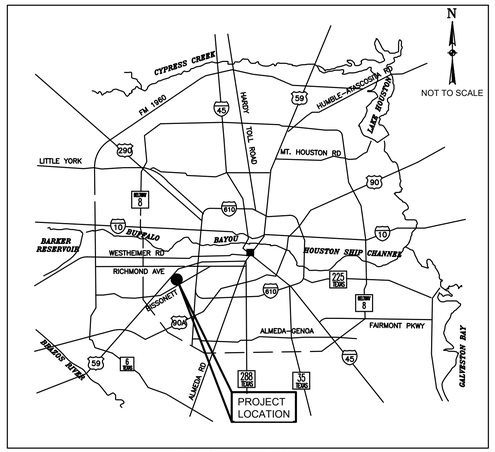
CITY OF HOUSTON

HOUSTON PUBLIC WORKS

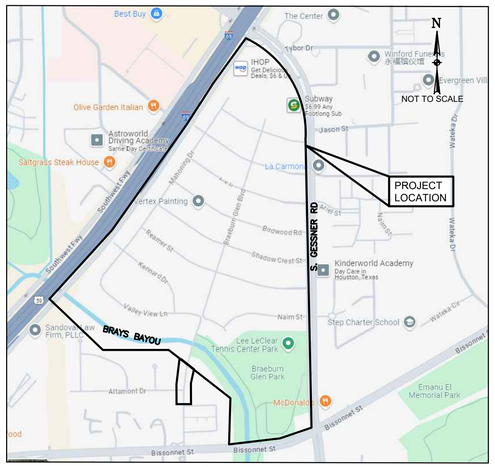
CAPITAL PROJECTS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

WBS NO. M-410040-0001-4



LOCATION MAP



VICINITY MAP

KEY MAP NO.: 530N, 530P, 530S, 530T

GIMS MAP NO.: 5054C, 5053A

CITY COUNCIL DISTRICT J

TDLR EABPR _____

MAYOR
JOHN WHITMIRE

CONTROLLER
CHRIS HOLLINS

DISTRICT COUNCIL MEMBERS

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

COUNCIL MEMBERS AT-LARGE

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

NO.	DATE	REVISION	APP.

ENTECH CIVIL ENGINEERS, INC.
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

PARKS-FORESTRY DEPT.

METRO

HOUSTON WATER

TRANSPORTATION & DRAINAGE OPERATIONS

CAPITAL PROJECTS

SURVEY

CITY ENGINEER DATE

DIRECTOR OF HOUSTON PUBLIC WORKS DATE

SHEET NO 01 OF 227 SHEETS

FOR CITY OF HOUSTON USE ONLY

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2	SHEET INDEX
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7	LEGEND ABBREVIATION
8	HARRIS COUNTY FLOOD CONTROL DIST, REVIEW SHEET
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12 - 13	SURVEY CONTROL MAP
14 - 16	SWING TIES
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84	TCP LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) TY I DETAILS
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223 - 227	SWPPP

NO.	DATE	REVISION	APP.

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

RIVERA CIVIL ENGINEERS INC F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

SHEET INDEX

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HCFCD – MAINTENANCE ENGINEERING CONSTRUCTION NOTES: (USE IF APPLICABLE)

1. THE PROJECT PLANS ARE INTENDED AS A GUIDE. THE REPAIR AREA LIMITS WILL BE DETERMINED IN THE FIELD BY THE HCFCD REPRESENTATIVE. DUE TO THE DYNAMIC CONDITIONS IN THE FIELD, PROJECT SCOPE AND QUANTITIES MAY VARY FROM THE PLANS AND/OR CROSS SECTIONS. HCFCD RESERVES THE RIGHT TO ADJUST PLANS AND QUANTITIES AS NECESSARY. PROJECT SCOPE MAY BE ADJUSTED AS PRIORITIES CHANGE.
2. THE PURPOSE OF THE CHANNEL DESILT IS TO RESTORE POSITIVE DRAINAGE DURING LOW FLOW CONDITIONS. UNLESS SPECIFICALLY STATED OTHERWISE, IT IS NOT THE INTENT OF THE PROJECT TO DEEPEN THE CHANNEL BEYOND ITS ORIGINAL DESIGN CONFIGURATION. EXCAVATION OF SILT SHOULD NOT UNDERMINE THE TOE OF THE SLOPE.

HCFCD – MAINTENANCE ENGINEERING ON–CALL CONSTRUCTION CONTRACT NOTES: (USE IF APPLICABLE)

1. THE INITIAL ISSUED FOR CONSTRUCTION PROJECT PLAN DETAILS AND SUBSEQUENT PROJECT PLANS ISSUED TO THE CONTRACT ARE INTENDED AS A GUIDE. THE EXACT PROJECT LIMITS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER PRIOR TO AND/OR AFTER THE START OF CONSTRUCTION ACTIVITIES. DUE TO THE DYNAMIC CONDITIONS ON SITE, PROJECT SCOPE AND QUANTITIES MAY VARY FROM THE PROJECT PLANS AND/OR CROSS SECTIONS. HCFCD RESERVES THE RIGHT TO ADJUST PROJECT PLANS AND CONTRACT QUANTITIES AS NECESSARY IN ACCORDANCE WITH THE CONTRACT. PROJECT PLANS MAY BE ADDED OR DELETED FROM THE CONTRACT AS PRIORITIES CHANGE. PROJECT ASSIGNMENTS TO CONSTRUCTION WILL BE PRIORITIZED/DETERMINED BY THE ENGINEER.
2. ALL RIPRAP CALLED FOR ON THE PROJECT PLANS SHALL BE PAID FOR UNDER THE APPROPRIATE CORRESPONDING UNIT ITEM BASED ON THE SPECIFIED GRADATION AND SHALL BE PAID FOR BY THE TON. WHERE THE PROJECT PLANS CALL FOR THE USE OF A WELL GRADED MIXTURE OF GRANULAR FILL, PAYMENT WILL BE MADE UNDER UNIT ITEM 2378–05, GRANULAR FILL, GRAVEL TO RIPRAP GRADATION NO. 2, AS DIRECTED BY THE ENGINEER.
3. THE UNIT ITEM ASSOCIATED WITH SPECIFICATION SECTION 02200, SITE PREPARATION AND RESTORATION WILL BE UTILIZED ON ALL PROJECTS ISSUED TO THE CONTRACT. THE SITE PREPARATION AND RESTORATION UNIT ITEM WILL BE PAID OUT THROUGH THE LIFE OF THE CONTRACT IN INCREMENTS BASED ON 5 PERCENT OF THE ENGINEERS ESTIMATE OF EACH PROJECT SITE ISSUED TO THE CONTRACT. PROJECTS ISSUED TO THE CONTRACT WHICH HAVE AN ENGINEER'S ESTIMATE OF LESS THAN $100,000.00 WILL BE PAID A FLAT FEE OF $5,000.00 FOR THE COST ASSOCIATED WITH UNIT ITEM 02200, SITE PREPARATION AND RESTORATION. FINAL PAYMENT WILL BE BASED ON ALL ACTUAL WORK INSTALLED. FOR ADDITIONAL INFORMATION SEE THE SPECIAL PROVISION TO SPECIFICATION 02200, SITE PREP AND RESTORATION.
4. THE TERM "LANDFILL" AS INCLUDED IN THE CONTRACT DOCUMENTS REFERS TO A DISPOSAL FACILITY THAT IS LICENSED/PERMITTED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ).
5. IN AREAS WHERE THE PROJECT PLANS CALL FOR THE PLACEMENT OF CONCRETE TO TRANSITION FROM ONE CALLED THICKNESS TO ANOTHER CALLED THICKNESS, PAYMENT FOR THE CONCRETE SHALL BE EVENLY SPLIT BETWEEN THE APPROPRIATELY ASSOCIATED TWO UNIT ITEMS.
6. ALL SPECIFICATION SECTION NUMBER 02462, STEEL SHEET PILING UNIT ITEMS SHALL BE BASED ON PZ 27 STEEL SHEET PILING.

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.

MISCELLANEOUS NOTES:

1. CONTRACTOR TO NOTIFY CITY 48 HOURS PRIOR TO STARTING CONSTRUCTION

GENERAL NOTES – METRO:

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

NO.	DATE	REVISION	APP.

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

VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

Signature valid for six months.

Date

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

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281–945–0069
TX FIRM NUMBER: F–6932

SURVEYED BY: LANDTECH, INC.
FB NO. P–6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

GENERAL NOTES (1 OF 2)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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HCFCD GENERAL NOTES:

1. FENCES AND/OR OTHER ENCROACHMENTS IN THE HCFCD RIGHT-OF-WAY ARE NOT TO BE REMOVED UNLESS OTHERWISE STATED ON THE PLANS. IN CASES WHERE FENCE REMOVAL IS INDICATED ON THE PLANS, THE FENCE SHALL BE REMOVED AND PLACED NEATLY ON THE ADJACENT PROPERTY AT THE START OF CONSTRUCTION. WHERE THERE IS NOT A SEPARATE ITEM LISTED ON THE UNIT PRICE SCHEDULE, THE ENCROACHMENT REMOVAL IS INCIDENTAL TO SITE PREPARATION AND RESTORATION.

2. DO NOT ENTER PRIVATE PROPERTY WITHOUT PROPER WRITTEN AUTHORIZATION FROM THE OWNER. PROVIDE COPY OF WRITTEN PERMISSION TO HCFCD.

3. STRIP VEGETATION AND TOPSOIL AND STOCKPILE FOR REUSE ONSITE. MATERIAL FOUND UNACCEPTABLE BY THE ENGINEER WILL BE REMOVED AND PAID AS EXCAVATION AND OFFSITE DISPOSAL. NO SEPARATE MEASUREMENT AND PAYMENT WILL BE MADE FOR STRIPPING, STOCKPILING AND PLACING ON-SITE TOPSOIL. THE COST FOR THIS WORK WILL BE INCIDENTAL TO RELATED PAY ITEMS UNDER SPECIFICATION SECTION NUMBER 02315 LISTED ON THE UNIT PRICE SCHEDULE.

4. RIPRAP AND GRANULAR FILL MATERIAL REMOVED DURING EXCAVATION, MEETING SPECIFICATION SECTION NUMBER 02378, SHALL BE REUSED AS DIRECTED BY THE ENGINEER. REUSED MATERIAL WILL BE MEASURED AND PAID FOR AS EXCAVATION AND ON-SITE FILL UNDER SPECIFICATION NUMBER 02315. NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE FOR PROCESSING, HANDLING, STOCKPILING, AND PLACING MATERIAL FOUND TO BE ACCEPTABLE FOR REUSE. UPON APPROVAL OF THE ENGINEER, DISPOSAL OF NONCONFORMING RIPRAP AND GRANULAR FILL MATERIAL WILL BE MEASURED AND PAID FOR AS REMOVE AND DISPOSE OF CONCRETE RUBBLE UNDER SPECIFICATION SECTION NUMBER 02120, MATERIAL DISPOSAL.

5. THE LOCATION AND GRADE OF THE BACKSLOPE INTERCEPTOR STRUCTURES AND SWALES MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER AT THE TIME OF CONSTRUCTION. UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER, THE BACKSLOPE INTERCEPTOR STRUCTURE SHALL BE SET AT A MAXIMUM DEPTH OF 2.5 FEET AND THE MINIMUM GRADE FOR BACKSLOPE SWALES SHALL BE 0.2%.

6. ADJUST YARD DRAINS AS DIRECTED IN THE FIELD AT THE TIME OF CONSTRUCTION. PAYMENT WILL BE INCIDENTAL TO SITE PREPARATION AND RESTORATION.

7. COMPLETED SECTIONS OF THE CHANNEL WILL BE TURNED OVER FOR VEGETATION ESTABLISHMENT IN MAXIMUM 1500 LINEAR FOOT SEGMENTS. CONTRACTOR MAY NOT DISTURB GREATER THAN 1500 LF OF CHANNEL AT A TIME.

8. CLEAR AND REMOVE ALL SILT FROM CULVERTS, PIPES AND UNDER BRIDGES TO THE PROPOSED DESIGN GRADES TO PROVIDE POSITIVE FLOW.

9. LENGTHS AND DIAMETERS REPRESENTED ON PLANS ARE APPROXIMATE. CONTRACTOR WILL BE RESPONSIBLE FOR FIELD VERIFICATION PRIOR TO ORDERING MATERIALS.

10. ACTIVITIES THAT DISTURB BIRD HABITAT, INCLUDING BUT NOT LIMITED TO CLEARING, GRUBBING, AND IMPACTS TO STRUCTURES WHERE MIGRATORY BIRDS AND BALD EAGLES MIGHT NEST, REQUIRE A NEST HABITAT SURVEY. DO NOT PROCEED UNTIL HARRIS COUNTY FLOOD CONTROL DISTRICT HAS CONDUCTED A NEST HABITAT SURVEY TO VERIFY ACTIVE MIGRATORY BIRD NESTS AND BALD EAGLE NESTS ARE NOT PRESENT. THE HARRIS COUNTY FLOOD CONTROL DISTRICT MUST PROVIDE WRITTEN AUTHORIZATION TO PROCEED.

11. WHEN BANK EROSION REPAIRS CALL FOR THE PLACEMENT OF 3"x5" GRANULAR FILL IN THE CHANNEL BOTTOM TO ESTABLISH A BASE FOR REBUILDING THE SLOPE. THE 3"x5" GRANULAR FILL SHALL BE LIMITED TO AN ELEVATION 6-INCHES ABOVE THE NORMAL WATER SURFACE ELEVATION LEVEL.

12. THE CONTRACT CONTAINS UNIT ITEMS FOR THE ESTABLISHMENT OF BEST MANAGEMENT PRACTICES FOR STORM WATER QUALITY PURPOSES. WHEN NOT CALLED FOR IN THE PROJECT PLANS, COORDINATE THE NEED AND LOCATION OF THESE UNIT ITEMS WITH THE DISTRICT REPRESENTATIVE ON SITE PRIOR TO PLACEMENT. THESE UNIT ITEMS INCLUDE, BUT ARE NOT LIMITED TO, REINFORCED SILT FENCE FOR MATERIAL STOCKPILES, ANCHORED SODDING FOR DISTURBED EARTHEN AREAS OR AROUND CONCRETE AND CONCRETE INTERCEPTOR, AND STABILIZED CONSTRUCTION ACCESS FOR PROJECT SITE INGRESS/EGRESS.

13. WHEN INCLUDED IN THE SCOPE OF WORK, THE PURPOSE OF DEEP PLOWING THE SLOPE OR BERM OF A CHANNEL IS TO BREAK UP THE DESICCATED SOILS AND TO ELIMINATE ANY VOIDS, OR RILLING CLOSE TO THE SURFACE OF THE SLOPE OR BERM. THE CONTRACTOR WILL DEEP PLOW THE SLOPE OR BERM TO A MINIMUM DEPTH OF 2 FEET IN AREAS CONTAINING VOIDS AND/OR RILLING. IN AREAS OF VOIDS ONLY, THE SURFACE FROM WHICH THE 2 FEET DEPTH IS MEASURED WILL BE THE LEVEL OF THE SURROUNDING UNDISTURBED SOIL. IN AREAS OF RILLING, THE RILLS WILL FIRST BE KNOCKED DOWN AND LEVELED OFF. THE 2 FEET DEPTH WILL THEN BE MEASURED FROM THIS NEW SURFACE. THE CONTRACTOR WILL DETERMINE THE MEANS AND METHODS FOR DEEP PLOWING.)

14. TREES AND PLANTS LOCATED WITHIN A DESIGNATED TREE PROTECTION ZONE (TPZ) SHALL BE PRESERVED. REFER TO SPECIFICATION SECTION 01566 – TREE AND PLANT PROTECTION, FOR DETAILED INFORMATION ON TREE AND PLANT PRESERVATION PRACTICES AND PROCEDURES INCLUDING, BUT NOT LIMITED TO, ROOT PRUNING, VEGETATION TRIMMING, FENCING AND OTHER PRESERVATION OPERATIONS.

15. IF APPLICABLE, CONTRACTOR SHALL AVOID ANY WETLAND AREAS BEYOND THE LIMITS OF EXCAVATION AND CLEARING. AS THE FIRST WORK ITEM CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLING FENCING OR OTHER MATERIAL TO IDENTIFY AND PROTECT THE IDENTIFIED WETLAND AREAS, UNLESS WETLANDS HAVE BEEN IDENTIFIED AND FENCED BY HCFCD PRIOR TO CONSTRUCTION AND CONTRACTOR HAS WRITTEN EVIDENCE OF SUCH.

UTILITY NOTES

CENTERPOINT ENERGY ID: 1406234438
CAUTION: UNDERGROUND GAS FACILITIES

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

- WHEN CENTERPOINT ENERGY PIPE LINE MARKINGS ARE NOT VISIBLE, CALL (713) 207-5463 OR (713-945-8037 (7:00 A.M. TO 4:30 P.M.) FOR STATUS OF LINE LOCATION REQUEST BEFORE EXCAVATION BEGINS.
- WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF CENTERPOINT ENERGY FACILITIES, ALL EXCAVATION MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES.
- WHEN CENTERPOINT ENERGY FACILITIES ARE EXPOSED, SUFFICIENT SUPPORT MUST BE PROVIDED TO THE FACILITIES TO PREVENT EXCESSIVE STRESS ON THE PIPING.
- FOR EMERGENCIES REGARDING GAS LINES CALL (713) 659-2111 OR (713) 207-4200.

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

CENTERPOINT ENERGY
WARNING: OVERHEAD ELECTRICAL LINES

OVERHEAD LINES MAY EXIST ON THE PROPERTY. THE LOCATION OF OVERHEAD LINES HAS NOT BEEN SHOWN ON THESE DRAWINGS AS THE LINES ARE CLEARLY VISIBLE, BUT YOU SHOULD LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTION. TEXAS LAW, SECTION 752, HEALTH & SAFETY CODE FORBIDS ACTIVITIES THAT OCCUR IN CLOSE PROXIMITY TO HIGH VOLTAGE LINES, SPECIFICALLY:

▪ ANY ACTIVITY WHERE PERSON OR THINGS MAY COME WITHIN 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.

PARTIES RESPONSIBLE FOR THE WORK, INCLUDING CONTRACTORS ARE LEGALLY RESPONSIBLE FOR THE SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS LAW CARRIES BOTH CRIMINAL AND CIVIL LIABILITY. TO ARRANGE FOR LINES TO BE TURNED OFF OR REMOVED CALL CENTERPOINT ENERGY AT (713) 207-2222.

ACTIVITIES ON/OR ACROSS CENTERPOINT ENERGY FEE OR EASEMENT PROPERTY

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

WARNING: UNDERGOUND ELECTRICAL LINES

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

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

AT&T TEXAS/SWBT FACILITIES PREVIOUS LOG NO: 091125RSCFRR12

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

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

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

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

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

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

STANDARD HCFCD NOTES FOR CONSTRUCTION DRAWINGS

1. OBTAIN AND COMPLY WITH ALL APPLICABLE CITY, COUNTY, STATE, AND FEDERAL PERMITS AND APPROVALS, WITH ASSISTANCE FROM ENGINEER, IF NECESSARY. OBTAIN PERMIT (CERTIFICATION) FROM HARRIS COUNTY ENGINEER TO ENTER HARRIS COUNTY FLOOD CONTROL DISTRICT RIGHT-OF-WAY.

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

3. ENGINEER SHALL SUBMIT CERTIFICATION LETTER AND RECORD DRAWINGS TO THE HARRIS COUNTY FLOOD CONTROL DISTRICT'S DEVELOPMENT COORDINATION AND INSPECTION SECTION REQUESTING INSPECTION OF ITEMS CONSTRUCTED IN HARRIS COUNTY FLOOD CONTROL DISTRICT RIGHT-OF-WAY. PRIOR TO REQUESTING INSPECTION, THE DRAINAGE RIGHT-OF_WAY AND/OR EASEMENTS SHALL BE STAKED AND FLAGGED.
4. PROTECT, MAINTAIN, AND RESTORE EXISTING BACKSLOPE DRAINAGE SYSTEMS.

5. BACKSLOPE SWALE AND INTERCEPTOR STRUCTURE ELEVATIONS AND LOCATIONS SHOWN ON PLANS ARE APPROXIMATE. FINAL ELEVATIONS AND LOCATIONS SHALL BE FIELD VERIFIED BY THE ENGINEER PRIOR TO INSTALLATION.

6. ESTABLISH TURF GRASS ON ALL DISTURBED AREAS WITHIN THE CHANNEL OR DETENTION RIGHT-OF-WAY, EXCEPT THE CHANNEL BOTTOM AND WHERE STRUCTURAL EROSION MEASURES ARE USED. MINIMUM ACCEPTANCE CRITERIA ARE 75% COVERAGE OF LIVE BERMUDA GRASS AND NO EROSION OR RILLS DEEPER THAN 4".
7. PERFORM ALL ACTIVITIES WITHIN HARRIS COUNTY FLOOD CONTROL DISTRICT RIGHT-OF-WAY IN ACCORDANCE WITH THE MOST RECENT HARRIS COUNTY FLOOD CONTROL DISTRICT STANDARD SPECIFICATIONS BOOK.

8. EXCAVATE CHANNEL FLOWLINE TO DESIGN ELEVATION AS SHOWN ON PLANS AND DOWNSTREAM, AS NECESSARY, TO ENSURE NO WATER REMAINS IN THE FACILITY (STORM SEWER, LATERAL CHANNEL, OR DRY BOTTOM DETENTION BASIN) DURING NORMAL WATER SURFACE CONDITIONS IN THE CHANNEL, SO THE FACILITY WILL FUNCTION AS INTENDED. FOR WET BOTTOM DETENTION BASINS, ENSURE NO WATER IS ABOVE THE DESIGN LEVEL IN THE WET BOTTOM DURING NORMAL WATER SURFACE CONDITIONS IN THE CHANNEL.

9. MAINTAIN FLOW IN CHANNEL DURING CONSTRUCTION AND RESTORE CHANNEL TO ORIGINAL CONDITION.

10. REMOVE ALL EXCAVATED MATERIAL FROM THE HARRIS COUNTY FLOOD CONTROL DISTRICT OR DRAINAGE RIGHT-OF_WAY. NO FILL IS TO BE PLACED WITHIN A DESIGNATED FLOOD PLAIN AREA WITHOUT FIRST OBTAINING A FILL PERMIT FROM THE APPROPRIATE JURISDICTIONAL AUTHORITY.

NO.	DATE	REVISION	APP.

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Signature valid for six months.

Date

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Date

Approved for AT&T underground conduit facilities only.
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15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

GENERAL NOTES (2 OF 2)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 4 OF 227	

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WATER CONSTRUCTION NOTES

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

GRADING NOTES

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

STORM CONSTRUCTION NOTES

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

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281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

WATER AND STORM GENERAL NOTES

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 5 OF 227	

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SANITARY SEWERS CONSTRUCTION NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

    6" 340 SECONDS OR 0.855(L) FOR TEST LENGTHS GREATER THAN 398'

    8" 454 SECONDS OR 1.520(L) FOR TEST LENGTHS GREATER THAN 298'

    10" 567 SECONDS OR 2.374(L) FOR TEST LENGTHS GREATER THAN 239'

    12" 680 SECONDS OR 3.419(L) FOR TEST LENGTHS GREATER THAN 199'

    15" 850 SECONDS OR 5.342(L) FOR TEST LENGTHS GREATER THAN 159'

    18" 1020 SECONDS OR 7.693(L) FOR TEST LENGTHS GREATER THAN 133'

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

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

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

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STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA
DRAINAGE AND PAVING
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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 TELCOMM LINE W/ VAULT
- AERIAL TELECOMM LINE
- RAILROAD LINE
- WATER LINE
- SANITARY SEWER LINE
- STORM SEWER LINE
- SANITARY SEWER FORCE MAIN
- RECLAIMED WATER LINE
- NON–POTABLE WATER LINE
- GAS METER
- GAS VALVE
- PROPANE LINE
- STEAM LINE
- MISC UNDERGROUND PIPELINE LABLE
- MATCH LINE

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

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

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 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
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- AT&T MANHOLE
- WATER LINE MANHOLE
- SANITARY SEWER MANHOLE & CLEANOUT
- STORM SEWER MANHOLE
- STORM SEWER INLET

MISC STANDARD ELEMENTS

- COH NORTH ARROW
- COH BAR SCALE
- REVISION CLOUD/DELTA
- DETAIL/SECTION TITLE
- SECTION CALLOUT
- DETAIL CALLOUT

ENTECH CIVIL ENGINEERS INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281–945–0069
TX FIRM NUMBER: F–6932
SURVEYED BY: LANDTECH, INC.
FB NO. P–6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

LEGENDS AND ABBREVIATIONS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410040–0001–4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 7 OF 227	

1. PROPERTY DESCRIPTION

I. LOCATION INFORMATION

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

B. KEY MAP: 530 N, P, S & T

C. ADDRESS: ON S. GESSNER, S. OF US 59, AND NORTH OF BRAYS BAYOU
HOUSTON, TXAS 77074

II. LEGAL DESCRIPTION

A. ACREAGE: _____

B. ☐ SUBDIVISION: _____

☐ SURVEY & ABSTRACT: _____

C. ADJACENT ROADS: _____

III. PLATTING

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

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

PLAT NAME: _____

IV. JURISDICTIONS

☒ CITY OF HOUSTON
☐ ETJ, CITY OF HOUSTON
☐ ETJ, CITY OF _____
☐ NO ETJ
☐ UTILITY DISTRICT (NAME)_____

V. HCAD ACCOUNT NOS. (ALL)

_____

2. SITE DETENTION DRAINAGE

I. PROPOSED DRAINAGE AREA

☐ NEW DEVELOPMENT AREA: _____
☐ RE-DEVELOPMENT AREA (AMOUNT INCREASED IMPERVIOUS AREA): _____
☐ LOW IMPACT DEVELOPMENT (LID)
METHOD/DESCRIPTION _____

II. METHODOLOGY

HCFCD PCPM DETENTION METHOD USED:
☐ METHOD 1 (LESS THAN 20 ACRES)
☐ METHOD 2 (20 ACRES TO 640 ACRES)
☐ METHOD 3 (GREATER THAN 640 ACRES)
☐ OTHER _____

III. DETENTION VOLUME & OUTFALL

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

IV. STORMWATER DETENTION BASIN INFORMATION

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

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

B. DETENTION BASIN TO BE MAINTAINED BY _____

C. DETENTION SERVICE AREA MAP ON SHEET _____

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

V. DETENTION PROVIDED IN OTHER PLANS:

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

VI. FLOW RESTRICTOR SIZE

OUTFALL PIPE SIZE: _____
RESTRICTOR PIPE SIZE: _____
RESTRICTOR PLATE DIMENSION: _____

VII. DETENTION PROVIDED BY

☐ REGIONAL DETENTION BASIN SYSTEM (APPROVED H.C. PRJ NO.): _____

FOR PROJECTS LOCATED IN ANY FLOODPLAIN

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

OFFSITE SHEET FLOW: (100 YEAR)

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

TOTAL ACREAGE = ____
TOTAL DISCHARGE = ____

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

3. SWQ DISCHARGE INTO FCD FACILITY

I. SWPPP: CONSTRUCTION MEASURES. (Must complete)

☒ DISTURBS >1AC. SITE PLAN & DETAILS ON SHEET(S)
SWPPP PLAN (SHEET XX), SWPPP DETAILS (SHEET XX)
☐ DISTURBS <1AC. N/A

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

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

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

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

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

STORMWATER QUALITY MANAGEMENT PLAN:
☐ SITE PLAN ON SHEET(S)

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

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

4. FLOOD PLAIN STATUS

I. GENERAL INFORMATION

FIRM PANEL(S) FOR PROPERTY: 48201C0845M & 48201C0835L
FIRM PANEL(S) DATE: MAY 2, 2019 & JUNE 18, 2007
STATUS OF PROPERTY ON MAP
☐ ENTIRELY LOCATED IN UNSHADED ZONE "X"
☒ LOCATED PARTIALLY OR ENTIRELY IN ANY "A" ZONE OR SHADED ZONE "X", DELINEATE FLOODPLAIN BOUNDARY ON CONSTRUCTION DRAWINGS (DRAINAGE LAYOUT PG. NO.__15__) (1% BASE FLOOD LEVEL__65.3__)
(0.2% BASE FLOOD LEVEL__66.7__)
☐ SITE REMOVED FROM FLOODPLAIN BY LOMR, LOMR-F, LOMA CASE NO._____ REVISED FLOODPLAIN IS SHOWN ON SHEET_____

ELEVATION INFORMATION
BENCHMARK USED
☒ HARRIS COUNTY FLOODPLAIN REFERENCE MARK
☐ HARRIS-GALVESTON COASTAL SUBSIDENCE DISTRICT BENCHMARK (FOR COASTAL AREAS)
DESCRIPTION OF BENCHMARK INCLUDING ELEVATION, DATUM AND YEAR OF ADJUSTMENT *(2001 ADJ.)* CITY OF HOUSTON MONUMENT NO. 5053-7315
A BRASS DISK ON SIDEWALK OF BRIDGE AT BISSONNET ST. (EAST BOUND) OVER BRAYS BAYOU, APPROXIMATELY 0.1 MILE WEST FROM GESSNER RD.

II. FLOOD PLAIN DETERMINATION BASED ON GROUND ELEVATION

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

III. FLOODPLAIN STORAGE SUMMARY

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

A. TOTAL VOLUME OF MATERIAL PROPOSED TO BE MOVED OR PLACED WITHIN THE FIRM DELINEATED FLOODPLAIN (FILL, BASE, CONCRETE, ASPHALT, ETC.):
BELOW 0.2% BASE FLOOD ELEVATION (2001 ADJ.) __0__ CUBIC YARDS __0__

B. TOTAL VOLUME OF MATERIAL PROPOSED TO BE REMOVED FROM THE FIRM DELINEATED FLOODPLAIN:
BELOW 0.2% BASE FLOOD ELEVATION (2001 ADJ.) __0__ CUBIC YARDS __0__
INCLUDING CALCULATIONS)

C. FILL AREA & VOLUME CALCULATIONS ARE SHOWN ON SHEET __N/A__

5. WORK IN HCFCD RIGHT-OF-WAY

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

A. BOND/NOTIFICATION INFORMATION
☒ HCFCD WATERSHED BRAYS BAYOU
☒ HCFCD UNIT No. D100-00-00
☒ NUMBER OF OUTFALLS 3
☐ UTILITY CROSSING
☐ ROADWAY BRIDGE/CULVERT CROSSING
☐ FILL ACTIVITY
☐ REHABILITATION OF CHANNEL
☐ MAINTENANCE
☐ TEMPORARY CROSSING
☐ TRAIL (LENGTH) _____
☐ OTHER _____
COST OF WORK IN HCFCD ROW _____

II. USACE ENVIRONMENTAL PERMIT

☐ US ARMY CORPS OF ENGINEERS NATIONWIDE PERMIT NUMBER(S) _____
☐ US ARMY CORPS OF ENGINEERS INDIVIDUAL PERMITS
☐ OTHER
☐ NO PERMITS REQUIRED
EXPLAIN:
No jurisdictional wetlands verified by the USACE will be impacted

III. REFERENCE / BASIS OF DETERMINATION

☐ ENVIRONMENTAL CONSULTANT REPORT
BY _____
REPORT TITLE _____
REPORT DATE _____
☒ OTHER FOLLOWED OHWM DELINEATION MANUAL FOR SECTION 404 WATERS

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

IV. HCFCD STANDARD NOTES: SEE SHEET __6__ OF THESE PLANS.

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

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

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

6. REPORTS/AGREEMENTS

I. HCFCD ACCEPTED REPORTS (ALL)

STORMWATER DRAINAGE DESIGN REPORT
REPORT TITLE _____
HCFCD PROJECT #_____
ENGINEERING FIRM _____
REPORT ACCEPTANCE DATE _____

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

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

II. AGREEMENT TYPE & No.;

☐ INTERLOCAL (ILA): _____
☐ HCFCD MAINTENANCE _____
☑ TURF ESTABLISHMENT _____
☐ OTHER _____

HCFCD SIGNATURE BLOCK

PROJECT NAME: BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

ADDRESS: ON S. GESSNER, S. OF US 59, AND NORTH OF BRAYS BAYOU, HOUSTON, TEXAS 77074

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

HARRIS COUNTY FLOOD CONTROL DISTRICT

INTERPOSE NO OBJECTION

BY_____
FOR ITEMS LOCATED OUTSIDE OF HCFCD RIGHT-OF-WAY

APPROVED:

BY_____
FOR ITEMS LOCATED WITHIN EXISTING HCFCD RIGHT-OF-WAY

APPROVED:

BY_____
FOR ITEMS LOCATED WITHIN PROPOSED HCFCD RIGHT-OF-WAY

NO REVIEW REQUIRED:

BY_____
FINAL PERMITTING BY OTHERS

ADDITIONAL COMMENTS:

_____

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

ENGINEER'S CERTIFICATION

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

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

THE COMPLETED PROJECT CONSISTS OF DRAWING SHEETS __1__ THRU __46__.

Rodrigo Guadarrama — SIGNATURE
10/15/25 — DATE

SEAL

REVISIONS

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

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

HARRIS COUNTY FLOOD CONTROL PROJECT NO.

SHEET NUMBER __8__ OF 227

HARRIS COUNTY
FLOOD CONTROL DISTRICT
REVIEW SHEET

VERSION 1.0 OCTOBER 2019

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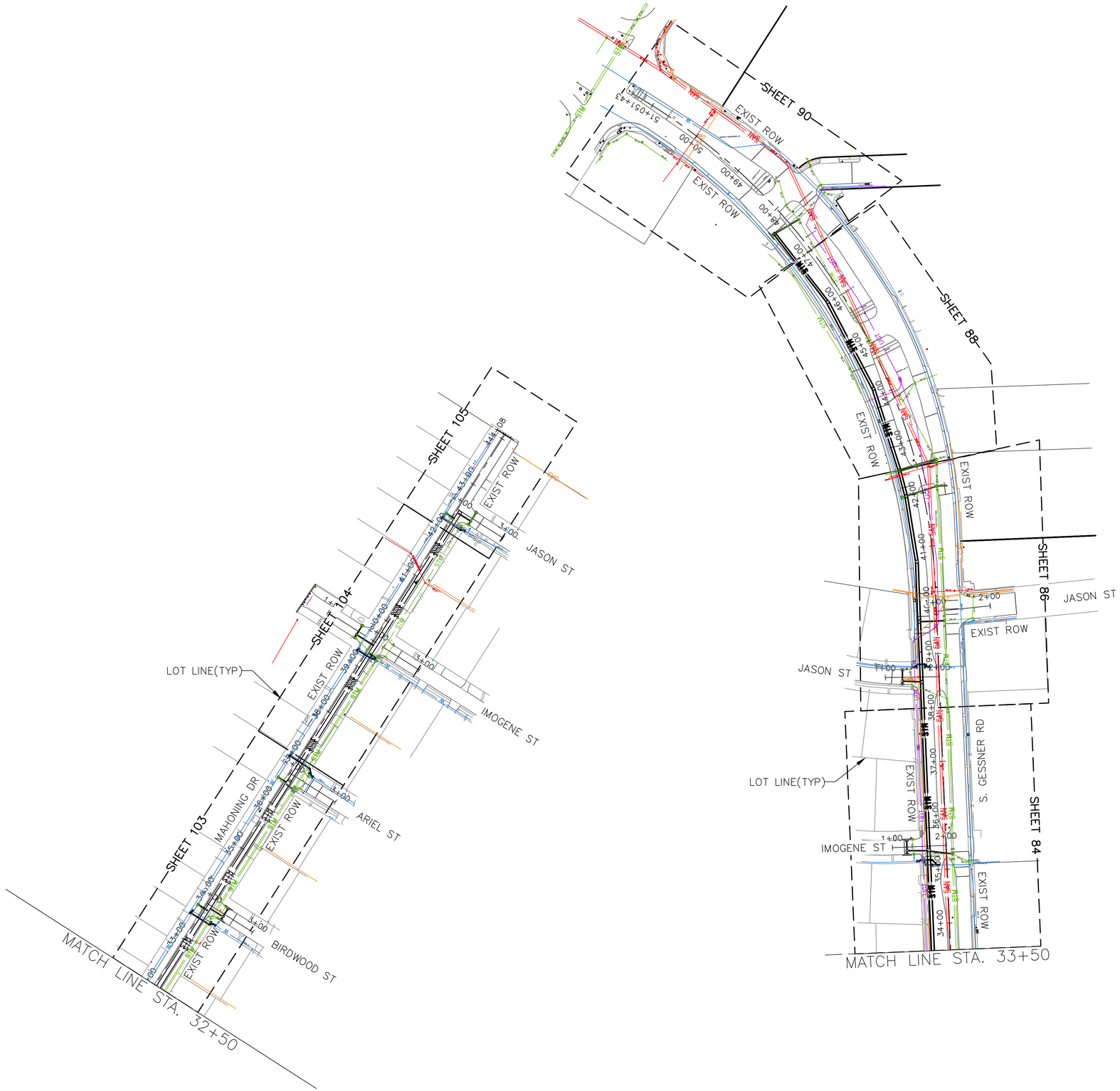

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HORIZ. 0 25 50 100

SCALE: 1"=100'

NO.	DATE	REVISION	APP.

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

VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

Signature valid for six months.

Date

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

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
3/9/2026

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

OVERALL LAYOUT

SHEET 1 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=100'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 9 OF 227	

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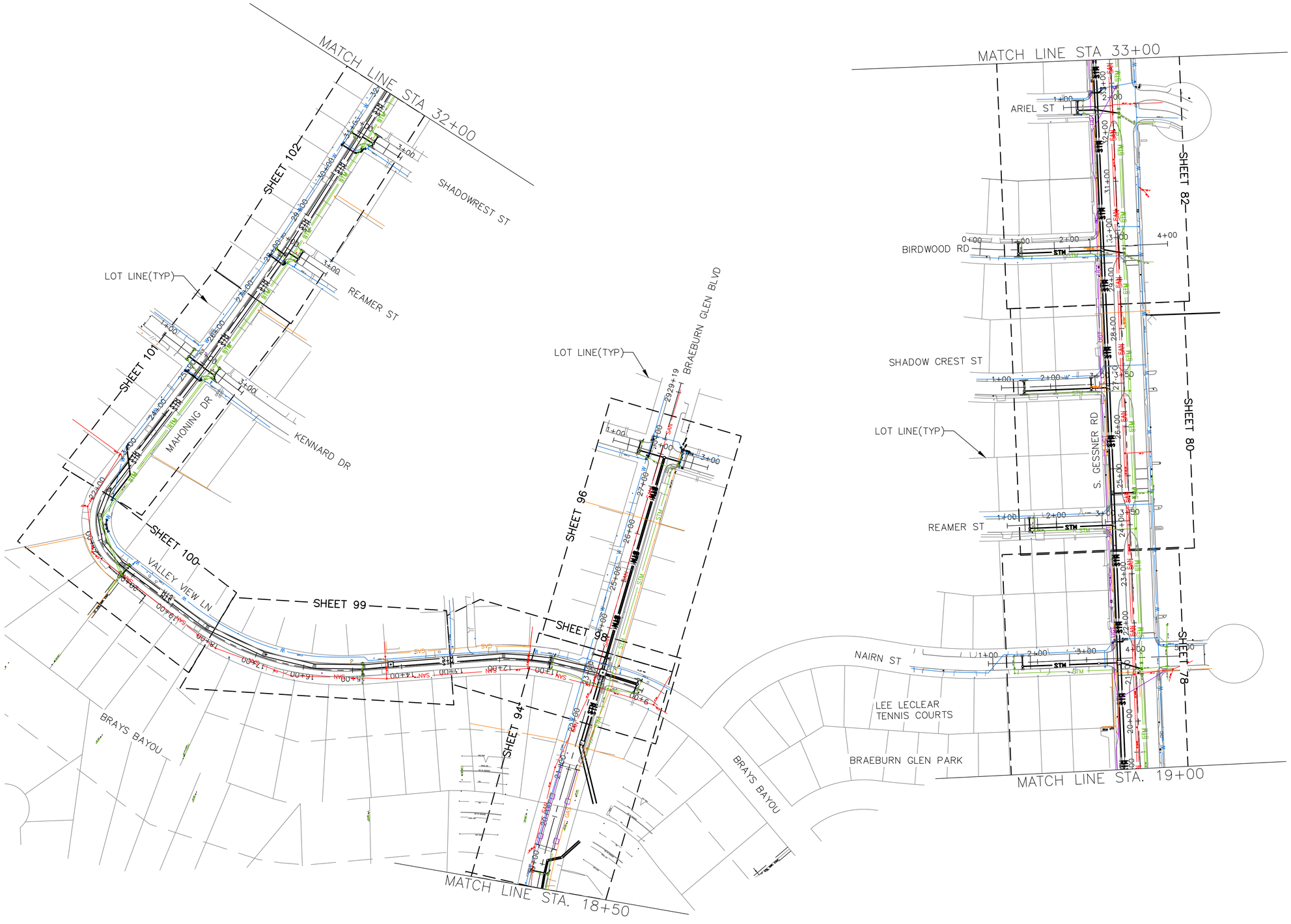

NO.	DATE	REVISION	APP.

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HORIZ. 0 25 50 100

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Date

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HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
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FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

OVERALL LAYOUT
SHEET 2 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=100'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 10 OF 227	

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SCALE: 1"=100'

NO.	DATE	REVISION	APP.

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15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

OVERALL LAYOUT

SHEET 3 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=100'	
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SHEET NO. 11 OF 227	

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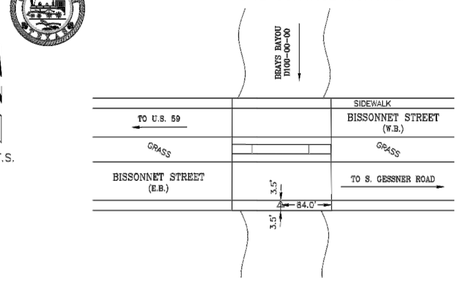
CITY OF HOUSTON

5053
7315

CITY SURVEY
SITE CONTROL MONUMENT



N.T.S.

Project WBS# M-410040-0001-3

Texas Coordinate System of 1983,
South Central Zone, U. S. Survey Feet

X= 3,070,036.88
Y= 13,809,790.75
Lat.= 29° 40' 34.73331" N
Lon.= 95° 31' 49.86803" W

Keymap Page: 530T
Orthometric Elevation = 65.79'
Ellipsoid Height= -23.84'
Geoid: 18
Datum Source & Adjustment:
GPS OBSERVED 2-13-2024

Reference Frame Used: NAD 83 (2011) 2010.00 EPOCH
Vertical Adjustment used: NAVD 88
General Location: ON SIDEWALK OF BRIDGE AT BISSONNET ST. (E.B.) OVER BRAYS BAYOU, APPROX. 0.1 MILE WEST FROM GESSNER RD.

Date Set: 5-14-2003 Type of Mark: BRASS DISK (HARRIS COUNTY FLOODPLAIN RM 040200)

3 Nearest project control points (bearings and distances stated below):
To Control Point # 28 (3/8"IRwLandtech Cap): N 50°49'51" E 820.72'
To Control Point # 33 (5/8"IRwLandtech Cap): N 64°59'06" E 729.91'
To Control Point # 29 ("X" Cut in Concrete): N 70°48'38" E 787.30'

NOTE:
1. Bearings are grid bearings.
2. Scale Factor = 0.9998802

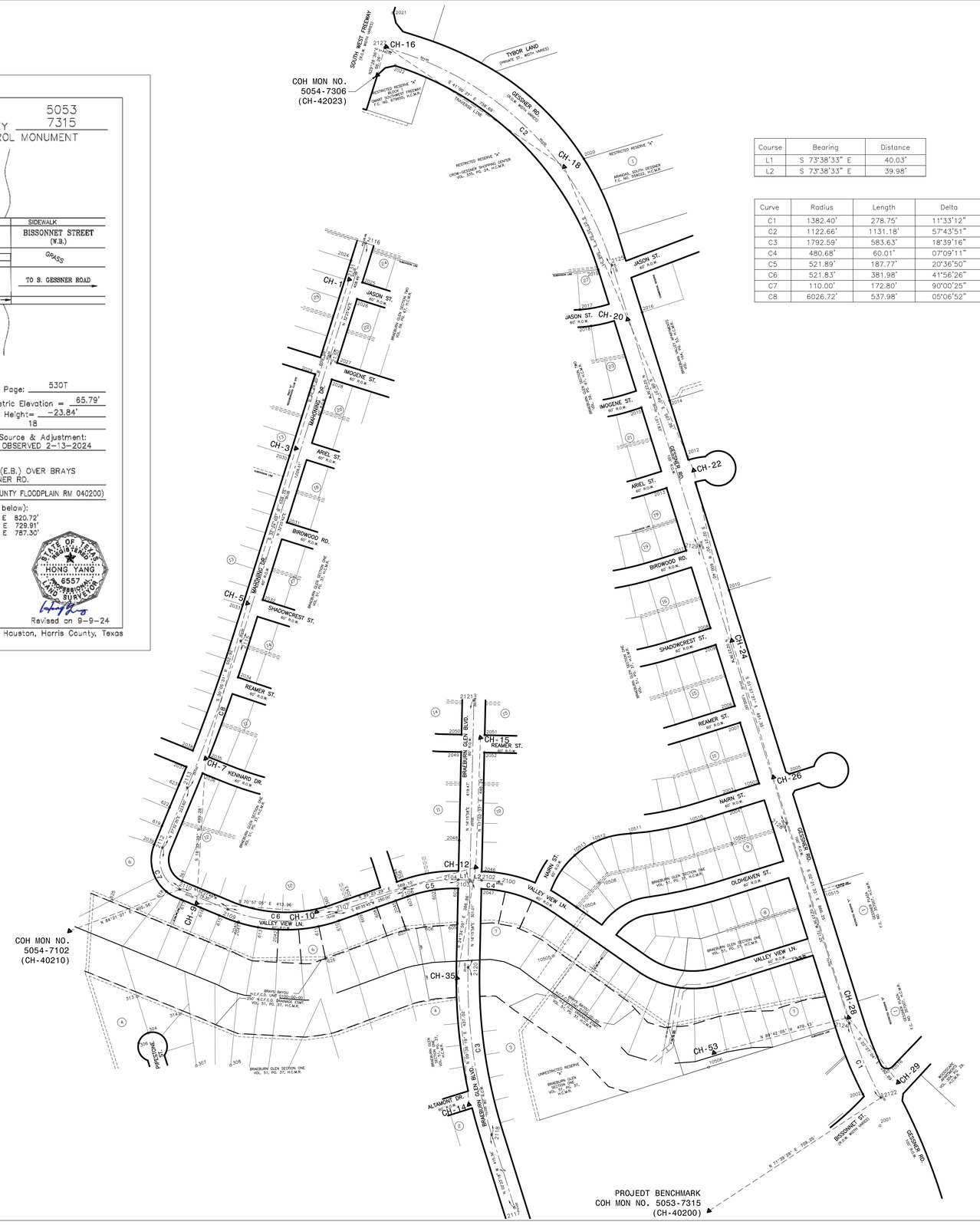
3. Surface= Grid / S.F.

Surveyed By: Landtech, Inc.
1315 W Sam Houston Parkway N, Suite 100
Houston, TX 77043
TBPELS Registration No. 10019100

STATE OF TEXAS REGISTERED HONG YANG 6557 PROFESSIONAL LAND SURVEYOR

Revised on 9-9-24

City of Houston, Harris County, Texas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CH-53
COH MON NO. 5054-7102 (CH-40210)
PROJEDT BENCHMARK COH MON NO. 5053-7315 (CH-40200)
SOUTH WEST FREEWAY (U.S. HWY. 59)
TYBOR LAND
GESSNER RD.
JASON ST.
MOGENE ST.
ARIEL ST.
BIRDWOOD RD.
SHADOWCREST ST.
REAMER ST.
KENNARD DR.
MASONRIC DR.
BRAEBURN GLEN BLVD.
VALLEY VIEW LN.
HARN ST.
OLDHEAVEN ST.
ALTAMONT DR.
PRESTONE
BISSONNET ST.
BRAEBURN GLEN SECTION ONE
VOL. 51, PG. 37, H.C.M.R.
BRAEBURN GLEN SECTION TWO
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION THREE
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION FOUR
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION FIVE
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION SIX
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION SEVEN
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION EIGHT
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION NINE
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION TEN
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ELEVEN
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION TWELVE
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION THIRTEEN
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION FOURTEEN
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION FIFTEEN
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION SIXTEEN
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION SEVENTEEN
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION EIGHTEEN
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION NINETEEN
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION TWENTY
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION TWENTY-ONE
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION TWENTY-TWO
VOL. 51, PG. 71, H.C.M.R.
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VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION TWENTY-FIVE
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BRAEBURN GLEN SECTION TWENTY-SIX
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION TWENTY-SEVEN
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION TWENTY-EIGHT
VOL. 51, PG. 71, H.C.M.R.
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VOL. 51, PG. 71, H.C.M.R.
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BRAEBURN GLEN SECTION THIRTY-FIVE
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BRAEBURN GLEN SECTION THIRTY-SIX
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BRAEBURN GLEN SECTION THIRTY-SEVEN
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BRAEBURN GLEN SECTION THIRTY-EIGHT
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION THIRTY-NINE
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BRAEBURN GLEN SECTION FORTY
VOL. 51, PG. 71, H.C.M.R.
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BRAEBURN GLEN SECTION FIFTY-SIX
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BRAEBURN GLEN SECTION FIFTY-EIGHT
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BRAEBURN GLEN SECTION FIFTY-NINE
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BRAEBURN GLEN SECTION SEVENTY-ONE
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BRAEBURN GLEN SECTION SEVENTY-TWO
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION SEVENTY-THREE
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION SEVENTY-FOUR
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BRAEBURN GLEN SECTION SEVENTY-FIVE
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BRAEBURN GLEN SECTION EIGHTY-EIGHT
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BRAEBURN GLEN SECTION NINETY
VOL. 51, PG. 71, H.C.M.R.
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BRAEBURN GLEN SECTION ONE HUNDRED SEVEN
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BRAEBURN GLEN SECTION ONE HUNDRED TWENTY-SIX
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED TWENTY-SEVEN
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED TWENTY-EIGHT
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED TWENTY-NINE
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED THIRTY
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED THIRTY-ONE
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED THIRTY-TWO
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED THIRTY-THREE
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED THIRTY-FOUR
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED THIRTY-FIVE
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED THIRTY-SIX
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED THIRTY-SEVEN
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED THIRTY-EIGHT
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED THIRTY-NINE
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED FORTY
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED FORTY-ONE
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED FORTY-TWO
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED FORTY-THREE
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED FORTY-FOUR
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED FORTY-FIVE
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED FORTY-SIX
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED FORTY-SEVEN
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED FORTY-EIGHT
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED FORTY-NINE
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED FIFTY
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED FIFTY-ONE
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED FIFTY-TWO
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED FIFTY-THREE
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED FIFTY-FOUR
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED FIFTY-FIVE
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED FIFTY-SIX
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED FIFTY-SEVEN
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED FIFTY-EIGHT
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED FIFTY-NINE
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED SIXTY
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED SIXTY-ONE
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED SIXTY-TWO
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED SIXTY-THREE
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED SIXTY-FOUR
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED SIXTY-FIVE
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED SIXTY-SIX
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED SIXTY-SEVEN
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED SIXTY-EIGHT
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED SIXTY-NINE
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED SEVENTY
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED SEVENTY-ONE
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED SEVENTY-TWO
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED SEVENTY-THREE
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED SEVENTY-FOUR
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED SEVENTY-FIVE
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED SEVENTY-SIX
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED SEVENTY-SEVEN
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED SEVENTY-EIGHT
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED SEVENTY-NINE
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED EIGHTY
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUNDRED EIGHTY-ONE
VOL. 51, PG. 71, H.C.M.R.
BRAEBURN GLEN SECTION ONE HUND

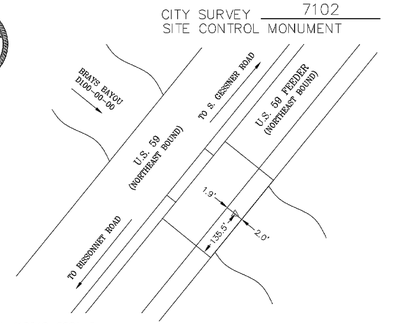
BRAEBURN GLEN AREA DRAINAGE & PAVING IMPROVEMENTS - Survey Control Map Data						
Point ID	**Station**	**Offset**	**Grid Northing**	**Grid Easting**	**Elevation**	**Description**
MAHONING DR. & VALLEY VIEW LANE						
2100	9+00.00	0	13,811,071.69	3,069,631.47		SET X IN CONC.
2102	9+60.01	0	13,811,092.07	3,069,575.09		SET X IN CONC.
2047	9+60.26	-29.78	13,811,063.57	3,069,566.46		FND. 5/8"I.R.
2046	9+60.32	29.78	13,811,120.73	3,069,583.17		FND. 1/2"I.R.
12	**9+80.72**	**44.16**	**13,811,140.27**	**3,069,567.65**	**59.79**	**CH-12 SET 3/8"I.R.w/LANDTECH CAP**
2103	10+00.00	0	13,811,103.33	3,069,536.73		SET 3/8"I.R. w/LANDTECH CAP
605	10+39.58	-150.18	13,810,970.39	3,069,456.47		FND. 3/4"P.T.P.
601	10+39.66	-29.84	13,811,085.86	3,069,490.26		FND. 3/4"I.P.(BENT)
2104	10+40.02	0	13,811,114.60	3,069,498.32		SET CONC. NAIL
602	11+24.83	-28.62	13,811,103.15	3,069,411.90		FND. 1/2"I.P.
606	11+99.20	-144.1	13,810,991.17	3,069,344.31		FND. 1/2"I.P.(BENT)
2106	12+27.79	0	13,811,133.80	3,069,312.58		SET CONC. NAIL
603	12+27.80	-29.79	13,811,104.10	3,069,314.86		FND. 1/2"I.P.
358	12+27.85	29.92	13,811,163.62	3,069,310.22		FND. 3/4"I.P.
2044	12+46.10	29.95	13,811,162.25	3,069,292.02		FND. 1/2"I.P.
607	12+70.80	-127.36	13,811,003.53	3,069,279.49		FND. 1/2"I.P.
2045	12+71.03	-29.08	13,811,101.49	3,069,271.71		FND. 1/2"I.P.
608	13+41.09	-29.49	13,811,095.70	3,069,201.89		FND. 1/2"I.P.
609	14+10.76	-29.31	13,811,090.53	3,069,132.42		FND. 1/2"I.P.
2043	14+30.78	30.09	13,811,148.21	3,069,107.91		FND. 1/2"I.R.
2107	14+77.79	0	13,811,114.61	3,069,063.35		SET CONC. NAIL
610	14+78.22	-29.53	13,811,085.13	3,069,065.16		FND. 3/4"I.P.
360	15+07.62	29.94	13,811,143.10	3,069,032.97		FND. 1/2"I.R.
10	**15+43.55**	**20.55**	**13,811,134.22**	**3,068,998.65**	**58.43**	**CH-10 SET 3/8"I.R.w/LANDTECH CAP**
626	15+46.93	-141.6	13,810,972.51	3,068,986.39		FND. 1/2"I.P.
611	15+47.10	-29.4	13,811,084.52	3,068,992.45		FND. 1/2"I.P.
2042	16+79.54	-28.97	13,811,110.31	3,068,855.40		FND. 1/2"I.R.
613	17+45.90	-29.27	13,811,135.57	3,068,790.10		FND. 1/2"I.R.
2040	18+11.77	-26.91	13,811,170.89	3,068,730.36		FND. 3/8"I.R.
2041	18+11.98	-29.12	13,811,169.13	3,068,729.00		FND. 1/2"P.T.P.
2109	18+59.77	0	13,811,221.09	3,068,705.39		SET CONC. NAIL
615	18+79.26	-30.28	13,811,208.96	3,068,671.49		FND. 5/8"I.R.
616	19+49.02	-30.09	13,811,251.60	3,068,616.30		FND. 1/2"I.P.
9	**19+66.86**	**-21.46**	**13,811,269.31**	**3,068,607.41**	**58.73**	**CH-9 SET 3/8"I.R.w/LANDTECH CAP**
617	20+19.33	-29.75	13,811,294.71	3,068,560.74		FND. 1/2"I.R.
2110	20+39.12	0	13,811,330.34	3,068,563.18		SET CONC. NAIL
361	20+44.52	30.56	13,811,357.03	3,068,578.77		FND. 1/2"I.R.w/PRECISION CAP
618	20+70.87	-29.7	13,811,335.61	3,068,517.09		FND. 3/8"I.R.(BENT)
625	21+17.40	-199.8	13,811,354.80	3,068,326.86		FND. 1/2"I.P. OLD
2039	22+11.23	-30.26	13,811,502.32	3,068,518.47		FND. 1/2"I.R.
2112	22+11.92	0	13,811,484.59	3,068,542.98		SET CONC. NAIL
619	22+80.63	-30.4	13,811,557.58	3,068,560.75		FND. 1/2"I.R.
622	23+50.51	-30.44	13,811,613.01	3,068,603.30		FND. 1/2"I.R.
623	24+33.95	-30.42	13,811,679.14	3,068,654.15		FND. 1/2"I.R.
2113	24+35.51	0	13,811,661.85	3,068,679.22		SET CONC. NAIL
2036	25+01.17	30.27	13,811,695.94	3,068,743.14		FND. 1/2"I.P.
2037	25+01.34	-30.01	13,811,732.28	3,068,695.06		FND. 1/2"I.R.
7	**25+52.15**	**20.86**	**13,811,742.60**	**3,068,766.17**	**58.83**	**CH-7 SET 3/8"I.R.w/LANDTECH CAP**
2035	25+60.36	30.21	13,811,743.70	3,068,778.59		FND. 1/2"I.P. (BENT)
2038	25+61.43	-30.32	13,811,780.44	3,068,730.47		FND. 1/2"I.R.
2034	28+51.35	30.26	13,811,983.27	3,068,946.22		FND. 1/2"I.P. (BENT)
2115	29+73.49	0	13,812,102.41	3,068,987.54		SET CONC. NAIL
2033	30+93.31	-31.65	13,812,220.51	3,069,025.08		FND. 1/2"I.P.
5	**31+03.49**	**-16.45**	**13,812,220.95**	**3,069,043.36**	**61.03**	**CH-5 SET 3/8"I.R.w/LANDTECH CAP**
2032	31+30.24	29.14	13,812,219.08	3,069,096.18		FND. 1/2"I.P.
2031	34+09.49	29.88	13,812,454.36	3,069,246.54		FND. 1/2"I.R. (BENT)
2030	36+31.07	-30.56	13,812,673.77	3,069,314.33		FND. 1/2"I.R. (BENT)
3	**36+62.25**	**-16.72**	**13,812,692.66**	**3,069,342.73**	**61.37**	**CH-3 SET 3/8"I.R.w/LANDTECH CAP**
2028	39+25.30	29.96	13,812,889.64	3,069,523.17		FND. 3/8"I.R.w/CAP
2029	39+25.58	-29.73	13,812,921.87	3,069,472.94		FND. 1/2"I.P.
2027	39+85.46	29.69	13,812,940.56	3,069,555.20		FND. 5/8"I.R.
2130	40+00.00	0	13,812,968.75	3,069,537.95		SET CONC. NAIL
2026	42+15.76	30.15	13,813,134.67	3,069,679.08		FND. 5/8"I.R.
1	**42+71.83**	**-16.08**	**13,813,206.78**	**3,069,670.12**	**61.85**	**CH-1 SET 3/8"I.R.w/LANDTECH CAP**
2025	42+75.13	30.31	13,813,184.69	3,069,711.04		FND. 5/8"I.R.
2131	43+00.00	0	13,813,221.94	3,069,698.80		SET CONC. NAIL
2024	43+35.40	-29.24	13,813,267.49	3,069,693.10		FND. 5/8"I.R.
2116	44+08.46	0	13,813,313.48	3,069,756.95		UNABLE TO SET (SET CONC. NAIL AT 43+00 INSTEAD)

BRAEBURN GLEN AREA DRAINAGE & PAVING IMPROVEMENTS - Survey Control Map Data						
Point ID	**Station**	**Offset**	**Grid Northing**	**Grid Easting**	**Elevation**	**Description**
BRAEBURN GLEN BOULEVARD						
2117	10+00.00	0	13,809,822.73	3,069,399.54		SET X IN CONC.
2118	14+15.36	0	13,810,237.67	3,069,382.23		SET CONC. NAIL
14	**15+34.26**	**-47.66**	**13,810,357.71**	**3,069,333.58**	**62.51**	**CH-14 SET 3/8"I.R.w/LANDTECH CAP**
35	**19+62.09**	**-36.99**	**13,810,788.51**	**3,069,406.74**	**52.79**	**CH-35 SET 3/8"I.R.w/LANDTECH CAP**
2120	19+98.99	0	13,810,814.41	3,069,452.43		SET X IN CONC.
606	21+38.41	-153.32	13,810,991.17	3,069,344.31		FND. 1/2"I.P.(BENT)
605	21+49.88	-39.82	13,810,970.39	3,069,456.47		FND. 3/4"P.T.P.
602	22+64.86	-119.8	13,811,103.15	3,069,411.90		FND. 1/2"I.P.
2047	22+70.16	39.68	13,811,063.57	3,069,566.46		FND. 5/8"I.R.
601	22+70.22	-39.72	13,811,085.86	3,069,490.26		FND. 3/4"I.P.(BENT)
2100	22+96.16	99.83	13,811,071.69	3,069,631.47		SET X IN CONC.
2102	22+99.94	39.98	13,811,092.07	3,069,575.09		SET X IN CONC.
2103	23+00.00	0	13,811,103.33	3,069,536.73		SET 3/8"I.R. w/LANDTECH CAP
2104	23+00.06	-40.03	13,811,114.60	3,069,498.32		SET CONC. NAIL
2046	23+29.72	39.72	13,811,120.73	3,069,583.17		FND. 1/2"I.R.
12	**23+44.13**	**19.34**	**13,811,140.27**	**3,069,567.65**	**59.79**	**CH-12 SET 3/8"I.R.w/LANDTECH CAP**
2048	24+34.96	-40.08	13,811,244.09	3,069,536.06		FND. 1/2"I.P.
2049	27+39.93	-40.23	13,811,536.86	3,069,621.33		FND. 1/2"I.P.
2052	27+39.99	39.29	13,811,514.65	3,069,697.68		FND. 1/2"I.P.
15	**27+90.33**	**25.39**	**13,811,566.86**	**3,069,698.42**	**60.24**	**CH-15 SET X IN CONC.**
2050	27+99.46	-39.96	13,811,593.93	3,069,638.25		FND. 3/4"P.T.P.
2051	27+99.48	39.32	13,811,571.75	3,069,714.35		FND. 1"I.P.
2121	29+19.47	0	13,811,697.93	3,069,710.22		SET CONC. NAIL
GESSNER ROAD						
2122	10+00.00	0	13,810,013.92	3,070,710.01		SET X IN CONC.
29	**10+18.68**	**76.72**	**13,810,049.51**	**3,070,780.36**	**61.11**	**CH-29 SET X IN CONC.**
2002	10+39.58	-49.84	13,810,041.89	3,070,652.35		FND. 3/8"I.R.w/CAP
10516	10+70.46	62.65	13,810,094.64	3,070,756.33		FND. X IN CONC.
2124	12+78.75	0	13,810,289.38	3,070,670.68		SET 3/8"I.R. w/LANDTECH CAP
28	**12+98.33**	**3.24**	**13,810,309.07**	**3,070,673.10**	**58.92**	**CH-28 SET 3/8"I.R.w/LANDTECH CAP**
10515	17+41.56	52.77	13,810,753.93	3,070,704.08		FND. 1/2"I.R.
2128	20+00.00	0	13,811,009.90	3,070,640.56		SET 3/8"I.R. w/LANDTECH CAP
2004	20+98.87	-135.33	13,811,103.03	3,070,501.25		FND. 5/8"I.R. (BENT)
10501	21+58.22	-50.27	13,811,165.87	3,070,583.74		FND. 5/8"I.R.
2005	21+58.36	59.71	13,811,170.59	3,070,693.61		FND. 5/8"I.R.
2003	21+58.52	-135.37	13,811,162.61	3,070,498.71		FND. 5/8"I.R. (BENT)
26	**21+64.58**	**3.75**	**13,811,174.47**	**3,070,637.44**	**60.61**	**CH-26 SET 3/8"I.R.w/LANDTECH CAP**
2007	23+78.32	-50.03	13,811,385.76	3,070,574.79		FND. 1/2"I.R.
2006	24+38.09	-49.85	13,811,445.48	3,070,572.48		FND. 1/2"I.P.
24	**26+55.91**	**7.49**	**13,811,665.47**	**3,070,620.66**	**61.85**	**CH-24 SET 3/8"I.R.w/LANDTECH CAP**
2009	26+58.77	-50.05	13,811,665.92	3,070,563.06		FND. 1/2"I.R.
2008	27+18.72	-50.08	13,811,725.83	3,070,560.53		FND. 1/2"I.R. (BENT)
2010	28+24.83	49.82	13,811,835.99	3,070,655.90		FND. 5/8"I.R.
2011	29+98.50	-49.91	13,812,005.32	3,070,549.01		FND. 1/2"I.P.
2129	30+00.00	0	13,812,008.91	3,070,598.81		SET 3/8"I.R. w/LANDTECH CAP
2013	32+24.12	-50.27	13,812,230.71	3,070,539.23		FND. 1/2"I.P.
22	**32+54.25**	**57.19**	**13,812,265.29**	**3,070,645.33**	**62.59**	**CH-22 SET 3/8"I.R.w/LANDTECH CAP**
2012	33+05.51	51.77	13,812,316.29	3,070,637.78		FND. 1/2"I.P.
2014	35+08.64	49.71	13,812,519.12	3,070,627.23		FND. 5/8"I.R.
2015	35+14.91	-50.12	13,812,521.21	3,070,527.25		FND. 5/8"I.R.
20	**38+18.15**	**-4.41**	**13,812,826.07**	**3,070,560.24**	**62.53**	**CH-20 SET 3/8"I.R.w/LANDTECH CAP**
2016	38+26.48	50.39	13,812,836.67	3,070,614.65		FND. 1/2"I.R.
2018	38+34.30	-131.01	13,812,836.91	3,070,433.10		FND. 1/2"I.R.w/PRECISION SURV. CAP
2017	38+99.11	-151.16	13,812,900.83	3,070,410.26		FND. 5/8"I.R.
2019	40+11.20	-49.93	13,813,017.02	3,070,506.71		FND. 5/8"I.R.
2125	40+11.83	0	13,813,019.74	3,070,556.56		SET 3/8"I.R. w/LANDTECH CAP
2020	43+71.99	78.21	13,813,398.75	3,070,557.68		FND. 5/8"I.R.
18	**43+88.71**	**7.11**	**13,813,389.22**	**3,070,485.13**	**63.10**	**CH-18 SET 3/8"I.R.w/LANDTECH CAP**
2022	50+88.98	-48.85	13,813,877.05	3,070,014.02		FND. TXDOT BRASS DISK
16	**51+37.74**	**3.48**	**13,813,946.58**	**3,070,000.49**	**63.41**	**CH-16 SET X IN CONC.**
42023	**51+42.27**	**-98.25**	**13,813,860.69**	**3,069,945.83**	**63.63**	**COH MON NO. 5054-7306**
2127	51+43.02	0	13,813,946.21	3,069,994.17		SET X IN CONC.
OTHER AREAS FOUND CORNERS						
53			13,810,311.57	3,070,194.04	**59.69**	**CH-53 SET 5/8"I.R.w/LANDTECH CAP**
304			13,810,881.10	3,068,331.47		FND. 1/2"I.R.
306			13,810,856.62	3,068,290.34		FND. 1/2"I.R.
307			13,810,729.38	3,068,461.82		FND. 3/4"I.P.
308			13,810,700.85	3,068,576.31		FND. 3/4"I.P.
313			13,811,012.58	3,068,326.25		FND. 1/2"I.R.
314			13,810,916.18	3,068,453.75		FND. 3/4"P.T.P.
10502			13,810,990.36	3,070,440.92		FND. 5/8"I.R.
10504			13,810,916.96	3,069,867.60		FND. 5/8"I.R.w/RODS CAP
10505			13,810,776.40	3,069,745.34		FND. 5/8"I.R.w/CAP
10506			13,810,268.53	3,070,163.46		FND. 5/8"I.R.w/RODS CAP
10508			13,810,977.46	3,069,964.81		FND. 5/8"I.R.
10510			13,811,097.52	3,070,371.29		FND. 1/2"I.R.w/PRECISION CAP
10511			13,811,114.88	3,070,112.57		FND. 5/8"I.R.
10512			13,811,115.53	3,069,973.77		FND. 5/8"I.R.
10513			13,811,092.35	3,069,907.85		FND. 5/8"I.R.

CITY OF HOUSTON

5054
7102

CITY SURVEY
SITE CONTROL MONUMENT



N.T.S.

Project WBS# M-410040-0001-3

Texas Coordinate System of 1983,
South Central Zone, U. S. Survey Feet

X= 3,068,159.64
Y= 13,811,290.44
Lat.= 29° 40' 50.12482" N
Lon.= 95° 32' 10.63784" W

Keymap Page: 530N
Orthometric Elevation = 69.67'
Ellipsoid Height= -19.98'
Geoid: 18
Datum Source & Adjustment: GPS OBSERVED 4-12-2024

Reference Frame Used: NAD 83 (2011) 2010.00 EPOCH
Vertical Adjustment used: NAVD 88

General Location: ON SIDEWALK OF BRIDGE AT U.S. 59 FEEDER (NORTHEAST BOUND) OVER BRAYS BAYOU, APPROX. 0.4 MILE NORTHEAST FROM BISSONNET ST.

Date Set: 5-14-2003 Type of Mark: BRASS DISK (HARRIS COUNTY FLOODPLAIN RM 040210)

3 Nearest project control points (bearings and distances stated below):
To Control Point # 7 (3/8"IRwLandtech Cap): N 53°17'43" E 756.62'
To Control Point # 8 (3/8"IRwLandtech Cap): N 58°50'18" E 454.98'
To Control Point # 9 (3/8"IRwLandtech Cap): S 87°17'57" E 448.31'

NOTE:
1. Bearings are grid bearings.
2. Scale Factor = 0.9998802

3. Surface= Grid / S.F.

Surveyed By: Landtech, Inc.
1315 W Sam Houston Parkway N, Suite 100
Houston, TX 77043
TBPELS Registration No. 10019100

STATE OF TEXAS · REGISTERED · HONG YANG · 6557 · PROFESSIONAL LAND SURVEYOR

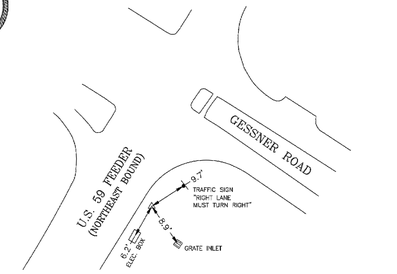
9-9-24

City of Houston, Harris County, Texas

CITY OF HOUSTON

5054
7306

CITY SURVEY
SITE CONTROL MONUMENT



N.T.S.

Project WBS# M-410040-0001-3

Texas Coordinate System of 1983,
South Central Zone, U. S. Survey Feet

X= 3,069,945.83
Y= 13,813,860.69
Lat.= 29° 41' 15.03562" N
Lon.= 95° 31' 49.53120" W

Keymap Page: 530P
Orthometric Elevation = 63.63'
Ellipsoid Height= -26.02'
Geoid: 18
Datum Source & Adjustment: GPS OBSERVED 9-12-2024

Reference Frame Used: NAD 83 (2011) 2010.00 EPOCH
Vertical Adjustment used: NAVD 88

General Location: AT THE SOUTHEAST CORNER OF U.S. 59 FEEDER (NORTHEAST BOUND) AND GESSNER ROAD.

Date Set: MARCH, 1987 Type of Mark: TXDOT BRASS DISK

3 Nearest project control points (bearings and distances stated below):
To Control Point # 16 ("X" Cut in Concrete): N 32°28'16" E 101.82'
To Control Point # 34 (5/8"IRwLandtech Cap): S 76°20'58" E 411.36'
To Control Point # 17 (3/8"IRwLandtech Cap): S 65°26'46" E 256.07'

NOTE:
1. Bearings are grid bearings.
2. Scale Factor = 0.9998802

3. Surface= Grid / S.F.

Surveyed By: Landtech, Inc.
1315 W Sam Houston Parkway N, Suite 100
Houston, TX 77043
TBPELS Registration No. 10019100

STATE OF TEXAS · REGISTERED · HONG YANG · 6557 · PROFESSIONAL LAND SURVEYOR

9-18-24

City of Houston, Harris County, Texas

NOTES:

1. ALL COORDINATES AND BEARINGS SHOWN HEREON ARE REFRENCED TO THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204), NORTH AMERICAN DATUM OF 1983/CORS (2011 ADJ.), EPOCH 2010.00. ALL COORDINATES ARE GRID VALUES AND CAN BE CONVERTED TO SURFACE BY DIVIDING BY THE COMBINED SCALE FACTOR OF 0.9998802.

2. ALL ELEVATIONS SHOWN HEREON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88/GEOID18).

3. THE ELEVATION DIFFERENCE BETWEEN THE FLOODPLAIN REFERENCE MARK NO. 040200 PUBLISHED DATUM (NAVD88, 2001 ADJ.) AND THE PROJECT VERTICAL DATUM (NAVD88/GEOID18) IS 0.32 FEET.
PROJECT DATUM + 0.32 FEET = FLOODPLAIN DATUM

4. THIS IS NOT A BOUNDARY SURVEY.

PROJECT BENCHMARK:

CITY OF HOUSTON MONUMENT NO. 5053-7315.
A BRASS DISK ON SIDEWALK OF BRIDGE AT BISSONNET ST. (EAST BOUND) OVER BRAYS BAYOU, APPROXIMATELY 0.1 MILE WEST FROM GESSNER RD.

ELEVATION = 65.79 FEET (NAVD88/GEOID18)

CONSULTANT:

LANDTECH
1315 W Sam Houston Parkway N, Suite 100
Houston, Texas 77043
T: 713-861-7068
F: 713-861-4131
TBPELS No. 10019100

SEAL

STATE OF TEXAS · REGISTERED · HONG YANG · 6557 · PROFESSIONAL LAND SURVEYOR

3/10/26

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

SURVEY CONTROL MAP

SHEET 2 OF 2

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 13 OF 227	

NO.	DATE	REVISION	APP.

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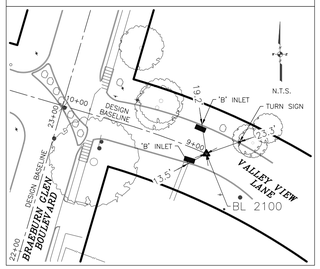

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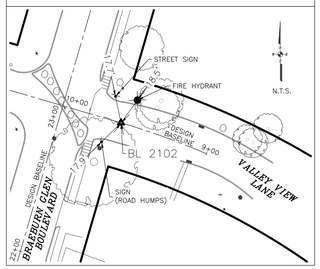
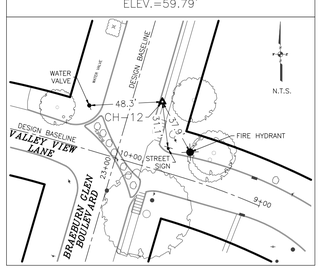
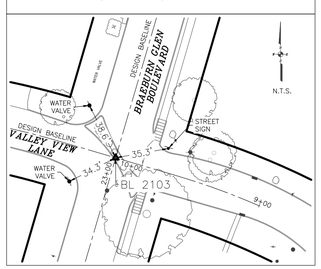


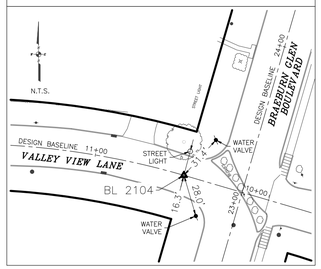
CH-12
SET 3/8" I.R. w/LANDTECH CAP
ELEV.=59.79'



BL 2103
SET 3/8" I.R. w/LANDTECH CAP



BL 2104
SET CONC. NAIL



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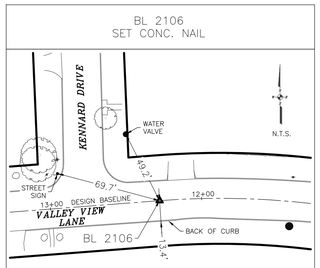

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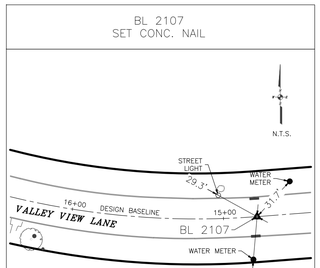
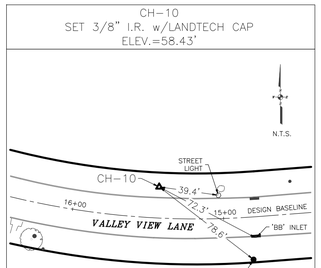
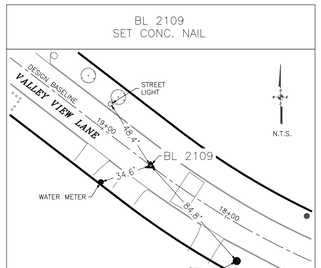
SET CONC. NAIL



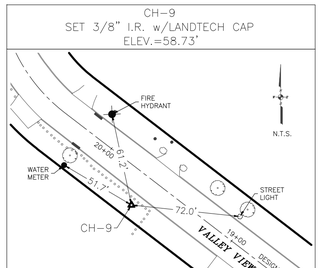
CH-10
SET 3/8" I.R. w/LANDTECH CAP
ELEV.=58.43'



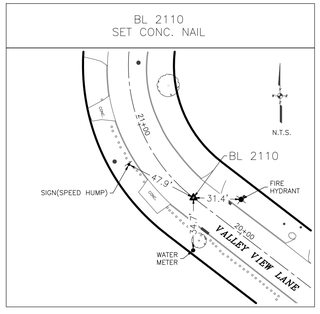
BL 2109
SET CONC. NAIL



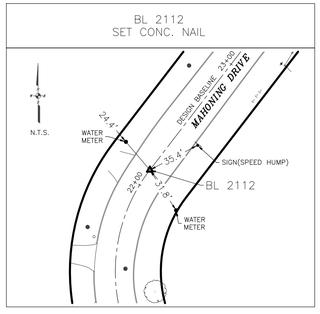
CH-9
SET 3/8" I.R. w/LANDTECH CAP
ELEV.=58.73'



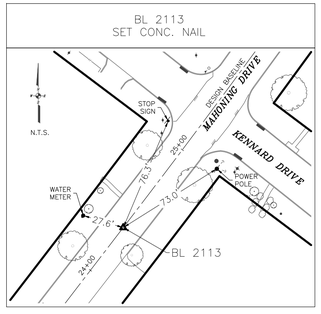
BL 2110
SET CONC. NAIL



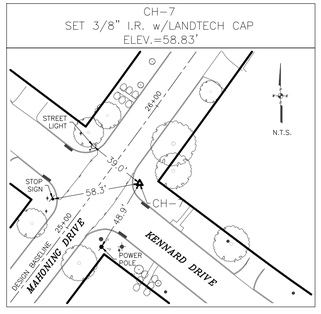
BL 2112
SET CONC. NAIL



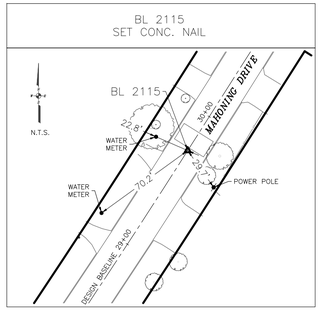
BL 2113
SET CONC. NAIL



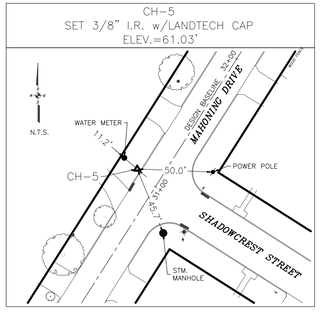
CH-7
SET 3/8" I.R. w/LANDTECH CAP
ELEV.=58.83'



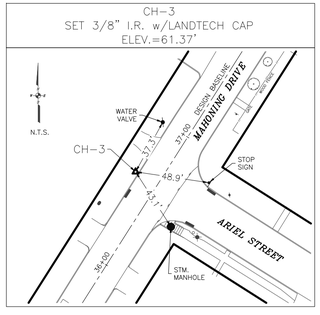
BL 2115
SET CONC. NAIL



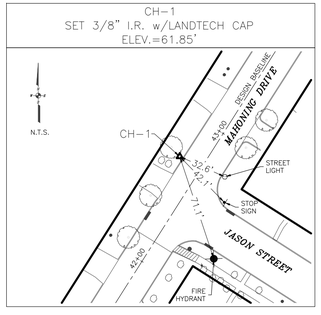
CH-5
SET 3/8" I.R. w/LANDTECH CAP
ELEV.=61.03'



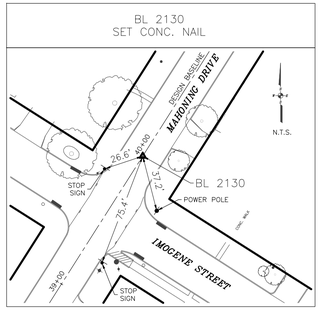
CH-3
SET 3/8" I.R. w/LANDTECH CAP
ELEV.=61.37'



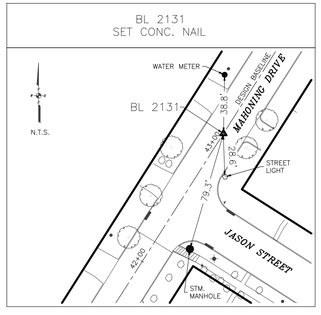
CH-1
SET 3/8" I.R. w/LANDTECH CAP
ELEV.=61.85'



BL 2130
SET CONC. NAIL



BL 2131
SET CONC. NAIL



NOTES:

1. ALL COORDINATES AND BEARINGS SHOWN HEREON ARE REFRENCED TO THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204), NORTH AMERICAN DATUM OF 1983/CORS (2011 ADJ.), EPOCH 2010.00. ALL COORDINATES ARE GRID VALUES AND CAN BE CONVERTED TO SURFACE BY DIVIDING BY THE COMBINED SCALE FACTOR OF 0.9998802.

2. ALL ELEVATIONS SHOWN HEREON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88/GEOID18).

3. THE ELEVATION DIFFERENCE BETWEEN THE FLOODPLAIN REFERENCE MARK NO, 040200 PUBLISHED DATUM (NAVD88, 2001 ADJ.) AND THE PROJECT VERTICAL DATUM (NAVD88/GEOID18) IS 0.32 FEET.
PROJECT DATUM + 0.32 FEET = FLOODPLAIN DATUM

4. THIS IS NOT A BOUNDARY SURVEY.

PROJECT BENCHMARK:

CITY OF HOUSTON MONUMENT NO. 5053-7315.
A BRASS DISK ON SIDEWALK OF BRIDGE AT BISSONNET ST. (EAST BOUND) OVER BRAYS BAYOU, APPROXIMATELY 0.1 MILE WEST FROM GESSNER RD.

ELEVATION = 65.79 FEET (NAVD88/GEOID18)

CONSULTANT:
LANDTECH
1315 W Sam Houston Parkway N, Suite 100
Houston, Texas 77043
T: 713-861-7068
F: 713-861-4131
TBPELS No. 10019100

SEAL
STATE OF TEXAS
REGISTERED
HONG YANG
6557
PROFESSIONAL
LAND SURVEYOR
3/10/26

ENTECH
CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

SWING TIES
SHEET 1 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 14 OF 227	

NO.	DATE	REVISION	APP.

FILE PATH: S:\2023\2320192\CADD\SCM\SWING TIES.dwg

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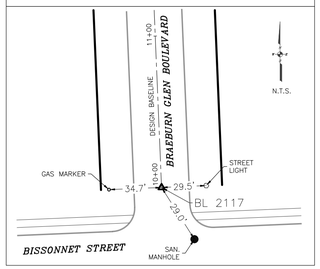
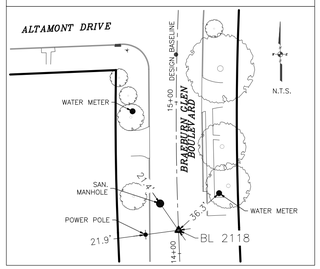
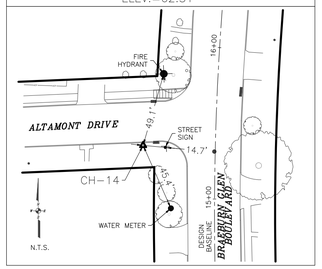


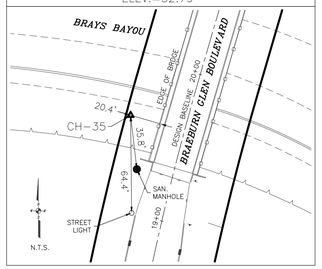
BL 2118
SET CONC. NAIL



CH-14
SET 3/8" I.R. w/LANDTECH CAP
ELEV.=62.51'



CH-35
SET 3/8" I.R. w/LANDTECH CAP
ELEV.=52.79'



BL 2120
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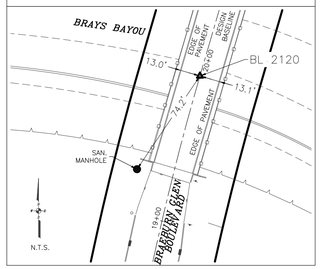
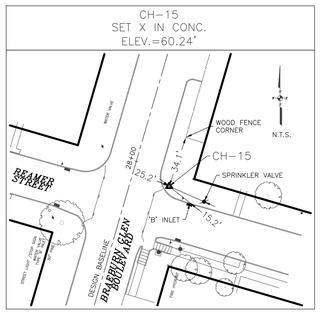
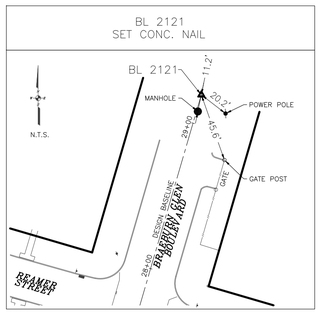


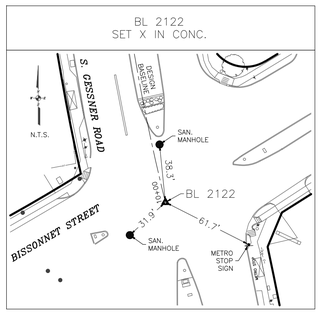
CH-15
SET X IN CONC.
ELEV.=60.24'



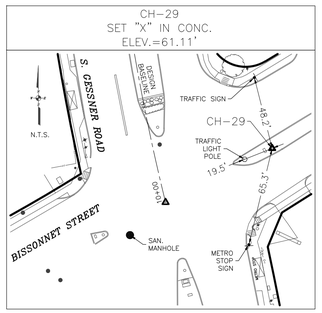
BL 2121
SET CONC. NAIL



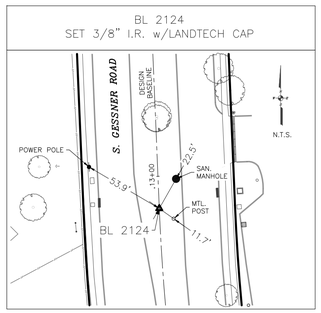
BL 2122
SET X IN CONC.



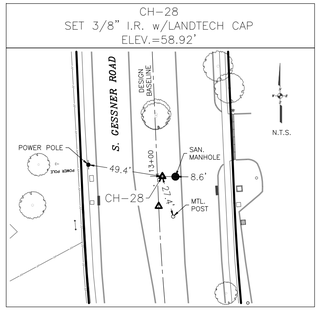
CH-29
SET "X" IN CONC.
ELEV.=61.11'



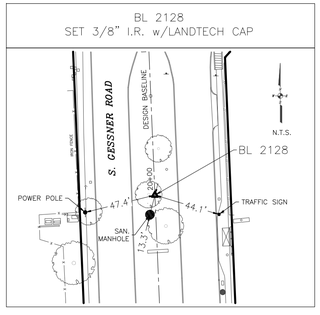
BL 2124
SET 3/8" I.R. w/LANDTECH CAP



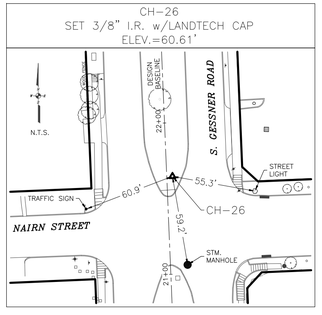
CH-28
SET 3/8" I.R. w/LANDTECH CAP
ELEV.=58.92'



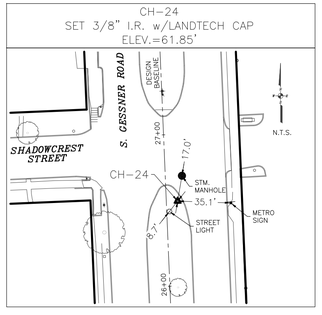
BL 2128
SET 3/8" I.R. w/LANDTECH CAP



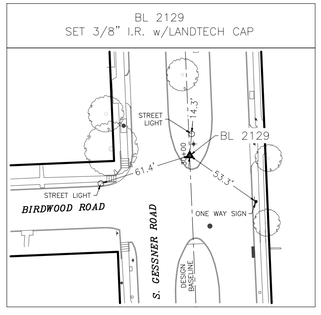
CH-26
SET 3/8" I.R. w/LANDTECH CAP
ELEV.=60.61'



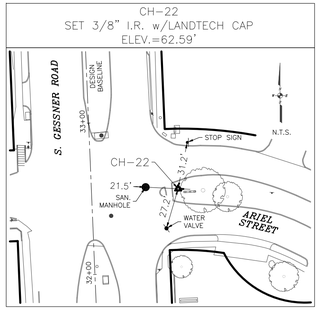
CH-24
SET 3/8" I.R. w/LANDTECH CAP
ELEV.=61.85'



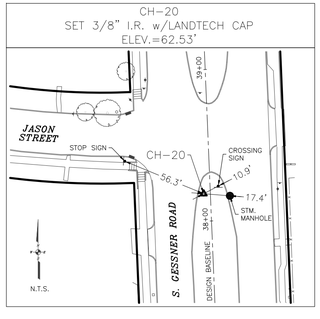
BL 2129
SET 3/8" I.R. w/LANDTECH CAP



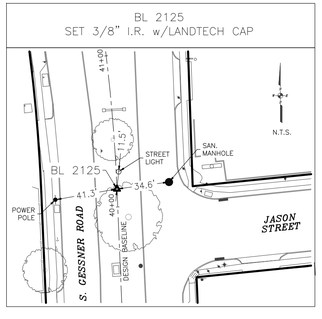
CH-22
SET 3/8" I.R. w/LANDTECH CAP
ELEV.=62.59'



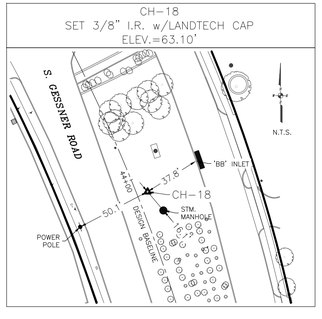
CH-20
SET 3/8" I.R. w/LANDTECH CAP
ELEV.=62.53'



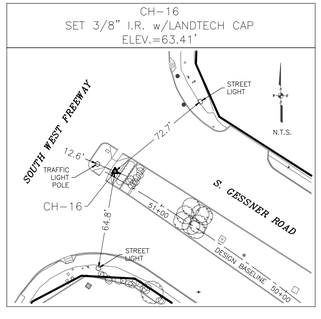
BL 2125
SET 3/8" I.R. w/LANDTECH CAP



CH-18
SET 3/8" I.R. w/LANDTECH CAP
ELEV.=63.10'



CH-16
SET 3/8" I.R. w/LANDTECH CAP
ELEV.=63.41'



NOTES:

1. ALL COORDINATES AND BEARINGS SHOWN HEREON ARE REFRENCED TO THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204), NORTH AMERICAN DATUM OF 1983/CORS (2011 ADJ.), EPOCH 2010.00. ALL COORDINATES ARE GRID VALUES AND CAN BE CONVERTED TO SURFACE BY DIVIDING BY THE COMBINED SCALE FACTOR OF 0.9998802.

2. ALL ELEVATIONS SHOWN HEREON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88/GEOID18).

3. THE ELEVATION DIFFERENCE BETWEEN THE FLOODPLAIN REFERENCE MARK NO, 040200 PUBLISHED DATUM (NAVD88, 2001 ADJ.) AND THE PROJECT VERTICAL DATUM (NAVD88/GEOID18) IS 0.32 FEET.
PROJECT DATUM + 0.32 FEET = FLOODPLAIN DATUM

4. THIS IS NOT A BOUNDARY SURVEY.

PROJECT BENCHMARK:

CITY OF HOUSTON MONUMENT NO. 5053-7315,
A BRASS DISK ON SIDEWALK OF BRIDGE AT BISSONNET ST. (EAST BOUND) OVER BRAYS BAYOU, APPROXIMATELY 0.1 MILE WEST FROM GESSNER RD.

ELEVATION = 65.79 FEET (NAVD88/GEOID18)

NO.	DATE	REVISION	APP.

CONSULTANT:

LANDTECH
1315 W Sam Houston Parkway N, Suite 100
Houston, Texas 77043
T: 713-861-7068
F: 713-861-4131
TBPELS No. 10019100

SEAL

STATE OF TEXAS
REGISTERED
HONG YANG
6557
PROFESSIONAL
LAND SURVEYOR
3/10/26

ENTECH
CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

SWING TIES
SHEET 2 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 15 OF 227	

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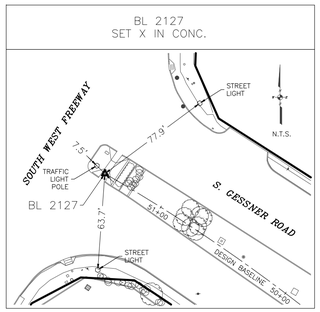

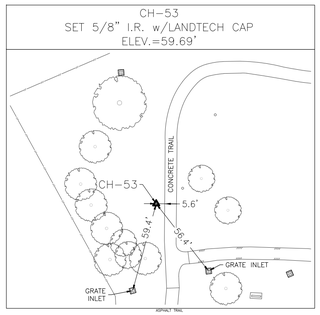

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NO.	DATE	REVISION	APP.

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SEAL

STATE OF TEXAS REGISTERED HONG YANG 6557 PROFESSIONAL LAND SURVEYOR

3/10/26

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

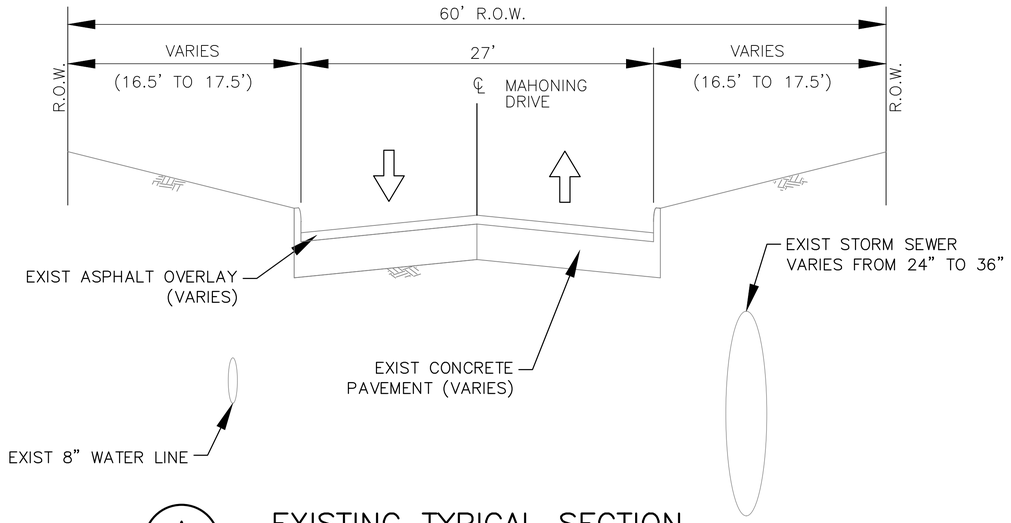
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

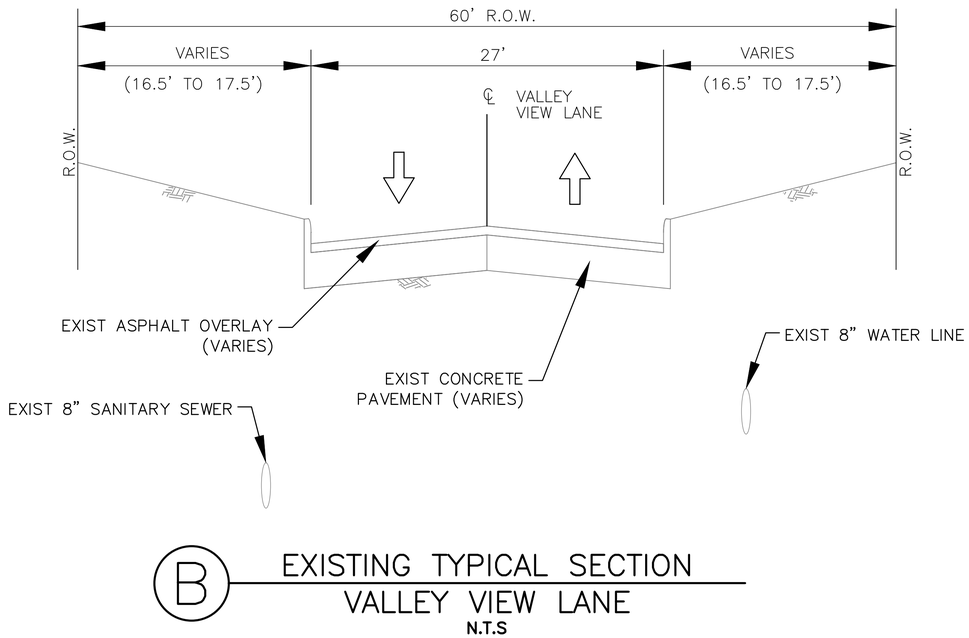
BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

SWING TIES
SHEET 3 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 16 OF 227	



A EXISTING TYPICAL SECTION
MAHONING DRIVE
N.T.S



B EXISTING TYPICAL SECTION
VALLEY VIEW LANE
N.T.S

NOTES:

1. REFER TO BORING LOGS IN GEOTECHNICAL INVESTIGATION REPORT G146-23, DATED SEPTEMBER 2025 PREPARED BY AVILES ENGINEERING CORPORATION, CORP FOR MORE INFORMATION ON EXISTING PAVEMENT SECTIONS.

NOTICE:
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VERIFICATION OF PRIVATE UTILITY LINES

Date

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Signature valid for six months.

Date

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Date

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ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED
PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

EXISTING TYPICAL SECTIONS (1 OF 2)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 17 OF 227	

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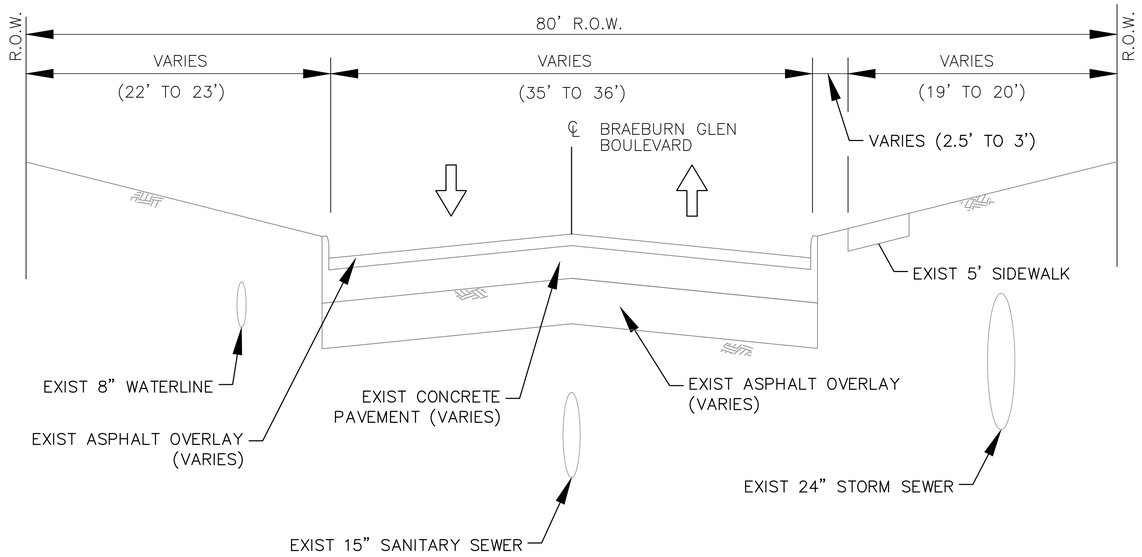
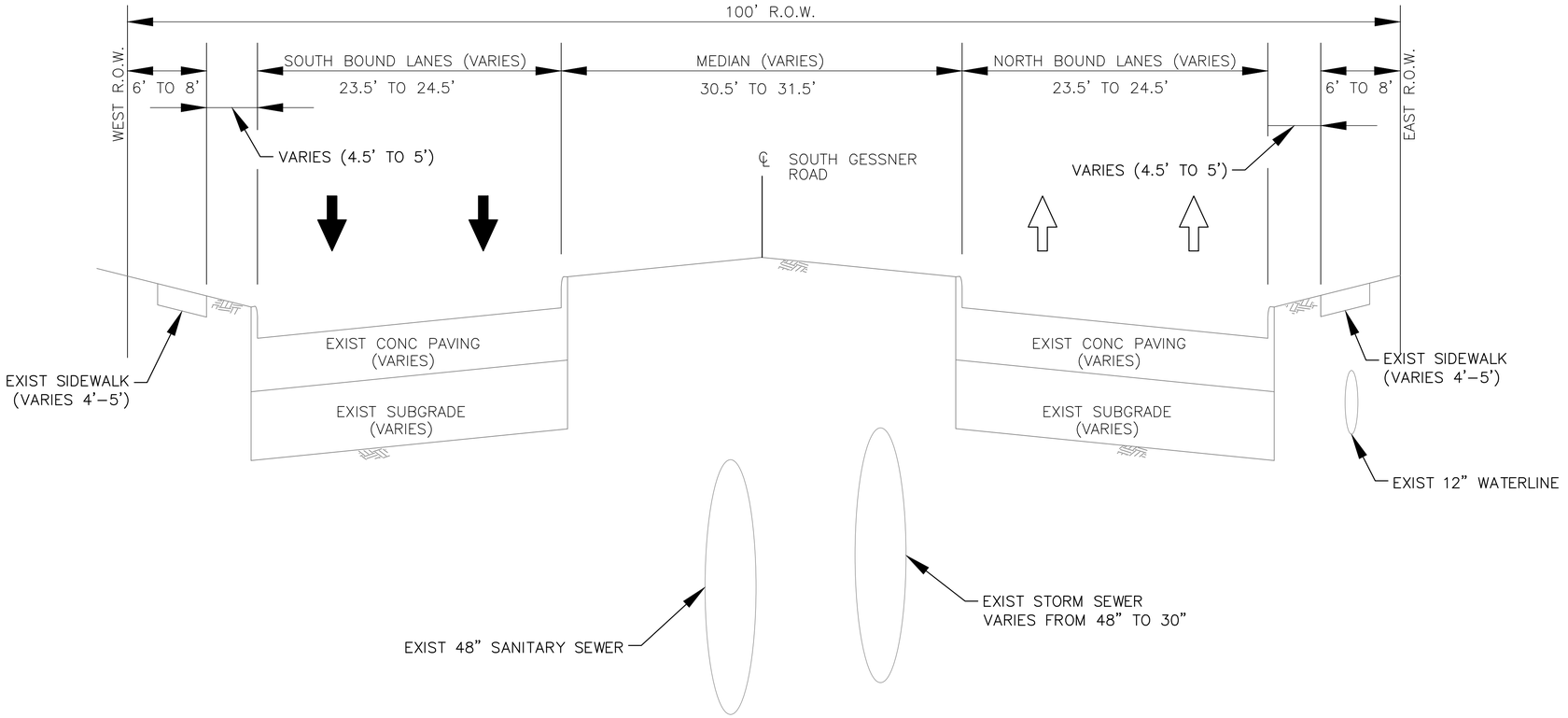


Ⓒ EXISTING TYPICAL SECTION BRAEBURN GLEN BOULEVARD

N.T.S



Ⓓ EXISTING TYPICAL SECTION SOUTH GESSNER ROAD

N.T.S

NOTES:

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Date

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ENTECH CIVIL ENGINEERS, INC.
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

EXISTING TYPICAL SECTIONS (2 OF 2)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 18 OF 227	

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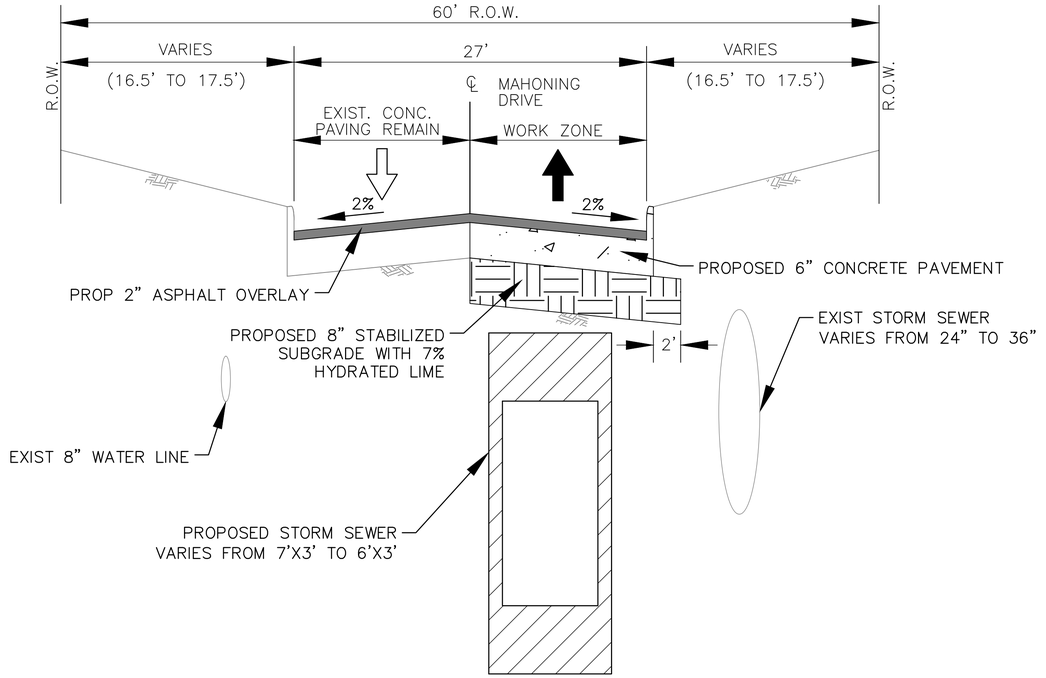
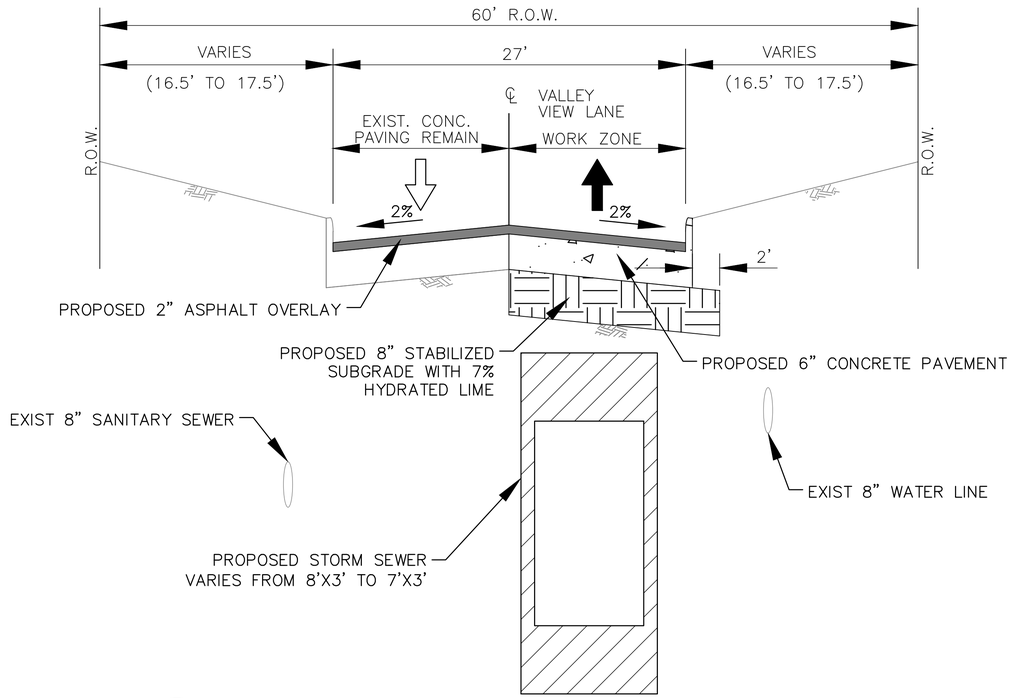


A PROPOSED TYPICAL SECTION
MAHONING DRIVE
N.T.S



B PROPOSED TYPICAL SECTION
VALLEY VIEW LANE
N.T.S

NOTES:

1. REFER TO BORING LOGS IN GEOTECHNICAL INVESTIGATION REPORT G146–23, DATED SEPTEMBER 2025 PREPARED BY AVILES ENGINEERING CORPORATION, CORP FOR MORE INFORMATION ON PROPOSED PAVEMENT SECTIONS.
2. SEE COH CONCRETE PAVEMENT DETAILS– NO.02751–01 AND HOT MIX ASPHALTIC CONCRETE PAVEMENT DETAILS – NO. 02741–01 FOR MORE INFORMATION

NOTICE:
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Date

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Signature valid for six months.

Date

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ENTECH
CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281–945–0069
TX FIRM NUMBER: F–6932
SURVEYED BY: LANDTECH, INC.
FB NO. P–6331

ENTECH CIVIL ENGINEERS, INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

PROPOSED TYPICAL SECTIONS (1 OF 2)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410040–0001–4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 19 OF 227	

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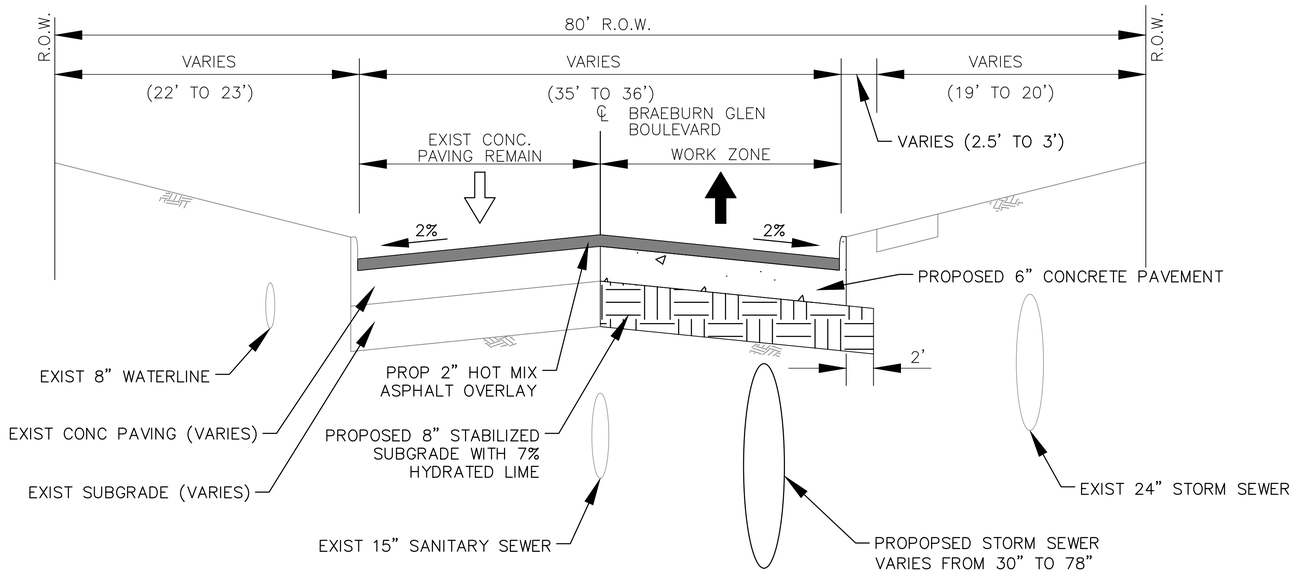
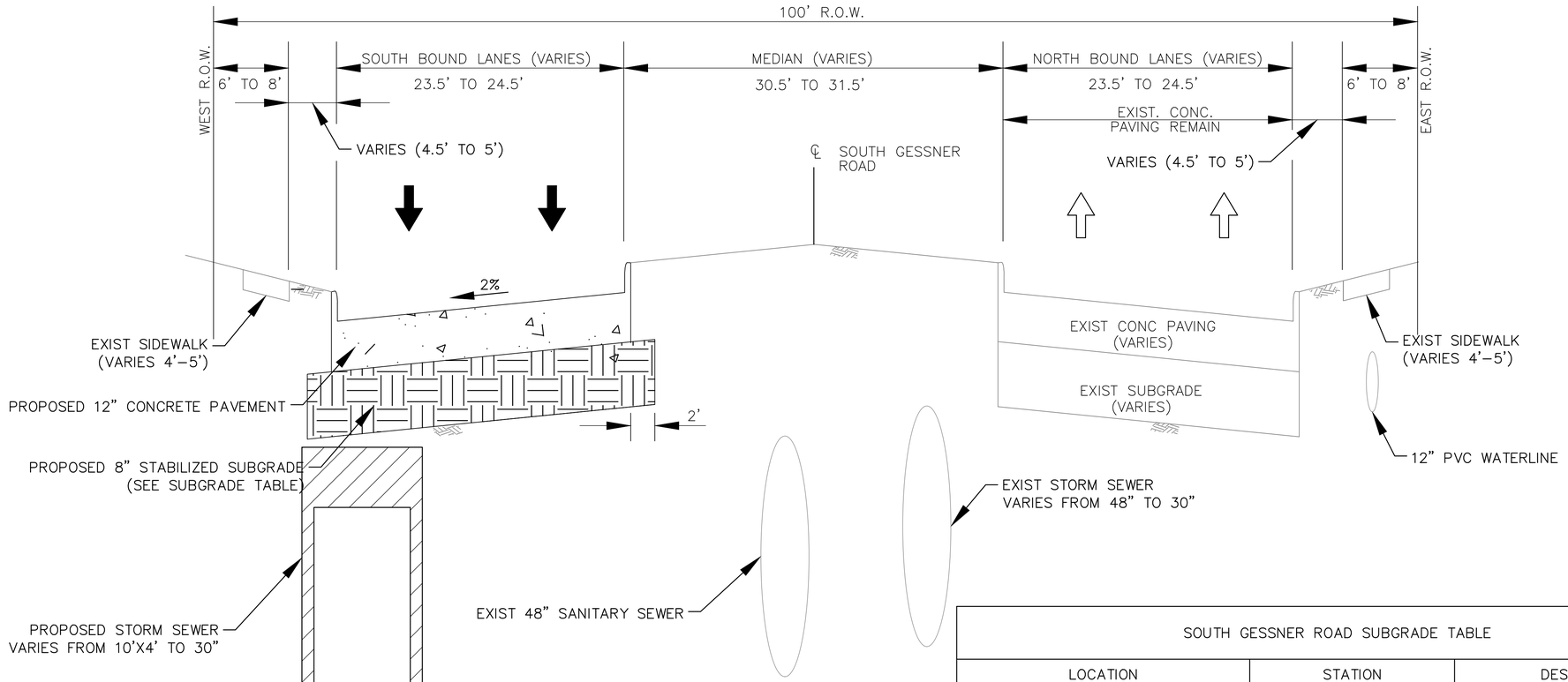


Ⓒ PROPOSED TYPICAL SECTION BRAEBURN GLEN BOULEVARD

N.T.S



Ⓓ PROPOSED TYPICAL SECTION SOUTH GESSNER ROAD

N.T.S

SOUTH GESSNER ROAD SUBGRADE TABLE		
LOCATION	STATION	DESCRIPTION
BISSONNET ST TO VALLEY VIEW LN	BEGIN TO STA 16+00	7% HYDRATED LIME
VALLEY VIEW LN TO NAIRN ST	STA 16+00 TO 21+60	3% HYDRATED LIME 7% FLY ASH
NAIRN ST TO END	STA 21+60 TO END	7% HYDRATED LIME

*VARIES THROUGHOUT ROADWAY CORRIDOR

NOTES:

1. REFER TO BORING LOGS IN GEOTECHNICAL INVESTIGATION REPORT G146-23, DATED SEPTEMBER 2025 PREPARED BY AVILES ENGINEERING CORPORATION, CORP FOR MORE INFORMATION ON PROPOSED PAVEMENT SECTIONS.
2. REFER TO DETAILS UNDER ROADWAY STANDARDS FOR PERTINENT INFORMATION.

NOTICE:
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ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

PROPOSED TYPICAL SECTIONS (2 OF 2)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 20 OF 227	

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N

LEGEND

FLOW DIRECTION

MH#
AC
CFS

MANHOLE ID

DRAINAGE AREA 2-YEAR

DRAINAGE AREA FLOW-2YR

ZONE AE

FLOODWAY

NOTE: FEMA FIRM PANEL 48201C0845M, EFFEFCTIVE ON 05/02/2019

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STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

OVERALL DRAINAGE AREA MAP

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 21 OF 227	

PLOTTED: 1/13/2026 1:44 PM

FILE PATH: N:\0030-23-101\3 - Design\Plan Set\14 AUTOCAD SHEETS\PLAN & PROFILE\DRAINAGE AREA MAP_recovered3.dwg

N

LEGEND

- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- DA — DRAINAGE AREA ID/ INLET ID
- FLOODWAY
- MH# / AC / CFS — MANHOLE ID; DRAINAGE AREA 2-YEAR; DRAINAGE AREA FLOW-2YR
- DA# / AC / CFS — DRAINAGE AREA ID; DRAINAGE AREA 2-YEAR; DRAINAGE AREA FLOW-2YR
- # — STORM RUN ID

NOTE: FEMA FIRM PANEL 48201C0845M, EFFEFCTIVE ON 05/02/2019

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.

