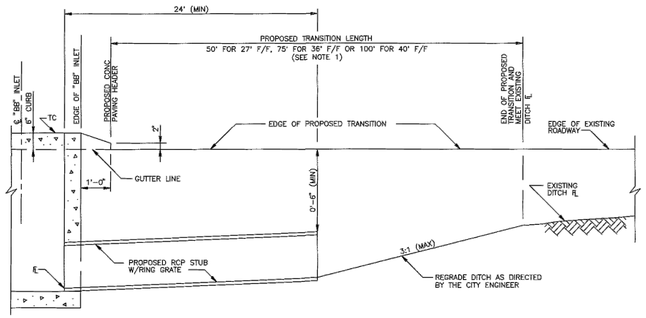
FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

STORM SEWER DETAILS
5 OF 6

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
N.T.S.
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.



PLAN



LONGITUDINAL SECTION OF PROPOSED RCP STUB FROM PROPOSED "BB" INLET TO EXISTING DITCH

THIS IS NOT A STANDARD DETAIL. IT IS TO BE USED ONLY AS A GUIDE.

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION

SIDE STREET DITCH RECEPTION

(NOT TO SCALE)

APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002	DWG NO: 02632-11

NO.	DATE	REVISION	APP.

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
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90% DRAFT
2/3/26 UPDATE
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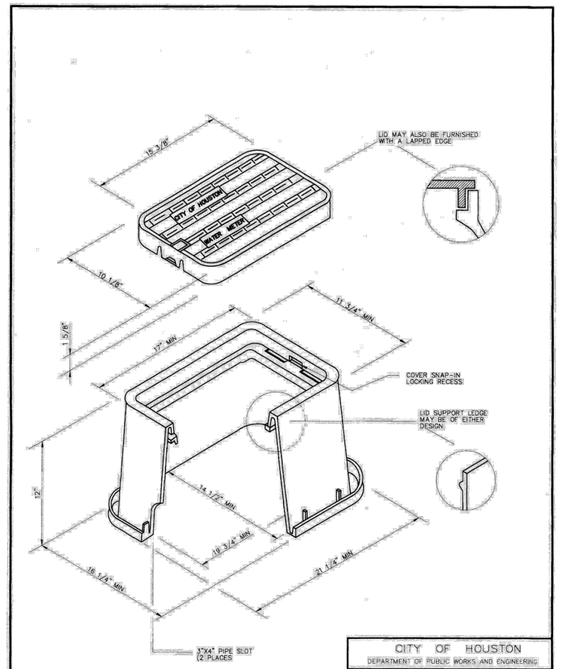
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

STORM SEWER DETAILS
6 OF 6

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
N.T.S.
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. 149 OF 155

PLOTTED: 10/2/2023 11:43 AM
PLOT STYLE: COH CIP.CTB
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\36 STANDARD DETAILS.dwg

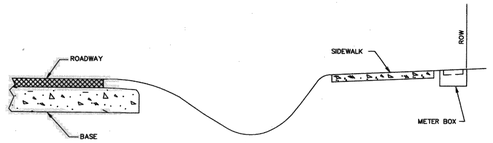


NOTE
1. LID MUST BE ABLE TO ACCEPT THE CITY'S AMR TRANSMITTING ENDPOINT.

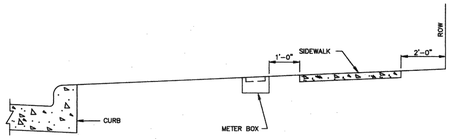
CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

STANDARD PLASTIC METER BOX FOR ⅝" AND 1" METERS
(NOT TO SCALE)

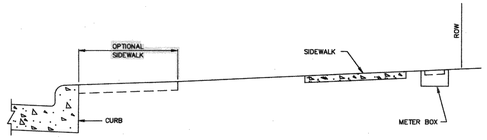
APPROVED BY: CITY ENGINEER | APPROVED BY: DIRECTOR, PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2010 | DWG NO: 02085-01



OPEN DITCH STREET



CURB STREET

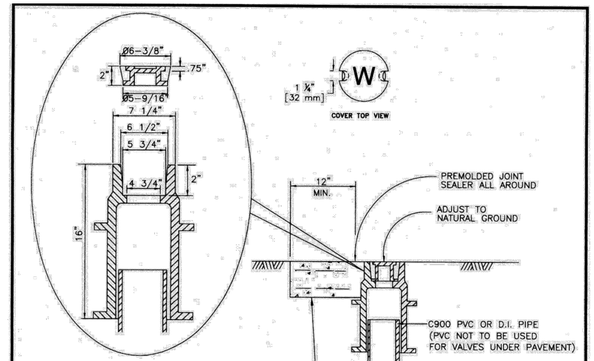


CURB STREET

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

LOCATION OF WATER METER BOX FOR 2" DIAMETER AND LESS

APPROVED BY: CITY ENGINEER | APPROVED BY: DIRECTOR, PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2010 | DWG NO: 02085-02

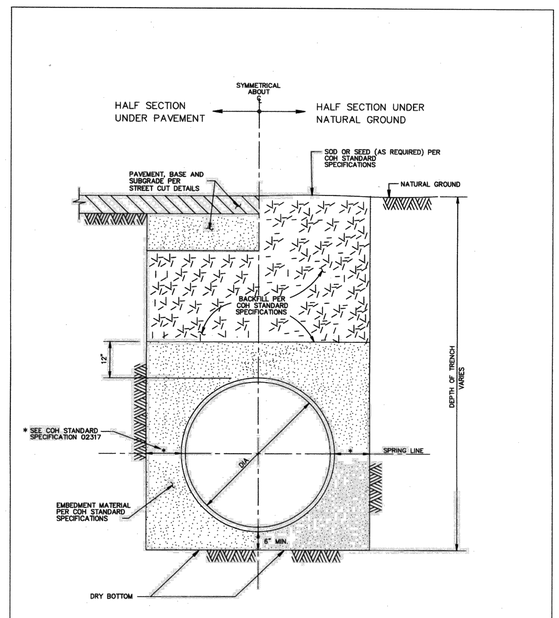


NOTE:
1) APPROXIMATE WEIGHTS
FRAME – 46 LBS
COVER – 10 LBS
2) MATERIAL – GRAY IRON ASTM A48 CL35B

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

VALVE BOX DETAIL
(NOT TO SCALE)

