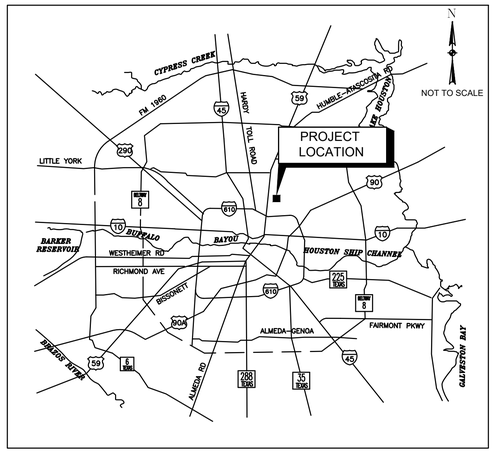
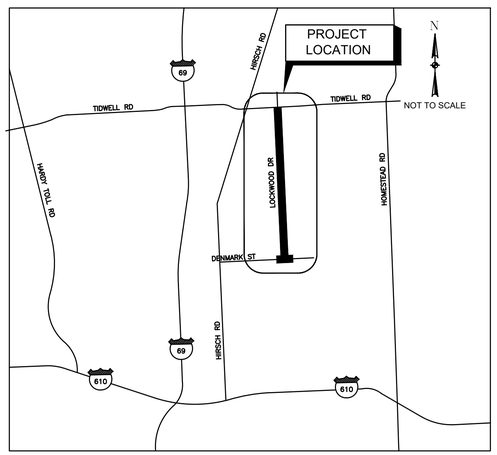
CITY OF HOUSTON
HOUSTON PUBLIC WORKS
CAPITAL PROJECTS

CAPACITY REMEDIAL MANAGEMENT PLAN (CRMP)
PACKAGE 7 AREA 1 - BASIN IB043
WBS NO. R-001000-0032-4



LOCATION MAP



VICINITY MAP
COUNCIL DISTRICT B
KEY MAP NO #454 C, G, L
GIMS MAP NO # 5560a, 5561c

TDLR EABPR N/A

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
ALEJANDRA SALINAS — POSITION 4
SALLIE ALCORN — POSITION 5

NO.	DATE	REVISION	APP.

sty
TEXAS REGISTERED ENGINEERING FIRM F–204
11757 KATY FREEWAY, STE 1540
HOUSTON, TX 77079
713.532.1730

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APRIL 2026
SINA ARJMAND., P.E.
TX PE NO. 132394

SURVEYED BY: LANDTECH
FB NO.

PARKS–FORESTRY DEPT.

METRO

HOUSTON WATER

TRANSPORTATION & DRAINAGE OPERATIONS

CAPITAL PROJECTS

SURVEY

CITY ENGINEER DATE

DIRECTOR OF HOUSTON PUBLIC WORKS DATE

SHEET NO 1 OF 124

FOR CITY OF HOUSTON USE ONLY

NO.	DATE	REVISION	APP.

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4 GENERAL NOTES SHEET 2 OF 2
5 ABBREVIATIONS
6 SYMBOLS LEGEND
7 OVERALL LAYOUT PLAN
8 FLOODPLAIN MITIGATION MAP

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15 PROFILE BOP TO STA 14+00
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17 PROFILE STA 14+00 TO STA 17+00
18 PLAN STA 17+00 TO STA 20+00
19 PROFILE STA 17+00 TO STA 20+00
20 PLAN STA 20+00 TO STA 24+00
21 PROFILE STA 20+00 TO STA 24+00
22 PLAN STA 24+00 TO STA 29+00
23 PROFILE STA 24+00 TO STA 29+00
24 PLAN STA 29+00 TO STA 32+00
25 PROFILE STA 29+00 TO STA 32+00
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27 PROFILE STA 32+00 TO STA 35+00
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44 PLAN STA 69+00 TO STA 72+00
45 PROFILE STA 69+00 TO STA 72+00
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APRIL 2026

SINA ARJMAND, P.E.
TX PE NO. 132394

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

SHEET INDEX

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–001000–0032–4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 2 OF 124	

60% SUBMITTAL

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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.

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" THROUGH 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 VALVE SHALL BE SUPPLIED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF AWWA C-500 AND SHALLB E OF THE RESILIENT SEAT TYPE.

6. ALL WATER VALVES SHALL 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 CONTAMINATION 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 UNILESS 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.

SANITARY SEWER NOTES

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

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

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

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

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

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

7. ALL SANITARY SEWER LINES UNDER PROPOSED OR FUTURE PAVEMENT AND TO A POINT ONE (1) FOOT BACK OF ALL PROPOSED OR FUTURE CURBS SHALL HAVE BEDDING PER CITY OF HOUSTON STANDARD DETAILS DRAWING NUMBERS 02317-01, 02317-02, OR 02317-03 AS APPLICABLE, WITH 1 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.

TRAFFIC NOTES

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

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

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH PART VI OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) LATEST EDITION WITH REVISIONS DURING THE ENTIRE CONSTRUCTION PERIOD.

2. NO WORK SHALL BE PERFORMED IN RESIDENTIAL AREAS FROM 7:00PM TO 7:00AM.

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

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

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

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

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

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

SWPPP CONSTRUCTION NOTES

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

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

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

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

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

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

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

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.

NOTICE:
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VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

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Approved for AT&T underground conduit facilities only.
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SURVEYED BY: LANDTECH
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APRIL 2026

SINA ARJMAND, P.E.
TX PE NO. 132394

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

GENERAL NOTES SHEET 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 3 OF 124	

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PRIVATE UTILITY NOTES:

COMCAST FACILITIES:

1. THE LOCATIONS OF COMCAST CABLE FACILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND LINES FIELD LOCATED.

2. THE CONTRACTOR WILL CALL TEXAS ONE-CALL AT 1-800-245-4545 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 COMCAST CABLE FACILITIES, ALL EXCACVATION MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES. WHEN BORING, THE CONTRACTOR SHALL EXPOSE THE COMCAST CABLE FACILITIES.

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

5. THE CONTRACTOR WILL DETERMIN THE EXACTLOCATION OF THE UNDERGROUND FACILITIES BEFORE COMMENCING WORK AND AGREES TO BE FULLY RESPONSIBLE FOR ALL DAMAGES CAUSED BY THIS FAILURE TO EXACTLY LOCATE AND PRESERVE ALL UNDERGROUND FACILITIES.

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 713-207-5463 OR 713-945-8037 (7:00 AM TO 4:30 PM) FOR STATUS OF LINE LOCATION REQUEST BEFORE EXCAVATION BEGINS.
   - -WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF CENTERPOINT ENERGY FACILITIES, ALL EXCAVATION MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES.
   - -WHEN CENTERPOINT ENERGY FACILITIES ARE EXPOSED, SUFFICIENT SUPPORT MUST BE PROVIDED TO THE FACILITIES TO PREVENT EXCESSIVE STRESS ON THE PIPING.
   - -FOR EMERGENCIES REGARDING GAS LINES CALL 713-659-2111 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.

WARNING: UNDERGROUND ELECTRICAL LINES:

1. THE CONTRACTOR SHALL CONTACT THE UTILITY COORDINATING COMMITTEE AT 1-800-545-6005 OR 811 A MINIMUM OF 48 HOURSPRIOR TO CONSTRUCTION TO HAVE MAIN AND SERVICE LINES FIELD LOCATED.
   - -ALL INFORMATION CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTORS ARE RESPONSIBLE FOR MAKING THEIR OWN DETERMINATIONS AS TO TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. THE CONTRACTOR SHALL VERIFY LOCATION OF UNDERGROUND PIPELINES, CONDUITS, AND STRUCTURES BY CONTACTING OWNERS OF UNDERGROUND UTILITIES OR BY EXCAVATING IN ADVANCE OF CONSTRUCTION.
   - -THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES WHEN AND WHERE THEY FALL IN THE PATH OF CONSTRUCTION.
   - -THE CONTRACTOR IS ALSO RESPONSIBLE FOR CONTACTING THE UTILITY COORDINATING COMMITTEE AT (713) 223-4567 AND TEXAS ONE CALL AT 1-800-245-4545, FORTY EIGHT (48) HOURS PRIOR TO ANY CONSTRUCTION.
   - -THE LOCATION OF ANY CENTERPOINT ENERGY UTILITIES ARE SHOWN IN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. THEY AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.
   - -ALL PROPOSED FACILITIES SHALL MAINTAIN 12" CLEAR FROM ALL EXISTING UTILITIES.

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

METRO NOTES:

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

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

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

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRS TO ANY METRO FACILITIES DAMAGED DURING CONSTRUCTION. IF THE CONTRACTOR CANNOT IMMEDIATELY MAKE THE REPAIRS TO METRO'S SATISFACTION, METRO WILL MAKE THE REPAIRS AND BILL THE COST TO THE CONTRACTOR.

5. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL VERIFY IN THE FIELD THAT THERE ARE NO CONFLICTS WITH OUR FIBER OPTICS, COMMUNICATION, SIGNALING, ELECTRICAL POWER, HIGH VOLTAGE CABLES OR ANY OTHER METRO INFRASTRUCTURE.

6. THE CONTRATOR SHALL CONTACT THE PLANNING, ENGINEERING, AND CONSTRUCTION DEPARTMENT, MUSTAQUE RUMI BY EMAIL AT MUSTAQUE.RUMI@METRO.ORG OR BY PHONE AT 713-615-6217 ONE WEEK PRIOR TO CONSTRUCTION. THE CONSTRUCTION DEPARTMENT MAY ASSIGN ON INSPECTOR TO ASSURE NO DAMAGES ARE MADE TO METRO'S FACILITIES.

7. THE CONTRACTOR SHALL HAND EXCAVATE IN THE VICINITY OF COMMUNICATION AND POWER LINES FEEDING THE METRO SYSTEM.

8. THE CONTRACTOR SHALL CONTACT METRO BUS OPERATIONS A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO CONSTRUCTION CHNAGES. THE CONTACT INFORMATION IS CARL TAYLOR, CARL.TAYLOR@RIDER.METRO.ORG, 713-615-7218.

9. THE CONTRACTOR SHALL PROVIDE ANY TEMPORARY BUS STOP FACILITIES NEEDED, EXCEPT FOR BUS STOP SIGNS, AT NO COST TO METRO AND SHALL RESTORE ANY AFFECTED BUS STOP TO ITS ORIGINAL CONDITION AND MEET CURRENT AMERICAN DISABILITY ACT (ADA) REQUIREMENTS AS REQUIRED BY LOCAL, STATE, AND FEDERAL CODE AND REQUIREMENTS. NO BUS STOP SHALLBE PERMANENTLY REMOVEDWITHOUT APPROVAL FROM METRO.

10. THE CONTRACTOR SHALL CONTACT THE DIRECTOR OF UNIVERSAL ACCESSIBILITY, TIM MILLS BY EMAIL AT TIM@RIDER.METRO.ORG OR BY PHONE AT 713-713-6691 ONE WEEK PRIOR TO CONSTRUCTION. METRO MAY ASSIGN AN INSPECTOR TO ASSURE NO DAMAGES ARE MADE TO METRO'S FACILITIES. UNIVERSAL ACCESSIBILITY WILL COORDINATE ANY PERMANENT OR TEMPORARY IMPACT ON BUS STOPS, SHELTERS, AND SIDEWALK TO MAINTAIN ACCESSIBILITY.

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SINA ARJMAND, P.E.
TX PE NO. 132394

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

GENERAL NOTES SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
AS NOTED	
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NEIL BARNSDALE, P.E.	
SHEET NO. 4 OF 124	

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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
BOP	BEGINNING OF PROJECT
℄	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
CRMP	CAPACITY REMEDIAL MANAGENT PLAN
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DR	DRIVE
DWG	DRAWING
DWY	DRIVEWAY
E	EAST
EL	ELEVATION
EOP	END OF PROJECT
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
GPNT	GAS PAINT MARKINGS
GPS	GLOBAL POSITIONING SYSTEM
GV	GATE VALVE
GV&B	GATE VALVE AND BOX
HCFCD	HARRIS COUNTY FLOOD CONTROL DISTRICT
HDPE	HIGH-DENSITY POLYETHYLENE
HGL	HYDRAULIC GRADE LINE
HP	HIGH PRESSURE
INV EL	INVERT ELEVATION
IP	INTERMEDIATE PRESSURE
IR	IRON ROD

ABBREVIATIONS:

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

ABBREVIATIONS:

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

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EXISTING PLAN VIEW

- WATER METER
- WATER VALVE (GATE)
- WATER VALVE (BUTTERFLY)
- FIRE HYDRANT/FLUSHING VALVE
- TAPPING SLEEVE & VALVE
- REDUCER
- ROUND CONNECTION
- SANITARY SEWER CLEANOUT & MANHOLE
- STORM SEWER MANHOLE
- STORM SEWER INLETS
- CULVERT PIPE AND HEADWALL
- TOP OF CURB ELEVATION
- GUTTER ELEVATION
- TOP OF PAVEMENT ELEVATION
- CONTOUR LINE
- ROW LINE
- PROPERTY LINE
- LOT LINES
- EASEMENT LINE
- CENTER LINE OF ROW
- TRANSIT LINE
- EDGE OF DITCHES
- CENTER LINE OF DITCHES
- EDGE OF DITCHES
- FENCE LINE, WOOD
- FENCE LINE, CHAIN LINK
- FENCE LINE, BARBED WIRE
- FENCE LINE, HOG WIRE
- EDGE OF CONCRETE
- CURB LINE
- CONCRETE WALK
- EDGE OF ASPHALT
- EDGE OF SHELL OR GRAVEL
- DIMENSION LINE
- AERIAL POWER LINE
- UNDERGROUND POWER LINE
- GAS LINE
- UNKNOWN UNDERGROUND LINE
- OIL PIPELINE
- UNDERGROUND TELECOMM LINE W/VAULT
- AERIAL TELECOMM LINE
- RAILROAD LINE
- WATER LINE
- SANITARY SEWER LINE
- STORM SEWER LINE
- SANITARY SEWER FORCE MAIN
- RECLAIMED WATER LINE
- NON–POTABLE WATER LINE
- GAS METER
- GAS VALVE
- PROPANE LINE
- STEAM LINE
- MISC UNDERGROUND PIPELINE LABLE

PROPOSED PLAN VIEW

- WATER METER
- WATER VALVE (GATE)
- WATER VALVE (BUTTERFLY)
- FIRE HYDRANT/FLUSHING VALVE
- TAPPING SLEEVE & VALVE
- REDUCER
- ROUND CONNECTION
- SANITARY SEWER CLEANOUT & MANHOLE
- STORM SEWER MANHOLE
- STORM SEWER INLETS
- CULVERT PIPE AND HEADWALL
- TOP OF CURB ELEVATION
- GUTTER ELEVATION
- TOP OF PAVEMENT ELEVATION
- CONTOUR LINE
- ROW LINE
- PROPERTY LINE
- LOT LINES
- EASEMENT LINE
- CENTER LINE OF ROW
- TRANSIT LINE
- EDGE OF DITCHES
- CENTER LINE OF DITCHES
- EDGE OF DITCHES
- FENCE LINE, WOOD
- FENCE LINE, CHAIN LINK
- FENCE LINE, BARBED WIRE
- FENCE LINE, HOG WIRE
- EDGE OF CONCRETE
- CURB LINE
- CONCRETE WALK
- EDGE OF ASPHALT
- EDGE OF SHELL OR GRAVEL
- DIMENSION LINE
- AERIAL POWER LINE
- UNDERGROUND POWER LINE
- GAS LINE
- UNKNOWN UNDERGROUND LINE
- OIL PIPELINE
- UNDERGROUND TELECOMM LINE W/ VAULT
- AERIAL TELECOMM LINE
- RAILROAD LINE
- WATER LINE
- SANITARY SEWER LINE
- STORM SEWER LINE
- SANITARY SEWER FORCE MAIN
- RECLAIMED WATER LINE
- NON–POTABLE WATER LINE
- GAS METER
- GAS VALVE
- PROPANE LINE
- STEAM LINE
- MISC UNDERGROUND PIPELINE LABLE
- MATCH LINE

EXISTING PLAN VIEW

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

EXISTING PROFILE VIEW

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

PROPOSED PLAN VIEW

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

PROPOSED PROFILE VIEW

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

MISC STANDARD ELEMENTS

- COH NORTH ARROW
- COH BAR SCALE (SCALE: 1"=20')
- REVISION CLOUD/DELTA
- DETAIL/SECTION TITLE (SCALE: 1:1)
- SECTION CALLOUT
- DETAIL CALLOUT
- CONTROL POINT
- TUNNEL SHAFT
- TRENCHLESS WATERLINE INSTALLATION

NO.	DATE	REVISION	APP.

stv
Texas Registered Engineering Firm F–204
Texas First Bank Building
11757 Katy Freeway
Suite 1540
Houston, TX. 77079
(713)532–1730
Fax (713)532–1734

SURVEYED BY: LANDTECH
FB NO. P–

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

APRIL 2026

SINA ARJMAND, P.E.
TX PE NO. 132394

CITY OF HOUSTON

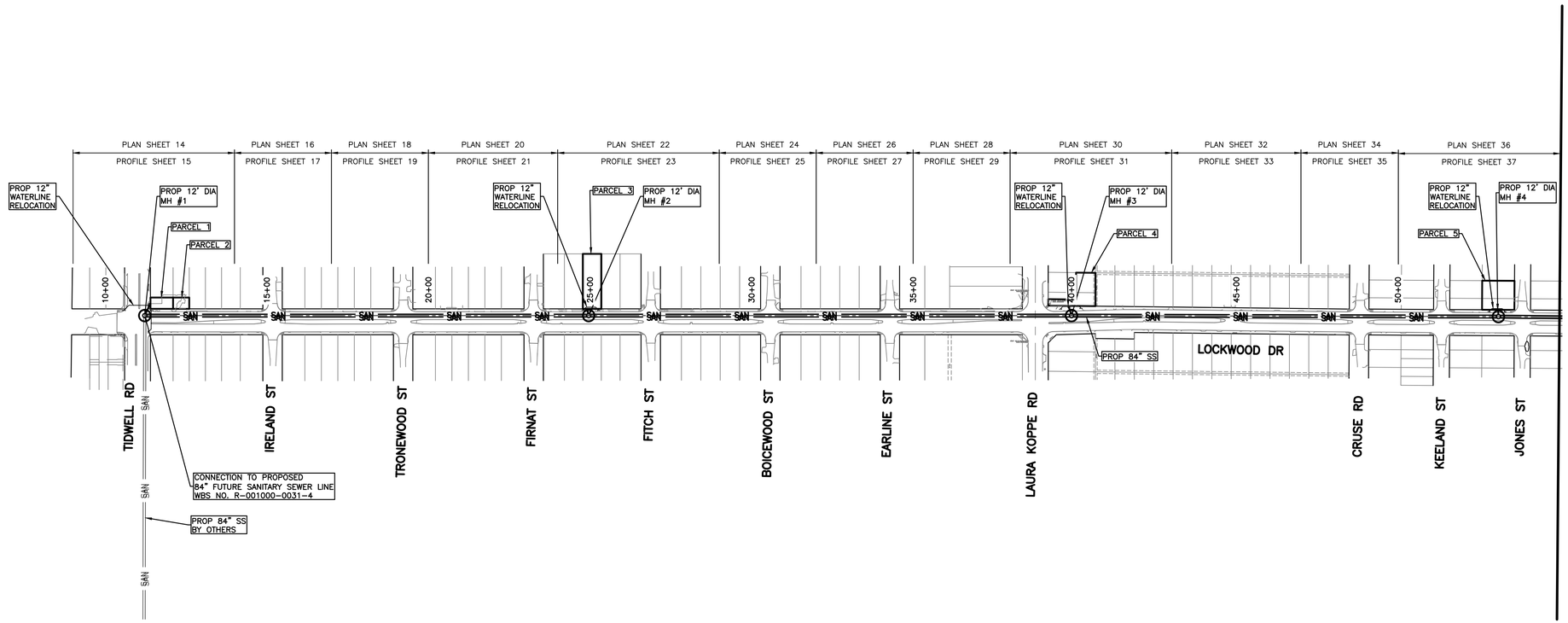
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

SYMBOLS LEGEND

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–001000–0032–4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 6 OF 124	

60% SUBMITTAL



NO.	DATE	REVISION	APP.

stv
Texas Registered Engineering Firm F-204

Texas First Bank Building
11757 Katy Freeway
Suite 1540
Houston, TX, 77079
(713)532-1730
Fax (713)532-1734

SURVEYED BY: LANDTECH
FB NO. P-

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APRIL 2026

SINA ARJMAND, P.E.
TX PE NO. 132394

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

OVERALL LAYOUT PLAN

WBS NUMBER
R-001000-0032-4
DRAWING SCALE
AS NOTED
CITY OF HOUSTON PM
NEIL BARNSDALE, P.E.
SHEET NO. 7 OF 124

FOR CITY OF HOUSTON USE ONLY

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/23/2026 3:24 PM

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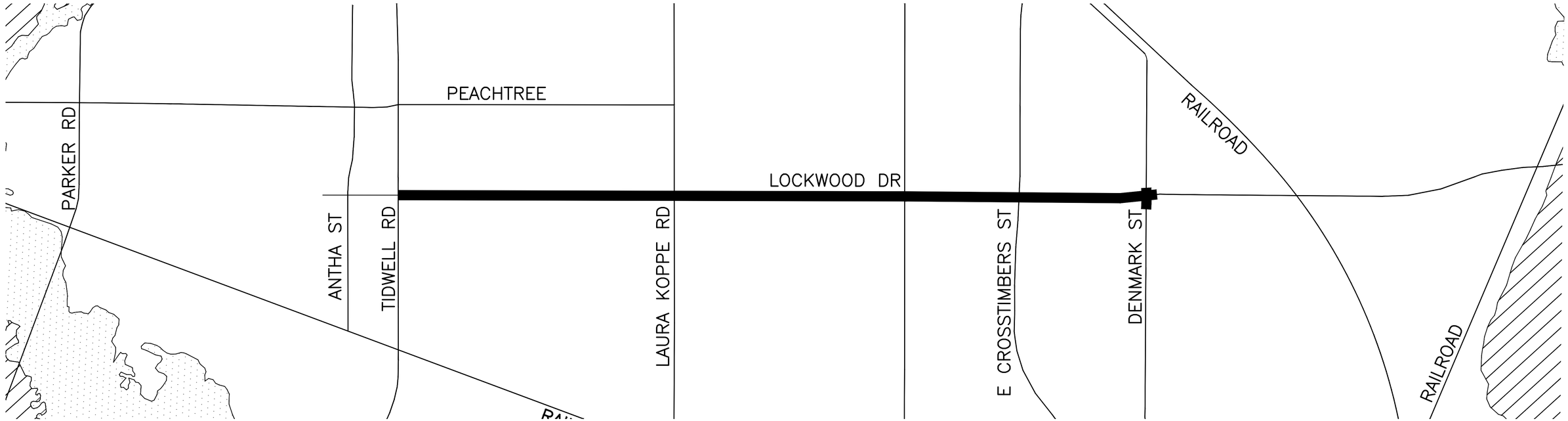

NO.	DATE	REVISION	APP.

LEGEND

- 100-YEAR FLOODPLAIN AREAS OF 1% ANNUAL CHANCE FLOOD EVENT (ZONE AE)
- 500-YEAR FLOODPLAIN AREAS OF .02% ANNUAL CHANCE FLOOD EVENT (ZONE X)
- AREAS DETERMINED TO BE OUTSIDE THE 0.2%ANNUAL CHANCE FLOODPLAIN (ZONE X)

NOTES

1. SEE SHEET 14-53 FOR SAN SEWER PLAN AND PROFILES.
2. DATA SHOWN HEREON IS BASED ON INFORMATION PRESENTED IN FEMA FLOOD INSURANCE MAP NO. 48201C0680L, REVISED JUNE 18, 2007.
3. EXCESS SOIL TO BE HAULED OFF PROJECT SITE. THE CONTRACTOR'S "MEANS AND METHODS" MUST INCLUDE THE REMOVAL AND/OR HAULING OF ANY EXCAVATED MATERIALS FROM THIS SITE.
4. THE GROUND SURFACE OF THIS PROJECT AREA SHALL BE RESTORED TO ITS EXISTING CONDITION AND ELEVATION, I.E. BACKFILL OPERATIONS TO MATCH EXISTING GROUND ELEVATIONS, UNLESS OTHERWISE NOTED.

stv
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Fax (713)532-1734

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APRIL 2026

SINA ARJMAND, P.E.
TX PE NO. 132394

SURVEYED BY: LANDTECH
FB NO. P-

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

FLOODPLAIN MITIGATION MAP

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 8 OF 124	

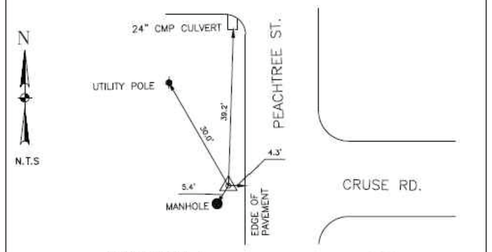
60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/23/2026 3:24 PM

FILE PATH: 230012201_GN_FEMA_Map.dwg

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 1:21 PM
FILE PATH: S:\2025\2520079\CADD\R-001000-0032-3 Scm.dwg

CITY OF HOUSTON
CITY SURVEY 5560 0416
SITE CONTROL MONUMENT



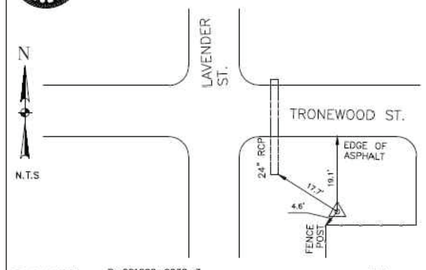
Project WBS# R-001000-0032-3
Texas Coordinate System of 1983, South Central Zone, U. S. Survey Feet
X= 3,136,494.2720
Y= 13,870,419.8253
Lat.= 29°50'14.56215" N
Lon.= 95°18'55.15091" W
Reference Frame Used: NAD 83 (GRS 80)
Vertical Adjustment used: NAVD '88
General Location: PEACHTREE & CRUSE
Date Set: 3/16/1972 Type of Mark: 4A
3 Nearest project control points (bearings and distances stated below):
CP-25: S69°52'04"W 1193.34
CP-26: S83°30'18"W 1140.13
CP-27: N86°01'28"W 1144.42
NOTE:
1. Bearings and distances are grid.
2. Scale Factor = (S.F. 0.99989985044).
3. Surface= Grid
S.F.
Surveyed By: LANDTECH, INC.
1315 W SAM HOUSTON PKWY N, SUITE 100
HOUSTON, TEXAS 77043
T: 713-861-7068 TBPELS REG. NO. 10019100

Keymap Page: 454G
Orthometric Elevation = 57.61
Ellipsoid Height= N/A
Geoid: 18
Datum Source & Adjustment: GPS & DIGITAL LEVELING

STATE OF TEXAS REGISTERED NHUY T. NGUYEN 6409 PROFESSIONAL LAND SURVEYOR

City of Houston, Harris County, Texas

CITY OF HOUSTON
CITY SURVEY 5561 7205
SITE CONTROL MONUMENT



Project WBS# R-001000-0032-3
Texas Coordinate System of 1983, South Central Zone, U. S. Survey Feet
X= 3,134,442.3265
Y= 13,873,421.6400
Lat.= 29°50'44.90413" N
Lon.= 95°19'17.36742" W
Reference Frame Used: NAD 83 (GRS 80)
Vertical Adjustment used: NAVD '88
General Location: LAVENDER ST AT TRONEWOOD ST.
Date Set: 01/23/2025 Type of Mark: 4A
3 Nearest project control points (bearings and distances stated below):
CP-33: S65°02'32"E 865.30'
CP-34: N83°17'13"E 766.98'
CP-35: N56°09'33"E 893.20'
NOTE:
1. Bearings and distances are grid.
2. Scale Factor = (S.F. 0.99989985044).
3. Surface= Grid
S.F.
Surveyed By: LANDTECH, INC.
1315 W SAM HOUSTON PKWY N, SUITE 100
HOUSTON, TEXAS 77043
T: 713-861-7068 TBPELS REG. NO. 10019100

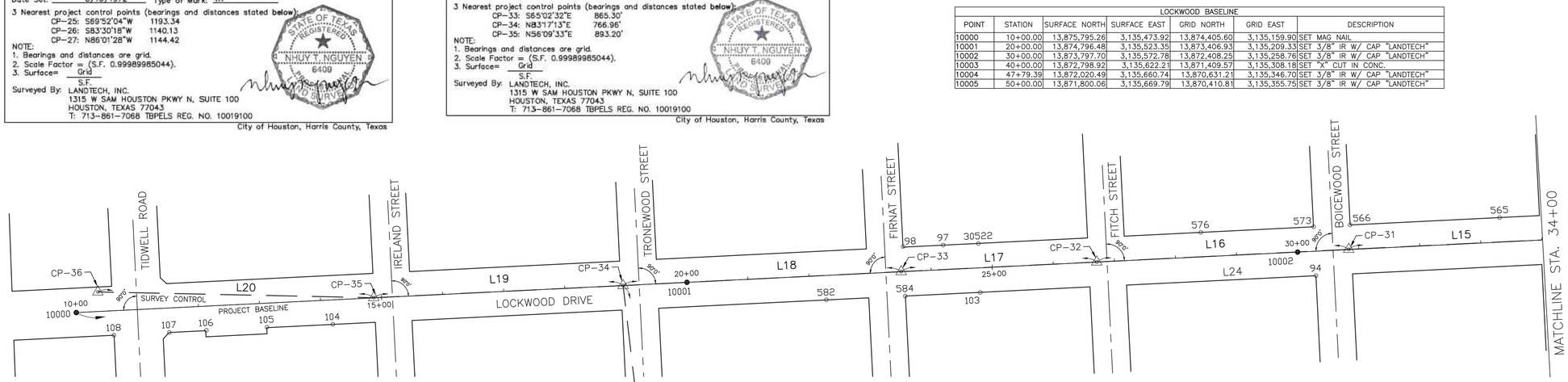
Keymap Page: 454C
Orthometric Elevation = 59.70
Ellipsoid Height= N/A
Geoid: 18
Datum Source & Adjustment: GPS & DIGITAL LEVELING

STATE OF TEXAS REGISTERED NHUY T. NGUYEN 6409 PROFESSIONAL LAND SURVEYOR

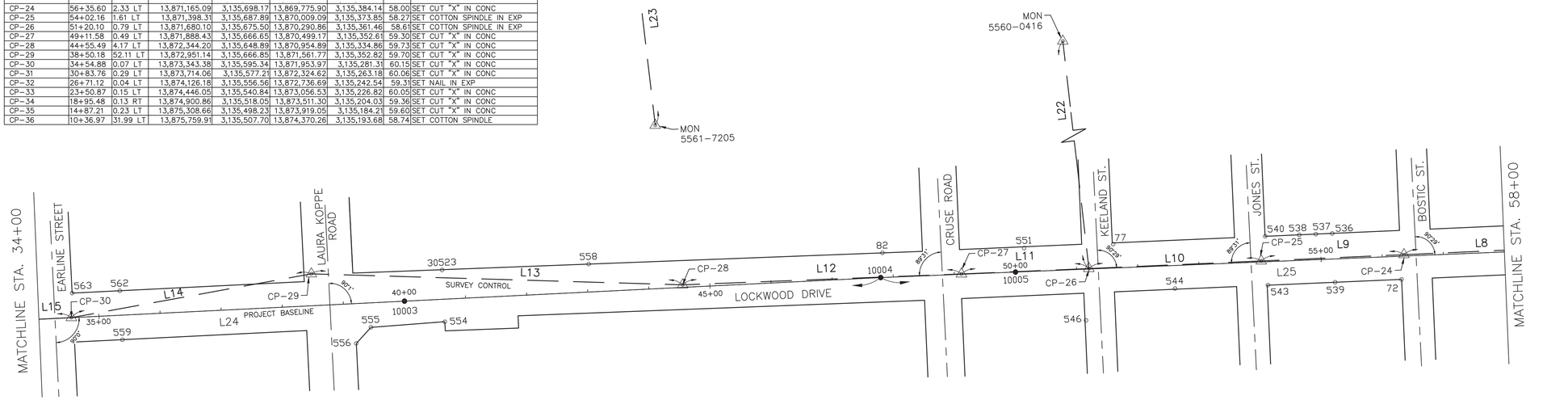
City of Houston, Harris County, Texas

PROJECT FOUND CORNER TABLE			
POINT#	STATION	OFFSET	DESCRIPTION
72	56+29.97	38.00 RT	FND 5/8" IR W/FIELD DATA CAP
77	51+61.34	38.94 LT	FND 3/8" IR
82	47+83.94	40.19 LT	FND 1/2" IR
94	30+28.14	39.98 RT	FND 5/8" IR (BENT)
97	24+21.62	40.00 LT	FND 5/8" IR W/CAP (ILLEGIBLE)
98	23+56.07	40.97 LT	FND 1/2" IR
103	24+78.32	40.17 RT	FND 1/2" IR
104	14+18.19	39.88 RT	FND 1/2" IR
105	13+10.16	39.23 RT	FND 1/2" IR
106	12+11.12	39.52 RT	FND 1/2" IR W/CAP VILLA 6751
107	11+50.36	39.90 RT	FND 1/2" IR
108	10+59.69	39.93 RT	FND 1/2" IR
536	55+19.90	41.67 LT	FND 5/8" IR
537	54+92.99	41.69 LT	FND 5/8" IR
538	54+65.82	41.62 LT	FND 5/8" IR
539	55+21.25	38.08 RT	FND 1/2" IR
540	54+10.10	41.70 LT	FND 5/8" IR
543	54+11.24	38.28 RT	FND 1/2" IR
544	52+59.47	37.62 RT	FND 5/8" IR
546	51+11.97	83.62 RT	FND 5/8" IR W/CAP ?
551	50+15.63	38.49 LT	FND 1/2" IR
554	40+64.20	36.83 RT	FND 5/8" IR GREENLEAF 8326685003
555	39+43.04	39.83 RT	FND 5/8" IR
556	39+17.93	65.02 RT	FND 5/8" IR GREENLEAF 8326685003
558	43+03.73	45.55 LT	FND 1/2" IR
559	35+36.34	40.20 RT	FND 1/2" IR
562	35+36.10	39.89 LT	FND 1/2" IR
563	34+57.92	39.93 LT	FND 1/2" IR
565	33+32.82	39.94 LT	FND 5/8" IR
566	30+87.93	40.13 LT	FND 1/2" IR
573	30+28.16	40.04 LT	FND 1/2" IR
576	28+43.27	39.97 LT	FND 5/8" IR
582	22+26.29	39.81 RT	FND 1/2" IR W/CAP (ILLEGIBLE)
584	23+55.48	40.10 RT	FND 1/2" IR
30523	40+63.86	47.83 LT	FND 5/8" IR
30522	24+79.15	39.75 LT	FND 1/2" IR W/CAP SURVEY 1

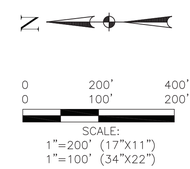
LOCKWOOD BASELINE						
POINT	STATION	SURFACE NORTH	SURFACE EAST	GRID NORTH	GRID EAST	DESCRIPTION
10000	10+00.00	13,875,795.26	3,135,473.92	13,874,405.60	3,135,159.90	SET MAG NAIL
10001	20+00.00	13,874,796.48	3,135,523.35	13,873,406.93	3,135,209.33	SET 3/8" IR W/ CAP "LANDTECH"
10002	30+00.00	13,873,797.70	3,135,572.78	13,872,408.25	3,135,258.76	SET 3/8" IR W/ CAP "LANDTECH"
10003	40+00.00	13,872,798.92	3,135,622.21	13,871,409.57	3,135,308.18	SET "X" CUT IN CONC.
10004	47+79.39	13,872,020.49	3,135,660.74	13,870,631.21	3,135,346.70	SET 3/8" IR W/ CAP "LANDTECH"
10005	50+00.00	13,871,800.06	3,135,669.79	13,870,410.81	3,135,355.75	SET 3/8" IR W/ CAP "LANDTECH"



SURVEY CONTROL TABLE / TBM STATE PLAN GRID COORDINATE								
POINT#	STATION	OFFSET	SURFACE NORTH	SURFACE EAST	GRID NORTH	GRID EAST	ELEV.	DESCRIPTION
CP-24	56+35.60	2.33 LT	13,871,165.09	3,135,698.17	13,869,775.90	3,135,384.14	58.00	SET CUT "X" IN CONC
CP-25	54+02.16	1.61 LT	13,871,398.31	3,135,687.89	13,870,009.09	3,135,373.85	58.27	SET COTTON SPINDLE IN EXP
CP-26	51+20.10	0.79 LT	13,871,680.10	3,135,675.50	13,870,290.86	3,135,361.46	58.61	SET COTTON SPINDLE IN EXP
CP-27	49+11.58	0.49 LT	13,871,888.43	3,135,666.65	13,870,499.17	3,135,352.61	59.30	SET CUT "X" IN CONC
CP-28	44+55.49	4.17 LT	13,872,344.20	3,135,648.89	13,870,954.89	3,135,334.86	59.73	SET CUT "X" IN CONC
CP-29	38+50.18	52.11 LT	13,872,951.14	3,135,666.85	13,871,561.77	3,135,352.82	59.70	SET CUT "X" IN CONC
CP-30	34+54.88	0.07 LT	13,873,343.38	3,135,595.34	13,871,953.97	3,135,281.31	60.15	SET CUT "X" IN CONC
CP-31	30+83.76	0.29 LT	13,873,714.06	3,135,577.21	13,872,324.62	3,135,263.18	60.06	SET CUT "X" IN CONC
CP-32	26+71.12	0.04 LT	13,874,126.18	3,135,556.56	13,872,736.69	3,135,242.54	59.31	SET NAIL IN EXP
CP-33	23+50.87	0.15 LT	13,874,446.05	3,135,540.84	13,873,056.53	3,135,226.82	60.05	SET CUT "X" IN CONC
CP-34	18+95.48	0.13 RT	13,874,900.86	3,135,518.05	13,873,511.30	3,135,204.03	59.36	SET CUT "X" IN CONC
CP-35	14+87.21	0.23 LT	13,875,308.66	3,135,498.23	13,873,919.05	3,135,184.21	59.60	SET CUT "X" IN CONC
CP-36	10+36.97	31.99 LT	13,875,759.91	3,135,507.70	13,874,370.26	3,135,193.68	58.74	SET COTTON SPINDLE



LINE TABLE		
LINE	BEARING	DISTANCE
L8	N02°30'33"W	270.14'
L9	N02°31'34"W	233.44'
L10	N02°31'01"W	282.06'
L11	N02°26'00"W	208.52'
L12	N02°13'52"W	456.11'
L13	N01°41'43"E	607.21'
L14	N10°19'57"W	398.71'
L15	N02°48'01"W	371.12'
L16	N02°52'05"W	412.64'
L17	N02°48'48"W	320.25'
L18	N02°52'08"W	455.39'
L19	N02°46'57"W	408.28'
L20	N01°12'05"E	451.35'
L21	N67°49'15"E	99.42'
L22	N83°30'18"E	1,140.24'
L23	S83°17'13"W	767.04'
L24	S02°50'00"E	3,779.39'
L25	S02°21'00"E	1,416.18'



BENCHMARK:
CITY OF HOUSTON MONUMENT 5560-0416: FOUND BRASS DISK IN CONCRETE AT CRUSE AND PEACHTREE INTERSECTION ELEV 57.61' NAVD 1988 (GEOID 18)

NOTES:
1. BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE. DISTANCES ARE SURFACE VALUES. SURFACE = GRID/0.99989985044.
2. ELEVATIONS BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
3. HORIZONTAL AND VERTICAL CONTROLS USING GPS OBSERVATIONS AND DIGITAL LEVELING HOLDING CITY OF HOUSTON MONUMENT 5560-0416.
4. FIELD WORK COMPLETED IN MARCH 2026.

stv
TBPE FIRM No. F-204
Texas First Bank Building
11757 Katy Freeway
Suite 1540
Houston, TX, 77079
(713)532-1730
Fax (713)532-1734

LANDTECH
1315 W SAM HOUSTON PKWY N
STE 100
HOUSTON, TEXAS 77043
T: 713-861-7068 F: 713-861-4131
TBPELS REGISTRATION NO. 10019100

SURVEYED BY: LANDTECH
FB NO. TBD

Released by: Nhuy Nguyen, TX RPLS #6409
Date: April 24, 2026
FOR INTERIM REVIEW ONLY
PRELIMINARY, THIS DOCUMENT SHALL NOT BE RECORDED FOR ANY PURPOSE AND SHALL NOT BE USED OR VIEWED OR RELIED UPON AS A FINAL SURVEY DOCUMENT

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
DENMARK ST TO TIDWELL RD

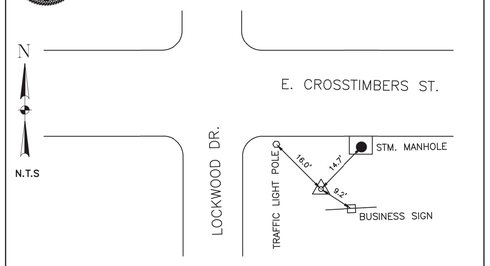
SURVEY CONTROL MAP
SHEET 1 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 9 OF 124	

60% SUBMITTAL

CITY OF HOUSTON

CITY SURVEY 5560
7311
SITE CONTROL MONUMENT



Project WBS# R-001000-0032-3
Texas Coordinate System of 1983,
South Central Zone, U. S. Survey Feet
X= 3,135,513.0793
Y= 13,868,024.2359

Lat.= 29°49'51.16387" N
Lon.= 95°19'07.14301" W

Reference Frame Used: NAD 83 (GRS 80)
Vertical Adjustment used: NAVD '88
General Location: E CROSSTIMBERS AT LOCKWOOD DR
Date Set: 6/20/2025 Type of Mark: 4A

Keymap Page: 454L
Orthometric Elevation = 55.80
Ellipsoid Height= N/A
Geoid: 18
Datum Source & Adjustment:
GPS & DIGITAL LEVELING

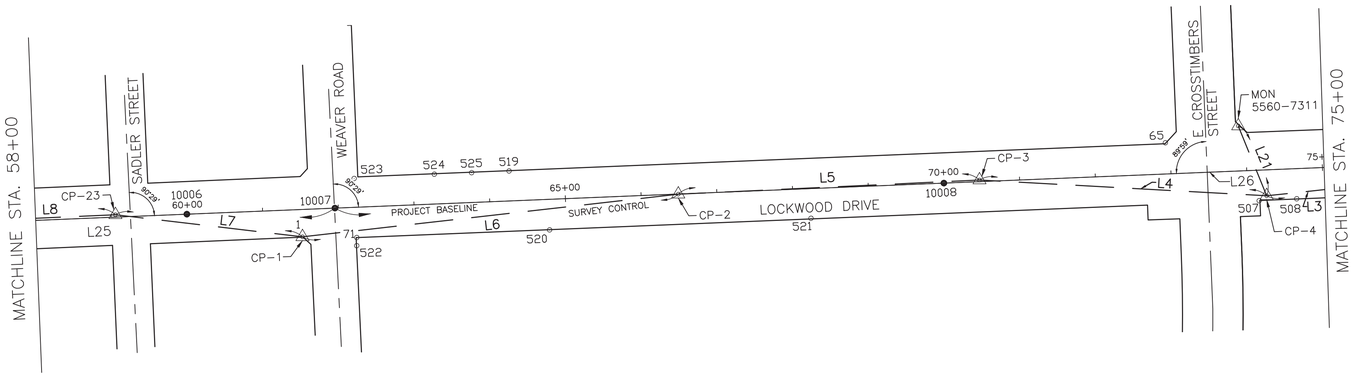
3 Nearest project control points (bearings and distances stated below):
CP-3: N11°47'06"W 348.86
CP-4: S67°49'15"W 99.41
CP-5: S03°37'25"W 565.30

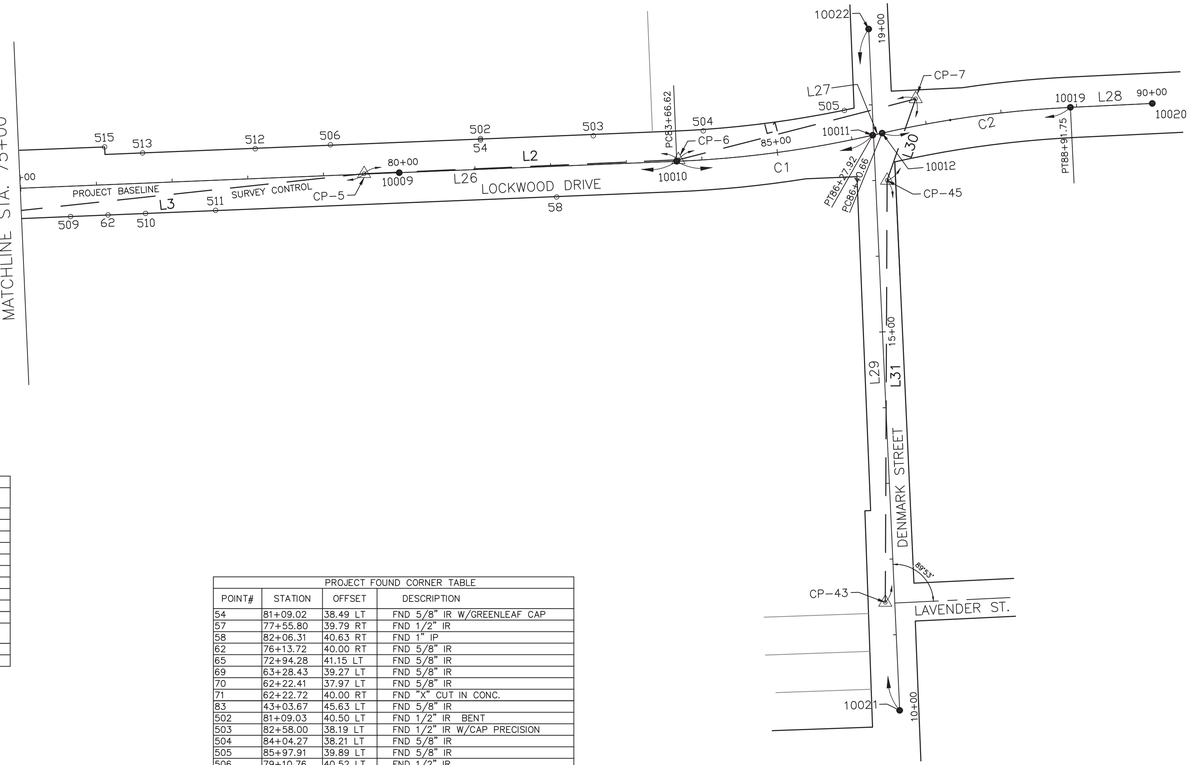
NOTE:
1. Bearings and distances are grid.
2. Scale Factor = (S.F. 0.99989985044).
3. Surface= Grid
S.F.

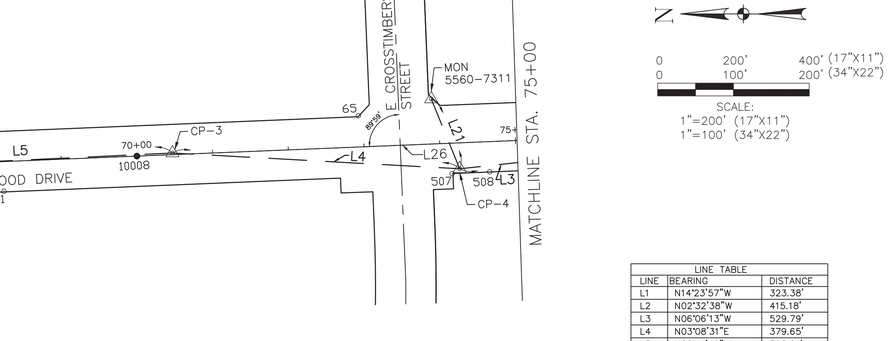
Surveyed By: LANDTECH, INC.
1315 W SAM HOUSTON PKWY N, SUITE 100
HOUSTON, TEXAS 77043
T: 713-861-7068 TBPELS REG. NO. 10019100

STATE OF TEXAS REGISTERED NHUY T. NGUYEN 6409 LICENSED SURVEYOR

City of Houston, Harris County, Texas







LINE TABLE		
LINE	BEARING	DISTANCE
L1	N14°23'57"W	323.38'
L2	N02°32'38"W	415.18'
L3	N06°06'13"W	529.79'
L4	N03°08'31"E	379.65'
L5	N02°41'49"W	398.01'
L6	N06°28'07"W	499.15'
L7	N06°43'14"E	248.59'
L8	N02°30'33"W	270.14'
L21	N67°49'15"E	99.42'
L25	S02°21'00"E	1,416.18'
L26	S02°21'00"E	2,171.05'
L27	S12°48'00"E	12.73'
L28	S02°45'30"E	108.25'
L29	N87°23'30"E	900.00'
L30	N70°41'32"W	114.10'
L31	N89°45'27"W	556.85'

CURVE	RADIUS	ARC LENGTH	DELTA	CHORD	
C1	1,432.69'	261.30'	10°27'00"	S07°34'30"E	260.94'
C2	1,432.69'	251.09'	10°02'30"	S07°46'45"E	250.77'

BENCHMARK:
CITY OF HOUSTON MONUMENT 5560-0416: FOUND BRASS DISK IN CONCRETE AT CRUSE AND PEACHTREE INTERSECTION ELEV 57.61' NAVD 1988 (GEOID 18)

NOTES:
1. BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE. DISTANCES ARE SURFACE VALUES.
   SURFACE = GRID/0.99989985044.
2. ELEVATIONS BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
3. HORIZONTAL AND VERTICAL CONTROLS USING GPS OBSERVATIONS AND DIGITAL LEVELING HOLDING CITY OF HOUSTON MONUMENT 5560-0416.
4. FIELD WORK COMPLETED IN MARCH 2026.

LOCKWOOD BASELINE							
POINT	STATION	SURFACE NORTH	SURFACE EAST	GRID NORTH	GRID EAST		DESCRIPTION
10006	60+00.00	13,870,800.90	3,135,710.79	13,869,411.75	3,135,396.75	SET "X" CUT IN CONC.	
10007	61+95.57	13,870,605.50	3,135,718.81	13,869,216.36	3,135,404.77	SET "X" CUT IN CONC.	
10008	70+00.00	13,869,801.75	3,135,751.79	13,868,412.69	3,135,437.75	SET 3/8" IR W/ CAP "LANDTECH"	
10009	80+00.00	13,868,802.59	3,135,792.80	13,867,413.63	3,135,478.75	SET 3/8" IR W/ CAP "LANDTECH"	
10010	83+66.62	13,868,436.27	3,135,807.83	13,867,047.36	3,135,493.78	SET 3/8" IR W/ CAP "LANDTECH"	
10011	86+27.92	13,868,177.61	3,135,842.23	13,866,788.72	3,135,528.17	SET "X" CUT IN CONC.	
10012	86+40.66	13,868,165.19	3,135,845.05	13,866,776.30	3,135,531.00	SET "X" CUT IN CONC.	
10019	88+91.75	13,867,916.73	3,135,878.99	13,866,527.86	3,135,564.94	SET 3/8" IR W/ CAP "LANDTECH"	
10020	90+00.00	13,867,808.60	3,135,884.20	13,866,419.75	3,135,570.14	SET 3/8" IR W/ CAP "LANDTECH"	
DENMARK BASELINE							
POINT	STATION	SURFACE NORTH	SURFACE EAST	GRID NORTH	GRID EAST		DESCRIPTION
10021	10+00.00	13,868,142.04	3,135,083.24	13,866,753.15	3,134,769.26	SET MAG NAIL	
10022	19+00.00	13,868,183.00	3,135,982.31	13,866,794.11	3,135,668.24	SET MAG NAIL	

SURVEY CONTROL TABLE / TBM STATE PLAN GRID COORDINATE								
POINT#	STATION	OFFSET	SURFACE NORTH	SURFACE EAST	GRID NORTH	GRID EAST	ELEV.	DESCRIPTION
CP-1	61+51.21	36.11 RT	13,870,648.34	3,135,680.91	13,869,259.20	3,135,366.87	56.64	SET 5/8" IR W/ LANDTECH CAP
CP-2	66+49.08	0.26 RT	13,870,152.36	3,135,737.14	13,868,763.27	3,135,423.10	56.73	SET 5/8" IR W/ LANDTECH CAP
CP-3	70+47.08	2.15 LT	13,869,754.80	3,135,755.87	13,868,365.75	3,135,441.83	55.84	SET 5/8" IR W/ LANDTECH CAP
CP-4	74+24.98	34.18 RT	13,869,375.72	3,135,735.06	13,867,986.71	3,135,421.02	56.34	SET CUT "X" IN CONC
CP-5	79+53.64	0.50 LT	13,868,848.93	3,135,791.39	13,867,459.97	3,135,477.35	55.95	SET 5/8" IR W/ LANDTECH CAP
CP-6	83+68.82	1.90 LT	13,868,434.16	3,135,809.82	13,867,045.24	3,135,495.77	55.38	SET CUT "X" IN CONC
CP-7	86+92.56	35.23 LT	13,868,120.94	3,135,890.24	13,866,732.05	3,135,576.18	54.29	SET CUT "X" IN CONC
CP-23	59+05.73	3.08 LT	13,870,895.22	3,135,710.00	13,869,506.05	3,135,395.96	57.36	SET MAG NAIL IN EXP
CP-43	11+43.20	12.47 LT	13,868,161.02	3,135,225.72	13,866,772.13	3,134,911.73	56.14	SET 3/8" IR W/ LANDTECH CAP
CP-45	16+99.35	15.22 RT	13,868,158.66	3,135,782.56	13,866,769.77	3,135,468.51	53.75	SET 3/8" IR W/ LANDTECH CAP
MON 5560-7311	73+91.26	59.35 LT	13,869,413.25	3,135,827.13	13,868,024.24	3,135,513.08	55.80	SET COH MON 5560-7311
MON 5561-7205	–	–	13,874,811.20	3,134,756.27	13,873,421.64	3,134,442.33	59.70	SET COH MON 5561-7205
MON 5560-0416	–	–	13,871,809.08	3,136,808.42	13,870,419.83	3,136,494.27	57.61	FOUND CoH MON

PROJECT FOUND CORNER TABLE			
POINT#	STATION	OFFSET	DESCRIPTION
54	81+09.02	38.49 LT	FND 5/8" IR W/GREENLEAF CAP
57	77+55.80	39.79 RT	FND 1/2" IR
58	82+06.31	40.63 RT	FND 1" IP
62	76+13.72	40.00 RT	FND 5/8" IR
65	72+94.28	41.15 LT	FND 5/8" IR
69	63+28.43	39.27 LT	FND 5/8" IR
70	62+22.41	37.97 LT	FND 5/8" IR
71	62+22.72	40.00 RT	FND "X" CUT IN CONC.
83	43+03.67	45.63 LT	FND 5/8" IR
502	81+09.03	40.50 LT	FND 1/2" IR BENT
503	82+58.00	38.19 LT	FND 1/2" IR W/CAP PRECISION
504	84+04.27	38.21 LT	FND 5/8" IR
505	85+97.91	39.89 LT	FND 5/8" IR
506	79+10.76	40.52 LT	FND 1/2" IR
507	74+14.85	40.21 RT	FND 1/2" IR BENT
508	74+64.44	39.78 RT	FND 1/2" IR
509	75+64.17	40.01 RT	FND 1" IRF
510	76+63.25	39.99 RT	FND 1/2" IR
511	77+55.80	39.75 RT	FND 1/2" IR
512	78+11.37	39.29 LT	FND 5/8" IR W/CAP EIC
513	76+62.61	39.94 LT	FND 1/2" IR
515	76+12.89	49.88 LT	FND 5/8" IR W/CAP KLSS 4503
519	64+27.20	39.46 LT	FND 5/8" IR
520	64+77.47	40.40 RT	FND 1/2" IR BENT
521	68+22.87	39.25 RT	FND 5/8" IR
522	62+22.24	50.77 RT	FND 5/8" IR BENT
523	62+22.44	37.94 LT	FND 5/8" IR
524	63+28.47	39.31 LT	FND 5/8" IR
525	63+77.75	39.31 LT	FND 5/8" IR
15626	79+10.72	40.46 LT	FND 5/8" IR

stv
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Texas First Bank Building
11757 Katy Freeway
Suite 1540
Houston, TX, 77079
(713)532-1730
Fax (713)532-1734

LANDTECH
1315 W SAM HOUSTON PKWY N
STE 100
HOUSTON, TEXAS 77043
T: 713-861-7068 F: 713-861-4131
TBPELS REGISTRATION NO. 10019100

Released by: Nhuy Nguyen, TX RPLS #6409
Date: April 24, 2026

FOR INTERIM REVIEW ONLY

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SURVEYED BY: LANDTECH
FB NO. TBD

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
DENMARK ST TO TIDWELL RD

SURVEY CONTROL MAP
SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 10 OF 124	

60% SUBMITTAL

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PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 1:21 PM

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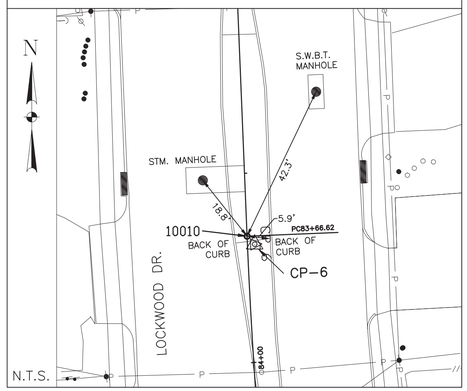
PT 10010



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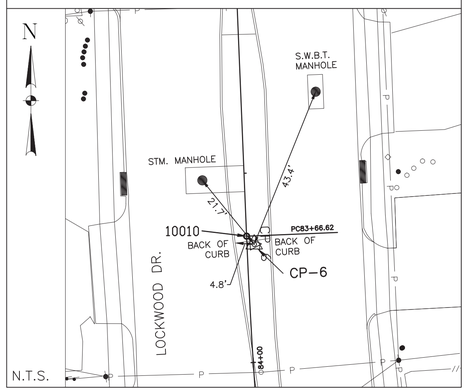
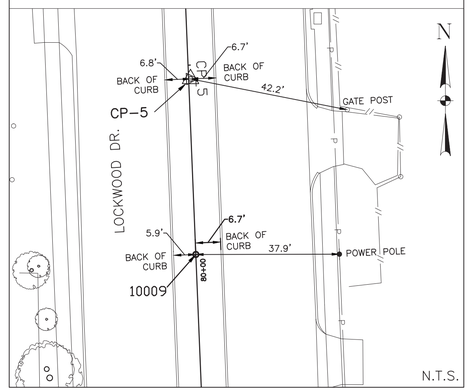


CP-5 AND PT 10009



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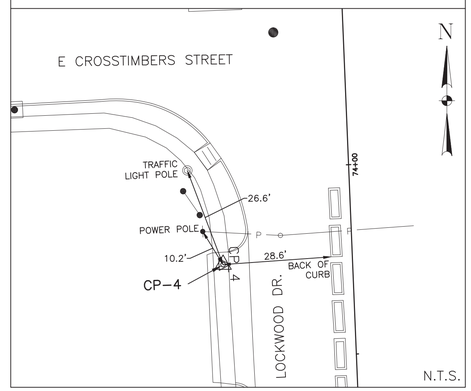

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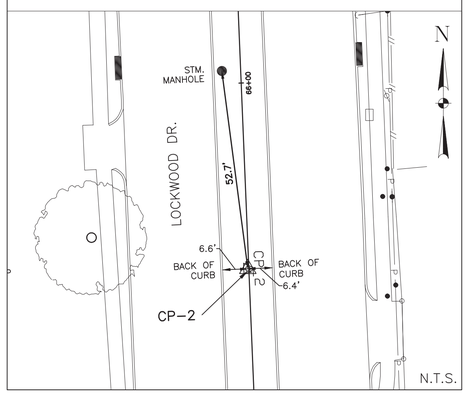

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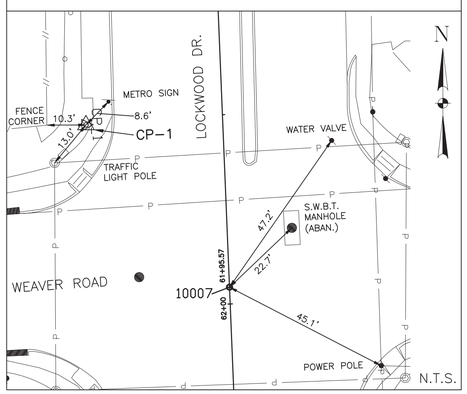

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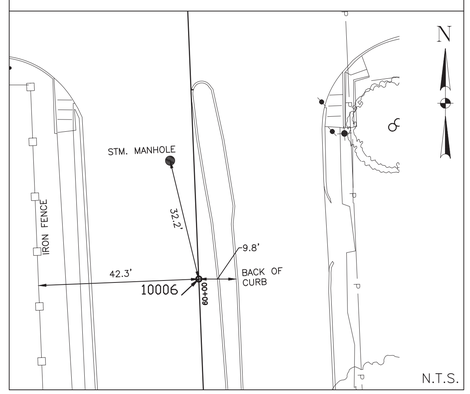

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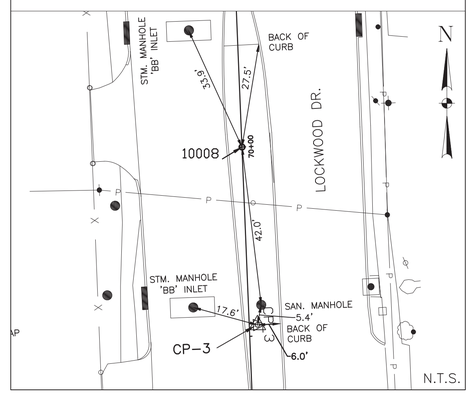

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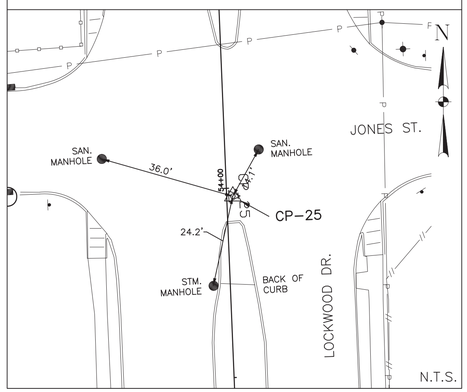

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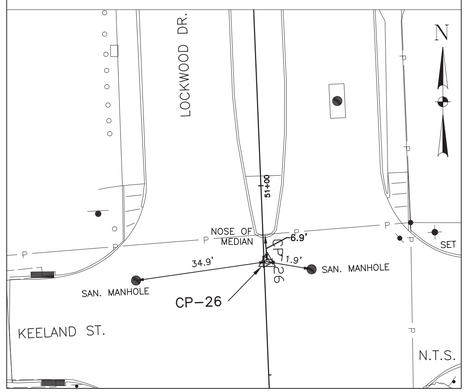

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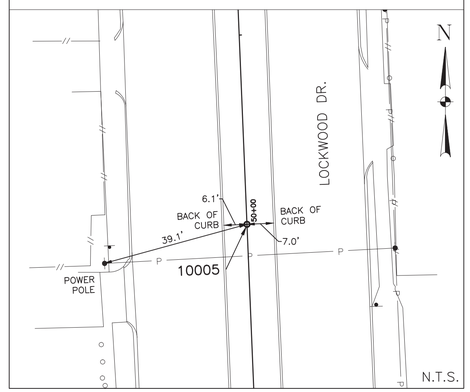

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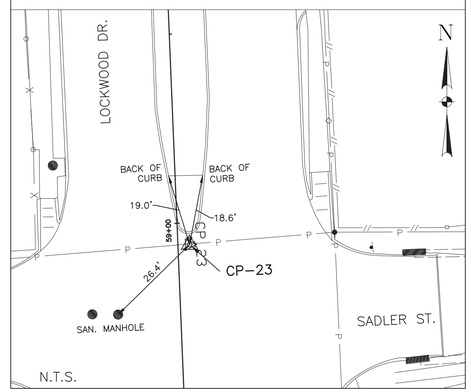

BENCHMARK:
CITY OF HOUSTON MONUMENT 5560-0416: FOUND BRASS DISK IN CONCRETE AT CRUSE AND PEACHTREE INTERSECTION ELEV 57.61' NAVD 1988 (GEOID 18)

NOTES:
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2. ELEVATIONS BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
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4. FIELD WORK COMPLETED IN MARCH 2026.

stv
TBPE FIRM No. F-204
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STE 100
HOUSTON, TEXAS 77043
T: 713-861-7068 F: 713-861-4131
TBPELS REGISTRATION NO. 10019100

SURVEYED BY: LANDTECH
FB NO. TBD

Released by: Nhuy Nguyen, TX RPLS #6409
Date: April 24, 2026

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
DENMARK ST TO TIDWELL RD

SWING TIES
SHEET 1 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 11 OF 124	

60% SUBMITTAL

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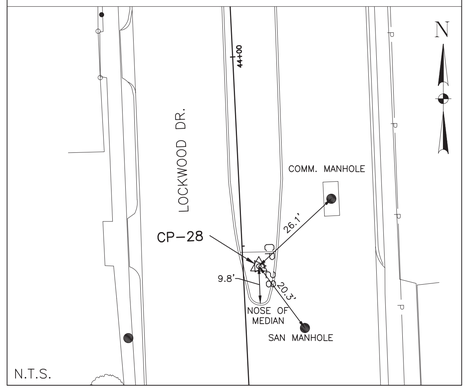
CP-28



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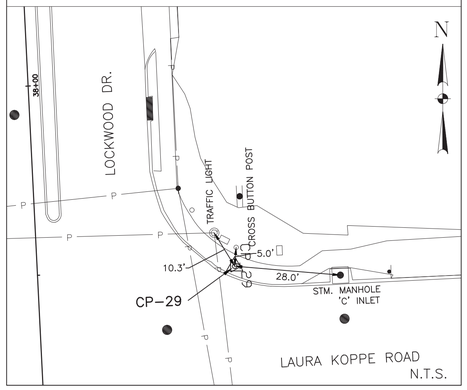

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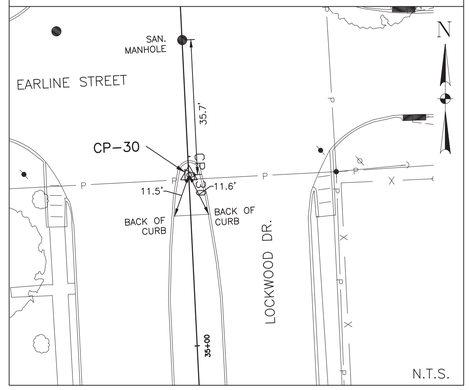

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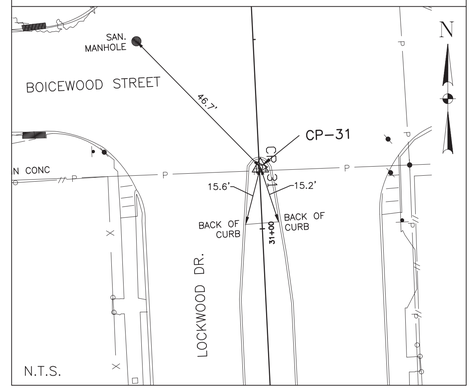
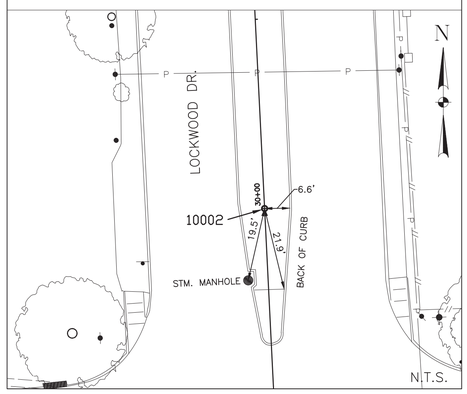


PT 10002



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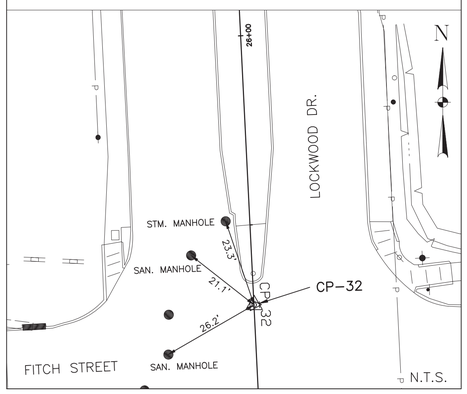

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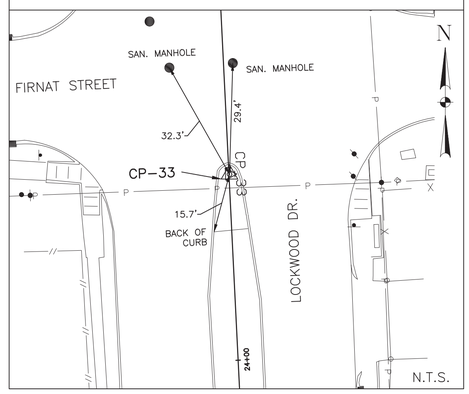

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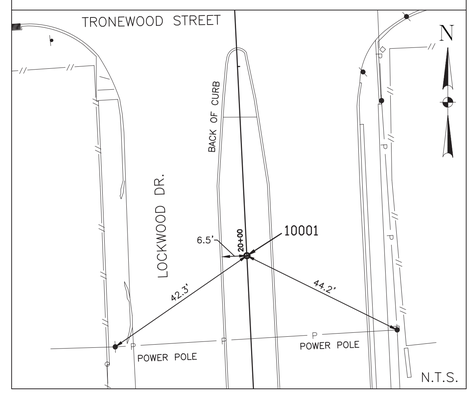

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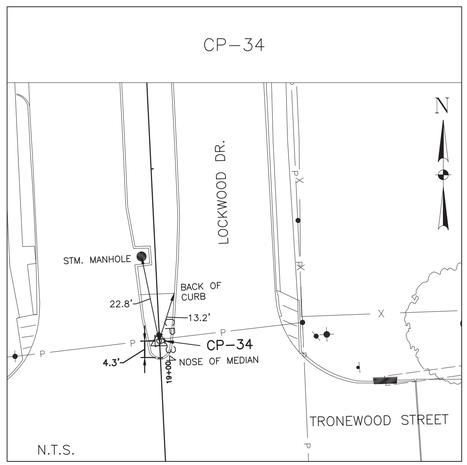

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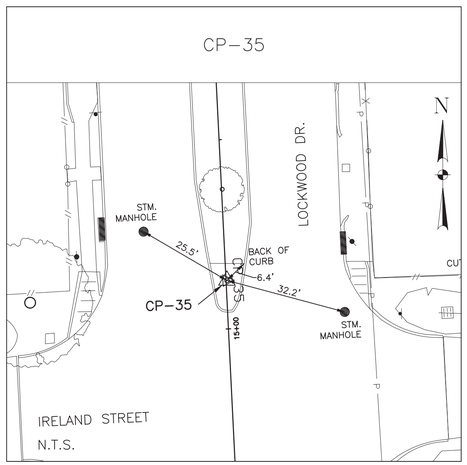
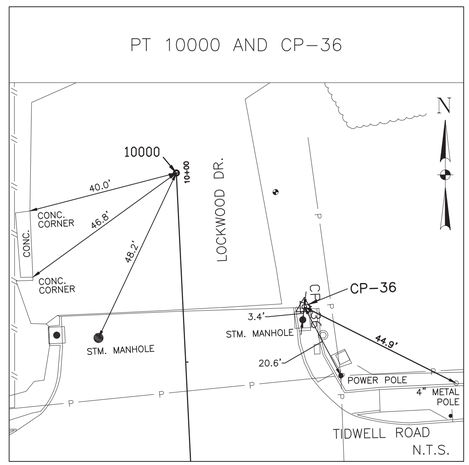
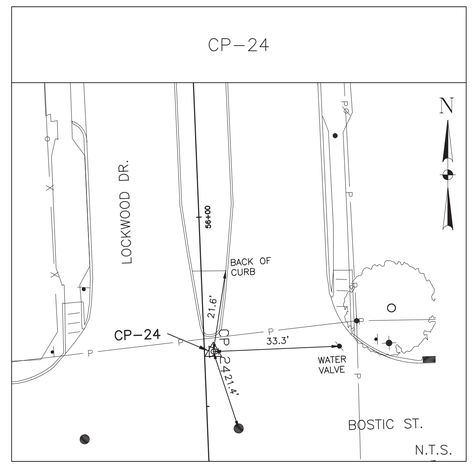


PT 10000 AND CP-36



CP-24



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CITY OF HOUSTON MONUMENT 5560-0416: FOUND BRASS DISK IN CONCRETE AT CRUSE AND PEACHTREE INTERSECTION ELEV 57.61' NAVD 1988 (GEOID 18)

NOTES:
1. BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE. DISTANCES ARE SURFACE VALUES.
   SURFACE = GRID/0.99989985044.
2. ELEVATIONS BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
3. HORIZONTAL AND VERTICAL CONTROLS USING GPS OBSERVATIONS AND DIGITAL LEVELING HOLDING CITY OF HOUSTON MONUMENT 5560-0416.
4. FIELD WORK COMPLETED IN MARCH 2026.

stv
TBPE FIRM No. F-204
Texas First Bank Building
11757 Katy Freeway
Suite 1540
Houston, TX, 77079
(713)532-1730
Fax (713)532-1734

LANDTECH
1315 W SAM HOUSTON PKWY N
STE 100
HOUSTON, TEXAS 77043
T: 713-861-7068 F: 713-861-4131
TBPELS REGISTRATION NO. 10019100

Released by: Nhuy Nguyen, TX RPLS #6409
Date: April 24, 2026

FOR INTERIM REVIEW ONLY

PRELIMINARY, THIS DOCUMENT SHALL NOT BE RECORDED FOR ANY PURPOSE AND SHALL NOT BE USED OR VIEWED OR RELIED UPON AS A FINAL SURVEY DOCUMENT

SURVEYED BY: LANDTECH
FB NO. TBD

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
DENMARK ST TO TIDWELL RD

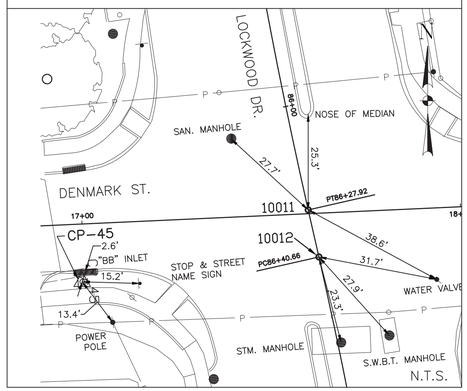
SWING TIES
SHEET 2 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 12 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 1:21 PM

CP-45, PT 10011 AND PT 10012



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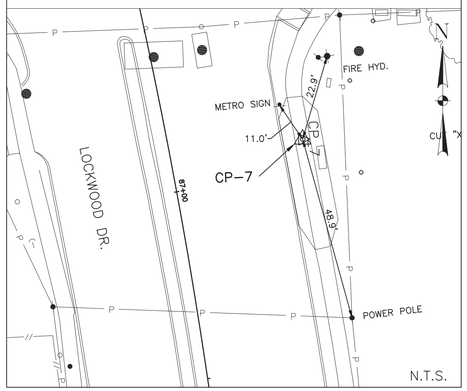

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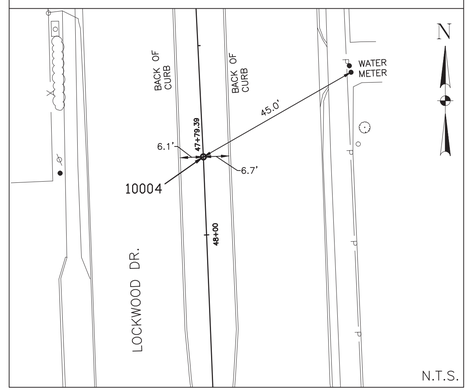

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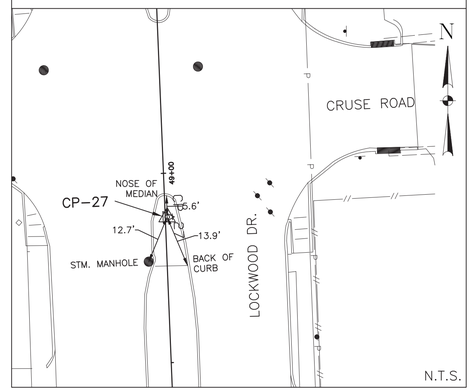

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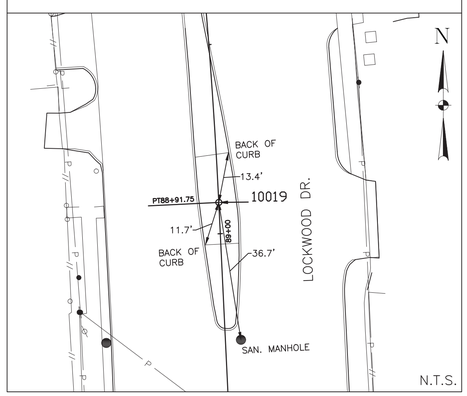

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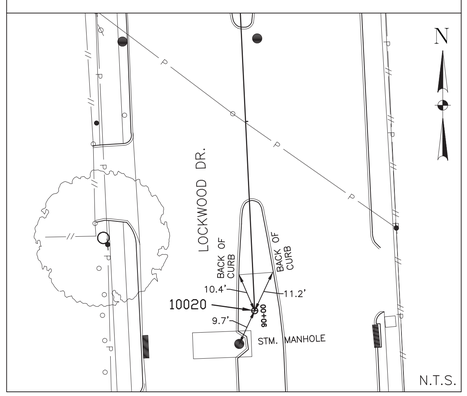

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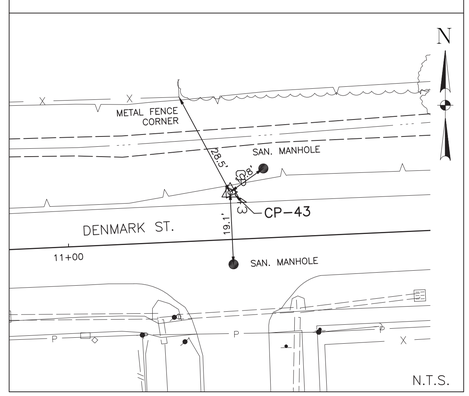

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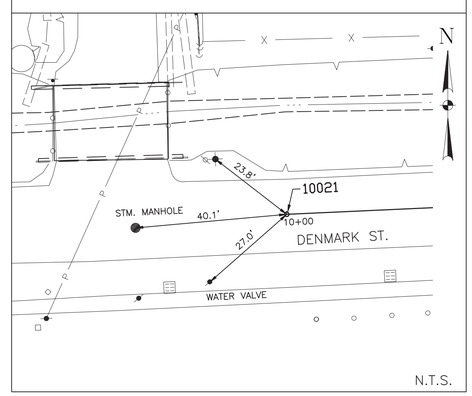

BENCHMARK:
CITY OF HOUSTON MONUMENT 5560-0416: FOUND BRASS DISK IN CONCRETE AT CRUSE AND PEACHTREE INTERSECTION ELEV 57.61' NAVD 1988 (GEOID 18)

NOTES:
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SURVEYED BY: LANDTECH
FB NO. TBD

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
DENMARK ST TO TIDWELL RD

SWING TIES
SHEET 3 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 13 OF 124	

60% SUBMITTAL

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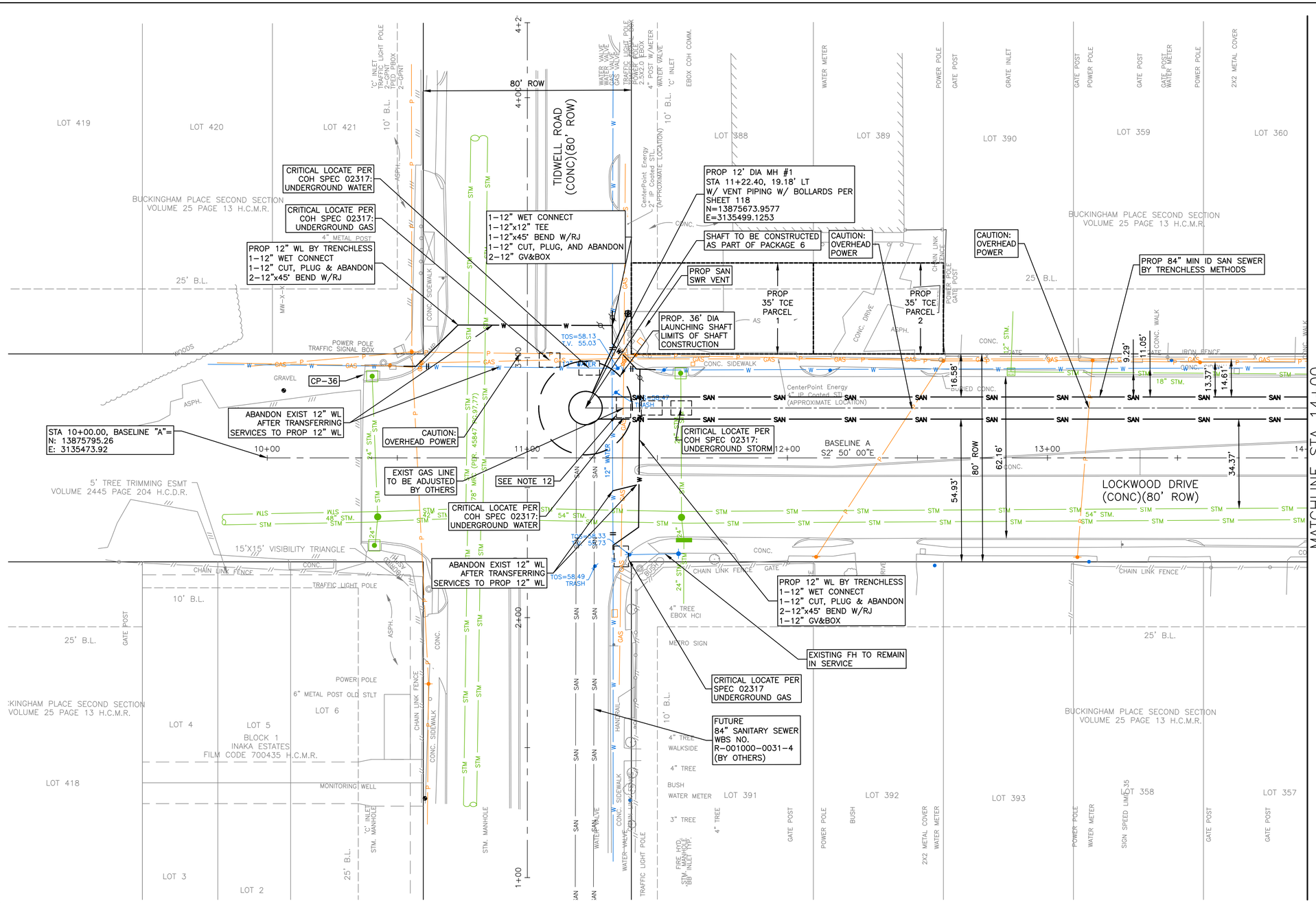

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FILE PATH: 230012201_01PLAN.dwg

KEY NOTES

PACKAGE CONNECTION POINT NOTE

1. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL FIELD_VERIFY THE LOCATION AND ELEVATION OF THE ADJACENT SANITARY SEWER CONSTRUCTED UNDER CONTRACT WBS NO. R_001000_0031_4. HORIZONTAL ALIGNMENT ADJUSTMENTS SHALL BE PERMITTED AS NECESSARY TO ACHIEVE A PROPER TIE_IN. ANY ADJUSTMENT TO VERTICAL GRADE SHALL BE LIMITED TO ACCEPTABLE TOLERANCES AND SHALL REQUIRE ENGINEER'S APPROVAL.

PPCA NOTES

2. CONTRACTOR SHALL COMPLY WITH THE CONTRACT DOCUMENTS AND SECTION 02136 FOR HANDLING, SAMPLING, AND DISPOSAL REQUIREMENTS WHEN WORKING WITHIN AREAS IDENTIFIED AS PPCA.

COMMON SHAFT NOTES

3. FIRST CONTRACTOR SHALL CONSTRUCT, OPERATE, AND MAINTAIN THE COMMON TUNNEL SHAFT IN ACCORDANCE WITH CITY OF HOUSTON STANDARD CONSTRUCTION SPECIFICATION SECTION 02400 UNTIL ACCEPTED BY THE SECOND CONTRACTOR.
4. FIRST CONTRACTOR, AS THE CONTRACTOR IN RESPONSIBLE CHARGE OF THE COMMON TUNNEL SHAFT, SHALL COORDINATE WITH THE SECOND CONTRACTOR TO ESTABLISH A MUTUALLY AGREED-UPON DATE FOR TRANSFER OF RESPONSIBILITY.
5. UPON ACCEPTANCE, THE SECOND CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR MAINTENANCE, REPAIRS, AND FINAL RESTORATION OF THE COMMON TUNNEL SHAFT AND ASSOCIATED SITE IN ACCORDANCE WITH CITY OF HOUSTON STANDARD CONSTRUCTION SPECIFICATION SECTION 02400 AND THE CONTRACT DOCUMENTS.

CCTV NOTES

6. CONTRACTOR SHALL DOCUMENT THE EXISTING 78-INCH STORM SEWER CONDITIONS PRE- AND POST-CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS WORK, IN ACCORDANCE WITH SECTION 02558.
7. ADDITIONAL PRE- AND POST-CONSTRUCTION DOCUMENTATION OF EXISTING SANITARY AND STORM SEWERS, WHERE SHOWN OR SPECIFIED, SHALL BE PER SECTION 02558.

WATERLINE RELOCATION NOTES

8. SMALL DIAMETER WATERLINE SHALL BE CONSTRUCTED BY MEANS OF TRENCHLESS CONSTRUCTION EXCEPT AS NOTED ON THE DRAWINGS.

PPCA NOTES

9. CONTRACTOR SHALL COMPLY WITH THE CONTRACT DOCUMENTS AND SECTION 02136 FOR HANDLING, SAMPLING, AND DISPOSAL REQUIREMENTS WHEN WORKING WITHIN AREAS IDENTIFIED AS PPCA.

GENERAL NOTES

10. SHAFT SHAPE AND SIZE SHOWN IS FOR REPRESENTATION PURPOSE ONLY. CONTRACTOR SHALL DETERMINE APPROPRIATE SIZE AND SHALL BACKFILL SHAFT PER COH STD DTL 02317-08
11. PROTECT EXISTING UTILITES DURING SHAFT CONSTRUCTION.
12. CONTRACTOR TO COORDINATE WITH CENTERPOINT ENERGY TO TEMPORARILY RELOCATE THE AFFECTED SEGMENT.
13. REFER TO PAVEMENT REPLACEMENT PLANS SHEETS 84 TO 104 FOR PAVEMENT REPLACEMENT LIMITS.
14. REFER TO TREE PROTECTION PLANS SHEETS 105 TO 112 FOR APPROPRIATE PROTECTION MEASURES. TREES OUTSIDE OF PROJECT LIMITS ARE TO BE PROTECTED AND REMAIN IN PLACE.

NO.	DATE	REVISION	APP.

0' 10' 20' 40'
HORIZ: SCALE: 1"=20'
0' 1' 2' 4'
VERT: SCALE: 1"=2'

CITY OF HOUSTON MONUMENT 5560-0416:
FOUND BRASS DISK IN CONCRETE AT CRUSE AND PEACHTREE INTERSECTION
ELEV = 57.61' NAVD 1988 (GEOID 18)

CP-36, SET COTTON SPINDLE
STA 10+36.97, 31.99' LT
EL. 58.74

NOTES:
1. BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE. DISTANCES ARE SURFACE VALUES. SURFACE=GRID/0.99988985044.
2. HORIZONTAL AND VERTICAL CONTROLS USING GPS OBSERVATIONS AND DIGITAL LEVELING HOLDING CITY OF HOUSTON MONUMENT 5560-0416.
3. FIELDWORK COMPLETED IN OCTOBER 2025.

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.

stv
Texas Registered Engineering Firm F-204
Texas First Bank Building
11757 Katy Freeway
Suite 1540
Houston, TX, 77079
(713)532-1730
Fax (713)532-1734

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APRIL 2026

SINA ARJMAND, P.E.
TX PE NO. 132394

SURVEYED BY: LANDTECH
FB NO. P-

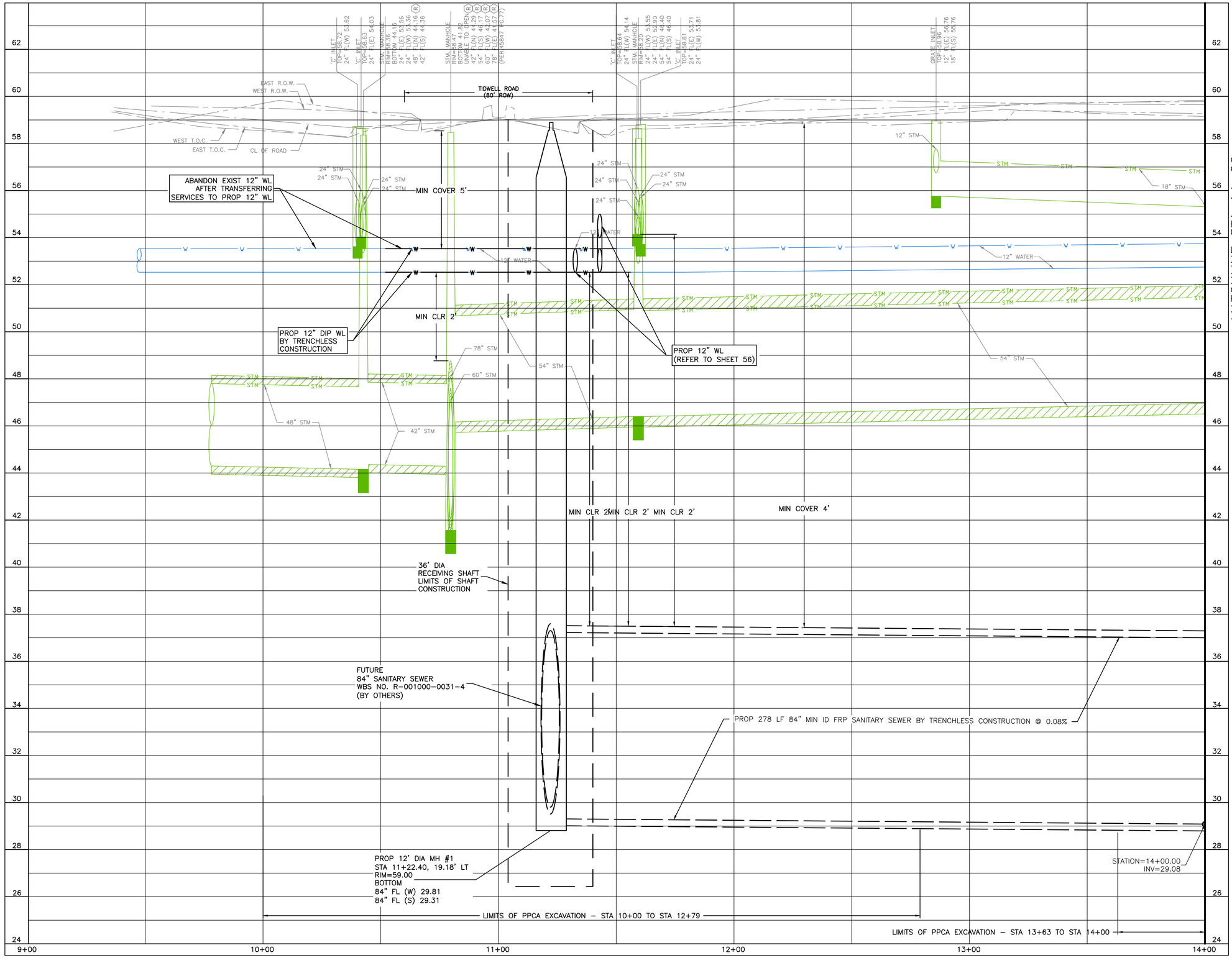
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PLAN BOP TO STA 14+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 14 OF 124	

60% SUBMITTAL



MATCHLINE STA 14+00
SEE SHEET 17

NO.	DATE	REVISION	APP.