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

INTERNAL DRAINAGE AREA MAP BEGIN PROJECT TO STA 20+50

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=50'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 22 OF 227	

PLOTTED: 3/9/2026 10:58 AM

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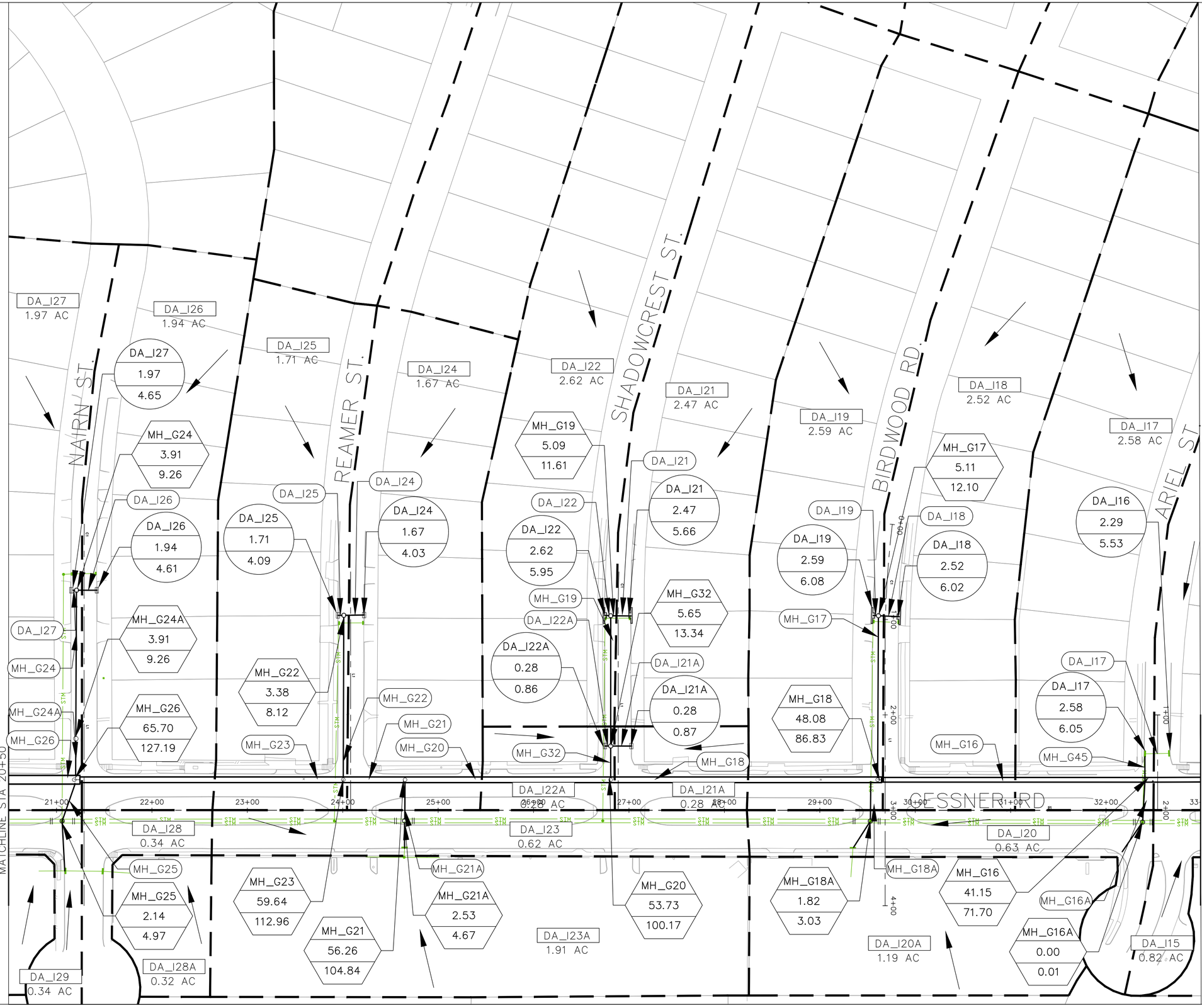

N

LEGEND

- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- DA — DRAINAGE AREA ID/ INLET ID
- FLOODWAY
- MH# / AC / CFS — MANHOLE ID / DRAINAGE AREA 2-YEAR / DRAINAGE AREA FLOW-2YR
- DA# / AC / CFS — DRAINAGE AREA ID / DRAINAGE AREA 2-YEAR / DRAINAGE AREA FLOW-2YR
- # — STORM RUN ID

NOTE: FEMA FIRM PANEL 48201C0845M, EFFEFCTIVE ON 05/02/2019

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VERIFICATION OF PRIVATE UTILITY LINES

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Date

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ENTECH CIVIL ENGINEERS, INC.
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

INTERNAL DRAINAGE AREA MAP STA 20+50 TO STA 33+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=50'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 23 OF 227	

PLOTTED: 3/9/2026 10:58 AM

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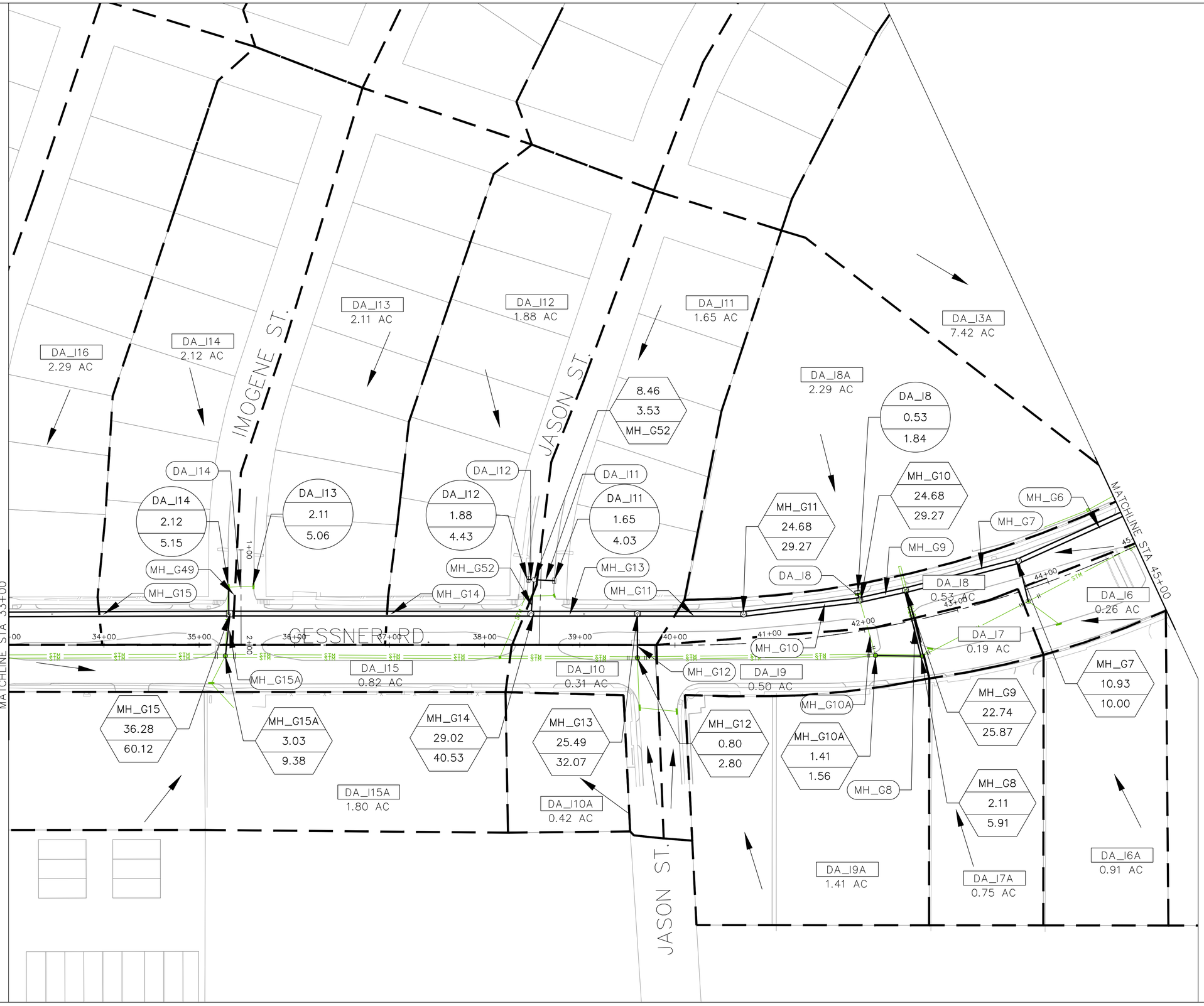

LEGEND

- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- DA — DRAINAGE AREA ID / INLET ID
- FLOODWAY
- MH# / AC / CFS — MANHOLE ID; DRAINAGE AREA 2-YEAR; DRAINAGE AREA FLOW-2YR
- DA# / AC / CFS — DRAINAGE AREA ID; DRAINAGE AREA 2-YEAR; DRAINAGE AREA FLOW-2YR
- # — STORM RUN ID

NOTE: FEMA FIRM PANEL 48201C0845M, EFFEFCTIVE ON 05/02/2019

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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Date

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Date

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ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 — STATE OF TEXAS — RODRIGO M. GUADARRAMA — 111437 — LICENSED PROFESSIONAL ENGINEER — 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

INTERNAL DRAINAGE AREA MAP STA 33+00 TO STA 45+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=50'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 24 OF 227	

PLOTTED: 3/9/2026 10:59 AM

FILE PATH: N:\0030-23-101\3 - Design\Plan Set\14 AUTOCAD SHEETS\PLAN & PROFILE\DRAINAGE AREA MAP_recovered3.dwg

LEGEND

- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- DA — DRAINAGE AREA ID/ INLET ID
- FLOODWAY
- MH# / AC / CFS — MANHOLE ID; DRAINAGE AREA 2-YEAR; DRAINAGE AREA FLOW-2YR
- DA# / AC / CFS — DRAINAGE AREA ID; DRAINAGE AREA 2-YEAR; DRAINAGE AREA FLOW-2YR
- # — STORM RUN ID

NOTE: FEMA FIRM PANEL 48201C0845M, EFFEFCTIVE ON 05/02/2019

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

Signature valid for six months.

Date

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

ENTECH CIVIL ENGINEERS, INC.
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

INTERNAL DRAINAGE AREA MAP STA 45+00 TO END PROJECT

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=50'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 25 OF 227	

PLOTTED: 3/9/2026 10:59 AM

FILE PATH: N:\0030-23-101\3 - Design\Plan Set\14 AUTOCAD SHEETS\PLAN & PROFILE\DRAINAGE AREA MAP_recovered3.dwg

N

LEGEND

- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- DA — DRAINAGE AREA ID/ INLET ID
- FLOODWAY
- MH# / AC / CFS — MANHOLE ID; DRAINAGE AREA 2-YEAR; DRAINAGE AREA FLOW-2YR
- DA# / AC / CFS — DRAINAGE AREA ID; DRAINAGE AREA 2-YEAR; DRAINAGE AREA FLOW-2YR
- # — STORM RUN ID

NOTE: FEMA FIRM PANEL 48201C0845M, EFFECTIVE ON 05/02/2019

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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Signature valid for six months.

Date

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Signature valid for six months.

Date

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Signature valid for one year.

ENTECH CIVIL ENGINEERS, INC.
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
3/9/2026

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

INTERNAL DRAINAGE AREA MAP STA 10+50 TO STA 23+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=50'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 26 OF 227	

PLOTTED: 3/9/2026 10:59 AM

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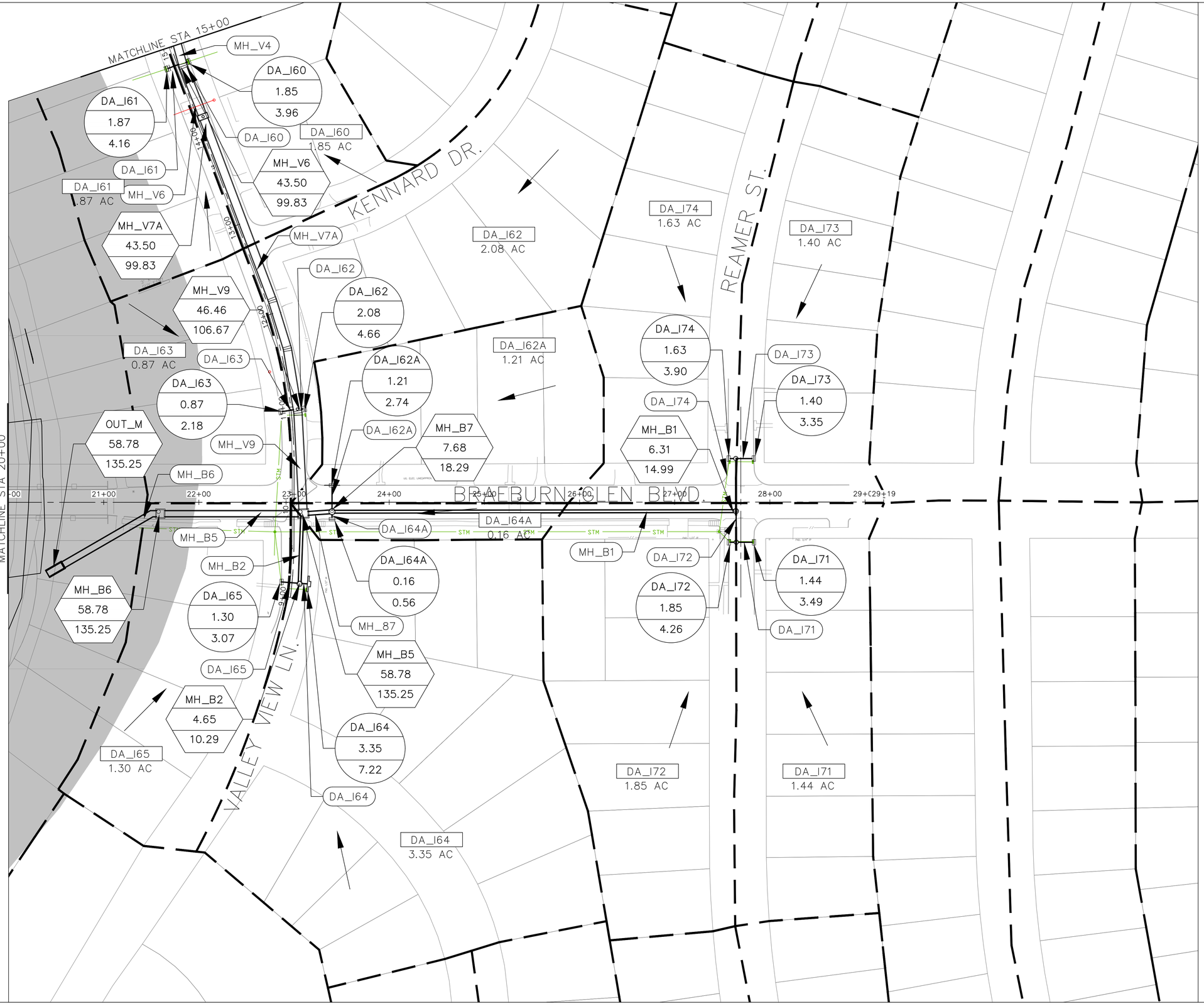

PLOTTED: 3/9/2026 11:00 AM

FILE PATH: N:\0030-23-101\3 - Design\Plan Set\14 AUTOCAD SHEETS\PLAN & PROFILE\DRAINAGE AREA MAP_recovered3.dwg

N

LEGEND

- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- DA — DRAINAGE AREA ID/ INLET ID
- FLOODWAY
- MH# / AC / CFS — MANHOLE ID; DRAINAGE AREA 2-YEAR; DRAINAGE AREA FLOW-2YR
- DA# / AC / CFS — DRAINAGE AREA ID; DRAINAGE AREA 2-YEAR; DRAINAGE AREA FLOW-2YR
- # — STORM RUN ID

NOTE: FEMA FIRM PANEL 48201C0845M, EFFEFCTIVE ON 05/02/2019

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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Date

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Date

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Signature valid for one year.

ENTECH CIVIL ENGINEERS, INC.
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HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 — STATE OF TEXAS — RODRIGO M. GUADARRAMA — 111437 — LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

INTERNAL DRAINAGE AREA MAP STA 20+00 TO END PROJECT

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=50'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 27 OF 227	

LEGEND

- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- DA — DRAINAGE AREA ID/ INLET ID
- FLOODWAY
- MH# / AC / CFS — MANHOLE ID, DRAINAGE AREA 2-YEAR, DRAINAGE AREA FLOW-2YR
- DA# / AC / CFS — DRAINAGE AREA ID, DRAINAGE AREA 2-YEAR, DRAINAGE AREA FLOW-2YR
- # — STORM RUN ID

NOTE: FEMA FIRM PANEL 48201C0845M, EFFECTIVE ON 05/02/2019

NOTICE:
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VERIFICATION OF PRIVATE UTILITY LINES

Date

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Date

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Signature valid for six months.

Date

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Signature valid for one year.

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

INTERNAL DRAINAGE AREA MAP STA 15+00 TO STA 32+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=50'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 28 OF 227	

PLOTTED: 3/9/2026 11:00 AM

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PLOTTED: 3/9/2026 11:00 AM

FILE PATH: N:\0030-23-101\3 - Design\Plan Set\14 AUTOCAD SHEETS\PLAN & PROFILE\DRAINAGE AREA MAP_recovered3.dwg

N

LEGEND

- FLOW DIRECTION
- DRAINAGE AREA BOUNDARY
- DA — DRAINAGE AREA ID/ INLET ID
- FLOODWAY
- MH# / AC / CFS — MANHOLE ID; DRAINAGE AREA 2-YEAR; DRAINAGE AREA FLOW-2YR
- DA# / AC / CFS — DRAINAGE AREA ID; DRAINAGE AREA 2-YEAR; DRAINAGE AREA FLOW-2YR
- # — STORM RUN ID

NOTE: FEMA FIRM PANEL 48201C0845M, EFFEFCTIVE ON 05/02/2019

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HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC F-6932 — STATE OF TEXAS — RODRIGO M. GUADARRAMA — 111437 — LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

INTERNAL DRAINAGE AREA MAP STA 32+00 TO END PROJECT

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=100'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 29 OF 227	

PLOTTED: 3/6/2026 3:03 PM

FILE PATH: N:\0030-23-101\3 - Design\Plan Set\14 AUTOCAD SHEETS\PLAN & PROFILE\HYDRAULIC DATA SHEETS.dwg

SYSTEM GESSNER: DRAINAGE AREA COMPUTATIONS

AREA ID	DRAINAGE AREA (AC)	RUNOFF (C)	TIME OF CONC. (MIN)	TIME USED (MIN)	2-YR INTENSITY (IN/HR)	2-YR DISCHARGE (CFS)	100-YR INTENSITY (IN/HR)	100-YR DISCHARGE (CFS)
DA_12	0.20	0.90	22.50	22.50	3.97	0.70	8.99	1.58
DA_14	0.14	0.90	22.07	22.07	4.01	0.50	9.07	1.14
DA_15	0.15	0.90	22.15	22.15	4.00	0.54	9.06	1.22
DA_16	0.69	0.90	24.37	24.37	3.80	2.37	8.65	5.38
DA_17	0.19	0.90	22.44	22.44	3.97	0.67	9.00	1.51
DA_I1	0.55	0.90	23.28	23.28	3.90	1.92	8.84	4.37
DA_I3	0.70	0.90	24.40	24.40	3.80	2.41	8.64	5.47
DA_I8	0.53	0.90	23.95	23.95	3.84	1.84	8.72	4.19
DA_I9	0.50	0.90	23.84	23.84	3.85	1.72	8.74	3.90
DA_14A	6.53	0.80	28.91	28.92	3.47	18.11	7.94	41.48
DA_15B	2.24	0.80	26.52	26.53	3.64	6.51	8.29	14.85
DA_16A	0.91	0.80	24.84	24.84	3.77	2.75	8.57	6.26
DA_17A	0.75	0.80	24.50	24.50	3.79	2.26	8.62	5.15
DA_19A	1.41	0.80	25.63	25.63	3.70	4.18	8.44	9.52
DA_I10	0.31	0.90	23.12	23.12	3.91	1.08	8.87	2.45
DA_I11	1.65	0.66	25.92	25.92	3.68	4.03	8.39	9.19
DA_I12	1.88	0.65	26.17	26.17	3.66	4.43	8.35	10.10
DA_I13	2.11	0.66	26.41	26.41	3.64	5.06	8.31	11.55
DA_I14	2.12	0.67	26.42	26.42	3.64	5.15	8.31	11.75
DA_I15	0.82	0.90	24.66	24.66	3.78	2.79	8.60	6.35
DA_I16	0.15	0.90	22.15	22.15	4.00	0.54	9.06	1.22
DA_I17	2.58	0.65	26.81	26.81	3.61	6.05	8.25	13.80
DA_I18	2.52	0.66	26.77	26.77	3.62	6.02	8.26	13.74
DA_I19	2.59	0.65	26.82	26.82	3.61	6.08	8.25	13.88
DA_I20	0.63	0.90	24.22	24.22	3.82	2.16	8.67	4.91
DA_I21	2.47	0.63	26.72	26.72	3.62	5.66	8.26	12.91
DA_I22	2.62	0.63	26.85	26.85	3.61	5.95	8.24	13.58
DA_I23	0.62	0.90	24.19	24.19	3.82	2.12	8.68	4.83
DA_I24	1.67	0.66	25.95	25.95	3.68	4.03	8.38	9.18
DA_I25	1.71	0.65	25.99	25.99	3.68	4.09	8.38	9.31
DA_I26	1.94	0.65	26.24	26.24	3.66	4.61	8.34	10.51
DA_I27	1.97	0.65	26.27	26.27	3.65	4.65	8.33	10.61
DA_I28	0.34	0.90	23.28	23.28	3.90	1.20	8.84	2.72
DA_I29	0.34	0.90	23.28	23.28	3.90	1.20	8.84	2.72
DA_I30	0.43	0.90	23.61	23.61	3.87	1.49	8.78	3.37
DA_I31	0.34	0.90	23.28	23.28	3.90	1.20	8.84	2.73
DA_I32	0.55	0.90	23.99	23.99	3.84	1.88	8.71	4.28
DA_I3A	7.42	0.80	29.23	29.23	3.45	20.45	7.90	46.86
DA_I8A	2.29	0.80	26.57	26.57	3.63	6.65	8.29	15.17
DA_I15A	2.22	0.80	26.51	26.51	3.64	6.46	8.29	14.74
DA_I20A	1.19	0.80	25.32	25.32	3.73	3.56	8.49	8.11
DA_I21A	0.28	0.78	23.00	23.00	3.92	0.87	8.89	1.97
DA_I22A	0.28	0.79	22.99	22.99	3.92	0.86	8.90	1.95
DA_I23A	1.91	0.80	26.21	26.21	3.66	5.59	8.34	12.75
DA_I28A	0.32	0.80	23.19	23.19	3.90	1.00	8.86	2.27
DA_I29A	1.14	0.80	25.23	25.23	3.73	3.40	8.50	7.74
DA_I30A	1.10	0.80	25.17	25.17	3.74	3.30	8.51	7.51
DA_I31A	1.89	0.80	26.18	26.18	3.66	5.53	8.35	12.60
DA_I32A	8.98	0.80	29.72	29.72	3.42	24.55	7.83	56.28
DA_I32B	0.46	0.90	23.70	23.71	3.86	1.59	8.76	3.60

SYSTEM MAHONING: DRAINAGE AREA COMPUTATIONS

AREA ID	DRAINAGE AREA (AC)	RUNOFF (C)	TIME OF CONC. (MIN)	TIME USED (MIN)	2-YR INTENSITY (IN/HR)	2-YR DISCHARGE (CFS)	100-YR INTENSITY (IN/HR)	100-YR DISCHARGE (CFS)
DA_I64	3.35	0.60	27.38	27.38	3.57	7.22	8.16	16.48
DA_I65	1.30	0.64	25.47	25.47	3.72	3.07	8.46	6.99
DA_I62A	1.21	0.61	25.34	25.34	3.73	2.74	8.48	6.23
DA_I64A	0.16	0.90	22.21	22.21	3.99	0.56	9.05	1.27
DA_I62	2.08	0.61	26.38	26.38	3.65	4.66	8.31	10.62
DA_I63	0.87	0.66	24.77	24.77	3.77	2.18	8.58	4.95
DA_I73	1.40	0.65	25.61	25.61	3.71	3.35	8.44	7.63
DA_I74	1.63	0.65	25.89	25.89	3.68	3.90	8.39	8.88
DA_I71	1.44	0.65	25.66	25.67	3.70	3.49	8.43	7.94
DA_I72	1.85	0.63	26.14	26.14	3.66	4.26	8.35	9.71
DA_I60	1.85	0.59	26.14	26.14	3.66	3.96	8.35	9.02
DA_I61	1.87	0.61	26.17	26.17	3.66	4.16	8.35	9.49
DA_I59A	0.78	0.62	24.57	24.57	3.79	1.83	8.61	4.16
DA_I58	1.93	0.53	26.23	26.23	3.66	3.75	8.34	8.56
DA_I59	0.52	0.61	23.91	23.91	3.84	1.22	8.73	2.77
DA_I59B	0.43	0.48	23.62	23.62	3.87	0.80	8.78	1.81
DA_I53	0.99	0.63	24.99	24.99	3.75	2.36	8.54	5.36
DA_I54	1.41	0.63	25.63	25.63	3.70	3.31	8.44	7.55
DA_I55	2.83	0.58	27.01	27.01	3.60	5.89	8.22	13.44
DA_I56	0.55	0.69	24.01	24.01	3.83	1.45	8.71	3.29
DA_I57	1.91	0.58	26.21	26.21	3.66	4.04	8.34	9.21
DA_I50	0.90	0.63	24.82	24.82	3.77	2.13	8.57	4.85
DA_I51	1.34	0.64	25.53	25.53	3.71	3.18	8.45	7.24
DA_I52	1.42	0.64	25.63	25.63	3.70	3.38	8.43	7.69
DA_I47	0.95	0.62	24.91	24.91	3.76	2.21	8.55	5.03
DA_I48	2.43	0.64	26.69	26.69	3.62	5.66	8.27	12.92
DA_I49	2.73	0.65	26.93	26.93	3.61	6.36	8.23	14.52
DA_I43	2.26	0.65	26.54	26.54	3.63	5.37	8.29	12.24
DA_I44	1.04	0.60	25.06	25.06	3.75	2.35	8.53	5.34
DA_I45	2.18	0.65	26.47	26.47	3.64	5.13	8.30	11.70
DA_I46	2.42	0.66	26.68	26.68	3.62	5.77	8.27	13.15
DA_I42	2.00	0.65	26.30	26.30	3.65	4.75	8.33	10.84
DA_I38	0.58	0.66	24.08	24.08	3.83	1.47	8.70	3.34
DA_I39	0.43	0.62	23.63	23.63	3.87	1.04	8.78	2.36
DA_I40	1.79	0.60	26.07	26.08	3.67	3.95	8.36	9.01
DA_I41	1.90	0.66	26.20	26.20	3.66	4.57	8.34	10.42
DA_I37	0.92	0.62	24.86	24.86	3.76	2.15	8.56	4.88
DA_I35	1.46	0.66	25.69	25.69	3.70	3.59	8.42	8.17
DA_I36	1.68	0.65	25.96	25.96	3.68	4.02	8.38	9.16

SYSTEM BRAEBURN: DRAINAGE AREA COMPUTATIONS

AREA ID	DRAINAGE AREA (AC)	RUNOFF (C)	TIME OF CONC. (MIN)	TIME USED (MIN)	2-YR INTENSITY (IN/HR)	2-YR DISCHARGE (CFS)	100-YR INTENSITY (IN/HR)	100-YR DISCHARGE (CFS)
DA_I66	0.58	0.95	24.90	24.90	3.76	2.07	8.55	4.71
DA_I67	0.60	1.07	25.12	25.12	3.74	2.39	8.52	5.44
DA_I68	0.66	0.99	24.99	24.99	3.75	2.45	8.54	5.58
DA_I69	0.71	0.46	23.70	23.71	3.86	1.24	8.76	2.82
DA_I70	0.73	0.45	23.70	23.70	3.86	1.28	8.76	2.90

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.

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. STATE OF TEXAS F-6932 RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

HYDRAULIC DATA SHEET

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 30 OF 227	

PLOTTED: 3/6/2026 3:03 PM

SYSTEM GESSNER: SAG INLET COMPUTATION DATA

ID	TYPE	DISCHARGE (CFS)	DISCHARGE (CFS)		ALLOWABLE PONDING WIDTH (FT)	PONDED WIDTH (FT)		SLOPE (%)		LENGTH (FT)	WIDTH (FT)	DEPRESSION (FT)	AREA (FT)	PERIMETER (FT)	CAPACITY (CFS)	PONDED DEPTH (FT)
			LEFT	RIGHT		LEFT	RIGHT	LEFT	RIGHT							
DA_I2	Curb	0.70	0.63	0.07	12	1.34	0.60	2.39	2.10	5	n/a	0.25	n/a	n/a	6.26	0.12
DA_I4	Curb	0.50	0.45	0.05	12	1.39	0.54	1.00	1.90	5	n/a	0.25	n/a	n/a	6.26	0.09
DA_I5	Curb	0.54	0.48	0.05	12	1.34	0.63	1.40	1.00	5	n/a	0.25	n/a	n/a	6.26	0.10
DA_I6	Curb	2.37	1.42	0.95	12	3.10	1.73	1.00	1.38	5	n/a	0.25	n/a	n/a	6.26	0.26
DA_I7	Curb	0.67	0.40	0.27	12	1.15	1.03	2.20	1.75	5	n/a	0.25	n/a	n/a	6.26	0.11
DA_I1	Curb	1.92	1.73	0.19	12	6.06	1.01	0.55	1.00	5	n/a	0.25	n/a	n/a	6.26	0.23
DA_I3	Curb	2.41	1.44	0.96	12	5.79	3.85	0.42	0.36	15	n/a	0.25	n/a	n/a	14.39	0.15
DA_I8	Curb and Grate	1.84	1.01	0.83	12	5.89	3.50	0.20	0.30	5	n/a	0.25	n/a	n/a	10.48	0.29
DA_I9	Curb	1.72	1.20	0.51	12	1.63	1.52	3.00	0.80	5	n/a	0.25	n/a	n/a	6.26	0.21
DA_I10	Curb	1.08	0.65	0.43	12	1.40	1.50	2.00	0.60	5	n/a	0.25	n/a	n/a	6.26	0.16
DA_I11	Curb and Grate	4.03	1.21	2.82	12	13.87	9.78	0.02	0.40	5	n/a	0.25	n/a	n/a	10.48	0.49
DA_I12	Curb and Grate	4.43	3.10	1.33	12	9.01	10.09	0.63	0.08	5	n/a	0.25	n/a	n/a	10.48	0.52
DA_I13	Curb	5.06	1.01	4.05	12	4.33	11.99	0.34	0.40	15	n/a	0.25	n/a	n/a	14.39	0.25
DA_I14	Curb	5.15	4.12	1.03	12	10.29	6.28	0.72	0.18	15	n/a	0.25	n/a	n/a	14.39	0.25
DA_I15	Curb	2.79	1.40	1.40	12	3.68	2.29	0.80	1.25	5	n/a	0.25	n/a	n/a	6.26	0.29
DA_I16	Curb	0.54	0.11	0.43	12	0.88	1.48	0.65	0.66	15	n/a	0.25	n/a	n/a	14.39	0.06
DA_I17	Curb	6.05	4.84	1.21	12	12.61	2.79	0.47	0.80	15	n/a	0.25	n/a	n/a	14.39	0.28
DA_I18	Curb	6.02	1.81	4.21	12	6.87	11.86	0.45	0.45	15	n/a	0.25	n/a	n/a	14.39	0.28
DA_I19	Curb	6.08	4.26	1.83	12	12.73	7.34	0.35	0.39	15	n/a	0.25	n/a	n/a	14.39	0.28
DA_I20	Curb	2.16	1.94	0.22	12	7.93	1.16	0.36	0.60	5	n/a	0.25	n/a	n/a	6.26	0.25
DA_I21	Curb	5.66	0.57	5.09	12	1.69	13.64	0.55	0.38	15	n/a	0.25	n/a	n/a	14.39	0.27
DA_I22	Curb	5.95	5.36	0.60	12	14.80	2.54	0.30	0.21	15	n/a	0.25	n/a	n/a	14.39	0.28
DA_I23	Curb	2.12	1.06	1.06	12	4.12	3.44	0.40	0.50	5	n/a	0.25	n/a	n/a	6.26	0.24
DA_I24	Curb and Grate	4.03	1.81	2.22	12	5.00	8.68	0.87	0.36	5	n/a	0.25	n/a	n/a	10.48	0.49
DA_I25	Curb and Grate	4.09	2.25	1.84	12	10.34	6.67	0.21	0.50	5	n/a	0.25	n/a	n/a	10.48	0.49
DA_I26	Curb and Grate	4.61	2.08	2.54	12	7.86	10.43	0.42	0.26	5	n/a	0.25	n/a	n/a	10.48	0.56
DA_I27	Curb and Grate	4.65	2.56	2.09	12	11.13	9.30	0.21	0.26	5	n/a	0.25	n/a	n/a	10.48	0.57
DA_I28	Curb	1.20	0.60	0.60	12	1.50	1.49	1.20	1.23	5	n/a	0.25	n/a	n/a	6.26	0.17
DA_I29	Curb	1.20	0.60	0.60	12	5.47	5.22	1.40	1.80	5	n/a	0.25	n/a	n/a	6.26	0.17
DA_I30	Curb	1.49	1.34	0.15	12	6.41	1.25	0.29	0.19	5	n/a	0.25	n/a	n/a	6.26	0.19
DA_I31	Curb and Grate	1.20	1.08	0.12	12	1.87	0.99	1.20	0.44	5	n/a	0.25	n/a	n/a	10.48	0.22
DA_I32	Curb and Grate	1.88	0.94	0.94	12	1.92	1.87	0.77	0.89	5	n/a	0.25	n/a	n/a	10.48	0.29
DA_I21A	Curb and Grate	0.87	0.78	0.09	12	4.36	1.56	0.20	0.02	5	n/a	0.25	n/a	n/a	10.48	0.17
DA_I22A	Curb and Grate	0.86	0.09	0.77	12	1.56	2.58	0.02	0.35	5	n/a	0.25	n/a	n/a	10.48	0.17
DA_I32B	Curb and Grate	1.59	1.43	0.16	12	7.44	1.12	0.23	0.39	5	n/a	0.25	n/a	n/a	10.48	0.26

SYSTEM BRAEBURN: SAG INLET COMPUTATION DATA

ID	TYPE	DISCHARGE (CFS)	DISCHARGE (CFS)		ALLOWABLE PONDING WIDTH (FT)	PONDED WIDTH (FT)		SLOPE (%)		LENGTH (FT)	WIDTH (FT)	DEPRESSION (FT)	AREA (FT)	PERIMETER (FT)	CAPACITY (CFS)	PONDED DEPTH (FT)
			LEFT	RIGHT		LEFT	RIGHT	LEFT	RIGHT							
DA_I66	Curb and Grate	2.07	1.966	0.103	12	6.535	0.726	0.6	1.69	5	n/a	0.25	n/a	n/a	10.479	0.311
DA_I67	Curb and Grate	2.391	0.12	2.271	12	0.63	6.959	4.8	0.69	5	n/a	0.25	n/a	n/a	10.479	0.342
DA_I68	Curb and Grate	2.453	1.472	0.981	12	5.396	1.977	0.5	0.72	5	n/a	0.25	n/a	n/a	10.479	0.348
DA_I69	Curb and Grate	1.24	0.744	0.496	12	5.829	1.628	0.11	0.52	5	n/a	0.25	n/a	n/a	10.479	0.221
DA_I70	Curb and Grate	1.279	0.511	0.767	12	1.566	2.713	0.68	0.33	5	n/a	0.25	n/a	n/a	10.479	0.226

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

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

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

RIVTECH CIVIL ENGINEERS, INC F-6988
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

HYDRAULIC DATA SHEET

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 31 OF 227	

FILE PATH: N:\0030-23-101\3 - Design\Plan Set\14 AUTOCAD SHEETS\PLAN & PROFILE\HYDRAULIC DATA SHEETS.dwg

SYSTEM MAHONING: SAG INLET COMPUTATION DATA															
ID	TYPE	DISCHARGE (CFS)	DISCHARGE (CFS)		ALLOWABLE PONDING WIDTH (FT)	PONDED WIDTH (FT)		SLOPE (%)		LENGTH (FT)	WIDTH (FT)	DEPRESSION (FT)	AREA (FT)	PERIMETER (FT)	CAPACITY (CFS)	PONDED DEPTH (FT)
			LEFT	RIGHT		LEFT	RIGHT	LEFT	RIGHT							
DA_I64	Curb	7.217	0.722	6.495	12	1.887	32.873	0.5	0.01	15	n/a	0.25	n/a	n/a	14.393	0.316
DA_I65	Curb and Grate	3.068	0.307	2.761	12	1.19	16.485	1.06	0.05	5	n/a	0.25	n/a	n/a	10.479	0.404
DA_I62A	Curb and Grate	2.737	2.6	0.137	12	14.831	1.368	0.07	0.1	5	n/a	0.25	n/a	n/a	10.479	0.375
DA_I64A	Curb and Grate	0.562	0.056	0.505	12	0.593	2.171	1.47	0.17	5	n/a	0.25	n/a	n/a	10.479	0.13
DA_I62	Curb and Grate	4.659	1.398	3.261	12	1.801	11.328	2.4	0.32	5	n/a	0.25	n/a	n/a	10.479	0.572
DA_I63	Curb and Grate	2.177	1.415	0.762	12	7.272	1.647	0.24	1.15	5	n/a	0.25	n/a	n/a	10.479	0.322
DA_I73	Curb and Grate	3.349	0.335	3.014	12	1.329	10.327	0.7	0.38	5	n/a	0.25	n/a	n/a	10.479	0.429
DA_I74	Curb and Grate	3.896	0.779	3.117	12	6.094	7.763	0.11	0.98	5	n/a	0.25	n/a	n/a	10.479	0.474
DA_I71	Curb and Grate	3.487	3.138	0.349	12	8.727	1.264	0.71	0.99	5	n/a	0.25	n/a	n/a	10.479	0.44
DA_I72	Curb and Grate	4.26	0.852	3.408	12	7.174	10.01	0.09	0.54	5	n/a	0.25	n/a	n/a	10.479	0.503
DA_I60	Curb and Grate	3.956	1.582	2.373	12	4.188	9.42	0.87	0.32	5	n/a	0.25	n/a	n/a	10.479	0.479
DA_I61	Curb and Grate	4.164	2.498	1.666	12	10.457	4.857	0.25	0.77	5	n/a	0.25	n/a	n/a	10.479	0.496
DA_I58	Curb and Grate	3.753	1.501	2.252	12	7.857	10.822	0.22	0.18	5	n/a	0.25	n/a	n/a	10.479	0.463
DA_I59	Curb and Grate	1.3	0.65	0.65	12	1.481	1.765	1.48	0.58	5	n/a	0.25	n/a	n/a	10.479	0.228
DA_I53	Curb and Grate	2.355	1.06	1.295	12	3.559	9.28	0.48	0.1	5	n/a	0.25	n/a	n/a	10.479	0.339
DA_I54	Curb and Grate	3.314	2.651	0.663	12	11.206	1.872	0.22	0.44	5	n/a	0.25	n/a	n/a	10.479	0.426
DA_I55	Curb	5.887	1.177	4.709	12	8.724	12.5	0.1	0.46	15	n/a	0.25	n/a	n/a	14.393	0.275
DA_I56	Curb and Grate	1.448	0.869	0.579	12	1.879	1.556	0.74	0.9	5	n/a	0.25	n/a	n/a	10.479	0.245
DA_I57	Curb and Grate	4.04	0.808	3.232	12	1.838	21.546	0.72	0.02	5	n/a	0.25	n/a	n/a	10.479	0.486
DA_I50	Curb and Grate	2.132	0.853	1.279	12	1.795	4.632	0.91	0.49	5	n/a	0.25	n/a	n/a	10.479	0.317
DA_I51	Curb and Grate	3.179	2.543	0.636	12	8.148	1.876	0.57	0.4	5	n/a	0.25	n/a	n/a	10.479	0.414
DA_I52	Curb and Grate	3.377	0.675	2.701	12	5.848	8.396	0.09	0.59	5	n/a	0.25	n/a	n/a	10.479	0.431
DA_I47	Curb and Grate	2.211	1.216	0.995	12	4.27	1.94	0.5	0.82	5	n/a	0.25	n/a	n/a	10.479	0.325
DA_I48	Curb	5.662	4.53	1.132	12	10.252	1.962	0.88	1	15	n/a	0.25	n/a	n/a	14.393	0.268
DA_I49	Curb	6.363	1.273	5.09	12	4.987	14.942	0.43	0.26	15	n/a	0.25	n/a	n/a	14.393	0.29
DA_I43	Curb and Grate	5.366	1.073	4.293	12	3.971	10.749	0.43	0.67	5	n/a	0.25	n/a	n/a	10.479	0.759
DA_I44	Curb and Grate	2.346	1.29	1.055	12	5.351	7.136	0.39	0.14	5	n/a	0.25	n/a	n/a	10.479	0.338
DA_I45	Curb	5.131	4.105	1.026	12	11.192	4.498	0.53	0.33	15	n/a	0.25	n/a	n/a	14.393	0.251
DA_I46	Curb	5.766	1.153	4.612	12	4.011	11.801	0.49	0.55	15	n/a	0.25	n/a	n/a	14.393	0.272
DA_I42	Curb and Grate	4.753	3.803	0.951	12	10.558	4.227	0.56	0.31	5	n/a	0.25	n/a	n/a	10.479	0.596
DA_I38	Curb and Grate	1.471	0.883	0.589	12	3.779	1.628	0.31	0.73	5	n/a	0.25	n/a	n/a	10.479	0.248
DA_I39	Curb and Grate	1.041	0.416	0.624	12	1.287	1.815	1.28	0.46	5	n/a	0.25	n/a	n/a	10.479	0.197
DA_I40	Curb and Grate	3.954	3.163	0.791	12	9.517	4.917	0.55	0.17	5	n/a	0.25	n/a	n/a	10.479	0.479
DA_I41	Curb and Grate	4.573	0.915	3.658	12	2.913	10.49	0.44	0.53	5	n/a	0.25	n/a	n/a	10.479	0.551
DA_I37	Curb and Grate	2.145	1.287	0.858	12	6.394	1.991	0.27	0.53	5	n/a	0.25	n/a	n/a	10.479	0.319
DA_I35	Curb and Grate	3.586	2.869	0.717	12	7.869	1.963	0.8	0.4	5	n/a	0.25	n/a	n/a	10.479	0.449
DA_I36	Curb and Grate	4.018	0.804	3.214	12	6.269	9.077	0.11	0.66	5	n/a	0.25	n/a	n/a	10.479	0.484

SYSTEM MAHONING: ON GRADE INLET COMPUTATION DATA											
ID	TYPE	DISCHARGE (CFS)	ALLOWABLE PONDING WIDTH (FT)	PONDED WIDTH (FT)	PONDED DEPTH (FT)	SLOPE %	LENGTH (FT)	WIDTH (FT)	DEPRESSION (FT)	CAPACITY (CFS)	BYPASS (CFS)	BYPASS TO NODE
DA_I59A	Curb and Grate	1.83	12	7.421	0.44	0.38	5.00	n/a	0.25	1.755	0.07	DA_I59
DA_I59B	Curb and Grate	0.80	12	3.036	0.35	0.32	5.00	n/a	0.25	0.787	0.01	DA_I59

NOTICE:
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VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

Signature valid for six months.

Date

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

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

HYDRAULIC DATA SHEET

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 32 OF 227	

PLOTTED: 3/6/2026 3:03 PM
FILE PATH: N:\0030-23-1011\3 - Design\Plan Set\14 AUTOCAD SHEETS\PLAN & PROFILE\HYDRAULIC DATA SHEETS.dwg

SYSTEM GESSNER: CONVEYANCE CONFIGURATION DATA

ID	UPSTREAM ID	DOWNSTREAM ID	DISCHARGE (CFS)	LENGTH (FT)	SHAPE	NO. BARRELS	RISE (FT)	SPAN (FT)	N	SLOPE %	UPSTREAM INVERT (FT)	DOWNSTREAM INVERT (FT)
MH_G31	MH_G31	OUTFALL	148.91	88.34	Circular	1	7	n/a	0.012	0.10	42.85	42.76
MH_G28	MH_G28	MH_G31	148.91	526.58	Box	1	4	10	0.012	0.10	47.01	46.48
MH_G27A	MH_27A	MH_G28	147.48	210.60	Box	1	4	10	0.012	0.14	47.32	47.01
MH_G28A	MH_G28A	MH_G28	3.05	38.27	Circular	1	2	n/a	0.012	0.43	53.40	53.21
MH_T2	MH_T2	MH_27A	10.96	12.04	Circular	1	2	n/a	0.012	0.29	52.90	52.85
MH_G27	MH_G27	MH_27A	136.90	68.30	Box	1	4	8	0.012	0.09	47.39	47.32
MH_G28B	MH_G28B	MH_G28A	3.05	27.97	Circular	1	2	n/a	0.012	0.34	53.51	53.40
DA_I32B	DA_I32B	MH_G27	1.59	3.10	Circular	1	2	n/a	0.012	0.25	54.32	54.30
MH_G26D	MH_G26D	MH_G27	136.06	76.16	Box	1	4	8	0.012	0.10	47.47	47.39
DA_I31	DA_I31	MH_G28B	1.20	26.12	Circular	1	2	n/a	0.012	0.20	53.57	53.51
DA_I32	DA_I32	MH_G28B	1.88	49.47	Circular	1	2	n/a	0.012	0.20	53.62	53.51
MH_G26B	MH_G26B	MH_G26D	135.53	123.00	Box	1	4	8	0.012	0.10	47.60	47.47
MH_G26E	MH_G26E	MH_G26D	1.49	39.10	Circular	1	2	n/a	0.012	0.27	53.32	53.20
MH_G26	MH_G26	MH_G26B	125.97	276.61	Box	1	4	8	0.012	0.10	47.89	47.60
MH_G26C	MH_G26C	MH_G26B	10.96	18.62	Circular	1	2	n/a	0.012	0.21	54.35	54.30
DA_I30	DA_I30	MH_G26E	1.49	56.71	Circular	1	2	n/a	0.012	0.23	53.46	53.32
MH_G23	MH_G23	MH_G26	114.03	274.93	Box	1	4	5	0.012	0.10	48.16	47.89
MH_G25	MH_G25	MH_G26	6.64	40.57	Circular	1	2	n/a	0.012	0.22	53.96	53.86
MH_G24A	MH_G24A	MH_G26	9.25	36.71	Circular	1	2	n/a	0.012	0.33	49.50	49.36
MH_G21	MH_G21	MH_G23	107.49	56.42	Box	1	4	5	0.012	0.08	48.21	48.16
MH_G22	MH_G22	MH_G23	8.11	164.45	Circular	1	2	n/a	0.012	0.26	55.00	54.56
DA_I29	DA_I29	MH_G25	6.64	47.68	Circular	1	2	n/a	0.012	0.21	54.07	53.96
MH_G24	MH_G24	MH_G24A	9.25	151.59	Circular	1	2	n/a	0.012	0.32	54.60	54.10
MH_G20	MH_G20	MH_G21	101.96	208.92	Box	1	4	5	0.012	0.10	48.43	48.21
MH_G21A	MH_G21A	MH_G21	7.62	38.63	Circular	1	2	n/a	0.012	0.20	54.93	54.84
DA_I24	DA_I24	MH_G22	4.03	15.73	Circular	1	2	n/a	0.012	0.42	55.08	55.00
DA_I25	DA_I25	MH_G22	4.09	3.74	Circular	1	2	n/a	0.012	0.55	55.04	55.00
DA_I28	DA_I28	DA_I29	2.19	41.54	Circular	1	2	n/a	0.012	0.20	54.16	54.07
DA_I29A	DA_I29A	DA_I29	3.40	23.95	Circular	1	2	n/a	0.012	0.31	54.15	54.07
DA_I26	DA_I26	MH_G24	4.61	16.99	Circular	1	2	n/a	0.012	0.49	54.70	54.60
DA_I27	DA_I27	MH_G24	4.65	2.51	Circular	1	2	n/a	0.012	0.83	54.65	54.60
MH_G18	MH_G18	MH_G20	91.63	273.47	Box	1	4	5	0.012	0.10	48.71	48.43
MH_G32	MH_G32	MH_G20	13.04	28.61	Circular	1	2	n/a	0.012	0.21	55.43	55.36
DA_I23	DA_I23	MH_G21A	7.62	26.92	Circular	1	2	n/a	0.012	0.20	54.99	54.93
DA_I28A	DA_I28A	DA_I28	1.00	40.18	Circular	1	1.25	n/a	0.012	0.34	54.30	54.16
MH_G16	MH_G16	MH_G18	77.06	279.07	Box	1	4	4	0.012	0.10	49.00	48.71
MH_G17	MH_G17	MH_G18	12.09	165.42	Circular	1	2	n/a	0.012	0.22	56.00	55.62
MH_G18A	MH_G18A	MH_G18	5.66	39.50	Circular	1	2	n/a	0.012	0.20	55.71	55.62
MH_G19	MH_G19	MH_G32	11.59	132.66	Circular	1	2	n/a	0.012	0.22	55.73	55.43
DA_I21A	DA_I21A	MH_G32	0.87	17.24	Circular	1	2	n/a	0.012	0.34	55.50	55.43
DA_I22A	DA_I22A	MH_G32	0.86	2.33	Circular	1	2	n/a	0.012	0.51	55.46	55.43
DA_I23A	DA_I23A	DA_I23	5.59	4.09	Circular	1	1.5	n/a	0.012	2.11	56.86	56.70
MH_G15	MH_G15	MH_G16	72.13	282.48	Box	1	4	4	0.012	0.10	49.29	49.00
MH_G45	MH_G45	MH_G16	6.53	31.50	Circular	1	2	n/a	0.012	0.22	55.21	55.13
MH_G16A	MH_G16A	MH_G16	0.01	41.06	Circular	1	2	n/a	0.012	0.17	55.21	55.13
DA_I18	DA_I18	MH_G17	6.02	19.15	Circular	1	2	n/a	0.012	0.42	56.10	56.00
DA_I19	DA_I19	MH_G17	6.08	4.65	Circular	1	2	n/a	0.012	0.55	56.05	56.00
DA_I20	DA_I20	MH_G18A	5.66	32.26	Circular	1	2	n/a	0.012	0.20	55.78	55.71
DA_I21	DA_I21	MH_G19	5.66	18.81	Circular	1	2	n/a	0.012	0.30	55.80	55.73
DA_I22	DA_I22	MH_G19	5.95	4.93	Circular	1	2	n/a	0.012	0.53	55.78	55.73
MH_G14	MH_G14	MH_G15	51.27	306.96	Circular	1	4	n/a	0.012	0.10	50.59	50.29
MH_G49	MH_G49	MH_G15	10.20	27.45	Circular	1	2	n/a	0.012	0.31	52.60	52.50
MH_G15A	MH_G15A	MH_G15	13.53	39.93	Circular	1	2	n/a	0.012	0.22	56.35	56.25
DA_I16	DA_I16	MH_G45	0.54	17.84	Circular	1	2	n/a	0.012	0.40	55.99	55.90
DA_I17	DA_I17	MH_G45	6.05	5.60	Circular	1	2	n/a	0.012	0.89	55.99	55.90
DA_120A	DA_I20A	DA_I20	3.56	27.42	Circular	1	1	n/a	0.012	0.42	57.41	57.29
MH_G13	MH_G13	MH_G14	43.66	105.72	Circular	1	4	n/a	0.012	0.11	50.71	50.59
MH_G52	MH_G52	MH_G14	8.44	27.75	Circular	1	2	n/a	0.012	0.31	57.10	57.00
DA_I13	DA_I13	MH_G49	5.06	18.43	Circular	1	2	n/a	0.012	0.44	56.39	56.29
DA_I14	DA_I14	MH_G49	5.15	5.37	Circular	1	2	n/a	0.012	1.01	56.39	56.29
DA_I15	DA_I15	MH_G15A	13.53	31.14	Circular	1	2	n/a	0.012	1.85	56.99	56.35
MH_G11	MH_G11	MH_G13	41.37	107.35	Circular	1	4	n/a	0.012	0.11	53.79	53.67
MH_G12	MH_G12	MH_G13	2.76	41.13	Circular	1	2	n/a	0.012	0.22	57.43	57.33
DA_I11	DA_I11	MH_G52	4.03	17.22	Circular	1	2	n/a	0.012	0.58	57.22	57.10
DA_I12	DA_I12	MH_G52	4.43	2.43	Circular	1	2	n/a	0.012	2.02	57.22	57.10
DA_I15A	DA_I15A	DA_I15	10.86	20.63	Circular	2	2	n/a	0.012	0.45	59.09	58.99
MH_G10	MH_G10	MH_G11	41.54	114.97	Circular	1	4	n/a	0.012	0.11	53.92	53.79
DA_I10	DA_I10	MH_G12	2.76	50.75	Circular	1	2	n/a	0.012	0.87	57.91	57.43
DA_I8	DA_I8	MH_G10	1.84	2.48	Circular	1	2	n/a	0.012	0.43	54.86	54.83

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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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ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER — STATE OF TEXAS — ENTECH CIVIL ENGINEERS, INC F-6932
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

HYDRAULIC DATA SHEET

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 33 OF 227	

PLOTTED: 3/6/2026 3:04 PM

FILE PATH: N:\0030-23-101\3 - Design\Plan Set\14 AUTOCAD SHEETS\PLAN & PROFILE\HYDRAULIC DATA SHEETS.dwg

SYSTEM GESSNER: CONVEYANCE CONFIGURATION DATA												
ID	UPSTREAM ID	DOWNSTREAM ID	DISCHARGE (CFS)	LENGTH (FT)	SHAPE	NO. BARRELS	RISE (FT)	SPAN (FT)	N	SLOPE %	UPSTREAM INVERT (FT)	DOWNSTREAM INVERT (FT)
MH_G9	MH_G9	MH_G10	28.89	43.67	Circular	1	4	n/a	0.012	0.16	54.00	53.92
MH_G10A	MH_G10A	MH_G10	11.45	55.36	Circular	1	2.5	n/a	0.012	0.15	54.59	54.50
DA_I9	DA_I9	DA_I10	1.72	41.07	Circular	1	2	n/a	0.012	0.32	58.05	57.91
MH_G7	MH_G7	MH_G9	14.63	153.39	Circular	1	4	n/a	0.012	0.17	54.27	54.00
EX_I8A	EX_I8A	MH_G9	14.73	22.99	Circular	1	2.5	n/a	0.012	0.13	54.72	54.69
MH_G8	MH_G8	MH_G10A	7.79	45.27	Circular	1	2.5	n/a	0.013	0.10	54.64	54.59
DA_19A	DA_19A	MH_G10A	3.71	56.23	Circular	1	1.25	n/a	0.013	0.33	56.51	56.32
MH_G6	MH_G6	MH_G7	14.63	176.69	Circular	1	4	n/a	0.012	0.18	54.60	54.27
MHD	MHD	MH_G8	5.07	121.89	Circular	1	2	n/a	0.012	0.10	54.76	54.64
DA_17	DA_17	MH_G8	0.67	10.50	Circular	1	2	n/a	0.012	23.79	57.72	54.39
DA_17A	DA_17A	MH_G8	2.26	69.12	Circular	1	1.25	n/a	0.013	0.33	56.93	56.69
MH_G4	MH_G4	MH_G6	14.63	156.41	Circular	1	3	n/a	0.012	0.18	55.90	55.61
DA_16	DA_16	MHD	5.07	34.45	Circular	1	2	n/a	0.012	5.46	57.43	55.36
DA_I3	DA_I3	MH_G4	2.41	5.02	Circular	1	2	n/a	0.012	0.32	56.03	56.00
MH_G3	MH_G3	MH_G4	12.39	46.94	Circular	1	2	n/a	0.012	0.22	56.11	56.00
DA_16A	DA_16A	DA_16	2.75	45.06	Circular	1	2	n/a	0.012	0.20	58.32	58.23
MHB	MHB	MH_G3	9.98	65.03	Circular	1	1.5	n/a	0.012	2.46	57.91	56.21
DA_12	DA_12	MH_G3	2.59	28.89	Circular	1	1.5	n/a	0.013	3.09	57.11	56.11
DA_15	DA_15	MHB	3.58	10.20	Circular	1	1.5	n/a	0.012	0.22	58.02	57.99
DA_15B	DA_15B	MHB	6.51	22.03	Circular	1	2	n/a	0.013	0.33	59.85	59.77
MHC	MHC	DA_12	1.92	44.35	Circular	1	1.5	n/a	0.013	0.31	57.26	57.11
MHA	MHA	DA_15	3.04	8.83	Circular	1	1.5	n/a	0.012	0.24	58.05	58.02
DA_I1	DA_I1	MHC	1.92	5.74	Circular	1	1.5	n/a	0.013	2.92	57.53	57.26
DA_14	DA_14	MHA	3.04	27.35	Circular	1	1.5	n/a	0.012	0.33	58.15	58.05
DA_14A	DA_14A	DA_14	2.54	17.86	Circular	1	1	n/a	0.012	0.44	58.20	58.11

SYSTEM MAHONING: CONVEYANCE CONFIGURATION DATA												
ID	UPSTREAM ID	DOWNSTREAM ID	DISCHARGE (CFS)	LENGTH (FT)	SHAPE	NO. BARRELS	RISE (FT)	SPAN (FT)	N	SLOPE %	UPSTREAM INVERT (FT)	DOWNSTREAM INVERT (FT)
MH_B6	MH_B6	M	81.72	112.98	Circular	1	7	n/a	0.013	0.05	41.00	40.94
MH_B5	MH_B5	MH_B6	81.72	147.17	Circular	1	6.5	n/a	0.013	0.10	43.87	43.73
MH_B2	MH_B2	MH_B5	10.15	67.59	Circular	1	3	n/a	0.012	0.56	53.50	53.12
MH_B7	MH_B7	MH_B5	16.84	29.37	Circular	1	4	n/a	0.012	0.31	50.23	50.14
MH_V9	MH_V9	MH_B5	64.87	100.41	Box	1	3	8.00	0.012	0.12	49.12	49.00
DA_I64	DA_I64	MH_B2	7.22	7.21	Circular	1	2	n/a	0.013	0.28	54.52	54.50
DA_I65	DA_I65	MH_B2	3.07	14.38	Circular	1	2	n/a	0.013	0.21	54.53	54.50
MH_B1	MH_B1	MH_B7	14.80	420.77	Circular	1	3	n/a	0.012	0.49	53.29	51.23
DA_I62A	DA_I62A	MH_B7	2.74	23.42	Circular	1	2	n/a	0.013	0.26	52.06	52.00
DA_I64A	DA_I64A	MH_B7	0.56	3.17	Circular	1	2	n/a	0.013	1.26	52.04	52.00
V_7A	V_7A	MH_V9	62.31	307.28	Box	1	3	8.00	0.012	0.10	49.43	49.12
DA_I62	DA_I62	MH_V9	4.66	3.82	Circular	1	2	n/a	0.013	0.52	49.64	49.62
DA_I63	DA_I63	MH_V9	2.18	11.76	Circular	1	2	n/a	0.013	0.34	49.66	49.62
MH_B1A	MH_B1A	MH_B1	7.21	54.01	Circular	1	2	n/a	0.013	0.296	54.46	54.30
MH_B2A	MH_B2A	MH_B1	7.70	31.12	Circular	1	2	n/a	0.013	0.321	54.40	54.30
MH_V6	MH_V6	V_7A	62.31	58.21	Box	1	3	8	0.012	0.103	51.88	51.82
DA_I73	DA_I73	MH_B1A	3.35	13.93	Circular	1	2	n/a	0.013	0.43	54.52	54.46
DA_I74	DA_I74	MH_B1A	3.90	4.57	Circular	1	2	n/a	0.013	0.88	54.50	54.46
DA_I71	DA_I71	MH_B2A	3.49	14.14	Circular	1	2	n/a	0.013	0.42	54.46	54.40
DA_I72	DA_I72	MH_B2A	4.26	4.24	Circular	1	2	n/a	0.013	0.94	54.44	54.40
MH_V4	MH_V4	MH_V6	59.31	221.40	Box	1	3	8.00	0.012	0.09	52.08	51.88
DA_I60	DA_I60	MH_V6	3.96	3.60	Circular	1	2	n/a	0.013	0.56	52.52	52.50
DA_I61	DA_I61	MH_V6	4.16	11.61	Circular	1	2	n/a	0.013	0.345	52.54	52.50
MH_V2A	MH_V2A	MH_V4	59.31	245.99	Box	1	3	8	0.012	0.13	52.40	52.08
MH_V2	MH_V2	MH_V2A	58.39	48.97	Box	1	3	7	0.012	0.102	52.45	52.40
DA_I59A	DA_I59A	MH_V2A	1.83	12.60	Circular	1	2	n/a	0.013	0.318	53.14	53.10
MH_V1	MH_V1	MH_V2	57.20	71.88	Box	1	3	7	0.012	0.111	52.53	52.45
DA_I58	DA_I58	MH_V2	3.75	3.19	Circular	1	2	n/a	0.013	0.627	53.42	53.40
DA_I59	DA_I59	MH_V2	1.22	11.78	Circular	1	2	n/a	0.013	0.424	53.45	53.40
MH_M8	MH_M8	MH_V1	56.69	95.57	Box	1	3	7	0.012	0.105	52.63	52.53
DA_I59B	DA_I59B	MH_V1	0.80	11.50	Circular	1	2	n/a	0.012	0.261	53.56	53.53

NOTICE:
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VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

Signature valid for six months.

Date

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

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

HYDRAULIC DATA SHEET

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 34 OF 227	

PLOTTED: 3/6/2026 3:04 PM

FILE PATH: N:\0030-23-101\3 - Design\Plan Set\14 AUTOCAD SHEETS\PLAN & PROFILE\HYDRAULIC DATA SHEETS.dwg

SYSTEM MAHONING: CONVEYANCE CONFIGURATION DATA

ID	UPSTREAM ID	DOWNSTREAM ID	DISCHARGE (CFS)	LENGTH (FT)	SHAPE	NO. BARRELS	RISE (FT)	SPAN (FT)	N	SLOPE %	UPSTREAM INVERT (FT)	DOWNSTREAM INVERT (FT)
MH_M7	MH_M7	MH_M8	56.69	311.07	Box	1	3	7	0.012	0.087	52.90	52.63
MH_M6	MH_M6	MH_M7	47.95	274.72	Box	1	3	7	0.012	0.106	53.19	52.90
MH_M7A	MH_M7A	MH_M7	9.09	26.28	Circular	1	2	n/a	0.013	0.228	53.96	53.90
MH_M7B	MH_M7B	MH_M7	5.41	29.60	Circular	1	2	n/a	0.013	0.27	53.98	53.90
MH_M5	MH_M5	MH_M6	43.11	278.37	Box	1	3	7	0.012	0.101	53.47	53.19
DA_I53	DA_I53	MH_M6	2.36	11.99	Circular	1	2	n/a	0.013	0.584	52.76	52.69
MH_M6A	MH_M6A	MH_M6	6.52	24.84	Circular	1	2	n/a	0.013	0.362	52.78	52.69
DA_I54	DA_I54	MH_M7A	3.31	12.59	Circular	1	2	n/a	0.013	0.318	54.00	53.96
DA_I55	DA_I55	MH_M7A	5.89	9.31	Circular	1	2	n/a	0.013	0.43	54.00	53.96
DA_I56	DA_I56	MH_M7B	1.45	14.40	Circular	1	2	n/a	0.013	0.417	54.04	53.98
DA_I57	DA_I57	MH_M7B	4.04	4.19	Circular	1	2	n/a	0.013	0.954	54.02	53.98
MH_M4	MH_M4	MH_M5	34.20	269.87	Box	1	3	7	0.012	0.1	53.74	53.47
DA_I50	DA_I50	MH_M5	2.13	15.68	Circular	1	2	n/a	0.013	0.255	54.51	54.47
MH_M5A	MH_M5A	MH_M5	11.98	20.39	Circular	1	2	n/a	0.013	0.441	54.56	54.47
DA_I51	DA_I51	MH_M6A	3.18	15.35	Circular	1	2	n/a	0.013	0.391	53.26	53.20
DA_I52	DA_I52	MH_M6A	3.38	3.06	Circular	1	2	n/a	0.013	1.309	53.24	53.20
MH_M3	MH_M3	MH_M4	25.80	271.48	Box	1	3	7	0.012	0.096	54.00	53.74
DA_I47	DA_I47	MH_M4	2.21	17.13	Circular	1	2	n/a	0.013	0.234	54.78	54.74
MH_M4A	MH_M4A	MH_M4	10.86	22.92	Circular	1	2	n/a	0.013	0.393	54.83	54.74
DA_I48	DA_I48	MH_M5A	5.66	19.16	Circular	1	2	n/a	0.013	0.313	54.62	54.56
DA_I49	DA_I49	MH_M5A	6.36	3.79	Circular	1	2	n/a	0.013	0.528	54.58	54.56
MH_M2	MH_M2	MH_M3	17.40	294.42	Box	1	3	6	0.012	0.102	54.30	54.00
DA_I43	DA_I43	MH_M3	10.09	23.93	Circular	1	2	n/a	0.013	0.334	55.54	55.46
DA_I44	DA_I44	MH_M3	2.35	17.12	Circular	1	2	n/a	0.013	0.234	55.50	55.46
DA_I45	DA_I45	MH_M4A	5.13	18.65	Circular	1	2	n/a	0.013	0.429	54.91	54.83
DA_I46	DA_I46	MH_M4A	5.77	3.79	Circular	1	2	n/a	0.013	0.791	54.86	54.83
MH_M1A	MH_M1A	MH_M2	9.62	138.96	Box	1	3	6	0.012	0.216	54.60	54.30
MH_M2A	MH_M2A	MH_M2	2.47	36.49	Circular	1	2	n/a	0.013	0.219	53.38	53.30
MH_M2B	MH_M2B	MH_M2	8.49	25.08	Circular	1	2	n/a	0.013	0.319	53.38	53.30
DA_I42	DA_I42	DA_I43	4.75	23.64	Circular	1	2	n/a	0.013	0.212	55.59	55.54
MH_M1	MH_M1	MH_M1A	9.62	135.32	Box	1	3	6	0.012	0.103	55.64	55.50
DA_I38	DA_I38	MH_M2A	1.47	15.85	Circular	1	2	n/a	0.013	0.252	57.04	57.00
DA_I39	DA_I39	MH_M2A	1.04	3.67	Circular	1	2	n/a	0.013	0.818	57.03	57.00
DA_I40	DA_I40	MH_M2B	3.95	15.69	Circular	1	2	n/a	0.013	0.255	57.04	57.00
DA_I41	DA_I41	MH_M2B	4.57	3.74	Circular	1	2	n/a	0.013	0.802	57.03	57.00
DA_I37	DA_I37	MH_M1	2.15	12.51	Circular	1	2	n/a	0.013	0.32	56.04	56.00
MH_M1B	MH_M1B	MH_M1	7.57	27.90	Circular	1	2	n/a	0.013	0.215	56.06	56.00
DA_I35	DA_I35	MH_M1B	3.59	15.97	Circular	1	2	n/a	0.013	0.313	56.45	56.40
DA_I36	DA_I36	MH_M1B	4.02	3.64	Circular	1	2	n/a	0.013	1.373	56.45	56.40

SYSTEM BRAEBURN: CONVEYANCE CONFIGURATION DATA

ID	UPSTREAM ID	DOWNSTREAM ID	DISCHARGE (CFS)	LENGTH (FT)	SHAPE	NO. BARRELS	RISE (FT)	SPAN (FT)	N	SLOPE %	UPSTREAM INVERT (FT)	DOWNSTREAM INVERT (FT)
MH_B12	MH_B12	BO	8.34	46.08	Circular	1	3.5	n/a	0.012	0.521	48.00	47.76
MH_B11	MH_B11	MH_B12	8.34	24.77	Circular	1	3	n/a	0.013	0.242	51.86	51.80
MH_B10	MH_B10	MH_B11	8.34	23.11	Circular	1	3	n/a	0.013	0.26	51.92	51.86
MH_B9	MH_B9	MH_B10	4.84	170.45	Circular	1	2.5	n/a	0.013	0.499	53.53	52.68
DA_I66	DA_I66	MH_B10	2.07	3.37	Circular	1	2	n/a	0.013	0.594	52.94	52.92
DA_I67	DA_I67	MH_B10	2.39	22.92	Circular	1	2	n/a	0.013	0.262	52.98	52.92
MH_B8	MH_B8	MH_B9	4.84	133.91	Circular	1	2.5	n/a	0.013	0.508	54.21	53.53
DA_I68	DA_I68	MH_B8	2.45	3.95	Circular	1	2	n/a	0.013	0.506	55.38	55.36
MH_B8A	MH_B8A	MH_B8	2.48	51.07	Circular	1	2	n/a	0.013	0.235	54.48	54.36
DA_I69	DA_I69	MH_B8A	1.24	4.14	Circular	1	2	n/a	0.013	0.484	54.50	54.48
DA_I70	DA_I70	MH_B8A	1.28	14.63	Circular	1	2	n/a	0.013	0.273	54.52	54.48

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

Signature valid for six months.

Date

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

ENTECH CIVIL ENGINEERS, INC.
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. STATE OF TEXAS F-6932 RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER

Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

HYDRAULIC DATA SHEET

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 35 OF 227	

PLOTTED: 3/6/2026 3:04 PM

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PLOTTED: 3/6/2026 3:04 PM

FILE PATH: N:\0030-23-101\3 - Design\Plan Set\14 AUTOCAD SHEETS\PLAN & PROFILE\HYDRAULIC DATA SHEETS.dwg

SYSTEM GESSNER: HYDRAULIC COMPUTATION DATA

ID	UPSTREAM ID	DOWNSTREAM ID	UPSTREAM HGL (FT)	DOWNSTREAM HGL (FT)	DOWNSTREAM NATURAL GROUND	DISCHARGE (CFS)	CAPACITY (FT)	SLOPE %	LOSS	FULL FLOW VELOCITY (FT/S)	UNIFORM VELOCITY (FT/S)	UNIFORM DEPTH (FT)	ACTUAL VELOCITY (FT/S)	ACTUAL DEPTH (FT)	100-YEAR UPSTREAM HGL (FT)
MH_G31	MH_G31	OUTFALL	49.84	49.76	45.68	148.91	216.64	0.10	0.04	5.21	5.99	4.31	3.87	7.00	61.70
MH_G28	MH_G28	MH_G31	50.66	49.84	59.43	148.91	198.02	0.09	0.58	4.57	5.47	2.72	4.43	3.36	61.70
MH_G27A	MH_27A	MH_G28	51.08	50.66	57.64	147.48	237.15	0.14	0.36	5.48	6.27	2.35	4.04	3.65	61.70
MH_G28A	MH_G28A	MH_G28	54.30	53.80	57.64	3.05	16.15	0.44	0.29	4.76	3.96	0.59	3.96	0.59	61.70
MH_T2	MH_T2	MH_27A	54.71	54.04	58.55	10.96	13.09	0.28	0.40	3.85	4.64	1.41	5.64	1.19	61.70
MH_G27	MH_G27	MH_27A	51.86	51.08	58.55	136.90	146.37	0.09	0.74	4.23	5.32	3.22	4.55	3.76	61.70
MH_G28B	MH_G28B	MH_G28A	54.56	54.30	59.00	3.05	14.38	0.35	0.25	4.23	3.64	0.62	2.22	0.90	61.70
DA_I32B	DA_I32B	MH_G27	54.91	54.74	58.65	1.59	12.18	0.25	0.12	3.59	2.70	0.48	3.14	0.44	61.70
MH_G26D	MH_G26D	MH_G27	52.13	51.86	58.65	136.06	148.89	0.11	0.21	4.30	5.73	2.97	4.25	4.00	61.70
DA_I31	DA_I31	MH_G28B	54.57	54.56	58.94	1.20	10.96	0.20	0.01	3.23	2.29	0.45	0.73	1.05	61.70
DA_I32	DA_I32	MH_G28B	54.59	54.56	58.94	1.88	10.96	0.21	0.03	3.23	2.63	0.56	1.13	1.05	61.70
MH_G26B	MH_G26B	MH_G26D	52.27	52.13	58.93	135.53	151.80	0.10	0.04	4.39	5.70	2.97	4.24	4.00	61.70
MH_G26E	MH_G26E	MH_G26D	53.86	53.62	58.93	1.49	12.71	0.27	0.07	3.74	2.71	0.46	3.08	0.42	61.70
MH_G26	MH_G26	MH_G26B	52.47	52.27	59.26	125.97	153.50	0.10	0.00	4.43	5.53	2.85	3.94	4.00	61.70
MH_G26C	MH_G26C	MH_G26B	56.16	55.49	59.26	10.96	11.16	0.20	0.37	3.29	3.97	1.64	5.64	1.19	61.70
DA_I30	DA_I30	MH_G26E	54.05	53.86	60.47	1.49	11.82	0.22	0.10	3.49	2.53	0.48	2.20	0.54	61.70
MH_G23	MH_G23	MH_G26	53.12	52.47	59.43	114.03	82.22	0.12	0.13	3.81	5.76	4.00	5.70	4.00	61.70
MH_G25	MH_G25	MH_G26	55.03	54.77	59.43	6.64	11.42	0.22	0.02	3.36	3.81	1.09	4.75	0.91	61.70
MH_G24A	MH_G24A	MH_G26	52.54	52.47	59.43	9.25	14.11	0.34	0.01	4.16	4.83	1.17	2.95	2.00	61.70
MH_G21	MH_G21	MH_G23	53.34	53.12	59.74	107.49	74.60	0.11	0.12	3.46	5.43	4.00	5.37	4.00	61.70
MH_G22	MH_G22	MH_G23	56.50	55.57	59.74	8.11	12.47	0.26	0.33	3.67	4.23	1.17	5.07	1.01	61.70
DA_I29	DA_I29	MH_G25	55.57	55.03	59.98	6.64	11.25	0.21	0.41	3.32	3.69	1.12	3.88	1.07	61.70
MH_G24	MH_G24	MH_G24A	56.34	55.19	59.29	9.25	13.89	0.31	0.54	4.09	4.69	1.20	5.31	1.09	61.70
MH_G20	MH_G20	MH_G21	53.80	53.34	60.32	101.96	84.81	0.10	0.15	3.93	5.15	3.96	5.10	4.00	61.70
MH_G21A	MH_G21A	MH_G21	56.08	55.82	60.32	7.62	11.07	0.20	0.01	3.26	3.75	1.23	4.97	0.98	61.70
DA_I24	DA_I24	MH_G22	56.55	56.50	58.78	4.03	15.81	0.41	0.04	4.66	4.20	0.69	1.60	1.50	61.70
DA_I25	DA_I25	MH_G22	56.54	56.50	58.78	4.09	18.22	0.55	0.04	5.37	4.66	0.65	1.62	1.50	61.70
DA_I28	DA_I28	DA_I29	55.58	55.57	59.87	2.19	11.02	0.21	0.00	3.25	2.76	0.60	0.87	1.50	61.70
DA_I29A	DA_I29A	DA_I29	55.61	55.57	59.87	3.40	13.74	0.32	0.03	4.05	3.65	0.68	1.34	1.50	61.70
DA_I26	DA_I26	MH_G24	56.38	56.34	58.66	4.61	17.12	0.48	0.04	5.04	4.60	0.71	1.59	1.74	61.70
DA_I27	DA_I27	MH_G24	56.38	56.34	58.66	4.65	22.36	0.83	0.04	6.59	5.62	0.62	1.61	1.74	61.70
MH_G18	MH_G18	MH_G20	54.24	53.80	60.79	91.63	83.95	0.09	0.10	3.89	4.94	3.71	4.58	4.00	61.70
MH_G32	MH_G32	MH_G20	57.20	56.66	60.79	13.04	11.10	0.24	0.25	3.27	4.26	2.00	6.04	1.30	61.70
DA_I23	DA_I23	MH_G21A	56.19	56.08	61.57	7.62	10.88	0.20	0.02	3.20	3.75	1.23	4.07	1.15	61.70
DA_I28A	DA_I28A	DA_I28	55.60	55.58	59.85	1.00	4.06	0.34	0.01	3.06	2.75	0.42	0.82	1.25	61.70
MH_G16	MH_G16	MH_G18	54.75	54.24	61.04	77.06	63.14	0.11	0.08	3.66	4.87	3.96	4.82	4.00	61.70
MH_G17	MH_G17	MH_G18	58.40	56.87	61.04	12.09	11.56	0.22	0.81	3.40	4.13	1.76	5.86	1.25	61.70
MH_G18A	MH_G18A	MH_G18	56.70	56.46	61.04	5.66	10.96	0.20	0.02	3.23	3.48	1.03	4.52	0.84	61.70
MH_G19	MH_G19	MH_G32	57.95	57.20	60.38	11.59	11.48	0.22	0.48	3.39	4.20	1.64	3.94	1.77	61.70
DA_I21A	DA_I21A	MH_G32	57.20	57.20	60.38	0.87	14.24	0.34	0.00	4.20	2.52	0.33	0.30	1.77	61.70
DA_I22A	DA_I22A	MH_G32	57.20	57.20	60.38	0.86	17.58	0.52	0.00	5.18	2.90	0.30	0.29	1.77	61.70
DA_123A	DA_I23A	DA_I23	58.26	57.43	61.12	5.59	16.53	2.11	0.38	8.66	8.45	0.60	6.51	0.73	61.70
MH_G15	MH_G15	MH_G16	55.27	54.75	60.34	72.13	62.82	0.09	0.13	3.64	4.55	3.96	4.51	4.00	61.70
MH_G45	MH_G45	MH_G16	56.31	56.04	60.34	6.53	11.47	0.22	0.07	3.38	3.75	1.09	4.73	0.91	61.70
MH_G16A	MH_G16A	MH_G16	55.39	55.18	60.34	0.01	10.21	0.17	0.00	3.01	0.51	0.05	0.42	0.05	61.70
DA_I18	DA_I18	MH_G17	58.47	58.40	60.19	6.02	15.94	0.43	0.06	4.70	4.73	0.85	1.92	2.00	61.70
DA_I19	DA_I19	MH_G17	58.46	58.40	60.19	6.08	18.12	0.54	0.06	5.34	5.19	0.80	1.94	2.00	61.70
DA_I20	DA_I20	MH_G18A	56.83	56.70	61.17	5.66	10.84	0.20	0.04	3.20	3.48	1.03	3.64	0.99	61.70
DA_I21	DA_I21	MH_G19	58.01	57.95	59.61	5.66	13.43	0.30	0.05	3.95	4.07	0.91	1.80	2.00	61.70
DA_I22	DA_I22	MH_G19	58.01	57.95	59.61	5.95	17.85	0.54	0.06	5.26	5.14	0.79	1.89	2.00	61.70
MH_G14	MH_G14	MH_G15	55.80	55.27	60.88	51.27	48.18	0.09	0.19	3.55	4.19	3.76	4.08	4.00	61.70
MH_G49	MH_G49	MH_G15	55.73	55.27	60.88	10.20	13.61	0.31	0.41	4.01	4.76	1.29	3.25	2.00	61.70
MH_G15A	MH_G15A	MH_G15	57.95	57.57	60.88	13.53	11.56	0.26	0.04	3.41	4.42	2.00	6.13	1.32	61.70
DA_I16	DA_I16	MH_G45	56.35	56.31	59.83	0.54	15.56	0.41	0.04	4.58	2.33	0.25	1.17	0.41	61.70
DA_I17	DA_I17	MH_G45	57.24	56.66	59.83	6.05	23.13	0.90	0.33	6.82	6.21	0.70	5.52	0.76	61.70
DA_120A	DA_I20A	DA_I20	58.89	58.10	60.85	3.56	2.47	0.75	0.32	2.93	4.65	1.00	5.25	0.81	61.70
MH_G13	MH_G13	MH_G14	55.92	55.80	61.60	43.66	51.00	0.11	0.04	3.75	4.62	2.82	3.47	4.00	61.70
MH_G52	MH_G52	MH_G14	58.88	58.04	61.60	8.44	13.54	0.31	0.66	3.99	4.54	1.14	5.14	1.04	61.70
DA_I13	DA_I13	MH_G49	57.51	57.06	60.19	5.06	16.19	0.43	0.30	4.77	4.54	0.77	4.54	0.77	61.70
DA_I14	DA_I14	MH_G49	57.52	56.98	60.19	5.15	24.67	1.02	0.30	7.27	6.22	0.62	5.41	0.69	61.70
DA_I15	DA_I15	MH_G15A	58.56	57.33	61.27	13.53	33.31	1.85	0.24	9.81	10.05	0.89	8.82	0.98	61.70

NOTES:
1. 100-YEAR HGL TAKEN FROM XPSWMM MODEL (VERSION 2021.3) TO ACCOUNT FOR BOTH SUB-SURFACE STORM SEWER CAPACITY AND THE OVERLAND SHEET FLOW AND PONDING. REFER TO BRAEBURN GLEN DRAINAGE IMPROVEMENTS REPORT, PREPARED BY ENTECH INC, DATED MARCH 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.

ENTECH
CIVIL ENGINEERS, INC.
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED
PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

HYDRAULIC DATA SHEET

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 36 OF 227	

SYSTEM GESSNER: HYDRAULIC COMPUTATION DATA

ID	UPSTREAM ID	DOWNSTREAM ID	UPSTREAM HGL (FT)	DOWNSTREAM HGL (FT)	DOWNSTREAM NATURAL GROUND	DISCHARGE (CFS)	CAPACITY (FT)	SLOPE %	LOSS	FULL FLOW VELOCITY (FT/S)	UNIFORM VELOCITY (FT/S)	UNIFORM DEPTH (FT)	ACTUAL VELOCITY (FT/S)	ACTUAL DEPTH (FT)	100-YEAR UPSTREAM HGL (FT)
MH_G11	MH_G11	MH_G13	56.22	55.92	61.44	41.37	50.63	0.10	0.03	3.73	4.38	2.82	5.67	2.25	61.70
MH_G12	MH_G12	MH_G13	58.10	57.91	61.44	2.76	11.41	0.21	0.01	3.36	2.97	0.68	3.66	0.58	61.70
DA_I11	DA_I11	MH_G52	58.92	58.88	61.08	4.03	18.65	0.58	0.03	5.49	4.75	0.63	1.36	1.78	61.70
DA_I12	DA_I12	MH_G52	58.92	58.88	61.08	4.43	34.87	2.03	0.04	10.27	7.62	0.48	1.50	1.78	61.70
DA_I15A	DA_I15A	DA_I15	60.22	59.78	61.22	10.86	32.95	0.45	0.31	4.85	4.69	0.79	4.69	0.79	61.70
MH_G10	MH_G10	MH_G11	56.89	56.22	61.27	41.54	51.01	0.10	0.47	3.75	4.39	2.82	5.21	2.43	61.70
DA_I10	DA_I10	MH_G12	58.79	57.90	62.93	2.76	22.84	0.87	0.30	6.73	4.92	0.47	4.88	0.47	61.70
DA_I8	DA_I8	MH_G10	56.89	56.89	60.64	1.84	16.07	0.43	0.01	4.73	3.40	0.46	0.59	2.00	61.70
MH_G9	MH_G9	MH_G10	57.38	56.89	60.64	28.89	62.45	0.15	0.48	4.60	4.79	1.94	2.89	2.97	61.70
MH_G10A	MH_G10A	MH_G10	57.25	56.89	60.64	11.45	17.16	0.16	0.33	3.23	3.83	1.47	2.37	2.39	61.70
DA_I9	DA_I9	DA_I10	58.84	58.79	62.06	1.72	13.81	0.32	0.04	4.07	2.99	0.48	1.28	0.88	61.70
MH_G7	MH_G7	MH_G9	57.39	57.38	60.92	14.63	64.15	0.17	0.00	4.73	4.17	1.29	1.29	3.38	61.70
EX_I8A	EX_I8A	MH_G9	57.55	57.38	60.92	14.73	16.02	0.13	0.14	3.02	3.67	1.91	3.00	2.50	61.70
MH_G8	MH_G8	MH_G10A	57.90	57.25	62.53	7.79	13.07	0.10	0.63	2.66	2.77	1.39	1.59	2.50	61.70
DA_19A	DA_19A	MH_G10A	57.71	57.25	62.53	3.71	3.71	0.33	0.20	3.03	3.44	1.03	3.78	0.93	61.70
MH_G6	MH_G6	MH_G7	57.41	57.39	61.28	14.63	66.32	0.17	0.01	4.89	4.17	1.29	1.39	3.12	61.70
MHD	MHD	MH_G8	57.98	57.90	61.82	5.07	7.57	0.10	0.03	2.23	2.64	1.17	1.61	2.00	61.70
DA_17	DA_17	MH_G8	58.10	54.50	61.82	0.67	119.53	23.79	0.10	12.45	10.23	0.11	9.88	0.11	61.70
DA_17A	DA_17A	MH_G8	58.04	57.90	61.82	2.26	3.71	0.33	0.07	3.03	3.17	0.71	1.86	1.21	61.70
MH_G4	MH_G4	MH_G6	59.32	57.41	61.36	14.63	30.68	0.18	1.79	4.01	4.31	1.45	3.30	1.80	61.70
DA_16	DA_16	MHD	58.37	55.79	62.97	5.07	57.24	5.46	0.15	16.86	11.24	0.40	10.32	0.43	61.70
DA_I3	DA_I3	MH_G4	59.33	59.32	61.07	2.41	13.75	0.32	0.01	4.05	3.30	0.57	0.77	2.00	61.70
MH_G3	MH_G3	MH_G4	60.69	59.32	61.07	12.39	11.39	0.22	1.24	3.36	4.05	1.88	3.94	2.00	61.70
DA_16A	DA_16A	DA_16	59.13	58.81	61.62	2.75	10.96	0.21	0.14	3.23	2.95	0.68	3.65	0.58	61.70
MHB	MHB	MH_G3	61.47	60.69	62.66	9.98	17.86	2.46	0.25	9.35	10.39	0.80	5.65	1.50	61.70
DA_12	DA_12	MH_G3	60.72	60.69	62.66	2.59	18.46	3.09	0.01	10.47	7.38	0.38	1.47	1.50	61.70
DA_15	DA_15	MHB	61.49	61.47	62.85	3.58	5.33	0.22	0.00	2.79	3.22	0.90	2.02	1.50	61.70
DA_15B	DA_15B	MHB	61.57	61.47	62.85	6.51	13.00	0.33	0.09	4.15	4.16	1.00	2.29	1.70	61.70
MHC	MHC	DA_12	60.76	60.72	61.81	1.92	5.88	0.31	0.02	3.33	2.95	0.59	1.09	1.50	61.70
MHA	MHA	DA_15	61.50	61.49	62.67	3.04	5.61	0.24	0.00	2.94	3.21	0.79	1.72	1.50	61.70
DA_I1	DA_I1	MHC	60.78	60.76	61.37	1.92	17.96	2.93	0.02	10.19	6.64	0.33	1.09	1.50	61.70
DA_14	DA_14	MHA	61.54	61.50	62.13	3.04	6.54	0.34	0.01	3.42	3.66	0.72	1.72	1.50	61.70
DA_14A	DA_14A	DA_14	61.78	61.54	62.44	2.54	2.54	0.44	0.16	3.02	3.68	0.82	3.23	1.00	61.70

SYSTEM MAHONING: HYDRAULIC COMPUTATION DATA

ID	UPSTREAM ID	DOWNSTREAM ID	UPSTREAM HGL (FT)	DOWNSTREAM HGL (FT)	DOWNSTREAM NATURAL GROUND	DISCHARGE (CFS)	CAPACITY (FT)	SLOPE %	LOSS	FULL FLOW VELOCITY (FT/S)	UNIFORM VELOCITY (FT/S)	UNIFORM DEPTH (FT)	ACTUAL VELOCITY (FT/S)	ACTUAL DEPTH (FT)	100-YEAR UPSTREAM HGL (FT)
MH_B6	MH_B6	M	47.97	47.94	41.92	81.72	158.37	0.06	0.01	3.83	3.96	3.70	2.12	7.00	61.70
MH_B5	MH_B5	MH_B6	51.15	47.97	60.89	81.72	173.94	0.10	3.12	4.88	4.94	3.24	3.57	4.24	61.70
MH_B2	MH_B2	MH_B5	55.74	54.00	60.07	10.15	58.28	0.56	1.20	7.09	5.87	0.88	5.84	0.88	61.70
MH_B7	MH_B7	MH_B5	52.53	51.34	60.07	16.84	92.67	0.30	1.07	6.34	5.29	1.20	5.29	1.20	61.70
MH_V9	MH_V9	MH_B5	51.91	51.15	60.07	64.87	145.14	0.12	0.71	4.21	4.85	1.67	3.78	2.15	61.70
DA_I64	DA_I64	MH_B2	55.95	55.74	58.81	7.22	12.81	0.28	0.19	3.80	4.01	1.12	3.53	1.24	61.70
DA_I65	DA_I65	MH_B2	55.78	55.74	58.81	3.07	11.12	0.21	0.04	3.30	2.86	0.75	1.50	1.24	61.70
MH_B1	MH_B1	MH_B7	56.78	52.34	59.68	14.80	54.39	0.49	2.24	6.62	6.22	1.11	6.21	1.11	61.70
DA_I62A	DA_I62A	MH_B7	52.86	52.58	59.68	2.74	12.32	0.27	0.14	3.65	3.03	0.66	3.64	0.58	61.70
DA_I64A	DA_I64A	MH_B7	52.53	52.53	59.68	0.56	27.35	0.27	0.02	3.65	3.30	0.21	0.85	0.53	61.70
V_7A	V_7A	MH_V9	51.99	51.91	59.03	62.31	133.35	0.10	0.01	3.86	4.42	1.76	2.80	2.79	61.70
DA_I62	DA_I62	MH_V9	51.95	51.91	59.03	4.66	17.61	0.52	0.03	5.23	4.46	0.73	1.48	2.00	61.70
DA_I63	DA_I63	MH_V9	51.92	51.91	59.03	2.18	14.19	0.34	0.01	4.21	3.10	0.55	0.69	2.00	61.70
MH_B1A	MH_B1A	MH_B1	56.97	56.78	59.88	7.21	13.25	0.30	0.13	3.93	4.07	1.10	2.30	2.00	61.70
MH_B2A	MH_B2A	MH_B1	56.93	56.78	59.88	7.70	13.80	0.32	0.11	4.09	4.28	1.12	2.45	2.00	61.70
MH_V6	MH_V6	V_7A	53.70	53.06	58.79	62.31	134.79	0.10	0.33	3.90	4.42	1.76	6.30	1.24	61.70
DA_I73	DA_I73	MH_B1A	56.99	56.97	59.14	3.35	15.97	0.43	0.02	4.74	3.82	0.65	1.07	2.00	61.70
DA_I74	DA_I74	MH_B1A	56.99	56.97	59.14	3.90	22.77	0.88	0.02	6.76	5.14	0.58	1.24	2.00	61.70
DA_I71	DA_I71	MH_B2A	56.96	56.93	59.18	3.49	15.85	0.43	0.02	4.70	3.86	0.66	1.11	2.00	61.70
DA_I72	DA_I72	MH_B2A	56.96	56.93	59.18	4.26	23.64	0.94	0.03	7.02	5.40	0.60	1.36	2.00	61.70
MH_V4	MH_V4	MH_V6	53.92	53.70	58.37	59.31	126.18	0.09	0.02	3.64	4.20	1.76	4.08	1.82	61.70
DA_I60	DA_I60	MH_V6	53.76	53.70	58.37	3.96	18.14	0.55	0.07	5.38	4.38	0.66	2.02	1.20	61.70
DA_I61	DA_I61	MH_V6	53.78	53.70	58.37	4.16	14.29	0.34	0.08	4.24	3.74	0.77	2.12	1.20	61.70
MH_V2A	MH_V2A	MH_V4	54.17	53.92	58.87	59.31	151.42	0.12	0.06	4.38	4.70	1.58	4.04	1.84	61.70

NOTES:
1. 100-YEAR HGL TAKEN FROM XPSWMM MODEL (VERSION 2021.3) TO ACCOUNT FOR BOTH SUB-SURFACE STORM SEWER CAPACITY AND THE OVERLAND SHEET FLOW AND PONDING. REFER TO BRAEBURN GLEN DRAINAGE IMPROVEMENTS REPORT, PREPARED BY ENTECH INC, DATED MARCH 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.

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.

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

HYDRAULIC DATA SHEET

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 37 OF 227	

PLOTTED: 3/6/2026 3:04 PM

FILE PATH: N:\0030-23-101\3 - Design\Plan Set\14 AUTOCAD SHEETS\PLAN & PROFILE\HYDRAULIC DATA SHEETS.dwg

SYSTEM MAHONING: HYDRAULIC COMPUTATION DATA															
ID	UPSTREAM ID	DOWNSTREAM ID	UPSTREAM HGL (FT)	DOWNSTREAM HGL (FT)	DOWNSTREAM NATURAL GROUND	DISCHARGE (CFS)	CAPACITY (FT)	SLOPE %	LOSS	FULL FLOW VELOCITY (FT/S)	UNIFORM VELOCITY (FT/S)	UNIFORM DEPTH (FT)	ACTUAL VELOCITY (FT/S)	ACTUAL DEPTH (FT)	100-YEAR UPSTREAM HGL (FT)
MH_V2	MH_V2	MH_V2A	55.31	54.17	58.30	58.39	112.85	0.10	1.07	3.78	4.49	1.86	4.71	1.77	61.70
DA_I59A	DA_I59A	MH_V2A	54.19	54.17	58.30	1.83	13.71	0.31	0.02	4.07	2.87	0.51	1.07	1.07	61.70
MH_V1	MH_V1	MH_V2	55.40	55.31	58.01	57.20	117.82	0.11	0.07	3.94	4.63	1.76	2.86	2.86	61.70
DA_I58	DA_I58	MH_V2	55.33	55.31	58.01	3.75	19.27	0.62	0.02	5.72	4.49	0.62	1.22	1.91	61.70
DA_I59	DA_I59	MH_V2	55.31	55.31	58.01	1.22	15.85	0.43	0.00	4.70	2.84	0.39	0.40	1.91	61.70
MH_M8	MH_M8	MH_V1	55.45	55.40	58.49	56.69	114.24	0.10	0.01	3.84	4.36	1.86	2.83	2.87	61.70
DA_I59B	DA_I59B	MH_V1	55.40	55.40	58.49	0.80	13.46	0.25	0.00	3.69	2.20	0.35	0.26	1.87	61.70
MH_M7	MH_M7	MH_M8	55.80	55.45	58.56	56.69	104.05	0.10	0.26	3.49	4.36	1.86	2.87	2.82	61.70
MH_M6	MH_M6	MH_M7	56.09	55.80	58.89	47.95	114.74	0.11	0.25	3.85	4.34	1.58	2.37	2.90	61.70
MH_M7A	MH_M7A	MH_M7	56.21	55.80	58.89	9.09	11.63	0.23	0.37	3.45	3.84	1.41	2.95	1.90	61.70
MH_M7B	MH_M7B	MH_M7	55.90	55.80	58.89	5.41	12.65	0.27	0.09	3.75	3.66	0.95	1.76	1.90	61.70
MH_M5	MH_M5	MH_M6	56.15	56.09	59.81	43.11	112.01	0.11	0.02	3.76	4.15	1.49	2.12	2.90	61.70
DA_I53	DA_I53	MH_M6	56.11	56.09	59.81	2.36	18.59	0.58	0.01	5.52	3.85	0.50	0.75	2.00	61.70
MH_M6A	MH_M6A	MH_M6	56.29	56.09	59.81	6.52	14.65	0.37	0.17	4.34	4.33	0.97	2.08	2.00	61.70
DA_I54	DA_I54	MH_M7A	56.23	56.21	58.28	3.31	13.72	0.32	0.02	4.07	3.40	0.70	1.06	2.00	61.70
DA_I55	DA_I55	MH_M7A	56.28	56.21	58.28	5.89	15.95	0.42	0.06	4.73	4.42	0.88	1.87	2.00	61.70
DA_I56	DA_I56	MH_M7B	55.91	55.90	58.44	1.45	15.71	0.42	0.00	4.66	2.97	0.43	0.47	1.92	61.70
DA_I57	DA_I57	MH_M7B	55.93	55.90	58.44	4.04	23.77	0.95	0.03	7.05	5.35	0.58	1.30	1.92	61.70
MH_M4	MH_M4	MH_M5	56.18	56.15	60.21	34.20	111.71	0.10	0.00	4.06	3.76	1.30	1.82	2.68	61.70
DA_I50	DA_I50	MH_M5	56.16	56.15	60.21	2.13	12.29	0.25	0.01	3.65	2.78	0.59	0.76	1.68	61.70
MH_M5A	MH_M5A	MH_M5	56.55	56.15	60.21	11.98	16.17	0.44	0.35	4.79	5.31	1.35	4.26	1.68	61.70
DA_I51	DA_I51	MH_M6A	56.32	56.29	59.32	3.18	15.21	0.39	0.02	4.51	3.63	0.65	1.01	2.00	61.70
DA_I52	DA_I52	MH_M6A	56.31	56.29	59.32	3.38	27.84	1.31	0.02	5.84	5.70	0.49	1.08	2.00	61.70
MH_M3	MH_M3	MH_M4	56.24	56.18	60.72	25.80	109.29	0.09	0.04	3.97	3.31	1.11	1.51	2.44	61.70
DA_I47	DA_I47	MH_M4	56.20	56.18	60.72	2.21	11.76	0.23	0.01	3.49	2.69	0.62	0.91	1.44	61.70
MH_M4A	MH_M4A	MH_M4	56.64	56.18	60.72	10.86	15.25	0.39	0.39	4.53	4.94	1.32	4.49	1.44	61.70
DA_I48	DA_I48	MH_M5A	56.62	56.55	59.31	5.66	13.62	0.31	0.05	4.04	3.91	0.94	1.80	1.99	61.70
DA_I49	DA_I49	MH_M5A	56.62	56.55	59.31	6.36	17.68	0.52	0.06	5.25	4.89	0.87	2.03	1.99	61.70
MH_M2	MH_M2	MH_M3	56.31	56.24	60.90	17.40	91.99	0.10	0.06	3.97	3.13	0.93	1.30	2.24	61.70
DA_I43	DA_I43	MH_M3	57.27	56.60	60.90	10.09	14.07	0.33	0.44	4.17	4.59	1.32	5.47	1.14	61.70
DA_I44	DA_I44	MH_M3	56.33	56.24	60.90	2.35	11.76	0.23	0.07	3.49	2.76	0.63	2.08	0.78	61.70
DA_I45	DA_I45	MH_M4A	56.70	56.64	60.49	5.13	15.94	0.43	0.05	4.73	4.27	0.81	1.72	1.81	61.70
DA_I46	DA_I46	MH_M4A	56.70	56.64	60.49	5.77	21.64	0.79	0.06	6.42	5.52	0.73	1.93	1.81	61.70
MH_M1A	MH_M1A	MH_M2	56.32	56.31	61.05	9.62	133.91	0.23	0.00	5.33	3.29	0.49	0.80	2.01	61.70
MH_M2A	MH_M2A	MH_M2	56.34	56.31	61.05	2.47	11.39	0.22	0.02	3.38	2.73	0.66	0.79	2.00	61.70
MH_M2B	MH_M2B	MH_M2	56.56	56.31	61.05	8.49	13.74	0.31	0.21	4.08	4.30	1.20	2.70	2.00	61.70
DA_I42	DA_I42	DA_I43	57.32	57.27	60.80	4.75	11.19	0.22	0.04	3.32	3.28	0.94	1.65	1.73	61.70
MH_M1	MH_M1	MH_M1A	57.18	56.32	61.13	9.62	92.70	0.10	0.80	3.68	2.56	0.63	1.97	0.82	61.70
DA_I38	DA_I38	MH_M2A	57.62	57.42	60.37	1.47	12.23	0.26	0.10	3.62	2.51	0.48	3.07	0.42	61.70
DA_I39	DA_I39	MH_M2A	57.51	57.31	60.37	1.04	22.00	0.82	0.10	6.53	3.42	0.31	3.30	0.31	61.70
DA_I40	DA_I40	MH_M2B	58.01	57.70	60.38	3.95	12.29	0.26	0.19	3.65	3.33	0.81	4.05	0.70	61.70
DA_I41	DA_I41	MH_M2B	58.08	57.68	60.38	4.57	21.80	0.81	0.25	6.47	5.22	0.65	4.84	0.68	61.70
DA_I37	DA_I37	MH_M1	57.20	57.18	60.82	2.15	13.76	0.31	0.02	4.08	3.00	0.56	1.12	1.18	61.70
MH_M1B	MH_M1B	MH_M1	57.66	57.18	60.82	7.57	11.29	0.21	0.39	3.35	3.63	1.26	3.94	1.18	61.70
DA_I35	DA_I35	MH_M1B	57.72	57.66	60.48	3.59	13.62	0.31	0.05	4.04	3.44	0.73	1.72	1.26	61.70
DA_I36	DA_I36	MH_M1B	57.72	57.66	60.48	4.02	28.52	1.37	0.06	5.98	6.09	0.53	1.93	1.26	61.70

SYSTEM BRAEBURN: HYDRAULIC COMPUTATION DATA															
ID	UPSTREAM ID	DOWNSTREAM ID	UPSTREAM HGL (FT)	DOWNSTREAM HGL (FT)	DOWNSTREAM NATURAL GROUND	DISCHARGE (CFS)	CAPACITY (FT)	SLOPE %	LOSS	FULL FLOW VELOCITY (FT/S)	UNIFORM VELOCITY (FT/S)	UNIFORM DEPTH (FT)	ACTUAL VELOCITY (FT/S)	ACTUAL DEPTH (FT)	100-YEAR UPSTREAM HGL (FT)
MH_B12	MH_B12	BO	51.27	51.26	50.97	8.34	84.61	0.52	0.00	7.57	5.32	0.77	0.87	3.50	61.70
MH_B11	MH_B11	MH_B12	53.05	52.71	61.17	8.34	35.31	0.24	0.18	4.65	3.86	1.03	4.60	0.91	61.70
MH_B10	MH_B10	MH_B11	54.04	53.05	61.80	8.34	36.56	0.26	0.97	4.82	3.98	1.01	3.19	1.19	61.70
MH_B9	MH_B9	MH_B10	54.29	53.37	61.25	4.84	31.16	0.50	0.02	5.92	4.37	0.69	4.37	0.69	61.70
DA_I66	DA_I66	MH_B10	54.06	54.04	61.25	2.07	18.75	0.59	0.02	5.56	3.73	0.47	1.14	1.12	61.70
DA_I67	DA_I67	MH_B10	54.08	54.04	61.25	2.39	12.45	0.26	0.03	3.70	2.91	0.62	1.32	1.12	61.70
MH_B8	MH_B8	MH_B9	55.99	54.22	62.20	4.84	31.44	0.51	1.03	5.97	4.41	0.69	4.41	0.69	61.70
DA_I68	DA_I68	MH_B8	56.13	55.99	61.90	2.45	17.31	0.51	0.15	5.14	3.70	0.53	2.91	0.63	61.70
MH_B8A	MH_B8A	MH_B8	56.02	55.99	61.90	2.48	11.80	0.24	0.03	3.50	2.83	0.65	0.91	1.63	61.70
DA_I69	DA_I69	MH_B8A	56.03	56.02	61.43	1.24	16.92	0.48	0.00	5.02	2.97	0.38	0.48	1.54	61.70
DA_I70	DA_I70	MH_B8A	56.03	56.02	61.43	1.28	12.72	0.27	0.00	3.77	2.44	0.45	0.49	1.54	61.70

NOTES:
1. 100–YEAR HGL TAKEN FROM XPSWMM MODEL (VERSION 2021.3) TO ACCOUNT FOR BOTH SUB–SURFACE STORM SEWER CAPACITY AND THE OVERLAND SHEET FLOW AND PONDING. REFER TO BRAEBURN GLEN DRAINAGE IMPROVEMENTS REPORT, PREPARED BY ENTECH INC, DATED MARCH 2025.

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281–945–0069
TX FIRM NUMBER: F–6932

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FB NO. P–6331

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STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

HYDRAULIC DATA SHEET

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M–410040–0001–4	
DRAWING SCALE	
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October 24, 2024

Mr. Ahmed Mahmoud, P.E.
Entech Civil Engineers, Inc.
15021 Katy Freeway Ste 500
Houston, TX 77094
amahmoud@entechhou.com

SENT VIA ELECTRONIC MAIL: NO HARD COPY TO FOLLOW

RE: Project No. 2407310220
Braeburn Glen Drainage and Paving
HCFCD Unit D100-00-00; Key Map 530-N,P,S,T; Pct. 4

Dear Mr. Mahmoud:

The referenced report has been reviewed pursuant to the HCFCD Policy, Criteria, and Procedure Manual and Section 3.02 of the *"Regulations of Harris County, Texas for the Approval and Acceptance of Infrastructure."* The goals of the review are to provide technical support to the Harris County Floodplain Administrator and to apply HCFCD policy and criteria where appropriate.

This review addresses issues regarding hydraulic and hydrologic drainage design criteria only. Design criteria regarding the site layout of the proposed development and drainage facilities will be reviewed upon submittal of site plans.

Our understanding of the report is described below. Please see the response contained within the *"Hydrologic & Hydraulic Technical Review"* section.

HCFCD Jurisdiction

HCFCD criteria applies because the project meets at least one of the following conditions:

- The project directly affects HCFCD Infrastructure.
- The project proposes infrastructure to be maintained by HCFCD.
- The project is located within a watershed where HCFCD has a regional project adopted by Harris County Commissioners Court.
- A technical review has been requested by Harris County.

Submittal Information

Submitted Report	Consulting Engineer
Braeburn Glen Drainage and Paving September 24, 2024	Entech Civil Engineers, Inc. 15021 Katy Freeway Ste 500 Houston, TX 77094 TBPE Registration No. F-6932 Ahmed Mahmoud, P.E. TX P.E. # 145363

Project Summary

The purpose of this report is to summarize the impacts assessment performed for the proposed storm drain improvements within the Braeburn Glen Subdivision near Gessner Rd and Brays Bayou. This proposed project was originally identified in Cobb Fendley and Associates (CFA), Sharpstown Drainage Master Plan Technical Memorandum (August 2020), as "Sub-Project 9".

Sub-Project 9 identified improvements to the storm drainage system in the Braeburn Glen Subdivision. The improved storm drain system was considered to have impacts on Brays Bayou. Therefore, the Fondren pond was identified to mitigate impacts caused by storm drain improvements. XPSWMM models were prepared to analyze the existing and proposed conditions and the difference in volume due to the proposed conveyance improvement was used to determine the mitigation amount into the proposed detention basin located further downstream close to Fonder Road. The detention basin sizing was analyzed using the unsteady HEC-RAS modeling. The study extent of the unsteady HEC-RAS model runs along Brays Bayou from Sam Houston Tollway to approximately 170 feet downstream of Hillcroft Ave that included the two offline detention basins. One of the detention basins is located upstream of the current project site to mitigate flow increase from a previous project. The detention volume required to mitigate the improvements is approximately 20 ac-ft.

Detention Summary

Not provided within the report.

Floodplain Related Information

The project area is located on FEMA Flood Insurance Rate Map (FIRM) panel No. 48201C0845M, dated May 1, 2019. The project limit is entirely within Brays Bayou FEMA Zone AE floodplain. Work is not proposed in the effective floodway.

Please also note that City of Houston is the Floodplain Administrator for the receiving waterways. All issues regarding local floodplain regulations must be coordinated through City of Houston.

Report Findings

The report states, *"The proposed project will not cause adverse impact to the properties and existing drainage system and receiving streams and within City of Houston for the storm events up to and including the 1% AEP (100-year storm) Atlas 14 storm events."*

Hydrologic & Hydraulic Technical Review

HCFCD offers the following:

The report includes statements that the project will cause no adverse impact to the receiving waterways, including downstream properties within the City of Houston, in storm events up to and including the 100-year Atlas 14 storm event. The documentation within the report generally supports the conclusions stated by the engineer. Based on the stated conclusions, HCFCD interposes no objection to the referenced report. Please note, this acceptance does not necessarily mean that the entire report, including all supporting data and calculations, has been completely checked and verified. However, the report is signed, dated, and sealed by a Professional Engineer licensed to practice in the State of Texas, which therefore conveys the licensed engineer's responsibility and accountability.

Additional HCFCD Criteria

Site plans must be submitted to HCFCD for review and signature.

All work proposed within existing and future HCFCD right-of-way must be designed and constructed in accordance with the HCFCD Policy, Criteria, and Procedure Manual.

Environmental Review & Permitting

The Harris County Flood Control District's Regulatory Compliance Department requires that proposed projects impacting regulated waters of the U.S. obtain and document the required U.S. Army Corps of Engineers permit(s) for any portions of the project located within any existing or proposed HCFCD right-of-way. The type of permit required (if any) must be stated on the site plans even if written permit authorization from the Corps of Engineers is not required. If written permit authorization is required, copies of approved Corps of Engineers permits must be submitted with the HCFCD *Notification of Construction in Right-of-Way* and submitted to the HCFCD Development Coordination and Inspection Department at least 48 hours prior to construction along with the *48-hour Pre-Construction Notification.*

Thank you for coordinating this project with the Flood Control District. If you have any questions regarding the technical comments, please contact Mr. Wen Zhang, P.E., via email at *Wen.Zhang@hcfcd.hctx.net.* For any other questions, you may contact me at *mike.vandewater@hcfcd.hctx.net.*

Sincerely,

Mike Vandewater, P.E.
Watershed Coordinator

MCV:ag

Ltr 10-24-24 P# 2407310220 Braeburn Glen INO.docx

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Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

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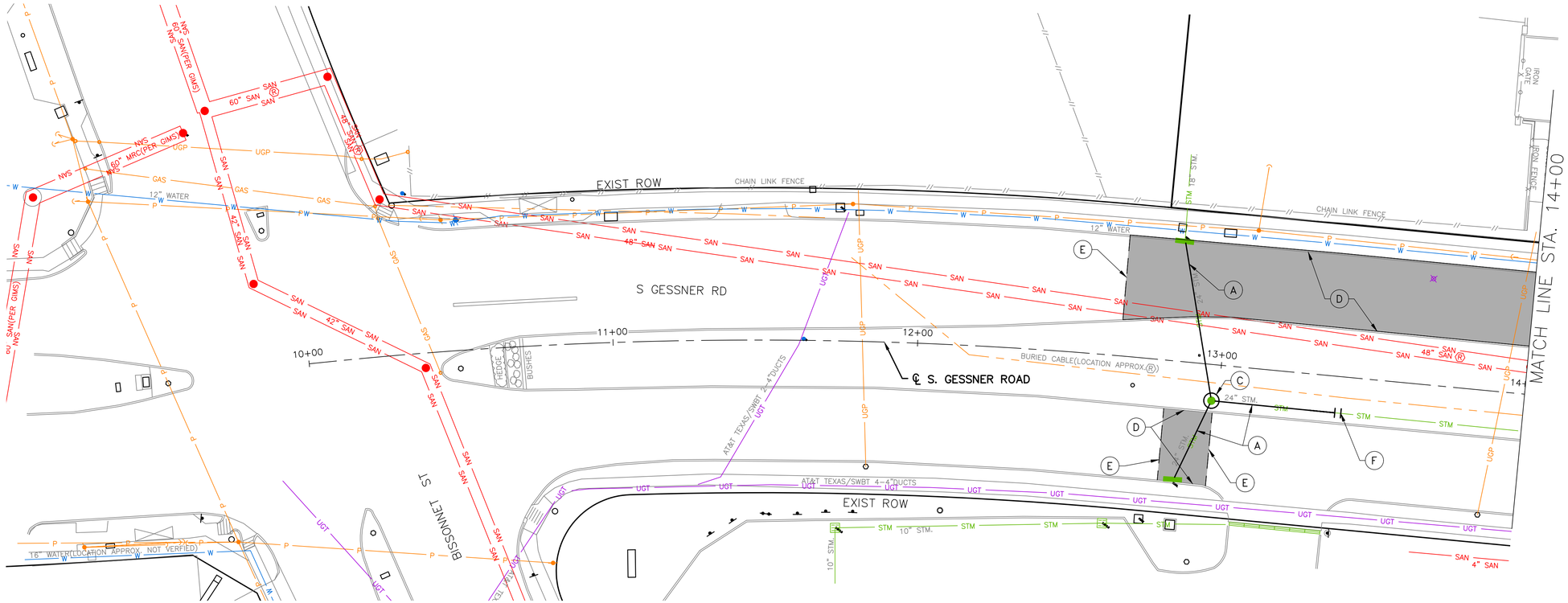

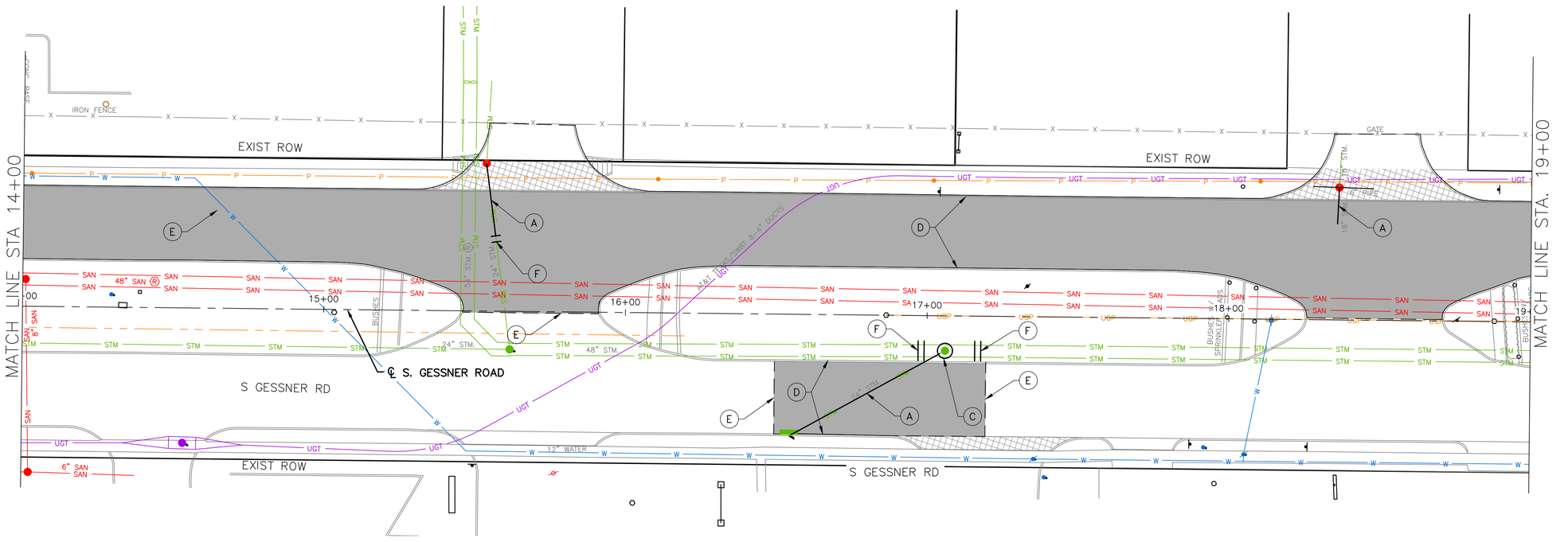

LEGEND

- (A) REMOVE PIPE (ALL SIZES)
- (B) REMOVE INLET
- (C) REMOVE MANHOLE
- (D) REMOVE CURB
- (E) SAWCUT
- (F) CUT AND PLUG
- REMOVE CONC. PAVEMENT
- REMOVE CONC DRIVEWAY

NO.	DATE	REVISION	APP.