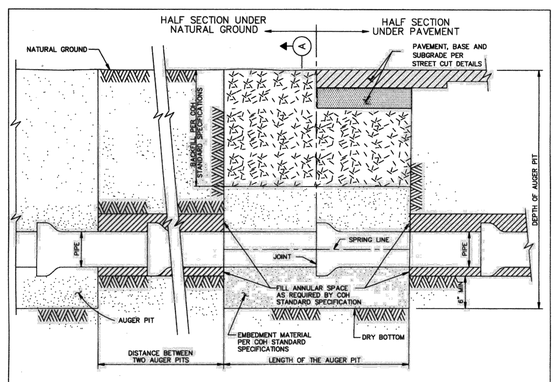
APPROVED BY: CITY ENGINEER | APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF. DATE: JULY 01, 2010 | DWG. NO: 02085-03

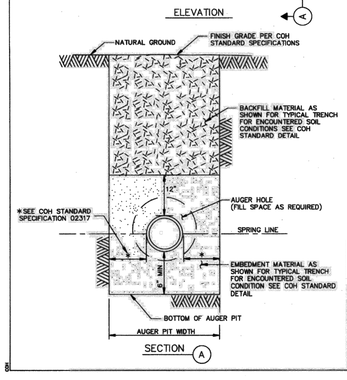


CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

WATER DISTRIBUTION MAIN BEDDING AND BACKFILL FOR OPEN CUT TRENCHES
(NOT TO SCALE)

APPROVED BY: CITY ENGINEER | APPROVED BY: DIRECTOR, PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2010 | DWG NO: 02317-04





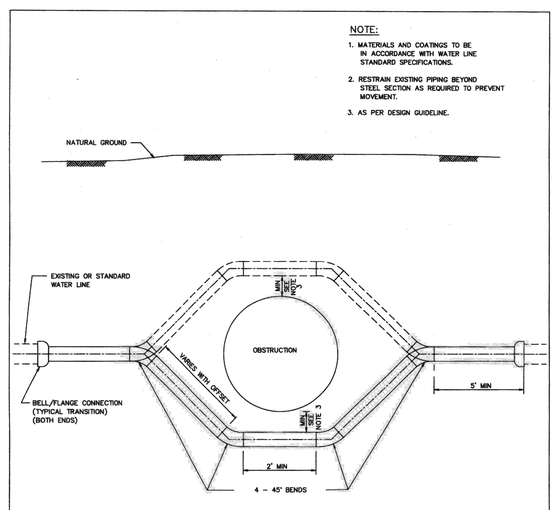
NOTE:
1. SELECT BACKFILL FOR RIGID PAVEMENT; FLEXIBLE BASE MATERIAL FOR ASPHALT PAVEMENT.

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, PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2010 | DWG NO: 02447-01

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 RESTRAINED JOINT FITTINGS, EPOXY LINED AND COATED. USE 250 PSI AWWA C900 DR 14 FOR PVC RESTRAINED JOINTS.
3. PVC NOT ALLOWED FOR GREATER THAN 20 FT OF COVER OR FOR DIAMETER LARGER THAN 20 IN.
4. USE ONLY DUCTILE IRON AND PVC PRODUCTS LISTED ON OCE DIVISION APPROVED PRODUCTS LIST AND IN ACCORDANCE WITH CITY STANDARD SPECIFICATIONS.

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

TYPICAL STEEL PIPE OFFSET SECTION FOR WATER LINES
(NOT TO SCALE)

APPROVED BY: CITY ENGINEER | APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF. DATE: JULY-01-2010 | DWG NO: 02511-01

NO.	DATE	REVISION	APP.

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

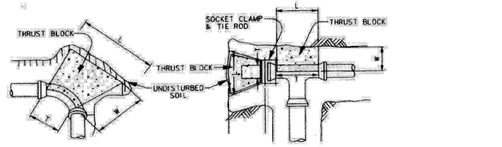
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

WATER DETAILS 1 OF 2

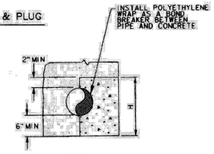
WBS NUMBER
N-000818-0001-3
DRAWING SCALE
N.T.S.
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. 150 OF 155

PLOT STYLE: COH CIP.CTB
PLOTTED: 10/2/2023 9:47 AM
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\36 STANDARD DETAILS.dwg



90° BEND
(45° BENDS SIMILAR)

TEE & PLUG



PIPE
CROSS SECTION

MINIMUM BLOCKING DIMENSION IN INCHES

PIPE SIZE	90° BEND				45° BEND				TEE/PLUG			
	W	H	L	T	W	H	L	T	W	H	L	T
4"	6	12	14	10	6	8	11	8	6	10	12	12
6"	8	14	26	12	8	14	14	12	8	14	19	19
8"	10	16	40	16	10	18	20	16	10	18	26	26
10"	12	24	42	18	12	22	25	18	12	24	30	30
12"	14	36	40	30	14	26	30	22	14	26	40	40