0' 10' 20' 40'
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

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TIDWELL RD TO DENMARK ST

PROFILE BOP TO STA 14+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 15 OF 124	

60% SUBMITTAL

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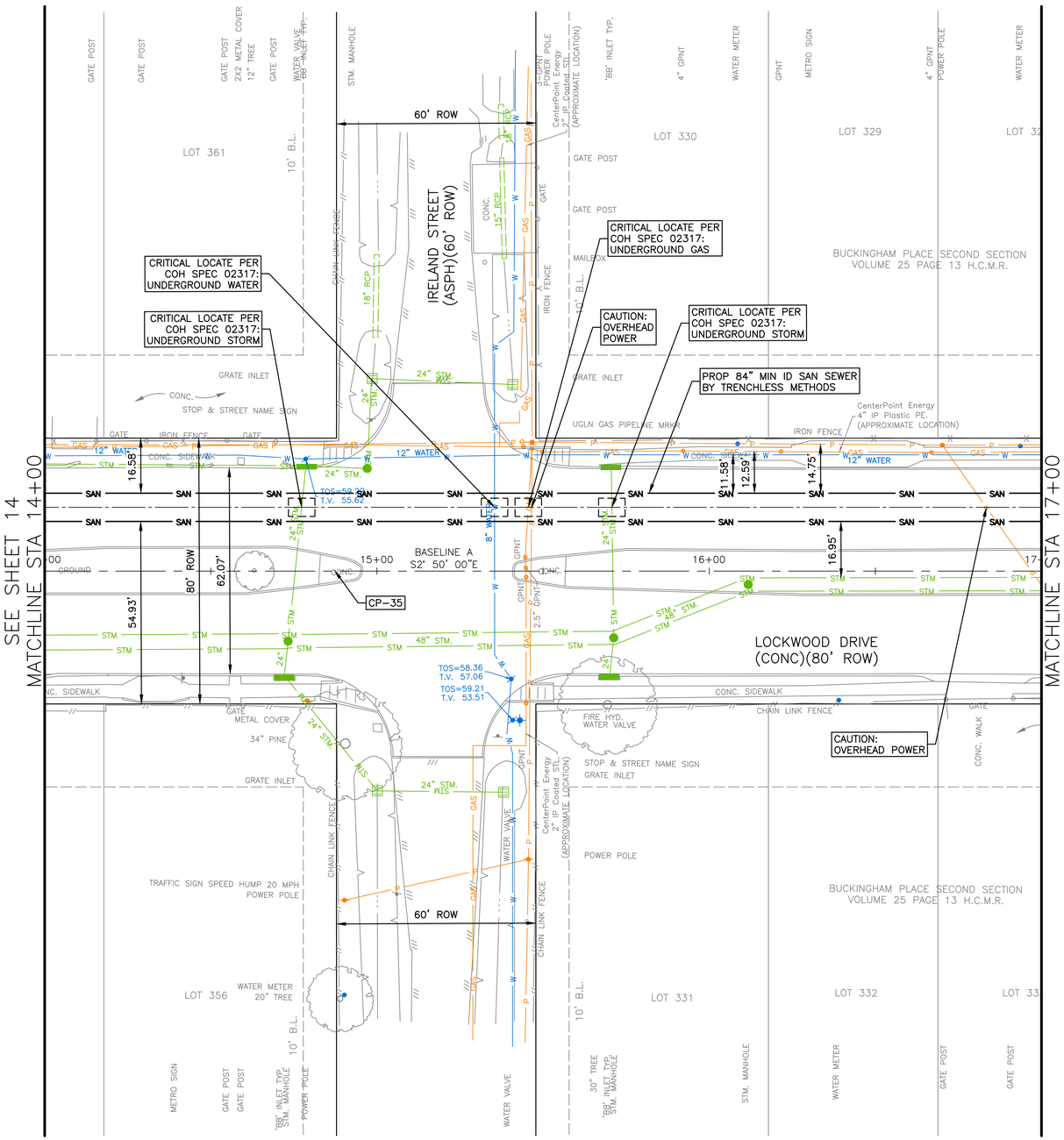

CCTV NOTES

1. PRE- AND POST-CONSTRUCTION DOCUMENTATION OF EXISTING SANITARY AND STORM SEWERS, WHERE SHOWN OR SPECIFIED, SHALL BE PER SECTION 02558.

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NO.	DATE	REVISION	APP.

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HORIZ: SCALE: 1"=20'
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CITY OF HOUSTON MONUMENT 5560-0416:
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CP-35, SET CUT "X"
IN CONC
STA 14+87.21, 0.23' LT
EL. 59.60

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NEIL BARNSDALE, P.E.	
SHEET NO. 16 OF 124	

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PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 4:33 PM

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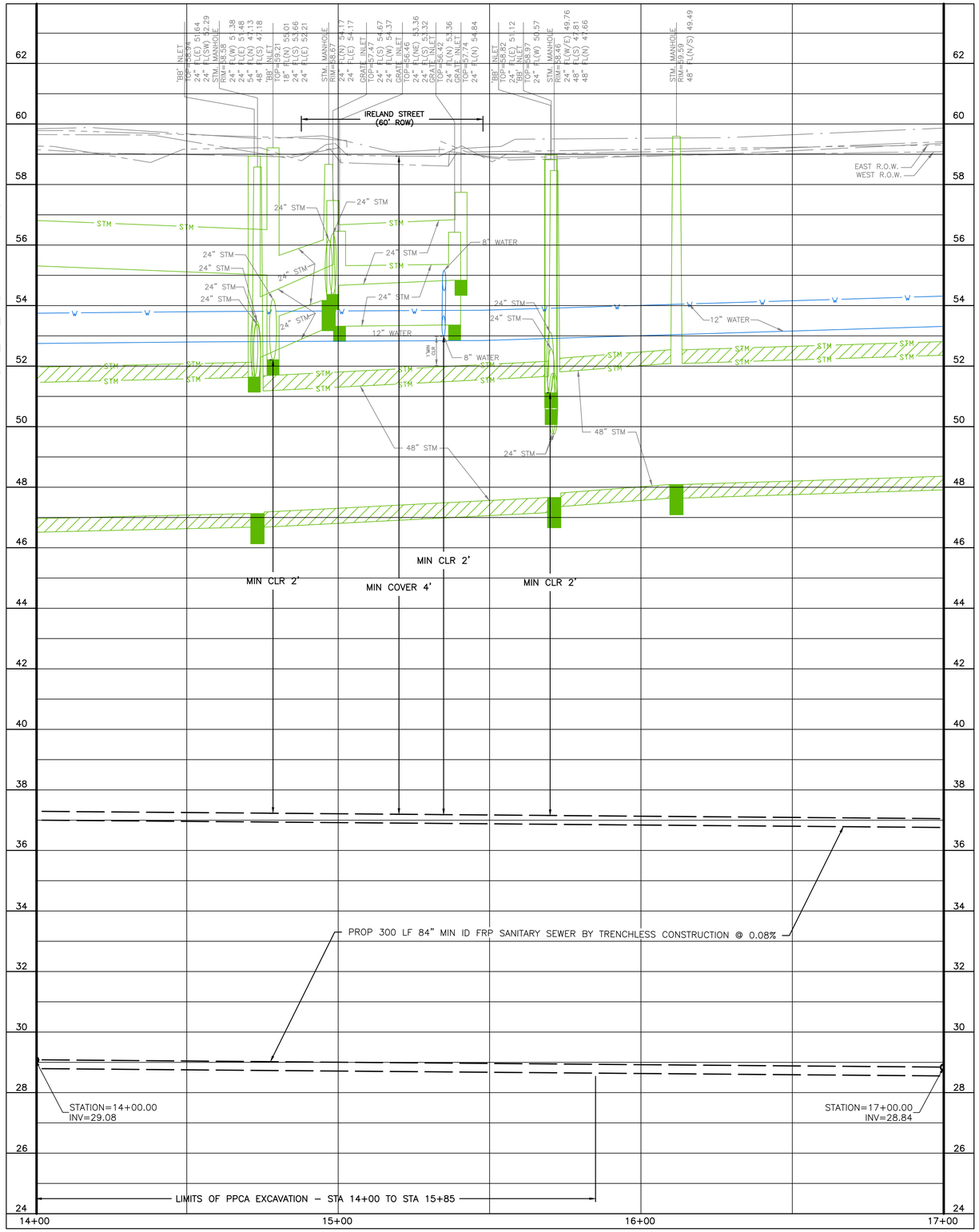
PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 4:33 PM
FILE PATH: 230012201_02PROFILE.dwg

SEE SHEET 15
MATCHLINE STA 14+00



MATCHLINE STA 17+00
SEE SHEET 19

NO.	DATE	REVISION	APP.

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HOUSTON PUBLIC WORKS

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TIDWELL RD TO DENMARK ST

PROFILE STA 14+00 TO STA 17+00

WBS NUMBER
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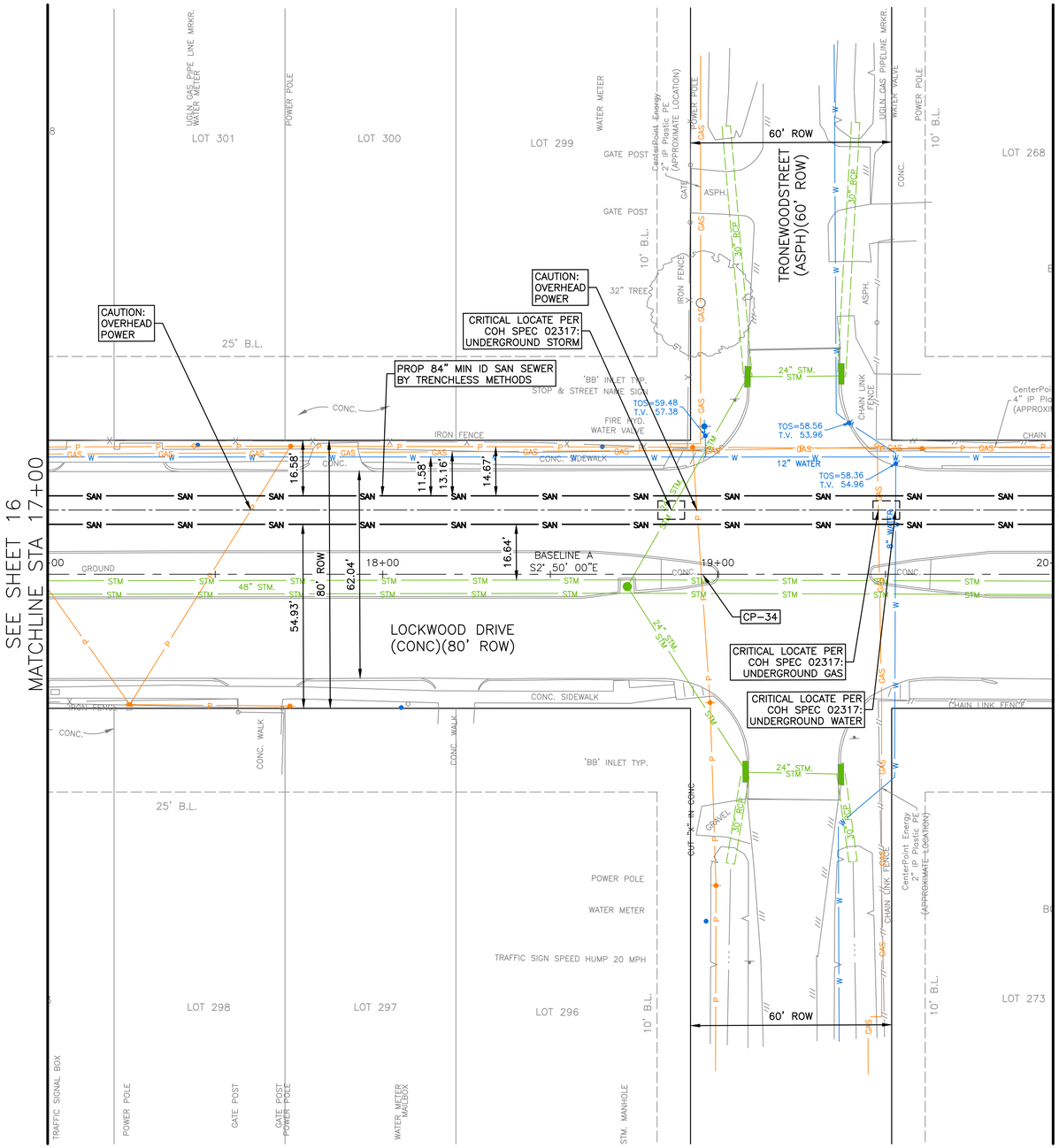

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VERIFICATION OF PRIVATE UTILITY LINES

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.

stv
Texas Registered Engineering Firm F-204
Texas First Bank Building
11757 Katy Freeway
Suite 1540
Houston, TX, 77079
(713)532-1730
Fax (713)532-1734

SURVEYED BY: LANDTECH
FB NO. P-

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APRIL 2026

SINA ARJMAND, P.E.
TX PE NO. 132394

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

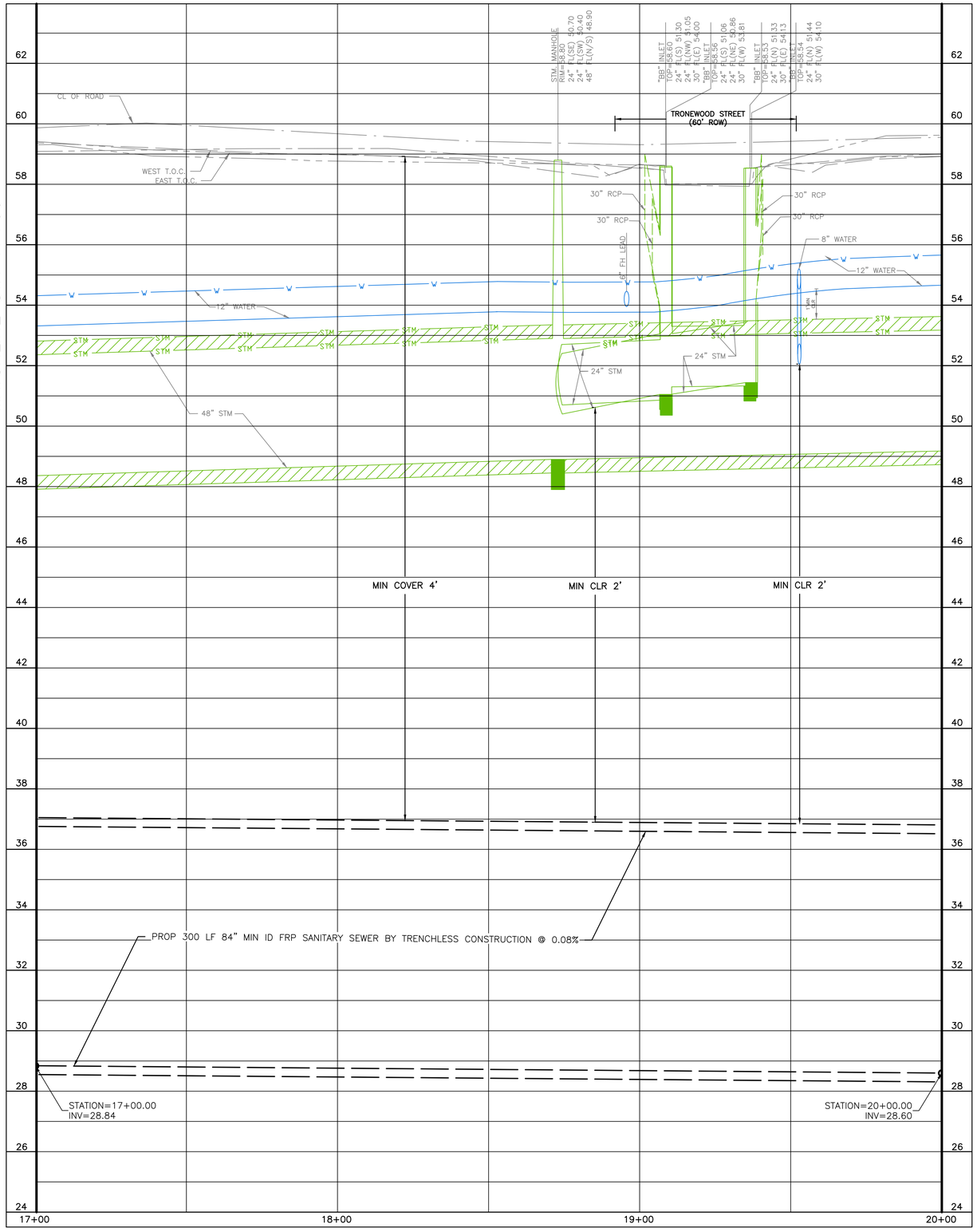
PLAN STA 17+00 TO STA 20+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 18 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 4:33 PM

FILE PATH: 230012201_03PLAN.dwg



0' 10' 20' 40'

HORIZ: SCALE: 1"=20'

0' 1' 2' 4'

VERT: SCALE: 1"=2'

CITY OF HOUSTON MONUMENT 5560-0416:
FOUND BRASS DISK IN CONCRETE AT CRUSE AND PEACHTREE INTERSECTION
ELEV = 57.61' NAVD 1988 (GEOID 18)

CP-34, SET CUT "X"
IN CONC
STA 18+95.48, 0.13' RT
EL. 59.36

NOTES:
1. BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE. DISTANCES ARE SURFACE VALUES. SURFACE=GRID/0.99988985044.
2. HORIZONTAL AND VERTICAL CONTROLS USING GPS OBSERVATIONS AND DIGITAL LEVELING HOLDING CITY OF HOUSTON MONUMENT 5560-0416.
3. FIELDWORK COMPLETED IN OCTOBER 2025.

NOTICE:
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APRIL 2026

SINA ARJMAND, P.E.
TX PE NO. 132394

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PROFILE STA 17+00 TO STA 20+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 19 OF 124	

60% SUBMITTAL

NO.	DATE	REVISION	APP.

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 4:34 PM

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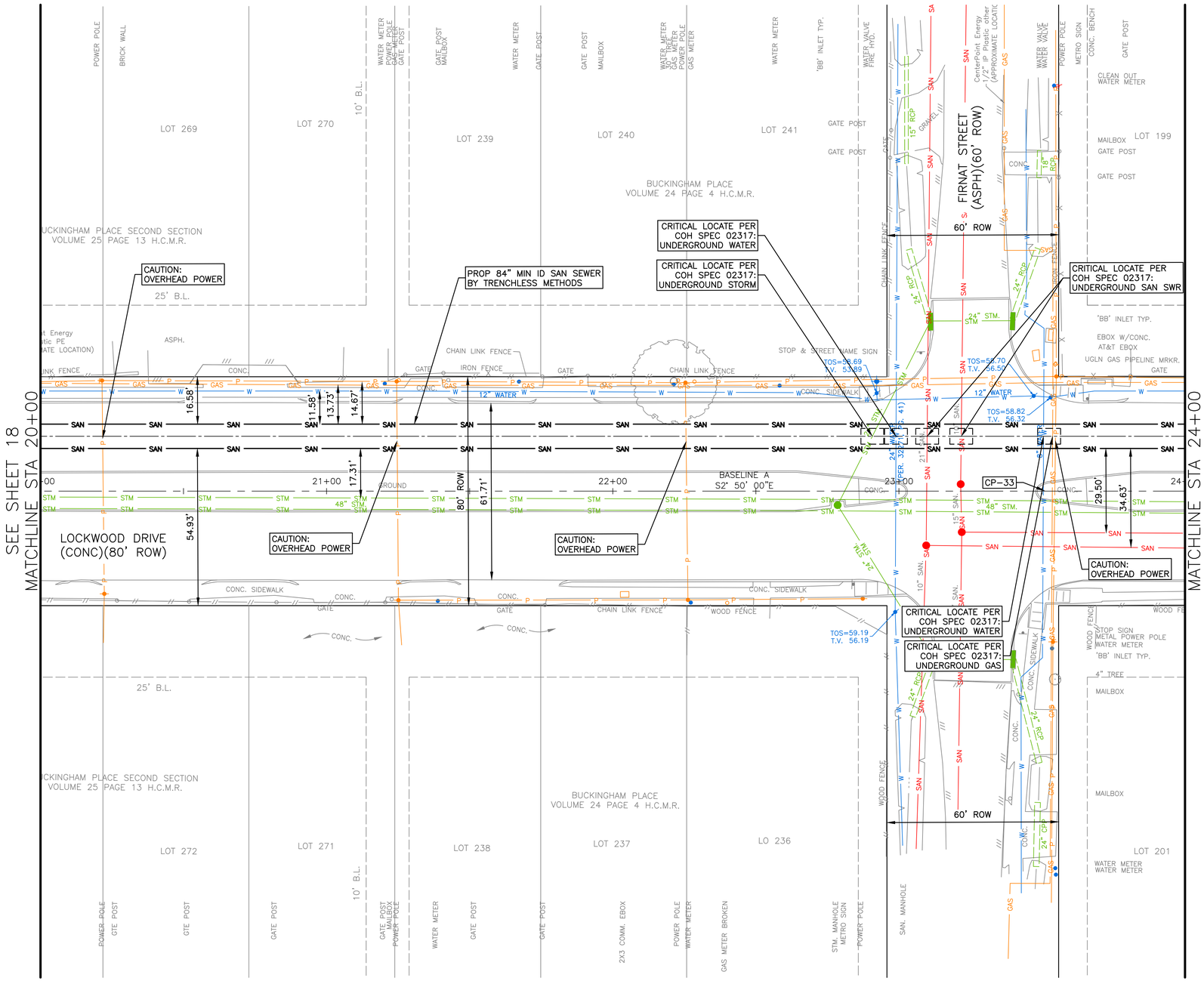

CCTV NOTES

1. CONTRACTOR SHALL DOCUMENT THE EXISTING 21-INCH SANITARY SEWER CONDITIONS PRE- AND POST-CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS WORK, IN ACCORDANCE WITH SECTION 02558.
2. ADDITIONAL PRE- AND POST-CONSTRUCTION DOCUMENTATION OF EXISTING SANITARY AND STORM SEWERS, WHERE SHOWN OR SPECIFIED, SHALL BE PER SECTION 02558.

GENERAL NOTES

3. SHAFT SHAPE AND SIZE SHOWN IS FOR REPRESENTATION PURPOSE ONLY. CONTRACTOR SHALL DETERMINE APPROPRIATE SIZE AND SHALL BACKFILL SHAFT PER COH STD DTL 02317-08
4. PROTECT EXISTING UTILITES DURING SHAFT CONSTRUCTION.
5. CONTRACTOR TO COORDINATE WITH CENTERPOINT ENERGY TO TEMPORARILY RELOCATE THE AFFECTED SEGMENT.
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7. REFER TO TREE PROTECTION PLANS SHEETS 105 TO 112 FOR APPROPRIATE PROTECTION MEASURES. TREES OUTSIDE OF PROJECT LIMITS ARE TO BE PROTECTED AND REMAIN IN PLACE.

NO.	DATE	REVISION	APP.

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HORIZ: SCALE: 1"=20'
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CITY OF HOUSTON MONUMENT 5560-0416:
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CP-33, SET CUT "X"
IN CONC
STA 23+50.87, 0.15' LT
EL. 60.05

NOTES:
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APRIL 2026
SINA ARJMAND, P.E.
TX PE NO. 132394

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PLAN STA 20+00 TO STA 24+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 20 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 4:34 PM

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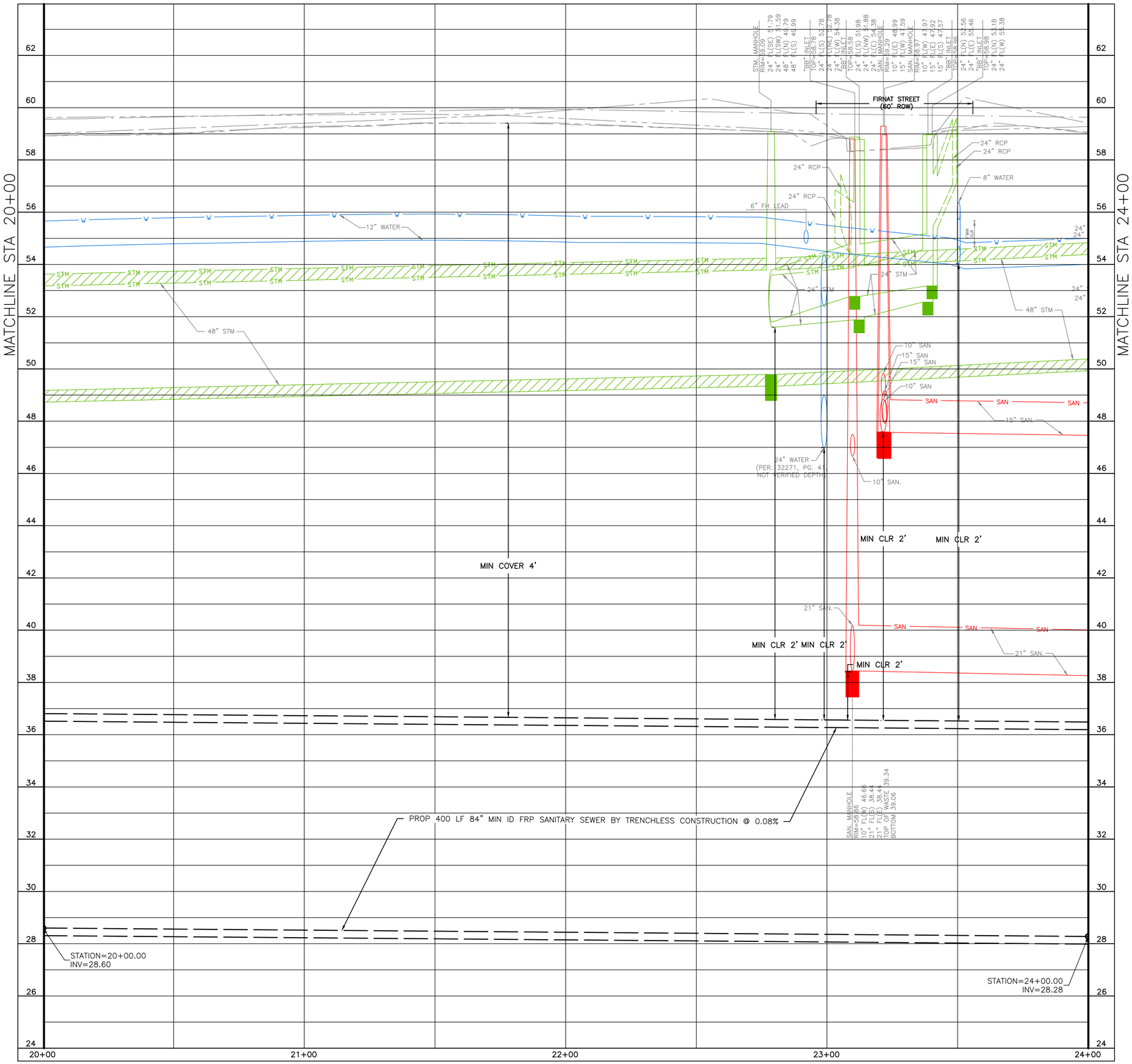

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FILE PATH: 230012201_04PROFILE.dwg

NO.	DATE	REVISION	APP.

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VERT: SCALE: 1"=2'

CITY OF HOUSTON MONUMENT 5560-0416:
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IN CONC
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NOTES:
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SURVEYED BY: LANDTECH
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APRIL 2026

SINA ARJMAND, P.E.
TX PE NO. 132394

CITY OF HOUSTON

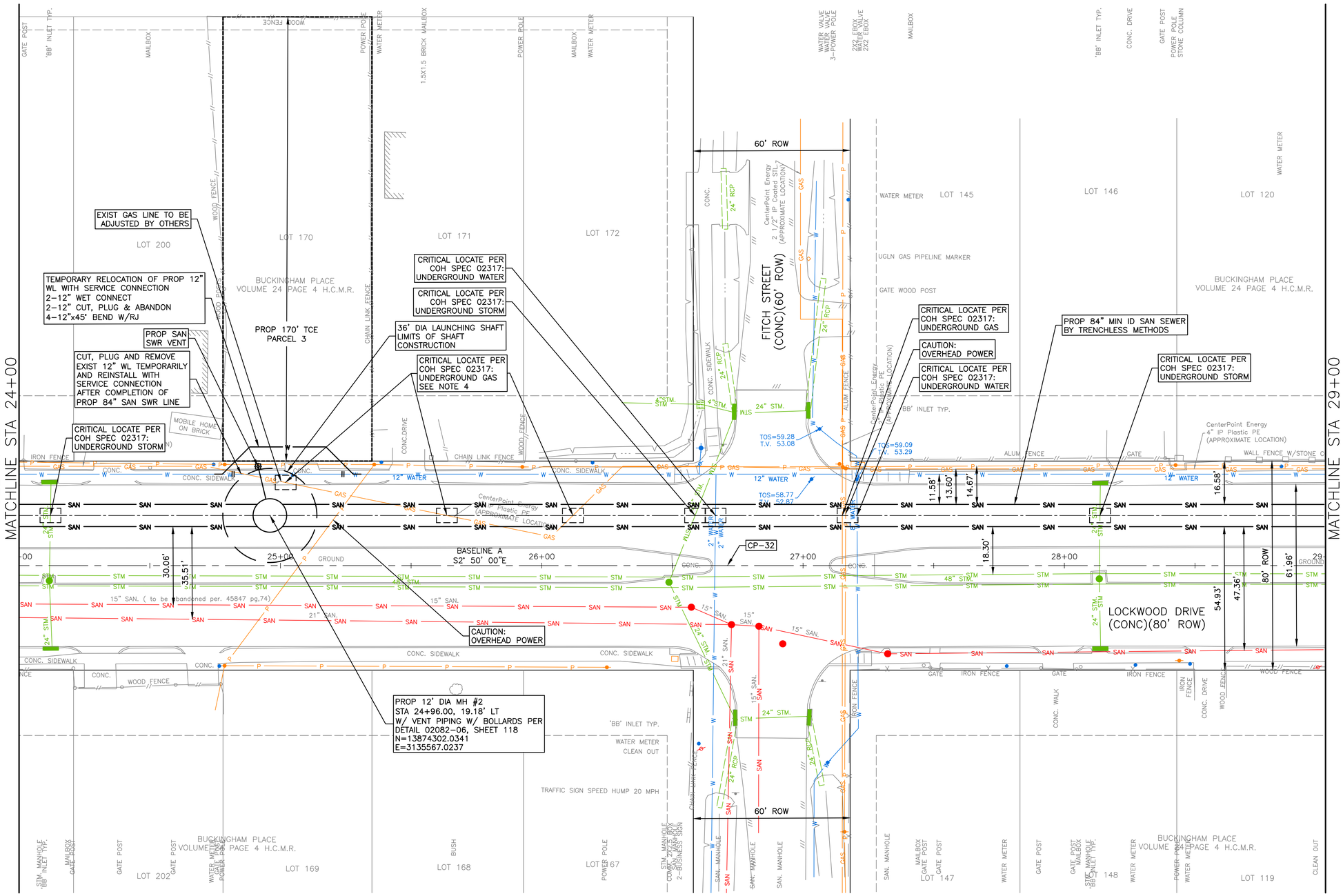
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PROFILE STA 20+00 TO STA 24+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 21 OF 124	

60% SUBMITTAL



CCTV NOTES

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GENERAL NOTES

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CITY OF HOUSTON MONUMENT 5560-0416:
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ELEV = 57.61' NAVD 1988 (GEOID 18)

CP-32, SET NAIL
IN EXP
STA 26+71.12, 0.04' LT
EL. 59.31

NOTES:
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3. FIELDWORK COMPLETED IN OCTOBER 2025.

NO.	DATE	REVISION	APP.

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APRIL 2026

SINA ARJMAND, P.E.
TX PE NO. 132394

SURVEYED BY: LANDTECH
FB NO. P-

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

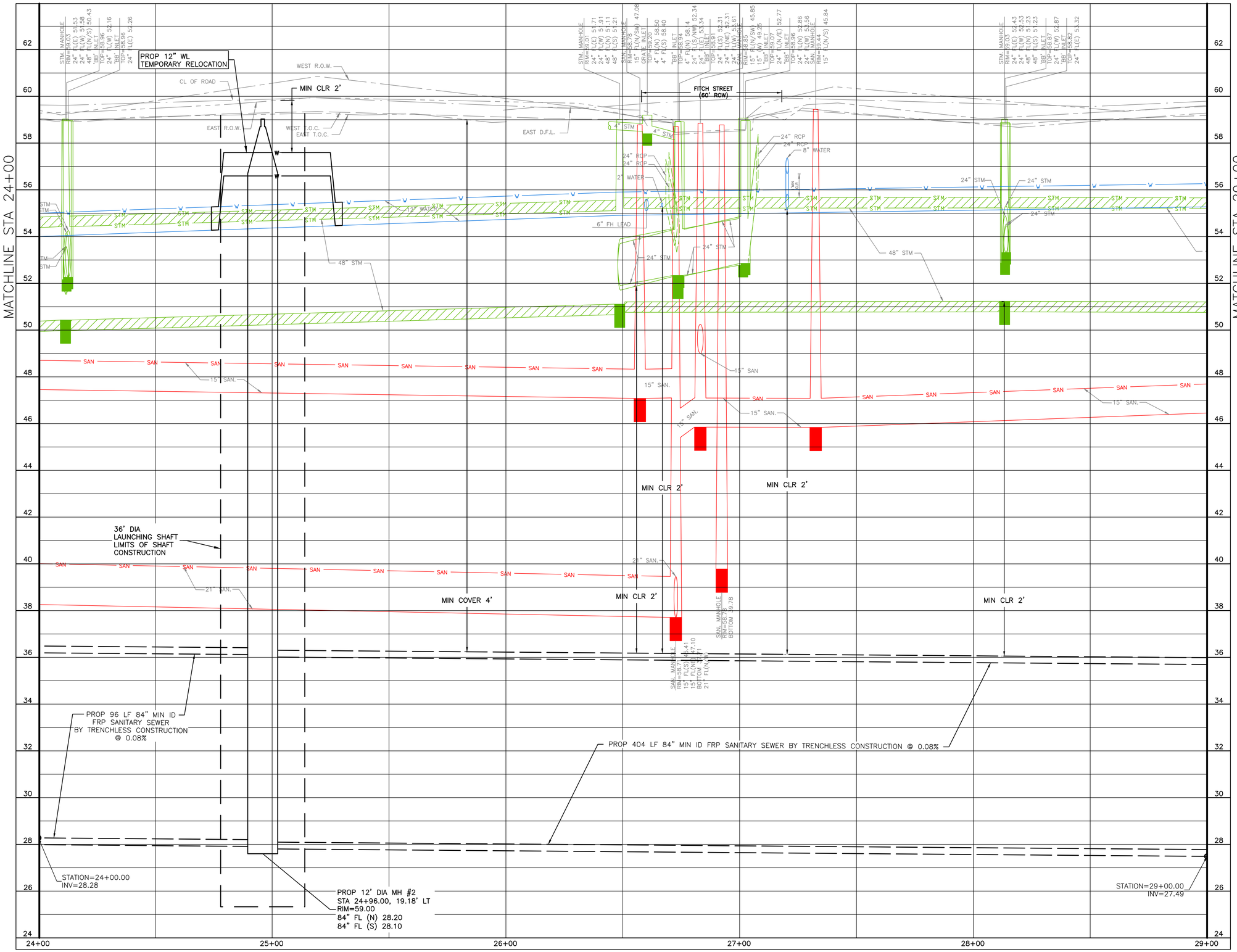
PLAN STA 24+00 TO STA 29+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 22 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 4:35 PM

FILE PATH: 230012201_05PLAN.dwg



PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 4:35 PM

FILE PATH: 230012201_05PROFILE.dwg

NO.	DATE	REVISION	APP.

0' 10' 20' 40'

HORIZ: SCALE: 1"=20'

0' 1' 2' 4'

VERT: SCALE: 1"=2'

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CP-32, SET NAIL
IN EXP
STA 26+71.12, 0.04' LT
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APRIL 2026

SINA ARJMAND, P.E.
TX PE NO. 132394

SURVEYED BY: LANDTECH
FB NO. P-

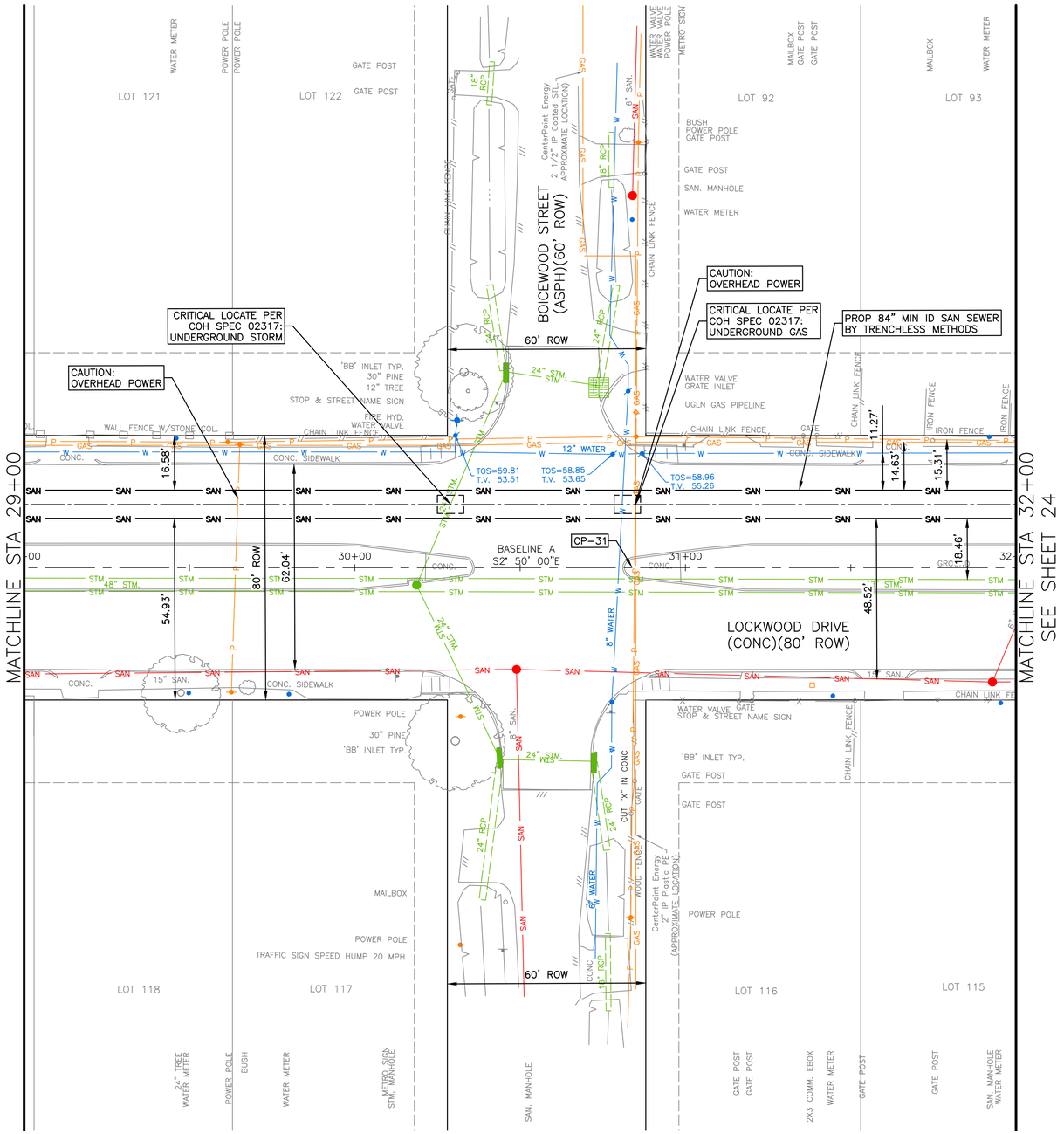
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PROFILE STA 24+00 TO STA 29+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 23 OF 124	

60% SUBMITTAL



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STA 30+83.76, 0.29' LT
EL. 60.06

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TX PE NO. 132394

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HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
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PLAN STA 29+00 TO STA 32+00

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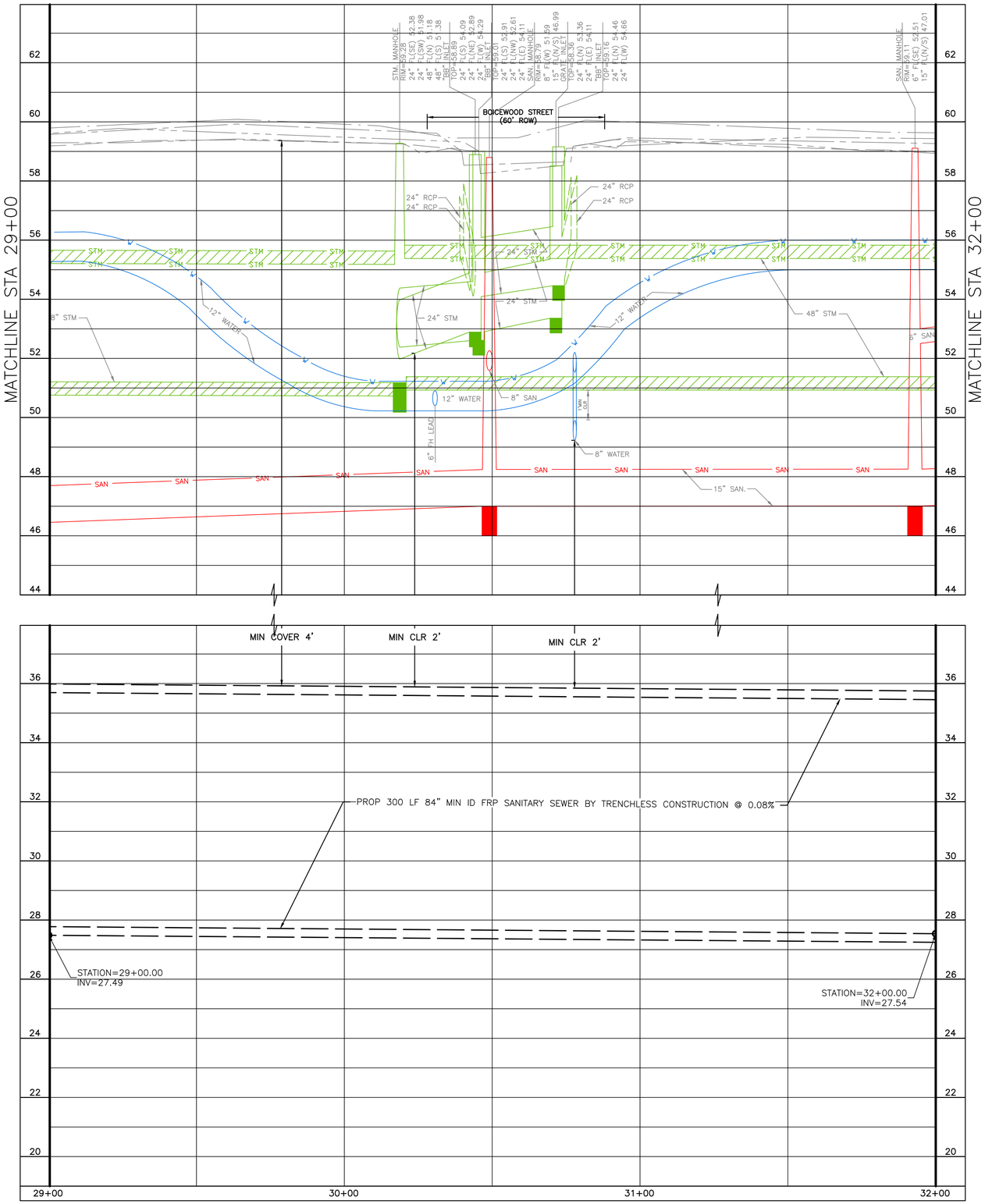
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 24 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 4:35 PM

FILE PATH: 230012201_06PLAN.dwg



PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 4:36 PM

FILE PATH: 230012201_06PROFILE.dwg

NO.	DATE	REVISION	APP.

0' 10' 20' 40'

HORIZ: SCALE: 1"=20'

0' 1' 2' 4'

VERT: SCALE: 1"=2'

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HOUSTON PUBLIC WORKS

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LOCKWOOD DR
TIDWELL RD TO DENMARK ST

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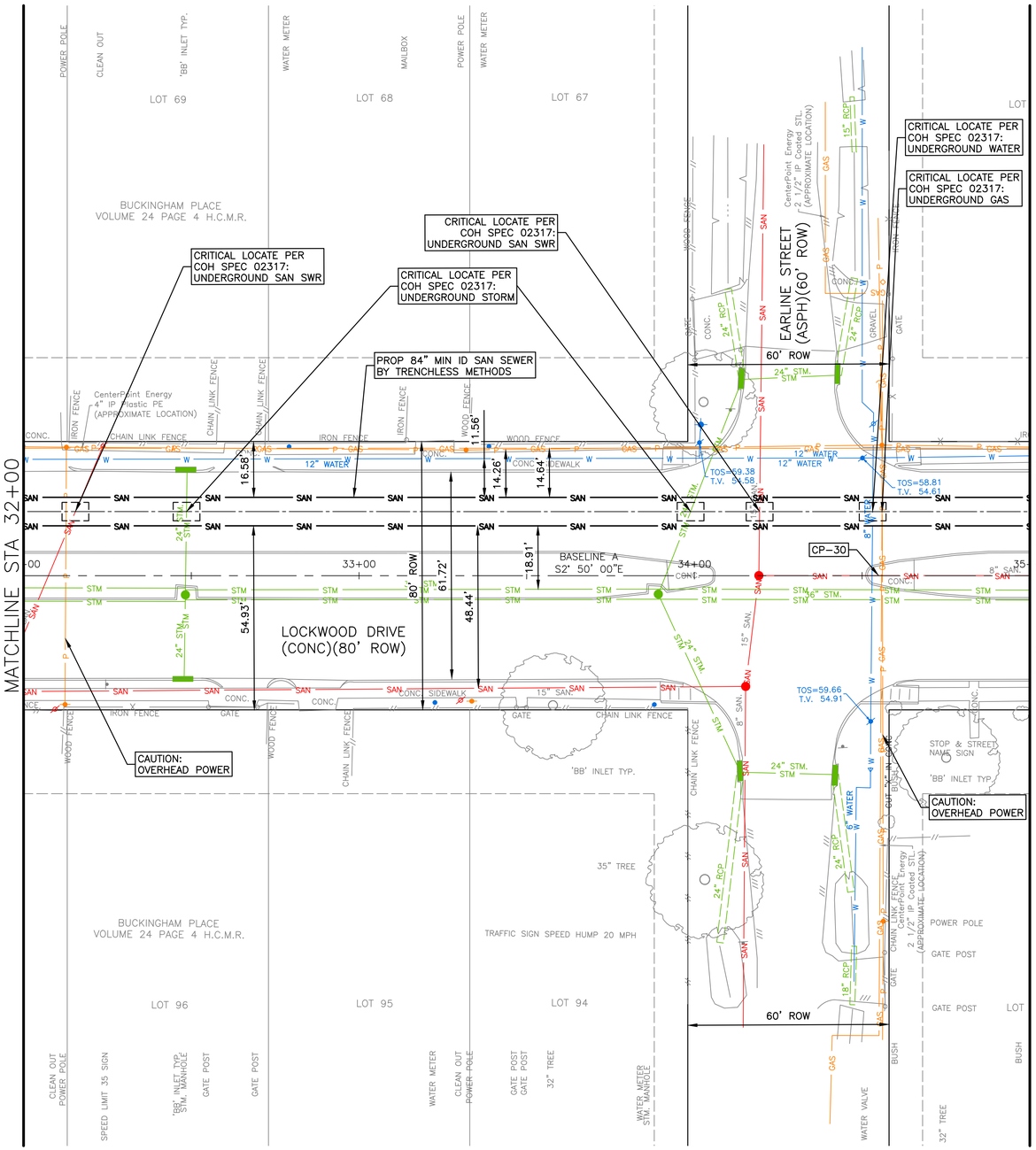
NEIL BARNSDALE, P.E.	
SHEET NO. 25 OF 124	

60% SUBMITTAL



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NO.	DATE	REVISION	APP.

0' 10' 20' 40'
HORIZ: SCALE: 1"=20'
0' 1' 2' 4'
VERT: SCALE: 1"=2'

CITY OF HOUSTON MONUMENT 5560-0416:
FOUND BRASS DISK IN CONCRETE AT CRUSE AND PEACHTREE INTERSECTION
ELEV = 57.61' NAVD 1988 (GEOID 18)

CP-30, SET CUT "X"
IN CONC
STA 34+54.88, 0.07' LT
EL. 60.15

NOTES:
1. BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE. DISTANCES ARE SURFACE VALUES. SURFACE=GRID/0.99989985044.
2. HORIZONTAL AND VERTICAL CONTROLS USING GPS OBSERVATIONS AND DIGITAL LEVELING HOLDING CITY OF HOUSTON MONUMENT 5560-0416.
3. FIELDWORK COMPLETED IN OCTOBER 2025.

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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

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Texas First Bank Building
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Houston, TX, 77079
(713)532-1730
Fax (713)532-1734

SURVEYED BY: LANDTECH
FB NO. P-

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APRIL 2026

SINA ARJMAND, P.E.
TX PE NO. 132394

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PLAN STA 32+00 TO STA 35+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 26 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 4:36 PM
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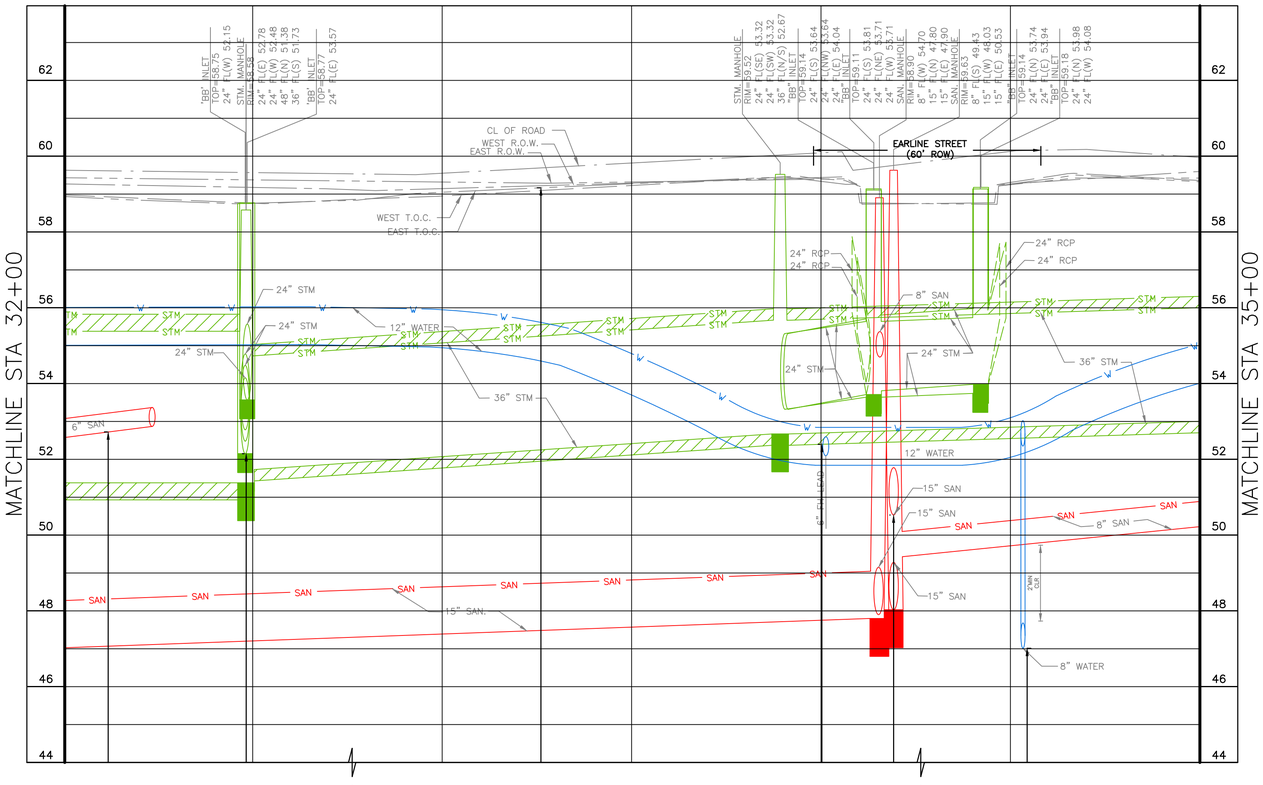

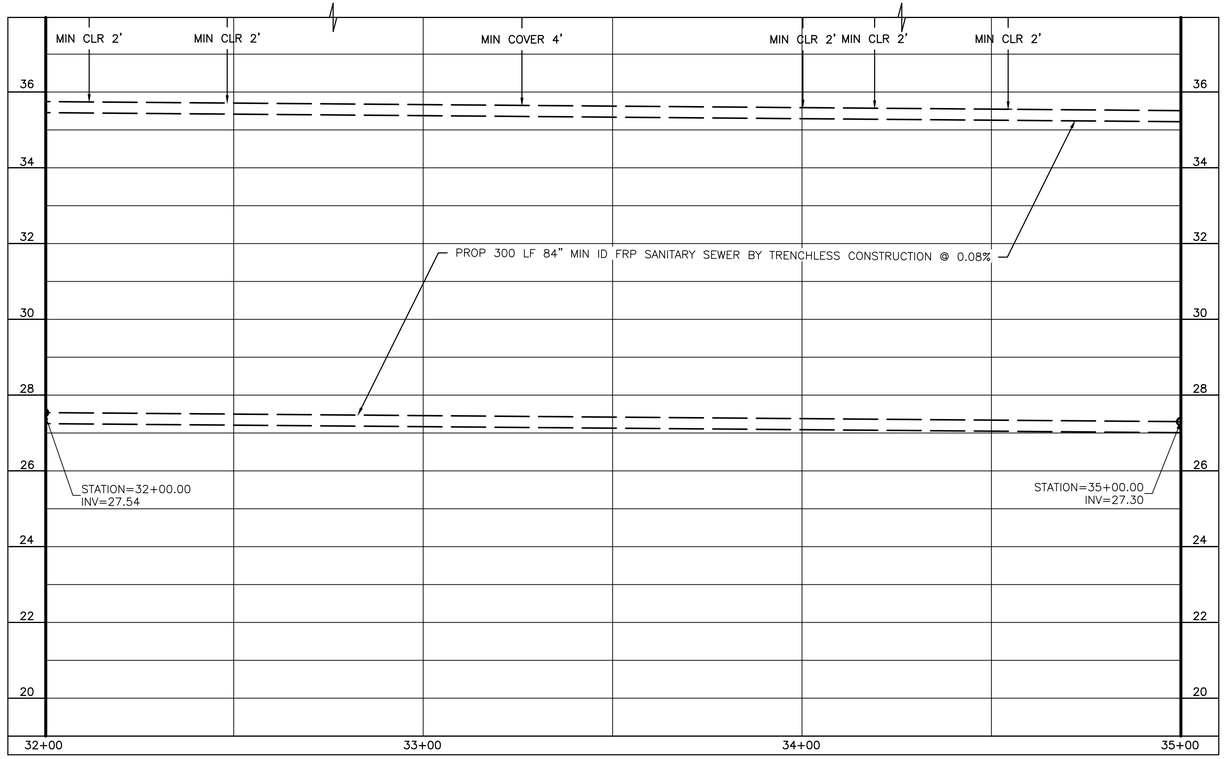

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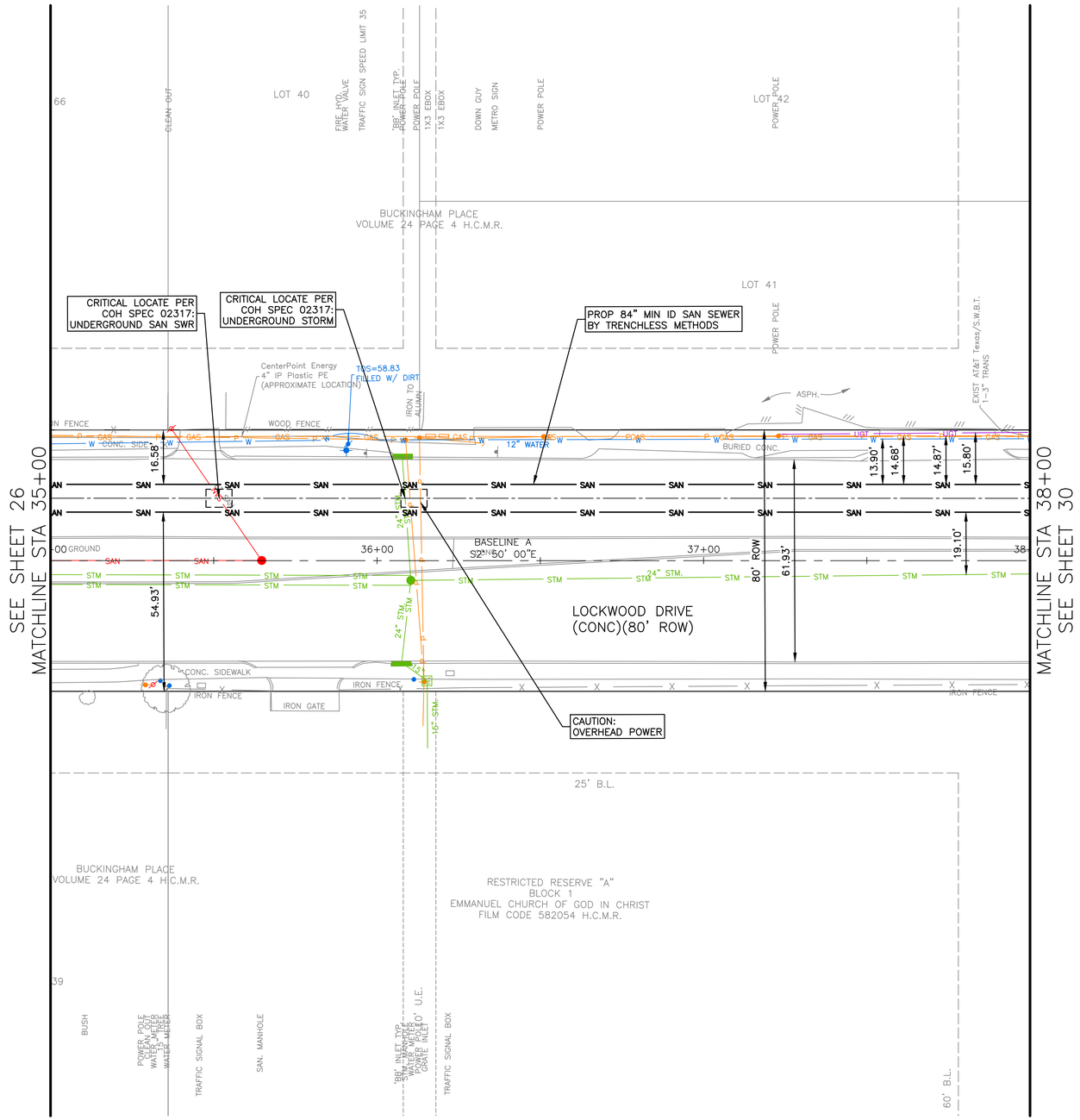

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PPCA NOTES

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SHEET NO. 28 OF 124	

60% SUBMITTAL

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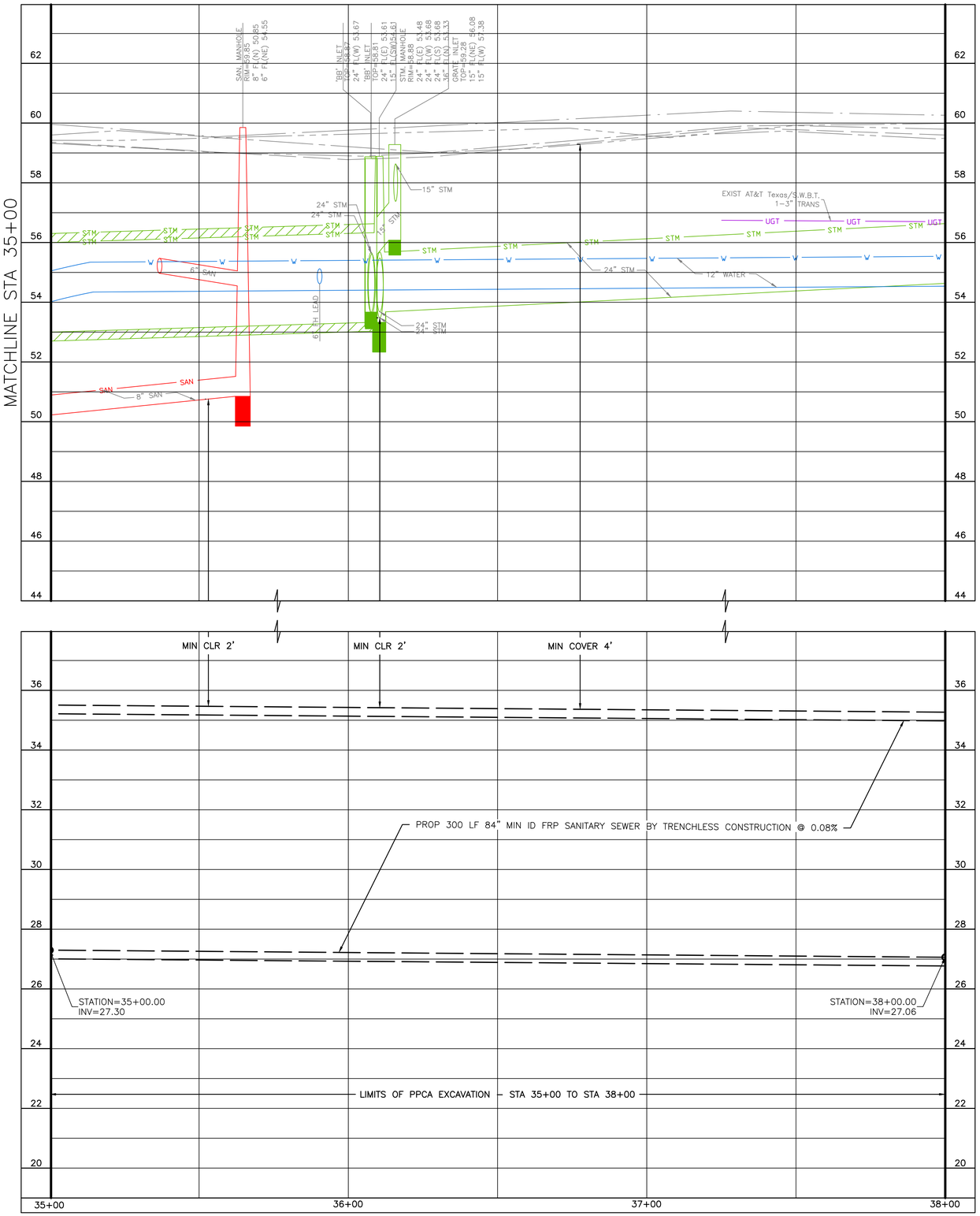

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HOUSTON PUBLIC WORKS

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AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PROFILE STA 35+00 TO STA 38+00

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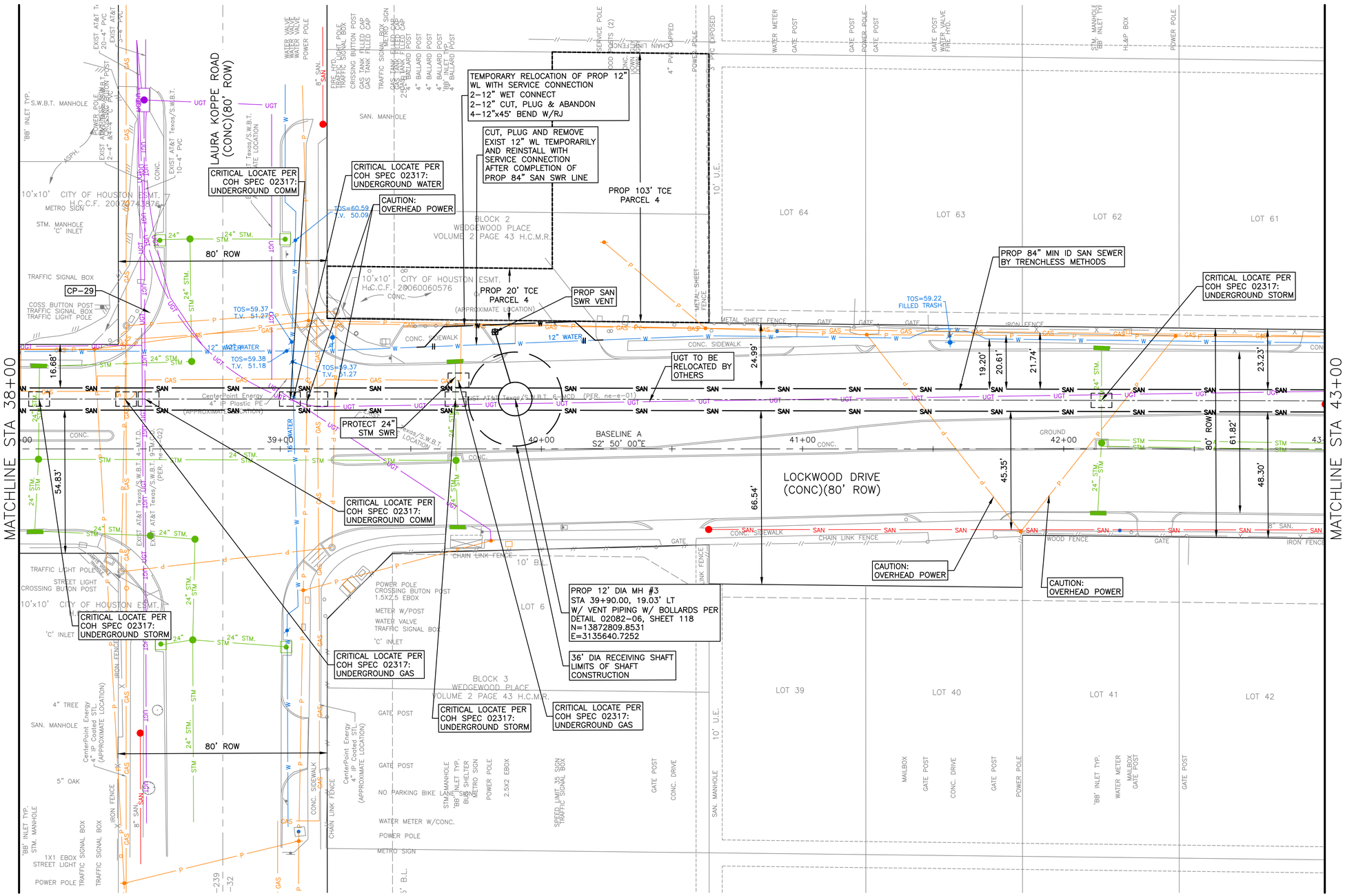
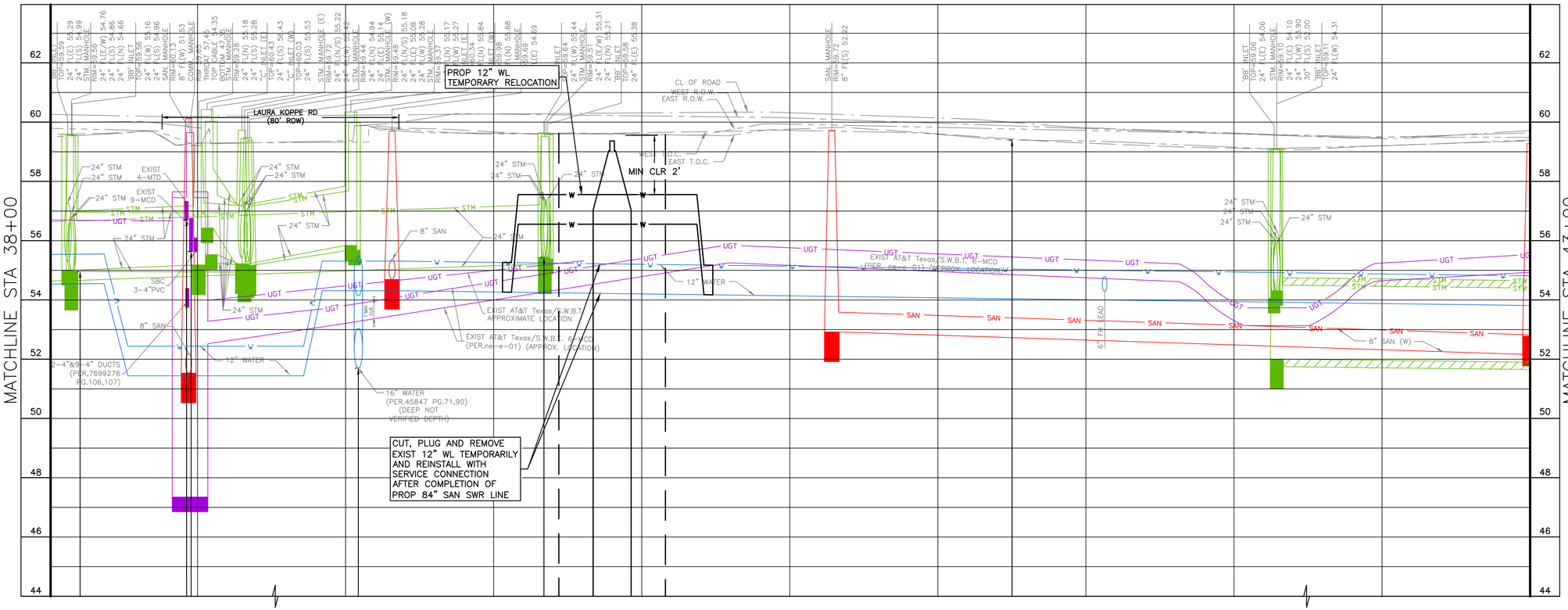
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 29 OF 124	

60% SUBMITTAL


SEE SHEET 28
MATCHLINE STA 38+00
MATCHLINE STA 43+00
SEE SHEET 32
LAURA KOPPE ROAD (CONC)(80' ROW)
LOCKWOOD DRIVE (CONC)(80' ROW)
80' ROW
BASELINE A
S2° 50' 00"E
38+00
39+00
40+00
41+00
42+00
43+00
TEMPORARY RELOCATION OF PROP 12" WL WITH SERVICE CONNECTION
2-12" WET CONNECT
2-12" CUT, PLUG & ABANDON
4-12"x45° BEND W/RJ
CUT, PLUG AND REMOVE EXIST 12" WL TEMPORARILY AND REINSTALL WITH SERVICE CONNECTION AFTER COMPLETION OF PROP 84" SAN SWR LINE
PROP 103' TCE PARCEL 4
PROP 20' TCE PARCEL 4
PROP SAN SWR VENT
PROP 84" MIN ID SAN SEWER BY TRENCHLESS METHODS
UGT TO BE RELOCATED BY OTHERS
PROTECT 24" STM SWR
CRITICAL LOCATE PER COH SPEC 02317: UNDERGROUND COMM
CRITICAL LOCATE PER COH SPEC 02317: UNDERGROUND WATER
CRITICAL LOCATE PER COH SPEC 02317: UNDERGROUND STORM
CRITICAL LOCATE PER COH SPEC 02317: UNDERGROUND GAS
CAUTION: OVERHEAD POWER
PROP 12' DIA MH #3
STA 39+90.00, 19.03' LT
W/ VENT PIPING W/ BOLLARDS PER DETAIL 02082-06, SHEET 118
N=13872809.8531
E=3135640.7252
36' DIA RECEIVING SHAFT LIMITS OF SHAFT CONSTRUCTION
10'x10' CITY OF HOUSTON ESMT. H.C.C.F. 20070433876
10'x10' CITY OF HOUSTON ESMT. H.C.C.F. 20060060576
BLOCK 2 WEDGEWOOD PLACE VOLUME 2 PAGE 43 H.C.M.R.
BLOCK 3 WEDGEWOOD PLACE VOLUME 2 PAGE 43 H.C.M.R.
LOT 64
LOT 63
LOT 62
LOT 61
LOT 6
LOT 39
LOT 40
LOT 41
LOT 42
CP-29
TOS=60.59 T.V. 50.09
TOS=59.37 T.V. 51.27
TOS=59.38 T.V. 51.18
TOS=59.37 T.V. 51.27
TOS=59.22 FILLED TRASH
16.68'
54.83'
24.99'
66.54'
19.20'
20.61'
21.74'
45.35'
61.82'
23.23'
48.30'
12" WATER
24" STM.
8" SAN.
CONC. SIDEWALK
CHAIN LINK FENCE
IRON FENCE
WOOD FENCE
METAL SHEET FENCE
GATE
GATE POST
SAN. MANHOLE
'BB' INLET TYP.
STM. MANHOLE 'C' INLET
TRAFFIC SIGNAL BOX
TRAFFIC LIGHT POLE
STREET LIGHT
CROSSING BUTON POST
POWER POLE
METRO SIGN
WATER METER W/CONC.
WATER VALVE
4" TREE
5" OAK
1X1 EBOX
2.5X2 EBOX
MAILBOX
CONC. DRIVE
WATER METER
GROUND
CenterPoint Energy 4" IP Plastic PE (APPROXIMATE LOCATION)
CenterPoint Energy 4" IP Coated STL. (APPROXIMATE LOCATION)
EXIST AT&T Texas/S.W.B.T. 4-4" PVC (PER ne-e-01)
EXIST AT&T Texas/S.W.B.T. 9-4" PVC (PER ne-e-02)
EXIST AT&T Texas/S.W.B.T. 6-MCD (PER. ne-e-01)
EXIST AT&T Tx 20-4" PVC 2-4" 45° BENDS
EXIST AT&T 3-4" PVC
EXIST AT&T Texas/S.W.B.T. 10-4" PVC
EXIST AT&T Texas/S.W.B.T. 2-4" PVC
EXIST AT&T Texas/S.W.B.T. 2-4" PVC
EXIST AT&T Texas/S.W.B.T. 2



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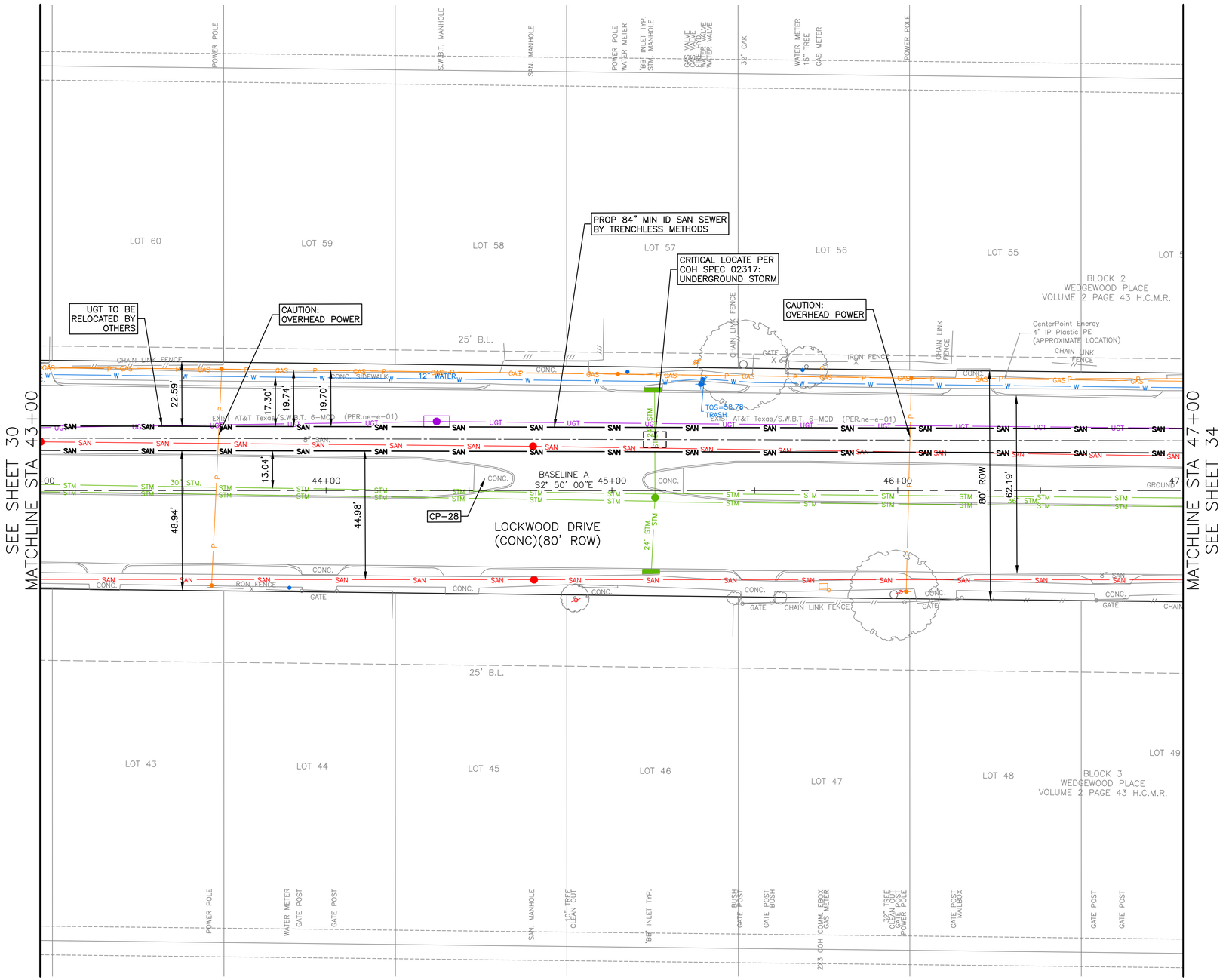

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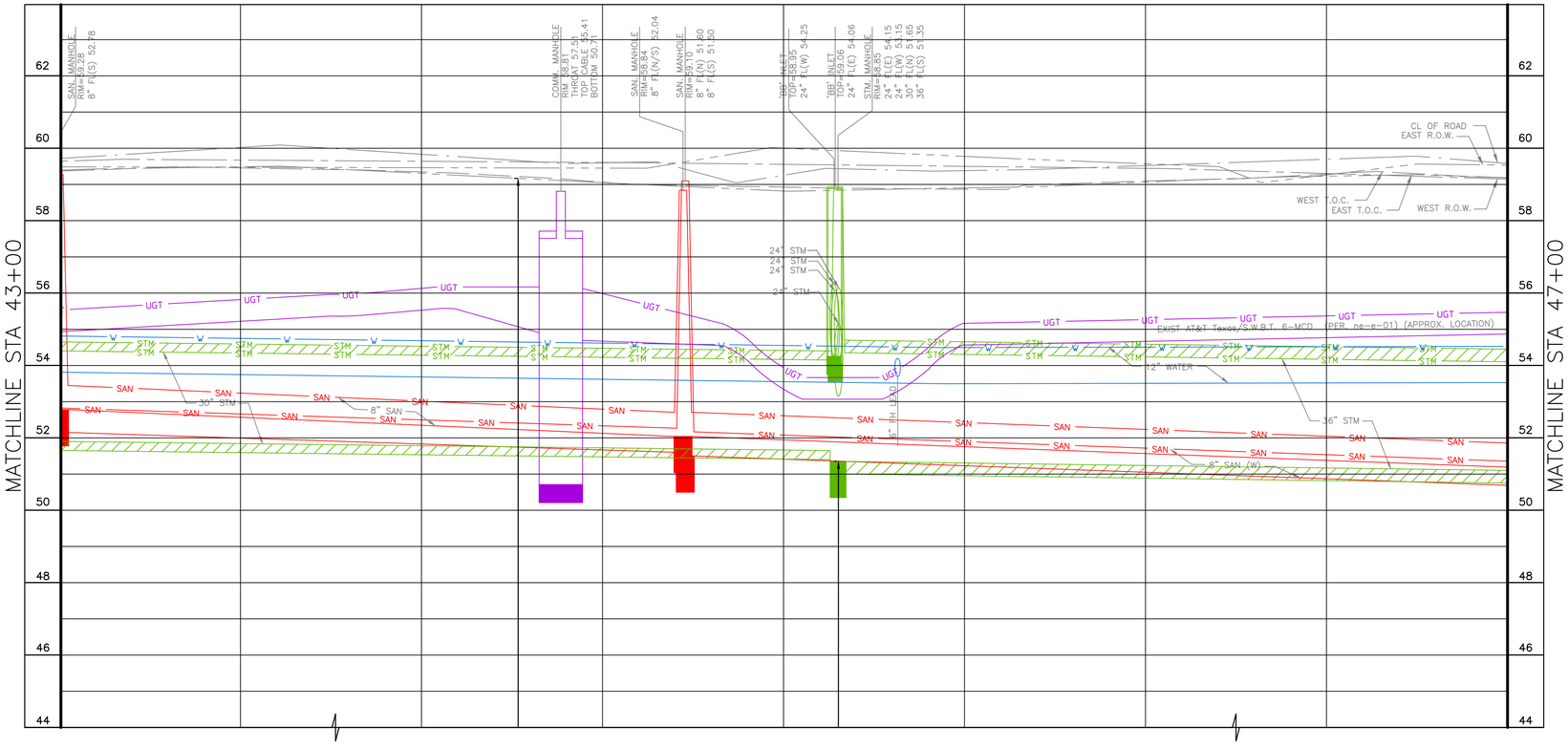

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FOUND BRASS DISK IN CONCRETE AT CRUSE AND PEACHTREE INTERSECTION
ELEV = 57.61' NAVD 1988 (GEOID 18)

CP-28, SET CUT "X"
IN CONC
STA 44+55.49, 4.17' LT
EL. 59.79

NOTES:
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3. FIELDWORK COMPLETED IN OCTOBER 2025.

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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Signature valid for six months.

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stv
Texas Registered Engineering Firm F-204
Texas First Bank Building
11757 Katy Freeway
Suite 1540
Houston, TX. 77079
(713)532-1730
Fax (713)532-1734

SURVEYED BY: LANDTECH
FB NO. P-

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APRIL 2026

SINA ARJMAND, P.E.
TX PE NO. 132394

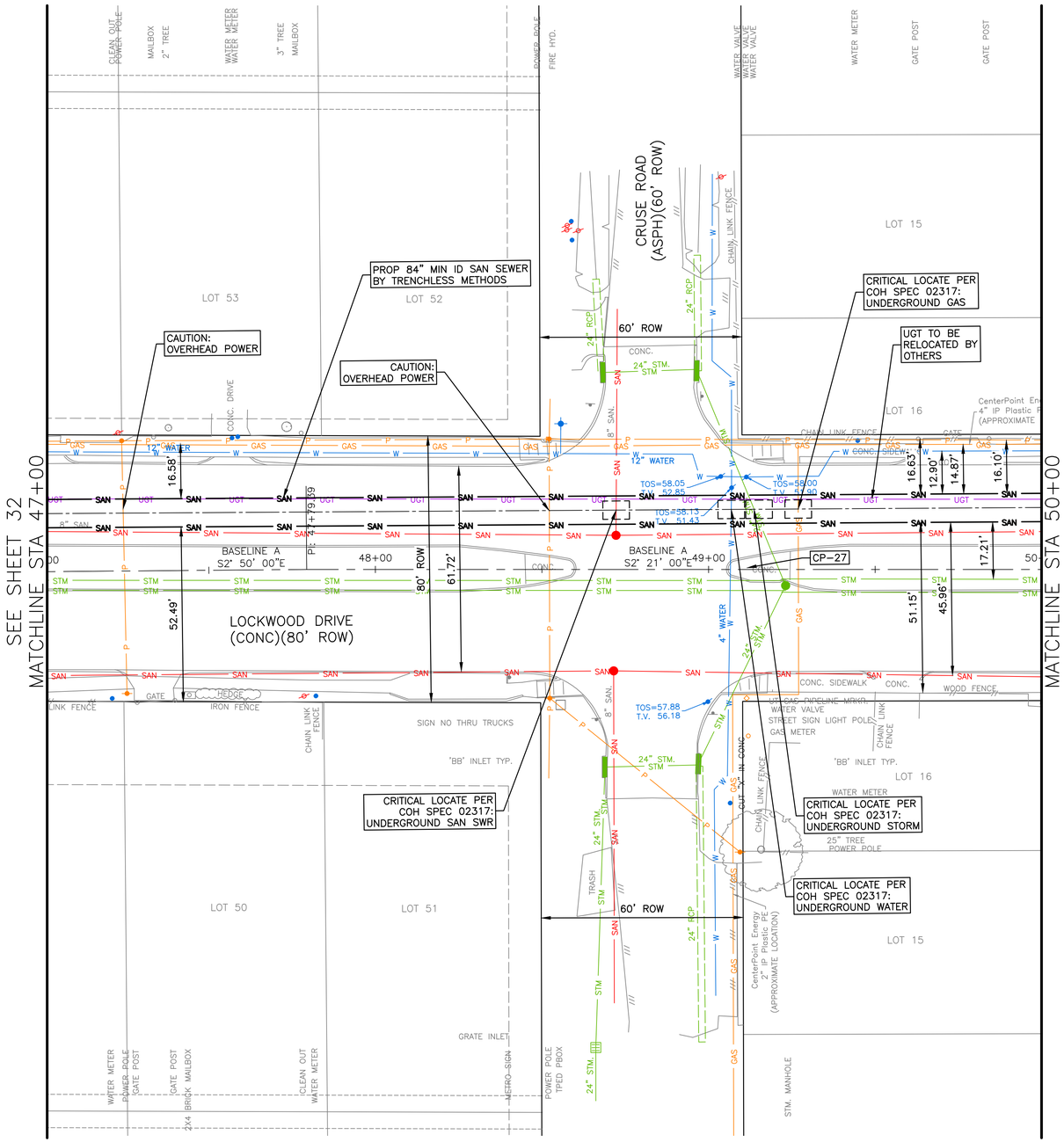
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PROFILE STA 43+00 TO STA 47+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 33 OF 124	

60% SUBMITTAL



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CITY OF HOUSTON

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AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PLAN STA 47+00 TO STA 50+00

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AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 34 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 4:40 PM

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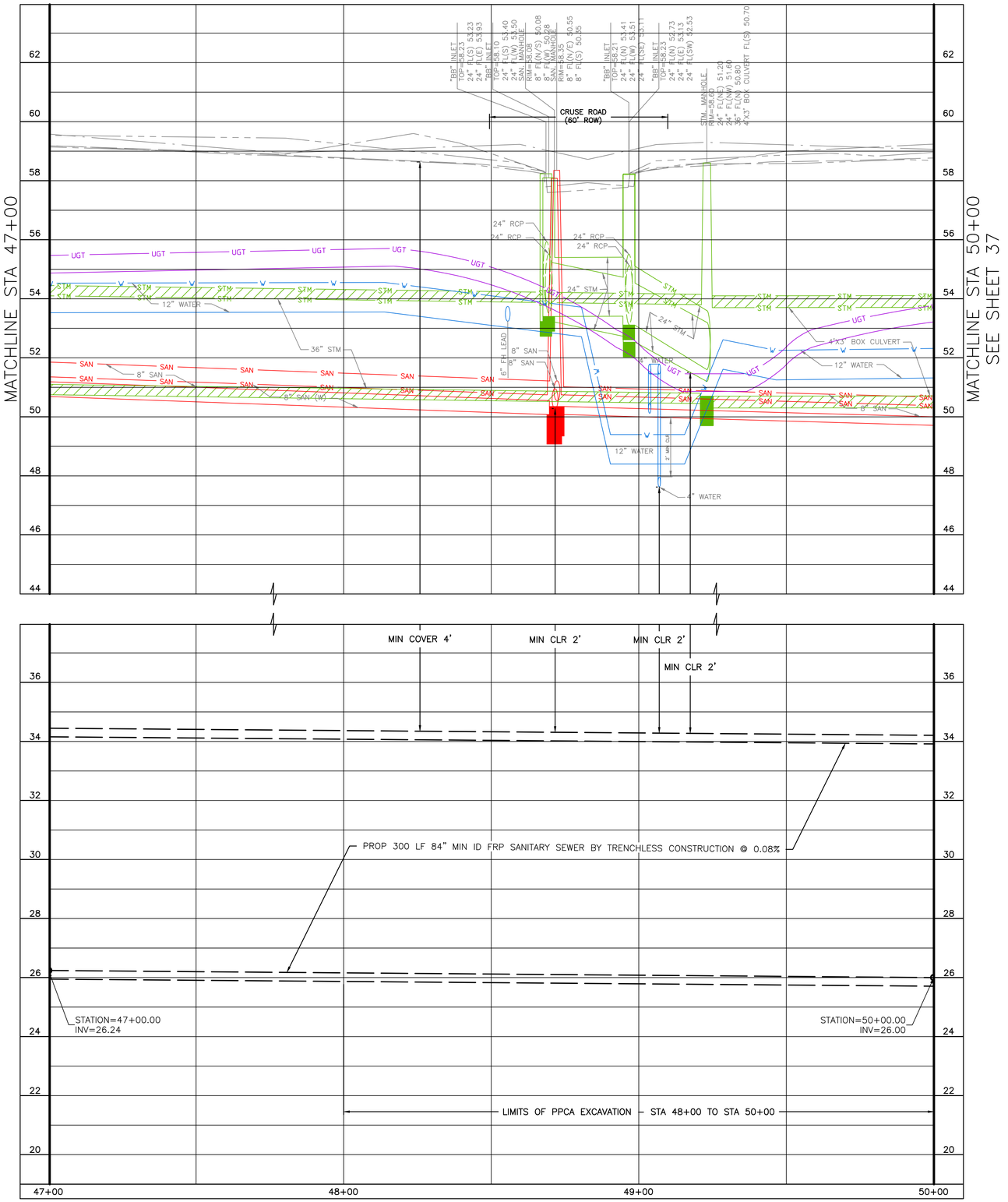

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TIDWELL RD TO DENMARK ST

PROFILE STA 47+00 TO STA 50+00

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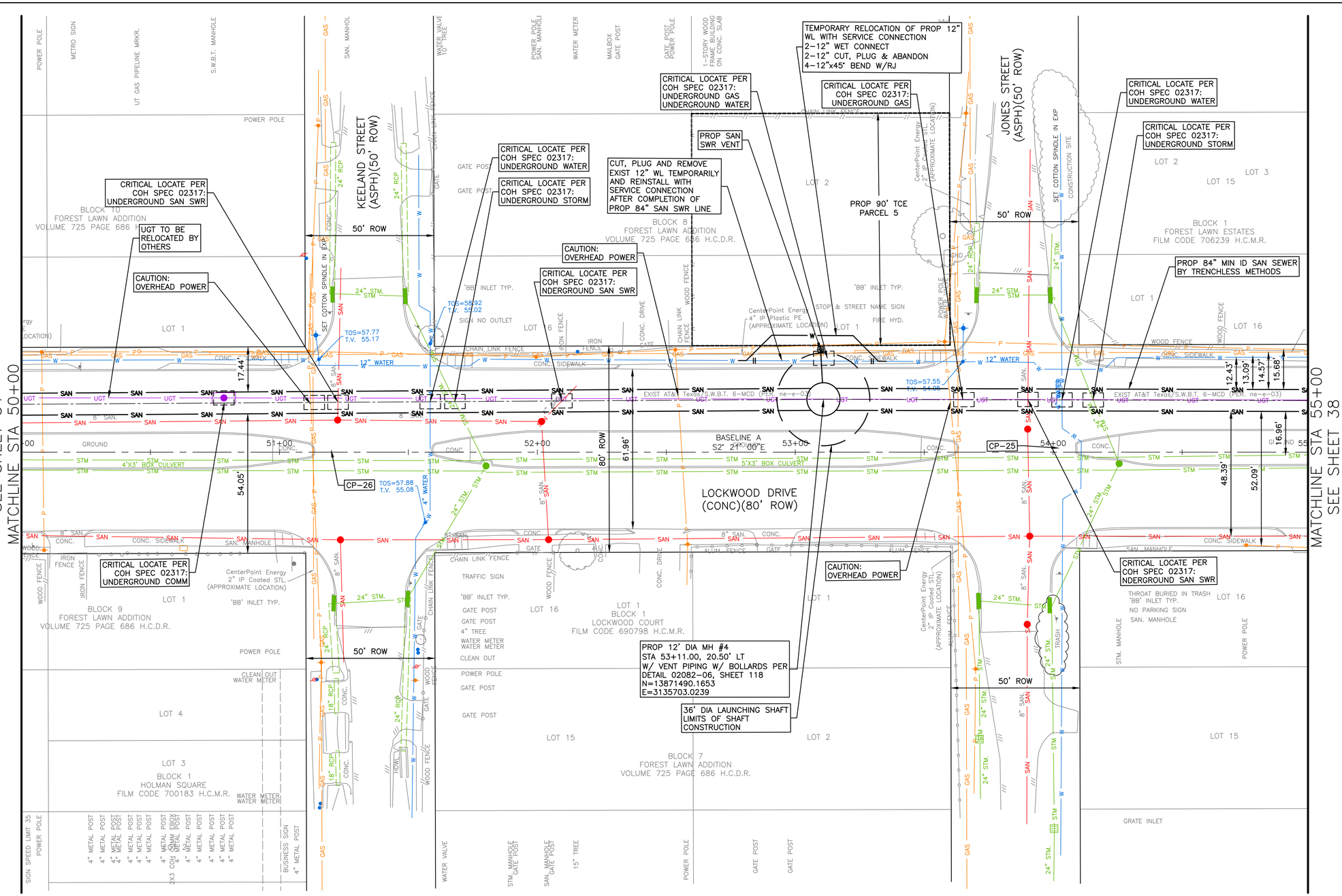
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 35 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 4:41 PM

FILE PATH: 2300122201_11PROFILE.dwg

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 4:41 PM



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EL. 58.61

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SURVEYED BY: LANDTECH
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PLAN STA 50+00 TO STA 55+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 36 OF 124	

60% SUBMITTAL

FILE PATH: 230012201_12PLAN.dwg

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 4:42 PM

SEE SHEET 35
MATCHLINE STA 50+00

MATCHLINE STA 55+00
SEE SHEET 39

KEELAND STREET (50' ROW)

JONES STREET (50' ROW)

CL OF ROAD
WEST R.O.W.
EAST R.O.W.