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LICENSED
PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
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BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS S GESSNER RD DEMOLITION PLAN SHEET 1 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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SHEET NO. 40 OF 227	

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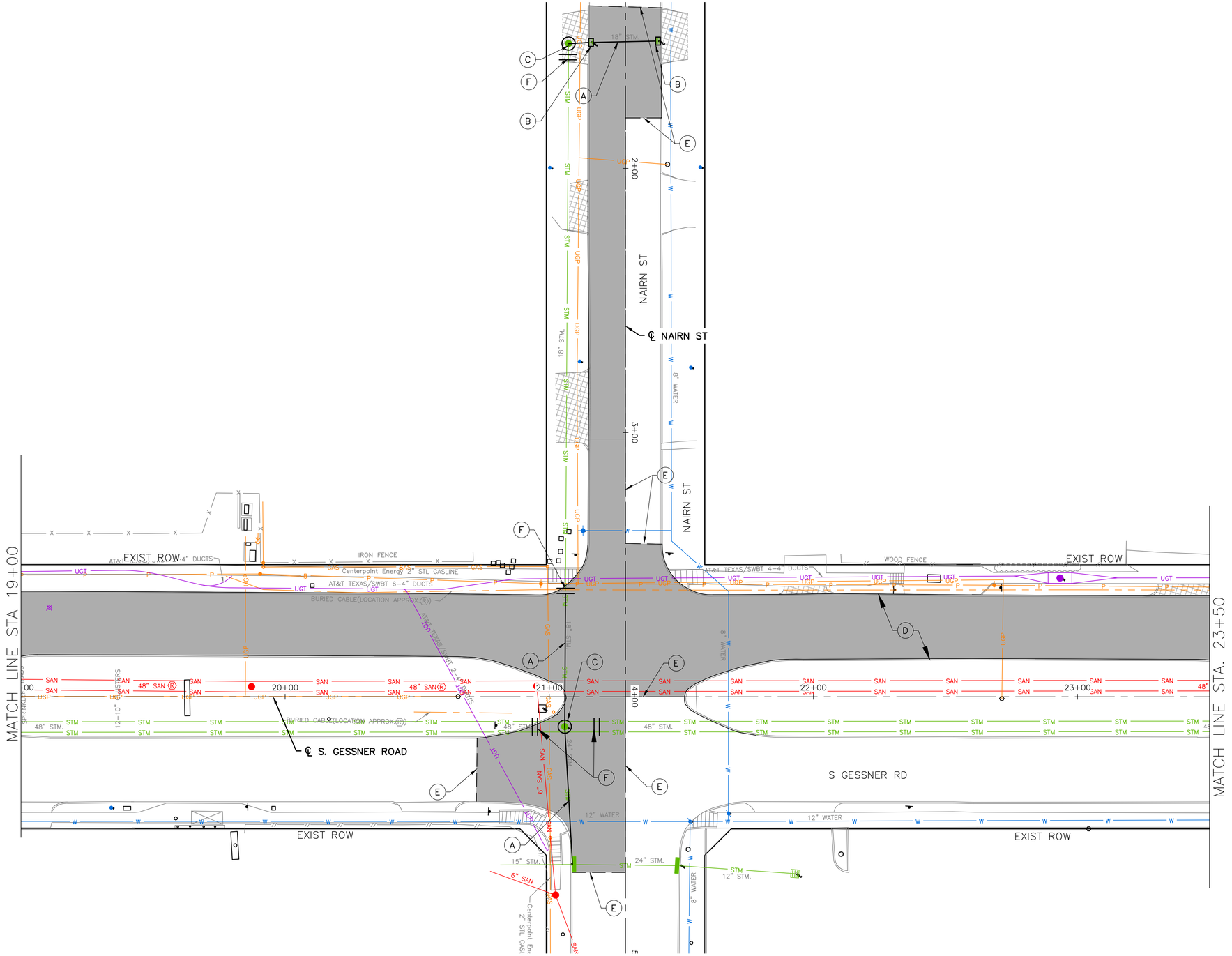

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Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
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SHEET NO. 41 OF 227	

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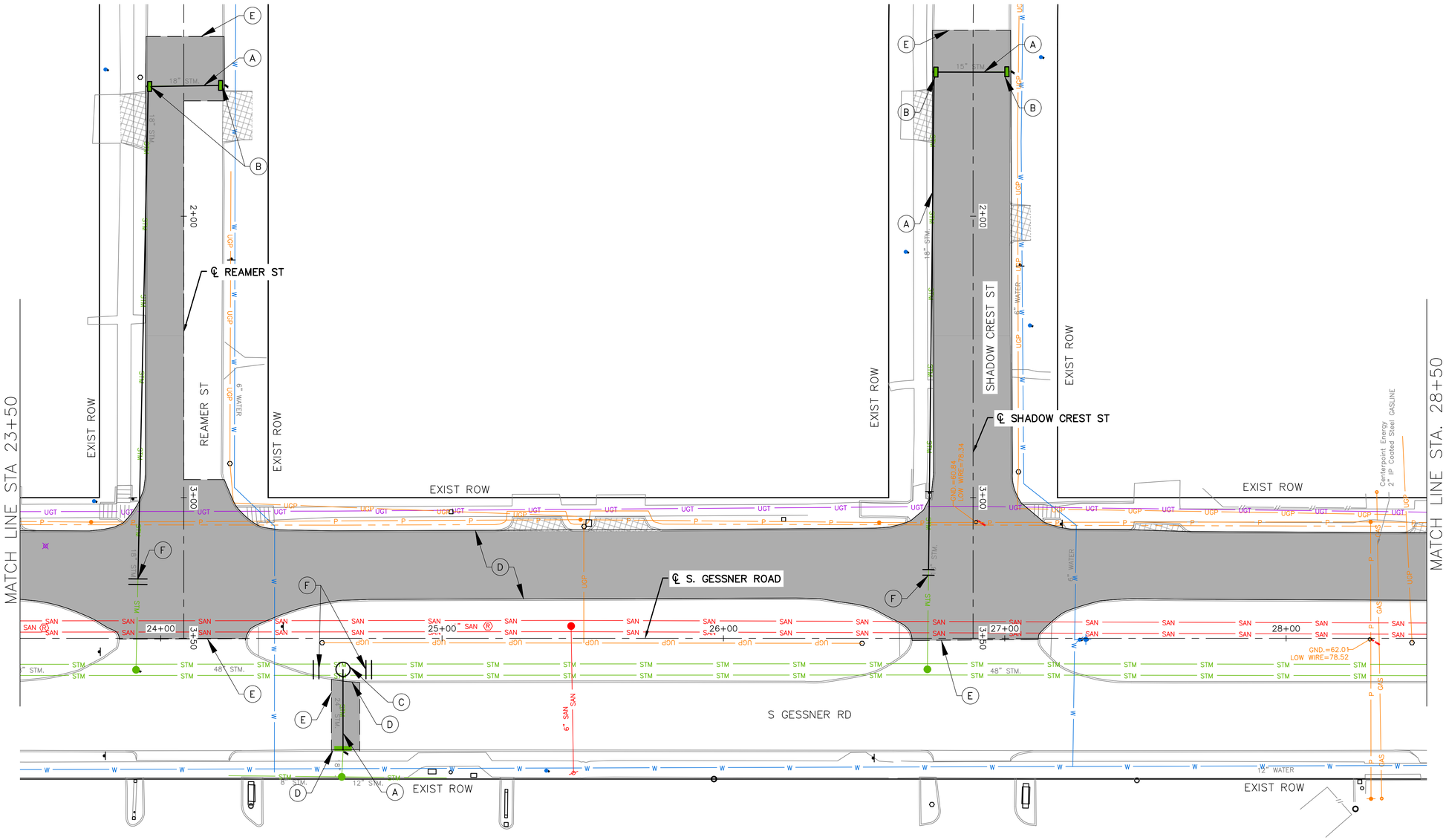

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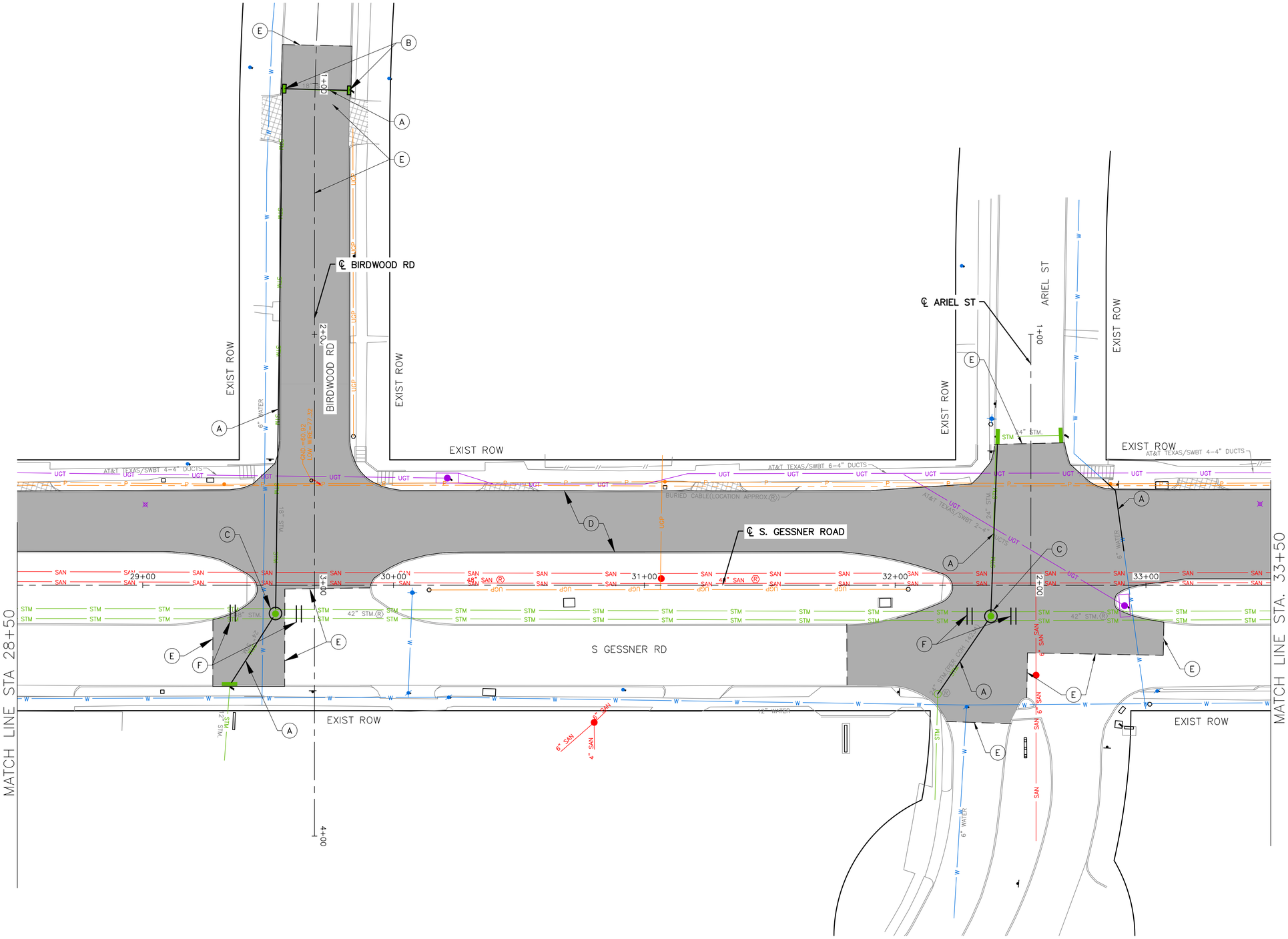

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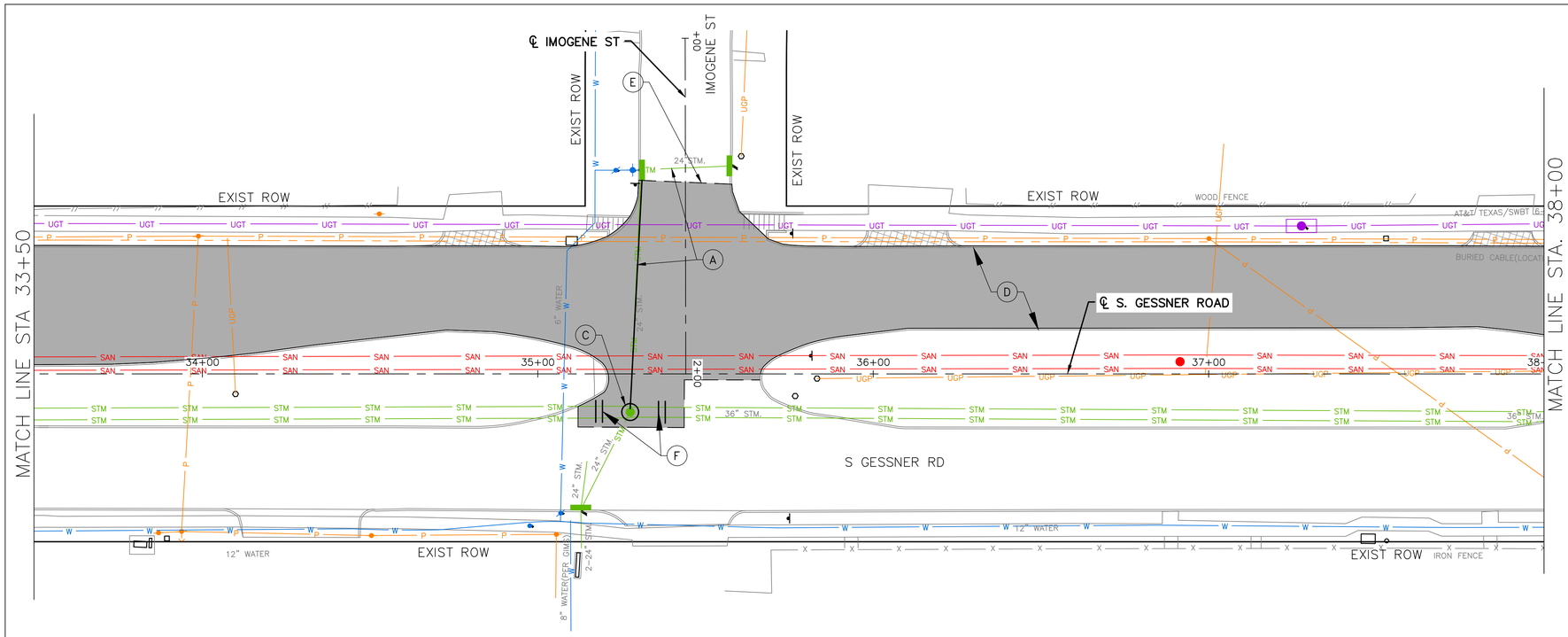

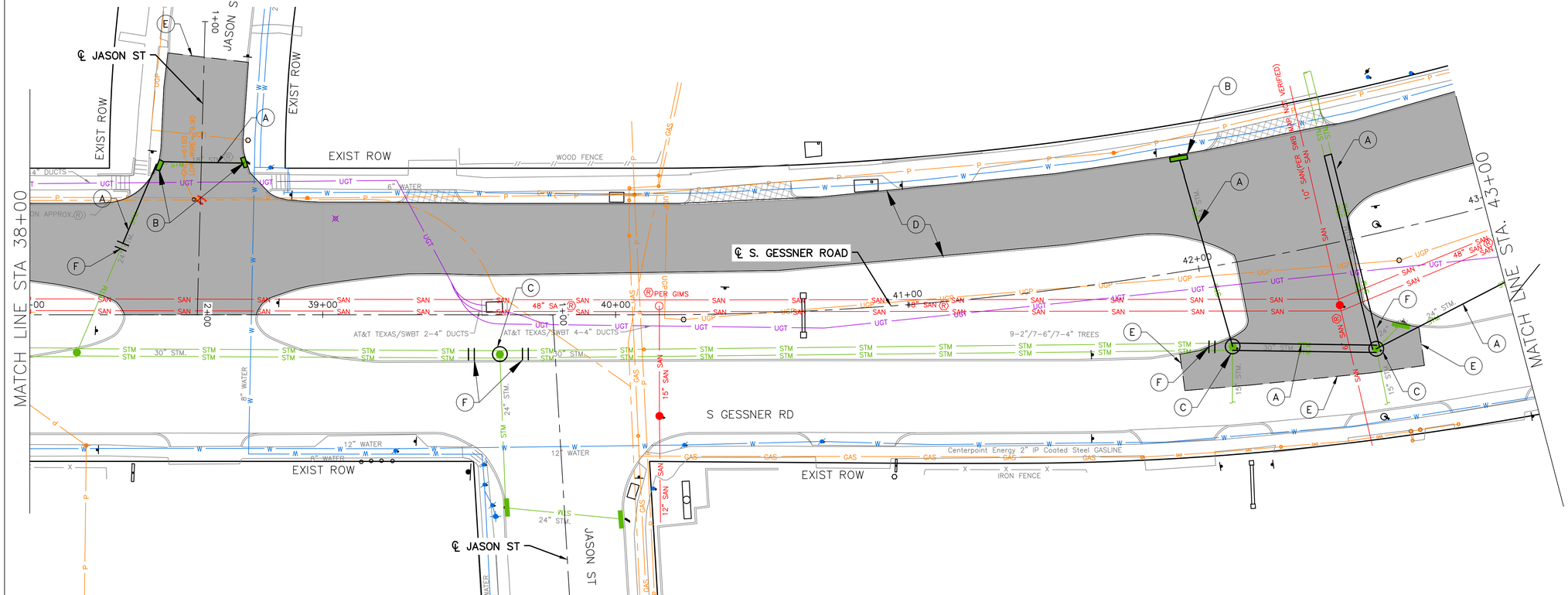

LEGEND

- (A) REMOVE PIPE (ALL SIZES)
- (B) REMOVE INLET
- (C) REMOVE MANHOLE
- (D) REMOVE CURB
- (E) SAWCUT
- (F) CUT AND PLUG

REMOVE CONC. PAVEMENT

REMOVE CONC DRIVEWAY

NO.	DATE	REVISION	APP.

N

HORIZ. 0 5 10 20

SCALE: 1"=20'

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

VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

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Date

Approved for AT&T underground conduit facilities only.
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ENTECH CIVIL ENGINEERS INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER 3/9/2026

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS S GESSNER RD DEMOLITION PLAN SHEET 5 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 44 OF 227	

PLOTTED: 3/10/2026 10:52 AM coh_ctb_230809.ctb

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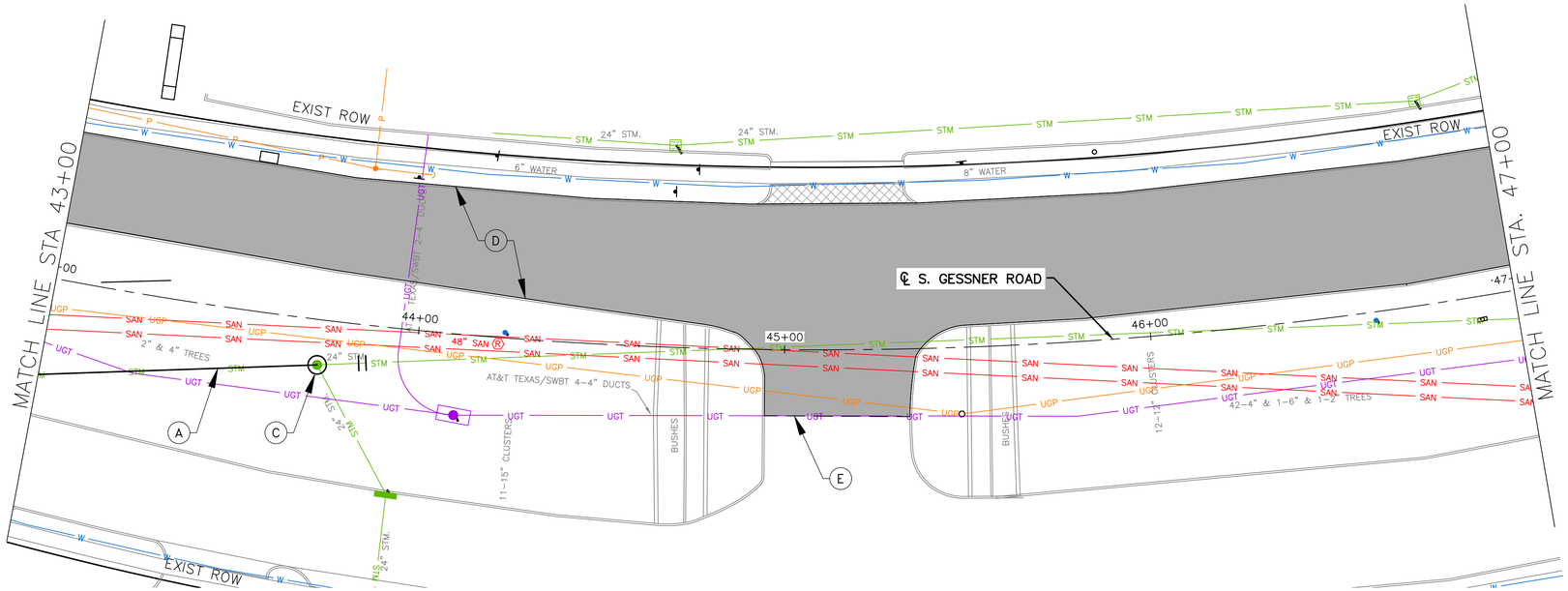

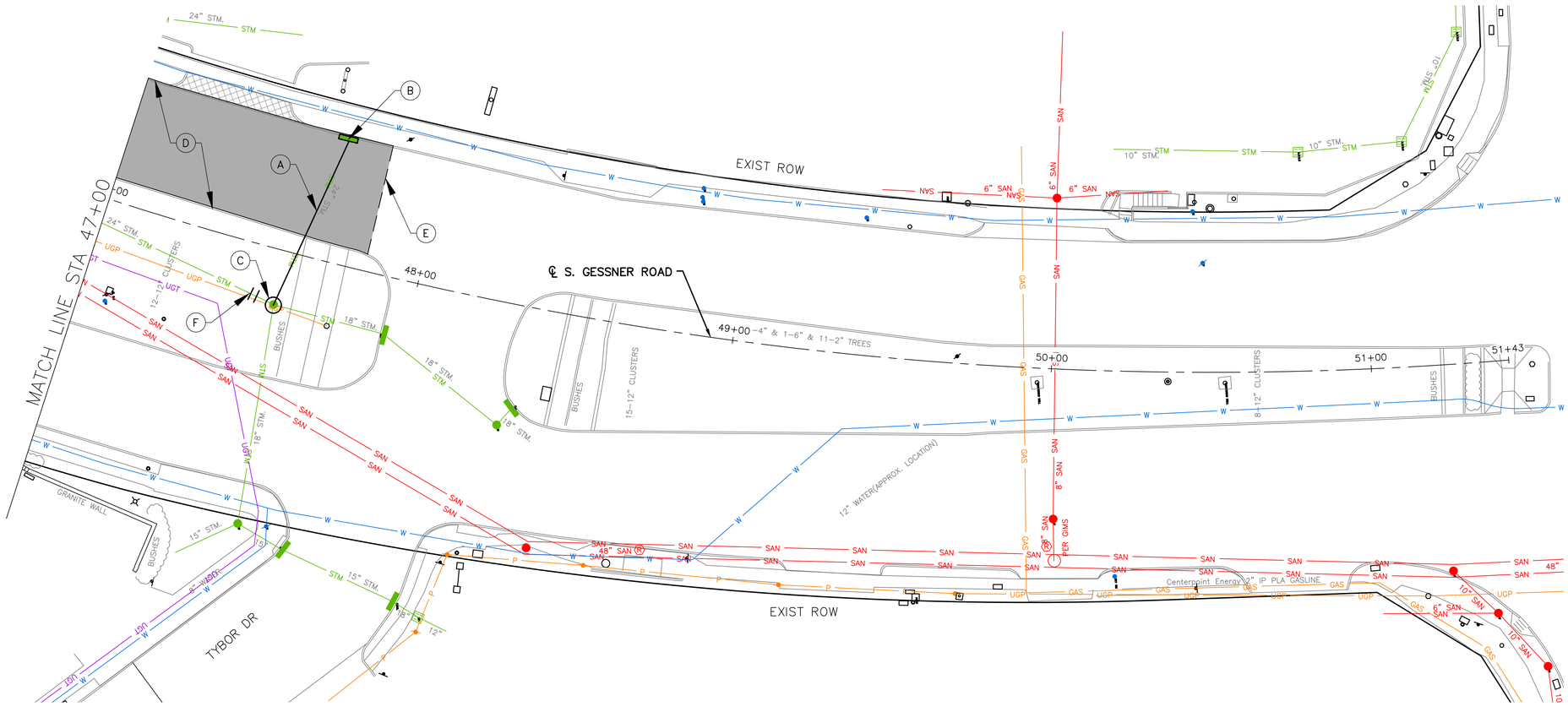

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- (B) REMOVE INLET
- (C) REMOVE MANHOLE
- (D) REMOVE CURB
- (E) SAWCUT
- (F) CUT AND PLUG
- REMOVE CONC. PAVEMENT
- REMOVE CONC DRIVEWAY

NO.	DATE	REVISION	APP.

HORIZ. 0 5 10 20

SCALE: 1"=20'

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ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

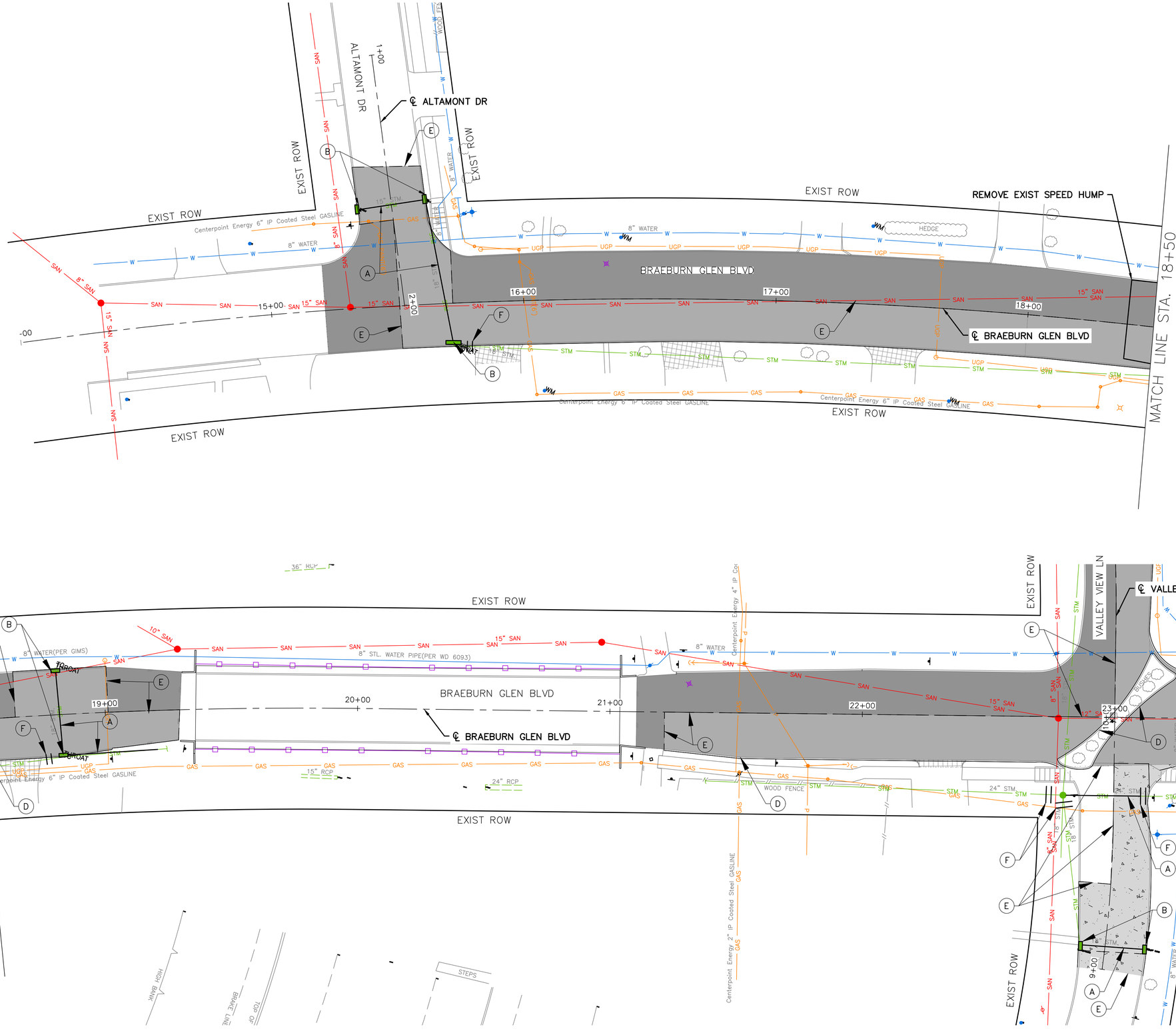
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. STATE OF TEXAS F-6932 RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS S GESSNER RD DEMOLITION PLAN SHEET 6 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 45 OF 227	



LEGEND

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- (B) REMOVE INLET
- (C) REMOVE MANHOLE
- (D) REMOVE CURB
- (E) SAWCUT
- (F) CUT AND PLUG

- REMOVE ASPH PAV OVER CONC PAV & BASE
- REMOVE CONC. DRIVEWAY
- MILL ASPH PAV (2")
- REMOVE CONC PAV

NO.	DATE	REVISION	APP.

HORIZ. 0 5 10 20

SCALE: 1"=20'

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15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS BRAEBURN GLEN BLVD DEMOLITION PLAN SHEET 7 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 46 OF 227	

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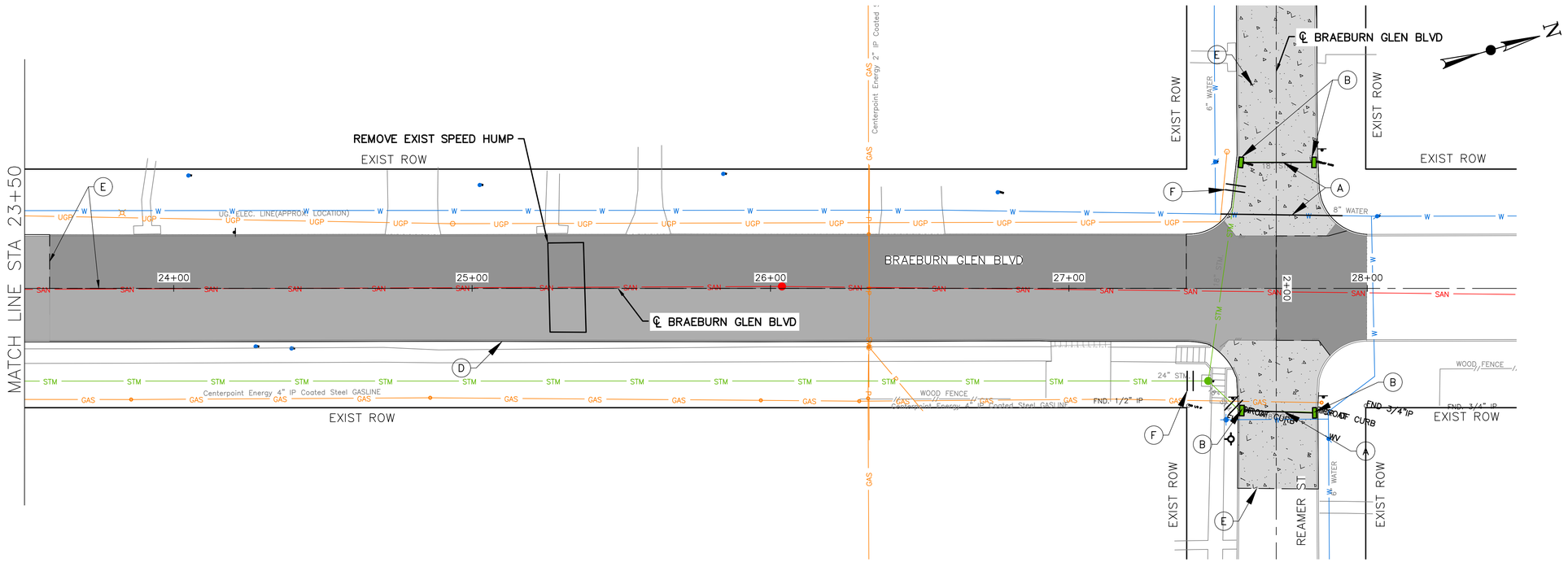

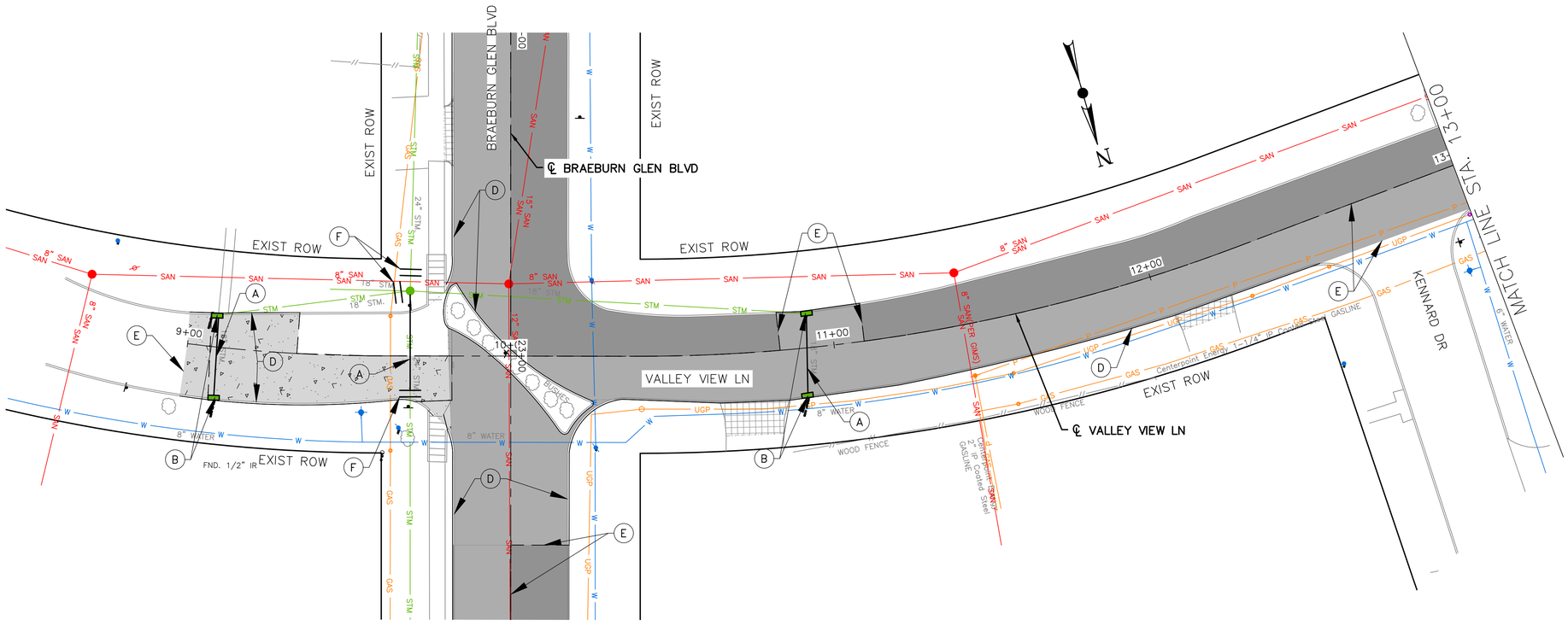

LEGEND

- (A) REMOVE PIPE (ALL SIZES)
- (B) REMOVE INLET
- (C) REMOVE MANHOLE
- (D) REMOVE CURB
- (E) SAWCUT
- (F) CUT AND PLUG

- REMOVE ASPH PAV OVER CONC PAV & BASE
- REMOVE CONC. DRIVEWAY
- MILL ASPH PAV (2")
- REMOVE CONC PAV

NO.	DATE	REVISION	APP.

HORIZ. 0 5 10 20

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ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS BRAEBURN & VALLEY VIEW DEMOLITION PLAN SHEET 8 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 47 OF 227	

PLOTTED: 3/10/2026 10:53 AM coh_ctb_230809.ctb

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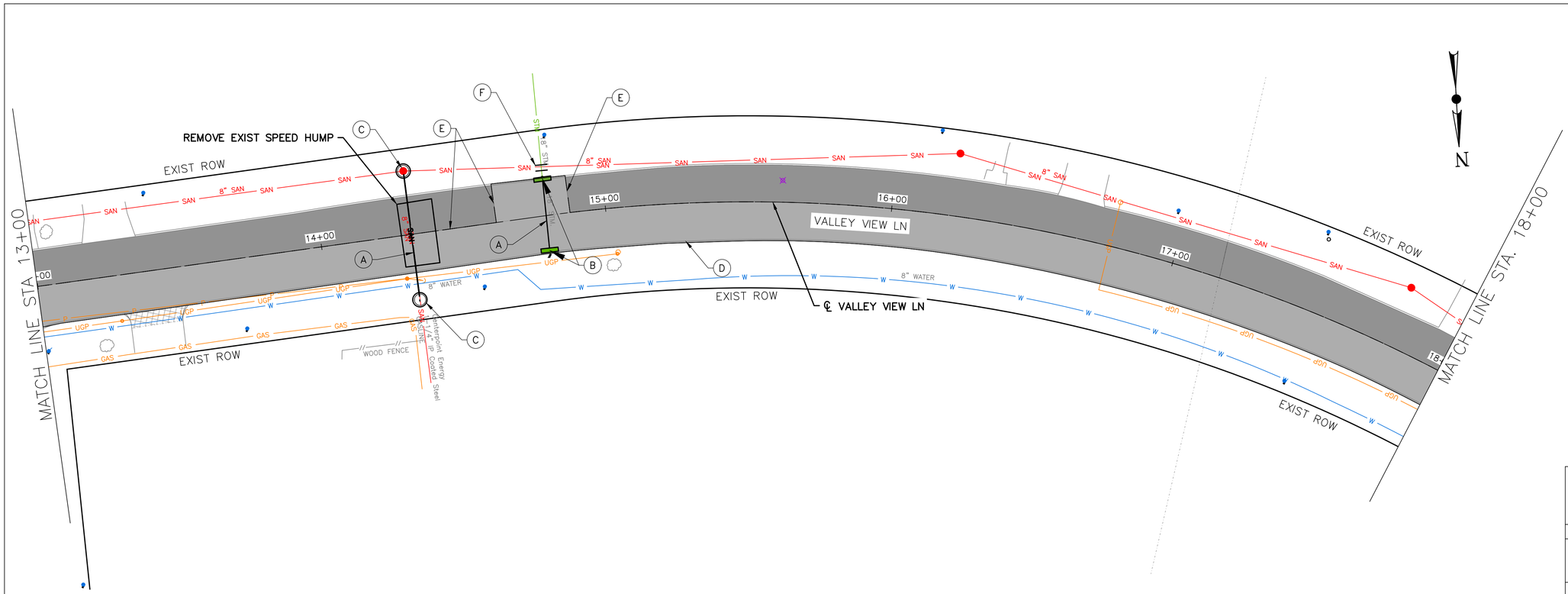

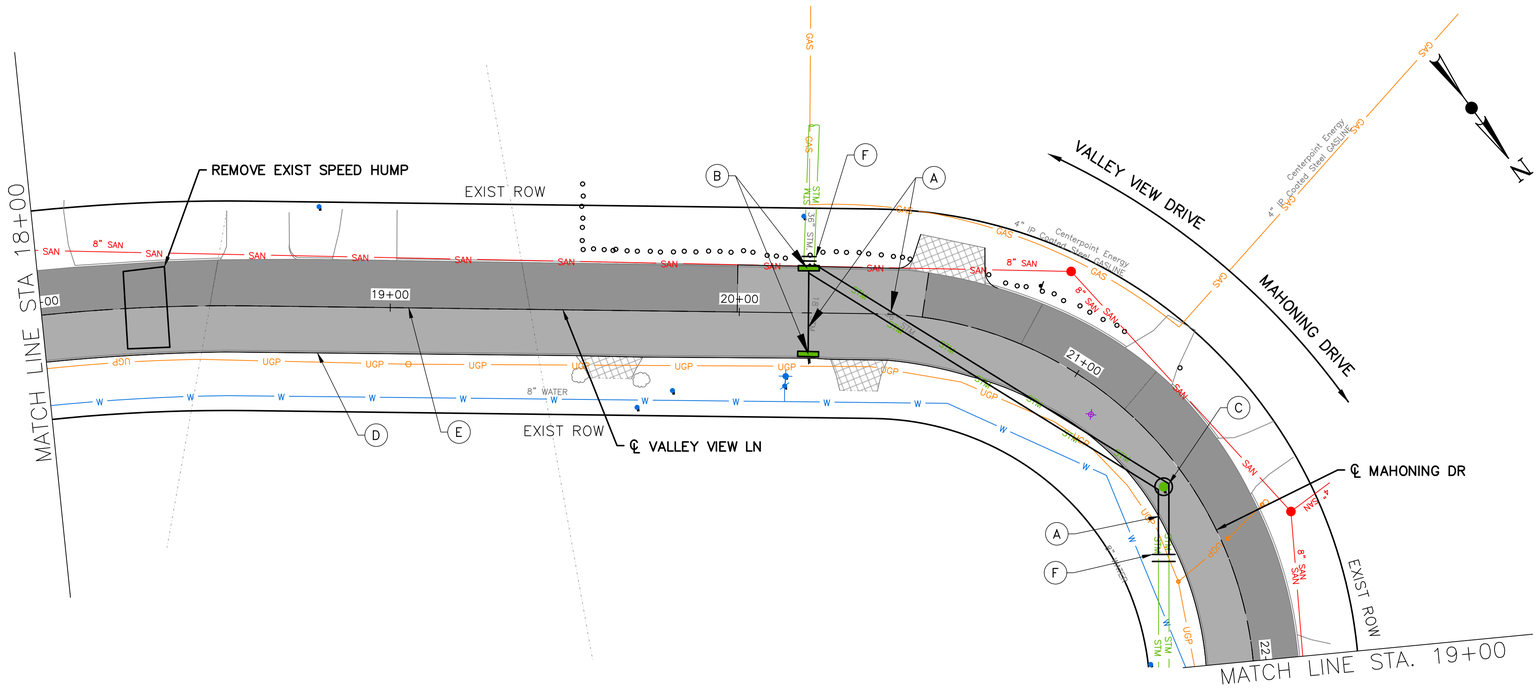

LEGEND

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- (F) CUT AND PLUG

- REMOVE ASPH PAV OVER CONC PAV & BASE
- REMOVE CONC. DRIVEWAY
- MILL ASPH PAV (2")
- REMOVE CONC PAV

NO.	DATE	REVISION	APP.

HORIZ. 0 5 10 20

SCALE: 1"=20'

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Date

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ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
VALLEY VIEW LANE
DEMOLITION PLAN
SHEET 9 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 48 OF 227	

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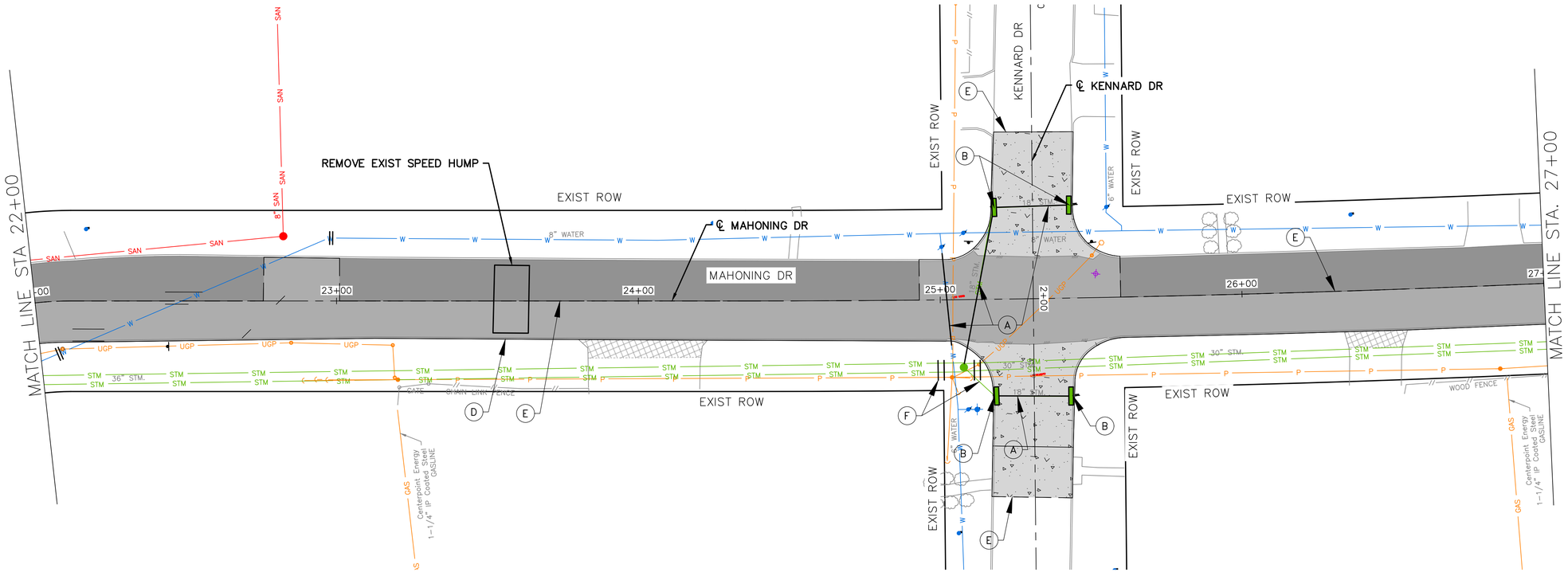

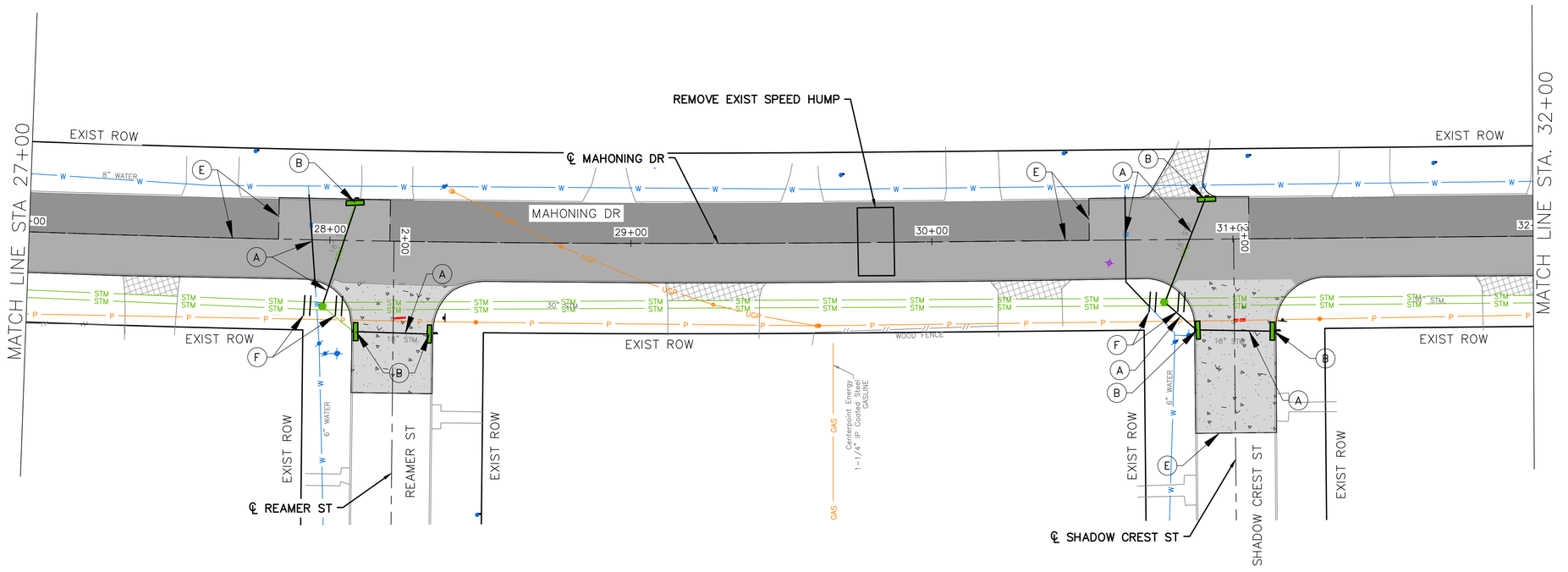

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- REMOVE ASPH PAV OVER CONC PAV & BASE
- REMOVE CONC. DRIVEWAY
- MILL ASPH PAV (2")
- REMOVE CONC PAV

NO.	DATE	REVISION	APP.

HORIZ. 0 5 10 20

SCALE: 1"=20'

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Date

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Signature valid for one year.

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS, INC. F-6932 — STATE OF TEXAS — RODRIGO M. GUADARRAMA — 111437 — LICENSED PROFESSIONAL ENGINEER

Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS MAHONING DR DEMOLITION PLAN SHEET 10 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 49 OF 227	

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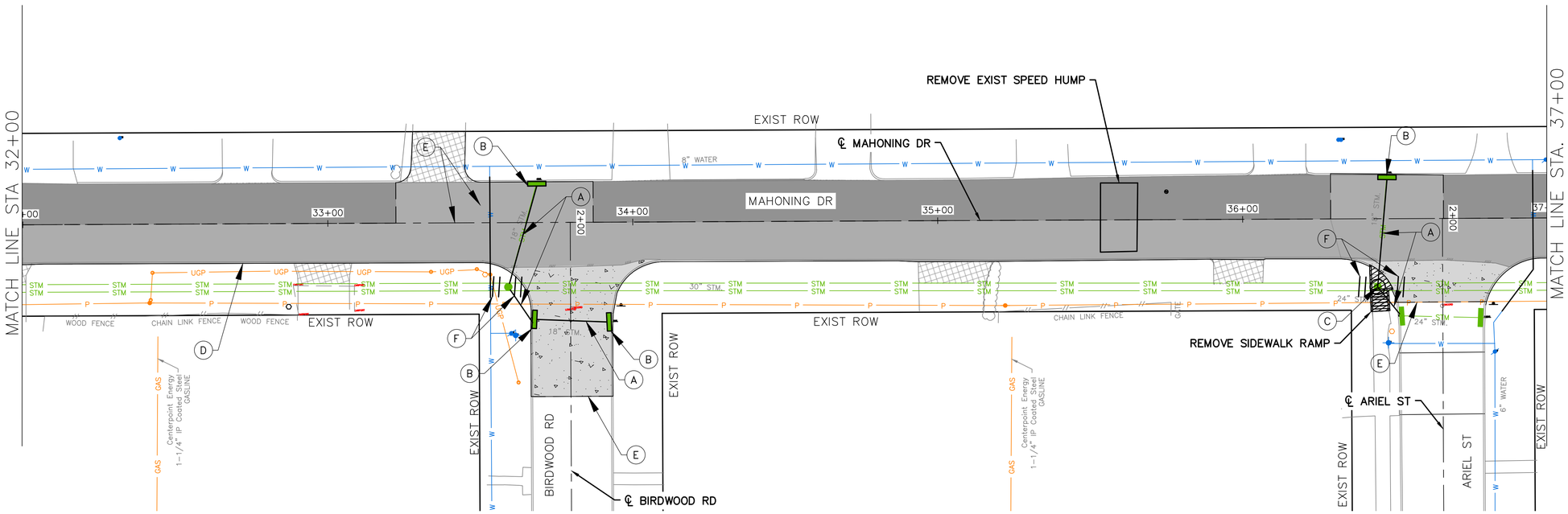

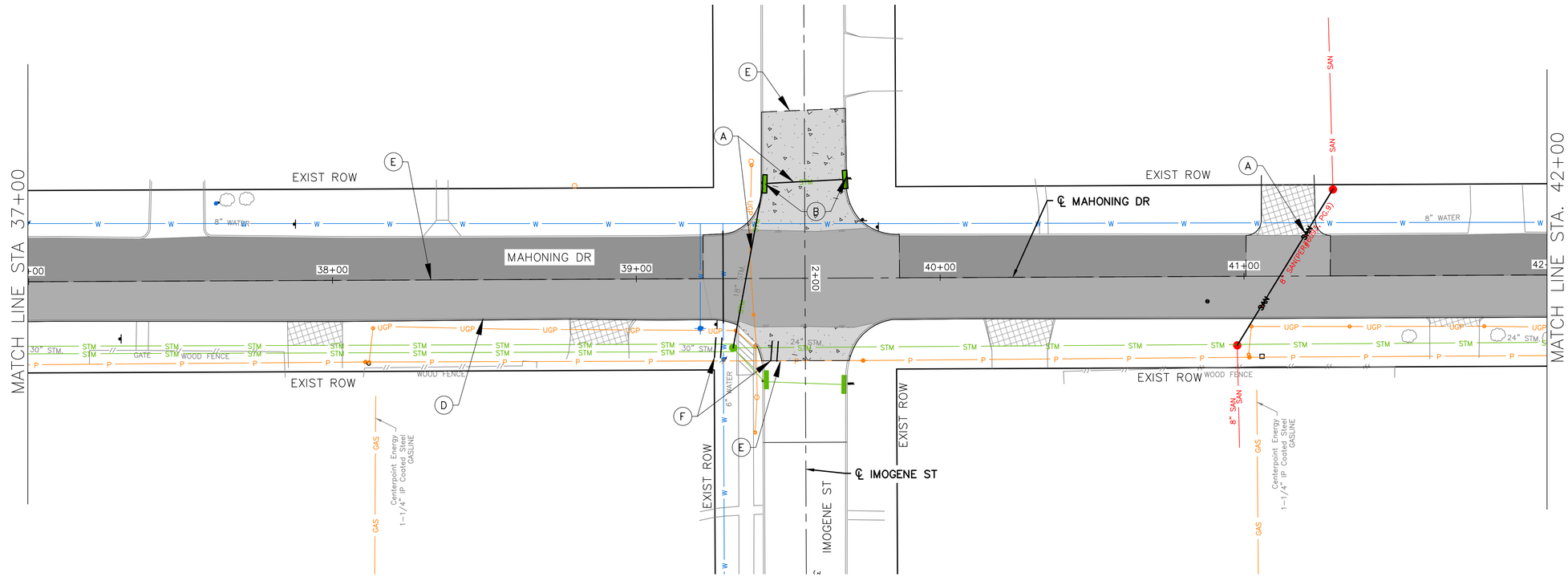

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- REMOVE ASPH PAV OVER CONC PAV & BASE
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NO.	DATE	REVISION	APP.

HORIZ. 0 5 10 20

SCALE: 1"=20'

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15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

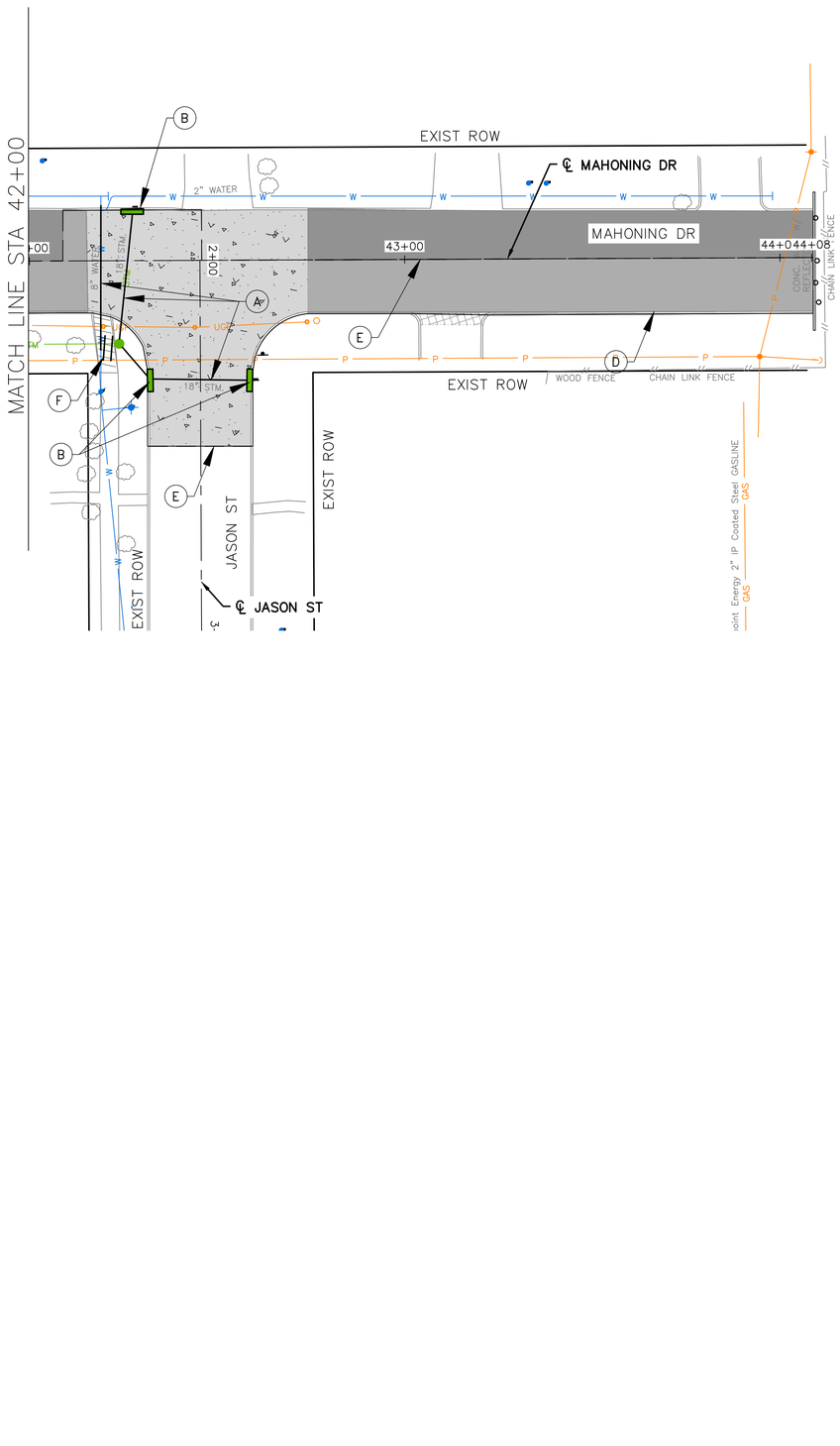
ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS MAHONING DR DEMOLITION PLAN SHEET 11 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 50 OF 227	

FILE PATH: C:\Users\dvarghese\Entech Civil Engineers, Inc\Braeburn Glen - Documents\SHARE\2525PVEN\Working\05_DEMO.dwg



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15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
MAHONING DR
DEMOLITION PLAN
SHEET 12 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 51 OF 227	

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TCP GENERAL NOTES:

1. THE CONTRACTOR SHALL INSTALL TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH PART VI OF THE CURRENT TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).
2. NO CONSTRUCTION IS ALLOWED BETWEEN 4PM AND 9AM MONDAY THROUGH SUNDAY.
3. THE CONTRACTOR SHALL MAINTAIN ALL BUSINESS & RESIDENTIAL DRIVEWAYS, TRAFFIC CONTROL DEVICES, STREET NAME SIGNS, STOP SIGNS, WARNING SIGNS, TEMPORARY AND EXISTING SIGNS AND STRIPINGS DURING THE ENTIRE PERIOD OF CONSTRUCTION. EXISTING SIGNS OR STRIPING IN CONFLICT WITH TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE COVERED OR REMOVED.
4. CONTRACTOR TO ENSURE PROPER DRAINAGE TO EXISTING DRAINAGE DITCHES AT ALL TIMES.
5. WHERE PROJECT REQUIREMENTS ARE NOT FULLY SATISFIED BY THE DETAILS SHOWN HEREIN, THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (THE LATEST EDITION) SHALL GOVERN.
6. ALL TEMPORARY SIGNS AND PAVEMENT MARKINGS INSTALLED DURING CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE TMUTCD., UNLESS SPECIFICALLY DIRECTED BY THE CITY AUTHORIZED OFFICIAL/ENGINEER.
7. THE CONTRACTOR SHALL PROVIDE CERTIFIED FLAGGERS OR AN OFF DUTY OFFICER TO DIRECT TRAFFIC. THIS DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR TAKING OTHER STEPS AND PROVIDING OTHER PERSONNEL WHOM THE CONTRACTOR MAY DEEM NECESSARY FOR PROTECTION OF WORK AND THE PUBLIC.
8. CONTRACTOR SHALL ENSURE THAT ALL BARRICADES, SIGNS, CHANNELIZING DEVICES, WARNING LIGHTS AND TRAFFIC CONTROL DEVICES ARE KEPT IN A CLEAN FUNCTIONAL CONDITION AT ALL TIMES.
9. ALL SIGNS, WARNING DEVICES, AND BARRICADES ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR, INCLUDING ACTS OF VANDALISM OR ACCIDENTS.
10. THE CONTRACTOR SHALL MAINTAIN ALL TEMPORARY AND EXISTING PAVEMENT MARKINGS IN GOOD CONDITION THROUGHOUT THE DURATION OF THE CONTRACT.
11. THE CONTRACTOR SHALL MAINTAIN BARRICADES AND SAFETY FENCES AT EACH SITE WHERE PEDESTRIAN TRAFFIC IS EVIDENT.
12. LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) WITH REFLECTORS SHALL BE USED.
13. THE CONTRACTOR SHALL CONDUCT THEIR OPERATION IN A MANNER SUCH THAT TRUCKS AND OTHER CONSTRUCTION VEHICLES DO NOT CREATE A DIRT NUISANCE OR SAFETY HAZARD IN ANY PUBLIC OR PRIVATE STREET.
14. ALL BARRICADES, SIGNS, STRIPING, CHANNELIZING DEVICES, AND ALL EQUIPMENT INCIDENTALS, AND ALL LABOR REQUIRED FOR TRAFFIC CONTROL SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR TRAFFIC HANDLING.
15. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE EXISTING SIDEWALK AND/OR PROVIDING A TEMPORARY SIDEWALK.

CONSTRUCTION SEQUENCE:

1) S GESSNER ROAD TRAFFIC CONTROL PLAN (TCP)

PROPOSED STORM SEWER LINE CONSTRUCTION ALONG S GESSNER ROAD AND CROSS-STREETS (PHASE-1 & PHASE-2):

TCP PHASE-1 (SHEET 1 OF 6 THROUGH 6 OF 6)

1. INSTALL ALL THE ADVANCE CONSTRUCTION WARNING SIGNS AT THE SOUTHERN END (S. GESSNER ROAD PHASE-1, SHEET 1 OF 6) AND NORTHERN END (S. GESSNER ROAD PHASE-1, SHEET 6 OF 6) OF THE PROJECT IN ACCORDANCE WITH THE TMUTCD GUIDELINES BEFORE COMMENCING CONSTRUCTION.

2. THE PROPOSED STORM SEWER INSTALLATION BEGINS AT THE NORTH END OF S. GESSNER ROAD, AT THE INTERSECTION OF S. GESSNER ROAD AND TYBOR DRIVE. THE TRUNK LINE IS TO BE INSTALLED ALONG THE SOUTHBOUND LANES OF S. GESSNER ROAD, CONTINUING UNTIL IT CONNECTS AT BRAEBURN GLEN PARK, JUST SOUTH OF NAIRN STREET, APPROXIMATELY 250 FEET NORTH OF BISSONNET STREET.

3. THE CONTRACTOR TO PROHIBIT SOUTHBOUND LEFT TURN FROM S.GESSNER ROAD ONTO THE EASTBOUND TYBOR DRIVE WITH THE LPCTB AS SHOWN ON SHEET 5 OF 6. THE CONTRACTOR IS ALSO REQUIRED TO PROVIDE THE TYBOR DRIVE DETOUR AS SHOWN ON SHEET 5 OF 6.

4. THE CONTRACTOR TO MAINTAIN A TWO LANE BI-DIRECTIONAL TRAFFIC ON THE EAST SIDE OF THE EXISTING MEDIAN BETWEEN STATION 13+00 THROUGH STATION 46+50. THE CONTRACTOR TO COMMENCE THE PROPOSED CONSTRUCTION AFTER THE BI-DIRECTIONAL TRAFFIC IS ESTABLISHED ALONG NORTHBOUND S GESSNER ROAD ON THE EAST SIDE OF THE MEDIAN AS PER SHEET 2 OF 6 THROUGH SHEET 5 OF 6.

5. TO CONSTRUCT THE LATERAL CONNECTIONS AT THE CROSS-STREETS ON THE WEST SIDE ALONG S GESSNER ROAD, FOLLOW THE TEMPORARY CROSS-STREET DETOUR PLANS OUTLINED IN PHASE-1, CONSTRUCTION STEP-2A, CONSTRUCTION STEP-2B, AND CONSTRUCTION STEP-3. MAINTAIN ACCESS TO ALL RESIDENTIAL DRIVEWAYS INCLUDING ONE SOUTHBOUND TRAFFIC LANE ALONG S GESSNER ROAD FOR LOCAL TRAFFIC.

6. IT IS RECOMMENDED THAT THE CONTRACTOR INSTALL TEMPORARY ASPHALT PAVEMENT TO CREATE A MEDIAN OPENING FOR SOUTHBOUND S GESSNER TRAFFIC TO TRANSITION BACK TO ORIGINAL SOUTHBOUND S GESSNER BEFORE THE EXISTING TRAFFIC SIGNAL AT S GESSNER ROAD AND BISSONNET STREET AS SHOWN ON SHEET 5 OF 6. THIS OPENING, LOCATED SOUTH OF NAIRN STREET AND APPROXIMATELY 250 FEET NORTH OF BISSONNET STREET, WILL FACILITATE A SAFE TRANSITION FOR DIVERTED SOUTHBOUND TRAFFIC BACK TO THE ORIGINAL SOUTHBOUND LANES. THE PROPOSED TEMPORARY PAVEMENT MUST BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING GEOTECH RECOMMENDATIONS:

   HOT MIX ASPHALTIC CONCRETE (HMAC) PAVEMENT SHOULD BE CONSTRUCTED IN ACCORDANCE WITH SECTION 02741 OF THE LATEST EDITION OF THE CITY OF HOUSTON STANDARD CONSTRUCTION SPECIFICATION. PRIME COAT AND TACK COAT SHOULD BE IN ACCORDANCE WITH SECTION 02742 AND 02743, RESPECTIVELY OF THE LATEST EDITION OF THE CITY OF HOUSTON STANDARD CONSTRUCTION SPECIFICATIONS

TCP PHASE-2 (SHEET 1 OF 5 THROUGH 5 OF 5)

1. CONTRACTOR MUST COMPLETE THE INSTALLATION OF ALL THE INLETS IDENTIFIED IN PHASE-2 OF OF THE TRAFFIC CONTROL PLANS AFTER CONSTRUCTION OF THE STORM SEWER TRUNK LINE. FOLLOW THE TYPICAL DETAILS OUTLINED IN SHEET 5 OF 5 FOR THE CONSTRUCTION OF INLETS ON CROSS STREETS LOCATED ON THE EAST SIDE OF S GESSNER ROAD.

2) TRAFFIC CONTROL PLANS (TCP) BRAEBURN GLEN NEIGHBORHOOD

PROPOSED STORM SEWER LINE CONSTRUCTION ALONG BRAEBURN GLEN BLVD.:

FOLLOWING ARE THE STEPS OF THE PROPOSED STORM SEWER LINE CONSTRUCTION IN THE BRAEBURN GLEN SUBDIVISION:

SEGMENT-1(STEP-1), BRAEBURN GLEN TCP: ONE LANE (MIN 10-FT) OPEN FOR TRAFFIC DURING CONSTRUCTION HOURS (9AM-4PM). REFER TO SHEET 1 OF 14

SEGMENT-1(STEP-2), BRAEBURN GLEN TCP: TWO LANE BI-DIRECTIONAL TRAFFIC WITH MINIMUM 10-FT SPACING OF TRAVEL LANE MAINTAINED DURING OFF CONSTRUCTION HOURS (4PM-9AM). REFER TO SHEET 2 OF 14

SEGMENT-2(STEP-1), BRAEBURN GLEN TCP: ONE LANE (MIN 10-FT) OPEN FOR TRAFFIC DURING CONSTRUCTION HOURS (9AM-4PM). REFER TO SHEET 3 OF 14

SEGMENT-2(STEP-2), BRAEBURN GLEN TCP: TWO LANE BI-DIRECTIONAL TRAFFIC WITH MINIMUM 9-FT SPACING OF TRAVEL LANE MAINTAINED DURING OFF CONSTRUCTION HOURS (4PM-9AM). REFER TO SHEET 4 OF 14

SEGMENT-3, BRAEBURN GLEN TCP: TWO LANE BI-DIRECTIONAL TRAFFIC WITH MINIMUM 10-FT SPACING TRAVEL LANE MAINTAINED THROUGHOUT THE CONSTRUCTION DURATION BETWEEN VALLEY VIEW LANE AND REAMER STREET. REFER TO SHEET 5 OF 14

SEGMENT-4 DETOUR PLAN-1. VALLEY VIEW LANE TCP: ONE WAY TRAFFIC ON VALLEY VIEW LANE WITH MINIMUM 10-FT TRAVEL LANE BETWEEN BRAEBURN GLEN BLVD. AND KENNARD STREET. REFER TO SHEET 6 OF 14 FOR DETOUR ROUTE.

SEGMENT-5 DETOUR PLAN-2. VALLEY VIEW LANE TCP: ONE WAY TRAFFIC ON VALLEY VIEW LANE/MAHONING DR. WITH MINIMUM 10-FT TRAVEL LANE BETWEEN KENNARD STREET. REFER TO SHEET 7 OF 14 FOR DETOUR ROUTE.

SEGMENT-6 DETOUR PLAN-3. MAHONING DRIVE TCP: ONE WAY TRAFFIC ON MAHONING DR. WITH MINIMUM 10-FT TRAVEL LANE BETWEEN KENNARD STREET AND REAMER STREET. REFER TO SHEET 8 OF 14 FOR DETOUR ROUTE.

SEGMENT-7 DETOUR PLAN-4. MAHONING DRIVE TCP: ONE WAY TRAFFIC ON MAHONING DR. WITH MINIMUM 10-FT TRAVEL LANE BETWEEN REAMER STREET AND SHADOW CREST STREET. REFER TO SHEET 9 OF 14 FOR DETOUR ROUTE.

SEGMENT-8 DETOUR PLAN-5. MAHONING DRIVE TCP: ONE WAY TRAFFIC ON MAHONING DR. WITH MINIMUM 10-FT TRAVEL LANE BETWEEN SHADOW CREST STREET AND BIRDWOOD ROAD REFER TO SHEET 10 OF 14 FOR DETOUR ROUTE.

SEGMENT-9 DETOUR PLAN-6. MAHONING DRIVE TCP: ONE WAY TRAFFIC ON MAHONING DR. WITH MINIMUM 10-FT TRAVEL LANE BETWEEN BIRDWOOD ROAD AND ARIEL STREET.REFER TO SHEET 11 OF 14 FOR DETOUR ROUTE.

SEGMENT-10 DETOUR PLAN-7. MAHONING DRIVE TCP: ONE WAY TRAFFIC ON MAHONING DR. WITH MINIMUM 10-FT TRAVEL LANE BETWEEN ARIEL STREET AND IMOGENE STREET. REFER TO SHEET 12 OF 14 FOR DETOUR ROUTE.

SEGMENT-11 DETOUR PLAN-8. MAHONING DRIVE TCP: ONE WAY TRAFFIC ON MAHONING DR. WITH MINIMUM 10-FT TRAVEL LANE BETWEEN IMOGENE STREET AND JASON STREET. REFER TO SHEET 13 OF 14 FOR DETOUR ROUTE.

REFER TO SHEET 14 OF 14 FOR THE TYPICAL DETAILS TO CONSTRUCT ALL THE LATERAL CONNECTIONS AND INLETS IN THE BRAEBURN GLEN NEIGHBORHOOD.

OPEN ALL THE TRAFFIC LANES AFTER THE PROPOSED STORM LINE CONSTRUCTION, PAVEMENT REPAIR, SIGNING AND PAVEMENT MARKINGS, AND RESTORATION WORK OF THE AFFECTED AREAS HAVE BEEN COMPLETED.

CONTINUED

TCP PHASE-2 (SHEET 1 OF 5 THROUGH 5 OF 5)

2. AFTER THE INSTALLATION OF THE PROPOSED STORM SEWER LINE, LATERAL CONNECTIONS, AND MANHOLES, THE CONTRACTOR SHALL RESTORE ALL IMPACTED CURBS, INLETS, AND ROADWAY PAVEMENT. THE CONTRACTOR IS ALSO RESPONSIBLE FOR RESTORING EXISTING SIGNING AND PAVEMENT MARKINGS TO MATCH THE PRE-CONSTRUCTION CONDITIONS.

3. INSTALL THE FINAL SIGNING AND PAVEMNT MARKINGS ALONG S GESSNER STREET AFTER ALL THE RMANING ITEMS ARE COMPLETED AND RESTORE THE ORIGIONAL TRAFFIC PATTERN,

PROPOSED TEMPORARY PAVEMENT FOR THE PROJECT AS NEEDED:

HOT MIX ASPHALTIC CONCRETE (HMAC) PAVEMENT SHOULD BE CONSTRUCTED IN ACCORDANCE WITH SECTION 02741 OF THE LATEST EDITION OF THE CITY OF HOUSTON STANDARD CONSTRUCTION SPECIFICATION. PRIME COAT AND TACK COAT SHOULD BE IN ACCORDANCE WITH SECTION 02742 AND 02743, RESPECTIVELY OF THE LATEST EDITION OF THE CITY OF HOUSTON STANDARD CONSTRUCTION SPECIFICATIONS (COHSCS).

PROPOSED TEMPORARY SIDEWALK PAVEMENT AS NEEDED FOR THE PROJECT:

- 6-INCH BLACK BASE ON COMPACTED SUBGRADE

SIDEWALK DETOUR/CROSSWALK CLOSURE NOTES:

1) THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL THE SIDEWALK AND CROSSWALK PEDESTRIAN TRAFFIC BY FACILITATING TEMPORARY SIDEWALKS AND CROSSWALKS THROUGHOUT EACH TCP PHASE, ALONG S GESSNER ROAD, MAHONING DRIVE, AND BRAEBURN GLEN BLVD.

2) THE CONTRACTOR SHALL APPLY TYPICAL SIDEWALK APPLICATIONS GIVEN IN THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD, LATEST EDITION) IN ACCORDANCE WITH THE TMUTCD REQUIREMENTS.

3) THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AND PROVIDING A SAFE PEDESTRIAN DETOUR ROUTE IF EXISTING SIDEWALK OR PEDESTRIAN CROSSING IS IMPACTED DUE TO CONSTRUCTION.

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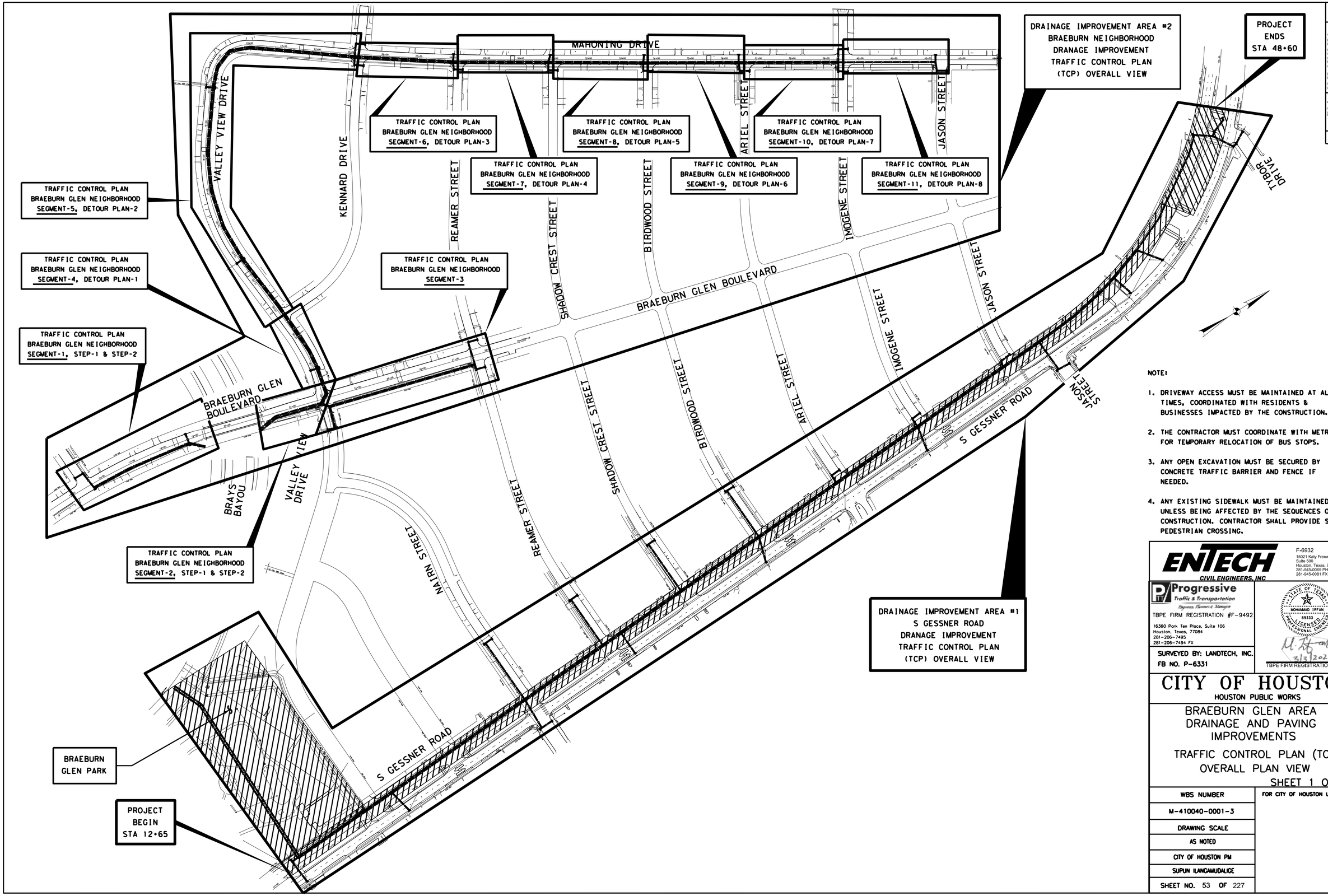
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
TRAFFIC CONTROL PLAN (TCP)
TCP GENERAL NOTES & CONSTRUCTION SEQUENCE
SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 52 OF 227	



NO	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

NOTE:

1. DRIVEWAY ACCESS MUST BE MAINTAINED AT ALL TIMES, COORDINATED WITH RESIDENTS & BUSINESSES IMPACTED BY THE CONSTRUCTION.
2. THE CONTRACTOR MUST COORDINATE WITH METRO FOR TEMPORARY RELOCATION OF BUS STOPS.
3. ANY OPEN EXCAVATION MUST BE SECURED BY CONCRETE TRAFFIC BARRIER AND FENCE IF NEEDED.
4. ANY EXISTING SIDEWALK MUST BE MAINTAINED UNLESS BEING AFFECTED BY THE SEQUENCES OF CONSTRUCTION. CONTRACTOR SHALL PROVIDE SAFE PEDESTRIAN CROSSING.

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BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

TRAFFIC CONTROL PLAN (TCP) OVERALL PLAN VIEW

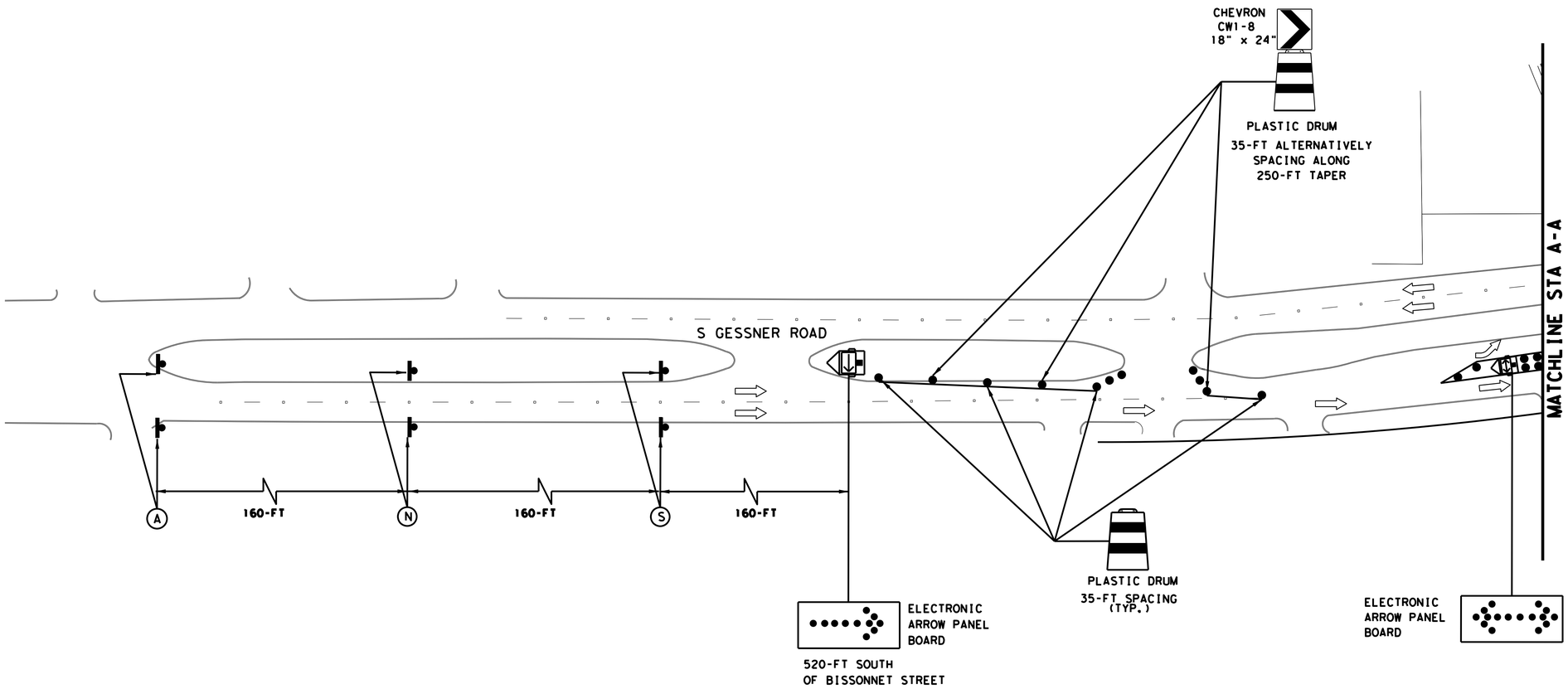
SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 53 OF 227	

TCP LEGEND:

- CONSTRUCTION AREA
- TY III TRAFFIC BARRIER
- (A) TEMP. GROUND MOUNTED SIGNS
- PLASTIC DRUM
- 36-INCH TRAFFIC CONTROL DELLINEATOR
- FLASHING ARROW PANEL
- CERTIFIED FLAGGER/ OFF-DUTY OFFICER
- DIRECTION OF TRAVEL
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY I) W/REFLECTIVE MARKER
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY II) W/REFLECTIVE MARKER

NO	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX



TYPICAL SIGN SPACING & TAPER LENGTH				
S GESSNER ROAD Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF)		
		10' Offset	11' Offset	12' Offset
35	160'	205'	225'	245'

0 40 80 120 160

SCALE: 1" = 40'

S GESSNER ROAD TRAFFIC CONTROL PHASE-1:

TWO LANE, TWO WAY TRAFFIC
ALONG NORTHBOUND, S GESSNER ROAD

A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	U	T	S	R
ORANGE FLAG (TYPICAL) ROAD WORK AHEAD	BRAEBURN GLEN BLVD	DETOUR	DETOUR	DETOUR	END ROAD WORK			DO NOT ENTER	ROAD CLOSED	ORANGE FLAG (TYPICAL) ROAD CLOSED AHEAD	RIGHT LANE CLOSED AHEAD	LEFT LANE CLOSED AHEAD	END DETOUR		DETOUR AHEAD		THRU TRAFFIC MERGE RIGHT	ROAD CLOSED TO THRU TRAFFIC
CW20-1D (36x36)	M4-12T (VAR X 12)	M4-9S (30x24)	M4-9R (30x24)	M4-9L (30x24)	G20-2a (36 X 18)	R3-2 (24x24)	R3-1 (24x24)	R5-1 (30x30)	R11-2 (48x30)	CW20-3D (36x36)	CW20-5DR (36x36)	CW20-5DL (36x36)	M4-8b (24x18)	CW-6-3 (36x36)	CW20-2D (36x36)	R3-27 (24x24)	CW4-1aTR (36x36)	R11-4 (60x30)

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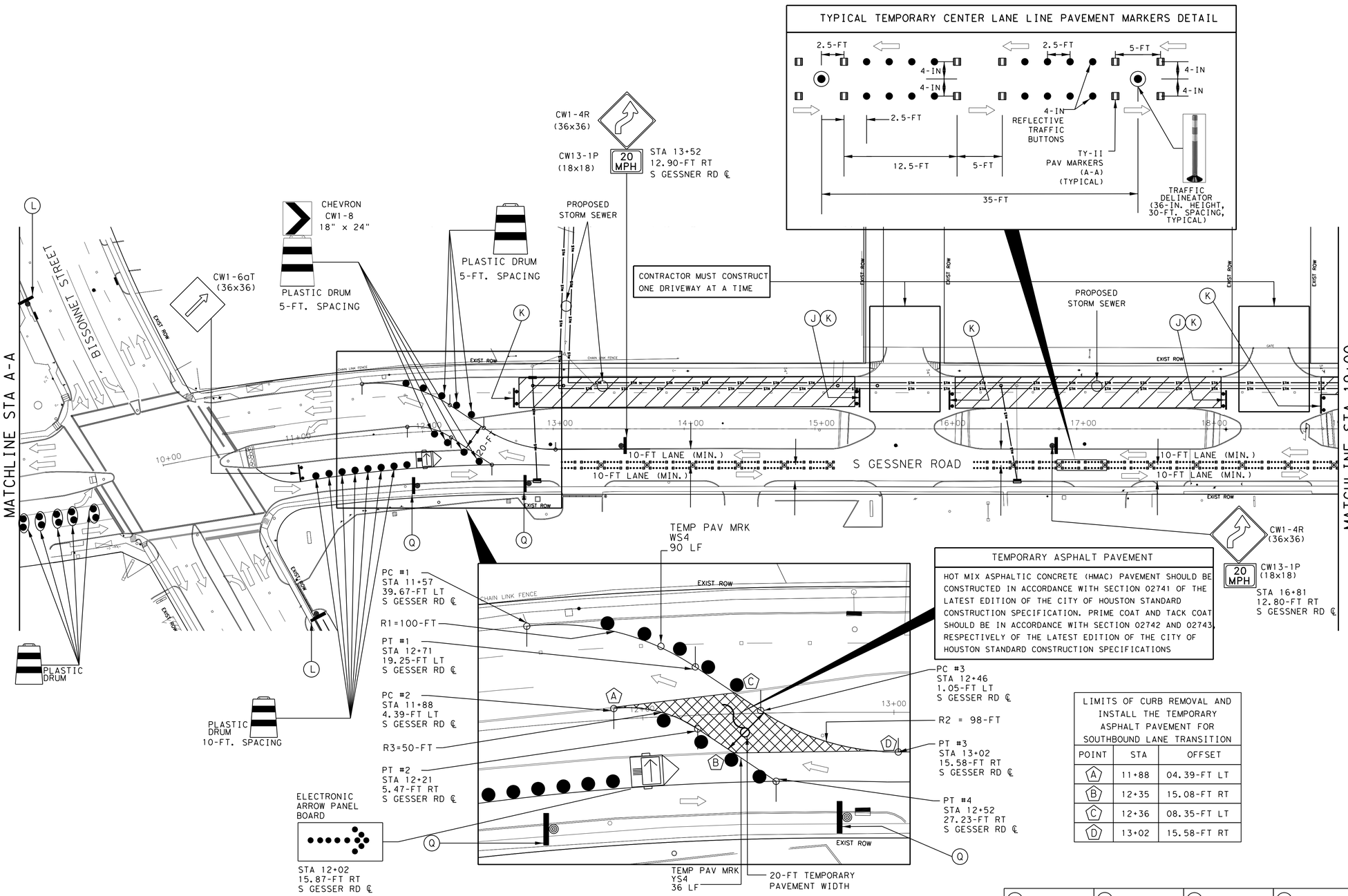
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA
DRAINAGE AND PAVING
IMPROVEMENTS
TRAFFIC CONTROL PLAN (TCP)
S GESSNER ROAD PHASE-1
SOUTH OF BISSONET STREET
SHEET 1 OF 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 54 OF 227	



TEMPORARY ASPHALT PAVEMENT

HOT MIX ASPHALTIC CONCRETE (HMAC) PAVEMENT SHOULD BE CONSTRUCTED IN ACCORDANCE WITH SECTION 02741 OF THE LATEST EDITION OF THE CITY OF HOUSTON STANDARD CONSTRUCTION SPECIFICATION. PRIME COAT AND TACK COAT SHOULD BE IN ACCORDANCE WITH SECTION 02742 AND 02743, RESPECTIVELY OF THE LATEST EDITION OF THE CITY OF HOUSTON STANDARD CONSTRUCTION SPECIFICATIONS

LIMITS OF CURB REMOVAL AND INSTALL THE TEMPORARY ASPHALT PAVEMENT FOR SOUTHBOUND LANE TRANSITION

POINT	STA	OFFSET
A	11+88	04.39-FT LT
B	12+35	15.08-FT RT
C	12+36	08.35-FT LT
D	13+02	15.58-FT RT

TCP LEGEND:

- CONSTRUCTION AREA
- TY III TRAFFIC BARRIER
- (A) TEMP. GROUND MOUNTED SIGNS
- PLASTIC DRUM
- 36-INCH TRAFFIC CONTROL DELLINEATOR
- FLASHING ARROW PANEL
- CERTIFIED FLAGGER/ OFF-DUTY OFFICER
- DIRECTION OF TRAVEL
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY I) W/REFLECTIVE MARKER
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY II) W/REFLECTIVE MARKER

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

TYPICAL SIGN SPACING & TAPER LENGTH				
S GESSNER ROAD Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF) 10' Offset	11' Offset	12' Offset
35	160'	205'	225'	245'

0 40 80 120 160

SCALE: 1" = 40'

S GESSNER ROAD TRAFFIC CONTROL PHASE-1:

TWO LANE, TWO-WAY TRAFFIC
ALONG NORTHBOUND S GESSNER ROAD

(A) ORANGE FLAG (TYPICAL) ROAD WORK AHEAD CW20-1D (36x36)	(B) S GESSNER RD M4-12T (VAR X 12)	(C) DETOUR M4-9S (30x24)	(D) DETOUR M4-9R (30x24)	(E) DETOUR M4-9L (30x24)	(F) END ROAD WORK G20-2a (36 X 18)	(G) R3-2 (24x24)	(H) R3-1 (24x24)	(J) DO NOT ENTER R5-1 (30x30)	(K) ROAD CLOSED R11-2 (48x30)	(L) ORANGE FLAG (TYPICAL) ROAD CLOSED AHEAD CW20-3D (36x36)	(M) RIGHT LANE CLOSED AHEAD CW20-5DR (36x36)	(N) LEFT LANE CLOSED AHEAD CW20-5DL (36x36)	(P) END DETOUR M4-8b (24x18)	(Q) CW-6-3 (36x36)	(U) DETOUR AHEAD CW20-2D (36x36)	(T) R3-27 (24x24)	(S) LOCAL TRAFFIC ONLY R8-9 (MODIFIED) (24x24)	(R) ROAD CLOSED TO THRU TRAFFIC R11-4 (60x30)

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HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA
DRAINAGE AND PAVING IMPROVEMENTS
TRAFFIC CONTROL PLAN (TCP)
S GESSNER ROAD PHASE-1
STA 10+00 TO 19+25
SHEET 2 OF 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 55 OF 227	

CONTRACTOR MUST CONSTRUCT THE CROSS-STREET CORNERS ONE CORNER AT A TIME ON ALTERNATING STREETS. REFER TO THE DETOUR PLANS IN THE PHASE-1 CONSTRUCTION STEP-2A, CONSTRUCTION STEP 2B & CONSTRUCTION STEP-3 SHEETS.

(A) (TYPICAL)

1) THE CONTRACTOR SHALL CLOSE RESIDENTIAL DRIVEWAYS ALONG THE SOUTHBOUND LANES OF SOUTH GESSNER ROAD AS REQUIRED FOR CONSTRUCTION ACTIVITIES.

2) THE CONTRACTOR SHALL COORDINATE AND PROVIDE ALTERNATE PARKING ARRANGEMENTS FOR AFFECTED RESIDENTS ALONG ADJACENT CITY STREETS FOR GESSNER ROAD CONSTRUCTION.

(B) (TYPICAL)

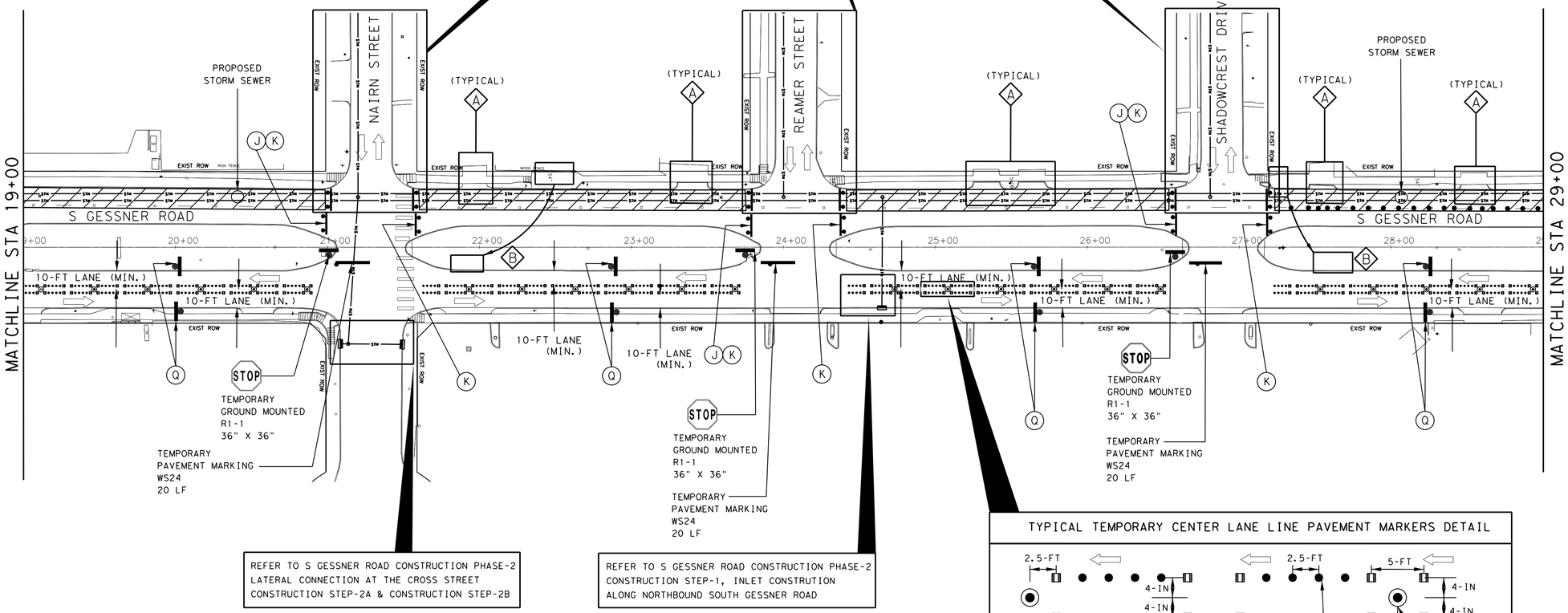
1) THE CONTRACTOR SHALL RELOCATE EXISTING METRO BUS STOP/SHELTER FOR THE S GESSNER ROAD CONSTRUCTION.

2) THE CONTRACTOR SHALL MAINTAIN SAFE AND ACCESSIBLE PEDESTRIAN PATHWAYS TO THE RELOCATED METRO BUS STOP/SHELTERS AT ALL TIMES DURING CONSTRUCTION.

TCP LEGEND:

- CONSTRUCTION AREA
- TY III TRAFFIC BARRIER
- (A) TEMP. GROUND MOUNTED SIGNS
- PLASTIC DRUM
- 36-INCH TRAFFIC CONTROL DELLINEATOR
- FLASHING ARROW PANEL
- CERTIFIED FLAGGER/ OFF-DUTY OFFICER
- DIRECTION OF TRAVEL
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY I) W/REFLECTIVE MARKER
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY II) W/REFLECTIVE MARKER

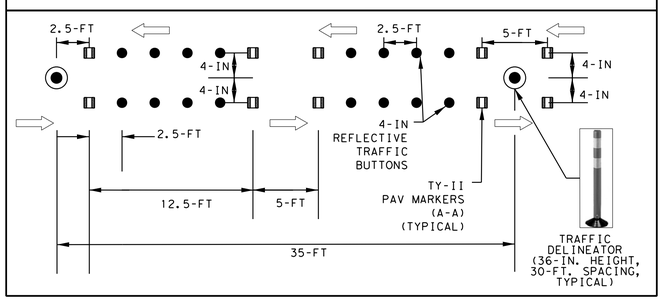
NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX



REFER TO S GESSNER ROAD CONSTRUCTION PHASE-2 LATERAL CONNECTION AT THE CROSS STREET CONSTRUCTION STEP-2A & CONSTRUCTION STEP-2B

REFER TO S GESSNER ROAD CONSTRUCTION PHASE-2 CONSTRUCTION STEP-1, INLET CONSTRUTION ALONG NORTHBOUND SOUTH GESSNER ROAD

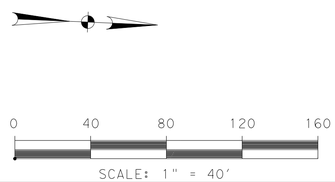
TYPICAL TEMPORARY CENTER LANE LINE PAVEMENT MARKERS DETAIL



S GESSNER ROAD TRAFFIC CONTROL PHASE-1:

TWO LANE, TWO-WAY TRAFFIC
ALONG NORTHBOUND S GESSNER ROAD

TYPICAL SIGN SPACING & TAPER LENGTH				
S GESSNER ROAD Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF) 10' Offset	11' Offset	12' Offset
35	160'	205'	225'	245'



(A) ORANGE FLAG (TYPICAL) ROAD WORK AHEAD CW20-1D (36x36)	(B) BRAEBURN GLEN BLVD M4-12T (VAR X 12)	(C) DETOUR M4-9S (30x24)	(D) DETOUR M4-9R (30x24)	(E) DETOUR M4-9L (30x24)	(F) END ROAD WORK G20-2a (36 X 18)	(G) R3-2 (24x24)	(H) R3-1 (24x24)	(J) DO NOT ENTER R5-1 (30x30)	(K) ROAD CLOSED R11-2 (48x30)	(L) ORANGE FLAG (TYPICAL) ROAD CLOSED AHEAD CW20-3D (36x36)	(M) RIGHT LANE CLOSED AHEAD CW20-5DR (36x36)	(N) LEFT LANE CLOSED AHEAD CW20-5DL (36x36)	(P) END DETOUR M4-8b (24x18)	(Q) CW-6-3 (36x36)

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STATE OF TEXAS MOHAMMAD IRFAN 89333 LICENSED PROFESSIONAL ENGINEER
3/3/2026
TBPE FIRM REGISTRATION #F-9492

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

TRAFFIC CONTROL PLAN (TCP)
S GESSNER ROAD PHASE-1
STA 19+00 TO 29+00
SHEET 3 OF 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 56 OF 227	

CONTRACTOR MUST CONSTRUCT THE CROSS-STREET CORNERS ONE CORNER AT A TIME ON ALTERNATING STREETS. REFER TO THE DETOUR PLANS IN THE PHASE-1 CONSTRUCTION STEP-2A, CONSTRUCTION STEP 2B & CONSTRUCTION STEP-3 SHEETS.

(A) (TYPICAL)

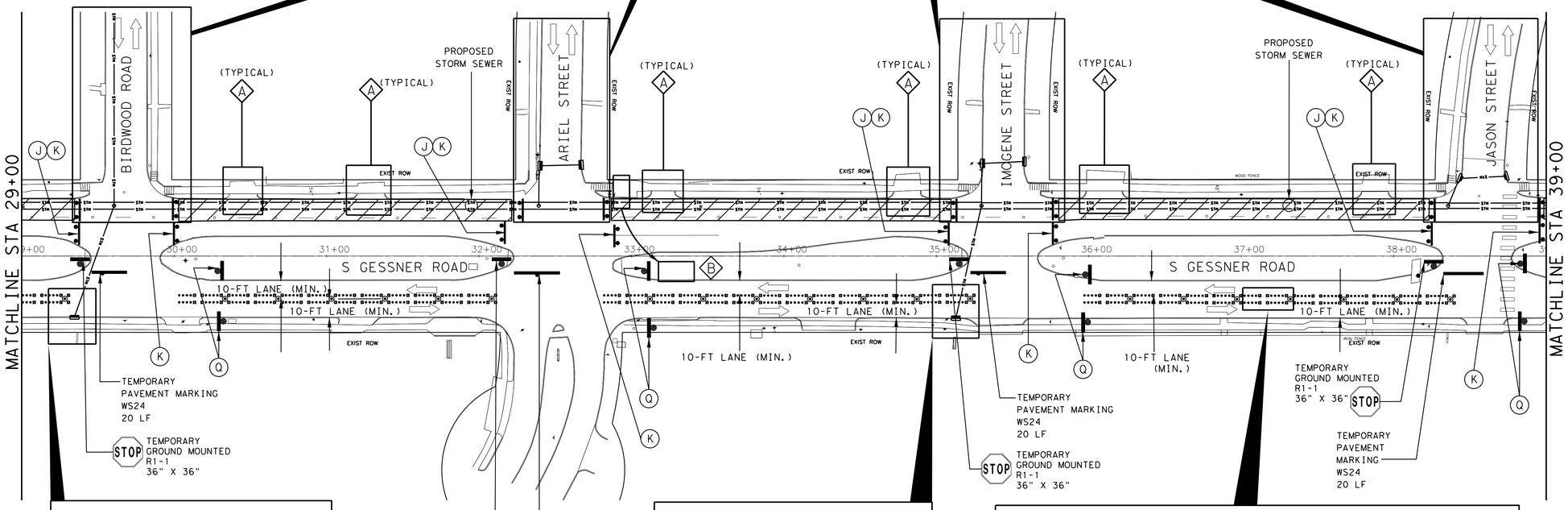
1) THE CONTRACTOR SHALL CLOSE RESIDENTIAL DRIVEWAYS ALONG THE SOUTHBOUND LANES OF SOUTH GESSNER ROAD AS REQUIRED FOR CONSTRUCTION ACTIVITIES.

2) THE CONTRACTOR SHALL COORDINATE AND PROVIDE ALTERNATE PARKING ARRANGEMENTS FOR AFFECTED RESIDENTS ALONG ADJACENT CITY STREETS FOR GESSNER ROAD CONSTRUCTION.

(B) (TYPICAL)

1) THE CONTRACTOR SHALL RELOCATE EXISTING METRO BUS STOP/SHELTER FOR THE S GESSNER ROAD CONSTRUCTION.

2) THE CONTRACTOR SHALL MAINTAIN SAFE AND ACCESSIBLE PEDESTRIAN PATHWAYS TO THE RELOCATED METRO BUS STOP/SHELTERS AT ALL TIMES DURING CONSTRUCTION.



TCP LEGEND:

- CONSTRUCTION AREA
- TY III TRAFFIC BARRIER
- (A) TEMP. GROUND MOUNTED SIGNS
- PLASTIC DRUM
- 36-INCH TRAFFIC CONTROL DELLINEATOR
- FLASHING ARROW PANEL
- CERTIFIED FLAGGER/ OFF-DUTY OFFICER
- DIRECTION OF TRAVEL
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY I) W/REFLECTIVE MARKER
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY II) W/REFLECTIVE MARKER

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

TYPICAL SIGN SPACING & TAPER LENGTH				
S GESSNER ROAD Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF) 10' Offset	11' Offset	12' Offset
35	160'	205'	225'	245'

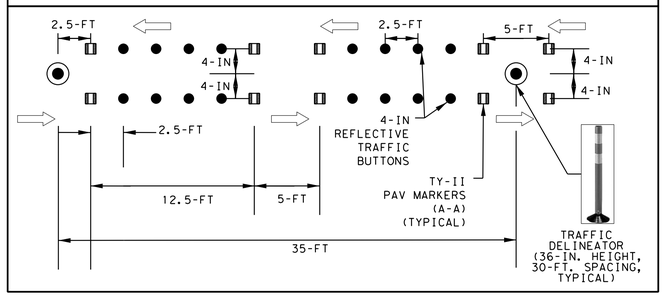
0 40 80 120 160

SCALE: 1" = 40'

S GESSNER ROAD TRAFFIC CONTROL PHASE-1:

TWO LANE, TWO-WAY TRAFFIC
ALONG NORTHBOUND S GESSNER ROAD

TYPICAL TEMPORARY CENTER LANE LINE PAVEMENT MARKERS DETAIL



(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(J)	(K)	(L)	(M)	(N)	(P)	(Q)
ORANGE FLAG (TYPICAL) ROAD WORK AHEAD	BRAEBURN GLEN BLVD	DETOUR	DETOUR	DETOUR	END ROAD WORK			DO NOT ENTER	ROAD CLOSED	ORANGE FLAG (TYPICAL) ROAD CLOSED AHEAD	RIGHT LANE CLOSED AHEAD	LEFT LANE CLOSED AHEAD	END DETOUR	
CW20-1D (36x36)	M4-12T (VAR X 12)	M4-9S (30x24)	M4-9R (30x24)	M4-9L (30x24)	G20-2a (36 X 18)	R3-2 (24x24)	R3-1 (24x24)	R5-1 (30x30)	R11-2 (48x30)	CW20-3D (36x36)	CW20-5DR (36x36)	CW20-5DL (36x36)	M4-8b (24x18)	CW-6-3 (36x36)

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SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

STATE OF TEXAS — MOHAMMAD I IRFAN — 89333 — LICENSED PROFESSIONAL ENGINEER — 3/3/2026

TBPE FIRM REGISTRATION #F-9492

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS TRAFFIC CONTROL PLAN (TCP) S GESSNER ROAD PHASE-1 STA 29+00 TO 39+00

SHEET 4 OF 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 57 OF 227	

Ⓐ (TYPICAL)

1) THE CONTRACTOR SHALL CLOSE RESIDENTIAL DRIVEWAYS ALONG THE SOUTHBOUND LANES OF SOUTH GESSNER ROAD AS REQUIRED FOR CONSTRUCTION ACTIVITIES.

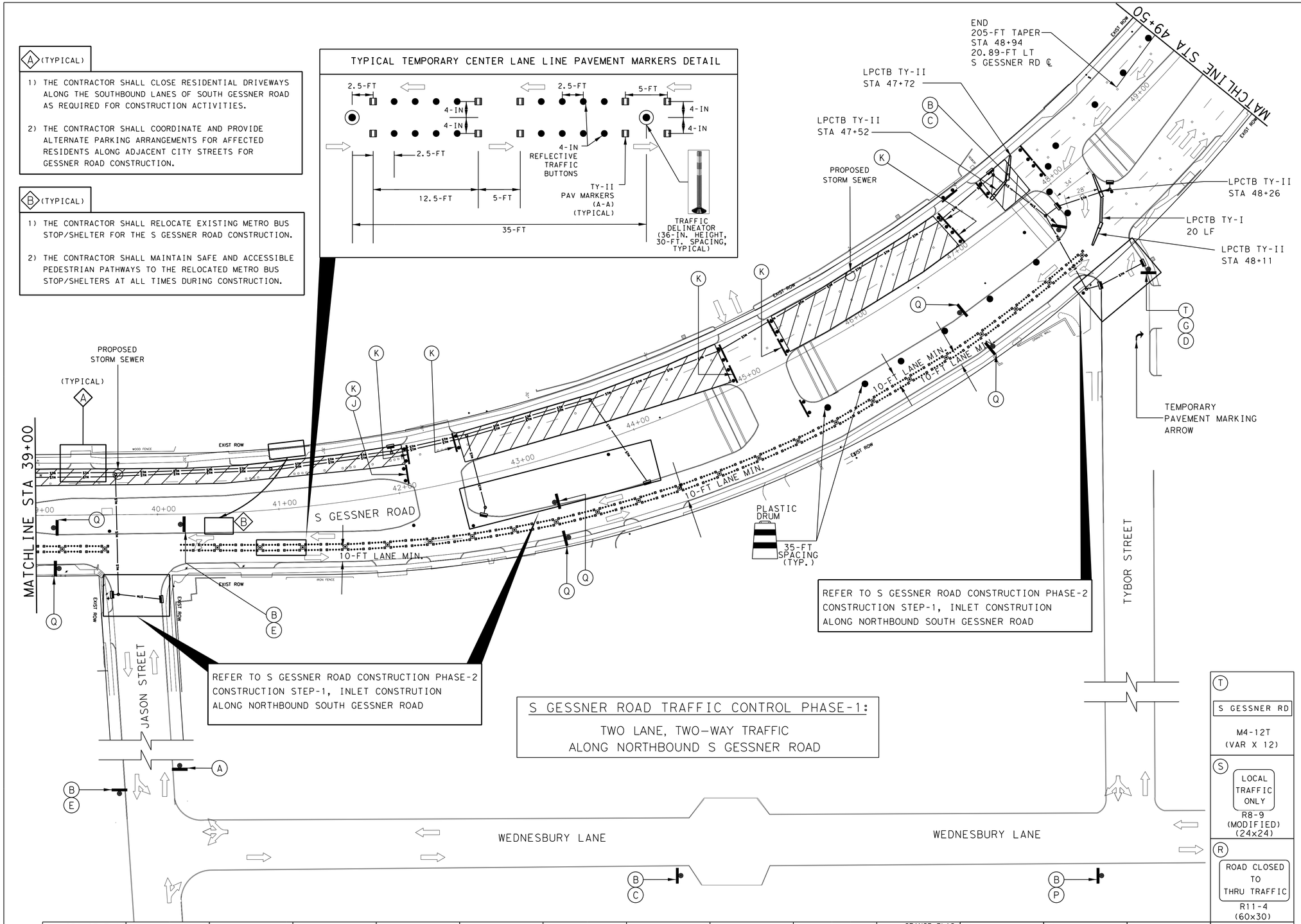
2) THE CONTRACTOR SHALL COORDINATE AND PROVIDE ALTERNATE PARKING ARRANGEMENTS FOR AFFECTED RESIDENTS ALONG ADJACENT CITY STREETS FOR GESSNER ROAD CONSTRUCTION.

Ⓑ (TYPICAL)

1) THE CONTRACTOR SHALL RELOCATE EXISTING METRO BUS STOP/SHELTER FOR THE S GESSNER ROAD CONSTRUCTION.

2) THE CONTRACTOR SHALL MAINTAIN SAFE AND ACCESSIBLE PEDESTRIAN PATHWAYS TO THE RELOCATED METRO BUS STOP/SHELTERS AT ALL TIMES DURING CONSTRUCTION.