CORRECTION FACTORS

SOIL TYPE	SOIL BEARING STRENGTH S_b(lb/ft²)	MULTIPLY "L" AND "H" BY
SOFT CLAY	1000	1.73
SILT	1500	1.41
SANDY SILT	3000	1.00
SAND	4000	0.87
SANDY CLAY	6000	0.71
HARD CLAY	9000	0.58

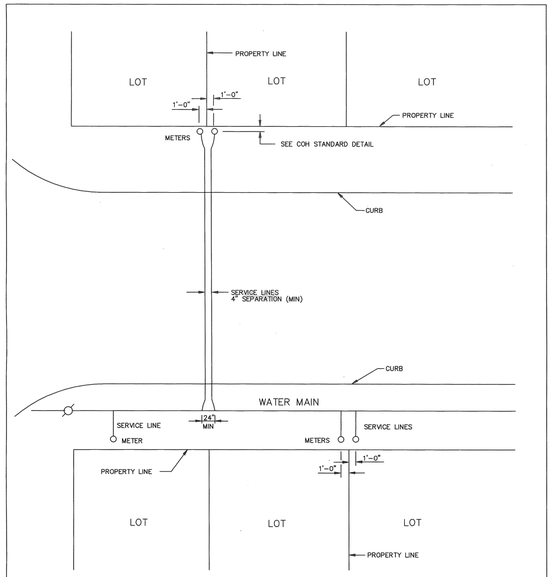
NOTES:

1. DEPTH "W" MAY BE GREATER THAN SPECIFIED TO ALLOW WORKING SPACE.
2. BLOCKING MUST BE PLACED AGAINST UNDISTURBED EARTH. WHERE THIS IS NOT POSSIBLE, THE FILL BETWEEN THE BEARING SURFACE AND UNDISTURBED SOIL MUST BE COMPACTED TO AT LEAST 90% STANDARD PROCTOR DENSITY.
3. PROVIDE CONCRETE IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 03315 — CONCRETE FOR UTILITY CONSTRUCTION.
4. BLOCKING DIMENSIONS SHOWN ARE BASED ON 3000 PSI SOIL BEARING STRENGTH AND 125 PSI INTERNAL WATER PRESSURE. FOR OTHER SOIL CONDITIONS, MULTIPLY DIMENSIONS "L" AND "H" BY THE APPROPRIATE CORRECTION FACTOR.

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

THRUST BLOCK DETAIL FOR WATER LINES (4-INCH TO 12 INCH)
(NOT TO SCALE)

APPROVED BY: CITY ENGINEER — APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JULY-01-2010 DWG NO: 02511-02



GENERAL NOTES:

1. TWO SERVICE LINES MAY BE INSTALLED IN SAME TRENCH PROVIDING 4" CLEARANCE IS MAINTAINED.
2. ONE METER PER SERVICE LINE

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

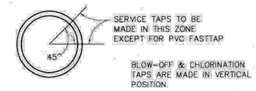
TYPICAL 3/4" THROUGH 2" SERVICE ARRANGEMENTS
(NOT TO SCALE)

APPROVED BY: CITY ENGINEER — APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2016 DWG NO: 02512-01

PIPE TAPPING SCHEDULE

WATER MAIN TYPE AND DIAMETER	SERVICE SIZE			
	3/4"	1"	1 1/2"	2"
4" CAST IRON OR DUCTILE IRON	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
4" ASBESTOS (EXISTING) CEMENT	WBSS	WBSS	DSS, WBSS	DSS, WBSS
4" PVC (AWWA C900)	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
6" AND 8" CAST IRON OR DUCTILE IRON	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
6" AND 8" ASBESTOS (EXISTING) CEMENT	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
6" AND 8" CAST IRON OR DUCTILE IRON	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
6" AND 8" PVC (AWWA C900)	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
12" CAST IRON OR DUCTILE IRON	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
12" ASBESTOS (EXISTING) CEMENT	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
12" PVC (AWWA C900)	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
16" AND UP CAST IRON OR DUCTILE IRON	DWBSS	DWBSS	DWBSS	DWBSS
16" AND UP ASBESTOS (EXISTING) CEMENT	DWBSS	DWBSS	DWBSS	DWBSS
16" AND UP PVC (AWWA C900)	DWBSS	DWBSS	DWBSS	DWBSS

DSS = DUAL STRAP SADDLES
WBSS = WIDE BAND STRAP SADDLES
DWBSS = DUAL WIDE BAND STRAP SADDLES



SERVICE TAPS TO BE MADE IN THIS ZONE EXCEPT FOR PVC FASTTAP

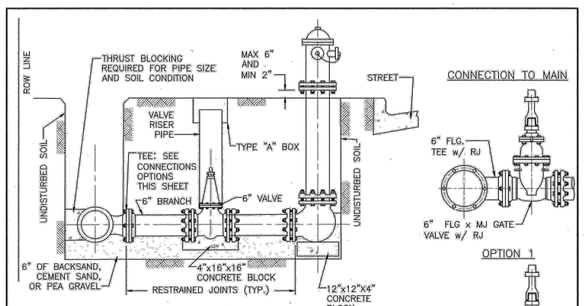
BLOW-OFF & CHLORINATION TAPS ARE MADE IN VERTICAL POSITION.