WEST T.O.C.
EAST T.O.C.

PROP 12" WL TEMPORARY RELOCATION

MIN CLR 2'

CUT, PLUG AND REMOVE EXIST 12" WL TEMPORARILY AND REINSTALL WITH SERVICE CONNECTION AFTER COMPLETION OF PROP 84" SAN SWR LINE

EXIST AT&T Texas/S.W.B.T. C-MCD (PER ne-e-03) (APPROX. LOCATION)

COMM. MANHOLE RIM=58.18 TOP CABLE 54.88 BOTTOM 50.18

"BB" INLET TOP=57.11 24" FL(S/E) 54.41 24" FL(S/W) 53.43

"BB" INLET TOP=58.13 24" FL(W) 53.43 24" FL(E) 54.24

SAN. MANHOLE RIM=58.27 8" FL(N/72) 49.67 8" FL(N/E) 49.62

SAN. MANHOLE RIM=57.76 8" FL(W/S/W) 49.36

"BB" INLET TOP=58.14 24" FL(W) 53.38 24" FL(SE) 53.38

STM. MANHOLE RIM=56.38 24" FL(NE) 50.88 24" FL(W) 51.68 BOTTOM 47.72

4'X3' BOX CULVERT FL(N)(E) 5'X3' BOX CULVERT FL(S)(E) UNABLE TO SEE PIPE

SAN. MANHOLE RIM=58.21 4" FL(SE) 52.41 8" FL(N) 49.22 8" FL(W) 49.3

SAN. MANHOLE RIM=58.24 8" FL(S) 49.04 8" FL(N) 48.99

"BB" INLET TOP=57.80 24" FL(S) 54.49 24" FL(E) 54.46

"BB" INLET TOP=57.80 24" FL(S) 54.40 24" FL(N) 53.80

SAN. MANHOLE RIM=57.40 8" FL(E) 48.90 8" FL(W) 48.95

SAN. MANHOLE RIM=58.16 8" FL(E) 48.9 8" FL(W) 48.95

SAN. MANHOLE RIM=57.58 8" FL(N) 48.53 8" FL(S) 48.48

"BB" INLET TOP=57.86 8" FL(N) 48.53 8" FL(S) 48.53

"BB" INLET TOP=57.86 24" FL(N) 53.81 24" FL(E) 53.86

"BB" INLET TOP=57.76 24" FL(N/E) 53.51 24" FL(W) 53.46

SAN. MANHOLE RIM=58.14 24" FL(NE) 51.04 24" FL(NW) 51.04 BOTTOM 46.44

5'X3' BOX CULVERT FL(N)(E) 5'X3' BOX CULVERT FL(S)(E) UNABLE TO SEE PIPE

24" RCP
4'X3' BOX CULVERT
12" WATER
24" STM
4" WATER
8" SAN
8" SAN (W)
12" WATER
4" WATER
8" SAN (W)
8" SAN
12" WATER
4" WATER
2-8" SAN
4" WATER
8" SAN
4" WATER
5'X3' BOX CULVERT
4' FH (EAST)
2-8" SAN
8" SAN
4" WATER

MIN COVER 4'
MIN CLR 2'
MIN CLR 2'
MIN CLR 2'
MIN CLR 2'
MIN CLR 2'
MIN CLR 2'

36' DIA LAUNCHING SHAFT LIMITS OF SHAFT CONSTRUCTION

PROP 311 LF 84" MIN ID FRP SANITARY SEWER BY TRENCHLESS CONSTRUCTION @ 0.08%

PROP 189 LF 84" MIN ID FRP SANITARY SEWER BY TRENCHLESS CONSTRUCTION @ 0.08%

STATION=50+00.00
INV=26.00

STATION=55+00.00
INV=25.50

PROP 12' DIA MH #4
STA 53+11.00, 20.50' LT
RIM=57.99
84" FL (N) 25.75
84" FL (S) 25.65

LIMITS OF PPCA EXCAVATION – STA 50+00 TO STA 51+90

50+00 51+00 52+00 53+00 54+00 55+00

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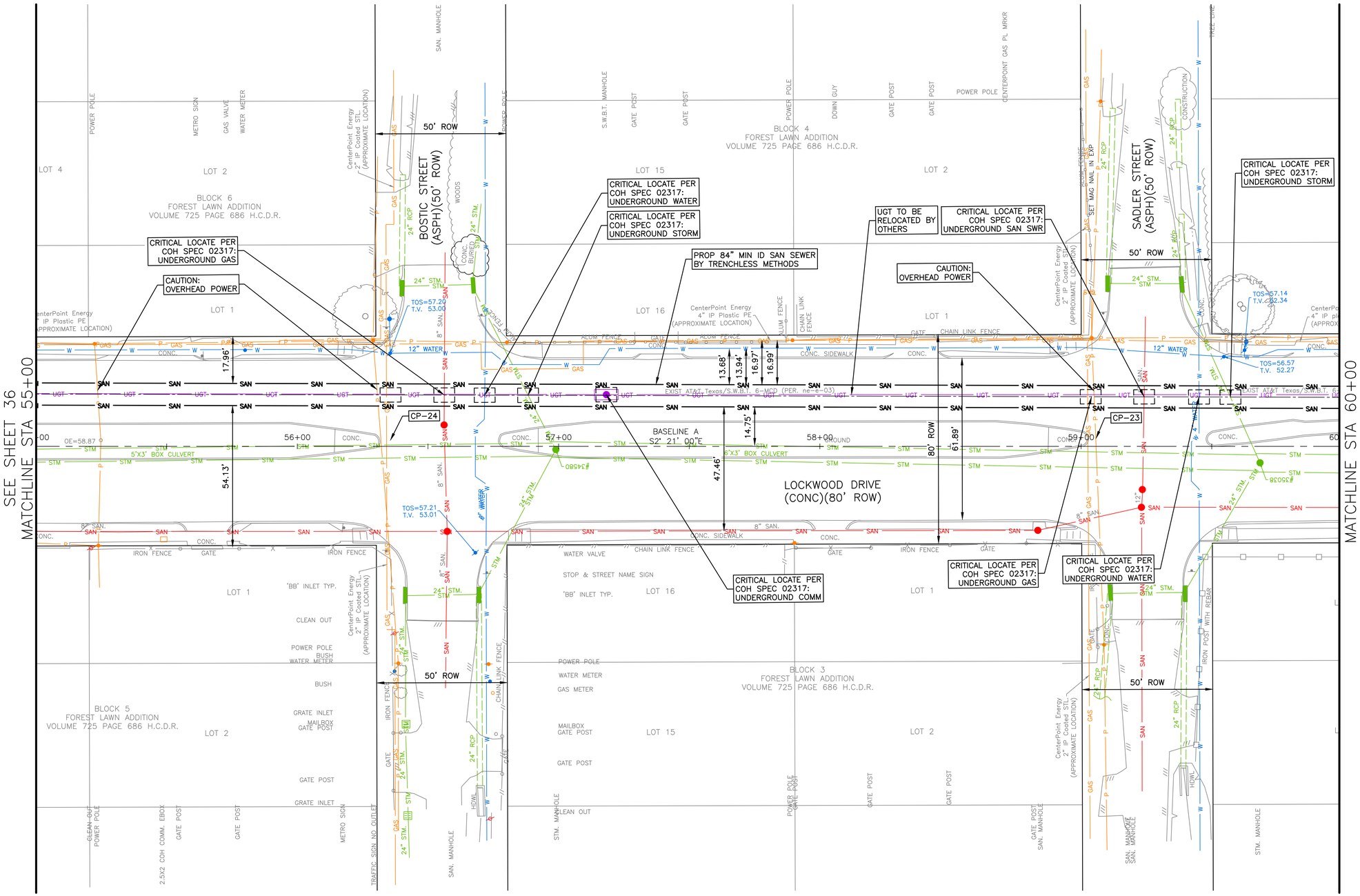

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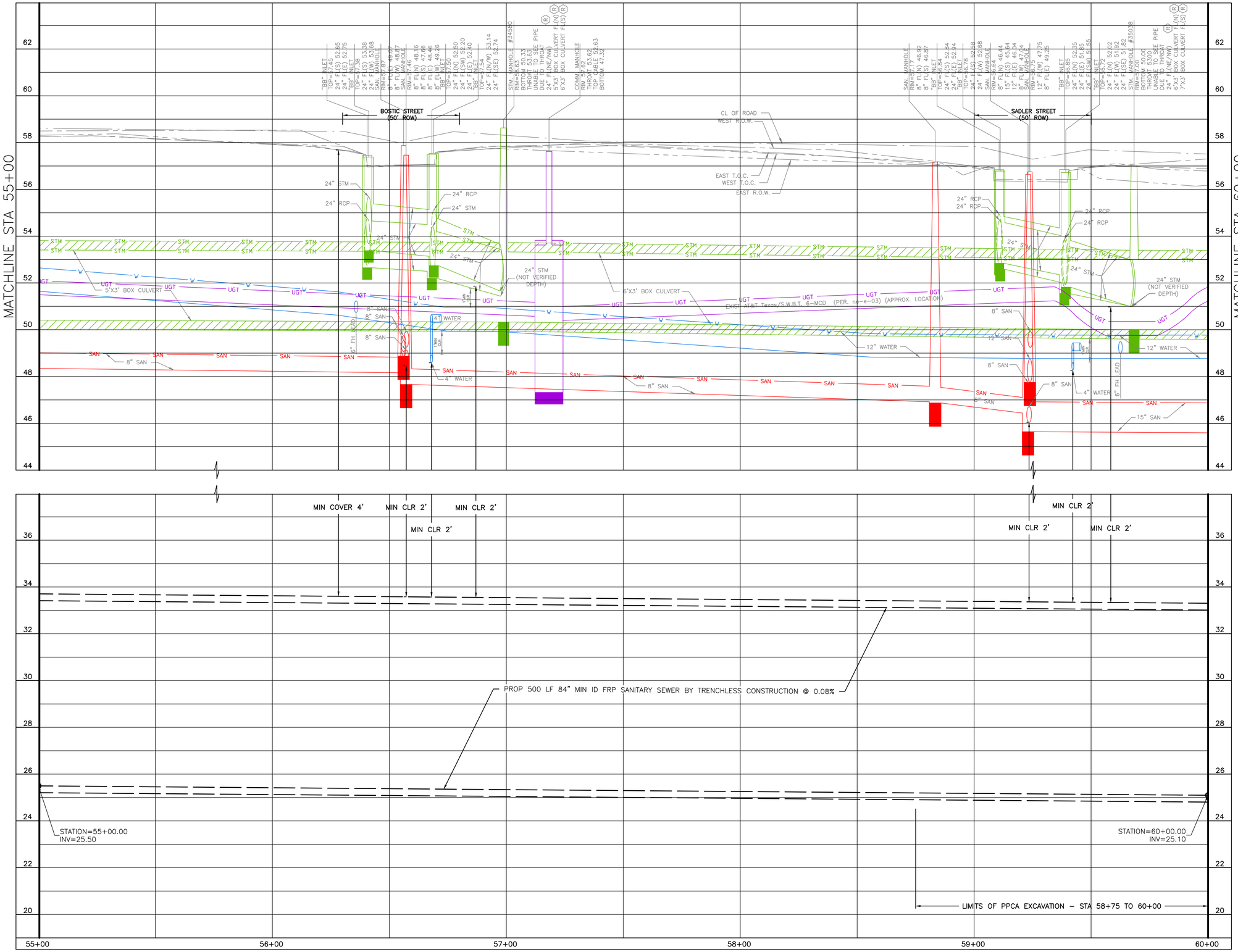

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Signature valid for one year.

stv
Texas Registered Engineering Firm F-204
Texas First Bank Building
11757 Katy Freeway
Suite 1540
Houston, TX. 77079
(713)532-1730
Fax (713)532-1734

SURVEYED BY: LANDTECH
FB NO. P-

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APRIL 2026

SINA ARJMAND, P.E.
TX PE NO. 132394

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

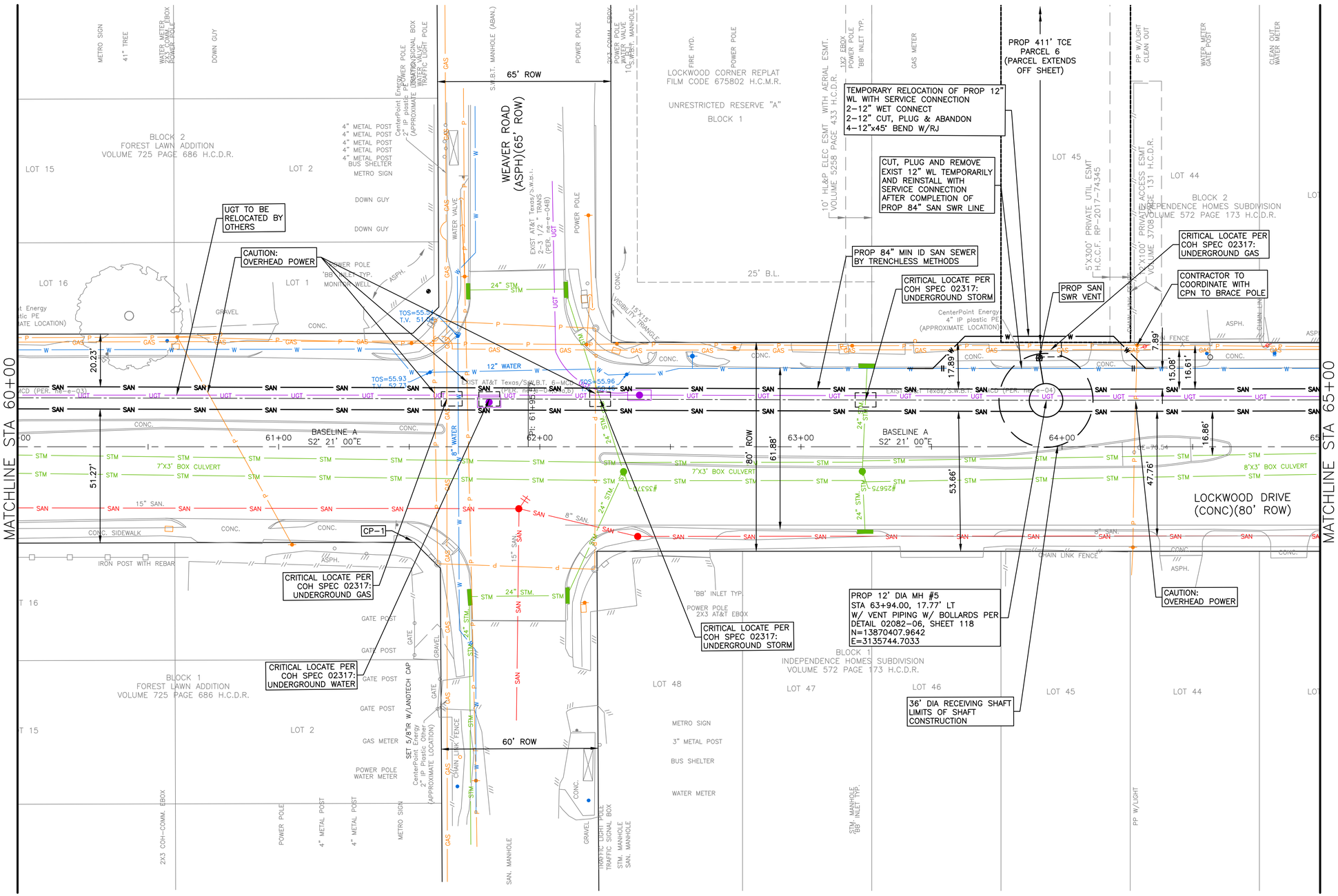
PROFILE STA 55+00 TO STA 60+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 39 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 4:43 PM

FILE PATH: 230012201_13PROFILE.dwg



CCTV NOTES

1. PRE- AND POST-CONSTRUCTION DOCUMENTATION OF EXISTING SANITARY AND STORM SEWERS, WHERE SHOWN OR SPECIFIED, SHALL BE PER SECTION 02558.

PPCA NOTES

2. CONTRACTOR SHALL COMPLY WITH THE CONTRACT DOCUMENTS AND SECTION 02136 FOR HANDLING, SAMPLING, AND DISPOSAL REQUIREMENTS WHEN WORKING WITHIN AREAS IDENTIFIED AS PPCA.

GENERAL NOTES

3. SHAFT SHAPE AND SIZE SHOWN IS FOR REPRESENTATION PURPOSE ONLY. CONTRACTOR SHALL DETERMINE APPROPRIATE SIZE AND SHALL BACKFILL SHAFT PER COH STD DTL 02317-08
4. PROTECT EXISTING UTILITES DURING SHAFT CONSTRUCTION.
5. CONTRACTOR TO COORDINATE WITH CENTERPOINT ENERGY TO TEMPORARILY RELOCATE THE AFFECTED SEGMENT.
6. REFER TO PAVEMENT REPLACEMENT PLANS SHEETS 84 TO 104 FOR PAVEMENT REPLACEMENT LIMITS.
7. REFER TO TREE PROTECTION PLANS SHEETS 105 TO 112 FOR APPROPRIATE PROTECTION MEASURES. TREES OUTSIDE OF PROJECT LIMITS ARE TO BE PROTECTED AND REMAIN IN PLACE.

NO.	DATE	REVISION	APP.

0' 10' 20' 40'
HORIZ: SCALE: 1"=20'
0' 1' 2' 4'
VERT: SCALE: 1"=2'

CITY OF HOUSTON MONUMENT 5560-0416:
FOUND BRASS DISK IN CONCRETE AT CRUSE AND PEACHTREE INTERSECTION
ELEV = 57.61' NAVD 1988 (GEOID 18)
CP-1, SET 5/8" IR W/ LANDTECH CAP
STA 61+51.21, 36.11' RT
EL. 56.64

NOTES:
1. BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE. DISTANCES ARE SURFACE VALUES. SURFACE=GRID/0.99989985044.
2. HORIZONTAL AND VERTICAL CONTROLS USING GPS OBSERVATIONS AND DIGITAL LEVELING HOLDING CITY OF HOUSTON MONUMENT 5560-0416.
3. FIELDWORK COMPLETED IN OCTOBER 2025.

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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TX PE NO. 132394

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PLAN STA 60+00 TO STA 65+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 40 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 4:43 PM

FILE PATH: 230012201_14PLAN.dwg

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 4:43 PM

SEE SHEET 39
MATCHLINE STA 60+00

MATCHLINE STA 65+00
SEE SHEET 43

"BB" INLET TOP=56.03 24" FL(S) 51.76
"BB" INLET TOP=55.97 24" FL(S) 50.87 24" FL(W) 51.27
COMM. MANHOLE RIM=56.22 ABAN. 24" FL(N) 45.48
"BB" INLET TOP=55.91 15" FL(N) 45.48 8" FL(S) 45.38
"BB" INLET TOP=55.91 15" FL(W) 45.38
"BB" INLET TOP=55.91 24" FL(N) 51.45 24" FL(SW) 51.25
"BB" INLET TOP=55.91 24" FL(N) 50.41 24" FL(S) 50.41
STM. MANHOLE #35370 RIM=56.34 BOTTOM 49.94 UNABLE TO SEE DUE TO THROAT
7'X3' BOX CULVERT FL(N) (R) 7'X3' BOX CULVERT FL(S) (R)
SAN. MANHOLE RIM=56.28 8" FL(N) 46.18 8" FL(S) 46.08
COMM. MANHOLE RIM=56.18 THROAT 52.18 TOP CABLE 52.18 BOTTOM 46.38
STM. MANHOLE #25675 RIM=56.81 BOTTOM 50.01 UNABLE TO SEE DUE TO THROAT
7'X3' BOX CULVERT FL(N) (R) 7'X3' BOX CULVERT FL(S) (R)
"BB" INLET TOP=55.85 24" FL(E) 51.25
"BB" INLET TOP=55.91 24" FL(W) 51.71

WEAVER STREET
(60' ROW WEST)
(65' ROW EAST)

PROP 12" WL
TEMPORARY RELOCATION

CL OF ROAD
WEST R.O.W.
EAST R.O.W.
WEST T.O.C.
EAST T.O.C.

MIN CLR 2'

24" STM
8" WATER
12" WATER
7'X3' BOX CULVERT
8'X3' BOX CULVERT
SBC 4-1/2" TRANS PIPES
24" STM (NOT VERIFIED DEPTH)
6" TH LEAD
EXIST AT&T Texas/S.W.B.T. 6-MCD (PER. ne-e-0104b) (APPROX. LOCATION)
SBC 6-4" DUCTS (PER.7399276 PG.103)
15" SAN
8" SAN

CUT, PLUG AND REMOVE EXIST 12" WL TEMPORARILY AND REINSTALL WITH SERVICE CONNECTION AFTER COMPLETION OF PROP 84" SAN SWR LINE

MIN COVER 4'
MIN CLR 2'
MIN CLR 2'
MIN CLR 2'

36' DIA RECEIVING SHAFT LIMITS OF SHAFT CONSTRUCTION

PROP 394 LF 84" MIN ID FRP SANITARY SEWER BY TRENCHLESS CONSTRUCTION @ 0.08%

PROP 106 LF 84" MIN ID FRP SANITARY SEWER BY TRENCHLESS CONSTRUCTION @ 0.08%

STATION=60+00.00
INV=25.10

STATION=65+00.00
INV=24.60

PROP 12' DIA MH #5
STA 63+94.00, 17.77' LT
RIM=55.45
84" FL (N) 24.78
84" FL (S) 24.68

LIMITS OF PPCA EXCAVATION – STA 60+00 TO 61+20

LIMITS OF PPCA EXCAVATION – STA 62+60 TO STA 64+60

60+00 61+00 62+00 63+00 64+00 65+00

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APRIL 2026

SINA ARJMAND, P.E.
TX PE NO. 132394

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

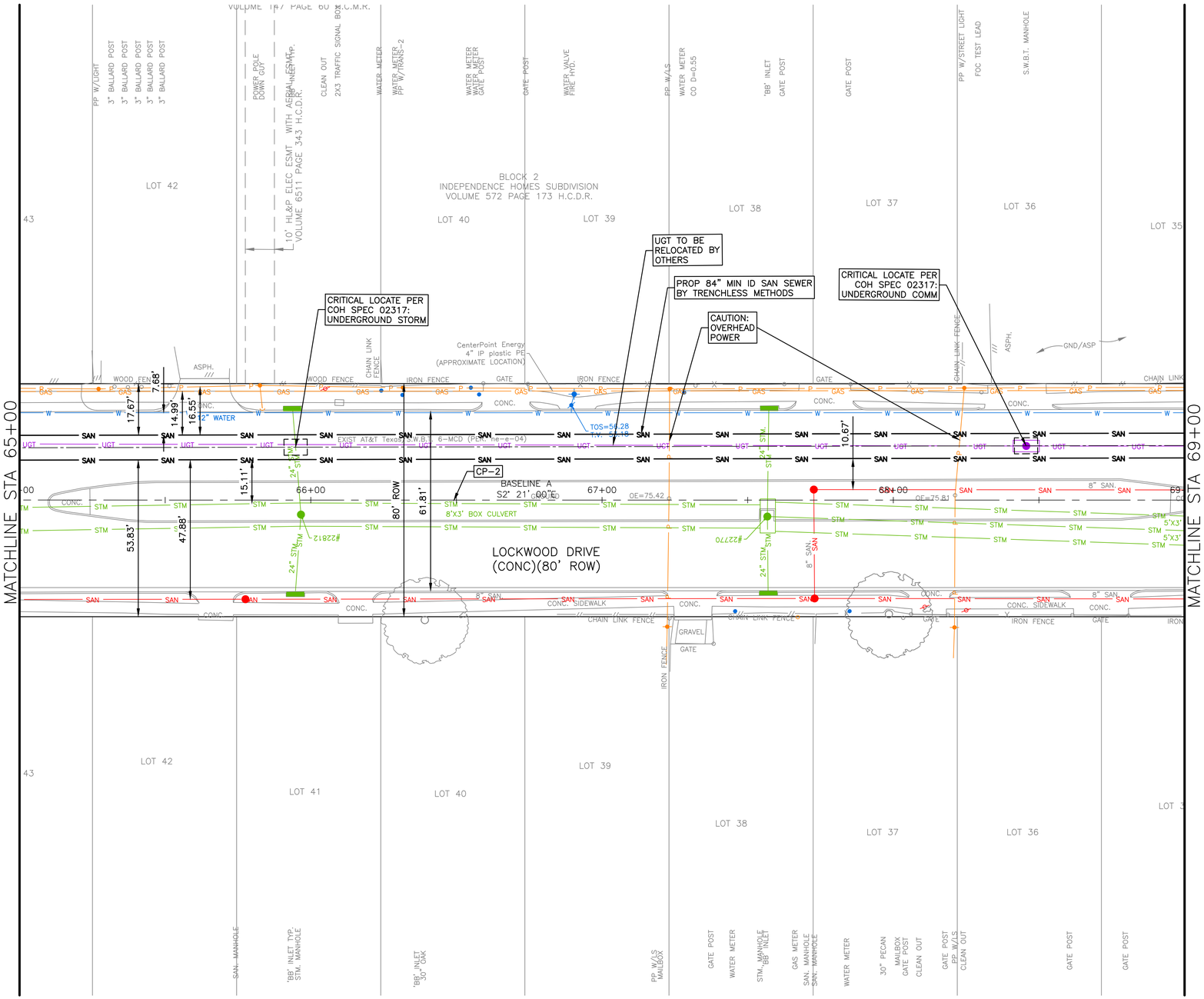
CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PROFILE STA 60+00 TO STA 65+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 41 OF 124	

60% SUBMITTAL

FILE PATH: 230012201_14PROFILE.dwg



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EL. 56.73

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PLAN STA 65+00 TO STA 69+00

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R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 42 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 4:44 PM

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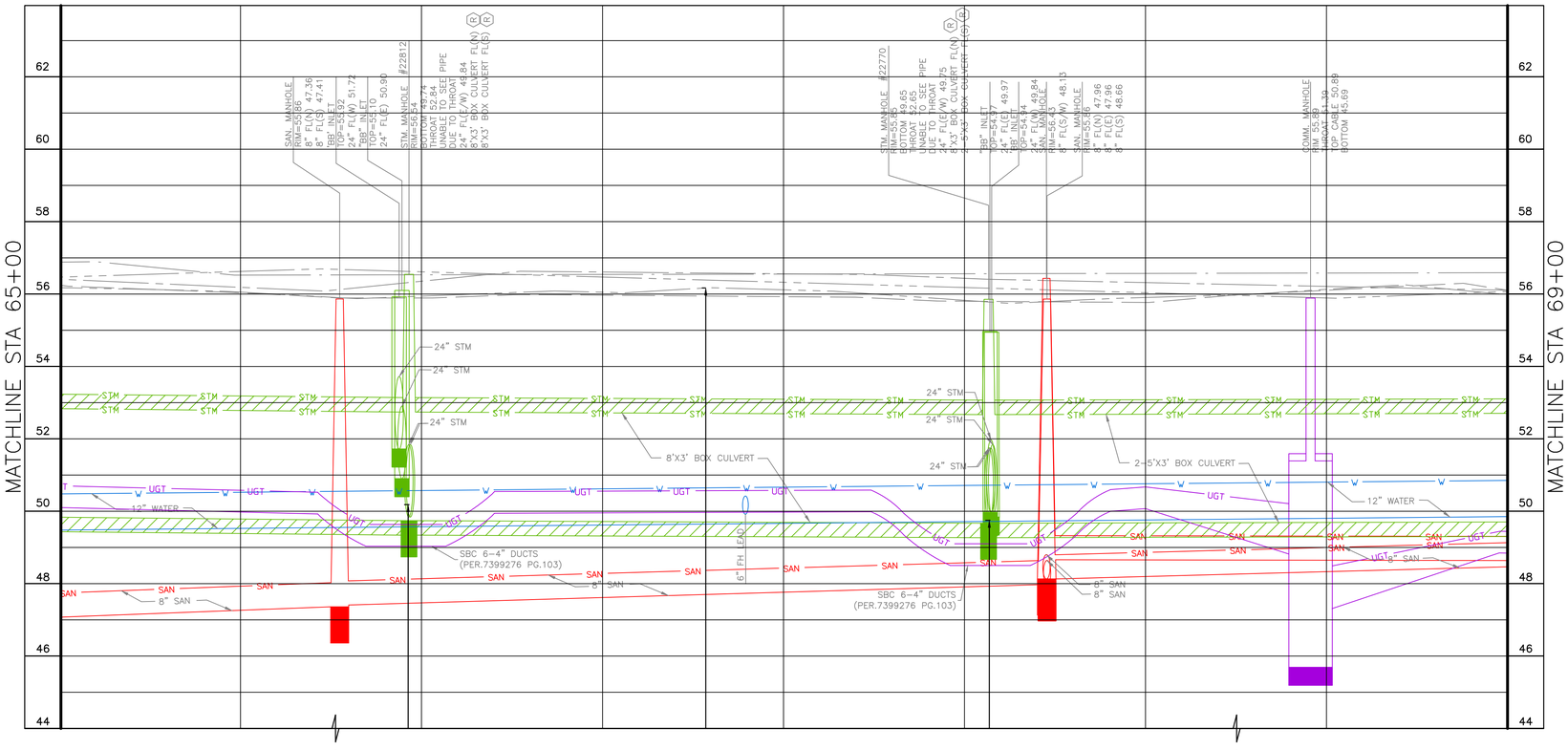

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PROFILE STA 65+00 TO STA 69+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 43 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 4:44 PM

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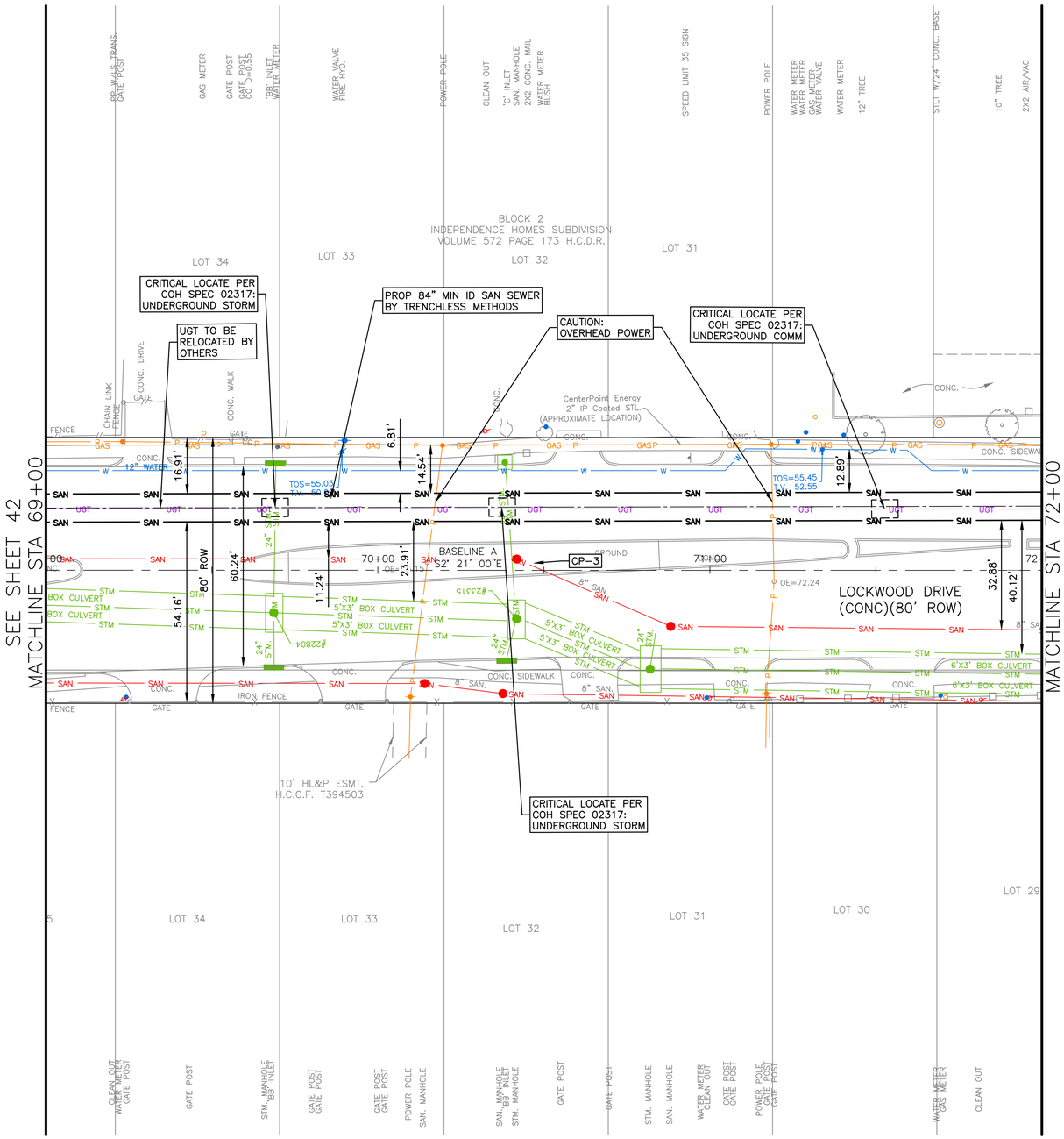

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CP-3, SET 5/8" IR W/ LANDTECH CAP
STA 70+47.08, 2.15' LT
EL. 55.84

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PLAN STA 69+00 TO STA 72+00

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NEIL BARNSDALE, P.E.	
SHEET NO. 44 OF 124	

60% SUBMITTAL

NO.	DATE	REVISION	APP.

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 4:45 PM

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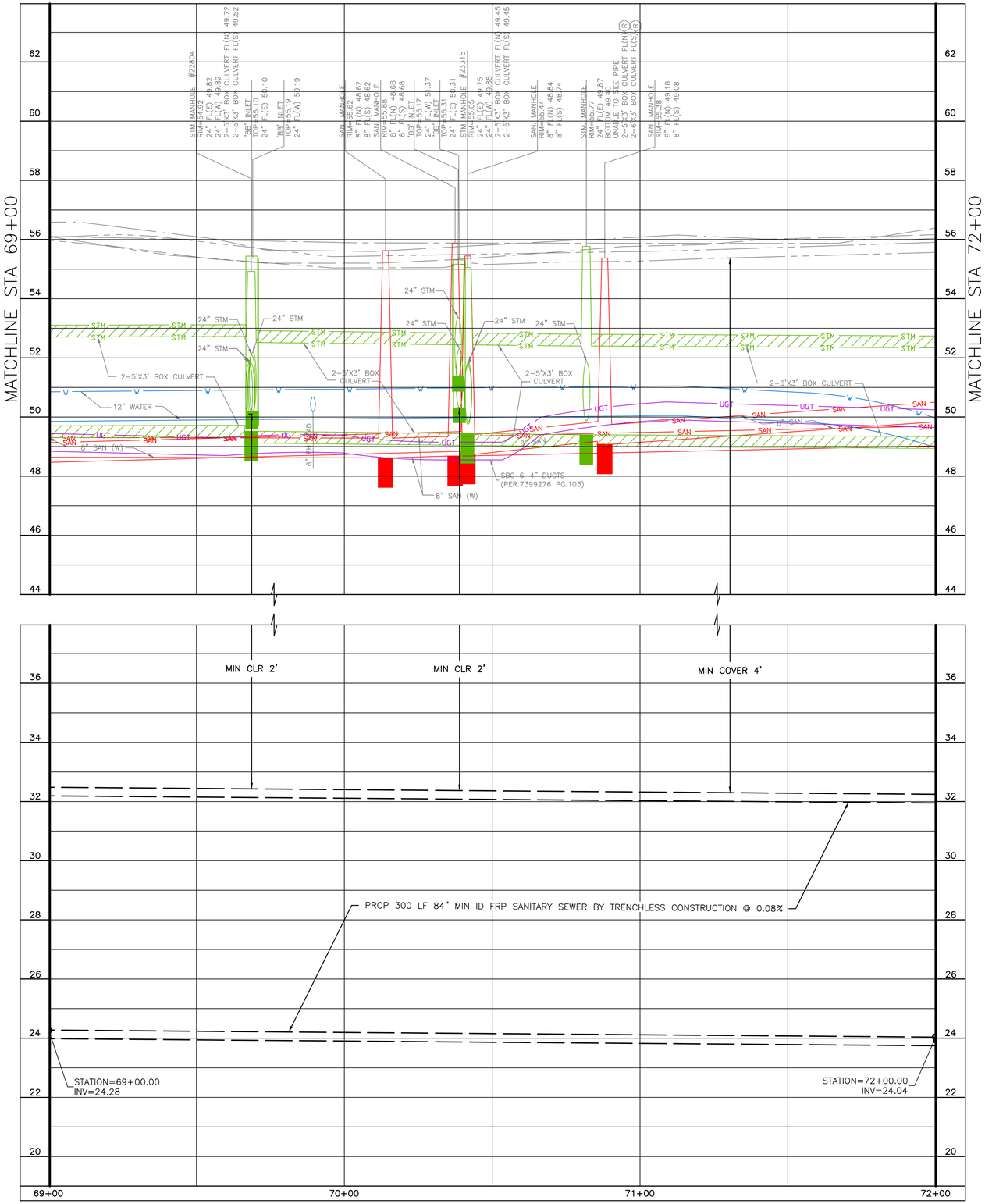

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 4:45 PM

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NO.	DATE	REVISION	APP.

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NEIL BARNSDALE, P.E.	
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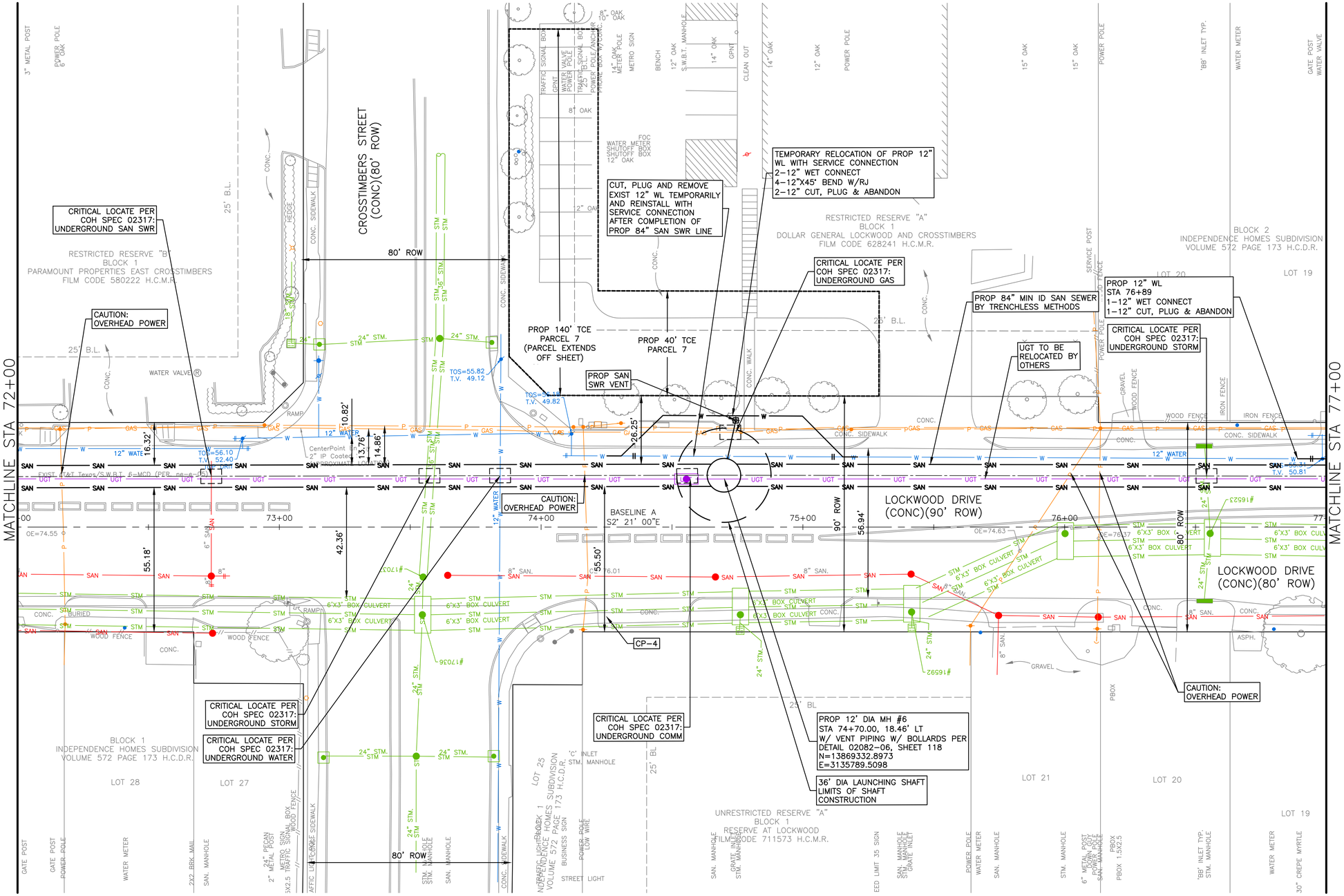

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WATERLINE RELOCATION NOTES

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5. CONTRACTOR TO COORDINATE WITH CENTERPOINT ENERGY TO TEMPORARILY RELOCATE THE AFFECTED SEGMENT.
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NO.	DATE	REVISION	APP.

N

0' 10' 20' 40'
HORIZ: SCALE: 1"=20'
0' 1' 2' 4'
VERT: SCALE: 1"=2'

CITY OF HOUSTON MONUMENT 5560-0416:
FOUND BRASS DISK IN CONCRETE AT CRUSE AND PEACHTREE INTERSECTION
ELEV = 57.61' NAVD 1988 (GEOID 18)
CP-4, SET CUT "X"
IN CONC
STA 74+24.08, 34.18' RT
EL. 56.34

NOTES:
1. BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE. DISTANCES ARE SURFACE VALUES. SURFACE=GRID/0.99988985044.
2. HORIZONTAL AND VERTICAL CONTROLS USING GPS OBSERVATIONS AND DIGITAL LEVELING HOLDING CITY OF HOUSTON MONUMENT 5560-0416.
3. FIELDWORK COMPLETED IN OCTOBER 2025.

NOTICE:
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VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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Date

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Signature valid for one year.

stv
Texas Registered Engineering Firm F-204
Texas First Bank Building
11757 Katy Freeway
Suite 1540
Houston, TX. 77079
(713)532-1730
Fax (713)532-1734

SURVEYED BY: LANDTECH
FB NO. P-

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APRIL 2026

SINA ARJMAND, P.E.
TX PE NO. 132394

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PLAN STA 72+00 TO STA 77+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 46 OF 124	

60% SUBMITTAL

FILE PATH: 230012201_17PLAN.dwg

SEE SHEET 45
MATCHLINE STA 72+00

MATCHLINE STA 77+00
SEE SHEET 49

E CROSSTIMBERS STREET
(80' ROW)

CUT, PLUG AND REMOVE EXIST 12" WL TEMPORARILY AND REINSTALL WITH SERVICE CONNECTION AFTER COMPLETION OF PROP 84" SAN SWR LINE

PROP 12" WL TEMPORARY RELOCATION

CL OF ROAD
WEST R.O.W.
WEST T.O.C.
EAST R.O.W.
EAST T.O.C.

MIN CLR 2'

EXIST AT&T Texas/S.W.B.T. 6-MCD (PER. ne-e-05) (APPROX. LOCATION)

2-6'X3' BOX CULVERT

24" STM (NOT VERIFIED DEPTH)

12" WATER

SBC 6-4" DUCTS (PER.7399276 PG.102)

6" FH LEAD

MIN CLR 2' | MIN COVER 4' | MIN CLR 2' | MIN CLR 2'

36' DIA
LAUNCHING SHAFT
LIMITS OF SHAFT
CONSTRUCTION

PROP 270 LF 84" MIN ID FRP SANITARY SEWER BY TRENCHLESS CONSTRUCTION @ 0.08%

PROP 230 LF 84" MIN ID FRP SANITARY SEWER BY TRENCHLESS CONSTRUCTION @ 0.08%

STATION=72+00.00
INV=24.04

PROP 12' DIA MH #6
STA 74+70.00 18.46' LT
RIM=55.63
84" FL (N) 23.82
84" FL (S) 23.72

STATION=77+00.00
INV=23.54

72+00 | 73+00 | 74+00 | 75+00 | 76+00 | 77+00

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APRIL 2026

SINA ARJMAND, P.E.
TX PE NO. 132394

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

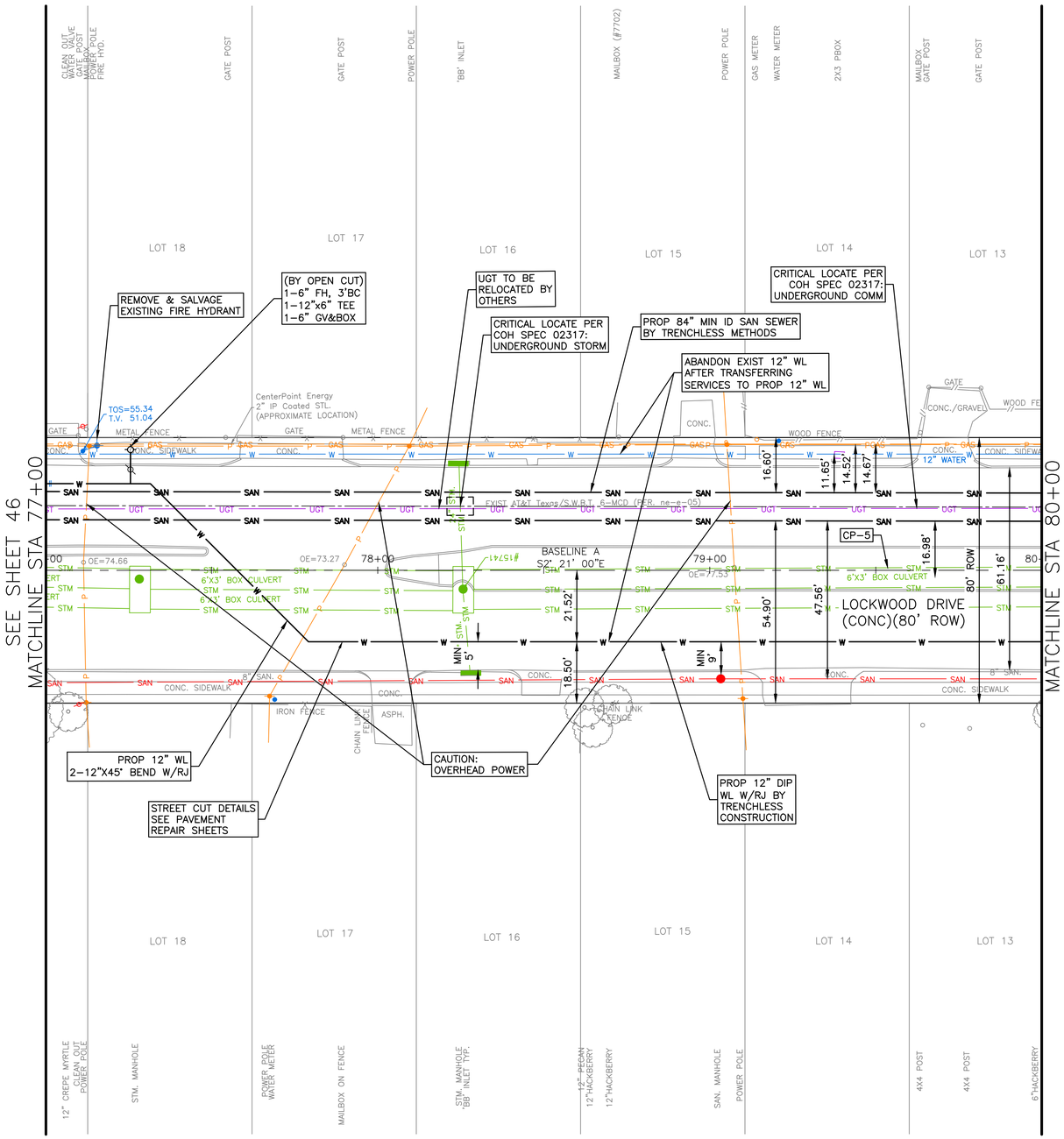
PROFILE STA 72+00 TO STA 77+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 47 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 4:46 PM

FILE PATH: 230012201_17PROFILE.dwg



CCTV NOTES

1. PRE- AND POST-CONSTRUCTION DOCUMENTATION OF EXISTING SANITARY AND STORM SEWERS, WHERE SHOWN OR SPECIFIED, SHALL BE PER SECTION 02558.

WATERLINE RELOCATION NOTES

2. SMALL DIAMETER WATERLINE SHALL BE CONSTRUCTED BY MEANS OF TRENCHLESS CONSTRUCTION EXCEPT AS NOTED ON THE DRAWINGS.

GENERAL NOTES

3. SHAFT SHAPE AND SIZE SHOWN IS FOR REPRESENTATION PURPOSE ONLY. CONTRACTOR SHALL DETERMINE APPROPRIATE SIZE AND SHALL BACKFILL SHAFT PER COH STD DTL 02317-08
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CP-5, SET 5/8" IR W/ LANDTECH CAP
STA 79+53.64, 0.50' LT
EL. 55.95

NOTES:

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APRIL 2026

SINA ARJMAND, P.E.
TX PE NO. 132394

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

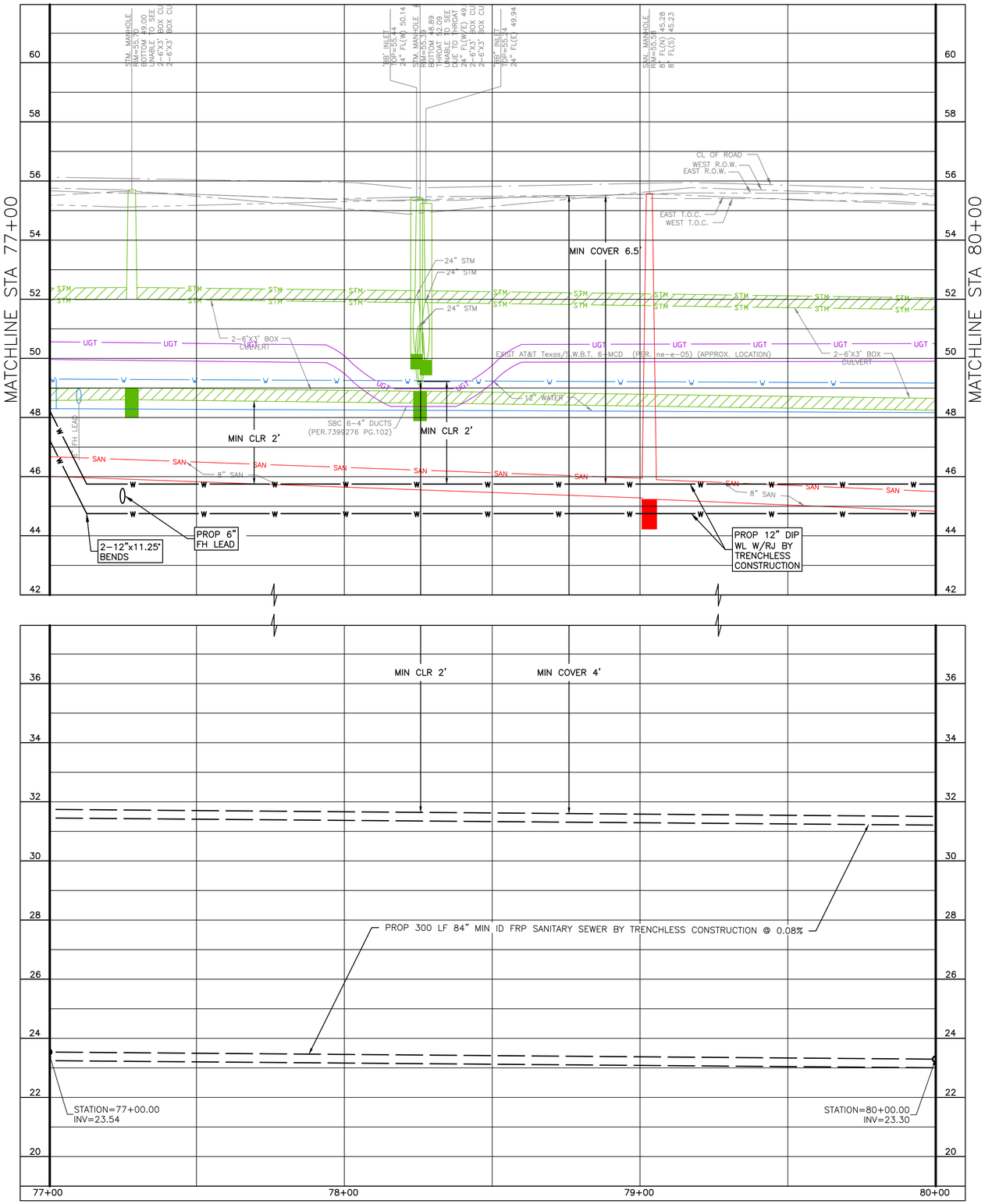
PLAN STA 77+00 TO STA 80+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 48 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 4:46 PM

FILE PATH: 230012201_18PLAN.dwg



PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 4:47 PM

FILE PATH: 230012201_18PROFILE.dwg

NO.	DATE	REVISION	APP.

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0' 1' 2' 4'

VERT: SCALE: 1"=2'

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APRIL 2026

SINA ARJMAND, P.E.
TX PE NO. 132394

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

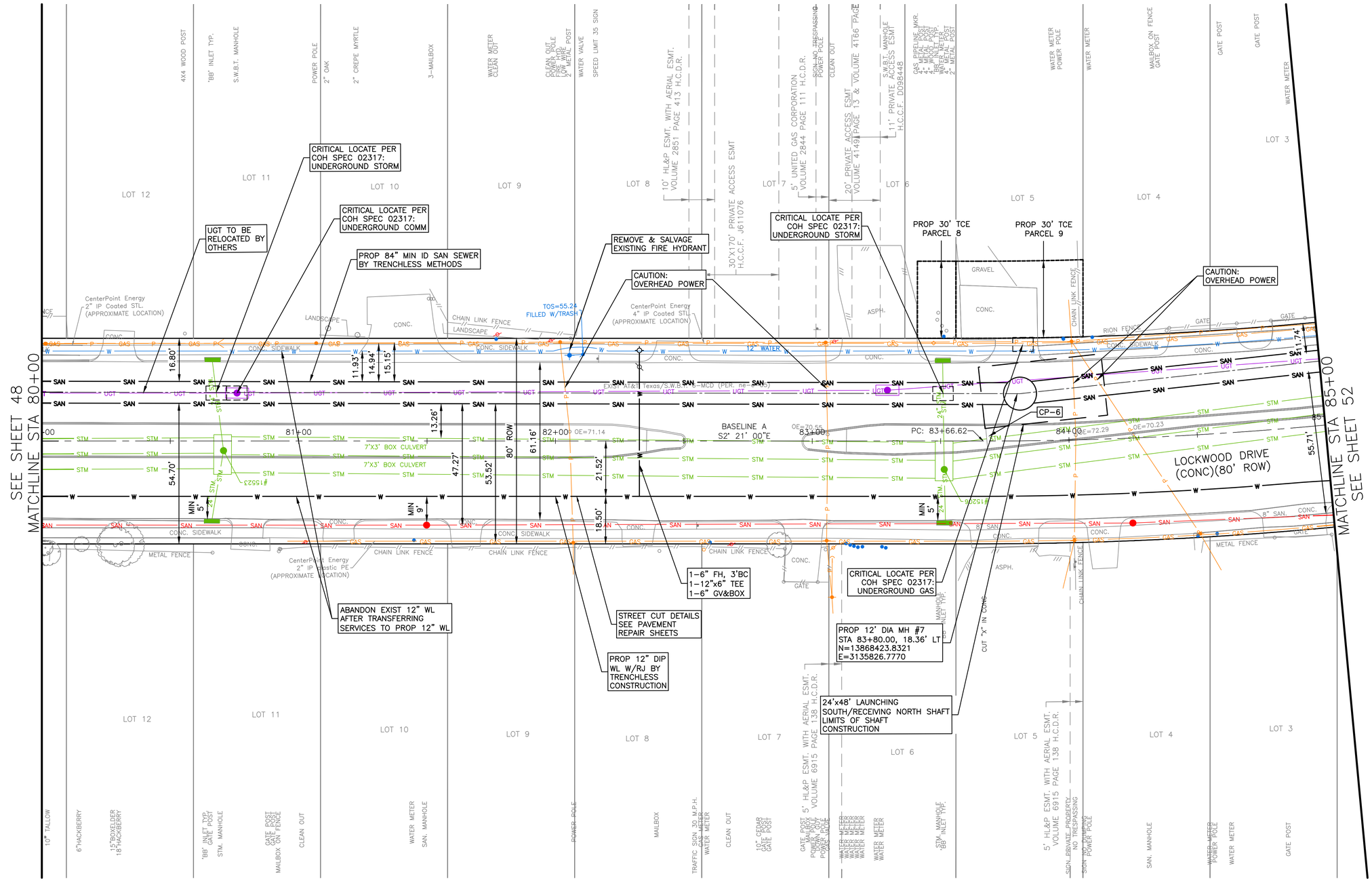
CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PROFILE STA 77+00 TO STA 80+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 49 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 4:47 PM



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CP-6, SET CUT "X"
IN CONC
STA 83+68.82, 1.90' LT
EL. 55.38

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APRIL 2026

SINA ARJMAND, P.E.
TX PE NO. 132394

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

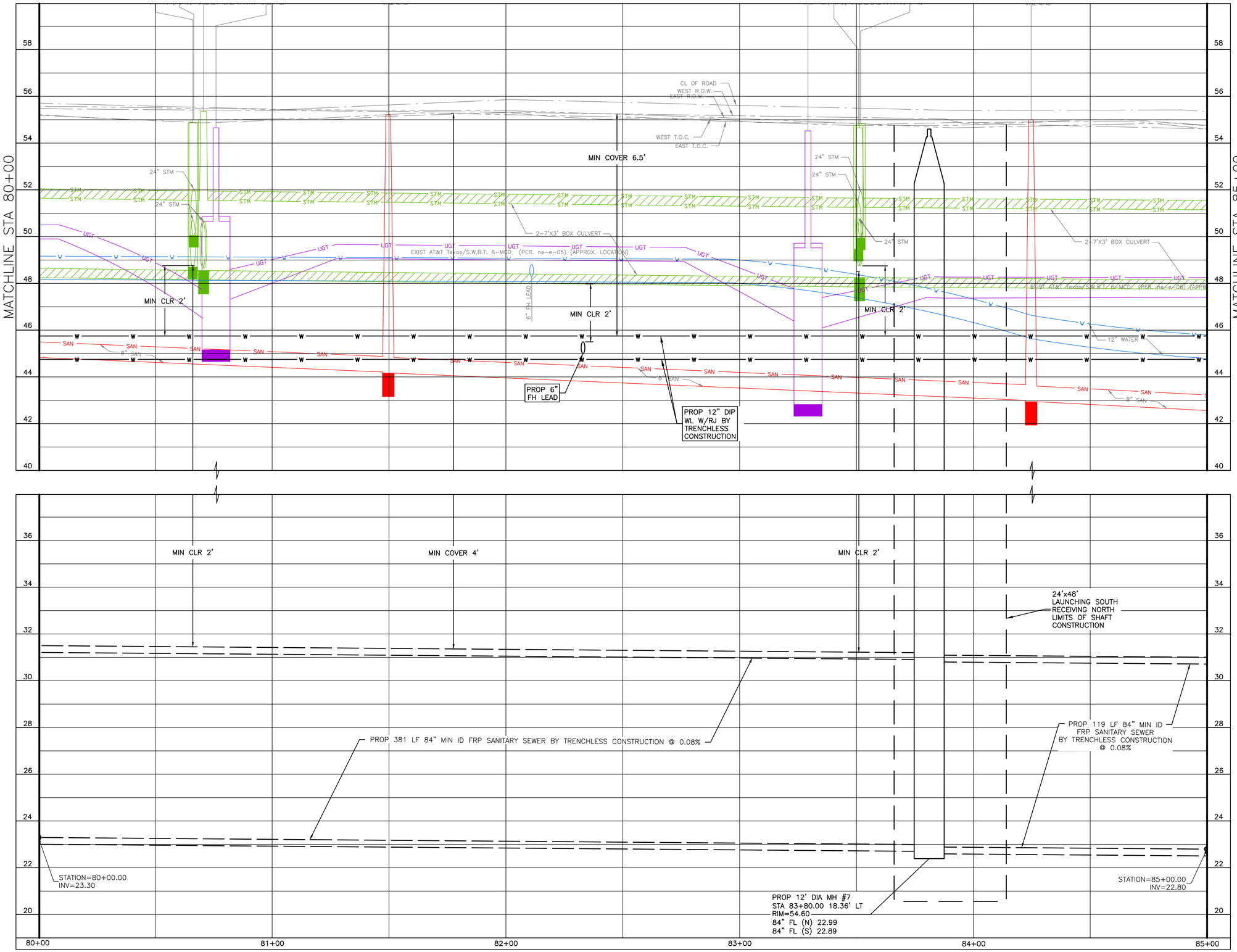
CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PLAN STA 80+00 TO STA 85+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 50 OF 124	

60% SUBMITTAL

FILE PATH: 230012201_19PLAN.dwg



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CITY OF HOUSTON
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PROFILE STA 80+00 TO STA 85+00

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NEIL BARNSDALE, P.E.	
SHEET NO. 51 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 4:48 PM

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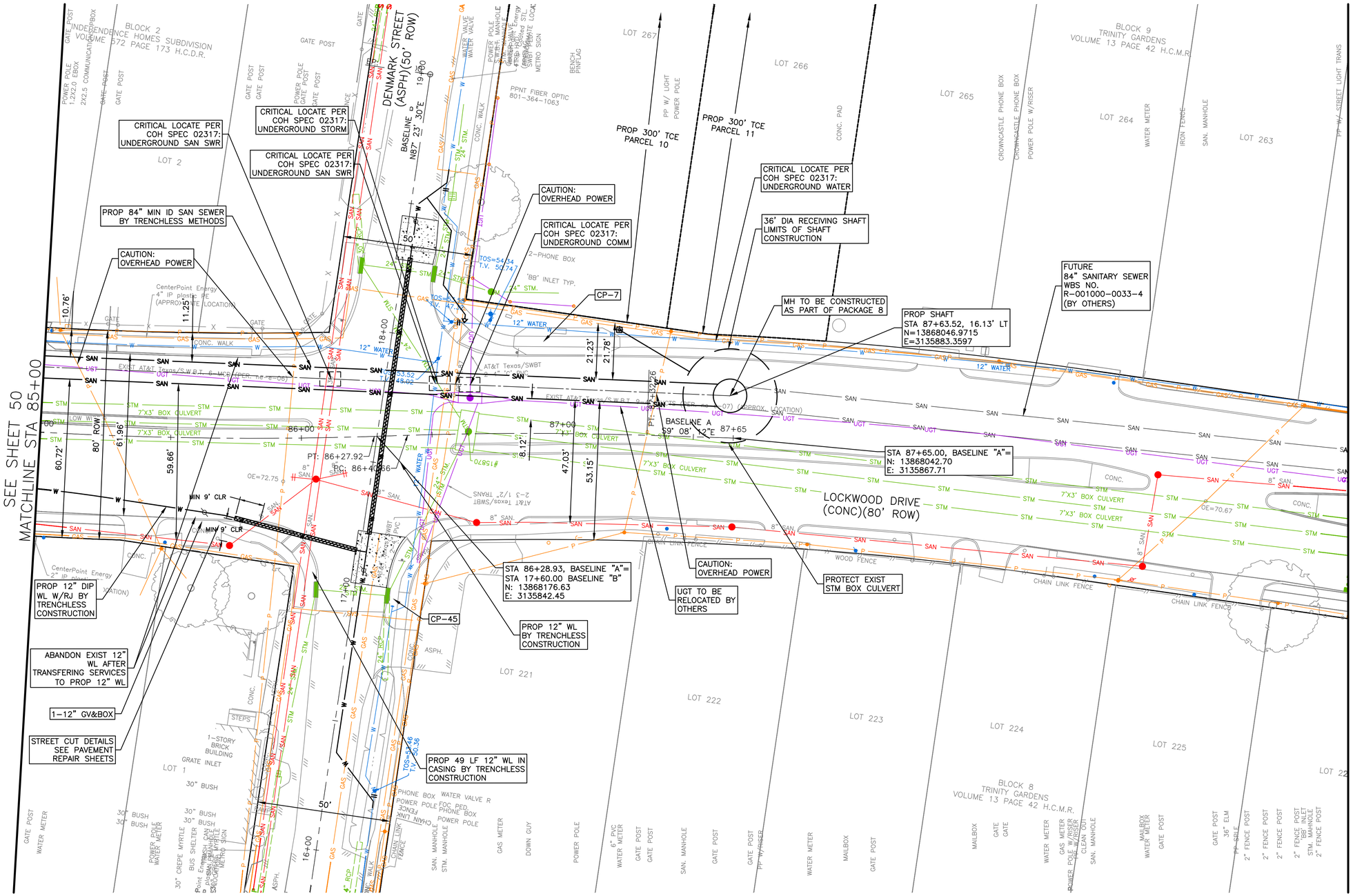

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FILE PATH: 230012201_20PLAN.dwg

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APRIL 2026

SRIKANTH PUNUKULA, P.E.
TX PE NO. 88614

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PLAN STA 85+00 TO EOP

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 52 OF 124	

60% SUBMITTAL

KEY NOTES

PACKAGE CONNECTION POINT NOTE

1. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL FIELD_VERIFY THE LOCATION AND ELEVATION OF THE ADJACENT SANITARY SEWER CONSTRUCTED UNDER CONTRACT WBS NO. R_001000_0033_4. HORIZONTAL ALIGNMENT ADJUSTMENTS SHALL BE PERMITTED AS NECESSARY TO ACHIEVE A PROPER TIE_IN. ANY ADJUSTMENT TO VERTICAL GRADE SHALL BE LIMITED TO ACCEPTABLE TOLERANCES AND SHALL REQUIRE ENGINEER'S APPROVAL.

COMMON SHAFT NOTES

2. FIRST CONTRACTOR SHALL CONSTRUCT, OPERATE, AND MAINTAIN THE COMMON TUNNEL SHAFT IN ACCORDANCE WITH CITY OF HOUSTON STANDARD CONSTRUCTION SPECIFICATION SECTION 02400 UNTIL ACCEPTED BY THE SECOND CONTRACTOR.
3. FIRST CONTRACTOR, AS THE CONTRACTOR IN RESPONSIBLE CHARGE OF THE COMMON TUNNEL SHAFT, SHALL COORDINATE WITH THE SECOND CONTRACTOR TO ESTABLISH A MUTUALLY AGREED-UPON DATE FOR TRANSFER OF RESPONSIBILITY.
4. UPON ACCEPTANCE, THE SECOND CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR MAINTENANCE, REPAIRS, AND FINAL RESTORATION OF THE COMMON TUNNEL SHAFT AND ASSOCIATED SITE IN ACCORDANCE WITH CITY OF HOUSTON STANDARD CONSTRUCTION SPECIFICATION SECTION 02400 AND THE CONTRACT DOCUMENTS.

CCTV NOTES

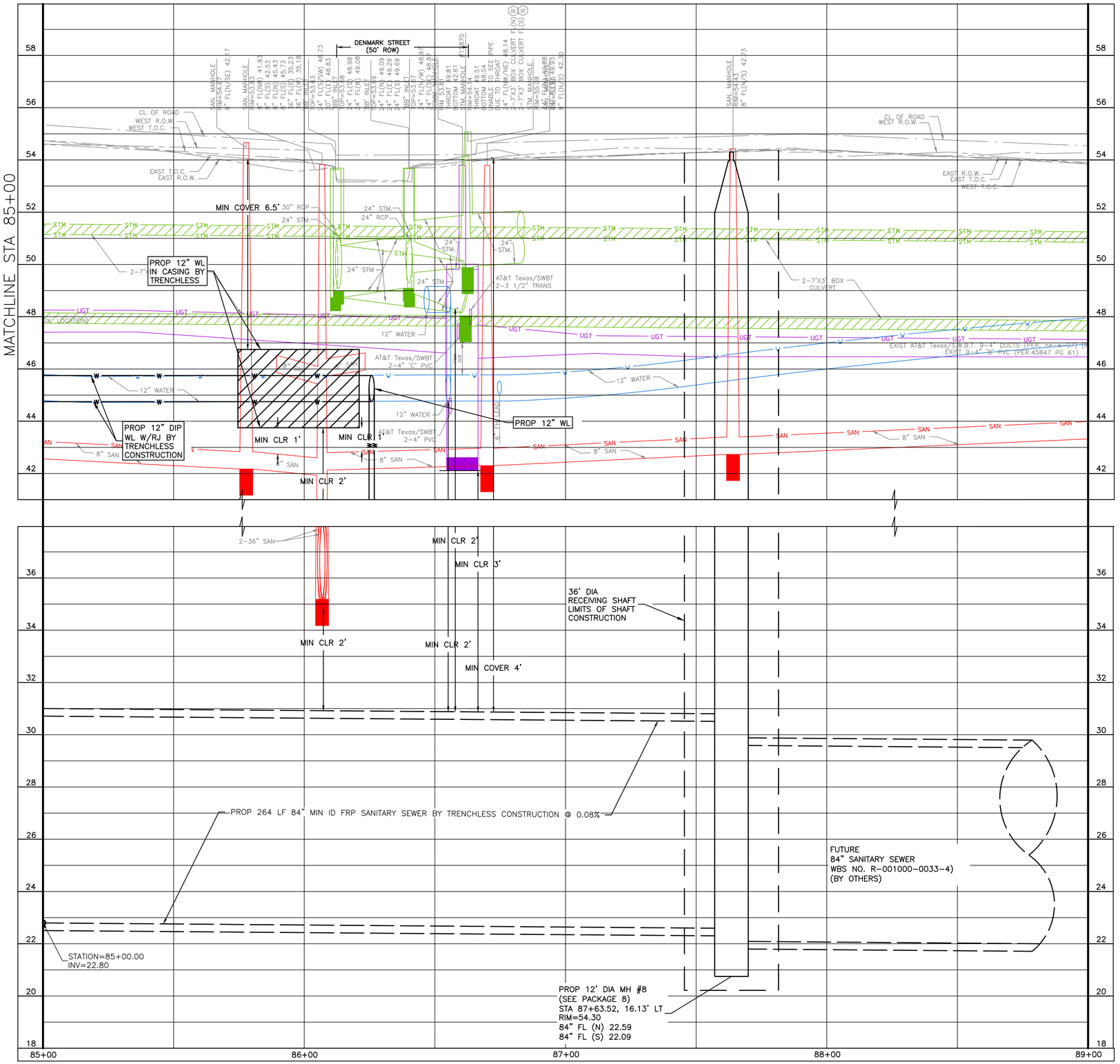
5. CONTRACTOR SHALL DOCUMENT THE EXISTING 36-INCH SANITARY SEWER CONDITIONS PRE- AND POST-CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS WORK, IN ACCORDANCE WITH SECTION 02558.
6. ADDITIONAL PRE- AND POST-CONSTRUCTION DOCUMENTATION OF EXISTING SANITARY AND STORM SEWERS, WHERE SHOWN OR SPECIFIED, SHALL BE PER SECTION 02558.

WATERLINE RELOCATION NOTES

7. SMALL DIAMETER WATERLINE SHALL BE CONSTRUCTED BY MEANS OF TRENCHLESS CONSTRUCTION EXCEPT AS NOTED ON THE DRAWINGS.

GENERAL NOTES

8. SHAFT SHAPE AND SIZE SHOWN IS FOR REPRESENTATION PURPOSE ONLY. CONTRACTOR SHALL DETERMINE APPROPRIATE SIZE AND SHALL BACKFILL SHAFT PER COH STD DTL 02317-08
9. PROTECT EXISTING UTILITES DURING SHAFT CONSTRUCTION.
10. CONTRACTOR TO COORDINATE WITH CENTERPOINT ENERGY TO TEMPORARILY RELOCATE THE AFFECTED SEGMENT.
11. REFER TO PAVEMENT REPLACEMENT PLANS SHEETS 84 TO 104 FOR PAVEMENT REPLACEMENT LIMITS.
12. REFER TO TREE PROTECTION PLANS SHEETS 105 TO 112 FOR APPROPRIATE PROTECTION MEASURES. TREES OUTSIDE OF PROJECT LIMITS ARE TO BE PROTECTED AND REMAIN IN PLACE.



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FILE PATH: 230012201_20PROFILE.dwg

NO.	DATE	REVISION	APP.

0' 10' 20' 40'

HORIZ: SCALE: 1"=20'

0' 1' 2' 4'

VERT: SCALE: 1"=2'

CITY OF HOUSTON MONUMENT 5560-0416:
FOUND BRASS DISK IN CONCRETE AT CRUSE AND PEACHTREE INTERSECTION
ELEV = 57.61' NAVD 1988 (GEOID 18)

CP-7, SET CUT "X"
IN CONC
STA 86+92.56, 35.23' LT
EL. 54.29

NOTES:
1. BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE. DISTANCES ARE SURFACE VALUES. SURFACE=GRID/0.99988985044.
2. HORIZONTAL AND VERTICAL CONTROLS USING GPS OBSERVATIONS AND DIGITAL LEVELING HOLDING CITY OF HOUSTON MONUMENT 5560-0416.
3. FIELDWORK COMPLETED IN OCTOBER 2025.

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.
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Texas Registered Engineering Firm F-204

Texas First Bank Building
11757 Katy Freeway
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(713)532-1730
Fax (713)532-1734

SURVEYED BY: LANDTECH
FB NO. P-

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

APRIL 2026

SRIKANTH PUNUKULA, P.E.
TX PE NO. 88614

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PROFILE STA 85+00 TO EOP

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 53 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/23/2026 6:23 PM

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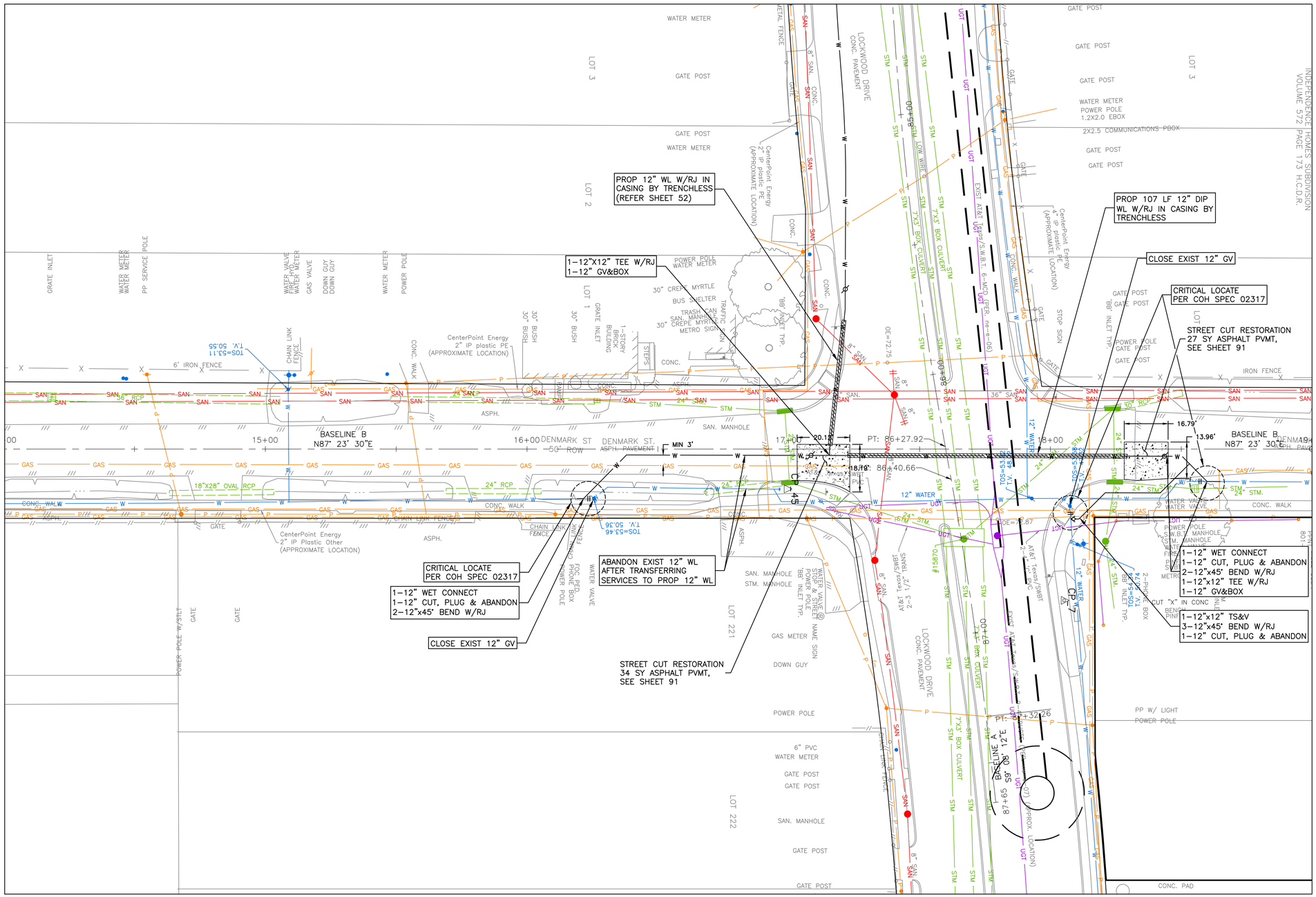
PROP 12" WL W/RJ IN CASING BY TRENCHLESS (REFER SHEET 52)
1-12"X12" TEE W/RJ
1-12" GV&BOX
PROP 107 LF 12" DIP WL W/RJ IN CASING BY TRENCHLESS
CLOSE EXIST 12" GV
CRITICAL LOCATE PER COH SPEC 02317
STREET CUT RESTORATION 27 SY ASPHALT PVMT, SEE SHEET 91
1-12" WET CONNECT
1-12" CUT, PLUG & ABANDON
2-12"x45° BEND W/RJ
ABANDON EXIST 12" WL AFTER TRANSFERRING SERVICES TO PROP 12" WL
CRITICAL LOCATE PER COH SPEC 02317
1-12" WET CONNECT
1-12" CUT, PLUG & ABANDON
2-12"x45° BEND W/RJ
CLOSE EXIST 12" GV
STREET CUT RESTORATION 34 SY ASPHALT PVMT, SEE SHEET 91
1-12" WET CONNECT
1-12" CUT, PLUG & ABANDON
2-12"x12" TEE W/RJ
1-12" GV&BOX
1-12"x12" TS&V
3-12"x45° BEND W/RJ
1-12" CUT, PLUG & ABANDON
BASELINE B
N87° 23' 30"E
DENMARK ST
50' ROW
ASPH. PAVEMENT
BASELINE A
S9° 08' 12"E
PT: 86+27.92
PT: 86+40.66
87+65.48
LOT 1
LOT 2
LOT 3
LOT 221
LOT 222
INDEPENDENCE HOMES SUBDIVISION VOLUME 572 PAGE 173 H.C.D.R.
LOCKWOOD DRIVE
CONC. PAVEMENT
CenterPoint Energy 2" IP plastic PE (APPROXIMATE LOCATION)
CenterPoint Energy 2" IP Plastic Other (APPROXIMATE LOCATION)
AT&T 1ø96/S.W.B.T. 6-#COPPER-#4+#6-OB1
AT&T 1ø48/S.W.B.T. 2-#22AWG-PE-#24-OB1
6' IRON FENCE
CHAIN LINK FENCE
CONC. WALK
ASPH.
CONC.
SAN. MANHOLE
STM. MANHOLE
GATE POST
GATE
WATER METER
POWER POLE
GAS VALVE
DOWN GUY
GRATE INLET
STEPS
1-STORY BRICK BUILDING
30" CREPE MYRTLE
30" BUSH
BUS SHELTER
TRASH CAN
SAN. MANHOLE
CREPE MYRTLE
METRO SIGN
TRAFFIC SIGN
"BB" INLET TYP.
STOP SIGN
POWER POLE W/ LIGHT
GAS METER
6" PVC WATER METER
LOCKWOOD DRIVE CONC. PAVEMENT
CONC. PAD
IRON FENCE
CHAIN LINK FENCE
POWER POLE W/ SIGN
POWER POLE W/ LIGHT
TOS=53.11
T.V. 50.55
TOS=53.46
T.V. 50.36
TOS=53.48
T.V. 50.38
TOS=53.67
T.V. 50.57
TOS=53.67
T.V. 50.57
TOS=53.48
T.V. 50.38
TOS=53.46
T.V. 50.36
TOS=53.11
T.V. 50.55
OE=72.75
OE=72.67
OE=72.67
OE=72.75
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PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 10:20 AM

FILE PATH: 230012201_DENMARK_PROFILE.dwg

NO.	DATE	REVISION	APP.

HORIZ: SCALE: 1"=20'

VERT: SCALE: 1"=2'

170 LF PROP 12" DIP WL W/RJ
SEE SHEET 122

GRATE INLET
TOP=54.82
36" FL(E) 50.12
36" FL(W) 50.12

GRATE INLET
TOP=53.85
24" FL(E) 50.10
24" FL(W) 50.25

"DB" INLET
TOP=53.68
24" FL(S) 48.98
24" FL(W) 49.08

"DB" INLET
TOP=53.67
24" FL(NW/W) 48.97
24" FL(SE) 48.87

SAN. MANHOLE
RIM=54.67
8" FL(N/SE) 42.17

SAN. MANHOLE
RIM=53.80
8" FL(NE/S) 42.30

SAN. MANHOLE
RIM=54.53
8" FL(NW) 42.01
8" FL(N) 45.49
8" FL(SW) 42.21
8" FL(S) 43.67
30" FL(E) 35.28
36" FL(W) 35.18

STM. MANHOLE
RIM=54.44
BOTTOM 47.74
UNABLE TO SEE PIPE
#15870

24" FL(NE/NW) 47.84
2-7'X3' BOX CULVERT FL(N)
2-7'X3' BOX CULVERT FL(S)

GRATE INLET
TOP=54.51
THROAT 49.51
BOTTOM 48.04
UNABLE TO SEE PIPE
DUE TO THROAT
24" FL(NW/NE) 48.14
2-7'X3' BOX CULVERT FL(N)(R)
2-7'X3' BOX CULVERT FL(S)(R)

COMM. MANHOLE
RIM 53.81
BOTTOM 42.61

STM. MANHOLE
RIM=55.08
24" FL(N) 49.88
24" FL(S) 49.93

"DB" INLET
TOP=53.63
24" FL(S/SW) 48.73
30" FL(E) 48.83

"DB" INLET
TOP=53.69
24" FL(N) 49.09
24" FL(S) 49.29
24" FL(S) 49.69

GRATE INLET
TOP=54.38
24" FL(E) 50.88
24" FL(W) 50.58

SOUTH R.O.W.
SI OF ROAD
NORTH R.O.W.
NORTH T.O.C.
SOUTH T.O.C.
NORTH T.O.C.
SOUTH T.O.C.
SOUTH D.F.L.
NORTH D.F.L.
NORTH D.F.L.
18"X28" OVAL RCP
36" RCP
24" RCP
24" RCP
30" RCP
24" STM.
6' MIN COVER
2-7'X3' BOX CULVERT
12" WATER
5" FH LEAD
AT&T Texas/SWBT 2-3 1/2" TRANS
AT&T Texas/SWBT 2-4" 'C' PVC
AT&T Texas/SWBT 9-4" DUCTS
AT&T Texas/SWBT 2-4" PVC
UGT
PROP 12" WL
MIN CLR 2'
PROP 12" DIP WL W/RJ
PROP 12" DIP WL W/RJ IN CASING BY TRENCHLESS
8" SAN
36" SAN

14+00 15+00 16+00 17+00 18+00 19+00

NOTICE:
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VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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Date

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

stv
Texas Registered Engineering Firm F-204
Texas First Bank Building
11757 Katy Freeway
Suite 1540
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(713)532-1730
Fax (713)532-1734

InduSri Consulting
8815 WEST ROAD, SUITE 302
HOUSTON, TEXAS 77064
832-865-4462
TBPE FIRM NO. F-21781

SURVEYED BY: LANDTECH
FB NO. P-

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MARCH 2026

SRIKANTH PUNUKULA, P.E.
TX PE NO. 88614

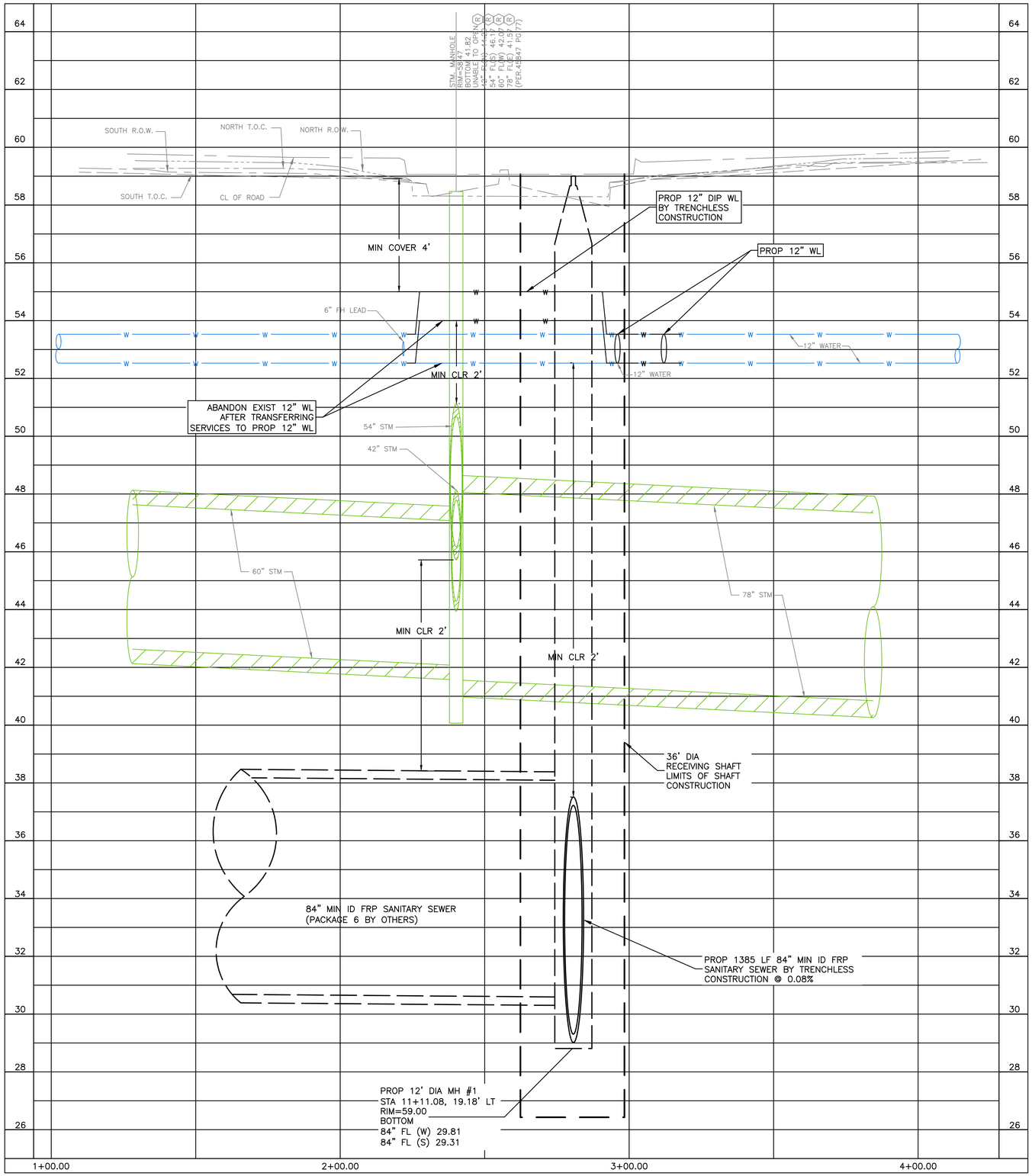
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER ALONG DENMARK ST

PROFILE BASELINE B
BOP TO EOP

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 55 OF 124	

60% SUBMITTAL



NO.	DATE	REVISION	APP.