TYPICAL TEMPORARY CENTER LANE LINE PAVEMENT MARKERS DETAIL



REFER TO S GESSNER ROAD CONSTRUCTION PHASE-2 CONSTRUCTION STEP-1, INLET CONSTRUTION ALONG NORTHBOUND SOUTH GESSNER ROAD

REFER TO S GESSNER ROAD CONSTRUCTION PHASE-2 CONSTRUCTION STEP-1, INLET CONSTRUTION ALONG NORTHBOUND SOUTH GESSNER ROAD

S GESSNER ROAD TRAFFIC CONTROL PHASE-1:

TWO LANE, TWO-WAY TRAFFIC
ALONG NORTHBOUND S GESSNER ROAD

TCP LEGEND:

- CONSTRUCTION AREA
- TY III TRAFFIC BARRIER
- Ⓐ TEMP. GROUND MOUNTED SIGNS
- PLASTIC DRUM
- 36-INCH TRAFFIC CONTROL DELLINEATOR
- FLASHING ARROW PANEL
- CERTIFIED FLAGGER/ OFF-DUTY OFFICER
- DIRECTION OF TRAVEL
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY I) W/REFLECTIVE MARKER
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY II) W/REFLECTIVE MARKER

TYPICAL SIGN SPACING & TAPER LENGTH				
S Gessner Road Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF)		
		10' Offset	11' Offset	12' Offset
35	160'	205'	225'	245'

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

0 40 80 120 160

SCALE: 1" = 40'

Ⓐ ORANGE FLAG (TYPICAL) ROAD WORK AHEAD	Ⓑ TYBOR DR	Ⓒ DETOUR	Ⓓ DETOUR	Ⓔ DETOUR	Ⓕ END ROAD WORK	Ⓖ	Ⓗ	Ⓙ DO NOT ENTER	Ⓚ ROAD CLOSED	Ⓛ ORANGE FLAG (TYPICAL) ROAD CLOSED AHEAD	Ⓜ RIGHT LANE CLOSED AHEAD	Ⓝ LEFT LANE CLOSED AHEAD	Ⓟ END DETOUR	Ⓠ	Ⓣ S GESSNER RD	Ⓢ LOCAL TRAFFIC ONLY	Ⓡ ROAD CLOSED TO THRU TRAFFIC
CW20-1D (36x36)	M4-12T (VAR X 12)	M4-9S (30x24)	M4-9R (30x24)	M4-9L (30x24)	G20-2a (36 X 18)	R3-2 (24x24)	R3-1 (24x24)	R5-1 (30x30)	R11-2 (48x30)	CW20-3D (36x36)	CW20-5DR (36x36)	CW20-5DL (36x36)	M4-8b (24x18)	CW-6-3 (36x36)	M4-12T (VAR X 12)	R8-9 (MODIFIED) (24x24)	R11-4 (60x30)

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FB NO. P-6331

STATE OF TEXAS MOHAMMAD IRFAN 89333 LICENSED PROFESSIONAL ENGINEER
3/3/2026
TBPE FIRM REGISTRATION #F-9492

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

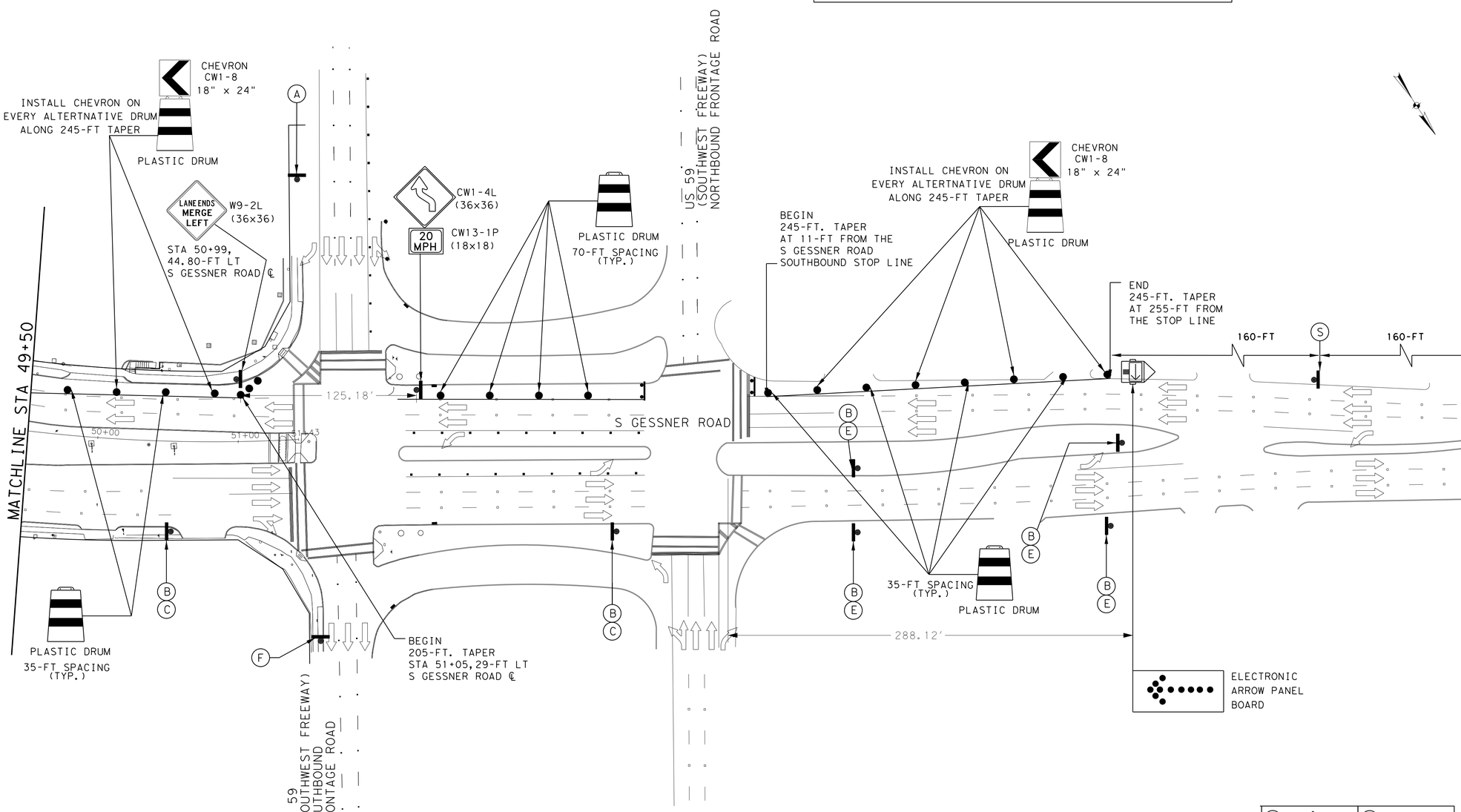
BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

TRAFFIC CONTROL PLAN (TCP)
S GESSNER ROAD PHASE-1
STA 39+00 TO 49+50
SHEET 5 OF 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 58 OF 227	

S GESSNER ROAD TRAFFIC CONTROL PHASE-1:

TWO LANE, TWO-WAY TRAFFIC
ALONG NORTHBOUND S GESSNER ROAD



TCP LEGEND:

- CONSTRUCTION AREA
- TY III TRAFFIC BARRIER
- (A) TEMP. GROUND MOUNTED SIGNS
- PLASTIC DRUM
- 36-INCH TRAFFIC CONTROL DELLINEATOR
- FLASHING ARROW PANEL
- CERTIFIED FLAGGER/ OFF-DUTY OFFICER
- DIRECTION OF TRAVEL
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY I) W/REFLECTIVE MARKER
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY II) W/REFLECTIVE MARKER

TYPICAL SIGN SPACING & TAPER LENGTH				
S GESSNER ROAD Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF) 10' Offset	11' Offset	12' Offset
35	160'	205'	225'	245'

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

(A) ORANGE FLAG (TYPICAL) ROAD WORK AHEAD CW20-1D (36x36)	(B) S GESSNER ROAD M4-12T (VAR X 12)	(C) DETOUR M4-9S (30x24)	(D) DETOUR M4-9R (30x24)
(E) DETOUR M4-9L (30x24)	(F) END ROAD WORK G20-2a (36 X 18)	(G) R3-2 (24x24)	(H) R3-1 (24x24)
(J) DO NOT ENTER R5-1 (30x30)	(K) ROAD CLOSED R11-2 (48x30)	(L) ORANGE FLAG (TYPICAL) ROAD CLOSED AHEAD CW20-3D (36x36)	(M) RIGHT LANE CLOSED AHEAD CW20-5DR (36x36)
(N) LEFT LANE CLOSED AHEAD CW20-5DL (36x36)	(P) END DETOUR M4-8b (24x18)	(Q) CW-6-3 (36x36)	(S) THRU TRAFFIC MERGE LEFT CW4-1aTL (36x36)
(R) ROAD CLOSED TO THRU TRAFFIC R11-4 (60x30)			

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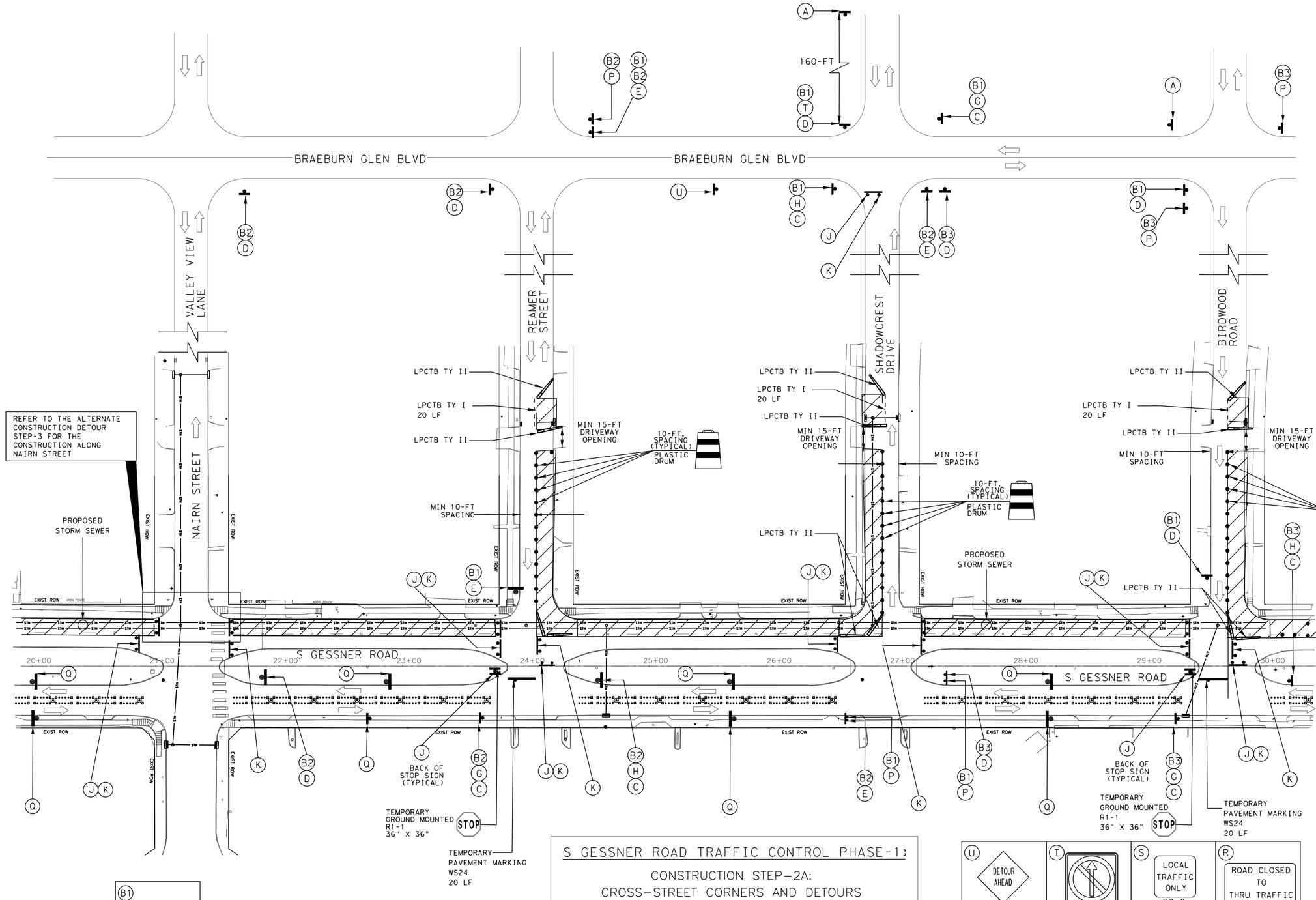
3/3/2026
TBPE FIRM REGISTRATION #F-9492

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA
DRAINAGE AND PAVING
IMPROVEMENTS
TRAFFIC CONTROL PLAN (TCP)
S GESSNER ROAD PHASE-1
STA 50+00 TO END
SHEET 6 OF 6

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 59 OF 227	



TCP LEGEND:

- CONSTRUCTION AREA
- TY III TRAFFIC BARRIER
- TEMP. GROUND MOUNTED SIGNS
- PLASTIC DRUM
- 36-INCH TRAFFIC CONTROL DELLINEATOR
- FLASHING ARROW PANEL
- CERTIFIED FLAGGER/ OFF-DUTY OFFICER
- DIRECTION OF TRAVEL
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY I) W/REFLECTIVE MARKER
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY II) W/REFLECTIVE MARKER

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

TYPICAL SIGN SPACING & TAPER LENGTH

S GESSNER ROAD Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF) 10' Offset	11' Offset	12' Offset
35	160'	205'	225'	245'

0 40 80 120 160

SCALE: 1" = 40'

S GESSNER ROAD TRAFFIC CONTROL PHASE-1:

CONSTRUCTION STEP-2A:
CROSS-STREET CORNERS AND DETOURS

A ORANGE FLAG (TYPICAL) ROAD WORK AHEAD	B1 SHADOWCREST DRIVE; B2 REAMER STREET; B3 BIRDWOOD ROAD	C DETOUR	D DETOUR	E DETOUR	F END ROAD WORK	G	H	J DO NOT ENTER	K ROAD CLOSED	L ORANGE FLAG (TYPICAL) ROAD CLOSED AHEAD	M RIGHT LANE CLOSED AHEAD	N LEFT LANE CLOSED AHEAD	P END DETOUR	Q
CW20-1D (36x36)	M4-12T (VAR X 12)	M4-9S (30x24)	M4-9R (30x24)	M4-9L (30x24)	G20-2a (36 X 18)	R3-2 (24x24)	R3-1 (24x24)	R5-1 (30x30)	R11-2 (48x30)	CW20-3D (36x36)	CW20-5DR (36x36)	CW20-5DL (36x36)	M4-8b (24x18)	CW-6-3 (36x36)

U	T	S	R
DETOUR AHEAD		LOCAL TRAFFIC ONLY	ROAD CLOSED TO THRU TRAFFIC
CW20-2D (36x36)	R3-27 (24x24)	R8-9 (MODIFIED) (24x24)	R11-4 (60x30)

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3/3/2026
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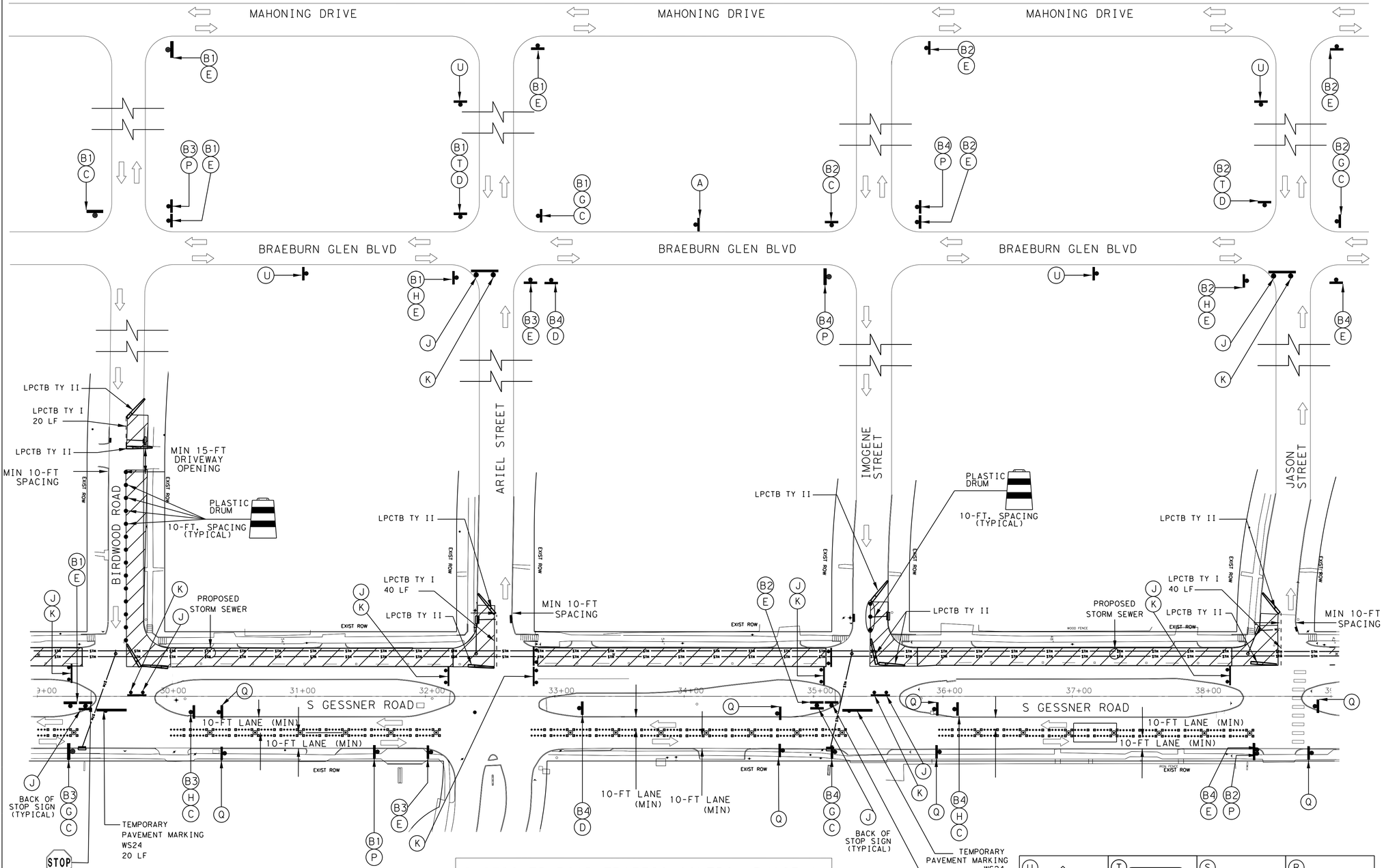
CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS TRAFFIC CONTROL DETOUR PLAN S GESSNER ROAD PHASE-1 CONSTRUCTION STEP-2A

SHEET 1 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 60 OF 227	



TCP LEGEND:

- CONSTRUCTION AREA
- TY III TRAFFIC BARRIER
- (A) TEMP. GROUND MOUNTED SIGNS
- PLASTIC DRUM
- 36-INCH TRAFFIC CONTROL DELLINEATOR
- FLASHING ARROW PANEL
- CERTIFIED FLAGGER/ OFF-DUTY OFFICER
- DIRECTION OF TRAVEL
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY I) W/REFLECTIVE MARKER
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY II) W/REFLECTIVE MARKER

NO.	DATE	REVISION
	MM/DD/YY	BRIEF DESCRIPTION
	MM/DD/YY	BRIEF DESCRIPTION
	MM/DD/YY	BRIEF DESCRIPTION
APP.	XXX	
	XXX	
	XXX	

TYPICAL SIGN SPACING & TAPER LENGTH				
S GESSNER ROAD Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF)		
		10' Offset	11' Offset	12' Offset
35	160'	205'	225'	245'

0 40 80 120 160

SCALE: 1" = 40'

S GESSNER ROAD TRAFFIC CONTROL PHASE-1:

CONSTRUCTION STEP-2A:
CROSS-STREET CORNERS AND DETOURS

(A) ORANGE FLAG (TYPICAL) ROAD WORK AHEAD CW20-1D (36x36)	(B1) AERIAL STREET (B2) JASON STREET (B3) BIRDWOOD ROAD (B4) IMOGENE STREET M4-12T (VAR X 12)	(C) DETOUR M4-9S (30x24)	(D) DETOUR M4-9R (30x24)	(E) DETOUR M4-9L (30x24)	(F) END ROAD WORK G20-2a (36 X 18)	(G) R3-2 (24x24)	(H) R3-1 (24x24)	(J) DO NOT ENTER R5-1 (30x30)	(K) ROAD CLOSED R11-2 (48x30)	(L) ORANGE FLAG (TYPICAL) ROAD CLOSED AHEAD CW20-3D (36x36)	(M) RIGHT LANE CLOSED AHEAD CW20-5DR (36x36)	(N) LEFT LANE CLOSED AHEAD CW20-5DL (36x36)	(P) END DETOUR M4-8b (24x18)	(Q) CW-6-3 (36x36)

(U) DETOUR AHEAD CW20-2D (36x36)

(T) R3-27 (24x24)

(S) LOCAL TRAFFIC ONLY R8-9 (MODIFIED) (24x24)

(R) ROAD CLOSED TO THRU TRAFFIC R11-4 (60x30)

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3/3/2026
TBPE FIRM REGISTRATION #F-9492

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA
DRAINAGE AND PAVING IMPROVEMENTS
TRAFFIC CONTROL DETOUR PLAN
S GESSNER ROAD PHASE-1
CONSTRUCTION STEP-2A
SHEET 2 OF 5

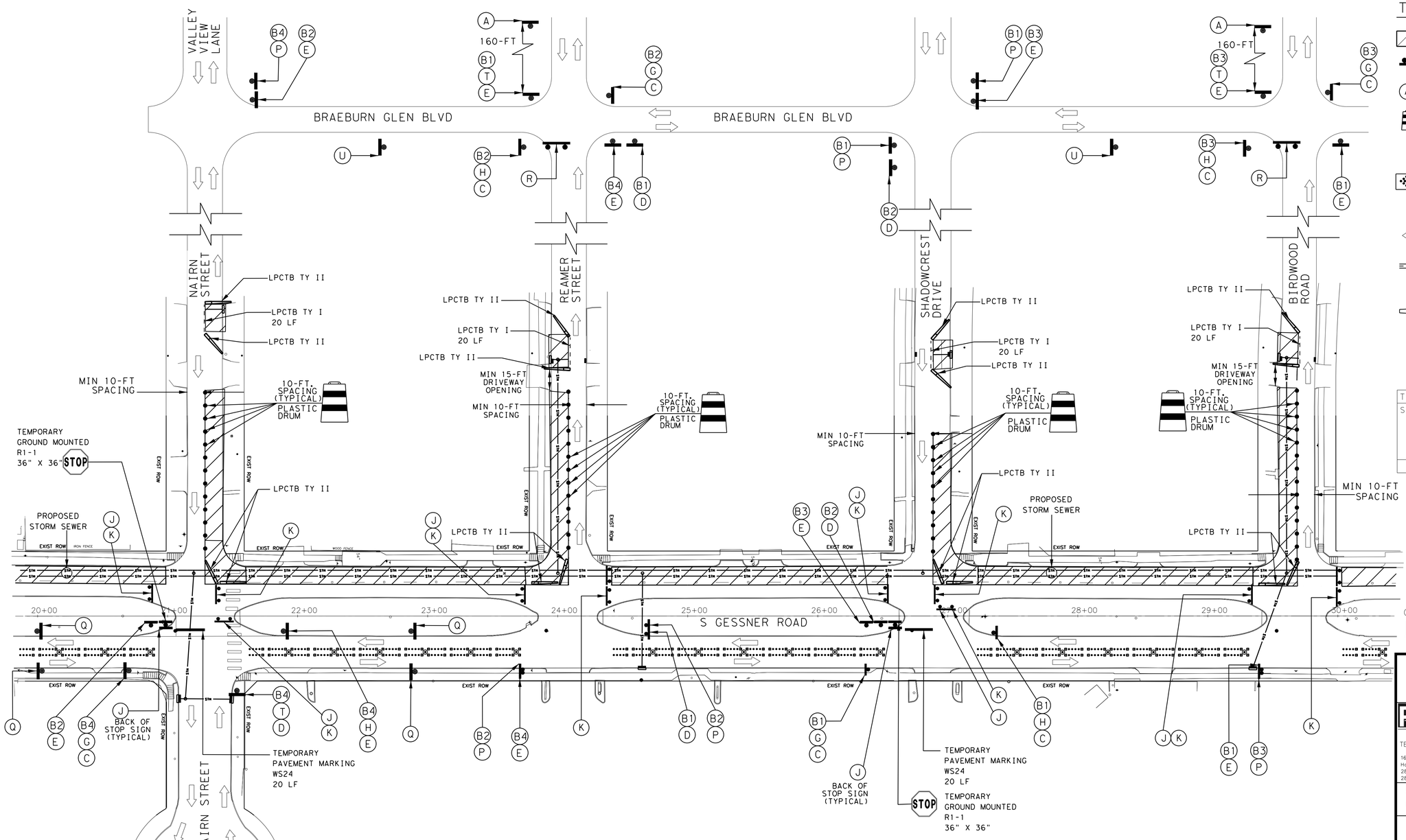
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 61 OF 227	

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

TCP LEGEND:

- CONSTRUCTION AREA
- TY III TRAFFIC BARRIER
- TEMP. GROUND MOUNTED SIGNS
- PLASTIC DRUM
- 36-INCH TRAFFIC CONTROL DELLINEATOR
- FLASHING ARROW PANEL
- CERTIFIED FLAGGER/ OFF-DUTY OFFICER
- DIRECTION OF TRAVEL
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY I) W/REFLECTIVE MARKER
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY II) W/REFLECTIVE MARKER

TYPICAL SIGN SPACING & TAPER LENGTH				
S GESSNER ROAD Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF) 10' Offset	11' Offset	12' Offset
35	160'	205'	225'	245'



0 40 80 120 160

SCALE: 1" = 40'

S GESSNER ROAD TRAFFIC CONTROL PHASE-1:

CONSTRUCTION STEP-2B:

CROSS-STREET CORNERS AND DETOURS

A ORANGE FLAG (TYPICAL) ROAD WORK AHEAD CW20-1D (36x36)	B1 SHADOWCREST DRIVE; B2 REAMER STREET; B3 BIRDWOOD ROAD; B4 NAIRN STREET M4-12T (VAR X 12)	C DETOUR M4-9S (30x24)	D DETOUR M4-9R (30x24)	E DETOUR M4-9L (30x24)	F END ROAD WORK G20-2a (36 X 18)	G R3-2 (24x24)	H R3-1 (24x24)	J DO NOT ENTER R5-1 (30x30)	K ROAD CLOSED R11-2 (48x30)	L ORANGE FLAG (TYPICAL) ROAD CLOSED AHEAD CW20-3D (36x36)	M RIGHT LANE CLOSED AHEAD CW20-5DR (36x36)	N LEFT LANE CLOSED AHEAD CW20-5DL (36x36)	P END DETOUR M4-8b (24x18)	Q CW-6-3 (36x36)

U DETOUR AHEAD CW20-2D (36x36)	T R3-27 (24x24)	S LOCAL TRAFFIC ONLY R8-9 (MODIFIED) (24x24)	R ROAD CLOSED TO THRU TRAFFIC R11-4 (60x30)	

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STATE OF TEXAS — MOHAMMAD IRFAN — 89333 — LICENSED PROFESSIONAL ENGINEER

3/3/2026

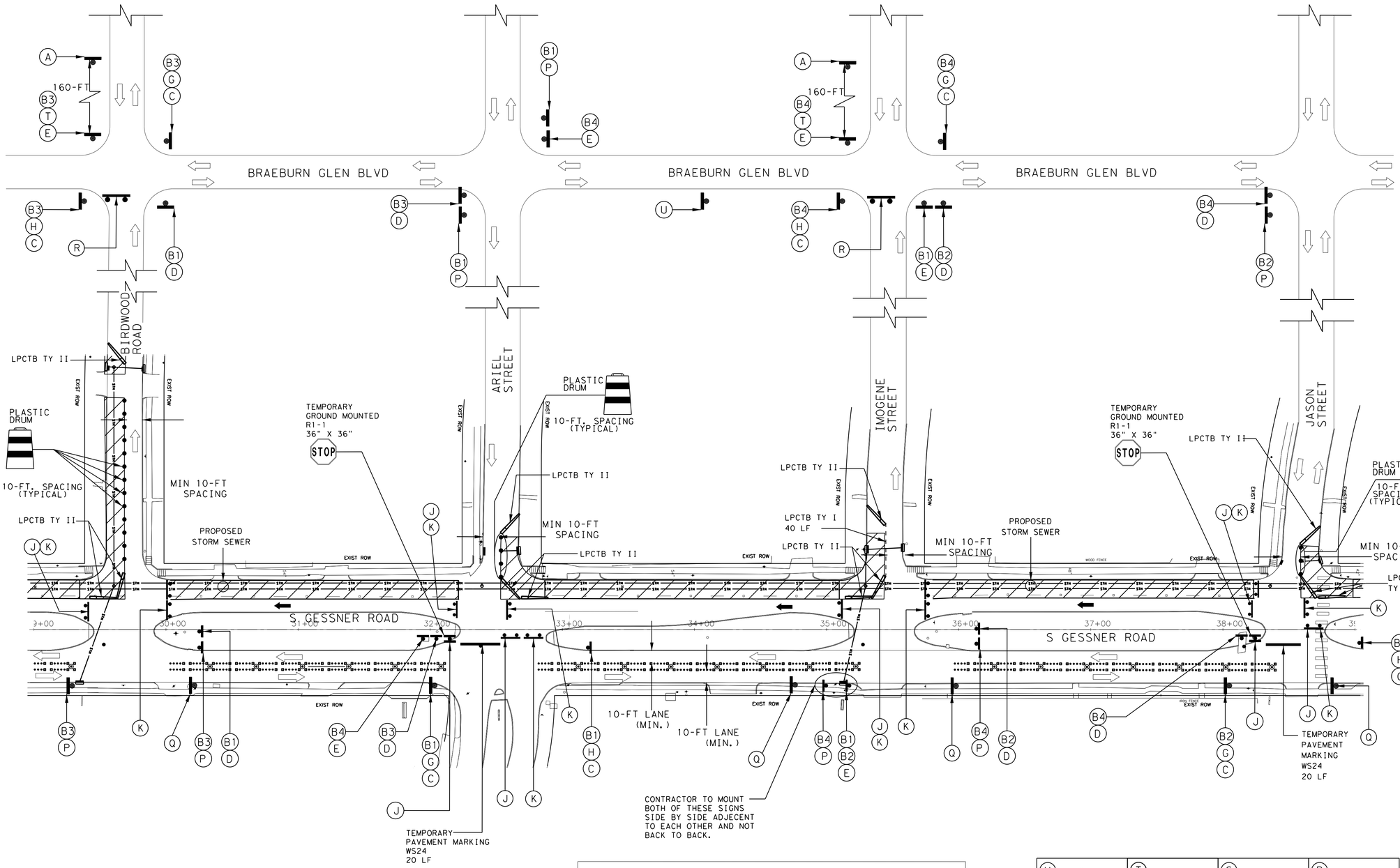
TBPE FIRM REGISTRATION #F-9492

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
TRAFFIC CONTROL DETOUR PLAN
S GESSNER ROAD PHASE-1
CONSTRUCTION STEP-2B
SHEET 3 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 62 OF 227	



TCP LEGEND:

- CONSTRUCTION AREA
- TY III TRAFFIC BARRIER
- TEMP. GROUND MOUNTED SIGNS
- PLASTIC DRUM
- 36-INCH TRAFFIC CONTROL DELLINEATOR
- FLASHING ARROW PANEL
- CERTIFIED FLAGGER/ OFF-DUTY OFFICER
- DIRECTION OF TRAVEL
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY I) W/REFLECTIVE MARKER
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY II) W/REFLECTIVE MARKER

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

TYPICAL SIGN SPACING & TAPER LENGTH				
S GESSNER ROAD Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF) 10' Offset	11' Offset	12' Offset
35	160'	205'	225'	245'

0 40 80 120 160

SCALE: 1" = 40'

S GESSNER ROAD TRAFFIC CONTROL PHASE-1:

CONSTRUCTION STEP-2B:
CROSS-STREET CORNERS AND DETOURS

A	ORANGE FLAG (TYPICAL) ROAD WORK AHEAD	B1 AERIAL STREET B2 JASON STREET B3 BIRDWOOD ROAD B4 IMOGENE STREET	C	DETOUR	D	DETOUR	E	DETOUR	F	END ROAD WORK	G		H		J	DO NOT ENTER	K	ROAD CLOSED	L	ORANGE FLAG (TYPICAL) ROAD CLOSED AHEAD
CW20-1D (36x36)		M4-12T (VAR X 12)		M4-9S (30x24)		M4-9R (30x24)		M4-9L (30x24)		G20-2a (36 X 18)		R3-2 (24x24)		R3-1 (24x24)		R5-1 (30x30)		R11-2 (48x30)		CW20-3D (36x36)

U	DETOUR AHEAD	T		S	LOCAL TRAFFIC ONLY	R	ROAD CLOSED TO THRU TRAFFIC												
CW20-2D (36x36)		R3-27 (24x24)		R8-9 (MODIFIED) (24x24)		R11-4 (60x30)													
M	RIGHT LANE CLOSED AHEAD	N	LEFT LANE CLOSED AHEAD	P	END DETOUR	Q													
CW20-5DR (36x36)		CW20-5DL (36x36)		M4-8b (24x18)		CW-6-3 (36x36)													

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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

TRAFFIC CONTROL DETOUR PLAN
S GESSNER ROAD PHASE-1
CONSTRUCTION STEP-2B
SHEET 4 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
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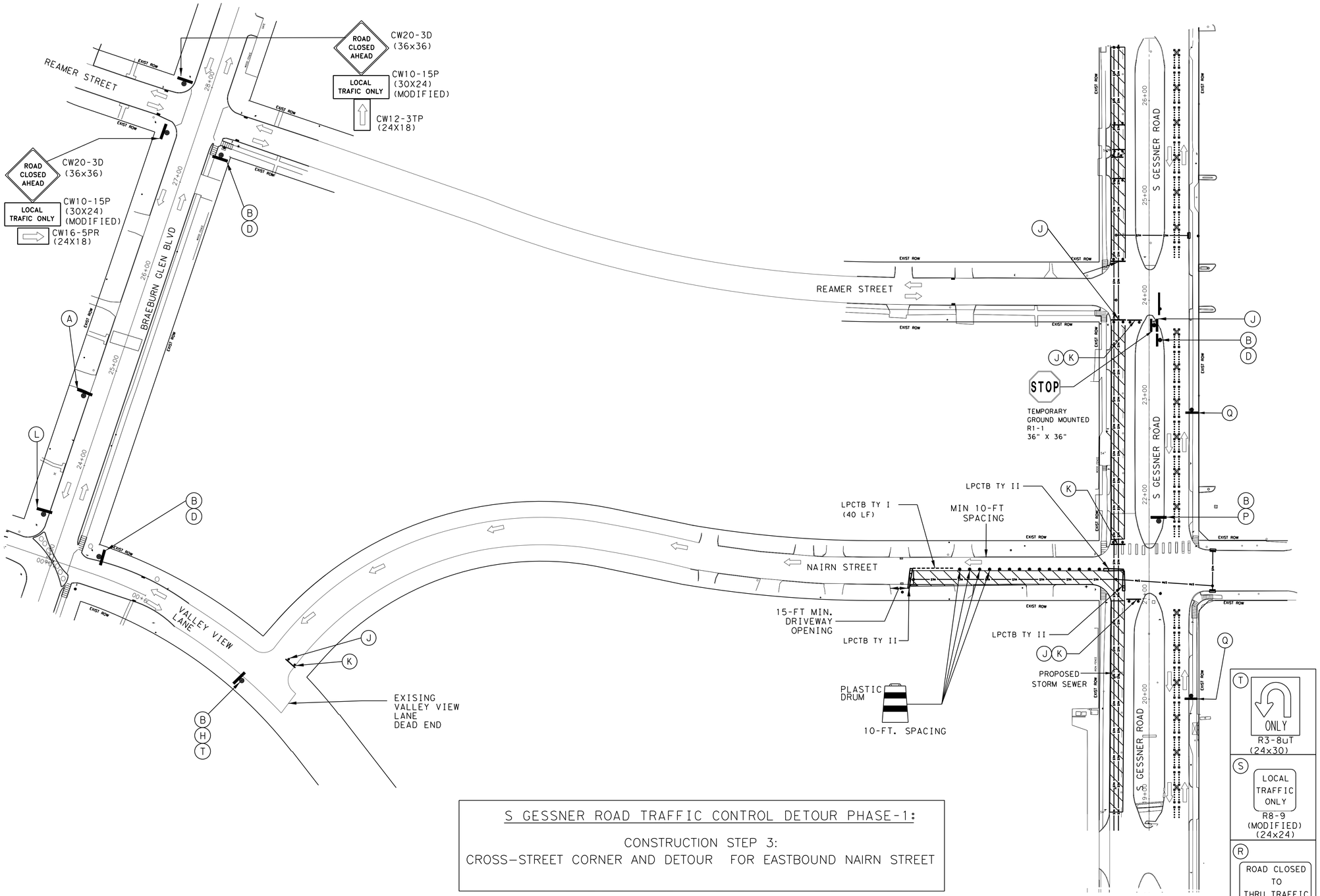
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 63 OF 227	



TCP LEGEND:

- CONSTRUCTION AREA
- TY III TRAFFIC BARRIER
- (A) TEMP. GROUND MOUNTED SIGNS
- PLASTIC DRUM
- 36-INCH TRAFFIC CONTROL DELLINEATOR
- FLASHING ARROW PANEL
- CERTIFIED FLAGGER/ OFF-DUTY OFFICER
- DIRECTION OF TRAVEL
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY I) W/REFLECTIVE MARKER
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY II) W/REFLECTIVE MARKER

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

TYPICAL SIGN SPACING & TAPER LENGTH				
S GESSNER ROAD Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF) 10' Offset	11' Offset	12' Offset
35	160'	205'	225'	245'
30	120'	150'	165'	180'

0 50 100 150 200

SCALE: 1" = 100'

S GESSNER ROAD TRAFFIC CONTROL DETOUR PHASE-1:

CONSTRUCTION STEP 3:
CROSS-STREET CORNER AND DETOUR FOR EASTBOUND NAIRN STREET

(A) ORANGE FLAG (TYPICAL) ROAD WORK AHEAD CW20-1D (36x36)	(B) NAIRN ST M4-12T (VAR X 12)	(C) DETOUR M4-9S (30x24)	(D) DETOUR M4-9R (30x24)	(E) DETOUR M4-9L (30x24)	(F) END ROAD WORK G20-2a (36 X 18)	(G) R3-2 (24x24)	(H) R3-1 (24x24)	(J) DO NOT ENTER R5-1 (30x30)	(K) ROAD CLOSED R11-2 (48x30)	(L) ORANGE FLAG (TYPICAL) ROAD CLOSED AHEAD CW20-3D (36x36)	(M) RIGHT LANE CLOSED AHEAD CW20-5DR (36x36)	(N) LEFT LANE CLOSED AHEAD CW20-5DL (36x36)	(P) END DETOUR M4-8b (24x18)	(Q) CW-6-3 (36x36)

(T) ONLY R3-8uT (24x30)

(S) LOCAL TRAFFIC ONLY R8-9 (MODIFIED) (24x24)

(R) ROAD CLOSED TO THRU TRAFFIC R11-4 (60x30)

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3/3/2026
TBPE FIRM REGISTRATION #F-9492

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA
DRAINAGE AND PAVING
IMPROVEMENTS
TRAFFIC CONTROL DETOUR PLAN
S GESSNER ROAD PHASE-1
CONSTRUCTION STEP 3
SHEET 5 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
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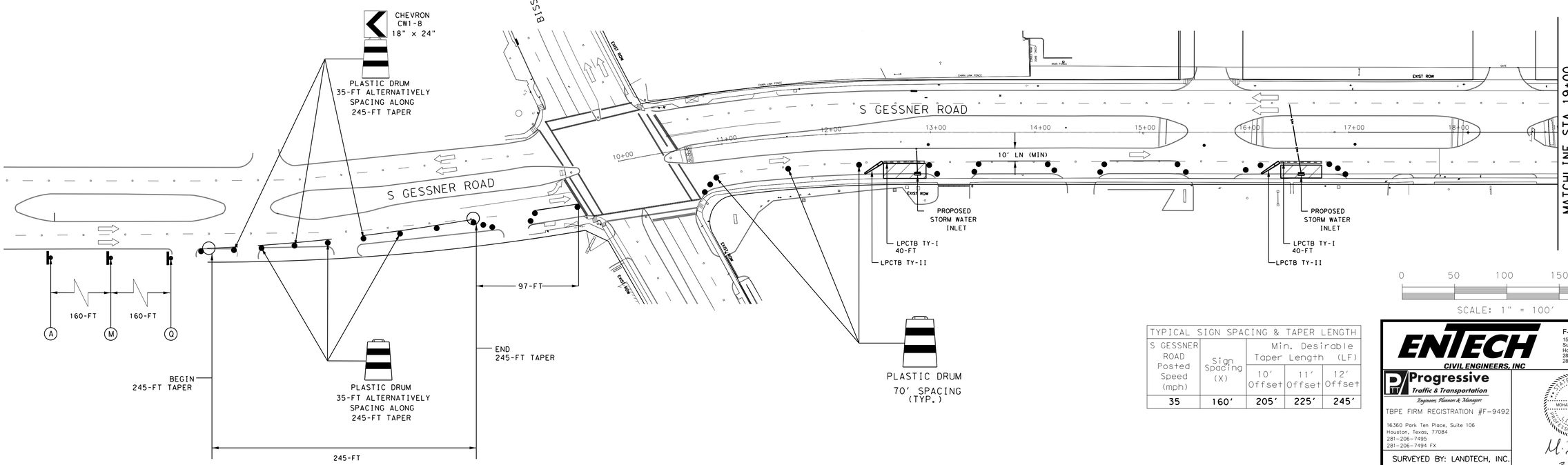
SHEET NO. 64 OF 227	

TCP LEGEND:

- CONSTRUCTION AREA
- TY III TRAFFIC BARRIER
- (A) TEMP. GROUND MOUNTED SIGNS
- PLASTIC DRUM
- 36-INCH TRAFFIC CONTROL DELLINEATOR
- FLASHING ARROW PANEL
- CERTIFIED FLAGGER/ OFF-DUTY OFFICER
- DIRECTION OF TRAVEL
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY I) W/REFLECTIVE MARKER
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY II) W/REFLECTIVE MARKER

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX



TYPICAL SIGN SPACING & TAPER LENGTH				
S GESSNER ROAD Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF)		
		10' Offset	11' Offset	12' Offset
35	160'	205'	225'	245'

S GESSNER ROAD TRAFFIC CONTROL PHASE-2:

CONSTRUCTION STEP-1:
INLETS ALONG NORTH BOUND S GESSNER ROAD

(A) ORANGE FLAG (TYPICAL)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(J)	(K)	(L) ORANGE FLAG (TYPICAL)	(M)	(N)	(P)	(Q)
ROAD WORK AHEAD CW20-1D (36x36)	S GESSNER RD M4-12T (VAR X 12)	DETOUR M4-9S (30x24)	DETOUR M4-9R (30x24)	DETOUR M4-9L (30x24)	END ROAD WORK G20-2a (36 X 18)	R3-2 (24x24)	R3-1 (24x24)	DO NOT ENTER R5-1 (30x30)	ROAD CLOSED R11-2 (48x30)	ROAD CLOSED AHEAD CW20-3D (36x36)	RIGHT LANE CLOSED AHEAD CW20-5DR (36x36)	LEFT LANE CLOSED AHEAD CW20-5DL (36x36)	END DETOUR M4-8b (24x18)	20 MPH CW13-1P (18x18) CW1-4L (36x36)

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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA
DRAINAGE AND PAVING
IMPROVEMENTS
TRAFFIC CONTROL PLAN (TCP)
S GESSNER ROAD PHASE-2 STEP-1
STA 10+00 TO 19+25

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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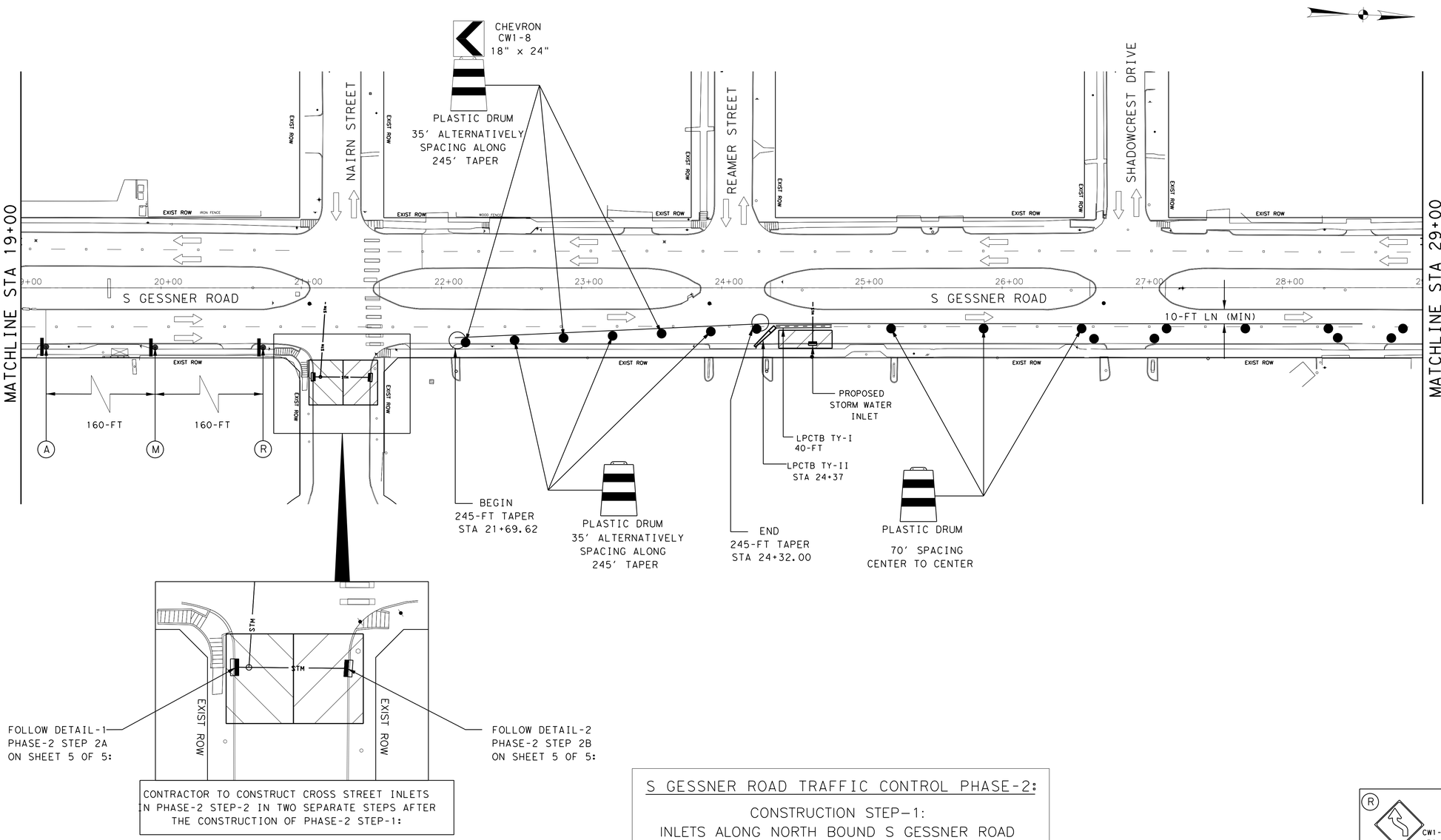
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 65 OF 227	



CONTRACTOR TO CONSTRUCT CROSS STREET INLETS IN PHASE-2 STEP-2 IN TWO SEPARATE STEPS AFTER THE CONSTRUCTION OF PHASE-2 STEP-1:

S GESSNER ROAD TRAFFIC CONTROL PHASE-2:

CONSTRUCTION STEP-1:
INLETS ALONG NORTH BOUND S GESSNER ROAD

TCP LEGEND:

- CONSTRUCTION AREA
- TY III TRAFFIC BARRIER
- (A) TEMP. GROUND MOUNTED SIGNS
- PLASTIC DRUM
- 36-INCH TRAFFIC CONTROL DELLINEATOR
- FLASHING ARROW PANEL
- CERTIFIED FLAGGER/ OFF-DUTY OFFICER
- DIRECTION OF TRAVEL
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY I) W/REFLECTIVE MARKER
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NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

TYPICAL SIGN SPACING & TAPER LENGTH				
S GESSNER ROAD Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF) 10' Offset	11' Offset	12' Offset
35	160'	205'	225'	245'

0 40 80 120 160

SCALE: 1" = 40'

(A) ORANGE FLAG (TYPICAL) — ROAD WORK AHEAD — CW20-1D (36x36)

(B) BRAEBURN GLEN BLVD — M4-12T (VAR X 12)

(C) DETOUR — M4-9S (30x24)

(D) DETOUR — M4-9R (30x24)

(E) DETOUR — M4-9L (30x24)

(F) END ROAD WORK — G20-2a (36 X 18)

(G) R3-2 (24x24)

(H) R3-1 (24x24)

(J) DO NOT ENTER — R5-1 (30x30)

(K) ROAD CLOSED — R11-2 (48x30)

(L) ORANGE FLAG (TYPICAL) — ROAD CLOSED AHEAD — CW20-3D (36x36)

(M) RIGHT LANE CLOSED AHEAD — CW20-5DR (36x36)

(N) LEFT LANE CLOSED AHEAD — CW20-5DL (36x36)

(P) END DETOUR — M4-8b (24x18)

(Q) CW-6-3 (36x36)

(R) CW1-4L (36x36); 20 MPH — CW13-1P (18x18)

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3/3/2026
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FB NO. P-6331

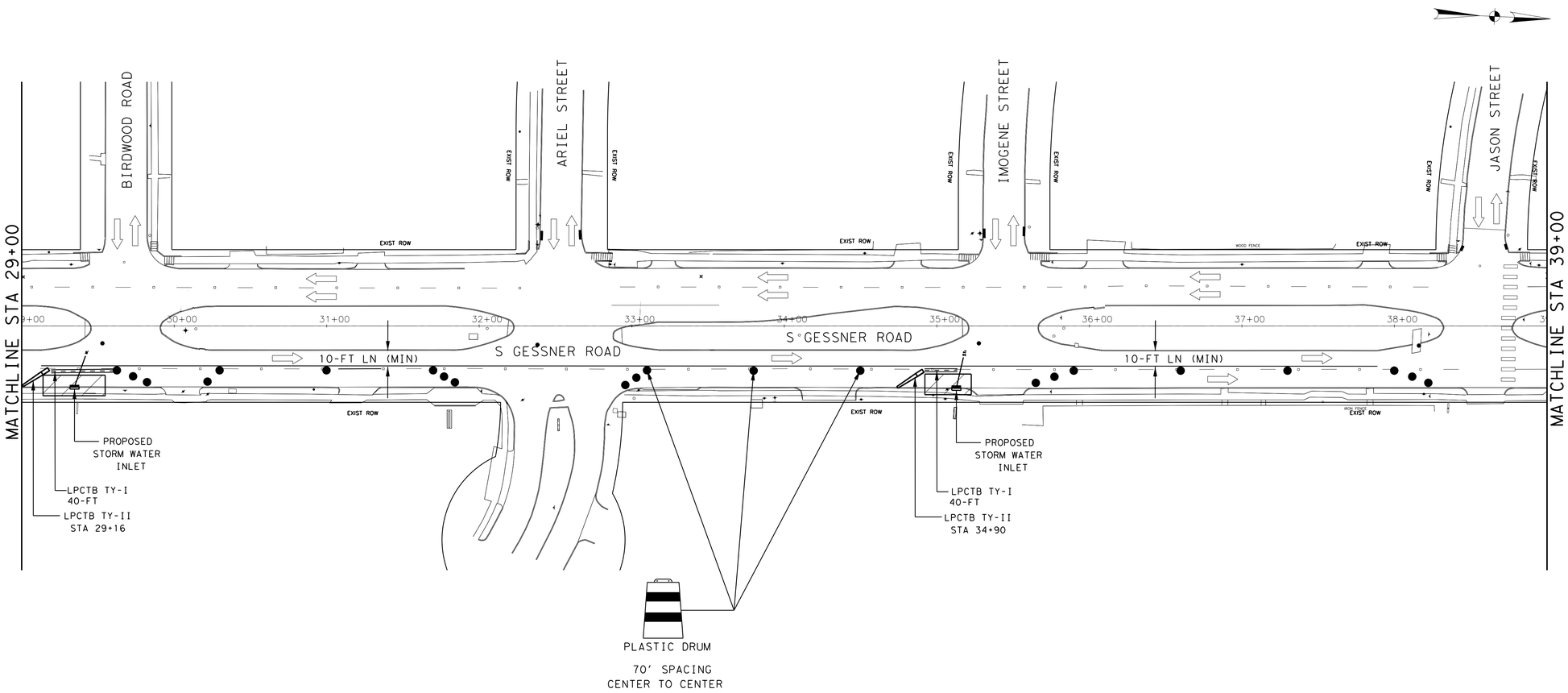
CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

TRAFFIC CONTROL PLAN (TCP)
S GESSNER ROAD PHASE-2 STEP-1
STA 19+00 TO 29+00
SHEET 2 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 66 OF 227	



TCP LEGEND:

- CONSTRUCTION AREA
- TY III TRAFFIC BARRIER
- (A) TEMP. GROUND MOUNTED SIGNS
- PLASTIC DRUM
- 36-INCH TRAFFIC CONTROL DELLINEATOR
- FLASHING ARROW PANEL
- CERTIFIED FLAGGER/ OFF-DUTY OFFICER
- DIRECTION OF TRAVEL
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY I) W/REFLECTIVE MARKER
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY II) W/REFLECTIVE MARKER

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
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	MM/DD/YY	BRIEF DESCRIPTION	XXX

TYPICAL SIGN SPACING & TAPER LENGTH				
S GESSNER ROAD Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF) 10' Offset	11' Offset	12' Offset
35	160'	205'	225'	245'

0 40 80 120 160

SCALE: 1" = 40'

S GESSNER ROAD TRAFFIC CONTROL PHASE-2:

CONSTRUCTION STEP-1:
INLETS ALONG NORTH BOUND S GESSNER ROAD

(A) ORANGE FLAG (TYPICAL) ROAD WORK AHEAD	(B) BRAEBURN GLEN BLVD	(C) DETOUR	(D) DETOUR	(E) DETOUR	(F) END ROAD WORK	(G)	(H)	(J) DO NOT ENTER	(K) ROAD CLOSED	(L) ORANGE FLAG (TYPICAL) ROAD CLOSED AHEAD	(M) RIGHT LANE CLOSED AHEAD	(N) LEFT LANE CLOSED AHEAD	(P) END DETOUR	(Q)	(R) ROAD CLOSED TO THRU TRAFFIC	
CW20-1D (36x36)	M4-12T (VAR X 12)	M4-9S (30x24)	M4-9R (30x24)	M4-9L (30x24)	G20-2a (36 X 18)	R3-2 (24x24)	R3-1 (24x24)	R5-1 (30x30)	R11-2 (48x30)	CW20-3D (36x36)	CW20-5DR (36x36)	CW20-5DL (36x36)	M4-8b (24x18)	CW-6-3 (36x36)	R11-4 (60x30)	

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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA
DRAINAGE AND PAVING
IMPROVEMENTS
TRAFFIC CONTROL PLAN (TCP)
S GESSNER ROAD PHASE-2 STEP-1
STA 29+00 TO 39+00
SHEET 3 OF 5

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AS NOTED	
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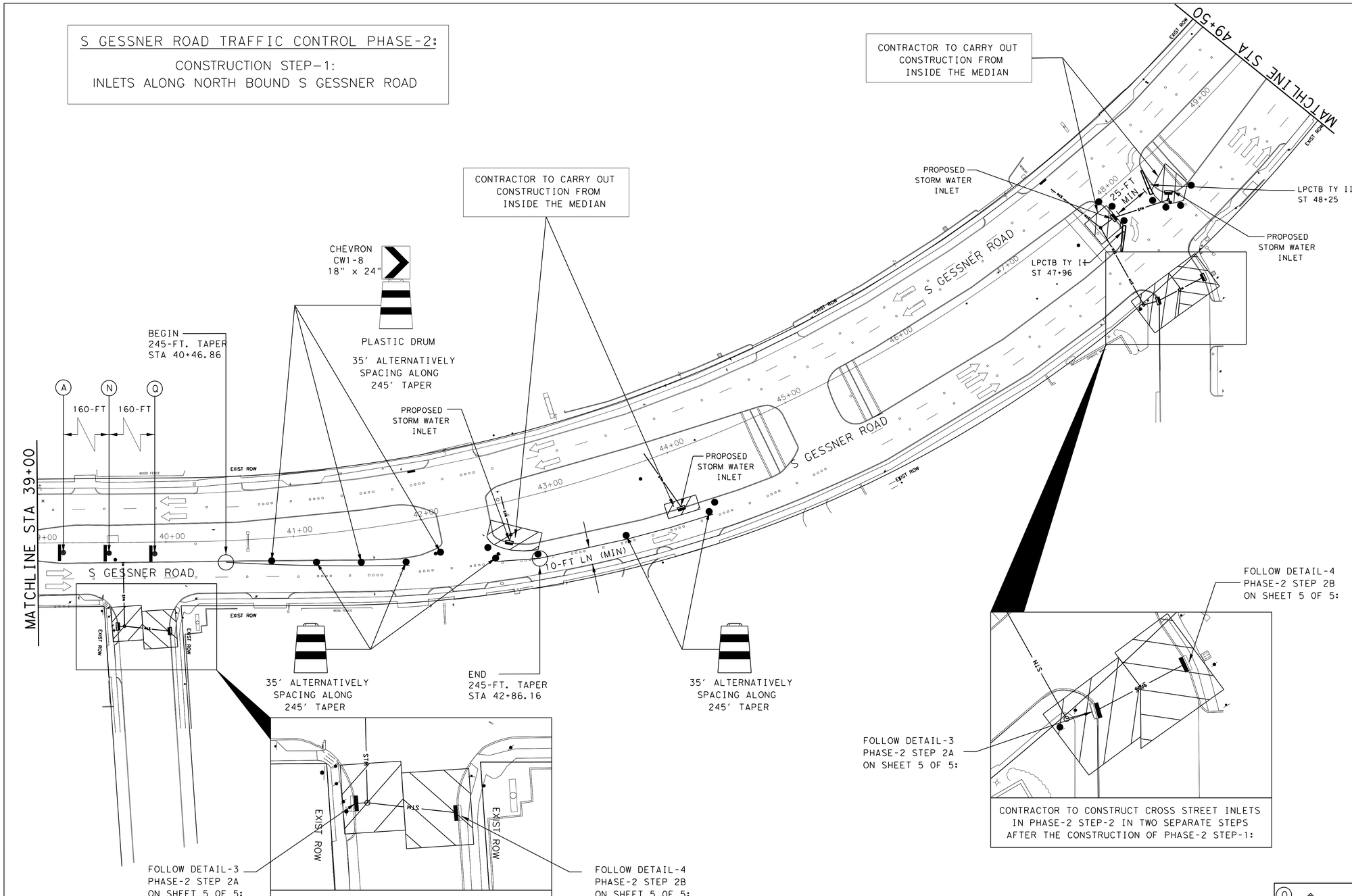
SUPUN ILANGAMUDALIGE	
SHEET NO. 67 OF 227	

S GESSNER ROAD TRAFFIC CONTROL PHASE-2:

CONSTRUCTION STEP-1:
INLETS ALONG NORTH BOUND S GESSNER ROAD



TCP LEGEND:

- CONSTRUCTION AREA
- TY III TRAFFIC BARRIER
- TEMP. GROUND MOUNTED SIGNS
- PLASTIC DRUM
- 36-INCH TRAFFIC CONTROL DELLINEATOR
- FLASHING ARROW PANEL
- CERTIFIED FLAGGER/ OFF-DUTY OFFICER
- DIRECTION OF TRAVEL
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY I) W/REFLECTIVE MARKER
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY II) W/REFLECTIVE MARKER

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

TYPICAL SIGN SPACING & TAPER LENGTH				
S Gessner Road Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF)		
		10' Offset	11' Offset	12' Offset
35	160'	205'	225'	245'

A ORANGE FLAG (TYPICAL) ROAD WORK AHEAD	B TYBOR DR	C DETOUR	D DETOUR	E DETOUR	F END ROAD WORK	G	H	J DO NOT ENTER	K ROAD CLOSED	L ORANGE FLAG (TYPICAL) ROAD CLOSED AHEAD	M RIGHT LANE CLOSED AHEAD	N LEFT LANE CLOSED AHEAD	P END DETOUR	Q	Q CW1-4R (36x36) 20 MPH CW13-1P (18x18)
CW20-1D (36x36)	M4-12T (VAR X 12)	M4-9S (30x24)	M4-9R (30x24)	M4-9L (30x24)	G20-2a (36 X 18)	R3-2 (24x24)	R3-1 (24x24)	R5-1 (30x30)	R11-2 (48x30)	CW20-3D (36x36)	CW20-5DR (36x36)	CW20-5DL (36x36)	M4-8b (24x18)	CW-6-3 (36x36)	

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3/3/2026
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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
TRAFFIC CONTROL PLAN (TCP)
S GESSNER ROAD PHASE-2 STEP-1
STA 39+00 TO 49+50

SHEET 4 OF 5

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DRAWING SCALE	
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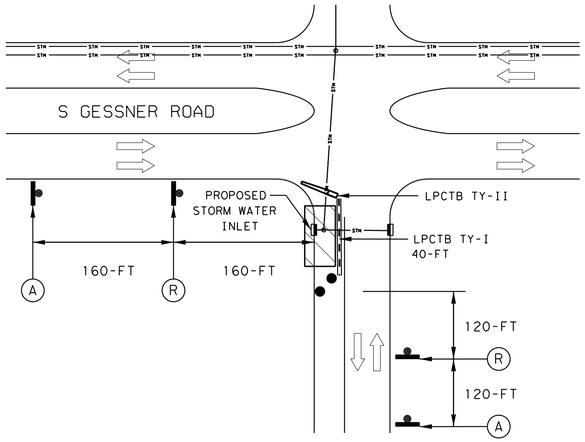
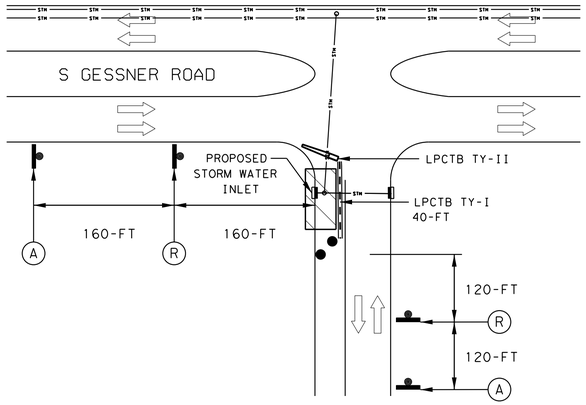
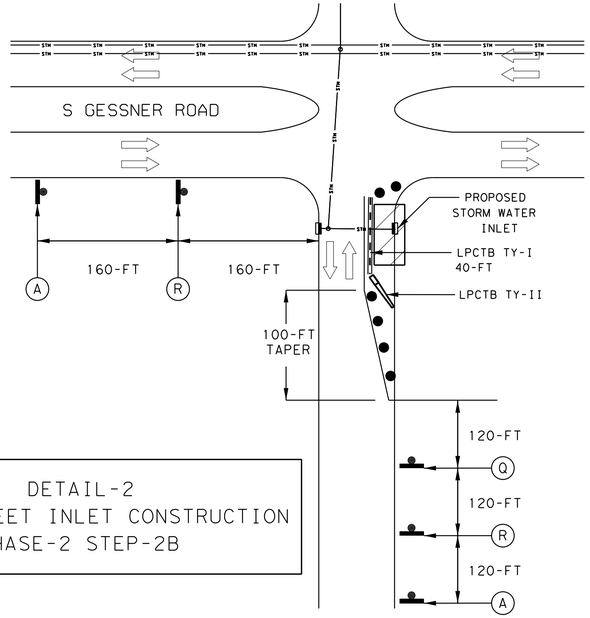
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 68 OF 227	



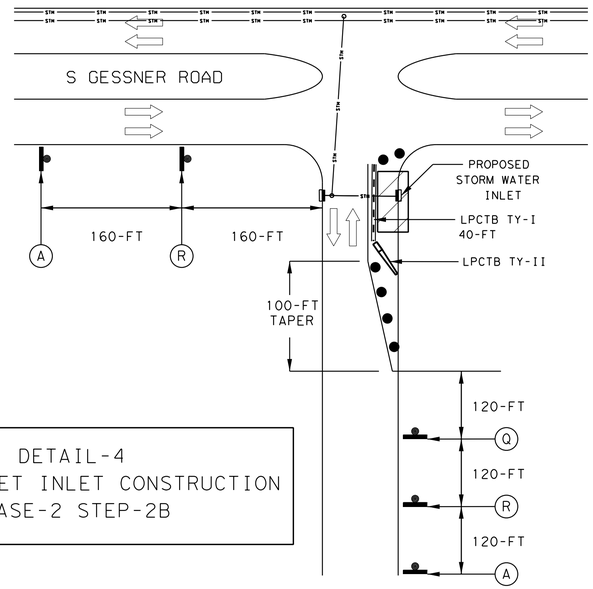
DETAIL-1
CROSS STREET INLET CONSTRUCTION
PHASE-2 STEP-2A



DETAIL-3
CROSS STREET INLET CONSTRUCTION
PHASE-2 STEP-2A



DETAIL-2
CROSS STREET INLET CONSTRUCTION
PHASE-2 STEP-2B



DETAIL-4
CROSS STREET INLET CONSTRUCTION
PHASE-2 STEP-2B

TCP LEGEND:

- CONSTRUCTION AREA
- TY III TRAFFIC BARRIER
- (A) TEMP. GROUND MOUNTED SIGNS
- PLASTIC DRUM
- 36-INCH TRAFFIC CONTROL DELLINEATOR
- FLASHING ARROW PANEL
- CERTIFIED FLAGGER/ OFF-DUTY OFFICER
- DIRECTION OF TRAVEL
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY I) W/REFLECTIVE MARKER
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY II) W/REFLECTIVE MARKER

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

TYPICAL SIGN SPACING & TAPER LENGTH

BREABURN GLEN BLVD. Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF) 10' Offset	11' Offset	12' Offset
30	120'	150'	165'	180'
35	160'	205'	225'	245'

(A) ORANGE FLAG (TYPICAL) — ROAD WORK AHEAD — CW20-1D (36x36)

(B) BRAEBURN GLEN BLVD — M4-12T (VAR X 12)

(C) DETOUR — M4-9S (30x24)

(D) DETOUR — M4-9R (30x24)

(E) DETOUR — M4-9L (30x24)

(F) END ROAD WORK — G20-2a (36 X 18)

(G) R3-2 (24x24)

(H) R3-1 (24x24)

(J) DO NOT ENTER — R5-1 (30x30)

(K) ROAD CLOSED — R11-2 (48x30)

(L) ORANGE FLAG (TYPICAL) — ROAD CLOSED AHEAD — CW20-3D (36x36)

(M) RIGHT LANE CLOSED AHEAD — CW20-5DR (36x36)

(N) LEFT LANE CLOSED AHEAD — CW20-5DL (36x36)

(P) END DETOUR — M4-8b (24x18)

(Q) CW1-4L (36x36); 20 MPH — CW13-1P (18x18)

(R) ROAD NARROWS — CW5-1 (36x36)

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Engineers, Planners & Managers
TBPE FIRM REGISTRATION #F-9492
16360 Park Ten Place, Suite 106
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281-206-7495
281-206-7494 FX

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

STATE OF TEXAS — MOHAMMAD IRFAN — 89333 — LICENSED PROFESSIONAL ENGINEER
3/3/2026
TBPE FIRM REGISTRATION #F-9492

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

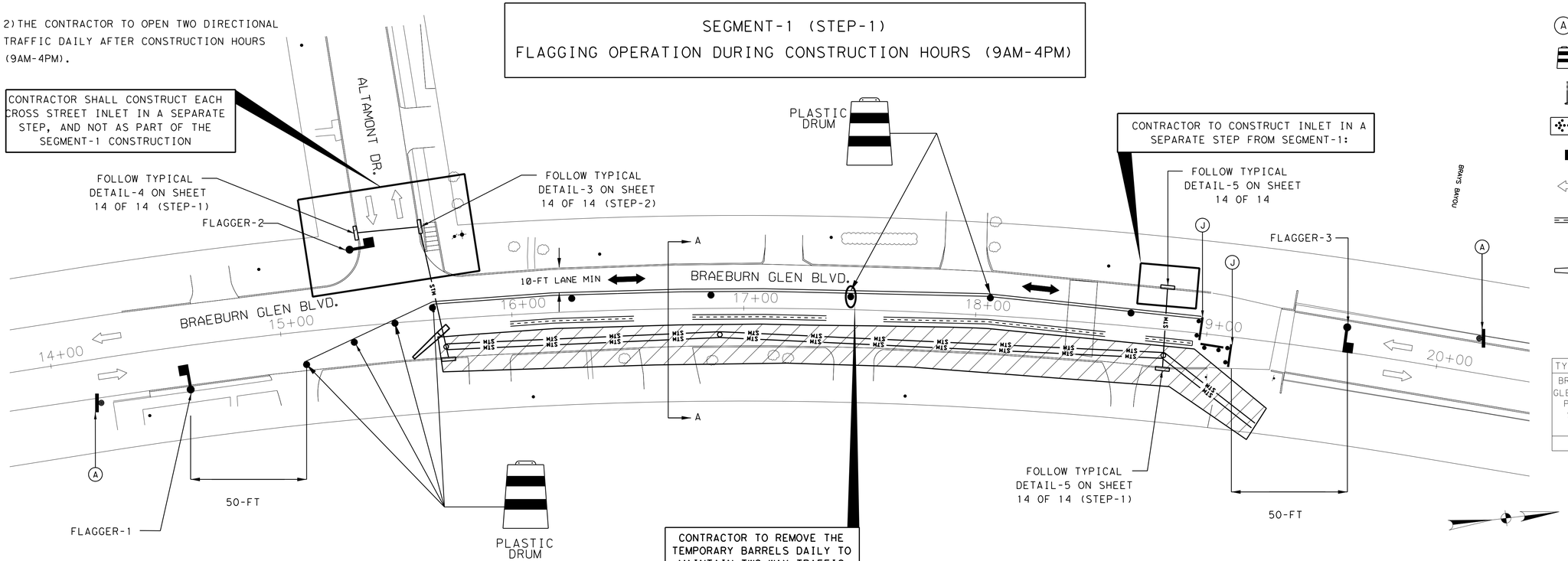
BRAEBURN GLEN AREA
DRAINAGE AND PAVING
IMPROVEMENTS
TRAFFIC CONTROL PLAN (TCP)
S GESSNER ROAD PHASE-2 STEP-2
TYPICAL DETAILS
SHEET 5 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
NOT TRUE SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 69 OF 227	

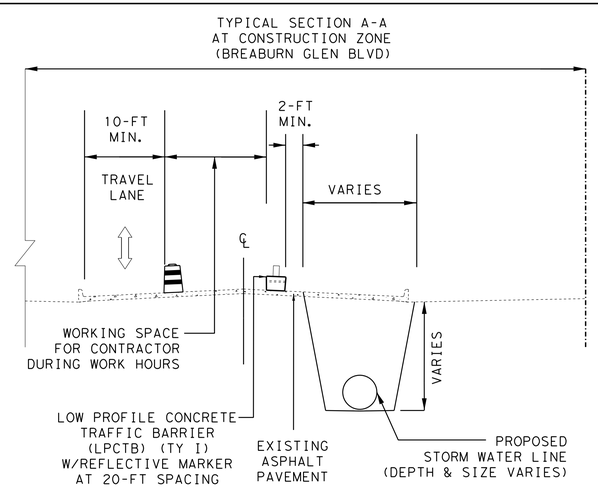
NOTE:
1) DURING THE WORKING HOURS (9AM-4PM) CONTRACTOR TO MAINTAIN FLAGGING OPERATION WITH FLAGGERS AS INTRUCTED ON THE LAYOUT.

2)THE CONTRACTOR TO OPEN TWO DIRECTIONAL TRAFFIC DAILY AFTER CONSTRUCTION HOURS (9AM-4PM).

SEGMENT-1 (STEP-1)
FLAGGING OPERATION DURING CONSTRUCTION HOURS (9AM-4PM)



A-A TYPICAL X-SECTION STORM WATERLINE CONSTRUCTION & ADJACENT TRAVEL LANE



TCP LEGEND:

- CONSTRUCTION AREA
- TY III TRAFFIC BARRIER
- TEMP. GROUND MOUNTED SIGNS
- PLASTIC DRUM
- 36-INCH TRAFFIC CONTROL DELLINEATOR
- FLASHING ARROW PANEL
- CERTIFIED FLAGGER/ OFF-DUTY OFFICER
- DIRECTION OF TRAVEL
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY I) W/REFLECTIVE MARKER
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY II) W/REFLECTIVE MARKER

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

TYPICAL SIGN SPACING & TAPER LENGTH				
BREABURN GLEN BLVD. Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF) 10' Offset	11' Offset	12' Offset
30	120'	150'	165'	180'

NOTE:
CONTRACTOR TO GIVE SAFE ACCESS TO RESIDENT DRIVEWAYS AT ALL TIMES THROUGHOUT THE CONSTRUCTION DURATION. IF DRIVEWAY IS IN THE CONSTRUCTION ZONE, IT IS CONTRACTOR RESPONSIBILTY TO PROVIDE ACCESS USING STEEL PLATES OVER THE EXCAVATED AREA FOR THE RESIDENTS TO ACCESS DRIVEWAY.

A ORANGE FLAG (TYPICAL) ROAD WORK AHEAD	B BRAEBURN GLEN BLVD	C DETOUR	D DETOUR	E DETOUR	F END ROAD WORK	G	H	J DO NOT ENTER	K ROAD CLOSED	L ORANGE FLAG (TYPICAL) ROAD CLOSED AHEAD	M RIGHT LANE CLOSED AHEAD	N LEFT LANE CLOSED AHEAD	P END DETOUR	R ROAD CLOSED TO THRU TRAFFIC	Q	
CW20-1D (36x36)	M4-12T (VAR X 12)	M4-9S (30x24)	M4-9R (30x24)	M4-9L (30x24)	G20-2a (36 X 18)	R3-2 (24x24)	R3-1 (24x24)	R5-1 (30x30)	R11-2 (48x30)	CW20-3D (36x36)	CW20-5DR (36x36)	CW20-5DL (36x36)	M4-8b (24x18)	R11-4 (60x30)	CW-6-3 (36x36)	

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STATE OF TEXAS — MOHAMMAD IRFAN — 89333 — LICENSED PROFESSIONAL ENGINEER
3/3/2026
TBPE FIRM REGISTRATION #F-9492

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

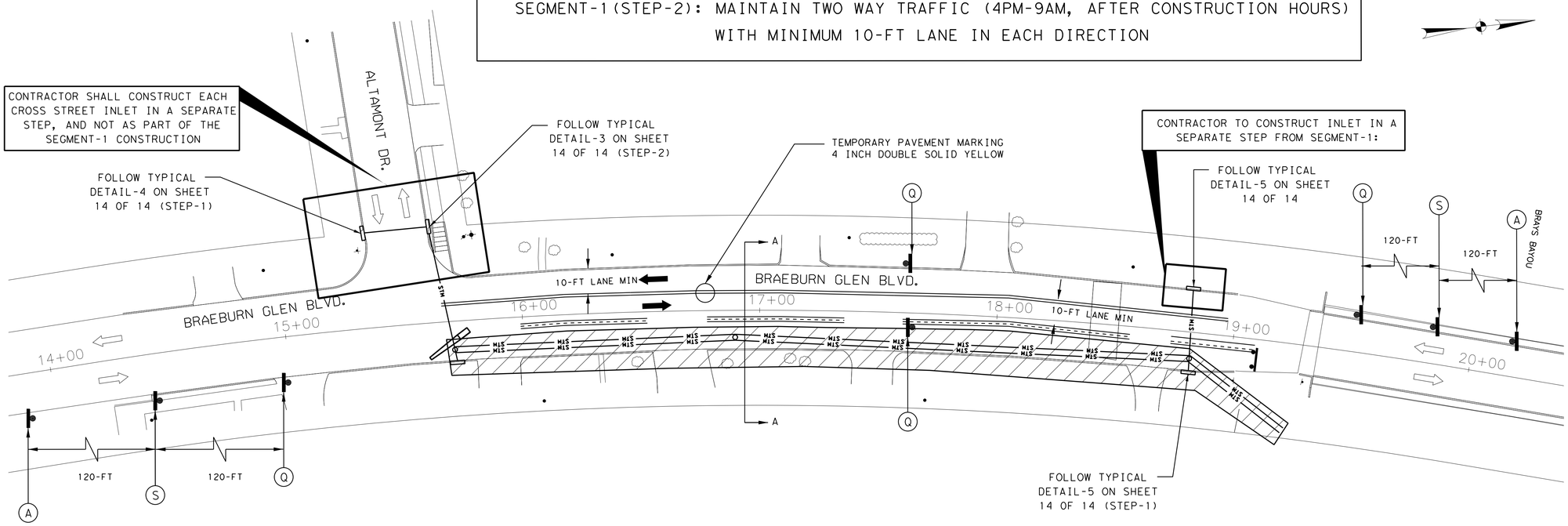
BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
TRAFFIC CONTROL PLAN (TCP)
BRAEBURN GLEN NEIGHBORHOOD
SEGMENT 1 (STEP-1)

SHEET 1 OF 14

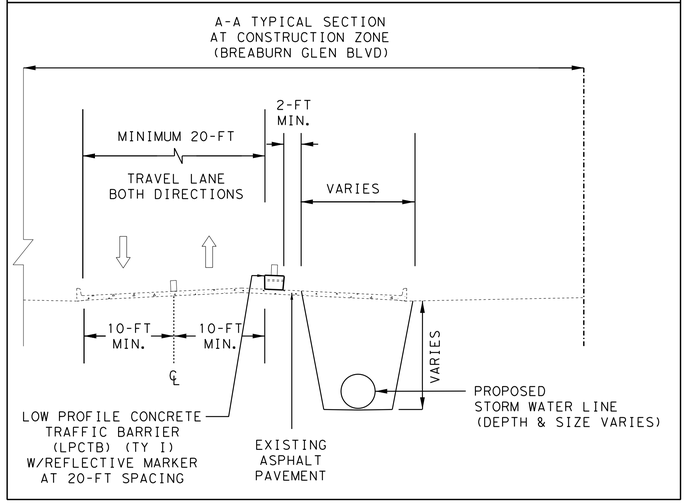
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 70 OF 227	

NOTE:
1) DURING THE OFF WORKING HOURS (4PM-9AM) CONTRACTOR TO MAINTAIN TWO WAY TRAFFIC WITH A MIN 10-FT TRAVEL LANE IN EACH DIRECTION.

SEGMENT-1(STEP-2): MAINTAIN TWO WAY TRAFFIC (4PM-9AM, AFTER CONSTRUCTION HOURS) WITH MINIMUM 10-FT LANE IN EACH DIRECTION



A-A TYPICAL X-SECTION STORM WATERLINE CONSTRUCTION & ADJACENT TRAVEL LANE



TCP LEGEND:

- CONSTRUCTION AREA
- TY III TRAFFIC BARRIER
- (A) TEMP. GROUND MOUNTED SIGNS
- PLASTIC DRUM
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- FLASHING ARROW PANEL
- CERTIFIED FLAGGER/ OFF-DUTY OFFICER
- DIRECTION OF TRAVEL
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY I) W/REFLECTIVE MARKER
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NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

TYPICAL SIGN SPACING & TAPER LENGTH				
BREABURN GLEN BLVD. Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF) 10' Offset	11' Offset	12' Offset
30	120'	150'	165'	180'

NOTE:
CONTRACTOR TO GIVE SAFE ACCESS TO RESIDENT DRIVEWAYS AT ALL TIMES THROUGHOUT THE CONSTRUCTION DURATION. IF DRIVEWAY IS IN THE CONSTRUCTION ZONE, IT IS CONTRACTOR RESPONSIBILTY TO PROVIDE ACCESS USING STEEL PLATES OVER THE EXCAVATED AREA FOR THE RESIDENTS TO ACCESS DRIVEWAY.

(A) ORANGE FLAG (TYPICAL) — ROAD WORK AHEAD — CW20-1D (36x36)
(B) BRAEBURN GLEN BLVD — M4-12T (VAR X 12)
(C) DETOUR — M4-9S (30x24)
(D) DETOUR — M4-9R (30x24)
(E) DETOUR — M4-9L (30x24)
(F) END ROAD WORK — G20-2a (36 X 18)
(G) R3-2 (24x24)
(H) R3-1 (24x24)
(J) DO NOT ENTER — R5-1 (30x30)
(K) ROAD CLOSED — R11-2 (48x30)
(L) ORANGE FLAG (TYPICAL) — ROAD CLOSED AHEAD — CW20-3D (36x36)
(M) RIGHT LANE CLOSED AHEAD — CW20-5DR (36x36)
(N) LEFT LANE CLOSED AHEAD — CW20-5DL (36x36)
(P) END DETOUR — M4-8b (24x18)
(Q) CW-6-3 (36x36)
(S) NARROW LANES AHEAD — CW20-8T (36x36)
(R) ROAD CLOSED TO THRU TRAFFIC — R11-4 (60x30)

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STATE OF TEXAS — MOHAMAD TIFAN — #9333 — LICENSED PROFESSIONAL ENGINEER — 3/3/2026
TBPE FIRM REGISTRATION #F-9492

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
TRAFFIC CONTROL PLAN (TCP)
BRAEBURN GLEN NEIGHBORHOOD
SEGMENT-1 (STEP-2)

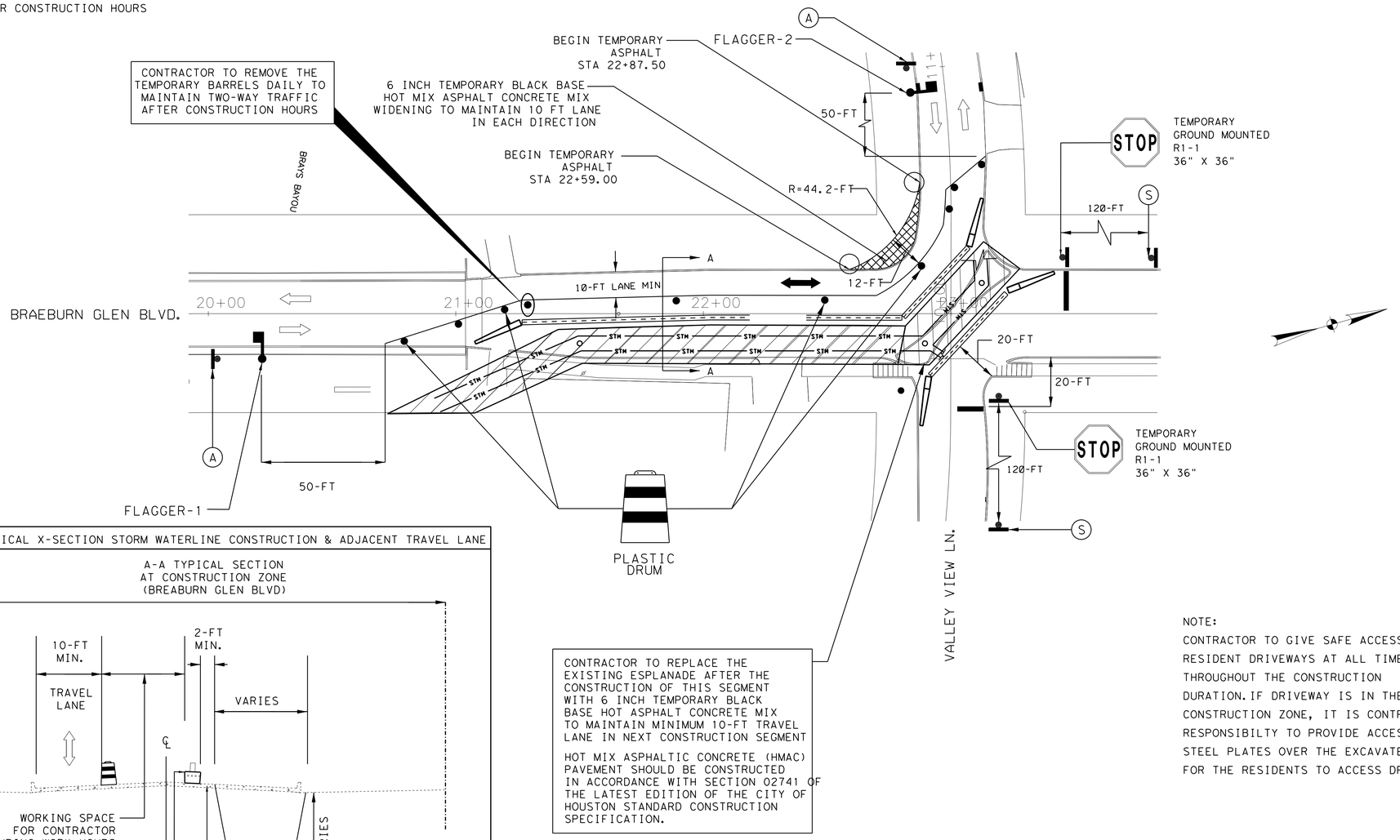
SHEET 2 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 71 OF 227	

NOTE:
1) DURING THE WORKING HOURS (9AM-4PM) CONTRACTOR TO MAINTAIN FLAGGING OPERATION WITH FLAGGERS AS INTRUCTED ON THE LAYOUT.

2) THE CONTRACTOR TO OPEN TWO DIRECTIONAL TRAFFIC DAILY AFTER CONSTRUCTION HOURS (9AM-4PM).

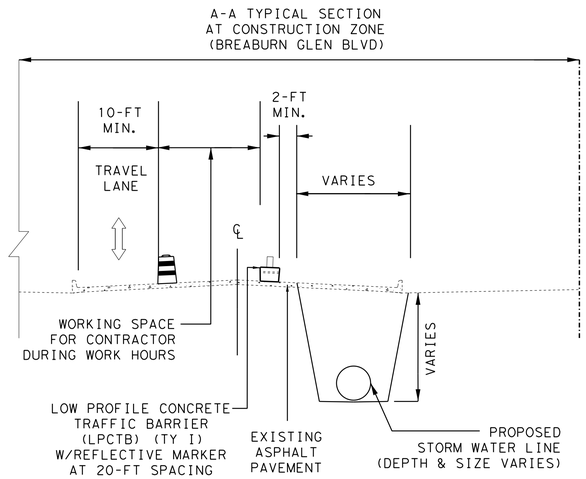
SEGMENT-2 (STEP-1)
FLAGGING OPERATION DURING CONSTRUCTION HOURS (9AM-4PM)



CONTRACTOR TO REPLACE THE EXISTING ESPLANADE AFTER THE CONSTRUCTION OF THIS SEGMENT WITH 6 INCH TEMPORARY BLACK BASE HOT ASPHALT CONCRETE MIX TO MAINTAIN MINIMUM 10-FT TRAVEL LANE IN NEXT CONSTRUCTION SEGMENT

HOT MIX ASPHALTIC CONCRETE (HMAC) PAVEMENT SHOULD BE CONSTRUCTED IN ACCORDANCE WITH SECTION 02741 OF THE LATEST EDITION OF THE CITY OF HOUSTON STANDARD CONSTRUCTION SPECIFICATION.

A-A TYPICAL X-SECTION STORM WATERLINE CONSTRUCTION & ADJACENT TRAVEL LANE



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TCP LEGEND:

- CONSTRUCTION AREA
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- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY II) W/REFLECTIVE MARKER

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

TYPICAL SIGN SPACING & TAPER LENGTH

BREABURN GLEN BLVD. Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF) 10' Offset	11' Offset	12' Offset
30	120'	150'	165'	180'

(A) ORANGE FLAG (TYPICAL) — ROAD WORK AHEAD — CW20-1D (36x36)
(B) BRAEBURN GLEN BLVD — M4-12T (VAR X 12)
(C) DETOUR ⇧ — M4-9S (30x24)
(D) DETOUR ⇨ — M4-9R (30x24)
(E) DETOUR ⇦ — M4-9L (30x24)
(F) END ROAD WORK — G20-2a (36 X 18)
(G) R3-2 (24x24)
(H) R3-1 (24x24)
(J) DO NOT ENTER — R5-1 (30x30)
(K) ROAD CLOSED — R11-2 (48x30)
(L) ORANGE FLAG (TYPICAL) — ROAD CLOSED AHEAD — CW20-3D (36x36)
(M) RIGHT LANE CLOSED AHEAD — CW20-5DR (36x36)
(N) LEFT LANE CLOSED AHEAD — CW20-5DL (36x36)
(P) END DETOUR — M4-8b (24x18)
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(S) W3-1a (36x36)
(R) ROAD CLOSED TO THRU TRAFFIC — R11-4 (60x30)

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STATE OF TEXAS — MOHAMMAD IRFAN — 89333 — LICENSED PROFESSIONAL ENGINEER
3/3/2026
TBPE FIRM REGISTRATION #F-9492

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

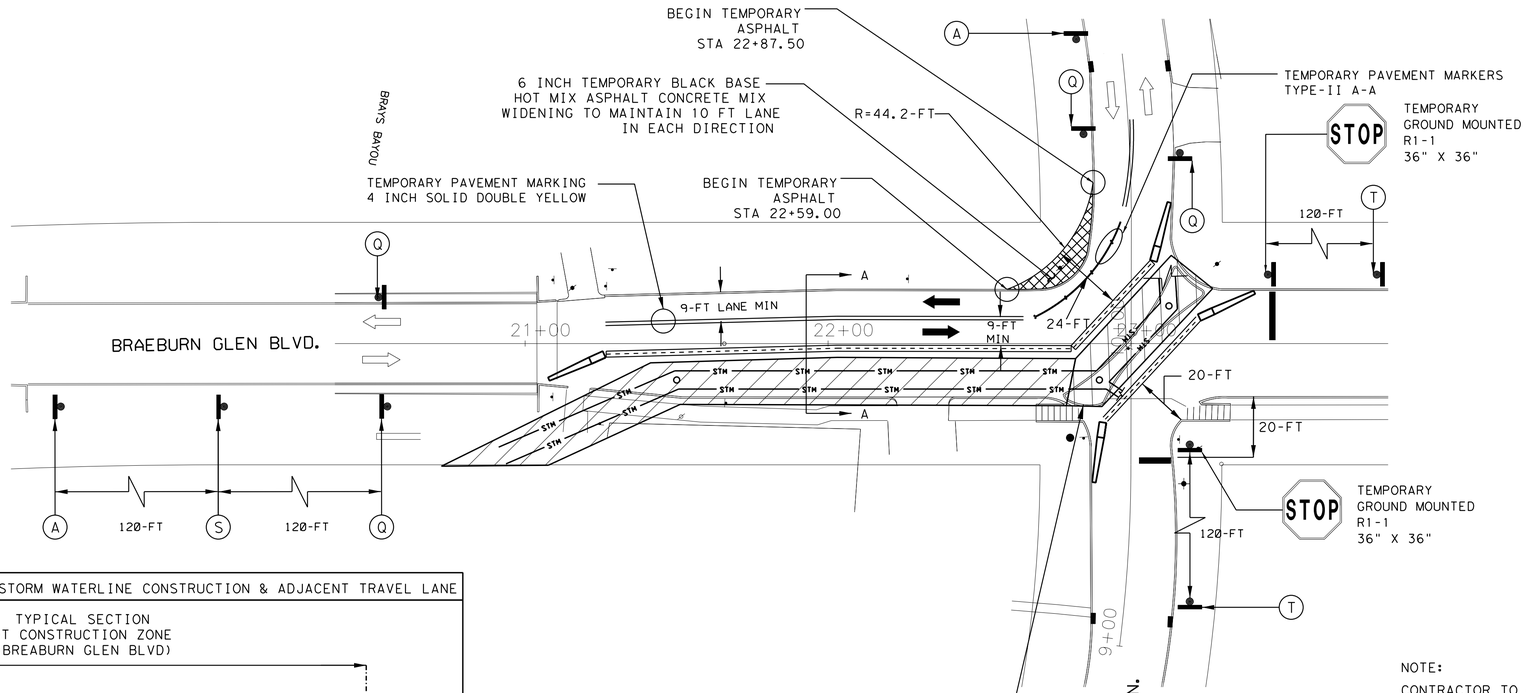
BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
TRAFFIC CONTROL PLAN (TCP)
BRAEBURN GLEN NEIGHBORHOOD
SEGMENT 2 (STEP-1)

SHEET 3 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 72 OF 227	

NOTE:
1) DURING THE OFF WORKING HOURS (4PM-9AM) CONTRACTOR TO MAINTAIN TWO WAY TRAFFIC WITH A MIN 10-FT TRAVEL LANE IN EACH DIRECTION.

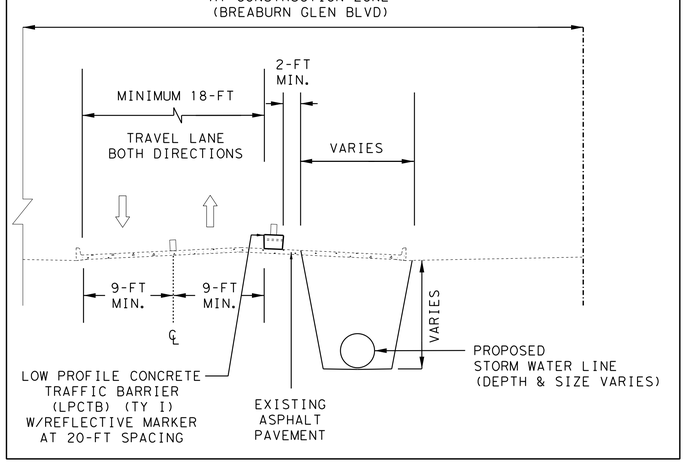
SEGMENT-2(STEP-2): MAINTAIN TWO WAY TRAFFIC (4PM-9AM, AFTER CONSTRUCTION HOURS) WITH MINIMUM 10-FT LANE IN EACH DIRECTION



CONTRACTOR TO REPLACE THE EXISTING ESPLANADE AFTER THE CONSTRUCTION OF THIS SEGMENT WITH 6 INCH TEMPORARY BLACK BASE HOT ASPHALT CONCRETE MIX TO MAINTAIN MINIMUM 10-FT TRAVEL LANE IN NEXT CONSTRUCTION SEGMENT

HOT MIX ASPHALTIC CONCRETE (HMAC) PAVEMENT SHOULD BE CONSTRUCTED IN ACCORDANCE WITH SECTION 02741 OF THE LATEST EDITION OF THE CITY OF HOUSTON STANDARD CONSTRUCTION SPECIFICATION.

A-A TYPICAL X-SECTION STORM WATERLINE CONSTRUCTION & ADJACENT TRAVEL LANE



NOTE:
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TCP LEGEND:

- CONSTRUCTION AREA
- TY III TRAFFIC BARRIER
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- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY I) W/REFLECTIVE MARKER
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NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

TYPICAL SIGN SPACING & TAPER LENGTH

BREABURN GLEN BLVD. Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF) 10' Offset	11' Offset	12' Offset
30	120'	150'	165'	180'

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(J)	(K)	(L)	(M)	(N)	(P)	(Q)
ORANGE FLAG (TYPICAL) ROAD WORK AHEAD	BRAEBURN GLEN BLVD	DETOUR	DETOUR	DETOUR	END ROAD WORK			DO NOT ENTER	ROAD CLOSED	ORANGE FLAG (TYPICAL) ROAD CLOSED AHEAD	RIGHT LANE CLOSED AHEAD	LEFT LANE CLOSED AHEAD	END DETOUR	
CW20-1D (36x36)	M4-12T (VAR X 12)	M4-9S (30x24)	M4-9R (30x24)	M4-9L (30x24)	G20-2a (36 X 18)	R3-2 (24x24)	R3-1 (24x24)	R5-1 (30x30)	R11-2 (48x30)	CW20-3D (36x36)	CW20-5DR (36x36)	CW20-5DL (36x36)	M4-8b (24x18)	CW-6-3 (36x36)

(T)	(S)	(R)
W3-1a (36x36)	NARROW LANES AHEAD CW20-8T (36x36)	ROAD CLOSED TO THRU TRAFFIC R11-4 (60x30)

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STATE OF TEXAS MOHAMMAD IRFAN 89333 LICENSED PROFESSIONAL ENGINEER
3/3/2026
TBPE FIRM REGISTRATION #F-9492

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

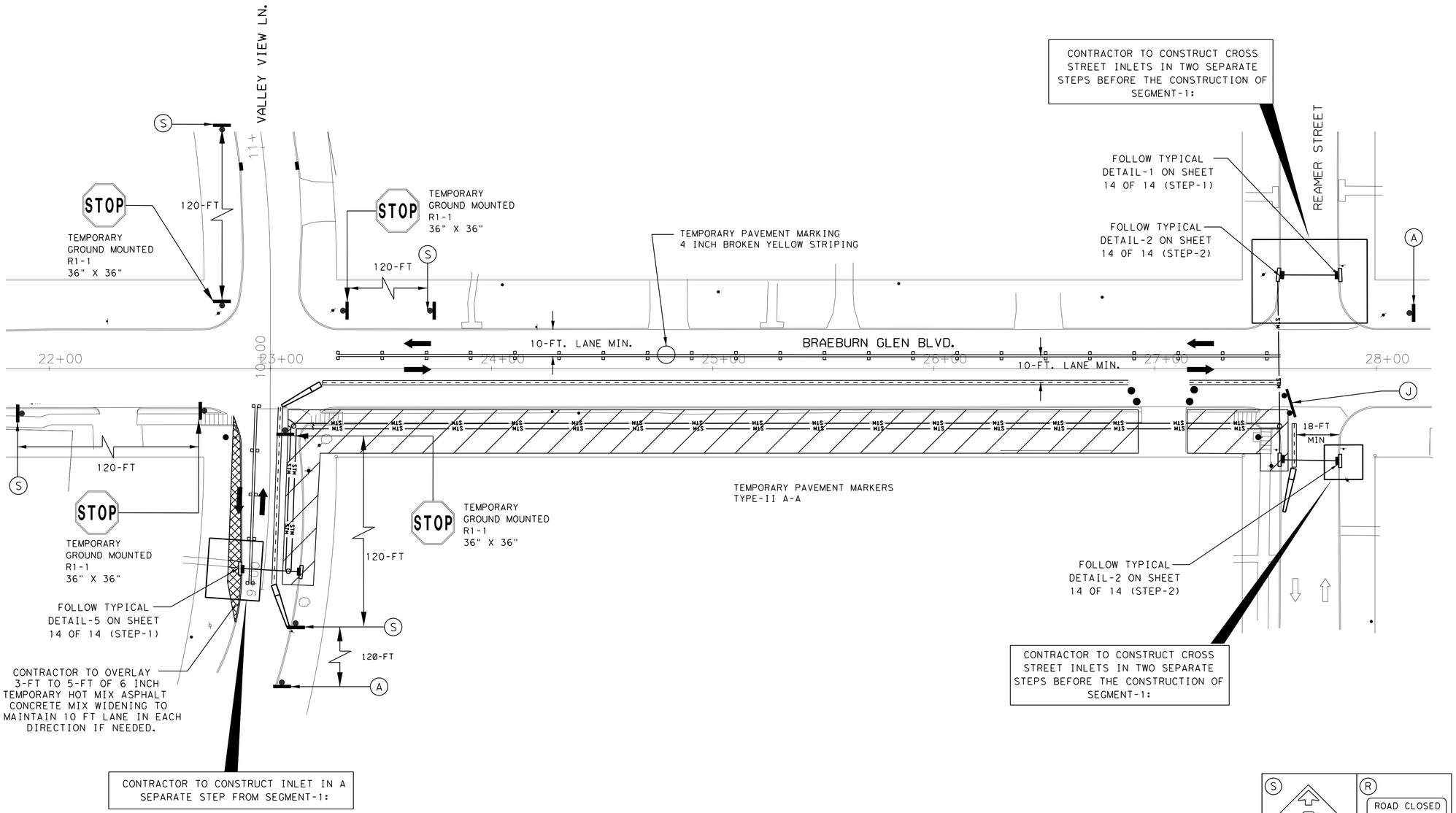
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
TRAFFIC CONTROL PLAN (TCP)
BRAEBURN GLEN NEIGHBORHOOD SEGMENT-2 (STEP-2)

SHEET 4 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 73 OF 227	

SEGMENT-3
TWO WAY TRAFFIC WITH ONE LANE (10-FT MIN) IN EACH DIRECTION



TCP LEGEND:

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- TY III TRAFFIC BARRIER
- (A) TEMP. GROUND MOUNTED SIGNS
- PLASTIC DRUM
- 36-INCH TRAFFIC CONTROL DELLINEATOR
- FLASHING ARROW PANEL
- CERTIFIED FLAGGER/ OFF-DUTY OFFICER
- DIRECTION OF TRAVEL
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY I) W/REFLECTIVE MARKER
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY II) W/REFLECTIVE MARKER

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

TYPICAL SIGN SPACING & TAPER LENGTH				
BREABURN GLEN BLVD. Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF) 10' Offset	11' Offset	12' Offset
30	120'	150'	165'	180'

NOTE:
CONTRACTOR TO GIVE ACCESS TO RESIDENT DRIVEWAYS AT ALL TIMES THROUGHOUT THE CONSTRUCTION DURATION. IF DRIVEWAY IS IN THE CONSTRUCTION ZONE, IT IS CONTRACTOR RESPONSIBILTY TO PROVIDE ACCESS USING STEEL PLATES OVER THE EXCAVATED AREA FOR THE RESIDENTS TO ACCESS DRIVEWAY.

(A) ORANGE FLAG (TYPICAL) ROAD WORK AHEAD	(B) BRAEBURN GLEN BLVD	(C) DETOUR	(D) DETOUR	(E) DETOUR	(F) END ROAD WORK	(G)	(H)	(J) DO NOT ENTER	(K) ROAD CLOSED	(L) ORANGE FLAG (TYPICAL) ROAD CLOSED AHEAD	(M) RIGHT LANE CLOSED AHEAD	(N) LEFT LANE CLOSED AHEAD	(P) END DETOUR	(Q)	(S)	(R) ROAD CLOSED TO THRU TRAFFIC			
CW20-1D (36x36)	M4-12T (VAR X 12)	M4-9S (30x24)	M4-9R (30x24)	M4-9L (30x24)	G20-2a (36 X 18)	R3-2 (24x24)	R3-1 (24x24)	R5-1 (30x30)	R11-2 (48x30)	CW20-3D (36x36)	CW20-5DR (36x36)	CW20-5DL (36x36)	M4-8b (24x18)	CW-6-3 (36x36)	W3-1a (36x36)	R11-4 (60x30)			

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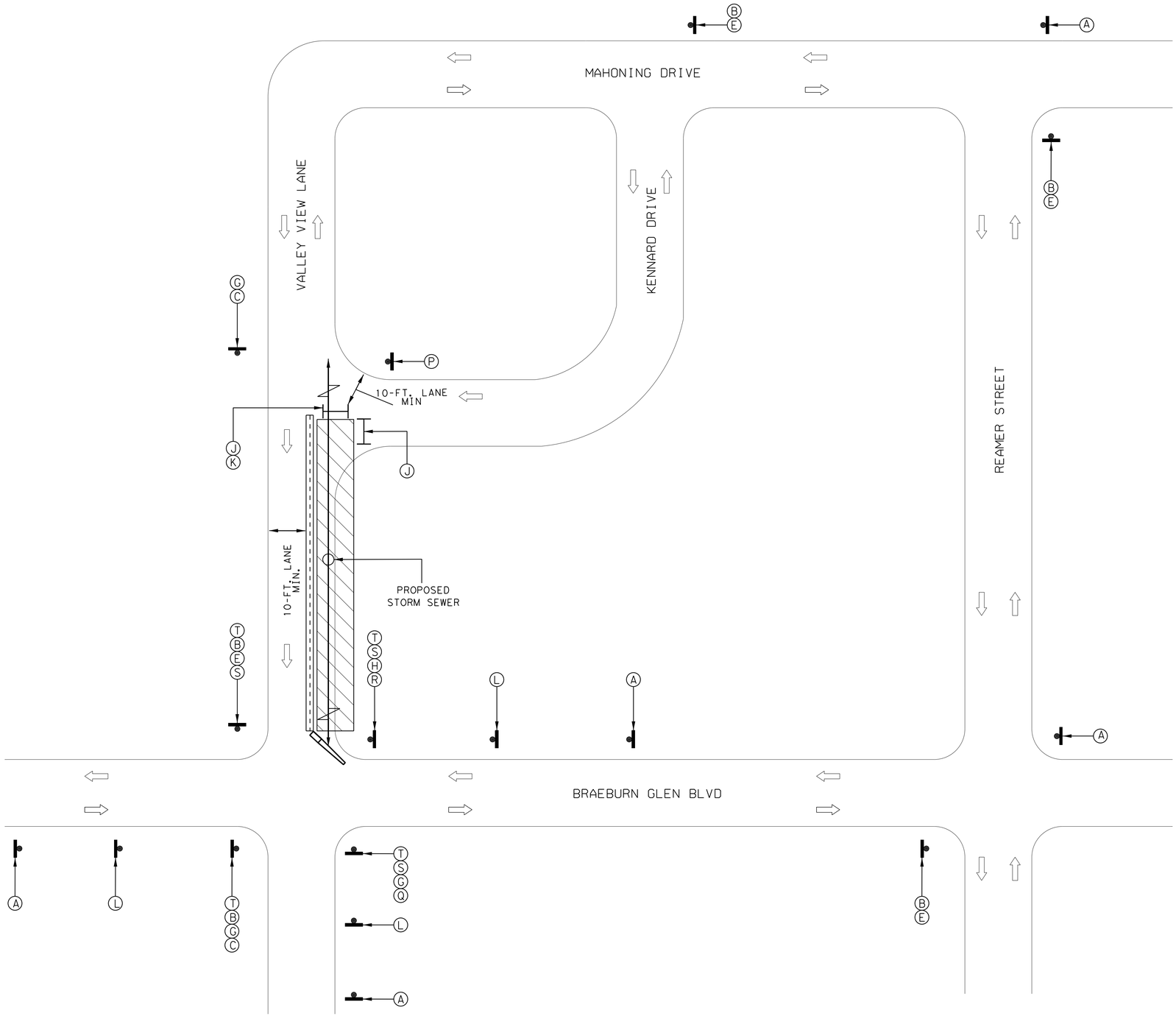
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA
DRAINAGE AND PAVING
IMPROVEMENTS
TRAFFIC CONTROL PLAN (TCP)
BRAEBURN GLEN NEIGHBORHOOD
SEGMENT-3

SHEET 5 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 74 OF 227	



TCP LEGEND:

- CONSTRUCTION AREA
- TY III TRAFFIC BARRIER
- (A) TEMP. GROUND MOUNTED SIGNS
- PLASTIC DRUM
- 36-INCH TRAFFIC CONTROL DELLINEATOR
- FLASHING ARROW PANEL
- CERTIFIED FLAGGER/ OFF-DUTY OFFICER
- DIRECTION OF TRAVEL
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY I) W/REFLECTIVE MARKER
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY II) W/REFLECTIVE MARKER

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

TYPICAL SIGN SPACING & TAPER LENGTH				
VALLEY VIEW LANE Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF)		
		10' Offset	11' Offset	12' Offset
30	120'	150'	165'	180'

(A) ORANGE FLAG (TYPICAL) — ROAD WORK AHEAD — CW20-1D (36x36)

(B) VALLEY VIEW LN. — M4-12T (VAR X 12)

(C) DETOUR — M4-9S (30x24)

(D) DETOUR — M4-9R (30x24)

(E) DETOUR — M4-9L (30x24)

(F) END ROAD WORK — G20-2a (36 X 18)

(G) R3-2 (24x24)

(H) R3-1 (24x24)

(J) DO NOT ENTER — R5-1 (30x30)

(K) ROAD CLOSED — R11-2 (48x30)

(L) ORANGE FLAG (TYPICAL) — ROAD CLOSED AHEAD — CW20-3D (36x36)

(M) RIGHT LANE CLOSED AHEAD — CW20-5DR (36x36)

(N) LEFT LANE CLOSED AHEAD — CW20-5DL (36x36)

(P) END DETOUR — M4-8b (24x18)

(Q) ONLY — R3-5L (30x36)

(T) STOP — R1-1 (24x24)

(S) R3-27 (24x24)

(R) ONLY — R3-5L (30x36)

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STATE OF TEXAS — MOHAMMAD IRFAN — 89333 — LICENSED PROFESSIONAL ENGINEER
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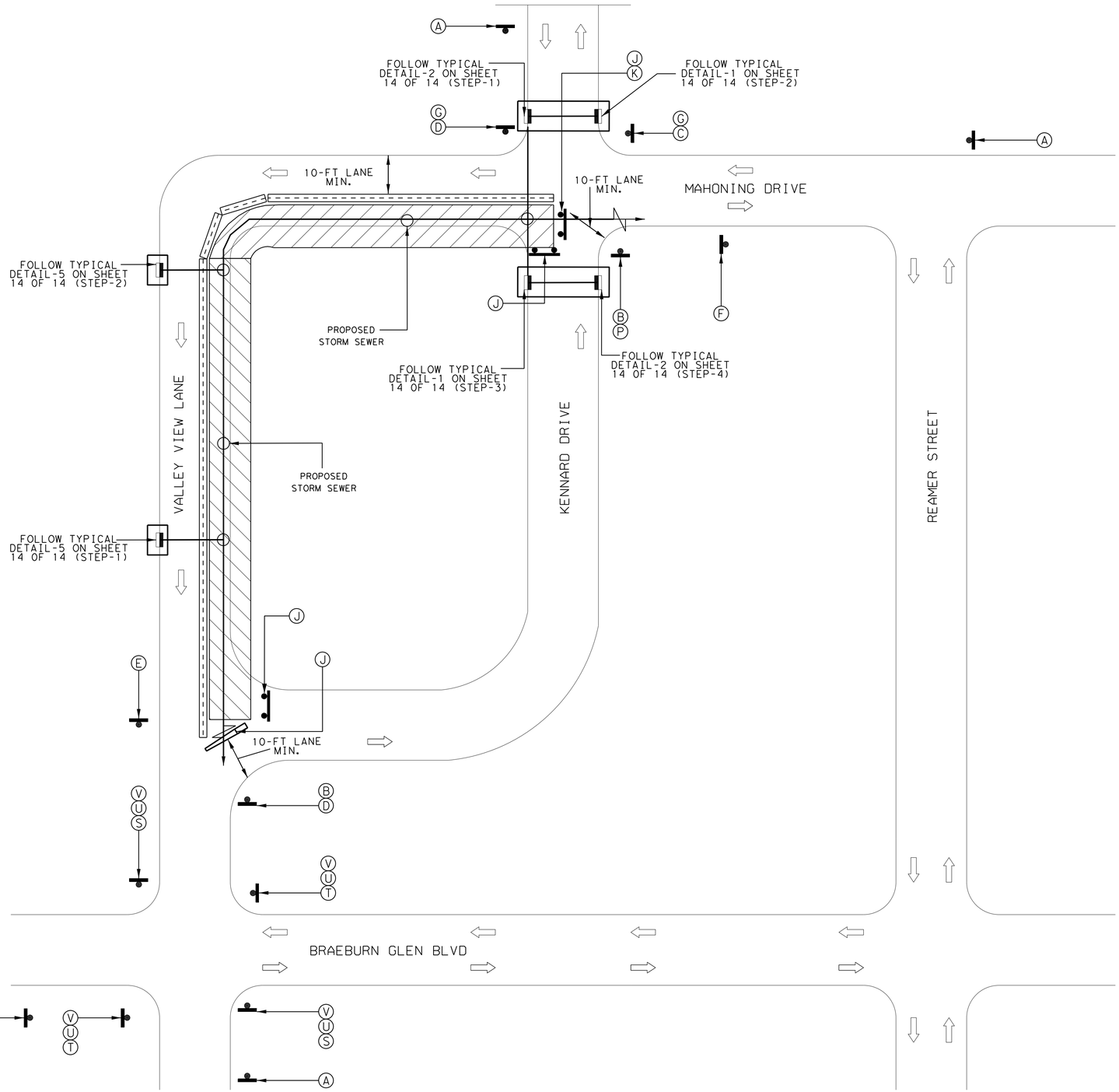
CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS TRAFFIC CONTROL PLAN (TCP) BREABURN GLEN NEIGHBORHOOD SEGMENT 4 DETOUR PLAN–1

SHEET 6 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 75 OF 227	



NOTE:

CONTRACTOR SHALL CONSTRUCT EACH CROSS STREET INLET IN A SEPARATE STEP, AND NOT AS PART OF THE SEGMENT-5 CONSTRUCTION.

TCP LEGEND:

- CONSTRUCTION AREA
- TY III TRAFFIC BARRIER
- (A) TEMP. GROUND MOUNTED SIGNS
- PLASTIC DRUM
- 36-INCH TRAFFIC CONTROL DELLINEATOR
- FLASHING ARROW PANEL
- CERTIFIED FLAGGER/ OFF-DUTY OFFICER
- DIRECTION OF TRAVEL
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY I) W/REFLECTIVE MARKER
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY II) W/REFLECTIVE MARKER

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

TYPICAL SIGN SPACING & TAPER LENGTH				
VALLEY VIEW LANE, Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF)		
		10' Offset	11' Offset	12' Offset
30	120'	150'	165'	180'

(A) ORANGE FLAG (TYPICAL) — ROAD WORK AHEAD — CW20-1D (36x36)

(B) VALLEY VIEW LN. — M4-12T (VAR X 12)

(C) DETOUR — M4-9S (30x24)

(D) DETOUR — M4-9R (30x24)

(E) DETOUR — M4-9L (30x24)

(F) END ROAD WORK — G20-2a (36 X 18)

(G) R3-2 (24x24)

(H) R3-1 (24x24)

(J) DO NOT ENTER — R5-1 (30x30)

(K) ROAD CLOSED — R11-2 (48x30)

(L) ORANGE FLAG (TYPICAL) — ROAD CLOSED AHEAD — CW20-3D (36x36)

(M) RIGHT LANE CLOSED AHEAD — CW20-5DR (36x36)

(N) LEFT LANE CLOSED AHEAD — CW20-5DL (36x36)

(P) END DETOUR — M4-8b (24x18)

(Q) CW-6-3 (36x36)

(V) STOP — R1-1 (24x24)

(U) R3-27 (24x24)

(T) ONLY — R3-5L (30x36)

(S) ONLY — R3-5L (30x36)

(R) ROAD CLOSED TO THRU TRAFFIC — R11-4 (60x30)

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FB NO. P-6331

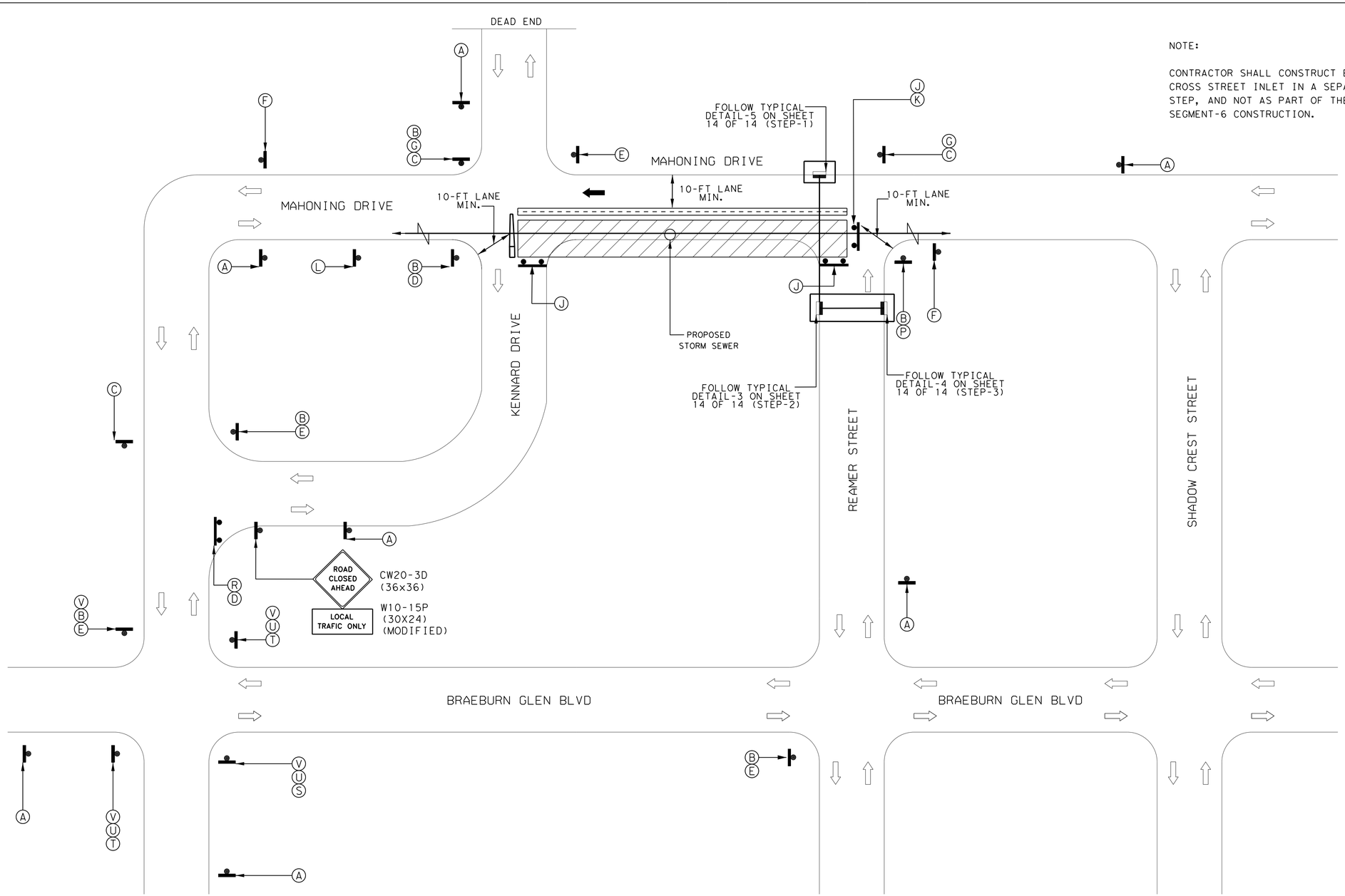
CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
TRAFFIC CONTROL PLAN (TCP)
BREABURN GLEN NEIGHBORHOOD
SEGMENT 5 DETOUR PLAN-2

SHEET 7 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 76 OF 227	



NOTE:

CONTRACTOR SHALL CONSTRUCT EACH CROSS STREET INLET IN A SEPARATE STEP, AND NOT AS PART OF THE SEGMENT-6 CONSTRUCTION.

TCP LEGEND:

- CONSTRUCTION AREA
- TY III TRAFFIC BARRIER
- TEMP. GROUND MOUNTED SIGNS
- PLASTIC DRUM
- 36-INCH TRAFFIC CONTROL DELLINEATOR
- FLASHING ARROW PANEL
- CERTIFIED FLAGGER/ OFF-DUTY OFFICER
- DIRECTION OF TRAVEL
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY I) W/REFLECTIVE MARKER
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY II) W/REFLECTIVE MARKER

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

TYPICAL SIGN SPACING & TAPER LENGTH				
MAHONING DRIVE Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF) 10' Offset	11' Offset	12' Offset
30	120'	150'	165'	180'

A	ORANGE FLAG (TYPICAL) ROAD WORK AHEAD CW20-1D (36x36)	B	MAHONING DR. M4-12T (VAR X 12)	C	DETOUR M4-9S (30x24)	D	DETOUR M4-9R (30x24)	E	DETOUR M4-9L (30x24)	F	END ROAD WORK G20-2a (36 X 18)	G	R3-2 (24x24)	H	R3-1 (24x24)	J	DO NOT ENTER R5-1 (30x30)	K	ROAD CLOSED R11-2 (48x30)
L	ORANGE FLAG (TYPICAL) ROAD CLOSED AHEAD CW20-3D (36x36)	M	RIGHT LANE CLOSED AHEAD CW20-5DR (36x36)	N	LEFT LANE CLOSED AHEAD CW20-5DL (36x36)	P	END DETOUR M4-8b (24x18)	Q	CW-6-3 (36x36)	R	ROAD CLOSED TO THRU TRAFFIC R11-4 (60x30)	S	ONLY R3-5L (30x36)	T	ONLY R3-5L (30x36)	U	R3-27 (24x24)	V	STOP R1-1 (24x24)

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3/3/2026
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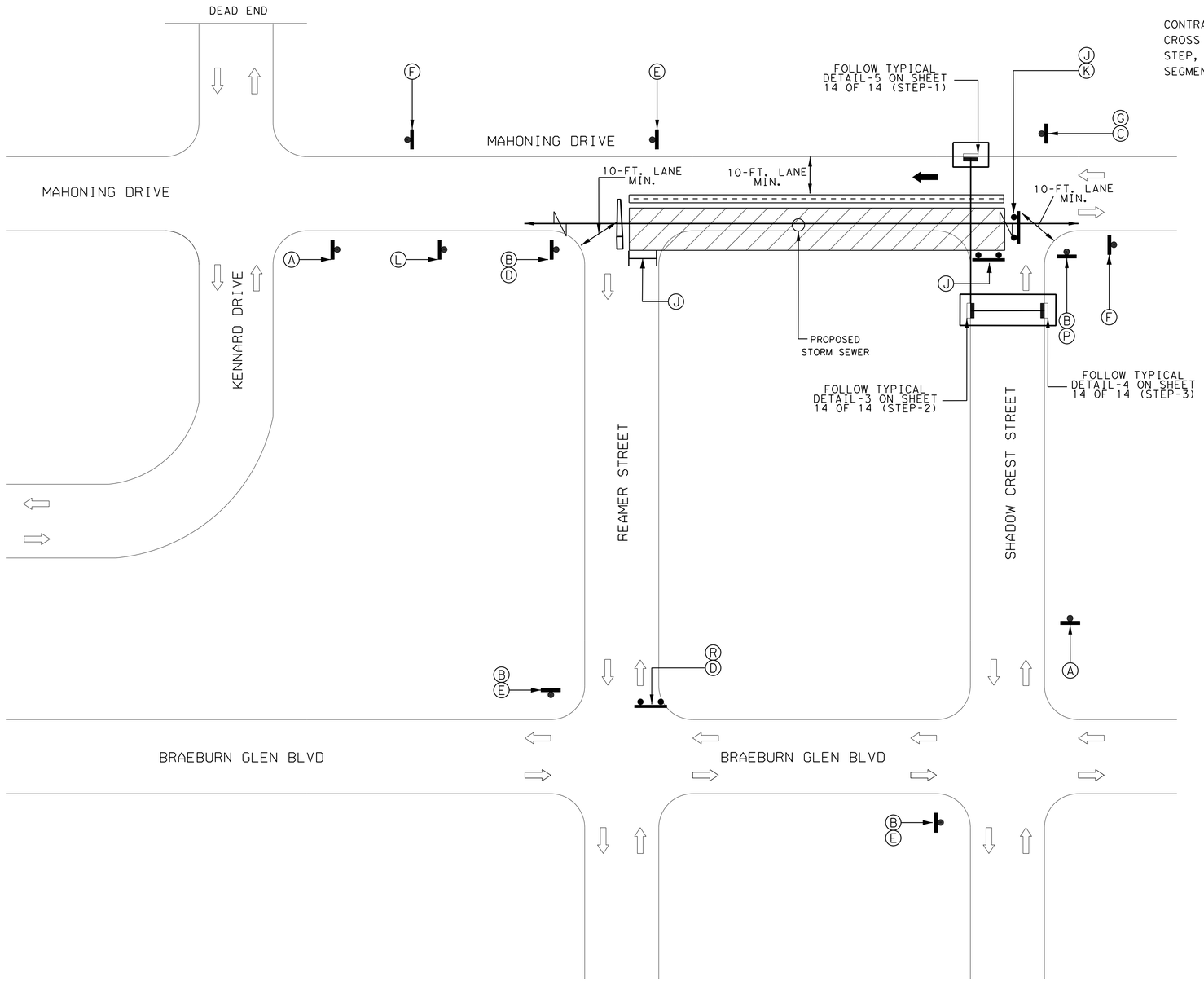
CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS TRAFFIC CONTROL PLAN (TCP) BREABURN GLEN NEIGHBORHOOD SEGMENT 6 DETOUR PLAN-3

SHEET 8 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 77 OF 227	



NOTE:

CONTRACTOR SHALL CONSTRUCT EACH CROSS STREET INLET IN A SEPARATE STEP, AND NOT AS PART OF THE SEGMENT-7 CONSTRUCTION.

TCP LEGEND:

- CONSTRUCTION AREA
- TY III TRAFFIC BARRIER
- (A) TEMP. GROUND MOUNTED SIGNS
- PLASTIC DRUM
- 36-INCH TRAFFIC CONTROL DELLINEATOR
- FLASHING ARROW PANEL
- CERTIFIED FLAGGER/ OFF-DUTY OFFICER
- DIRECTION OF TRAVEL
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY I) W/REFLECTIVE MARKER
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY II) W/REFLECTIVE MARKER

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

TYPICAL SIGN SPACING & TAPER LENGTH				
MAHONING DRIVE, Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF)		
		10' Offset	11' Offset	12' Offset
30	120'	150'	165'	180'

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(J)	(K)	(L)	(M)	(N)	(P)	(Q)	(R)
ORANGE FLAG (TYPICAL) ROAD WORK AHEAD	MAHONING DR.	DETOUR	DETOUR	DETOUR	END ROAD WORK			DO NOT ENTER	ROAD CLOSED	ORANGE FLAG (TYPICAL) ROAD CLOSED AHEAD	RIGHT LANE CLOSED AHEAD	LEFT LANE CLOSED AHEAD	END DETOUR		ROAD CLOSED TO THRU TRAFFIC
CW20-1D (36x36)	M4-12T (VAR X 12)	M4-9S (30x24)	M4-9R (30x24)	M4-9L (30x24)	G20-2a (36 X 18)	R3-2 (24x24)	R3-1 (24x24)	R5-1 (30x30)	R11-2 (48x30)	CW20-3D (36x36)	CW20-5DR (36x36)	CW20-5DL (36x36)	M4-8b (24x18)	CW-6-3 (36x36)	R11-4 (60x30)

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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
TRAFFIC CONTROL PLAN (TCP)
BREABURN GLEN NEIGHBORHOOD
SEGMENT 7 DETOUR PLAN-4

SHEET 9 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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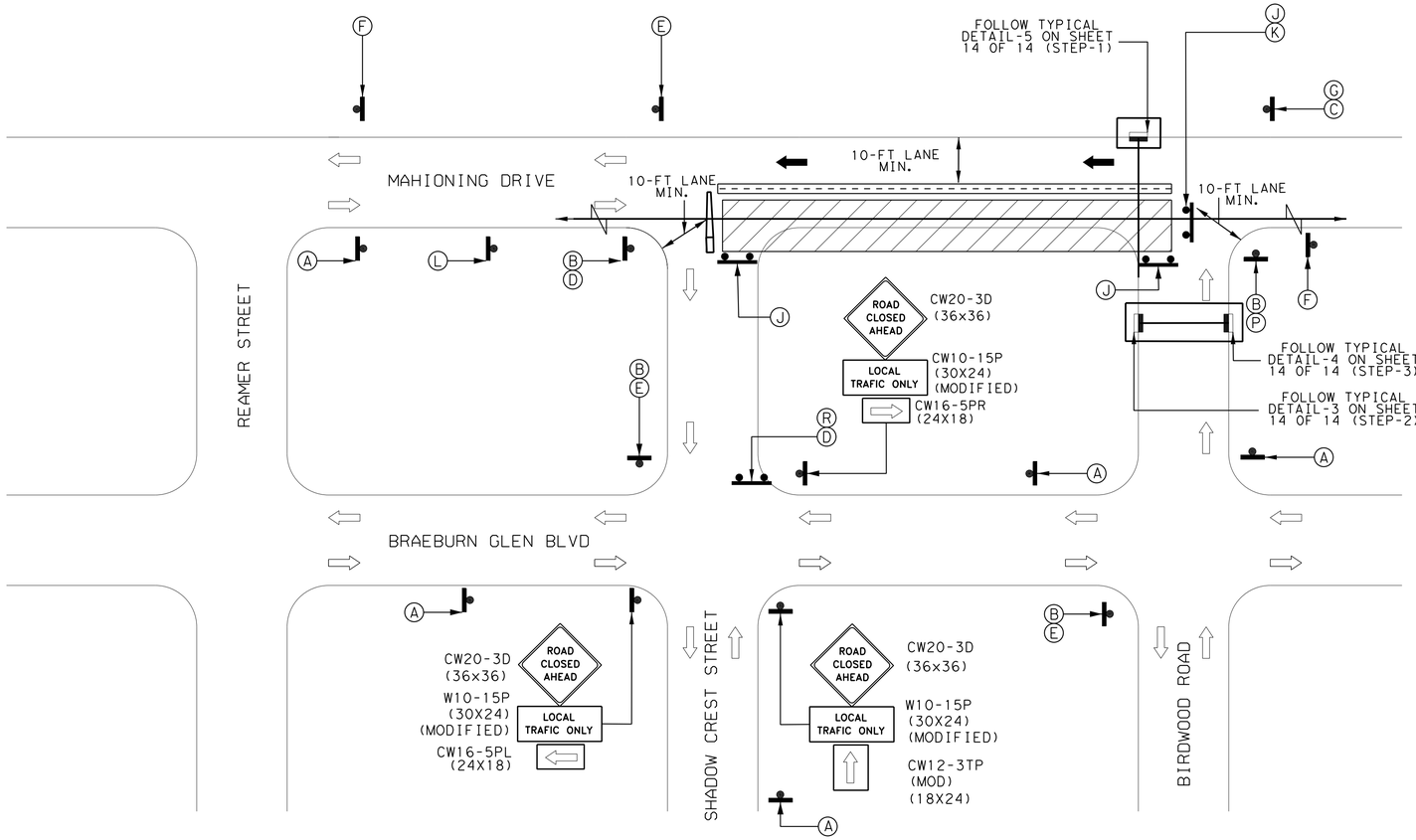
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 78 OF 227	

NOTE:

CONTRACTOR SHALL CONSTRUCT EACH CROSS STREET INLET IN A SEPARATE STEP, AND NOT AS PART OF THE SEGMENT-8 CONSTRUCTION.