WIDE BAND SINGLE SADDLE OR DUAL SADDLES

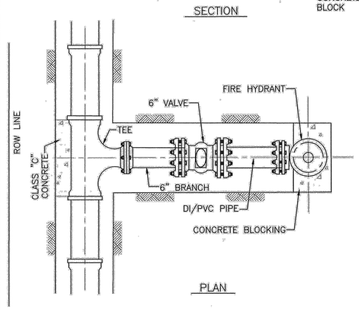
CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

SERVICE TAPS
(NOT TO SCALE)

APPROVED BY: CITY ENGINEER — APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2010 DWG NO: 02512-02



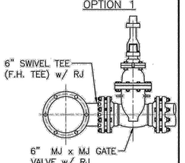
SECTION



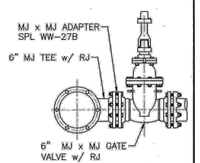
PLAN

CONNECTION TO MAIN

OPTION 1



OPTION 2



OPTION 3

NOTES:

1. LOCATE FIRE HYDRANTS AT POINT OF CURVATURE (PC) OR POINT OF TANGENCY (PT) OF THE INTERSECTION CURB RADIUS, 3 FEET BEHIND CURB OR PROJECTED FUTURE CURB.
2. ON OPEN-DITCH ROADWAYS, SET THE FIRE HYDRANTS WITH IN 5 FEET OF RIGHT-OF-WAY LINES.
3. FIRE HYDRANT STEAMER NOZZLE SHALL FACE THE STREET.
4. LOCATE HYDRANT VALVE IMMEDIATELY ADJACENT TO WATER LINE.
5. ALL PIPING TO BE RESTRAINED JOINTS.

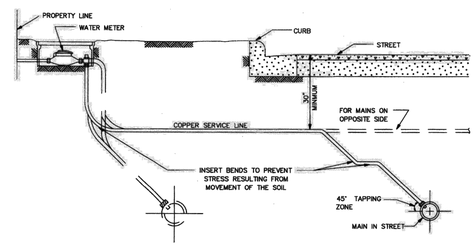
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STANDARD FIRE HYDRANT DETAIL
(NOT TO SCALE)

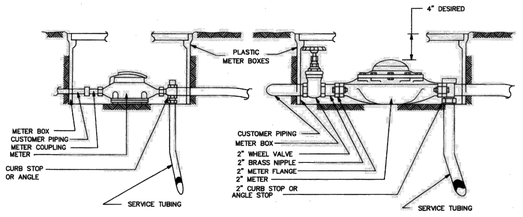
APPROVED BY: CITY ENGINEER — APPROVED BY: DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2021 DWG NO: 02520-01

NOTES:

1 1/2" METER SET IS SAME AS 2" EXCEPT WHEEL VALVE IS NOT REQUIRED.



TYPICAL SECTION SERVICE LINE



5/8", 3/4" AND 1" METER SET

2" METER SET

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

TYPICAL METER SETTINGS
(NOT TO SCALE)

APPROVED BY: CITY ENGINEER — APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JULY-01-2010 DWG NO: 02526-01

NO.	DATE	REVISION	APP.

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

WATER DETAILS 2 OF 2

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 151 OF 155	

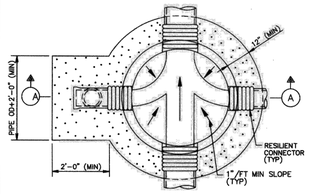
PLOT STYLE: COH CIP.CTB
PLOTTED: 10/2/2023 9:47 AM
FILE PATH: C:\pwworking\hatch-dpd-south_central_us\dms31977\36 STANDARD DETAILS.dwg

PLOT STYLE: COH CIP.CTB
PLOTTED: 10/2/2023 5:09 PM

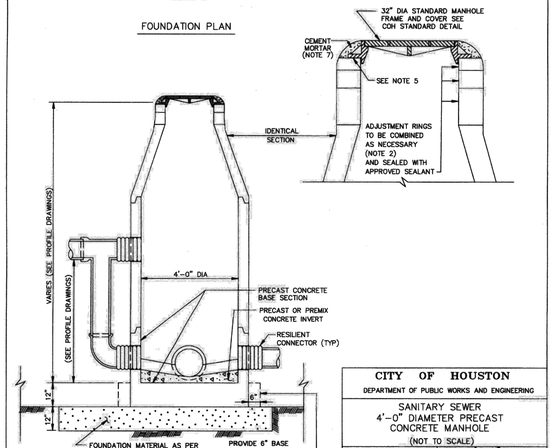
NO.	DATE	REVISION	APP.

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

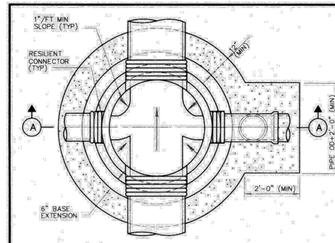


SECTION

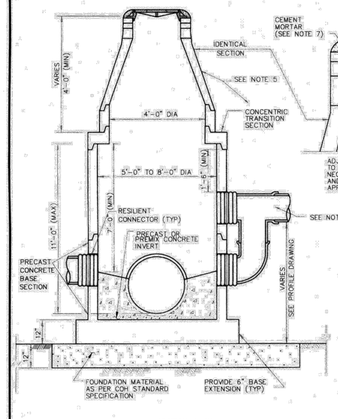
CITY OF HOUSTON	
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
SANITARY SEWER 4'-0" DIAMETER PRECAST CONCRETE MANHOLE	
(NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JULY-01-2010	DWG NO: 02082-02

NOTES:

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.



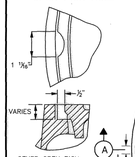
FOUNDATION PLAN



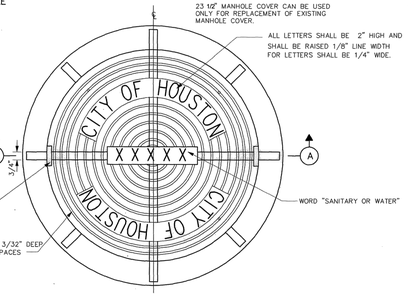
SECTION

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

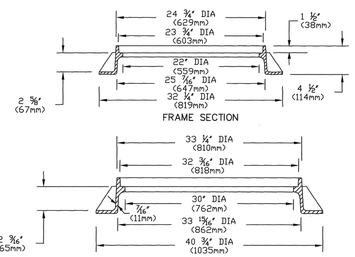
TYPE 1
OPEN PICK HOLE



NOTE:
23 1/2" MANHOLE COVER CAN BE USED ONLY FOR REPLACEMENT OF EXISTING MANHOLE COVER.