0' 10' 20' 40'
HORIZ: SCALE: 1"=20'
0' 1' 2' 4'
VERT: SCALE: 1"=2'

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MARCH 2026

SRIKANTH PUNUKULA, P.E.
TX PE NO. 88614

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER ALONG TIDWELL ST

PROFILE BOP TO EOP

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–001000–0032–4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 56 OF 124	

60% SUBMITTAL

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PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 10:18 AM

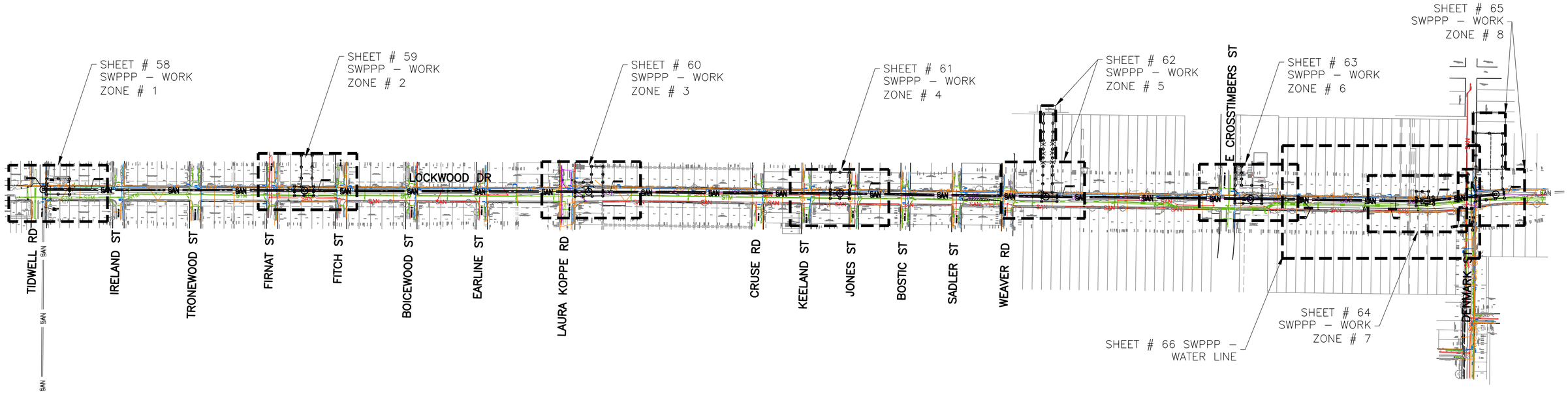
FILE PATH: 230012201_SV_SWPPP.dwg

NO.	DATE	REVISION	APP.

N

0 260 520

SCALE: 1" = 260'



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TRILOGY
ENGINEERING SERVICES
238 WESTCOTT STREET
HOUSTON, TEXAS 77007
PH: 877.463.1699
TX FIRM NO: 17715

SURVEYED BY: LANDTECH
FB NO. P–

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APRIL 2026

TIISETSO MASIANE, P.E.
TX PE NO. 139211

CITY OF HOUSTON

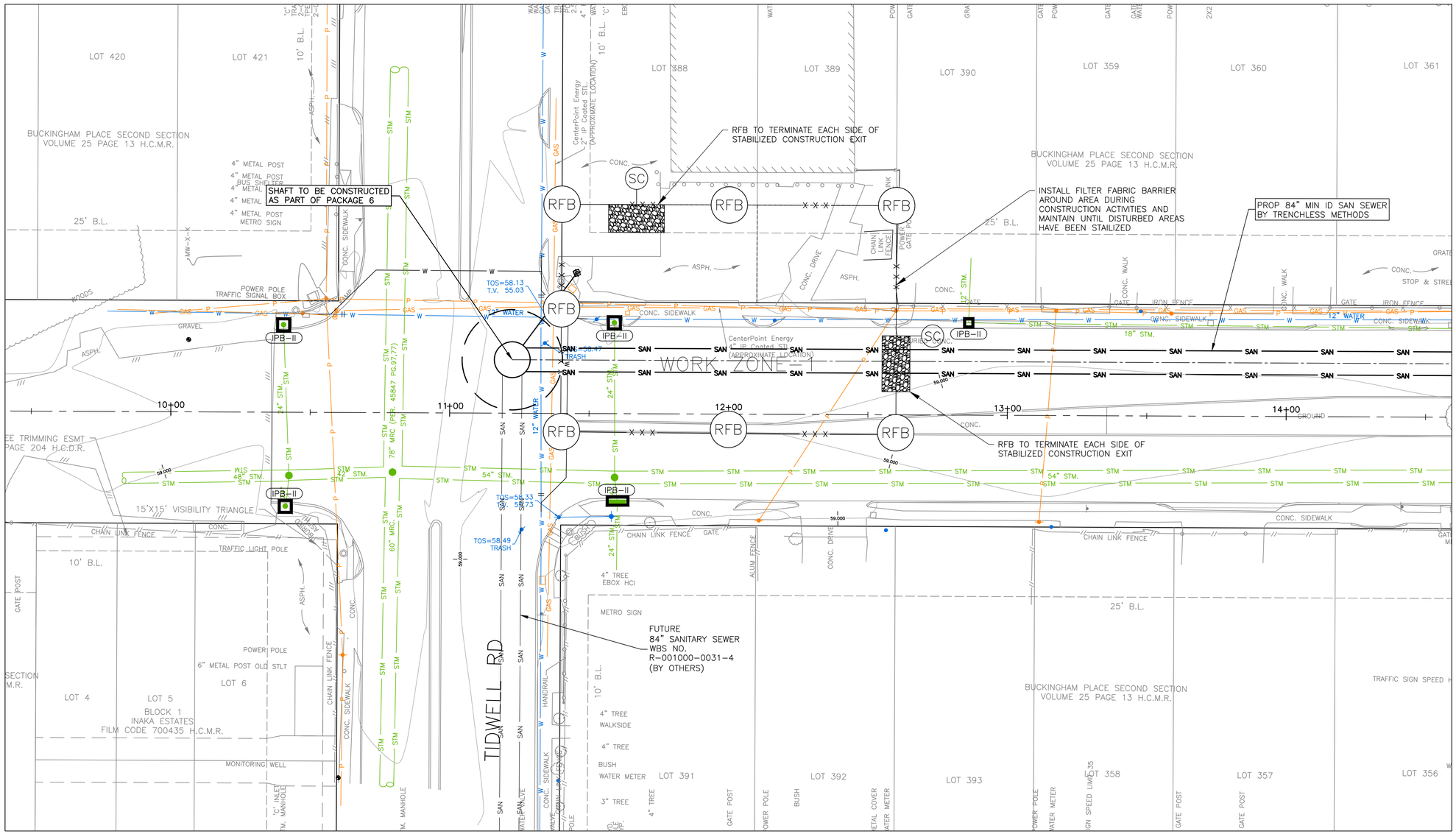
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

STORM WATER POLLUTION PREVENTION PLAN – OVERVIEWPLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–001000–0032–4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 57 OF 124	

60% SUBMITTAL



EROSION AND SEDIMENT CONTROLS:

STABILIZATION: STABILIZE ALL DISTURBED AREAS (STOCKPILES, SHOULDER AREAS, AND EXPOSED SOILS) THAT WILL REMAIN INACTIVE FOR 14 DAYS OR MORE USING TEMPORARY SEEDING, MULCH, MATS, OR OTHER APPROVED METHODS.

PERIMETER CONTROLS: INSTALL AND MAINTAIN REINFORCED FILTER FABRIC BARRIER (RFB) / SILT FENCE AROUND EACH ACTIVE SHAFT WORK AREA AND ALONG THE LIMITS OF DISTURBANCE AS NEEDED TO PREVENT SEDIMENT MIGRATION TO GUTTERS, INLETS, AND ADJACENT PROPERTIES.

INLET PROTECTION: INSTALL AND MAINTAIN INLET PROTECTION BARRIERS AT ALL STORM DRAIN INLETS THAT MAY RECEIVE RUNOFF FROM SHAFT WORK AREAS, STAGING, OR HAUL ROUTES. INLET PROTECTION SHALL NOT CREATE TRAFFIC HAZARDS OR CAUSE FLOODING.

TRACK-OUT CONTROL: PROVIDE STABILIZED CONSTRUCTION ENTRANCE/EXIT AT EACH SHAFT/STAGING ACCESS POINT WHERE FEASIBLE. IF TRACK-OUT OCCURS, REMOVE SEDIMENT FROM PAVEMENT BEFORE END OF EACH WORK DAY (OR MORE FREQUENTLY) USING SWEEPING/VACUUMING. SEDIMENT SHALL BE DISPOSED OF PROPERLY.

STOCKPILES/SPOILS: SPOILS, EXCAVATED MATERIAL, AND SPOIL BINS SHALL BE CONTAINED, BERMED, AND/OR COVERED (AS NEEDED) AND KEPT OUT OF GUTTERS AND AWAY FROM INLETS.

DEWATERING (SHAFTS): ANY DEWATERING FROM SHAFTS/EXCAVATIONS SHALL BE FILTERED (SEDIMENT BAG/TANK OR APPROVED METHOD) PRIOR TO DISCHARGE AND SHALL NOT CAUSE EROSION, TURBIDITY, OR DISCHARGE OF CONTAMINANTS. DISCHARGE LOCATION AND METHOD SHALL COMPLY WITH COH REQUIREMENTS AND PERMITS.

SLURRY/DRILLING FLUIDS: TRENCHLESS SLURRY, BENTONITE, AND/OR DRILLING FLUIDS SHALL BE FULLY CONTAINED AND SHALL NOT ENTER THE STORM DRAIN SYSTEM. COLLECT AND DISPOSE OF THESE MATERIALS IN ACCORDANCE WITH APPLICABLE REGULATIONS.

DUST CONTROL: CONTROL WIND-BLOWN DUST BY WATERING/SPRAYING DISTURBED AREAS AS NECESSARY WITHOUT CAUSING RUNOFF.

GOOD HOUSEKEEPING, MAINTENANCE, AND OTHER CONTROLS:

WASTE MANAGEMENT: STORE TRASH AND DEBRIS IN COVERED CONTAINERS. DISPOSE OF ALL WASTE AT AN APPROVED FACILITY. NO WASTE SHALL BE BURIED OR LEFT ON-SITE.

HAZARDOUS MATERIALS: STORE FUELS/OILS/CHEMICALS IN DESIGNATED AREAS WITH SECONDARY CONTAINMENT. IN THE EVENT HAZMAT IS ENCOUNTERED, STOP WORK IN THE AFFECTED AREA AND DISPOSE/ADDRESS PER APPLICABLE REGULATIONS AND COH DIRECTION.

SANITARY WASTE: PROVIDE AND SERVICE PORTABLE TOILETS AS REQUIRED. SANITARY WASTE SHALL BE REMOVED BY A LICENSED PROVIDER.

CONCRETE/PCC RESTORATION: FOR PCC PANEL REPLACEMENT/RESTORATION, PROVIDE A DESIGNATED CONCRETE WASHOUT AREA/CONTAINER. NO WASH WATER SHALL ENTER INLETS OR GUTTERS.

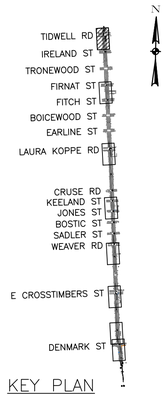
MAINTENANCE OF BMPs: INSPECT AND MAINTAIN ALL BMPs REGULARLY AND AFTER RAIN EVENTS. REMOVE SEDIMENT BUILDUP WHEN IT REACHES APPROXIMATELY ONE-THIRD (1/3) THE HEIGHT OF THE DEVICE OR AS NEEDED TO MAINTAIN FUNCTION.

INLET CLEANOUT: REMOVE SEDIMENT DEPOSITS IN AND AROUND STORM INLETS IMMEDIATELY AS NECESSARY.

REMOVAL OF TEMPORARY CONTROLS: REMOVE TEMPORARY BMPs ONLY AFTER DISTURBED AREAS HAVE BEEN STABILIZED AND PER COH REQUIREMENTS.

SWPPP SITE PLAN LEGEND

SYMBOL	DESCRIPTION
RFB — X X X —	REINFORCED FILTER BARRIER
SC	STABILIZED CONSTRUCTION ENTRANCE
CTW	CONCRETE TRUCK WASHOUT
IPB-I	INLET PROTECTION BARRIER FOR STAGE I
IPB-II	INLET PROTECTION BARRIER FOR STAGE II



KEY PLAN

NO.	DATE	REVISION	APP.

0 20 40
SCALE: 1" = 20'

BENCHMARKS:

CITY OF HOUSTON MONUMENT 5560-0416: FOUND BRASS DISK IN CONCRETE AT CRUSE AND PEACHTREE INTERSECTION

ELEV 57.61' NAVD 1988 (GEOID 18)

NOTES:

1. BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE. DISTANCES ARE SURFACE VALUES. SURFACE = GRID/0.99989985044.
2. HORIZONTAL AND VERTICAL CONTROLS USING GPS OBSERVATIONS AND DIGITAL LEVELING HOLDING CITY OF HOUSTON MONUMENT 5560-0416.
3. FIELDWORK COMPLETED IN OCTOBER 2025.

FLOODPLAIN NOTE:

BASED ON THE FLOOD INSURANCE RATE MAP (FIRM) NO. 48201C0680L, MAP REVISED DATE OF JUNE 18, 2007, THE PROJECT LIMITS ALONG LOCKWOOD DR (TIDWELL RD TO DENMARK ST) LIE WITHIN AREAS DESIGNATED AS:

ZONE "X" (UNSHADED) – AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN; AND

IN ADDITION, THIS MAP STATES: "THIS MAP IS FOR USE IN ADMINISTERING THE NATIONAL FLOOD INSURANCE PROGRAM; IT DOES NOT NECESSARILY IDENTIFY ALL AREAS SUBJECT TO FLOODING, PARTICULARLY FROM LOCAL DRAINAGE SOURCES OF SMALL SIZE, OR ALL PLANIMETRIC FEATURES OUTSIDE SPECIAL FLOOD HAZARD AREAS. CERTAIN AREAS NOT IN SPECIAL FLOOD HAZARD AREAS MAY BE PROTECTED BY FLOOD CONTROL STRUCTURES." THE APPROXIMATE LIMITS OF SAID ZONES AS DETERMINED HEREON ARE SCALED FROM SAID MAP. THIS INFORMATION IS NOT INTENDED TO IDENTIFY SPECIFIC FLOOD CONDITIONS.

REFERENCE SHEETS NOTE:

FOR STORM WATER POLLUTION PREVENTION DETAILS REFER TO SHEETS 67 & 68

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Texas Registered Engineering Firm F-204
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238 WESTCOTT STREET
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PH: 877.463.1699
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SURVEYED BY: LANDTECH
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APRIL 2026

TIISETSO MASIANE, P.E.
TX PE NO. 139211

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

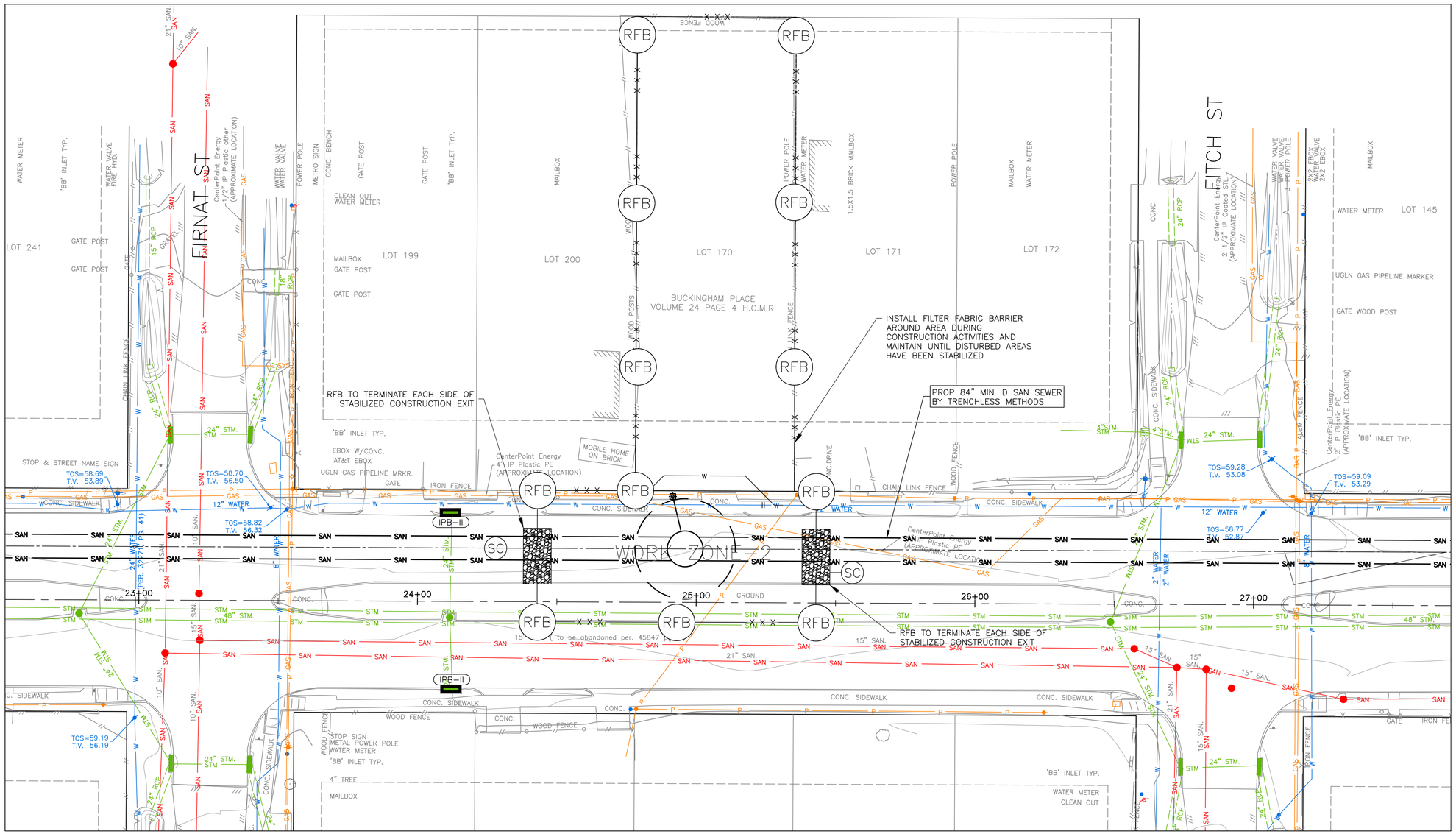
PHASE II STORM WATER POLLUTION PREVENTION PLAN– WORK ZONE # 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 58 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 10:18 AM

FILE PATH: 230012201_SV_SWPPP.dwg



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SWPPP SITE PLAN LEGEND

SYMBOL	DESCRIPTION
RFB — X X X —	REINFORCED FILTER BARRIER
SC	STABILIZED CONSTRUCTION ENTRANCE
CTW	CONCRETE TRUCK WASHOUT
IPB-I	INLET PROTECTION BARRIER FOR STAGE I
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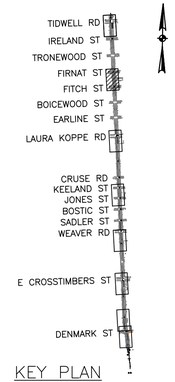

KEY PLAN

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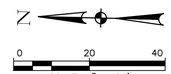

BENCHMARKS:

CITY OF HOUSTON MONUMENT 5560-0416: FOUND BRASS DISK IN CONCRETE AT CRUSE AND PEACHTREE INTERSECTION

ELEV 57.61' NAVD 1988 (GEOID 18)

NOTES:

1. BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE. DISTANCES ARE SURFACE VALUES. SURFACE = GRID/0.99989985044.
2. HORIZONTAL AND VERTICAL CONTROLS USING GPS OBSERVATIONS AND DIGITAL LEVELING HOLDING CITY OF HOUSTON MONUMENT 5560-0416.
3. FIELDWORK COMPLETED IN OCTOBER 2025.

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stv
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TRILOGY ENGINEERING SERVICES
238 WESTCOTT STREET
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PH: 877.463.1699
TX FIRM NO: 17715

SURVEYED BY: LANDTECH
FB NO. P-

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APRIL 2026

TIISETSO MASIANE, P.E.
TX PE NO. 139211

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PHASE II STORM WATER POLLUTION PREVENTION PLAN– WORK ZONE # 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 59 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 10:18 AM

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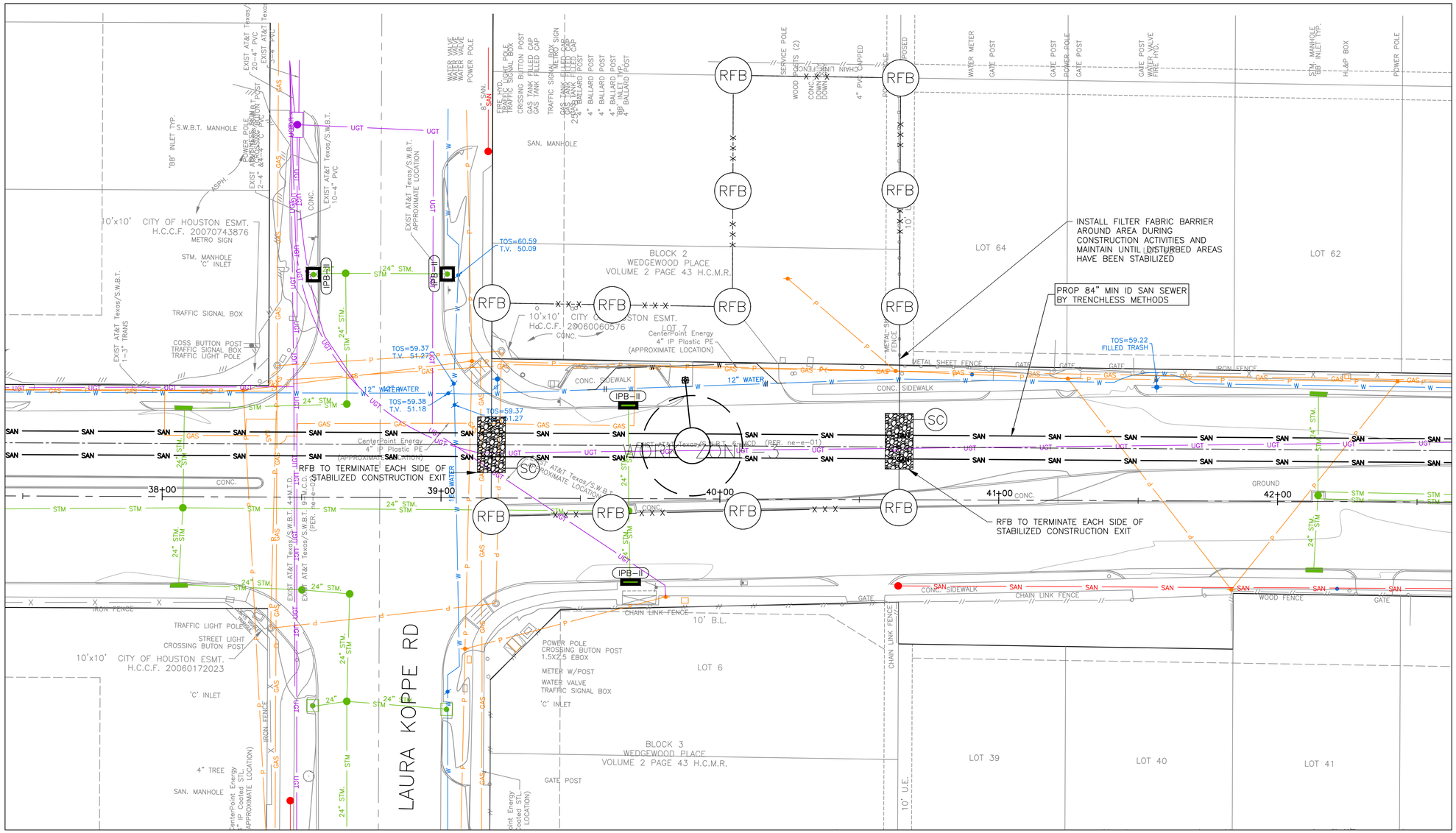

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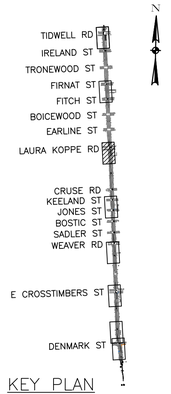

KEY PLAN

NO.	DATE	REVISION	APP.

0 20 40
SCALE: 1" = 20'

BENCHMARKS:

CITY OF HOUSTON MONUMENT 5560-0416: FOUND BRASS DISK IN CONCRETE AT CRUSE AND PEACHTREE INTERSECTION

ELEV 57.61' NAVD 1988 (GEOID 18)

NOTES:

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TRILOGY ENGINEERING SERVICES
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HOUSTON, TEXAS 77007
PH: 877.463.1699
TX FIRM NO: 17715

SURVEYED BY: LANDTECH
FB NO. P-

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APRIL 2026

TIISETSO MASIANE, P.E.
TX PE NO. 139211

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PHASE II STORM WATER POLLUTION PREVENTION PLAN- WORK ZONE # 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 60 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 10:18 AM

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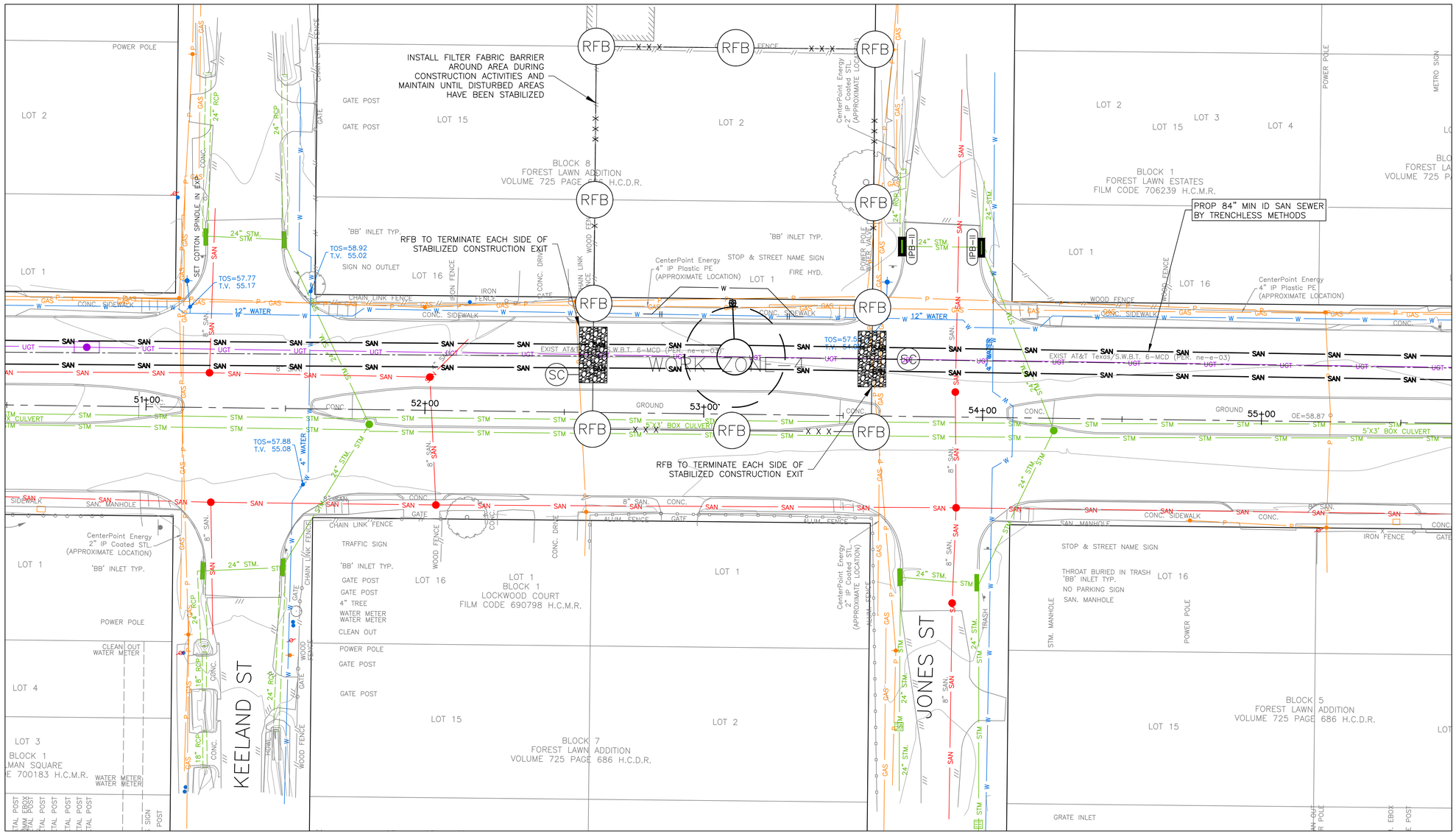

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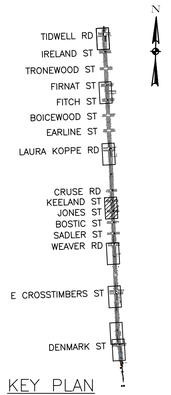

KEY PLAN

NO.	DATE	REVISION	APP.

0 20 40
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WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
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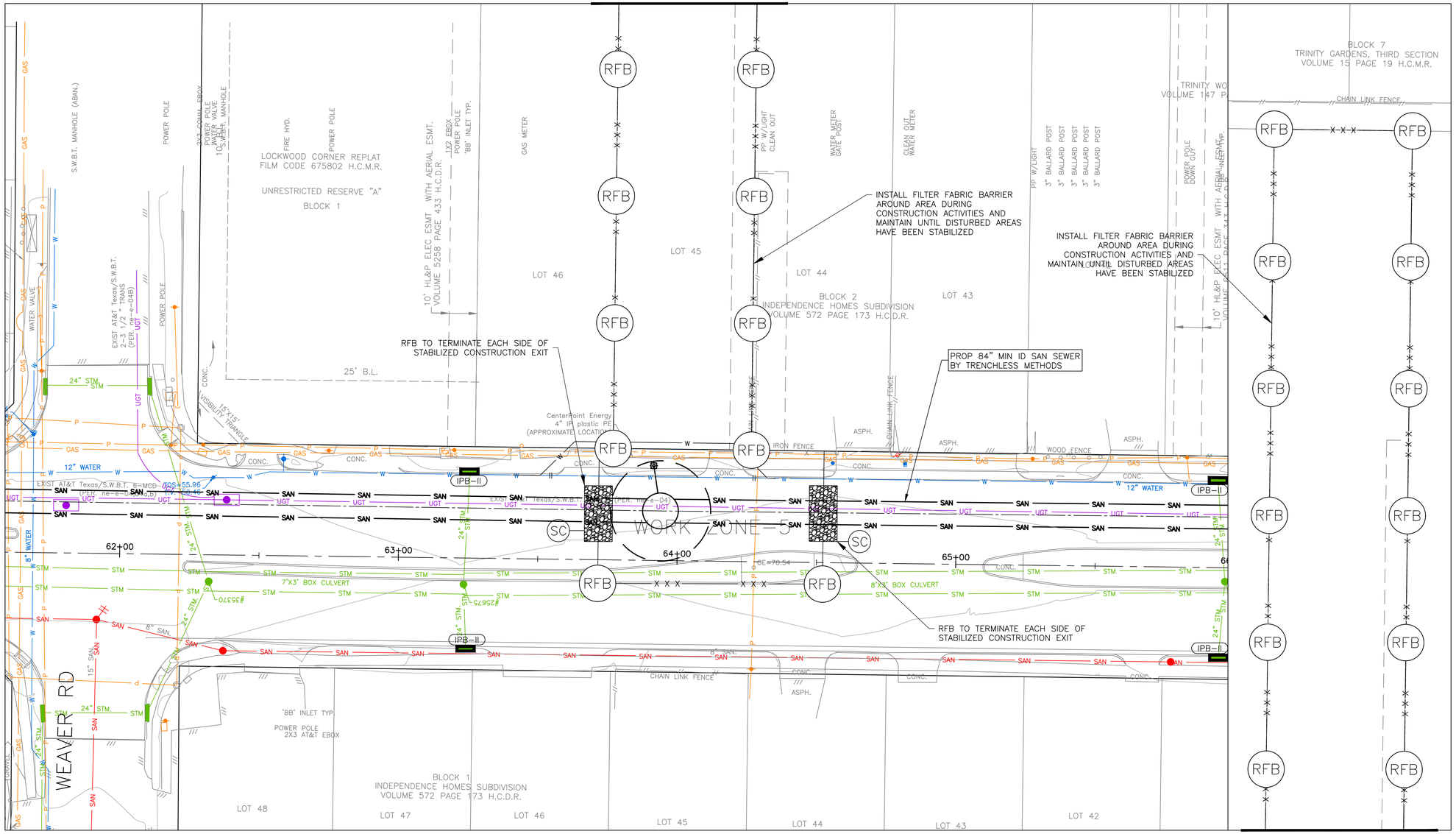

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SWPPP SITE PLAN LEGEND

SYMBOL	DESCRIPTION
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CTW	CONCRETE TRUCK WASHOUT
IPB-I	INLET PROTECTION BARRIER FOR STAGE I
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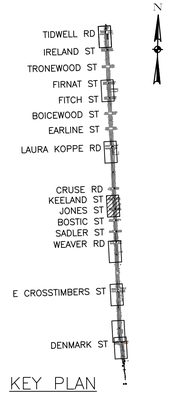
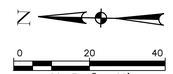


KEY PLAN

NO.	DATE	REVISION	APP.



BENCHMARKS:

CITY OF HOUSTON MONUMENT 5560-0416: FOUND BRASS DISK IN CONCRETE AT CRUSE AND PEACHTREE INTERSECTION

ELEV 57.61' NAVD 1988 (GEOID 18)

NOTES:

1. BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE. DISTANCES ARE SURFACE VALUES. SURFACE = GRID/0.99989985044.
2. HORIZONTAL AND VERTICAL CONTROLS USING GPS OBSERVATIONS AND DIGITAL LEVELING HOLDING CITY OF HOUSTON MONUMENT 5560-0416.
3. FIELDWORK COMPLETED IN OCTOBER 2025.

FLOODPLAIN NOTE:

BASED ON THE FLOOD INSURANCE RATE MAP (FIRM) NO. 48201C0680L, MAP REVISED DATE OF JUNE 18, 2007, THE PROJECT LIMITS ALONG LOCKWOOD DR (TIDWELL RD TO DENMARK ST) LIE WITHIN AREAS DESIGNATED AS:

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TRILOGY ENGINEERING SERVICES
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PH: 877.463.1699
TX FIRM NO: 17715

SURVEYED BY: LANDTECH
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APRIL 2026

TIISETSO MASIANE, P.E.
TX PE NO. 139211

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PHASE II STORM WATER POLLUTION PREVENTION PLAN- WORK ZONE # 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 62 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 10:18 AM

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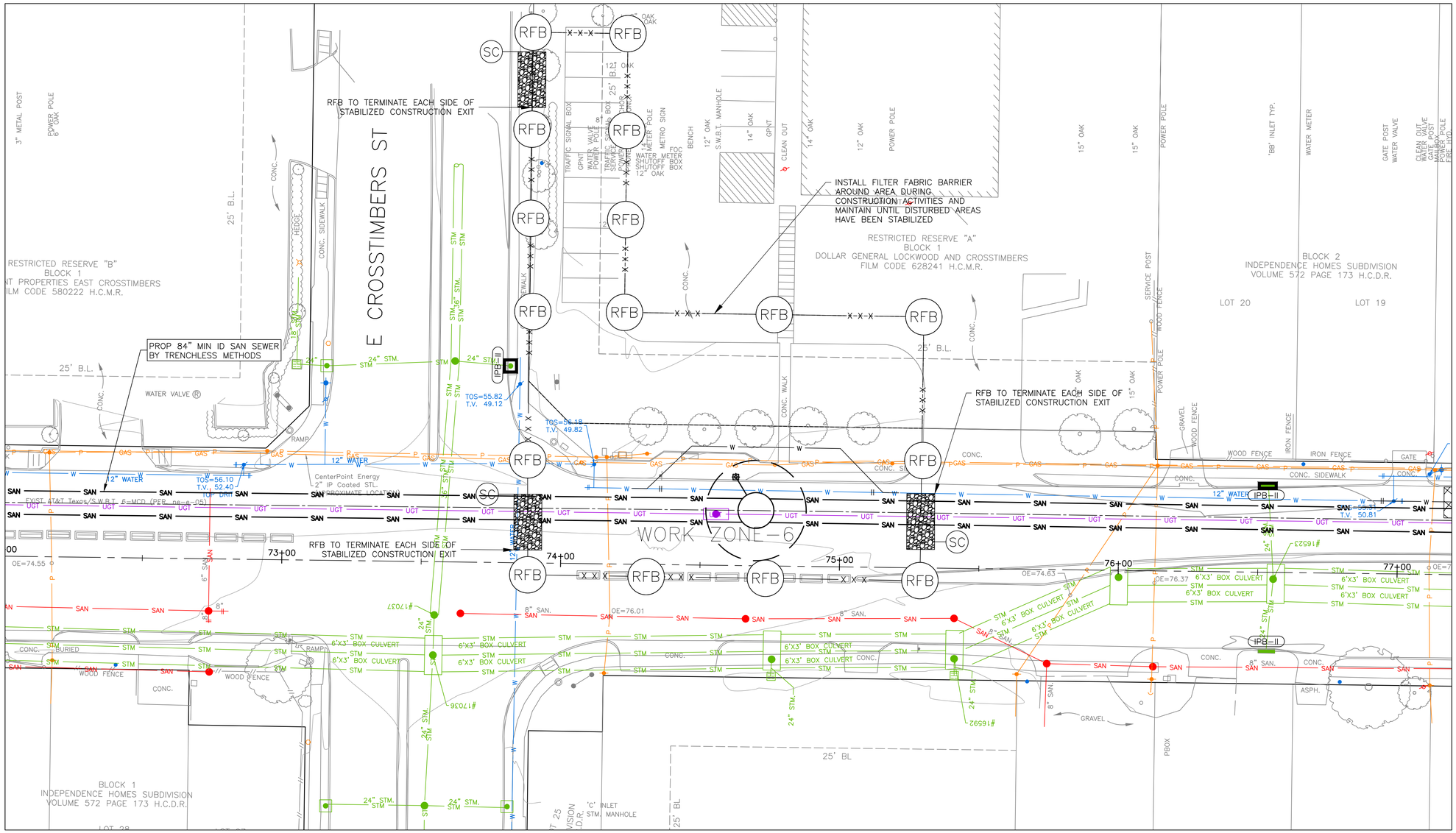

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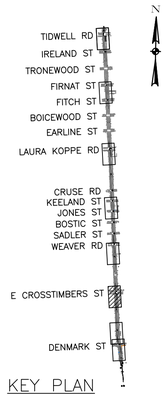
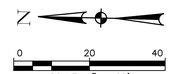


KEY PLAN

NO.	DATE	REVISION	APP.



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APRIL 2026

TIISETSO MASIANE, P.E.
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PHASE II STORM WATER POLLUTION PREVENTION PLAN- WORK ZONE # 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 63 OF 124	

60% SUBMITTAL

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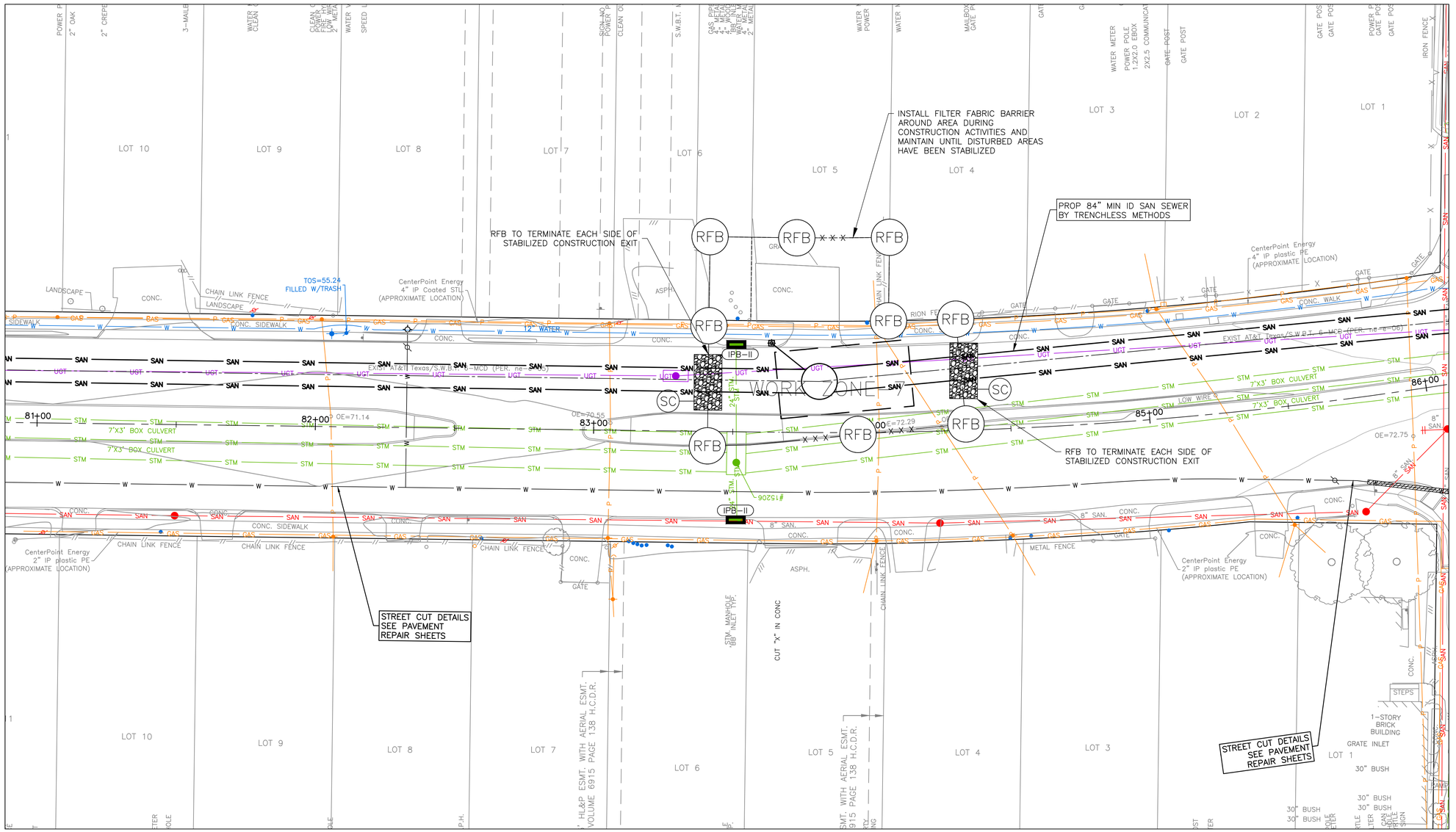

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APRIL 2026

TIISETSO MASIANE, P.E.
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PHASE II STORM WATER POLLUTION PREVENTION PLAN– WORK ZONE # 7

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 64 OF 124	

60% SUBMITTAL

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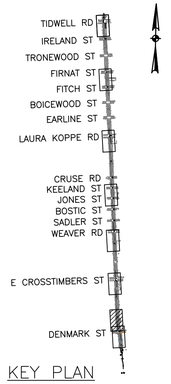

KEY PLAN

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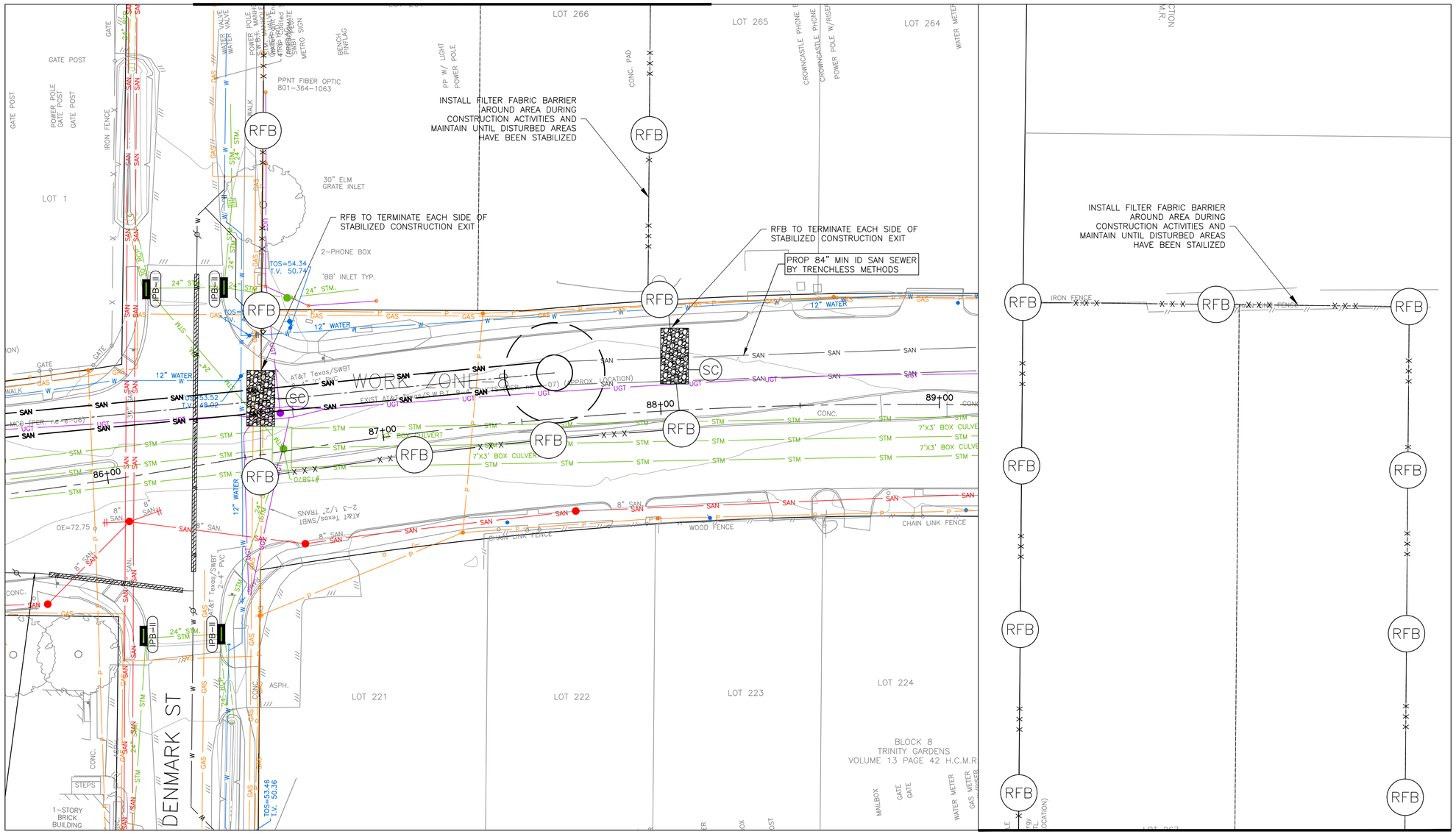

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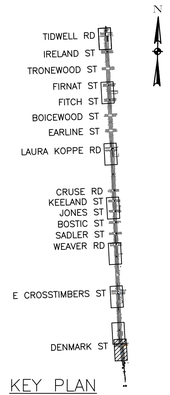
MAINTENANCE OF BMPs: INSPECT AND MAINTAIN ALL BMPs REGULARLY AND AFTER RAIN EVENTS. REMOVE SEDIMENT BUILDUP WHEN IT REACHES APPROXIMATELY ONE-THIRD (1/3) THE HEIGHT OF THE DEVICE OR AS NEEDED TO MAINTAIN FUNCTION.

INLET CLEANOUT: REMOVE SEDIMENT DEPOSITS IN AND AROUND STORM INLETS IMMEDIATELY AS NECESSARY.

REMOVAL OF TEMPORARY CONTROLS: REMOVE TEMPORARY BMPs ONLY AFTER DISTURBED AREAS HAVE BEEN STABILIZED AND PER COH REQUIREMENTS.

SWPPP SITE PLAN LEGEND

SYMBOL	DESCRIPTION
RFB — X X X	REINFORCED FILTER BARRIER
SC	STABILIZED CONSTRUCTION ENTRANCE
CTW	CONCRETE TRUCK WASHOUT
IPB-I	INLET PROTECTION BARRIER FOR STAGE I
IPB-II	INLET PROTECTION BARRIER FOR STAGE II



KEY PLAN

NO.	DATE	REVISION	APP.

N

0 20 40

SCALE: 1" = 20'

BENCHMARKS:

CITY OF HOUSTON MONUMENT 5560-0416: FOUND BRASS DISK IN CONCRETE AT CRUSE AND PEACHTREE INTERSECTION

ELEV 57.61' NAVD 1988 (GEOID 18)

NOTES:

1. BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE. DISTANCES ARE SURFACE VALUES. SURFACE = GRID/0.99989985044.
2. HORIZONTAL AND VERTICAL CONTROLS USING GPS OBSERVATIONS AND DIGITAL LEVELING HOLDING CITY OF HOUSTON MONUMENT 5560-0416.
3. FIELDWORK COMPLETED IN OCTOBER 2025.

FLOODPLAIN NOTE:

BASED ON THE FLOOD INSURANCE RATE MAP (FIRM) NO. 48201C0680L, MAP REVISED DATE OF JUNE 18, 2007, THE PROJECT LIMITS ALONG LOCKWOOD DR (TIDWELL RD TO DENMARK ST) LIE WITHIN AREAS DESIGNATED AS:

ZONE "X" (UNSHADED) - AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN; AND

IN ADDITION, THIS MAP STATES: "THIS MAP IS FOR USE IN ADMINISTERING THE NATIONAL FLOOD INSURANCE PROGRAM; IT DOES NOT NECESSARILY IDENTIFY ALL AREAS SUBJECT TO FLOODING, PARTICULARLY FROM LOCAL DRAINAGE SOURCES OF SMALL SIZE, OR ALL PLANIMETRIC FEATURES OUTSIDE SPECIAL FLOOD HAZARD AREAS. CERTAIN AREAS NOT IN SPECIAL FLOOD HAZARD AREAS MAY BE PROTECTED BY FLOOD CONTROL STRUCTURES." THE APPROXIMATE LIMITS OF SAID ZONES AS DETERMINED HEREON ARE SCALED FROM SAID MAP. THIS INFORMATION IS NOT INTENDED TO IDENTIFY SPECIFIC FLOOD CONDITIONS.

REFERENCE SHEETS NOTE:

FOR STORM WATER POLLUTION PREVENTION DETAILS REFER TO SHEETS 67 & 68

stv
Texas Registered Engineering Firm F-204
Texas First Bank Building
11757 Katy Freeway
Suite 1540
Houston, TX, 77079
(713)532-1730
Fax (713)532-1734

TRILOGY ENGINEERING SERVICES
238 WESTCOTT STREET
HOUSTON, TEXAS 77007
PH: 877.463.1699
TX FIRM NO: 17715

SURVEYED BY: LANDTECH
FB NO. P-

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

APRIL 2026

TIISETSO MASIANE, P.E.
TX PE NO. 139211

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PHASE II STORM WATER POLLUTION PREVENTION PLAN- WORK ZONE # 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 65 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 10:19 AM

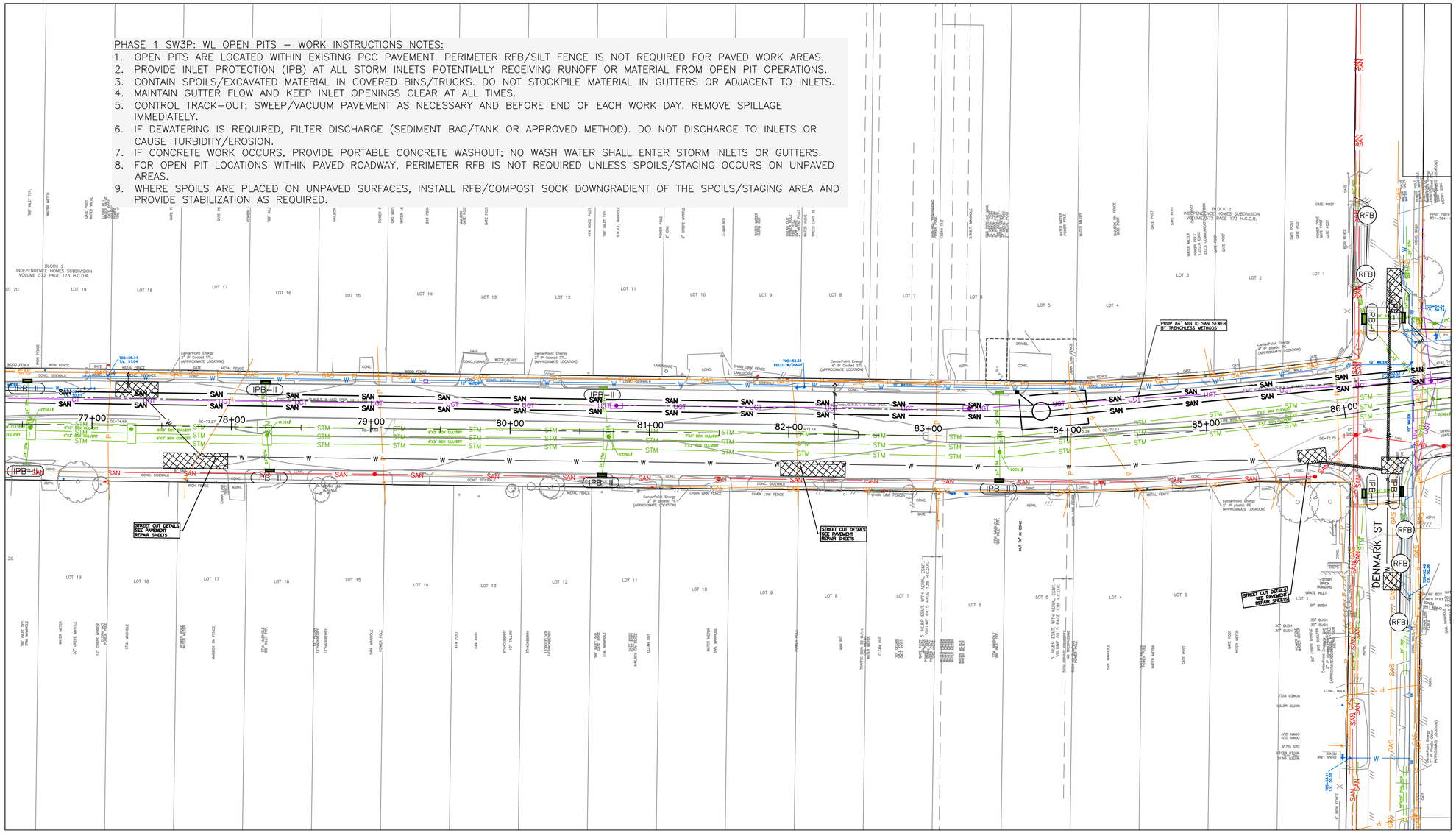
FILE PATH: 230012201_SV_SWPPP.dwg

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 10:19 AM

FILE PATH: 230012201_SV_SWPPP.dwg

PHASE 1 SW3P: WL OPEN PITS – WORK INSTRUCTIONS NOTES:

1. OPEN PITS ARE LOCATED WITHIN EXISTING PCC PAVEMENT. PERIMETER RFB/SILT FENCE IS NOT REQUIRED FOR PAVED WORK AREAS.
2. PROVIDE INLET PROTECTION (IPB) AT ALL STORM INLETS POTENTIALLY RECEIVING RUNOFF OR MATERIAL FROM OPEN PIT OPERATIONS.
3. CONTAIN SPOILS/EXCAVATED MATERIAL IN COVERED BINS/TRUCKS. DO NOT STOCKPILE MATERIAL IN GUTTERS OR ADJACENT TO INLETS.
4. MAINTAIN GUTTER FLOW AND KEEP INLET OPENINGS CLEAR AT ALL TIMES.
5. CONTROL TRACK–OUT; SWEEP/VACUUM PAVEMENT AS NECESSARY AND BEFORE END OF EACH WORK DAY. REMOVE SPILLAGE IMMEDIATELY.
6. IF DEWATERING IS REQUIRED, FILTER DISCHARGE (SEDIMENT BAG/TANK OR APPROVED METHOD). DO NOT DISCHARGE TO INLETS OR CAUSE TURBIDITY/EROSION.
7. IF CONCRETE WORK OCCURS, PROVIDE PORTABLE CONCRETE WASHOUT; NO WASH WATER SHALL ENTER STORM INLETS OR GUTTERS.
8. FOR OPEN PIT LOCATIONS WITHIN PAVED ROADWAY, PERIMETER RFB IS NOT REQUIRED UNLESS SPOILS/STAGING OCCURS ON UNPAVED AREAS.
9. WHERE SPOILS ARE PLACED ON UNPAVED SURFACES, INSTALL RFB/COMPOST SOCK DOWNGRADIENT OF THE SPOILS/STAGING AREA AND PROVIDE STABILIZATION AS REQUIRED.



EROSION AND SEDIMENT CONTROLS:

STABILIZATION: STABILIZE ALL DISTURBED AREAS (STOCKPILES, SHOULDER AREAS, AND EXPOSED SOILS) THAT WILL REMAIN INACTIVE FOR 14 DAYS OR MORE USING TEMPORARY SEEDING, MULCH, MATS, OR OTHER APPROVED METHODS.

PERIMETER CONTROLS: INSTALL AND MAINTAIN REINFORCED FILTER FABRIC BARRIER (RFB) / SILT FENCE AROUND EACH ACTIVE SHAFT WORK AREA AND ALONG THE LIMITS OF DISTURBANCE AS NEEDED TO PREVENT SEDIMENT MIGRATION TO GUTTERS, INLETS, AND ADJACENT PROPERTIES.

INLET PROTECTION: INSTALL AND MAINTAIN INLET PROTECTION BARRIERS AT ALL STORM DRAIN INLETS THAT MAY RECEIVE RUNOFF FROM SHAFT WORK AREAS, STAGING, OR HAUL ROUTES. INLET PROTECTION SHALL NOT CREATE TRAFFIC HAZARDS OR CAUSE FLOODING.

TRACK–OUT CONTROL: PROVIDE STABILIZED CONSTRUCTION ENTRANCE/EXIT AT EACH SHAFT/STAGING ACCESS POINT WHERE FEASIBLE. IF TRACK–OUT OCCURS, REMOVE SEDIMENT FROM PAVEMENT BEFORE END OF EACH WORK DAY (OR MORE FREQUENTLY) USING SWEEPING/VACUUMING. SEDIMENT SHALL BE DISPOSED OF PROPERLY.

STOCKPILES/SPOILS: SPOILS, EXCAVATED MATERIAL, AND SPOIL BINS SHALL BE CONTAINED, BERMED, AND/OR COVERED (AS NEEDED) AND KEPT OUT OF GUTTERS AND AWAY FROM INLETS.

DEWATERING (SHAFTS): ANY DEWATERING FROM SHAFTS/EXCAVATIONS SHALL BE FILTERED (SEDIMENT BAG/TANK OR APPROVED METHOD) PRIOR TO DISCHARGE AND SHALL NOT CAUSE EROSION, TURBIDITY, OR DISCHARGE OF CONTAMINANTS. DISCHARGE LOCATION AND METHOD SHALL COMPLY WITH COH REQUIREMENTS AND PERMITS.

SLURRY/DRILLING FLUIDS: TRENCHLESS SLURRY, BENTONITE, AND/OR DRILLING FLUIDS SHALL BE FULLY CONTAINED AND SHALL NOT ENTER THE STORM DRAIN SYSTEM. COLLECT AND DISPOSE OF THESE MATERIALS IN ACCORDANCE WITH APPLICABLE REGULATIONS.

DUST CONTROL: CONTROL WIND–BLOWN DUST BY WATERING/SPRAYING DISTURBED AREAS AS NECESSARY WITHOUT CAUSING RUNOFF.

GOOD HOUSEKEEPING, MAINTENANCE, AND OTHER CONTROLS:

WASTE MANAGEMENT: STORE TRASH AND DEBRIS IN COVERED CONTAINERS. DISPOSE OF ALL WASTE AT AN APPROVED FACILITY. NO WASTE SHALL BE BURIED OR LEFT ON–SITE.

HAZARDOUS MATERIALS: STORE FUELS/OILS/CHEMICALS IN DESIGNATED AREAS WITH SECONDARY CONTAINMENT. IN THE EVENT HAZMAT IS ENCOUNTERED, STOP WORK IN THE AFFECTED AREA AND DISPOSE/ADDRESS PER APPLICABLE REGULATIONS AND COH DIRECTION.

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SWPPP SITE PLAN LEGEND

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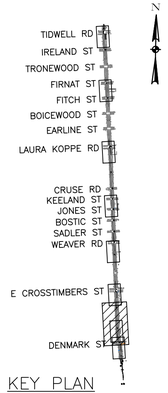
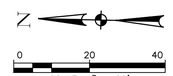


KEY PLAN

NO.	DATE	REVISION	APP.



PHASE I OPEN PIT – SWPPP CONTROLS PER NOTES (IPB + SPOILS CONTAINMENT + HOUSEKEEPING)

BENCHMARKS:

CITY OF HOUSTON MONUMENT 5560–0416: FOUND BRASS DISK IN CONCRETE AT CRUSE AND PEACHTREE INTERSECTION

ELEV 57.61' NAVD 1988 (GEOID 18)

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stv
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238 WESTCOTT STREET
HOUSTON, TEXAS 77007
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TX FIRM NO: 17715

SURVEYED BY: LANDTECH
FB NO. P–

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APRIL 2026

TIISETSO MASIANE, P.E.
TX PE NO. 139211

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

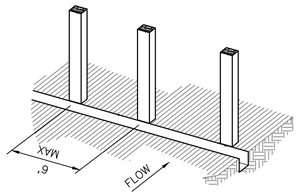
PHASE I STORM WATER POLLUTION PREVENTION PLAN– WATER LINE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–001000–0032–4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 66 OF 124	

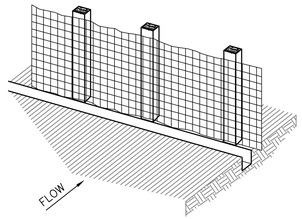
60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 10:19 AM

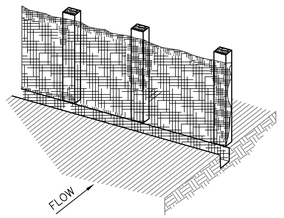
1. SET POSTS AND EXCAVATE 4"x4" TRENCH UPSLOPE ALONG LINE OF POSTS (SEE NOTE 1).



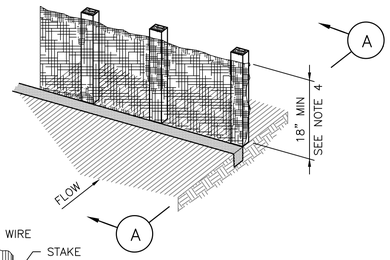
2. SECURE WIRE REINFORCING TO POSTS (SEE NOTE 2).

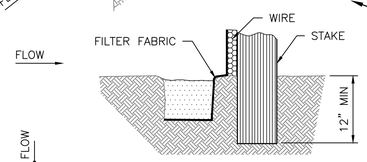


3. ATTACH FILTER MATERIAL TO WIRE REINFORCING AND EXTEND IT INTO THE TRENCH (SEE NOTE 3).



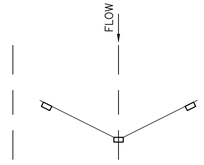
4. BACKFILL AND COMPACT THE EXCAVATED SOIL.



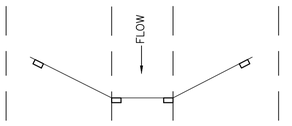


SECTION A–A

EXTENSION OF FABRIC INTO TRENCH

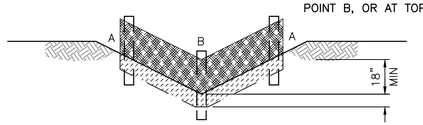


PLAN VIEW

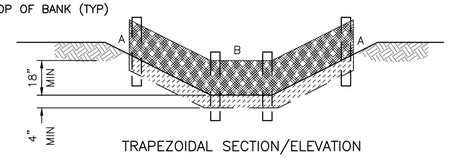


PLAN VIEW

POINTS A SHOULD BE HIGHER THAN POINT B, OR AT TOP OF BANK (TYP)



"V–DITCH" SECTION/ELEVATION



TRAPEZOIDAL SECTION/ELEVATION

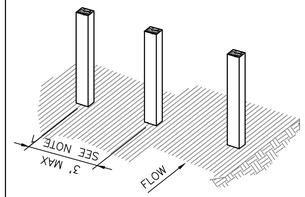
CONSTRUCTION NOTES:

1. SET 2 INCH BY 2 INCH WOODEN STAKES SPACED A MAX OF 6 FEET APART AND EMBEDDED A MIN OF 12 INCHES.
2. WOVEN WIRE REINFORCING TO BE FASTENED SECURELY TO BARRIER POSTS WITH STAPLES.
3. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE REINFORCING, WITH TIES SPACED EVERY 24 INCHES AT TOP AND MIDSECTION.
4. MINIMUM HEIGHT OF FILTER SHOULD BE 18 INCHES AND A MAXIMUM OF 36 INCHES ABOVE NATURAL GROUND.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.
6. SEE COH STANDARD SPECIFICATION 01570 FOR FILTER FABRIC BARRIER.

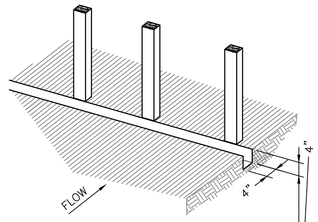
SYMBOL

REINFORCED FILTER FABRIC BARRIER

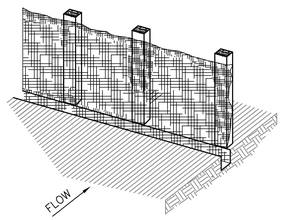
1. SET POSTS AT REQUIRED SPACING.



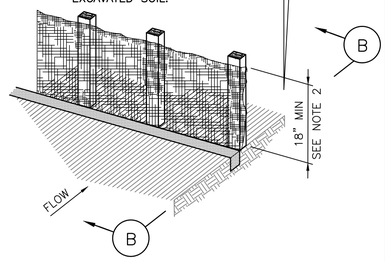
2. EXCAVATE A 4"x4" TRENCH UPSLOPE ALONG THE LINE OF STAKES.

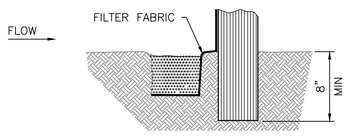


3. ATTACH FILTER MATERIAL TO STAKES AND EXTEND IT INTO THE TRENCH.



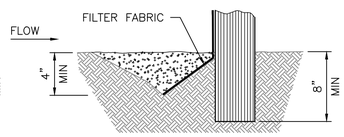
4. BACKFILL AND COMPACT THE EXCAVATED SOIL.





SECTION B–B

EXTENSION OF FABRIC INTO TRENCH



SECTION B–B

ALTERNATE

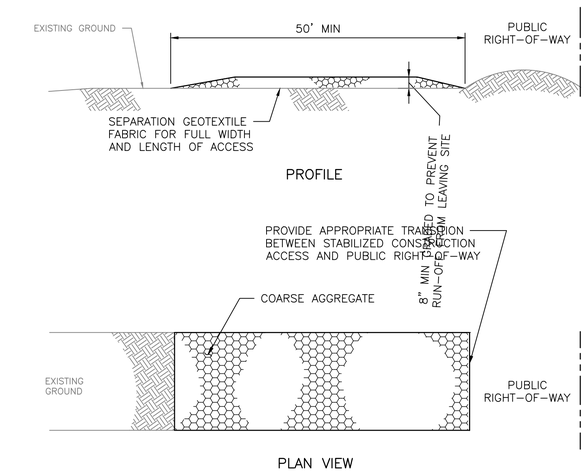
V–TRENCH EXTENSION OF FABRIC INTO TRENCH

CONSTRUCTION NOTES:

1. 2 INCH THICK BY 2 INCH WOODEN STAKES TO BE SET AT MAX SPACING OF 3 FEET AND EMBEDDED A MIN OF 8 INCHES. IF PREASSEMBLED BARRIER WITH SUPPORT NETTING IS USED, SPACING OF POST MAY BE INCREASED TO 8 FEET MAX.
2. ATTACH FILTER FABRIC TO WOODEN STAKES. FILTER FABRIC BARRIER SHALL HAVE A MIN HEIGHT OF 18 INCHES AND MAX HEIGHT OF 36 INCHES ABOVE NATURAL GROUND.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHOULD BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.
4. SEE COH STANDARD SPECIFICATION 01570 FOR FILTER FABRIC BARRIER.

SYMBOL

FILTER FABRIC BARRIER



PLAN VIEW

CONSTRUCTION NOTES:

1. LENGTH SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS, BUT NOT LESS THAN 50 FEET.
2. THICKNESS SHALL BE NOT LESS THAN 8 INCHES.
3. WIDTH SHALL BE NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
4. STABILIZATION FOR OTHER AREAS SHALL HAVE THE SAME AGGREGATE THICKNESS AND WIDTH REQUIREMENTS AS THE STABILIZED CONSTRUCTION ACCESS, UNLESS OTHERWISE SHOWN ON THE CONSTRUCTION DRAWINGS.
5. STABILIZED AREA MAY BE WIDENED OR LENGTHENED TO ACCOMODATE A WASHING AREA. AN OUTLET SEDIMENT TRAP MUST BE PROVIDED FOR THE WASHING AREA.
6. COH STANDARD SPECIFICATION 01575 FOR STABILIZED CONSTRUCTION ACCESS.
7. STABILIZED CONSTRUCTION ACCESS SHALL BE MAINTAINED FREE OF SEDIMENT FOR THE DURATION OF THE PROJECT.

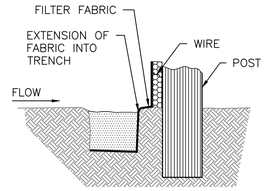
SC

SYMBOL

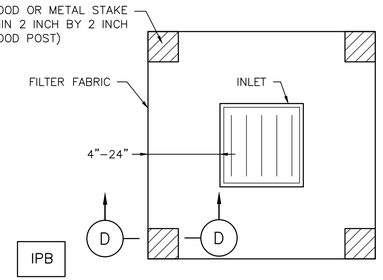
STABILIZED CONSTRUCTION ACCESS

CONSTRUCTION NOTES:

1. SEE CONSTRUCTION NOTES FOR RFB.



SECTION D–D

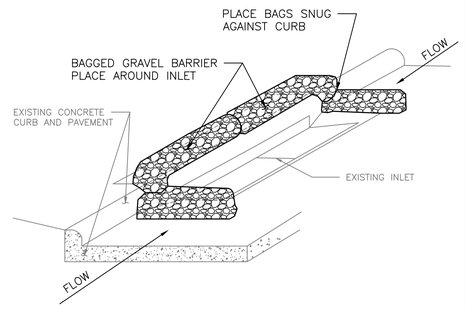


IPB

SYMBOL

PLAN VIEW

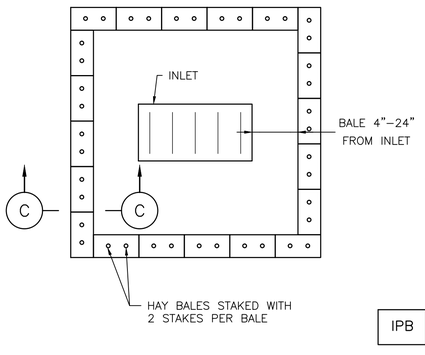
SILT FENCE INLET PROTECTION BARRIER



INLET PROTECTION BARRIER

(FOR STAGE II INLETS)

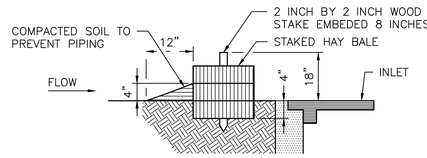
BAGGED GRAVEL BARRIER



PLAN VIEW

IPB

SYMBOL



SECTION C–C

HAY BALE INLET PROTECTION BARRIER

NO.	DATE	REVISION	APP.

stv
Texas Registered Engineering Firm F–204
Texas First Bank Building
11757 Katy Freeway
Suite 1540
Houston, TX, 77079
(713)532–1730
Fax (713)532–1734

TRILOGY ENGINEERING SERVICES
238 WESTCOTT STREET
HOUSTON, TEXAS 77007
PH: 877.463.1699
TX FIRM NO: 17715

SURVEYED BY: LANDTECH
FB NO. P–

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APRIL 2026

TIISETSO MASIANE, P.E.
TX PE NO. 139211

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

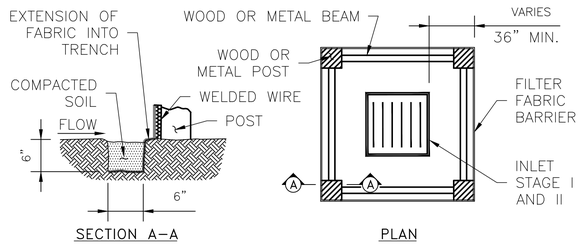
STORMWATER POLLUTION PREVENTION

PLAN DETAILS – 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–001000–0032–4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 67 OF 124	

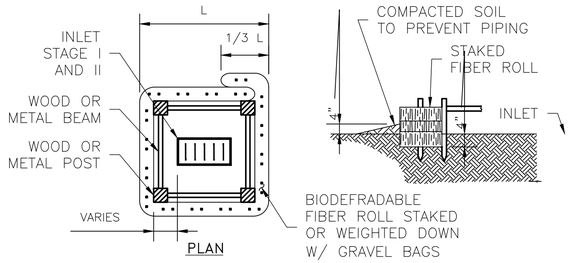
60% SUBMITTAL

FILE PATH: 230012201_SV_SWPPP.dwg



SECTION A–A PLAN

INLET PROTECTION WITH SEDIMENT CONTROL FENCE



PLAN

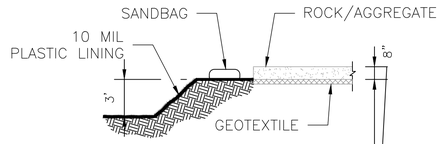
INLET PROTECTION WITH BIODEGRADABLE FILTER ROLLS

GENERAL NOTES:

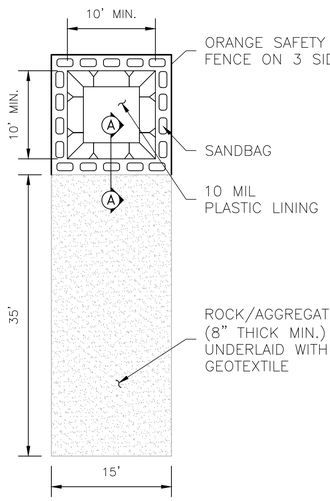
1. BIODEGRADABLE FIBER ROLLS WILL BE UTILIZED ONLY WHEN SITE CONDITIONS DO NOT PERMIT THE USE OF FILTER FABRIC BARRIER AND AS APPROVED BY THE ENGINEER.

INLET PROTECTION BARRIERS FOR STAGE I INLETS

IPB
SYMBOL



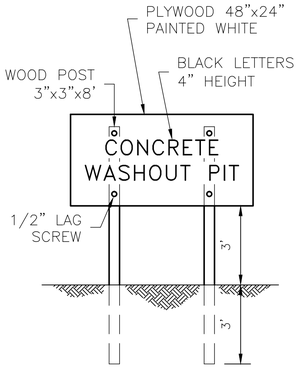
SECTION A–A



PLAN

GENERAL NOTES:

1. POST A SIGN READING "CONCRETE WASHOUT PIT" NEXT TO THE PIT.
2. VERBALLY INSTRUCT THE CONCRETE TRUCK DRIVERS WHERE THE PIT IS AND TO WASHOUT THEIR TRUCKS IN THE PIT AND NOWHERE ELSE.
3. UPON THE CONCRETE SETTING UP (CURING, DRYING OUT), THE CONCRETE WASTE SHALL BE REMOVED FROM THE PROJECT SITE AND DISPOSED OF PROPERLY BY THE CONTRACTOR. AFTER REMOVAL OF THE CONCRETE WASTE, THE WASHOUT PIT SHALL BE FILLED WITH CLEAN FILL MATERIAL AND COMPACTED TO IN–SITU CONDITIONS, OR AS DIRECTED BY THE PROJECT SPECIFICATIONS.
4. CONCRETE WASHOUT PITS SHALL NOT BE LOCATED DIRECTLY ADJACENT TO, NOR AT ANY TIME DRAIN INTO THE STORM SEWER SYSTEM OR ANY OTHER SWALE, DITCH, OR WATERWAY.
5. CONSTRUCT ENTRY ROAD AND BOTTOM OF WASHOUT AREA TO SUPPORT EXPECTED LOADINGS FROM TRUCKS EQUIPMENT.



SIGN DETAIL
(OR EQUIVALENT)

CONCRETE TRUCK WASHOUT

CTW
SYMBOL

NO.	DATE	REVISION	APP.

stv
Texas Registered Engineering Firm F–204
Texas First Bank Building
11757 Katy Freeway
Suite 1540
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(713)532–1730
Fax (713)532–1734

TRILOGY ENGINEERING SERVICES
238 WESTCOTT STREET
HOUSTON, TEXAS 77007
PH: 877.463.1699
TX FIRM NO: 17715

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APRIL 2026

TIISETSO MASIANE, P.E.
TX PE NO. 139211

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

STORMWATER POLLUTION PREVENTION PLAN DETAILS – 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–001000–0032–4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 68 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 10:19 AM
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GENERAL NOTES

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

SPACING FOR CHANNELIZING DEVICES

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

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

C. PLASTIC DRUMS ON RADII @ 35' C –C.

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

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

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

G. PLASTIC DRUMS W/GUARD RAIL MOUNTED.

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

I. SPACING SHOWN ON TRAFFIC CONTROL SHALL SUPERSEDE THE ABOVE SPACING.

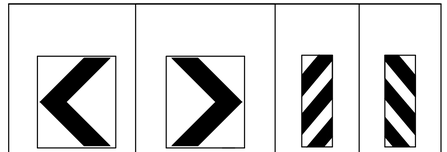
J. SPACING MAY BE ADJUSTED TO PROVIDE DRIVEWAYS, INTERSECTIONS AND /OR MEDIAN OPENINGS.

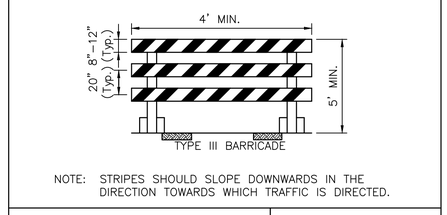
TABLE C3 – TYPICAL SIGN SPACING, TAPER LENGTHS, AND SUGGESTED SPACING OF CHANNELIZATION DEVICES

POSTED SPEED (MPH)	SIGN SPACING "X" (FEET)	MIN. DESIRABLE TAPER LENGTH "L"			SUGGESTED MAXIMUM SPACING OF DEVICE	
		10' OFFSET	11' OFFSET	12' OFFSET	ON A TAPER	ON A TANGENT
30	120'	150'	165'	180'	30'	60'–75'
35	160'	205'	225'	245'	35'	70'–90'
40	240'	265'	295'	320'	40'	80'–100'
45	320'	450'	495'	540'	45'	90'–110'
50	400'	500'	550'	600'	50'	100'–125'
55	500'	550'	605'	660'	55'	110'–140'

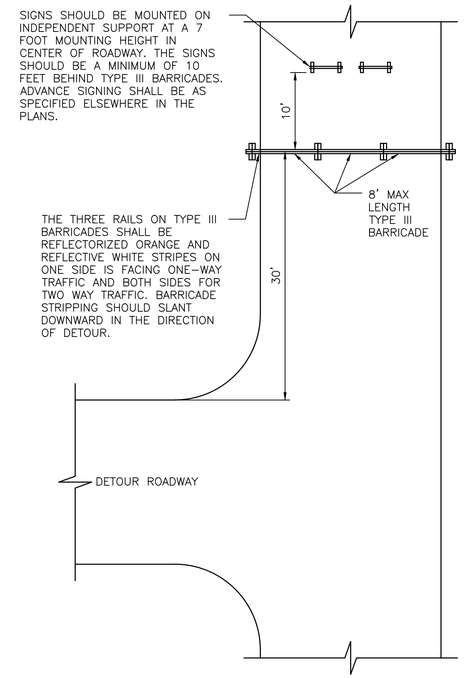
TABLE C4 – STOPPING SIGHT DISTANCE AS A FUNCTION OF SPEED

POSTED SPEED (MPH)	DISTANCE "D" (FEET)
30	200
35	250
40	305
45	360
50	425
55	495





CHANNELIZATION AND BARRICADES



PLAN VIEW
TYPE III BARRICADE (POST AND SKID)
TYPICAL APPLICATION

NO.	DATE	REVISION	APP.

stv
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(713)532–1730
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TRILOGY
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238 WESTCOTT STREET
HOUSTON, TEXAS 77007
PH: 877.463.1699
TX FIRM NO: 17715

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APRIL 2026

TIISETSO MASIANE, P.E.
TX PE NO. 139211

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

TCP NOTES CHANNELIZING DEVICES AND BARRICADES

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–001000–0032–4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 69 OF 124	

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TRAFFIC CONTROL PLAN (TCP) – PHASE 2 GENERAL NARRATIVE

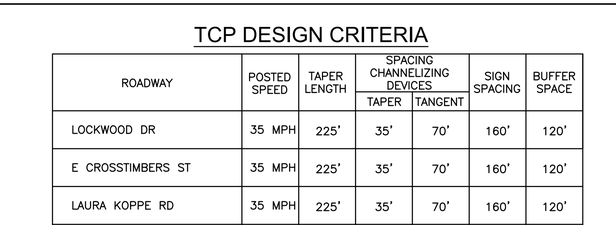
1. GENERAL
   THIS PROJECT CONSISTS OF (1) INSTALLATION OF A NEW 12-INCH WATERLINE BY AUGERING/TRENCHLESS METHODS WITH OPEN PITS AT VERTICAL AND HORIZONTAL FITTINGS AND SERVICE TRANSFERS (PHASE 1), FOLLOWED BY (2) TRENCHLESS INSTALLATION OF AN 84-INCH SANITARY SEWER WITH MULTIPLE TUNNEL SHAFT WORK AREAS ALONG LOCKWOOD DR (PHASE 2). THE CONTRACTOR SHALL COMPLETE INSTALLATION OF THE NEW 12-INCH WATERLINE AND TRANSFER SERVICES PRIOR TO STARTING TUNNEL SHAFT EXCAVATION AND INSTALLATION OF THE 84-INCH SANITARY LINE. TRAFFIC CONTROL SHALL BE IMPLEMENTED IN ACCORDANCE WITH THE APPROVED TCP SHEETS AND CITY OF HOUSTON (COH) MOBILITY PERMIT REQUIREMENTS.
2. TRAFFIC OPERATIONS (THROUGH MOVEMENT)
   THROUGH TRAFFIC ON LOCKWOOD DR SHALL BE MAINTAINED DURING BOTH PHASES OF CONSTRUCTION USING TEMPORARY LANE SHIFTS, MERGE TAPERS, AND CHANNELIZATION TO ROUTE VEHICLES SAFELY AROUND ACTIVE WORK AREAS. DURING PHASE 1, TRAFFIC CONTROL SHALL BE CONFIGURED TO ACCOMMODATE DISCRETE OPEN PIT WORK AREAS AT WATERLINE FITTINGS AND SERVICE TRANSFER LOCATIONS. DURING PHASE 2, TRAFFIC CONTROL SHALL BE CONFIGURED TO ROUTE VEHICLES AROUND ACTIVE TUNNEL SHAFT WORK ZONES. TRAFFIC SHALL BE RETURNED TO NORMAL ALIGNMENT AT THE END OF EACH ACTIVE WORK SEGMENT AS SHOWN ON THE TCP SHEETS.
3. STAGING / ROLLING WORK ZONES
   CONSTRUCTION IS ANTICIPATED TO PROGRESS USING A ROLLING/SEGMENTED TRAFFIC CONTROL APPROACH. ACTIVE WORK LIMITS SHALL BE ESTABLISHED ONLY WHERE WORK IS OCCURRING AND SHALL BE CLEARLY DELINEATED WITH APPROVED DEVICES AND SIGNING. DURING PHASE 1, THE CONTRACTOR SHALL IMPLEMENT SITE-SPECIFIC SETUPS FOR EACH ACTIVE WATERLINE OPEN PIT/FITTING LOCATION CONSISTENT WITH THE TCP TYPICALS. DURING PHASE 2, THE CONTRACTOR SHALL PROVIDE SITE-SPECIFIC SETUPS CONSISTENT WITH TCP SHEETS FOR EACH ACTIVE SHAFT OR GROUP OF SHAFTS.
4. WORK ZONE PROTECTION / CONTRACTOR USE AREAS
   DURING PHASE 1, EACH WATERLINE OPEN PIT/FITTING LOCATION SHALL BE TREATED AS AN ACTIVE WORK ZONE WITH APPROPRIATE BUFFER SPACE AND TRAFFIC EXCLUSION/CLOSED AREAS AS SHOWN ON THE PLANS. DURING PHASE 2, EACH SHAFT LOCATION SHALL BE TREATED AS AN ACTIVE WORK ZONE WITH APPROPRIATE BUFFER SPACE AND TRAFFIC EXCLUSION/CLOSED AREAS AS SHOWN ON THE PLANS. CLOSED AREAS SHALL NOT BE ACCESSIBLE TO PUBLIC TRAFFIC AND MAY BE USED FOR CONTRACTOR OPERATIONS/STAGING WHERE INDICATED. POSITIVE PROTECTION (BARRIERS/FENCING) SHALL BE PROVIDED AS REQUIRED FOR PUBLIC SAFETY.
5. ACCESS (DRIVEWAYS / LOCAL TRAFFIC)
   ACCESS TO ADJACENT PROPERTIES SHALL BE MAINTAINED TO THE MAXIMUM EXTENT PRACTICAL. WHERE "LOCAL TRAFFIC ONLY" OR TEMPORARY RESTRICTIONS ARE SHOWN, THE CONTRACTOR SHALL MAINTAIN SAFE ACCESS AND COORDINATE ANY TEMPORARY DRIVEWAY CLOSURES WITH PROPERTY OWNERS IN ADVANCE. MAINTAIN AT LEAST ONE ACCESS POINT TO COMMERCIAL PROPERTIES WHEN FEASIBLE.
6. PEDESTRIAN / ADA
   PEDESTRIAN ROUTES AND ADA ACCESS SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. WHERE PEDESTRIAN ACCESS TO PUSH BUTTONS, CROSSWALKS, OR SIDEWALKS CANNOT BE MAINTAINED SAFELY, THE CONTRACTOR SHALL IMPLEMENT THE APPROVED PEDESTRIAN DETOUR AND POST REQUIRED CLOSURE/DETOUR SIGNING AS SHOWN ON THE TCP SHEETS.
7. TRAFFIC SIGNALS / INTERSECTIONS
   EXISTING TRAFFIC SIGNAL OPERATIONS MAY REQUIRE TEMPORARY ADJUSTMENTS (TIMING/PHASING/DETECTION) TO MATCH TEMPORARY LANE CONFIGURATIONS AND MAINTAIN SAFE OPERATIONS. CONTRACTOR SHALL COORDINATE WITH COH TRAFFIC OPERATIONS PRIOR TO IMPLEMENTATION AND SHALL RESTORE SIGNAL OPERATIONS TO ORIGINAL CONDITIONS UPON COMPLETION (OR AS DIRECTED BY COH).
8. METRO BUS STOPS
   BUS STOPS IDENTIFIED ON TCP SHEETS SHALL EITHER REMAIN IN SERVICE, BE TEMPORARILY RELOCATED, OR BE TEMPORARILY SUSPENDED AS INDICATED. CONTRACTOR SHALL COORDINATE WITH METRO FOR STOP RELOCATION/SUSPENSION (METRO: 713-615-6195), MAINTAIN ADA ACCESS WHERE STOPS REMAIN IN SERVICE, AND POST REQUIRED TEMPORARY SIGNING/NOTICES.
9. DEVICES, SIGNING, AND PAVEMENT MARKINGS
   ADVANCE WARNING SIGNING, CHANNELIZING DEVICES (DRUMS/DELINEATORS), BARRICADES, WARNING LIGHTS, ARROW BOARDS (AS REQUIRED), AND TEMPORARY PAVEMENT MARKINGS (INCLUDING DOTTED PAVEMENT MARKING "CAT TRACKS" WHERE SHOWN) SHALL BE INSTALLED AND MAINTAINED AS DEPICTED ON THE TCP SHEETS. DEVICES SHALL BE ADJUSTED AS NECESSARY TO ACCOMMODATE DRIVEWAYS, INTERSECTIONS, AND MEDIAN OPENINGS WHILE MAINTAINING SAFETY.
10. MAINTENANCE, HOUSEKEEPING, AND RESTORATION
    CONTRACTOR SHALL MAINTAIN ALL TRAFFIC CONTROL DEVICES IN PROPER POSITION AND CONDITION AT ALL TIMES, REMOVE SPILLAGE FROM HAULING OPERATIONS IMMEDIATELY, AND REPAIR/REPLACE ANY DAMAGED SIGNS, MARKINGS, OR TRAFFIC SIGNAL COMPONENTS. UPON COMPLETION OF EACH STAGE, TEMPORARY DEVICES/MARKINGS SHALL BE REMOVED AS REQUIRED AND FINAL CONDITIONS RESTORED PER PROJECT REQUIREMENTS AND COH STANDARDS.

TCP DESIGN CRITERIA

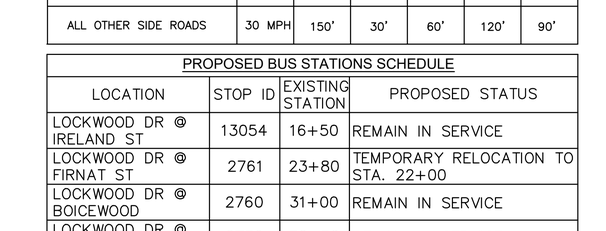
ROADWAY	POSTED SPEED	TAPER LENGTH	SPACING CHANNELIZING DEVICES		SIGN SPACING	BUFFER SPACE
			TAPER	TANGENT		
LOCKWOOD DR	35 MPH	225'	35'	70'	160'	120'
E CROSSTIMBERS ST	35 MPH	225'	35'	70'	160'	120'
LAURA KOPPE RD	35 MPH	225'	35'	70'	160'	120'
TIDWELL RD	40 MPH	295'	40'	80'	240'	155'
ALL OTHER SIDE ROADS	30 MPH	150'	30'	60'	120'	90'

PROPOSED BUS STATIONS SCHEDULE

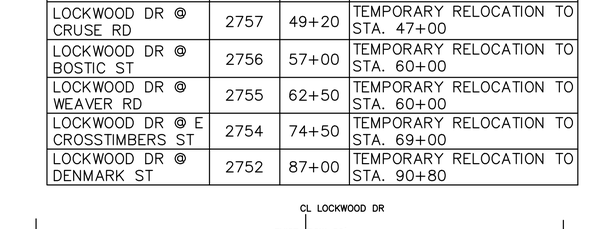
LOCATION	STOP ID	EXISTING STATION	PROPOSED STATUS
LOCKWOOD DR @ IRELAND ST	13054	16+50	REMAIN IN SERVICE
LOCKWOOD DR @ FIRNAT ST	2761	23+80	TEMPORARY RELOCATION TO STA. 22+00
LOCKWOOD DR @ BOICEWOOD	2760	31+00	REMAIN IN SERVICE
LOCKWOOD DR @ LAURA KOPPE RD	2759	36+50	REMAIN IN SERVICE
LOCKWOOD DR @ LAURA KOPPE RD	2758	39+50	TEMPORARY RELOCATION TO STA. 47+00
LOCKWOOD DR @ CRUSE RD	2757	49+20	TEMPORARY RELOCATION TO STA. 47+00
LOCKWOOD DR @ BOSTIC ST	2756	57+00	TEMPORARY RELOCATION TO STA. 60+00
LOCKWOOD DR @ WEAVER RD	2755	62+50	TEMPORARY RELOCATION TO STA. 60+00
LOCKWOOD DR @ E CROSSTIMBERS ST	2754	74+50	TEMPORARY RELOCATION TO STA. 69+00
LOCKWOOD DR @ DENMARK ST	2752	87+00	TEMPORARY RELOCATION TO STA. 90+80



LOCKWOOD DR EXISTING TYPICAL CROSS SECTION



LOCKWOOD DR TYPICAL TCP CROSS SECTION
(AT THE LOCATION OF THE 8 LAUNCHING SHAFTS)



LOCKWOOD DR TYPICAL TCP CROSS SECTION
(AT THE LOCATION OF NB LEFT TURN LANES)

PROPOSED TRAFFIC SIGNAL MODIFICATIONS

LOCATION	STATION	REQUIRED MODIFICATIONS (SUMMARY)	NB APPROACH (DETAIL)	SB APPROACH (DETAIL)
LOCKWOOD DR @ TIDWELL RD	11+00	SHIFT NB MOVEMENT TO SB INNER LANE; RE-ALIGN SIGNAL DISPLAYS	RE-ALIGN/RELOCATE SIGNAL HEADS TO SERVE (1) NB TEMPORARY LANE OPERATING IN THE SB INSIDE LANE (CONTRA-FLOW/SHIFT CONDITION). VERIFY VISIBILITY AND LANE LINE-UP.	ADJUST SB LEFT-TURN SIGNAL HEAD(S) TO MAINTAIN PROPER LANE LINE-UP AND INDICATION VISIBILITY UNDER TEMPORARY LANE CONFIGURATION.
LOCKWOOD DR @ LAURA KOPPE RD	39+00	SHIFT NB MOVEMENT TO SB INNER LANE; RE-ALIGN SIGNAL DISPLAYS	RE-ALIGN/RELOCATE SIGNAL HEADS TO SERVE (1) NB TEMPORARY LANE OPERATING IN THE SB INSIDE LANE. VERIFY VISIBILITY AND LANE LINE-UP.	ADJUST SB LEFT-TURN SIGNAL HEAD(S) TO MAINTAIN PROPER LANE LINE-UP AND INDICATION VISIBILITY UNDER TEMPORARY LANE CONFIGURATION.
LOCKWOOD DR @ WEAVER RD	62+00	SHIFT NB MOVEMENT TO SB INNER LANE; RE-ALIGN SIGNAL DISPLAYS	RE-ALIGN/RELOCATE SIGNAL HEADS TO SERVE (1) NB TEMPORARY LANE OPERATING IN THE SB INSIDE LANE. VERIFY VISIBILITY AND LANE LINE-UP.	RE-ALIGN/RELOCATE SIGNAL HEADS TO SERVE (1) SB TEMPORARY THROUGH LANE UNDER THE TEMPORARY LANE CONFIGURATION (INCLUDING ANY SB TURN LANES IF MAINTAINED).