TCP LEGEND:

- CONSTRUCTION AREA
- TY III TRAFFIC BARRIER
- (A) TEMP. GROUND MOUNTED SIGNS
- PLASTIC DRUM
- 36-INCH TRAFFIC CONTROL DELLINEATOR
- FLASHING ARROW PANEL
- CERTIFIED FLAGGER/ OFF-DUTY OFFICER
- DIRECTION OF TRAVEL
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY I) W/REFLECTIVE MARKER
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY II) W/REFLECTIVE MARKER



TYPICAL SIGN SPACING & TAPER LENGTH				
MAHONING DRIVE Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF)		
		10' Offset	11' Offset	12' Offset
30	120'	150'	165'	180'

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

(A) ORANGE FLAG (TYPICAL) — ROAD WORK AHEAD — CW20-1D (36x36)

(B) MAHONING DR. — M4-12T (VAR X 12)

(C) DETOUR — M4-9S (30x24)

(D) DETOUR — M4-9R (30x24)

(E) DETOUR — M4-9L (30x24)

(F) END ROAD WORK — G20-2a (36 X 18)

(G) R3-2 (24x24)

(H) R3-1 (24x24)

(J) DO NOT ENTER — R5-1 (30x30)

(K) ROAD CLOSED — R11-2 (48x30)

(L) ORANGE FLAG (TYPICAL) — ROAD CLOSED AHEAD — CW20-3D (36x36)

(M) RIGHT LANE CLOSED AHEAD — CW20-5DR (36x36)

(N) LEFT LANE CLOSED AHEAD — CW20-5DL (36x36)

(P) END DETOUR — M4-8b (24x18)

(Q) CW-6-3 (36x36)

(R) ROAD CLOSED TO THRU TRAFFIC — R11-4 (60x30)

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STATE OF TEXAS — MOHAMMAD IRFAN — 89333 — LICENSED PROFESSIONAL ENGINEER
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
TRAFFIC CONTROL PLAN (TCP)
BREABURN GLEN NEIGHBORHOOD SEGMENT 8 DETOUR PLAN 5

SHEET 10 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 79 OF 227	

NOTE:

CONTRACTOR SHALL CONSTRUCT EACH CROSS STREET INLET IN A SEPARATE STEP, AND NOT AS PART OF THE SEGMENT-9 CONSTRUCTION.

TCP LEGEND:

- CONSTRUCTION AREA
- TY III TRAFFIC BARRIER
- (A) TEMP. GROUND MOUNTED SIGNS
- PLASTIC DRUM
- 36-INCH TRAFFIC CONTROL DELLINEATOR
- FLASHING ARROW PANEL
- CERTIFIED FLAGGER/ OFF-DUTY OFFICER
- DIRECTION OF TRAVEL
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY I) W/REFLECTIVE MARKER
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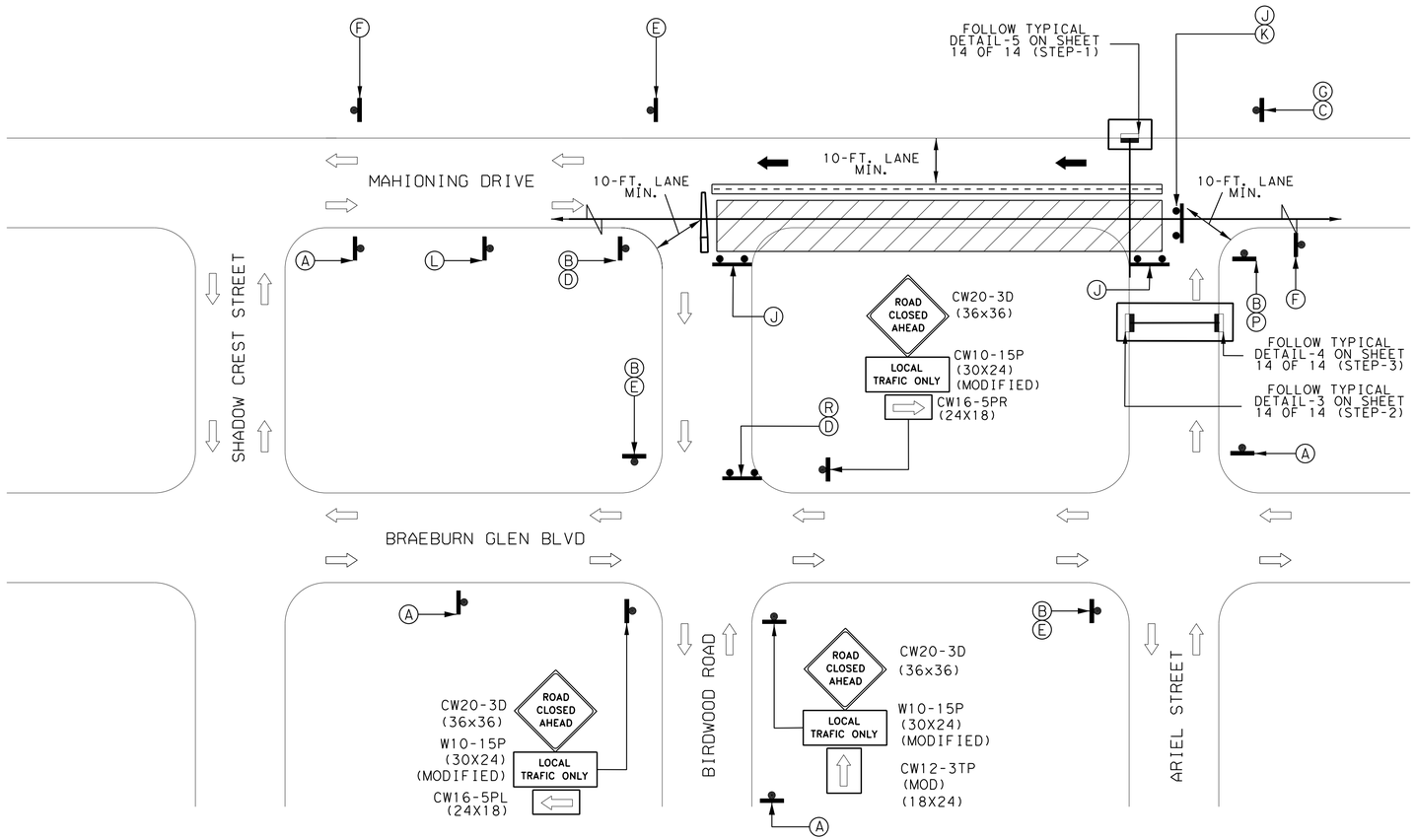

TYPICAL SIGN SPACING & TAPER LENGTH				
MAHONING DRIVE Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF)		
		10' Offset	11' Offset	12' Offset
30	120'	150'	165'	180'

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

(A) ORANGE FLAG (TYPICAL) — ROAD WORK AHEAD — CW20-1D (36x36)

(B) MAHONING DR. — M4-12T (VAR X 12)

(C) DETOUR — M4-9S (30x24)

(D) DETOUR — M4-9R (30x24)

(E) DETOUR — M4-9L (30x24)

(F) END ROAD WORK — G20-2a (36 X 18)

(G) R3-2 (24x24)

(H) R3-1 (24x24)

(J) DO NOT ENTER — R5-1 (30x30)

(K) ROAD CLOSED — R11-2 (48x30)

(L) ORANGE FLAG (TYPICAL) — ROAD CLOSED AHEAD — CW20-3D (36x36)

(M) RIGHT LANE CLOSED AHEAD — CW20-5DR (36x36)

(N) LEFT LANE CLOSED AHEAD — CW20-5DL (36x36)

(P) END DETOUR — M4-8b (24x18)

(Q) CW-6-3 (36x36)

(R) ROAD CLOSED TO THRU TRAFFIC — R11-4 (60x30)

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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

TRAFFIC CONTROL PLAN (TCP)
BREABURN GLEN NEIGHBORHOOD
SEGMENT 9 DETOUR PLAN 6
SHEET 11 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 80 OF 227	

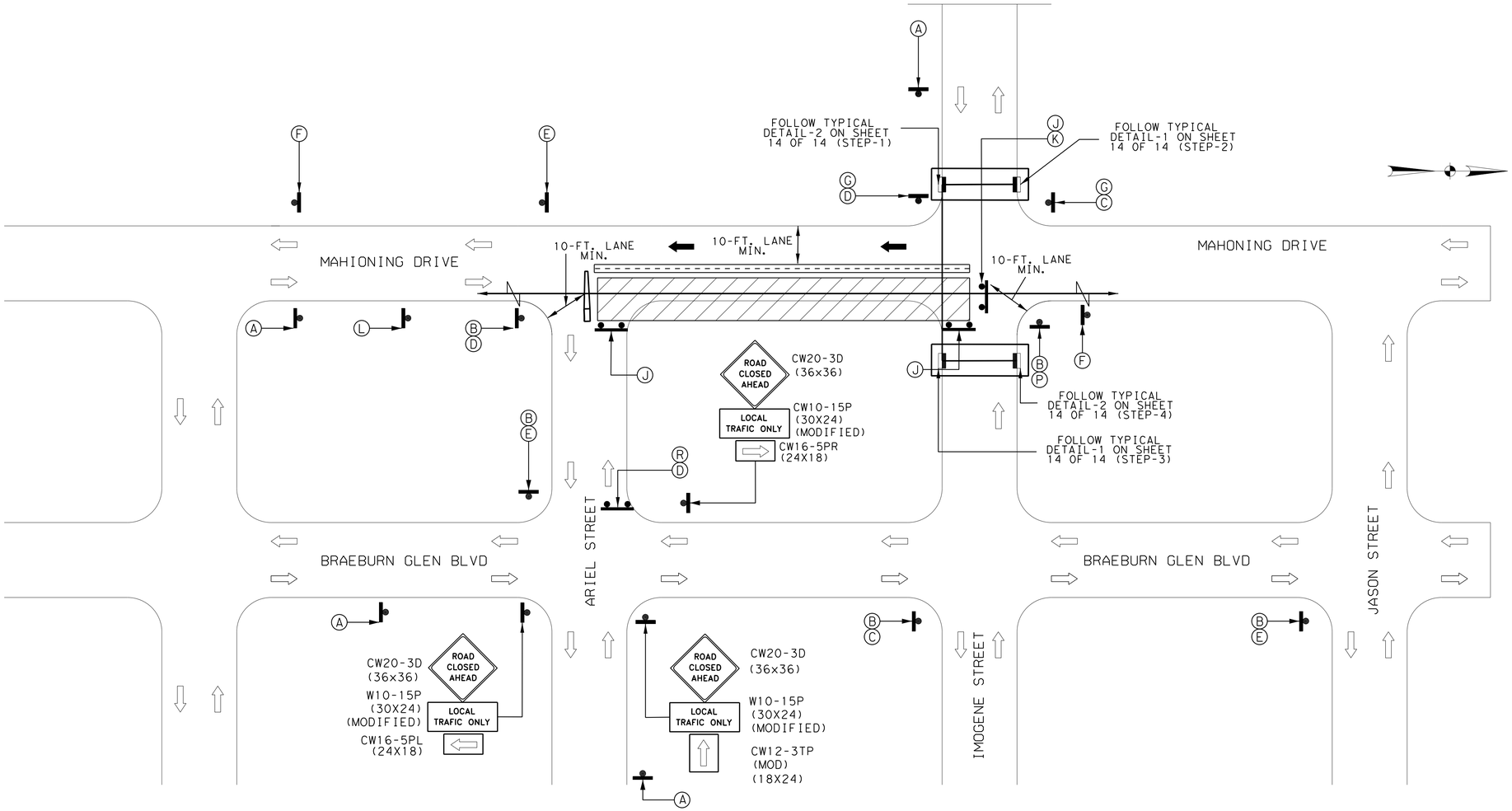
NOTE:

CONTRACTOR SHALL CONSTRUCT EACH CROSS STREET INLET IN A SEPARATE STEP, AND NOT AS PART OF THE SEGMENT-10 CONSTRUCTION.

TCP LEGEND:

- CONSTRUCTION AREA
- TY III TRAFFIC BARRIER
- (A) TEMP. GROUND MOUNTED SIGNS
- PLASTIC DRUM
- 36-INCH TRAFFIC CONTROL DELLINEATOR
- FLASHING ARROW PANEL
- CERTIFIED FLAGGER/ OFF-DUTY OFFICER
- DIRECTION OF TRAVEL
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY I) W/REFLECTIVE MARKER
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY II) W/REFLECTIVE MARKER

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX



TYPICAL SIGN SPACING & TAPER LENGTH				
MAHONING DRIVE Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF) 10' Offset	11' Offset	12' Offset
30	120'	150'	165'	180'

(A) ORANGE FLAG (TYPICAL) — ROAD WORK AHEAD — CW20-1D (36x36)

(B) MAHONING DR. — M4-12T (VAR X 12)

(C) DETOUR — M4-9S (30x24)

(D) DETOUR — M4-9R (30x24)

(E) DETOUR — M4-9L (30x24)

(F) END ROAD WORK — G20-2a (36 X 18)

(G) R3-2 (24x24)

(H) R3-1 (24x24)

(J) DO NOT ENTER — R5-1 (30x30)

(K) ROAD CLOSED — R11-2 (48x30)

(L) ORANGE FLAG (TYPICAL) — ROAD CLOSED AHEAD — CW20-3D (36x36)

(M) RIGHT LANE CLOSED AHEAD — CW20-5DR (36x36)

(N) LEFT LANE CLOSED AHEAD — CW20-5DL (36x36)

(P) END DETOUR — M4-8b (24x18)

(Q) CW-6-3 (36x36)

(R) ROAD CLOSED TO THRU TRAFFIC — R11-4 (60x30)

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15021 Katy Freeway, Suite 500
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281-945-0069 PH
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Progressive Traffic & Transportation
Engineers, Planners & Managers
TBPE FIRM REGISTRATION #F-9492
16360 Park Ten Place, Suite 106
Houston, Texas, 77084
281-206-7495
281-206-7494 FX

STATE OF TEXAS — MOHAMMAD IRFAN — 89333 — LICENSED PROFESSIONAL ENGINEER
3/3/2026
TBPE FIRM REGISTRATION #F-9492

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS TRAFFIC CONTROL PLAN (TCP) BREABURN GLEN NEIGHBORHOOD SEGMENT 10 DETOUR PLAN 7

SHEET 12 OF 14

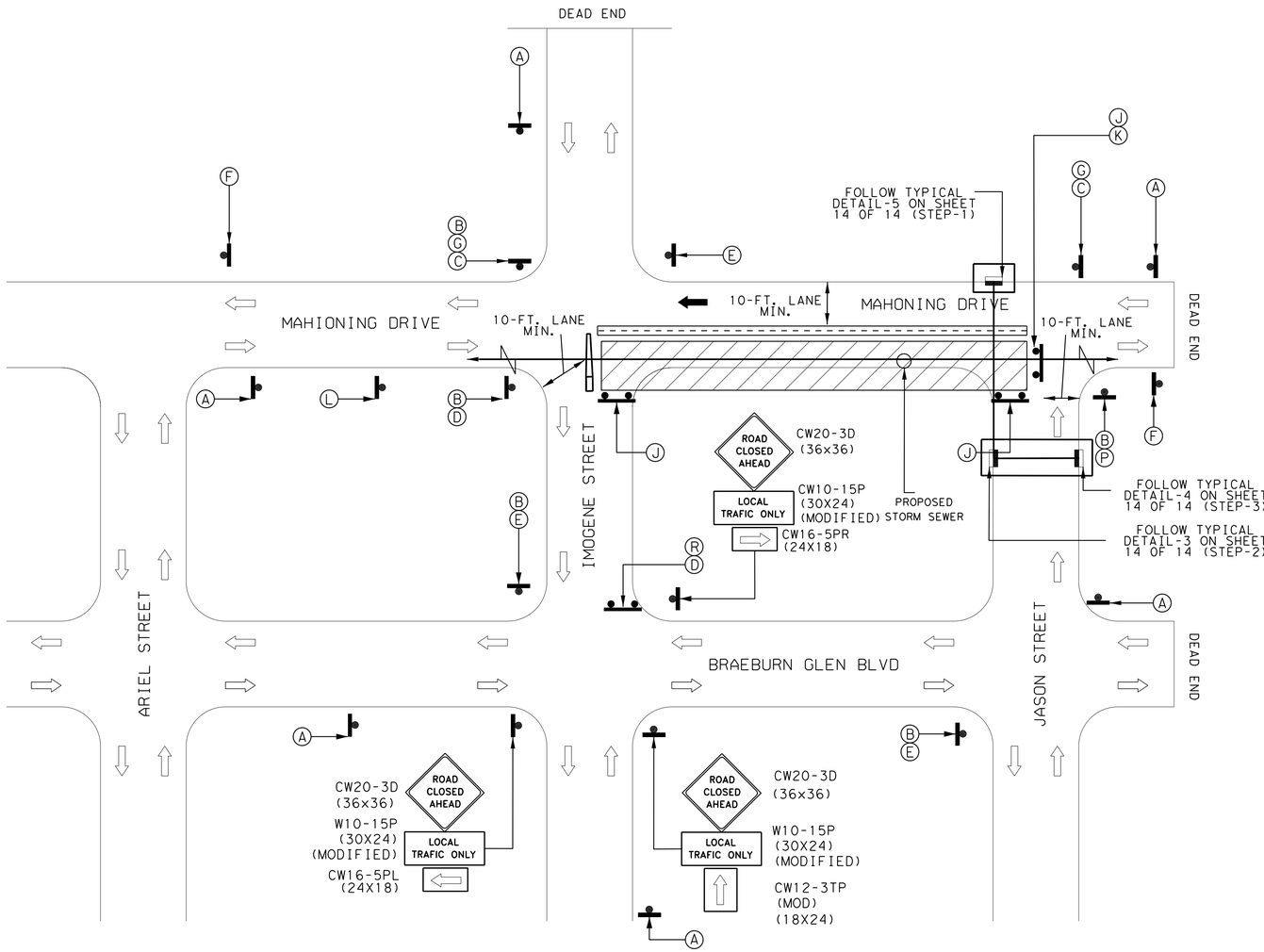
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 81 OF 227	

NOTE:

CONTRACTOR SHALL CONSTRUCT EACH CROSS STREET INLET IN A SEPARATE STEP, AND NOT AS PART OF THE SEGMENT-11 CONSTRUCTION.

TCP LEGEND:

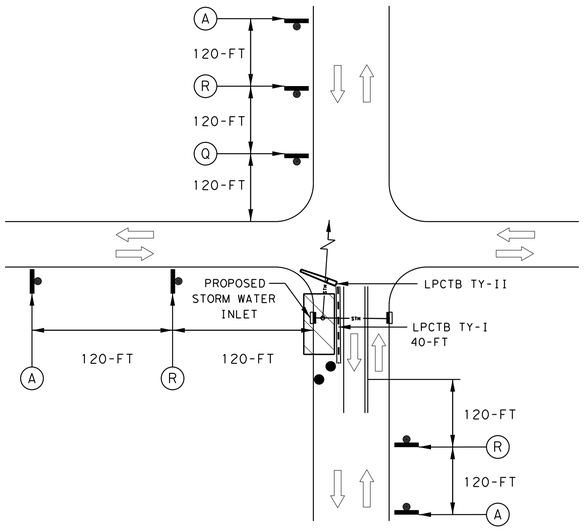
- CONSTRUCTION AREA
- TY III TRAFFIC BARRIER
- (A) TEMP. GROUND MOUNTED SIGNS
- PLASTIC DRUM
- 36-INCH TRAFFIC CONTROL DELLINEATOR
- FLASHING ARROW PANEL
- CERTIFIED FLAGGER/ OFF-DUTY OFFICER
- DIRECTION OF TRAVEL
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY I) W/REFLECTIVE MARKER
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY II) W/REFLECTIVE MARKER



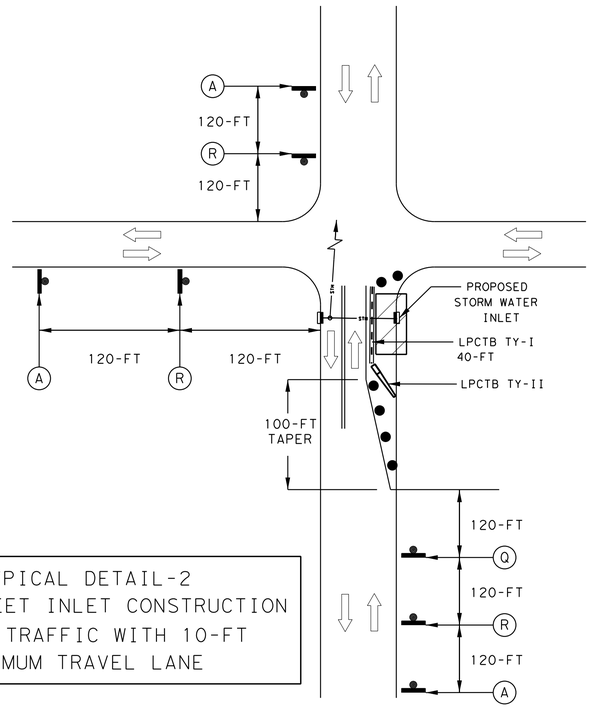
TYPICAL SIGN SPACING & TAPER LENGTH				
MAHONING DRIVE Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF)		
		10' Offset	11' Offset	12' Offset
30	120'	150'	165'	180'

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

| | | | |



TYPICAL DETAIL-1
CROSS STREET INLET CONSTRUCTION
TWO WAY TRAFFIC WITH 10-FT
MINIMUM TRAVEL LANE



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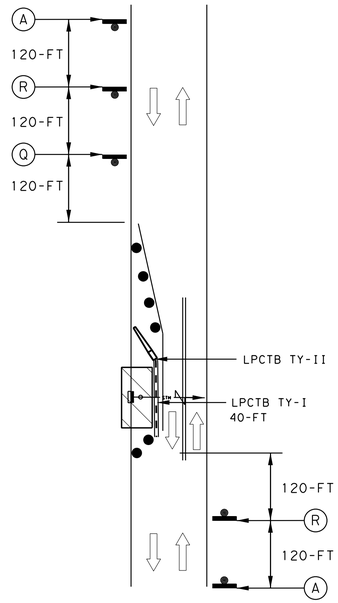
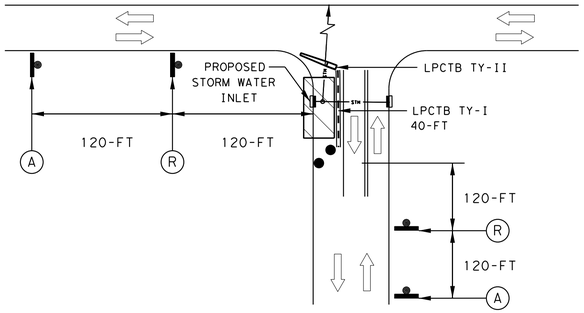
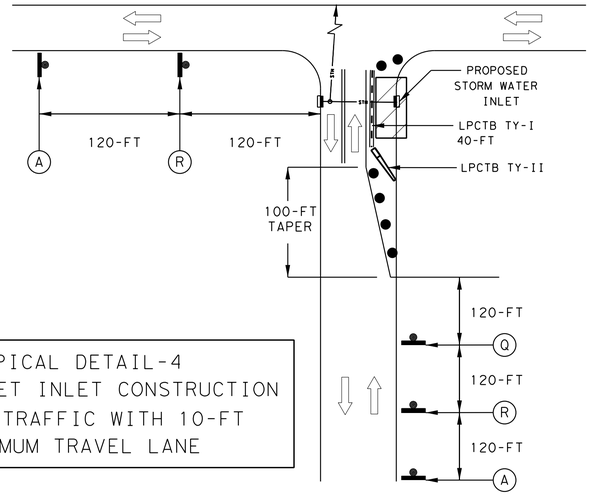
CROSS STREET INLET CONSTRUCTION
TWO WAY TRAFFIC WITH 10-FT
MINIMUM TRAVEL LANE



TYPICAL DETAIL-5
INLET ADJECENT TO TRUNK LINE CONSTRUCTION
TWO WAY TRAFFIC WITH 10-FT
MINIMUM TRAVEL LANE



TYPICAL DETAIL-3
CROSS STREET INLET CONSTRUCTION
TWO WAY TRAFFIC WITH 10-FT
MINIMUM TRAVEL LANE



TYPICAL DETAIL-4
CROSS STREET INLET CONSTRUCTION
TWO WAY TRAFFIC WITH 10-FT
MINIMUM TRAVEL LANE

TCP LEGEND:

- CONSTRUCTION AREA
- TY III TRAFFIC BARRIER
- TEMP. GROUND MOUNTED SIGNS
- PLASTIC DRUM
- 36-INCH TRAFFIC CONTROL DELLINEATOR
- FLASHING ARROW PANEL
- CERTIFIED FLAGGER/ OFF-DUTY OFFICER
- DIRECTION OF TRAVEL
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY I) W/REFLECTIVE MARKER
- LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) (TY II) W/REFLECTIVE MARKER

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

TYPICAL SIGN SPACING & TAPER LENGTH

BREABURN GLEN BLVD. Posted Speed (mph)	Sign Spacing (X)	Min. Desirable Taper Length (LF) 10' Offset	11' Offset	12' Offset
30	120'	150'	165'	180'
35	160'	205'	225'	245'

A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
ORANGE FLAG (TYPICAL) ROAD WORK AHEAD	BRAEBURN GLEN BLVD	DETOUR	DETOUR	DETOUR	END ROAD WORK			DO NOT ENTER	ROAD CLOSED	ORANGE FLAG (TYPICAL) ROAD CLOSED AHEAD	RIGHT LANE CLOSED AHEAD	LEFT LANE CLOSED AHEAD	END DETOUR	20 MPH	ROAD NARROWS
CW20-1D (36x36)	M4-12T (VAR X 12)	M4-9S (30x24)	M4-9R (30x24)	M4-9L (30x24)	G20-2a (36 X 18)	R3-2 (24x24)	R3-1 (24x24)	R5-1 (30x30)	R11-2 (48x30)	CW20-3D (36x36)	CW20-5DR (36x36)	CW20-5DL (36x36)	M4-8b (24x18)	CW1-4L (36x36) CW13-1P (18x18)	CW5-1 (36x36)

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16360 Park Ten Place, Suite 106
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SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

STATE OF TEXAS
MOHAMMAD IRFAN
89333
LICENSED
PROFESSIONAL ENGINEER
3/3/2026
TBPE FIRM REGISTRATION #F-9492

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA
DRAINAGE AND PAVING
IMPROVEMENTS
TRAFFIC CONTROL PLAN (TCP)
BRAEBURN GLEN NEIGHBORHOOD
TYPICAL DETAILS (INLETS CONSTRUCTION)
SHEET 14 OF 14

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
NOT TRUE SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 83 OF 227	

NO.	DATE	REVISION	APP.
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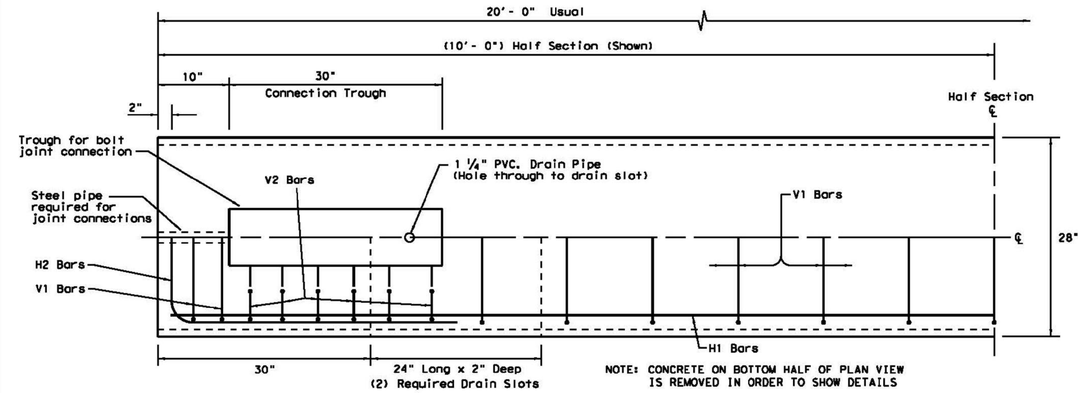
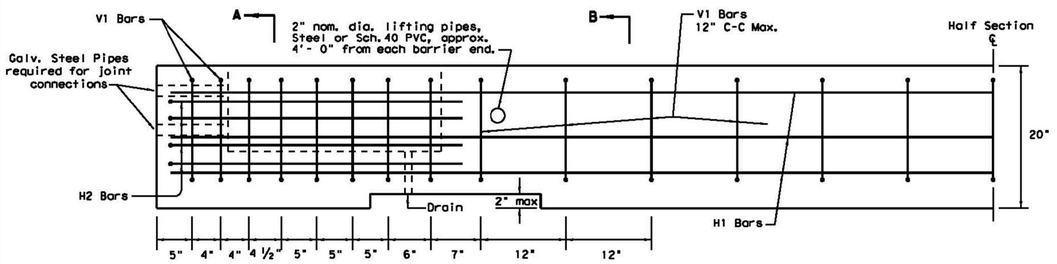
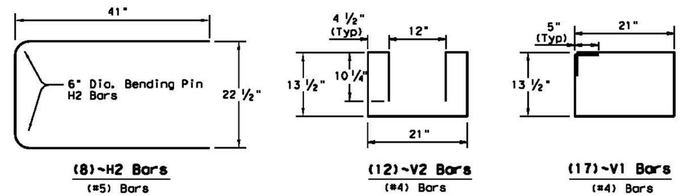


PLAN
(TYPE 1) BARRIER SEGMENT
(SYMMETRICAL ABOUT CENTER LINES)



ELEVATION
(TYPE 1) BARRIER SEGMENT
(SYMMETRICAL ABOUT CENTER LINES)



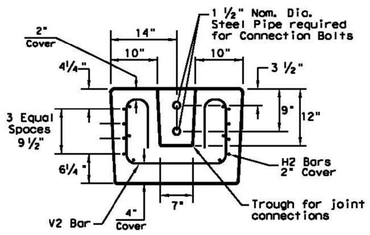
(8)~H2 Bars (#5) Bars

(12)~V2 Bars (#4) Bars

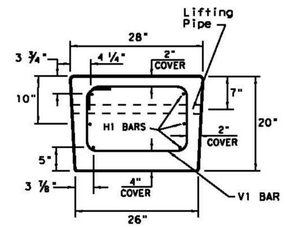
(17)~V1 Bars (#4) Bars

REINFORCING STEEL DETAILS
TYPE 1 - BARRIER SEGMENT

Note: Use 2" Dia. Bending Pin, unless otherwise shown



SECTION A-A



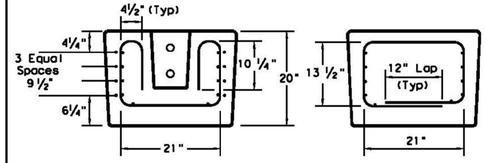
SECTION B-B

GENERAL NOTES

1. Low Profile Concrete Barrier (LPCB), is approved for use in temporary work zone locations, where the posted speed is 45 mph, or less.
2. Concrete shall be Class H for precast barrier with a minimum compressive strength of 3,600 psi.
3. Where used, rebar reinforcement shall be Grade 60 and conform to ASTM A615.
4. Precast LPCB barrier length shall be 20 ft.
5. All barrier edges shall have ¾" chamfer or a tooled radius.
6. Joint connection hardware shall be in accordance with Item 449, "Anchor Bolts." and is considered subsidiary.
7. Steel pipe required for joint connection bolts shall be galvanized in accordance with Item 445, "Galvanizing."
8. Welded wire reinforcement (WWR) may be used in lieu of conventional reinforcement for Type 1 barrier, and shall meet the requirements shown.

FOR CONTRACTORS INFORMATION ONLY

(TYPE 1) APPROX. QUANTITIES 20 FT. SECTION		
CONCRETE	CY	2.6
REINFORCING STEEL	LBS	330
TOTAL BARRIER WT.	LBS	11000



SECTION A-A
SECTION B-B

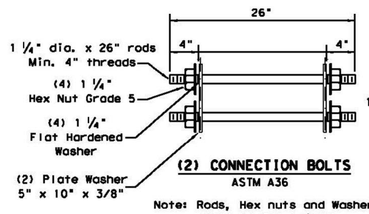
(WWR) GENERAL NOTES

1. Deformed Welded Wire Reinforcement shall conform to ASTM A497.
2. Welded wire cage may be cut or bent, if necessary, but must be approved by the Engineer.
3. Combinations of reinforcing steel and WWR are permitted, as directed by the Engineer. The dimensions from the end of the barrier section to the first wire shall not exceed 3".

REQUIRED (WWR) WIRE DESIGN

8 ~ (D31) Horizontal Wires (Equally spaced)
10 ~ (D20) Horizontal Wires (Equally spaced)
29 ~ (D20) Vertical Wires (Spaced as shown in Elevation View)

WELDED WIRE REINFORCEMENT (WWR)- OPTIONAL REINFORCING



(2) CONNECTION BOLTS
ASTM A36

Note: Rods, Hex nuts and Washers shall be Galvanized.

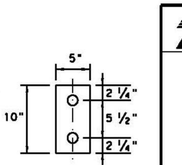


PLATE WASHER
5" x 10" x ⅜"

SHEET 1 OF 2

Texas Department of Transportation — Design Division Standard

LOW PROFILE CONCRETE BARRIER
PRECAST BARRIER (TYPE 1)
LPCB-13

FILE: lpcb13.dgn	DW: TxDOT	CK: AM	DW: VP	CK:
©TxDOT December 2010	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.

ENTECH CIVIL ENGINEERS, INC
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Progressive Traffic & Transportation Engineers, Planners & Managers
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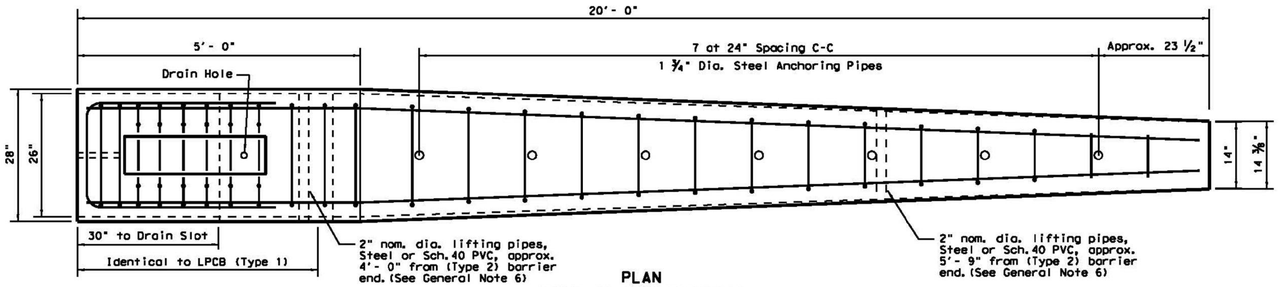
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

STATE OF TEXAS — MOHAMMAD IRFAN — 89333 — LICENSED PROFESSIONAL ENGINEER
3/3/2026
TBPE FIRM REGISTRATION #F-9492

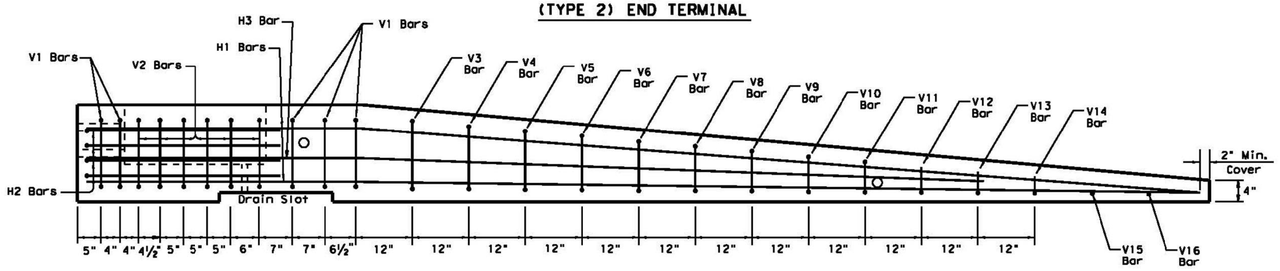
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
TRAFFIC CONTROL PLAN (TCP)
LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) TY I DETAILS
SHEET 1 OF 1

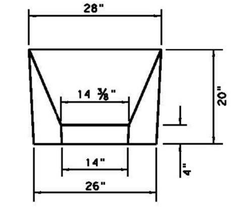
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 84 OF 227	



PLAN
(TYPE 2) END TERMINAL



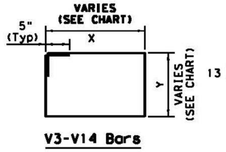
ELEVATION
(TYPE 2) END TERMINAL



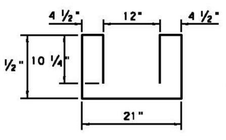
APPROACH VIEW

TYPE 2 - NOTES

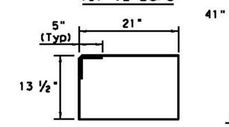
1. Welded wire reinforcment (WWR) is "not" an option for Type 2 Barrier.
2. Type 2 Barrier shall be used as an end treatment for the Type 1 barrier segments, when applicable.
3. The end treatment can be used without the anchor pins in locations that can accommodate approximately 4 ft. of lateral displacement of the end treatment. The use of non-pinned end treatment does not affect the performance or the deflection of the Low-Profile barrier system.
4. The anchor pins are all the same length and are to be driven flush with the top of the (Type 2) barrier surface.
5. The bends in the H3 and H1 bars are slight, no formal bend is necessary.
6. The Type 2 barrier segment must be lifted from the rear first, to prevent cracking of sloped section.
7. See LPCB sheet 1 for additional information.



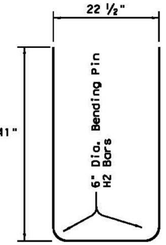
V3-V14 Bars



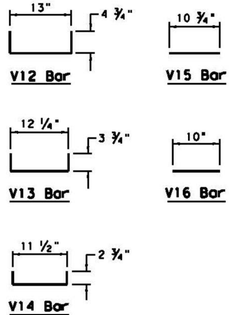
(6)-V2 Bars



(5)-V1 Bars



(4)-H2 Bars
(#5) Bars

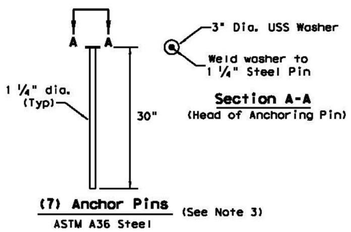


Note: All V Bars are (#4)

BAR (#4)	X (IN.)	Y (IN.)
V3 BAR	20 ¼	14 ½
V4 BAR	19 ½	13 ½
V5 BAR	18 ½	12 ¼
V6 BAR	17 ½	11 ¼
V7 BAR	17	10 ¼
V8 BAR	16 ¼	9
V9 BAR	15 ½	8
V10 BAR	14 ½	7
V11 BAR	13 ¾	6

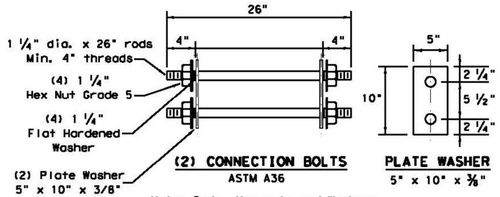
REINFORCING STEEL DETAILS
TYPE 2 - END TERMINAL

Note:
Anchoring pipes not shown in Elevation View



Section A-A
(Head of Anchoring Pin)

(7) Anchor Pins
ASTM A36 Steel
(See Note 3)

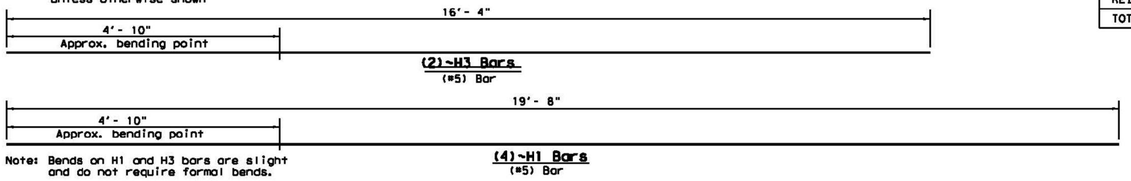


(2) CONNECTION BOLTS
ASTM A36

PLATE WASHER
5" x 10" x ⅜"

Note: Rods, Hex nuts and Washers shall be Galvanized.

Note: Use 2" Dia. Bending Pin, unless otherwise shown



(2)-H3 Bars
(#5) Bar

(4)-H1 Bars
(#5) Bar

Note: Bends on H1 and H3 bars are slight and do not require formal bends.

FOR CONTRACTORS INFORMATION ONLY

(TYPE 2) APPROX. QUANTITIES	20 FT. SECTION	
CONCRETE	CY	1.65
REINFORCING STEEL	LBS	240
TOTAL BARRIER WT.	LBS	7000

Texas Department of Transportation — Design Division Standard

LOW PROFILE CONCRETE BARRIER
PRECAST BARRIER (TYPE 2)
LPCB-13

FILE: lpcb13.dgn	DN: TxDOT	CK: AM	DW: VP	CK:
©TxDOT December 2010	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

ENTECH
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281-945-0081 FX

Progressive Traffic & Transportation
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TBPE FIRM REGISTRATION #F-9492
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STATE OF TEXAS — MOHAMMAD IRFAN — 89333 — LICENSED PROFESSIONAL ENGINEER — 3/3/2026

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331
TBPE FIRM REGISTRATION #F-9492

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA
DRAINAGE AND PAVING IMPROVEMENTS
TRAFFIC CONTROL PLAN (TCP)
LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) TY II DETAILS
SHEET 1 OF 1

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 85 OF 227	

GENERAL NOTES

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH PART VI OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) LATEST EDITION WITH REVISIONS DURING THE ENTIRE CONSTRUCTION PERIOD.
2. ALL SIGNS AND TRAFFIC CONTROL DEVICES SHALL CONFORM THE LATEST VERSION OF THE TMUTCD.
3. NO LANES SHALL BE CLOSED DURING THE HOURS OF 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM MONDAY THRU FRIDAY WITHOLT APPROVAL OF THE CITY TRAFFIC ENGINEER.
4. NO WORK SHALL BE PERFORMED IN RESIDENTIAL AREAS FROM 7:00 PM TO 7:00 AM.
5. CONTRACTOR SHALL MAINTAIN APPROVED NUMBER OF THROUGH LANES OF TRAFFIC IN EACH DIRECTION DURING CONSTRUCTION WORKING HOURS. TRAFFIC CONTROL PLANS SHALL INCLUDE ONE–WAY AND/OR DETOUR PLANS. CONTRACTOR SHALL MAINTAIN ADA COMPLIANT PEDESTRIAN ACCESS TO BUS STOPS AND ADEQUATE BUS ACCESS TO ALL THE BUS STOPS.
6. CONTRACTOR SHALL MAINTAIN TRAFFIC LANES AND DETOURS ACCORDING TO TRAFFIC CONTROL PLANS DURING WORKING HOURS.
7. CONTRACTOR SHALL COVER OPEN PAVEMENT EXCAVATIONS FOR MINOR UTILITY WORK WITH ANCHORED STEEL PLATES DURING NON–WORKING HOURS, AND OPEN LANES FOR NORMAL TRAFFIC FLOW WHEN FEASIBLE.
8. IF THE CONTRACTOR CHOOSES TO USE A DIFFERENT METHOD OF "TRAFFIC CONTROL PLANS" DURING THE CONSTRUCTION THAN WHAT IS OUTLINED IN THE CONTRACT DRAWINGS, THE CONTRACTOR SHALL BE RESPONSIBLE TO PREPARE AND SUBMIT AN ALTERNATE SET OF TRAFFIC CONTROL PLANS TO THE CITY OF HOUSTON PROJECT MANAGER FOR APPROVAL TEN WORKING DAYS PRIOR TO IMPLEMENTATION. THESE PLANS SHALL BE DRAWN TO SCALE ON REPRODUCIBLE MYLARS AND SHALL BE SEALED BY A LICENSED ENGINEER IN THE STATE OF TEXAS. OFFICE OF CITY ENGINEER, MOBILITY PERMITS SECTION REPRESENTATIVE APPROVAL IS REQUIRED TO ACCEPT THE PROPOSED CHANGES.
9. CONTRACTOR SHALL SECURE LANE/SIDEWALK/BICYCLE FACILITY CLOSURE PERMITS FROM OFFICE OF CITY ENGINEER (MOBILITY PERMIT SECTION AT https://gohub.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 CONTRCL 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.

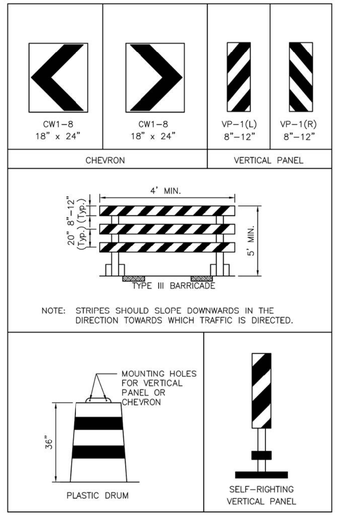
J. SPACING MAY BE ADJUSTED TO PROVIDE DRIVEWAYS, INTERSECTIONS AND /OR MEDIAN OPENINGS.

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

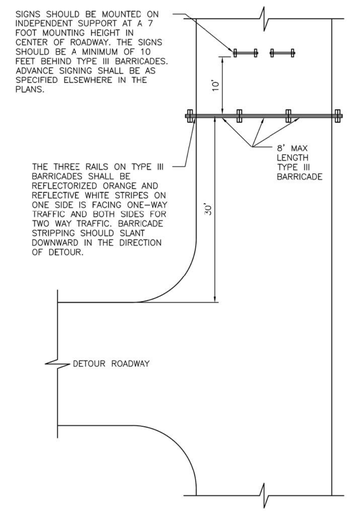
POSTED SPEED (MPH)	DISTANCE "D" (FEET)
30	200
35	250
40	305
45	360
50	425
55	495



CHANNELIZATION AND BARRICADES

LEGEND:

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



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

APPROVED BY:	APPROVED BY:
Docusigned by: Sohail Kanwar	Docusigned by: KHANG NGUYEN
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: Docusigned by: Carol Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV–27–2023	DWG NO: 01555–01

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TCP NOTES CHANNELIZING DEVICES AND BARRICADES

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NOT TO SCALE	

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	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

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3/3/2026
TBPE FIRM REGISTRATION #F–9492

SURVEYED BY: LANDTECH, INC.
FB NO. P–6331

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

TRAFFIC CONTROL PLAN STANDARD DETAILS

SHEET 1 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
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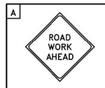
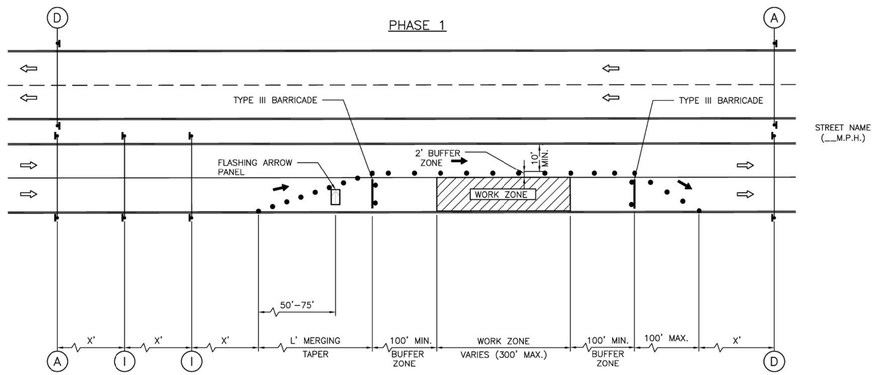
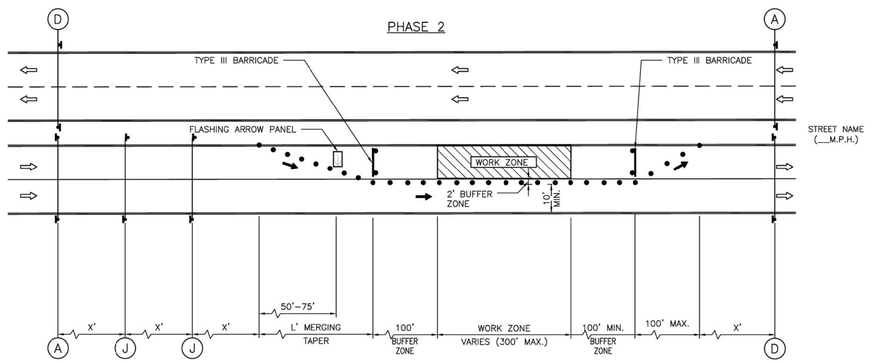
SHEET NO. 86 OF 227	

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

A	D	I	J
			
CW20-1	G20-2	AHEAD CW20-5(2) CW16-3	AHEAD CW20-5(1) CW16-3





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.

APPROVED BY:	APPROVED BY:
DocuSigned by: Suhail Kanwar 8678B0C64170478...	DocuSigned by: HUNG NGUYEN 95A29EFDA75B4CD...
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: DocuSigned by: Carl Haddock 4ADC61787DE4E8...	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 01555-04

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TCP ONE LANE CLOSURE
PHASE 1 & 2

	FOR CITY OF HOUSTON USE ONLY
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NOT TO SCALE	

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STATE OF TEXAS
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#9533
LICENSED
PROFESSIONAL ENGINEER
3/3/2026
TBPE FIRM REGISTRATION #F-9492

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA
DRAINAGE AND PAVING
IMPROVEMENTS

TRAFFIC CONTROL PLAN
STANDARD DETAILS
SHEET 2 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
AS NOTED	
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NO.	DATE	REVISION	APP.
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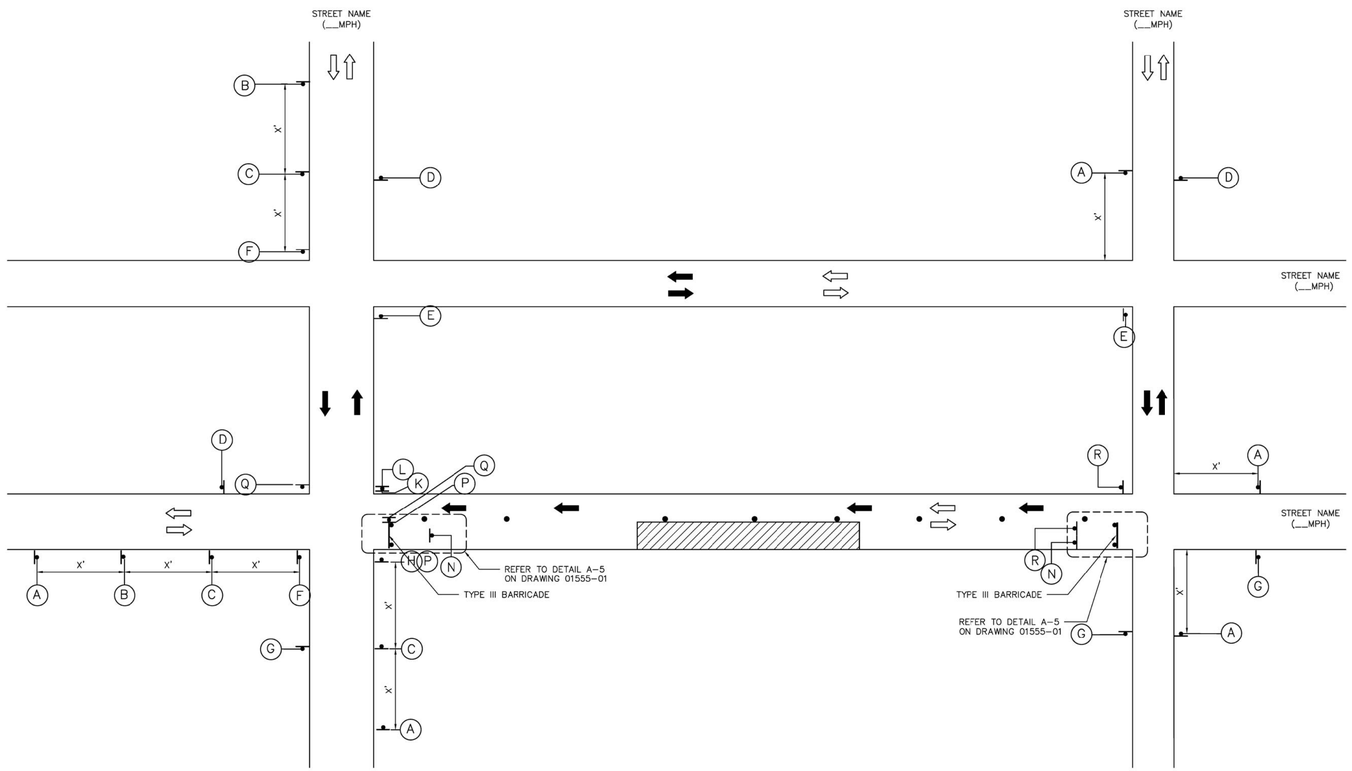
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	APP.

A	B	C	D	E	F	G	H	I	J	
ROAD WORK AHEAD	ROAD CLOSED AHEAD	DETOUR AHEAD	END ROAD WORK	STREET NAME DETOUR →	STREET NAME DETOUR ←	END DETOUR	STREET NAME DETOUR ↑	RIGHT LANE CLOSED AHEAD	LEFT LANE CLOSED AHEAD	
CW20-1	CW20-3	CW20-2	G20-2	M4-9R	M4-9L	M4-8a	M4-9T	CW20-5(2) CW16-3	CW20-5(1) CW16-3	
K	L	M	N	O	P	Q	R			
ONE WAY ←	ONE WAY →	DO NOT ENTER	ROAD CLOSED	DETOUR			BEGIN ONE WAY			
R6-2(L)	R6-2(R)	R5-1	R11-2	M4-10(L)	R3-1	R3-2	R6-6			



LEGEND:

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

NOTES:

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

APPROVED BY:	APPROVED BY:
DocuSigned by: Sukat Kanwar	DocuSigned by: HENG NGUYEN
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: DocuSigned by: Carl Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 01555-05

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TCP TYPICAL DETOUR ROUTING WITH ONE LANE CLOSURE (ONE BLOCK)

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NOT TO SCALE	

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3/3/2026
TBPE FIRM REGISTRATION #F-9492

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

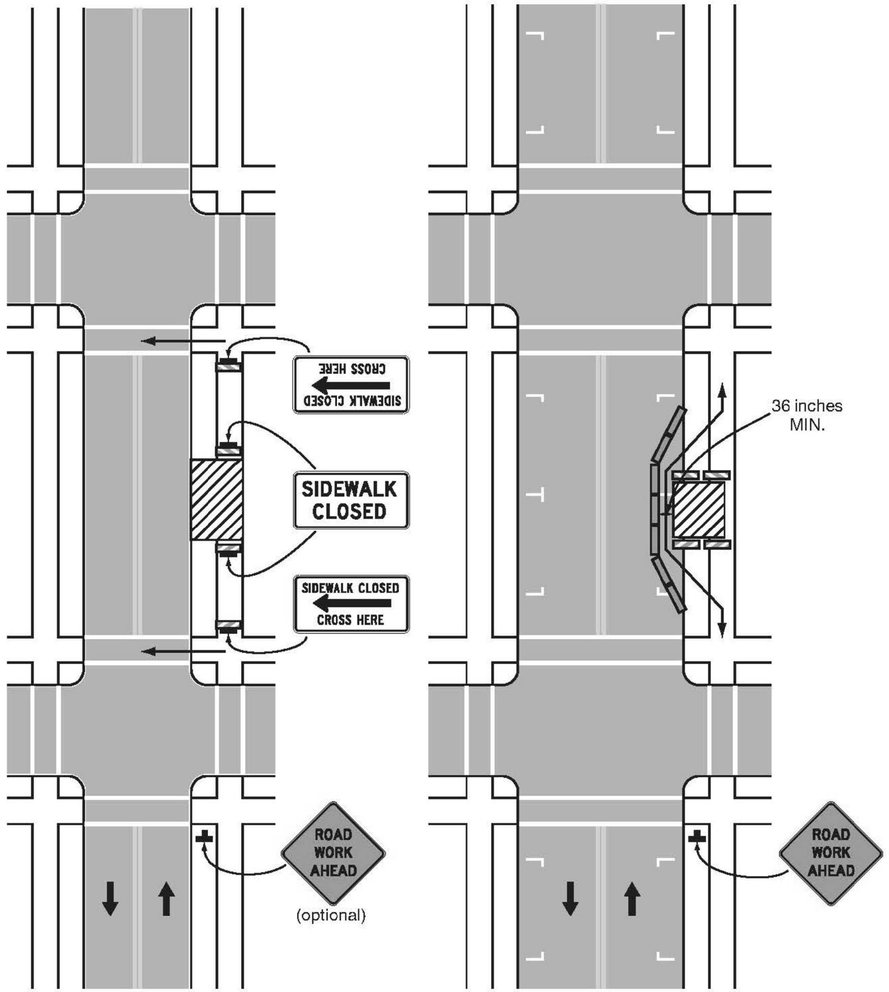
TRAFFIC CONTROL PLAN STANDARD DETAILS

SHEET 3 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 88 OF 227	

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

Figure 6H-28. Sidewalk Detour or Diversion (TA-28)

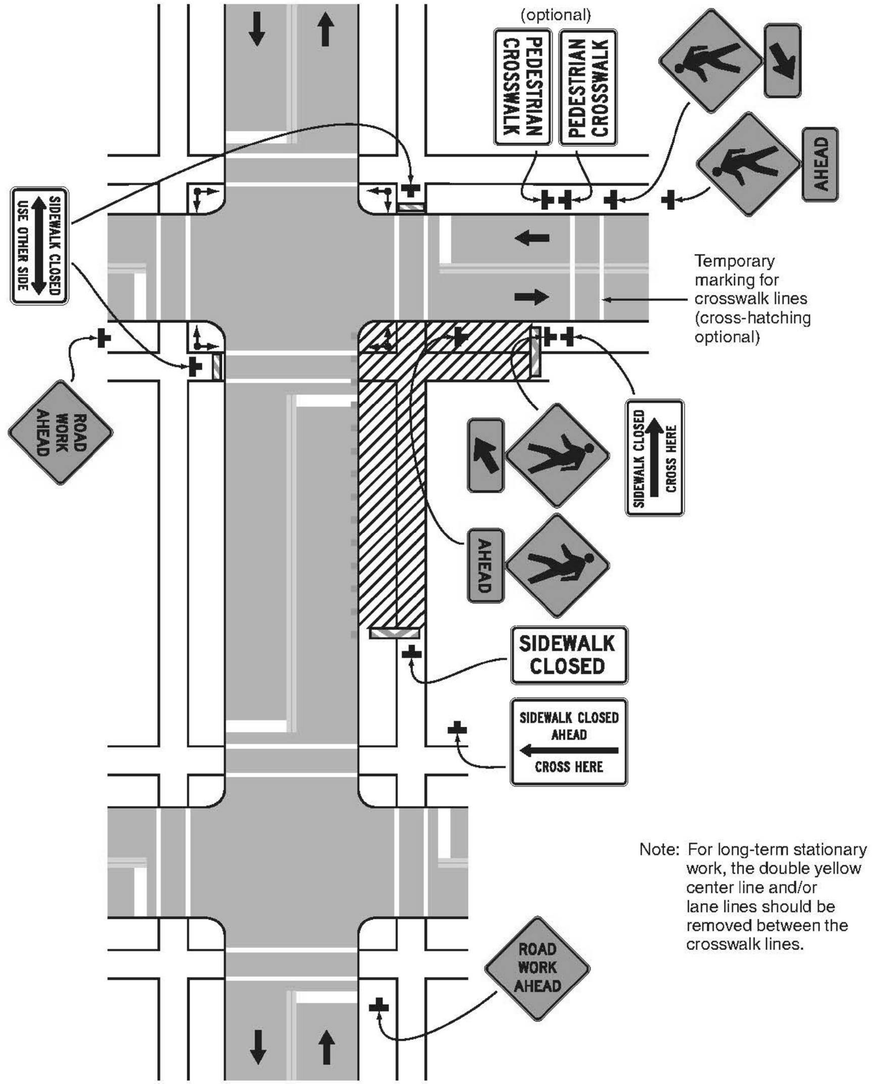


SIDEWALK DETOUR

SIDEWALK DIVERSION

Typical Application 28

Figure 6H-29. Crosswalk Closures and Pedestrian Detours (TA-29)



Note: For long-term stationary work, the double yellow center line and/or lane lines should be removed between the crosswalk lines.

Typical Application 29

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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA
DRAINAGE AND PAVING
IMPROVEMENTS

TRAFFIC CONTROL PLAN
STANDARD DETAILS
SHEET 4 OF 4

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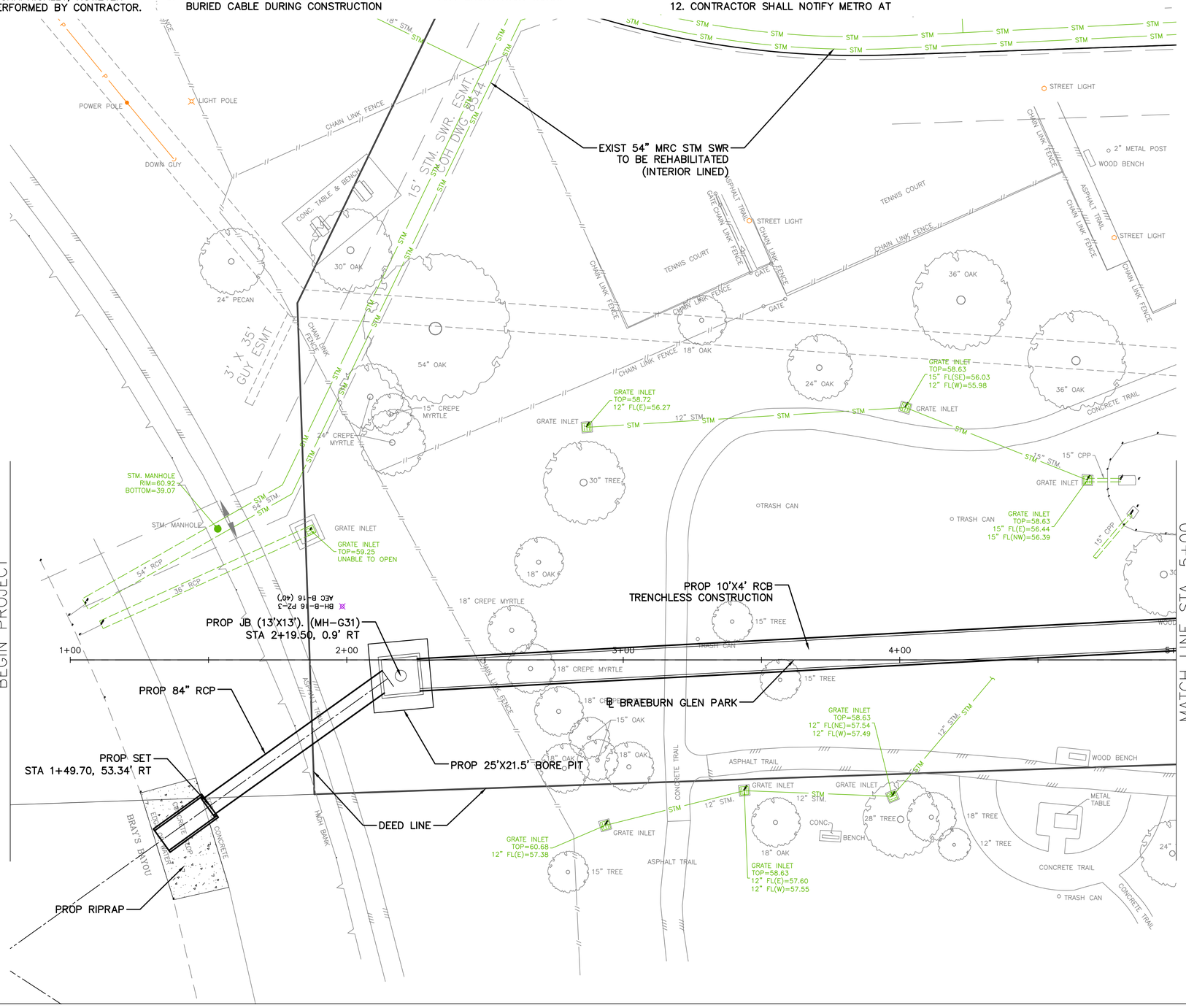
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 89 OF 227	

NOTES:

1. MAINTAIN WATER SERVICES TO ALL CUSTOMER, FIRE HYDRANTS, AND INTERCONNECTIONS AT ALL TIME. PROVIDE TEMPORARY CONNECTION IF NECESSARY FOR CONSTRUCTION.
2. ALL CONNECTION TO EXISTING WATER LINES TO BE MADE WITHIN ROW LIMITS.
3. CONNECTION TO PROPOSED WATER LINE OF EXISTING SERVICE LESS THAN 3" ARE NOT SHOWN GRAPHICALLY, HOWEVER SHALL BE PERFORMED BY CONTRACTOR.
4. SANITARY AND WATER LINE LEADS SHOWN AT APPROXIMATE LOCATION. CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION, NO SEPARATE PAY.
5. SUBMIT CCTV VIDEO INSPECTION OF ALL NEW SANITARY SEWER MAINS, LATERALS, AND MANHOLES TO THE CITY OF HOUSTON, IN ACCORDANCE WITH THE CITY OF HOUSTON SPECIFICATION 02558.
6. CONTRACTOR TO BRACE AND SUPPORT BURIED CABLE DURING CONSTRUCTION AND MAINTAIN 12-INCH MIN. VERTICAL CLEARANCE BETWEEN BURIED CABLE AND PROPOSED UTILITIES.
7. ADJUST ALL MANHOLES TO GRADE UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.
8. THE LOCATIONS OF UTILITIES SHOWN ARE APPROXIMATE. CONTRACTOR SHALL VERIFY ELEVATION & LOCATION PRIOR TO ANY EXCAVATION WORK.
9. ALL RCP ARE CLASS III UNLESS OTHERWISE NOTED.
10. CONTRACTOR TO MAINTAIN POSITIVE DRAINAGE DURING CONSTRUCTION. FIELD VERIFY FLOWLINES AT EXISTING STORM SEWER CONNECTIONS. IF THERE IS NOT POSITIVE DRAINAGE, CONTACT EOR.
11. DIMENSIONS ARE TO FACE OF CURB INLET, CENTER OF MANHOLE RIM.
12. CONTRACTOR SHALL NOTIFY METRO AT 713-615-9195, TWO WEEKS PRIOR TO DISTURBING EXISTING BUS STOPS.
13. CONTRACTOR SHALL COORDINATE WITH METRO TO REMOVE EXISTING AMENITIES. CONTACT BUSSTOPS@RIDEMETRO.ORG
14. REFER TO S. GESSNER RD P&P FOR MORE INFORMATION.



N

HORIZ. 0 20 40

SCALE: 1"=20'

LEGEND

- PROPOSED LANE
- EXISTING LANE
- EXIST ROW
- PROP 6" CURB
- PROP 12" JRCP
- PROP CONC DRIVEWAY
- PROP DRIVEWAY NO.
- PROP SAWCUT
- -STM- PROP STORM SEWER
- -STM- EXIST STORM SEWER
- PROPOSED INLETS
- PROPOSED MH/JB
- EXIST INLETS
- EXIST MANHOLES

(A) PAV MRK (W) (4") (SLD)
(B) REV PAV MRK (TY II-C-R)
(C) PAV MRK (W) (6") (SLD)
(D) PAV MRK (W) (12") (SLD)
(E) PAV MRK (W) (24") (SLD)
(F) PAV MRK (TY C) (WORD)
(G) PAV MRK (TY C) (ARROW)

NO.	DATE	REVISION	APP.

NOTICE:
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VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

Signature valid for six months.

Date

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

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

RIVERA CIVIL ENGINEERS INC F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
BRAEBURN GLEN PARK BEGIN TO STA 5+00 PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 90 OF 227	

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PLOTTED: 3/9/2026 4:22 PM coh_ctb_230809.ctb
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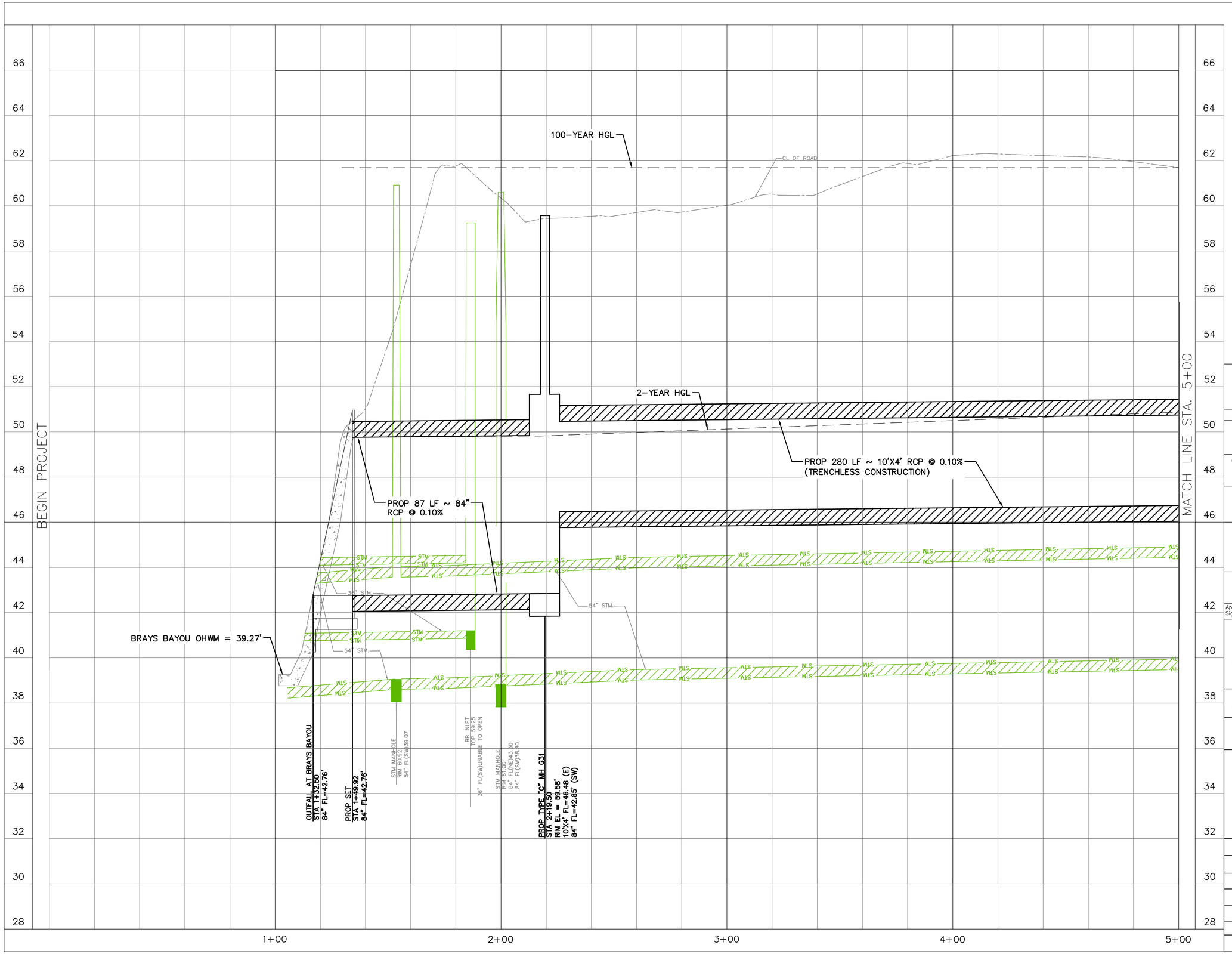

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281-945-0069
TX FIRM NUMBER: F-6932
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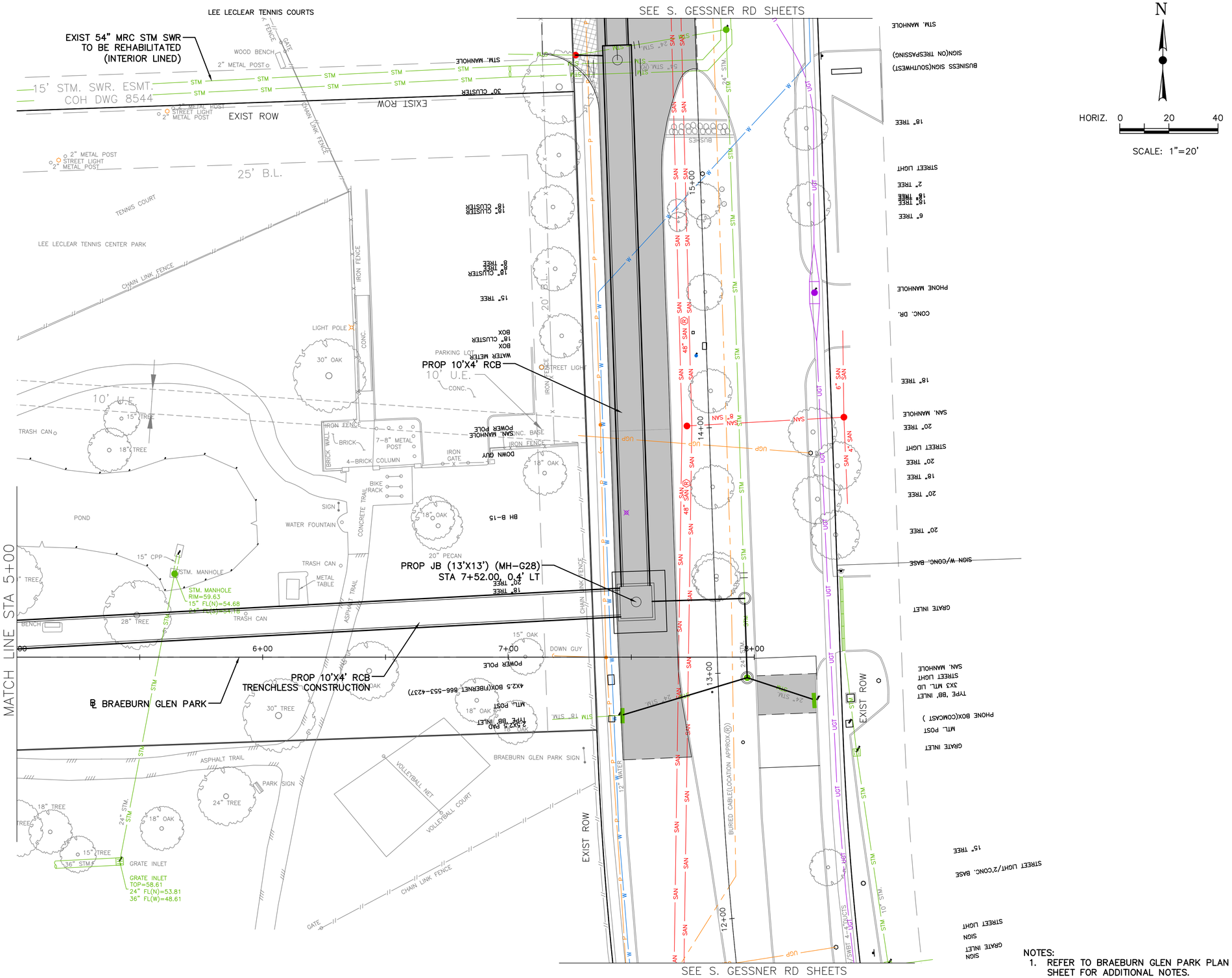
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
BRAEBURN GLEN PARK
BEGIN TO STA 5+00 PROFILE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 91 OF 227	



N

HORIZ. 0 20 40

SCALE: 1"=20'

LEGEND

- PROPOSED LANE
- EXISTING LANE
- EXIST ROW
- PROP 6" CURB
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- PROP CONC DRIVEWAY
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- PROPOSED MH/JB
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(A) PAV MRK (W) (4") (SLD)
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(C) PAV MRK (W) (6") (SLD)
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15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. STATE OF TEXAS F-6932 RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
BRAEBURN GLEN PARK STA 5+00 TO END PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 92 OF 227	

NOTES:
1. REFER TO BRAEBURN GLEN PARK PLAN SHEET FOR ADDITIONAL NOTES.

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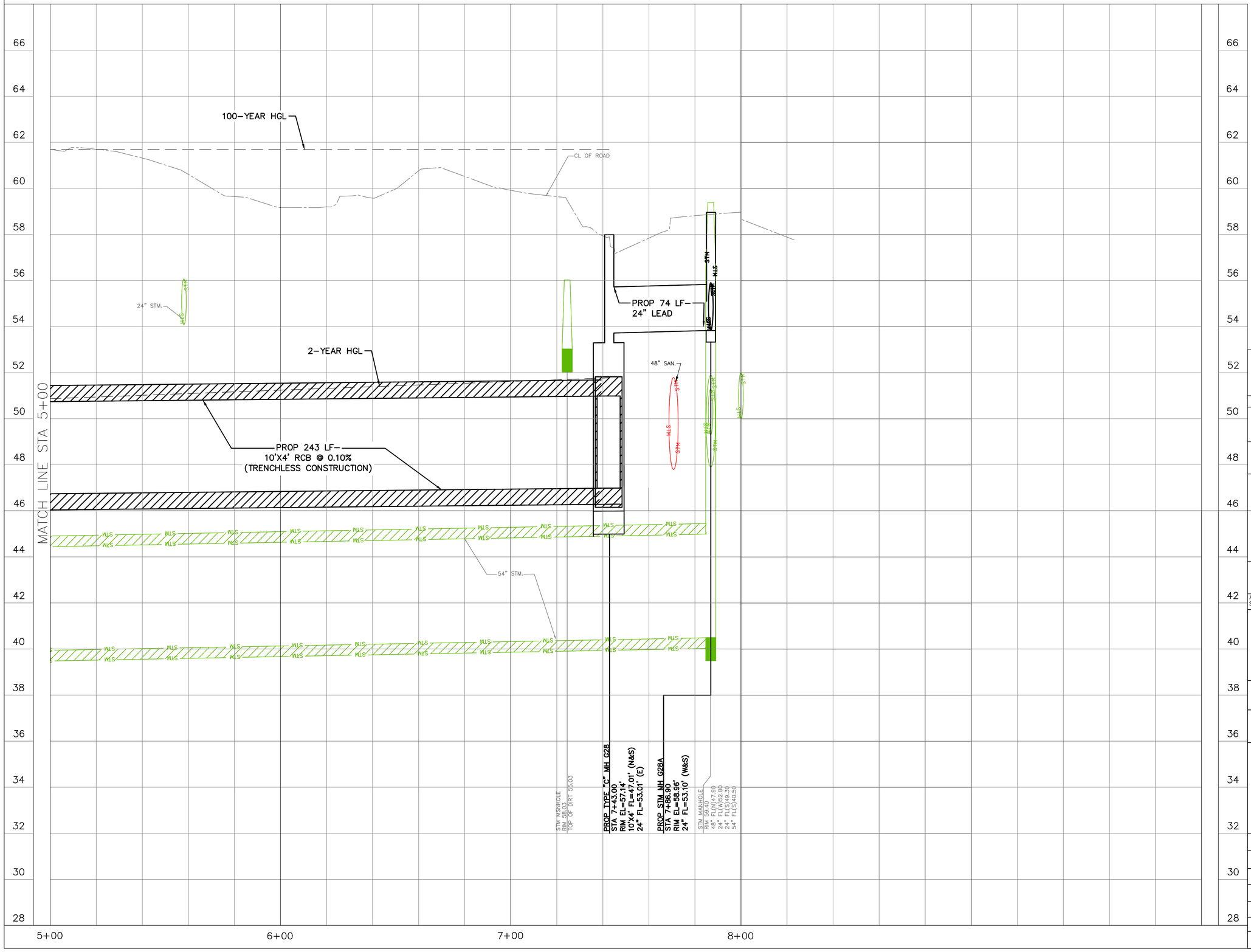

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HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
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FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED
PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

BRAEBURN GLEN PARK STA 5+00 TO END PROFILE

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M-410040-0001-4	
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1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 93 OF 227	

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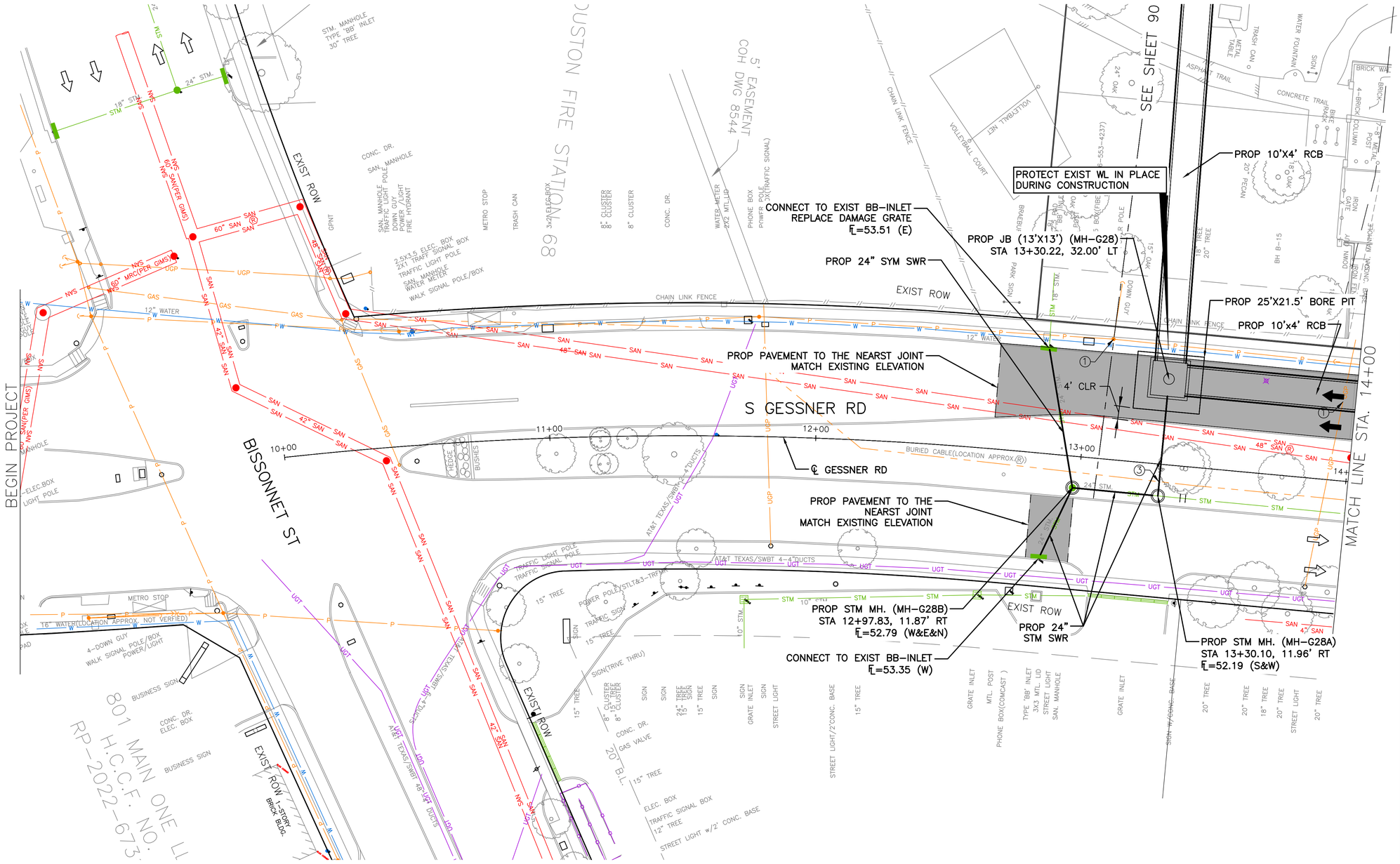

NOTES:
1. REFER TO BRAEBURN GLEN PARK PLAN SHEET FOR ADDITIONAL NOTES.

NOTES:
① CAUTION EXIST CENTER POINT ENERGY UNDERGROUND ELECTRIC POWER CONDUIT.

② CAUTION EXIST CENTER POINT ENERGY UNDERGROUND 4-IN/6-IN IP COATED STEEL GAS LINE (NOT FIELD VERIFIED).

③ CAUTION EXIST UNDERGROUND TELEPHONE/COMMUNICATION CONDUIT.

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ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
S. GESSNER RD BEGIN TO STA 14+00 PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 94 OF 227	

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BEGIN PROJECT

BB INLET
TOP 60.56
18" FL(N&S) 56.78

STM MANHOLE
RIM 60.98
24" FL(N) 56.48
18" FL(S) 55.68
24" FL(W) 55.58

BB INLET
TOP 61.00
24" FL(S)56.70

GRATE INLET
TOP 61.38
10" FL(N)57.88
10" FL(E)58.13

GRATE INLET
TOP 59.27
10" FL(N)57.62
10" FL(E)57.72

BB INLET(W)
TOP 57.71
18" FL(W)53.61
24" FL(E)53.51

BB INLET(E)
TOP 58.23
24" FL(NW) Ⓡ
UNABLE TO OPEN

STM MANHOLE
RIM 58.43
24" FL(W) 50.43
24" FL(N) 50.33
24" FL(SE) Ⓡ

100-YEAR HGL
EAST T.O.C.
WEST R.O.W.
WEST T.O.C.
CL OF ROAD
EAST R.O.W.

24" STM.
18" STM.
10" STM.
STM
UGT
W
SAN
SAN

AT&T TEXAS/SWBT 48-4" PVC
AT&T TEXAS/SWBT 6-4" DUCTS
AT&T TEXAS/SWBT 2-4" DUCTS
AT&T TEXAS/SWB4-4" DUCTS

12" WATER
16" WATER (APPROX.LOCATION)
42" SAN.
60" SAN.
48" SAN.
4" SAN.

PROP STM JB (13'X13') JB G28
STA 13+30.22
RIM EL = 57.14'
10'x4' RCB E=47.01' (N&W)
24" E=51.43' (E)

PROP STM MH G28B
STA 12+84.20
RIM EL = 58.96'
24" E=52.79' (N&E&W)

PROP 24" STM SWR
18" MIN CLR
2-YEAR HGL
2' MIN CLR
PROP 93 LF ~10'X4' RCB @ 0.1%
PROP 10'x4' RCB

60" SAN SIZE & LINE CONNECTED PER GIMS NO RECORD FOUND

SAN. MANHOLE
RIM 62.15
60" FL(N&SE) Ⓡ
BOTTOM 46.35

SAN. MANHOLE
RIM 60.98
60" FL(S) Ⓡ
BOTTOM 47.08

SAN. MANHOLE
RIM 61.00
60" FL(NW&N) Ⓡ
42" FL(E) Ⓡ
BOTTOM 47.73

SAN. MANHOLE
RIM 61.07
42" FL(W) 50.67
42" FL(NE)50.92

SAN. MANHOLE
RIM 60.82
60" FL(S) Ⓡ
48" FL(E) Ⓡ
BOTTOM 47.42

SAN. MANHOLE
RIM 59.98
48" FL(N)
48" FL(W)
BOTTOM 46.78

SAN. MANHOLE
RIM 60.57
42" FL(SW&E)
BOTTOM 50.97

MATCH LINE STA. 14+00

74 72 70 68 66 64 62 60 58 56 54 52 50 48 46 44 42 40 38 36

10+00 11+00 12+00 13+00 14+00

NO.	DATE	REVISION	APP.

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ENTECH
CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111431
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
S. GESSNER RD BEGIN TO STA 14+00 PROFILE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 95 OF 227	

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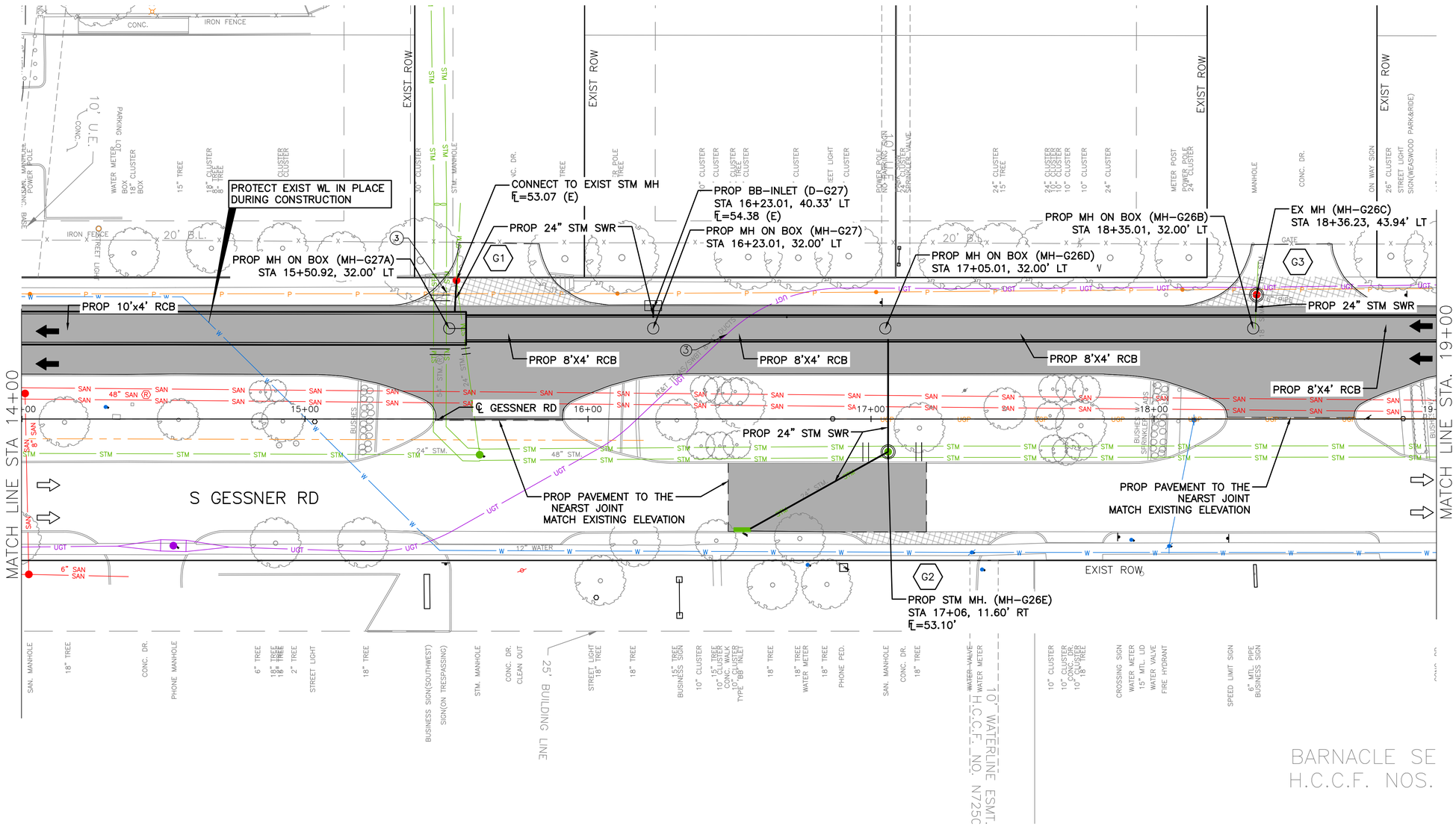
HORIZ. 0 20 40

SCALE: 1"=20'

N



LEGEND

- PROPOSED LANE
- EXISTING LANE
- EXIST ROW
- PROP 6" CURB
- PROP 12" JRCP
- PROP CONC DRIVEWAY
- PROP SAWCUT
- (ID) PROP DRIVEWAY NO.
- PROP STORM SEWER
- -STM- EXIST STORM SEWER
- PROPOSED INLETS
- PROPOSED MH/JB
- EXIST INLETS
- EXIST MANHOLES

NO.	DATE	REVISION	APP.

NOTES:
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NOTES:
(1) CAUTION EXIST CENTER POINT ENERGY UNDERGROUND ELECTRIC POWER CONDUIT.
(2) CAUTION EXIST CENTER POINT ENERGY UNDERGROUND 4-IN/6-IN IP COATED STEEL GAS LINE (NOT FIELD VERIFIED).
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ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
S. GESSNER RD STA 14+00 TO 19+00 PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 96 OF 227	

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NO.	DATE	REVISION	APP.

MATCH LINE STA 14+00

MATCH LINE STA. 19+00

SAN. MANHOLE
RIM 59.88
48" FL(N)43.78
4" FL(S)54.28
8" FL(W)53.68

PHONE MANHOLE
RIM 59.08
T.C. 58.88
THROAT 55.08
THROAT 47.98

STM MSNHOLE
RIM 58.03
TOP OF DIRT 55.03

STM MANHOLE
RIM 59.40
48" FL(N)42.90
24" FL(W)52.80
24" FL(S)49.30
54" FL(S)40.50

SBT INLET
TOP 59.66
24" FL(W)53.46

STM MANHOLE
RIM 60.68
48" FL(N)48.28
48" FL(S)48.18
24" FL(E)50.28

SAN. MANHOLE
RIM 59.00

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

100-YEAR HGL

PROP 24" STM 74 L.F @ 0.34%

PROP 24" STM SWR

PROP 24" STM SWR

PROP 24" STM SWR

2-YEAR HGL

PROP 24" STM SWR

AT&T TEXAS/SWB 8-4" DUCTS

6" FH LEAD

2' MIN CLR

2.9' CLR

2' CLR

PROP 155 LF – 10'X4' RCB @ 0.10%

PROP 61 LF – 8'X4' STM SWR @ 0.10%

PROP 76 LF– 8'X4' STM SWR @ 0.10%

PROP 124 LF– 8'X4' STM SWR @ 0.10%

PROP 61LF – 8'X4' STM SWR @ 0.10%

8" SAN.
8" WSAN.
24" STM.
48" STM.
54" STM.
8" SAN.

PROP MH ON BOX G27A
STA 15+50.92
RIM EL = 58.97'
10'X4' RCB E=47.32' (S)
8'X4' E=47.32' (N)
24" E=52.85' (W)

PROP MH ON BOX G27
STA 16+23.01
RIM EL = 59.70'
8'X4' E=47.39' (N&S)
24" E=54.30' (W)

CONNECT TO EXIST B-B INLET
STA 16+45.35
RIM EL = 59.66'
24" E=53.46' (NE)

PROP MH ON BOX MH-26D
STA 17+05.01
RIM EL = 59.30'
8'X4' E=47.47' (N&S)
24" E=53.00' (E)

PROP MH ON BOX MH-26B
STA 18+35.01
RIM EL = 59.12'
8'X4' E=47.60' (N&S)
24" E=54.30' (W)

SAN. MANHOLE
RIM 56.30
48" FL(N)46.90
48" FL(S)46.80
8" FL(E)52.70

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

74 72 70 68 66 64 62 60 58 56 54 52 50 48 46 44 42 40 38 36

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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Date

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ENTECH
CIVIL ENGINEERS, INC.
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
S. GESSNER RD STA 14+00 TO 19+00 PROFILE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 97 OF 227	

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FILE PATH: C:\Users\dvarghese\Entech Civil Engineers, Inc\Braeburn Glen - Documents\SHARE\2525PVEN\Working\08_GESSNER RD_PP SHEETS-ECEPC81.dwg

PROP STM MH. (MH-G24)
PROP BB-INLET (DA-I27) 24" FL=54.75'
PROP BB-INLET (DA-I26) 24" FL=54.75'
PROP PAVEMENT IMPROVEMENT TO NEAREST JOINT
PROP 24" STM SWR
PROP 24" STM SWR
PROP STM MH. (MH G24A)
PROP 24" STM SWR
PROP MH ON BOX (MH-G26) STA 21+18.54, 32.00'LT
PROP 8'X4' RCB
PROP 5'X4' RCB
PROP 24" STM SWR
PROP STM MH. (MH-G26A) STA 21+05.86, 11.34' RT
PROP 18"X28.5" STM SWR
CONNECT TO EX BB-INLET (DA 129)
PROP PAVEMENT IMPROVEMENT TO NEAREST JOINT

NAIRN ST
SEE SHEET 126
S GESSNER RD
℄ GESSNER RD
EXIST ROW
MATCH LINE STA 19+00
MATCH LINE STA. 23+50
10' U.E.
25' B.L.
20' B.L.
5' B.L.
AT&T TEXAS/SWBT 2-4" DUCTS
AT&T TEXAS/SWBT 6-4" DUCTS
AT&T TEXAS/SWBT 4-4" DUCTS
Centerpoint Energy 2" STL GASLINE
BURIED CABLE (LOCATION APPROX.)
WOOD FENCE
IRON FENCE
CONC. WALK
CONC. DR.
GRATE INLET
WATER METER
STREET LIGHT
TRAFFIC SIGN
TYPE 'BB' INLET
STM. MANHOLE
SAN. MANHOLE
WATER VALVE
12" WATER
8" WATER
18" STM.
24" STM.
15" STM.
48" STM.
48" SAN
6" SAN
6" TREE
20" TREE
24" CLUSTER
8" CLUSTER
FLAG POLE
BRICK BUSINESS SIGN
METRO SHELTER
BUSINESS SIGN
ELEC. BOX
MTL. LID
15" TREE
TRASH CAN
WATER METER ELEC. BOX
12" PINE
15" OAK
24" OAK
COMM. MANHOLE
POWER POLE/LIGHT
ELECTRIC MANHOLE
DOWN GUY
PHONE BOX
GRNT
CROSSING SIGN
POWER POLE BUSH
NO PARKING SIGN
HORIZ. 0 20 40
SCALE: 1"=20'

NOTES:
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NOTES:
① CAUTION EXIST CENTER POINT ENERGY UNDERGROUND ELECTRIC POWER CONDUIT.
② CAUTION EXIST CENTER POINT ENERGY UNDERGROUND 4-IN/6-IN IP COATED STEEL GAS LINE (NOT FIELD VERIFIED).
③ CAUTION EXIST UNDERGROUND TELEPHONE/COMMUNICATION CONDUIT.

LEGEND
- PROPOSED LANE
- EXISTING LANE
- EXIST ROW
- PROP 6" CURB
- PROP 12" JRCP
- PROP CONC DRIVEWAY
- PROP SAWCUT
- (ID) PROP DRIVEWAY NO.
- PROP STORM SEWER
- -STM- EXIST STORM SEWER
- PROPOSED INLETS
- PROPOSED MH/JB
- EXIST INLETS
- EXIST MANHOLES

NO.	DATE	REVISION	APP.

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ENTECH CIVIL ENGINEERS, INC.
15021 KATY FREEWAY, STE. 500
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281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. STATE OF TEXAS F-6932 RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
S. GESSNER RD STA 19+00 TO 23+50 PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 98 OF 227	

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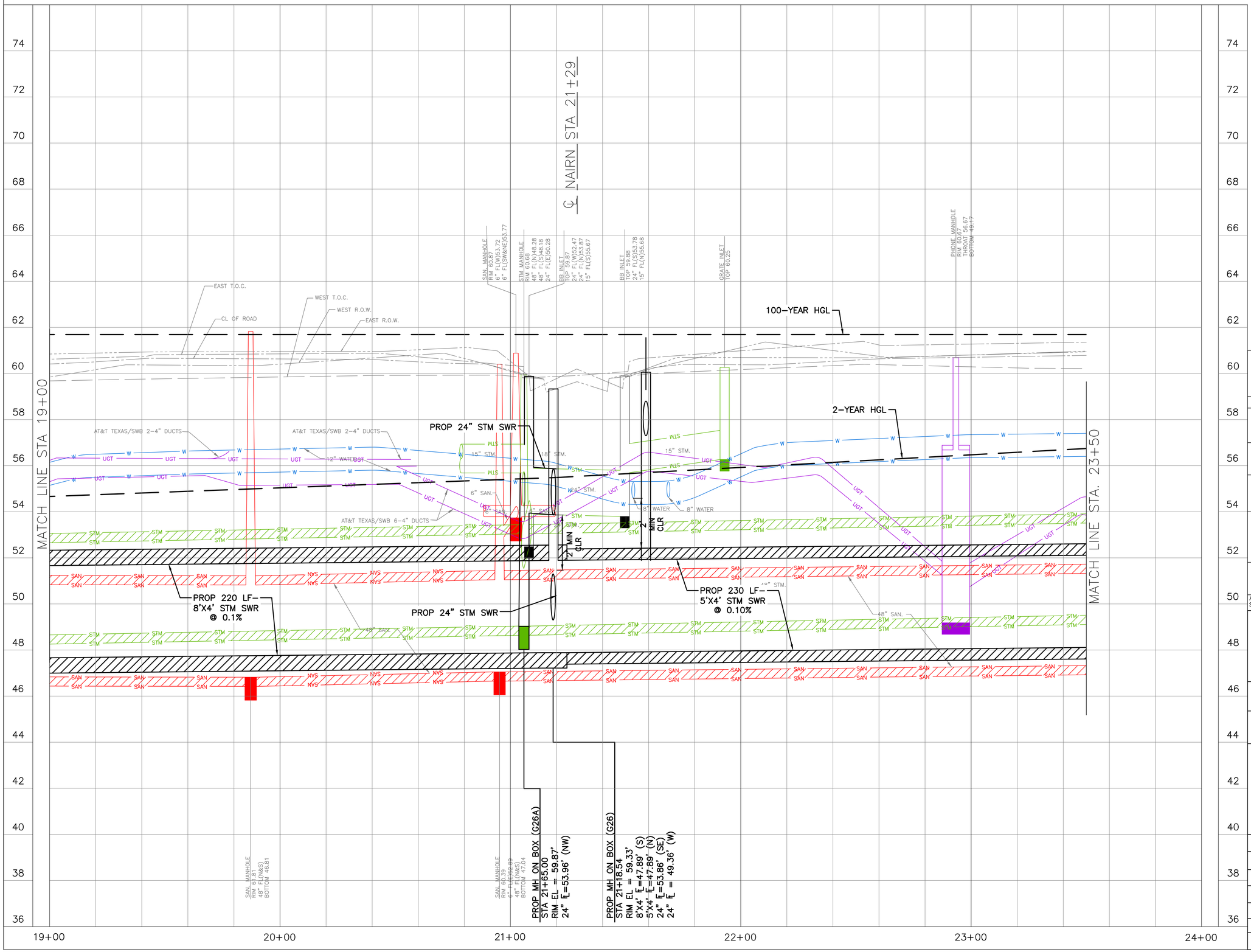
NO.	DATE	REVISION	APP.



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S. GESSNER RD STA 19+00 TO 23+50 PROFILE

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M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 99 OF 227	

PROP BB-INLET (DA-I25)
PROP PAVEMENT IMPROVEMENT TO NEAREST JOINT
PROP STM MH. (MH-G22)
PROP BB-INLET (DA-I24)
PROP PCU-INLET (DA-I22)
PROP STM MH. (MH-G19)
PROP PAVEMENT IMPROVEMENT TO NEAREST JOINT
PROP PCU-INLET (DA-I21)
2.4' CLR
PROP 24" STM SWR
SEE SHEET 127
REAMER ST
SEE SHEET 128
SHADOW CREST ST
EXIST ROW
PROP STM MH. (MH-G32)
PROP BB-INLET (DA-I22A)
PROP BB-INLET (DA-I21A)
PROTECT EXIST WL IN PLACE DURING CONSTRUCTION
PROP MH ON BOX (MH-G23) STA 24+00.54, 32.00' LT
PROP MH ON BOX (MH-G21) STA 24+65.25, 32.00' LT
PROP MH ON BOX (MH-G20) STA 26+80.71, 32.00' LT
G6
G7
G8
PROP 5'X4' RCB
PROP 5'X4' STM SWR
PROP 24" STM SWR
℄ GESSNER RD
S GESSNER RD
MATCH LINE STA 23+50
MATCH LINE STA. 28+50
PROP PAVEMENT TO THE NEARST JOINT MATCH EXISTING ELEVATION
PROP STM MH (MH-G21A) STA 24+64.78, 11,14' RT ℄=54.61 (E&W)
CONNECT TO EXIST BB-INLET ℄=55.13 (W)
24+00
25+00
26+00
27+00
28+00
HORIZ. 0 20 40
SCALE: 1"=20'

LEGEND
- PROPOSED LANE
- EXISTING LANE
- EXIST ROW
- PROP 6" CURB
- PROP 12" JRCP
- PROP CONC DRIVEWAY
- PROP SAWCUT
- PROP DRIVEWAY NO.
- PROP STORM SEWER
- EXIST STORM SEWER
- PROPOSED INLETS
- PROPOSED MH/JB
- EXIST INLETS
- EXIST MANHOLES

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Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
S. GESSNER RD STA 23+50 TO 28+50 PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 100 OF 227	

NOTES:
1. REFER TO BRAEBURN GLEN PARK PLAN SHEET FOR ADDITIONAL NOTES.

NOTES:
① CAUTION EXIST CENTER POINT ENERGY UNDERGROUND ELECTRIC POWER CONDUIT.
② CAUTION EXIST CENTER POINT ENERGY UNDERGROUND 4-IN/6-IN IP COATED STEEL GAS LINE (NOT FIELD VERIFIED).
③ CAUTION EXIST UNDERGROUND TELEPHONE/COMMUNICATION CONDUIT.

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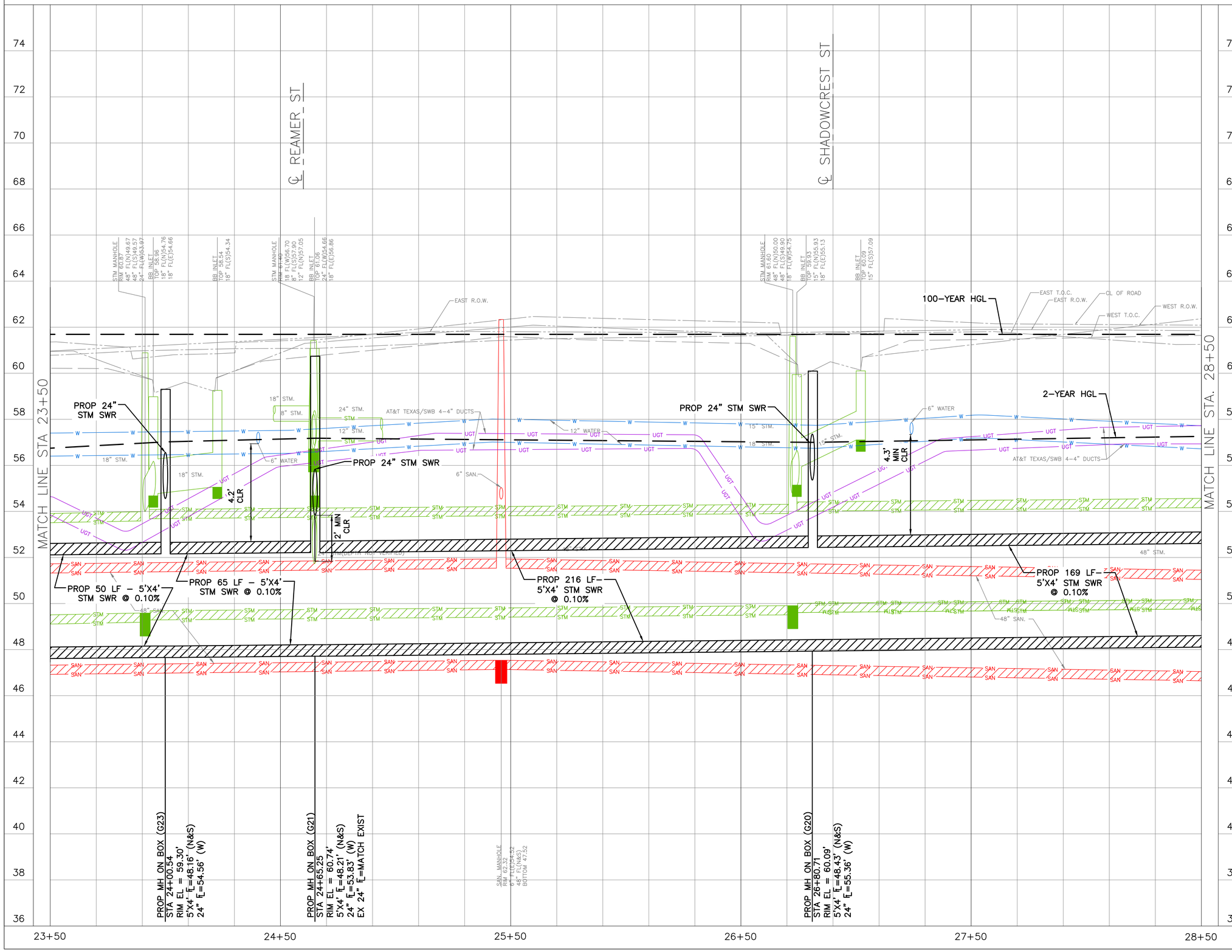

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
S. GESSNER RD STA 23+50 TO 28+50 PROFILE

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M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 101 OF 227	

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PROP PAVEMENT IMPROVEMENT TO NEAREST JOINT
PROP STM MH. (MH-G17)
2.8' CLR
PROP PCU-INLET (DA-I19) FL=56.10'
PROP PCU-INLET (DA-I18) FL=56.10'
PROP 24" STM SWR
SEE SHEET 129
PROTECT EXIST WL IN PLACE DURING CONSTRUCTION
PROP MH ON BOX (MH-G18) STA 29+60.61, 32.00' LT
PROP PAVEMENT TO THE NEAREST JOINT MATCH EXISTING ELEVATION
PROP 5'X4' RCB
PROP 24" STM LEAD
PROP STM MH (MH-G18A) STA 29+52.94, 11.37' RT ℄=56.71 (W&E)
PROP 4'X4' RCB
PROP PAVEMENT IMPROVEMENT TO NEAREST JOINT
CONNECT TO EXIST BB-INLET EX ℄=55.66 (N) ℄=55.56 (E)
PROP 24" STM LEAD
PROP MH ON BOX (MH-G16) STA 32+40.80, 32.00' LT
4-6"x45° BENDS, RJ
2-6" GV w/BOX
2-6" WET CONNECTION
2-6" CUT, PLUG & ABANDON AFTER TRANSFER OF SERVICES
PROP 6" D.I.PIPE W/RESTRAINED JOINTS
PROP 24" STM LEAD
PROP 4'X4' RCB
FIELD VERIFY EX MH
PROP STM MH. (MH-G16A STA 32+38.18, 12.32' RT ℄=54.80 (W&E)
PROP PAVEMENT TO THE NEAREST JOINT MATCH EXISTING ELEVATION

BIRDWOOD RD
ARIEL ST
S GESSNER RD
℄ GESSNER RD
EXIST ROW
MATCH LINE STA 28+50
MATCH LINE STA. 33+50
HORIZ. 0 20 40
SCALE: 1"=20'

NOTES:
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NOTES:
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② CAUTION EXIST CENTER POINT ENERGY UNDERGROUND 4-IN/6-IN IP COATED STEEL GAS LINE (NOT FIELD VERIFIED).
③ CAUTION EXIST UNDERGROUND TELEPHONE/COMMUNICATION CONDUIT.

LEGEND
- PROPOSED LANE
- EXISTING LANE
- EXIST ROW
- PROP 6" CURB
- PROP 12" JRCP
- PROP CONC DRIVEWAY
- PROP SAWCUT
- PROP DRIVEWAY NO. (ID)
- PROP STORM SEWER
- EXIST STORM SEWER (-STM-)
- PROPOSED INLETS
- PROPOSED MH/JB
- EXIST INLETS
- EXIST MANHOLES

NO.	DATE	REVISION	APP.

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FB NO. P-6331
ENTECH CIVIL ENGINEERS INC. STATE OF TEXAS F-6932 RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
S. GESSNER RD STA 28+50 TO 33+50 PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 102 OF 227	

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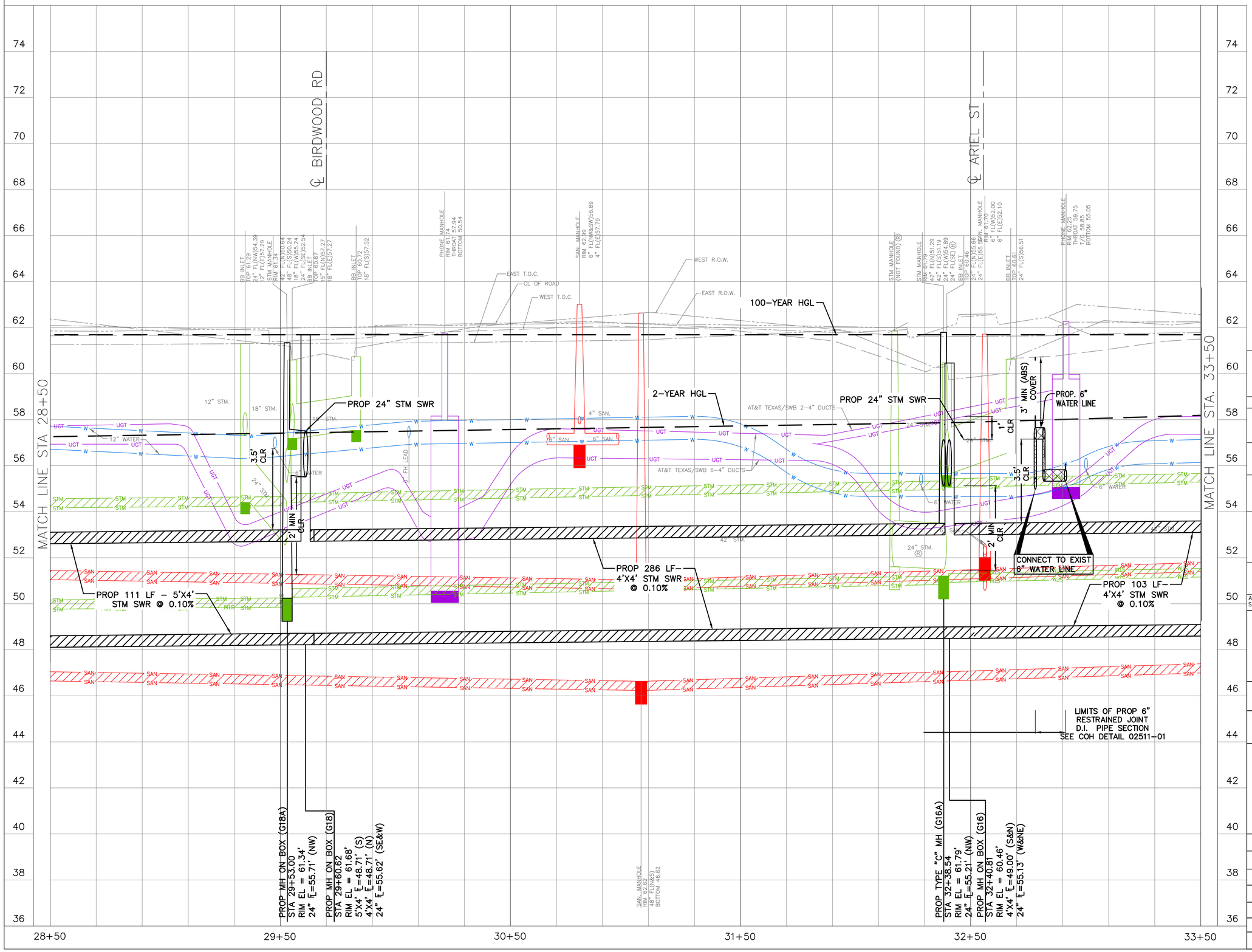

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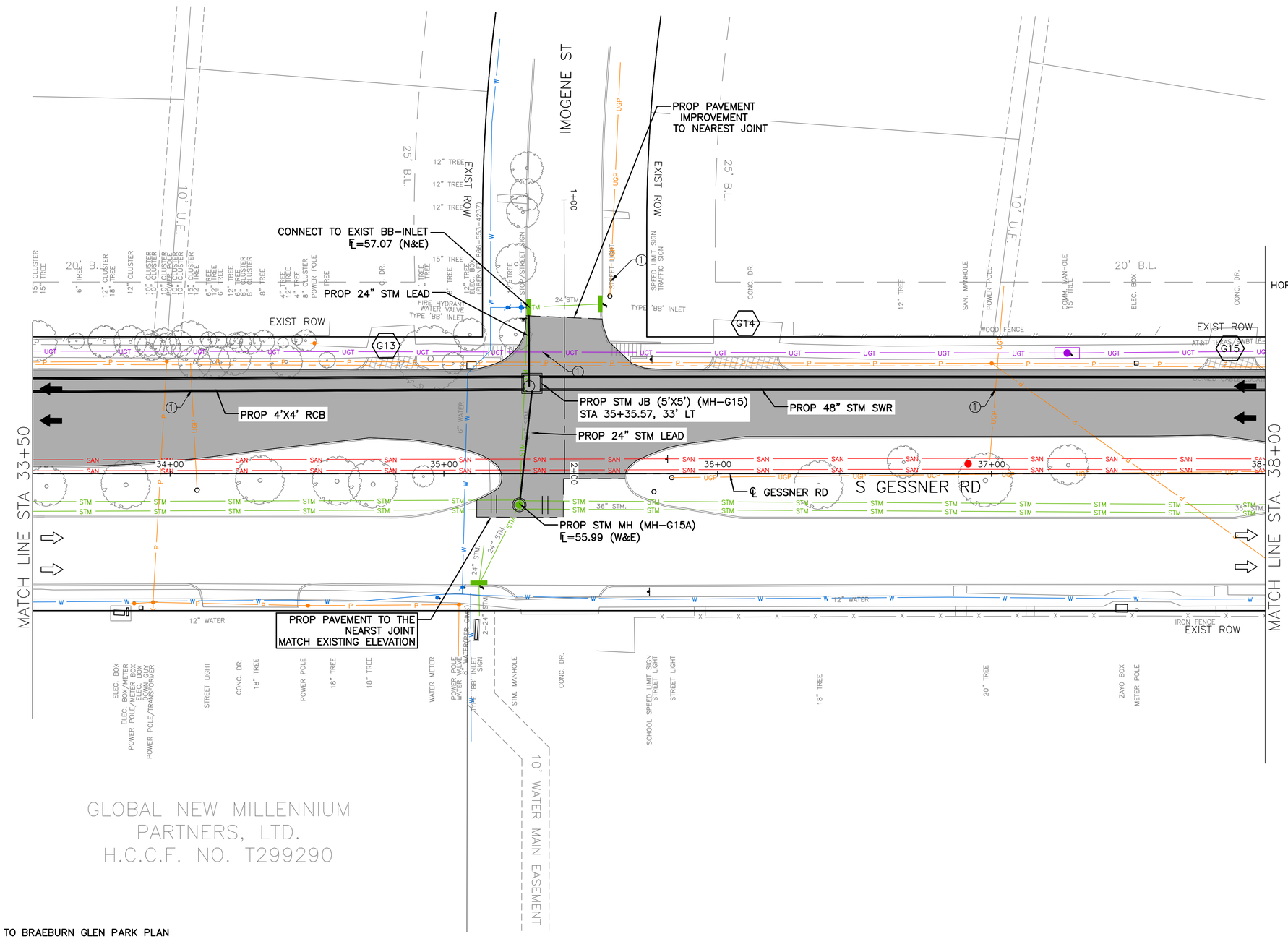

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③ CAUTION EXIST UNDERGROUND TELEPHONE/COMMUNICATION CONDUIT.