PLAN
23 1/2" MANHOLE COVER WITH FRAME

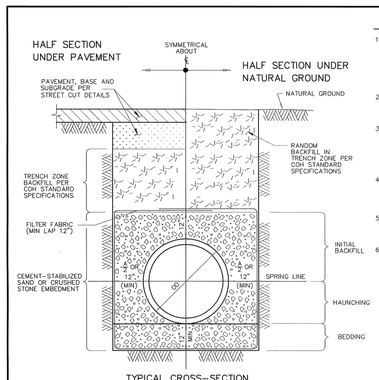


1) NOTE: APPROXIMATE WEIGHTS.
FRAME- 170 LBS 77 kg
COVER- 270 LBS 123 kg
UNIT- 440 LBS 200 kg
2) MATERIAL- GRAY IRON ASTM A48 CL35B
3) CASTING TO MEET M306 PROOF LOAD SPECIFICATION
4) MODEL V-14240 ASY OR APPROVED EQUAL

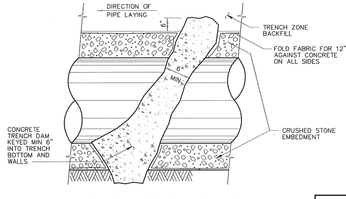
SECTION (A)
32" MANHOLE COVER WITH FRAME

CITY OF HOUSTON	
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
SANITARY SEWER AND WATER MANHOLE FRAME AND COVER	
(NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2016	DWG NO: 02090-01

HALF SECTION UNDER PAVEMENT
HALF SECTION UNDER NATURAL GROUND



TYPICAL CROSS-SECTION



LONGITUDINAL SECTION ALONG PIPE ℄
AT EMBEDMENT TRENCH DAM

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"

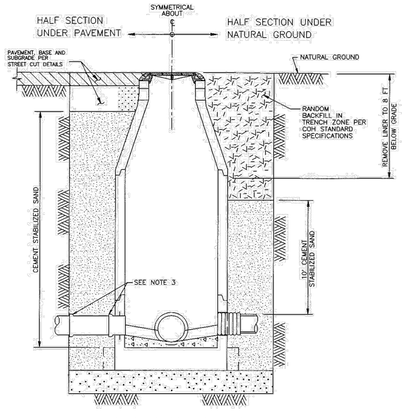
2. MAX TRENCH WIDTH SHALL BE NOT GREATER THAN MIN TRENCH WIDTH PLUS 24 INCHES, UNLESS OTHERWISE NOTED.
3. TRENCH DAM MAY BE FORMED OR UNFORMED.ACTUAL SHAPE OF CONCRETE TRENCH DAM CROSS SECTION MAY BE DETERMINED BY CONTRACTOR IN FIELD, MEETING MINIMUM THICKNESS AND KEY DEPTH REQUIREMENTS.
4. TRENCH DAM 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 BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2016	DWG NO: 02317-01

NOTES:

1. GROUTING OF MANHOLE STRUCTURE ANNULAR SPACE WILL BE PERMITTED IN CASES WHERE INSUFFICIENT WORK SPACE EXISTS FOR PLACEMENT AND COMPACTION OF CEMENT STABILIZED SAND, PER COH STANDARD SPECIFICATION FOR TUNNEL GROUT.
2. THIS DETAIL ALSO APPLIES TO BACKFILL OF SHAFTS WITHOUT STRUCTURES.
3. ARRANGE PIPE JOINTS AS SHOWN WHEN USING RIGID CONNECTION TO CAST IN PLACE MANHOLE BASE.

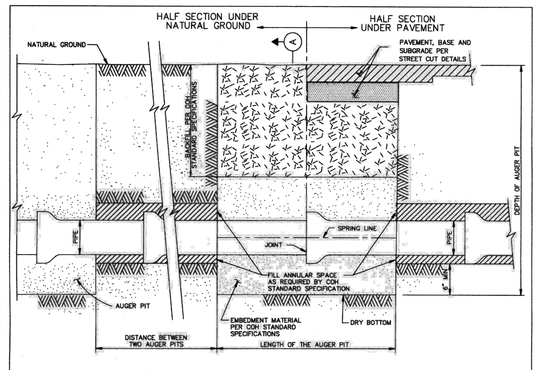
HALF SECTION UNDER PAVEMENT
HALF SECTION UNDER NATURAL GROUND



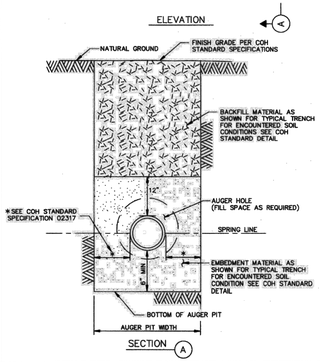
TYPICAL CROSS - SECTION

CITY OF HOUSTON	
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION	
SANITARY SEWER BACKFILL OF SHAFTS	
(NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002	DWG NO: 02317-08

HALF SECTION UNDER NATURAL GROUND
HALF SECTION UNDER PAVEMENT



ELEVATION



NOTE:
1. SELECT BACKFILL FOR RIGID PAVEMENT; FLEXIBLE BASE MATERIAL FOR ASPHALT PAVEMENT.