SIGNAL HEAD ADJUSTMENTS SHALL INCLUDE: TEMPORARY RE-AIMING/REPOSITIONING OF SIGNAL HEADS AND ANY REQUIRED OVERHEAD SIGN RE-ALIGNMENT TO MATCH THE TEMPORARY LANE GEOMETRY.

COORDINATE WITH COH TRAFFIC OPERATIONS FOR ANY REQUIRED TIMING/PHASING/DETECTION MODIFICATIONS AND RESTORE TO ORIGINAL OPERATIONS UPON COMPLETION (OR AS DIRECTED BY COH).

NO.	DATE	REVISION	APP.

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APRIL 2026

TIISETSO MASIANE, P.E.
TX PE NO. 139211

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

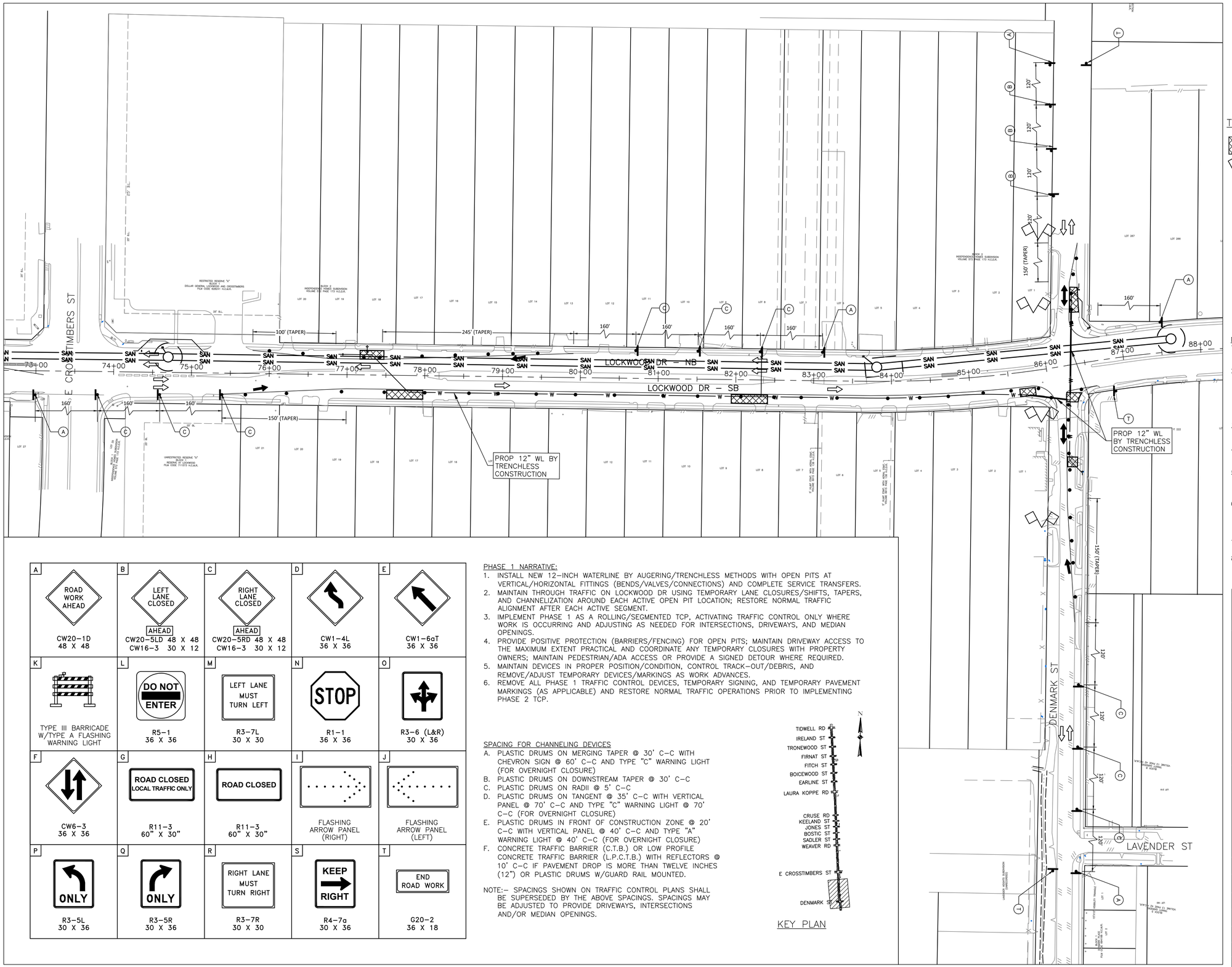
CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PHASE II – TRAFFIC CONTROL PLAN
GENERAL NARRATIVE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 70 OF 124	

60% SUBMITTAL

FILE PATH: 230012201_SV_TCP_PLAN.dwg



0 60' 120'
HORIZONTAL SCALE IN FEET

NO.	DATE	REVISION	APP.

TCP LEGEND

- WORK ZONE (ACTIVE CONSTRUCTION)
- FLAGGERS
- EXISTING TRAFFIC FLOW
- PROPOSED TCP TRAFFIC FLOW
- TYPE III BARRICADE
- CHANNELIZATION DEVICES: PLASTIC DRUM
- SIGN ON POST
- (1) 4" TEMP. RPMs/BUTTONS + DOUBLE YELLOW SOLID STRIPE
- (2) 4" TEMP. RPMs/BUTTONS + YELLOW SOLID STRIPE
- (3) 4" TEMP. RPMs/BUTTONS + WHITE SOLID STRIPE
- (4) 8" TEMP. PAVEMENT MARKING (WHITE SOLID STRIPE)
- (5) 24" TEMP. PAVEMENT MARKING (WHITE SOLID STRIPE)
- (6) DOTTED PAVEMENT MARKING (CAT TRACKS)

NOTE:
1. CONTRACTOR SHALL ADJUST LOCATION OF TRAFFIC SIGNAL HEADS AND OVERHEAD SIGNS TO LINE–UP WITH TEMPORARY TRAFFIC LANES AT ALL TIMES.
2. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO ANY OF THE TRAFFIC SIGNAL COMPONENTS AND ANY OF THE INTERSECTION PHYSICAL CONDITIONS INCLUDING, DETECTION, UNDERGROUND WIRES AND CABLES, WHEELCHAIR RAMPS, CROSSWALKS, BUTTONS, AND CABINETS. THE CONTRACTOR IS TO RESTORE THE INTERSECTION AND THE SIGNAL OPERATION TO ITS ORIGINAL CONDITIONS.
3. A 10' MINIMUM LANE WIDTH FOR EMERGENCY SHALL BE MADE AVAILABLE AND MAINTAINED BY THE CONTRACTOR AT ALL TIME.
4. REFER TO COH ONE LANE CLOSURE DETAIL 01555–04 FOR LANE CLOSURES DURING THE INSTALLATION OF ASPHALT AT THE MEDIANS.
5. CONTRACTOR TO PROVIDE A SECURITY FENCE THAT SURROUNDS THE SURFACE WORK SITE FOR THE TUNNEL SHAFTS IN ACCORDANCE WITH THE CITY OF HOUSTON SPECIFICATIONS.
6. THE CONTRACTOR SHALL MAINTAIN PEDESTRIAN ACCESSIBILITY TO PUSH BUTTONS AND PROPER SIGNAL ALIGNMENT THROUGHOUT TCP STAGES. OTHERWISE BAG PEDESTRIAN SIGNAL HEADS AND INSTALL CROSSWALK CLOSED SIGNS AND PROVIDE PEDESTRIAN DETOUR.
7. CONTRACTOR SHALL MAINTAIN MINIMUM OF ONE DRIVEWAY TO ALL COMMERCIAL PROPERTIES AT ALL TIMES.
8. MAINTAIN ACCESS TO RESIDENTIAL DRIVEWAYS AT ALL TIMES AND COORDINATE RESIDENTIAL DRIVEWAY CLOSURES WITH PROPERTY OWNERS.

A ROAD WORK AHEAD CW20–1D 48 X 48	B LEFT LANE CLOSED AHEAD CW20–5LD 48 X 48 CW16–3 30 X 12	C RIGHT LANE CLOSED AHEAD CW20–5RD 48 X 48 CW16–3 30 X 12	D CW1–4L 36 X 36	E CW1–6aT 36 X 36
K TYPE III BARRICADE W/TYPE A FLASHING WARNING LIGHT	L DO NOT ENTER R5–1 36 X 36	M LEFT LANE MUST TURN LEFT R3–7L 30 X 30	N STOP R1–1 36 X 36	O R3–6 (L&R) 30 X 36
F CW6–3 36 X 36	G ROAD CLOSED LOCAL TRAFFIC ONLY R11–3 60" X 30"	H ROAD CLOSED R11–3 60" X 30"	I FLASHING ARROW PANEL (RIGHT)	J FLASHING ARROW PANEL (LEFT)
P ONLY R3–5L 30 X 36	Q ONLY R3–5R 30 X 36	R RIGHT LANE MUST TURN RIGHT R3–7R 30 X 30	S KEEP RIGHT R4–7a 30 X 36	T END ROAD WORK G20–2 36 X 18

PHASE 1 NARRATIVE:
1. INSTALL NEW 12–INCH WATERLINE BY AUGERING/TRENCHLESS METHODS WITH OPEN PITS AT VERTICAL/HORIZONTAL FITTINGS (BENDS/VALVES/CONNECTIONS) AND COMPLETE SERVICE TRANSFERS.
2. MAINTAIN THROUGH TRAFFIC ON LOCKWOOD DR USING TEMPORARY LANE CLOSURES/SHIFTS, TAPERS, AND CHANNELIZATION AROUND EACH ACTIVE OPEN PIT LOCATION; RESTORE NORMAL TRAFFIC ALIGNMENT AFTER EACH ACTIVE SEGMENT.
3. IMPLEMENT PHASE 1 AS A ROLLING/SEGMENTED TCP, ACTIVATING TRAFFIC CONTROL ONLY WHERE WORK IS OCCURRING AND ADJUSTING AS NEEDED FOR INTERSECTIONS, DRIVEWAYS, AND MEDIAN OPENINGS.
4. PROVIDE POSITIVE PROTECTION (BARRIERS/FENCING) FOR OPEN PITS; MAINTAIN DRIVEWAY ACCESS TO THE MAXIMUM EXTENT PRACTICAL AND COORDINATE ANY TEMPORARY CLOSURES WITH PROPERTY OWNERS; MAINTAIN PEDESTRIAN/ADA ACCESS OR PROVIDE A SIGNED DETOUR WHERE REQUIRED.
5. MAINTAIN DEVICES IN PROPER POSITION/CONDITION, CONTROL TRACK–OUT/DEBRIS, AND REMOVE/ADJUST TEMPORARY DEVICES/MARKINGS AS WORK ADVANCES.
6. REMOVE ALL PHASE 1 TRAFFIC CONTROL DEVICES, TEMPORARY SIGNING, AND TEMPORARY PAVEMENT MARKINGS (AS APPLICABLE) AND RESTORE NORMAL TRAFFIC OPERATIONS PRIOR TO IMPLEMENTING PHASE 2 TCP.

SPACING FOR CHANNELING DEVICES
- A. PLASTIC DRUMS ON MERGING TAPER @ 30' C–C WITH CHEVRON SIGN @ 60' C–C AND TYPE "C" WARNING LIGHT (FOR OVERNIGHT CLOSURE)
- B. PLASTIC DRUMS ON DOWNSTREAM TAPER @ 30' C–C
- C. PLASTIC DRUMS ON RADII @ 5' C–C
- D. PLASTIC DRUMS ON TANGENT @ 35' C–C WITH VERTICAL PANEL @ 70' C–C AND TYPE "C" WARNING LIGHT @ 70' C–C (FOR OVERNIGHT CLOSURE)
- E. PLASTIC DRUMS IN FRONT OF CONSTRUCTION ZONE @ 20' C–C WITH VERTICAL PANEL @ 40' C–C AND TYPE "A" WARNING LIGHT @ 40' C–C (FOR OVERNIGHT CLOSURE)
- F. CONCRETE TRAFFIC BARRIER (C.T.B.) OR LOW PROFILE CONCRETE TRAFFIC BARRIER (L.P.C.T.B.) WITH REFLECTORS @ 10' C–C IF PAVEMENT DROP IS MORE THAN TWELVE INCHES (12") OR PLASTIC DRUMS W/GUARD RAIL MOUNTED.

NOTE:– SPACINGS SHOWN ON TRAFFIC CONTROL PLANS SHALL BE SUPERSEDED BY THE ABOVE SPACINGS. SPACINGS MAY BE ADJUSTED TO PROVIDE DRIVEWAYS, INTERSECTIONS AND/OR MEDIAN OPENINGS.

KEY PLAN

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FB NO. P–

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APRIL 2026

TIISETSO MASIANE, P.E.
TX PE NO. 139211

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PHASE I – TRAFFIC CONTROL PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–001000–0032–4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 71 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 10:19 AM

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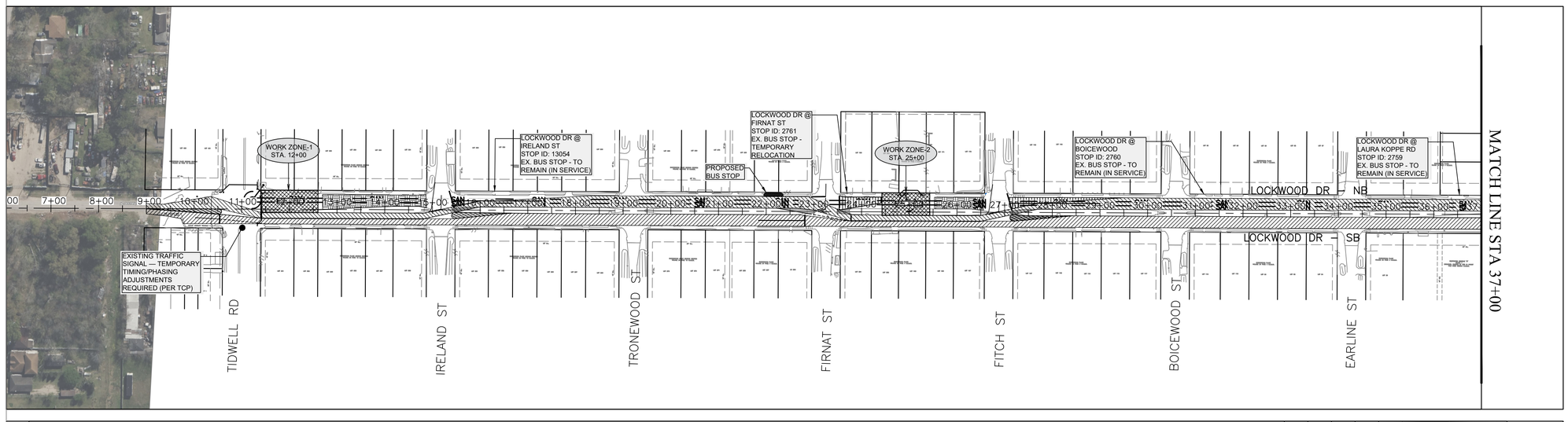

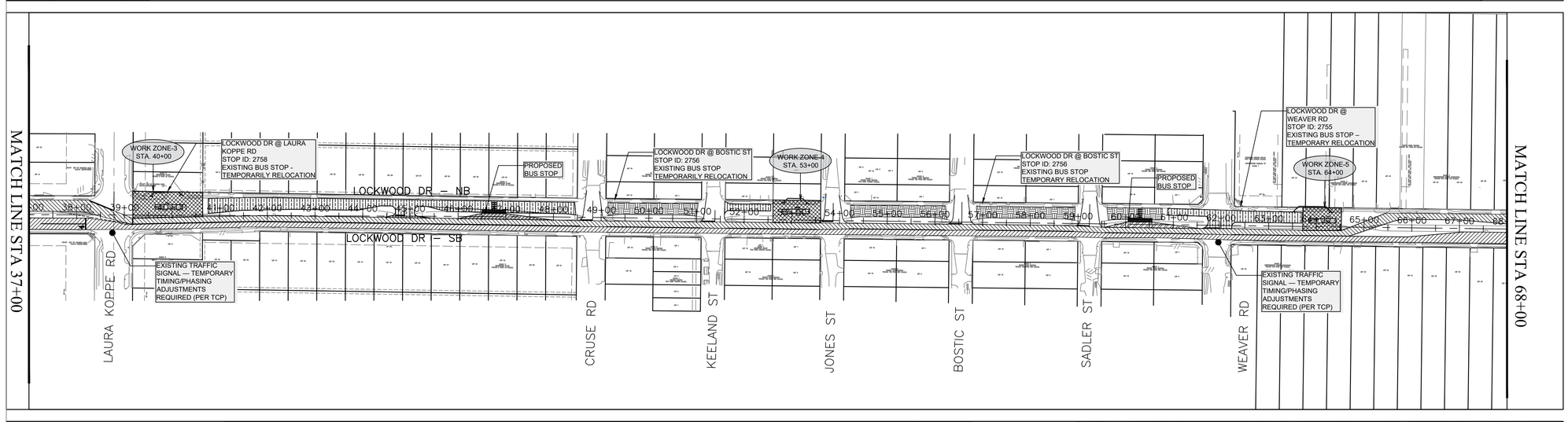

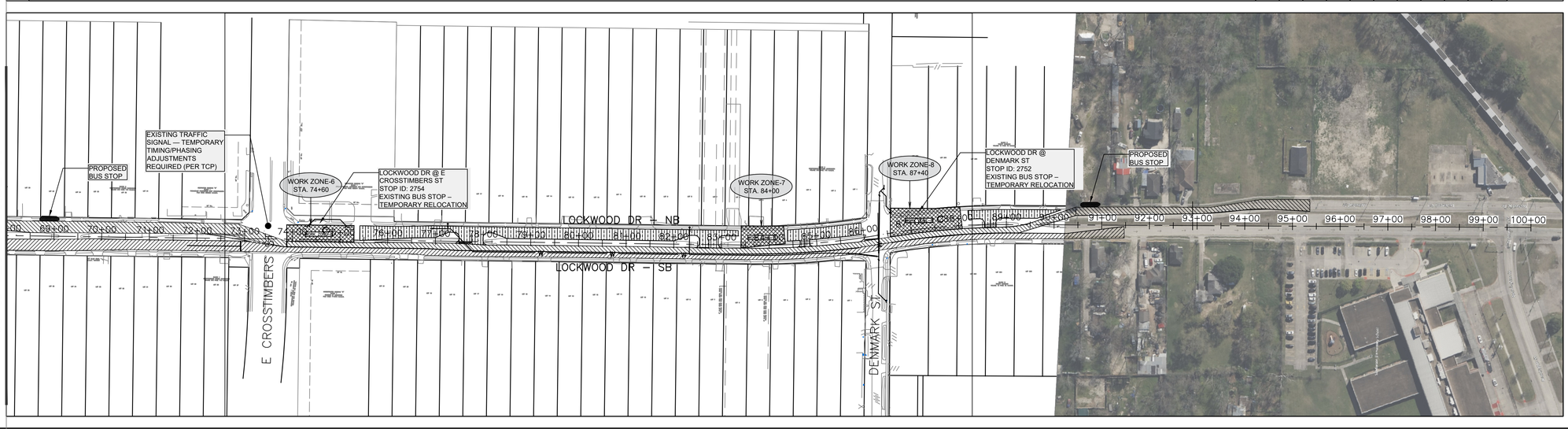

0 125' 250'
HORIZONTAL SCALE IN FEET

TCP LEGEND

- NB THROUGH TRAFFIC – OPEN
- SB THROUGH TRAFFIC – OPEN
- WORK ZONE (ACTIVE CONSTRUCTION) (CONTRACTOR STAGING & OPERATIONS AREA)
- LOCAL ACCESS ONLY (RESIDENTS/BUSINESSES/EMERGENCY)
- TRAFFIC EXCLUSION ZONE (NO VEHICLES) (CLOSED TO ALL TRAFFIC – AVAILABLE FOR CONTRACTOR USE IF NEEDED)
- TRAFFIC SAFETY BUFFER
- EXISTING TRAFFIC FLOW
- PROPOSED TCP TRAFFIC FLOW
- CHANNELIZATION DEVICES
- TYPE III BARRICADE

GENERAL TCP NOTES

1. IMPLEMENT TRAFFIC CONTROL PER APPROVED TCP AND CURRENT TMUTCD/MUTCD STANDARDS.
2. CONTRACTOR SHALL MAINTAIN SAFE TWO–WAY TRAFFIC AND LOCAL ACCESS AT ALL TIMES UNLESS OTHERWISE NOTED.
3. ALL SIGNING, CHANNELIZATION DEVICES, AND TEMPORARY PAVEMENT MARKINGS SHALL BE INSTALLED PRIOR TO ANY LANE CLOSURES.
4. FIELD CONDITIONS MAY REQUIRE MINOR ADJUSTMENTS; ANY SIGNIFICANT DEVIATION FROM TCP REQUIRES ENGINEER/COH APPROVAL.
5. MAINTAIN EMERGENCY VEHICLE ACCESS THROUGH PROJECT LIMITS AT ALL TIMES.
6. EXISTING TRAFFIC SIGNALS WITHIN/ADJACENT TO WORK LIMITS SHALL BE TEMPORARILY ADJUSTED (TIMING/PHASING/DETECTION AS REQUIRED) TO MATCH TCP AND MAINTAIN OPERATIONS; COORDINATE WITH COH TRAFFIC OPERATIONS PRIOR TO IMPLEMENTATION.
7. METRO BUS STOPS TO REMAIN IN SERVICE MAINTAIN ADA ACCESS AND MINIMUM CLEAR PATH TO EXISTING STOP PAD.
8. METRO BUS STOP(S) TO BE TEMPORARILY RELOCATED CONTRACTOR SHALL COORDINATE LOCATION, SIGNAGE, AND ADA ACCESS WITH METRO PRIOR TO RELOCATION.
9. METRO BUS STOP(S) TEMPORARILY SUSPENDED CONTRACTOR SHALL COORDINATE ADVANCE NOTICE AND POST REQUIRED TEMPORARY SIGNAGE PER METRO/AGENCY REQUIREMENTS.

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APRIL 2026

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PHASE II TRAFFIC CONTROL PLAN

OVERALL TCP PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–001000–0032–4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 72 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 10:19 AM

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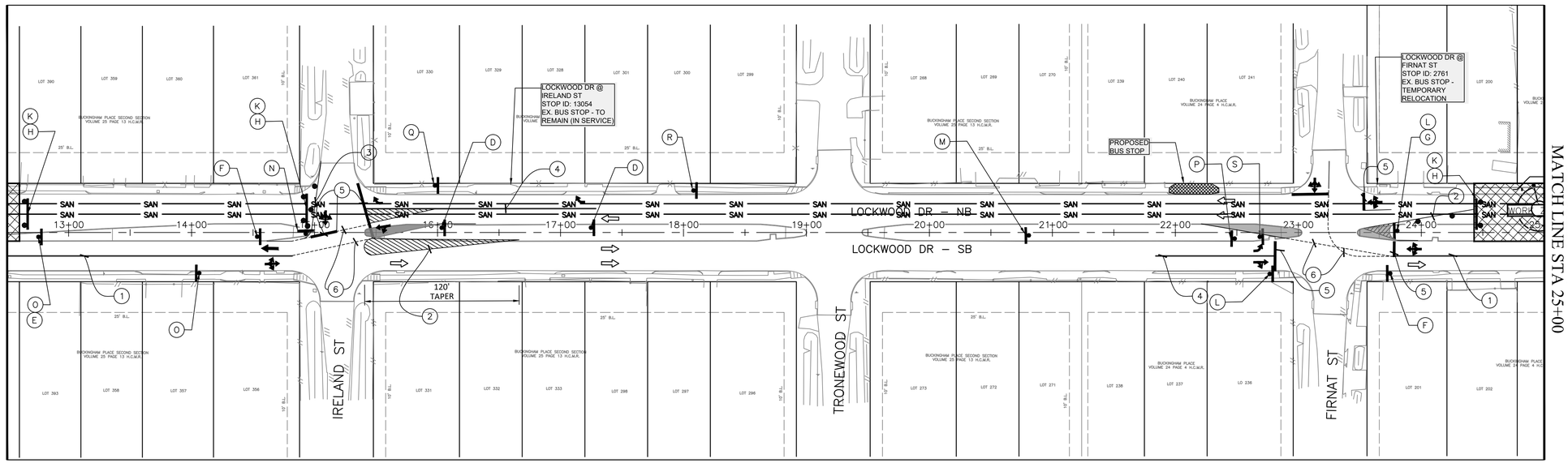
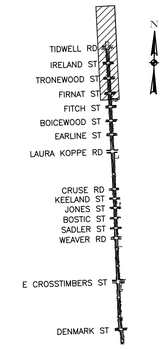


A	B	C	D	E	F	G	H	I	J	
ROAD WORK AHEAD	LEFT LANE CLOSED / AHEAD	END ROAD WORK			CW6-3 36 X 36 / W13-1P 18 X 18 / 35 MPH	ROAD CLOSED LOCAL TRAFFIC ONLY	ROAD CLOSED			
CW20-1D 48 X 48	CW20-5LD 48 X 48 CW16-3 30 X 12	G20-2 36 X 18	CW1-4L 36 X 36	CW1-4R 36 X 36		R11-3 60" X 30"	R11-3 60" X 30"	FLASHING ARROW PANEL (RIGHT)	FLASHING ARROW PANEL (LEFT)	
K	L	M	N	O	P	Q	R	S	T	
TYPE III BARRICADE W/TYPE A FLASHING WARNING LIGHT	DO NOT ENTER	LEFT LANE MUST TURN LEFT	STOP		ONLY	ONLY	RIGHT LANE MUST TURN RIGHT	KEEP RIGHT	END ROAD WORK	
	R5-1 36 X 36	R3-7L 30 X 30	R1-1 36 X 36	R3-6 (L&R) 30 X 36	R3-5L 30 X 36	R3-5R 30 X 36	R3-7R 30 X 30	R4-7a 30 X 36	G20-2 36 X 18	

SPACING FOR CHANNELING DEVICES

A. PLASTIC DRUMS ON MERGING TAPER @ 30' C–C WITH CHEVRON SIGN @ 60' C–C AND TYPE "C" WARNING LIGHT (FOR OVERNIGHT CLOSURE)
B. PLASTIC DRUMS ON DOWNSTREAM TAPER @ 30' C–C
C. PLASTIC DRUMS ON RADII @ 5' C–C
D. PLASTIC DRUMS ON TANGENT @ 35' C–C WITH VERTICAL PANEL @ 70' C–C AND TYPE "C" WARNING LIGHT @ 70' C–C (FOR OVERNIGHT CLOSURE)
E. PLASTIC DRUMS IN FRONT OF CONSTRUCTION ZONE @ 20' C–C WITH VERTICAL PANEL @ 40' C–C AND TYPE "A" WARNING LIGHT @ 40' C–C (FOR OVERNIGHT CLOSURE)
F. CONCRETE TRAFFIC BARRIER (C.T.B.) OR LOW PROFILE CONCRETE TRAFFIC BARRIER (L.P.C.T.B.) WITH REFLECTORS @ 10' C–C IF PAVEMENT DROP IS MORE THAN TWELVE INCHES (12") OR PLASTIC DRUMS W/GUARD RAIL MOUNTED.

NOTE:– SPACINGS SHOWN ON TRAFFIC CONTROL PLANS SHALL BE SUPERSEDED BY THE ABOVE SPACINGS. SPACINGS MAY BE ADJUSTED TO PROVIDE DRIVEWAYS, INTERSECTIONS AND/OR MEDIAN OPENINGS.



KEY PLAN

NO.	DATE	REVISION	APP.

0 50' 100'
HORIZONTAL SCALE IN FEET

TCP LEGEND

- WORK ZONE (ACTIVE CONSTRUCTION)
- TEMPORARY PAVEMENT
- PAVEMENT CROSS HATCH
- EXISTING TRAFFIC FLOW
- PROPOSED TCP TRAFFIC FLOW
- TYPE III BARRICADE
- CHANNELIZATION DEVICES: PLASTIC DRUM
- SIGN ON POST
- (1) 4" TEMP. RPMs/BUTTONS + DOUBLE YELLOW SOLID STRIPE
- (2) 4" TEMP. RPMs/BUTTONS + YELLOW SOLID STRIPE
- (3) 4" TEMP. RPMs/BUTTONS + WHITE SOLID STRIPE
- (4) 8" TEMP. PAVEMENT MARKING (WHITE SOLID STRIPE)
- (5) 24" TEMP. PAVEMENT MARKING (WHITE SOLID STRIPE)
- (6) DOTTED PAVEMENT MARKING (CAT TRACKS)

NOTE:

1. CONTRACTOR SHALL ADJUST LOCATION OF TRAFFIC SIGNAL HEADS AND OVERHEAD SIGNS TO LINE–UP WITH TEMPORARY TRAFFIC LANES AT ALL TIMES.
2. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO ANY OF THE TRAFFIC SIGNAL COMPONENTS AND ANY OF THE INTERSECTION PHYSICAL CONDITIONS INCLUDING, DETECTION, UNDERGROUND WIRES AND CABLES, WHEELCHAIR RAMPS, CROSSWALKS, BUTTONS, AND CABINETS. THE CONTRACTOR IS TO RESTORE THE INTERSECTION AND THE SIGNAL OPERATION TO ITS ORIGINAL CONDITIONS.
3. A 10' MINIMUM LANE WIDTH FOR EMERGENCY SHALL BE MADE AVAILABLE AND MAINTAINED BY THE CONTRACTOR AT ALL TIME.
4. REFER TO COH ONE LANE CLOSURE DETAIL 01555–04 FOR LANE CLOSURES DURING THE INSTALLATION OF ASPHALT AT THE MEDIANS.
5. CONTRACTOR TO PROVIDE A SECURITY FENCE THAT SURROUNDS THE SURFACE WORK SITE FOR THE TUNNEL SHAFTS IN ACCORDANCE WITH THE CITY OF HOUSTON SPECIFICATIONS.
6. THE CONTRACTOR SHALL MAINTAIN PEDESTRIAN ACCESSIBILITY TO PUSH BUTTONS AND PROPER SIGNAL ALIGNMENT THROUGHOUT TCP STAGES. OTHERWISE BAG PEDESTRIAN SIGNAL HEADS AND INSTALL CROSSWALK CLOSED SIGNS AND PROVIDE PEDESTRIAN DETOUR.
7. CONTRACTOR SHALL MAINTAIN MINIMUM OF ONE DRIVEWAY TO ALL COMMERCIAL PROPERTIES AT ALL TIMES.
8. MAINTAIN ACCESS TO RESIDENTIAL DRIVEWAYS AT ALL TIMES AND COORDINATE RESIDENTIAL DRIVEWAY CLOSURES WITH PROPERTY OWNERS.

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SURVEYED BY: LANDTECH
FB NO. P–

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APRIL 2026

TIISETSO MASIANE, P.E.
TX PE NO. 139211

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

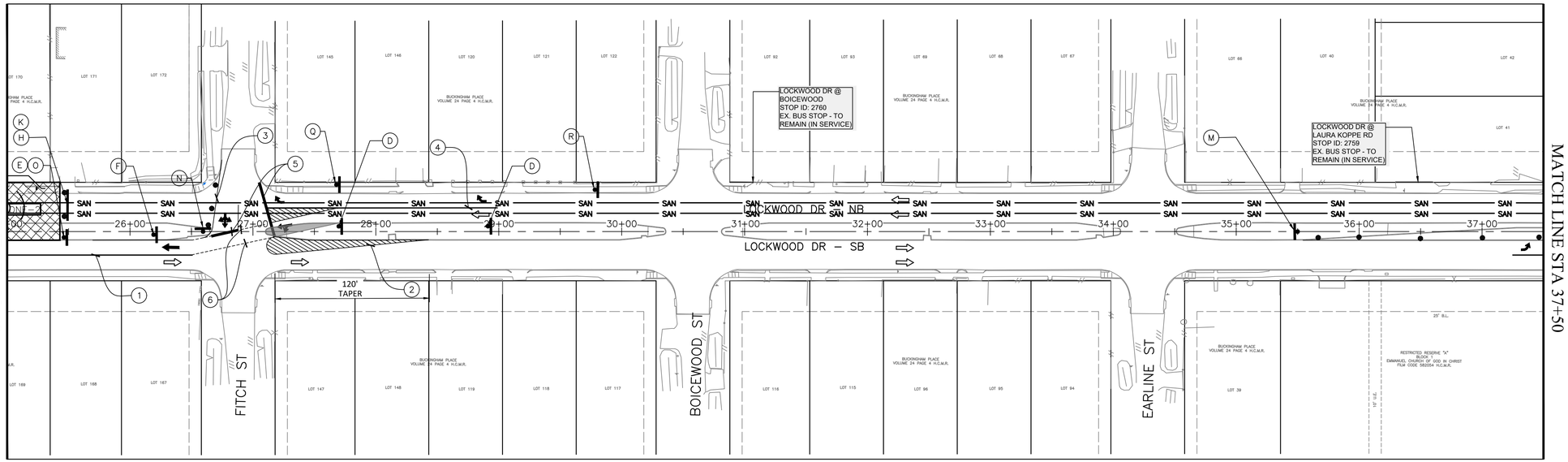
CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

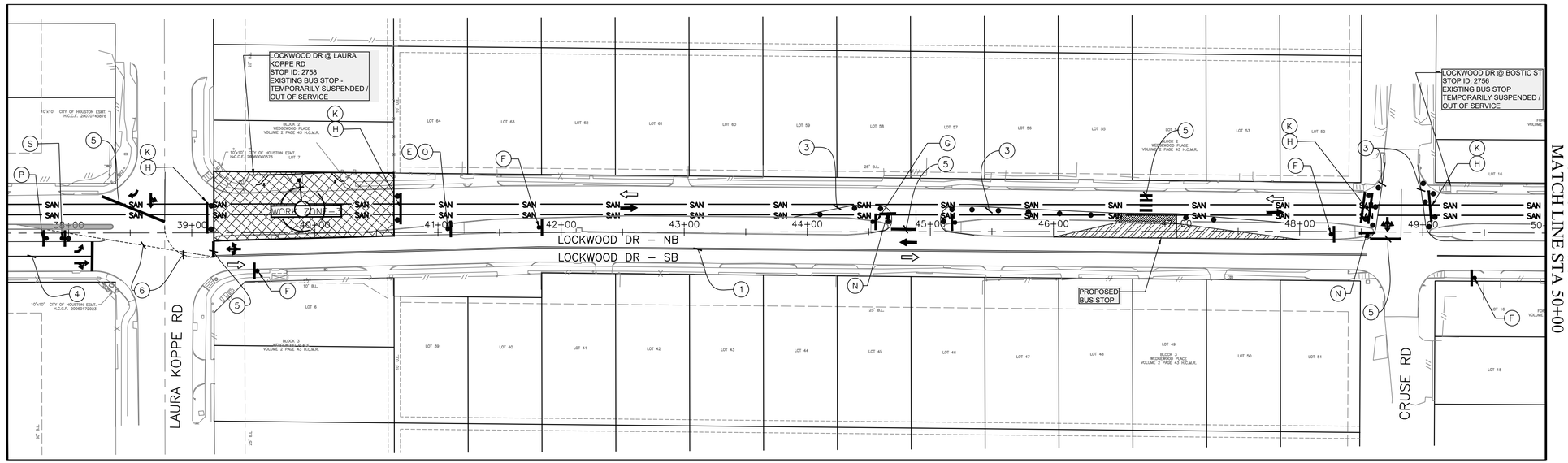
PHASE II – TRAFFIC CONTROL PLAN

TCP PLAN–1: STA. 0+00 TO 25+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–001000–0032–4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 73 OF 124	

60% SUBMITTAL





TCP LEGEND

- WORK ZONE (ACTIVE CONSTRUCTION)
- TEMPORARY PAVEMENT
- PAVEMENT CROSS HATCH
- EXISTING TRAFFIC FLOW
- PROPOSED TCP TRAFFIC FLOW
- TYPE III BARRICADE
- CHANNELIZATION DEVICES: PLASTIC DRUM
- SIGN ON POST
- (1) 4" TEMP. RPMs/BUTTONS + DOUBLE YELLOW SOLID STRIPE
- (2) 4" TEMP. RPMs/BUTTONS + YELLOW SOLID STRIPE
- (3) 4" TEMP. RPMs/BUTTONS + WHITE SOLID STRIPE
- (4) 8" TEMP. PAVEMENT MARKING (WHITE SOLID STRIPE)
- (5) 24" TEMP. PAVEMENT MARKING (WHITE SOLID STRIPE)
- (6) DOTTED PAVEMENT MARKING (CAT TRACKS)

NOTE:
1. CONTRACTOR SHALL ADJUST LOCATION OF TRAFFIC SIGNAL HEADS AND OVERHEAD SIGNS TO LINE–UP WITH TEMPORARY TRAFFIC LANES AT ALL TIMES.
2. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO ANY OF THE TRAFFIC SIGNAL COMPONENTS AND ANY OF THE INTERSECTION PHYSICAL CONDITIONS INCLUDING, DETECTION, UNDERGROUND WIRES AND CABLES, WHEELCHAIR RAMPS, CROSSWALKS, BUTTONS, AND CABINETS. THE CONTRACTOR IS TO RESTORE THE INTERSECTION AND THE SIGNAL OPERATION TO ITS ORIGINAL CONDITIONS.
3. A 10' MINIMUM LANE WIDTH FOR EMERGENCY SHALL BE MADE AVAILABLE AND MAINTAINED BY THE CONTRACTOR AT ALL TIME.
4. REFER TO COH ONE LANE CLOSURE DETAIL 01555–04 FOR LANE CLOSURES DURING THE INSTALLATION OF ASPHALT AT THE MEDIANS.
5. CONTRACTOR TO PROVIDE A SECURITY FENCE THAT SURROUNDS THE SURFACE WORK SITE FOR THE TUNNEL SHAFTS IN ACCORDANCE WITH THE CITY OF HOUSTON SPECIFICATIONS.
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7. CONTRACTOR SHALL MAINTAIN MINIMUM OF ONE DRIVEWAY TO ALL COMMERCIAL PROPERTIES AT ALL TIMES.
8. MAINTAIN ACCESS TO RESIDENTIAL DRIVEWAYS AT ALL TIMES AND COORDINATE RESIDENTIAL DRIVEWAY CLOSURES WITH PROPERTY OWNERS.

NO.	DATE	REVISION	APP.

stv
Texas Registered Engineering Firm F–204
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11757 Katy Freeway
Suite 1540
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(713)532–1730
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TRILOGY ENGINEERING SERVICES
238 WESTCOTT STREET
HOUSTON, TEXAS 77007
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APRIL 2026

TIISETSO MASIANE, P.E.
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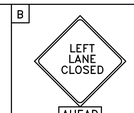
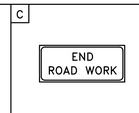
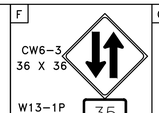
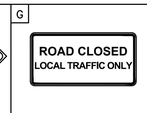
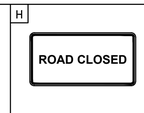
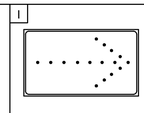
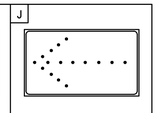
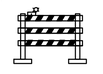
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST
PHASE II – TRAFFIC CONTROL PLAN
TCP PLAN–2: STA. 25+00 TO 50+00

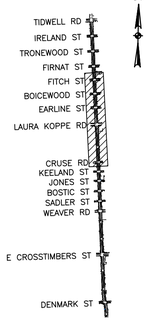
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–001000–0032–4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 74 OF 124	

60% SUBMITTAL

A	B	C	D	E	F	G	H	I	J	
										
ROAD WORK AHEAD	LEFT LANE CLOSED AHEAD	END ROAD WORK			CW6–3 36 X 36 W13–1P 18 X 18 35 MPH	ROAD CLOSED LOCAL TRAFFIC ONLY	ROAD CLOSED			
CW20–1D 48 X 48	CW20–5LD 48 X 48 CW16–3 30 X 12	G20–2 36 X 18	CW1–4L 36 X 36	CW1–4R 36 X 36		R11–3 60" X 30"	R11–3 60" X 30"	FLASHING ARROW PANEL (RIGHT)	FLASHING ARROW PANEL (LEFT)	
K	L	M	N	O	P	Q	R	S	T	
										
TYPE III BARRICADE W/TYPE A FLASHING WARNING LIGHT	DO NOT ENTER	LEFT LANE MUST TURN LEFT	STOP		ONLY	ONLY	RIGHT LANE MUST TURN RIGHT	KEEP RIGHT	END ROAD WORK	
	R5–1 36 X 36	R3–7L 30 X 30	R1–1 36 X 36	R3–6 (L&R) 30 X 36	R3–5L 30 X 36	R3–5R 30 X 36	R3–7R 30 X 30	R4–7a 30 X 36	G20–2 36 X 18	

SPACING FOR CHANNELING DEVICES
- A. PLASTIC DRUMS ON MERGING TAPER @ 30' C–C WITH CHEVRON SIGN @ 60' C–C AND TYPE "C" WARNING LIGHT (FOR OVERNIGHT CLOSURE)
- B. PLASTIC DRUMS ON DOWNSTREAM TAPER @ 30' C–C
- C. PLASTIC DRUMS ON RADII @ 5' C–C
- D. PLASTIC DRUMS ON TANGENT @ 35' C–C WITH VERTICAL PANEL @ 70' C–C AND TYPE "C" WARNING LIGHT @ 70' C–C (FOR OVERNIGHT CLOSURE)
- E. PLASTIC DRUMS IN FRONT OF CONSTRUCTION ZONE @ 20' C–C WITH VERTICAL PANEL @ 40' C–C AND TYPE "A" WARNING LIGHT @ 40' C–C (FOR OVERNIGHT CLOSURE)
- F. CONCRETE TRAFFIC BARRIER (C.T.B.) OR LOW PROFILE CONCRETE TRAFFIC BARRIER (L.P.C.T.B.) WITH REFLECTORS @ 10' C–C IF PAVEMENT DROP IS MORE THAN TWELVE INCHES (12") OR PLASTIC DRUMS W/GUARD RAIL MOUNTED.

NOTE:– SPACINGS SHOWN ON TRAFFIC CONTROL PLANS SHALL BE SUPERSEDED BY THE ABOVE SPACINGS. SPACINGS MAY BE ADJUSTED TO PROVIDE DRIVEWAYS, INTERSECTIONS AND/OR MEDIAN OPENINGS.

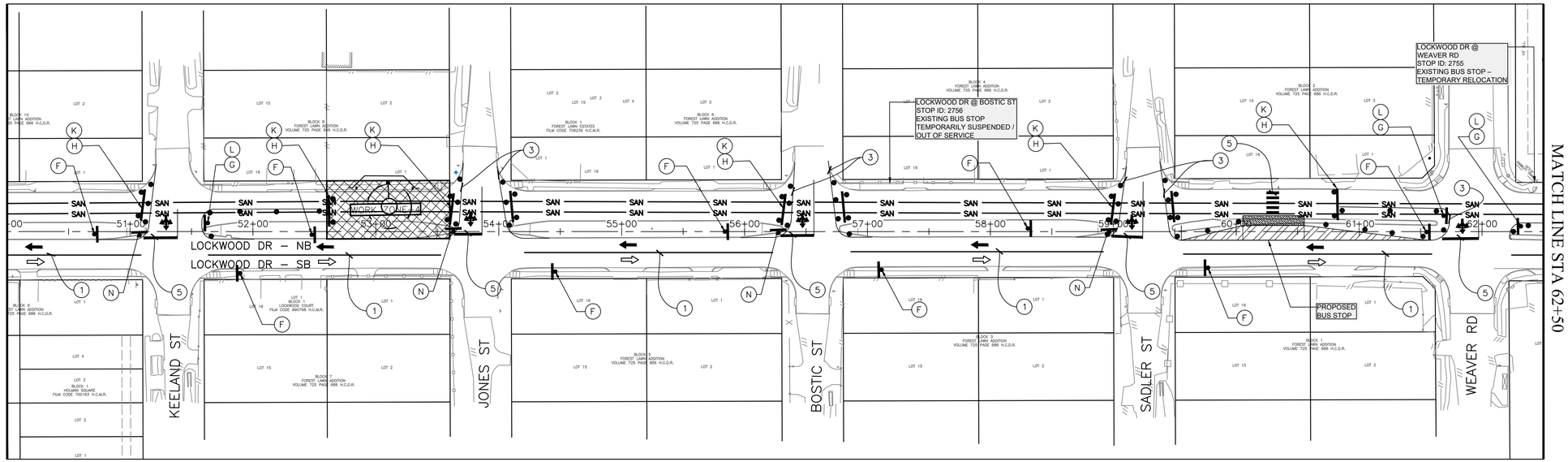


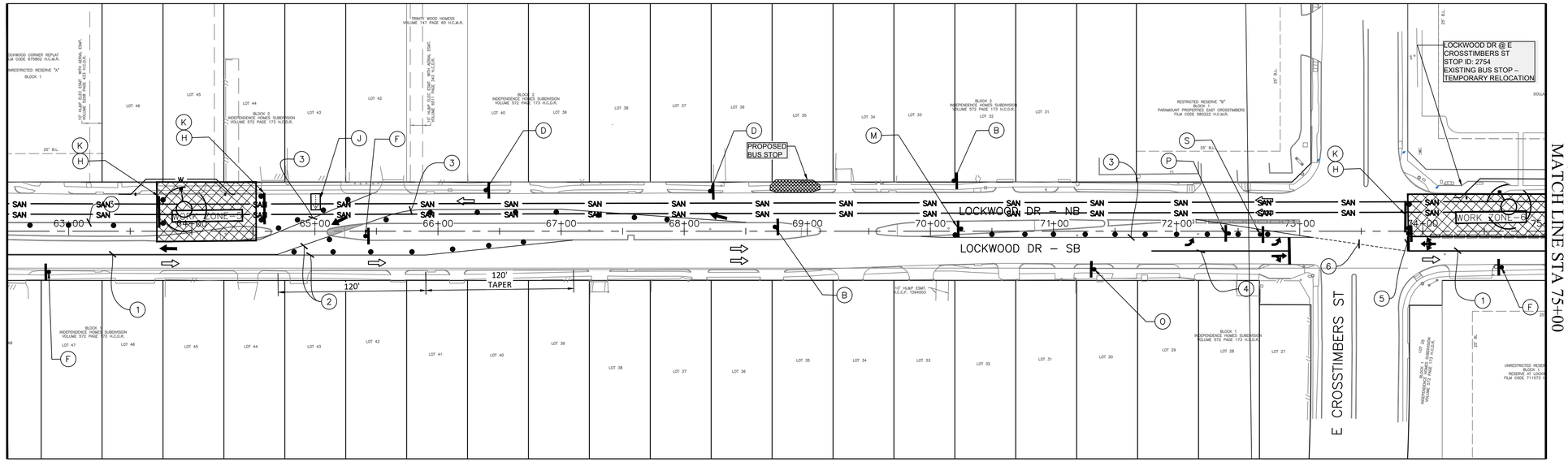
KEY PLAN

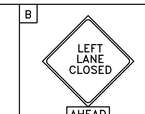
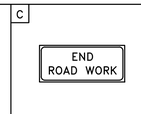
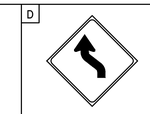
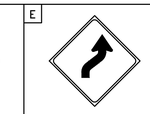
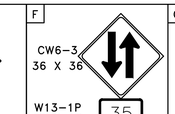
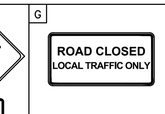
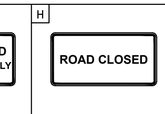
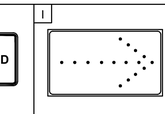
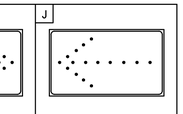
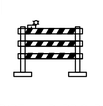
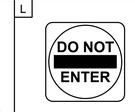
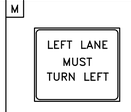
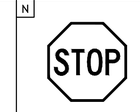
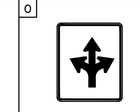
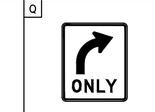
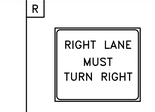
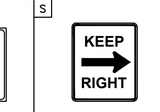
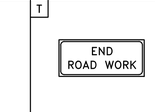
PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 10:19 AM

FILE PATH: 230012201_SV_TCP_PLAN.dwg

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 10:19 AM
FILE PATH: 230012201_SV_TCP_PLAN.dwg





A	B	C	D	E	F	G	H	I	J
CW20–1D 48 X 48	 CW20–5LD 48 X 48 CW16–3 30 X 12	 G20–2 36 X 18	 CW1–4L 36 X 36	 CW1–4R 36 X 36	 CW6–3 36 X 36 W13–1P 18 X 18 35 MPH	 R11–3 60" X 30"	 R11–3 60" X 30"	 FLASHING ARROW PANEL (RIGHT)	 FLASHING ARROW PANEL (LEFT)
K	L	M	N	O	P	Q	R	S	T
 TYPE III BARRICADE W/TYPE A FLASHING WARNING LIGHT	 R5–1 36 X 36	 R3–7L 30 X 30	 R1–1 36 X 36	 R3–6 (L&R) 30 X 36	R3–5L 30 X 36	 R3–5R 30 X 36	 R3–7R 30 X 30	 R4–7a 30 X 36	 G20–2 36 X 18

SPACING FOR CHANNELING DEVICES

A. PLASTIC DRUMS ON MERGING TAPER @ 30' C–C WITH CHEVRON SIGN @ 60' C–C AND TYPE "C" WARNING LIGHT (FOR OVERNIGHT CLOSURE)
B. PLASTIC DRUMS ON DOWNSTREAM TAPER @ 30' C–C
C. PLASTIC DRUMS ON RADII @ 5' C–C
D. PLASTIC DRUMS ON TANGENT @ 35' C–C WITH VERTICAL PANEL @ 70' C–C AND TYPE "C" WARNING LIGHT @ 70' C–C (FOR OVERNIGHT CLOSURE)
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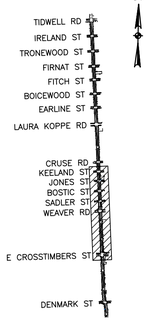

KEY PLAN

NO.	DATE	REVISION	APP.

0 50' 100'
HORIZONTAL SCALE IN FEET

TCP LEGEND

- WORK ZONE (ACTIVE CONSTRUCTION)
- TEMPORARY PAVEMENT
- PAVEMENT CROSS HATCH
- EXISTING TRAFFIC FLOW
- PROPOSED TCP TRAFFIC FLOW
- TYPE III BARRICADE
- CHANNELIZATION DEVICES: PLASTIC DRUM
- SIGN ON POST
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4. REFER TO COH ONE LANE CLOSURE DETAIL 01555–04 FOR LANE CLOSURES DURING THE INSTALLATION OF ASPHALT AT THE MEDIANS.
5. CONTRACTOR TO PROVIDE A SECURITY FENCE THAT SURROUNDS THE SURFACE WORK SITE FOR THE TUNNEL SHAFTS IN ACCORDANCE WITH THE CITY OF HOUSTON SPECIFICATIONS.
6. THE CONTRACTOR SHALL MAINTAIN PEDESTRIAN ACCESSIBILITY TO PUSH BUTTONS AND PROPER SIGNAL ALIGNMENT THROUGHOUT TCP STAGES. OTHERWISE BAG PEDESTRIAN SIGNAL HEADS AND INSTALL CROSSWALK CLOSED SIGNS AND PROVIDE PEDESTRIAN DETOUR.
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PH: 877.463.1699
TX FIRM NO: 17715

SURVEYED BY: LANDTECH
FB NO. P–

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APRIL 2026

TIISETSO MASIANE, P.E.
TX PE NO. 139211

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

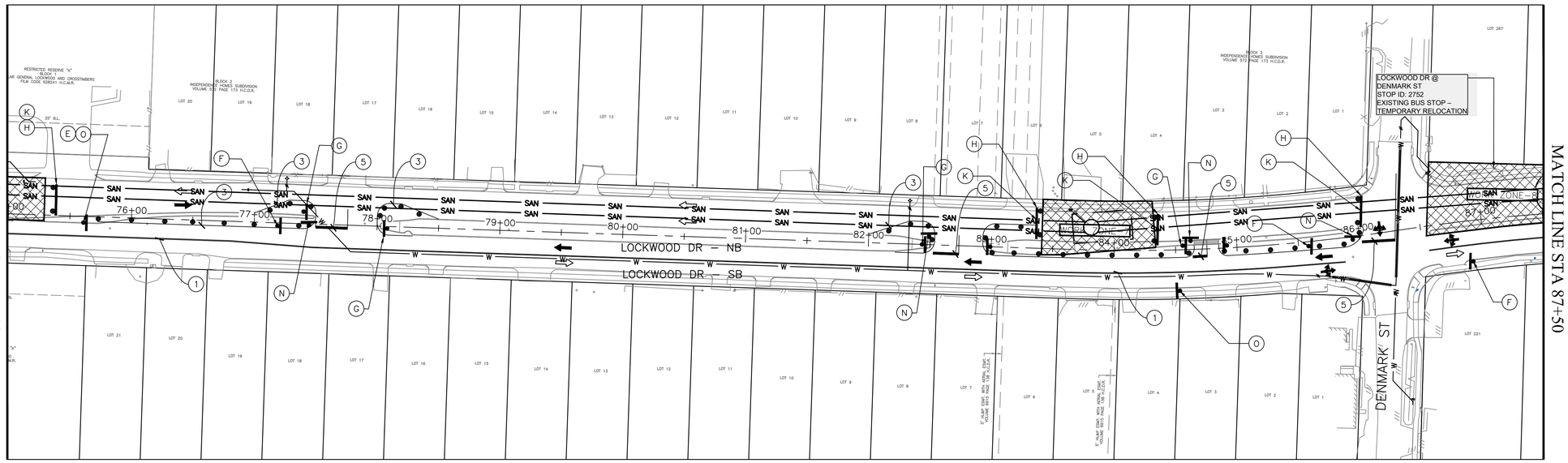
CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

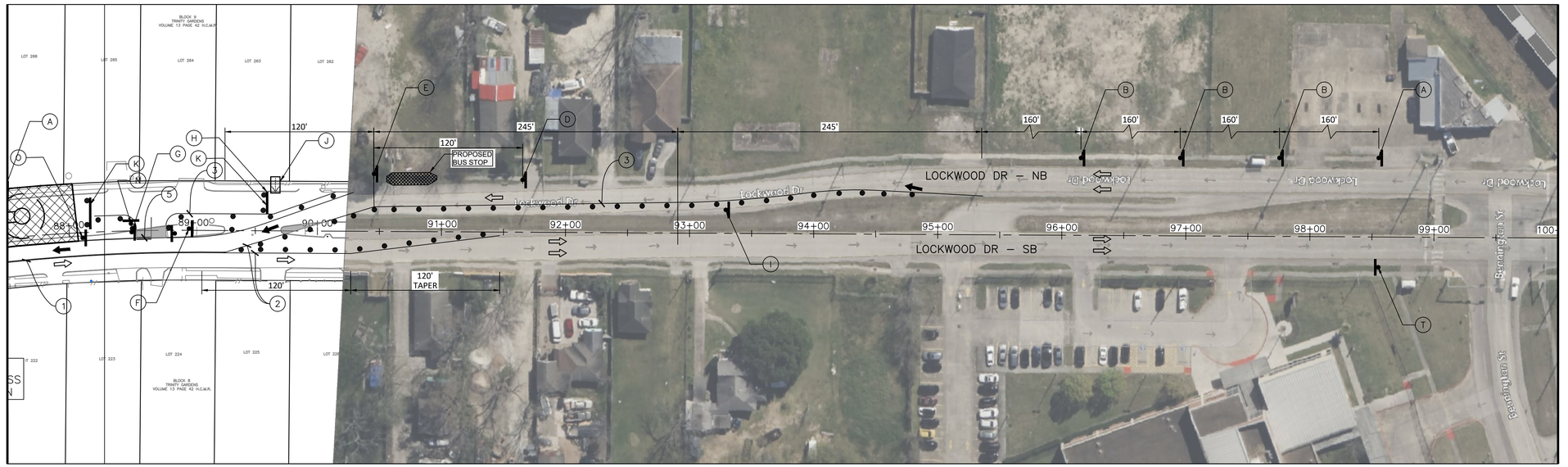
PHASE II – TRAFFIC CONTROL PLAN

TCP PLAN–3: STA. 50+00 TO 75+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–001000–0032–4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 75 OF 124	

60% SUBMITTAL



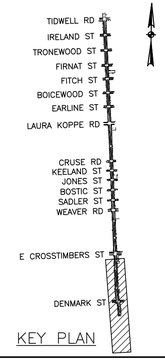


A	B	C	D	E	F	G	H	I	J	
ROAD WORK AHEAD CW20-1D 48 X 48	LEFT LANE CLOSED AHEAD CW20-5LD 48 X 48 CW16-3 30 X 12	END ROAD WORK G20-2 36 X 18	CW1-4L 36 X 36	CW1-4R 36 X 36	CW6-3 36 X 36 W13-1P 18 X 18 35 MPH	ROAD CLOSED LOCAL TRAFFIC ONLY R11-3 60" X 30"	ROAD CLOSED R11-3 60" X 30"	FLASHING ARROW PANEL (RIGHT)	FLASHING ARROW PANEL (LEFT)	
K	L	M	N	O	P	Q	R	S	T	
TYPE III BARRICADE W/TYPE A FLASHING WARNING LIGHT	DO NOT ENTER R5-1 36 X 36	LEFT LANE MUST TURN LEFT R3-7L 30 X 30	STOP R1-1 36 X 36	R3-6 (L&R) 30 X 36	ONLY R3-5L 30 X 36	ONLY R3-5R 30 X 36	RIGHT LANE MUST TURN RIGHT R3-7R 30 X 30	KEEP RIGHT R4-7a 30 X 36	END ROAD WORK G20-2 36 X 18	

SPACING FOR CHANNELING DEVICES

A. PLASTIC DRUMS ON MERGING TAPER @ 30' C–C WITH CHEVRON SIGN @ 60' C–C AND TYPE "C" WARNING LIGHT (FOR OVERNIGHT CLOSURE)
B. PLASTIC DRUMS ON DOWNSTREAM TAPER @ 30' C–C
C. PLASTIC DRUMS ON RADII @ 5' C–C
D. PLASTIC DRUMS ON TANGENT @ 35' C–C WITH VERTICAL PANEL @ 70' C–C AND TYPE "C" WARNING LIGHT @ 70' C–C (FOR OVERNIGHT CLOSURE)
E. PLASTIC DRUMS IN FRONT OF CONSTRUCTION ZONE @ 20' C–C WITH VERTICAL PANEL @ 40' C–C AND TYPE "A" WARNING LIGHT @ 40' C–C (FOR OVERNIGHT CLOSURE)
F. CONCRETE TRAFFIC BARRIER (C.T.B.) OR LOW PROFILE CONCRETE TRAFFIC BARRIER (L.P.C.T.B.) WITH REFLECTORS @ 10' C–C IF PAVEMENT DROP IS MORE THAN TWELVE INCHES (12") OR PLASTIC DRUMS W/GUARD RAIL MOUNTED.

NOTE:– SPACINGS SHOWN ON TRAFFIC CONTROL PLANS SHALL BE SUPERSEDED BY THE ABOVE SPACINGS. SPACINGS MAY BE ADJUSTED TO PROVIDE DRIVEWAYS, INTERSECTIONS AND/OR MEDIAN OPENINGS.



KEY PLAN

N

0 50' 100'
HORIZONTAL SCALE IN FEET

TCP LEGEND

- WORK ZONE (ACTIVE CONSTRUCTION)
- TEMPORARY PAVEMENT
- PAVEMENT CROSS HATCH
- EXISTING TRAFFIC FLOW
- PROPOSED TCP TRAFFIC FLOW
- TYPE III BARRICADE
- CHANNELIZATION DEVICES: PLASTIC DRUM
- SIGN ON POST
- (1) 4" TEMP. RPMs/BUTTONS + DOUBLE YELLOW SOLID STRIPE
- (2) 4" TEMP. RPMs/BUTTONS + YELLOW SOLID STRIPE
- (3) 4" TEMP. RPMs/BUTTONS + WHITE SOLID STRIPE
- (4) 8" TEMP. PAVEMENT MARKING (WHITE SOLID STRIPE)
- (5) 24" TEMP. PAVEMENT MARKING (WHITE SOLID STRIPE)
- (6) DOTTED PAVEMENT MARKING (CAT TRACKS)

NOTE:

1. CONTRACTOR SHALL ADJUST LOCATION OF TRAFFIC SIGNAL HEADS AND OVERHEAD SIGNS TO LINE–UP WITH TEMPORARY TRAFFIC LANES AT ALL TIMES.
2. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO ANY OF THE TRAFFIC SIGNAL COMPONENTS AND ANY OF THE INTERSECTION PHYSICAL CONDITIONS INCLUDING, DETECTION, UNDERGROUND WIRES AND CABLES, WHEELCHAIR RAMPS, CROSSWALKS, BUTTONS, AND CABINETS. THE CONTRACTOR IS TO RESTORE THE INTERSECTION AND THE SIGNAL OPERATION TO ITS ORIGINAL CONDITIONS.
3. A 10' MINIMUM LANE WIDTH FOR EMERGENCY SHALL BE MADE AVAILABLE AND MAINTAINED BY THE CONTRACTOR AT ALL TIME.
4. REFER TO COH ONE LANE CLOSURE DETAIL 01555–04 FOR LANE CLOSURES DURING THE INSTALLATION OF ASPHALT AT THE MEDIANS.
5. CONTRACTOR TO PROVIDE A SECURITY FENCE THAT SURROUNDS THE SURFACE WORK SITE FOR THE TUNNEL SHAFTS IN ACCORDANCE WITH THE CITY OF HOUSTON SPECIFICATIONS.
6. THE CONTRACTOR SHALL MAINTAIN PEDESTRIAN ACCESSIBILITY TO PUSH BUTTONS AND PROPER SIGNAL ALIGNMENT THROUGHOUT TCP STAGES. OTHERWISE BAG PEDESTRIAN SIGNAL HEADS AND INSTALL CROSSWALK CLOSED SIGNS AND PROVIDE PEDESTRIAN DETOUR.
7. CONTRACTOR SHALL MAINTAIN MINIMUM OF ONE DRIVEWAY TO ALL COMMERCIAL PROPERTIES AT ALL TIMES.
8. MAINTAIN ACCESS TO RESIDENTIAL DRIVEWAYS AT ALL TIMES AND COORDINATE RESIDENTIAL DRIVEWAY CLOSURES WITH PROPERTY OWNERS.

NO.	DATE	REVISION	APP.

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Fax (713)532–1734

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SURVEYED BY: LANDTECH
FB NO. P–

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APRIL 2026

TIISETSO MASIANE, P.E.
TX PE NO. 139211

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PHASE II – TRAFFIC CONTROL PLAN

TCP PLAN–4: STA. 75+00 TO 100+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–001000–0032–4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 76 OF 124	

60% SUBMITTAL

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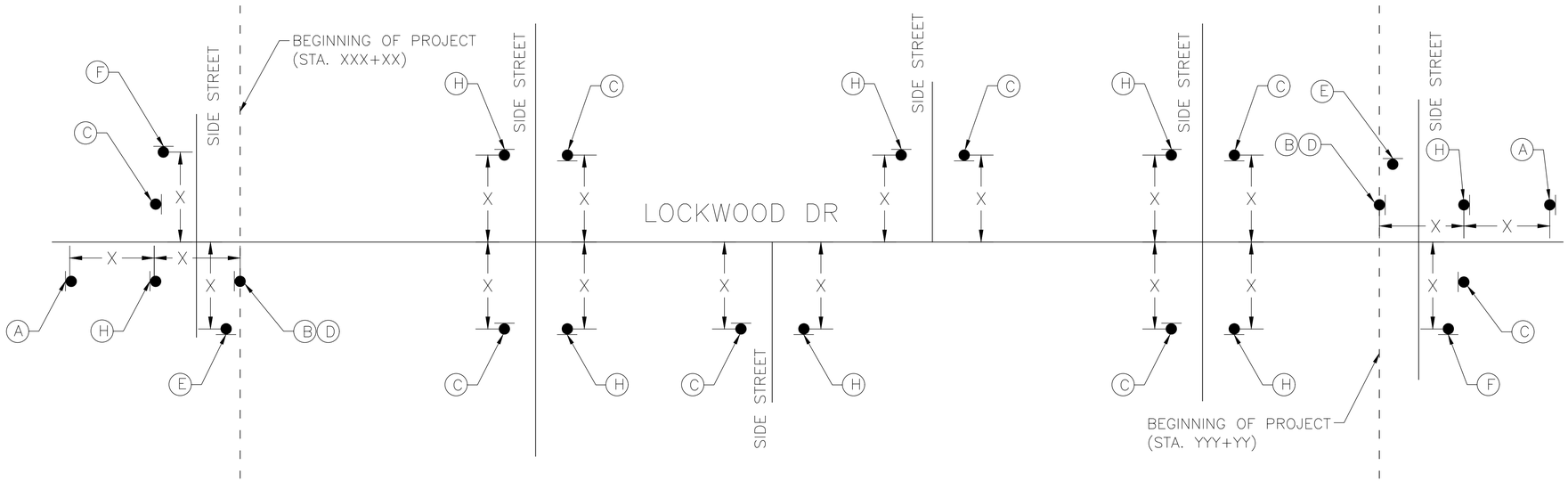

WORK ZONE SIGNS

(A) OBEY WARNING SIGNS STATE LAW — R20-3T

(B) ROAD WORK NEXT YY MILES — G20-1

(C) END ROAD WORK — G20-2

(D) NAME ADDRESS CITY STATE / CONTRACTOR — G20-6

(E) ROAD WORK NEXT YY MILES → — G20-1br

(F) ROAD WORK ← NEXT YY MILES — G20-1bl

(G) ROAD WORK ← NEXT XX MILES NEXT YY MILES → — G20-1a

(H) ROAD WORK AHEAD — CW20-1D

XX MPH — CW13-1P (SEE NOTE 2)

GENERAL NOTES

1. FLAGS ATTACHED TO SIGNS WHERE SHOWN ARE OPTIONAL.
2. ALL TRAFFIC CONTROL DEVICES ILLUSTRATED ARE REQUIRED, EXCEPT THOSE DENOTED WITH THE TRIANGLE SYMBOL ARE OPTIONAL.
3. INACTIVE WORK VEHICLES OR OTHER EQUIPMENT SHOULD BE PARKED NEAR THE RIGHT-OF-WAY LINE AND NOT PARKED ON THE PAVED SHOULDER.
4. A SHADOW VEHICLE WITH A TMA SHOULD BE USED ANYTIME IT CAN BE POSITIONED 30 TO 100 FEET IN ADVANCE OF THE AREA OF CREW EXPOSURE WITHOUT ADVERSELY AFFECTING THE PERFORMANCE OR QUALITY OF THE WORK. IF WORKERS ARE NO LONGER PRESENT BUT ROAD OR WORK CONDITIONS REQUIRE THE TRAFFIC CONTROL TO REMAIN IN PLACE, TYPE 3 BARRICADES OR OTHER CHANNELIZING DEVICES MAY BE SUBSTITUTED FOR THE SHADOW VEHICLE AND TMA.
5. ADDITIONAL SHADOW VEHICLES WITH TMAS MAY BE POSITIONED OFF THE PAVED SURFACE, NEXT TO THOSE SHOWN IN ORDER TO PROTECT WIDER WORK SPACES.
6. CONTRACTOR SHALL PROVIDE AND INSTALL TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH PART VI OF TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD – LATEST EDITION WITH REVISIONS) DURING CONSTRUCTION.
7. OFF DUTY UNIFORMED LAW ENFORCEMENT OFFICERS/FLAGGERS ARE REQUIRED TO DIRECT TRAFFIC WHEN APPLICABLE.

TRAFFIC CONTROL PLAN SECTION SHALL BE COMPLETED BY ENGINEER

ROADWAY	POSTED SPEED	TAPER LENGTH	SPACING CHANNELIZING DEVICES		SIGN SPACING	BUFFER SPACE
			TAPER	TANGENT		
LOCKWOOD DR	35 MPH	225'	35'	70'	160'	120'

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths "L" * *			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L=WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

* Conventional Roads Only

** Taper lengths have been rounded off.
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

NO.	DATE	REVISION	APP.

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APRIL 2026

TIISETSO MASIANE, P.E.
TX PE NO. 139211

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

TRAFFIC CONTROL PLAN

PROJECT APPROACH SIGNING

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 77 OF 124	

60% SUBMITTAL

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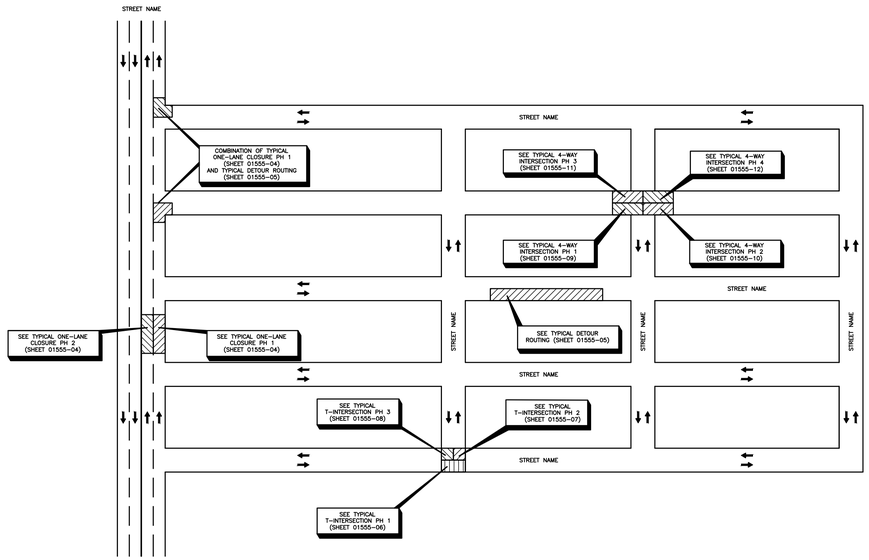
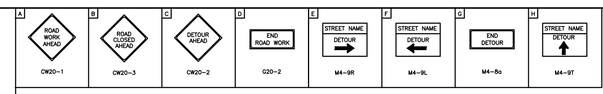
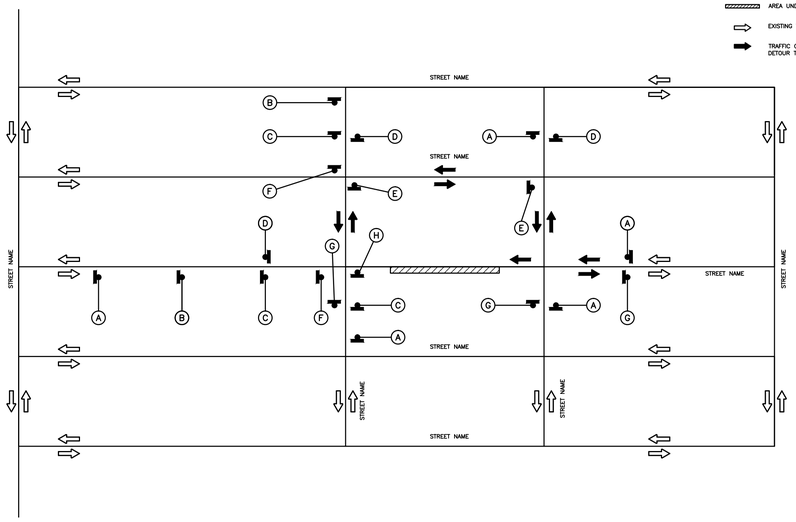


TCP OVERALL TRAFFIC CONTROL LAYOUT
(COH 01555-02)

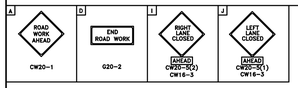


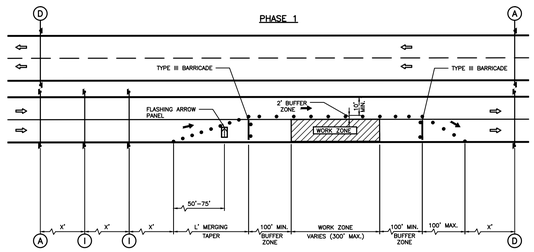


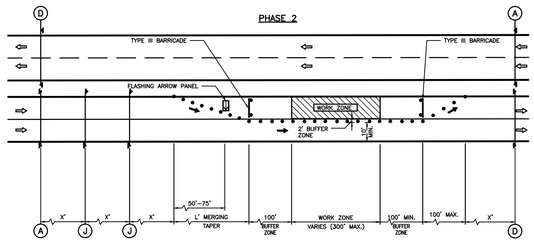
TRAFFIC CONTROL LAYOUT
(COH 01555-03)

LEGEND:
- SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- BARRICADE
- FLASHING ARROW PANEL
- AREA UNDER CONSTRUCTION
- EXISTING TRAVEL WAY
- TRAFFIC CONTROL PLAN DETOUR TRAVEL WAY

NO.	DATE	REVISION	APP.



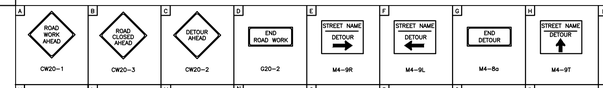




LEGEND:
- SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- BARRICADE
- FLASHING ARROW PANEL
- AREA UNDER CONSTRUCTION
- EXISTING TRAVEL WAY
- TRAFFIC CONTROL PLAN DETOUR TRAVEL WAY

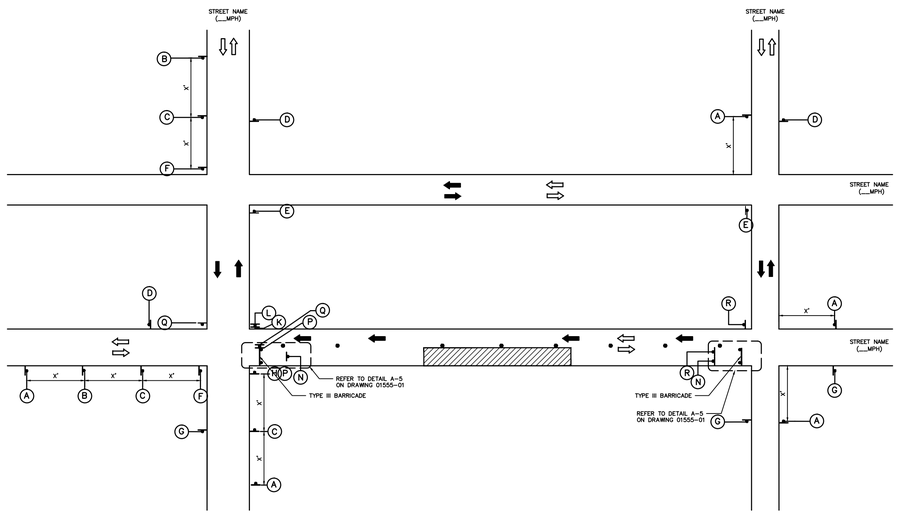
NOTES:
1. RETURN TAPERS AND DOWNSTREAM BARRICADES ARE OPTIONAL ON A DIVIDED ROADWAY SECTION.
2. DOUBLE SIGNS SHALL BE USED ONLY ON ROADWAYS WITH MEDIANS.
3. FOR DIMENSIONS REFER TO SHEET 01555-01.
4. INSTALL FLASHERS ON DRUMS WHERE REQUIRED AND APPROVED BY CITY TRAFFIC ENGINEER.

TCP ONE LANE CLOSURE
PHASE 1 & 2
(COH 01555-04)



NOTES:
1. A 10' MINIMUM LANE WIDTH FOR EMERGENCY SHALL BE MADE AVAILABLE AND MAINTAINED BY THE CONTRACTOR AT ALL TIMES.
2. FOR DIMENSIONS REFER TO SHEET 01555-01.
3. INSTALL FLASHERS ON DRUMS WHERE REQUIRED AND APPROVED BY CITY TRAFFIC ENGINEER.

LEGEND:
- SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- BARRICADE
- FLASHING ARROW PANEL
- AREA UNDER CONSTRUCTION
- EXISTING TRAVEL WAY
- TRAFFIC CONTROL PLAN DETOUR TRAVEL WAY



TCP TYPICAL DETOUR ROUTING
WITH ONE LANE CLOSURE
(ONE BLOCK)
(COH 01555-05)

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11757 Katy Freeway
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HOUSTON, TEXAS 77007
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TX FIRM NO: 17715

SURVEYED BY: LANDTECH
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APRIL 2026

TIISETSO MASIANE, P.E.
TX PE NO. 139211

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

TRAFFIC CONTROL PLAN

TRAFFIC CONTROL STANDARDS-1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 78 OF 124	

60% SUBMITTAL

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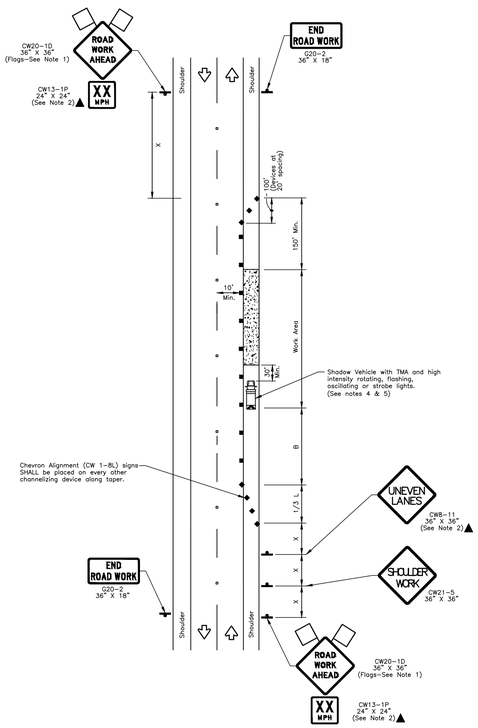
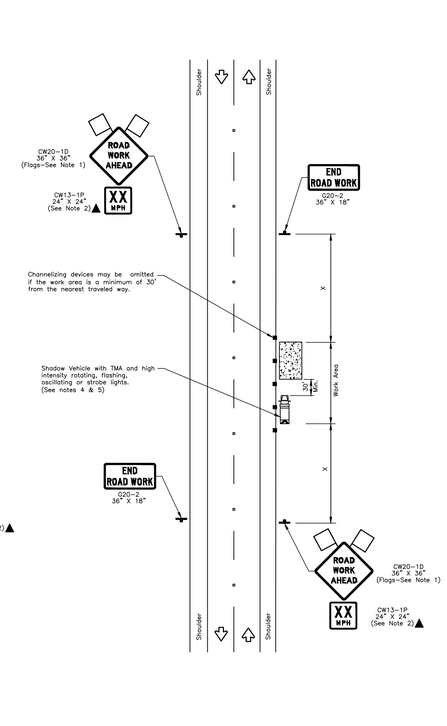
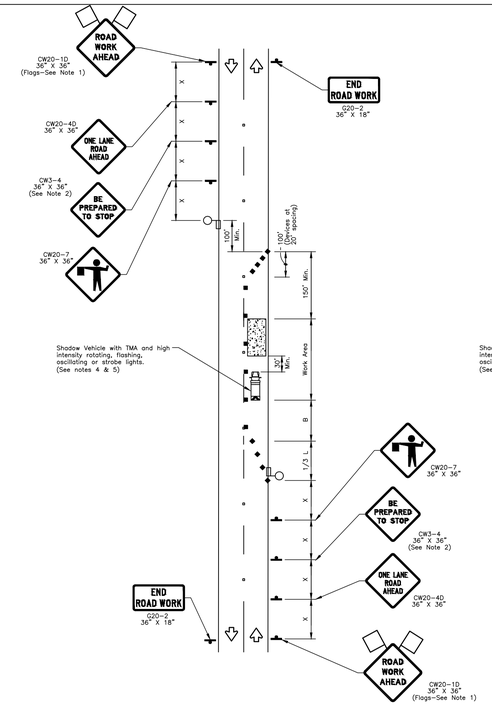


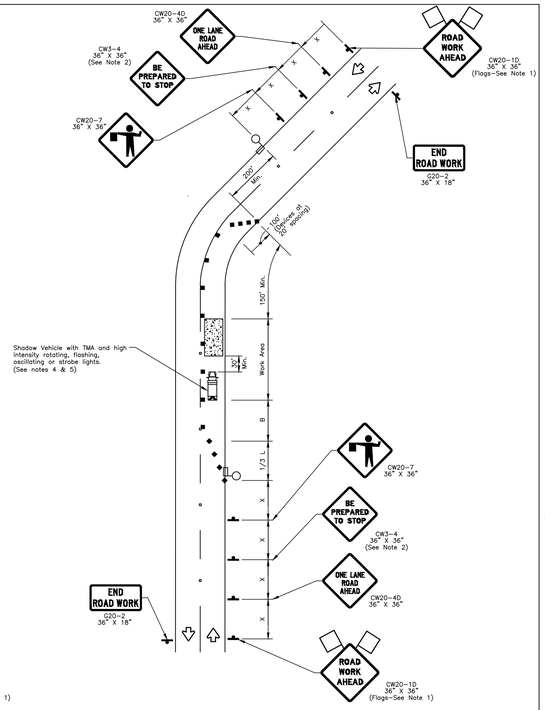
WORK SPACE ON SHOULDER



WORK SPACE NEAR SHOULDER



ONE-LANE TWO-WAY SINGLE LANE CLOSURE
CONTROL WITH FLAGGERS
(ON STRAIGHT SECTION OF ROADWAY)



ONE-LANE TWO-WAY SINGLE LANE CLOSURE
CONTROL WITH FLAGGERS
(ON CURVED SECTION OF ROADWAY)

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

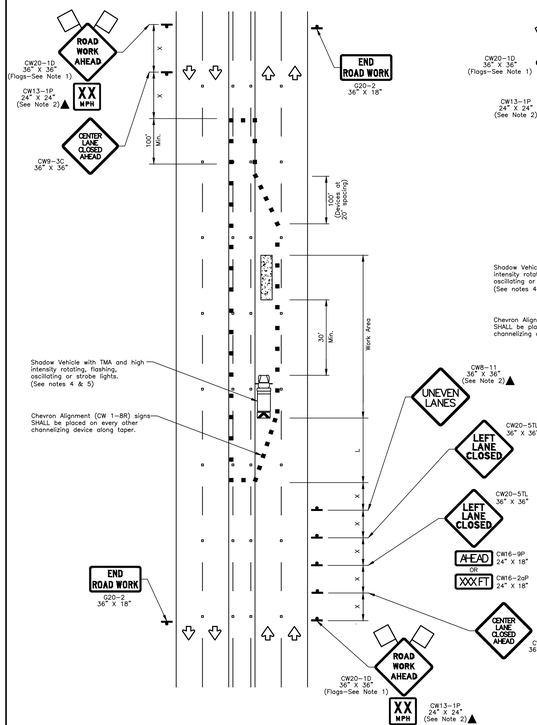
Posted Speed *	Formula	Minimum Desirable Taper Lengths "L" ** 10" Offset	11" Offset	12" Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent	Minimum Sign Spacing "X" * Distance	Suggested Longitudinal Buffer Space "B"
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45		450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55	L=WS	550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

* Conventional Roads Only

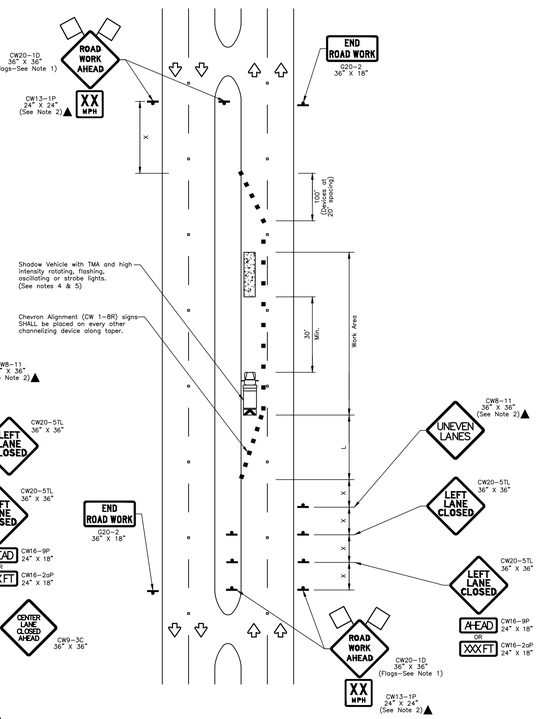
** Taper lengths have been rounded off.
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

GENERAL NOTES

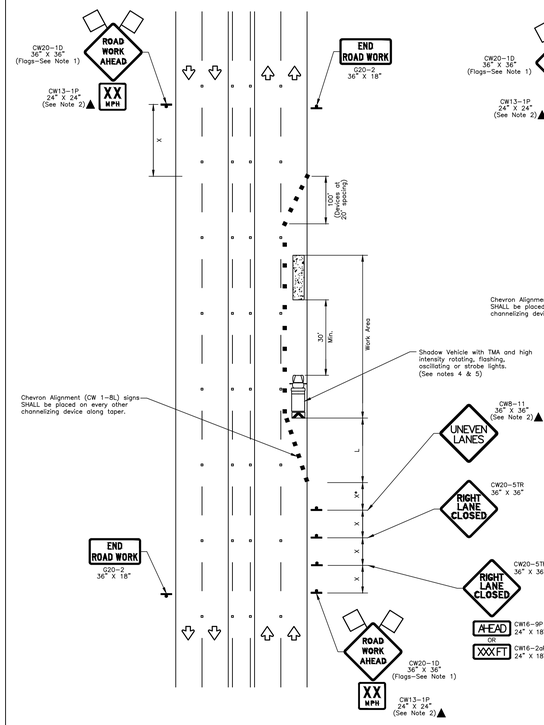
1. Flags attached to signs where shown are OPTIONAL.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol are OPTIONAL.
3. Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
4. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
5. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
6. Contractor shall provide and install traffic control devices in conformance with part VI of Texas Manual on Uniform Traffic Control Devices (TMUTCD – Latest edition with revisions) during construction.
7. Off duty uniformed law enforcement officers/flaggers are required to direct traffic when applicable.



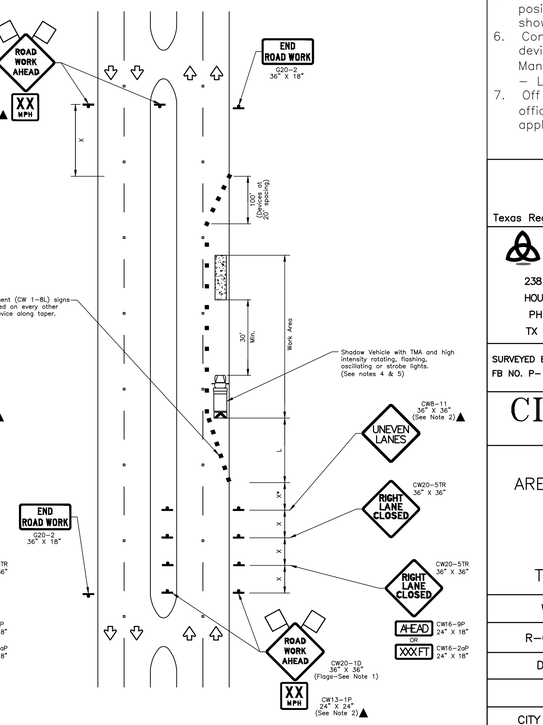
LEFT LANE CLOSURE (5 LANE ROAD)



LEFT LANE CLOSURE (4 LANE BOULEVARD ROAD)



RIGHT LANE CLOSURE (5 LANE ROAD)



RIGHT LANE CLOSURE (4 LANE BOULEVARD ROAD)

NO.	DATE	REVISION	APP.