LEGEND

- PROPOSED LANE
- EXISTING LANE
- EXIST ROW
- PROP 6" CURB
- PROP 12" JRCP
- PROP CONC DRIVEWAY
- PROP SAWCUT
- ID PROP DRIVEWAY NO.
- PROP STORM SEWER
- STM EXIST STORM SEWER
- PROPOSED INLETS
- PROPOSED MH/JB
- EXIST INLETS
- EXIST MANHOLES

HORIZ. 0 20 40

SCALE: 1"=20'

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Rodrigo Guadarrama 3/9/2026

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1"=20'	
CITY OF HOUSTON PM	
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SHEET NO. 104 OF 227	

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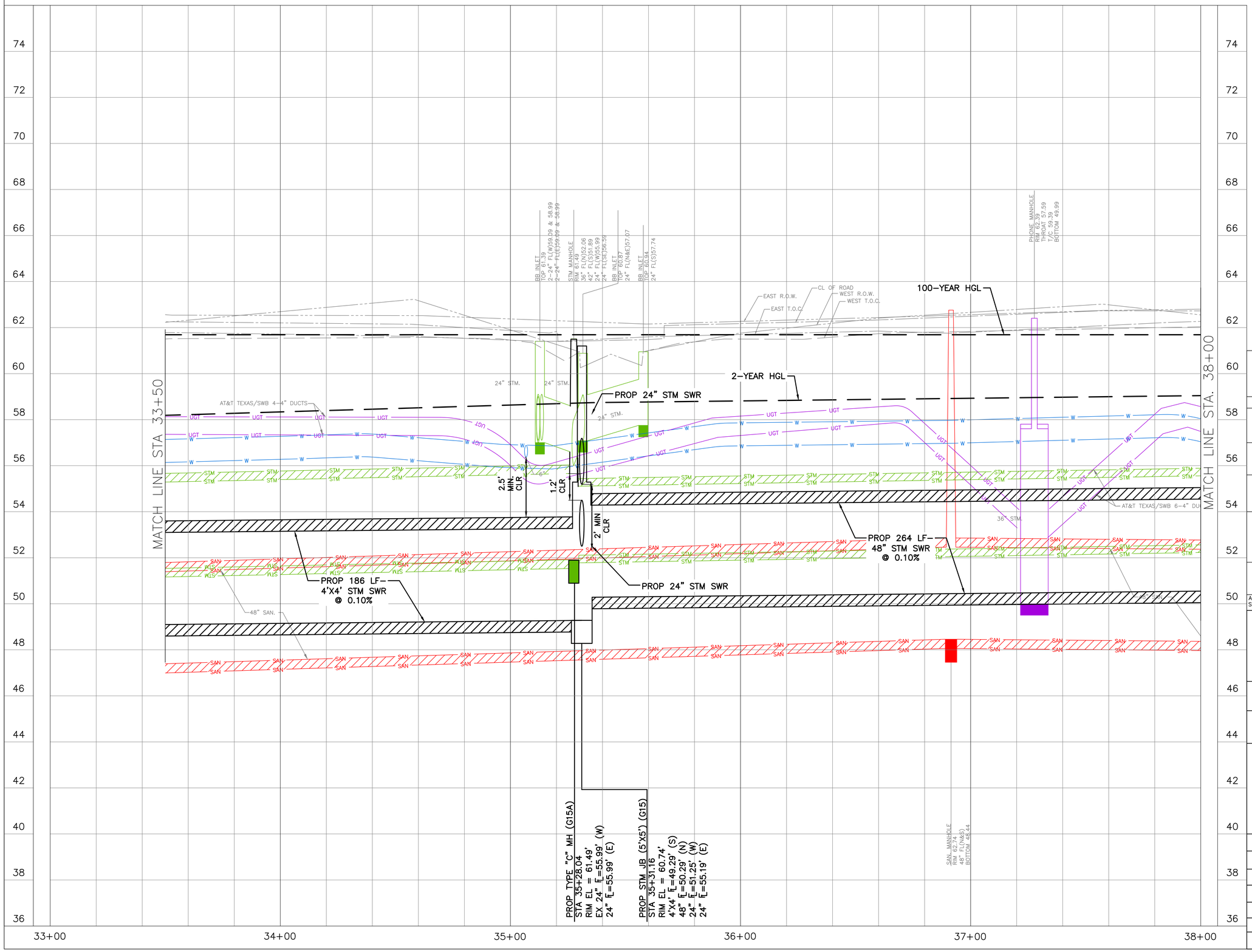

NO.	DATE	REVISION	APP.

NOTICE:
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VERIFICATION OF PRIVATE UTILITY LINES

Date

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Signature valid for six months.

Date

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

ENTECH
CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
S. GESSNER RD STA 33+50 TO 38+00 PROFILE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 105 OF 227	

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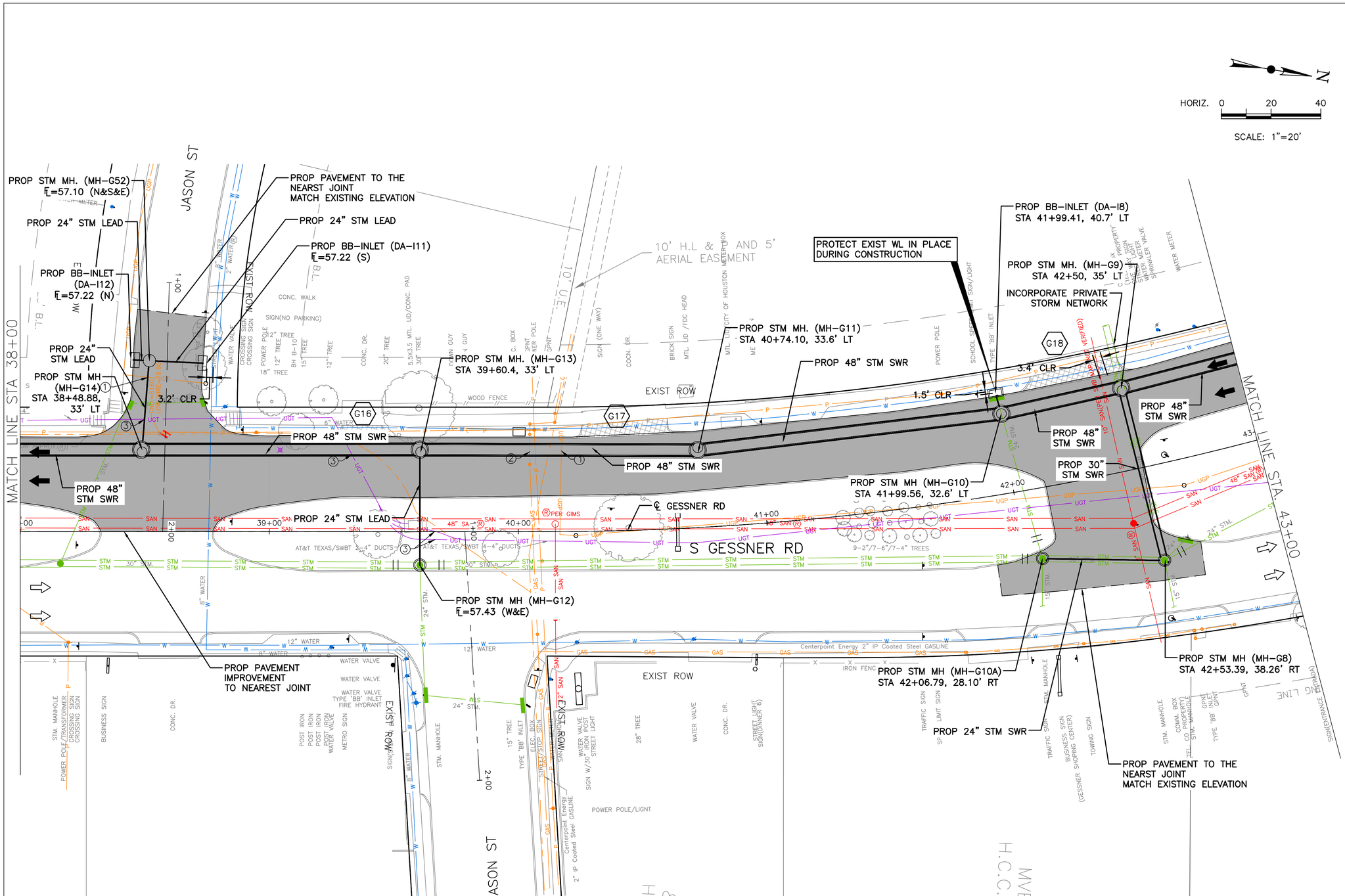
PROP STM MH. (MH-G52)
FL=57.10 (N&S&E)
PROP 24" STM LEAD
PROP BB-INLET (DA-I12)
FL=57.22 (N)
PROP 24" STM LEAD
PROP STM MH (MH-G14) ①
STA 38+48.88, 33' LT
3.2' CLR
PROP 48" STM SWR
PROP 48" STM SWR
MATCH LINE STA 38+00
JASON ST
PROP PAVEMENT TO THE NEARST JOINT MATCH EXISTING ELEVATION
PROP 24" STM LEAD
PROP BB-INLET (DA-I11)
FL=57.22 (S)
EXIST ROW
10' H.L & AND 5' AERIAL EASEMENT
PROTECT EXIST WL IN PLACE DURING CONSTRUCTION
PROP STM MH. (MH-G13)
STA 39+60.4, 33' LT
PROP STM MH. (MH-G11)
STA 40+74.10, 33.6' LT
PROP 48" STM SWR
PROP BB-INLET (DA-I8)
STA 41+99.41, 40.7' LT
PROP STM MH. (MH-G9)
STA 42+50, 35' LT
INCORPORATE PRIVATE STORM NETWORK
1.5' CLR
3.4' CLR
PROP 48" STM SWR
PROP 48" STM SWR
PROP 30" STM SWR
PROP STM MH (MH-G10)
STA 41+99.56, 32.6' LT
MATCH LINE STA. 43+00
PROP 24" STM LEAD
PROP STM MH (MH-G12)
FL=57.43 (W&E)
S GESSNER RD
℄ GESSNER RD
PROP PAVEMENT IMPROVEMENT TO NEAREST JOINT
EXIST ROW
PROP STM MH (MH-G10A)
STA 42+06.79, 28.10' RT
PROP 24" STM SWR
PROP STM MH (MH-G8)
STA 42+53.39, 38.26' RT
PROP PAVEMENT TO THE NEARST JOINT MATCH EXISTING ELEVATION
JASON ST
G16
G17
G18
WOOD FENCE
IRON FENC
Centerpoint Energy 2" IP Coated Steel GASLINE
POWER POLE/LIGHT
AT&T TEXAS/SWBT 4-4" DUCTS
9-2"/7-6"/7-4" TREES
SIGN(ENTRANCE)
SIGN(EXIT)
SIGN(NO PARKING)
STM. MANHOLE
BUSINESS SIGN
CONC. DR.
WATER VALVE
TYPE 'BB' INLET
FIRE HYDRANT
METRO SIGN
POST IRON
ELEC. BOX
STREET/STOP SIGN
SAN MANHOLE
STREET LIGHT
SIGN W/30" IRON POST
TRAFFIC SIGN
LIMIT SIGN
TOWING SIGN
(GESSNER SHOPING CENTER)
COMM. BOX
TEL. CO PROPERTY
TYPE 'BB' INLET
GPNT
BRICK SIGN
MTL. LID /FDC HEAD
MTL. LID CITY OF HOUSTON
METER BOX
SCHOOL SPEED LIMIT SIGN/LIGHT
PROPERTY SIGN
CABLE TV
SPRINKLER VALVE
WATER METER
POWER POLE
CROSSING SIGN
TRANSFORMER
BH B-10
12" TREE
15" TREE
18" TREE
20" TREE
30" TREE
5.5'X3.5' MTL. LID/CONC. PAD
DRAIN GUY
GUY
C. BOX
JPNT
SIGN (ONE WAY)
COCN. DR.
CONC. WALK
8" WATER
12" WATER
2" WATER
6" WATER
24" STM.
30" STM.
15" STM.
48" SAN
42" SAN
24" STM.
UGP
UGT
SAN
STM
GAS
W
P
X
M
PER GIMS
PER VERIFIED
SAN MANHOLE
STM MANHOLE
SAN MANHOLE
SAN MANHOLE
SAN

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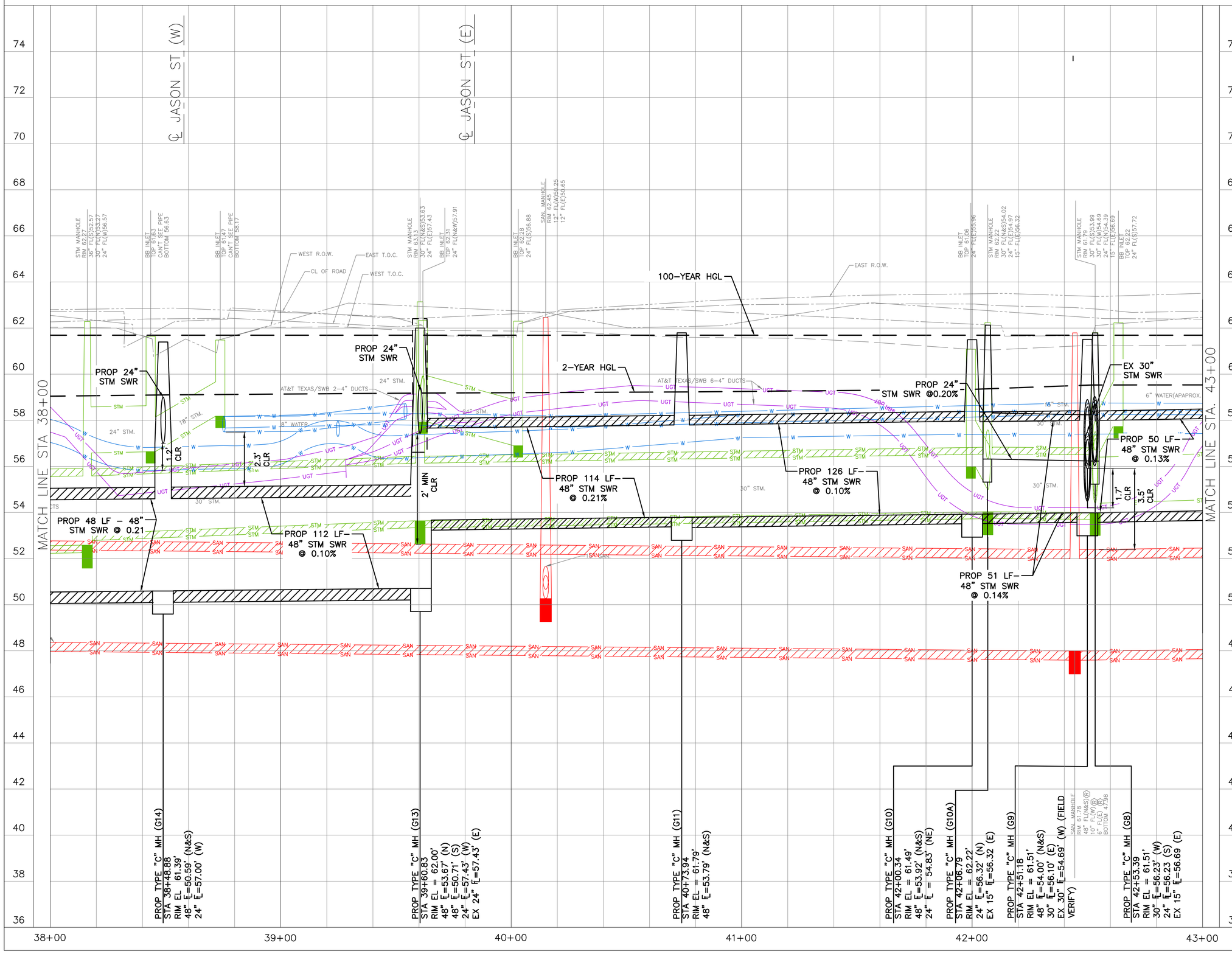

NO.	DATE	REVISION	APP.

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VERIFICATION OF PRIVATE UTILITY LINES

Date

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Date

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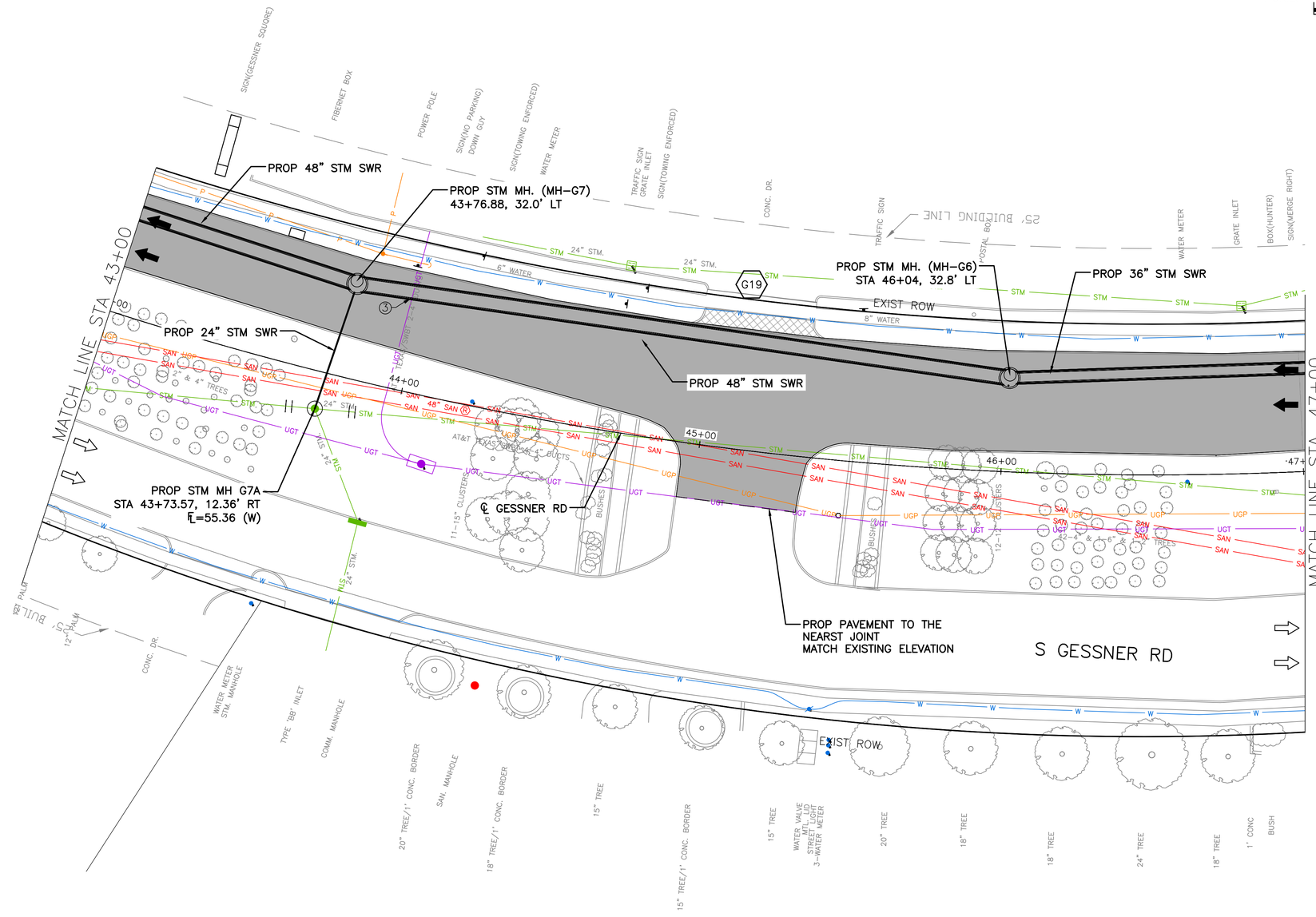
ENTECH CIVIL ENGINEERS, INC.
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
S. GESSNER RD STA 38+00 TO 43+00 PROFILE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 107 OF 227	



HORIZ. 0 20 40

SCALE: 1"=20'

LEGEND

- PROPOSED LANE
- EXISTING LANE
- EXIST ROW
- PROP 6" CURB
- PROP 12" JRCP
- PROP CONC DRIVEWAY
- PROP SAWCUT
- ID PROP DRIVEWAY NO.
- PROP STORM SEWER
- STM EXIST STORM SEWER
- PROPOSED INLETS
- PROPOSED MH/JB
- EXIST INLETS
- EXIST MANHOLES

NO.	DATE	REVISION	APP.

NOTES:
1. REFER TO BRAEBURN GLEN PARK PLAN SHEET FOR ADDITIONAL NOTES.

NOTES:
① CAUTION EXIST CENTER POINT ENERGY UNDERGROUND ELECTRIC POWER CONDUIT.

② CAUTION EXIST CENTER POINT ENERGY UNDERGROUND 4-IN/6-IN IP COATED STEEL GAS LINE (NOT FIELD VERIFIED).

③ CAUTION EXIST UNDERGROUND TELEPHONE/COMMUNICATION CONDUIT.

NOTICE:
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281-945-0069
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FB NO. P-6331

ENTECH CIVIL ENGINEERS INC F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

S. GESSNER RD STA 43+00 TO 47+00 PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 108 OF 227	

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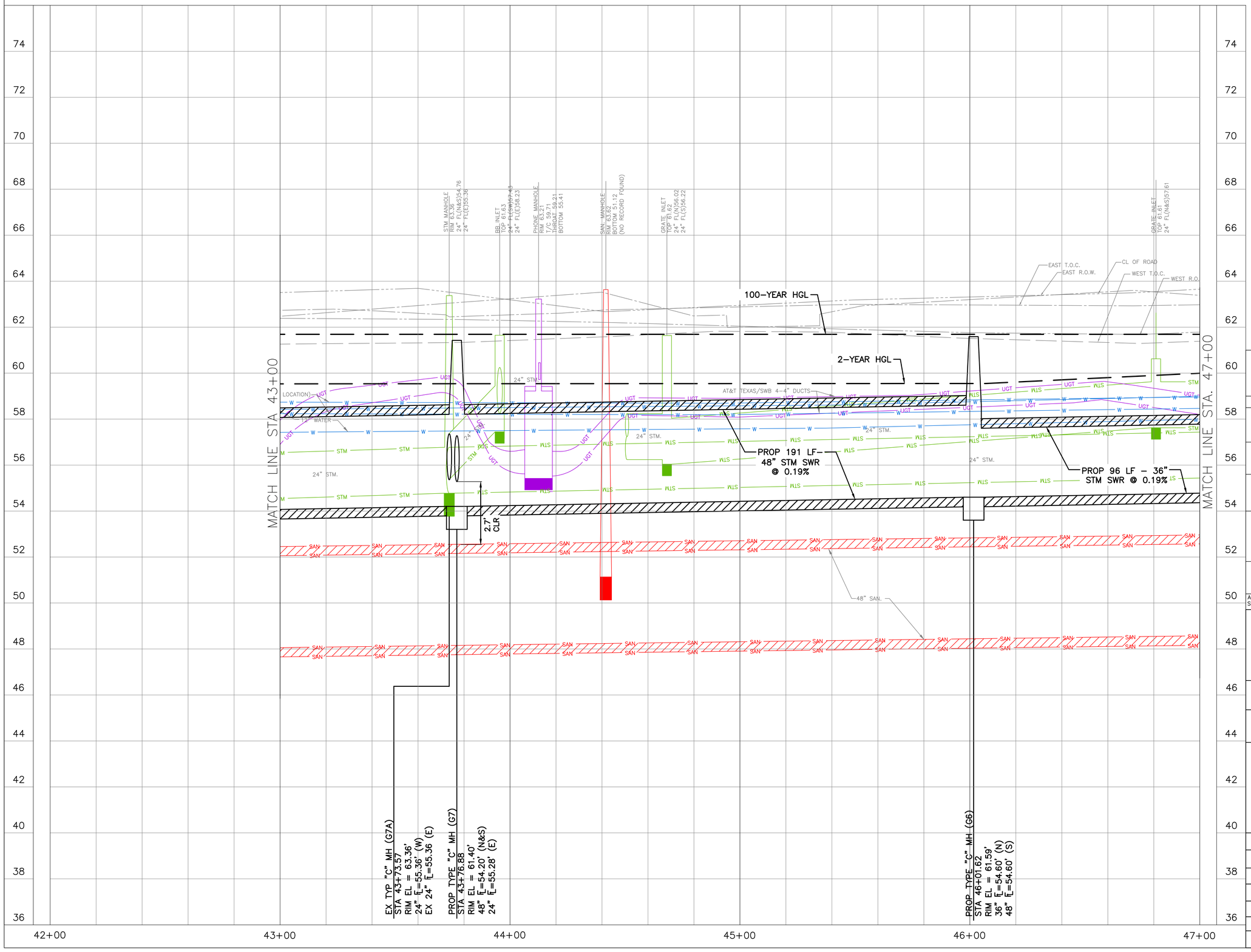

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STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
S. GESSNER RD STA 43+00 TO 47+00 PROFILE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 109 OF 227	

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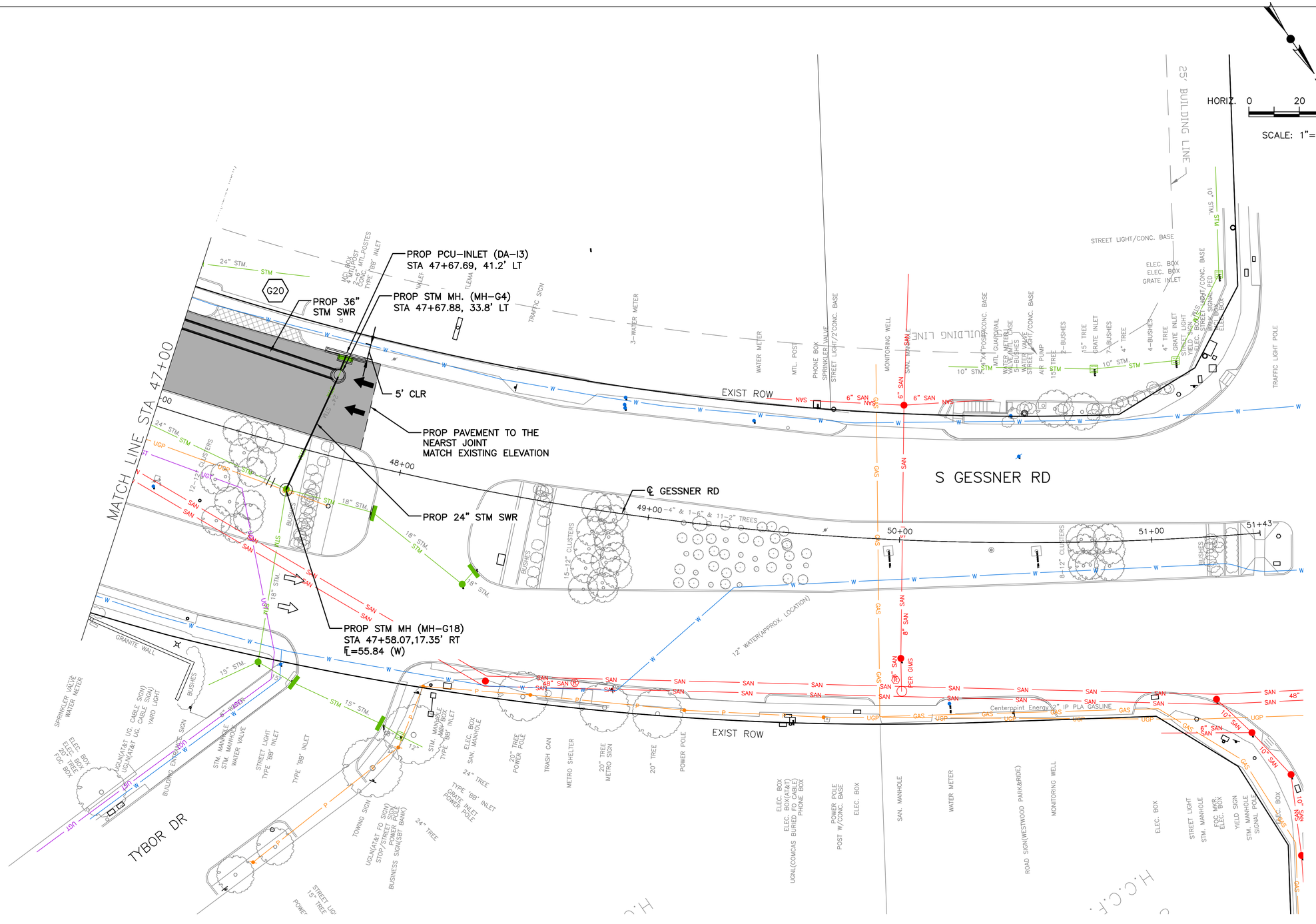

NOTES:
1. REFER TO BRAEBURN GLEN PARK PLAN SHEET FOR ADDITIONAL NOTES.

NOTES:
① CAUTION EXIST CENTER POINT ENERGY UNDERGROUND ELECTRIC POWER CONDUIT.

② CAUTION EXIST CENTER POINT ENERGY UNDERGROUND 4-IN/6-IN IP COATED STEEL GAS LINE (NOT FIELD VERIFIED).

③ CAUTION EXIST UNDERGROUND TELEPHONE/COMMUNICATION CONDUIT.

NO.	DATE	REVISION	APP.

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ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS, INC F-6932 — STATE OF TEXAS — RODRIGO M. GUADARRAMA — 111437 — LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
S. GESSNER RD STA 47+00 TO END PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 110 OF 227	

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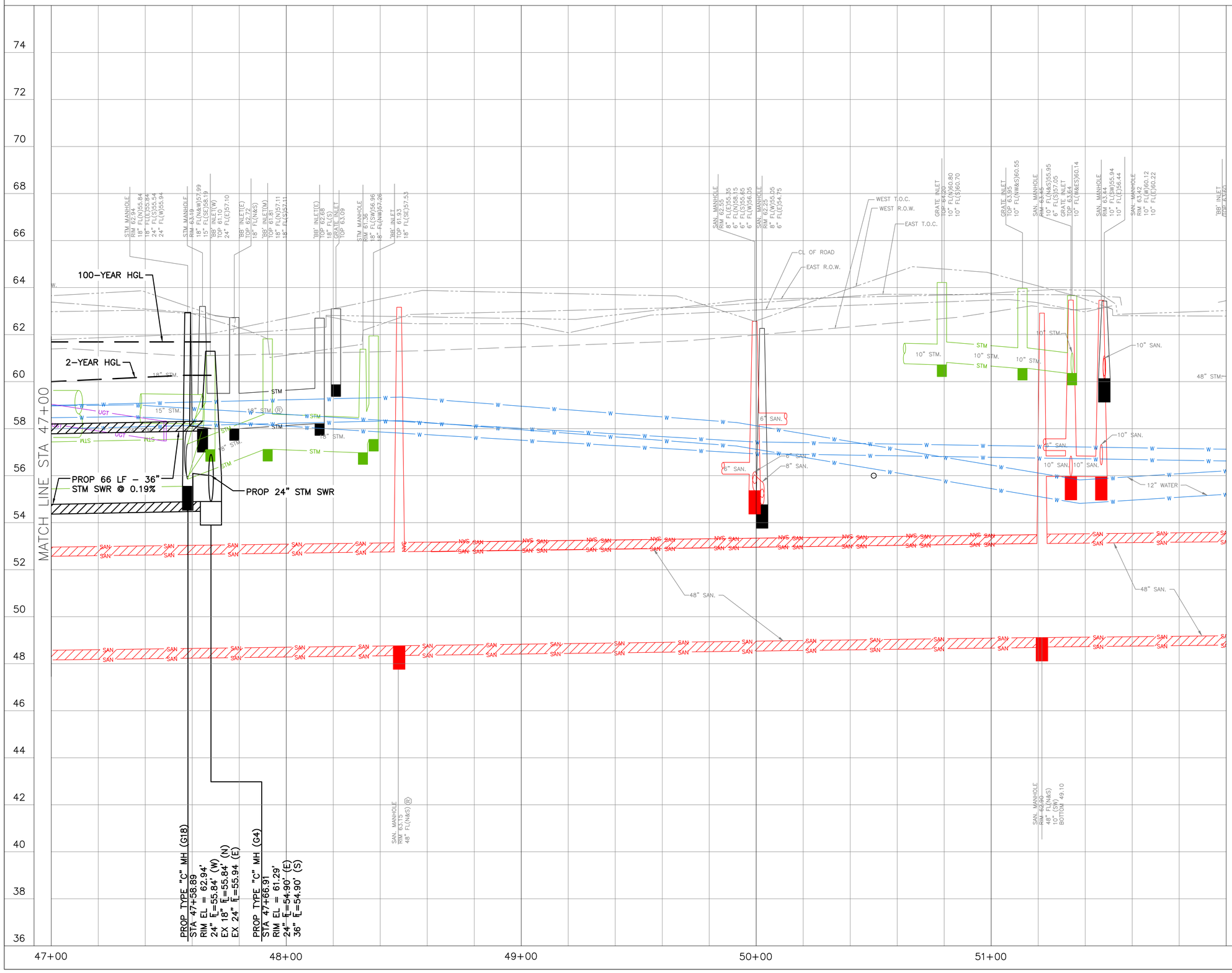

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HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
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FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
S. GESSNER RD STA 47+00 TO END PROFILE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 111 OF 227	

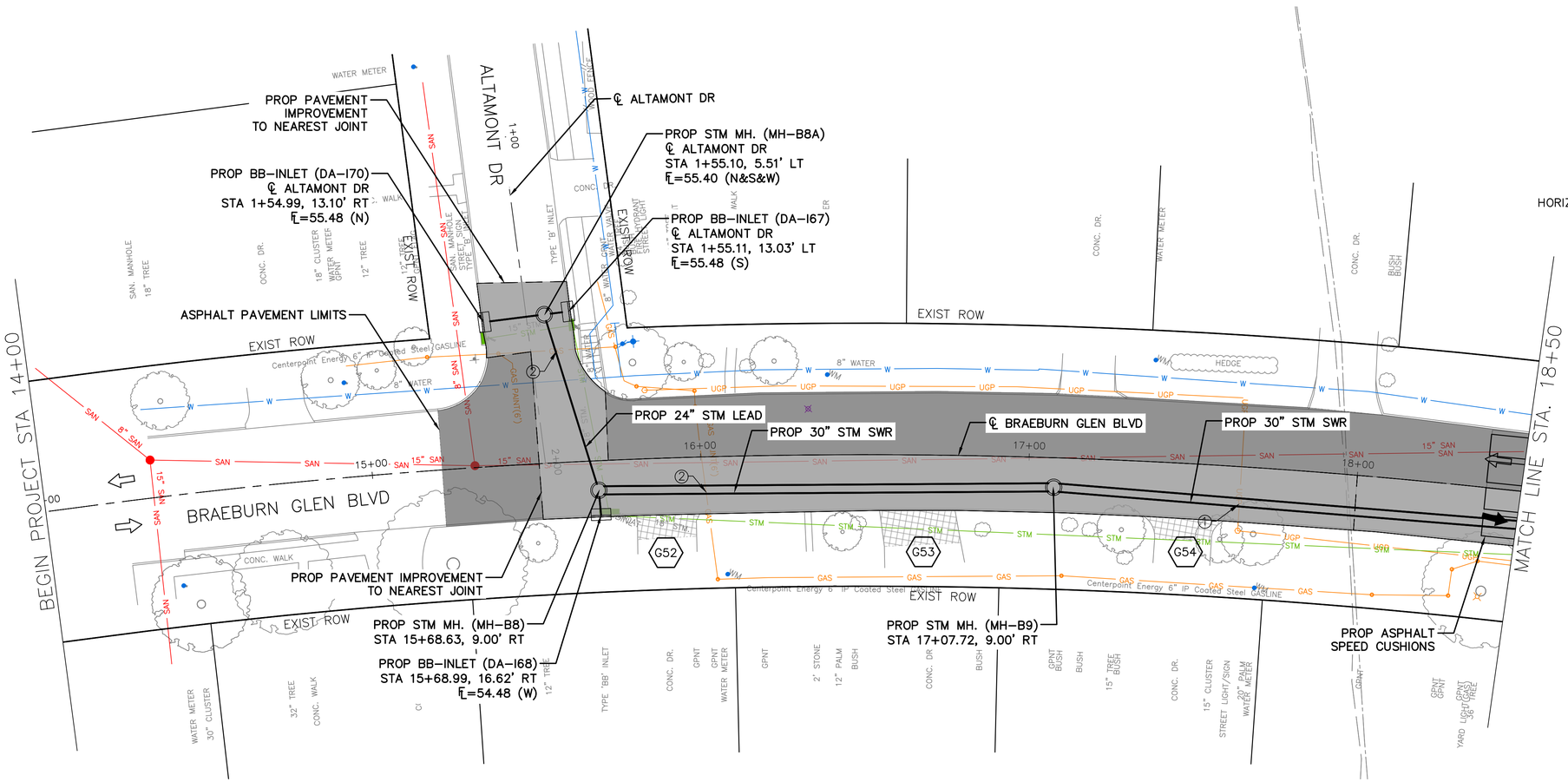
NOTES:
①CAUTION EXIST CENTER POINT ENERGY UNDERGROUND ELECTRIC POWER CONDUIT.

②CAUTION EXIST CENTER POINT ENERGY UNDERGROUND 4–IN/6–IN IP COATED STEEL GAS LINE (NOT FIELD VERIFIED).

③CAUTION EXIST UNDERGROUND TELEPHONE/COMMUNICATION CONDUIT.

LEGEND
- PROPOSED LANE
- EXISTING LANE
- EXIST ROW
- PROP 6" CURB
- PROP 6" JRCP W/2" HMAC
- PROP 2" HMAC
- PROP 7" JRCP
- PROP CONC DRIVEWAY
- PROP SAWCUT
- PROP DRIVEWAY NO. (ID)
- PROP STORM SEWER
- EXIST STORM SEWER
- PROPOSED INLETS
- PROPOSED MH/JB
- EXIST INLETS
- EXIST MANHOLES

NO.	DATE	REVISION	APP.



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SCALE: 1"=20'

NOTES:
1. REFER TO BRAEBURN GLEN PARK PLAN SHEET FOR ADDITIONAL NOTES.
2. PROPOSED STORM NETWORK IS DESIGNED TO PROVIDE A 10–YEAR LEVEL OF SERVICE..

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ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281–945–0069
TX FIRM NUMBER: F–6932

SURVEYED BY: LANDTECH, INC.
FB NO. P–6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
BRAEBURN GLEN BLVD STA 14+00 TO STA 18+50 PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410040–0001–4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 112 OF 227	

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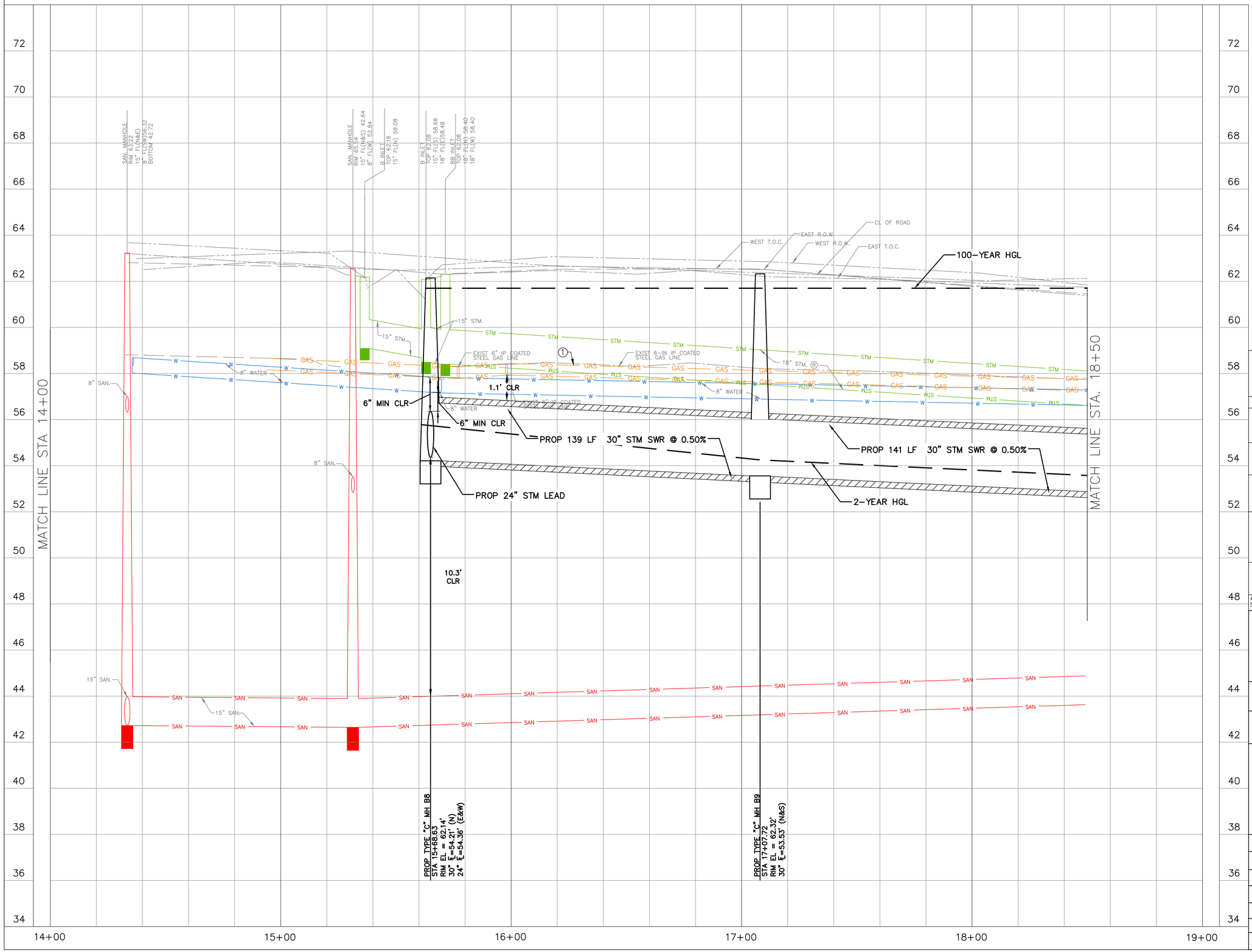

NO.	DATE	REVISION	APP.

NOTES:

1. CAUTION EXIST CENTER POINT ENERGY UNDERGROUND 4-IN/6-IN IP COATED STEEL GAS LINE (NOT FIELD VERIFIED).

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STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

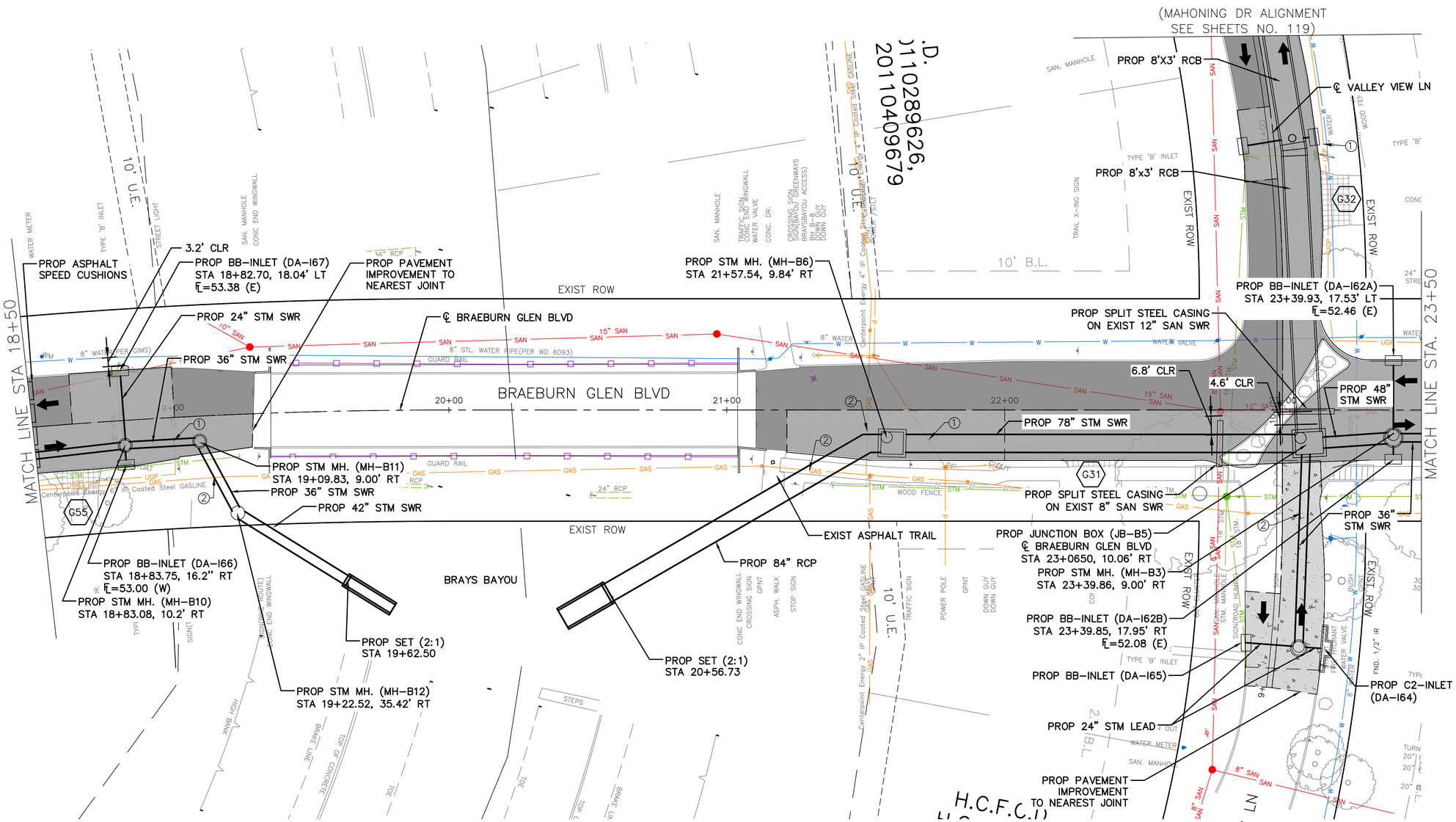
BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
BRAEBURN GLEN BLVD STA 14+00 TO STA 18+50 PROFILE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 113 OF 227	

NOTES:
①CAUTION EXIST CENTER POINT ENERGY UNDERGROUND ELECTRIC POWER CONDUIT.

②CAUTION EXIST CENTER POINT ENERGY UNDERGROUND 4-IN/6-IN IP COATED STEEL GAS LINE (NOT FIELD VERIFIED).

③CAUTION EXIST UNDERGROUND TELEPHONE/COMMUNICATION CONDUIT.



NOTES:
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2. PROPOSED STORM NETWORK IS DESIGNED TO PROVIDE A 10-YEAR LEVEL OF SERVICE..

LEGEND
- PROPOSED LANE
- EXISTING LANE
- EXIST ROW
- PROP 6" CURB
- PROP 6" JRCP W/2" HMAC
- PROP 2" HMAC
- PROP 7" JRCP
- PROP CONC DRIVEWAY
- PROP SAWCUT
- PROP DRIVEWAY NO.
- PROP STORM SEWER
- EXIST STORM SEWER
- PROPOSED INLETS
- PROPOSED MH/JB
- EXIST INLETS
- EXIST MANHOLES

HORIZ. 0 20 40
SCALE: 1"=20'

NO.	DATE	REVISION	APP.

NOTICE:
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VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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

Signature valid for six months.

Date

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

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
BRAEBURN GLEN BLVD STA 18+50 TO STA 23+50 PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 114 OF 227	

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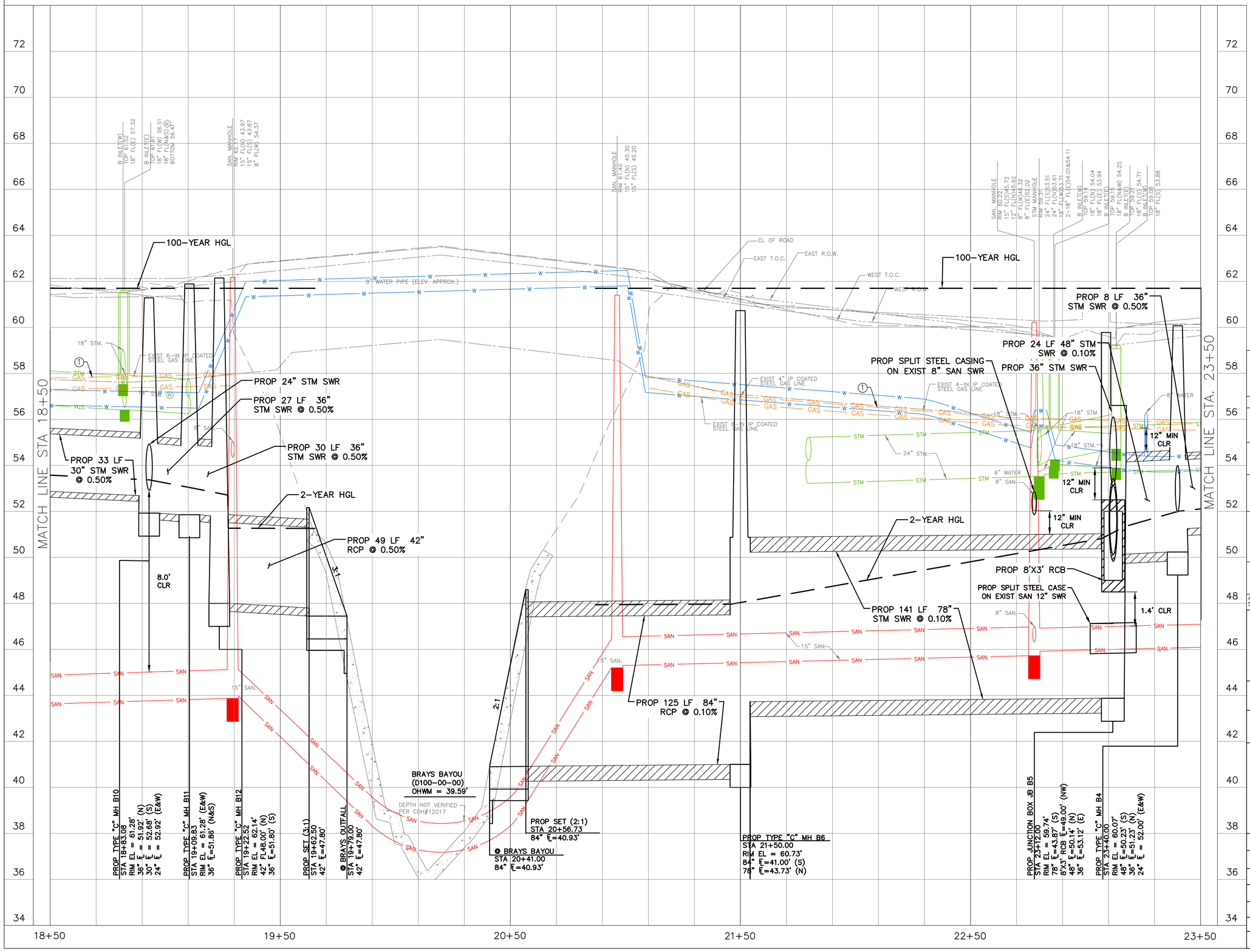

NO.	DATE	REVISION	APP.

NOTES:

1. CAUTION EXIST CENTER POINT ENERGY UNDERGROUND 4-IN/6-IN IP COATED STEEL GAS LINE (NOT FIELD VERIFIED).

NOTICE:
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Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

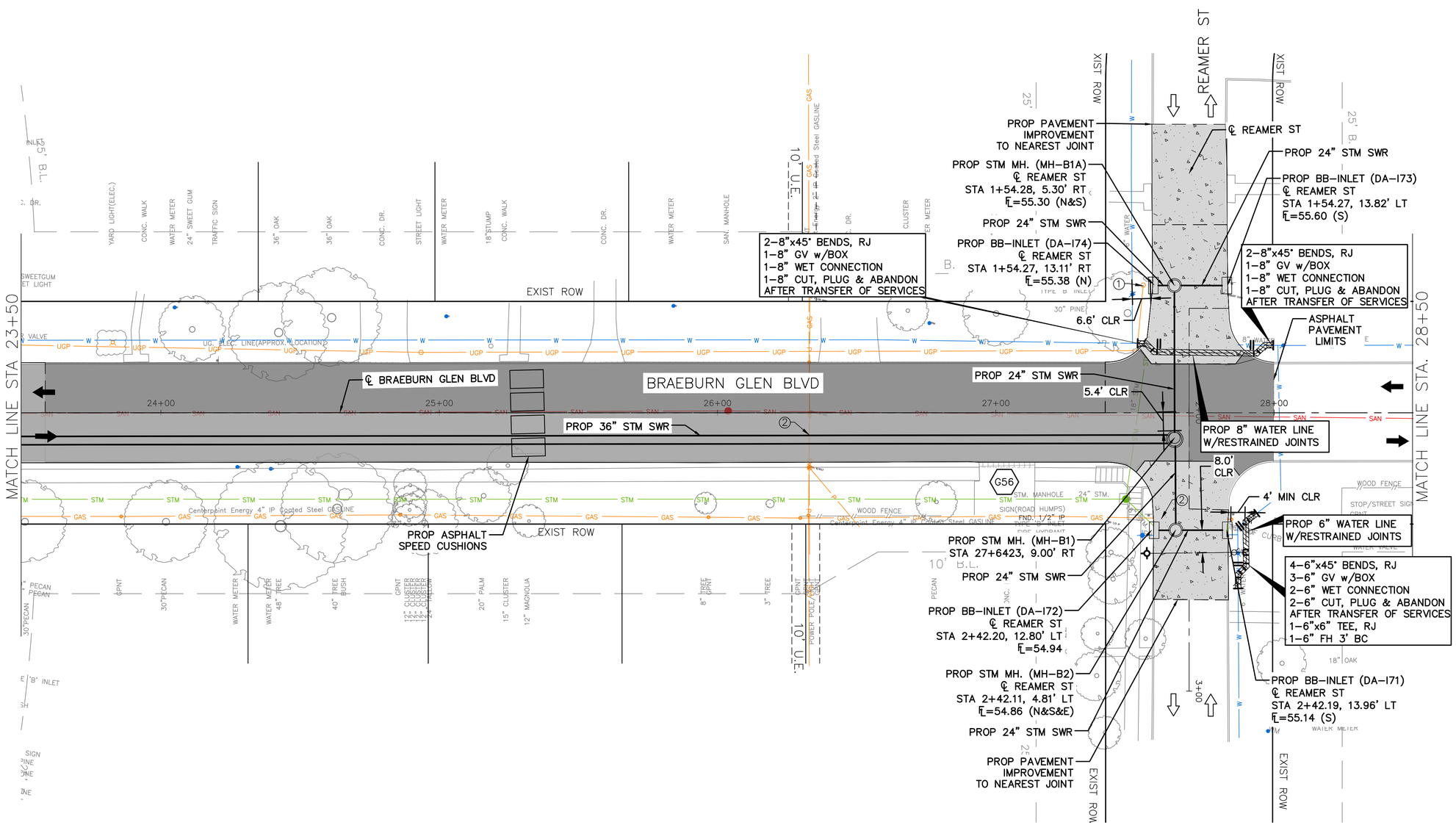
BRAEBURN GLEN BLVD STA 18+50 TO STA 23+50 PROFILE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 115 OF 227	

NOTES:
①CAUTION EXIST CENTER POINT ENERGY UNDERGROUND ELECTRIC POWER CONDUIT.

②CAUTION EXIST CENTER POINT ENERGY UNDERGROUND 4-IN/6-IN IP COATED STEEL GAS LINE (NOT FIELD VERIFIED).

③CAUTION EXIST UNDERGROUND TELEPHONE/COMMUNICATION CONDUIT.



NOTES:
1. REFER TO BRAEBURN GLEN PARK PLAN SHEET FOR ADDITIONAL NOTES.
2. PROPOSED STORM NETWORK IS DESIGNED TO PROVIDE A 10-YEAR LEVEL OF SERVICE..

LEGEND
- PROPOSED LANE
- EXISTING LANE
- EXIST ROW
- PROP 6" CURB
- PROP 6" JRCP W/2" HMAC
- PROP 2" HMAC
- PROP 7" JRCP
- PROP CONC DRIVEWAY
- PROP SAWCUT
- PROP DRIVEWAY NO.
- PROP STORM SEWER
- EXIST STORM SEWER
- PROPOSED INLETS
- PROPOSED MH/JB
- EXIST INLETS
- EXIST MANHOLES

HORIZ. 0 20 40

SCALE: 1"=20'

NO.	DATE	REVISION	APP.

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ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER — ENTECH CIVIL ENGINEERS, INC F-6932 — 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
BRAEBURN GLEN BLVD STA 23+50 TO STA 28+50 PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 116 OF 227	

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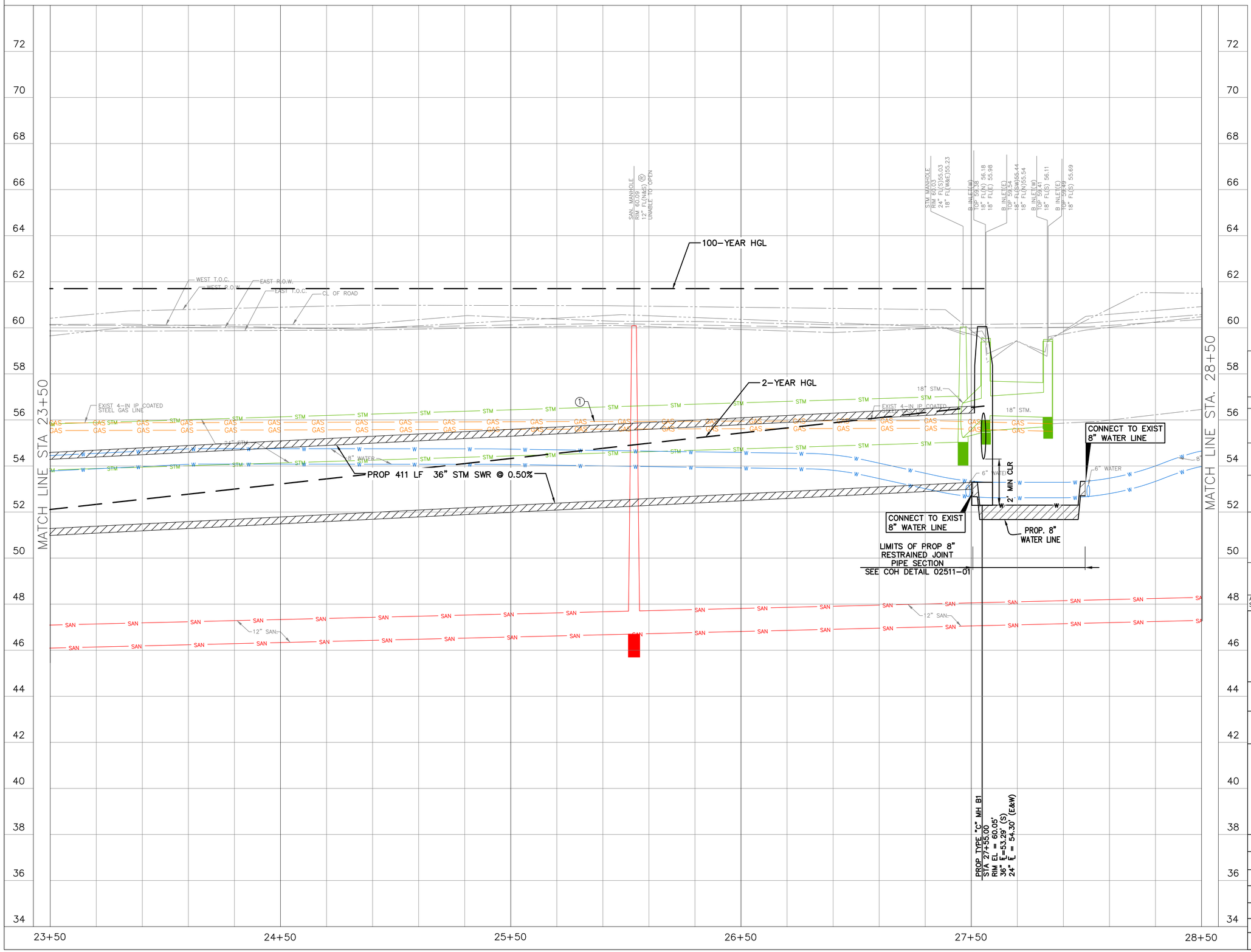

NO.	DATE	REVISION	APP.

NOTES:

1. CAUTION EXIST CENTER POINT ENERGY UNDERGROUND 4-IN/6-IN IP COATED STEEL GAS LINE (NOT FIELD VERIFIED).

NOTICE:
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ENTECH CIVIL ENGINEERS, INC.
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
BRAEBURN GLEN BLVD STA 23+50 TO STA 28+50 PROFILE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 117 OF 227	

NOTES:
①CAUTION EXIST CENTER POINT ENERGY UNDERGROUND ELECTRIC POWER CONDUIT.

②CAUTION EXIST CENTER POINT ENERGY UNDERGROUND 4-IN/6-IN IP COATED STEEL GAS LINE (NOT FIELD VERIFIED).

③CAUTION EXIST UNDERGROUND TELEPHONE/COMMUNICATION CONDUIT.

NOTES:
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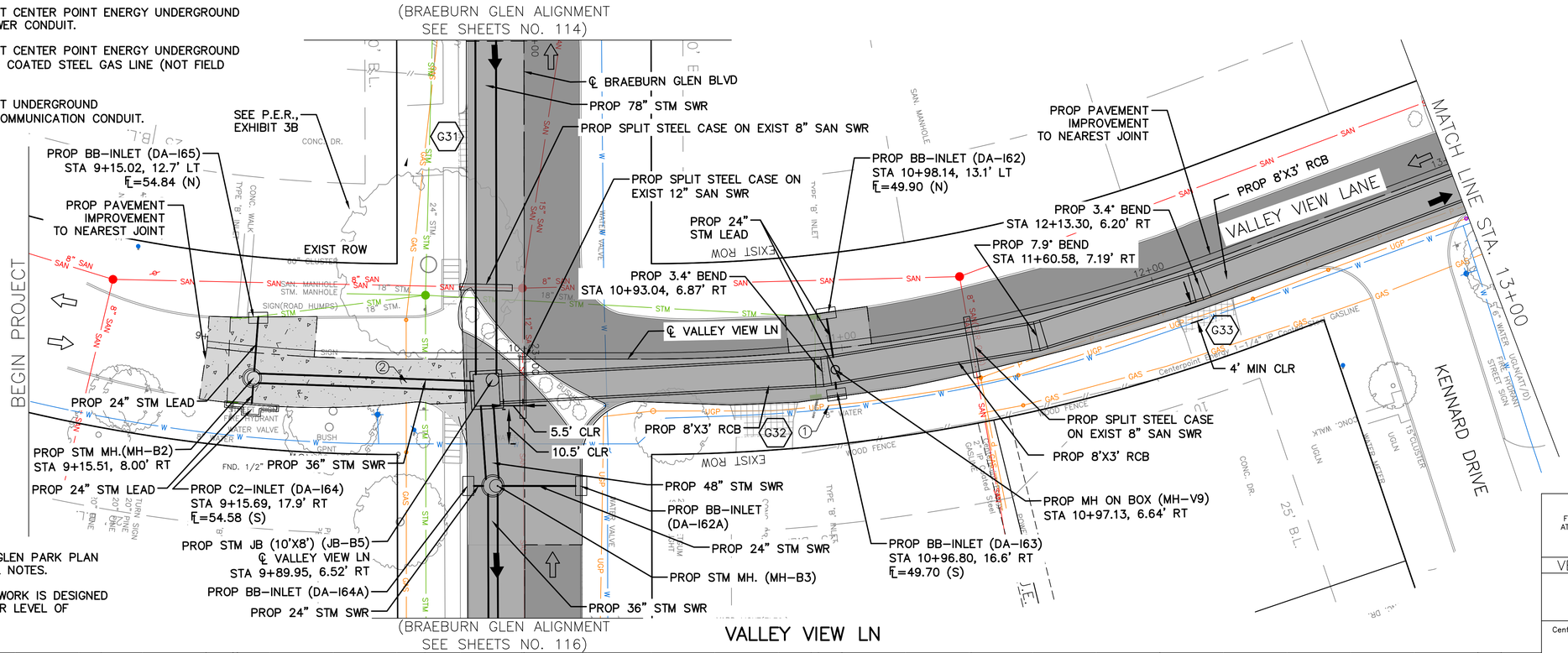
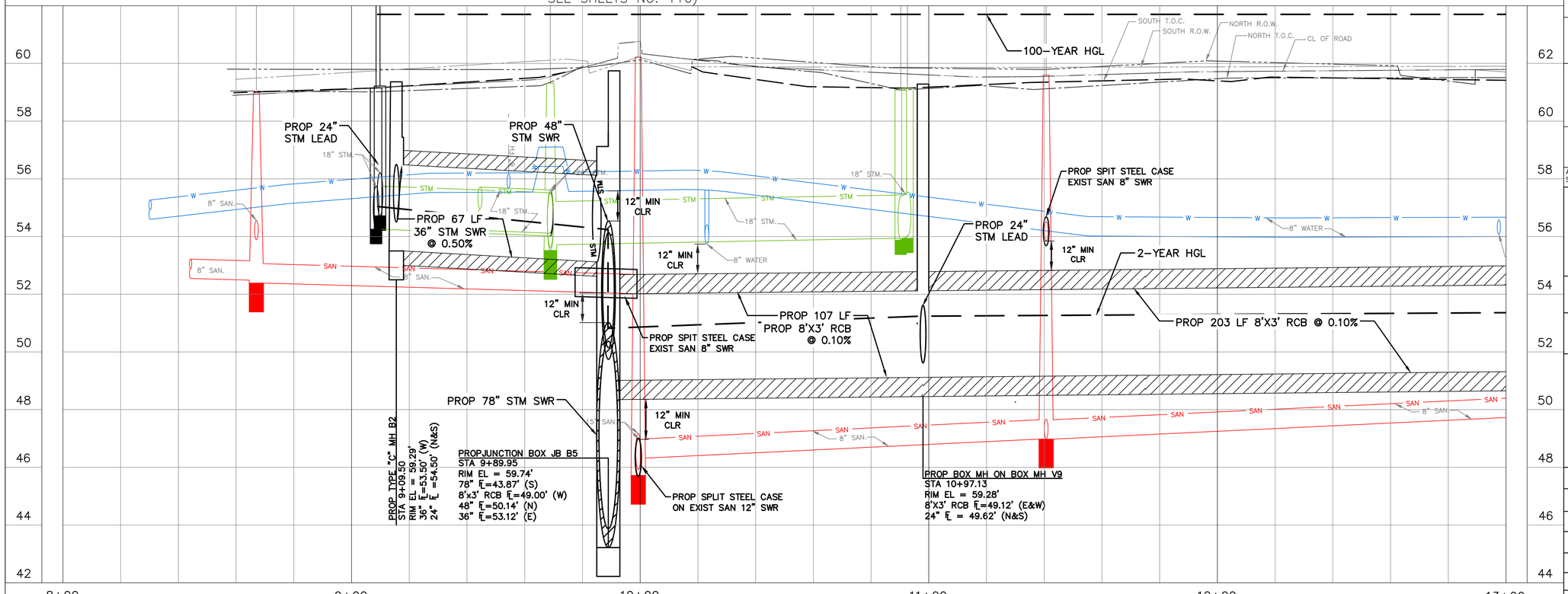
2. PROPOSED STORM NETWORK IS DESIGNED TO PROVIDE A 10-YEAR LEVEL OF SERVICE.





LEGEND
- PROPOSED LANE
- EXISTING LANE
- EXIST ROW
- PROP 6" CURB
- PROP 6" JRCP W/2" HMAC
- PROP 2" HMAC
- PROP 7" JRCP
- PROP CONC DRIVEWAY
- PROP SAWCUT
- (ID) PROP DRIVEWAY NO.
- PROP STORM SEWER
- -STM- EXIST STORM SEWER
- PROPOSED INLETS
- PROPOSED MH/JB
- EXIST INLETS
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NO.	DATE	REVISION	APP.

N

HORIZ. 0 20 40

SCALE: 1"=20'

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ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

RIVERA CIVIL ENGINEERS, INC F-8888 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
VALEY VIEW LN BEGIN TO STA 13+00 PLAN & PROFILE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 118 OF 227	

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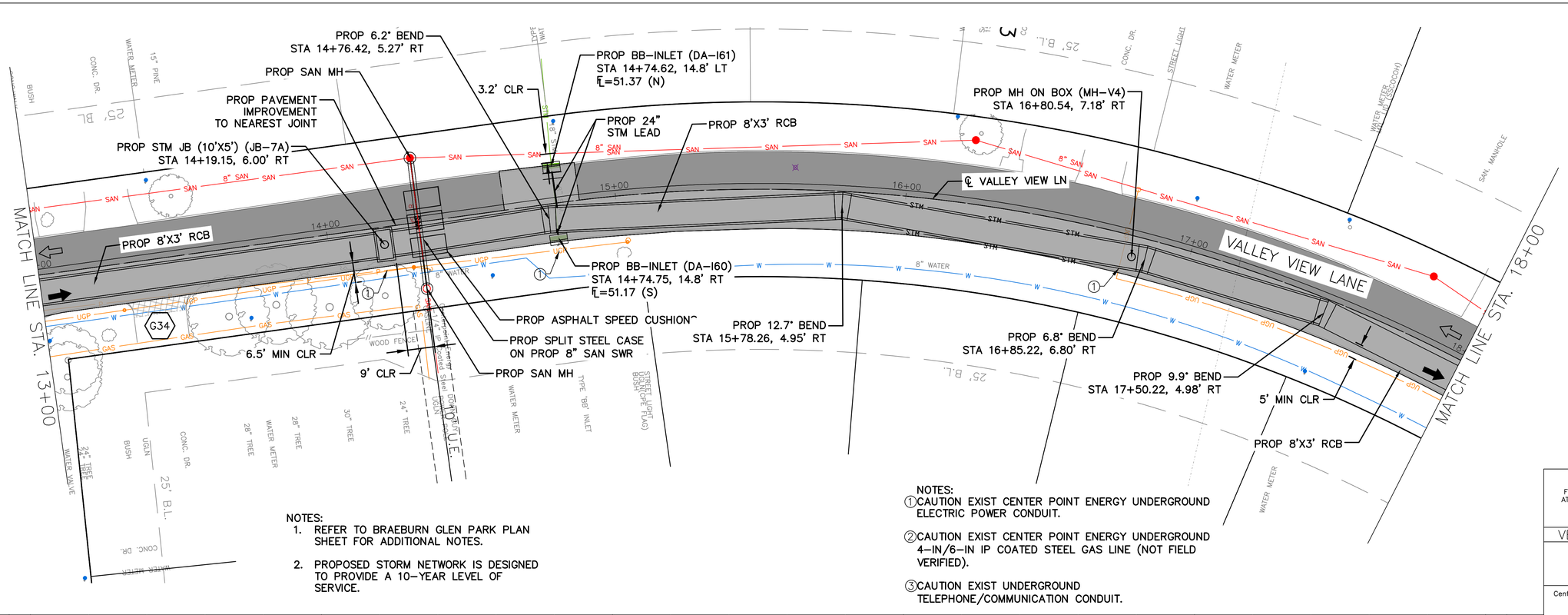

NOTES:
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2. PROPOSED STORM NETWORK IS DESIGNED TO PROVIDE A 10-YEAR LEVEL OF SERVICE.

NOTES:
① CAUTION EXIST CENTER POINT ENERGY UNDERGROUND ELECTRIC POWER CONDUIT.
② CAUTION EXIST CENTER POINT ENERGY UNDERGROUND 4-IN/6-IN IP COATED STEEL GAS LINE (NOT FIELD VERIFIED).
③ CAUTION EXIST UNDERGROUND TELEPHONE/COMMUNICATION CONDUIT.

LEGEND
- PROPOSED LANE
- EXISTING LANE
- EXIST ROW
- PROP 6" CURB
- PROP 6" JRCP W/2" HMAC
- PROP 2" HMAC
- PROP 7" JRCP
- PROP CONC DRIVEWAY
- PROP SAWCUT
- (ID) PROP DRIVEWAY NO.
- PROP STORM SEWER
- -STM- EXIST STORM SEWER
- PROPOSED INLETS
- PROPOSED MH/JB
- EXIST INLETS
- EXIST MANHOLES

N

HORIZ. 0 20 40

SCALE: 1"=20'

NO.	DATE	REVISION	APP.

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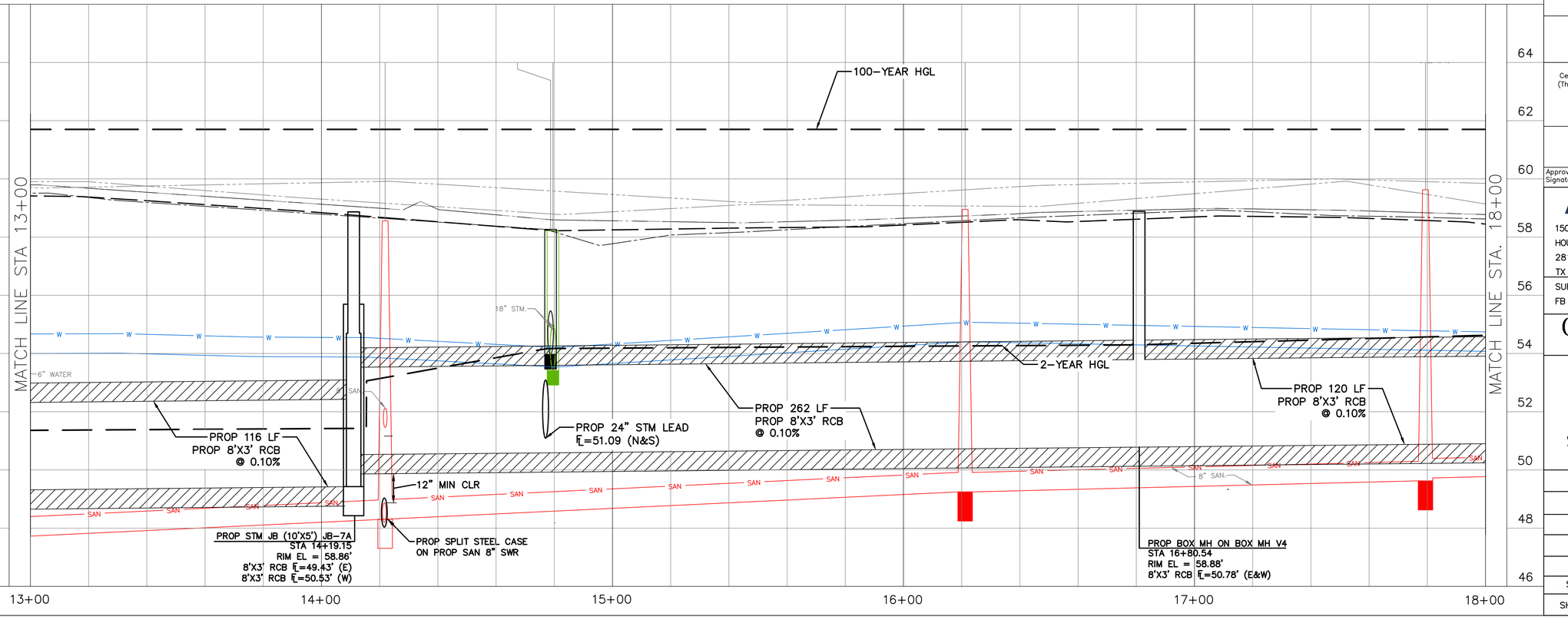

ENTECH
CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
VALLEY VIEW LN
STA 13+00 TO STA 18+00
PLAN & PROFILE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 119 OF 227	

PLOTTED: 3/10/2026 10:41 AM coh_ctb_230809.ctb
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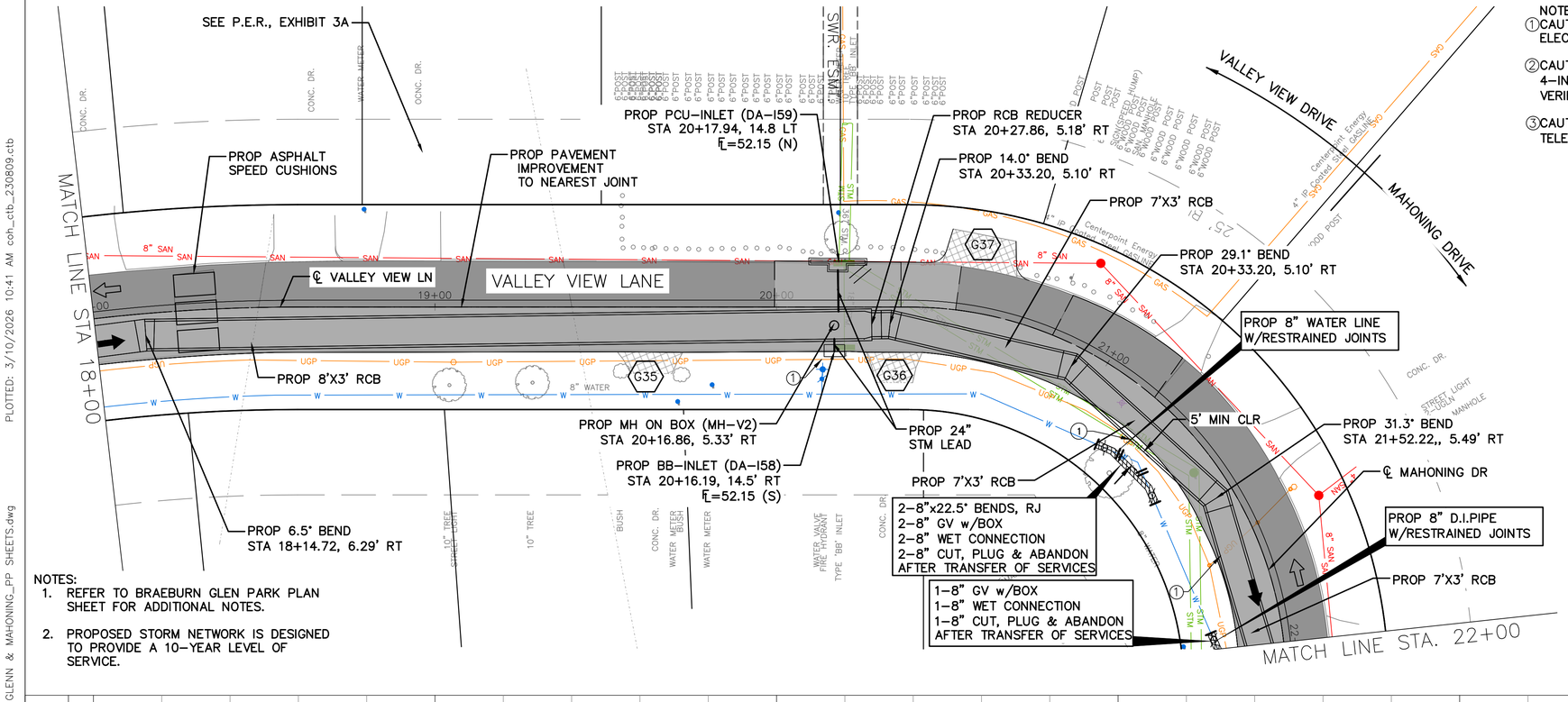

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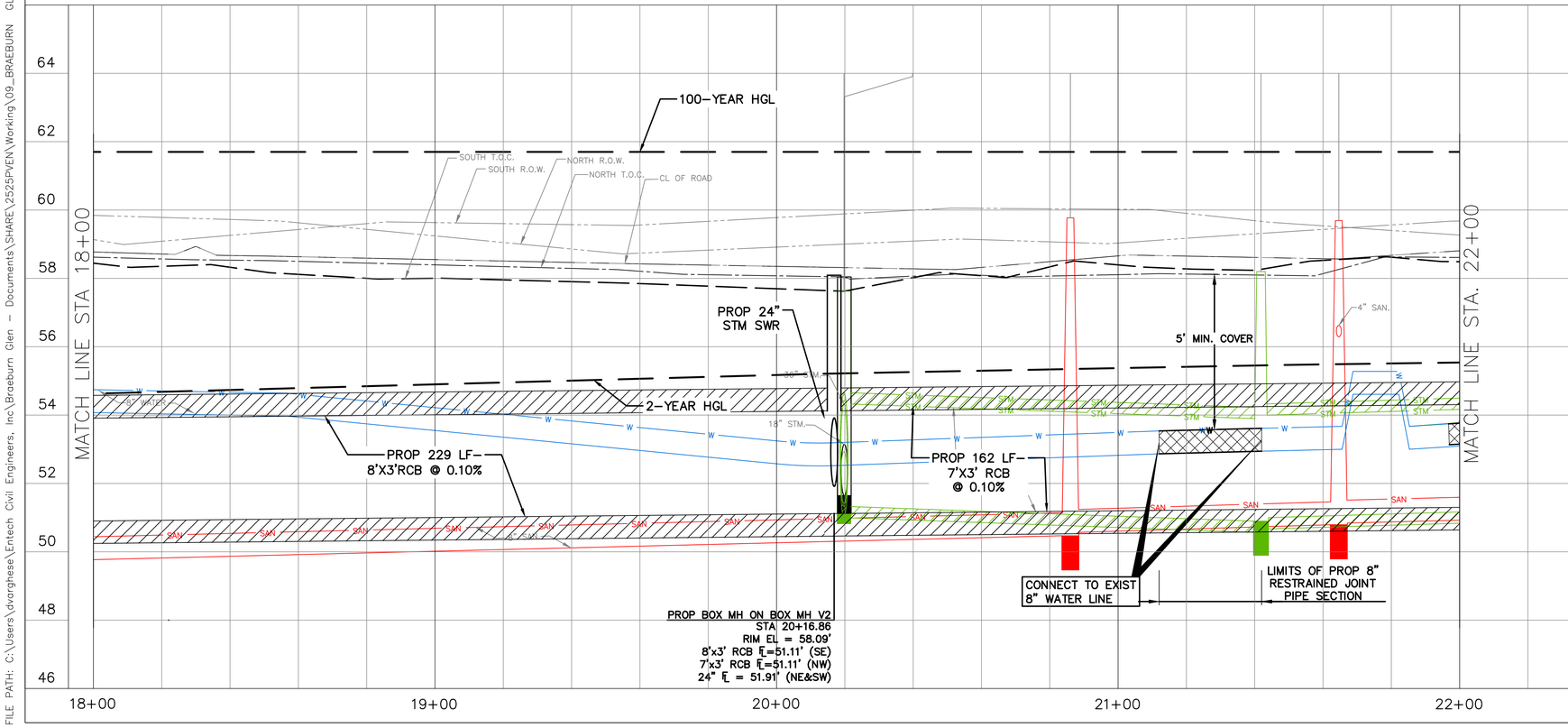
LEGEND
- PROPOSED LANE
- EXISTING LANE
- EXIST ROW
- PROP 6" CURB
- PROP 6" JRCP W/2" HMAC
- PROP 2" HMAC
- PROP 7" JRCP
- PROP CONC DRIVEWAY
- PROP SAWCUT
- PROP DRIVEWAY NO. (ID)
- PROP STORM SEWER
- EXIST STORM SEWER
- PROPOSED INLETS
- PROPOSED MH/JB
- EXIST INLETS
- EXIST MANHOLES

HORIZ. 0 20 40
SCALE: 1"=20'

NO.	DATE	REVISION	APP.



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HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

RIVTECH CIVIL ENGINEERS INC F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
MAHONING DR STA 18+00 TO STA 22+00 PLAN & PROFILE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 120 OF 227	

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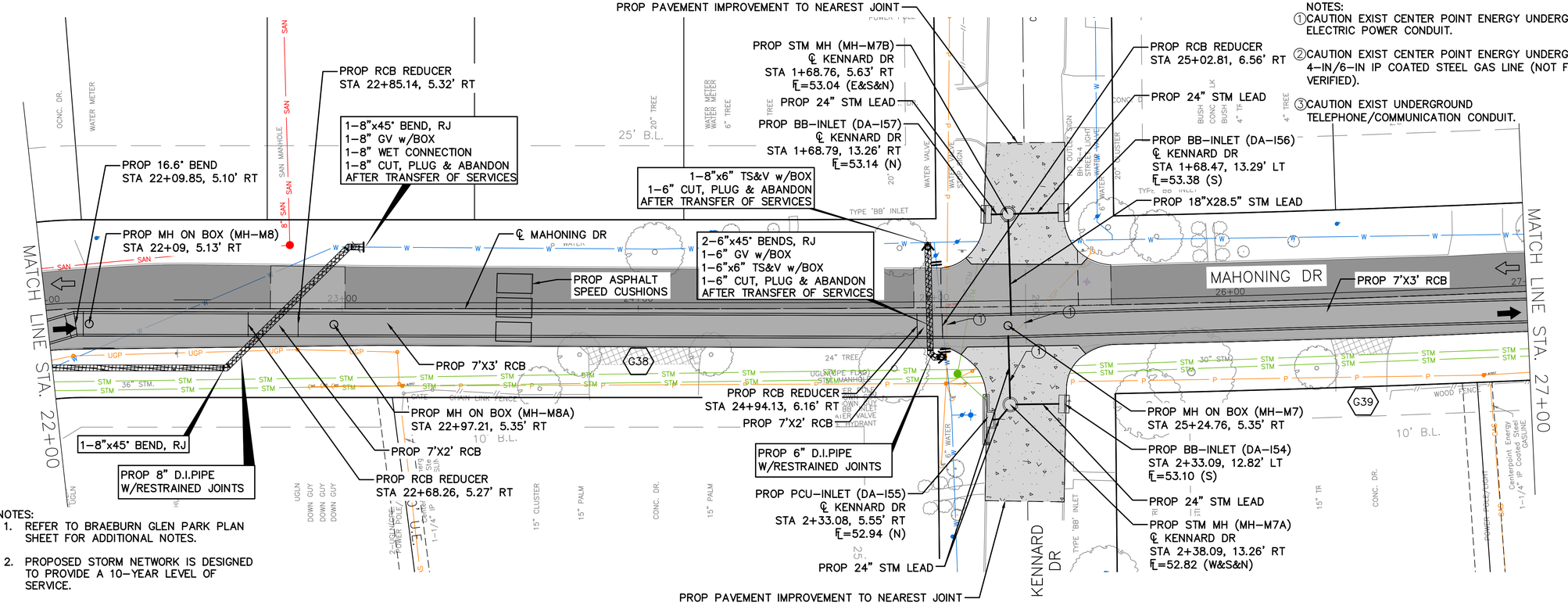

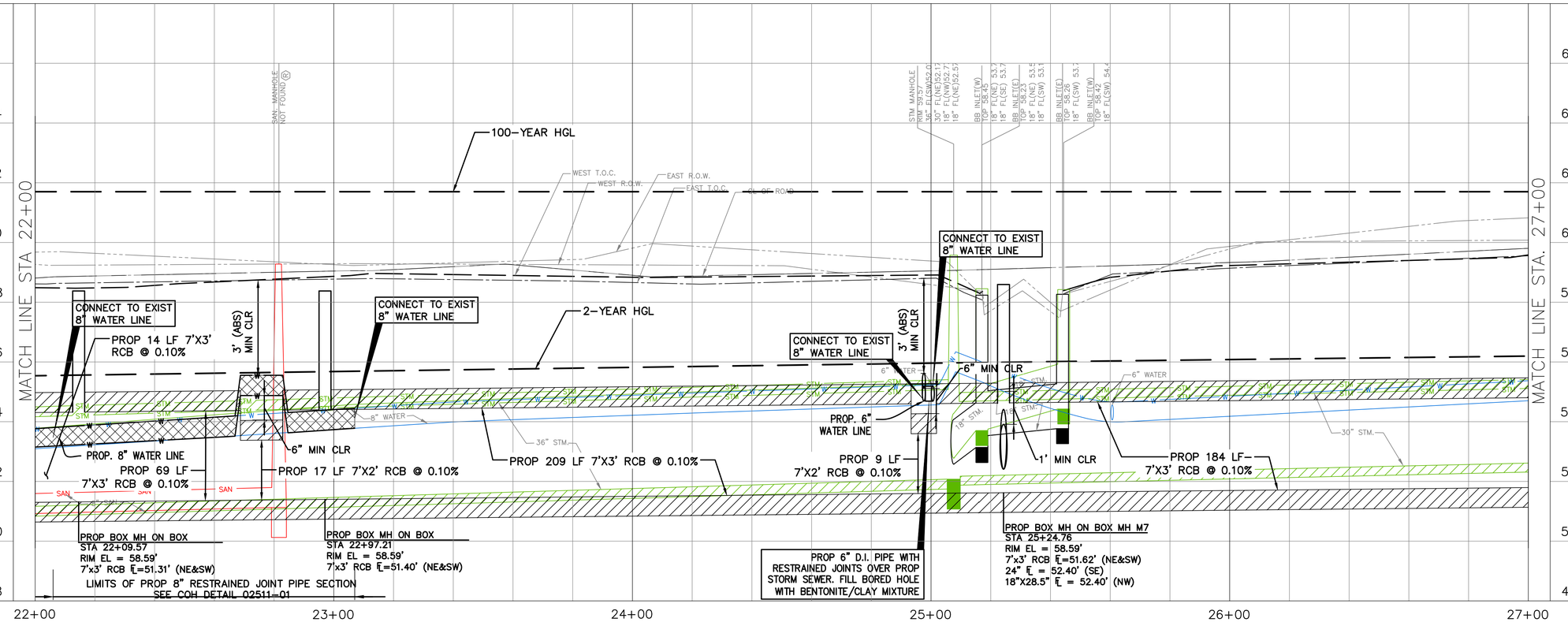

LEGEND

- PROPOSED LANE
- EXISTING LANE
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- PROP 6" CURB
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HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
MAHONING DR STA 22+00 TO STA 27+00 PLAN & PROFILE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 121 OF 227	

NOTES:
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2. PROPOSED STORM NETWORK IS DESIGNED TO PROVIDE A 10-YEAR LEVEL OF SERVICE.

NOTES:
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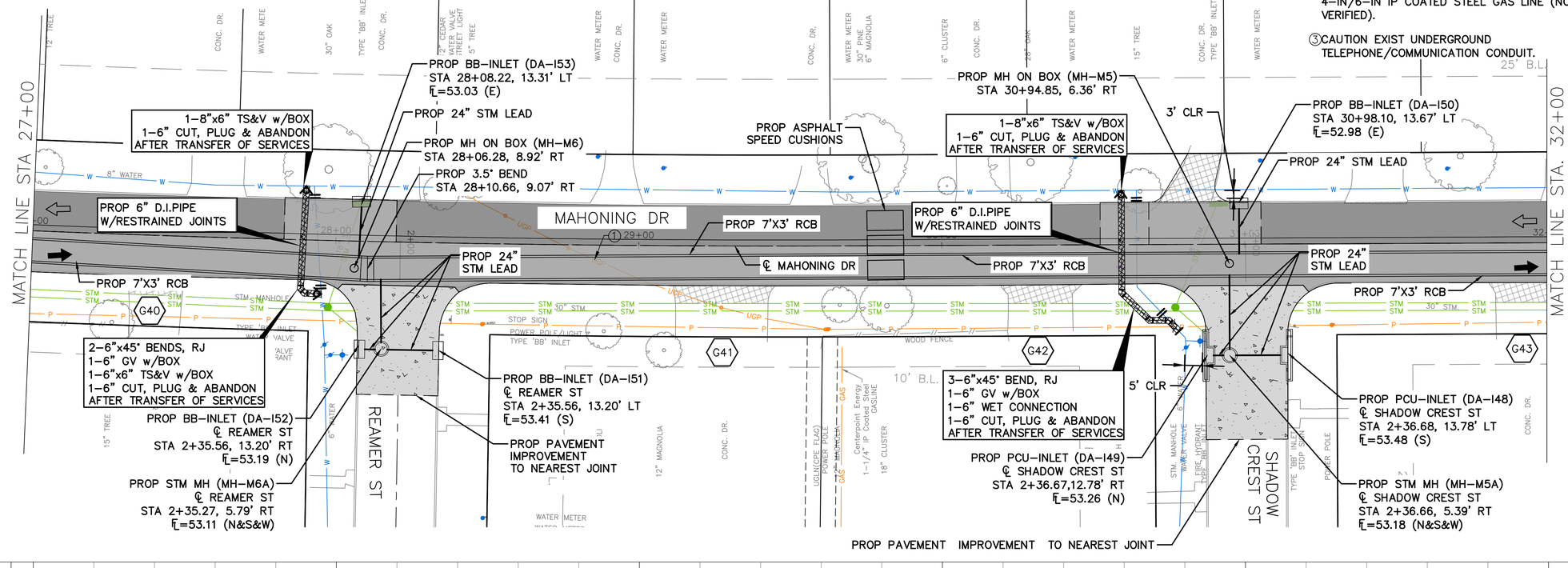

LEGEND
- PROPOSED LANE
- EXISTING LANE
- EXIST ROW
- PROP 6" CURB
- PROP 6" JRCP W/2" HMAC
- PROP 2" HMAC
- PROP 7" JRCP
- PROP CONC DRIVEWAY
- PROP SAWCUT
- (ID) PROP DRIVEWAY NO.
- PROP STORM SEWER
- -STM- EXIST STORM SEWER
- PROPOSED INLETS
- PROPOSED MH/JB
- EXIST INLETS
- EXIST MANHOLES

HORIZ. 0 20 40

SCALE: 1"=20'

NO.	DATE	REVISION	APP.

NOTICE:
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VERIFICATION OF PRIVATE UTILITY LINES

Date

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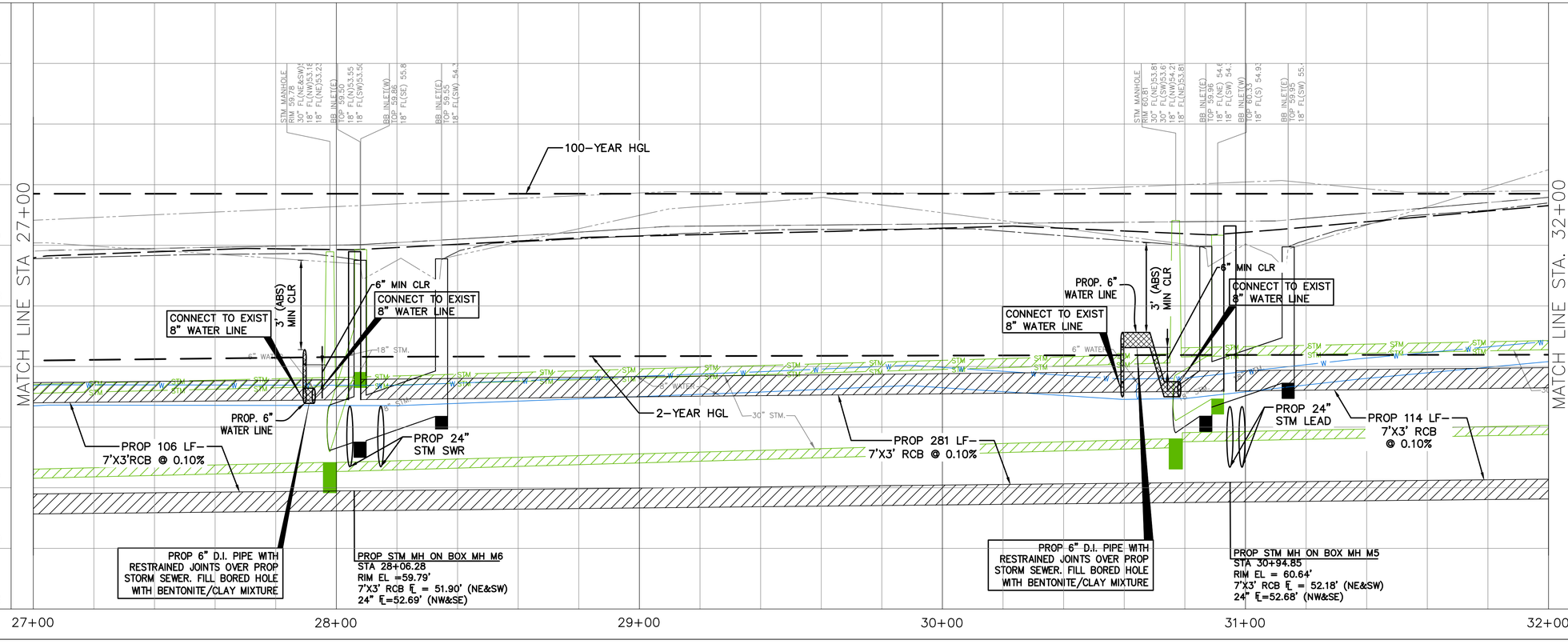
ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER — STATE OF TEXAS — RIVERCH CIVIL ENGINEERS INC F-6932 — 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
MAHONING DR STA 27+00 TO STA 32+00 PLAN & PROFILE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 122 OF 227	



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NOTES:
①CAUTION EXIST CENTER POINT ENERGY UNDERGROUND ELECTRIC POWER CONDUIT.

②CAUTION EXIST CENTER POINT ENERGY UNDERGROUND 4–IN/6–IN IP COATED STEEL GAS LINE (NOT FIELD VERIFIED).

③CAUTION EXIST UNDERGROUND TELEPHONE/COMMUNICATION CONDUIT.

NOTES:
1. REFER TO BRAEBURN GLEN PARK PLAN SHEET FOR ADDITIONAL NOTES.
2. PROPOSED STORM NETWORK IS DESIGNED TO PROVIDE A 10–YEAR LEVEL OF SERVICE.

MATCH LINE STA 32+00

EXIST ROW

1–8"x6" TS&V w/BOX
1–6" CUT, PLUG & ABANDON
AFTER TRANSFER OF SERVICES

4' CLR

PROP 6" D.I.PIPE
W/RESTRAINED JOINTS

PROP 7'X3' RCB

PROP BB–INLET INLET (DA–I47)
STA 33+68.53, 13.33' LT
℄=53.38 (E)

PROP 24" STM LEAD

PROP MH ON BOX (MH–M4)
STA 33+68.52, 6.69' RT

SEE P.E.R., EXHIBIT 3

℄ MAHONING DR

MAHONING DR

PROP 7'X3' RCB

PROP 24" STM LEAD

PROP TYP "B–B" INLET (DA–I44)
STA 36+47.39, 14.30' LT
℄=53.58 (W)

PROP RCB REDUCER
STA 36+55.34, 7.00' RT

PROP 24" STM LEAD

PROP MH ON BOX (JB–M3)
STA 36+44.51, 7.28' RT

1–8"x6" TS&V w/BOX
1–6" CUT, PLUG & ABANDON
AFTER TRANSFER OF SERVICES

PROP 6" D.I.PIPE
W/RESTRAINED JOINTS

4' CLR

PROP 24" STM LEAD

PROP 6'X3' RCB

MATCH LINE STA. 37+00

G44

2–6"x45° BENDS, RJ
1–6" GV w/BOX
1–6" WET CONNECTION
1–6" CUT, PLUG & ABANDON
AFTER TRANSFER OF SERVICES

PROP PCU–INLET (DA–I46)
℄ BIRDWOOD RD
STA 2+38.11, 12.50' RT
℄=53.54 (N)

PROP STOM MH(MH–M4A)
℄ BIRDWOOD DR
STA 2+38.11, 5.25' RT
℄=53.46 (N&S&W)

BIRDWOOD RD

EXIST ROW

G45

PROP PCU–INLET (DA–I45)
℄ BIRDWOOD DR
STA 2+38.07, 13.84' LT
℄=53.76 (S)

PROP PAVEMENT
IMPROVEMENT
TO NEAREST JOINT

PROP ASPHALT
SPEED CUSHIONS

G46

PROP STM MH
STA 36.35.18, 17.50' RT
℄=55.94 (N)
℄=53.46 (E)

PROP SIDEWALK RAMP

PROP 24" STM LEAD

PROP PAVEMENT IMPROVEMENT TO NEAREST JOINT

2–6"x45° BENDS, RJ
1–6" GV w/BOX
1–6" WET CONNECTION
1–6" CUT, PLUG & ABANDON
AFTER TRANSFER OF SERVICES

ARIEL ST

EXIST ROW

MAHONING DRIVE

LEGEND
- PROPOSED LANE
- EXISTING LANE
- EXIST ROW
- PROP 6" CURB
- PROP 6" JRCP W/2" HMAC
- PROP 2" HMAC
- PROP 7" JRCP
- PROP CONC DRIVEWAY
- PROP SAWCUT
- (ID) PROP DRIVEWAY NO.
- PROP STORM SEWER
- -STM- EXIST STORM SEWER
- PROPOSED INLETS
- PROPOSED MH/JB
- EXIST INLETS
- EXIST MANHOLES

HORIZ. 0 20 40

SCALE: 1"=20'

NO.	DATE	REVISION	APP.

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15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281–945–0069
TX FIRM NUMBER: F–6932
SURVEYED BY: LANDTECH, INC.
FB NO. P–6331

RYBACK CIVIL ENGINEERS INC F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

MAHONING DR STA 32+00 TO STA 37+00 PLAN & PROFILE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410040–0001–4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 123 OF 227	

MATCH LINE STA 32+00

100–YEAR HGL

2–YEAR HGL

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

PROP. 6" WATER LINE

6" MIN CLR

3' (ABS) MIN CLR

CONNECT TO EXIST 6" WATER LINE

PROP 166 LF– 7'x3' RCB– @ 0.10%

CONNECT TO EXIST 8" WATER LINE

PROP 24" STM LEAD

PROP 278 LF– 7'X3' RCB @ 0.10%

PROP 6" D.I. PIPE WITH RESTRAINED JOINTS OVER PROP STORM SEWER. FILL BORED HOLE WITH BENTONITE/CLAY MIXTURE

PROP STM MH ON BOX MH M4
STA 33+68.52
RIM EL = 60.50'
7'X3' RCB ℄ = 52.44' (NE&SW)
24" ℄ = 52.94' (NW&SE)

PROP 6" D.I. PIPE WITH RESTRAINED JOINTS OVER PROP STORM SEWER. FILL BORED HOLE WITH BENTONITE/CLAY MIXTURE

PROP 56 LF 6'x3' RCB @ 0.10%

PROP 24" STM LEAD

PROP JUNCTION BOX JB M3
STA 36+44.51
RIM EL = 60.87'
7'X3' RCB ℄ = 52.72' (SW)
6'X3' RCB ℄ = 52.72' (NE)
24" RCP ℄ = 53.22' (NW&SE)

CONNECT TO EXIST 8" WATER LINE

CONNECT TO EXIST 8" WATER LINE

MATCH LINE STA. 37+00

32+00 33+00 34+00 35+00 36+00 37+00

48 50 52 54 56 58 60 62 64 66

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NOTES:
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③CAUTION EXIST UNDERGROUND TELEPHONE/COMMUNICATION CONDUIT.

NOTES:
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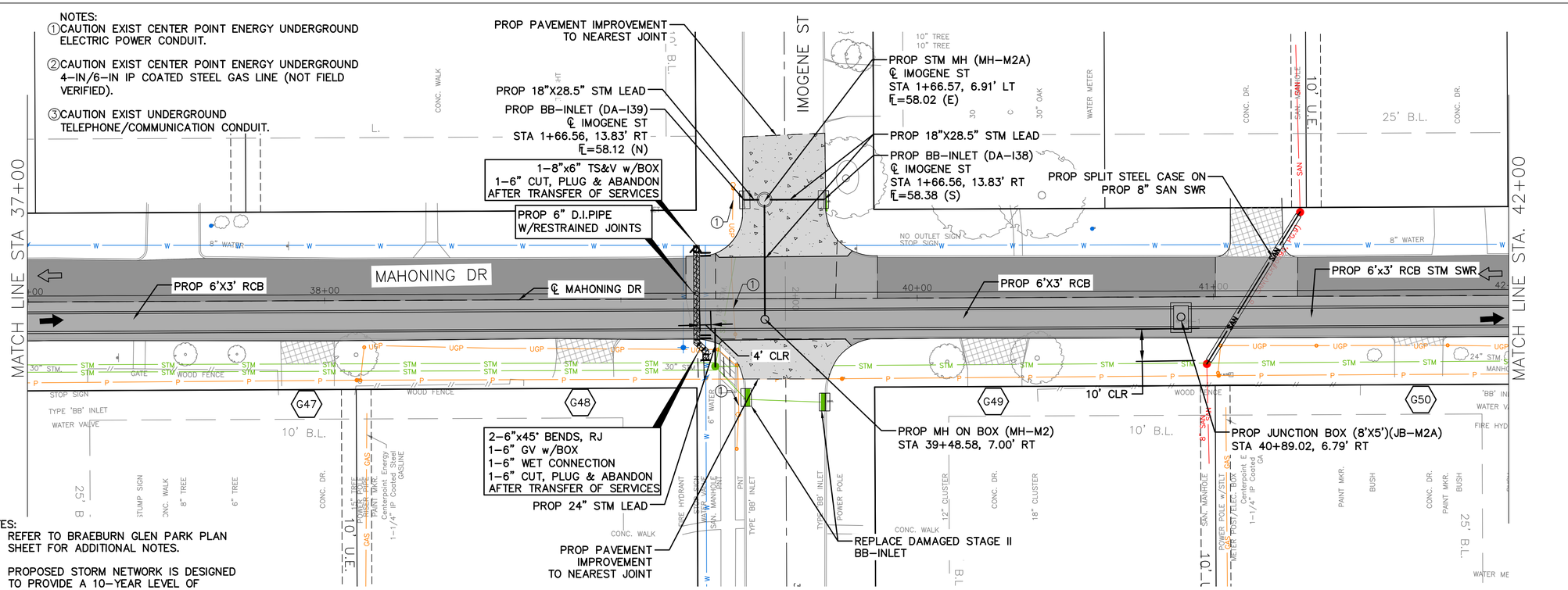

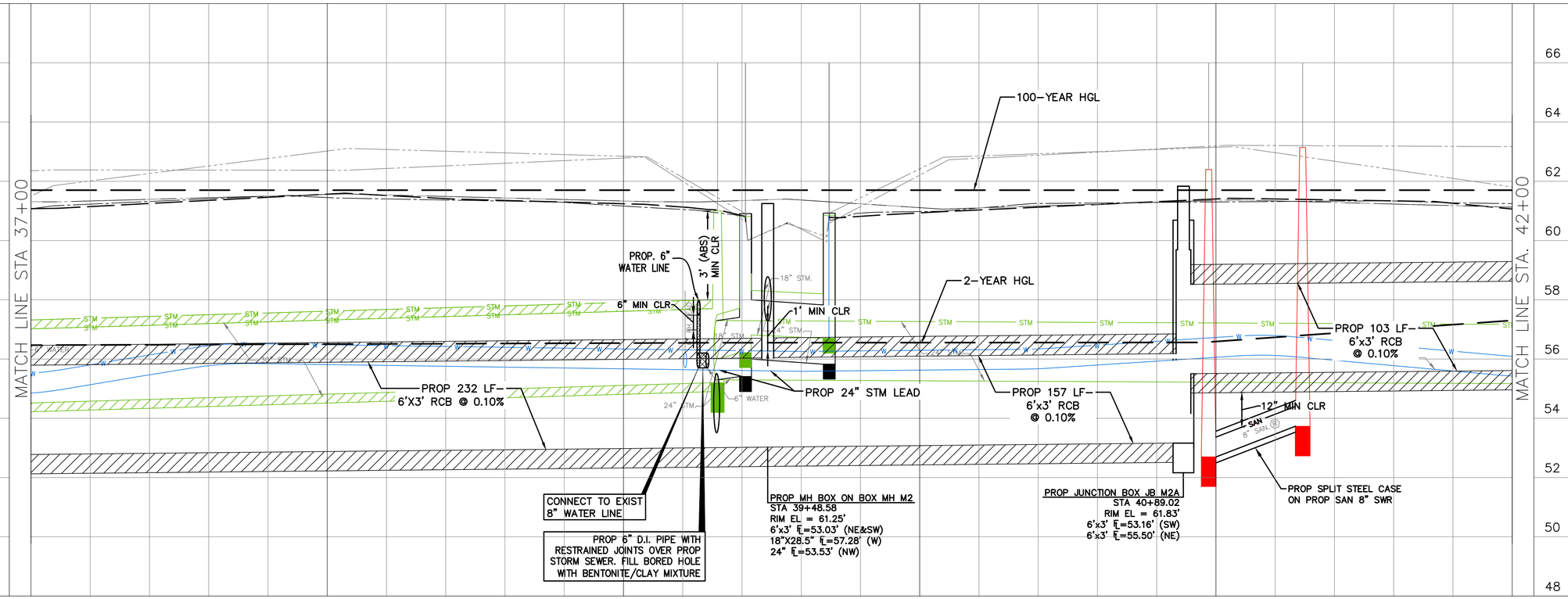

LEGEND

- PROPOSED LANE
- EXISTING LANE
- EXIST ROW
- PROP 6" CURB
- PROP 6" JRCP W/2" HMAC
- PROP 2" HMAC
- PROP 7" JRCP
- PROP CONC DRIVEWAY
- PROP SAWCUT
- (ID) PROP DRIVEWAY NO.
- PROP STORM SEWER
- -STM- EXIST STORM SEWER
- PROPOSED INLETS
- PROPOSED MH/JB
- EXIST INLETS
- EXIST MANHOLES

HORIZ. 0 20 40

SCALE: 1"=20'

NO.	DATE	REVISION	APP.

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VERIFICATION OF PRIVATE UTILITY LINES

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ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281–945–0069
TX FIRM NUMBER: F–6932
SURVEYED BY: LANDTECH, INC.
FB NO. P–6331

ENTECH CIVIL ENGINEERS INC F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

MAHONING DR STA 37+00 TO STA 42+00 PLAN & PROFILE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410040–0001–4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 124 OF 227	

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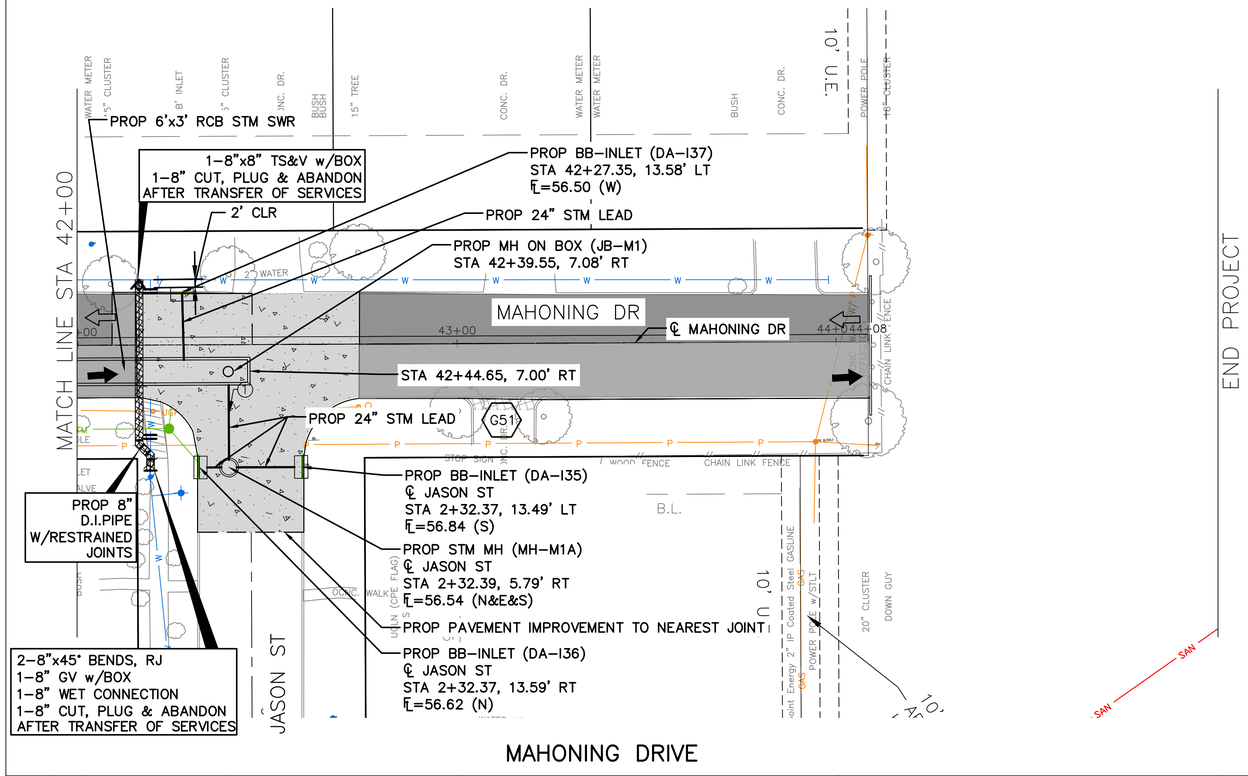

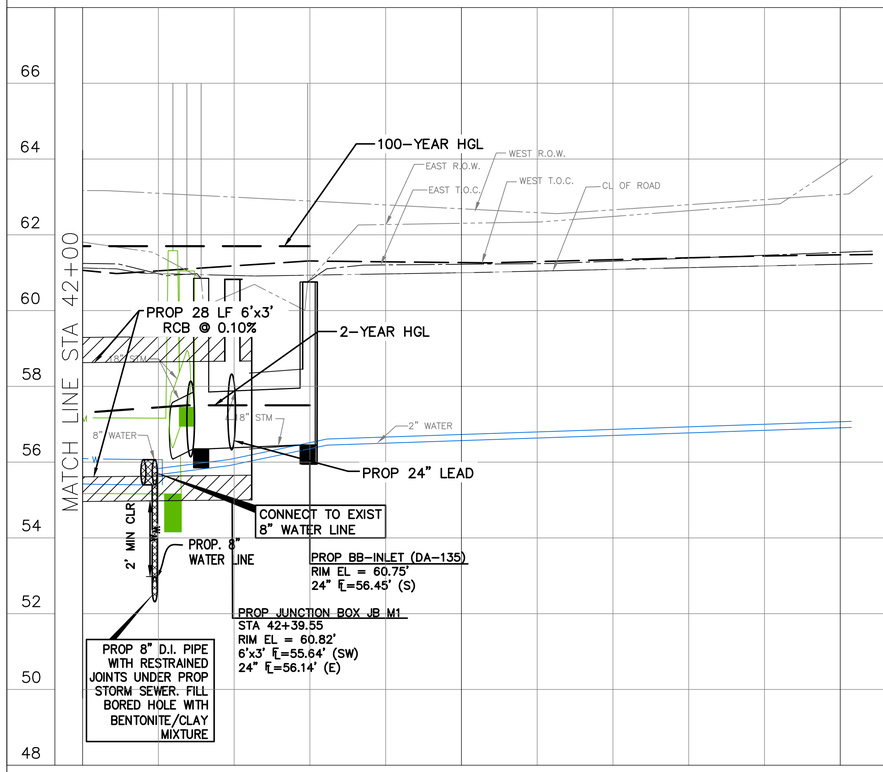

NOTES:
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③CAUTION EXIST UNDERGROUND TELEPHONE/COMMUNICATION CONDUIT.

NOTES:
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2. PROPOSED STORM NETWORK IS DESIGNED TO PROVIDE A 10-YEAR LEVEL OF SERVICE.