SECTION (A)

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

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

SANITARY SEWER DETAILS
1 OF 3

WBS NUMBER	
N-000818-0001-3	
DRAWING SCALE	
N.T.S.	
CITY OF HOUSTON PM	
MICHELLE RANDON, P.E.	
SHEET NO. 152 OF 155	

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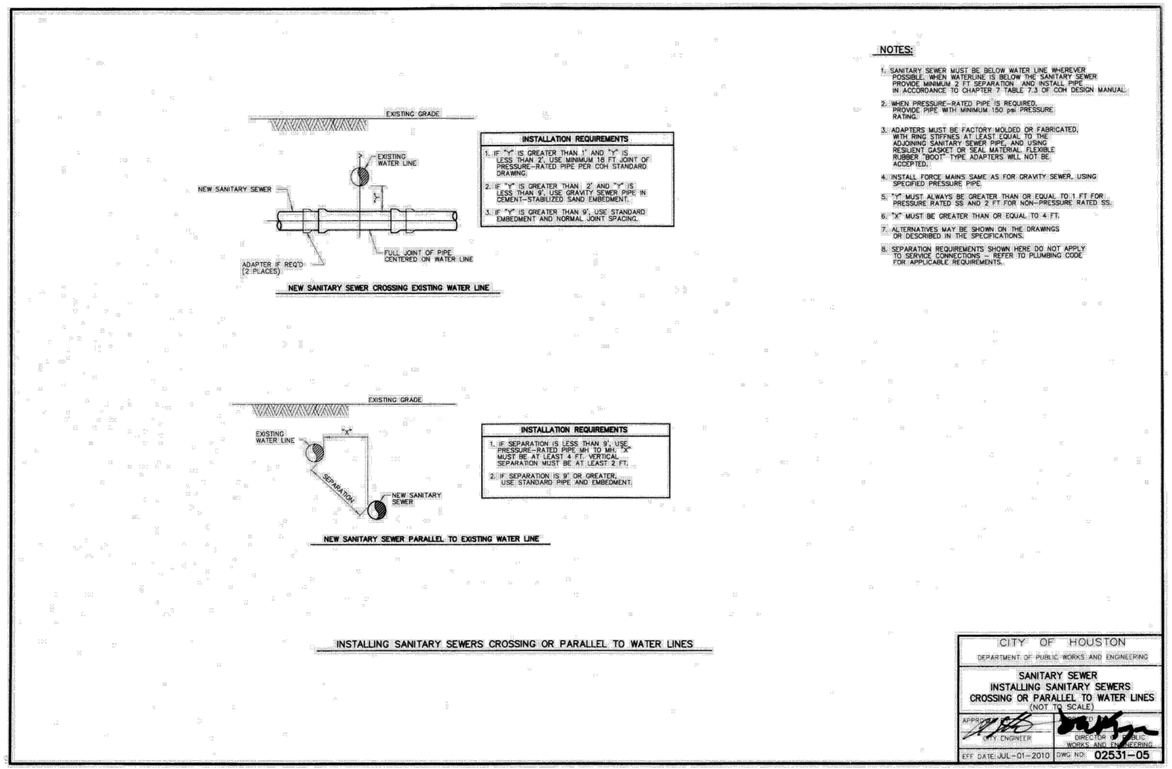