Texas First Bank Building
11757 Katy Freeway
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(713)532-1730
Fax (713)532-1734

Texas Registered Engineering Firm F-204

TRILOGY ENGINEERING SERVICES
238 WESTCOTT STREET
HOUSTON, TEXAS 77007
PH: 877.463.1699
TX FIRM NO: 17715

SURVEYED BY: LANDTECH
FB NO. P-

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APRIL 2026

TIISETSO MASIANE, P.E.
TX PE NO. 139211

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

TRAFFIC CONTROL PLAN

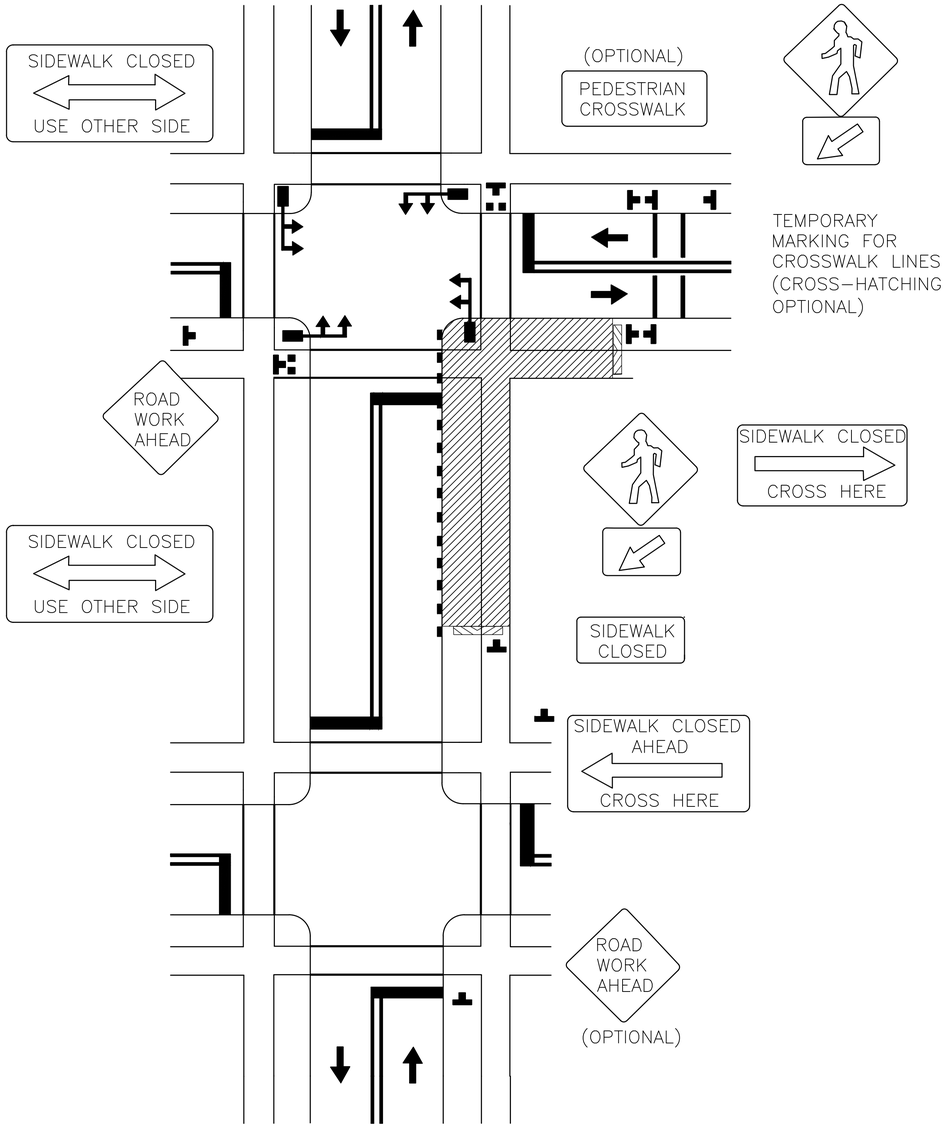
TRAFFIC CONTROL STANDARDS-2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 79 OF 124	

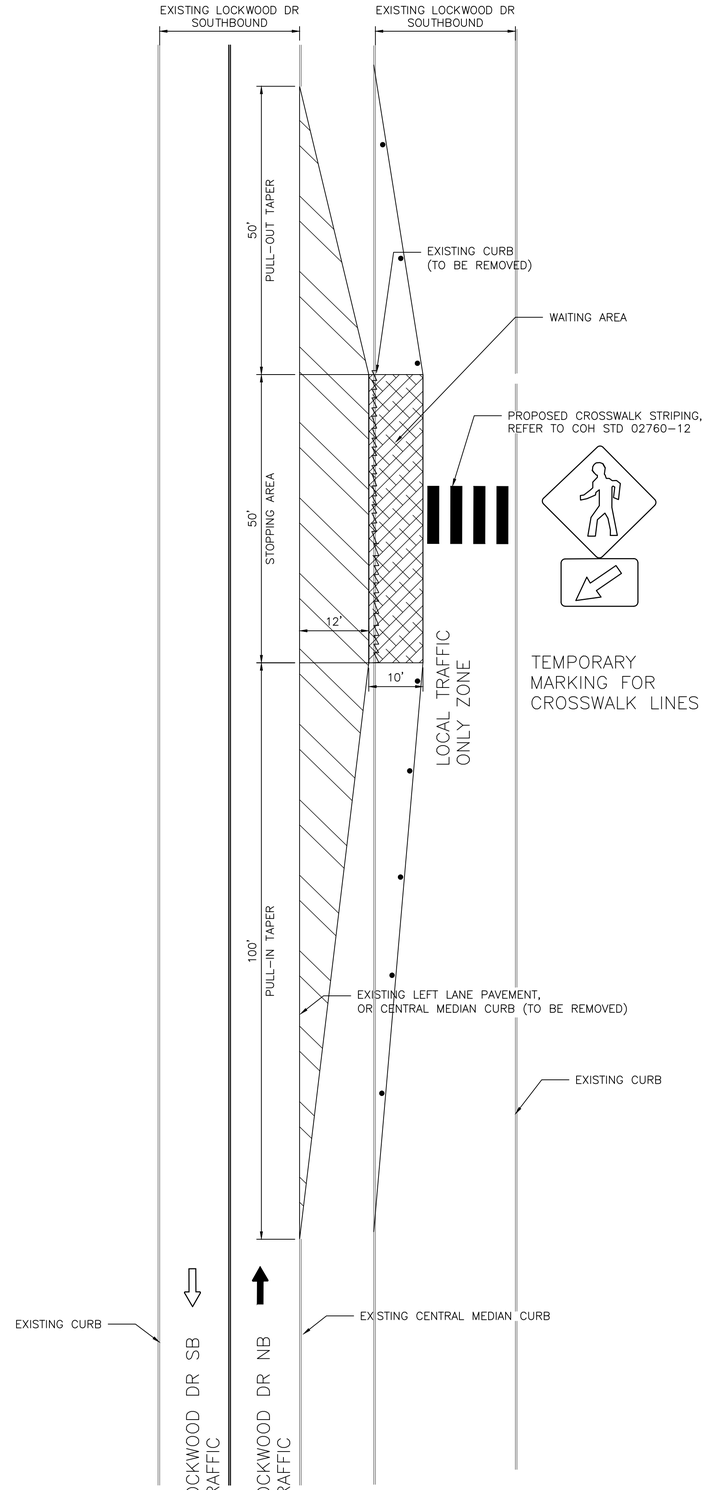
60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 10:19 AM

FILE PATH: 230012201_SV_TCP_PLAN.dwg



CROSSWALK CLOSURES
AND PEDESTRIAN DETOURS
(COH 01555–16)



PROPOSED BUS BAY
DESIGN LAYOUT

NO.	DATE	REVISION	APP.

stv
Texas Registered Engineering Firm F–204
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HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

TRAFFIC CONTROL PLAN
CROSSWALK CLOSURES, PEDESTRIAN DETOURS, AND BUS BAY DESIGN

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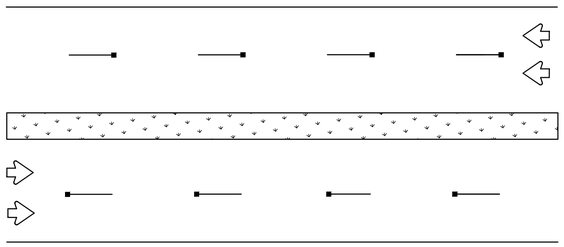
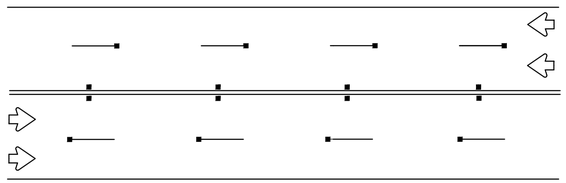
FILE PATH: 230012201_SV_TCP_PLAN.dwg

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 10:19 AM

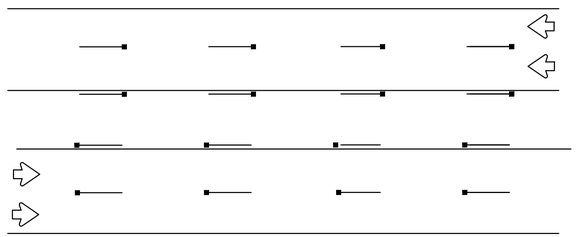
LANE LINES FOR DIVIDED STREET



LANE & CENTER LINES FOR MULTILANE UNDIVIDED STREETS

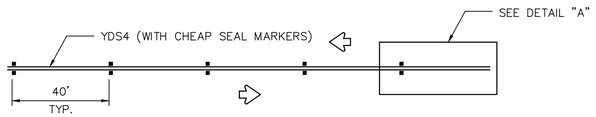


TWO–WAY LEFT TURN LANE



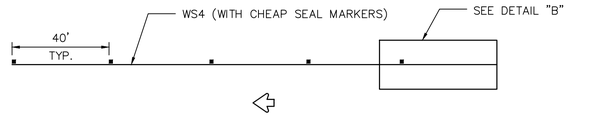
TEMPORARY PAVEMENT MARKINGS PLACEMENT DETAILS

DOUBLE YELLOW LINE

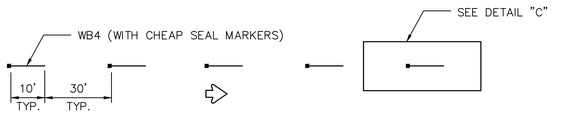


SOLID LINES

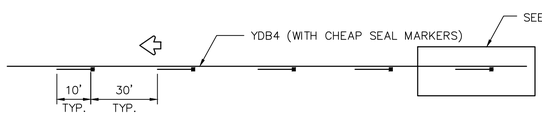
EDGE LINE OR SINGLE NO–PASSING LINE



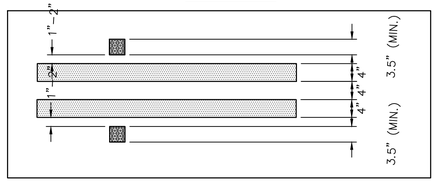
BROKEN LINE



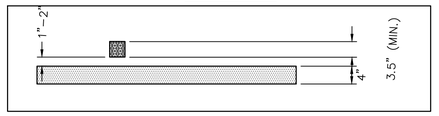
YELLOW DOUBLE BROKEN LINE



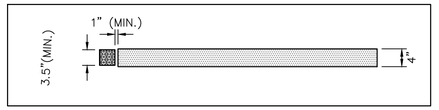
DETAIL "A"



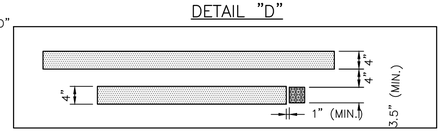
DETAIL "B"



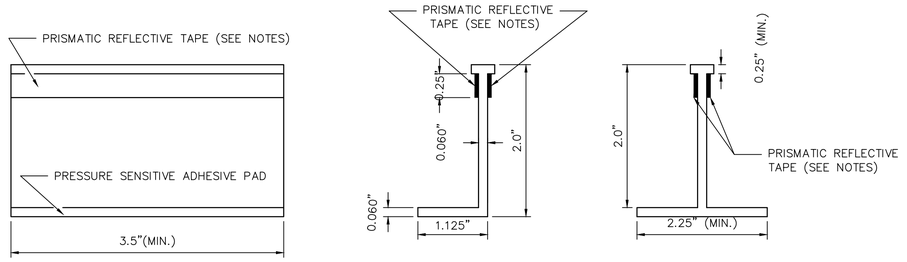
DETAIL "C"



DETAIL "D"



TEMPORARY CHIP SEAL MARKER DETAIL



TEMPORARY PAVEMENT MARKER FRONT VIEW

"L" DESIGN RIGHT VIEW

"T" DESIGN RIGHT VIEW

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 ONCOMING TRAFFIC.
6. ALL TEMPORARY STRIPING SHALL BE WATER BASED PAINT.

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238 WESTCOTT STREET
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APRIL 2026

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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

REFLECTIVE CHIP SEAL MARKER USE FOR TEMPORARY MARKINGS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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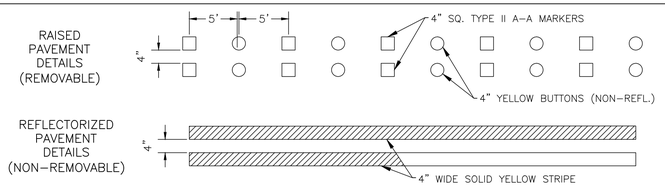
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 81 OF 124	

60% SUBMITTAL

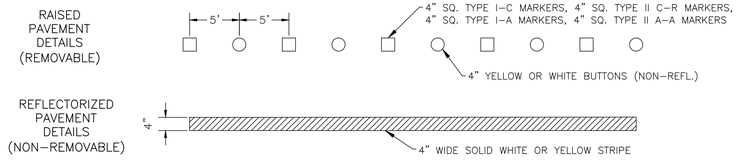
FILE PATH: 230012201_SV_TCP_PLAN.dwg

STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

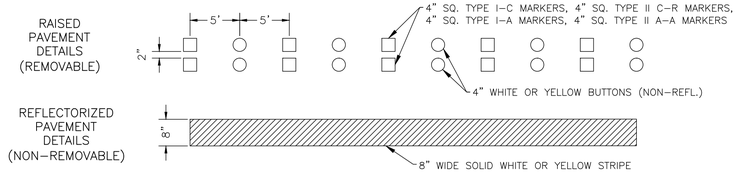
DOUBLE NO–PASSING LINE



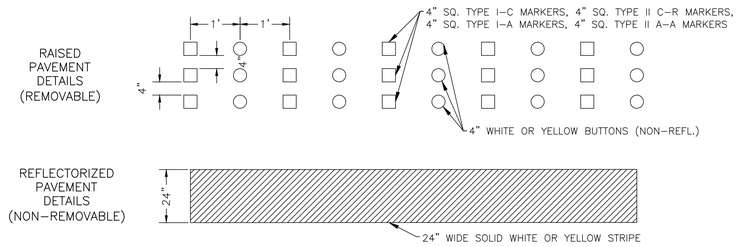
EDGE LINE OR SINGLE NO–PASSING LINE



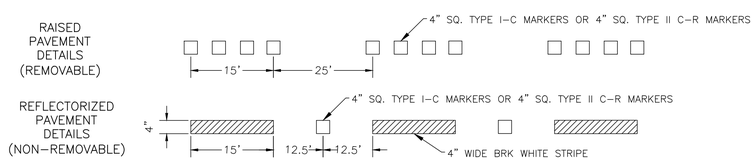
WIDE LINE (LEFT TURN LANE CHANNELIZING)



WIDE LINE (CROSS HATCHING)



BROKEN LINES

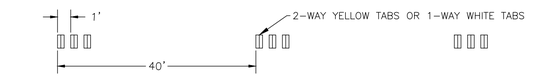


SHORT TERM WORK ZONE PAVEMENT MARKINGS DETAILS
ASPHALT SURFACE TREATMENTS (ONLY)

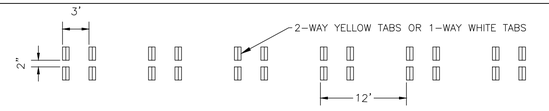
DOUBLE NO–PASSING LINE

EDGE LINE OR SINGLE NO–PASSING LINE

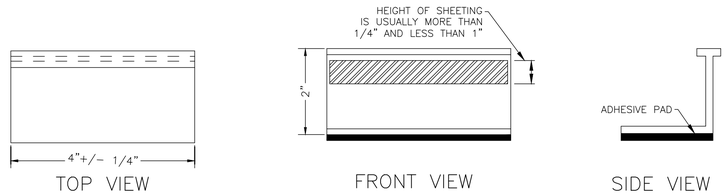
BROKEN LINE



WIDE LINE (WIDTH 8" OR GREATER)



TEMPORARY FLEXIBLE–REFLECTIVE ROADWAY MARKER TABS



STAPLES OR NAILS SHALL NOT BE USED TO SECURE TEMPORARY FLEXIBLE–REFLECTORIZED ROADWAY MARKER TABS TO THE PAVEMENT SURFACE

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HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

TRAFFIC CONTROL PLAN

TEMPORARY PAVEMENT MARKING DETAILS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
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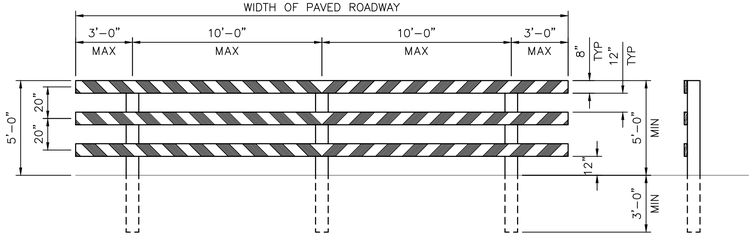
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 82 OF 124	

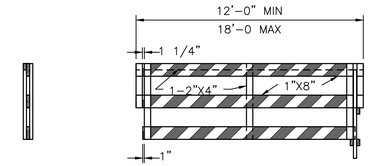
60% SUBMITTAL

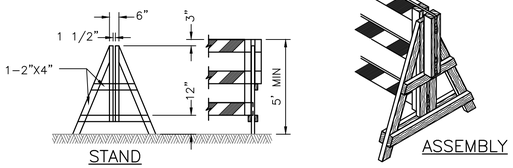
PLOT STYLE: Coh_ctb_230809.ctb
PLOTTED: 4/24/2026 10:19 AM
FILE PATH: 230012201_SV_TCP_PLAN.dwg



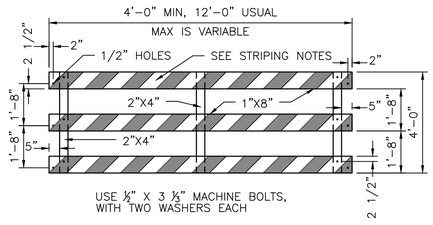
TYPE III BARRICADE FOR END OF ROAD

FOR TYPE III BARRICADE FOR END OF ROAD, THE THREE (3) RAILS SHALL BE REFLECTIVE RED AND RELFLECTIVE WHITE STRIPES ON SIDE FACING TRAFFIC

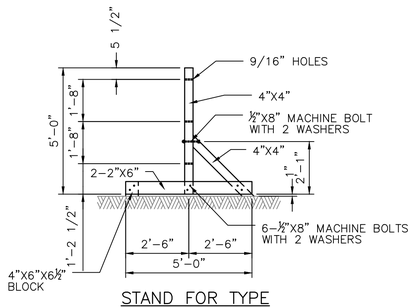




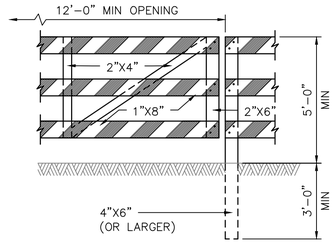
DEMOUNTABLE TYPE III BARRICADE



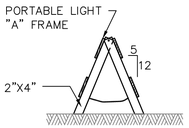
PANEL FOR TYPE III BARRICADE



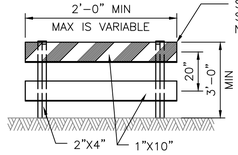
STAND FOR TYPE III BARRICADE



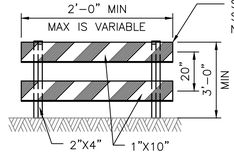
GATE FOR TYPE III BARRICADE



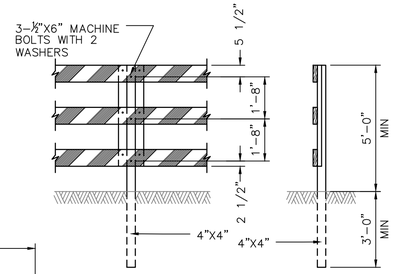
"A" FRAME



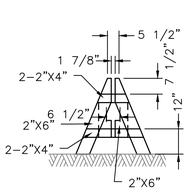
TYPE I



TYPE II



POST FOR TYPE III BARRICADE



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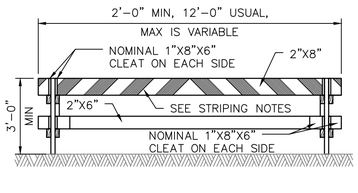

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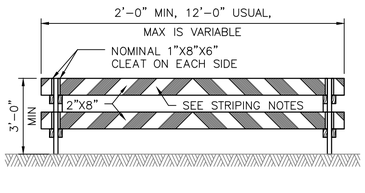
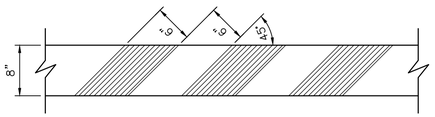


TYPE II

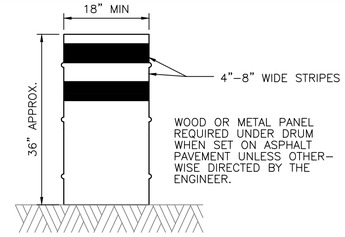
BARRICADE NOTES:

1. THE MOST RECENT EDITION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, AND IT'S REVISIONS, SHALL GOVERN THE CONSTRUCTION AND USE OF ALL ITEMS HEREIN DESCRIBED.
2. CHANNELIZATION DEVICES OTHER THAN BARRICADES SHOULD NORMALLY BE USED FOR CHANNELIZATION PURPOSES.
3. BARRICADES SHOULD NORMALLY BE PLACED PERPENDICULAR TO THE TRAFFIC FLOW. OTHER CHANNELIZING DEVICES, SUCH AS DRUMS, VERTICAL PANELS OR PORTABLE BARRIERS, SHOULD BE USED WHERE NEEDED TO SEPARATE TRAFFIC FROM THE WORK AREA. IN ALL CASES, THE BARRICADES SHOULD BE SO LOCATED AS TO MOST ADVANTAGEOUSLY WARN AND DIRECT TRAFFIC.
4. BARRICADES MAY BE DESIGNED AND CONSTRUCTED FROM WOOD OR ANY OTHER SUITABLE MATERIAL APPROVED BY THE TMUTCD. THE CONSTRUCTION DETAILS SHOWN HEREON ARE TYPICAL AND ARE SUGGESTED DETAILS FOR WOOD SUPPORT SYSTEMS FOR BARRICADES. THE DETAILS OF RAIL WIDTH AND STRIPING, NUMBER AND SPACING OF RAILS, MINIMUM LENGTH AND HEIGHT (ABOVE PAVEMENT) OF RAILS MUST BE ADHERED TO WHEN ALTERNATE DESIGNS ARE USED.
5. BARRICADES ARE TO BE CONSTRUCTED OF CLEAN SOUND MATERIAL. ALL SURFACES ABOVE GROUND, WHICH ARE NOT STRIPED, SHALL BE WHITE EXCEPT THE UNPAINTED GALVANIZED METAL OR ALUMINUM COMPONENTS MAY BE USED. COMPONENTS MADE OF LUMBER SHALL BE PAINTED WITH A MINIMUM OF TWO COATS OF AN APPROVED BRAND OF WHITE PAINT TO SECURE THOROUGH COVERAGE AND A UNIFORM WHITE COLOR.
6. THE REFLECTORIZED WHITE AND REFLECTORIZED ORANGE (REFLECTORIZED RED) STRIPES FOR BARRICADES, DRUMS AND VERTICAL PANELS SHALL BE CONSTRUCTED OF HIGH INTESITY SHEETING AND SHALL BE MAINTAINED TO MEET THE APPEARANCE, COLOR AND REFLECTIVITY REQUIREMENTS SET BY DOTT.
7. THE CONTRACTOR SHALL MAINTAIN EACH BARRICADE IN A CLEAN AND GOOD CONDITION.
8. BARRICADES SHALL BE REMOVED UPON COMPLETION OF THE WORK AND/OR THE ELIMINATION OF THE HAZARD ON ANY SECTION.



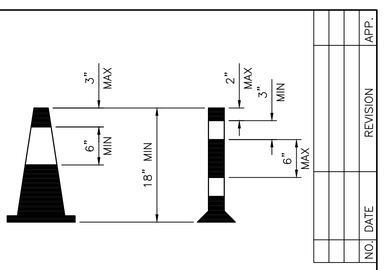
STRIPING FOR BARRICADE

1. FOR ALL TYPES OF BARRICADES WITH RAILS LESS THAN 3'–0" LONG, STRIPES 4" WIDE SHALL BE USED. IDENTIFICATION MARKINGS MAY BE SHOWN ONLY ON BACK SIDE OF BARRICADE RAILS.
2. STRIPING SHOULD COVER THE FULL WIDTH OF THE RAIL. STRIPING OF RAILS, PANELS, ETC, SHOULD SLOPE DOWNWARD AT AN ANGLE OF 45° DEGREES IN DIRECTIONS TRAFFIC IS TO PASS.
3. WHERE A BARRICADE EXTENDS ENTIRELY ACROSS A ROADWAY, IT IS DESIRABLE THAT THE STRIPES SLOPE DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN IN DETOURING. WHEN BOTH RIGHT AND LEFT TURNS ARE PROVIDED FOR, THE CHEVRON STRIPING MAY SLOPE DOWNWARD IN BOTH DIRECTIONS FROM THE CENTER OF THE BARRICADE.



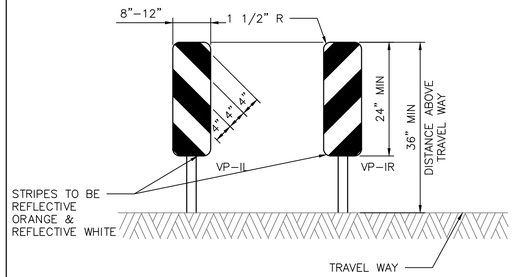
DRUMS

1. DRUMS, SET ON END, AND USED FOR TRAFFIC WARNING OR CHANNELIZATION SHALL BE APPROX 36" IN HEIGHT AND A MIN OF 18" IN DIAMETER. THE CONTRACTOR, AT HIS OPTION, MAY USE DRUMS MADE FROM STEEL BARRELS OR BLACK POLYETHYLENE PLASTIC DRUM LINERS WEIGHING APPROX EIGHT POUNDS EACH. THE MARKINGS ON DRUMS SHALL BE HORIZONTAL, CIRCUMFERENTIAL, REFLECTORIZED ORANGE AND REFLECTORIZED WHITE STRIPES, 4 TO 8 INCHES WIDE. THE FIRST REFLECTORIZED STRIPE SHOULD START WITHIN TWO (2) INCHES OF THE TOP OF THE DRUM. THERE SHALL BE AT LEAST TWO ORANGE AND TWO WHITE STRIPES ON EACH DRUM. IF THERE ARE NON–REFLECTORIZED SPACES BETWEEN THE HORIZONTAL ORANGE AND WHITE STRIPES, THEY SHALL BE NO MORE THAN 2 INCHES WIDE. METAL DRUMS SHALL BE PAINTED BLACK OR ORANGE BEFORE RELFECTORIZED STRIPES ARE ADDED. ALL DRUMS ON PROJECT WILL BE THE SAME COLOR. WHEN DRUMS ARE PLACED IN THE ROADWAY, APPROPIATE WARNING SIGNS SHOULD BE USED. DURING HOURS OF DARKNESS, A FLASHING WARNING LIGHT SHOULD BE PLACED ON DRUMS USED SINGLY AS A WARNING DEVICE. STEADY BURN ELECTRIC LIGHTS OR DELINEATORS SHOULD BE PLACED ON DRUMS USED IN SERIES FOR TRAFFIC CHANNELIZATION. DRUMS SHALL BE WEIGHTED WITH SAND TO THE EXTENT INDICATED IN THE PLANS.
2. CWI–8 CHEVRON SIGNS, CWI–6A ARROW SIGNS OR VP–I VERTICAL PANELS MOUNTED ABOVE DRUMS MAY BE USED AS SUPPLEMENTS TO DRUM DELINEATION.



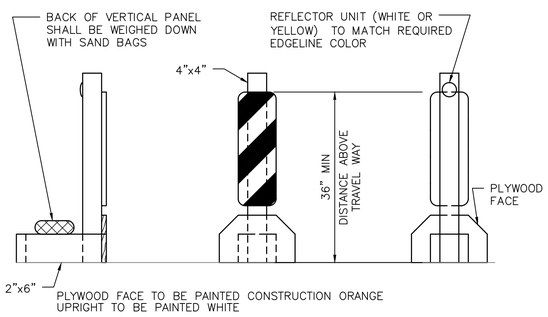
CONES

1. TRAFFIC CONES AND TUBULAR MARKERS SHALL BE A MIN OF 18" INCHES IN HEIGHT WITH A BROADENED BASE AND MAY BE MADE OF VARIOUS MATERIALS TO WITHSTAND IMPACT WITHOUT DAMAGE TO THEMSELVES OR TO VEHICLES. LARGER SIZES SHOULD BE USED ON FREEWAYS AND OTHER ROADWAYS WHERE SPEED ARE RELATIVELY HIGH OR WHERE EVER MORE CONSPICUOUS GUIDANCE IS NEEDED. ORANGE SHALL BE THE PREDOMINANT COLOR ON CONES AND TUBULAR MARKERS. THEY SHOULD BE KEPT CLEAN AND BRIGHT FOR MAX TARGET VALUE. FOR NIGHT TIME USE THEY SHALL BE REFLECTORIZED OR EQUIPPED WITH LIGHTING DEVICES FOR MAX VISIBILITY. REFLECTORIZED MATERIAL SHALL HAVE A SMOOTH, SEALED OUTER SURFACE WHICH WILL DISPLAY THE SAME APPROX COLOR DAY AND NIGHT.
2. REFLECTORIZATION OF TUBULAR MARKERS SHALL BE A MIN OF TWO THREE–INCH BANDS PLACED A MAX OF 2" FROM THE TOP WITH A MAX OF 6" BETWEEN THE BANDS. REFLECTORIZATION OF CONES SHALL BE PROVIDED BY A MIN 6" BAND PLACED A MAX OF 3" FROM THE TOP.
3. CONES OR TUBULAR MARKERS ARE GENERALLY ONLY SUITABLE FOR TEMPORARY USAGE (UP TO 8 HOURS) WITH OTHER CHANNELIZATION DEVICES SUCH AS VERTICAL PANELS OR BARRICADES PREFERRED FOR LONGER TERM USAGE. CARE SHOULD BE TAKEN TO INSURE THAT THEY REMAIN IN THEIR PROPER LOCATION AND IN AN UPRIGHT POSITION.



VERTICAL PANELS (VP)

VERTICAL PANELS ARE NORMALLY USED AS CHANNELIZING DEVICES TO INDICATE TANGENT OR NEARLY TANGENT ROADWAY ALIGNMENT WHERE GOOD TARGET VALUE OF A DEVICE IS NEEDED IN DAYTIME AS WELL AS THE NIGHTTIME. IN ADDITION, VERTICAL PANELS SHOULD BE USED AT THE EDGE OF SHOULDER DROP–OFFS AND OTHER SUCH AREAS AS LANE TRANSITIONS WHERE POSITIVE DAY AND NIGHT DELINEATION MAY BE REQUIRED. VERTICAL PANELS SHOULD BE MOUNTED BACK TO BACK IF USED AT THE EDGE OF CUTS ADJACENT TO TWO–WAY TWO LANE ROADWAYS. STRIPES SHOULD ALWAYS SLOPE DOWNWARD TOWARD THE TRAVELED WAY.



TYPICAL PORTABLE VERTICAL PANEL OR DELINEATOR

OTHER SIMILAR SUPPORTS MAY BE USED WHEN APPROVED BY TMUTCD AND DIRECTED BY THE CITY OF HOUSTON.

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PH: 877.463.1699
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FB NO. P–

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APRIL 2026

TIISETSO MASIANE, P.E.
TX PE NO. 139211

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

TRAFFIC CONTROL PLAN

BARRICADE AND CHANNELIZING DEVICES

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–001000–0032–4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 83 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 10:19 AM

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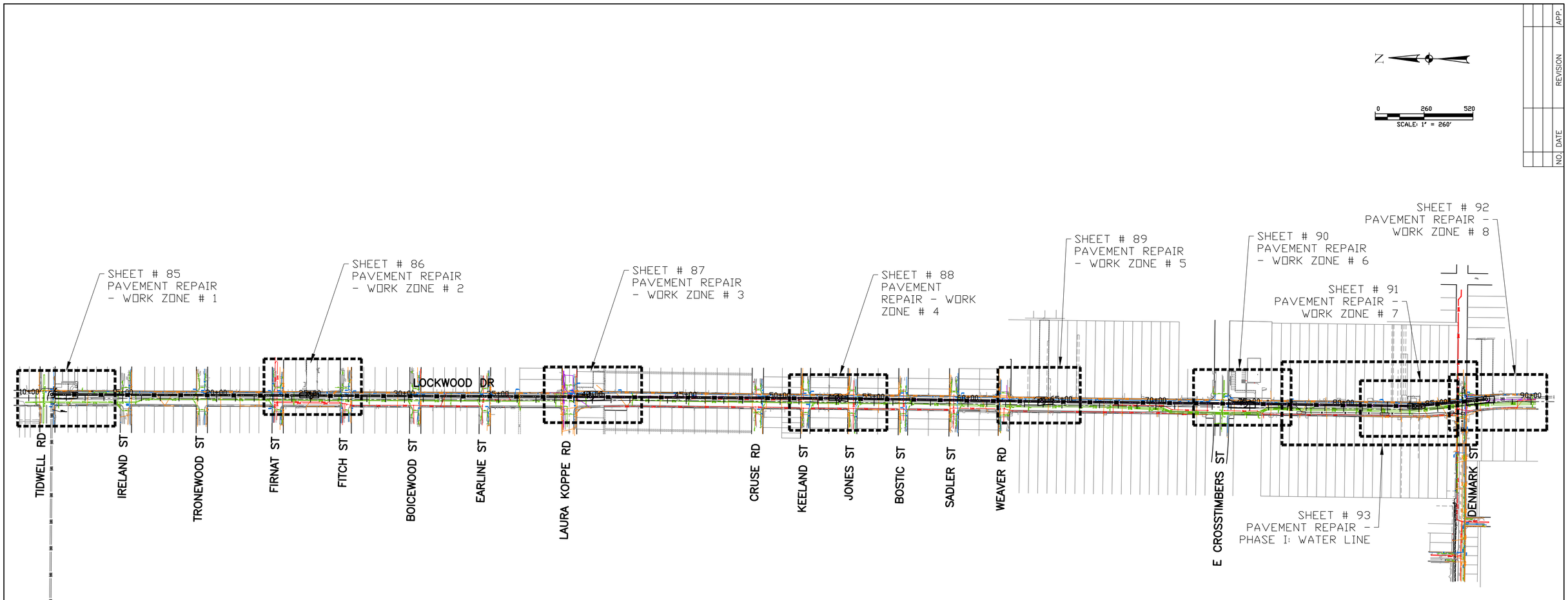

ALIGNMENT REPORT: LOCKWOOD DRIVE

Tangent Data
Start Station: 0+00.00
End Station: 10+00.00
Length: 1000.000 Course: S 02° 49' 59.9988" E

Tangent Data
Start Station: 10+00.00
End Station: 47+79.39
Length: 3779.386 Course: S 02° 49' 59.9988" E

Tangent Data
Start Station: 47+79.39
End Station: 83+66.62
Length: 3587.234 Course: S 02° 21' 00.0000" E

Circular Curve Data
Start Station: 83+66.62
End Station: 86+27.92
Delta: 10° 27' 00.0000" Type:LEFT
Radius: 1432.690
Length: 261.304 Tangent: 131.015
Mid-Ord: 5.953 External: 5.978
Chord: 260.942 Course: S 07° 34' 30.0000" E

Tangent Data
Start Station: 86+27.92
End Station: 86+40.66
Length: 12.734 Course: S 12° 48' 00.0000" E

Circular Curve Data
Start Station: 86+40.66
End Station: 88+91.75
Delta: 10° 02' 29.9999" Type:RIGHT
Radius: 1432.690
Length: 251.093 Tangent: 125.869
Mid-Ord: 5.497 External: 5.518
Chord: 250.772 Course: S 07° 46' 45.0001" E

Tangent Data
Start Station: 88+91.75
End Station: 90+00.00
Length: 108.249 Course: S 02° 45' 30.0002" E

Tangent Data
Start Station: 90+00.00
End Station: 100+00.00
Length: 1000.000 Course: S 02° 45' 30.0002" E

BENCHMARKS:

CITY OF HOUSTON MONUMENT 5560-0416: FOUND BRASS DISK IN CONCRETE AT CRUSE AND PEACHTREE INTERSECTION

ELEV 57.61' NAVD 1988 (GEOID 18)

NOTES:

1. BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE. DISTANCES ARE SURFACE VALUES. SURFACE = GRID/0.99989985044.
2. HORIZONTAL AND VERTICAL CONTROLS USING GPS OBSERVATIONS AND DIGITAL LEVELING HOLDING CITY OF HOUSTON MONUMENT 5560-0416.
3. FIELDWORK COMPLETED IN OCTOBER 2025.

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stv
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AREA 1 84" RELIEF SANITARY SEWER
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TIDWELL RD TO DENMARK ST

PAVEMENT REPAIR

OVERALL PLAN

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CITY OF HOUSTON PM	
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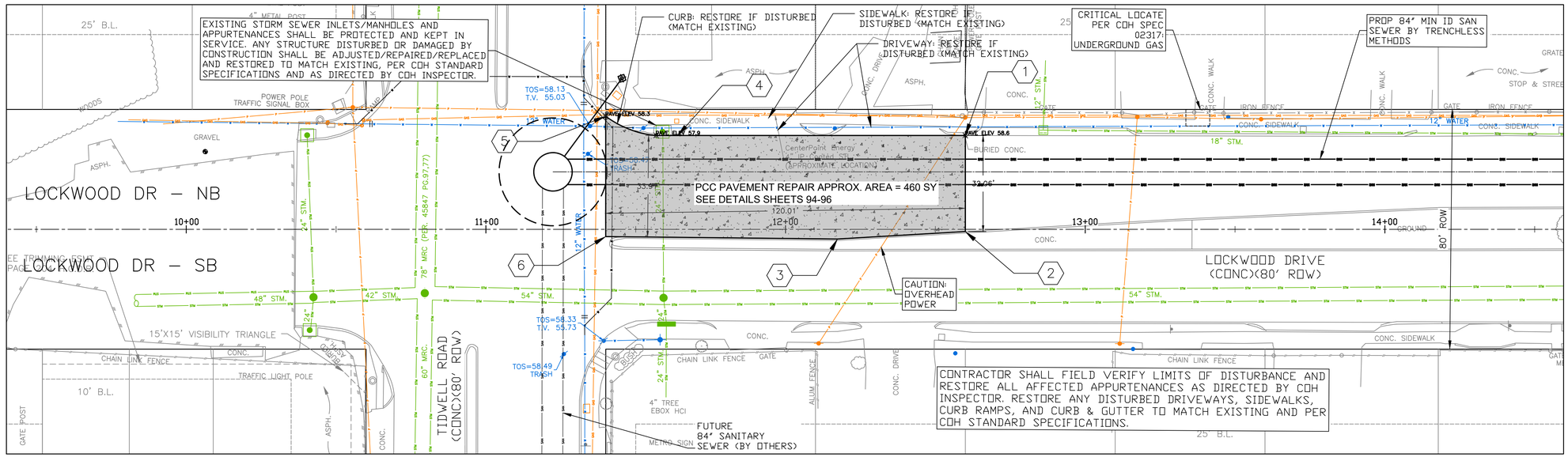

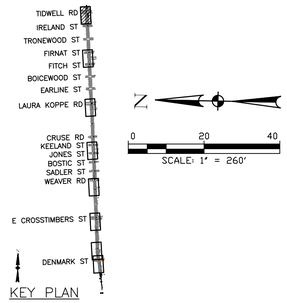

KEY PLAN

NO.	DATE	REVISION	APP.

Point Table (X)

Point#	Elevation	Northing	Easting	Staton	Offset
1	58.552	13875537.12	3135518.05	12+60.00	−31.313
2	59.162	13875535.54	3135486.02	12+60.00	+0.749
3	59.000	13875578.03	3135481.45	12+17.34	+3.22
4	58.096	13875632.99	3135513.29	11+64.05	−31.305
5	58.324	13875657.29	3135518.51	11+40.00	−37.718
6	58.754	13875655.31	3135478.42	11+40.00	2.421

NOTES:

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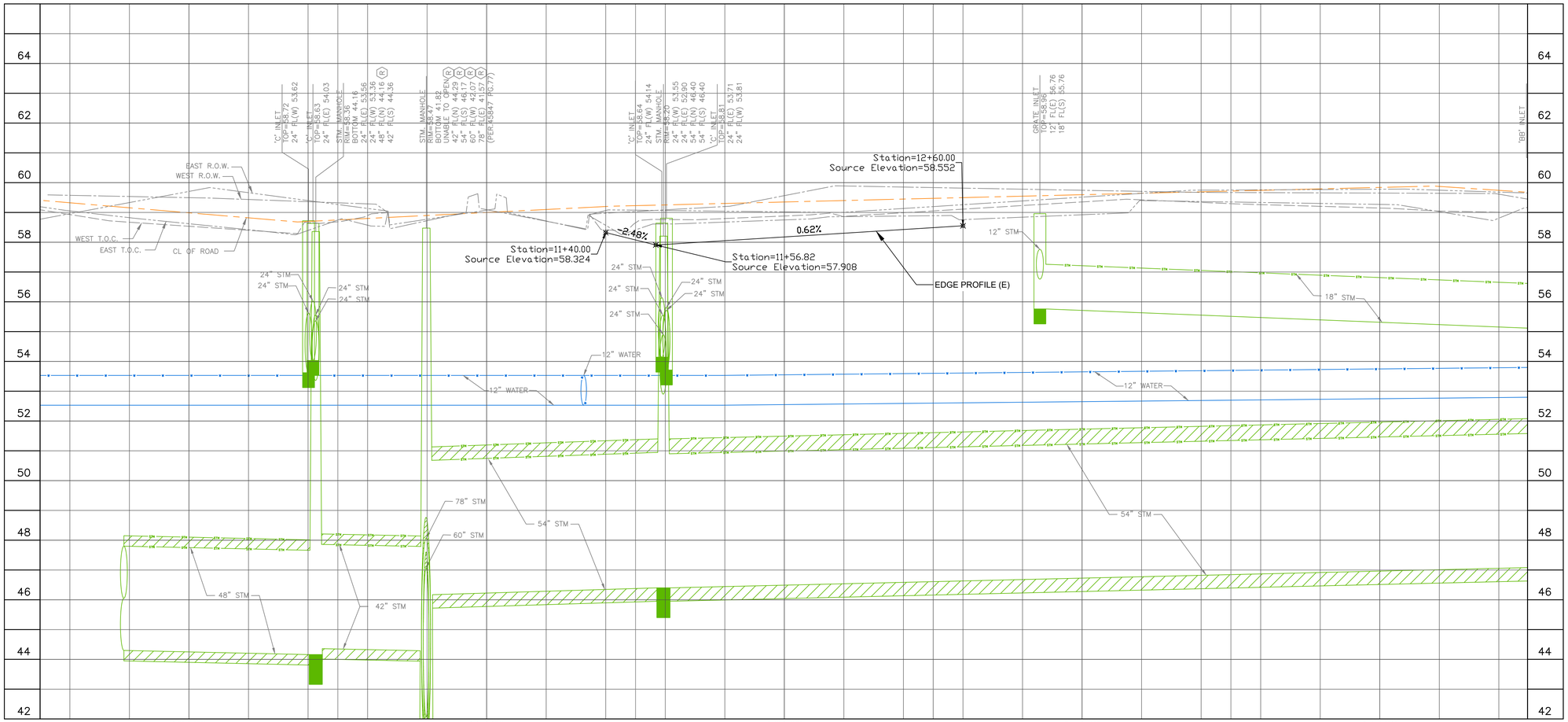

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CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
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PHASE II PAVEMENT REPAIR
WORK ZONE#1
STA. 11+40.00 TO STA. 12+60.00

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60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 10:20 AM

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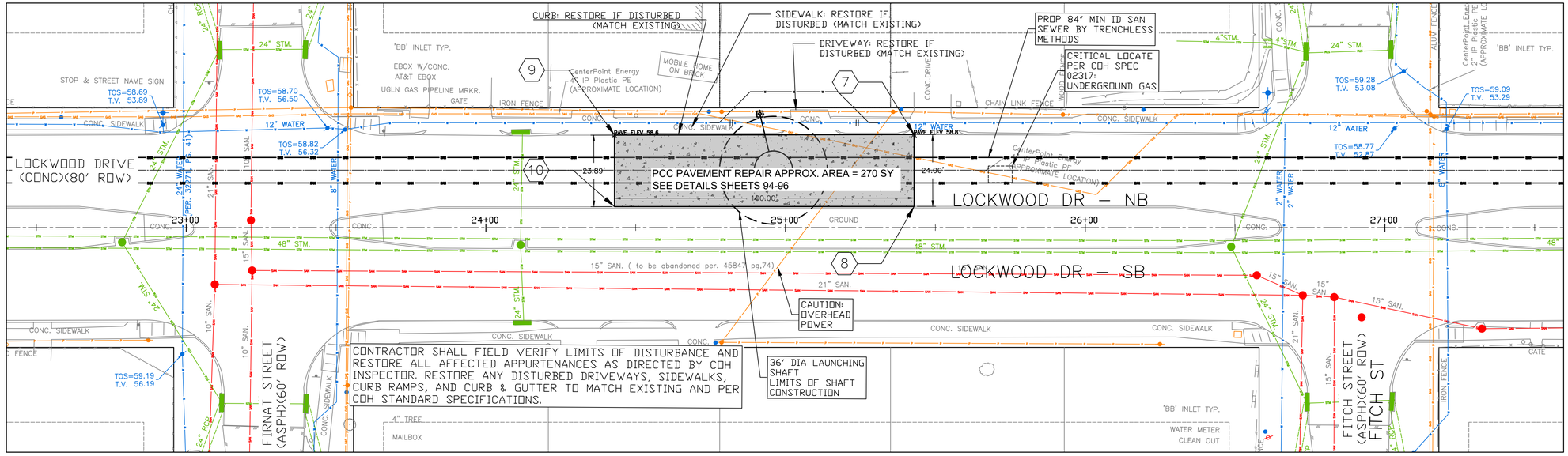

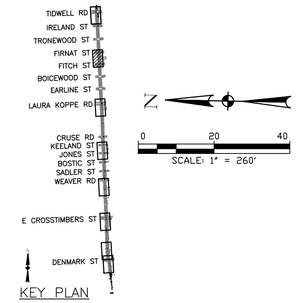

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9	58.598	13874355.64	3135576.10	24+42.91	−30.895
10	59.262	13874354.44	3135552.24	24+42.93	−7.006

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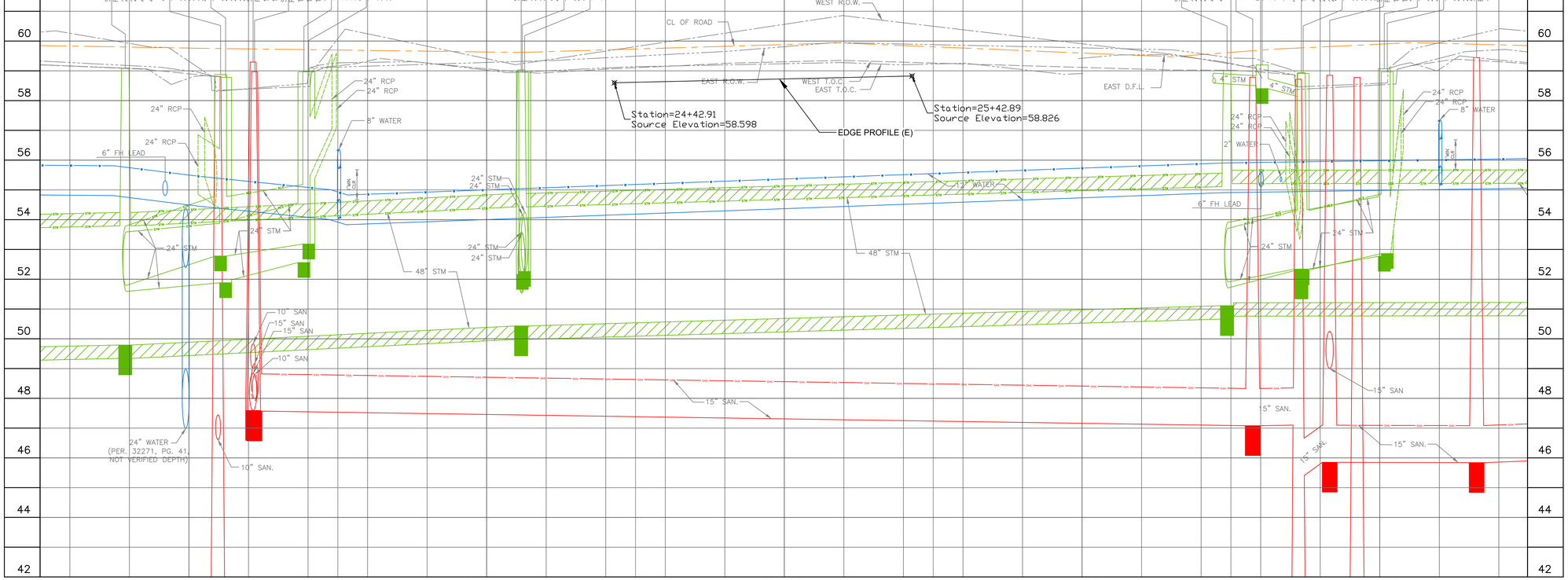

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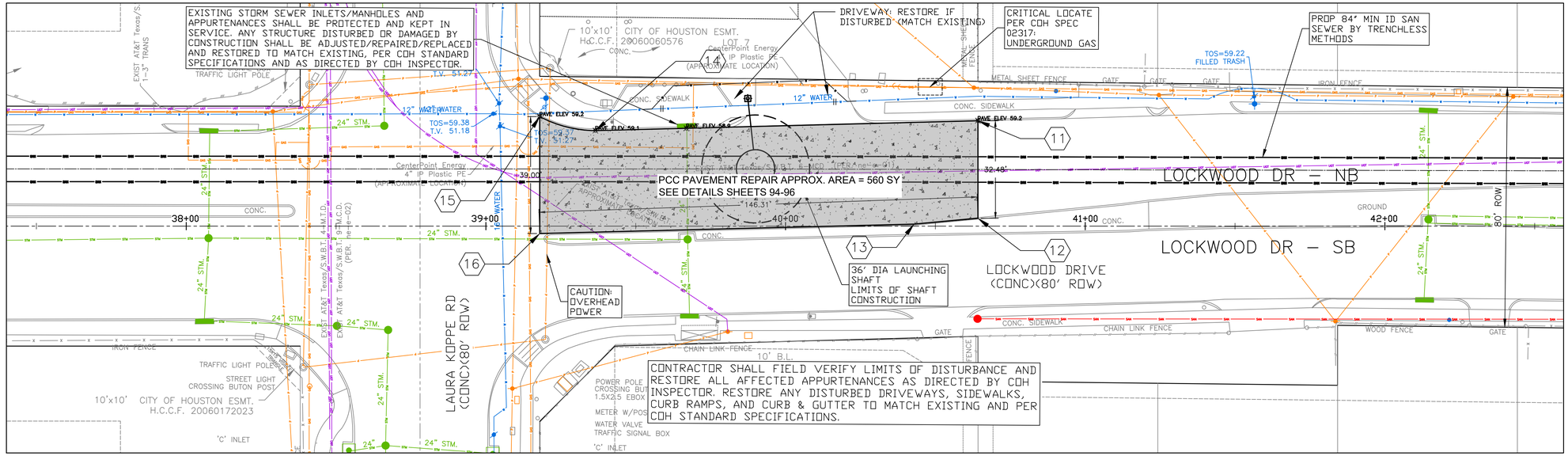

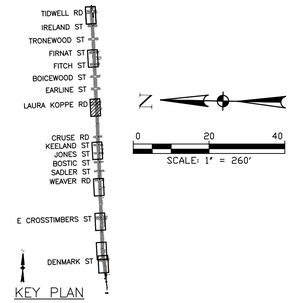

NO.	DATE	REVISION	APP.

Point Table (X)

Point#	Elevation	Northing	Easting	Staton	Offset
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12	60.008	13872734.92	3135628.04	40+64.21	–2.655
13	59.900	13872756.16	3135625.17	40+42.86	–0.676
14	59.139	13872863.85	3135650.89	39+36.57	–31.848
15	59.245	13872882.66	3135654.62	39+17.97	–36.504
16	59.769	13872880.72	3135615.70	39+17.98	2.465

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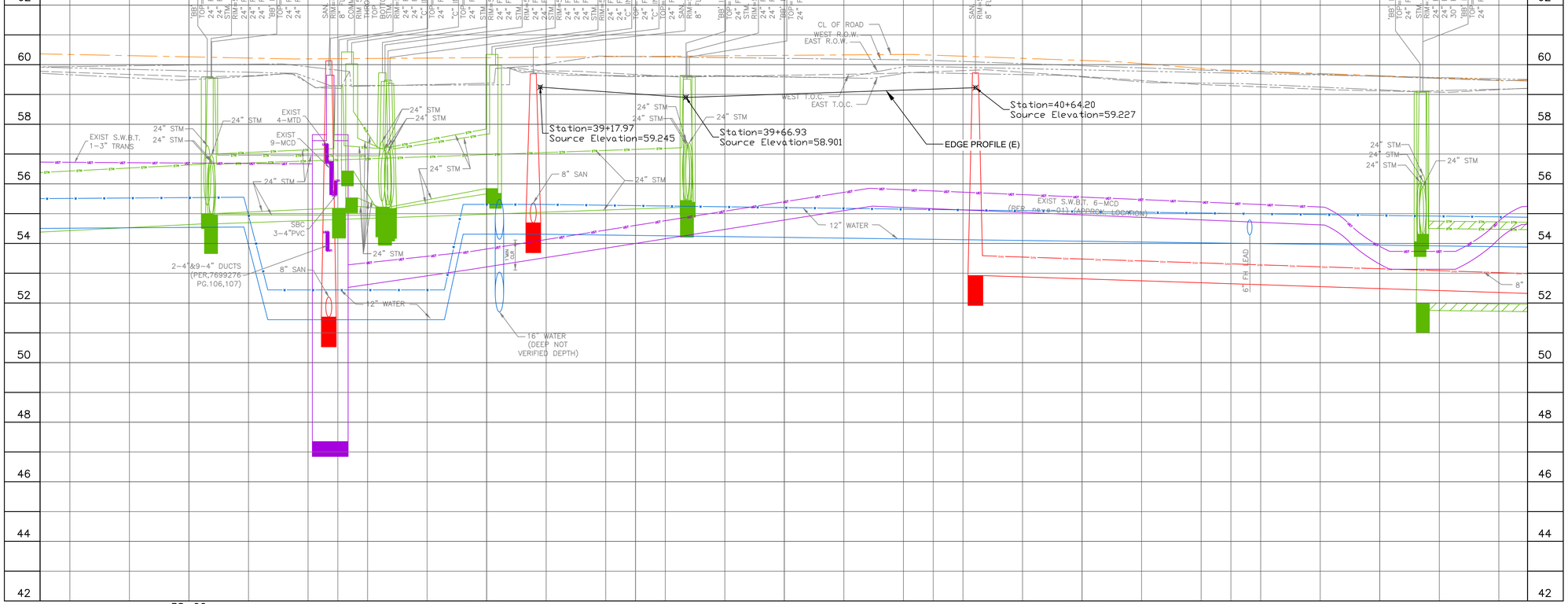

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TRILOGY ENGINEERING SERVICES
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HOUSTON, TEXAS 77007
PH: 877.463.1699
TX FIRM NO: 17715

SURVEYED BY: LANDTECH
FB NO. P–

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APRIL 2026

TIISETSO MASIANE, P.E.
TX PE NO. 139211

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST
PHASE II PAVEMENT REPAIR
WORK ZONE#3
STA. 39+17.97 TO STA. 40+64.21

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–001000–0032–4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 87 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 10:20 AM

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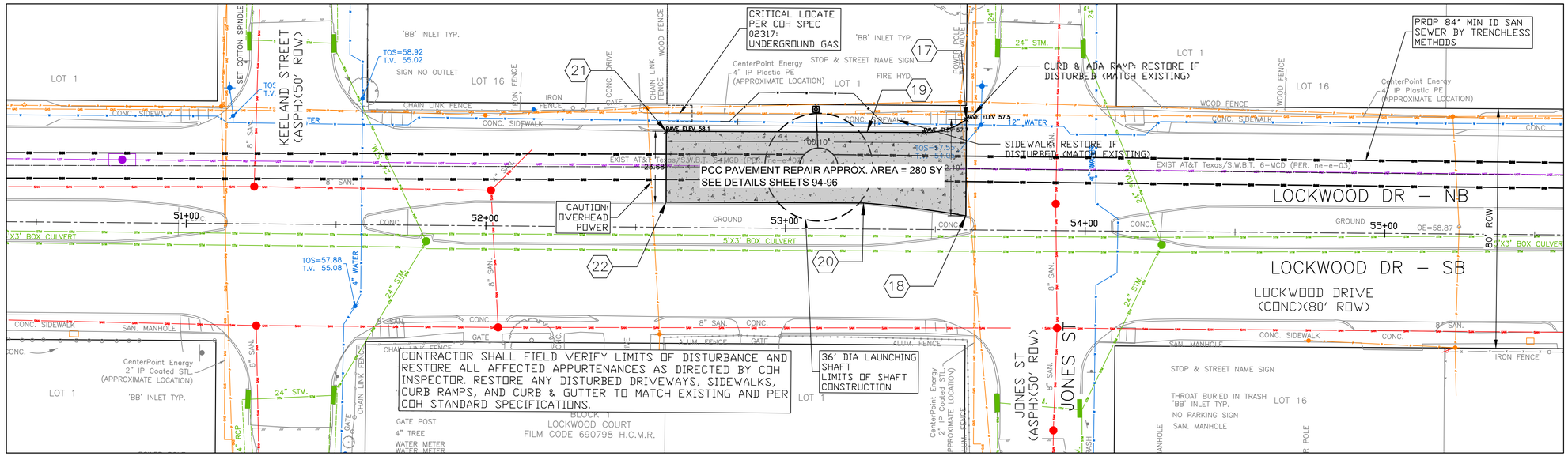

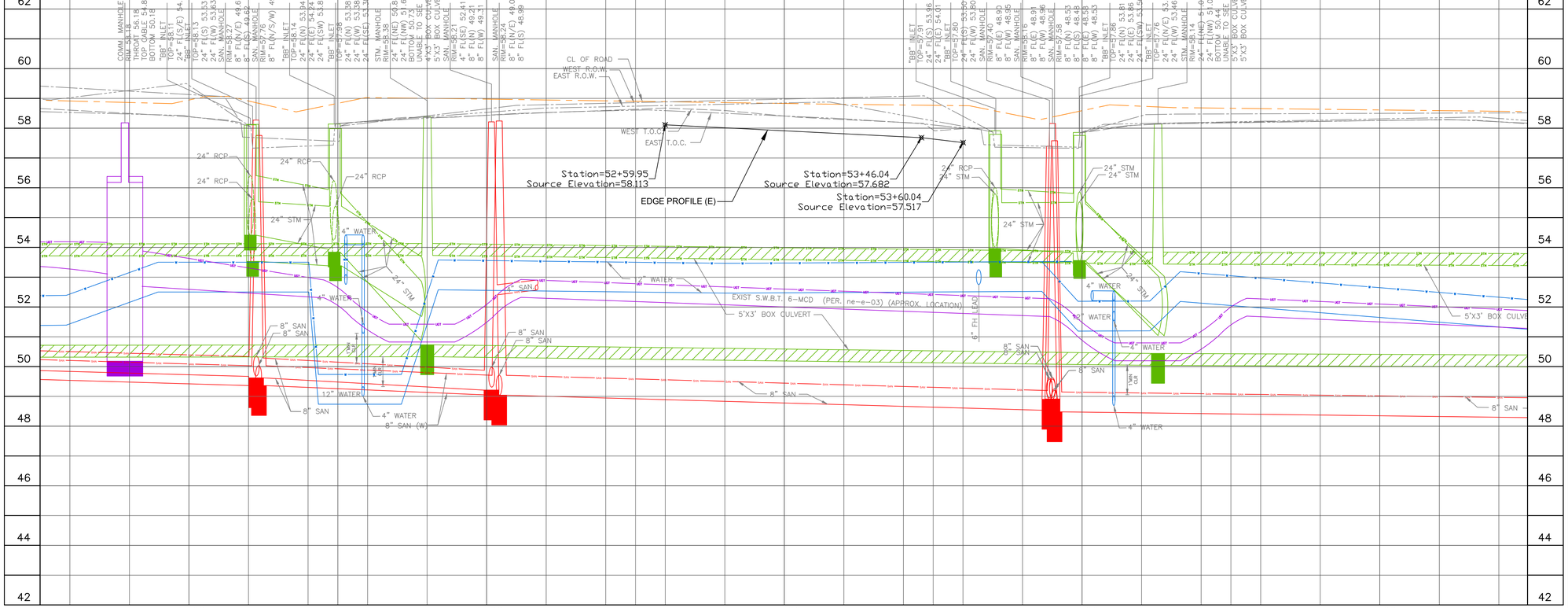

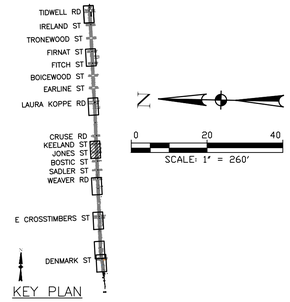

NO.	DATE	REVISION	APP.

Point Table (X)

Point#	Elevation	Northing	Easting	Staton	Offset
17	57.517	13871441.83	3135721.37	53+59.75	–37.050
18	58.227	13871440.42	3135689.35	53+60.15	–4.798
19	57.792	13871474.72	3135715.51	53+26.95	–32.343
20	58.254	13871474.72	3135691.81	53+25.97	–8.671
21	58.113	13871541.65	3135712.46	52+59.95	–32.050
22	58.417	13871540.55	3135688.86	52+60.07	–8.419

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CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST
PHASE II PAVEMENT REPAIR
WORK ZONE#4
STA. 52+59.95 TO STA. 53+60.15

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–001000–0032–4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 88 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 10:20 AM

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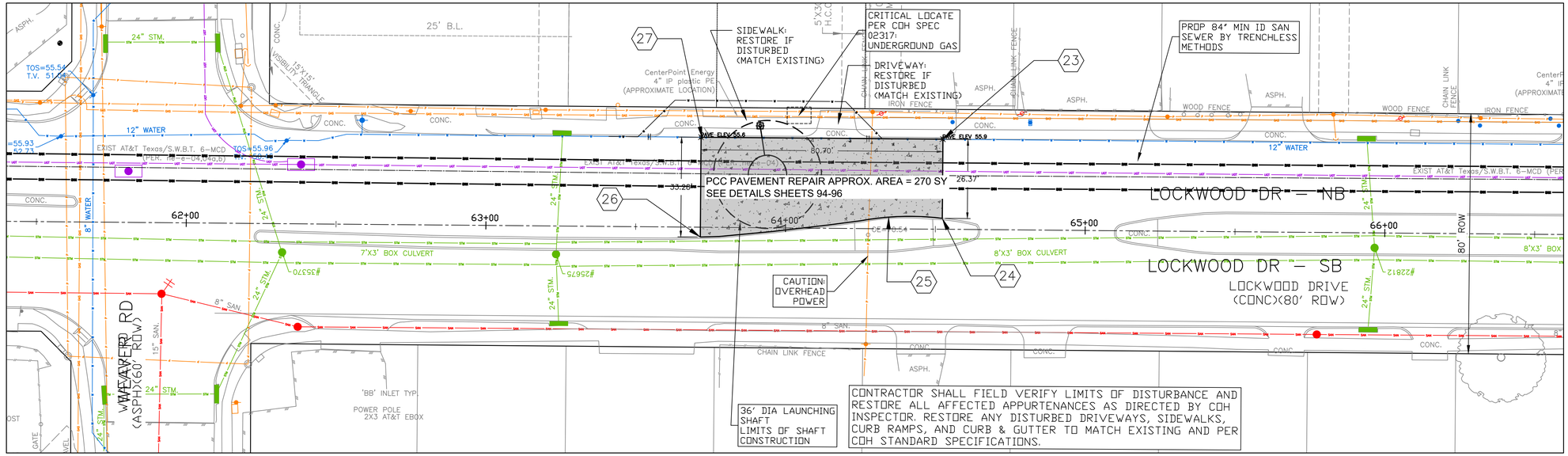

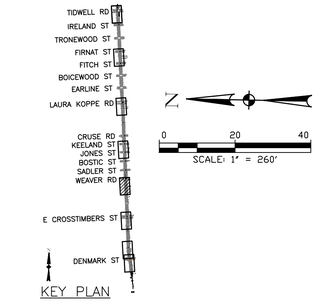

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Point#	Elevation	Northing	Easting	Staton	Offset
23	55.862	13870350.24	3135759.31	64+52.30	−29.983
24	56.423	13870349.16	3135732.96	64+52.28	−3.628
25	56.354	13870367.00	3135732.49	64+34.46	−3.891
26	56.249	13870429.48	3135722.74	63+71.60	3.284
27	55.562	13870430.87	3135755.99	63+71.58	−29.996

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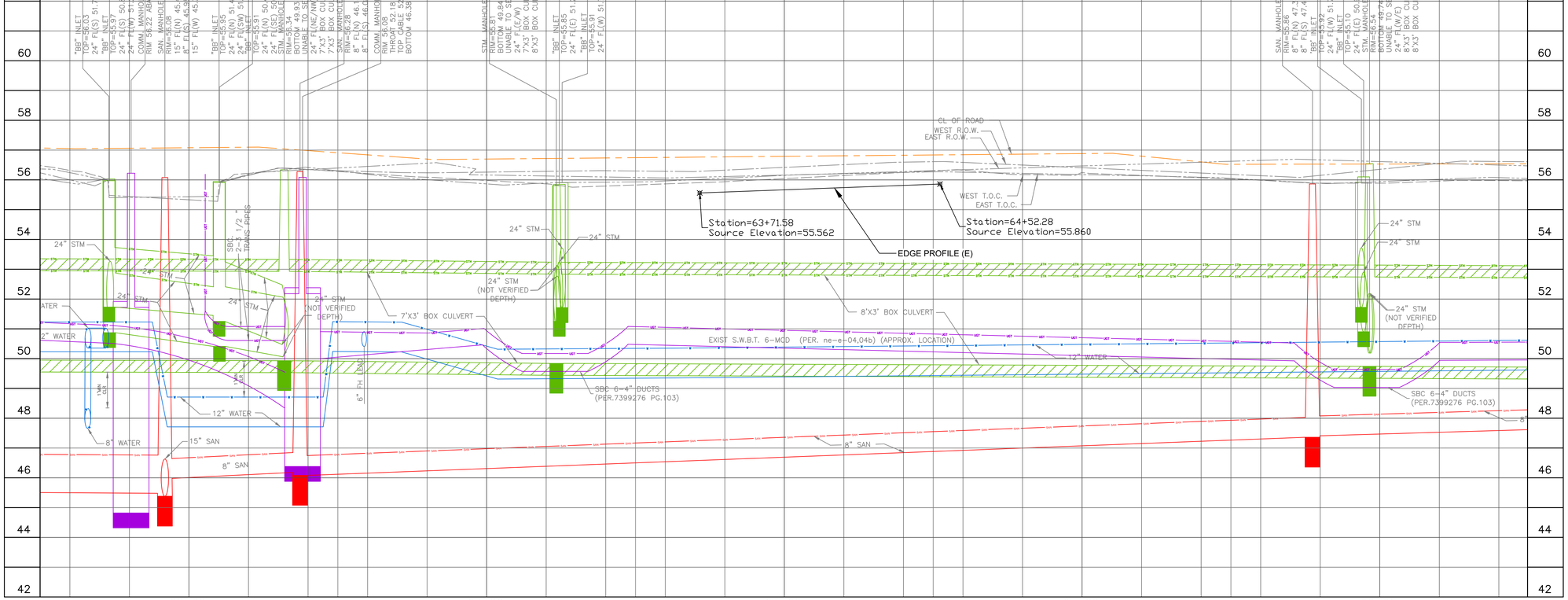

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SHEET NO. 89 OF 124	

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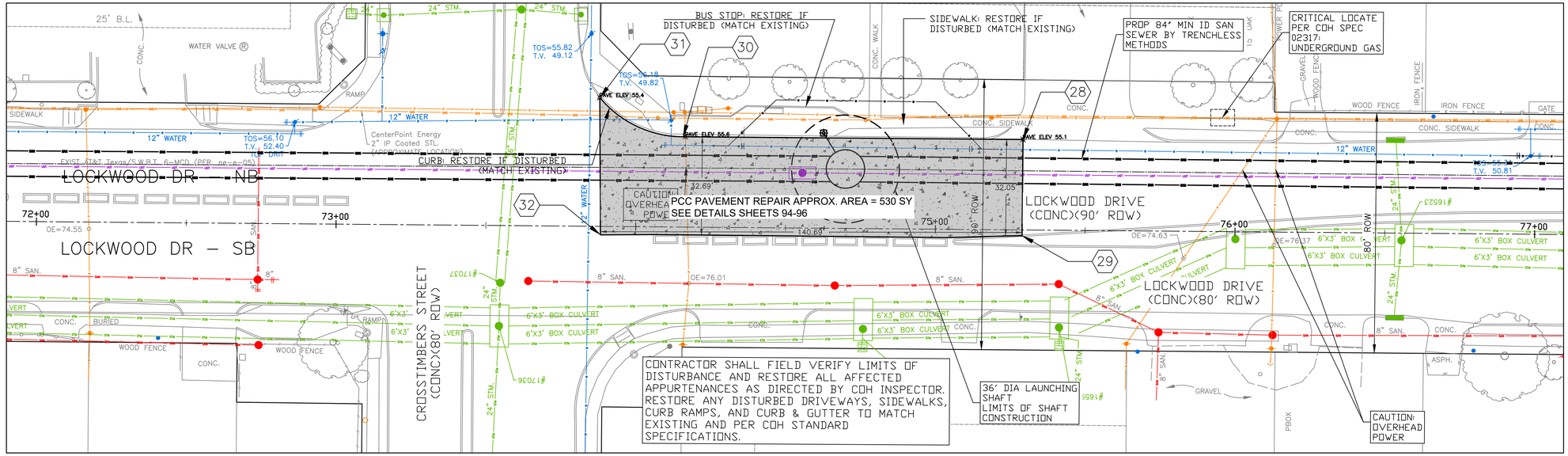

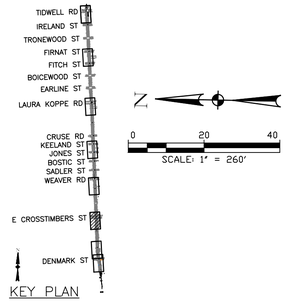

NO.	DATE	REVISION	APP.

Point Table (X)

Point#	Elevation	Northing	Easting	Staton	Offset
28	55.076	13869274.41	3135803.59	75+29.01	−30.145
29	55.987	13869273.17	3135771.61	75+28.95	1.868
30	55.579	13869387.72	3135798.91	74+15.61	−30.097
31	55.443	13869416.15	3135810.55	73+87.68	−42.910
32	56.599	13869413.70	3135764.89	73+88.26	2.824

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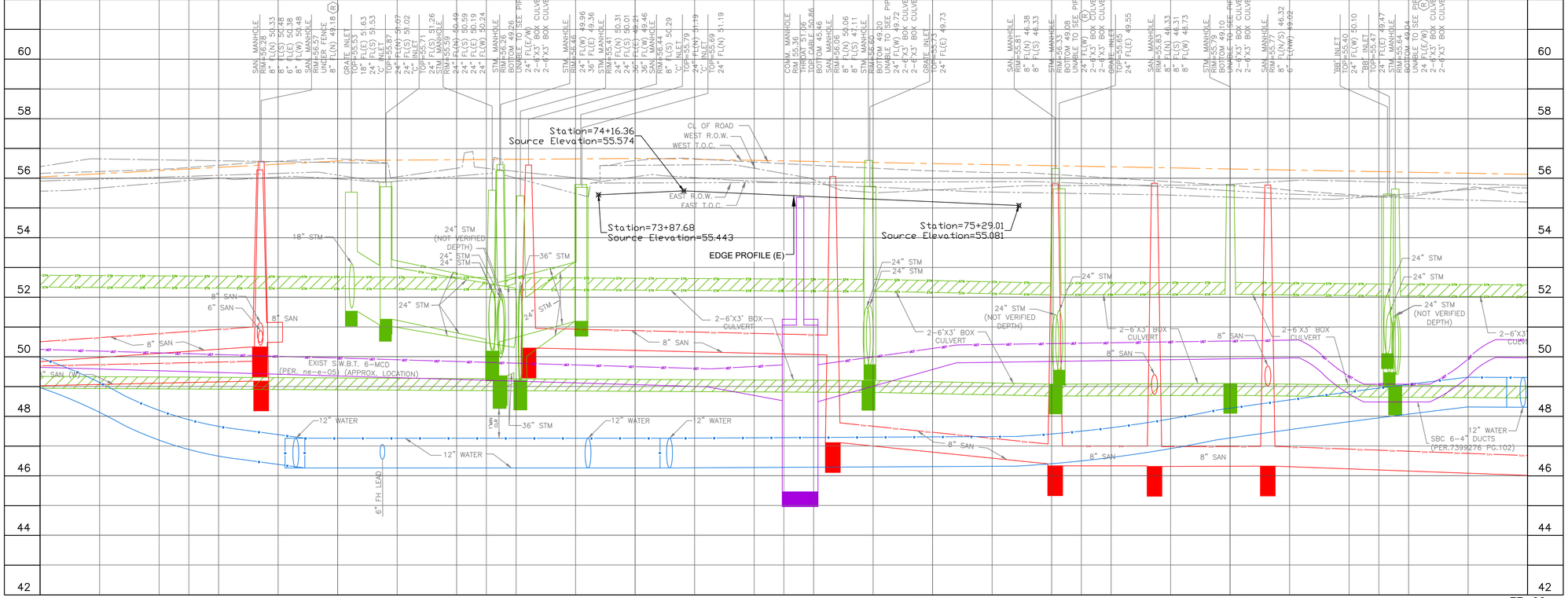

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AREA 1 84" RELIEF SANITARY SEWER
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PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/23/2026 10:42 PM
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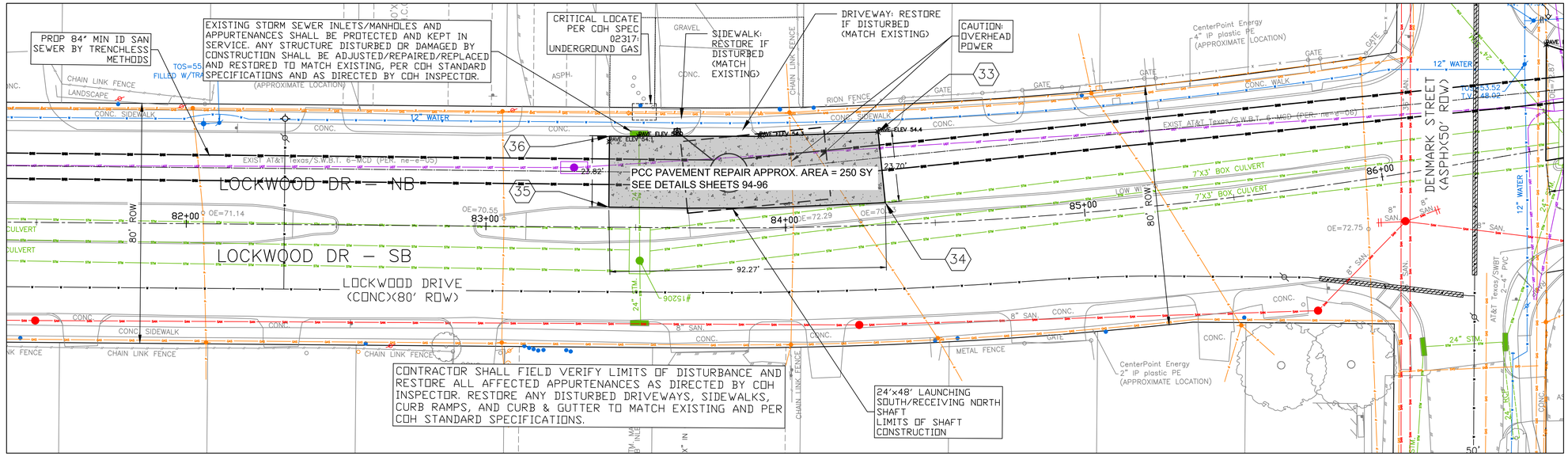

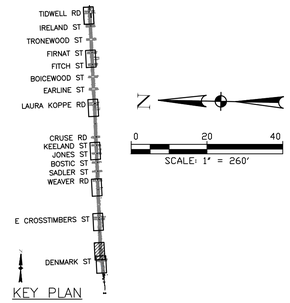

KEY PLAN

NO.	DATE	REVISION	APP.

Point Table (X)

Point#	Elevation	Northing	Easting	Staton	Offset
33	54.430	13868373.69	3135842.91	84+32.02	–31.029
34	55.039	13868370.11	3135819.48	84+33.57	–7.376
35	54.828	13868462.18	3135813.44	83+40.96	–6.668
36	54.190	13868463.15	3135837.09	83+40.96	–30.334

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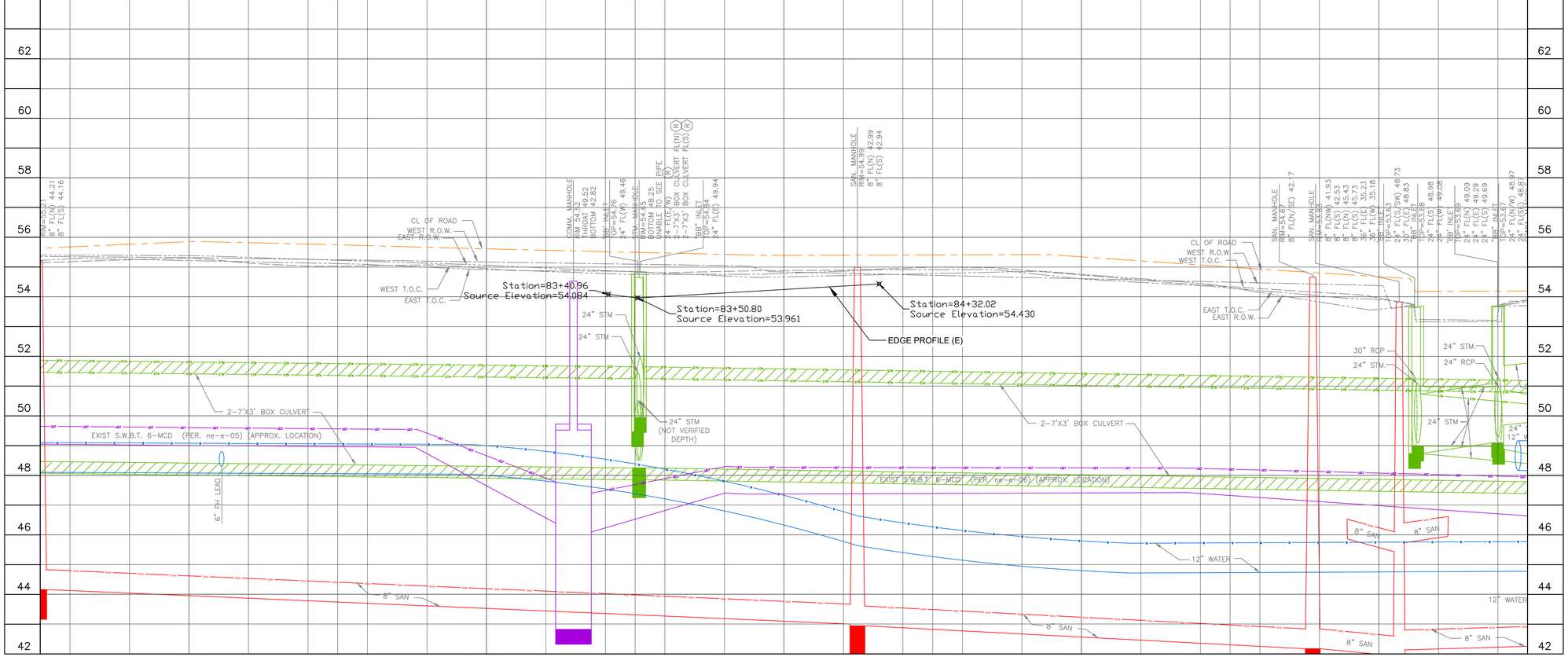

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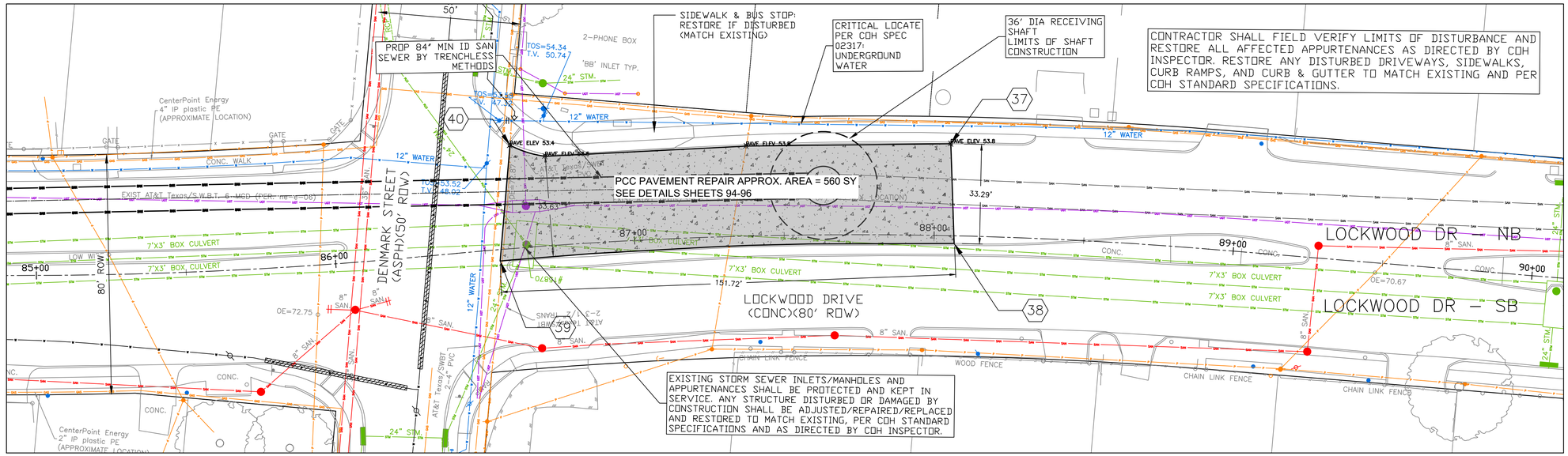

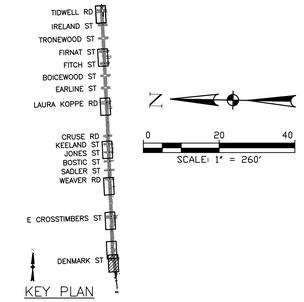

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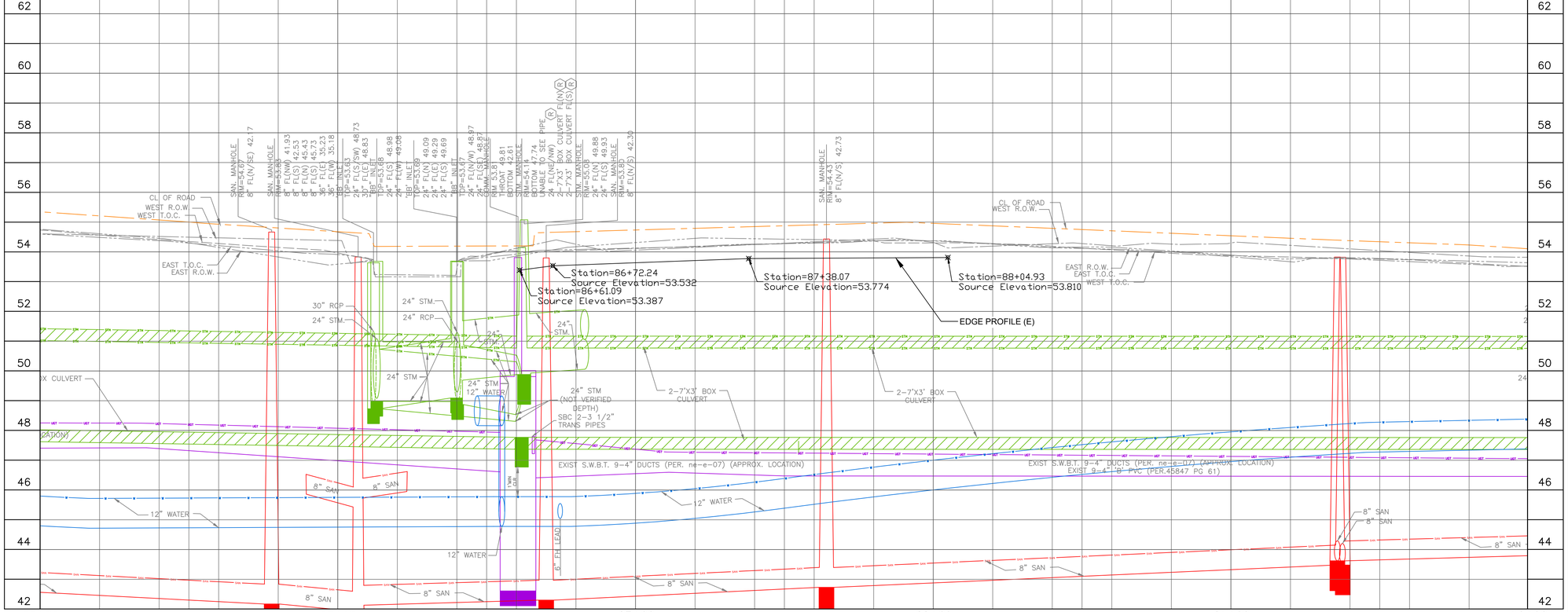
37	53.810	13868006.60	3135902.73	88+04.93	−30.722
38	54.503	13868001.17	3135869.84	88+06.76	2.561
39	54.197	13868150.62	3135844.38	86+54.76	3.814
40	53.386	13868152.38	3135883.10	86+61.09	−34.413

NOTES:
1. PCC PAVEMENT REPAIR LIMITS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING PCC JOINT LOCATIONS AND ADJUST SAWCUT/REMOVAL LIMITS TO MATCH EXISTING TRANSVERSE AND LONGITUDINAL JOINTS.
2. FULL-DEPTH PCC PANEL REPLACEMENT SHALL BE JOINT-TO-JOINT WHEREVER PRACTICAL. WHERE IT IS NOT FEASIBLE, PROVIDE A NEW CONSTRUCTION JOINT AT A LOCATION APPROVED BY THE ENGINEER/COH INSPECTOR.
3. ALL REMOVAL SHALL BE FULL-DEPTH SAWCUT WITH STRAIGHT, CLEAN EDGES. NO BREAK-OUT OR IRREGULAR DEMOLITION EDGES ARE PERMITTED.
4. PCC PAVEMENT RESTORATION SHALL BE PER CITY OF HOUSTON STANDARD DETAILS 02951-02 (CONCRETE PAVEMENT RESTORATION - GREATER THAN 5 YEARS) AND 02902-01 (PAVEMENT REPAIR DETAILS FOR STREET CUTS).
5. MATCH EXISTING PCC THICKNESS, SURFACE FINISH, AND CROSS-SLOPE. RESTORE TO MATCH EXISTING GRADES AND DRAINAGE PATTERNS.
6. REPAIR/REPLACE SUBGRADE AND BASE AS REQUIRED TO PROVIDE UNIFORM SUPPORT; COMPACT PER COH SPECS.
7. PROVIDE LOAD TRANSFER/TIE-IN ACROSS JOINTS (DOWELS/TIE BARS) AS REQUIRED BY COH STANDARDS.
8. RESTORE ALL PAVEMENT MARKINGS, RAISED PAVEMENT MARKERS (RPMS), AND TRAFFIC SIGNAL LOOP DETECTORS IMPACTED BY WORK.
9. MAINTAIN ACCESS TO ADJACENT DRIVEWAYS AND INTERSECTIONS. COORDINATE ANY TEMPORARY DRIVEWAY CLOSURES WITH PROPERTY OWNERS IN ADVANCE.
10. CONCRETE SHALL BE CURED PER COH SPECIFICATIONS. OPEN TO TRAFFIC ONLY AFTER REQUIRED STRENGTH/CURE IS ACHIEVED AND TEMPORARY/FIELD STRIPING IS IN PLACE AS REQUIRED BY THE APPROVED TCP.
11. FINAL PAVEMENT REPAIR LIMITS SHALL BE AS DIRECTED BY THE ENGINEER/COH INSPECTOR BASED ON ACTUAL DISTURBANCE LIMITS AND FIELD CONDITIONS.



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TRILOGY ENGINEERING SERVICES
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PH: 877.463.1699
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APRIL 2026

TIISETSO MASIANE, P.E.
TX PE NO. 139211

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST
PHASE II PAVEMENT REPAIR
WORK ZONE#8
STA. 86+54.76 TO STA. 88+06.76

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CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 92 OF 124	

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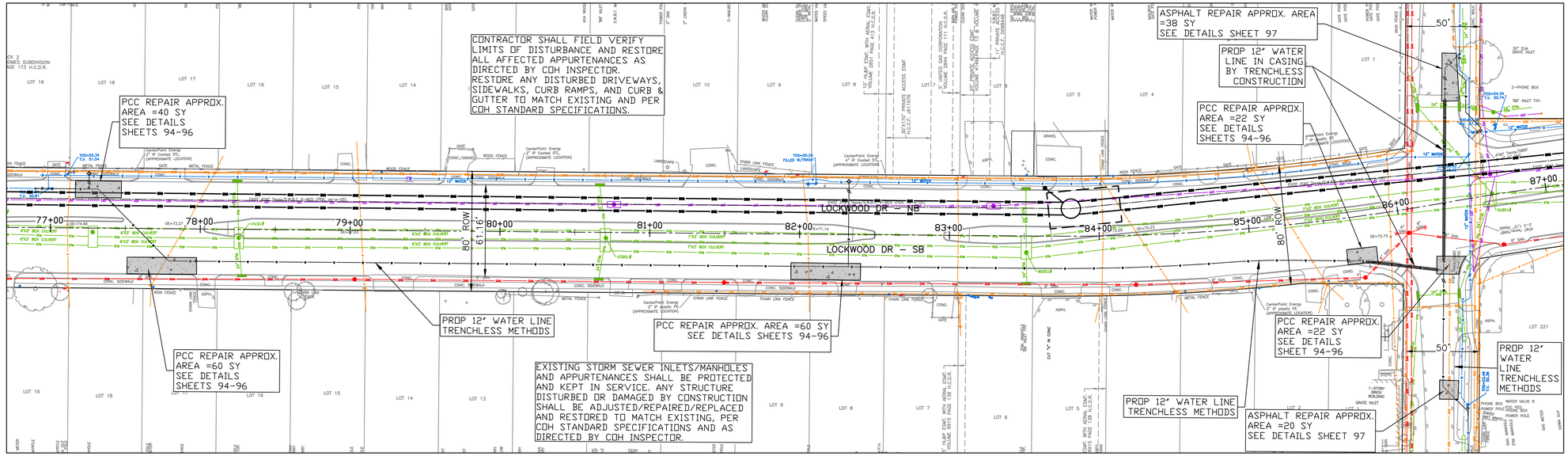

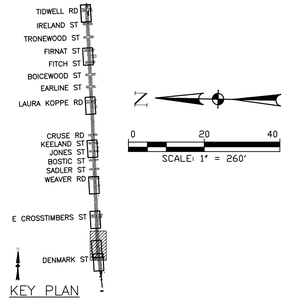

KEY PLAN

PLAN LEGEND:

- PORTLAND CEMENT CONCRETE PAVEMENT REPAIR AT LOCATION OF WL OPEN PITS AT VERTICAL & HORIZONTAL FITTINGS.
- ASPHALT PAVEMENT REPAIR AT LOCATION OF WL OPEN PITS AT VERTICAL & HORIZONTAL FITTINGS.
- 12_IN WATERLINE IS TO BE INSTALLED BY AUGERING WITH OPEN PITS AT VERTICAL & HORIZONTAL FITTINGS.