LEGEND
- PROPOSED LANE
- EXISTING LANE
- EXIST ROW
- PROP 6" CURB
- PROP 6" JRCP W/2" HMAC
- PROP 2" HMAC
- PROP 7" JRCP
- PROP CONC DRIVEWAY
- PROP SAWCUT
- PROP DRIVEWAY NO. (ID)
- PROP STORM SEWER
- EXIST STORM SEWER (-STM-)
- PROPOSED INLETS
- PROPOSED MH/JB
- EXIST INLETS
- EXIST MANHOLES

HORIZ. 0 20 40

SCALE: 1"=20'

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HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS, INC F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
MAHONING DR STA 42+00 TO END PLAN & PROFILE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 125 OF 227	

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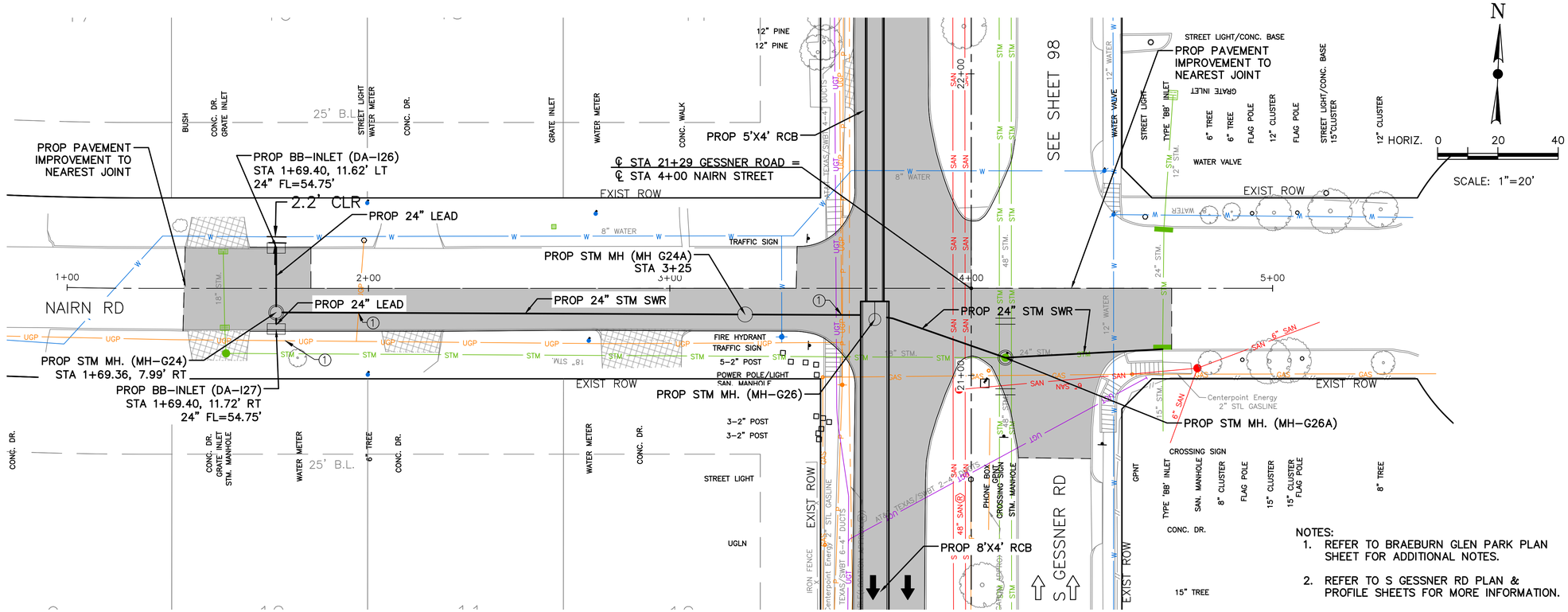

LEGEND

- PROPOSED LANE
- EXISTING LANE
- EXIST ROW
- PROP 6" CURB
- PROP 12" JRCP
- PROP CONC DRIVEWAY
- PROP SAWCUT
- PROP STORM SEWER
- EXIST STORM SEWER
- PROPOSED INLETS
- PROPOSED MH/JB
- EXIST INLETS
- EXIST MANHOLES

NO.	DATE	REVISION	APP.

NOTES:

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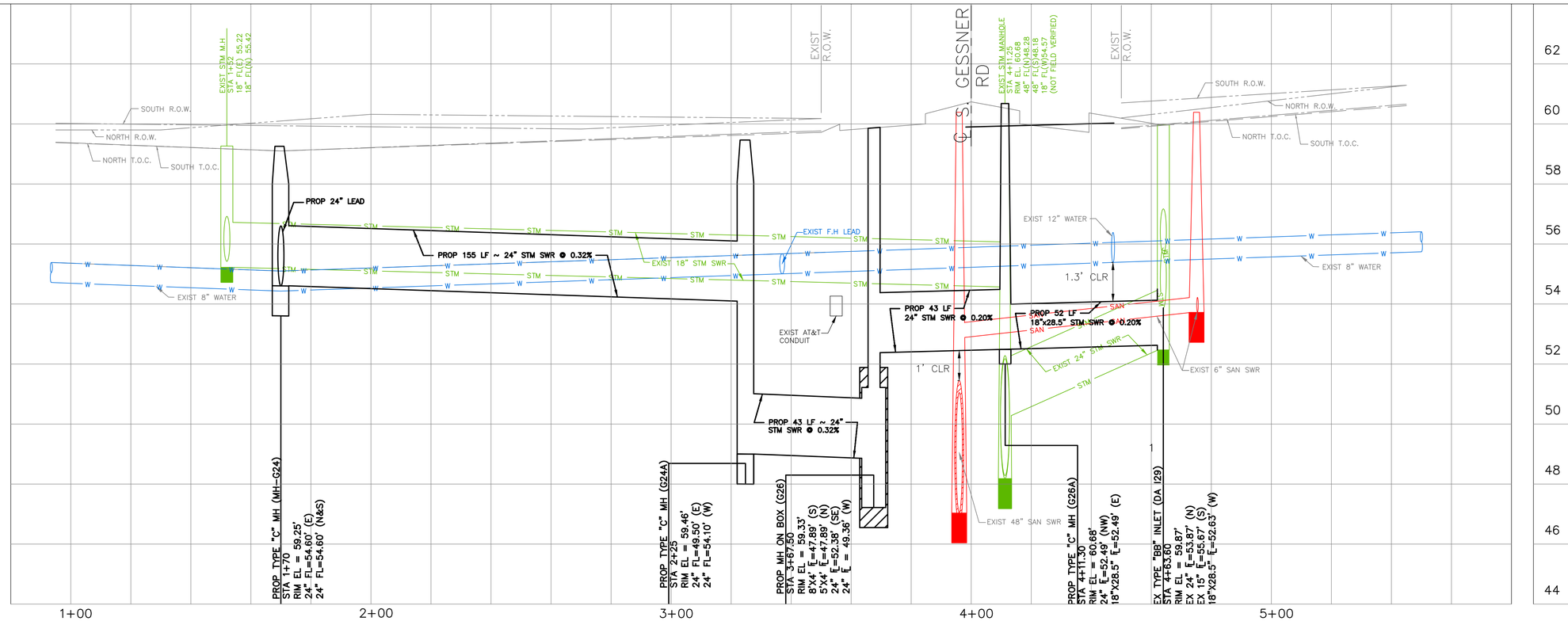
2. REFER TO S GESSNER RD PLAN & PROFILE SHEETS FOR MORE INFORMATION.



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HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

NAIRN ST PLAN & PROFILE STA 1+00 TO STA 5+00

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 126 OF 227	

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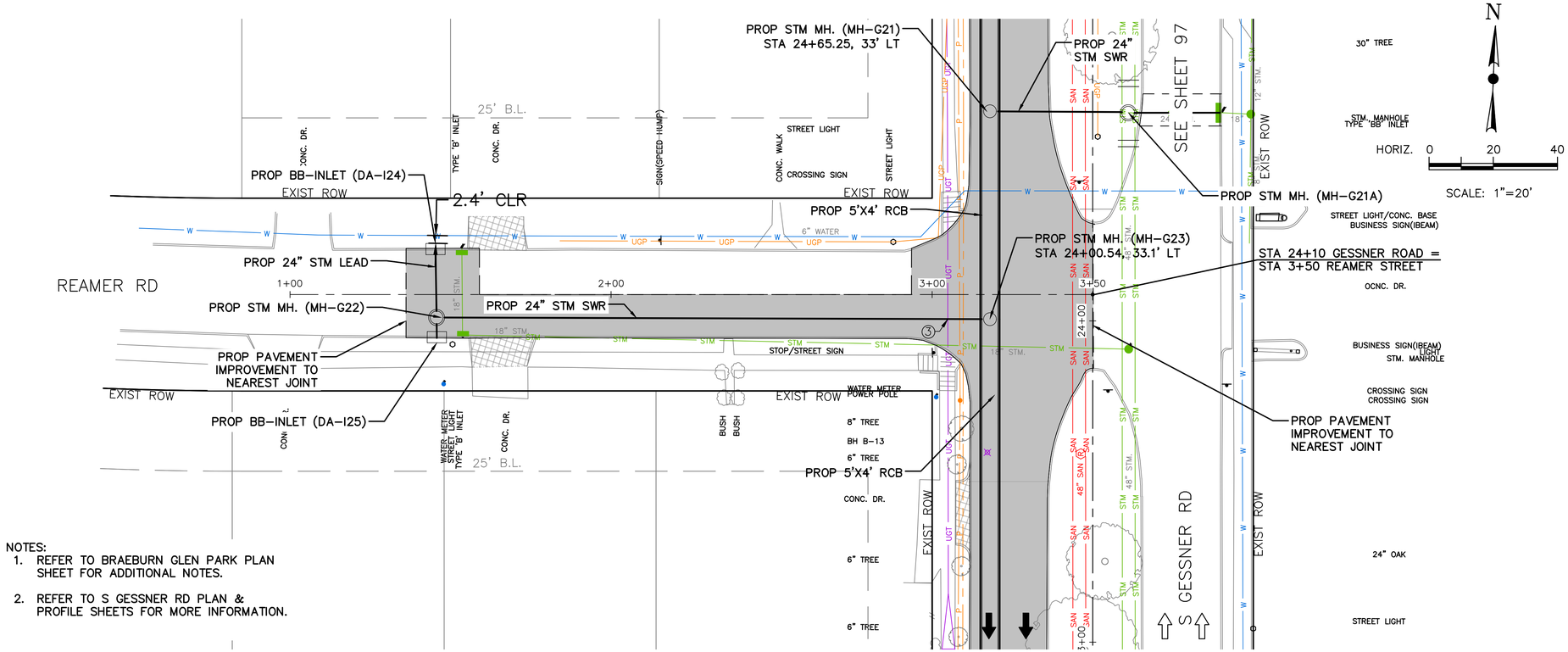

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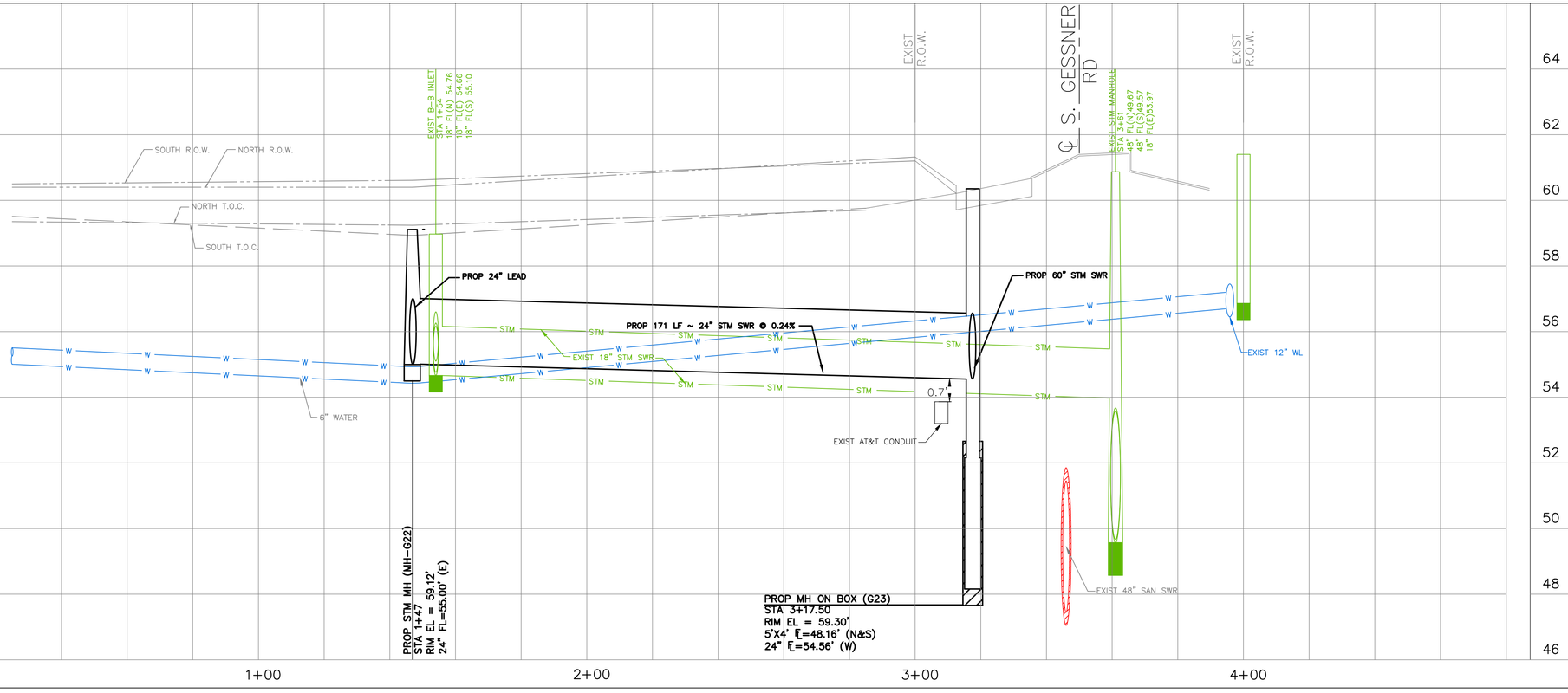
LEGEND

- PROPOSED LANE
- EXISTING LANE
- EXIST ROW
- PROP 6" CURB
- PROP 12" JRCP
- PROP CONC DRIVEWAY
- PROP SAWCUT
- PROP STORM SEWER
- EXIST STORM SEWER
- PROPOSED INLETS
- PROPOSED MH/JB
- EXIST INLETS
- EXIST MANHOLES

NO.	DATE	REVISION	APP.



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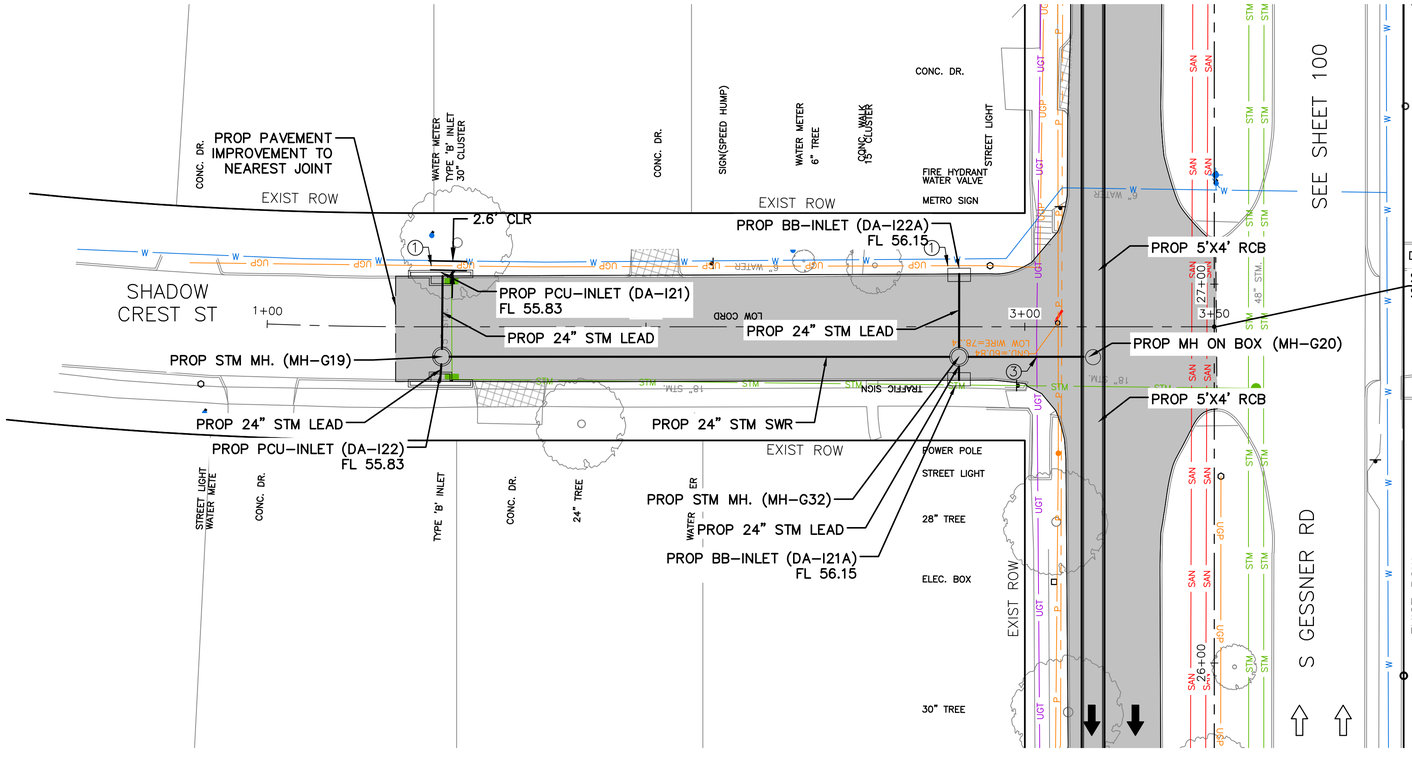
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS, INC F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
REAMER ST PLAN & PROFILE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 127 OF 227	



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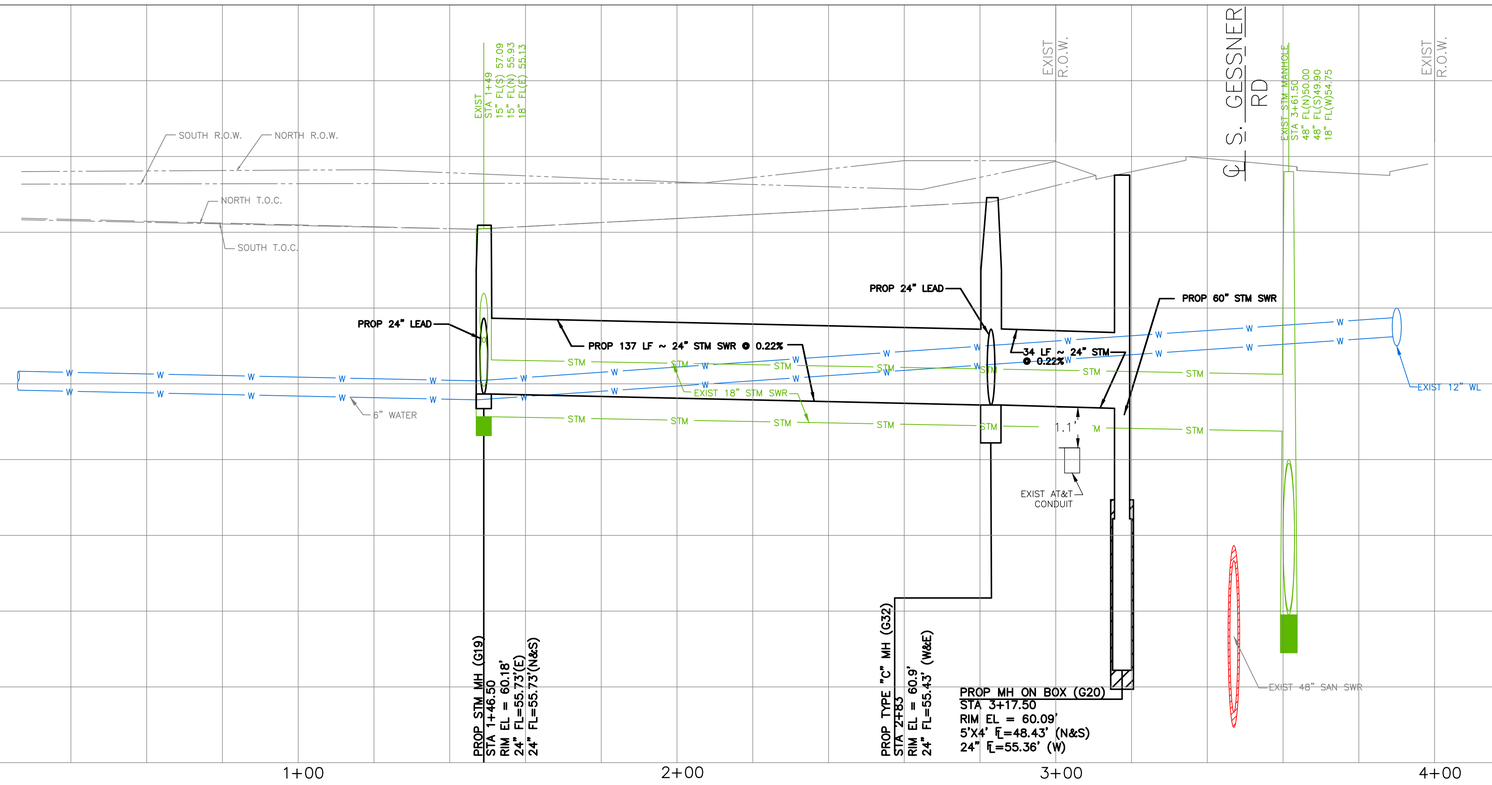

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HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

RYBECK CIVIL ENGINEERS INC F-8088
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

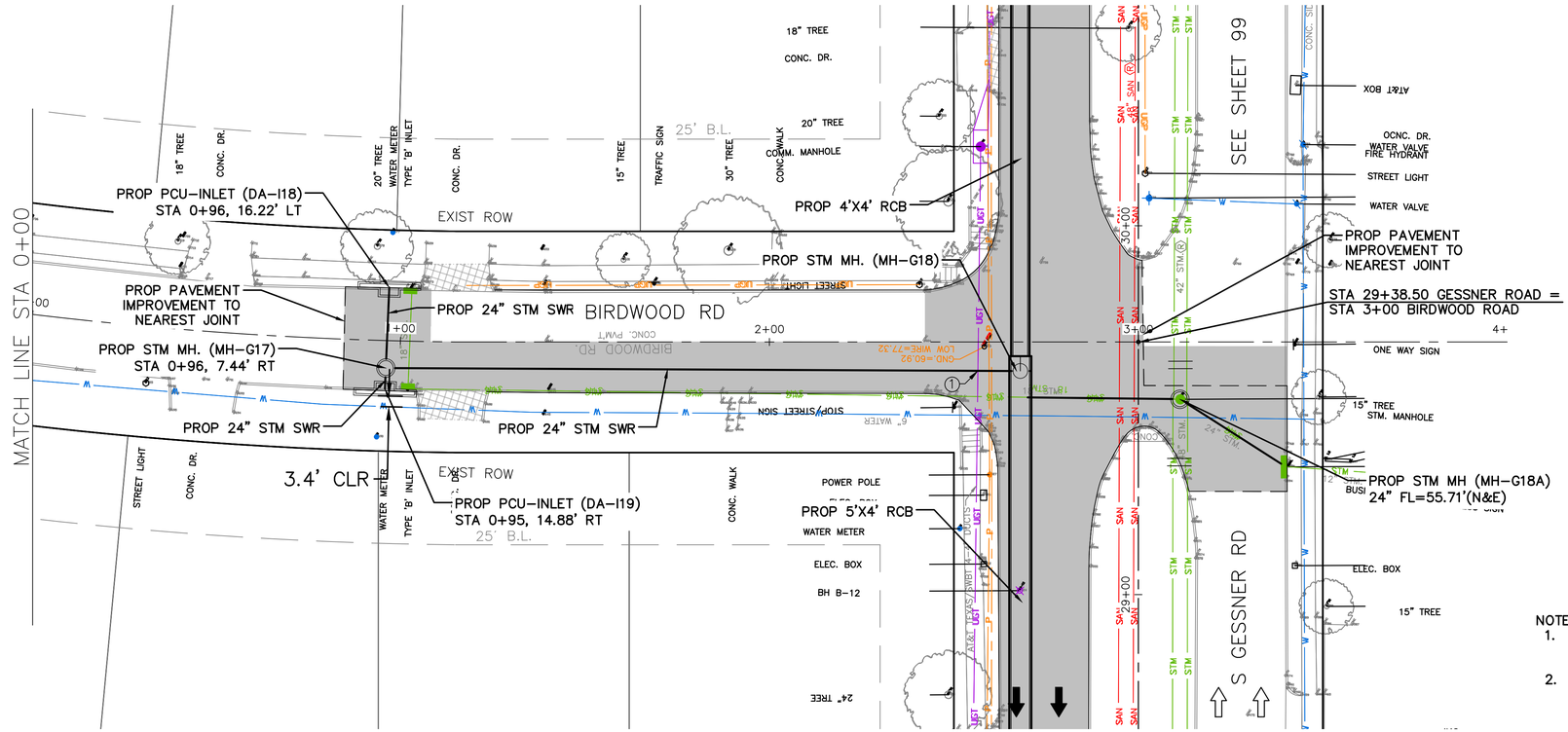
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

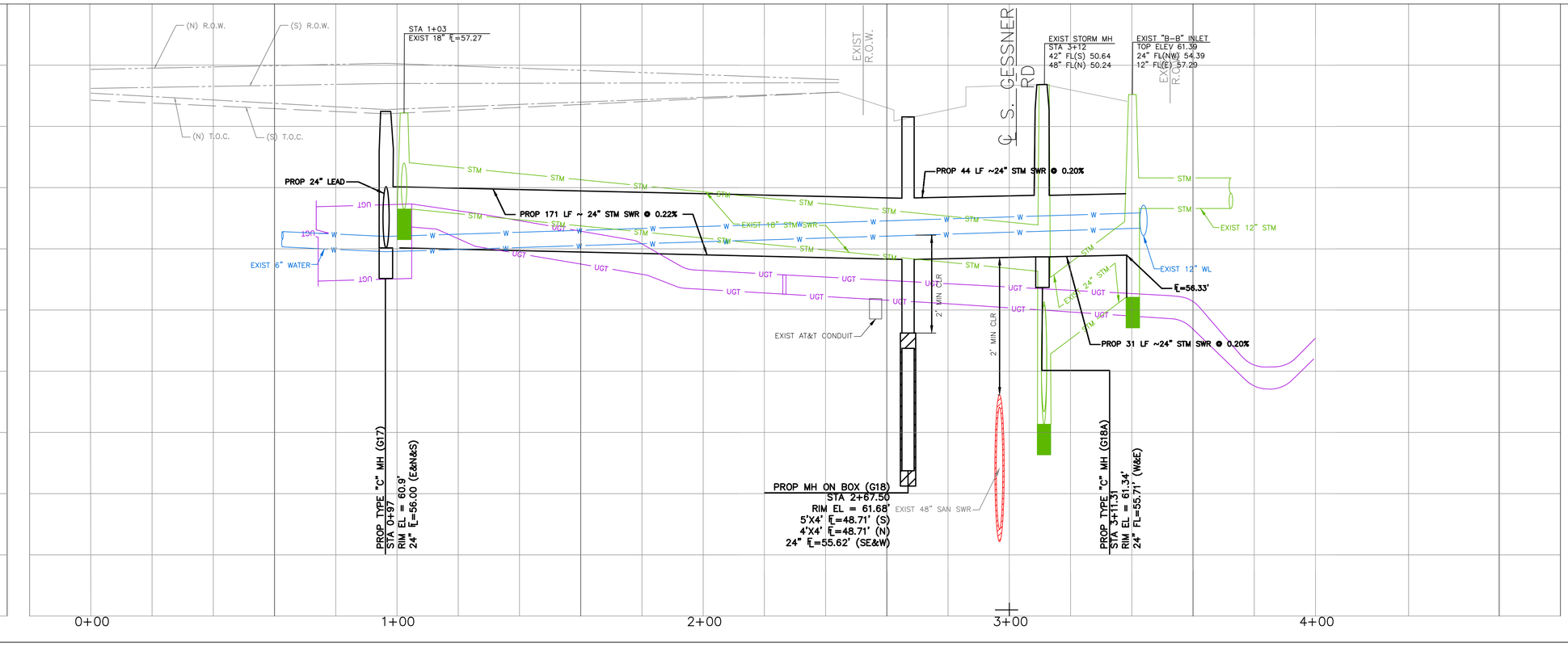
BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
SHADOWCREST ST PLAN & PROFILE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 128 OF 227	

NO.	DATE	REVISION	APP.

FILE PATH: C:\Users\dvarghese\Entech Civil Engineers, Inc\Braeburn Glen - Documents\SHARE\2525PVEN\Working\10_SIDE-STREET-PROFILE-SHADOWCREST-PP-SHEETS-5-27-25.dwgPLOTTED: 3/10/2026 11:06 AM coh_ctb_230809.ctb





N

HORIZ. 0 20 40

SCALE: 1"=20'

LEGEND

- PROPOSED LANE
- EXISTING LANE
- EXIST ROW
- PROP 6" CURB
- PROP 12" JRCP
- PROP CONC DRIVEWAY
- PROP SAWCUT
- PROP STORM SEWER
- EXIST STORM SEWER
- PROPOSED INLETS
- PROPOSED MH/JB
- EXIST INLETS
- EXIST MANHOLES

NO.	DATE	REVISION	APP.

NOTES:

1. REFER TO BRAEBURN GLEN PARK PLAN SHEET FOR ADDITIONAL NOTES.
2. REFER TO S GESSNER RD PLAN & PROFILE SHEETS FOR MORE INFORMATION.

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.

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER 3/9/2026

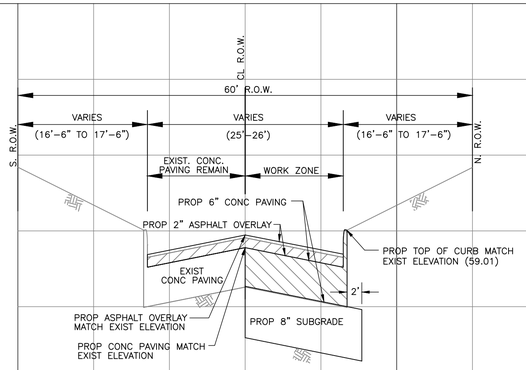
CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

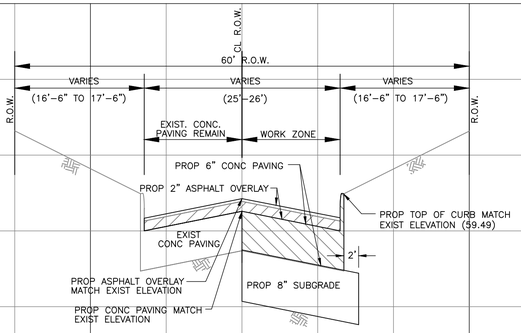
BIRDWOOD RD PLAN & PROFILE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 129 OF 227	

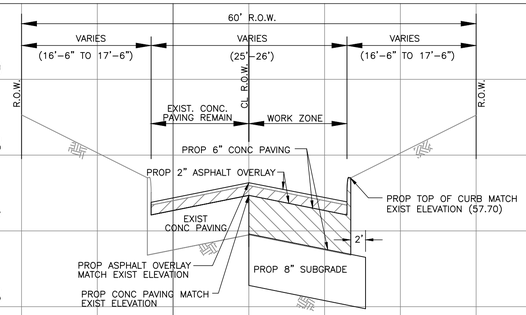
FILE PATH: C:\Users\dvarghese\Entech Civil Engineers, Inc\Braeburn Glen - Documents\SHARE\2525PVEN\Working\13_SIDE-STREET-PROFILE-BIRDWOOD-PP-SHEETS-5-22-25.dwg PLOTTED: 3/10/2026 11:08 AM coh_ctb_230809.ctb



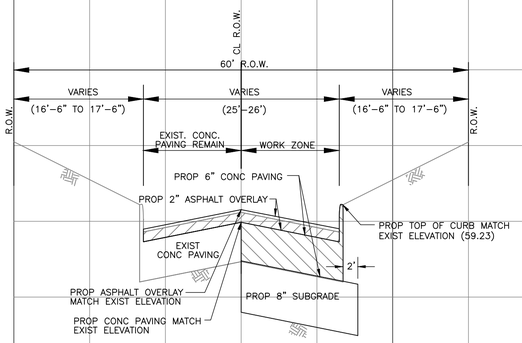
STATION 9+00
(VALLEY VIEW LANE)



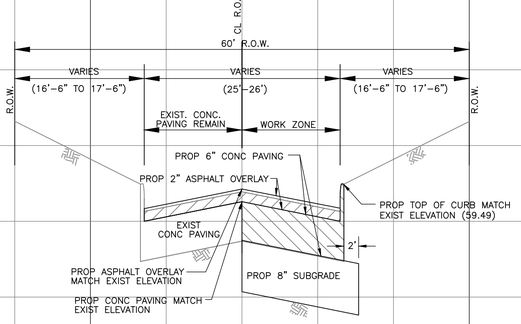
STATION 12+00
(VALLEY VIEW LANE)



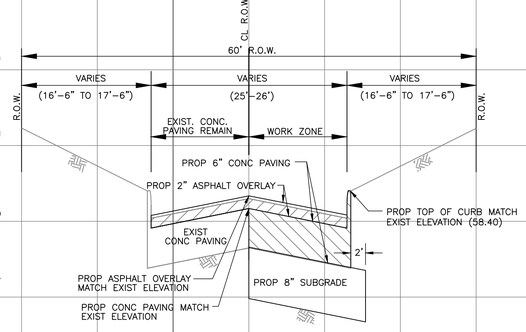
STATION 15+00
(VALLEY VIEW LANE)



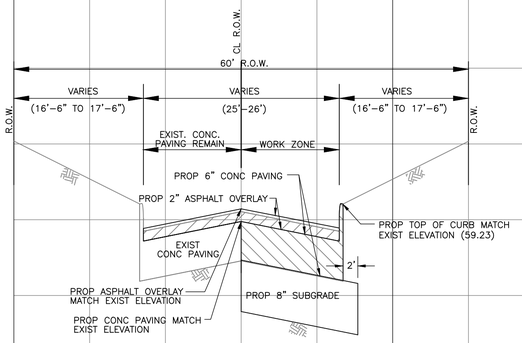
STATION 9+70
VALLEY VIEW LANE)



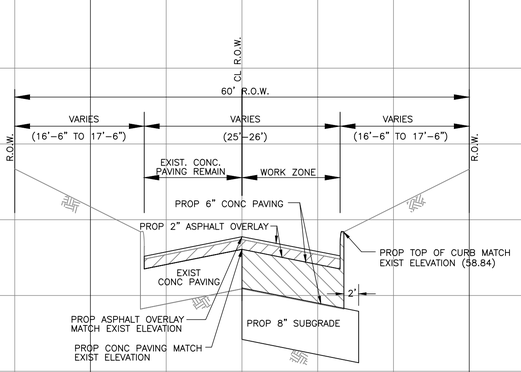
STATION 13+00
(VALLEY VIEW LANE)



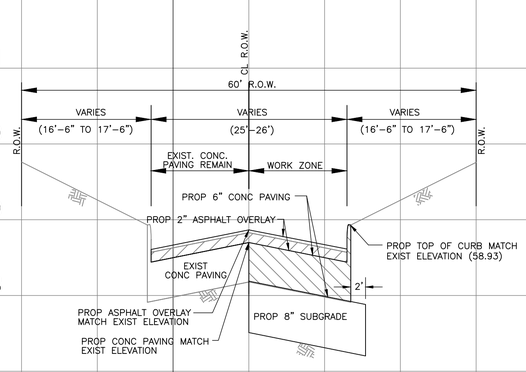
STATION 16+00
(VALLEY VIEW LANE)



STATION 11+00
(VALLEY VIEW LANE)



STATION 14+00
(VALLEY VIEW LANE)



STATION 17+00
(VALLEY VIEW LANE)

NO.	DATE	REVISION	APP.

LEGEND:

REMOVE EXIST ASPHALT OVERLAY

REMOVE EXISITNG CONCRETE PAVING

SCALE:

FULL SIZE (34X22):
H: 1" = 10'
V: 1" = 1'

HALF SIZE (17X11):
H: 1" = 20'
V: 1" = 2'

ENTECH CIVIL ENGINEERS, INC.
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

VALLEY VIEW LANE CROSS SECTIONS (1 OF 4)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 130 OF 227	

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 10/15/2025 4:35 PM

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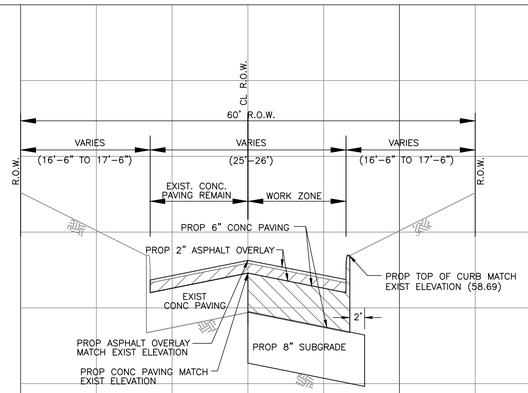
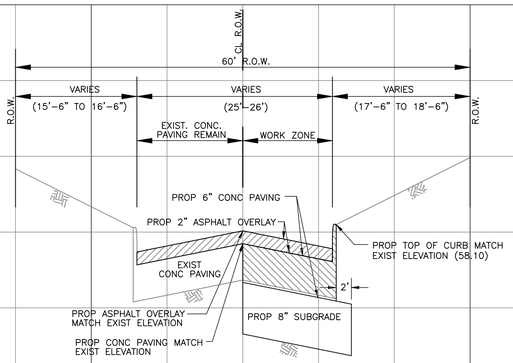
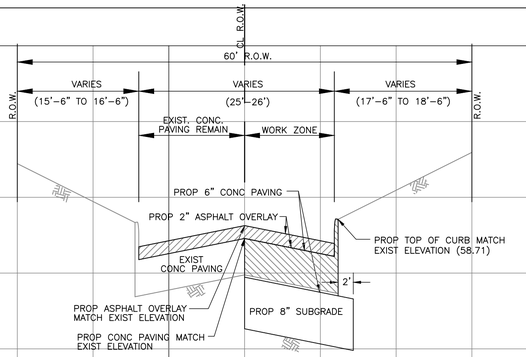


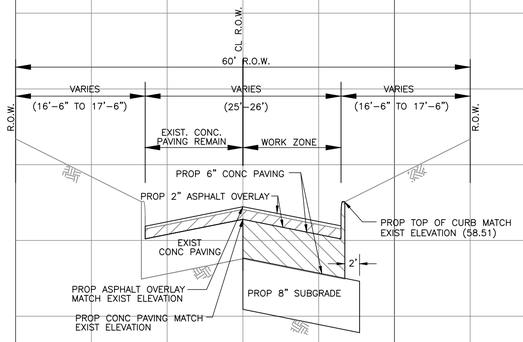
STATION 18+00
(VALLEY VIEW LANE)



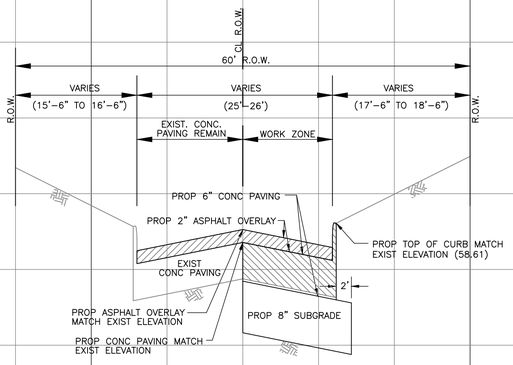
STATION 21+00
(VALLEY VIEW LANE)



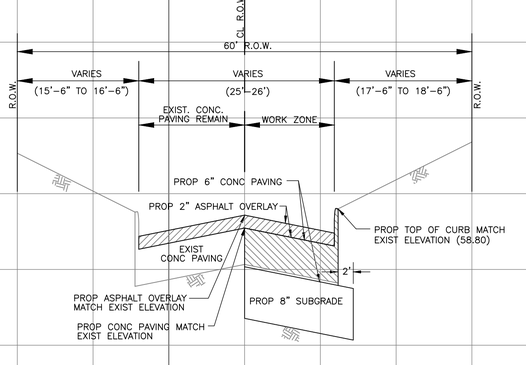
STATION 23+80
(MAHONING DRIVE)



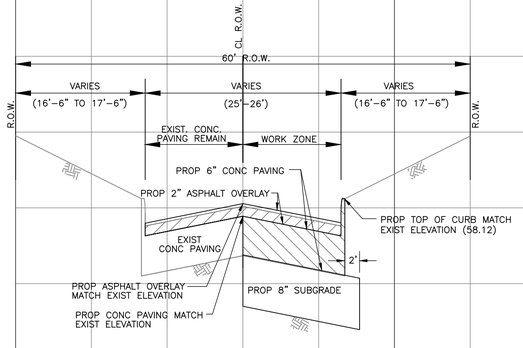
STATION 19+00
(VALLEY VIEW LANE)



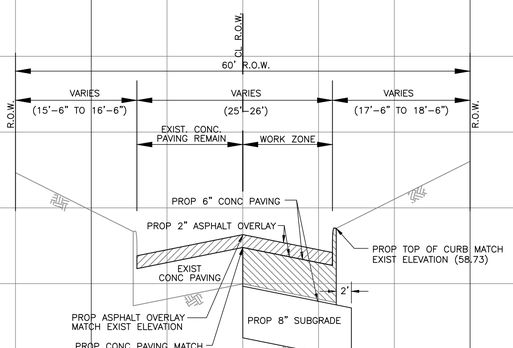
STATION 22+00
(MAHONING DRIVE)



STATION 25+00
(MAHONING DRIVE)



STATION 20+00
(VALLEY VIEW LANE)



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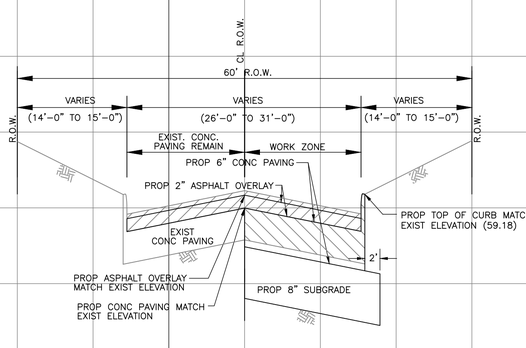
(MAHONING DRIVE)



STATION 26+00
(MAHONING DRIVE)

NO.	DATE	REVISION	APP.

LEGEND:

REMOVE EXIST ASPHALT OVERLAY

REMOVE EXISITNG CONCRETE PAVING

SCALE:

FULL SIZE (34X22):
H: 1" = 10'
V: 1" = 1'

HALF SIZE (17X11):
H: 1" = 20'
V: 1" = 2'

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS, INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
VALLEY VIEW LANE/ MAHONING DRIVE
CROSS SECTIONS (2 OF 4)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 131 OF 227	

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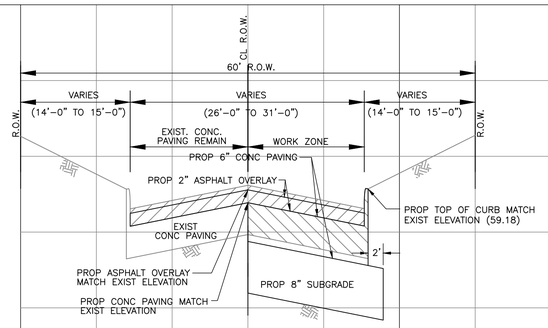
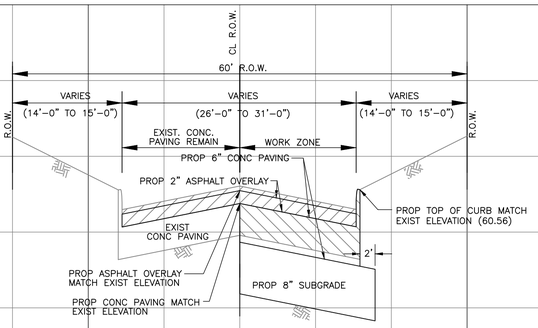
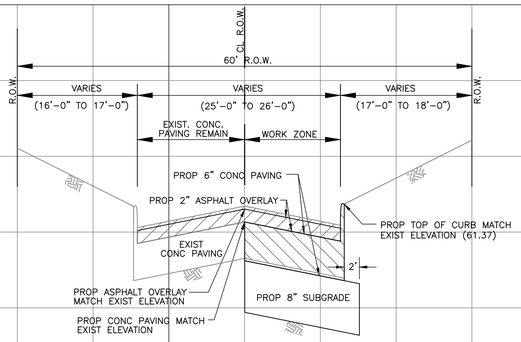


STATION 27+00
(MAHONING DRIVE)



STATION 30+00
(MAHONING DRIVE)



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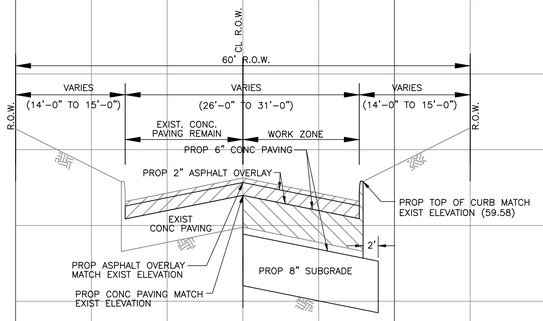
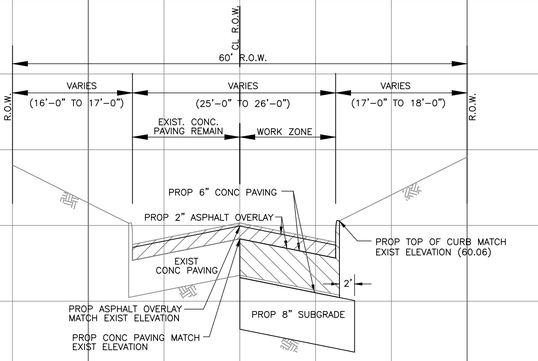
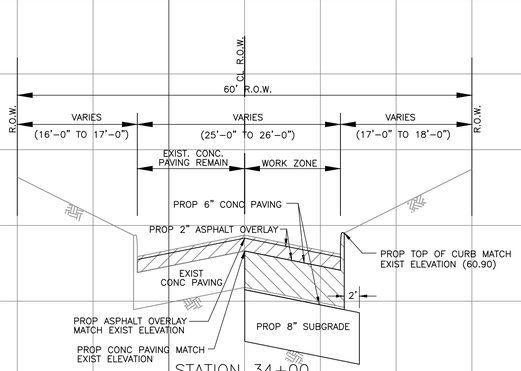
(MAHONING DRIVE)



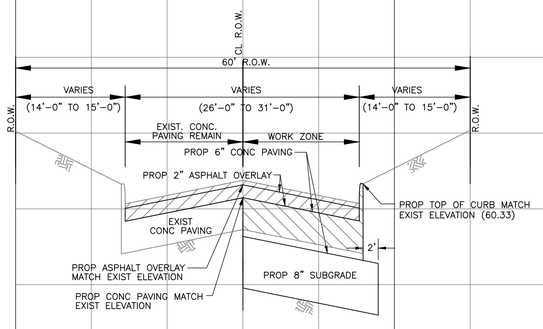
STATION 28+00
(MAHONING DRIVE)



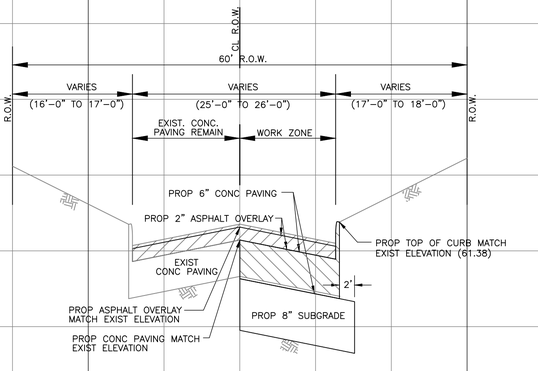
STATION 30+80
(MAHONING DRIVE)



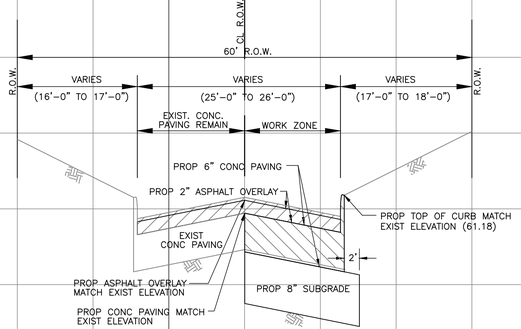
STATION 34+00
(MAHONING DRIVE)



STATION 29+00
(MAHONING DRIVE)



STATION 32+00
(MAHONING DRIVE)



STATION 35+00
(MAHONING DRIVE)

NO.	DATE	REVISION	APP.

LEGEND:

REMOVE EXIST ASPHALT OVERLAY

REMOVE EXISITNG CONCRETE PAVING

SCALE:

FULL SIZE (34X22):
H: 1" = 10'
V: 1" = 1'

HALF SIZE (17X11):
H: 1" = 20'
V: 1" = 2'

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

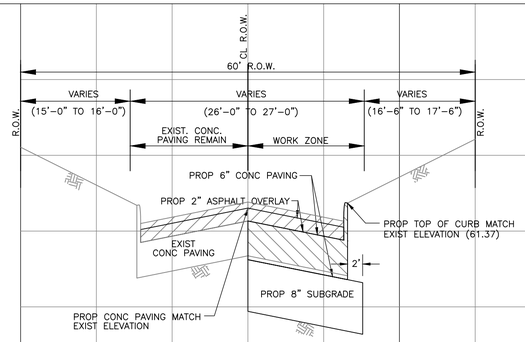
BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

MAHONING DRIVE CROSS SECTIONS (3 OF 4)

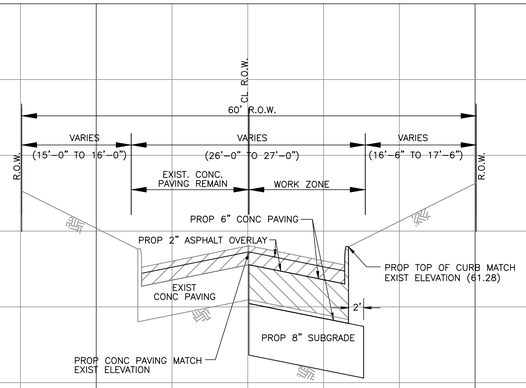
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 132 OF 227	

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 10/15/2025 4:33 PM

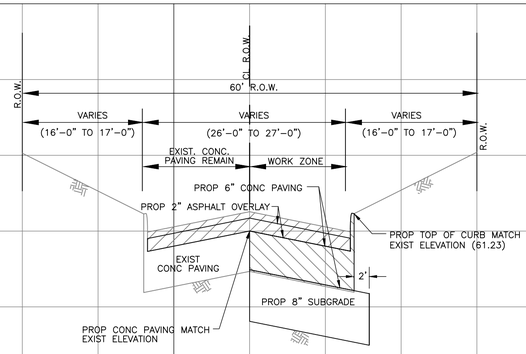
FILE PATH: Z:\Projects\2525PVEN\Working\14_Cross-Sections-5-15-25.dwg



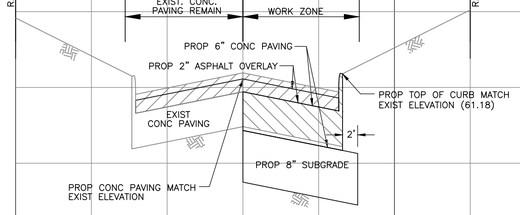
STATION 36+00
(MAHONING DRIVE)



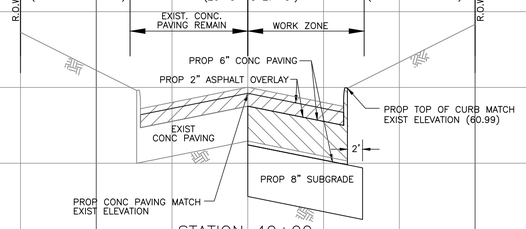
STATION 39+00
(MAHONING DRIVE)



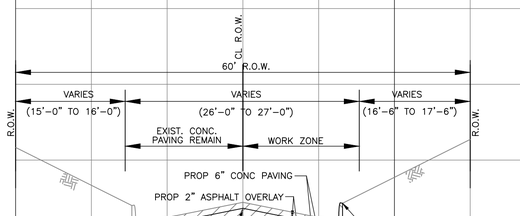
STATION 42+00
(MAHONING DRIVE)



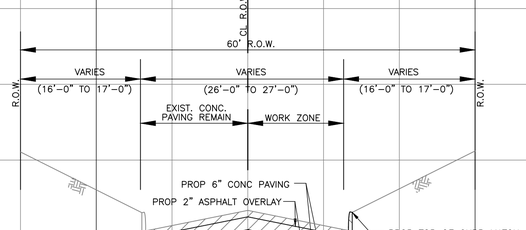
STATION 37+00
(MAHONING DRIVE)



STATION 40+00
(MAHONING DRIVE)



STATION 38+00
(MAHONING DRIVE)



STATION 41+00
(MAHONING DRIVE)

LEGEND:

REMOVE EXIST ASPHALT OVERLAY

REMOVE EXISITNG CONCRETE PAVING

SCALE:

FULL SIZE (34X22):
H: 1" = 10'
V: 1" = 1'

HALF SIZE (17X11):
H: 1" = 20'
V: 1" = 2'

NO.	DATE	REVISION	APP.

ENTECH CIVIL ENGINEERS, INC.
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
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TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

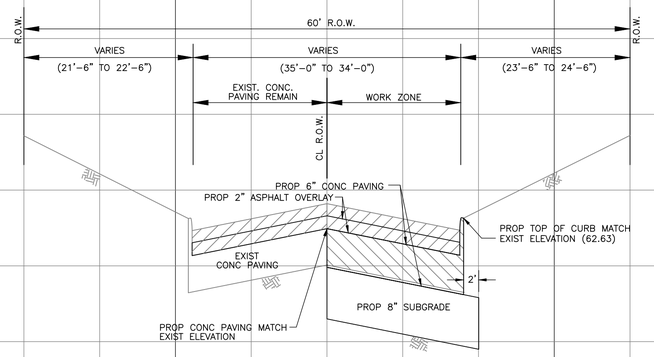
BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

MAHONING DRIVE CROSS SECTIONS (4 OF 4)

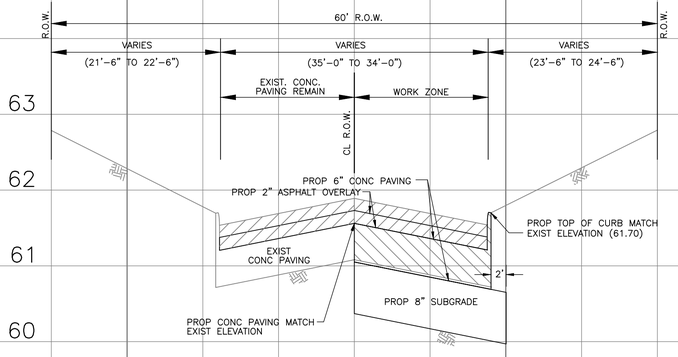
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 133 OF 227	

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 10/15/2025 4:33 PM

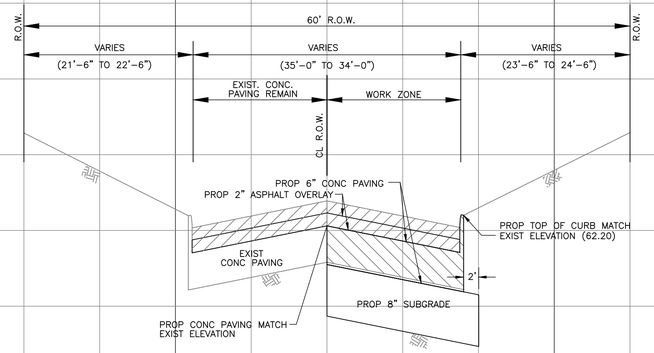
FILE PATH: Z:\Projects\2525PVEN\Working\14_Cross-Sections-5-15-25.dwg



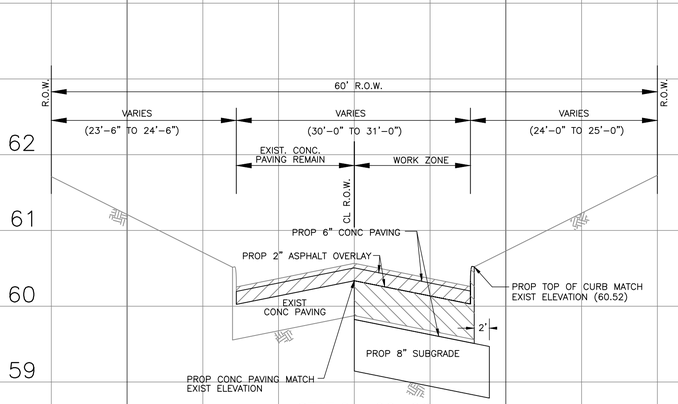
STATION 16+00
(BRAEBURN GLEN BLVD)



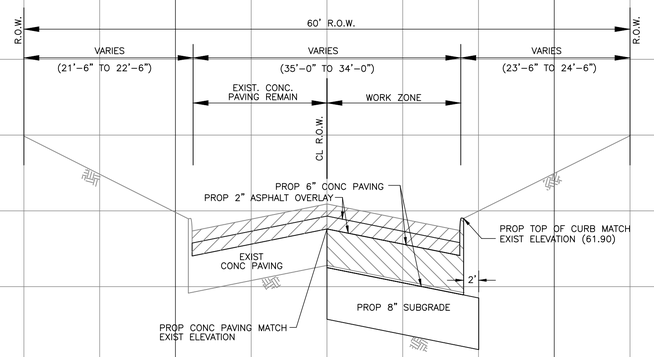
STATION 19+00
(BRAEBURN GLEN BLVD)



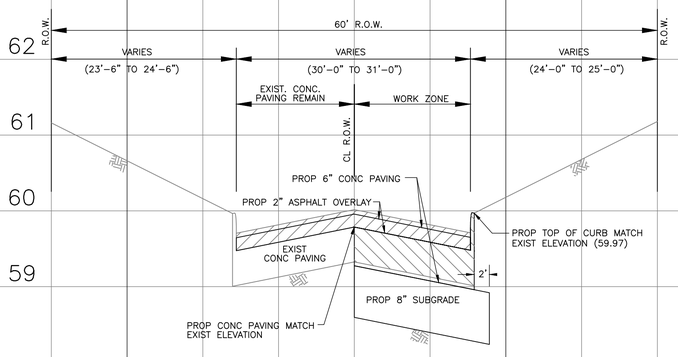
STATION 17+00
(BRAEBURN GLEN BLVD)



STATION 22+00
(BRAEBURN GLEN BLVD)



STATION 18+00
(BRAEBURN GLEN BLVD)



STATION 22+80
(BRAEBURN GLEN BLVD)

LEGEND:

REMOVE EXIST ASPHALT OVERLAY

REMOVE EXISITNG CONCRETE PAVING

NO.	DATE	REVISION	APP.

SCALE:

FULL SIZE (34X22):
H: 1" = 10'
V: 1" = 1'

HALF SIZE (17X11):
H: 1" = 20'
V: 1" = 2'

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED
PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

BRAEBURN GLEN BLVD. CROSS SECTIONS (1 OF 2)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 134 OF 227	

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 10/15/2025 4:31 PM
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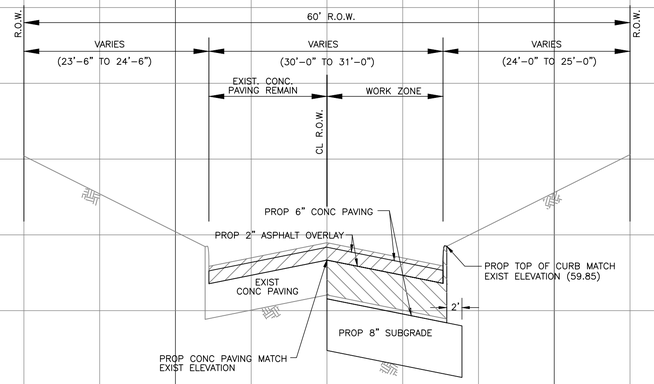
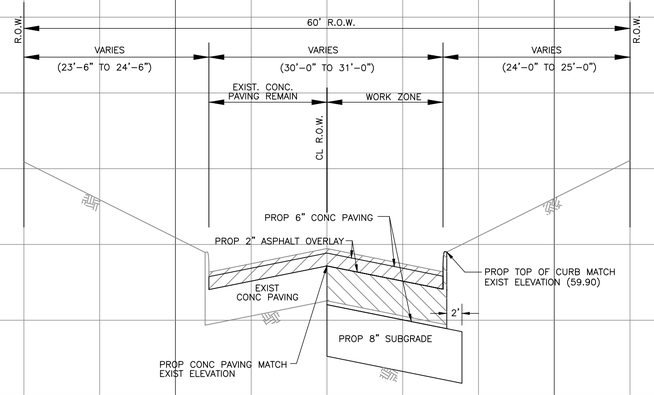
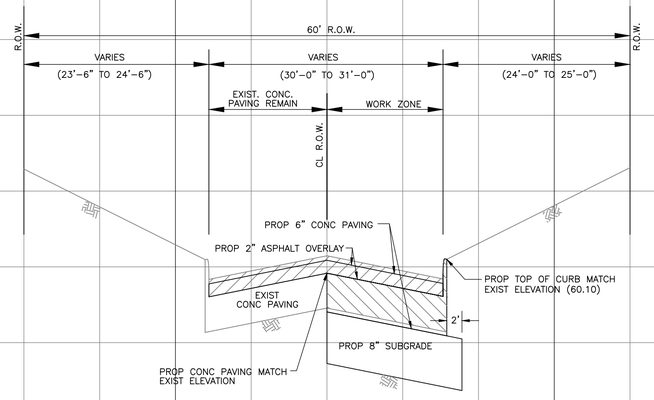


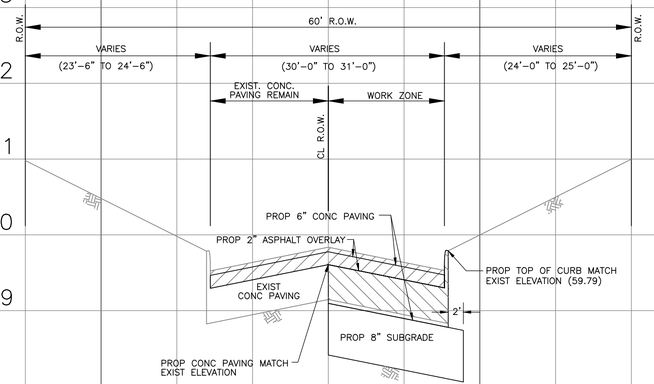
STATION 24+00
(BRAEBURN GLEN BLVD)



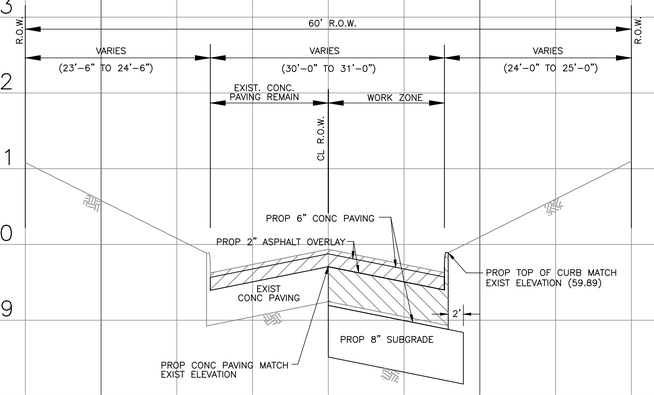
STATION 25+00
(BRAEBURN GLEN BLVD)



STATION 26+00
(BRAEBURN GLEN BLVD)



STATION 27+00
(BRAEBURN GLEN BLVD)



STATION 28+00
(BRAEBURN GLEN BLVD)

NO.	DATE	REVISION	APP.

LEGEND:

REMOVE EXIST ASPHALT OVERLAY

REMOVE EXISITNG CONCRETE PAVING

SCALE:

FULL SIZE (34X22):
H: 1" = 10'
V: 1" = 1'

HALF SIZE (17X11):
H: 1" = 20'
V: 1" = 2'

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED
PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

BRAEBURN GLEN BLVD. CROSS SECTIONS (2 OF 2)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 135 OF 227	

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 10/15/2025 4:32 PM
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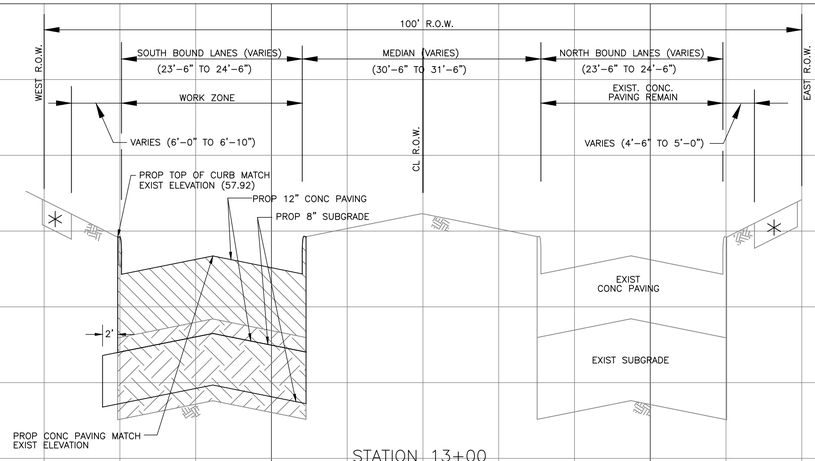
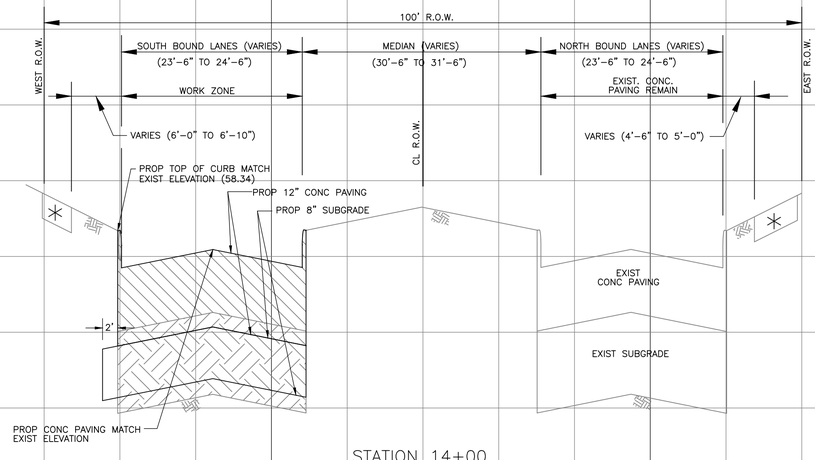
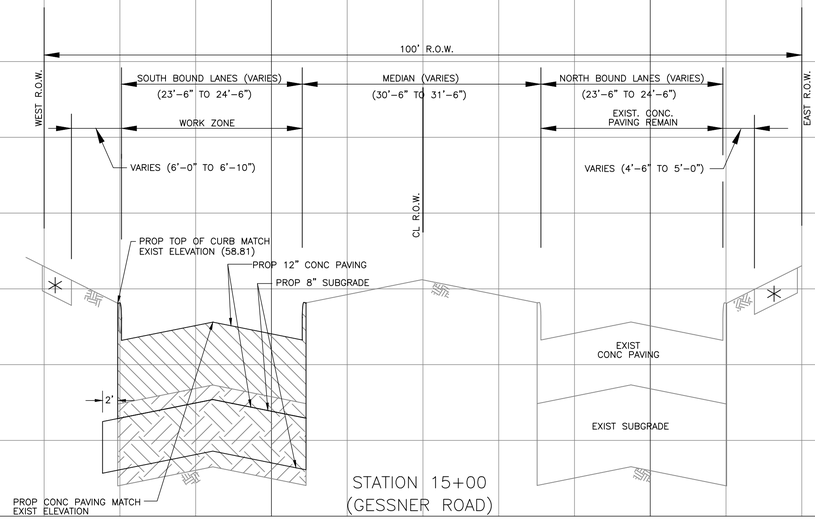


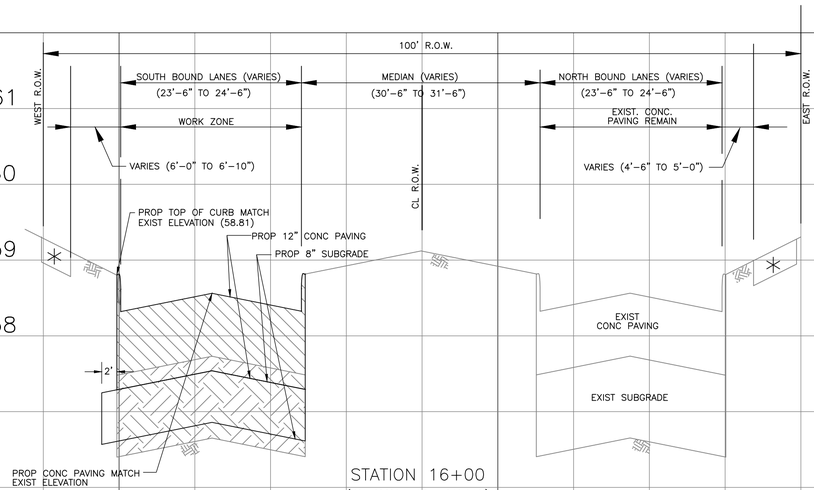
STATION 13+00
(GESSNER ROAD)



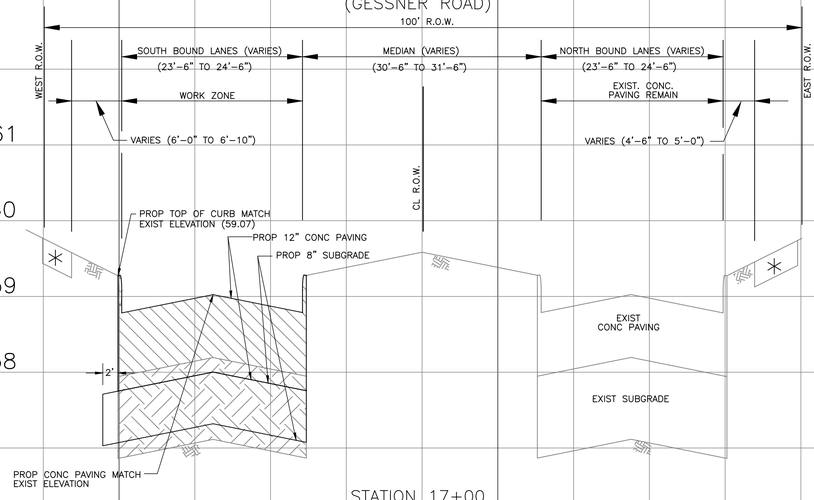
STATION 14+00
(GESSNER ROAD)



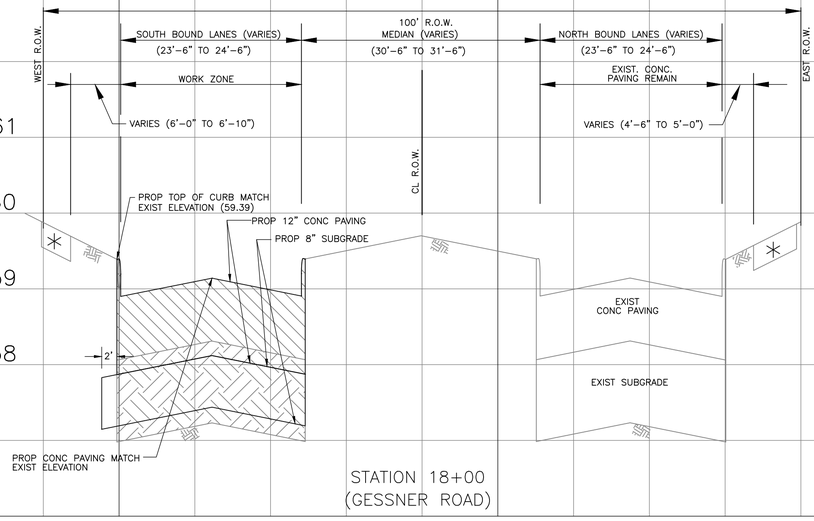
STATION 15+00
(GESSNER ROAD)



STATION 16+00
(GESSNER ROAD)



STATION 17+00
(GESSNER ROAD)



STATION 18+00
(GESSNER ROAD)

NO.	DATE	REVISION	APP.

LEGEND:

REMOVE EXISITNG CONCRETE PAVING

REMOVE EXIST SUBGRADE

EXISTING CONCRETE SIDEWALK, WIDTH VARIES (4'-6" TO 5'-6")

SCALE:

FULL SIZE (34X22):
H: 1" = 10'
V: 1" = 1'

HALF SIZE (17X11):
H: 1" = 20'
V: 1" = 2'

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED
PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

GESSNER ROAD CROSS SECTIONS (1 OF 6)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 136 OF 227	

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 10/15/2025 4:35 PM
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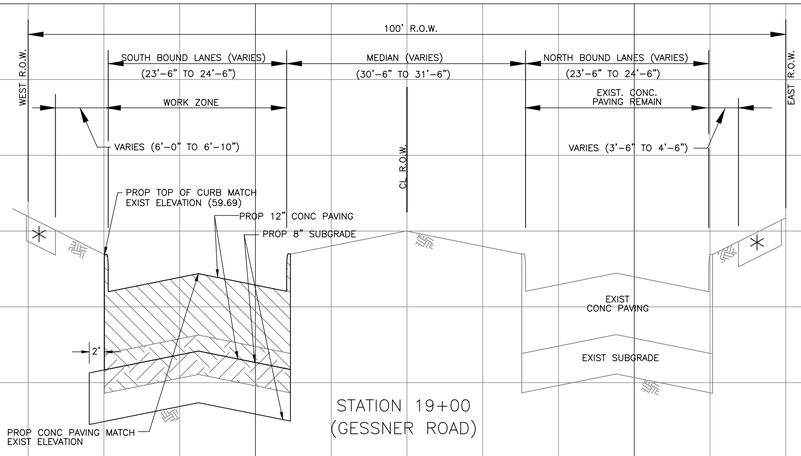
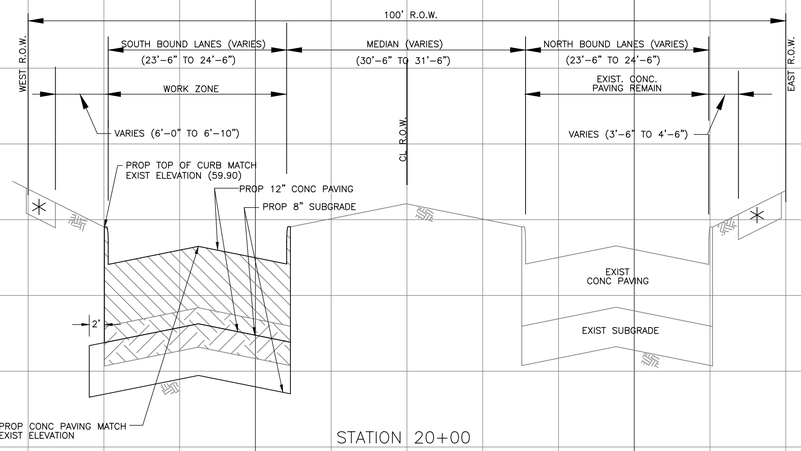
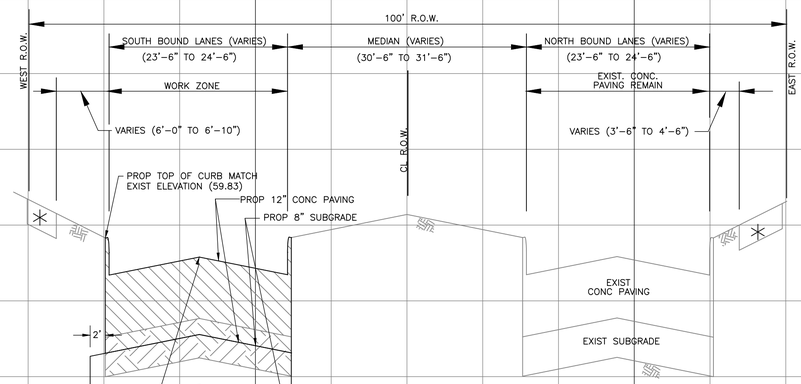


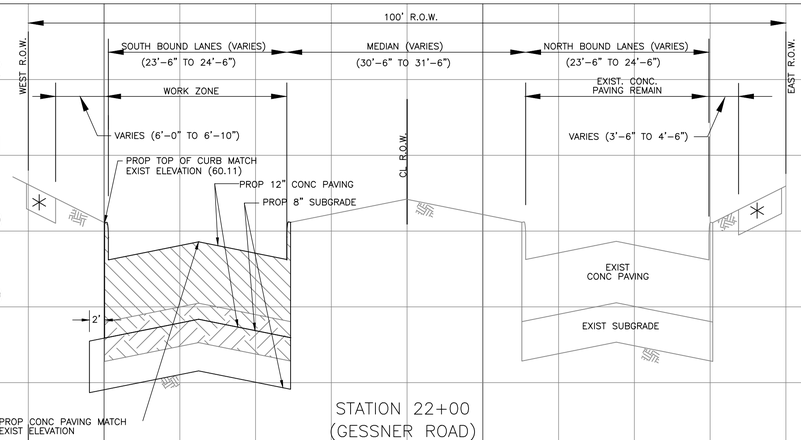
STATION 19+00
(GESSNER ROAD)



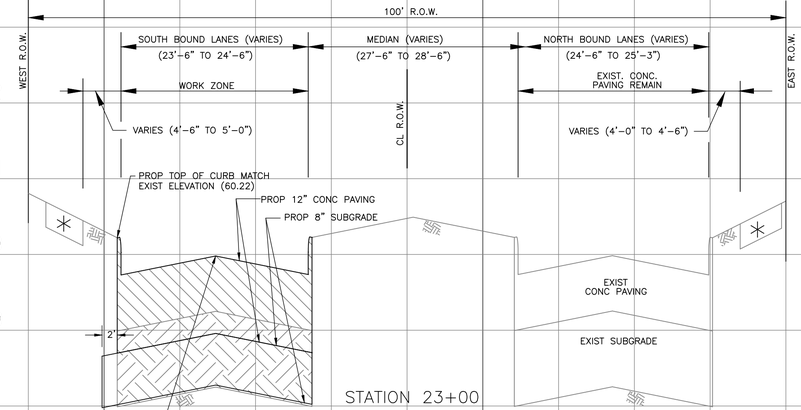
STATION 20+00
(GESSNER ROAD)



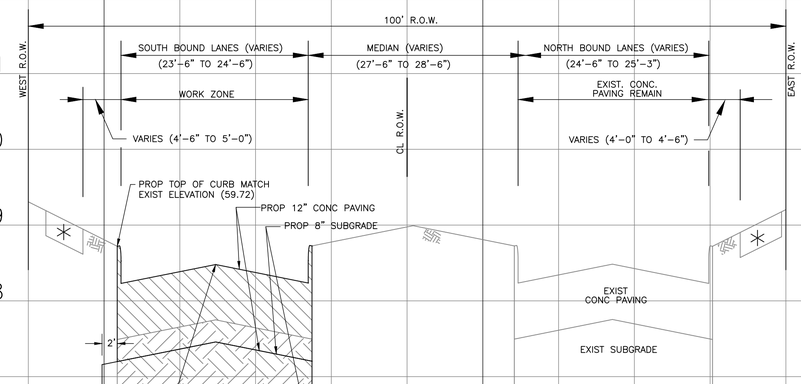
STATION 21+00
(GESSNER ROAD)



STATION 22+00
(GESSNER ROAD)



STATION 23+00
(GESSNER ROAD)



STATION 24+00
(GESSNER ROAD)

NO.	DATE	REVISION	APP.

LEGEND:

REMOVE EXISITNG CONCRETE PAVING

REMOVE EXIST SUBGRADE

EXISTING CONCRETE SIDEWALK, WIDTH VARIES (4'-6" TO 5'-6")

SCALE:

FULL SIZE (34X22):
H: 1" = 10'
V: 1" = 1'

HALF SIZE (17X11):
H: 1" = 20'
V: 1" = 2'

ENTECH
CIVIL ENGINEERS, INC.
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

GESSNER ROAD CROSS SECTIONS (2 OF 6)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 137 OF 227	

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 10/15/2025 4:36 PM
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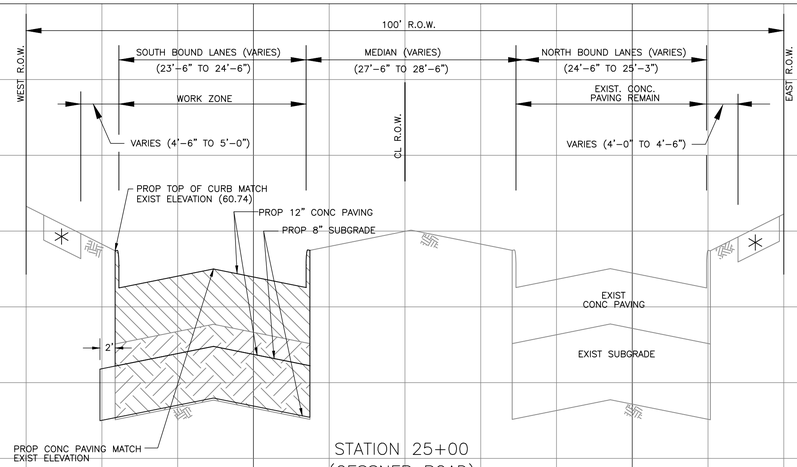
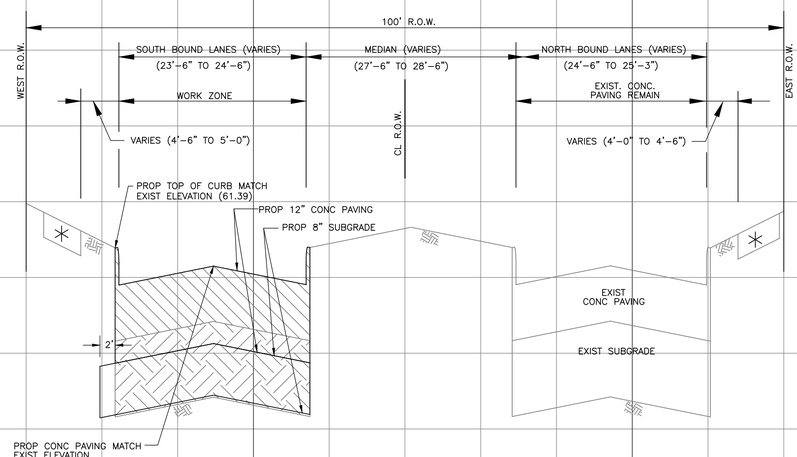
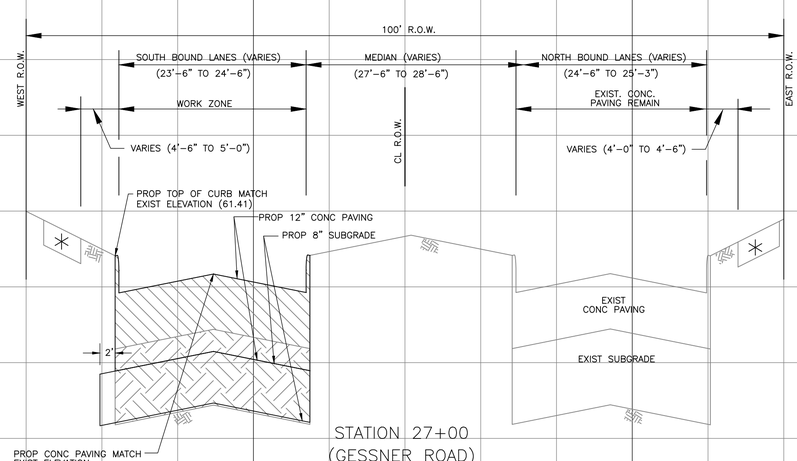


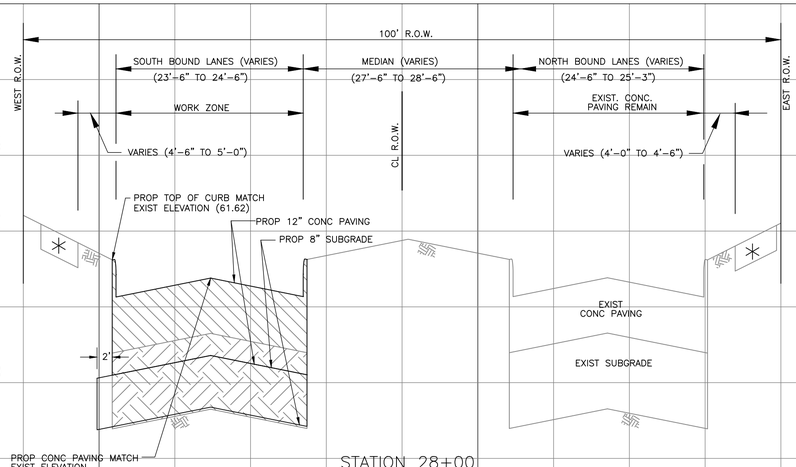
STATION 25+00
(GESSNER ROAD)



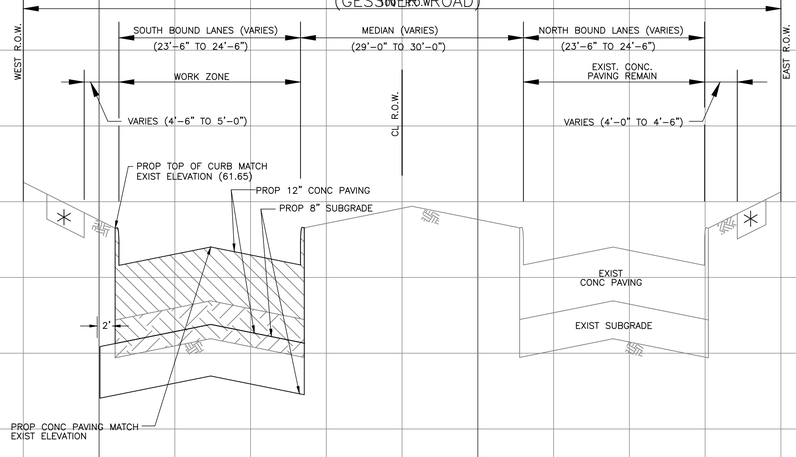
STATION 26+00
(GESSNER ROAD)



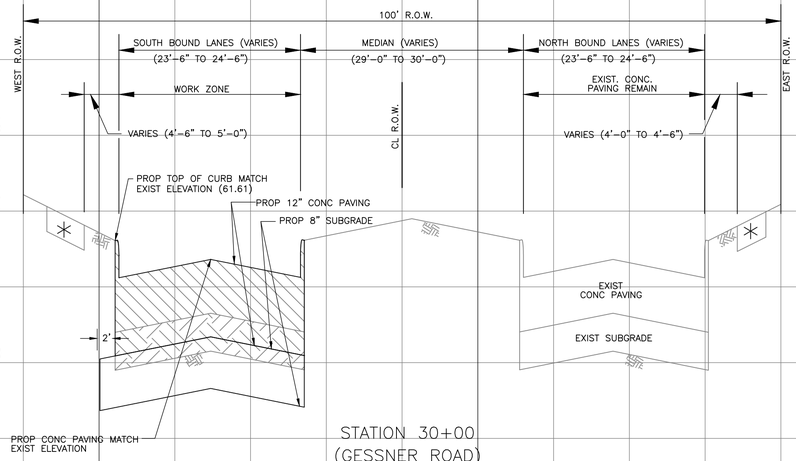
STATION 27+00
(GESSNER ROAD)



STATION 28+00
(GESSNER ROAD)



STATION 29+00
(GESSNER ROAD)



STATION 30+00
(GESSNER ROAD)

NO.	DATE	REVISION	APP.

LEGEND:

REMOVE EXISITNG CONCRETE PAVING

REMOVE EXIST SUBGRADE

EXISTING CONCRETE SIDEWALK, WIDTH VARIES (4'-6" TO 5'-6")

SCALE:

FULL SIZE (34X22):
H: 1" = 10'
V: 1" = 1'

HALF SIZE (17X11):
H: 1" = 20'
V: 1" = 2'

ENTECH CIVIL ENGINEERS, INC.
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

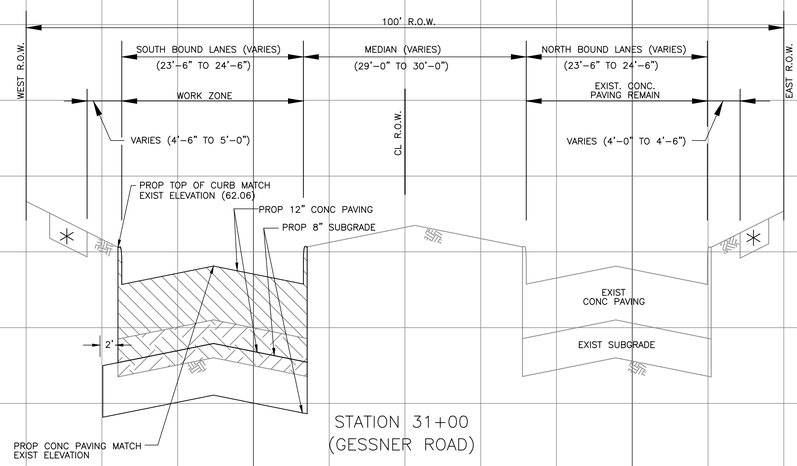
BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

GESSNER ROAD CROSS SECTIONS (3 OF 6)

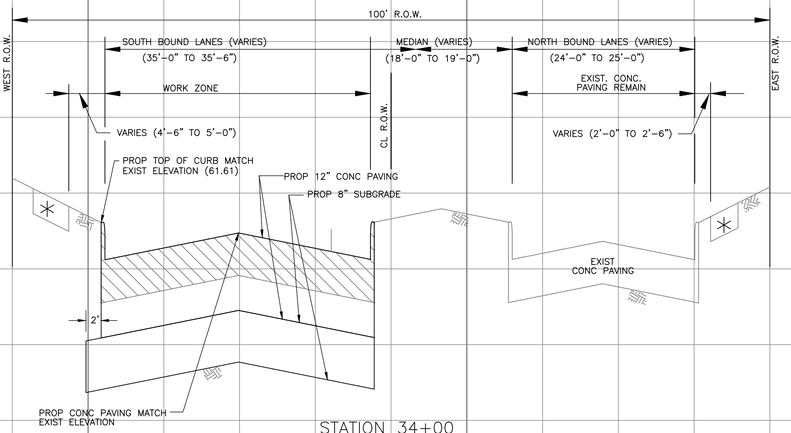
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 138 OF 227	

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 10/15/2025 4:30 PM

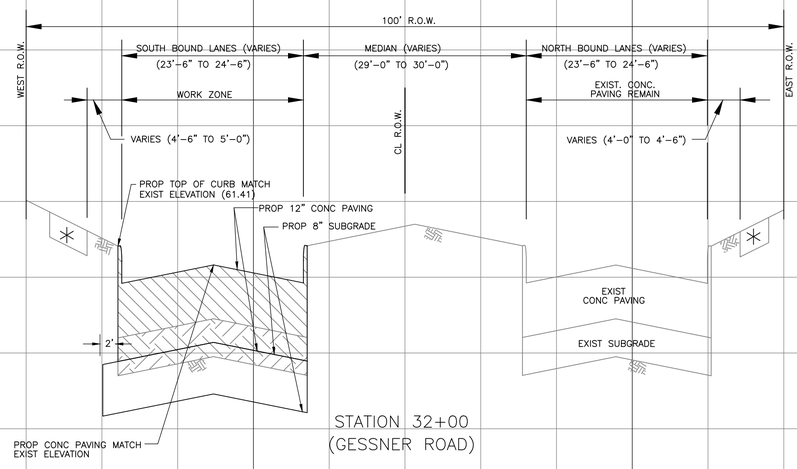
FILE PATH: Z:\Projects\2525PVEN\Working\14_Cross-Sections-5-15-25.dwg



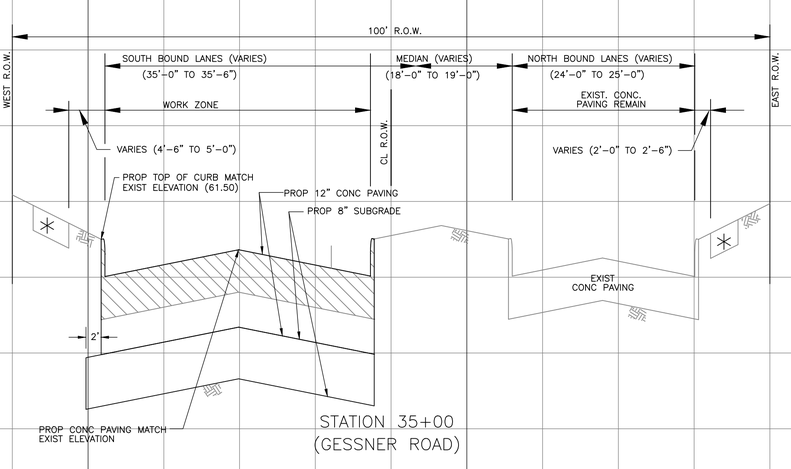
STATION 31+00
(GESSNER ROAD)



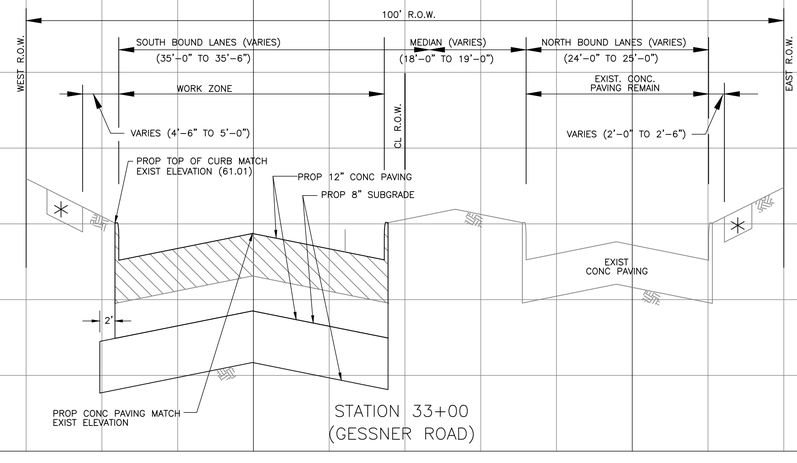
STATION 34+00
(GESSNER ROAD)



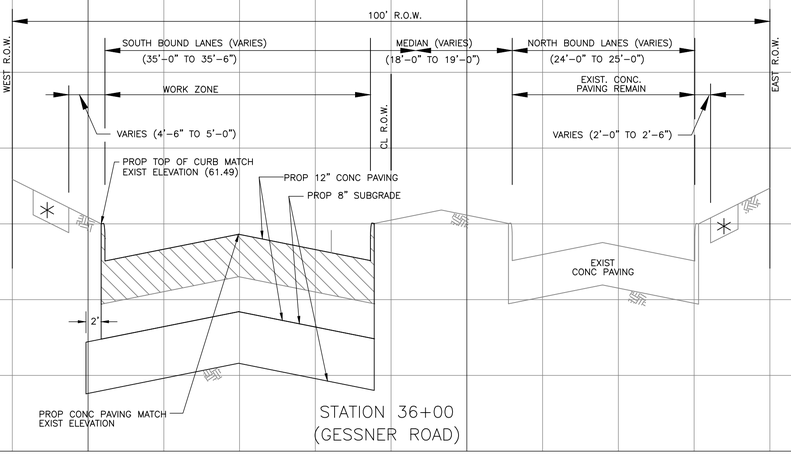
STATION 32+00
(GESSNER ROAD)



STATION 35+00
(GESSNER ROAD)



STATION 33+00
(GESSNER ROAD)



STATION 36+00
(GESSNER ROAD)

NO.	DATE	REVISION	APP.

LEGEND:

- REMOVE EXISITNG CONCRETE PAVING
- REMOVE EXIST SUBGRADE
- EXISTING CONCRETE SIDEWALK, WIDTH VARIES (4'-6" TO 5'-6")

SCALE:

FULL SIZE (34X22):
H: 1" = 10'
V: 1" = 1'

HALF SIZE (17X11):
H: 1" = 20'
V: 1" = 2'

ENTECH
CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED
PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

GESSNER ROAD CROSS SECTIONS (4 OF 6)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 139 OF 227	

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 10/15/2025 4:31 PM

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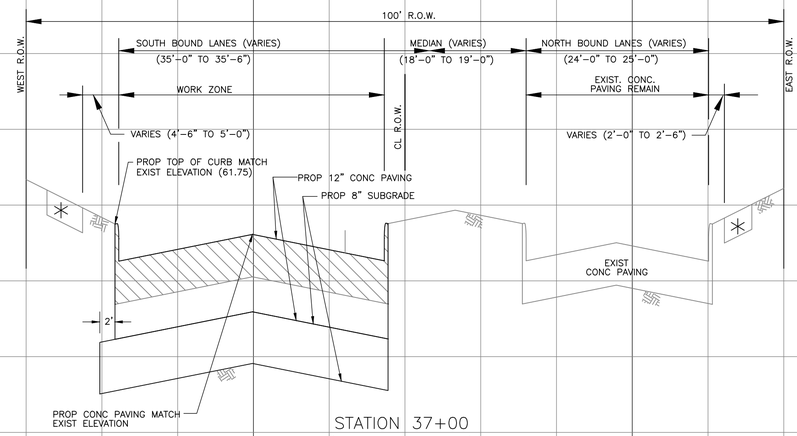
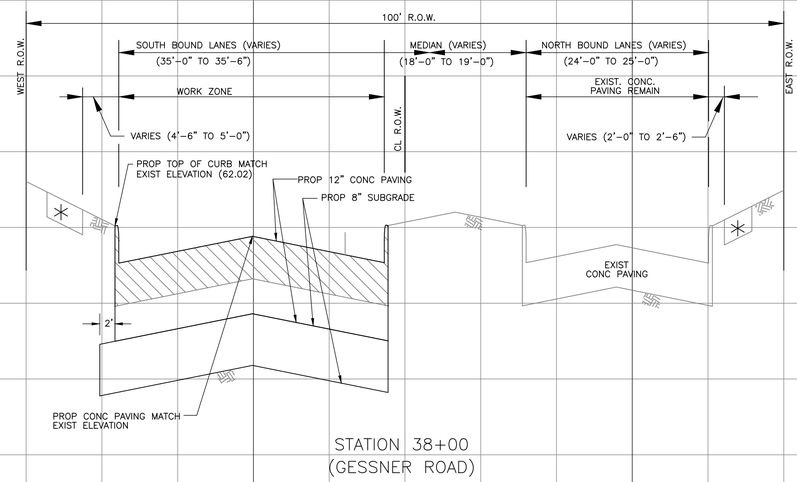


STATION 37+00
(GESSNER ROAD)



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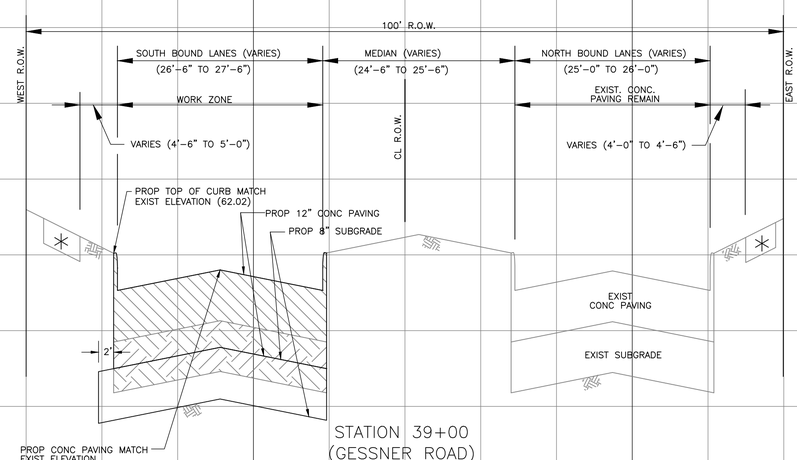
(GESSNER ROAD)



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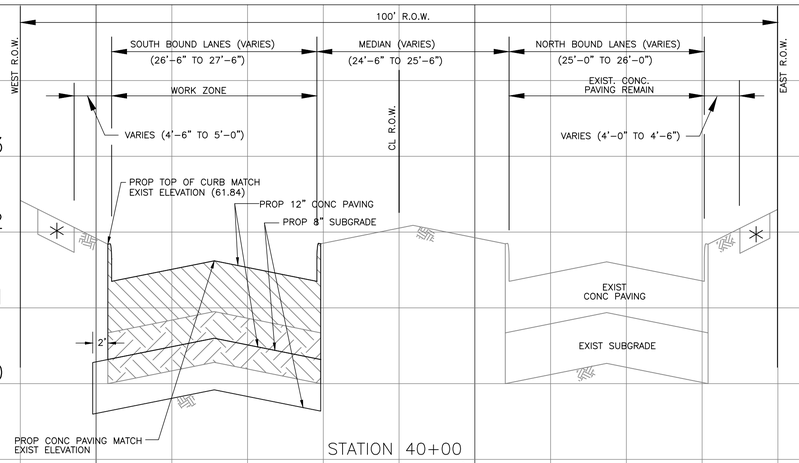

STATION 40+00
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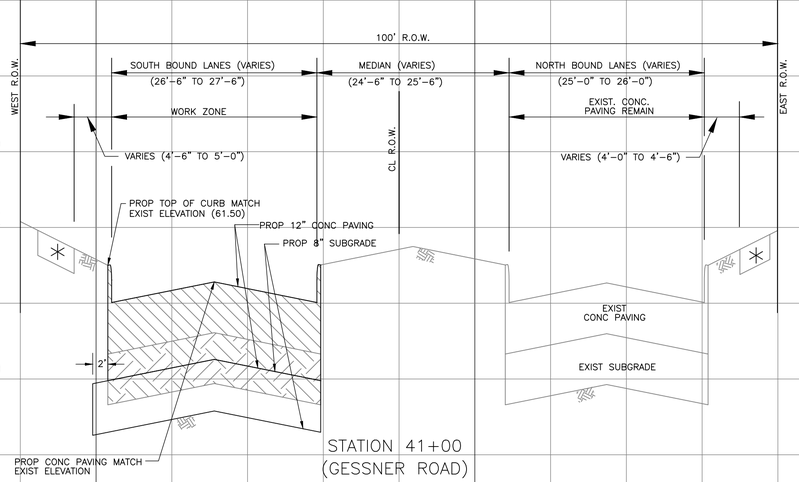

STATION 41+00
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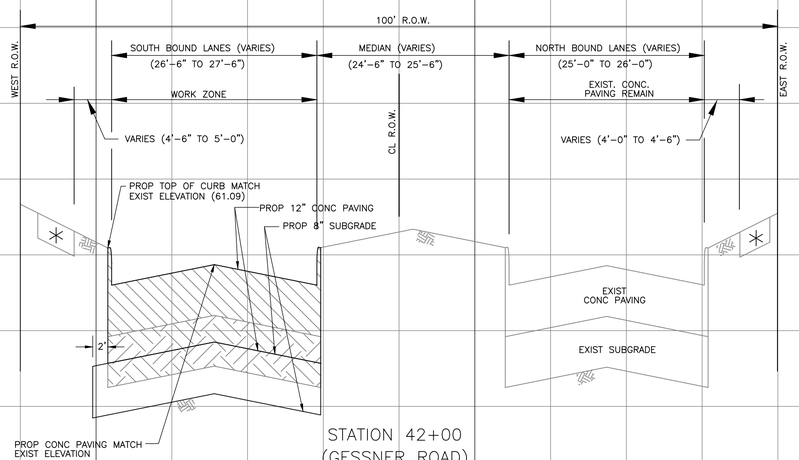

STATION 42+00
(GESSNER ROAD)

NO.	DATE	REVISION	APP.

LEGEND:

REMOVE EXISITNG CONCRETE PAVING

REMOVE EXIST SUBGRADE

EXISTING CONCRETE SIDEWALK, WIDTH VARIES (4'-6" TO 5'-6")

SCALE:

FULL SIZE (34X22):
H: 1" = 10'
V: 1" = 1'

HALF SIZE (17X11):
H: 1" = 20'
V: 1" = 2'

ENTECH CIVIL ENGINEERS, INC.
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED
PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

GESSNER ROAD CROSS SECTIONS (5 OF 6)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 140 OF 227	

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 10/15/2025 4:35 PM
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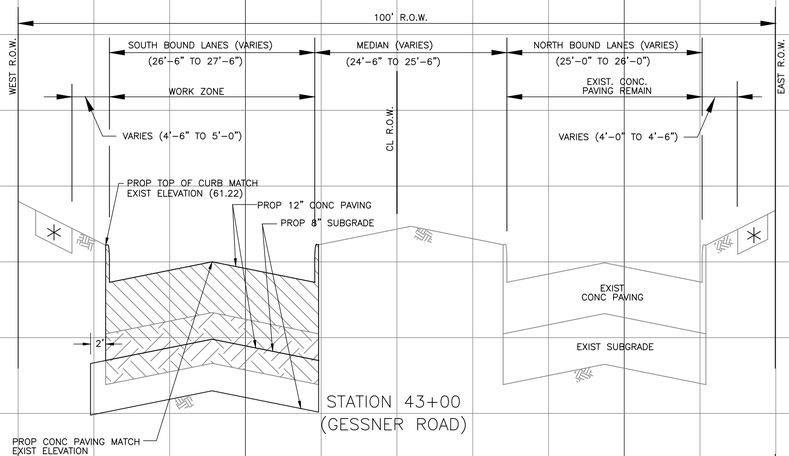
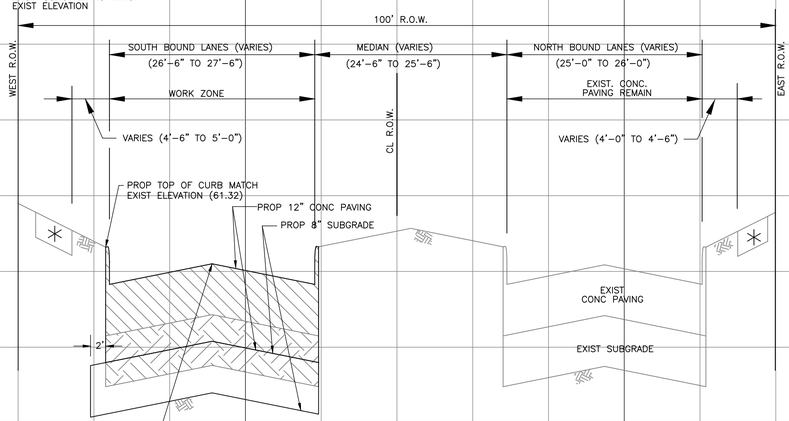
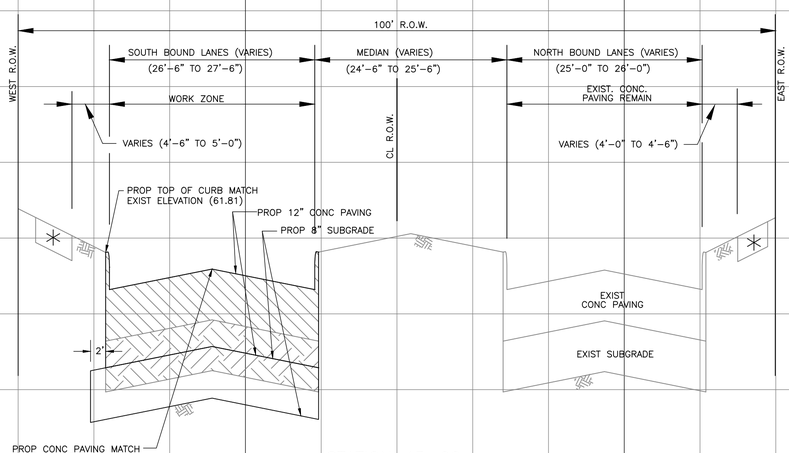


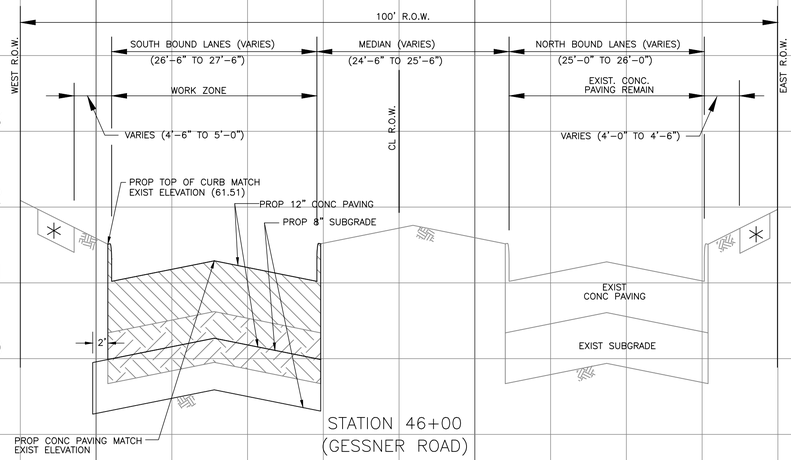
STATION 43+00
(GESSNER ROAD)



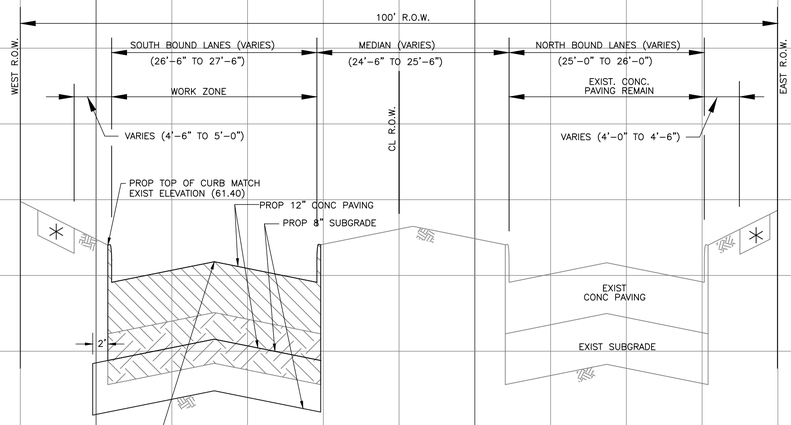
STATION 44+00
(GESSNER ROAD)



STATION 45+00
(GESSNER ROAD)



STATION 46+00
(GESSNER ROAD)



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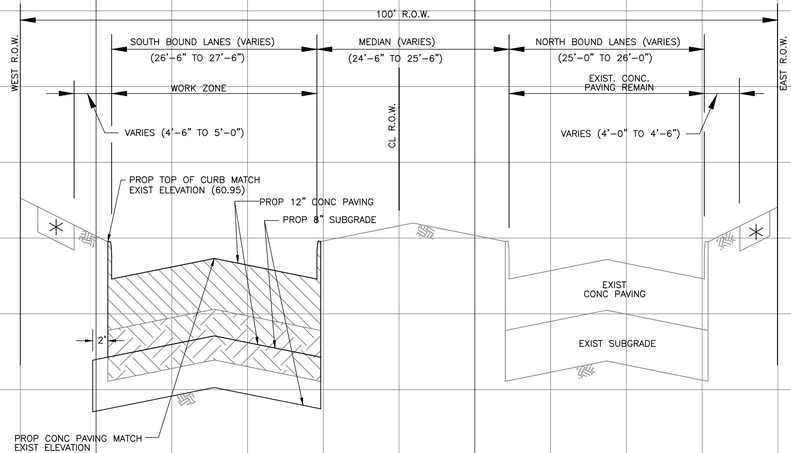
(GESSNER ROAD)



STATION 48+00
(GESSNER ROAD)

NO.	DATE	REVISION	APP.

LEGEND:

REMOVE EXISITNG CONCRETE PAVING

REMOVE EXIST SUBGRADE

EXISTING CONCRETE SIDEWALK, WIDTH VARIES (4'-6" TO 5'-6")

SCALE:

FULL SIZE (34X22):
H: 1" = 10'
V: 1" = 1'

HALF SIZE (17X11):
H: 1" = 20'
V: 1" = 2'

ENTECH
CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

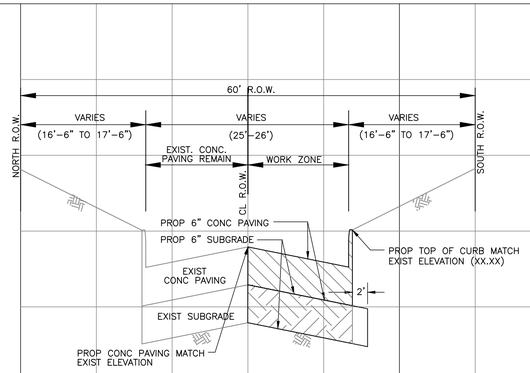
BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

GESSNER ROAD CROSS SECTIONS (6 OF 6)

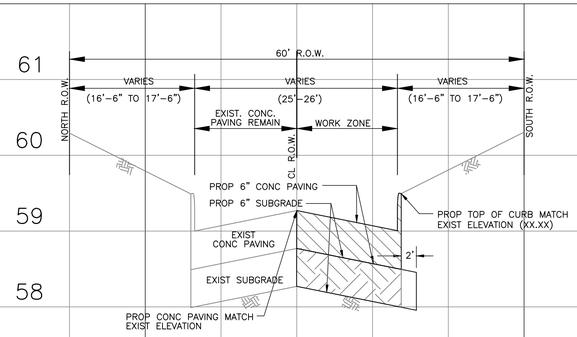
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 141 OF 227	

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 10/15/2025 4:33 PM

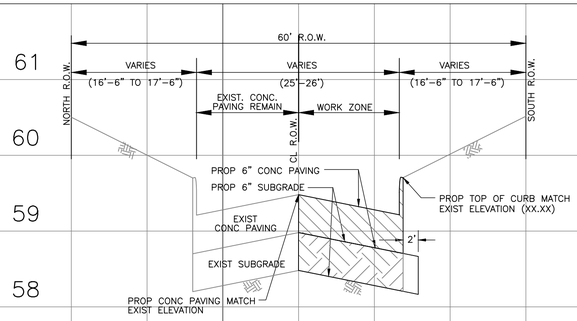
FILE PATH: Z:\Projects\2525PVEN\Working\14_Cross-Sections-5-15-25.dwg



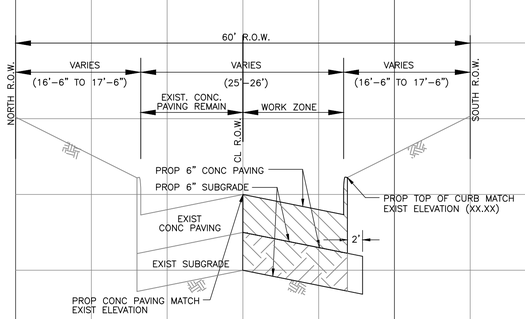
STATION 0+00
(BIRDWOOD ROAD)



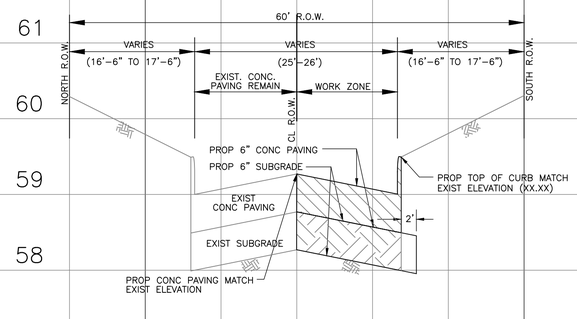
STATION 1+00
(SHADOWCREST STREET)



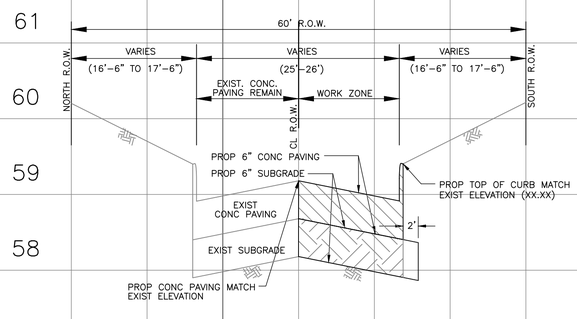
STATION 1+00
(REAMER STREET)



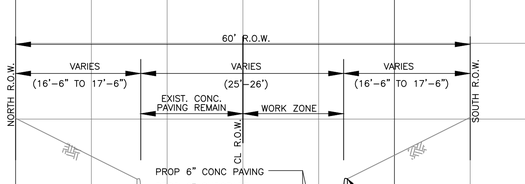
STATION 1+00
(BIRDWOOD ROAD)



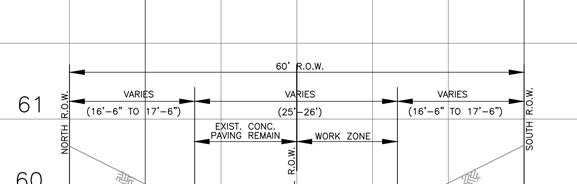
STATION 2+00
(SHADOWCREST STEET)



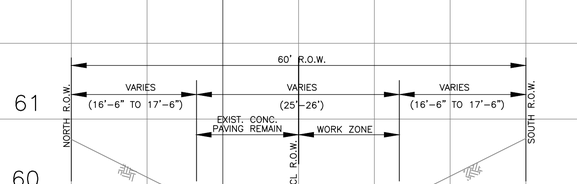
STATION 2+00
(REAMER STEET)



STATION 2+00
(BIRDWOOD ROAD)



STATION 3+00
(SHADOWCREST STREET)



STATION 3+00
(REAMER STREET)

NO.	DATE	REVISION	APP.