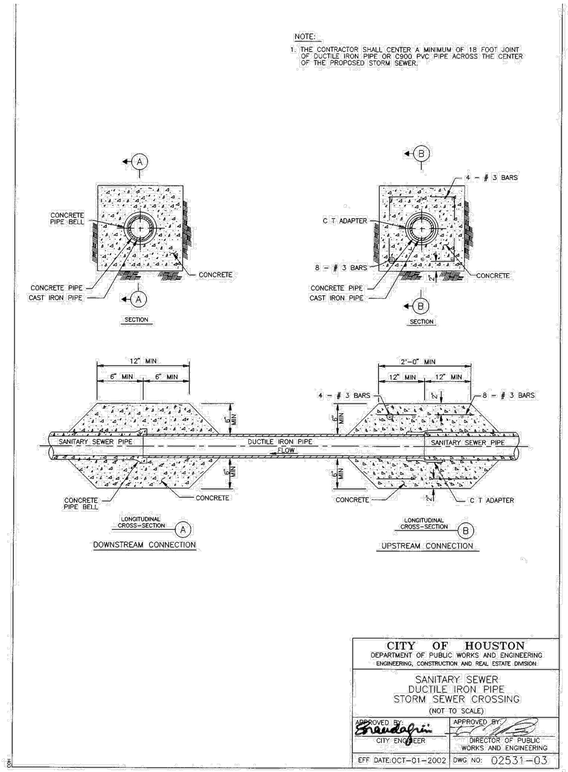

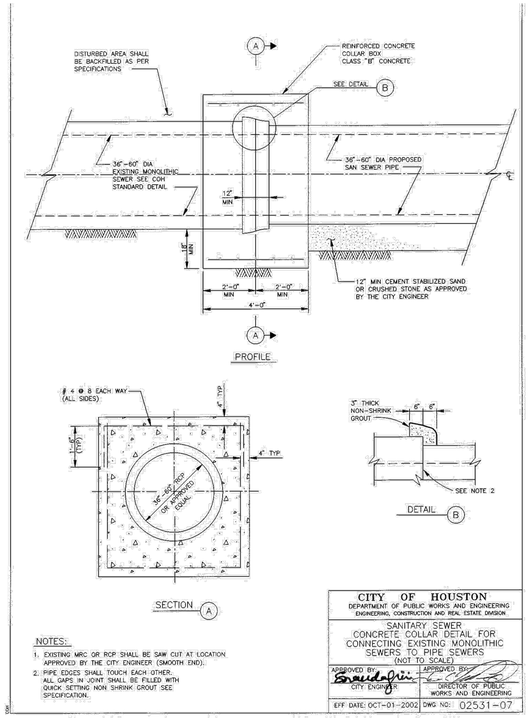

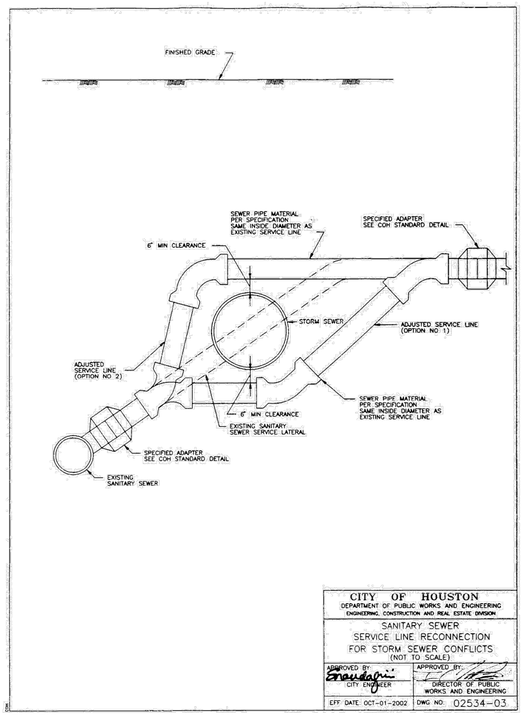

NO.	DATE	REVISION	APP.

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

SANITARY SEWER DETAILS
2 OF 3

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
N.T.S.
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. 153 OF 155

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PLOTTED: 10/2/2023 5:10 PM
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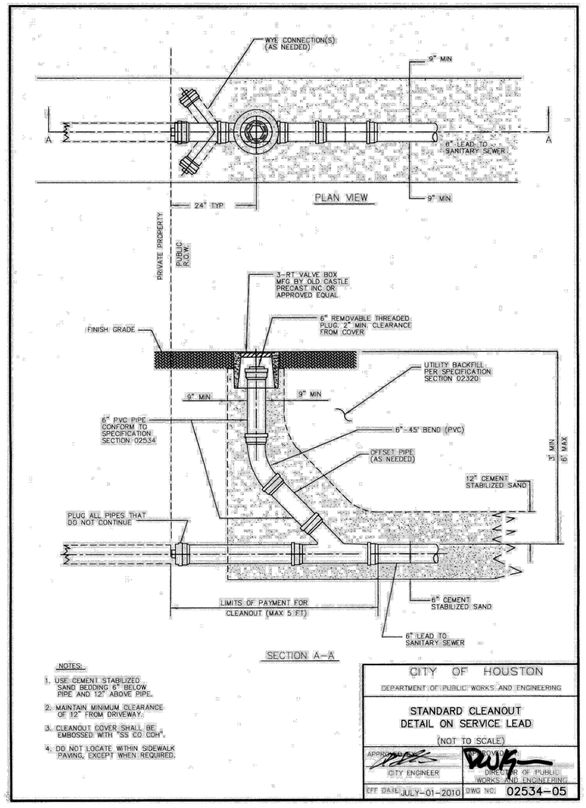
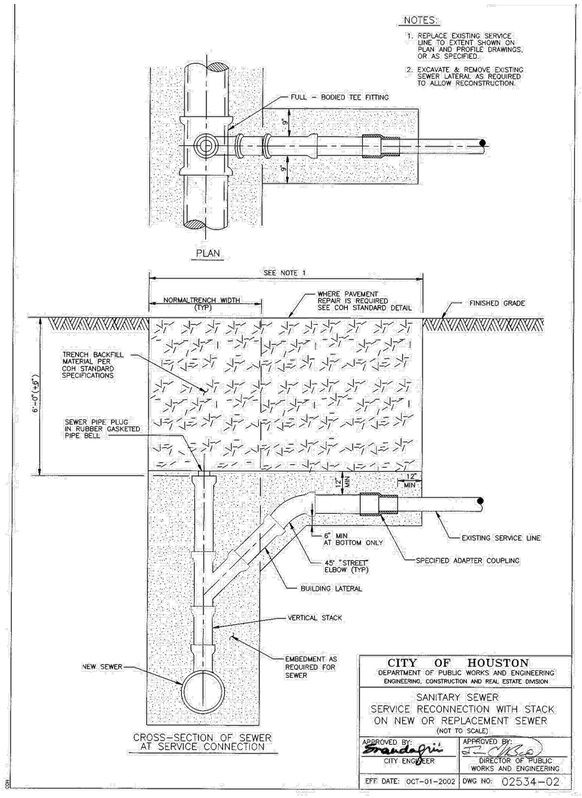


NOTES:

1. USE CEMENT STABILIZED SAND BEDDING 6" BELOW PIPE AND 12" ABOVE PIPE.
2. MAINTAIN MINIMUM CLEARANCE OF 10' FROM DRIVEWAY.
3. CLEANOUT COVER SHALL BE EMBOSSED WITH "SS CO COH".
4. DO NOT LOCATE WITHIN SIDEWALK PAVING, EXCEPT WHEN REQUIRED.