NOTES:

1. PCC PAVEMENT REPAIR LIMITS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING PCC JOINT LOCATIONS AND ADJUST SAWCUT/REMOVAL LIMITS TO MATCH EXISTING TRANSVERSE AND LONGITUDINAL JOINTS.
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5. MATCH EXISTING PCC THICKNESS, SURFACE FINISH, AND CROSS-SLOPE. RESTORE TO MATCH EXISTING GRADES AND DRAINAGE PATTERNS.
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HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
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LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PHASE I PAVEMENT REPAIR – WATER LINE

STA. 77+00 TO STA. 86+50

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SHEET NO. 93 OF 124	

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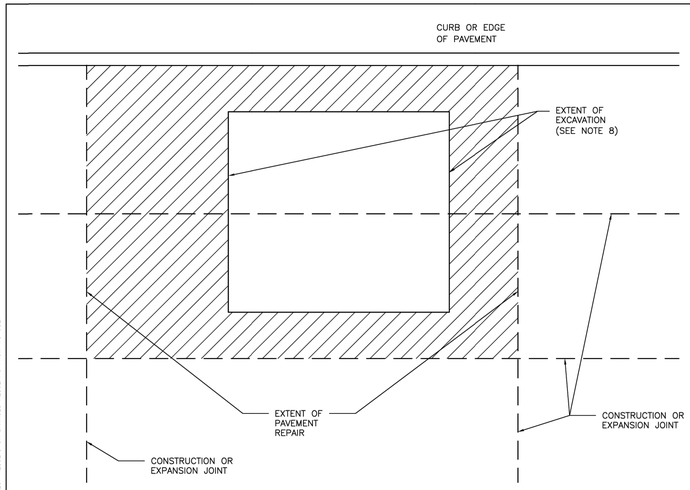

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NOTES:

1. EXTENT OF PAVEMENT REPAIR SHALL BE PERPENDICULAR AND PARALLEL TO TRAVEL WAY.
2. REPLACE ENTIRE PANEL WIDTH AND LENGTH TO NEAREST CONSTRUCTION OR EXPANSION JOINT BEYOND EDGE OF EXCAVATION.
3. SAW CUT AND EXPOSE 15" OF REINFORCING STEEL WITHIN EXISTING PAVEMENT. PROVIDE HORIZONTAL DOWELS (PER SPECIFICATION SECTION 02951–PAVEMENT REPAIR AND RESTORATION) IF EXISTING REINFORCING IS BROKEN OFF.
4. REPLACE CURB WHEN ADJACENT LANE IS REPLACED.
5. MAINTAIN EXPANSION JOINTS AT EXISTING LOCATIONS UNLESS OTHERWISE DIRECTED BY CITY ENGINEER.
6. SPECIALTY PAVEMENTS (IE: BRICK PAVERS) TO BE REPLACED WITH MATCHING PAVEMENT IN ALL CASES.
7. REPLACE PAVEMENT MARKINGS IN ACCORDANCE WITH CITY OF HOUSTON STANDARD SPECIFICATIONS 02764–RAISED PAVEMENT MARKERS AND 02767–THERMOPLASTIC PAVEMENT MARKINGS.
8. EXTENT OF EXCAVATION INCLUDES 18" OVERCUT AS SHOWN ON STANDARD DETAIL 02951–04 PAVEMENT REPAIR DETAIL FOR STREET CUTS (FLEX–BASE PAVEMENT & CONCRETE PAVEMENT).

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

STREET CUT FOR CONCRETE PAVEMENT REPLACEMENT/RESTORATION AGE OF PAVEMENT ≤ 5YRS
(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Suhail Kanuar — CITY ENGINEER
DocuSigned by: KHANG NGUYEN — CITY TRAFFIC ENGINEER
DocuSigned by: Carl Haddock — DIRECTOR OF HPW

EFF DATE: NOV–27–2023 | DWG NO: 02951–01

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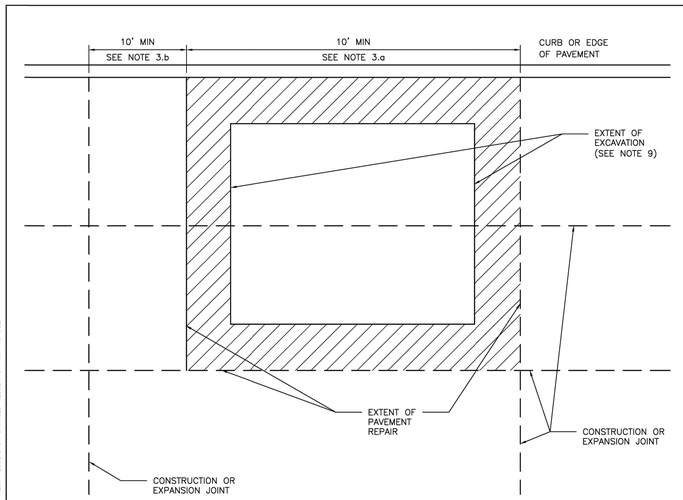

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NOTES:

1. EXTENT OF PAVEMENT REPAIR SHALL BE PERPENDICULAR AND PARALLEL TO TRAVEL WAY.
2. WIDTH:
   REPLACE PANEL WIDTH TO NEAREST CONSTRUCTION OR EXPANSION JOINT BEYOND EDGE OF EXCAVATION.
3. LENGTH:
   a. MINIMUM LENGTH OF PAVEMENT REPAIR ALONG TRAVEL WAY IS 10' FROM THE NEAREST JOINT.
   b. IF EXTENT OF PAVEMENT REPAIR IS LESS THAN 10' FROM EXISTING CONSTRUCTION OR EXPANSION JOINT, EXTEND PAVEMENT REPAIR TO EXISTING JOINT.
4. SAW CUT AND EXPOSE 15" OF REINFORCING STEEL AROUND EDGE OF PANEL REPLACEMENT. PROVIDE HORIZONTAL DOWELS (PER SPECIFICATION SECTION 02951–PAVEMENT REPAIR AND RESTORATION) IF REINFORCING IS BROKEN OFF OR DOES NOT EXIST.
5. REPLACE CURB WHEN ADJACENT LANE IS REPLACED.
6. MAINTAIN EXPANSION JOINTS AT EXISTING LOCATIONS UNLESS OTHERWISE DIRECTED BY CITY ENGINEER.
7. SPECIALTY PAVEMENTS (IE: BRICK PAVERS) TO BE REPLACED WITH MATCHING PAVEMENT IN ALL CASES.
8. REPLACE PAVEMENT MARKINGS IN ACCORDANCE WITH CITY OF HOUSTON STANDARD SPECIFICATIONS 02764–RAISED PAVEMENT MARKERS AND 02767–THERMOPLASTIC PAVEMENT MARKINGS.
9. EXTENT OF EXCAVATION INCLUDES 18" OVERCUT AS SHOWN ON STANDARD DETAIL 02951–04 PAVEMENT REPAIR DETAIL FOR STREET CUTS (FLEX–BASE PAVEMENT & CONCRETE PAVEMENT).

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

STREET CUT FOR CONCRETE PAVEMENT REPLACEMENT/RESTORATION AGE OF PAVEMENT > 5YRS
(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Suhail Kanuar — CITY ENGINEER
DocuSigned by: KHANG NGUYEN — CITY TRAFFIC ENGINEER
DocuSigned by: Carl Haddock — DIRECTOR OF HPW

EFF DATE: NOV–27–2023 | DWG NO: 02951–02

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PAVEMENT REPAIR DETAIL FOR CONCRETE PAVEMENT (1 OF 2)

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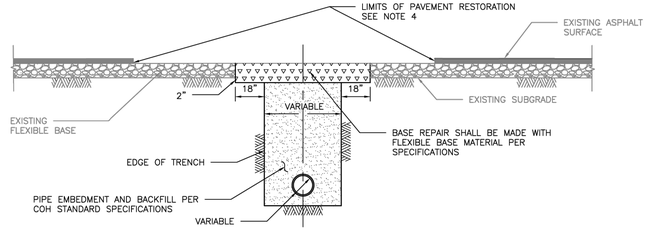
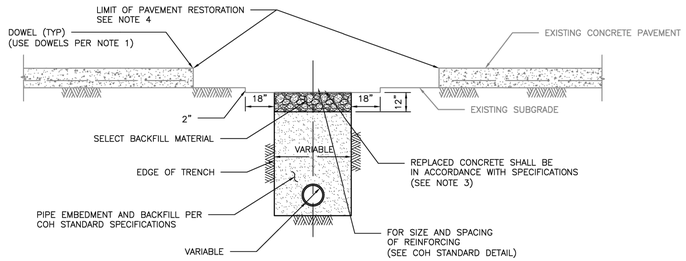


ELEVATION A
REPAIR OF FLEXIBLE BASE PAVEMENT



ELEVATION B
REPAIR OF REINFORCED CONCRETE PAVEMENT

NOTES:

1. EXPOSE 15" OF REINFORCING STEEL AT PROPOSED SAWED JOINT. IF NO REINFORCING STEEL EXISTS, USE HORIZONTAL DOWELS. HORIZONTAL DOWELS SHALL BE #6 BAR, 24" LONG, 24" C-C, DRILLED AND EMBEDDED 8" INTO THE CENTER OF THE EXISTING SLAB. WITH "PO ROC" OR EQUAL.
2. IF REINFORCED CONCRETE IS OVERLAYED WITH ASPHALT, REPLACE WITH 2" MIN HMAC SURFACING.
3. REFER TO STANDARD DETAIL 02751-01 FOR REINFORCING STEEL REQUIREMENTS.
4. REFER TO STANDARD DETAIL 02951-01 THROUGH 03 FOR PAVEMENT RESTORATION LIMITS.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

PAVEMENT REPAIR DETAIL
FOR STREET CUTS
(FLEX-BASE PAVEMENT & CONCRETE PAVEMENT)
(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Sukait Tesfamariam — CITY ENGINEER
DocuSigned by: Khang Nguyen — CITY TRAFFIC ENGINEER
DocuSigned by: Carol Haddock — DIRECTOR OF HPW

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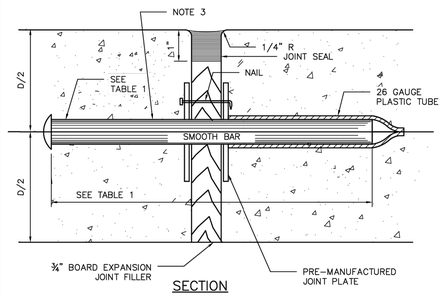
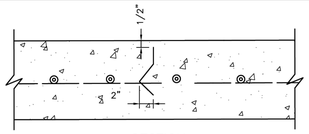
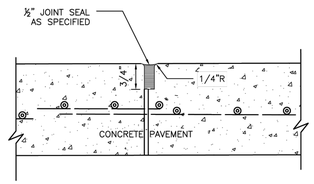


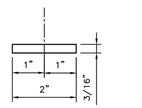
SECTION
DOWEL TYPE EXPANSION JOINT



SECTION
DEFORMED METAL STRIP



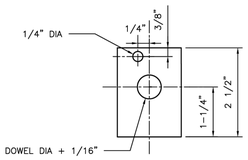
SECTION
CONSTRUCTION JOINT SEAL



PLAN VIEW
JOINT PLATE

TABLE 1

PAVEMENT THICKNESS (IN)	DOWEL SIZES AND SPACINGS		
	DIAMETER (IN)	LENGTH (IN)	SPACING (IN)
6	3/4	18	12
7	1	18	12
8	1	18	12
9	1 1/4	18	12
10	1 1/4	18	12
11	1 1/4	18	12
12	1 1/4	18	12



ELEVATION VIEW
JOINT PLATE

NOTES:

1. STEEL TO MEET ASTM STANDARD SPECIFICATIONS FOR CONCRETE REINFORCING BARS. UNITS TO BE SPACED 12" CENTER ON CENTER.
2. EXPANSION JOINT TO BE PLACED AT THE END OF EACH CURB RADIUS.
3. CENTER DOWEL HORIZONTALLY ON JOINT.
4. CENTER DOWEL VERTICALLY IN CONCRETE BASE. EXTEND THICKENED CONCRETE AS NEEDED TO MAINTAIN 3" MIN COVER.
5. CITY OF HOUSTON APPROVED PRODUCTS MAY BE USED AS JOINT PLATE ALTERNATIVE.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

PAVEMENT EXPANSION AND
CONSTRUCTION JOINT DETAILS
(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Sukait Tesfamariam — CITY ENGINEER
DocuSigned by: Khang Nguyen — CITY TRAFFIC ENGINEER
DocuSigned by: Carol Haddock — DIRECTOR OF HPW

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PAVEMENT REPAIR DETAIL FOR CONCRETE PAVEMENT (2 OF 2)

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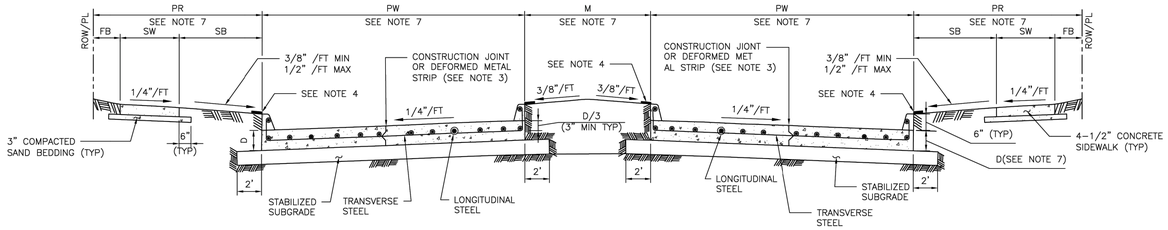
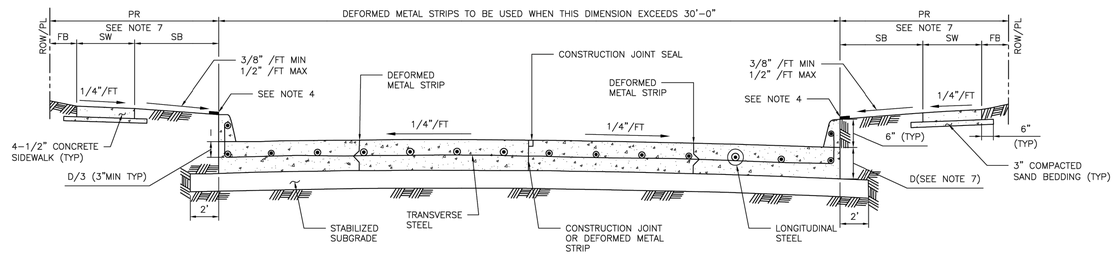


TYPICAL DOUBLE ROADWAY SECTION FOR CONCRETE PAVEMENT WITH CURBS



TYPICAL SINGLE ROADWAY SECTION FOR CONCRETE PAVEMENT WITH CURBS

TABLE 1

REINFORCING STEEL BAR SIZES AND SPACINGS FOR VARIOUS PAVEMENT THICKNESSES (D) WITH: MAXIMUM TRANSVERSE CONTROL JOINT SPACING = 20'-0"
MAXIMUM EXPANSION JOINT SPACING = 80'-0"
fc' = 4,000 PSI/28 DAYS AND FY = 60,000 PSI

PAVEMENT THICKNESS 'D' (IN)	PAVEMENT WIDTH 'PW' (FT)	LONGITUDINAL STEEL									TRAVERSE STEEL		
		#4 BARS			#5 BARS			#6 BARS			#4 BARS	#5 BARS	#6 BARS
		NUMBER OF BARS	SPACING (IN)	END BAR SPACING (IN)	NUMBER OF BARS	SPACING (IN)	END BAR SPACING (IN)	NUMBER OF BARS	SPACING (IN)	END BAR SPACING (IN)	SPACING (IN)	SPACING (IN)	SPACING (IN)
6	28	17	20.50	4.00	–	–	–	–	–	–	36	–	–
7	25	17	18.25	4.00	–	–	–	–	–	–	36	–	–
7	35	24	18.00	3.00	–	–	–	–	–	–	36	–	–
7	36	25	17.75	3.00	–	–	–	–	–	–	36	–	–
7	37	25	18.25	3.00	–	–	–	–	–	–	36	–	–
7	41	28	18.00	3.00	–	–	–	–	–	–	36	–	–
7	45	31	17.75	3.75	–	–	–	–	–	–	36	–	–
8	25	20	15.50	2.75	13	24.50	3.0	–	–	–	36	36	–
8	34	27	15.50	2.50	17	25.00	4.0	–	–	–	36	36	–
8	35	27	16.00	2.00	18	24.25	4.0	–	–	–	36	36	–
8	36	28	15.75	3.25	18	25.00	3.0	–	–	–	30	36	–
8	44	24	15.75	4.00	22	24.75	4.0	–	–	–	30	36	–
8	45	35	15.75	2.25	23	24.25	3.0	–	–	–	30	36	–
9	25	22	14.00	3.00	14	22.50	4.0	–	–	–	36	36	–
9	34	31	13.50	2.00	19	22.25	3.5	–	–	–	30	36	–
9	35	31	13.75	3.75	20	21.75	3.5	–	–	–	30	36	–
9	36	32	13.75	3.00	21	21.25	3.5	–	–	–	30	36	–
9	44	39	13.75	2.75	25	21.75	3.0	–	–	–	24	36	–
9	45	39	14.00	4.00	26	21.25	4.5	–	–	–	24	36	–
10	25	24	12.75	3.50	17	18.25	4.0	–	–	–	36	36	36
10	34	33	12.50	4.00	21	20.00	4.0	–	–	–	30	36	36
10	35	34	12.50	3.75	23	18.75	4.0	–	–	–	30	36	36
10	36	35	12.50	3.50	24	18.50	3.0	–	–	–	30	36	36
10	44	44	12.00	4.00	29	18.50	4.5	–	–	–	24	36	36
10	45	44	12.50	3.00	29	19.00	3.0	–	–	–	24	36	36
11	25	27	11.25	3.00	17	18.25	4.0	12	26.75	3	36	36	36
11	34	36	11.50	2.75	24	17.50	2.5	17	25.00	4	24	36	36
11	35	37	11.50	3.00	24	18.00	3.0	17	25.75	4	24	36	36
11	36	40	11.00	2.00	25	17.75	3.0	17	26.50	4	24	36	36
11	44	48	11.125	2.50	30	18.00	3.0	21	26.00	4	24	36	36
11	45	49	11.125	3.00	31	17.75	4.0	22	25.50	3	24	36	36
12	25	–	–	–	19	16.25	4.0	13	24.50	3	36	36	36
12	34	–	–	–	26	16.00	4.0	18	23.50	4	24	36	36
12	35	–	–	–	26	16.50	4.0	19	23.00	3	24	36	36
12	36	–	–	–	27	16.25	4.5	20	22.25	4.5	24	36	36
12	44	–	–	–	33	16.25	4.0	24	22.50	5	24	30	36
12	45	–	–	–	35	15.75	3.0	25	22.25	3	24	30	36

MINIMUM LAP LENGTH (L):
A. # 4 BARS ; L = 22 INCHES
B. # 5 BARS ; L = 27 INCHES
C. # 6 BARS ; L = 32 INCHES

NOTES:

1. THE MAXIMUM WIDTH BETWEEN LONGITUDINAL JOINTS SHALL NOT EXCEED 15'-0".
2. ALL EARTHEN AREAS ARE TO BE HYDROMULCHED UNLESS SHOWN OTHERWISE ON DRAWINGS.
3. CONTRACTOR MAY SAW CUT IN LIEU OF DEFORMED METAL STRIP.
4. USE STRIP OF SOD GRASS TO PREVENT EROSION UNTIL STAND OF GRASS IS ESTABLISHED.
5. AN EQUAL OR LARGER AREA OF WELDED REINFORCEMENT BAR CONFORMING TO ASTM A497, MAY BE SUBSTITUTED FOR REBARS LISTED IN TABLE 1.
6. IF AVAILABLE ROW IS NOT SUFFICIENT TO ACCOMMODATE SIDEWALK WIDTH (SW) ACCORDING TO IDM REQUIREMENTS, ENGINEER SHALL OBTAIN A VARIANCE FROM THE CITY ENGINEER.
7. REFER TO CONTRACT DRAWINGS FOR PAVEMENT WIDTH (PW) AND PAVEMENT THICKNESS (D), MEDIAN (M), PEDESTRIAN REALM (PR), SIDEWALK (SW), FRONTAGE BUFFER (FB), AND SAFETY BUFFER (SB) WIDTHS.

NO.	DATE	REVISION	APP.

APPROVED BY:	APPROVED BY:
DocuSigned by: Sukai Kaiwar 9EFB80C64F5478...	DocuSigned by: KHANG NGUYEN 95A39EFDA758400...
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: DocuSigned by: Carl Haddock A9C4195F8E9E4E5...	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 02751-01

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

CONCRETE PAVEMENT DETAILS

FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE

NOT TO SCALE

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TX FIRM NO: 17715

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APRIL 2026
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TX PE NO. 139211

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

CONCRETE PAVEMENT DETAIL

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
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CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
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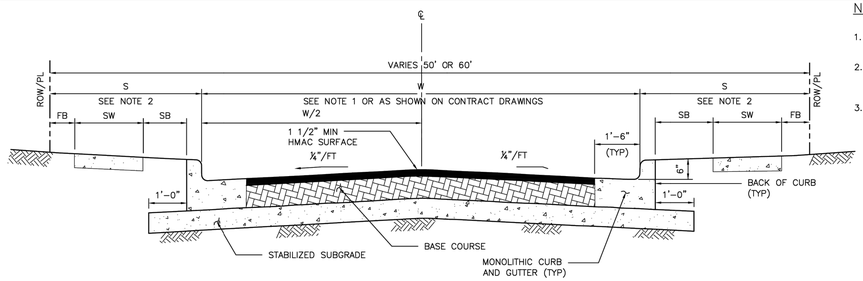
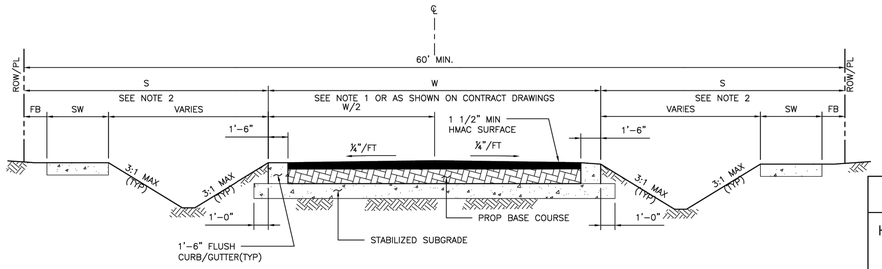


HMAC PAVEMENT – CURB & GUTTER SECTION

(NOT APPLICABLE TO ETJ OF CITY OF HOUSTON)



HMAC PAVEMENT – DITCH SECTION

(NOT APPLICABLE TO ETJ OF CITY OF HOUSTON)

NOTES:

1. FOR TRAVEL WAY WIDTH (W) REFER TO IDM SECTION 10.3.03.A.
2. REFER TO CONTRACT DRAWINGS FOR "S" DIMENSION (S), SIDEWALK (SW), FRONTAGE BUFFER (FB), AND SAFETY BUFFER (SB) WIDTHS.
3. BASE COURSE SHALL BE:
   ALTERNATES:
   A) 6" (MIN) HOT MIX ASPHALTIC CONCRETE.
   B) 8" (MIN) CRUSHED CONCRETE.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

HOT MIX ASPHALTIC CONCRETE PAVEMENT DETAILS

(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Suhail Kanuar — CITY ENGINEER
DocuSigned by: Carl Haddock — DIRECTOR OF HPW
DocuSigned by: KHANG NGUYEN — CITY TRAFFIC ENGINEER

EFF DATE: NOV-27-2023 | DWG NO: 02741-01

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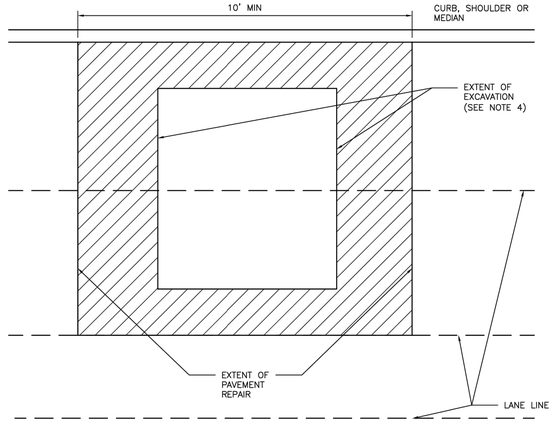

NOTES:

1. EXTENT OF PAVEMENT REPAIR SHALL BE PERPENDICULAR AND PARALLEL TO TRAVEL WAY.
2. FLEXIBLE BASE: REPLACE BASE TO SAME THICKNESS PLUS TWO INCHES (2") FOR EXTENT OF EXCAVATION. USE APPROVED BASE MATERIAL TYPE.*
3. SURFACE COURSE:
   3.1. WIDTH:
   SURFACE MILL AND OVERLAY FULL WIDTH OF LANE(S) TO NEAREST LANE DIVIDER BEYOND EDGE OF EXCAVATION.
   3.2. LENGTH:
   MINIMUM LENGTH OF SURFACE MILL ALONG TRAVEL WAY IS 10'.
   3.3. REPLACE PAVEMENT MARKINGS IN ACCORDANCE WITH CITY OF HOUSTON STANDARD SPECIFICATIONS 02764–RAISED PAVEMENT MARKERS AND 02767–THERMOPLASTIC PAVEMENT MARKINGS.
4. EXTENT OF EXCAVATION INCLUDES 18" OVER CUT AS SHOWN ON STANDARD DETAIL 02951–04 PAVEMENT REPAIR DETAIL FOR STREET CUTS (FLEX–BASE PAVEMENT AND CONCRETE PAVEMENT).
5. ADDITIONAL REQUIREMENTS FOR ASPHALT OVERLAY ON CONCRETE PAVEMENT:
   5.1. REPLACE CONCRETE FOR EXTENT OF EXCAVATION. REPLACE TO SAME THICKNESS PLUS TWO INCHES (2").
   5.2. WIDTH:
   5.2.1. IF EXCAVATION EXTENDS MORE THAN HALF OF A LANE, REPLACE ENTIRE LANE OF CONCRETE. OTHERWISE USE STANDARD DETAIL 02951–04 THROUGH 05.
   5.3. SAW CUT AND EXPOSE 15" OF REINFORCING STEEL AROUND EDGE OF CONCRETE REPLACEMENT, IF NO REINFORCING STEEL EXISTS, USE HORIZONTAL DOWELS PER CITY OF HOUSTON STANDARD SPECIFICATION SECTION 02951–PAVEMENT REPAIR AND RESTORATION.
   5.4. REPLACE CURB WHEN ADJACENT LANE IS REPLACED.
   5.5. MAINTAIN CONCRETE EXPANSION JOINTS AT EXISTING LOCATIONS UNLESS OTHERWISE APPROVED BY CITY ENGINEER.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

STREET CUT FOR ASPHALT PAVEMENT REPLACEMENT/RESTORATION FOR PAVEMENT OF ALL AGES

(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Suhail Kanuar — CITY ENGINEER
DocuSigned by: Carl Haddock — DIRECTOR OF HPW
DocuSigned by: KHANG NGUYEN — CITY TRAFFIC ENGINEER

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APRIL 2026

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PAVEMENT REPAIR DETAIL FOR ASPHALT PAVEMENT

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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AS NOTED	
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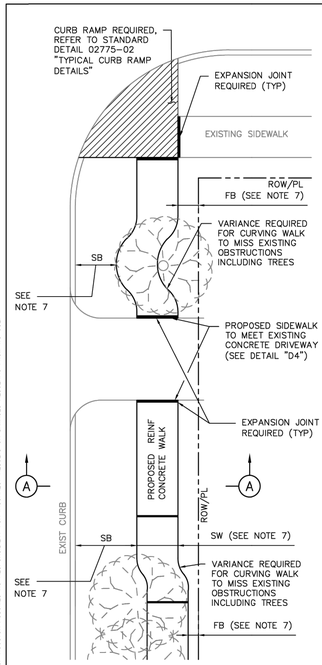
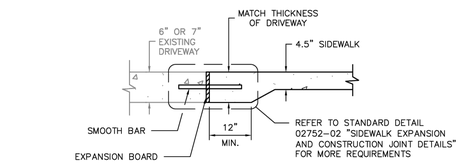


PLAN VIEW

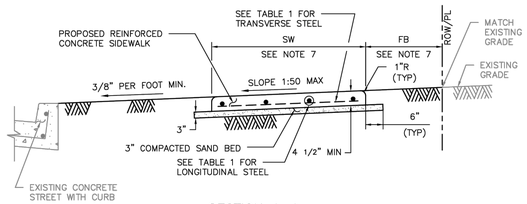


DETAIL D4
DRIVEWAY/SIDEWALK HEADER

TABLE 1

REINFORCING STEEL INFORMATION
FOR 4 ½ " THICK SIDEWALKS
EXPANSION JOINT SPACING = 40 FT
fc' = 3,500 PSI AND fy = 60,000 PSI
REFER TO CONTRACT DRAWINGS FOR SIDEWALKS WIDER THAN 6 FEET.

SIDEWALK THICKNESS (IN)	SIDEWALK WIDTH (FT)	LONGITUDINAL STEEL			TRANSVERSE STEEL #3 BARS SPACING (IN)
		#3 BARS			
		NO. OF BARS	SPACING (IN)	END BAR SPACING (IN)	
4.5	5	3	27	3	48
4.5	6	4	22	3	48



SECTION A-A

NOTES:

1. 6X6 – W2.9XW2.9 WELDED WIRE FABRIC MAY BE USED IN LIEU OF THE REINFORCING STEEL GIVEN IN TABLE 1.
2. REINFORCED CONCRETE SIDEWALKS THRU DRIVEWAYS OPENINGS SHALL BE EITHER 6" THICK OR 7" THICK AS SPECIFIED ON 6" STABILIZED SUBGRADE. FOR THE REINFORCING STEEL REQUIREMENTS, SEE CITY OF HOUSTON STANDARD DETAILS 02754-01A, 02754-01B, 02754-03, AND 02754-04.
3. MAXIMUM SPACING FOR EXPANSION JOINTS SHALL BE 40 FEET.
4. CONTRACTOR SHALL CONSTRUCT SIDEWALK IN A MANNER NOT TO BLOCK THE NATURAL DRAINAGE FROM ADJACENT PROPERTY.
5. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOUSTON PUBLIC WORKS STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
6. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON UNLESS NOTED OTHERWISE.
7. REFER TO CONTRACT DRAWINGS FOR SIDEWALK (SW), FRONTAGE BUFFER (FB), AND SAFETY BUFFER (SB) WIDTHS.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TYPICAL SIDEWALK LAYOUT AND DETAILS FOR STREETS WITH CURBS
(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Suhail Kanuvar — CITY ENGINEER
DocuSigned by: KHANG NGUYEN — CITY TRAFFIC ENGINEER
DocuSigned by: Carl Haddock — DIRECTOR OF HPW

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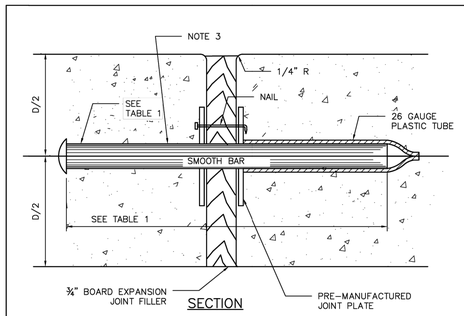
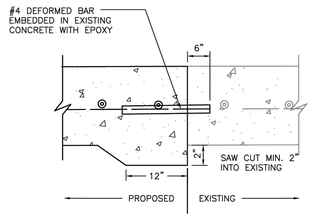


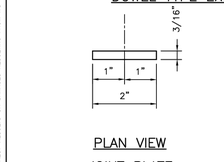
SECTION

DOWEL TYPE EXPANSION JOINT



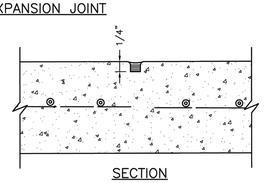
SECTION

SIDEWALK TO EXISTING SIDEWALK



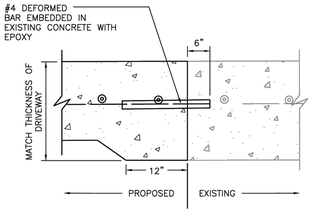
PLAN VIEW

JOINT PLATE



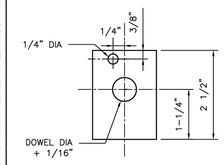
SECTION

CONTROL JOINT



SECTION

SIDEWALK TO EXISTING DRIVEWAY



ELEVATION VIEW

JOINT PLATE

TABLE 1

PAVEMENT THICKNESS (IN)	DOWEL SIZES AND SPACINGS		
	DIAMETER (IN)	LENGTH (IN)	SPACING (IN)
4 1/2	1/2	18	12
5	1/2	18	12
6	3/4	18	12
7	1	18	12

NOTES:

1. STEEL TO MEET ASTM STANDARD SPECIFICATIONS FOR CONCRETE REINFORCING BARS.
2. EXPANSION JOINT TO BE PLACED AT THE END OF EACH CURB RADIUS AND SPACED AT A MAXIMUM DISTANCE OF 3 FEET MAXIMUM SPACING FOR CONTROL JOINTS SHALL BE 5 FEET.
3. CENTER DOWEL HORIZONTALLY ON JOINT.
4. CENTER DOWEL VERTICALLY IN CONCRETE AS NEEDED TO MAINTAIN A 2 INCH MINIMUM COVER.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

SIDEWALK EXPANSION AND CONSTRUCTION JOINT DETAILS
(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Suhail Kanuvar — CITY ENGINEER
DocuSigned by: KHANG NGUYEN — CITY TRAFFIC ENGINEER
DocuSigned by: Carl Haddock — DIRECTOR OF HPW

EFF DATE: NOV-27-2023 | DWG NO: 02752-02

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

SIDEWALK CONSTRUCTION DETAILS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 98 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 10:21 AM

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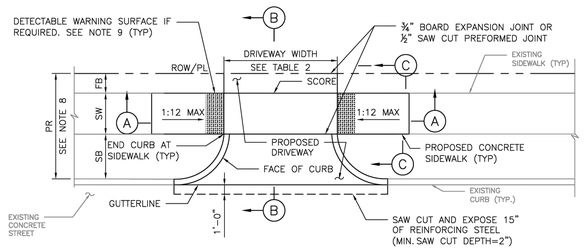
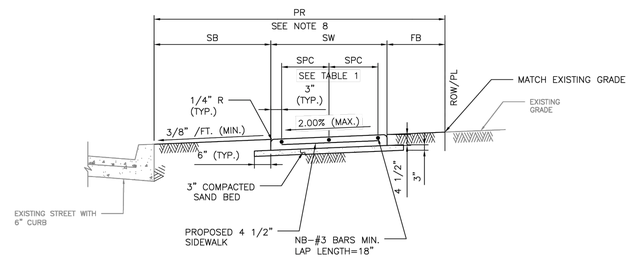
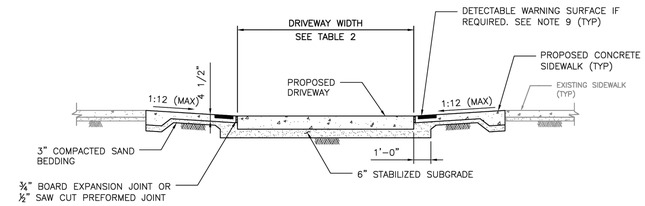


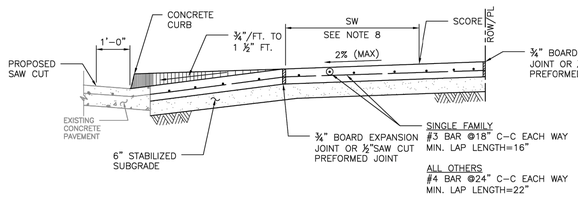
PLAN VIEW
DRIVEWAY



SECTION C–C
TYPICAL SIDEWALK SECTION



SECTION A–A
PROPOSED SIDEWALK THROUGH DRIVEWAY
WITH EXCESSIVE ELEVATION DIFFERENCE
WITH EXISTING SIDEWALK



SECTION B–B
TYPICAL DRIVEWAY SECTION

TABLE 1

REINFORCING STEEL INFORMATION
FOR 4 ½ " THICK SIDEWALKS
EXPANSION JOINT SPACING = 40 FT
fc' = 3,500 PSI AND fy = 60,000 PSI
REFER TO CONTRACT DRAWINGS FOR SIDEWALKS WIDER THAN 6 FEET.

SIDEWALK THICKNESS (IN)	SIDEWALK WIDTH (FT)	LONGITUDINAL STEEL			TRANSVERSE STEEL #3 BARS SPACING (IN)
		#3 BARS			
		NO. OF BARS "NB"	SPACING "SPC" (IN)	END BAR SPACING (IN)	
4.5	5	3	27	3	48
4.5	6	4	22	3	48

TABLE 2

DRIVEWAY DESIGN CRITERIA (1)(2)

TRAFFIC TYPE	TYPE A DRIVEWAY (FOR SINGLE FAMILY RESIDENTIAL HOUSES OR DUPLEXES)				TYPE B DRIVEWAY (SHARED ACCESS/SHARED DRIVEWAY)				TYPE C DRIVEWAY (COMMERCIAL DRIVEWAY)			
	WIDTH (FT)		RADIUS (FT)		WIDTH (FT)		RADIUS (FT)		WIDTH (FT)		RADIUS (FT)	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
ONE–WAY	10	12	4	10	12(3)	16(5)	4(5)	10(5)	15	20	10	20
TWO–WAY	10(3)	24(4)	4	10	16(6)	24	4	10	24	35	10	20

(1) REFER TO INFRASTRUCTURE DESIGN MANUAL ARTICLE 15.2.07.C.1.F FOR DRIVEWAYS THAT REQUIRE A VEHICLE SWEPT PATH ANALYSIS.
(2) REFER TO INFRASTRUCTURE DESIGN MANUAL ARTCILES 15.2.07.C.1.G.(1) AND 15.2.07.C.1.G.(2) FOR TYPE 1 PAE AND TYPE 2 PAE REQUIREMENTS.
(3) THE MINIMUM WIDTH FOR JOINT ACCESS DRIVEWAY IS 12 FT.
(4) REFER TO CHAPTER 42 OF THE CODE OF ORDINANCES FOR DRIVEWAY WIDTHS FOR NARROW LOTS.
(5) ONLY MURS AND COURTYARD STYLE DEVELOPMENTS ON CORNER LOTS CAN HAVE ONE–WAY DRIVEWAYS.
(6) REFER TO CHAPTER 42, SECTION 42–146 OF THE CODE OF ORDINANCES FOR EXCEPTIONS TO THE MINIMUM DRIVEWAY WIDTH FOR SHARED DRIVEWAYS.

NOTES:

1. REPAIR, RECONSTRUCTION OR REPLACEMENT OF SIDEWALKS SHALL MEET PERMITTING REQUIREMENTS OF CODE OF ORDINANCES SECTION 40–552.
2. FOR REPAIR, RECONSTRUCTION, OR REPLACEMENT OF EXISTING SIDEWALKS:
   - 2.1. EXISTING SIDEWALKS LESS THAN OR EQUAL TO 20 FEET IN TOTAL LENGTH:
     - 2.1.1. THE PROPOSED SIDEWALK WIDTH WILL BE ALLOWED TO MATCH THE EXISTING SIDEWALK.
   - 2.2. EXISTING SIDEWALKS GREATER THAN 20 FEET IN TOTAL LENGTH:
     - 2.2.1. THE SIDEWALK WIDTH FOR THE ENTIRE PROPERTY WIDTH SHALL BE IMPROVED TO MEET WIDTH REQUIREMENTS ACCORDING TO THE LATEST INFRASTRUCTURE DESIGN MANUAL.
   - 2.3. 20 FOOT TOTAL LENGTH IS DEFINED AS:
     - 2.3.1. UP TO 10 FEET ON BOTH SIDES OF THE DRIVEWAY; OR
     - 2.3.2. UP TO 20 FEET WHEN SIDEWALK AFFECTED IS LOCATED ONLY ON ONE SIDE OF THE DRIVEWAY.
3. ALL JOINTS ALONG THE SIDEWALK SHALL BE CONSTRUCTED ACCORDING TO DRAWING 02752–02 AND SPECIFICATION 02752.
4. DRIVEWAYS SHALL BE MINIMUM 6" THICK FOR SINGLE FAMILY AND DUPLEXES. DRIVEWAYS SHALL BE MINIMUM 7" THICK FOR ALL OTHERS (I.E. COMMERCIAL, INDUSTRIAL, ETC.)
5. DRIVEWAYS AND SIDEWALKS SHALL BE CONSTRUCTED WITH PORTLAND CEMENT CONCRETE AND INCLUDE 5 1/2 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE.
6. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOUSTON PUBLIC WORKS STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
7. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.
8. REFER TO CONTRACT DRAWINGS FOR PEDESTRIAN REALM (PR), SIDEWALK (SW), FRONTAGE BUFFER (FB), AND SAFETY BUFFER (SB) WIDTHS.
9. DETECTABLE WARNING SURFACES:
   - 9.1. SIDEWALK SHALL HAVE A DETECTABLE WARNING SURFACE WHERE:
     - 9.1.1. SIDEWALK INTERSECTS TYPE C DRIVEWAYS (COMMERCIAL DRIVEWAYS) THAT ARE STOP, YIELD, OR TRAFFIC SIGNAL CONTROLLED; OR
     - 9.1.2. SIDEWALK SLOPE IS GREATER THAN 1:20 AND INTERSECTS A TYPE C DRIVEWAY (COMMERCIAL DRIVEWAY)
   - 9.2. DETECTABLE WARNING SURFACES ARE OPTIONAL WHERE SIDEWALKS INTERSECT TYPE A DRIVEWAYS (SINGLE FAMILY RESIDENTIAL HOUSES OR DUPLEXES) OR TYPE B DRIVEWAYS (SHARED ACCESS/SHARED DRIVEWAYS).
   - 9.3. REFER TO STANDARD DETAILS 02775–06 TO 02775–07 FOR DETECTABLE WARNING SURFACE STANDARDS.

APPROVED BY:	APPROVED BY:
Docusigned by: Sukai Lauwar 8EF8B03C6A1F5A7A...	Docusigned by: kiuling Nguyen 35A39EF0A7B94CD...
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: Docusigned by: Carl Haddock A3DC4150735E465...	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV–27–2023	DWG NO: 02754–01B

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

DRIVEWAY DETAIL WITH 6" CURBED STREETS

	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	
NOT TO SCALE	

NO.	DATE	REVISION	APP.

stv
Texas Registered Engineering Firm F–204
Texas First Bank Building
11757 Katy Freeway
Suite 1540
Houston, TX, 77079
(713)532–1730
Fax (713)532–1734

TRILOGY ENGINEERING SERVICES
238 WESTCOTT STREET
HOUSTON, TEXAS 77007
PH: 877.463.1699
TX FIRM NO: 17715

SURVEYED BY: LANDTECH
FB NO. P–

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APRIL 2026

TIISETSO MASIANE, P.E.
TX PE NO. 139211

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

DRIVEWAY DETAIL WITH 6" CURBED STREET

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–001000–0032–4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 99 OF 124	

60% SUBMITTAL

DISCLAIMER:
THE USE OF THIS STANDARD IS GOVERNED BY THE TEXAS ENGINEERING PRACTICE ACT. THE DESIGN REQUIREMENTS ON THIS STANDARD DO NOT PURPORT TO ADDRESS ALL OF THE SAFETY CONCERNS ASSOCIATED WITH THEIR USE. IT IS THE RESPONSIBILITY OF THE DESIGN ENGINEER TO USE SOUND ENGINEERING JUDGMENT IN THE PREPARATION AND SEALING OF THE PLANS FOR A SPECIFIC PROJECT. THE DESIGN ENGINEER IS RESPONSIBLE FOR THE SAFETY DESIGN OF THE PROJECT. THE DESIGN ENGINEER SHALL DESIGN AND DETAIL THE PROJECT IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING STANDARDS AND PRACTICES TAKING INTO CONSIDERATION THE SAFETY OF THE CONTRACTOR'S EMPLOYEES AND THE PUBLIC. THE DESIGN ENGINEER SHALL BE RESPONSIBLE FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE. WARRANTY OF ANY KIND IS MADE BY THE CITY OF HOUSTON FOR ANY PURPOSES WHATSOEVER. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY

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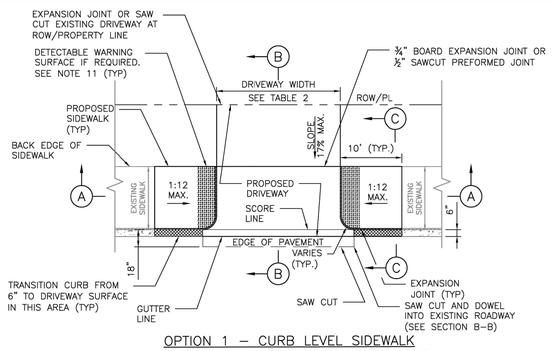
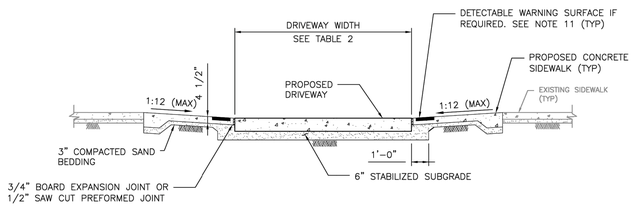
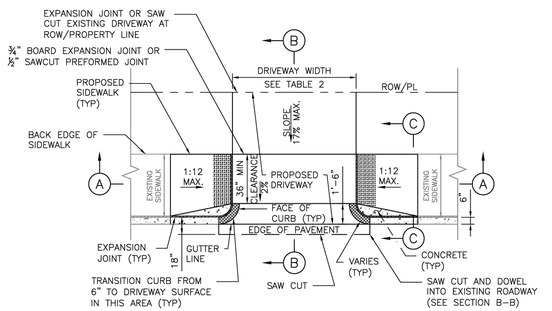


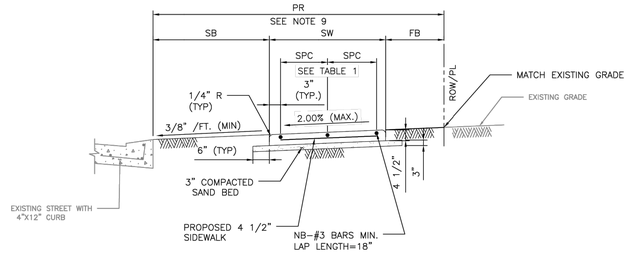
OPTION 1 – CURB LEVEL SIDEWALK
PLAN VIEW – DRIVEWAY WITHOUT CURB AT CURB RETURN



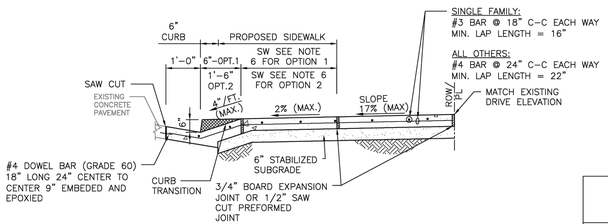
SECTION A–A
PROPOSED SIDEWALK THROUGH DRIVEWAY



OPTION 2 – CURB LEVEL SIDEWALK
PLAN VIEW – DRIVEWAY WITH CURB AT CURB RETURN



SECTION C–C
TYPICAL SIDEWALK SECTION



SECTION B–B
TYPICAL DRIVEWAY SECTION THROUGH DRIVEWAY

TABLE 1

REINFORCING STEEL INFORMATION
FOR 4 ½ " THICK SIDEWALKS
EXPANSION JOINT SPACING = 40 FT
f'_c = 3,500 PSI AND f_y = 60,000 PSI
REFER TO CONTRACT DRAWINGS FOR SIDEWALKS WIDER THAN 6 FEET.

SIDEWALK THICKNESS (IN)	SIDEWALK WIDTH (FT)	LONGITUDINAL STEEL #3 BARS			TRANSVERSE STEEL #3 BARS SPACING (IN)
		NO. OF BARS "NB"	SPACING "SPC" (IN)	END BAR SPACING (IN)	
4.5	5	3	27	3	48
4.5	6	4	22	3	48

TABLE 2

DRIVEWAY DESIGN CRITERIA (1)(2)

TRAFFIC TYPE	TYPE A DRIVEWAY (FOR SINGLE FAMILY RESIDENTIAL HOUSES OR DUPLEXES)				TYPE B DRIVEWAY (SHARED ACCESS/SHARED DRIVEWAY)				TYPE C DRIVEWAY (COMMERCIAL DRIVEWAY)			
	WIDTH (FT)		RADIUS (FT)		WIDTH (FT)		RADIUS (FT)		WIDTH (FT)		RADIUS (FT)	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
ONE–WAY	10	12	4	10	12(5)	16(5)	4(5)	10(5)	15	20	10	20
TWO–WAY	10(3)	24(4)	4	10	16(6)	24	4	10	24	35	10	20

(1) REFER TO INFRASTRUCTURE DESIGN MANUAL ARTICLE 15.2.07.C.1.F FOR DRIVEWAYS THAT REQUIRE A VEHICLE SWEPT PATH ANALYSIS.
(2) REFER TO INFRASTRUCTURE DESIGN MANUAL ARTICLES 15.2.07.C.1.G.(1) AND 15.2.07.C.1.G.(2) FOR TYPE 1 PAE AND TYPE 2 PAE REQUIREMENTS.
(3) THE MINIMUM WIDTH FOR JOINT ACCESS DRIVEWAY IS 12 FT.
(4) REFER TO CHAPTER 42 OF THE CODE OF ORDINANCES FOR DRIVEWAY WIDTHS FOR NARROW LOTS.
(5) ONLY MURS AND COURTYARD STYLE DEVELOPMENTS ON CORNER LOTS CAN HAVE ONE–WAY DRIVEWAYS.
(6) REFER TO CHAPTER 42, SECTION 42–146 OF THE CODE OF ORDINANCES FOR EXCEPTIONS TO THE MINIMUM DRIVEWAY WIDTH FOR SHARED DRIVEWAYS.

NOTES:

1. REPAIR, RECONSTRUCTION OR REPLACEMENT OF SIDEWALKS SHALL MEET PERMITTING REQUIREMENTS OF CODE OF ORDINANCES SECTION 40–552.
2. FOR REPAIR, RECONSTRUCTION, OR REPLACEMENT OF EXISTING SIDEWALKS:
   - 2.1. EXISTING SIDEWALKS LESS THAN OR EQUAL TO 20 FEET IN TOTAL LENGTH:
     - 2.1.1. THE PROPOSED SIDEWALK WIDTH WILL BE ALLOWED TO MATCH THE EXISTING SIDEWALK.
   - 2.2. EXISTING SIDEWALKS GREATER THAN 20 FEET IN TOTAL LENGTH:
     - 2.2.1. THE SIDEWALK WIDTH FOR THE ENTIRE PROPERTY WIDTH SHALL BE IMPROVED TO MEET WIDTH REQUIREMENTS ACCORDING TO THE LATEST INFRASTRUCTURE DESIGN MANUAL.
   - 2.3. 20 FOOT TOTAL LENGTH IS DEFINED AS:
     - 2.3.1. UP TO 10 FEET ON BOTH SIDES OF THE DRIVEWAY; OR
     - 2.3.2. UP TO 20 FEET WHEN SIDEWALK AFFECTED IS LOCATED ONLY ON ONE SIDE OF THE DRIVEWAY.
3. PROPOSED SIDEWALKS THAT DO NOT FALL WITHIN THE SCOPE DEFINED IN NOTE 2 SHALL BE DESIGNED ACCORDING TO IDM REQUIREMENTS AND CONSTRUCTED ACCORDING TO THE CONTRACT DRAWINGS.
4. DRIVEWAY WIDTH VARIES TO MATCH EXISTING DRIVE.
5. DRIVEWAY DETAIL TO PROVIDE FOR SIDEWALK TRANSITION FROM EXISTING BACK OF CURB TO PROPOSED DRIVEWAY EDGE.
6. DRIVEWAY WITH WIDTH >5' @ 2% CROSS SLOPE QUALIFIES AS PASSING SPACE. (SEE OPTION 1 AND OPTION 2 PLANS)
7. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOUSTON PUBLIC WORKS STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
8. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.
9. REFER TO CONTRACT DRAWINGS FOR PEDESTRIAN REALM (PR), SIDEWALK (SW), FRONTAGE BUFFER (FB), AND SAFETY BUFFER (SB) WIDTHS.
10. DRIVEWAYS SHALL BE MINIMUM 6" THICK FOR SINGLE FAMILY AND DUPLEXES. DRIVEWAYS SHALL BE MINIMUM 7" THICK FOR ALL OTHERS (I.E. COMMERCIAL, INDUSTRIAL, ETC.)
11. DETECTABLE WARNING SURFACES:
    - 11.1. SIDEWALK SHALL HAVE A DETECTABLE WARNING SURFACE WHERE:
      - 11.1.1. SIDEWALK INTERSECTS TYPE C DRIVEWAYS (COMMERCIAL DRIVEWAYS) THAT ARE STOP, YIELD OR TRAFFIC SIGNAL CONTROLLED; OR
      - 11.1.2. SIDEWALK SLOPE IS GREATER THAN 1:20 AND INTERSECTS A TYPE C DRIVEWAY (COMMERCIAL DRIVEWAY)
    - 11.2. DETECTABLE WARNING SURFACES ARE OPTIONAL WHERE SIDEWALKS INTERSECT TYPE A DRIVEWAYS (SINGLE FAMILY RESIDENTIAL HOUSES OR DUPLEXES) OR TYPE B DRIVEWAYS (SHARED ACCESS/SHARED DRIVEWAYS).
    - 11.3. REFER TO STANDARD DETAILS 02775–06 TO 02775–07 FOR DETECTABLE WARNING SURFACE STANDARDS.

NO.	DATE	REVISION	APP.

APPROVED BY:	APPROVED BY:
DocuSigned by: Sukad Kanwar 9EF8B0C64975478...	DocuSigned by: KHANG NGUYEN 95A26EFDA75B4CD...
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: DocuSigned by: Carl Haddock ABDC41B7852A4D...	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV–27–2023	DWG NO: 02754–03

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

PROPOSED SIDEWALK THROUGH DRIVEWAY WITH EXCESSIVE ELEVATION DIFFERENCE

	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	
NOT TO SCALE	

stv
Texas Registered Engineering Firm F–204
Texas First Bank Building
11757 Katy Freeway
Suite 1540
Houston, TX, 77079
(713)532–1730
Fax (713)532–1734

TRILOGY ENGINEERING SERVICES
238 WESTCOTT STREET
HOUSTON, TEXAS 77007
PH: 877.463.1699
TX FIRM NO: 17715

SURVEYED BY: LANDTECH
FB NO. P–

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APRIL 2026

TIISETSO MASIANE, P.E.
TX PE NO. 139211

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PROPOSED SIDEWALK THROUGH DRIVEWAY WITH EXCESSIVE ELEVATION DIFFERENCE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–001000–0032–4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 100 OF 124	

60% SUBMITTAL

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WARRANTY OF ANY KIND IS MADE BY THE CITY OF HOUSTON FOR ANY PURPOSES WHATSOEVER. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.

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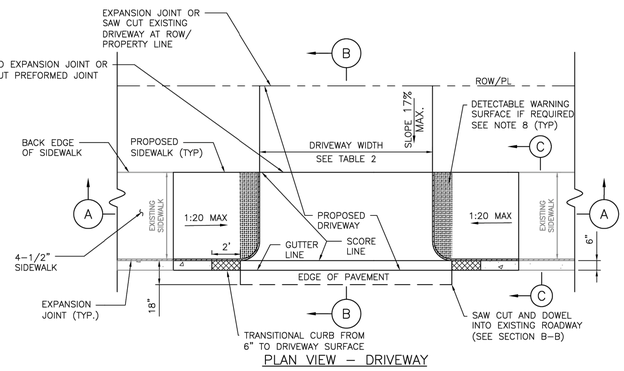
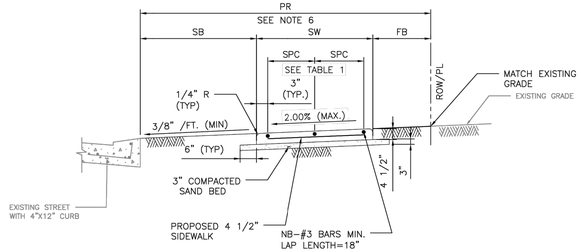
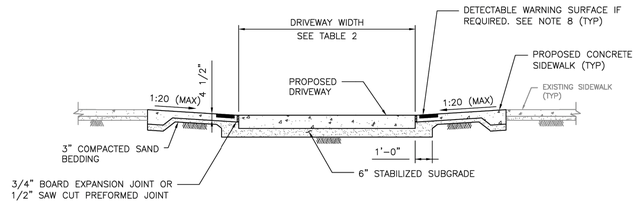


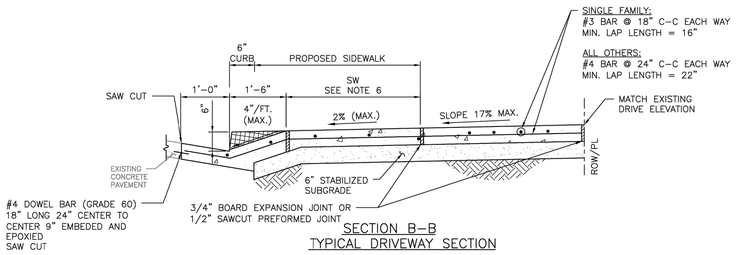
PLAN VIEW – DRIVEWAY



SECTION C–C
TYPICAL SIDEWALK SECTION



SECTION A–A
PROPOSED SIDEWALK THROUGH DRIVEWAY



SECTION B–B
TYPICAL DRIVEWAY SECTION

NOTES:

1. REPAIR, RECONSTRUCTION OR REPLACEMENT OF SIDEWALKS SHALL MEET PERMITTING REQUIREMENTS OF CODE OF ORDINANCES SECTION 40–552.
2. FOR REPAIR, RECONSTRUCTION, OR REPLACEMENT OF EXISTING SIDEWALKS:
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4. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOUSTON PUBLIC WORKS STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
5. CURB RAMPS THAT ARE STEEPER THAN A 1:20 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.
6. REFER TO CONTRACT DRAWINGS FOR PEDESTRIAN REALM (PR), SIDEWALK (SW), FRONTAGE BUFFER (FB), AND SAFETY BUFFER (SB) WIDTHS.
7. DRIVEWAYS SHALL BE MINIMUM 6" THICK FOR SINGLE FAMILY AND DUPLEXES. DRIVEWAYS SHALL BE MINIMUM 7" THICK FOR ALL OTHERS (I.E. COMMERCIAL, INDUSTRIAL, ETC.)
8. DETECTABLE WARNING SURFACES:
   - 8.1. SIDEWALK SHALL HAVE A DETECTABLE WARNING SURFACE WHERE SIDEWALK INTERSECTS TYPE C DRIVEWAYS (COMMERCIAL DRIVEWAYS) THAT ARE STOP, YIELD, OR TRAFFIC SIGNAL CONTROLLED.
   - 8.2. DETECTABLE WARNING SURFACES ARE OPTIONAL WHERE SIDEWALKS INTERSECT TYPE A DRIVEWAYS (SINGLE FAMILY RESIDENTIAL HOUSES OR DUPLEXES) OR TYPE B DRIVEWAYS (SHARED ACCESS/SHARED DRIVEWAYS).
   - 8.3. REFER TO STANDARD DETAILS 02775–06 TO 02775–07 FOR DETECTABLE WARNING SURFACE STANDARDS.

TABLE 1

REINFORCING STEEL INFORMATION
FOR 4 ½ " THICK SIDEWALKS
EXPANSION JOINT SPACING = 40 FT
fc' = 3,500 PSI AND fy = 60,000 PSI
REFER TO CONTRACT DRAWINGS FOR SIDEWALKS WIDER THAN 6 FEET.

SIDEWALK THICKNESS (IN)	SIDEWALK WIDTH (FT)	LONGITUDINAL STEEL			TRANSVERSE STEEL #3 BARS SPACING (IN)
		#3 BARS			
		NO. OF BARS "NB"	SPACING "SPC" (IN)	END BAR SPACING (IN)	
4.5	5	3	27	3	48
4.5	6	4	22	3	48

TABLE 2

DRIVEWAY DESIGN CRITERIA (1)(2)

TRAFFIC TYPE	TYPE A DRIVEWAY (FOR SINGLE FAMILY RESIDENTIAL HOUSES OR DUPLEXES)				TYPE B DRIVEWAY (SHARED ACCESS/SHARED DRIVEWAY)				TYPE C DRIVEWAY (COMMERCIAL DRIVEWAY)			
	WIDTH (FT)		RADIUS (FT)		WIDTH (FT)		RADIUS (FT)		WIDTH (FT)		RADIUS (FT)	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
ONE–WAY	10	12	4	10	12(5)	16(5)	4(5)	10(5)	15	20	10	20
TWO–WAY	10(3)	24(4)	4	10	16(6)	24	4	10	24	35	10	20

(1) REFER TO INFRASTRUCTURE DESIGN MANUAL ARTICLE 15.2.07.C.1.F FOR DRIVEWAYS THAT REQUIRE A VEHICLE SWEPT PATH ANALYSIS.
(2) REFER TO INFRASTRUCTURE DESIGN MANUAL ARTCILES 15.2.07.C.1.G.(1) AND 15.2.07.C.1.G.(2) FOR TYPE 1 PAE AND TYPE 2 PAE REQUIREMENTS.
(3) THE MINIMUM WIDTH FOR JOINT ACCESS DRIVEWAY IS 12 FT.
(4) REFER TO CHAPTER 42 OF THE CODE OF ORDINANCES FOR DRIVEWAY WIDTHS FOR NARROW LOTS.
(5) ONLY MURS AND COURTYARD STYLE DEVELOPMENTS ON CORNER LOTS CAN HAVE ONE–WAY DRIVEWAYS.
(6) REFER TO CHAPTER 42, SECTION 42–146 OF THE CODE OF ORDINANCES FOR EXCEPTIONS TO THE MINIMUM DRIVEWAY WIDTH FOR SHARED DRIVEWAYS.

APPROVED BY:	APPROVED BY:
DocuSigned by: Sukut Kanwar 8EF6B0C64197479...	DocuSigned by: KHANG NGUYEN 55A28EFDA7594CD...
CITY ENGINEER	CITY TRAFFIC ENGINEER

APPROVED BY:
DocuSigned by: Carl Haldbook A30C41DD73834A3...
DIRECTOR OF HOUSTON PUBLIC WORKS

EFF DATE: NOV–27–2023	DWG NO: 02754–04

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

PROPOSED SIDEWALK THROUGH DRIVEWAY WITH MINIMAL ELEVATION DIFFERENCE

FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE
NOT TO SCALE

NO.	DATE	REVISION	APP.

stv
Texas Registered Engineering Firm F–204
Texas First Bank Building
11757 Katy Freeway
Suite 1540
Houston, TX, 77079
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Fax (713)532–1734

TRILOGY ENGINEERING SERVICES
238 WESTCOTT STREET
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PH: 877.463.1699
TX FIRM NO: 11715

SURVEYED BY: LANDTECH
FB NO. P–

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APRIL 2026

TIISETSO MASIANE, P.E.
TX PE NO. 139211

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

PROPOSED SIDEWALK THROUGH DRIVEWAY WITH MINIMAL ELEVATION DIFFERENCE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–001000–0032–4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 101 OF 124	

60% SUBMITTAL

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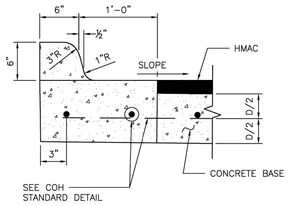
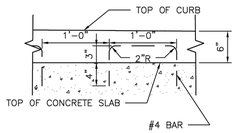
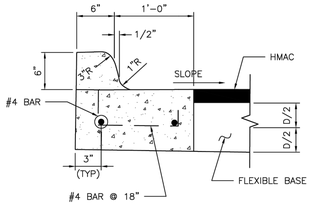


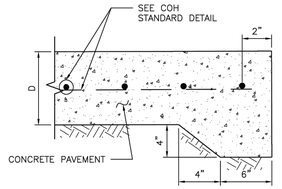
ESPLANADE CURB CONNECTED TO CONCRETE BASE



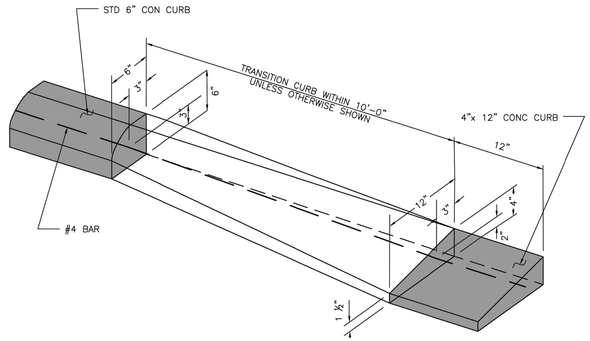
ALTERNATE CONCRETE CURB REINFORCEMENT



ESPLANADE CURB CONNECTED TO FLEXIBLE BASE

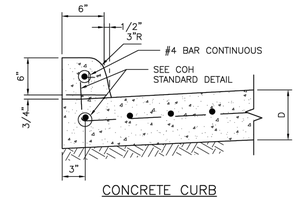


STANDARD CONCRETE PAVING HEADER

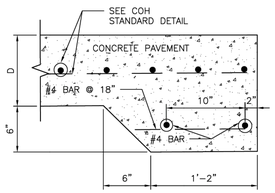


CURB TRANSITION

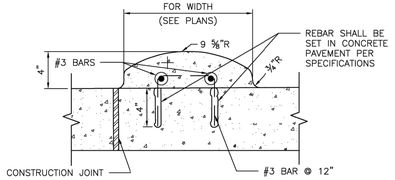
(SEE NOTES)



CONCRETE CURB

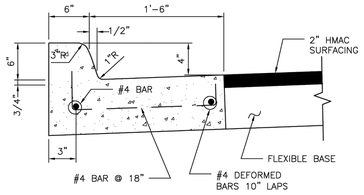


STANDARD RAILROAD HEADER

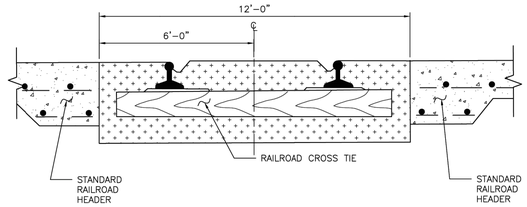


MOUNTABLE CURB

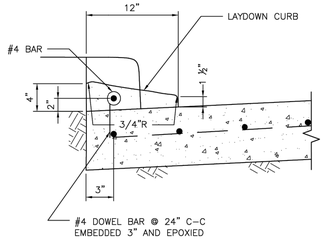
WHEN CONCRETE CURB IS TO BE PLACED EXISTING CONCRETE USE BASE #4 BAR @ 18x10" LONG, DOWELED AND SET IN EPOXY GROUT.
SET #4 DOWEL BARS, 25" LONG AT 12" C-C WHEN PAVEMENT SECTION POURED.



MONOLITHIC CURB AND GUTTER

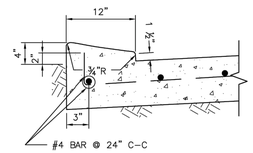


STANDARD RAILROAD CROSSING – SINGLE TRACK



4-INCH x 12-INCH TRANSITION CURB

(SEE NOTES)



4-INCH x 12-INCH MONOLITHIC CURB

(SEE NOTES)

4"x12" MONOLITHIC AND TRANSITION CURB NOTES:

1. 6-INCH CONCRETE CURB TO BE CONSTRUCTED ON ALL ESPLANADES, ISLANDS, NON-RESIDENTIAL STREETS, AND RESIDENTIAL STREETS.
2. TRANSITIONS FROM 6- INCH CONCRETE CURB TO 4-INCH x 12-INCH CONCRETE CURB TO BE ACCOMPLISHED WITHIN 10 FEET, UNLESS OTHERWISE SHOWN. IF THIS 10-FEET TRANSITION CURB IS NOT POURED MONOLITHICALLY WITH THE PAVEMENT, THEN REINFORCING STEEL AS SHOWN IN "4-INCH x 12-INCH TRANSITION CURB" IS TO BE INSTALLED.

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APPROVED BY:	APPROVED BY:
DocuSigned by: Sukud Kanwar 9EF6B0C64195479...	DocuSigned by: HUNG NGUYEN 28A28EFDA758A4D...
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: DocuSigned by: Carl Haldlock A30C4110073834E3...	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 02771-01

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

CURB, CURB AND GUTTER AND HEADER DETAILS

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stv
Texas Registered Engineering Firm F-204
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TRILOGY ENGINEERING SERVICES
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APRIL 2026

TIISETSO MASIANE, P.E.
TX PE NO. 139211

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

CURB, CURB AND GUTTER, AND HEADER DETAILS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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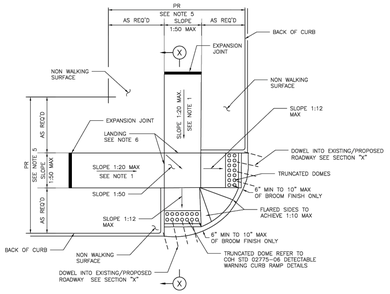
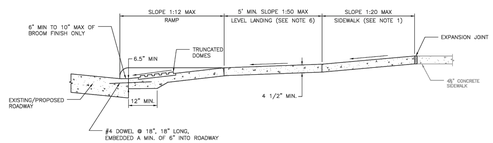


STREETS WITH NON– WALKING SURFACE BEHIND CURB
SEE NOTE–7

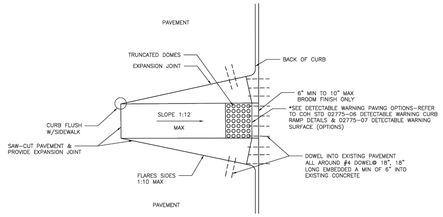


SECTION X–X

NOTES:

1. REPLACE EXISTING SIDEWALK FROM LEVEL LANDING AS NECESSARY TO ACHIEVE 1:20 SLOPE
2. BROOM FINISH IS MEASURED FROM FACE OF CURB.
3. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOUSTON PUBLIC WORKS STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
4. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON UNLESS NOTED OTHERWISE.
5. REFER TO CONTRACT DRAWINGS FOR PEDESTRIAN REALM (PR) WIDTH.
6. MINIMUM 5'x5' LANDING PAD ACCORDING TO ADA REQUIREMENTS, WHEN THE APPROACHING SIDEWALK IS WIDER THAN 5'. LANDING PAD AND RAMP WIDTH MUST MATCH THE SIDEWALK WIDTH.
7. FOR STREETS WITH WALKABLE SURFACES IMMEDIATELY BEHIND THE CURB A FLARE IS REQUIRED ON BOTH SIDES OF THE RAMP.

ELEVATION
LOOKING UP RAMP



CURB RAMP CONSTRUCTION FOR EXISTING PAVEMENT

APPROVED BY:	APPROVED BY:
Sukat Kanwar	Hang Nguyen
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY:	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV–27–2023	DWG NO: 02775–02

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TYPICAL CURB RAMP DETAILS

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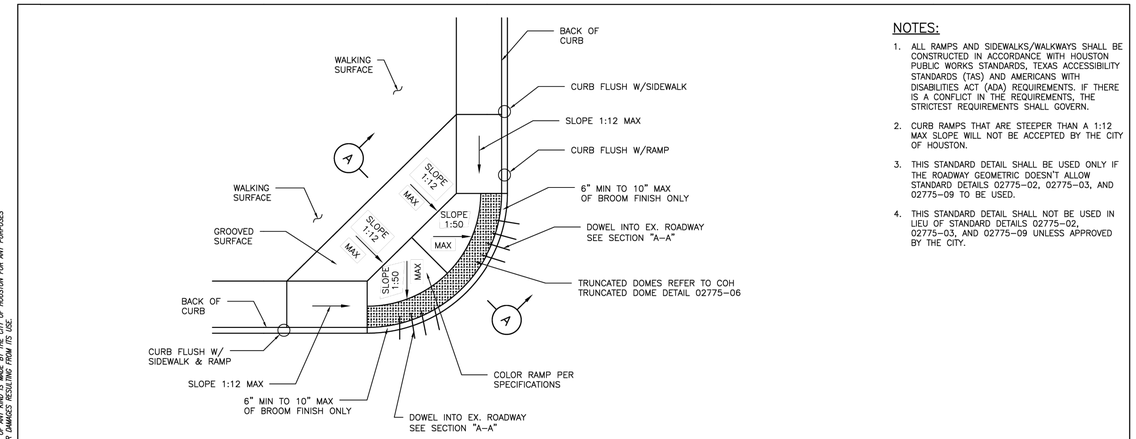
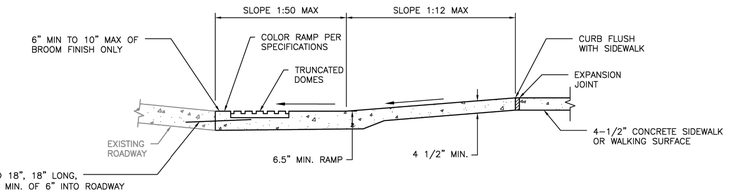


PLAN



SECTION A–A

NOTES:

1. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOUSTON PUBLIC WORKS STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
2. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.
3. THIS STANDARD DETAIL SHALL BE USED ONLY IF THE ROADWAY GEOMETRIC DOESN'T ALLOW STANDARD DETAILS 02775–02, 02775–03, AND 02775–09 TO BE USED.
4. THIS STANDARD DETAIL SHALL NOT BE USED IN LIEU OF STANDARD DETAILS 02775–02, 02775–03, AND 02775–09 UNLESS APPROVED BY THE CITY.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

COMMERCIAL & HIGH DENSITY CONDITIONS CURB RAMP DETAILS

(SCALE: NOT TO SCALE)

APPROVED BY:	
DocuSigned by: Sukat Kanwar 9677B80C61415478... CITY ENGINEER	DocuSigned by: Carl Haddock 4A5C4178D7E0483... DIRECTOR OF HPW
DocuSigned by: Hang Nguyen 55A296FDA75B4CD... CITY TRAFFIC ENGINEER	
EFF DATE: NOV–27–2023	DWG NO: 02775–05

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Texas Registered Engineering Firm F–204
Texas First Bank Building
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TRILOGY ENGINEERING SERVICES
238 WESTCOTT STREET
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PH: 877.463.1699
TX FIRM NO: 17715

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APRIL 2026

TIISETSO MASIANE, P.E.
TX PE NO. 139211

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

CURB RAMP DETAILS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–001000–0032–4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 103 OF 124	

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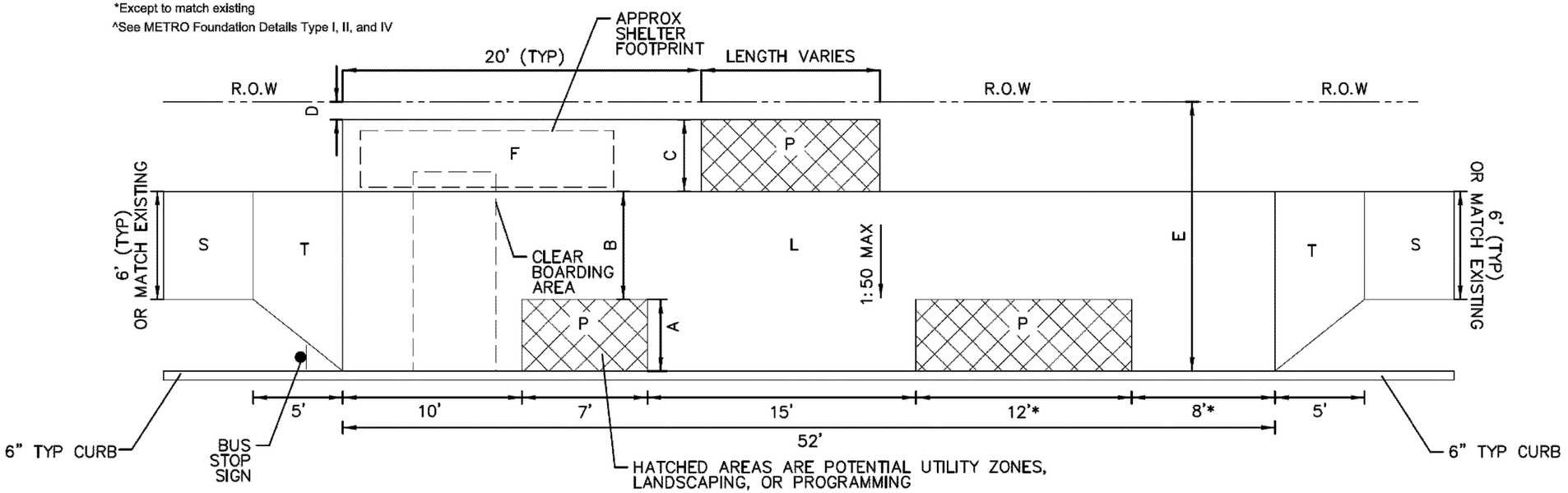
Dimension	Minimum	Standard	Preferred
Safety buffer/programming (A)	2'	4'	6'
Clear sidewalk (B)	5'	6'	10'
Shelter/amenity zone (C)	4'	4'	8'
ROW buffer (D)	1'	1'	1'
Total Back-of-Curb (E)	12'	15'	25'

Area	Paving Thickness	Running Slope	Cross Slope
Landing (L)	4.5"	Match Street	2% max
Bus Shelter Area (F)^	9"	2% max	2% max
Transition Area (T)	4.5"	5% max	2% max
Sidewalk (S)	4.5"	5% max	2% max*
Programming Areas (P)	4.5" (Optional)	2% max	2% max

*Except to match existing

^See METRO Foundation Details Type I, II, and IV

NOTES:
1) LOCATION OF BUS STOP LONGITUDINALLY ALONG THE ROADWAY WILL NEED TO ACCOUNT FOR THE CRITICAL SHELTER OBSTRUCTION TO LINE OF SIGHT AND OTHER GUIDLINES SET FORTH IN METRO TRANSIT DESIGN STANDARDS.
2) CLEAR SIDEWALK (B) SHALL BE A MINIMUM OF 5' WIDE. IF THE DISTANCE BETWEEN BACK-OF-CURB AND ROW LINE (E) IS LESS THAN 12', SEE "METRO BUS STOP DETAIL-6 INCH CURB WITH CONSTRAINED ROW" TO ACCOMMODATE 5' SIDEWALK.
3) THE SIDEWALK TRANSITION (T) FROM THE LANDING (L) TO EXISTING SIDEWALK SHOULD NOT HAVE A LONGITUDINAL SLOPE GREATER THAN 5% OR CROSS SLOPE GREATER THAN 2% EXCEPT TO MATCH EXISTING CROSS SLOPE. THE TRANSITION (T) SHOULD BE MINIMUM 5' LONG OR MAY BE LENGTHENED TO MITIGATE EXCESSIVE SLOPE. FOLLOW GUIDELINES COMPLIANT WITH AMERICANS WITH DISABILITIES ACT (ADA) AND TEXAS ACCESSIBILITY STANDARDS (TAS).
4) REFER TO "METRO BUS STOP CONCRETE DETAILS" FOR EXPANSION AND CONTROL JOINTS INSTALLATION.
5) REFER TO CITY OF HOUSTON "CONCRETE SIDEWALK DETAILS FOR STREETS WITH CURBS" DWG NO. 02775-01 FOR SIDEWALK DETAILS. THE DRIVEWAY/SIDEWALK HEADER DETAIL PER CITY OF HOUSTON DWG NO. 02775-01 WILL BE USED TO CONNECT THE LANDING (L) (4 1/2" THICK) TO THE PAD (F) (9" THICK).
6) PROGRAMMING AREAS (P) MAY INCLUDE LANDSCAPING, BIKE PARKING, UTILITIES, STREET FURNITURE, ETC. AS DEEMED ALLOWABLE BY METRO.
7) SHOW EXISTING PRIVATE AND PUBLIC UTILITIES. ADJUST VALVES AND PULLBOXES IF NEEDED. AVOID UTILITY CONFLICTS IN AREAS MARKED "L." VERTICAL UTILITES MAY EXIST IN AREAS MARKED "P." IDENTIFY AND PROTECT EXISTING GAS PIPELINES OR VALVES WITHIN THE WORK AREA.
8) CONTRACTOR TO AVOID DAMAGE TO ANY PRIVATE PROPERTY AND/OR TREES.
9) CONTRACTOR TO CONTACT METRO AT (713) 615-6195 ONCE FOUNDATION (F) AND LANDING (L) ARE COMPLETELY IN-PLACE.



* 0' FOR SITES WHERE STOP FOR ONLY 40' BUS IS FEASIBLE

NO	DATE	REVISIONS	BY\CK	APP

METRO

J.L.	7/31/2019	DESIGNED DATE
VKM	7/31/2019	DRAWN DATE
J.L.	7/31/2019	CHECKED DATE
		APPROVED DATE

SCALE: N.T.S

METRO BUS STOP DETAIL
6 INCH CURB WITH STANDARD ROW

CONTRACT NO | DRAWING NO | PAGE

NO.	DATE	REVISION	APP.

stv
Texas Registered Engineering Firm F-204
Texas First Bank Building
11757 Katy Freeway
Suite 1540
Houston, TX 77079
(713)532-1730
Fax (713)532-1734

TRILOGY ENGINEERING SERVICES
238 WESTCOTT STREET
HOUSTON, TEXAS 77007
PH: 877.463.1699
TX FIRM NO: 17715

SURVEYED BY: LANDTECH
FB NO. P-

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

APRIL 2026

TIISETSO MASIANE, P.E.
TX PE NO. 139211

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

METRO BUS STOP DETAIL 6 INCH CURB WITH STANDARD ROW

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 104 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/24/2026 10:21 AM
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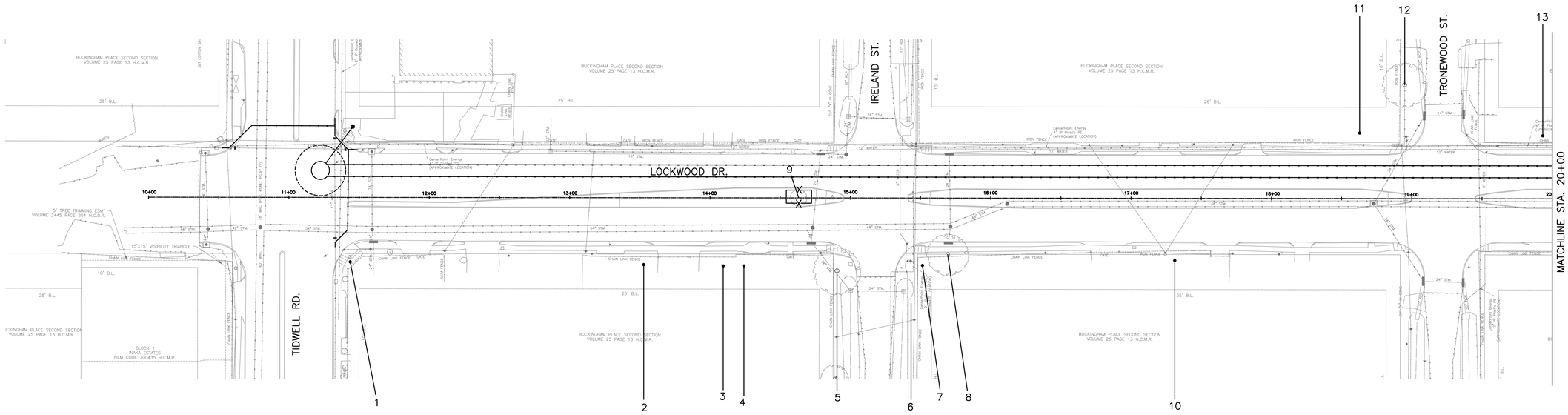

Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
Trees on Lockwood Drive					
1	9407 Lockwood	5" Live Oak	Not protected	Private tree	
2	9405 Lockwood	27" Live Oak	Protected	Private tree	Clearance prune
3	N/A	19" Pine	Protected	Private tree, Not impacted	
4	9401 Lockwood	31" Water Oak	Protected	30% dieback, Private tree	
5	9401 Lockwood	28" Pine	Protected	70% dieback	
6	4826 Lockwood	22" Sweetgum	Protected	Private tree, Pruned by CPE	
7	4826 Lockwood	17" Pine	Not protected	Private tree, Pruned by CPE	
8	4826 Lockwood	25" Willow Oak	Protected	Topped in past	Clearance prune
9	Median	10" Sawtooth Oak	Protected	Trunk decay	Fence
10	9313 Lockwood	16" Pine	Not protected	Dead, Private tree	
11	9222 Lockwood	26" Pine	Protected	Pruned by CPE, Private tree	
12	9222 Lockwood	21" Post Oak	Protected	Topped by CPE	
13	9222 Lockwood	22" Sweetgum	Protected	Punned by CPE, 90% dieback, Private tree	

NOTE:

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TREE PRESERVATION PLAN LEGEND

1	TREE NUMBER/LOCATION
(1)	TREE TO BE REMOVED
–X–X–	TREE PROTECTION FENCE

N

0 20 40 80

NO.	DATE	REVISION	APP.

stv
Texas Registered Engineering Firm F–204
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281-391-0022 ckoehl@koehlurbanforestry.com

APPROVED:

SURVEYED BY: LANDTECH
FB NO. P–

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST
TREE PROTECTION PLAN

SHEET 1 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–001000–0032–4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 105 OF 124	

60% SUBMITTAL

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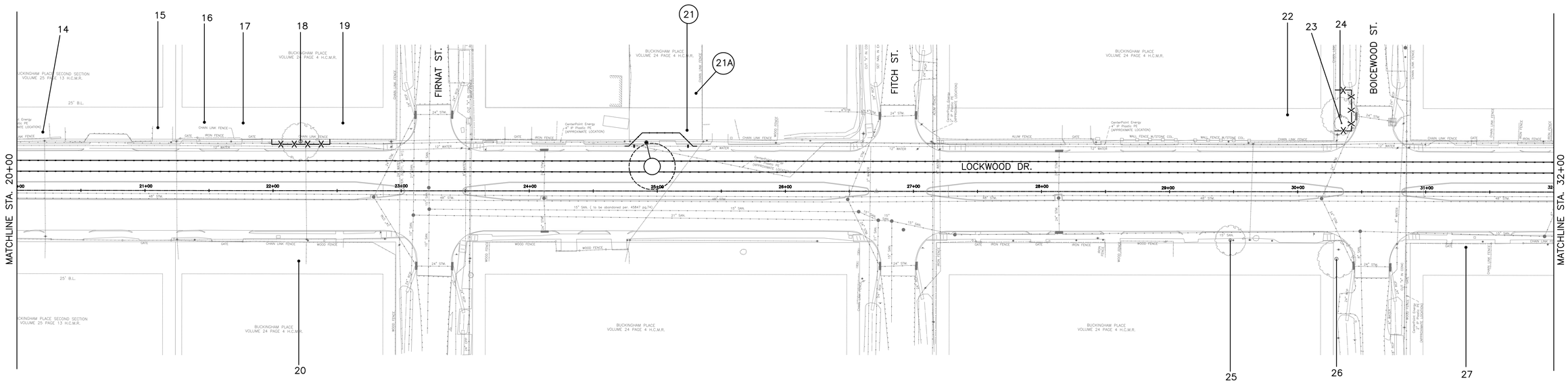

Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
Trees on Lockwood Drive					
14	9222 Lockwood	27" Water Oak	Protected	Private tree, 90% dieback	
15	9222 Lockwood	26" Cherry Bark Oak	Protected	Private tree, 90% dieback	
16	9210 Lockwood	26" Post Oak	Protected	Pruned by CPE, Private tree	
17	9206 Lockwood	22" Post Oak	Protected	Pruned by CPE, Private tree	
18	9206 Lockwood	23" Live Oak	Protected	Topped by CPE	Fence, Clearance prune
19	9202 Lockwood	27" Pine	Protected	Pruned by CPE, Private tree	
20	9205 Lockwood	22" Water Oak	Protected	Private tree, Not impacted	
21	N/A	38" Water Oak	Protected	Pruned by CPE, Easement tree, Corridor tree, Remove for construction access easement	Remove tree, Provide 38" in replacement/mitigation
21A	N/A	44" Water Oak	Not protected	Private tree, Remove for TCE	Remove tree, No replacement required
22	9002 Lockwood	25" Pine	Protected	Pruned by CPE, Private tree	
23	9002 Lockwood	27" Pine	Protected	Pruned by CPE	Fence
24	9002 Lockwood	24" Pine	Protected	Pruned by CPE	Fence
25	N/A	17" Tallow	Not protected		Clearance prune
26	4825 Boxwood	26" Pine	Protected	40% dieback	
27	8917 Lockwood	27" Pecan	Protected	Private tree	Clearance prune

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TREE PRESERVATION PLAN LEGEND	
1	TREE NUMBER/LOCATION
(1)	TREE TO BE REMOVED
–X–X–	TREE PROTECTION FENCE

N

0 20 40 80

NO.	DATE	REVISION	APP.

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APPROVED:

SURVEYED BY: LANDTECH
FB NO. P–

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST
TREE PROTECTION PLAN

SHEET 2 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–001000–0032–4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 106 OF 124	

60% SUBMITTAL

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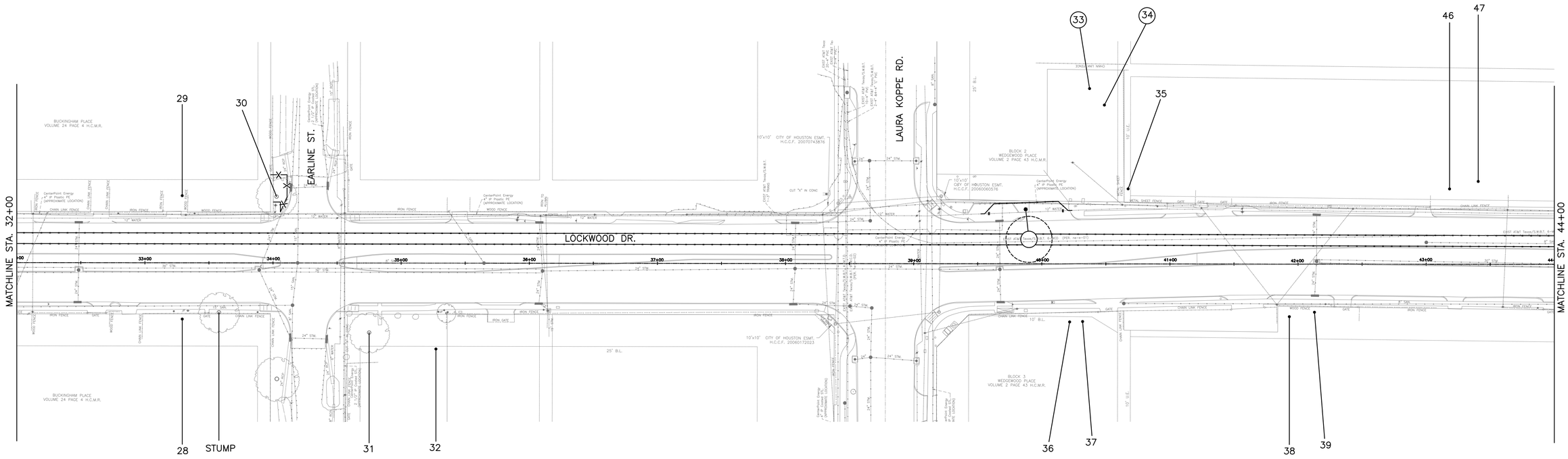

Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
Trees on Lockwood Drive					
28	N/A	23" Water Oak	Protected	Private tree	Clearance prune
29	8906 Lockwood	23" Pine	Protected	Private tree, Not impacted	
30	8902 Lockwood	22" Water Oak	Protected	Pruned by CPE	Fence
31	8817 Lockwood	42" Live Oak	Protected	Pruned by CPE, Private tree	Clearance prune
32	8817 Lockwood	15" Tallow	Not protected	Private tree	Clearance prune
33	4902 Laura Koppe	13" Tallow	Not protected	Remove for TCE	Remove tree, No replacement required
34	4902 Laura Koppe	12" Tallow	Not protected	Remove for TCE	Remove tree, No replacement required
35	8722 Lockwood	7" Live Oak	Not protected	Private tree	Clearance prune
36	4800 Laura Koppe	5" Live Oak	Not protected	Private tree	
37	4800 Laura Koppe	5" Live Oak	Not protected	Private tree	
38	8709 Lockwood	28" Willow Oak	Protected	15' Stump, Private tree	
39	8709 Lockwood	8" Sugarberry	Not protected	Private tree	
46	N/A	22" Water Oak	Protected	Private tree, Topped by CPE	
47	N/A	16" Mulberry	Not protected	Private tree, Topped by CPE	

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TREE PRESERVATION PLAN LEGEND

1 TREE NUMBER/LOCATION
(1) TREE TO BE REMOVED
–X–X– TREE PROTECTION FENCE

N

0 20 40 80

NO.	DATE	REVISION	APP.

stv
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Fax (713)532–1734

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APPROVED:

SURVEYED BY: LANDTECH
FB NO. P–

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST
TREE PROTECTION PLAN

SHEET 3 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–001000–0032–4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 107 OF 124	

60% SUBMITTAL

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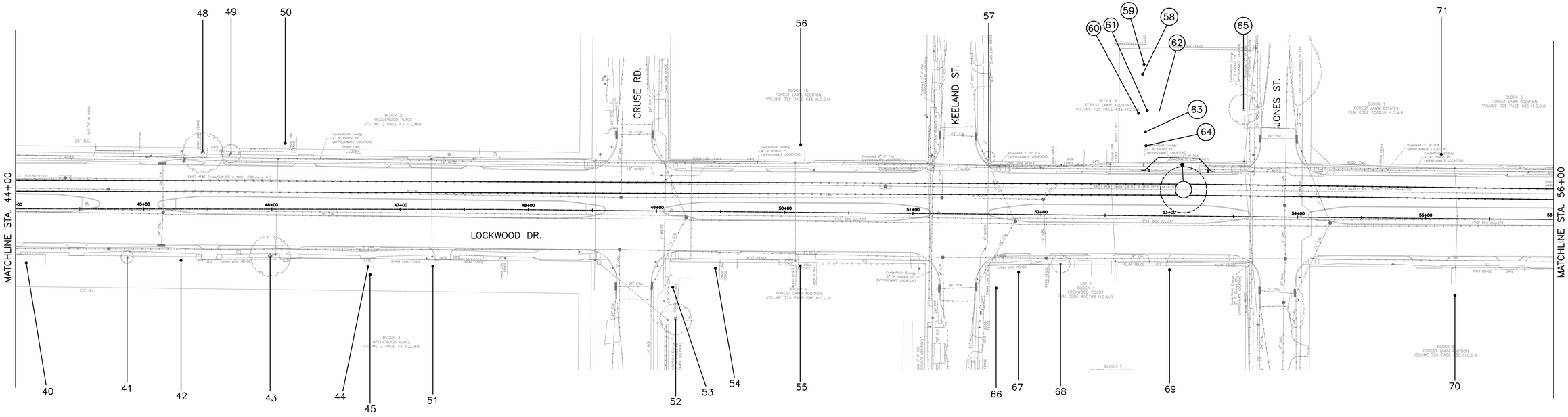

Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
Trees on Lockwood Drive					
40	N/A	24" Water Oak	Protected	Private tree	Clearance prune
41	N/A	14" Pine	Not protected	Private tree, Dead	
42	N/A	14" Crepe Myrtle	Not protected	Private tree, Not impacted	
43	8617 Lockwood	37" Water Oak	Protected	Hypoxylon, 70% dieback	
44	8609 Lockwood	26" Sycamore	Protected	Private tree, 40% dieback	Clearance prune
45	8609 Lockwood	16" Pecan	Not protected	Private tree	
48	8618 Lockwood	27" Water Oak	Protected	Private tree, 80% dieback	
49	8618 Lockwood	19" Arizona Ash	Not protected	Private tree, 15' trunk	
50	8618 Lockwood	30" Pine	Protected	Pruned by CPE, Private tree	
51	8605 Lockwood	22" American Elm	Protected	50% dieback, Private tree	
52	8507 Lockwood	15" Sugarberry	Not protected	Private tree	
53	8507 Lockwood	16" Tallow	Not protected	Private tree	
54	8507 Lockwood	7" American Elm	Not protected	Private tree	
55	8503 Lockwood	7" American Elm	Not protected	Private tree	Clearance prune
56	4905 Keeland	13" Sugarberry	Not protected	Private tree, Topped by CPE	
57	N/A	11" Box Elder	Not protected	Private tree	
58	N/A	32" Water Oak	Not protected	30% dieback, Private tree, Remove for TCE	Remove tree, No replacement required
59	N/A	21" Tallow	Not protected	60% dieback, Private tree, Remove for TCE	Remove tree, No replacement required
60	N/A	11" Pecan	Not protected	Trunk cavity, Private tree, Remove for TCE	Remove tree, No replacement required
61	N/A	14" Pecan	Not protected	Private tree, Remove for TCE	Remove tree, No replacement required
62	N/A	16" Pecan	Not protected	Private tree, Remove for TCE	Remove tree, No replacement required
63	N/A	15" Tallow	Not protected	Dead, Private tree, Remove for TCE	Remove tree, No replacement required
64	N/A	13" Pecan	Not protected	Topped, Private tree, Remove for TCE	Remove tree, No replacement required
65	N/A	7" Water Oak	Not protected	Private tree, Remove for TCE	Remove tree, No replacement required
66	4822 Keeland	16" Sycamore	Not protected	Private tree	
67	4822 Keeland	9" Mulberry	Not protected	Private tree	Clearance prune
68	4822 Keeland	11" Pecan	Protected		
69	8401 Keeland	15" Pecan	Not protected	Private tree	Clearance prune
70	4815 Bostic	17" Pecan	Not protected	Private tree, Pruned by CPE	
71	N/A	9" Sugarberry	Not protected	Private tree, Pruned by CPE	

NOTE:

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TREE PRESERVATION PLAN LEGEND

- 1 — TREE NUMBER/LOCATION
- (1) — TREE TO BE REMOVED
- –X–X– — TREE PROTECTION FENCE

N

0 20 40 80

NO.	DATE	REVISION	APP.

stv
Texas Registered Engineering Firm F–204
Texas First Bank Building
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APPROVED:

SURVEYED BY: LANDTECH
FB NO. P–

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST
TREE PROTECTION PLAN

SHEET 4 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–001000–0032–4	
DRAWING SCALE	
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CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 108 OF 124	

60% SUBMITTAL

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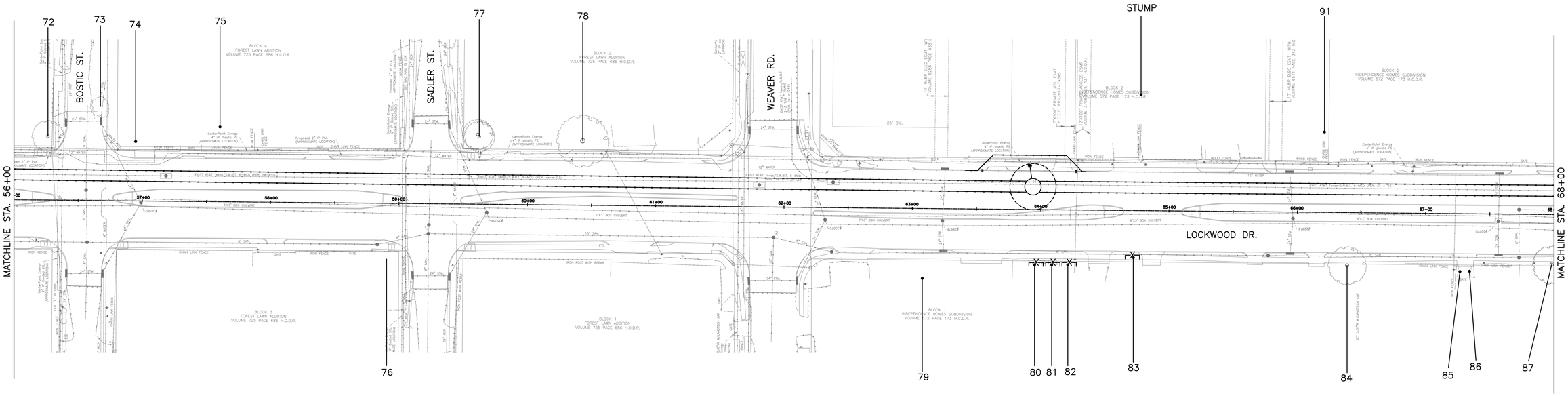

Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
Trees on Lockwood Drive					
72	4901 Bostic	16" Arizona Ash	Not protected	Private tree, Topped by CPE	
73	8214 Bostic	18" Tallow	Not protected		
74	8214 Bostic	12" Pear	Not protected	Private tree, Topped by CPE	
75	8214 Bostic	23" Post Oak	Protected	Private tree, Dead	
76	8203 Lockwood	20" Post Oak	Protected	Private tree	Clearance prune
77	N/A	17" Pecan	Not protected	Private tree, Pruned by CPE	
78	8023 Lockwood	33" Arizona Ash	Not protected	Pruned by CPE	
79	N/A	4' Sago	Not protected	Private tree	
80	N/A	4" Sugarberry	Not protected	Private tree	
81	N/A	4" Sugarberry	Not protected		
82	N/A	4" Sugarberry	Not protected		
83	7949 Lockwood	5" Pecan	Protected		Fence
84	N/A	29" Arizona Ash	Not protected	Private tree, Trunk decay, Poor	
85	7929 Lockwood	2" Italian Cypress	Not protected	Private tree	
86	7929 Lockwood	10" Pecan	Not protected	Private tree	
87	7925 Lockwood	28" Pecan	Not protected		Clearance prune
91	7944 Lockwood	44" Arizona Ash	Not protected	Private tree, Pruned by CPE	

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TREE PRESERVATION PLAN LEGEND

1	TREE NUMBER/LOCATION
(1)	TREE TO BE REMOVED
—X—X—	TREE PROTECTION FENCE

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HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
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LOCKWOOD DR
TIDWELL RD TO DENMARK ST
TREE PROTECTION PLAN

SHEET 5 OF 8

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SHEET NO. 109 OF 124	

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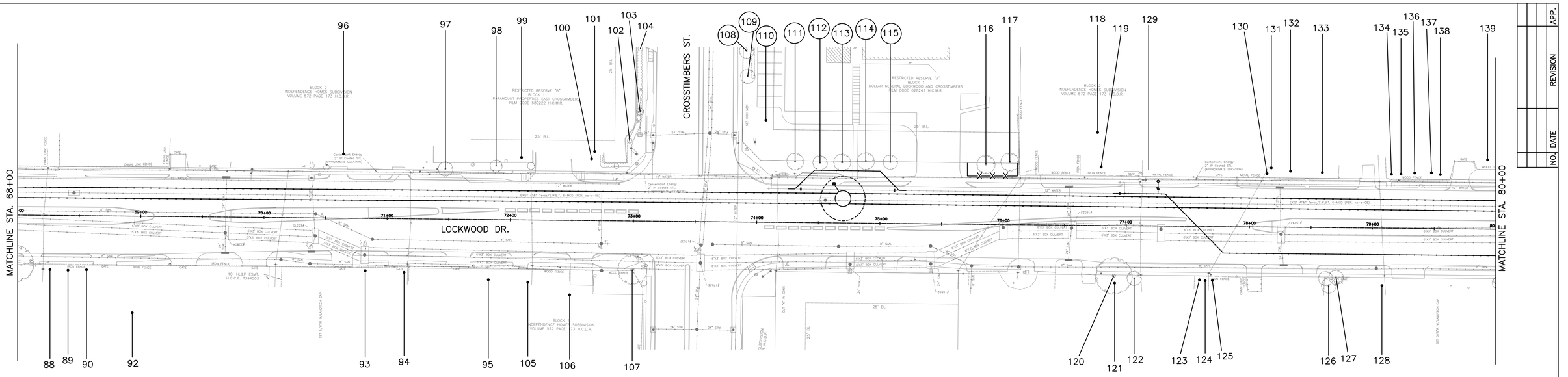

Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
Trees on Lockwood Drive					
88	7909 Lockwood	2" Italian Cypress	Not protected	Private tree	
89	7909 Lockwood	2" Italian Cypress	Not protected	Private tree	
90	7909 Lockwood	2" Italian Cypress	Not protected	Private tree	
92	7909 Lockwood	14" Arizona Ash	Not protected	Private tree, 50% dieback	
93	7901 Lockwood	12" Pecan	Not protected	Private tree	
94	7901 Lockwood	10" Pecan	Not protected	Private tree, Topped by CPE	
95	7809 Lockwood	22" Eastern Red Cedar	Not protected	Private tree	
96	7906 Lockwood	19" Crepe Myrtle	Not protected	Private tree, Topped	
97	7810 Lockwood	8" Live Oak	Not protected	Private tree, Topped by CPE	
98	7810 Lockwood	8" Live Oak	Not protected	Private tree, Topped by CPE	
99	7810 Lockwood	7" Live Oak	Not protected	Private tree	
100	7810 Lockwood	27" Pecan	Protected	60% private tree, Private tree	
101	7810 Lockwood	11" American Elm	Not protected	Private tree	
102	7810 Lockwood	5" Live Oak	Not protected	Private tree	
103	7810 Lockwood	5" Live Oak	Not protected	Private tree	
104	7810 Lockwood	5" Live Oak	Not protected	Private tree	
105	7809 Lockwood	20" Arborvitae	Not protected	50% dieback, Private tree	
106	7805 Lockwood	27" Pecan	Protected	50% dieback, Private tree	
107	N/A	24" Pecan	Protected		Clearance prune
108	7728 Lockwood	14" Live Oak	Not protected	Private tree, Pruned by CPE, Remove for TCE	Remove tree, No replacement required

NOTE:

1. THIS TREE PROTECTION PLAN WAS DEVELOPED WITH INFORMATION PROVIDED BY DESIGN ENGINEER IN DRAWINGS DATED APRIL 2026. THE PLAN CONSIDERS ALL FITTINGS, VERTICAL OFFSETS AND AREAS OF NECESSARY EXCAVATION. CHANGES MADE TO DESIGN MAY COMPROMISE THE TREE PROTECTION PLAN. REFER SPECIFICATIONS 01562 AND 02915. CONDITION OF EACH TREE IS BASED ON VISUAL EVALUATION AT TIME OF DESIGN. CONDITION AND STRUCTURAL INTEGRITY OF EACH TREE IS NOT GUARANTEED BY DESIGNER AT ANY POINT IN THE FUTURE, AS ENVIRONMENTAL AND MAINTENANCE INFLUENCES ON EACH TREE CAN NOT BE DETERMINED BY DESIGNER.
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TREE PRESERVATION PLAN LEGEND

- 1 — TREE NUMBER/LOCATION
- (1) — TREE TO BE REMOVED
- –X–X– — TREE PROTECTION FENCE

Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
Trees on Lockwood Drive					
109	7728 Lockwood	12" Live Oak	Not protected	Private tree, Pruned by CPE, Remove for TCE	Remove tree, No replacement required
110	7728 Lockwood	14" Live Oak	Not protected	Private tree, Pruned by CPE, Remove for TCE	Remove tree, No replacement required
111	7728 Lockwood	12" Live Oak	Protected	Remove for TCE	Remove tree, Provide 12" mitigation/replacement
112	7728 Lockwood	11" Live Oak	Protected	Remove for TCE	Remove tree, Provide 11" mitigation/replacement
113	7728 Lockwood	17" Live Oak	Protected	Remove for TCE	Remove tree, Provide 17" mitigation/replacement
114	7728 Lockwood	18" Live Oak	Protected	Remove for TCE	Remove tree, Provide 18" mitigation/replacement
115	7728 Lockwood	13" Live Oak	Protected	Remove for TCE	Remove tree, Provide 13" mitigation/replacement
116	7728 Lockwood	15" Live Oak	Protected	Pruned by CPE	Fence
117	7728 Lockwood	16" Live Oak	Protected	Pruned by CPE	Fence
118	7720 Lockwood	16" Arizona Ash	Not protected	Private tree	
119	7720 Lockwood	12" Sugarberry	Not protected	Private tree, Topped by CPE	
120	7719 Lockwood	15" Crepe Myrtle	Not protected	Private tree	
121	7719 Lockwood	26" Pecan	Protected	Private tree, Codominant	
122	7719 Lockwood	15" Crepe Myrtle	Not protected	Private tree	
123	1709 Lockwood	5" Cedar	Not protected	Private tree	
124	1709 Lockwood	5" Cedar	Not protected	Private tree	
125	1709 Lockwood	9" Shumard Oak	Not protected	Private tree	
126	N/A	10" Pecan	Not protected	Topped	
127	N/A	11" Sugarberry	Not protected	Private tree	Clearance prune
128	N/A	7" Pecan	Not protected	Private tree	
129	7716 Lockwood	4" Live Oak	Not protected	Private tree	
130	7716 Lockwood	4" Live Oak	Not protected	Private tree	
131	7702 Lockwood	4" Live Oak	Not protected	Private tree	
132	7702 Lockwood	4" Live Oak	Not protected	Private tree	
133	7702 Lockwood	4" Live Oak	Not protected	Private tree	
134	7618 Lockwood	5" Crepe Myrtle	Not protected	Private tree, Topped	
135	7618 Lockwood	5" Crepe Myrtle	Not protected	Private tree, Topped	
136	7618 Lockwood	5" Crepe Myrtle	Not protected	Private tree, Topped	
137	7618 Lockwood	5" Crepe Myrtle	Not protected	Private tree, Topped	
138	7618 Lockwood	5" Crepe Myrtle	Not protected	Private tree, Topped	
139	N/A	8" Mulberry	Not protected	Private tree	

N

0 20 40 80

NO.	DATE	REVISION	APP.

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281-391-9022 ckoehl@koehlurbanforestry.com

APPROVED:

SURVEYED BY: LANDTECH
FB NO. P–

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST
TREE PROTECTION PLAN

SHEET 6 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–001000–0032–4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 110 OF 124	

60% SUBMITTAL

PLOTTED: 4/23/2026 5:21 PM
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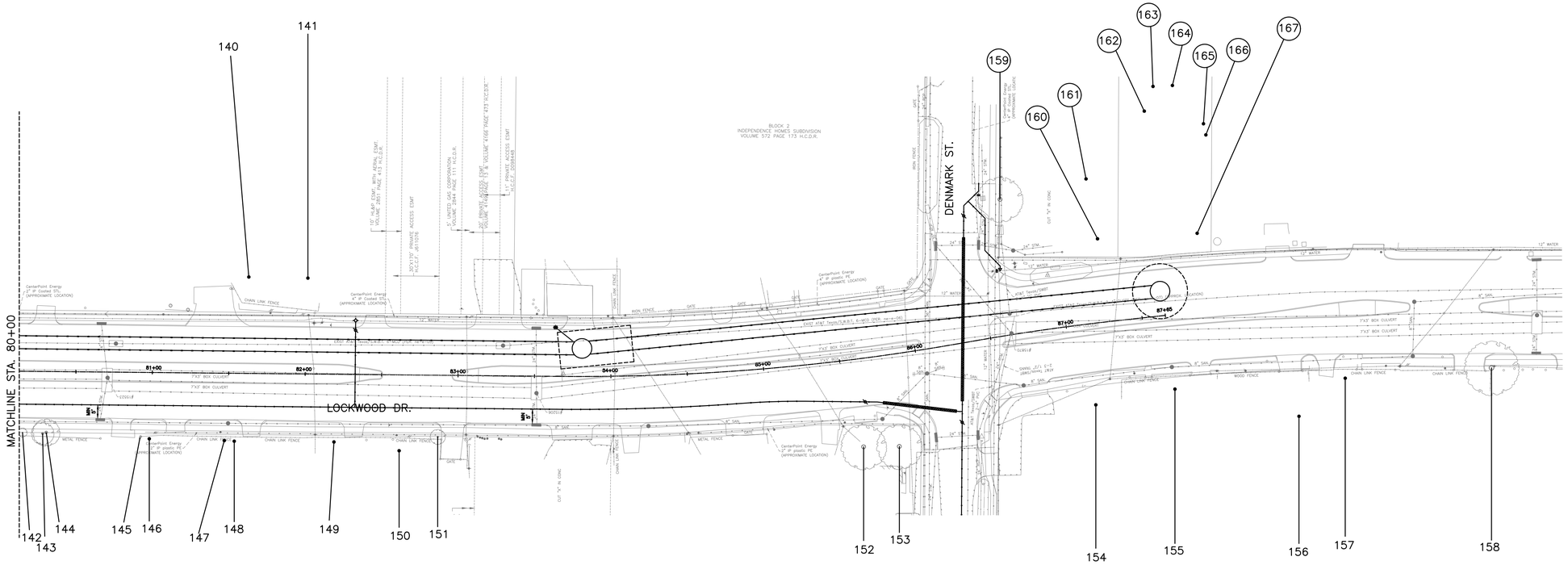

Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
Trees on Lockwood Drive					
140	7542 Lockwood	29" Pecan	Protected	Private tree, Topped	
141	7542 Lockwood	11" Pecan	Not protected	Private tree, Topped	
142	7611 Lockwood	8" Sugarberry	Not protected	Private tree	Clearance prune
143	7611 Lockwood	15" Camphor	Not protected	Private tree	
144	7611 Lockwood	8" Sugarberry	Not protected		Clearance prune
145	7611 Lockwood	16" Box Elder	Not protected		Clearance prune
146	7611 Lockwood	18" Sugarberry	Protected		Clearance prune
147	7611 Lockwood	8" Box Elder	Not protected		Clearance prune
148	7611 Lockwood	19" Mulberry	Not protected	Private tree	
149	7607 Lockwood	32" Pecan	Protected	Private tree	Clearance prune, Hand dig water service from curb to meter
150	7525 Lockwood	15" Loquat	Not protected	Private tree, 50% dieback	
151	7525 Lockwood	10" Juniper	Not protected	Private tree	
152	4819 Denmark	14" Crepe Myrtle	Not protected	Private tree, Topped	
153	4819 Denmark	17" Crepe Myrtle	Not protected	Private tree	
154	7419 Lockwood	41" Green Ash	Protected	Private tree, Trunk cavity	
155	7419 Lockwood	24" Magnolia	Protected	Private tree, Pruned by CPE	Clearance prune
156	7415 Lockwood	17" Arborvitae	Not protected	Private tree	
157	7405 Lockwood	16" Crepe Myrtle	Not protected	Private tree	
158	7401 Lockwood	22" American Elm	Protected	Private tree, Growing around power pole, 50% dieback	
159	7414 Lockwood	24" American Elm	Protected	Private tree, Topped by CPE, Remove for TCE	Remove tree, Provide 24" mitigation/replacement
160	7414 Lockwood	23" Eastern Red Cedar	Not protected	Private tree, Pruned by CPE, Remove for TCE	Remove tree, No replacement required
161	7414 Lockwood	24" Tallow	Not protected	Private tree, Remove for TCE	Remove tree, No replacement required
162	7414 Lockwood	26" Pecan	Protected	Private tree, Remove for TCE	Remove tree, Provide 26" mitigation/replacement
163	7414 Lockwood	9" American Elm	Not protected	Private tree, Remove for TCE	Remove tree, No replacement required
164	7414 Lockwood	13" American Elm	Not protected	Private tree, Remove for TCE	Remove tree, No replacement required
165	7414 Lockwood	10" Tallow	Not protected	Private tree, Remove for TCE	Remove tree, No replacement required
166	7414 Lockwood	14" Tallow	Not protected	Private tree, Remove for TCE	Remove tree, No replacement required
167	7414 Lockwood	5" Live Oak	Not protected	Private tree, Remove for TCE	Remove tree, No replacement required

NOTE:
1. THIS TREE PROTECTION PLAN WAS DEVELOPED WITH INFORMATION PROVIDED BY DESIGN ENGINEER IN DRAWINGS DATED APRIL 2026. THE PLAN CONSIDERS ALL FITTINGS, VERTICAL OFFSETS AND AREAS OF NECESSARY EXCAVATION. CHANGES MADE TO DESIGN MAY COMPROMISE THE TREE PROTECTION PLAN. REFER SPECIFICATIONS 01562 AND 02915. CONDITION OF EACH TREE IS BASED ON VISUAL EVALUATION AT TIME OF DESIGN. CONDITION AND STRUCTURAL INTEGRITY OF EACH TREE IS NOT GUARANTEED BY DESIGNER AT ANY POINT IN THE FUTURE, AS ENVIRONMENTAL AND MAINTENANCE INFLUENCES ON EACH TREE CAN NOT BE DETERMINED BY DESIGNER.
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TREE PRESERVATION PLAN LEGEND

1	TREE NUMBER/LOCATION
(1)	TREE TO BE REMOVED
–X–X–	TREE PROTECTION FENCE

N

0 20 40 80

NO.	DATE	REVISION	APP.

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281–391–0022 ckoehl@koehlurbanforestry.com

APPROVED:

SURVEYED BY: LANDTECH
FB NO. P–

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST
TREE PROTECTION PLAN

SHEET 7 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R–001000–0032–4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 111 OF 124	

60% SUBMITTAL

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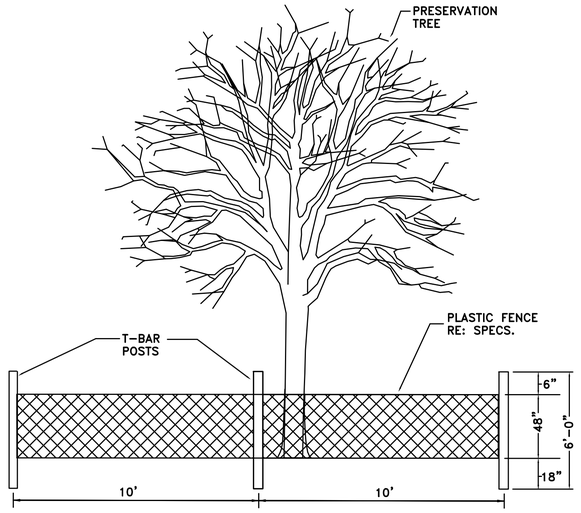
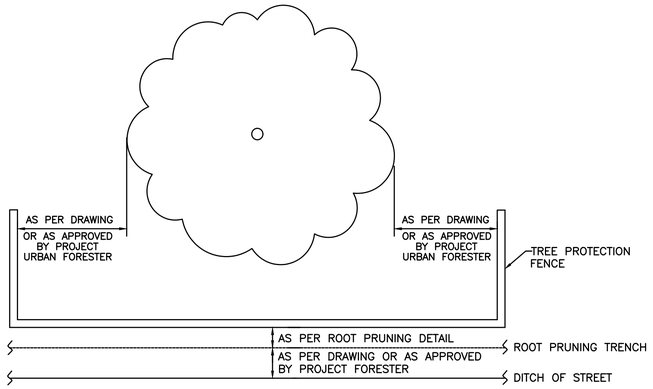


TREE PROTECTION FENCING DETAIL A

NOT TO SCALE



TREE PROTECTION FENCING DETAIL B

NOT TO SCALE

Tree Removal List

Tree No.	Location	Description	Replacement requirement
21	N/A	38" Water Oak	38
21A	N/A	44" Water Oak	0
33	4902 Laura Koppe	13" Tallow	0
34	4902 Laura Koppe	12" Tallow	0
58	N/A	32" Water Oak	0
59	N/A	21" Tallow	0
60	N/A	11" Pecan	0
61	N/A	14" Pecan	0
62	N/A	16" Pecan	0
63	N/A	15" Tallow	0
64	N/A	13" Pecan	0
65	N/A	7" Water Oak	0
108	7728 Lockwood	14" Live Oak	0
109	7728 Lockwood	12" Live Oak	0
110	7728 Lockwood	14" Live Oak	0
111	7728 Lockwood	12" Live Oak	12
112	7728 Lockwood	11" Live Oak	11
113	7728 Lockwood	17" Live Oak	17
114	7728 Lockwood	18" Live Oak	18
115	7728 Lockwood	13" Live Oak	13
159	7414 Lockwood	24" American Elm	24
160	7414 Lockwood	23" Eastern Red Cedar	0
161	7414 Lockwood	24" Tallow	0
162	7414 Lockwood	26" Pecan	26
163	7414 Lockwood	9" American Elm	0
164	7414 Lockwood	13" American Elm	0
165	7414 Lockwood	10" Tallow	0
166	7414 Lockwood	14" Tallow	0
167	7414 Lockwood	5" Live Oak	0
		TOTAL REPLACEMENT INCHES REQUIRED	**159**

Tree Replacement List

Quantity	Caliper Size	Species	Container/Tree Spade size
		TOTAL REPLACEMENT INCHES INCLUDED IN PLAN	**0**

NOTE: Tree replacement locations are not shown on plans. Contractor must coordinate with City of Houston Urban Forestry and Houston Public Works prior to PURCHASING trees. This project may not have adequate room for all required replacement trees without creating regulatory sign or traffic/pedestrian visibility issues. Number of trees and planting locations will be determined by City of Houston Urban Forestry in construction phase. Trees that are planted are to be maintained and watered for 2 years following planting per standard spec 02915. Timing of planting may be delayed in periods of drought with mandatory water restrictions in place-timing to be coordinated with City of Houston Urban Forestry. Trees in esplanade groupings to be planted in common bed with 4" of hardwood mulch between trees.

Trees are to be maintained and watered for 2 years following planting per standard spec 02915. Timing of planting may be delayed in periods of drought with mandatory water restrictions in place-timing to be coordinated with City of Houston Forestry.

Tree replacement locations shall comply with Houston Public Works spec sections 02811, 02911, 02912, 02915, 02921 & 02922. In general trees along sides of street right of ways shall be no closer than 3' to back of curb or 20' from another tree. Trees in medians shall be no closer than 6' back of curb, 75' from an intersection, 50' to a median cut, or 20' from another tree. Contractor to coordinate locations with City Forestry and HPW prior to PURCHASING trees. All replacement trees called out on plans may not be planted on project relative to coordination with listed parties.

Cash Allowance Due Parks from HPW for Balance of Mitigation Not Planted on Project

	Required Mitigation total	Mitigation rate/inch	
setback	50	$ 132.51	$ 6,625.50
0-5.99"		$ 302.12	$ -
6-11.99"	11	$ 503.55	$ 5,539.05
12" +	98	$ 671.40	$ 65,797.20
		TOTAL REQUIRED MITIGATION FEE	**$ 71,336.25**

Arboriculturally Significant Tree List

Tree No.	Location	Description
2	9405 Lockwood	27" Live Oak
4	9401 Lockwood	31" Water Oak
5	9401 Lockwood	28" Pine
8	4826 Lockwood	25" Willow Oak
11	9222 Lockwood	26" Pine
14	9222 Lockwood	27" Water Oak
15	9222 Lockwood	26" Cherry Bark Oak
16	9210 Lockwood	26" Post Oak
19	9202 Lockwood	27" Pine
21	N/A	38" Water Oak
22	9002 Lockwood	25" Pine
23	9002 Lockwood	27" Pine
24	9002 Lockwood	24" Pine
26	4825 Boxwood	26" Pine
27	8917 Lockwood	27" Pecan
31	8817 Lockwood	42" Live Oak
38	8709 Lockwood	28" Willow Oak
40	N/A	24" Water Oak
43	8617 Lockwood	37" Water Oak
44	8609 Lockwood	26" Sycamore
48	8618 Lockwood	27" Water Oak
50	8618 Lockwood	30" Pine
58	N/A	32" Water Oak
87	7925 Lockwood	28" Pecan
100	7810 Lockwood	27" Pecan
106	7805 Lockwood	27" Pecan
107	N/A	24" Pecan
121	7719 Lockwood	26" Pecan
140	7542 Lockwood	29" Pecan
149	7607 Lockwood	32" Pecan
154	7419 Lockwood	41" Green Ash
155	7419 Lockwood	24" Magnolia
159	7414 Lockwood	24" American Elm
162	7414 Lockwood	26" Pecan

Trees Identified by City of Houston Forestry/Parks & Recreation Department as Arboriculturally Significant are identified here and/or in treatment schedule included on TPP sheets. Arboriculturally Significant trees are to be pruned under direct supervision of City of Houston Forestry. Minimal pruning will be allowed for construction equipment access, and in some cases no pruning will be allowed. Contractor must review conditions around and/or under the canopy of Arboriculturally Significant trees and consider restrictions when preparing cost estimate and planning construction equipment that will be necessary to accomplish design installation with minimal to no tree pruning.

NO.	DATE	REVISION	APP.

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281-391-0022 ckoehl@koehlurbanforestry.com

APPROVED:

SURVEYED BY: LANDTECH
FB NO. P-

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST
TREE PROTECTION PLAN

SHEET 8 OF 8

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 112 OF 124	

60% SUBMITTAL

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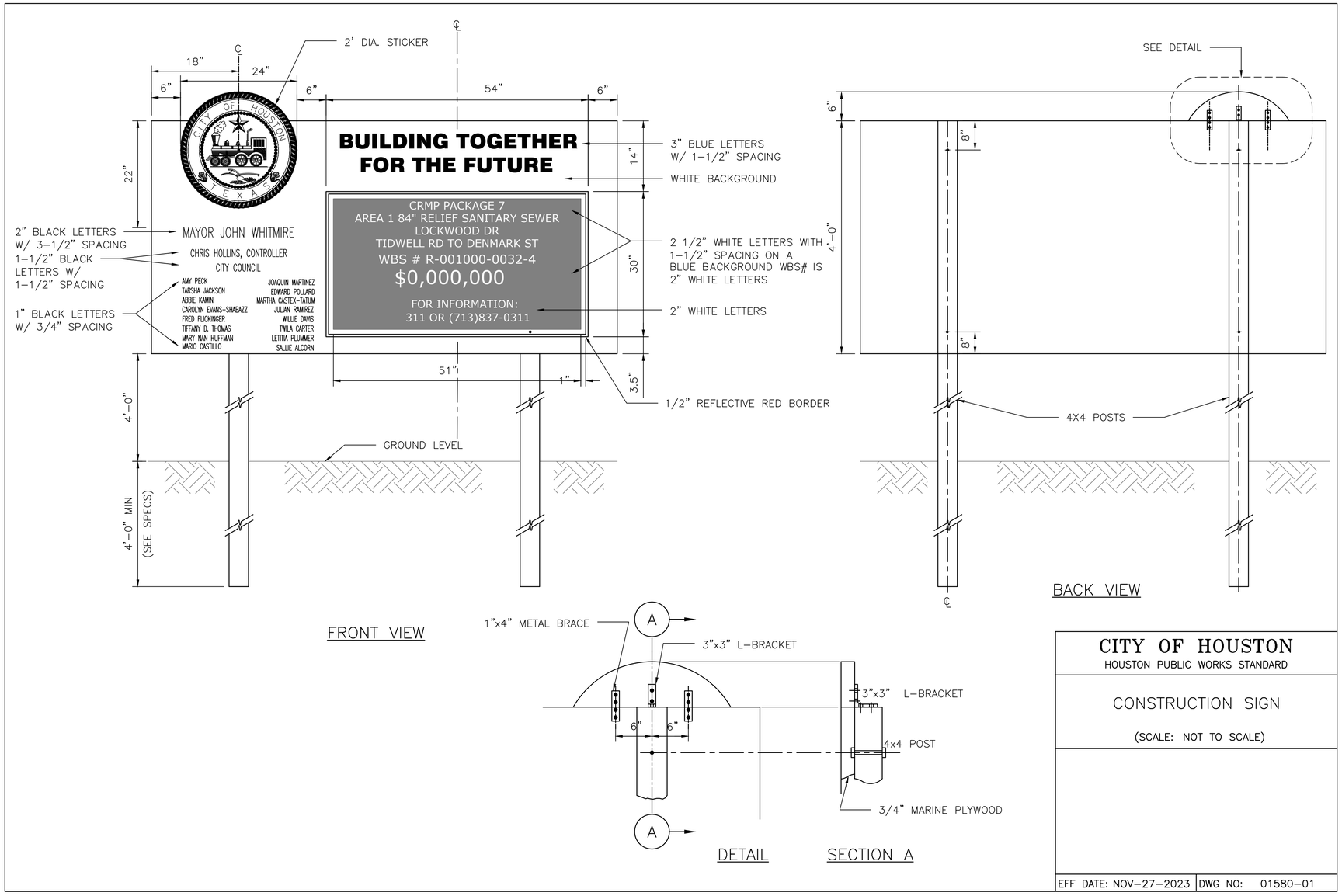

NO.	DATE	REVISION	APP.

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

CONSTRUCTION SIGN

(SCALE: NOT TO SCALE)

EFF DATE: NOV-27-2023 | DWG NO: 01580-01

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Fax (713)532-1734

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

APRIL 2026

SINA ARJMAND, P.E.
TX PE NO. 132394

SURVEYED BY: LANDTECH
FB NO. P-

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

STANDARD DETAILS FOR
CONSTRUCTION SIGN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
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CITY OF HOUSTON PM	
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SHEET NO. 113 OF 124	

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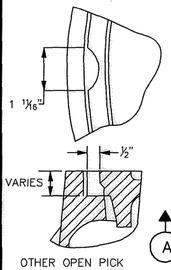
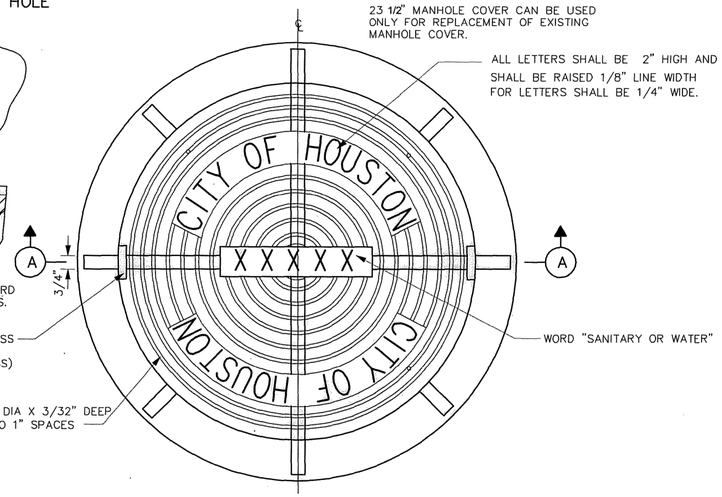
TYPE 1
OPEN PICK HOLE



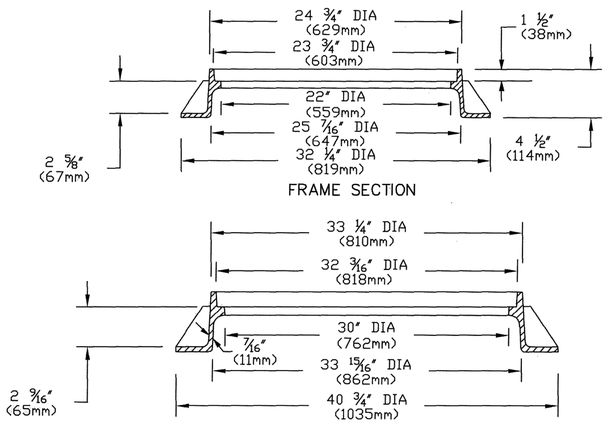
OTHER OPEN PICK HOLES ARE STANDARD ON CERTAIN COVERS.

NOTE:
23 1/2" MANHOLE COVER CAN BE USED ONLY FOR REPLACEMENT OF EXISTING MANHOLE COVER.



PLAN

23 1/2" MANHOLE COVER WITH FRAME



FRAME SECTION

SECTION (A)

32" 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

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

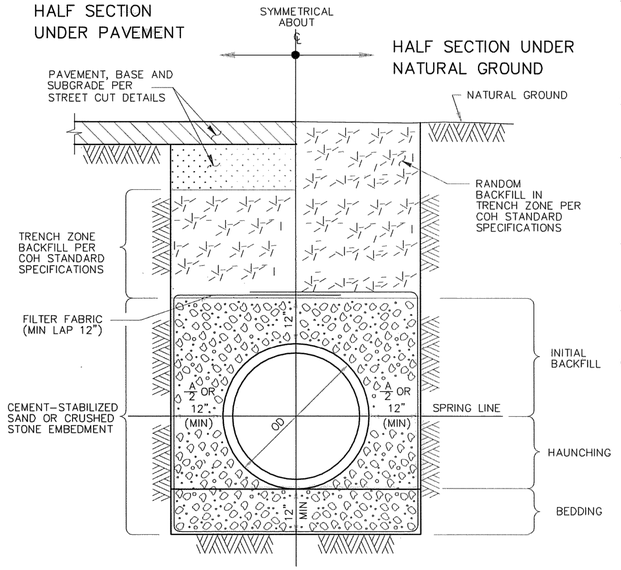
SANITARY SEWER AND WATER MANHOLE FRAME AND COVER

(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



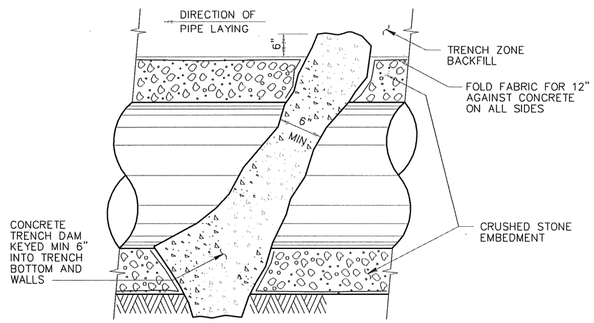
TYPICAL CROSS-SECTION

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.



LONGITUDINAL SECTION ALONG PIPE ℄ AT EMBEDMENT TRENCH DAM

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

stv
Texas Registered Engineering Firm F-204
Texas First Bank Building
11757 Katy Freeway
Suite 1540
Houston, TX, 77079
(713)532-1730
Fax (713)532-1734

SURVEYED BY: LANDTECH
FB NO. P-

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

APRIL 2026

SINA ARJMAND, P.E.
TX PE NO. 132394

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

STANDARD DETAILS FOR SANITARY SEWER DETAILS (SHEET 1 OF 4)

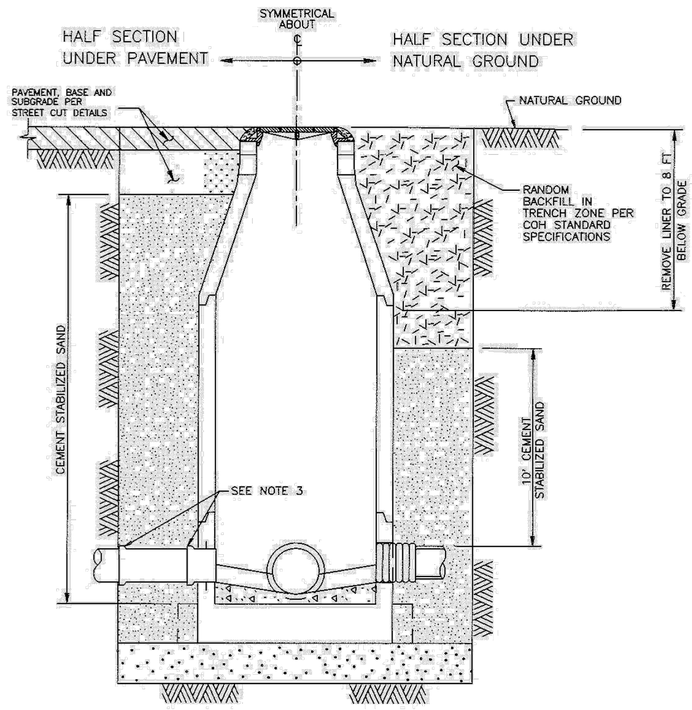
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 114 OF 124	

60% SUBMITTAL

FILE PATH: 230012201_GN_Standards7.dwg

NOTES:

1. GROUTING OF MANHOLE STRUCTURE ANNULAR SPACE WILL BE PERMITTED IN CASES WHERE INSUFFICIENT WORK SPACE EXISTS FOR PLACEMENT AND COMPACTATION OF CEMENT STABILIZED SAND, PER COH STANDARD SPECIFICATION FOR TUNNEL GROUT.
2. THIS DETAIL ALSO APPLIES TO BACKFILL OF SHAFTS WITHOUT STRUCTURES.
3. ARRANGE PIPE JOINTS AS SHOWN WHEN USING RIGID CONNECTION TO CAST IN PLACE MANHOLE BASE.



TYPICAL CROSS – SECTION

CDH

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

stv
Texas Registered Engineering Firm F-204
Texas First Bank Building
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(713)532-1730
Fax (713)532-1734

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APRIL 2026

SINA ARJMAND, P.E.
TX PE NO. 132394

SURVEYED BY: LANDTECH
FB NO. P-

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

STANDARD DETAILS FOR
SANITARY SEWER DETAILS (SHEET 2 OF 4)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 115 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/23/2026 3:34 PM
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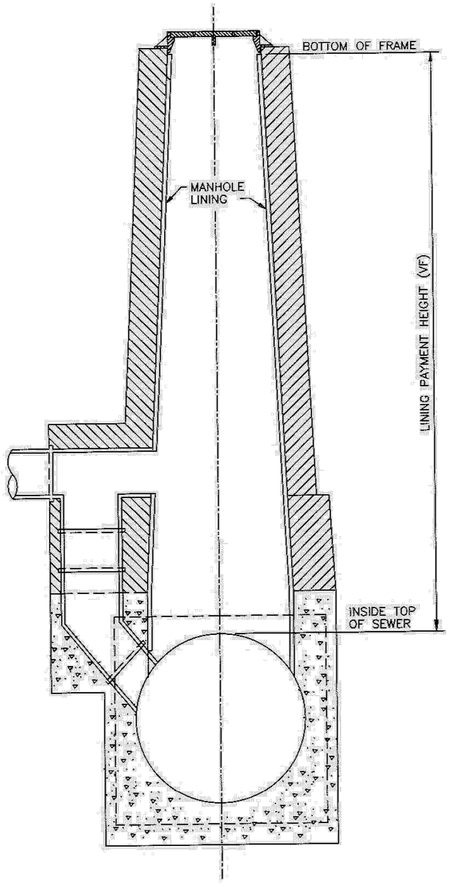
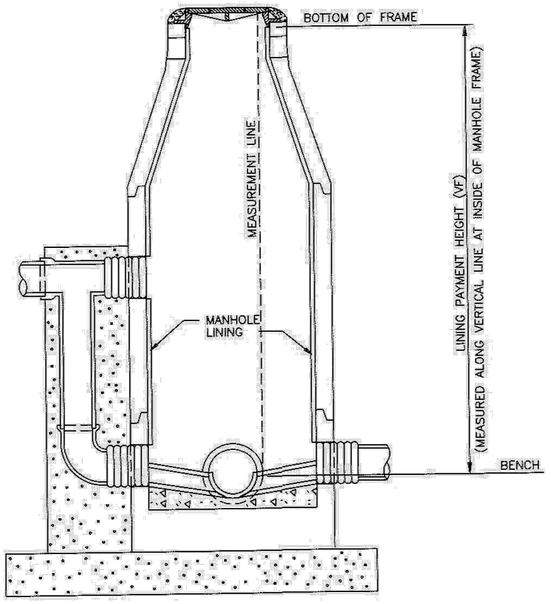


TYPICAL MONOLITHIC SEWER MANHOLE



TYPICAL PIPE SEWER MANHOLE

THIS IS NOT A STANDARD DETAIL.
IT IS TO BE USED ONLY AS A GUIDE
FOR MEASUREMENT PURPOSES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINE
ENGINEERING, CONSTRUCTION AND REAL ESTATE DI

SANITARY SEWER
MANHOLE LINING
PAYMENT LIMITS
(NOT TO SCALE)

APPROVED BY: Brandaguiz
CITY ENGINEER

APPROVED BY:
DIRECTOR OF PU
WORKS AND ENGIN

EFF DATE: OCT-01-2002

DWG NO: 02534

stv
Texas Registered Engineering Firm F-204
Texas First Bank Building
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Houston, TX, 77079
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APRIL 2026

SINA ARJMAND, P.E.
TX PE NO. 132394

SURVEYED BY: LANDTECH
FB NO. P-

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

STANDARD DETAILS FOR
SANITARY SEWER DETAILS (SHEET 3 OF 4)

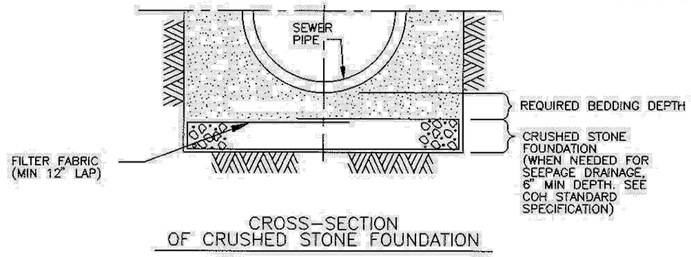
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 116 OF 124	

60% SUBMITTAL

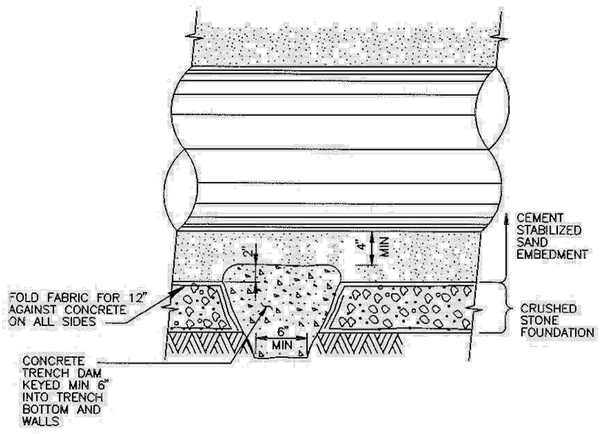
PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/23/2026 3:34 PM
FILE PATH: 230012201_GN_Standards7.dwg

NOTES:

1. ACTUAL SHAPE OF CONCRETE TRENCH DAM CROSS SECTION MAY BE DETERMINED BY CONTRACTOR IN FIELD, MEETING MINIMUM THICKNESS AND KEY DEPTH REQUIREMENTS.
2. THIS DETAIL SHALL BE USED WITH CEMENT STABILIZED SAND EMBEDMENT, OR OTHER CLASS II EMBEDMENT, IN WET STABLE TRENCH CONDITIONS.
3. PLACE TRENCH DAMS IN CLASS I EMBEDMENTS AT THE MIDPOINT OF LINE SEGMENTS LONGER THAN 100 FEET BETWEEN MANHOLES.



CROSS-SECTION OF CRUSHED STONE FOUNDATION



LONGITUDINAL SECTION ALONG PIPE ℄ AT FOUNDATION TRENCH DAM

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION

SANITARY OR STORM SEWER
CRUSHED STONE FOUNDATION
FOR WET STABLE TRENCH

(NOT TO SCALE)

APPROVED BY:	APPROVED BY:
CITY ENGINEER	DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002	DWG NO: 02317-02

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APRIL 2026

SINA ARJMAND, P.E.
TX PE NO. 132394

SURVEYED BY: LANDTECH
FB NO. P-

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

STANDARD DETAILS FOR
SANITARY SEWER DETAILS (SHEET 4 OF 4)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 117 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/23/2026 3:35 PM
FILE PATH: 230012201_GN_Standards7.dwg

SANITARY SEWER VENT STACK WITH ACTIVATED CARBON ODOR CONTROL

1. VENT STACK SCRUBBER IS CONSTRUCTED FROM HDPE OR FRP HDPE OR FRP, SUITABLE FOR EXPOSURE AND CORROSIVE SEWER GAS ENVIRONMENTS.

2. STANDARD VENT STACK SCRUBBER CONSISTS OF THE FOLLOWING:
   A) 18" FLANGE ADAPTER
   B) 18" × 6' SDR 19 MEDIA CHAMBER (APPROXIMATELY 6 CUBIC FEET)
   C) 316 STAINLESS STEEL MEDIA RETAINING SCREEN
   D) WEATHER GUARD WITH 316 VENT SCREEN
   E) APPROXIMATE OVERALL DIMENSIONS 14" × 8'
   F) MEDIA IS AN ACTIVATED CARBON WITH WEAR INDICATOR

3. VENT STACK SCRUBBER SHOULD BE ATTACHED TO A STAND PIPE VIA 316 STAINLESS STEEL CLAMPS AND/OR FLANGED CONNECTIONS, PER APPROVAL REQUIREMENTS AND CITY OF HOUSTON APPROVAL.

4. STAND POST SHALL BE SUPPORTED BY 3" HOT DIPPED GALVANIZED PIPE WITH ATTACHMENT POINT WELDED IN PLACE.

5. THE ACTIVATED CARBON MEDIA HAS A USEFUL LIFE AND IS REQUIRED TO BE REPLACED AS NEEDED. CARBON MEDIA SHALL BE SPECIFICALLY DESIGNED FOR REMOVAL OF HYDROGEN SULFIDE GAS (H_2S) AND TYPICAL SEWER ODORS.

6. VENT IS TO BE INSTALLED WITHIN THE RIGHT-OF-WAY AT LOCATIONS SHOWN ON THE DRAWINGS.

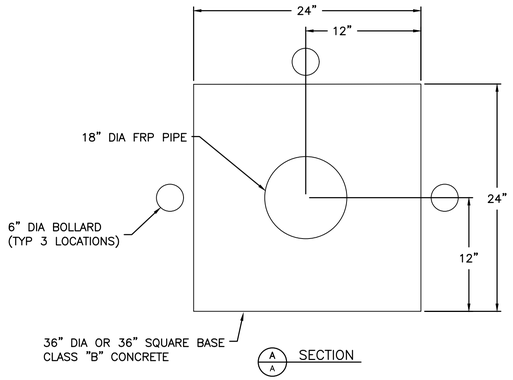
7. SEE COH STANDARD SPECIFICATIONS FOR INSTALLATION AND PROTECTIVE COATING REQUIREMENTS FOR EXPOSED FRP PIPE.

8. ODOR CONTROL UNIT SHALL BE RATED TO ACCOMMODATE THE FULL VENT AIRFLOW WITHOUT RESTRICTING PRESSURE RELIEF DURING PEAK SURCHARGE OR RELIEF FLOW CONDITIONS.

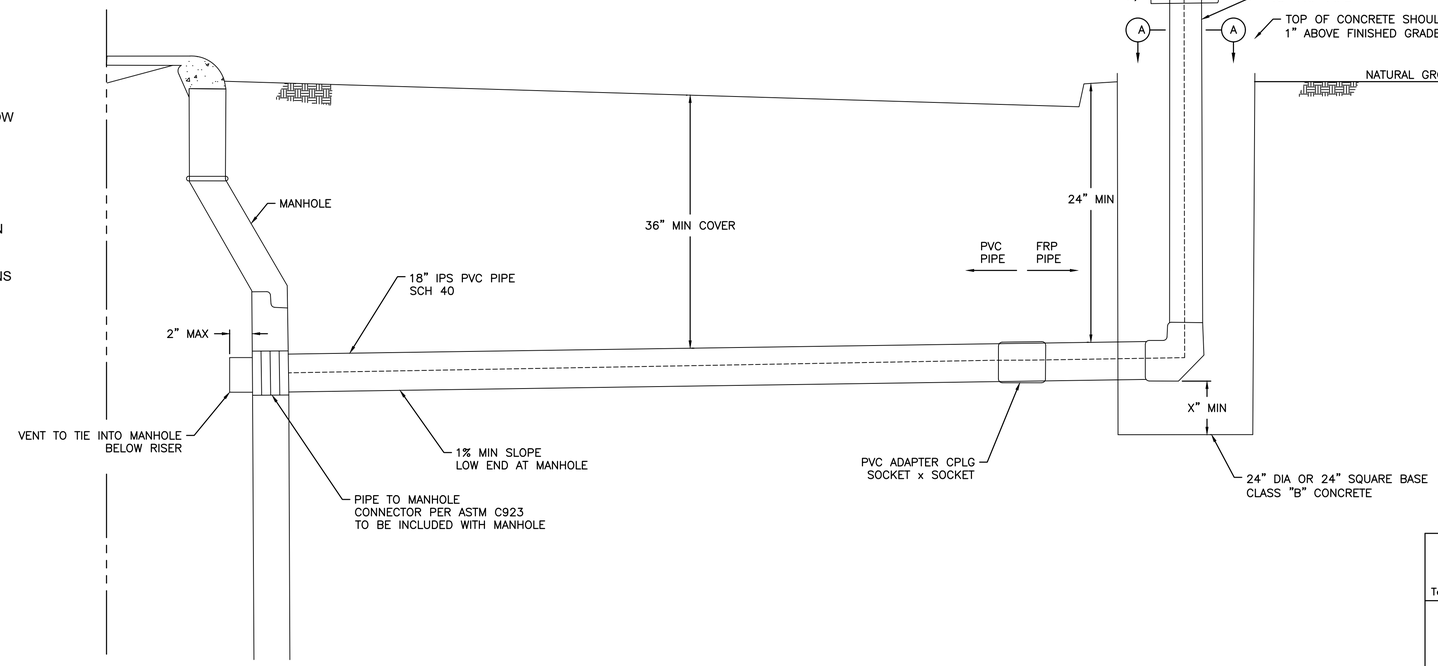
9. VENT RISER SHALL CONNECT TO THE MANHOLE BARREL ABOVE THE SEWER CROWN. VENT STACK HEIGHT SHALL BE A MINIMUM OF 3' ABOVE FINISHED GRADE AND ABOVE THE 100-YEAR FLOOD ELEVATION, WHERE APPLICABLE.

10. THE VENT RISER SHALL BE PROTECTED BY THREE (3) BOLLARDS THAT SHALL BE 6" IN DIAMETER.

11. ALL EXPOSED COMPONENTS SHALL COMPLY WITH CITY OF HOUSTON SPECIFICATIONS FOR MATERIALS, COATINGS, AND CORROSION PROTECTION.



CONCRETE FOUNDATION



LARGE DIAMETER SANITARY SEWER MANHOLE VENT DETAIL
(N.T.S.)

NO.	DATE	REVISION	APP.

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Texas Registered Engineering Firm F-204
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(713)532-1730
Fax (713)532-1734

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APRIL 2026

SINA ARJMAND, P.E.
TX PE NO. 132394

SURVEYED BY: LANDTECH
FB NO. P-

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

SANITARY SEWER MANHOLE VENT DETAIL

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 118 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/23/2026 3:35 PM
FILE PATH: 230012201_GN_SWRDTL01.dwg

Meter ID	Description	Address	Location	Meter Type	Service Status	Installed Date
00007760-BA-0.625	A-AMR	7906 LOCKWOOD DR HOUSTON TX 77016-6428		SM-SR-D4	SRV_ON	2/25/2000
01070377-BA-0.625	A-AMR	7607 LOCKWOOD DR HOUSTON TX 77016-6421	FRONT	SM-SR-D4	SRV_OFF	5/4/2002
02206971-BA-0.625	A-AMR	7901 LOCKWOOD DR P1-1 HOUSTON TX 77016-6427		SM-SR-D4	SRV_OFF	7/12/2002
02207017-BA-0.625	A-AMR	7527 LOCKWOOD DR HOUSTON TX 77016-6419		SM-SR-D4	SRV_OFF	7/12/2002
02209411-BA-0.625	A-AMR	7809 LOCKWOOD DR HOUSTON TX 77016-6425		SM-SR-D4	SRV_GRLOCK	7/12/2002
02224261-BA-0.625	A-AMR	7511 LOCKWOOD DR HOUSTON TX 77016-6419	FRONT	SM-SR-D4	SRV_ON	7/8/2002
02224263-BA-0.625	A-AMR	7523 LOCKWOOD DR # A HOUSTON TX 77016-0000		SM-SR-D4	SRV_ON	7/8/2002
02224264-BA-0.625	A-AMR	7519 LOCKWOOD DR A HOUSTON TX 77016-6463		SM-SR-D4	SRV_ON	11/17/2010
02224308-BA-0.625	A-AMR	7509 LOCKWOOD DR HOUSTON TX 77016-6419		SM-SR-D4	SRV_OFF	7/8/2002
02224309-BA-0.625	A-AMR	7505 LOCKWOOD DR HOUSTON TX 77016-6419		SM-SR-D4	SRV_OFF	7/8/2002
02224356-BA-0.625	A-AMR	7525 LOCKWOOD DR HOUSTON TX 77016-6419		SM-SR-D4	SRV_ON	7/8/2002
02224357-BA-0.625	A-AMR	7611 LOCKWOOD DR HOUSTON TX 77016-6421		SM-SR-D4	SRV_ON	7/8/2002
02224358-BA-0.625	A-AMR	7518 LOCKWOOD DR HOUSTON TX 77016-6420		SM-SR-D4	SRV_ON	7/8/2002
02224359-BA-0.625	A-AMR	7618 LOCKWOOD DR HOUSTON TX 77016-6422		SM-SR-D4	SRV_ON	7/8/2002
02236224-BA-0.625	A-AMR	7702 LOCKWOOD DR HOUSTON TX 77016-6424		SM-SR-D4	SRV_ON	7/12/2002
02355119-BA-0.625	A-AMR	7521 LOCKWOOD DR B HOUSTON TX 77016-6461		SM-SR-D4	SRV_ON	7/8/2002
04148947-BA-0.625	A-AMR	7419 LOCKWOOD DR HOUSTON TX 77016-7033		SM-SR-D4	SRV_ON	1/8/2005
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06586681-BA-0.625	A-AMR	7523 LOCKWOOD DR # B HOUSTON TX 77016-6451	FRONT	SM-SR-D4	SRV_ON	6/8/2007
08585240-BA-1.000	R-RESIDENTIAL	7515 LOCKWOOD DR HOUSTON TX 77016-6419		SM-SR-D4	SRV_ON	2/9/2009
09327518-BA-1.000	A-AMR	7728 LOCKWOOD DR P1-1 HOUSTON TX 77016-0000		SM-SR-D4	SRV_ON	7/28/2009
09501398-BA-0.625	A-AMR	7517 LOCKWOOD DR A HOUSTON TX 77016-0000		SM-SR-D4	SRV_ON	11/17/2010
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09516119-BA-0.625		7425 LOCKWOOD DR P1-1 HOUSTON TX 77016-7033	FRONT	SM-SR-D4	SRV_ON	7/5/2002
09641810-BA-0.625	A-AMR	7724 LOCKWOOD DR HOUSTON TX 77016-6424		SM-SR-D4	SRV_ON	3/9/2011
10251523-BA-1.500	A-AMR	7512 LOCKWOOD DR HOUSTON TX 77016-6420		SM-SR-D5	SRV_ON	8/25/2011
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12755824-BA-0.625	A-AMR	7709 LOCKWOOD DR HOUSTON TX 77016-6423		SM-SR-D4	SRV_ON	3/7/2014
19491900-BA-2.000	A-AMR	7542 LOCKWOOD DR HOUSTON TX 77016-6420		SM-SR-D5	SRV_ON	8/24/2020
230283842-BA-1.000	A-AMR	7720 LOCKWOOD DR P2-1 HOUSTON TX 77016-6424		SM-SR-D4	SRV_ON	7/31/2023
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31737571-EM-0.625	R-RESIDENTIAL	7701 LOCKWOOD DR A HOUSTON TX 77016-6423		SM-SR-D4		10/20/1960
31737572-RW-0.625	R-RESIDENTIAL	7710 LOCKWOOD DR P1-1 HOUSTON TX 77016-6424		SM-SR-D4		11/16/1971
32497783-RW-1.000	R-RESIDENTIAL	7522 LOCKWOOD DR P1-1 HOUSTON TX 77016-6420		SM-SR-D4		1/1/1987
33988751-RW-1.000		7716 LOCKWOOD DR P1-2/P2-1 HOUSTON TX 77016-6424		SM-SR-D4		1/1/1987
87077328-BA-0.625	R-RESIDENTIAL	7902 LOCKWOOD DR P2-1 HOUSTON TX 77016-6428		SM-SR-D4		10/20/1987
89083991-BA-0.625	R-RESIDENTIAL	7701 LOCKWOOD DR B HOUSTON TX 77016-6423		SM-SR-D4		6/8/1989

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MARCH 2026

SINA ARJMAND, P.E.
TX PE NO. 132394

SURVEYED BY: LANDTECH
FB NO. P-

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

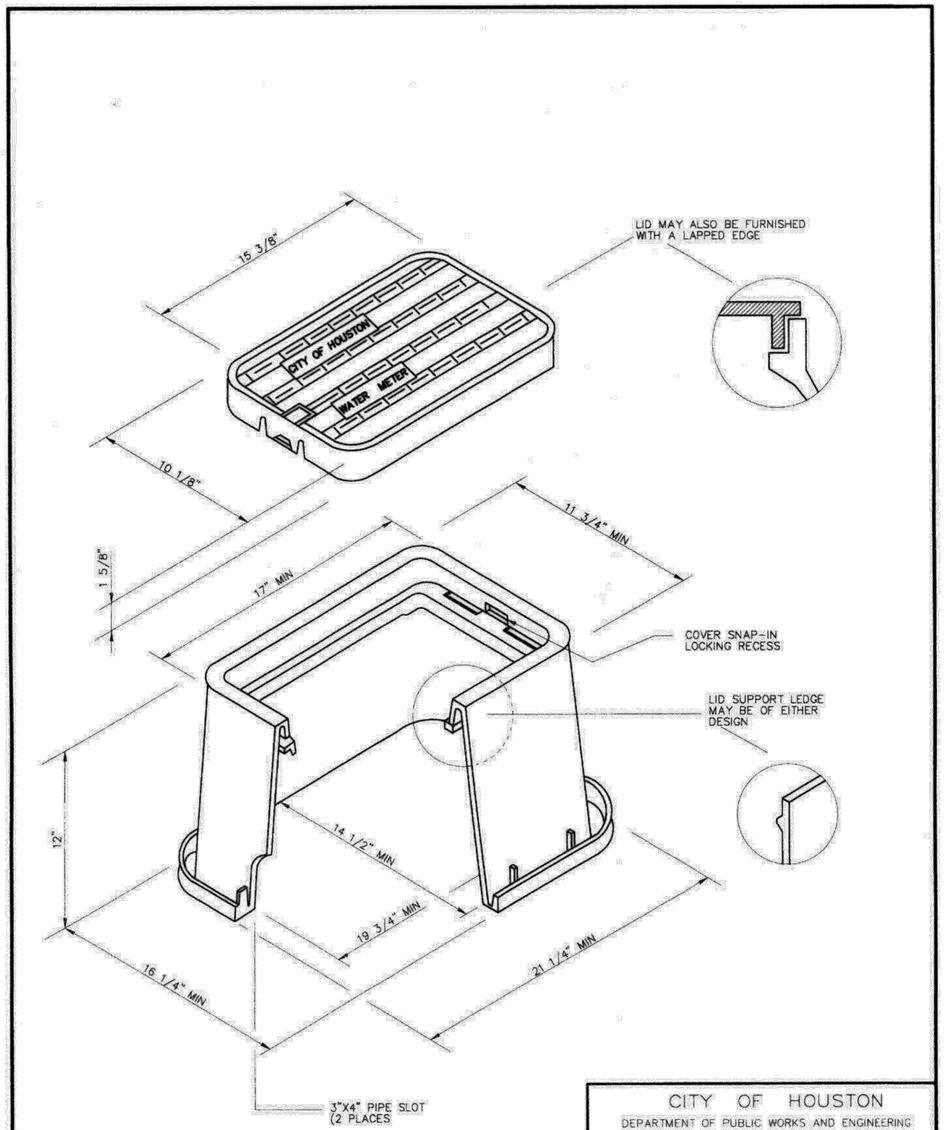
METER LIST

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 119 OF 124	

60% SUBMITTAL

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/23/2026 6:30 PM
FILE PATH: STV_STANDARD DETAILS.dwg

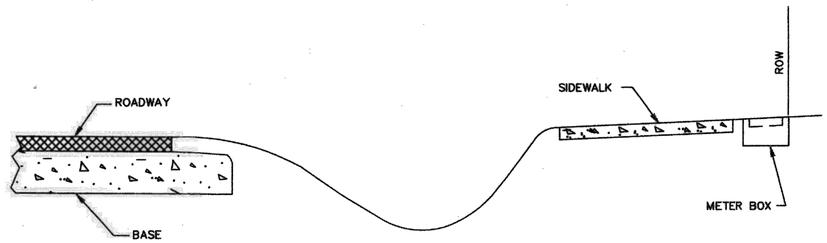
PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/23/2026 6:30 PM



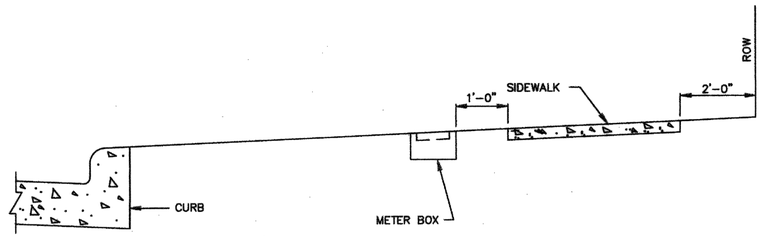
NOTE

1. LID MUST BE ABLE TO ACCEPT THE CITY'S AMR TRANSMITTING ENDPOINT.

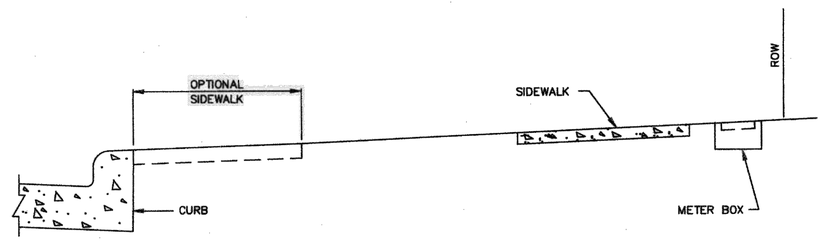
CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
STANDARD PLASTIC METER BOX FOR ⅝" AND 1" METERS (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2010	DWG NO: 02085-01



OPEN DITCH STREET



CURB STREET



CURB STREET

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
LOCATION OF WATER METER BOX FOR 2" DIAMETER AND LESS (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2010	DWG NO: 02085-02

stv
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SURVEYED BY: LANDTECH
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

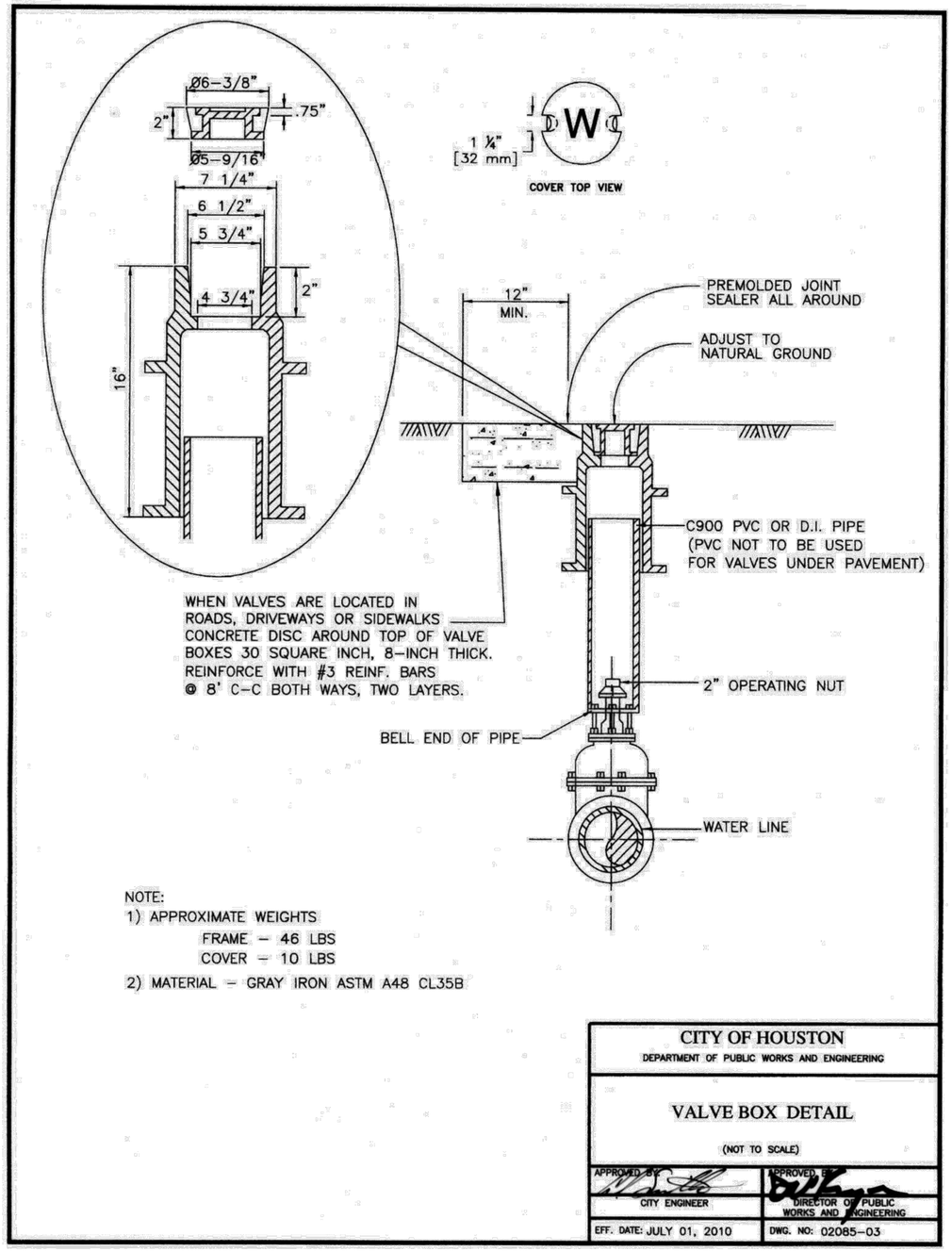
STANDARD DETAILS 1 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-001000-0032-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 120 OF 124	

60% SUBMITTAL

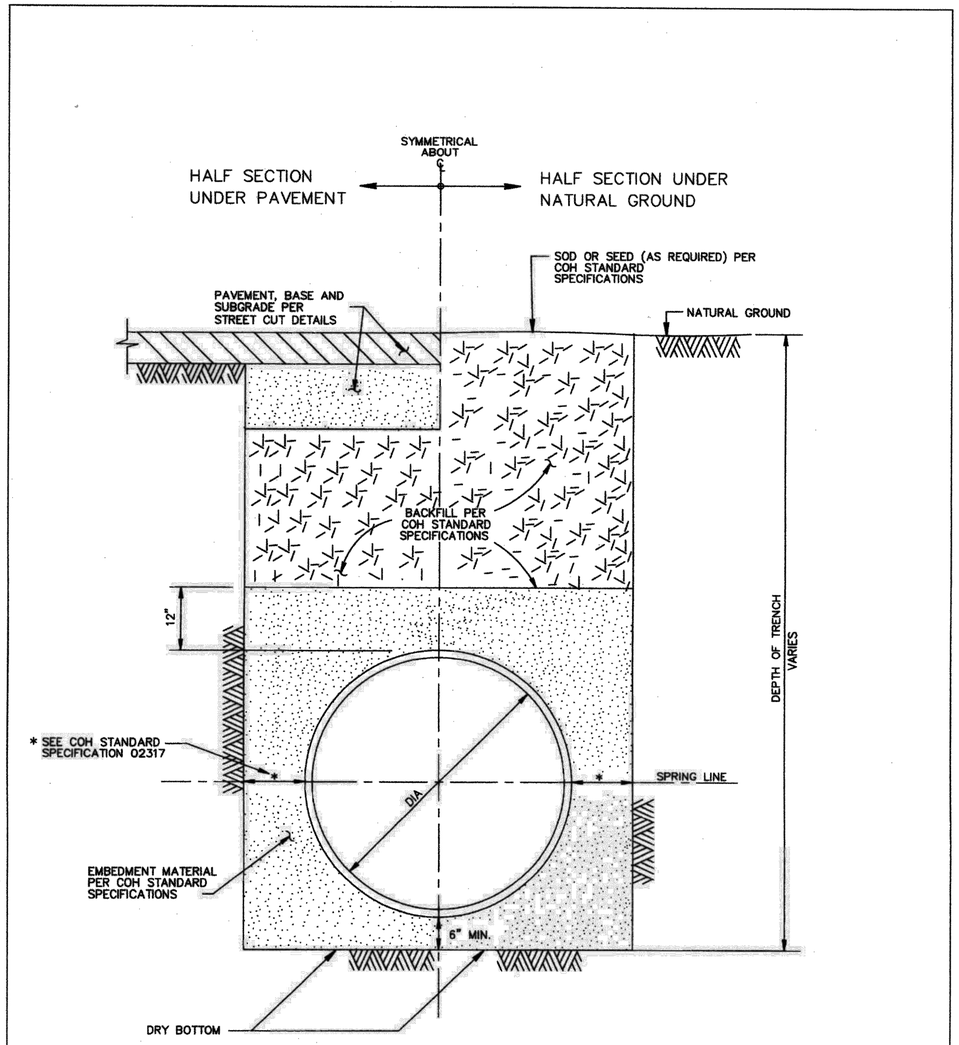
FILE PATH: STV_STANDARD DETAILS.dwg

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/23/2026 6:30 PM



NOTE:
1) APPROXIMATE WEIGHTS
FRAME – 46 LBS
COVER – 10 LBS
2) MATERIAL – GRAY IRON ASTM A48 CL35B

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
VALVE BOX DETAIL (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF. DATE: JULY 01, 2010	DWG. NO: 02085-03



CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
WATER DISTRIBUTION MAIN BEDDING AND BACKFILL FOR OPEN CUT TRENCHES (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2010	DWG NO: 02317-04

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SURVEYED BY: LANDTECH
FB NO. P-

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MARCH 2026

SINA ARJMAND, P.E.
TX PE NO. 132394

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

STANDARD DETAILS 2 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 121 OF 124	

60% SUBMITTAL

FILE PATH: STV_STANDARD DETAILS.dwg

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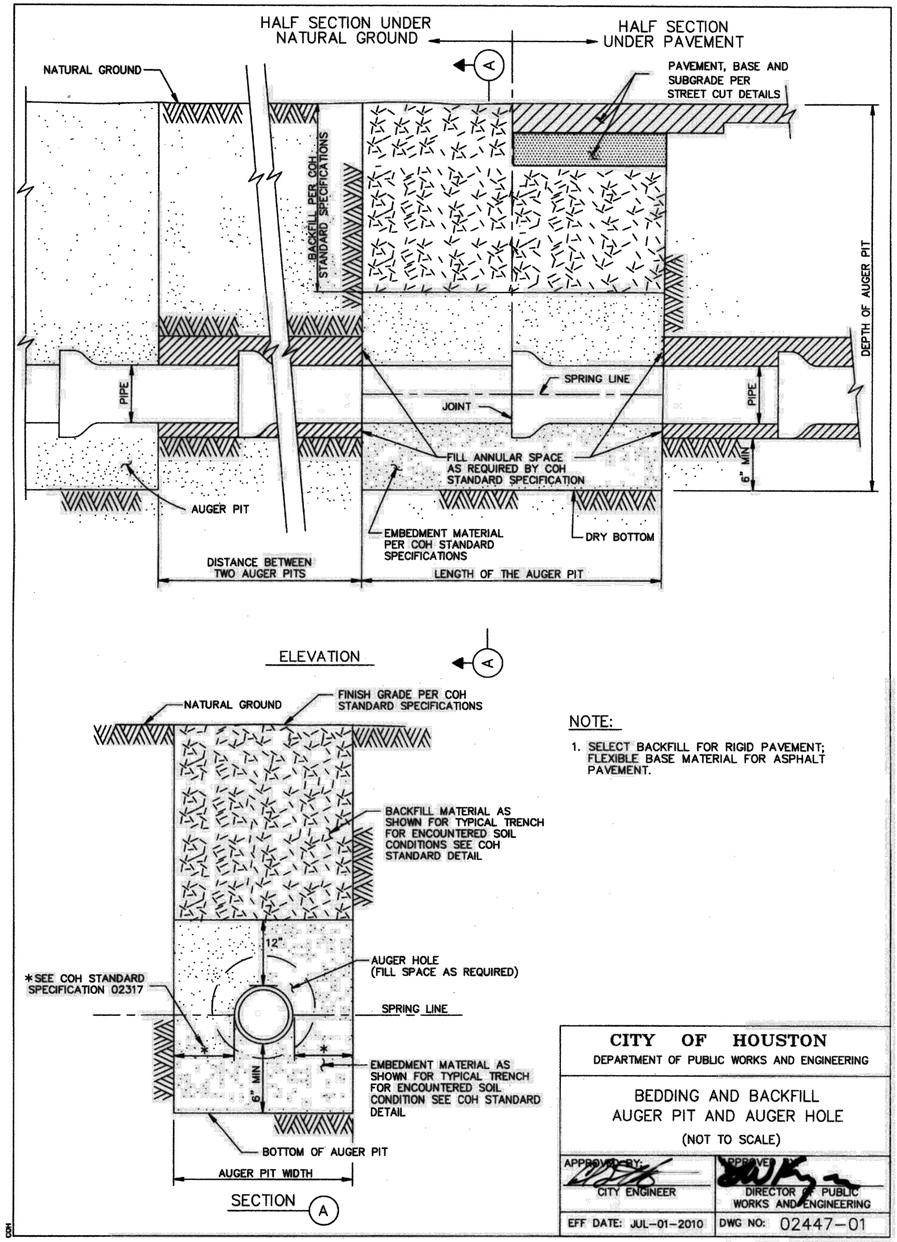


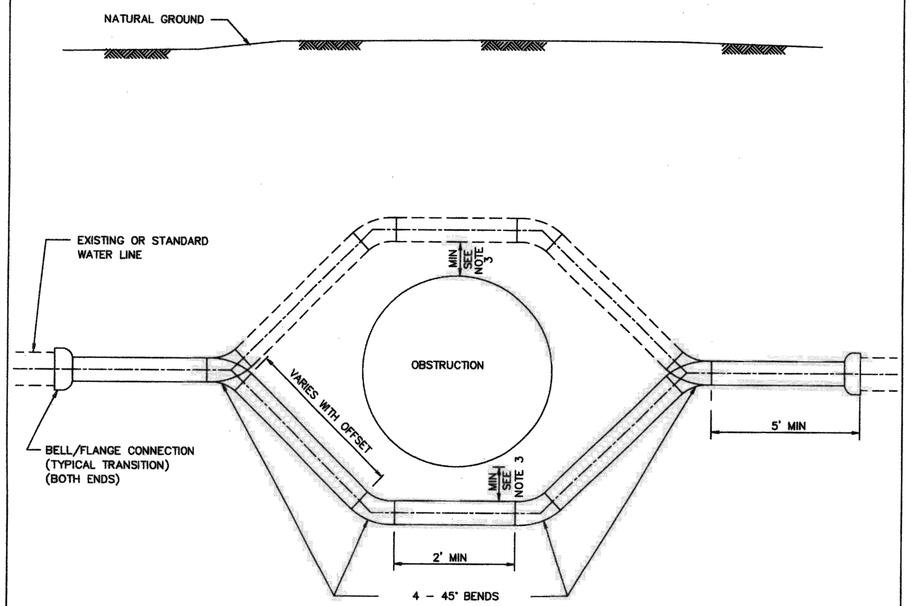
NOTE:

1. SELECT BACKFILL FOR RIGID PAVEMENT; FLEXIBLE BASE MATERIAL FOR ASPHALT PAVEMENT.

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
BEDDING AND BACKFILL AUGER PIT AND AUGER HOLE (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2010	DWG NO: 02447-01

NOTE:

1. MATERIALS AND COATINGS TO BE IN ACCORDANCE WITH WATER LINE STANDARD SPECIFICATIONS.
2. RESTRAIN EXISTING PIPING BEYOND STEEL SECTION AS REQUIRED TO PREVENT MOVEMENT.
3. AS PER DESIGN GUIDELINE.



PIPE OFFSET ALTERNATES

1. DUCTILE IRON PIPE PRESSURE 250 PSI WITH APPROVED RESTRAINED JOINTS.
2. PVC PIPE WITH INTEGRAL RESTRAINED JOINT SYSTEM, OR DUCTILE - IRON RESTRINED JOINT FITTINGS, EPOXY LINED AND COATED. USE 250 PSI AWWA C900 DR 14 FOR PVC RESTRAINED JOINTS.
3. PVC NOT ALLOWED FOR GREATER THAN 20 FT OF COVER OR FOR DIAMETER LARGER THAN 20 IN.
4. USE ONLY DUCTILE IRON AND PVC PRODUCTS LISTED ON OCE DIVISION APPROVED PRODUCTS LIST AND IN ACCORDANCE WITH CITY STANDARD SPECIFICATIONS.

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
TYPICAL STEEL PIPE OFFSET SECTION FOR WATER LINES (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JULY-01-2010	DWG NO: 02511-01

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

CRMP PACKAGE 7
AREA 1 84" RELIEF SANITARY SEWER
LOCKWOOD DR
TIDWELL RD TO DENMARK ST

STANDARD DETAILS 3 OF 5

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CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 122 OF 124	

60% SUBMITTAL

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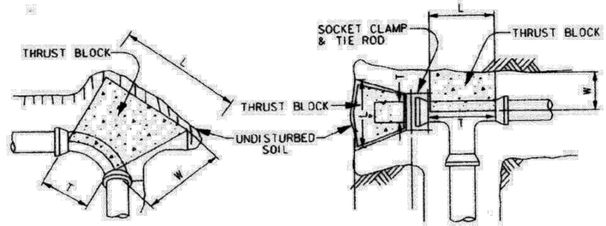
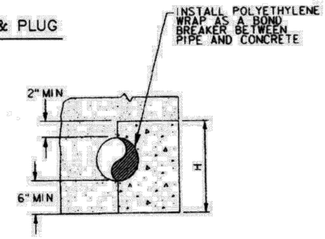


90° BEND

(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

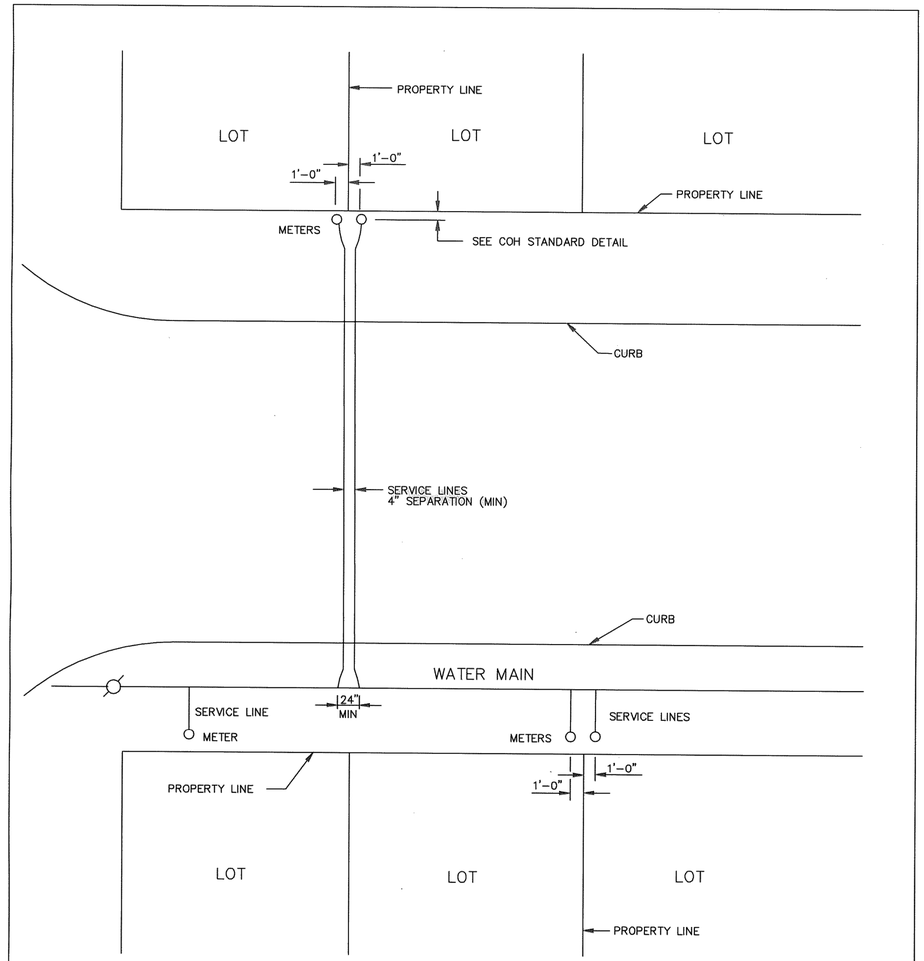
NOTES:

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

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CITY OF HOUSTON
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CRMP PACKAGE 7
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STANDARD DETAILS 4 OF 5

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AS NOTED	
CITY OF HOUSTON PM	
NEIL BARNSDALE, P.E.	
SHEET NO. 123 OF 124	

60% SUBMITTAL

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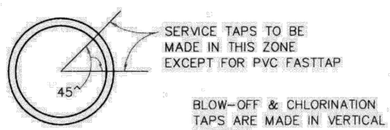
FILE PATH: STV_STANDARD DETAILS.dwg

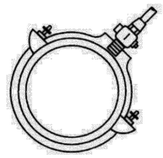
PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 4/23/2026 6:30 PM

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





WIDE BAND SINGLE SADDLE OR DUAL SADDLES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

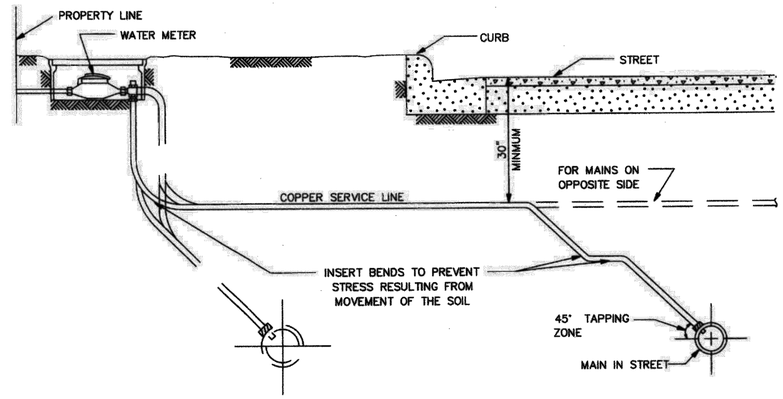
SERVICE TAPS

(NOT TO SCALE)

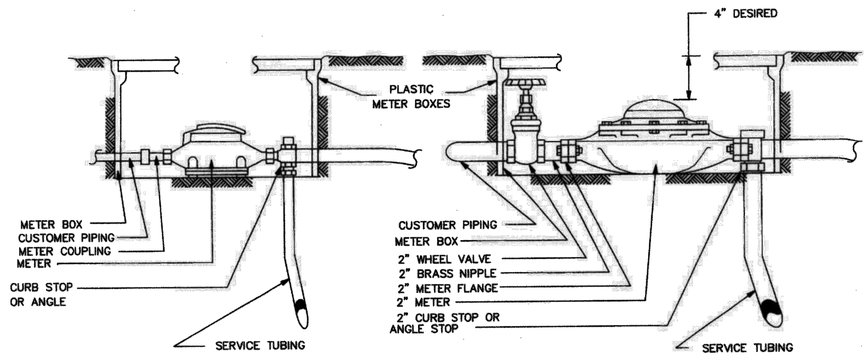
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2010	DWG NO: 02512-02

NOTES:

1 1/2" METER SET IS SAME AS 2" EXCEPT WHEEL VALVE IS NOT REQUIRED.



TYPICAL SECTION SERVICE LINE



5/8", 3/4" AND 1" METER SET

2" METER SET

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

TYPICAL METER SETTINGS

(NOT TO SCALE)

APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JULY-01-2010	DWG NO: 02526-01

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CITY OF HOUSTON

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STANDARD DETAILS 5 OF 5

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SHEET NO. 124 OF 124	

60% SUBMITTAL

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