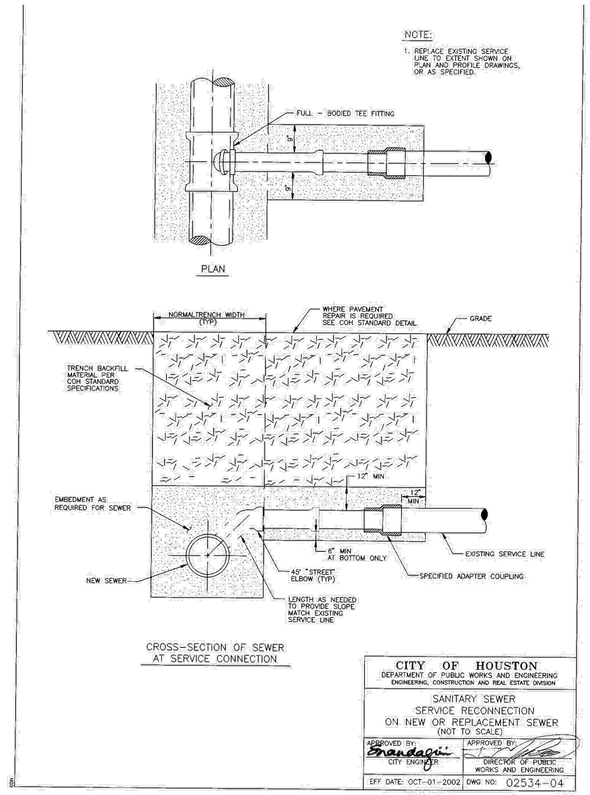
CITY OF HOUSTON	
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
STANDARD CLEANOUT DETAIL ON SERVICE LEAD	
(NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JULY-01-2010	DWG NO: 02534-05



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.

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



NOTE:

1. REPLACE EXISTING SERVICE LINE TO EXTENT SHOWN ON PLAN AND PROFILE DRAWINGS, OR AS SPECIFIED.

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

NO.	DATE	REVISION	APP.

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE UTILITY REVIEW
NOT FOR CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

SANITARY SEWER DETAILS
3 OF 3

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
N.T.S.
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. 154 OF 155

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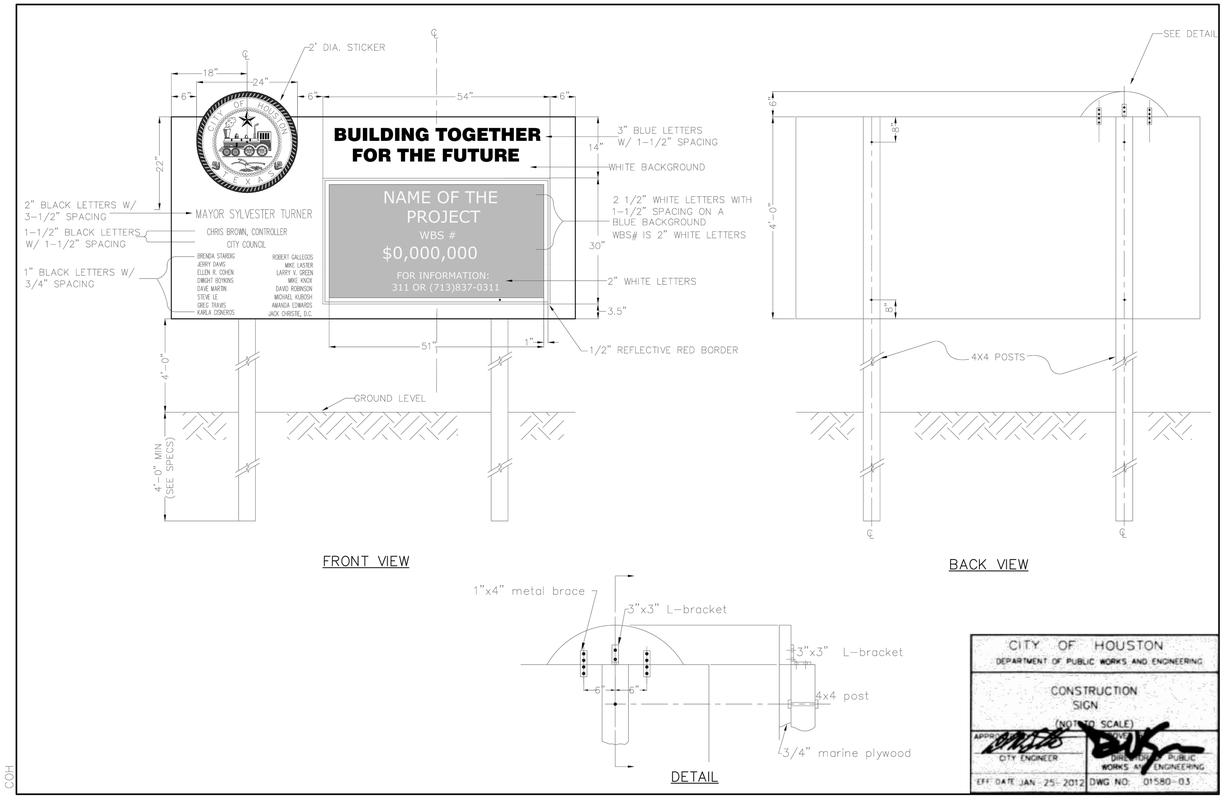

NO.	DATE	REVISION	APP.

HATCH
750 TOWN & COUNTRY BLVD
SUITE 650
HOUSTON, TX 77024
P: 832-930-7670
TX FIRM NUMBER: F-10912

SURVEYED BY:
AMANI ENGINEERING, INC.
FB NUMBER: P-6164

90% DRAFT
2/3/26 UPDATE
FOR PRIVATE
UTILITY REVIEW
NOT FOR
CONSTRUCTION

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

FULTON STREET PAVING AND DRAINAGE IMPROVEMENTS FROM QUITMAN STREET TO HOGAN STREET

PROJECT SIGN DETAIL

WBS NUMBER
N-000818-0001-3
DRAWING SCALE
N.T.S.
CITY OF HOUSTON PM
MICHELLE RANDON, P.E.
SHEET NO. 155 OF 155

PLOT STYLE: COH CIP.CTB
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