LEGEND:

REMOVE EXISITNG CONCRETE PAVING

REMOVE EXIST SUBGRADE

SCALE:

FULL SIZE (34X22):
H: 1" = 10'
V: 1" = 1'

HALF SIZE (17X11):
H: 1" = 20'
V: 1" = 2'

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

SIDE STREETS CROSS SECTIONS (1 OF 1)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 142 OF 227	

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 10/15/2025 4:36 PM

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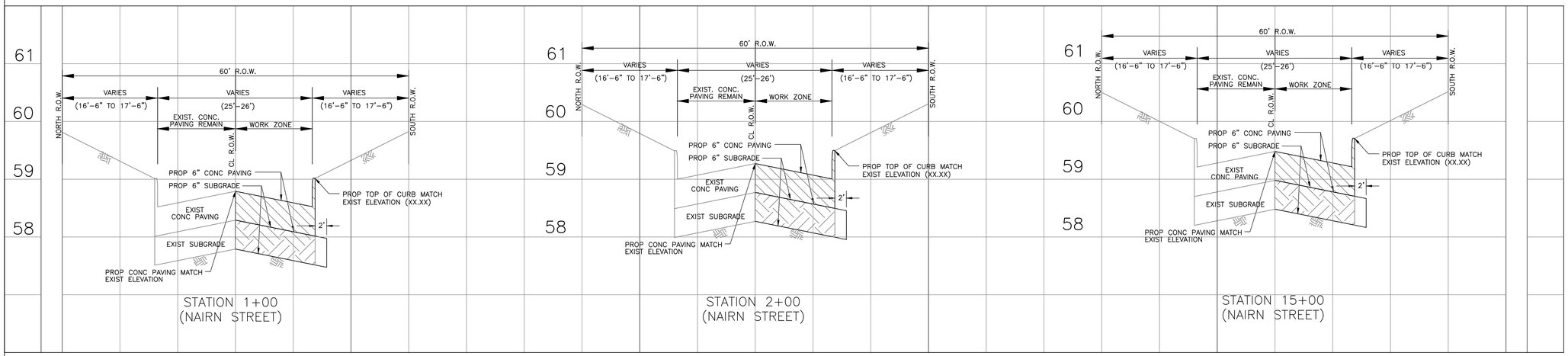


LEGEND:

REMOVE EXISITNG CONCRETE PAVING

REMOVE EXIST SUBGRADE

Mahoning/Valley View Lane (60' ROW)

		Inch	Feet	Cut-Area (sf)	Cut-Prop (sf)	Fill-Prop (sf)	NET CUT	NET FILL
B-1	Asphalt	3.00	0.25	6.69	4.47	4.47		
	Concrete	6.25	0.52	7.46	7.18	7.18		
	Sub-Grade	0.00	0.00	0.00	7.94	7.94		
	EXTRA ASPHALT				6.69	4.47		
	TOTAL			14.16	26.29	24.07	12.14	0.00
B-2	Asphalt	3.00	0.25	6.70	4.48	4.48		
	Concrete	5.50	0.46	6.63	7.19	7.19		
	Sub-Grade	0.00	0.00	0.00	7.95	7.95		
	EXTRA ASPHALT				6.70	4.48		
	TOTAL			13.34	26.32	24.10	12.98	0.00
B-3	Asphalt	2.50	0.21	5.63	4.48	4.48		
	Concrete	5.75	0.48	6.92	7.05	7.05		
	Sub-Grade	0.00	0.00	0.00	7.95	7.95		
	EXTRA ASPHALT				5.63	4.48		
	TOTAL			12.55	25.11	23.96	12.56	0.00
B-4	Asphalt	2.75	0.23	7.11	5.16	5.16		
	Concrete	5.00	0.42	6.94	8.22	8.22		
	Sub-Grade	0.00	0.00	0.00	8.98	8.98		
	EXTRA ASPHALT				7.11	5.16		
	TOTAL			14.05	29.46	27.52	15.41	0.00
B-5	Asphalt	2.00	0.17	4.39	4.32	4.32		
	Concrete	5.75	0.48	6.16	6.94	6.94		
	Sub-Grade	0.00	0.00	0.00	7.70	7.70		
	EXTRA ASPHALT				4.39	4.31		
	TOTAL			10.55	23.35	23.27	12.80	0.00
B-6	Asphalt	1.50	0.13	3.36	4.32	4.32		
	Concrete	6.25	0.52	7.24	6.97	6.97		
	Sub-Grade	0.00	0.00	0.00	7.73	7.73		
	EXTRA ASPHALT				3.35	4.32		
	TOTAL			10.60	22.36	23.33	11.76	0.97

Bareburn Glen (80' ROW)

		Inch	Feet	Cut-Area (sf)	Cut-Prop (sf)	Fill-Prop (sf)	NET CUT	NET FILL
B-7	Asphalt	3.50	0.29	3.38	4.32	4.32		
	Concrete	4.50	0.38	7.21	6.97	6.97		
	Sub-Grade	0.00	0.00		7.73	7.73		
	EXTRA ASPHALT				3.36	4.32		
	TOTAL			10.59	22.37	23.33	11.78	0.96
B-8	Asphalt	2.75	0.23	7.11	5.16	5.16		
	Concrete	5.50	0.46	7.58	8.22	8.22		
	Sub-Grade	0.00	0.00		8.98	8.98		
	EXTRA ASPHALT				7.11	5.16		
	TOTAL			14.69	29.47	27.52	14.78	0.00
B-9	Asphalt	4.00	0.33	11.66	5.90	5.90		
	Concrete	5.75	0.48	8.96	9.33	9.33		
	Sub-Grade	0.00	0.00	0.00	10.08	10.08		
	EXTRA ASPHALT				5.67	5.90		
	TOTAL			20.62	30.98	31.21	10.36	0.23

PLOTTED: 3/5/2026 9:06 AM coh_ctb_230809.ctb

FILE PATH: C:\Users\dvarghese\Entech Civil Engineers, Inc\Braeburn Glen - Documents\SHARE\2525PVEN\Working\07_PVMT&SIGN.dwg

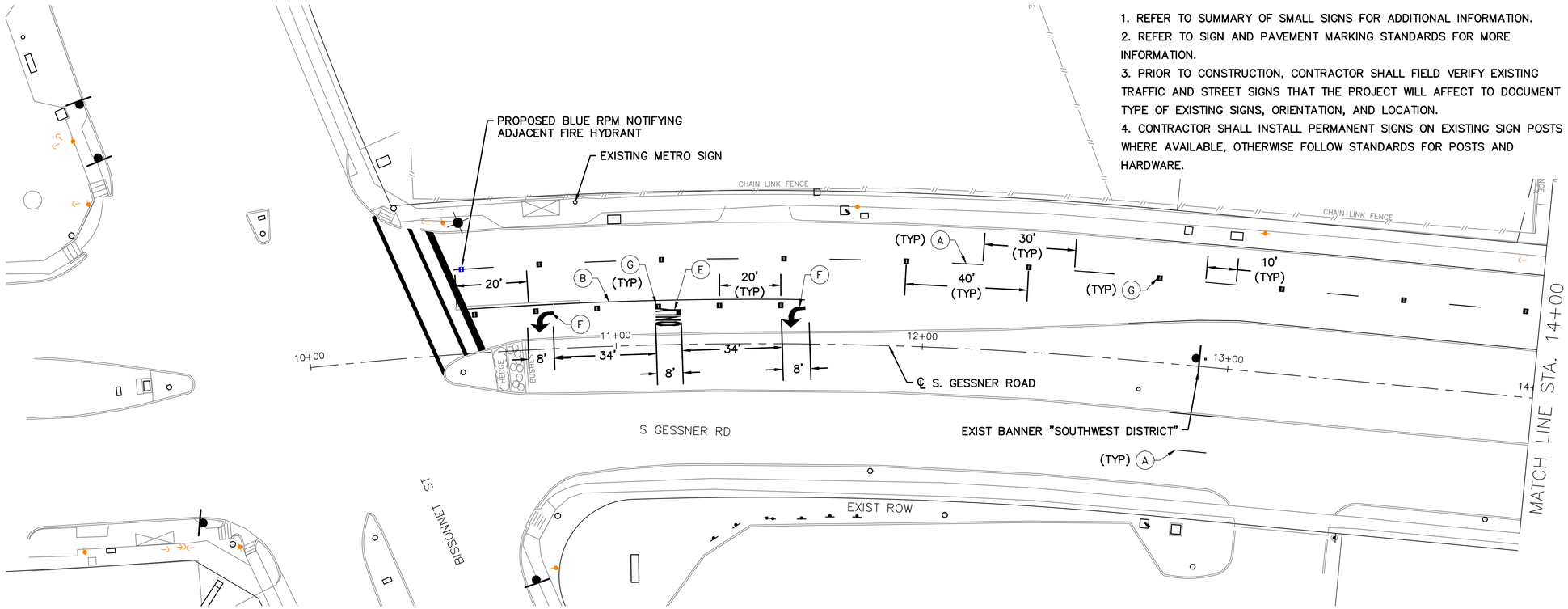
NOTES:

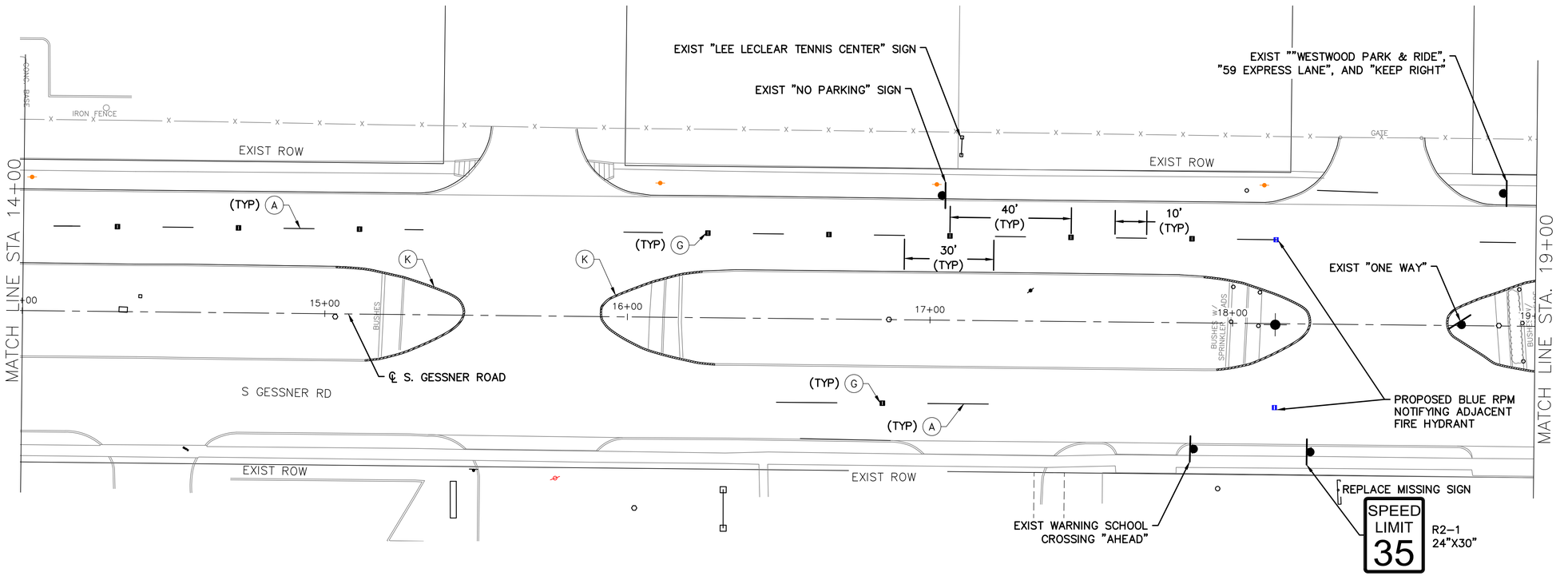
1. REFER TO SUMMARY OF SMALL SIGNS FOR ADDITIONAL INFORMATION.
2. REFER TO SIGN AND PAVEMENT MARKING STANDARDS FOR MORE INFORMATION.
3. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL FIELD VERIFY EXISTING TRAFFIC AND STREET SIGNS THAT THE PROJECT WILL AFFECT TO DOCUMENT TYPE OF EXISTING SIGNS, ORIENTATION, AND LOCATION.
4. CONTRACTOR SHALL INSTALL PERMANENT SIGNS ON EXISTING SIGN POSTS WHERE AVAILABLE, OTHERWISE FOLLOW STANDARDS FOR POSTS AND HARDWARE.

LEGEND

- (A) PAV MRK (W) (4") (SLD)
- (B) PAV MRK (W) (6") (SLD)
- (C) PAV MRK (W) (12") (SLD)
- (D) PAV MRK (W) (24") (SLD)
- (E) REFL PAV MRK (WORD)
- (F) RELF PAV MRK (ARROW)
- (G) RAISED PAV MRK (TY C)
- (H) RAISED PAV MRK (TY A)
- (I) PAV MRK (BG) (2'X2') (SLD)
- (J) PAV MRK (Y) (4") (SLD)
- (K) PAV REFL PAINT (Y) FOR MEDIAN NOSE

NO.	DATE	REVISION	APP.





N

HORIZ. 0 5 10 20

SCALE: 1"=20'

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.

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
S GESSNER RD
SIGNAGE & PAVEMENT MARKING
SHEET 1 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 144 OF 227	

PLOTTED: 3/5/2026 9:06 AM coh_ctb_230809.ctb

FILE PATH: C:\Users\dvarghese\Entech Civil Engineers, Inc\Braeburn Glen - Documents\SHARE\2525PVEN\Working\07_PVMT&SIGN.dwg

NOTES:

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2. REFER TO SIGN AND PAVEMENT MARKING STANDARDS FOR MORE INFORMATION.
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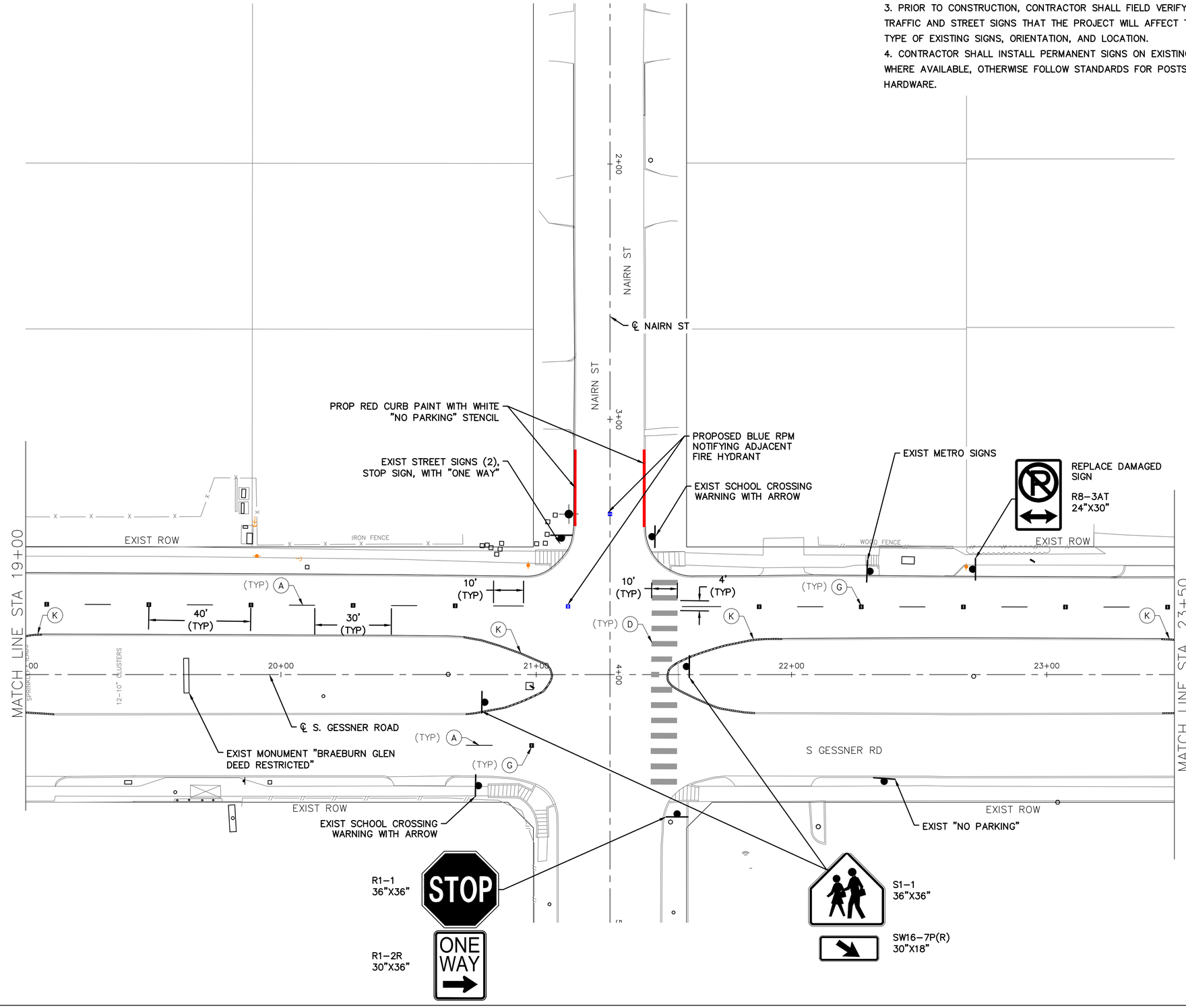
4. CONTRACTOR SHALL INSTALL PERMANENT SIGNS ON EXISTING SIGN POSTS WHERE AVAILABLE, OTHERWISE FOLLOW STANDARDS FOR POSTS AND HARDWARE.

LEGEND

- (A) PAV MRK (W) (4") (SLD)
- (B) PAV MRK (W) (6") (SLD)
- (C) PAV MRK (W) (12") (SLD)
- (D) PAV MRK (W) (24") (SLD)
- (E) REFL PAV MRK (WORD)
- (F) RELF PAV MRK (ARROW)
- (G) RAISED PAV MRK (TY C)
- (H) RAISED PAV MRK (TY A)
- (I) PAV MRK (BG) (2'X2') (SLD)
- (J) PAV MRK (Y) (4") (SLD)
- (K) PAV REFL PAINT (Y) FOR MEDIAN NOSE

NO.	DATE	REVISION	APP.



HORIZ. 0 5 10 20

SCALE: 1"=20'

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VERIFICATION OF PRIVATE UTILITY LINES

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ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS S GESSNER RD SIGNAGE & PAVEMENT MARKING SHEET 2 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 145 OF 227	

PLOTTED: 3/5/2026 9:06 AM coh_ctb_230809.ctb

FILE PATH: C:\Users\dvarghese\Entech Civil Engineers, Inc\Braeburn Glen - Documents\SHARE\2525PVEN\Working\07_PVMT&SIGN.dwg

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LEGEND

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- (G) RAISED PAV MRK (TY C)
- (H) RAISED PAV MRK (TY A)
- (I) PAV MRK (BG) (2'X2') (SLD)
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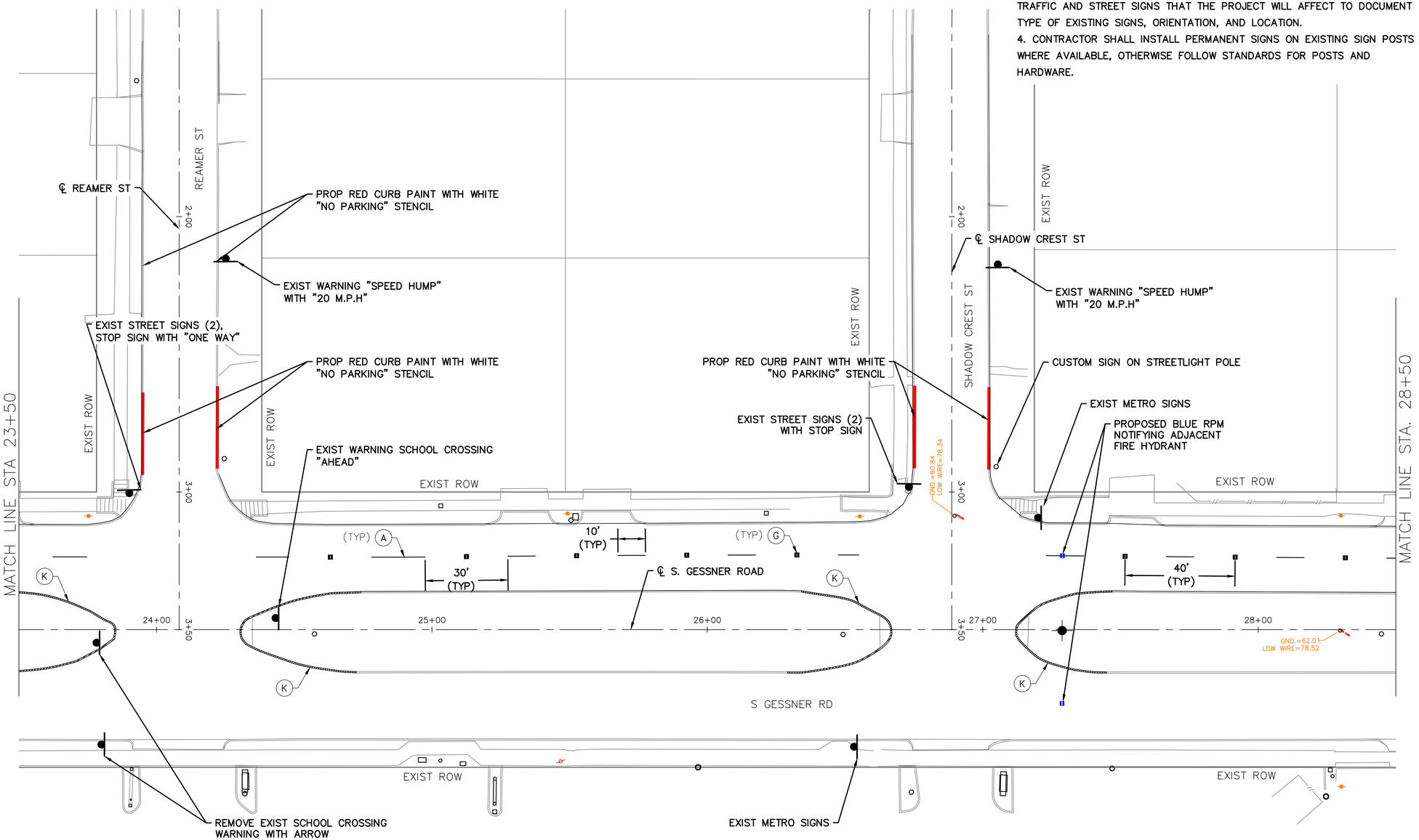

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TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
S GESSNER RD
SIGNAGE & PAVEMENT MARKING
SHEET 3 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 146 OF 227	

NO.	DATE	REVISION	APP.

PLOTTED: 3/5/2026 9:06 AM coh_ctb_230809.ctb

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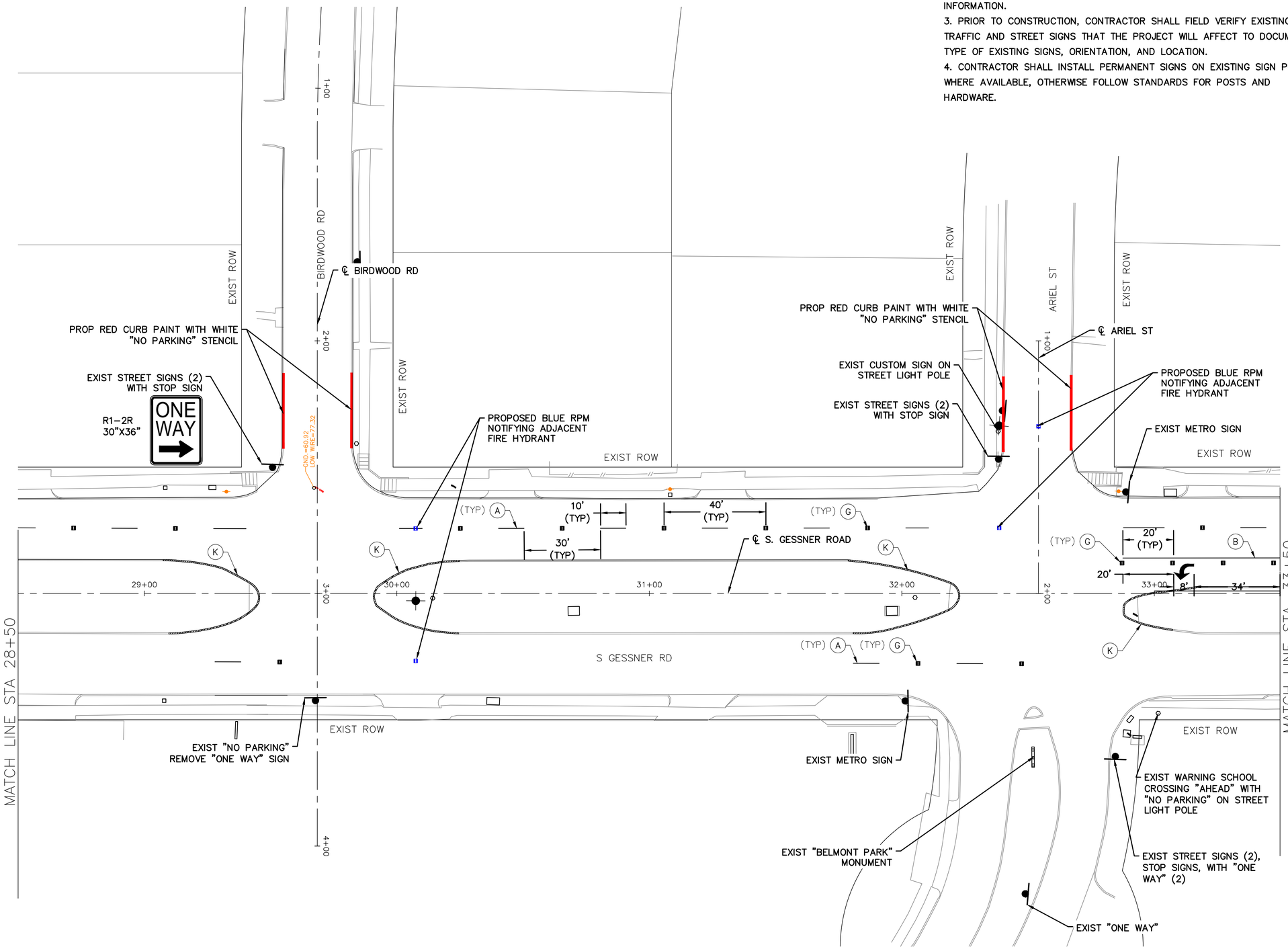

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FB NO. P-6331

ENTECH CIVIL ENGINEERS INC F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
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SHEET 4 OF 12

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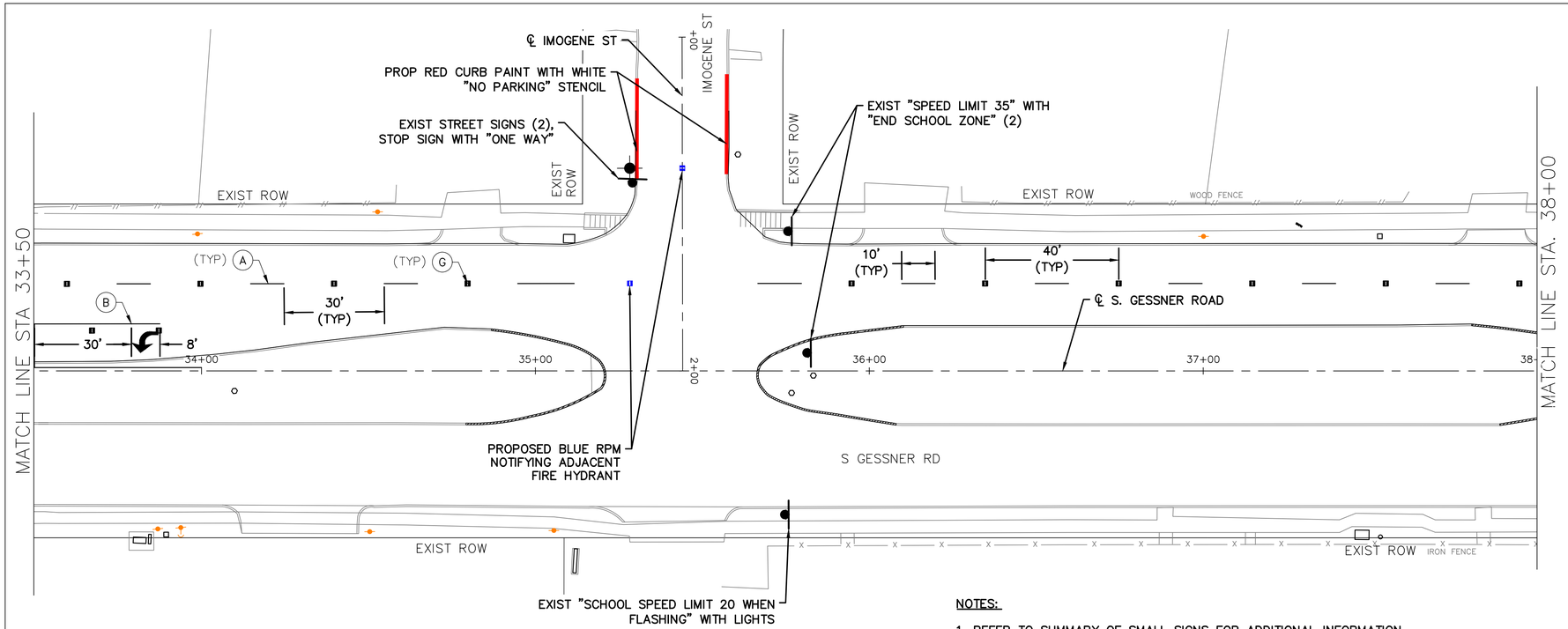

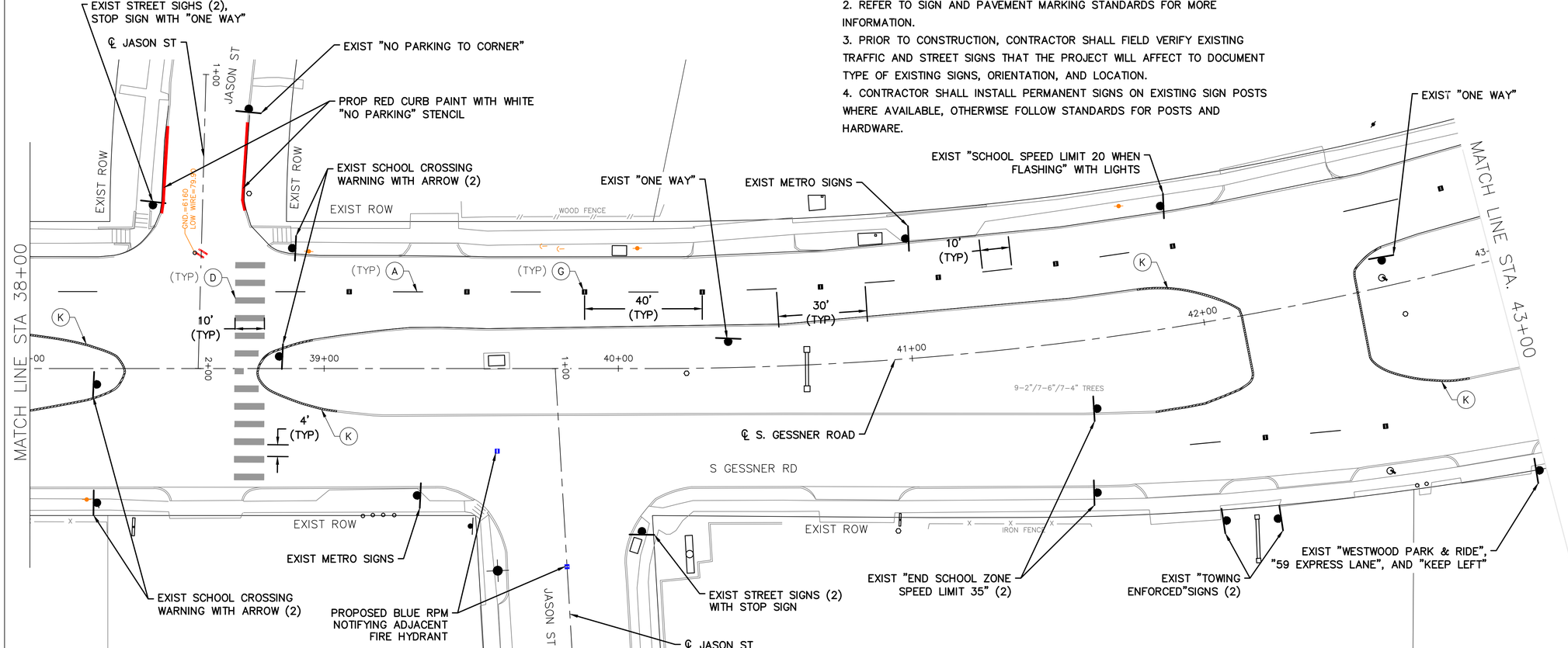

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281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS, INC F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
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SIGNAGE & PAVEMENT MARKING
SHEET 5 OF 12

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CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 148 OF 227	

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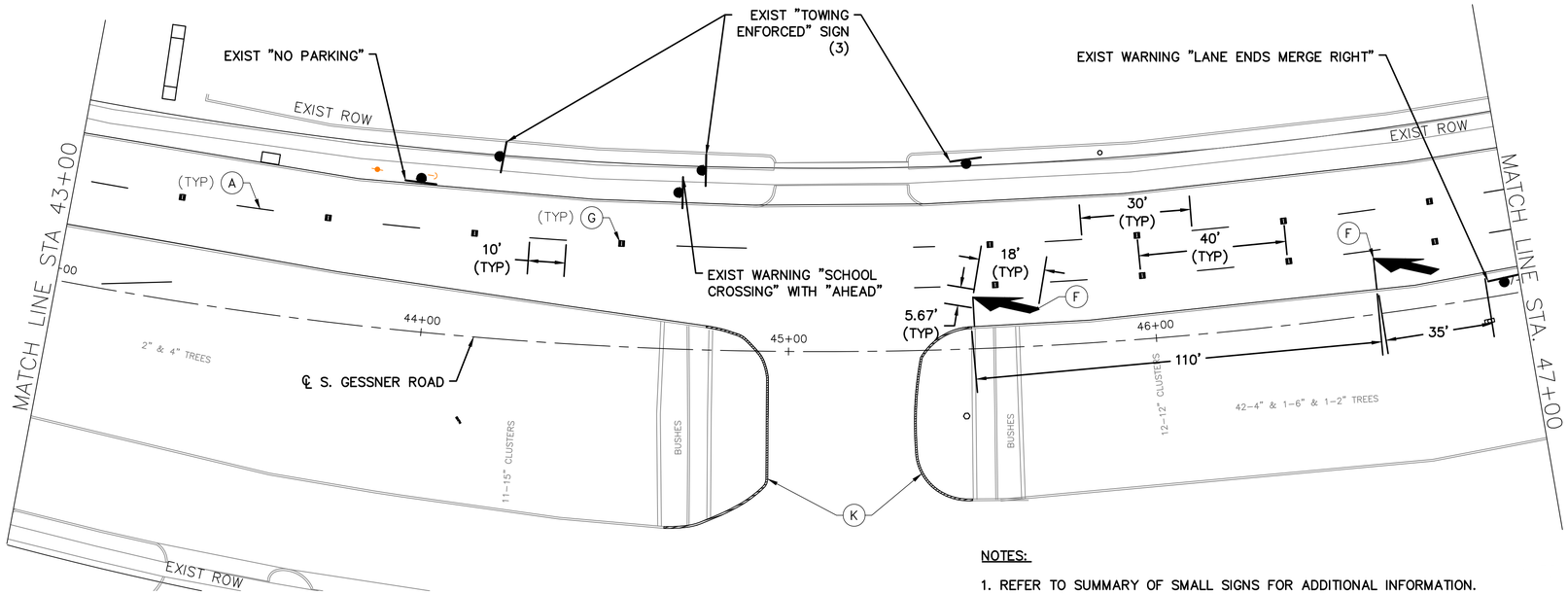

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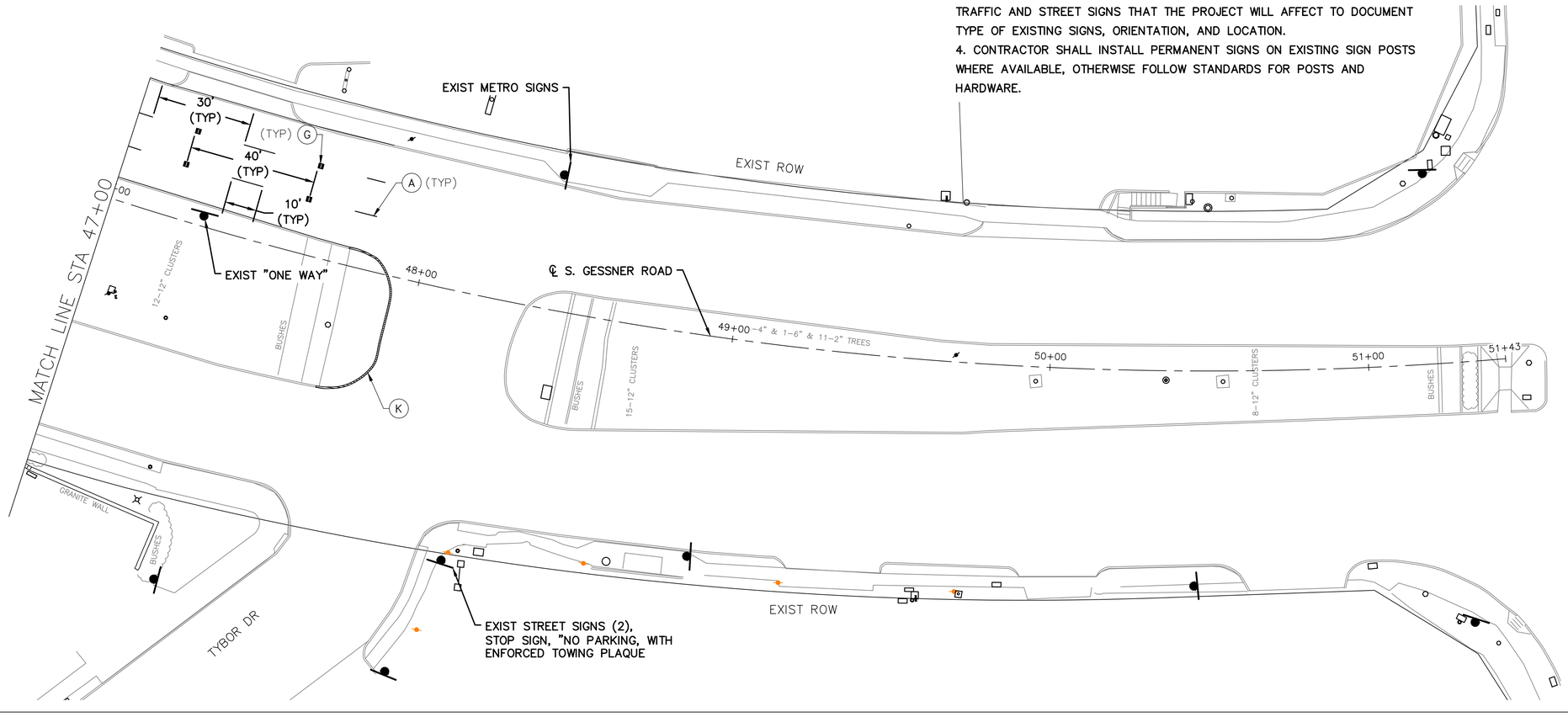

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TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. STATE OF TEXAS F-6932 RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
S GESSNER RD
SIGNAGE & PAVEMENT MARKING
SHEET 6 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
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NO.	DATE	REVISION	APP.

R1-1 36"X36" STOP
EXIST STREET SIGNS (2)
EXIST "NO OUTLET"
EXIST ROW
ALTAMONT DR
℄ ALTAMONT DR
1+00
WOOD FEN
EXIST ROW
PROPOSED BLUE RPM NOTIFYING ADJACENT FIRE HYDRANT
EXIST ROW
HEDGE
PROP SPEED CUSHION
BRAEBURN GLEN BLVD
14+00
15+00
2+00
16+00
17+00
18+00
℄ BRAEBURN GLEN BLVD
MATCH LINE STA. 18+50
EXIST ROW
EXIST BICYCLIST WARNING ON STREET LIGHT POLE
W17-1 30"X30" SPEED HUMP
W13-1P 18"X18" 20 M.P.H.
W17-1 30"X30" SPEED HUMP
W13-1P 18"X18" 20 M.P.H.
EXIST BICYCLIST/PEDESTRIAN WARNING, "TRAIL X-ING", "AHEAD" SIGN
EXIST DIRECTIONAL WARNING ARROWS (4)
EXIST CUSTOM STOP SIGN
EXIST CUSTOM TRAIL SIGN
EXIST BICYCLIST/PEDESTRIAN WARNING WITH ARROW
10' (TYP)
EXIST ROW
VALLEY VIEW
℄ VALLEY VIEW LN
EXIST ROW
19+00
20+00
BRAEBURN GLEN BLVD
21+00
22+00
40' (TYP)
23+00
(I) (TYP)
(D) (TYP)
℄ BRAEBURN GLEN BLVD
4' (TYP)
(H) (TYP)
(J) (TYP)
(K)
MATCH LINE STA. 18+50
REPLACE DAMAGED SIGN D11-1 24"X18"
BIKE ROUTE
WOOD FENCE
EXIST ROW
EXIST BICYCLIST/PEDESTRIAN WARNING WITH ARROW
EXIST LEFT TURN WARNING
EXIST "ROAD HUMPS" WITH "20 M.P.H"
EXIST CUSTOM STOP SIGN
EXIST BICYCLIST/PEDESTRIAN WARNING, "TRAIL X-ING", "AHEAD" SIGN
PROPOSED BLUE RPM NOTIFYING ADJACENT FIRE HYDRANT
EXIST STREET SIGNS (2)
EXIST RIGHT TURN WARNING
(J) (TYP)
9+00
EXIST ROW
EXIST ROW FND. 1/2" IR
MATCH LINE STA. 23+50
HIGH BANK
BRAKE LINE
TOP OF
STEPS

N

HORIZ. 0 5 10 20

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Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
BRAEBURN GLEN BLVD
SIGNAGE & PAVEMENT MARKING
SHEET 7 OF 12

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M-410040-0001-4	
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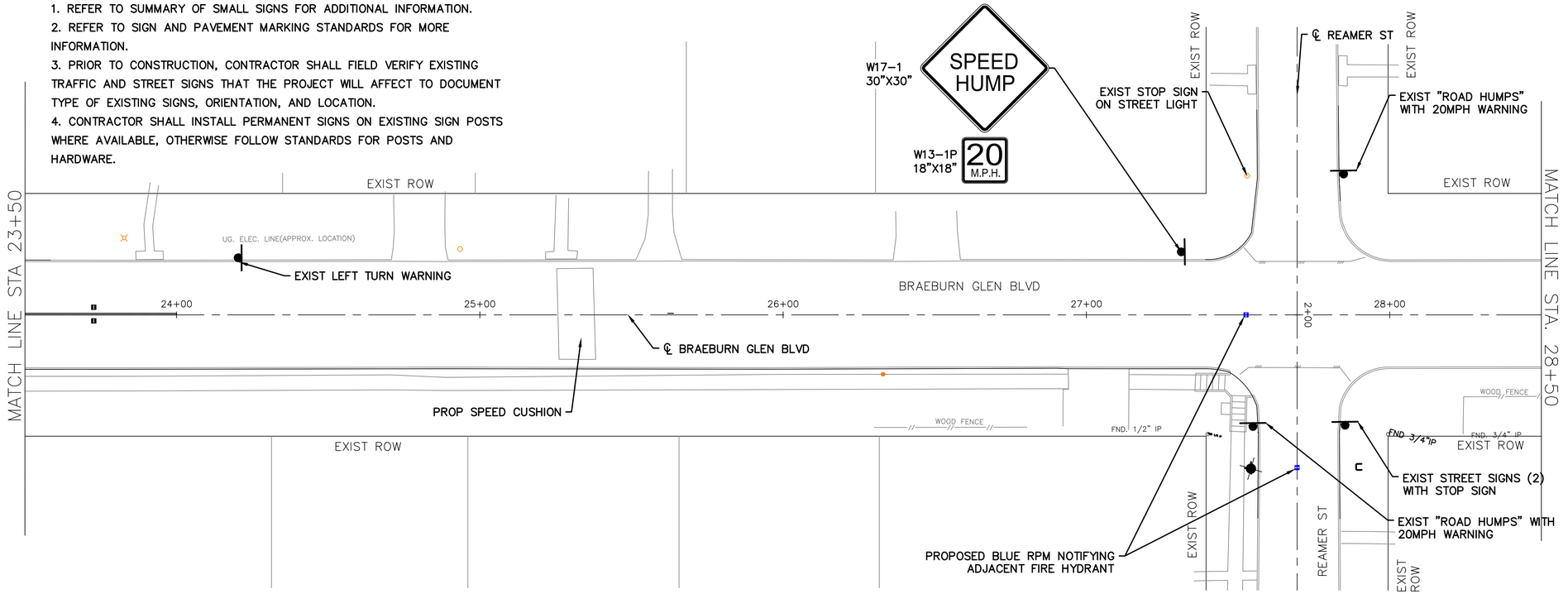

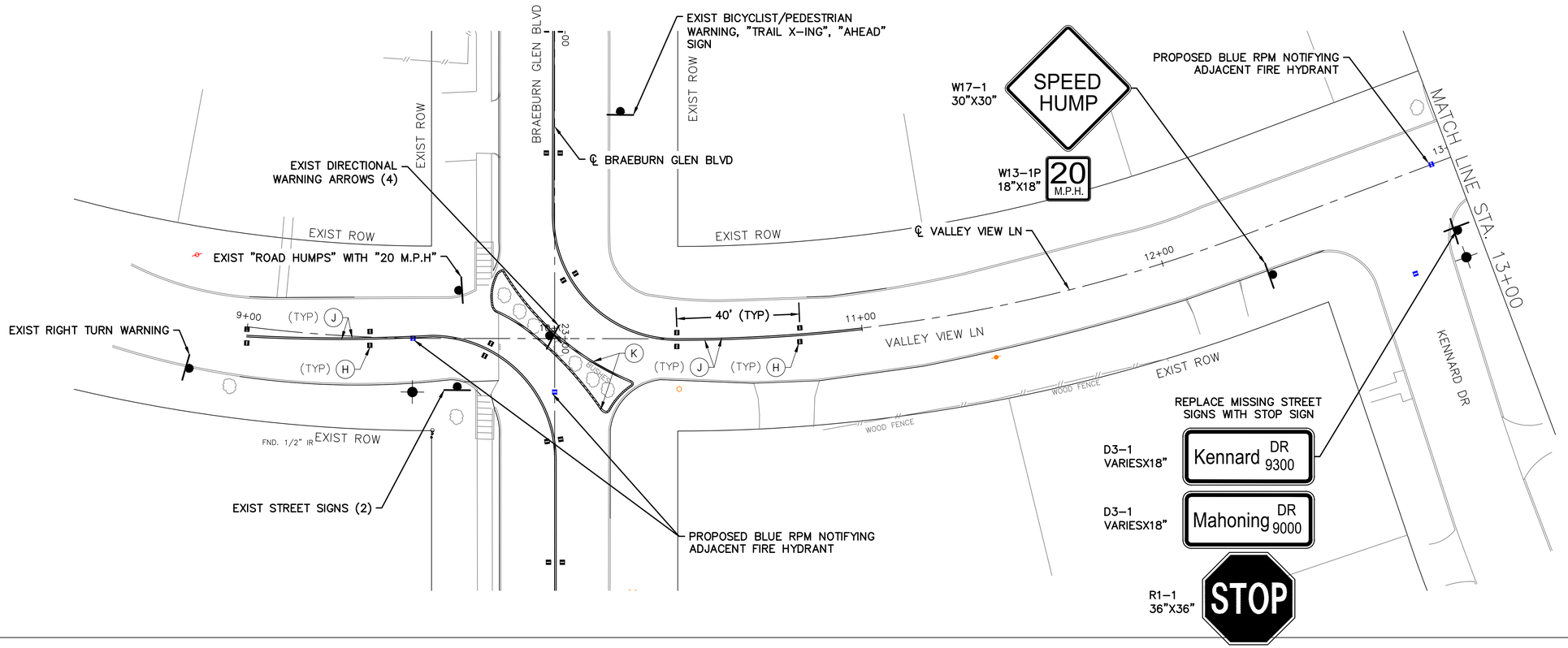

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Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
BRAEBURN & VALLEY VIEW
SIGNAGE & PAVEMENT MARKING
SHEET 8 OF 12

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PLOTTED: 3/5/2026 9:07 AM coh_ctb_230809.ctb

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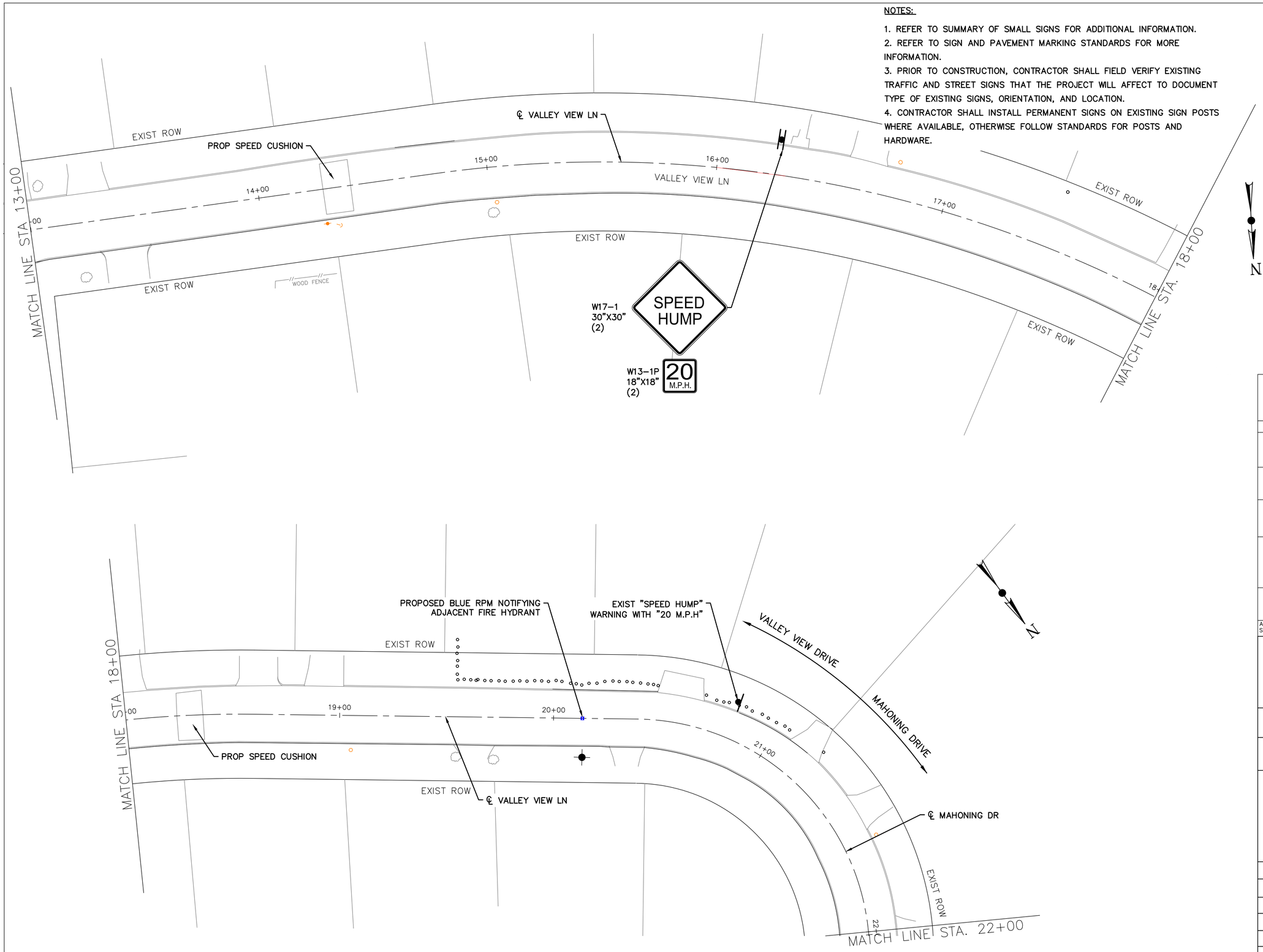

NOTES:

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2. REFER TO SIGN AND PAVEMENT MARKING STANDARDS FOR MORE INFORMATION.
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4. CONTRACTOR SHALL INSTALL PERMANENT SIGNS ON EXISTING SIGN POSTS WHERE AVAILABLE, OTHERWISE FOLLOW STANDARDS FOR POSTS AND HARDWARE.

LEGEND

- (A) PAV MRK (W) (4") (SLD)
- (B) PAV MRK (W) (6") (SLD)
- (C) PAV MRK (W) (12") (SLD)
- (D) PAV MRK (W) (24") (SLD)
- (E) REFL PAV MRK (WORD)
- (F) RELF PAV MRK (ARROW)
- (G) RAISED PAV MRK (TY C)
- (H) RAISED PAV MRK (TY A)
- (I) PAV MRK (BG) (2'X2') (SLD)
- (J) PAV MRK (Y) (4") (SLD)
- (K) PAV REFL PAINT (Y) FOR MEDIAN NOSE

NO.	DATE	REVISION	APP.

HORIZ. 0 5 10 20

SCALE: 1"=20'

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.

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED
PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
VALLEY VIEW LANE
SIGNAGE & PAVEMENT MARKING
SHEET 9 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 152 OF 227	

FILE PATH: C:\Users\dvarghese\Entech Civil Engineers, Inc\Braeburn Glen - Documents\SHARE\2525PVEN\Working\07_PVMT&SIGN.dwg

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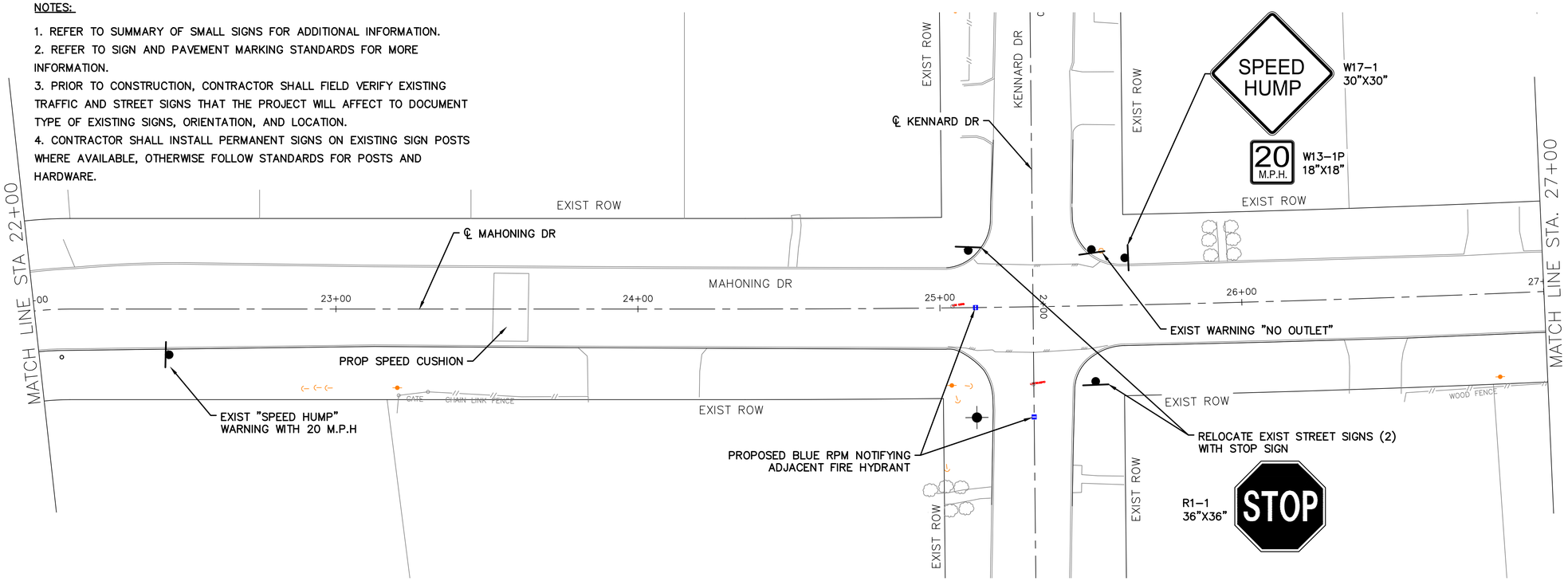

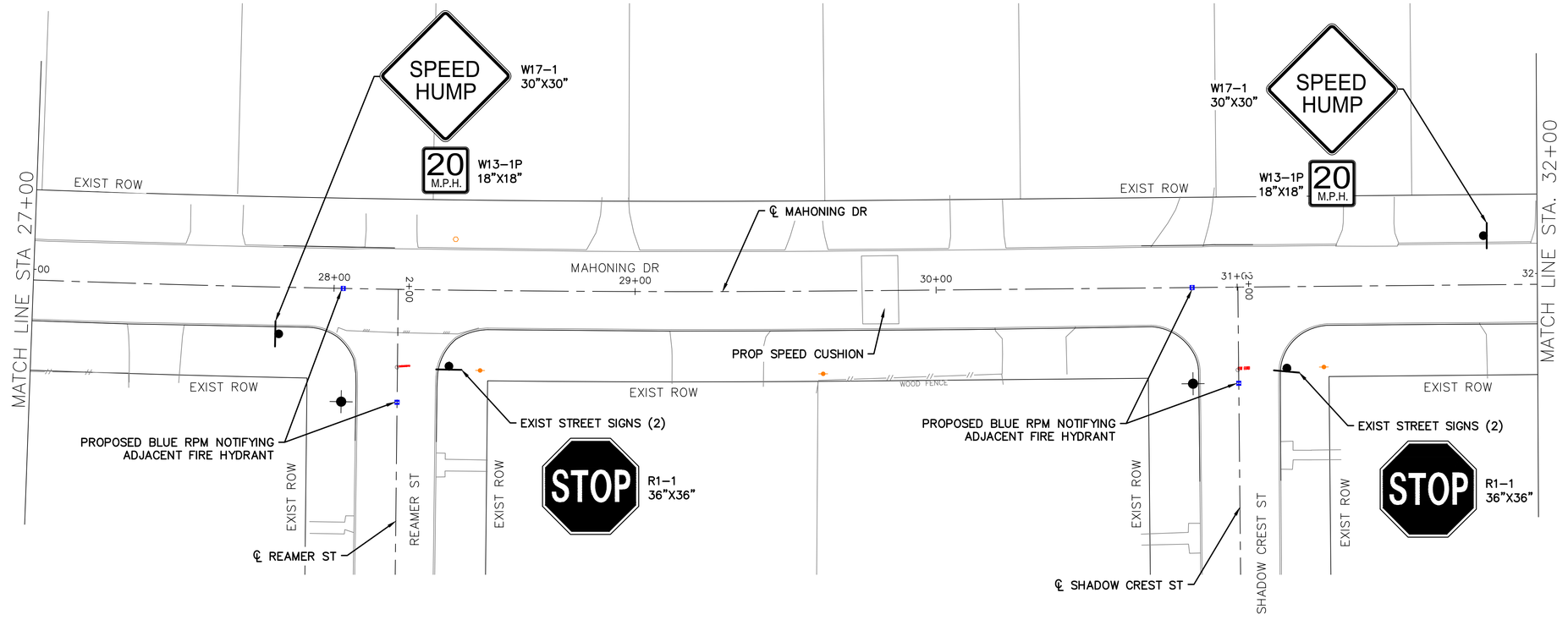

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NO.	DATE	REVISION	APP.

HORIZ. 0 5 10 20

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ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
MAHONING DR
SIGNAGE & PAVEMENT MARKING
SHEET 10 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 153 OF 227	

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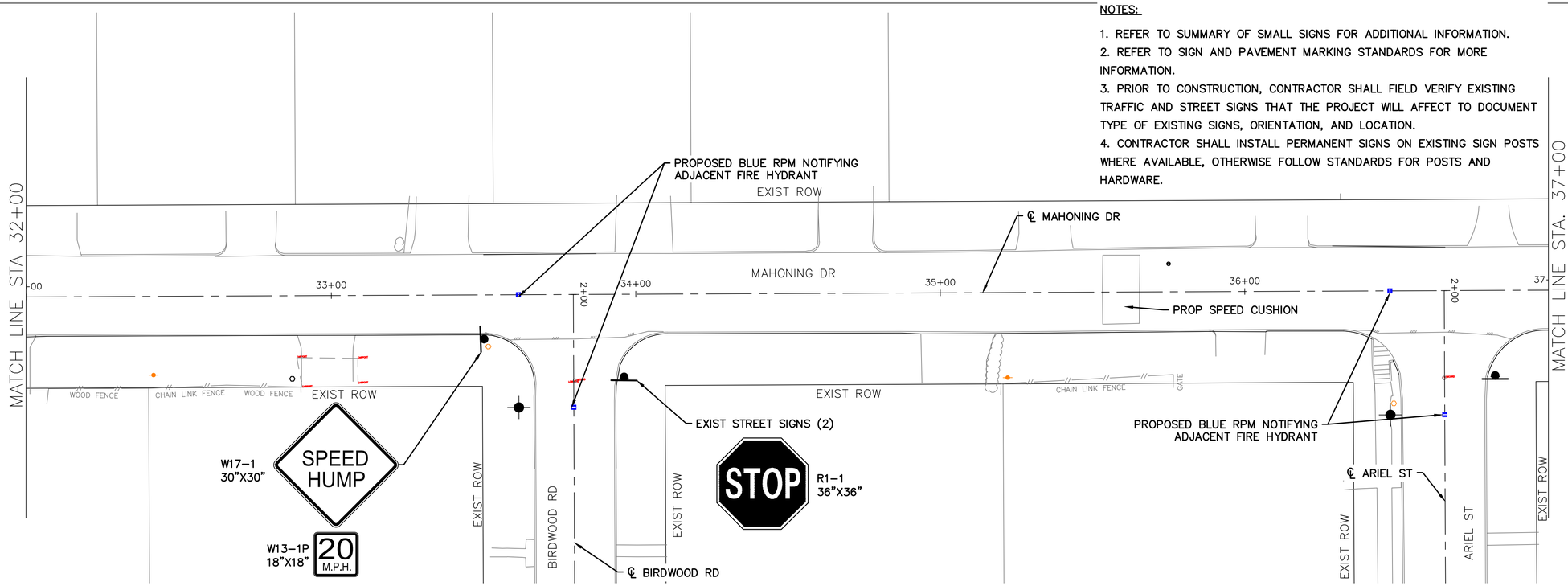

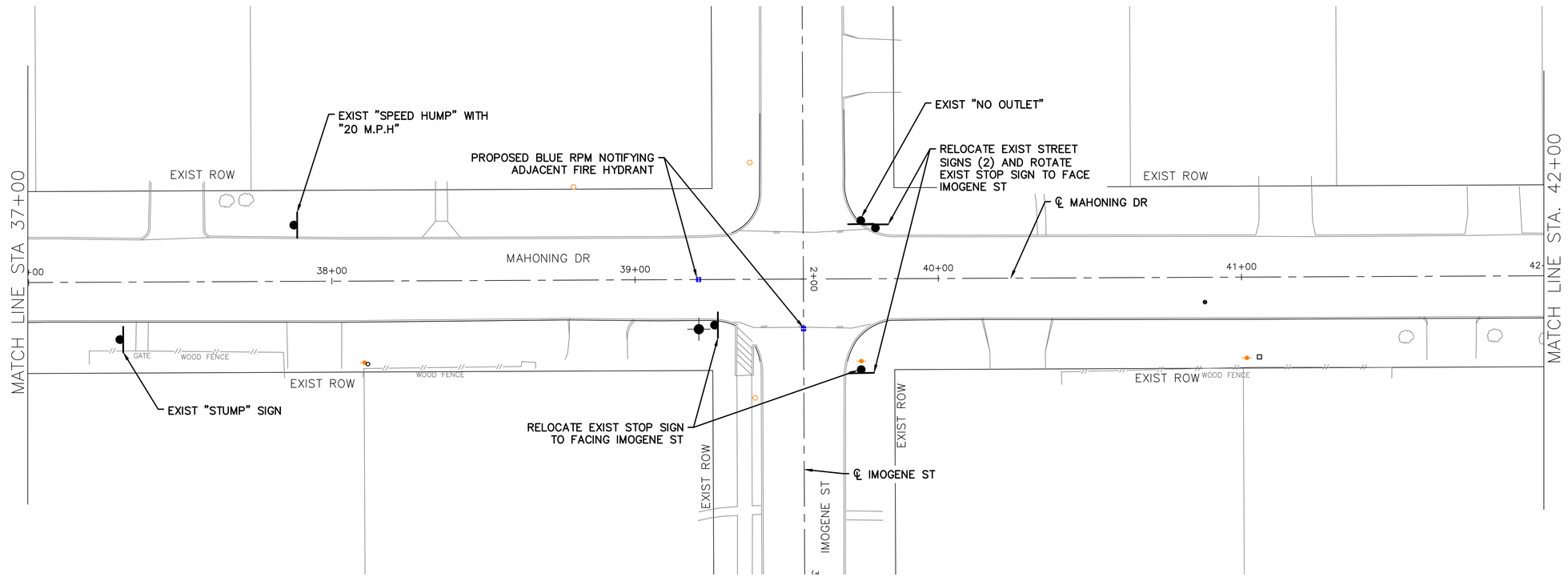

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HOUSTON, TX. 77094
281-945-0069
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SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

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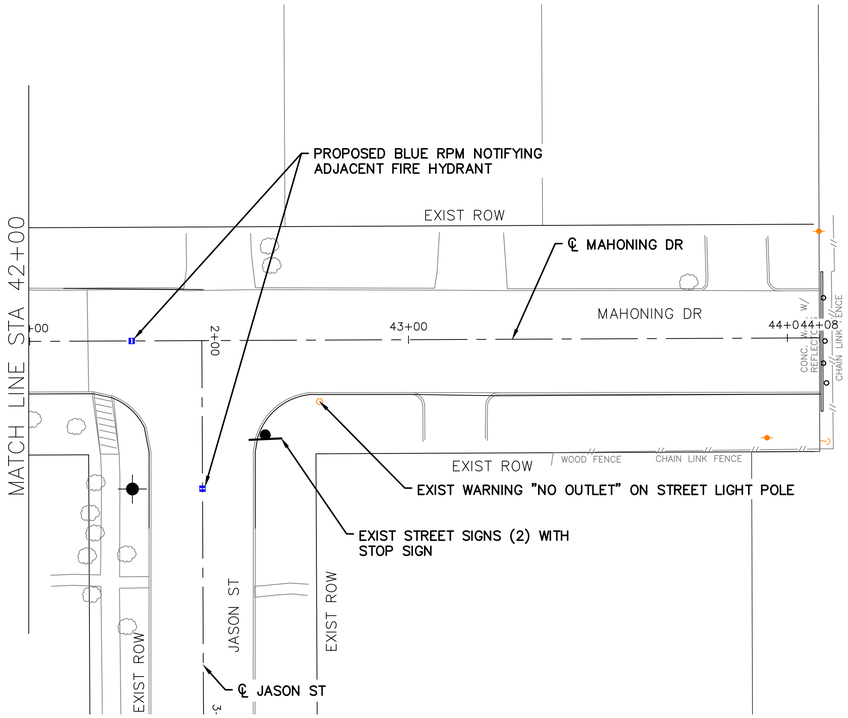
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
MAHONING DR
SIGNAGE & PAVEMENT MARKING
SHEET 11 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 154 OF 227	



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NO.	DATE	REVISION	APP.

HORIZ. 0 5 10 20

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HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED
PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS MAHONING DR SIGNAGE & PAVEMENT MARKING SHEET 12 OF 12

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=20'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 155 OF 227	

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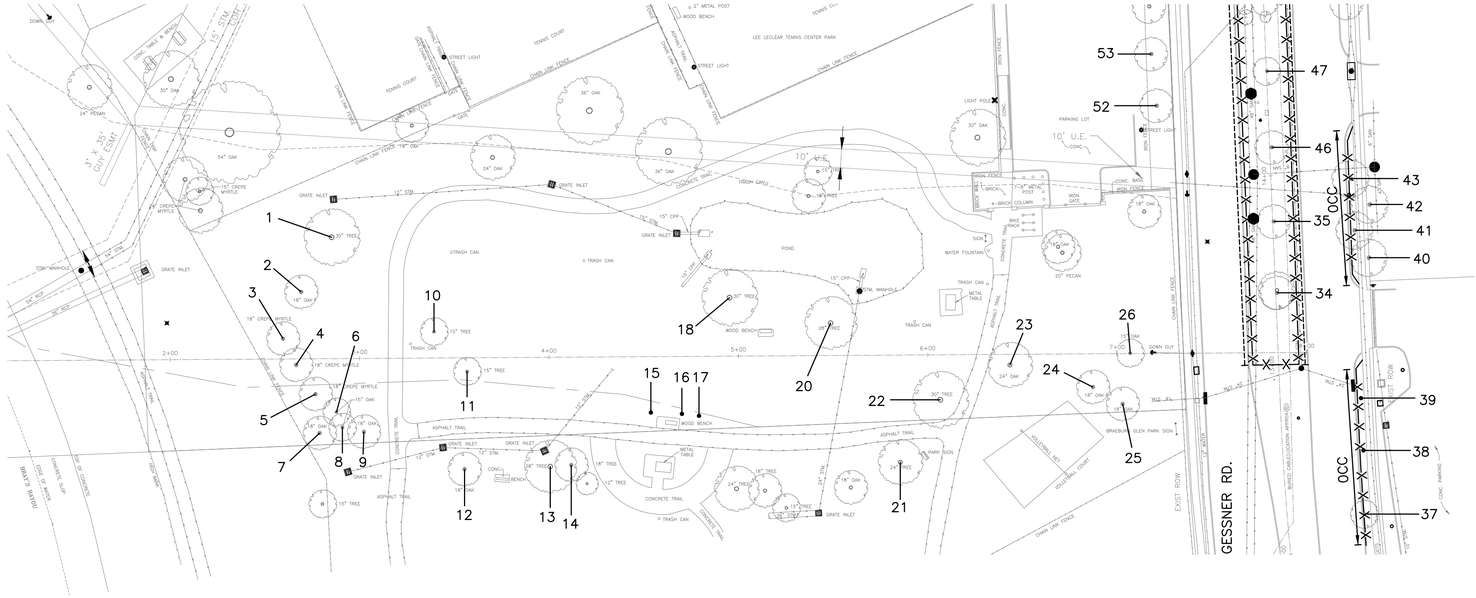

NOTE:

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2. CN KOEHL URBAN FORESTRY, INC. HAS NOT BEEN CONTRACTED TO COMPLETE ANY TREE RISK ASSESSMENTS ON THIS PROJECT–THIS TPP INCLUDES PROTECTION MEASURES FOR SPECIES OF TREES PROTECTED BY APPLICABLE ORDINANCE ONLY. CN KOEHL URBAN FORESTRY, INC. DOES NOT GUARANTEE CONDITION OR STRUCTURAL INTEGRITY OF ANY TREE LOCATED ON OR ADJACENT TO THIS PROJECT.
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4. THE CONTRACTOR'S ARBORIST WILL MARK LOCATIONS OF TREES TO BE PLANTED AND OBTAIN APPROVAL BY CITY ENGINEER AND CITY FORESTER BEFORE PURCHASING OR EXCAVATING PLANTING HOLE OF EACH TREE.

TREE PRESERVATION PLAN LEGEND

- 1 — TREE NUMBER/LOCATION
- (1) — TREE TO BE REMOVED
- –X–X– — TREE PROTECTION FENCE
- ------ — ROOT PRUNING TRENCH
- OCC — ZERO CUTBACK CURB

N

40 0 40 80

SCALE: 1"=40'

Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
Trees in Braeburn Glen Park					
1	Braeburn Glen Park	32" Water Oak	Protected	Not impacted, Trenchless construction area	Trenchless construction
2	Braeburn Glen Park	17" Green Ash	Protected	Not impacted, Trenchless construction area	Trenchless construction
3	Braeburn Glen Park	11" Crepe Myrtle	Not Protected	Not impacted, Trenchless construction area	Trenchless construction
4	Braeburn Glen Park	11" Crepe Myrtle	Not Protected	Not impacted, Trenchless construction area	Trenchless construction
5	Braeburn Glen Park	11" Crepe Myrtle	Not Protected	Not impacted, Trenchless construction area	Trenchless construction
6	Braeburn Glen Park	17" Green Ash	Protected	Not impacted, Trenchless construction area	Trenchless construction, Root prune, Clearance
7	Braeburn Glen Park	22" Green Ash	Protected	Not impacted, Trenchless construction area	Trenchless construction
8	Braeburn Glen Park	15" Green Ash	Protected	Not impacted, Trenchless construction area	Trenchless construction
9	Braeburn Glen Park	21" Green Ash	Protected	Not impacted, Trenchless construction area	Trenchless construction
10	Braeburn Glen Park	13" Tallow	Not Protected	Not impacted, Trenchless construction area	Trenchless construction
11	Braeburn Glen Park	17" Tallow	Not Protected	Not impacted, Trenchless construction area	Trenchless construction
12	Braeburn Glen Park	12" Cedar Elm	Protected	Not impacted, Trenchless construction area	Trenchless construction
13	Braeburn Glen Park	14" Sugarberry	Not Protected	Not impacted, Trenchless construction area	Trenchless construction
14	Braeburn Glen Park	16" Tallow	Not Protected	Not impacted, Trenchless construction area	Trenchless construction
15	Braeburn Glen Park	3" American Elm	Protected	Not impacted, Trenchless construction area	Trenchless construction
16	Braeburn Glen Park	3" American Elm	Protected	Not impacted, Trenchless construction area	Trenchless construction
17	Braeburn Glen Park	3" American Elm	Protected	Not impacted, Trenchless construction area	Trenchless construction
18	Braeburn Glen Park	27" Sugarberry	Protected	Not impacted, Trenchless construction area	Trenchless construction
19	Not used				
20	Braeburn Glen Park	24" American Elm	Protected	Not impacted, Trenchless construction area	Trenchless construction
21	Braeburn Glen Park	22" Arizona Ash	Protected	Not impacted, Trenchless construction area	Trenchless construction
22	Braeburn Glen Park	23" American Elm	Protected	Not impacted, Trenchless construction area	Trenchless construction
23	Braeburn Glen Park	25" Sugarberry	Protected	Not impacted, Trenchless construction area	Trenchless construction
24	Braeburn Glen Park	25" Water Oak	Protected	Not impacted, Trenchless construction area	Trenchless construction
25	Braeburn Glen Park	21" Water Oak	Protected	Not impacted, Trenchless construction area	Trenchless construction
26	Braeburn Glen Park	16" Cedar Elm	Protected	Not impacted, Trenchless construction area	Trenchless construction

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

C.N. Koehl
Urban Forestry, Inc.
210 Stone Bush Ct. • Katy, Texas 77493
281-391-0022 ckoehl@koehlurbanforestry.com

APPROVED: Craig N. Koehl 03-05-2026

ENTECH CIVIL ENGINEERS, INC.
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
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TX FIRM NUMBER: F-6932

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FB NO. P-6331

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

TREE PROTECTION PLAN

SHEET 1 OF 10

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 156 OF 227	

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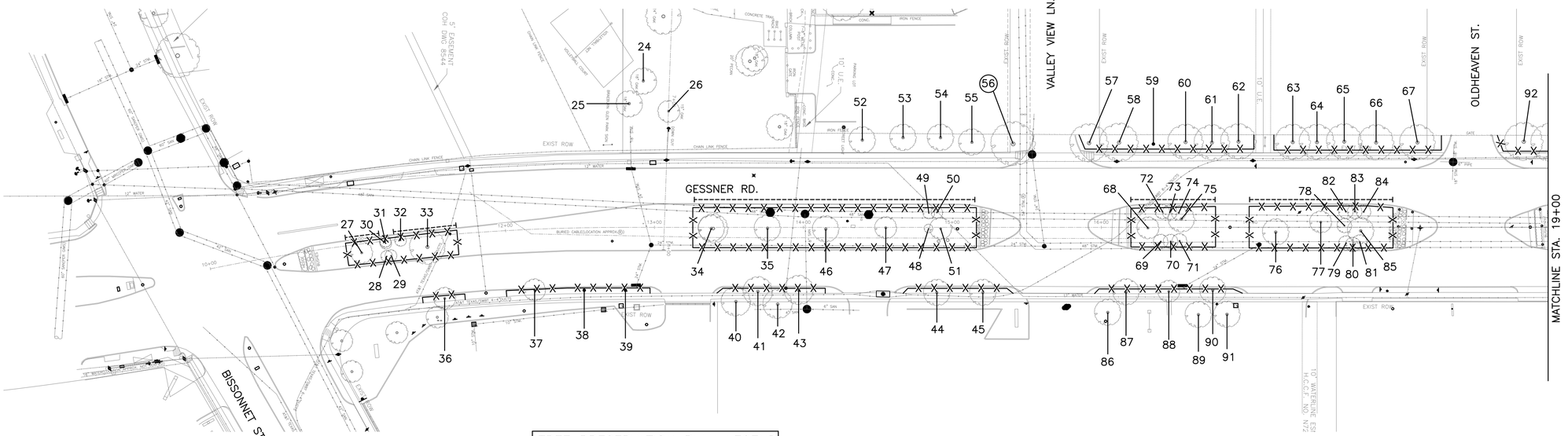

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TREE PRESERVATION PLAN LEGEND

- 1 — TREE NUMBER/LOCATION
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- –X–X– — TREE PROTECTION FENCE
- ------ — ROOT PRUNING TRENCH
- |–OCC–| — ZERO CUTBACK CURB

Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
Trees on Gessner Road					
27	Median	12" Live Oak	Protected		Root prune for street, Fence, Clearance prune
28	Median	5" Crepe Myrtle	Not Protected		
29	Median	5" Crepe Myrtle	Not Protected		
30	Median	5" Crepe Myrtle	Not Protected		
31	Median	5" Crepe Myrtle	Not Protected		
32	Median	5" Crepe Myrtle	Not Protected		
33	Median	23" Live Oak	Protected		Root prune for street, Fence, Clearance prune
34	Median	23" Live Oak	Protected		Root prune for street, Fence, Clearance prune
35	Median	20" Live Oak	Protected		Root prune for street, Fence, Clearance prune
36	8520 Bissonnet	13" Live Oak	Protected		Fence, Clearance prune
37	8521 Bissonnet	15" Live Oak	Protected		Fence, Clearance prune
38	8522 Bissonnet	17" Live Oak	Protected		Fence, Clearance prune
39	8523 Bissonnet	18" Live Oak	Protected		Fence, Clearance prune
40	9555 S Gessner	18" Live Oak	Protected		Fence, Clearance prune
41	9556 S Gessner	21" Live Oak	Protected		Fence, Clearance prune
42	9557 S Gessner	22" Live Oak	Protected		Fence, Clearance prune
43	9558 S Gessner	18" Live Oak	Protected		Fence, Clearance prune
44	9559 S Gessner	19" Ligustrum	Not Protected		Clearance prune
45	9560 S Gessner	21" Live Oak	Protected		Fence, Clearance prune
46	Median	19" Live Oak	Protected		Root prune for street, Fence, Clearance prune
47	Median	19" Live Oak	Protected		Root prune for street, Fence, Clearance prune
48	Median	3" Crepe Myrtle	Not Protected		
49	Median	4" Crepe Myrtle	Not Protected		
50	Median	4" Crepe Myrtle	Not Protected		
51	Median	23" Live Oak	Protected		
52	Braeburn Glen Park	12" Crepe Myrtle	Not Protected		
53	Braeburn Glen Park	13" Crepe Myrtle	Not Protected		
54	Braeburn Glen Park	14" Crepe Myrtle	Not Protected		
55	Braeburn Glen Park	15" Crepe Myrtle	Not Protected		
56	Braeburn Glen Park	29" Crepe Myrtle	Protected	Remove for storm	Remove tree, No replacement required per HPARD
57	7817 Valley View	20" Crepe Myrtle	Protected		Fence, Clearance prune
58	7818 Valley View	26" Crepe Myrtle	Protected		Fence, Clearance prune
59	7819 Valley View	23" Crepe Myrtle	Protected		Fence, Clearance prune
60	7820 Valley View	15" Crepe Myrtle	Not Protected		Fence, Clearance prune
61	7821 Valley View	18" Crepe Myrtle	Not Protected		Fence, Clearance prune
62	7822 Valley View	17" Crepe Myrtle	Not Protected		Fence, Clearance prune
63	7825 Oldhaven	20" Crepe Myrtle	Protected		Fence, Clearance prune
64	7826 Oldhaven	26" Crepe Myrtle	Protected		Fence, Clearance prune
65	7827 Oldhaven	15" Crepe Myrtle	Not Protected		Fence, Clearance prune
66	7828 Oldhaven	22" Crepe Myrtle	Protected		Fence, Clearance prune
67	7829 Oldhaven	19" Crepe Myrtle	Not Protected		Fence, Clearance prune
68	Median	18" Live Oak	Protected		Root prune for street, Fence, Clearance prune
69	Median	6" Crepe Myrtle	Not Protected		
70	Median	6" Crepe Myrtle	Not Protected		
71	Median	6" Crepe Myrtle	Not Protected		
72	Median	6" Crepe Myrtle	Not Protected		
73	Median	6" Crepe Myrtle	Not Protected		
74	Median	6" Crepe Myrtle	Not Protected		
75	Median	17" Live Oak	Protected		Root prune for street, Fence, Clearance prune
76	Median	20" Live Oak	Protected		Root prune for street, Fence, Clearance prune
77	Median	18" Live Oak	Protected		Root prune for street, Fence, Clearance prune
78	Median	6" Crepe Myrtle	Not Protected		
79	Median	6" Crepe Myrtle	Not Protected		
80	Median	6" Crepe Myrtle	Not Protected		
81	Median	6" Crepe Myrtle	Not Protected		
82	Median	6" Crepe Myrtle	Not Protected		
83	Median	6" Crepe Myrtle	Not Protected		
84	Median	6" Crepe Myrtle	Not Protected		
85	Median	19" Live Oak	Protected		Root prune for street, Fence, Clearance prune
86	8101 Bissonnet	25" Live Oak	Protected	Corridor tree	Fence, Clearance prune
87	8102 Bissonnet	17" Live Oak	Protected		Fence, Clearance prune
88	8103 Bissonnet	16" Live Oak	Protected		Fence, Clearance prune
89	8104 Bissonnet	17" Live Oak	Not Protected		Fence, Clearance prune
90	8105 Bissonnet	18" Live Oak	Protected		Fence, Clearance prune
91	8106 Bissonnet	19" Live Oak	Not Protected		Fence, Clearance prune
92	7826 Oldhaven	25" Crepe Myrtle	Protected		Fence, Clearance prune

N

40 0 40 80

SCALE: 1"=40'

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

C.N. Koehl
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281-391-0022 ckoehl@koehlurbanforestry.com

APPROVED: Craig N. Koehl 03-05-2026

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15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

TREE PROTECTION PLAN

SHEET 2 OF 10

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 157 OF 227	

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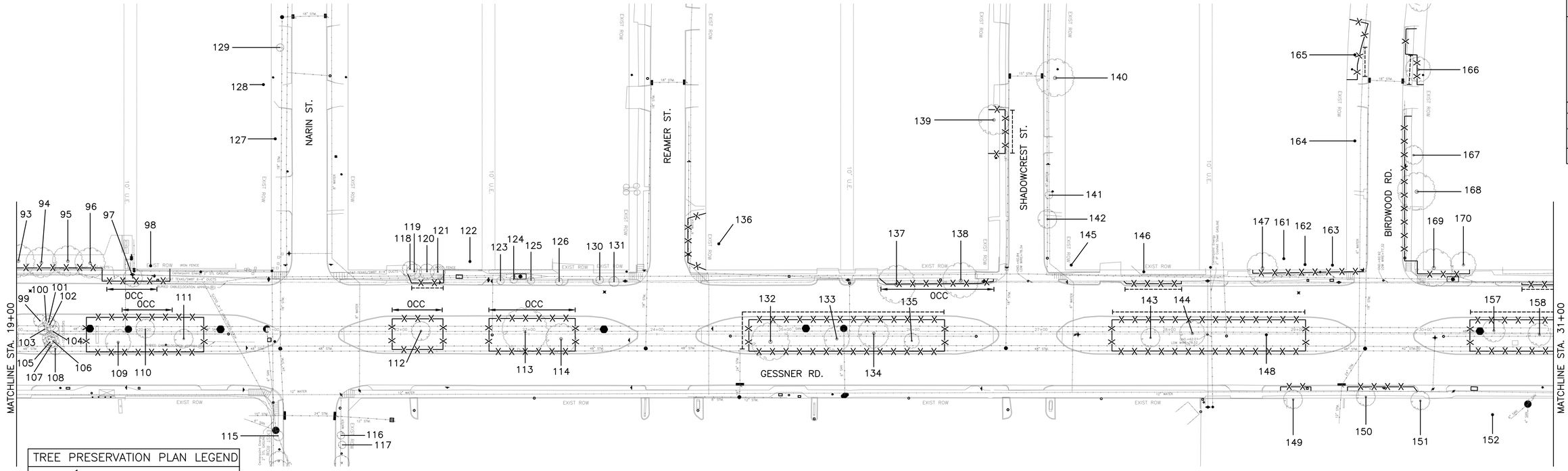

TREE PRESERVATION PLAN LEGEND

- 1 — TREE NUMBER/LOCATION
- (1) — TREE TO BE REMOVED
- —X—X— TREE PROTECTION FENCE
- ROOT PRUNING TRENCH
- 0CC — ZERO CUTBACK CURB

Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
Trees on Gessner Road					
93	9400 S Gessner	22" Crepe Myrtle	Protected		Fence, Clearance prune
94	9401 S Gessner	25" Crepe Myrtle	Protected		Fence, Clearance prune
95	9402 S Gessner	17" Crepe Myrtle	Not Protected		Fence, Clearance prune
96	9403 S Gessner	15" Crepe Myrtle	Not Protected		Fence, Clearance prune
97	8603 Gessner	15" Green Ash	Protected		Zero Curb Cutback, Fence, Clearance prune
98	8603 Gessner	15" Green Ash	Not Protected		Fence, Clearance prune
99	Median	6" Crepe Myrtle	Not Protected		
100	Median	5" Crepe Myrtle	Not Protected		
101	Median	7" Crepe Myrtle	Not Protected		
102	Median	7" Crepe Myrtle	Not Protected		
103	Median	6" Crepe Myrtle	Not Protected		
104	Median	6" Crepe Myrtle	Not Protected		
105	Median	5" Crepe Myrtle	Not Protected		
106	Median	6" Crepe Myrtle	Not Protected		
107	Median	6" Crepe Myrtle	Not Protected		
108	Median	6" Crepe Myrtle	Not Protected		
109	Median	25" Live Oak	Protected		Fence, Clearance prune
110	Median	20" Live Oak	Protected		Zero Curb Cutback, Fence, Clearance prune
111	Median	15" Live Oak	Protected		Fence, Clearance prune
112	Median	21" Live Oak	Protected		Zero Curb Cutback, Fence, Clearance prune
113	Median	24" Live Oak	Protected		Zero Curb Cutback, Fence, Clearance prune
114	Median	17" Live Oak	Protected		Zero Curb Cutback, Fence, Clearance prune
115	9401 S Gessner	6" Crepe Myrtle	Not Protected		
116	9399 S Gessner	8" Crepe Myrtle	Not Protected		
117	9399 S Gessner	8" Crepe Myrtle	Not Protected		
118	8598 Nairn	16" Pine	Not Protected		Root prune for street, Fence, Clearance prune
119	8599 Nairn	15" Pine	Protected		Root prune for street, Fence, Clearance prune
120	8600 Nairn	16" Pine	Protected		Root prune for street, Fence, Clearance prune
121	8601 Nairn	17" Pine	Protected		Root prune for street, Fence, Clearance prune
122	8602 Nairn	23" Lacebark Elm	Protected	Corridor tree	
123	8600 Reamer	9" Bradford Pear	Not Protected		
124	8601 Reamer	8" Bradford Pear	Not Protected		
125	8602 Reamer	11" Bradford Pear	Not Protected		
126	8603 Reamer	9" Bradford Pear	Not Protected		
127	8607 Nairn	16" Tallow	Not Protected		
128	8607 Nairn	28" Live Oak	Protected	Corridor tree	
129	8611 Nairn	8" Crepe Myrtle	Not Protected		
130	8603 Reamer	9" Bradford Pear	Not Protected		
131	8603 Reamer	11" Bradford Pear	Not Protected		
132	Median	27" Live Oak	Protected		Root prune for storm & street, Fence, Clearance prune
133	Median	18" Live Oak	Protected		Root prune for street, Fence, Clearance prune
134	Median	25" Live Oak	Protected		Root prune for street, Fence, Clearance prune
135	Median	15" Live Oak	Protected		Root prune for street, Fence, Clearance prune
136	8602 Reamer	35" Lacebark Elm	Protected	Corridor tree	Fence, Clearance prune
137	8603 Shadow Crest	28" Live Oak	Protected		Zero Curb Cutback, Fence, Clearance prune
138	8603 Shadow Crest	33" Live Oak	Protected		Zero Curb Cutback, Fence, Clearance prune
139	8607 Shadow Crest	25" Shumard Oak	Protected		Root prune for street, Fence, Clearance prune
140	8606 Shadow Crest	10" Orchid tree	Not Protected	Multitrunked	
141	8602 Shadow Crest	7" Mulberry	Not Protected		
142	8603 Shadow Crest	8" Sugarberry	Not Protected	Multitrunked	
143	Median	23" Live Oak	Protected		Root prune for street, Fence, Clearance prune
144	Median	22" Live Oak	Protected	Topped by CPE	Root prune for street, Fence, Clearance prune
145	8603 Shadow Crest	10" Crepe Myrtle	Not Protected		
146	8603 Shadow Crest	26" Pecan	Protected		Root prune for street, Fence, Clearance prune
147	8603 Birdwood	26" Eastern Red Cedar	Protected	Corridor tree	Fence, Clearance prune
148	Median	23" Live Oak	Protected		Root prune for street, Fence, Clearance prune
149	9119 Gessner	19" Live Oak	Not Protected		Fence, Clearance prune
150	9119 Gessner	25" Live Oak	Protected		Fence, Clearance prune
151	9119 Gessner	22" Live Oak	Protected	Corridor tree	Fence, Clearance prune
152	9119 Gessner	25" Live Oak	Protected	Corridor tree	Clearance prune
157	Median	19" Live Oak	Protected		Root prune for street, Fence, Clearance prune
158	Median	21" Live Oak	Protected		Root prune for street, Fence, Clearance prune
161	8603 Birdwood	20" Sweetgum	Protected	Corridor tree	Root prune for street, Fence, Clearance prune
162	8603 Birdwood	18" Sweetgum	Not Protected		Root prune for street, Fence, Clearance prune
163	8603 Birdwood	19" Pine	Not Protected		Root prune for street, Fence, Clearance prune
164	8607 Birdwood	7" Sugar berry	Not Protected		
165	8611 Birdwood	23" Arizona Ash	Protected		Root prune for street, Fence, Clearance prune
166	8610 Birdwood	26" Pine	Protected		Root prune for street, Fence, Clearance prune
167	8606 Birdwood	18" Pine	Protected		Fence
168	8602 Birdwood	43" Live Oak	Protected		Fence, Clearance prune
169	8602 Birdwood	37" Live Oak	Protected	Corridor tree	Root prune for street, Fence, Clearance prune
170	8602 Birdwood	27" Live Oak	Protected	Corridor tree	Root prune for street, Fence, Clearance prune

N

40 0 40 80

SCALE: 1"=40'

NO.	DATE	REVISION	APP.
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

TREE PROTECTION PLAN

SHEET 3 OF 10

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 158 OF 227	

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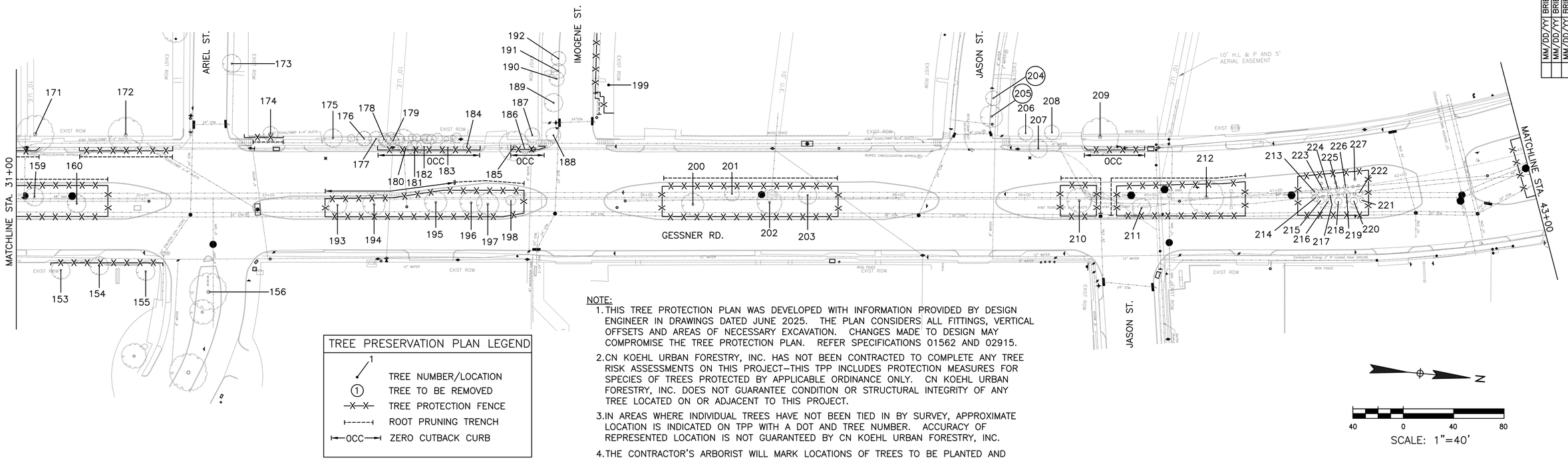

TREE PRESERVATION PLAN LEGEND

- 1 — TREE NUMBER/LOCATION
- (1) — TREE TO BE REMOVED
- —X—X— TREE PROTECTION FENCE
- ------ ROOT PRUNING TRENCH
- —0CC— ZERO CUTBACK CURB

NOTE:

1. THIS TREE PROTECTION PLAN WAS DEVELOPED WITH INFORMATION PROVIDED BY DESIGN ENGINEER IN DRAWINGS DATED JUNE 2025. 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.
2. CN KOEHL URBAN FORESTRY, INC. HAS NOT BEEN CONTRACTED TO COMPLETE ANY TREE RISK ASSESSMENTS ON THIS PROJECT–THIS TPP INCLUDES PROTECTION MEASURES FOR SPECIES OF TREES PROTECTED BY APPLICABLE ORDINANCE ONLY. CN KOEHL URBAN FORESTRY, INC. DOES NOT GUARANTEE CONDITION OR STRUCTURAL INTEGRITY OF ANY TREE LOCATED ON OR ADJACENT TO THIS PROJECT.
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4. THE CONTRACTOR'S ARBORIST WILL MARK LOCATIONS OF TREES TO BE PLANTED AND OBTAIN APPROVAL BY CITY ENGINEER AND CITY FORESTER BEFORE PURCHASING OR EXCAVATING PLANTING HOLE OF EACH TREE.

N

40 0 40 80

SCALE: 1"=40'

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
Trees on Gessner Road					
153	9119 Gessner	22" Live Oak	Protected	Corridor tree	Fence, Clearance prune
154	9119 Gessner	18" Live Oak	Not Protected		Fence, Clearance prune
155	9119 Gessner	22" Live Oak	Protected	Corridor tree	Fence, Clearance prune
156	Median	33" Arizona Ash	Protected	Trunk decay, Poor, Not impacted	
159	Median	20" Live Oak	Protected		Root prune for street, Fence, Clearance prune
160	Median	21" Live Oak	Protected		Root prune for street, Fence, Clearance prune
171	8603 Ariel	35" Water Oak	Protected	Corridor tree	Root prune for street, Fence, Clearance prune
172	8603 Ariel	34" Water Oak	Protected	Corridor tree	Root prune for street, Fence, Clearance prune
173	8602 Ariel	12" Crepe Myrtle	Not Protected		
174	8602 Ariel	20" Pine	Protected	Corridor tree	Root prune for street, Fence, Clearance prune
175	8602 Ariel	7" Crepe Myrtle	Not Protected		
176	8602 Ariel	7" Crepe Myrtle	Not Protected		
177	8602 Ariel	7" Crepe Myrtle	Not Protected		
178	8602 Ariel	7" Crepe Myrtle	Not Protected		
179	8603 Imogene	7" Crepe Myrtle	Not Protected		
180	8603 Imogene	13" Sycamore	Protected	Topped by CPE	Zero Curb Cutback, Fence, Clearance prune
181	8603 Imogene	11" Live Oak	Protected	Topped by CPE	Zero Curb Cutback, Fence, Clearance prune
182	8603 Imogene	12" Catalpa	Not Protected		
183	8603 Imogene	12" Live Oak	Protected	Topped by CPE	Zero Curb Cutback, Fence, Clearance prune
184	8603 Imogene	7" Sycamore	Protected	80% dieback	Zero Curb Cutback, Fence, Clearance prune
185	8603 Imogene	22" Tallow	Protected		Zero Curb Cutback, Fence, Clearance prune
186	8603 Imogene	9" Lacebark Elm	Protected	Dead	
187	8603 Imogene	12" Live Oak	Not Protected		
188	8603 Imogene	18" Catalpa	Not Protected		
189	8603 Imogene	12" Bradford Pear	Not Protected		
190	8603 Imogene	10" Bradford Pear	Not Protected		
191	8603 Imogene	10" Bradford Pear	Not Protected		
192	8603 Imogene	10" Bradford Pear	Not Protected		
193	Median	16" Live Oak	Protected		Zero Curb Cutback, Fence, Clearance prune
194	Median	20" Live Oak	Protected		Zero Curb Cutback, Fence, Clearance prune
195	Median	23" Live Oak	Protected		Zero Curb Cutback, Fence, Clearance prune
196	Median	19" Live Oak	Protected		Root prune for street, Fence, Clearance prune

Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
Trees on Gessner Road					
197	Median	22" Green Ash	Protected		Root prune for street, Fence, Clearance prune
198	Median	9" Ligustrum	Not Protected	Poor	
199	8602 Imogene	23" Water Oak	Protected		Root prune for street, Fence, Clearance prune
200	Median	23" Live Oak	Protected		Root prune for street, Fence, Clearance prune
201	Median	14" Live Oak	Protected		Root prune for street, Fence, Clearance prune
202	Median	22" Live Oak	Protected		Root prune for street, Fence, Clearance prune
203	Median	16" Live Oak	Not Protected		Root prune for street, Fence, Clearance prune
204	8602 Jason	13" Tallow	Not Protected	Remove for storm	Remove tree, No replacement required
205	8602 Jason	21" Tallow	Not Protected	Remove for storm	Remove tree, No replacement required per HPARD
206	8602 Jason	13" Tallow	Not Protected		
207	8602 Jason	14" Tallow	Not Protected		
208	8602 Jason	10" Tallow	Not Protected		
209	8602 Jason	35" Water Oak	Protected	Corridor tree	Zero Curb Cutback, Fence, Clearance prune
210	Median	22" Live Oak	Protected		Root prune for storm & street, Fence, Clearance prune
211	Median	16" Live Oak	Protected		Root prune for storm & street, Fence, Clearance prune
212	Median	25" Live Oak	Protected		Root prune for street, Fence, Clearance prune
213	Median	4" Shumard Oak	Protected		Fence
214	Median	4" Live Oak	Protected		Fence
215	Median	5" Live Oak	Protected		Fence
216	Median	4" Shumard Oak	Protected		Fence
217	Median	3" Shumard oak	Protected		Fence
218	Median	5" Shumard Oak	Protected		Fence
219	Median	6" Live Oak	Protected		Fence
220	Median	3" Live Oak	Protected		Fence
221	Median	4" Live Oak	Protected		Fence
222	Median	2" Shumard Oak	Protected		Fence
223	Median	2" Live Oak	Protected		Fence
224	Median	4" Live Oak	Protected		Fence
225	Median	5" Shumard Oak	Protected		Fence
226	Median	4" Shumard Oak	Protected		Fence
227	Median	6" Shumard Oak	Protected		Fence

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HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

TREE PROTECTION PLAN

SHEET 4 OF 10

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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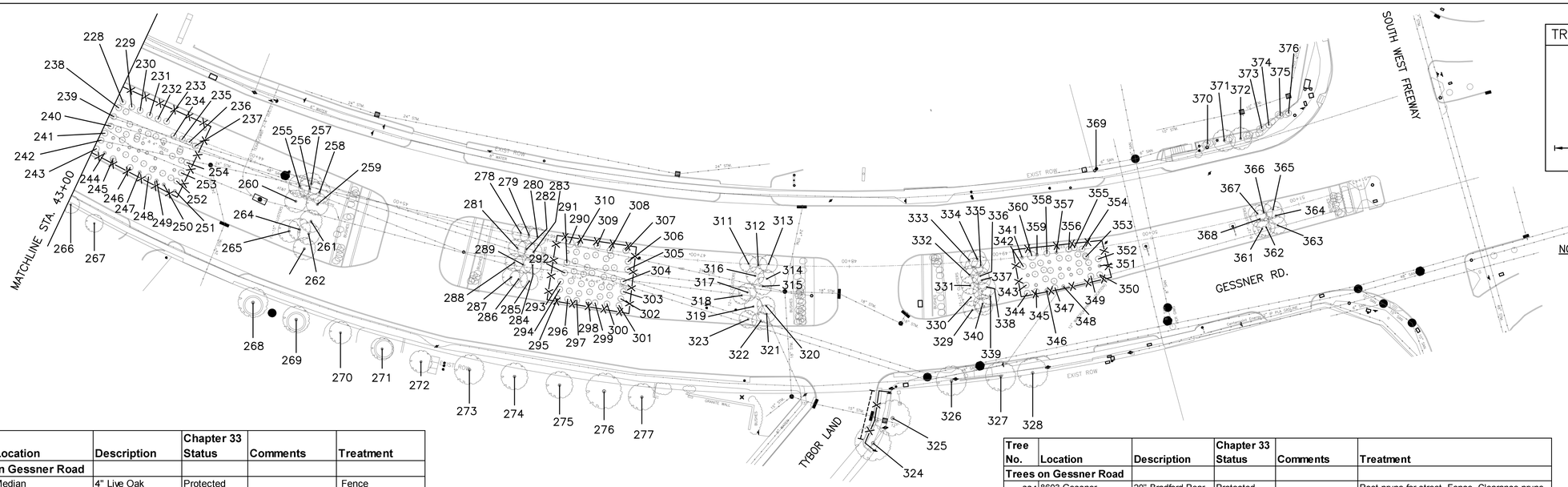

TREE PRESERVATION PLAN LEGEND

- TREE NUMBER/LOCATION
- (1) TREE TO BE REMOVED
- TREE PROTECTION FENCE
- ROOT PRUNING TRENCH
- OCC — ZERO CUTBACK CURB

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
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N

40 0 40 80

SCALE: 1"=40'

Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
Trees on Gessner Road					
228	Median	4" Live Oak	Protected		Fence
229	Median	3" Live Oak	Protected		Fence
230	Median	4" Live Oak	Protected		Fence
231	Median	5" Live Oak	Protected		Fence
232	Median	4" Shumard Oak	Protected		Fence
233	Median	3" Shumard oak	Protected		Fence
234	Median	5" Shumard Oak	Protected		Fence
235	Median	6" Live Oak	Protected		Fence
236	Median	3" Live Oak	Protected		Fence
237	Median	4" Live Oak	Protected		Fence
238	Median	2" Shumard Oak	Protected		Fence
239	Median	2" Live Oak	Protected		Fence
240	Median	4" Live Oak	Protected		Fence
241	Median	5" Shumard Oak	Protected		Fence
242	Median	4" Shumard Oak	Protected		Fence
243	Median	6" Shumard Oak	Protected		Fence
244	Median	4" Live Oak	Protected		Fence
245	Median	3" Live Oak	Protected		Fence
246	Median	4" Live Oak	Protected		Fence
247	Median	2" Shumard Oak	Protected		Fence
248	Median	2" Live Oak	Protected		Fence
249	Median	4" Live Oak	Protected		Fence
250	Median	5" Shumard Oak	Protected		Fence
251	Median	4" Shumard Oak	Protected		Fence
252	Median	6" Shumard Oak	Protected		Fence
253	Median	4" Live Oak	Protected		Fence
254	Median	3" Live Oak	Protected		Fence
255	Median	10" Crepe Myrtle	Not Protected		
256	Median	10" Crepe Myrtle	Not Protected		
257	Median	10" Crepe Myrtle	Not Protected		
258	Median	10" Crepe Myrtle	Not Protected		
259	Median	10" Crepe Myrtle	Not Protected		
260	Median	10" Crepe Myrtle	Not Protected		
261	Median	10" Crepe Myrtle	Not Protected		
262	Median	10" Crepe Myrtle	Not Protected		
263	Median	10" Crepe Myrtle	Not Protected		
264	Median	10" Crepe Myrtle	Not Protected		
265	Median	10" Crepe Myrtle	Not Protected		
266	NA	15' Palm	Not Protected		
267	NA	15' Palm	Not Protected		
268	NA	18" Live Oak	Not Protected		
269	NA	11" Live Oak	Not Protected		
270	NA	11" Live Oak	Not Protected		
271	NA	17" Live Oak	Not Protected		
272	NA	22" Live Oak	Protected	Corridor tree	Clearance prune
273	NA	20" Live Oak	Protected	Corridor tree	Clearance prune
274	NA	22" Live Oak	Protected	Corridor tree	Clearance prune
275	NA	19" Live Oak	Not Protected		
276	NA	27" Live Oak	Protected	Corridor tree	Clearance prune
277	NA	21" Live Oak	Protected	Corridor tree	Clearance prune

Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
Trees on Gessner Road					
278	Median	9" Crepe Myrtle	Not Protected		
279	Median	9" Crepe Myrtle	Not Protected		
280	Median	9" Crepe Myrtle	Not Protected		
281	Median	9" Crepe Myrtle	Not Protected		
282	Median	9" Crepe Myrtle	Not Protected		
283	Median	9" Crepe Myrtle	Not Protected		
284	Median	9" Crepe Myrtle	Not Protected		
285	Median	9" Crepe Myrtle	Not Protected		
286	Median	9" Crepe Myrtle	Not Protected		
287	Median	9" Crepe Myrtle	Not Protected		
288	Median	9" Crepe Myrtle	Not Protected		
289	Median	9" Crepe Myrtle	Not Protected		
290	Median	4" Shumard Oak	Protected		Fence
291	Median	4" Live Oak	Protected		Fence
292	Median	5" Live Oak	Protected		Fence
293	Median	4" Shumard Oak	Protected		Fence
294	Median	3" Shumard oak	Protected		Fence
295	Median	5" Shumard Oak	Protected		Fence
296	Median	6" Live Oak	Protected		Fence
297	Median	3" Live Oak	Protected		Fence
298	Median	4" Live Oak	Protected		Fence
299	Median	2" Shumard Oak	Protected		Fence
300	Median	2" Live Oak	Protected		Fence
301	Median	4" Live Oak	Protected		Fence
302	Median	5" Shumard Oak	Protected		Fence
303	Median	4" Shumard Oak	Protected		Fence
304	Median	6" Shumard Oak	Protected		Fence
305	Median	4" Live Oak	Protected		Fence
306	Median	3" Live Oak	Protected		Fence
307	Median	4" Live Oak	Protected		Fence
308	Median	5" Live Oak	Protected		Fence
309	Median	4" Shumard Oak	Protected		Fence
310	Median	3" Shumard oak	Protected		Fence
311	Median	10" Crepe Myrtle	Not Protected		
312	Median	10" Crepe Myrtle	Not Protected		
313	Median	10" Crepe Myrtle	Not Protected		
314	Median	10" Crepe Myrtle	Not Protected		
315	Median	10" Crepe Myrtle	Not Protected		
316	Median	10" Crepe Myrtle	Not Protected		
317	Median	10" Crepe Myrtle	Not Protected		
318	Median	10" Crepe Myrtle	Not Protected		
319	Median	10" Crepe Myrtle	Not Protected		
320	Median	10" Crepe Myrtle	Not Protected		
321	Median	10" Crepe Myrtle	Not Protected		
322	Median	10" Crepe Myrtle	Not Protected		
323	Median	10" Crepe Myrtle	Not Protected		

Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
Trees on Gessner Road					
324	8603 Gessner	20" Bradford Pear	Protected		Root prune for street, Fence, Clearance prune
325	8603 Gessner	21" Bradford Pear	Protected		Root prune for street, Fence, Clearance prune
326	8603 Gessner	21" Bradford Pear	Protected		Clearance prune
327	8603 Gessner	21" Bradford Pear	Protected		Clearance prune
328	8603 Gessner	20" Bradford Pear	Protected		Clearance prune
329	Median	9" Crepe Myrtle	Not Protected		
330	Median	9" Crepe Myrtle	Not Protected		
331	Median	9" Crepe Myrtle	Not Protected		
332	Median	9" Crepe Myrtle	Not Protected		
333	Median	9" Crepe Myrtle	Not Protected		
334	Median	9" Crepe Myrtle	Not Protected		
335	Median	9" Crepe Myrtle	Not Protected		
336	Median	9" Crepe Myrtle	Not Protected		
337	Median	9" Crepe Myrtle	Not Protected		
338	Median	9" Crepe Myrtle	Not Protected		
339	Median	9" Crepe Myrtle	Not Protected		
340	Median	9" Crepe Myrtle	Not Protected		
341	Median	5" Live Oak	Protected		Fence
342	Median	4" Shumard Oak	Protected		Fence
343	Median	3" Shumard oak	Protected		Fence
344	Median	5" Shumard Oak	Protected		Fence
345	Median	6" Live Oak	Protected		Fence
346	Median	3" Live Oak	Protected		Fence
347	Median	4" Live Oak	Protected		Fence
348	Median	2" Shumard Oak	Protected		Fence
349	Median	2" Live Oak	Protected		Fence
350	Median	4" Live Oak	Protected		Fence
351	Median	5" Shumard Oak	Protected		Fence
352	Median	4" Shumard Oak	Protected		Fence
353	Median	6" Shumard Oak	Protected		Fence
354	Median	4" Live Oak	Protected		Fence
355	Median	3" Live Oak	Protected		Fence
356	Median	4" Live Oak	Protected		Fence
357	Median	5" Live Oak	Protected		Fence
358	Median	4" Shumard Oak	Protected		Fence
359	Median	3" Shumard oak	Protected		Fence
360	Median	4" Live Oak	Protected		Fence
361	Median	10" Crepe Myrtle	Not Protected		
362	Median	10" Crepe Myrtle	Not Protected		
363	Median	10" Crepe Myrtle	Not Protected		
364	Median	10" Crepe Myrtle	Not Protected		
365	Median	10" Crepe Myrtle	Not Protected		
366	Median	10" Crepe Myrtle	Not Protected		
367	Median	10" Crepe Myrtle	Not Protected		
368	Median	10" Crepe Myrtle	Not Protected		
369	8601 Southwest Fwy	4" Lacebark Elm	Not Protected		
370	8601 Southwest Fwy	3" Lacebark Elm	Not Protected	Topped, Poor	
371	8601 Southwest Fwy	3" Lacebark Elm	Not Protected	Topped, Poor	
372	8601 Southwest Fwy	16" Bradford Pear	Not Protected	Dead	
373	8601 Southwest Fwy	16" Bradford Pear	Not Protected	Dead	
374	8601 Southwest Fwy	3" Lacebark Elm	Not Protected	Topped, Poor	
375	8601 Southwest Fwy	3" Lacebark Elm	Not Protected	Topped, Poor	
376	8601 Southwest Fwy	3" Lacebark Elm	Not Protected	Topped, Poor	

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APPROVED: Craig N. Koehl 03-05-2026

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281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

TREE PROTECTION PLAN

SHEET 5 OF 10

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 160 OF 227	

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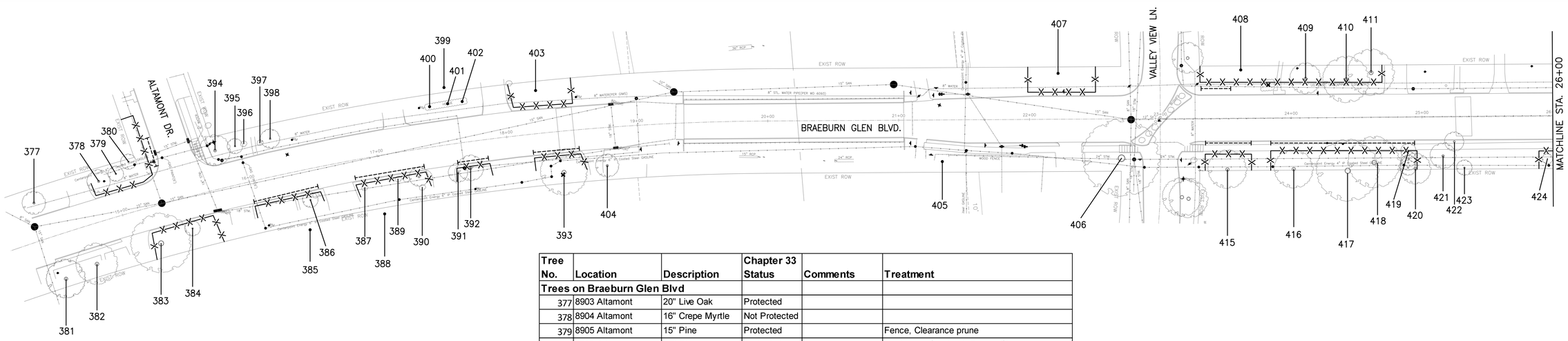

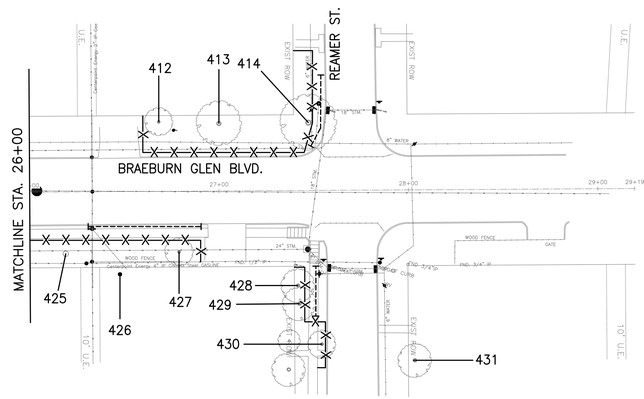

NOTE:

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4. THE CONTRACTOR'S ARBORIST WILL MARK LOCATIONS OF TREES TO BE PLANTED AND OBTAIN APPROVAL BY CITY ENGINEER AND CITY FORESTER BEFORE PURCHASING OR EXCAVATING PLANTING HOLE OF EACH TREE.

TREE PRESERVATION PLAN LEGEND

1	TREE NUMBER/LOCATION
①	TREE TO BE REMOVED
-X-X-	TREE PROTECTION FENCE
------	ROOT PRUNING TRENCH
0CC	ZERO CUTBACK CURB

Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
Trees on Braeburn Glen Blvd					
377	8903 Altamont	20" Live Oak	Protected		
378	8904 Altamont	16" Crepe Myrtle	Not Protected		
379	8905 Altamont	15" Pine	Protected		Fence, Clearance prune
380	8906 Altamont	22" Pine	Protected		Root prune for street, Fence, Clearance prune
381	9503 Braeburn Glen	25" Live Oak	Protected		
382	9503 Braeburn Glen	22" Water Oak	Protected		
383	9503 Braeburn Glen	41" Water Oak	Protected		Fence, Clearance prune
384	9427 Braeburn Glen	6" Redbud	Protected		Fence, Clearance prune
385	9423 Braeburn Glen	43" Water Oak	Protected	Corridor tree	Root prune for street, Fence, Clearance prune
386	9423 Braeburn Glen	5' Sago	Not Protected		
387	9423 Braeburn Glen	6" Crepe Myrtle	Not Protected		
388	9419 Braeburn Glen	38" Water Oak	Protected	40% dieback	Root prune for street, Fence, Clearance prune
389	9419 Braeburn Glen	2" Texas Sage	Not Protected		
390	9419 Braeburn Glen	3" Arborvitae	Not Protected		
391	9419 Braeburn Glen	5" Green Ash	Protected		Root prune for street, Fence, Clearance prune
392	9419 Braeburn Glen	5' Palm	Not Protected		
393	9426 Braeburn Glen	26" Pecan	Protected	Corridor tree	Root prune for street, Fence, Clearance prune
394	9427 Braeburn Glen	30' Palm	Not Protected		
395	9428 Braeburn Glen	30' Palm	Not Protected		
396	9429 Braeburn Glen	4' Sago	Not Protected		
397	9430 Braeburn Glen	4' Sago	Not Protected		
398	9431 Braeburn Glen	20' Palm	Not Protected	Dead	
399	9410 Braeburn Glen	28" Live Oak	Protected	Corridor tree	Clearance prune
400	9411 Braeburn Glen	6" Crepe Myrtle	Not Protected		
401	9412 Braeburn Glen	6" Crepe Myrtle	Not Protected		
402	9413 Braeburn Glen	6" Crepe Myrtle	Not Protected		
403	9408 Braeburn Glen	23" Water Oak	Protected	Poor condition	Fence, Clearance prune
404	9426 Braeburn Glen	17" Sugar berry	Not Protected		
405	8719 Valley View	16" Sugar berry	Not Protected		
406	8719 Valley View	15" Burford Holly	Not Protected		
407	9319 Braeburn Glen	21" Pecan	Protected		Fence, Clearance prune
408	9319 Braeburn Glen	25" Magnolia	Protected		Root prune for street, Fence, Clearance prune
409	9319 Braeburn Glen	24" Sycamore	Protected		Fence, Clearance prune
410	9319 Braeburn Glen	38" Live Oak	Protected		Fence, Clearance prune
411	9319 Braeburn Glen	42" Live Oak	Protected		Fence, Clearance prune
412	9319 Braeburn Glen	11" Crepe Myrtle	Not Protected		
413	9319 Braeburn Glen	28" Pine	Protected		Fence, Clearance prune
414	9319 Braeburn Glen	33" Pine	Protected		Root prune for street, Fence, Clearance prune
415	9319 Braeburn Glen	25" Pecan	Protected		Fence, Clearance prune
416	9319 Braeburn Glen	18" Pecan	Protected		Root prune for street, Fence, Clearance prune
417	9319 Braeburn Glen	42" Arizona Ash	Protected	Trunk decay, Poor	Root prune for street, Fence, Clearance prune
418	9319 Braeburn Glen	37" Arizona Ash	Protected	Trunk decay, Poor	Root prune for street, Fence, Clearance prune
419	9319 Braeburn Glen	(4) 5" Crepe Myrtle	Not Protected		
420	9315 Braeburn Glen	15" Tallow	Not Protected		
421	9315 Braeburn Glen	15" Palm	Not Protected		
422	9315 Braeburn Glen	8" Crepe Myrtle	Not Protected		
423	9315 Braeburn Glen	9" Magnolia	Protected	Dead	
424	9311 Braeburn Glen	8" Pecan	Protected		Fence, Clearance prune
425	9311 Braeburn Glen	4" Pecan	Protected		Fence, Clearance prune
426	9307 Braeburn Glen	26" Live Oak	Protected	Corridor tree	Root prune for street, Fence, Clearance prune
427	9307 Braeburn Glen	14" Pecan	Protected		Root prune for street, Fence, Clearance prune
428	8727 Reamer	15" Pecan	Protected		Root prune for street, Fence, Clearance prune
429	8727 Reamer	13" Pecan	Protected		Root prune for street, Fence, Clearance prune
430	8727 Reamer	11" Pecan	Protected		Fence, Clearance prune
431	8726 Reamer	15" Water Oak	Not Protected		

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

N

40 0 40 80

SCALE: 1"=40'

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APPROVED: Craig N. Koehl 03-05-2026

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HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

TREE PROTECTION PLAN

SHEET 6 OF 10

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 161 OF 227	

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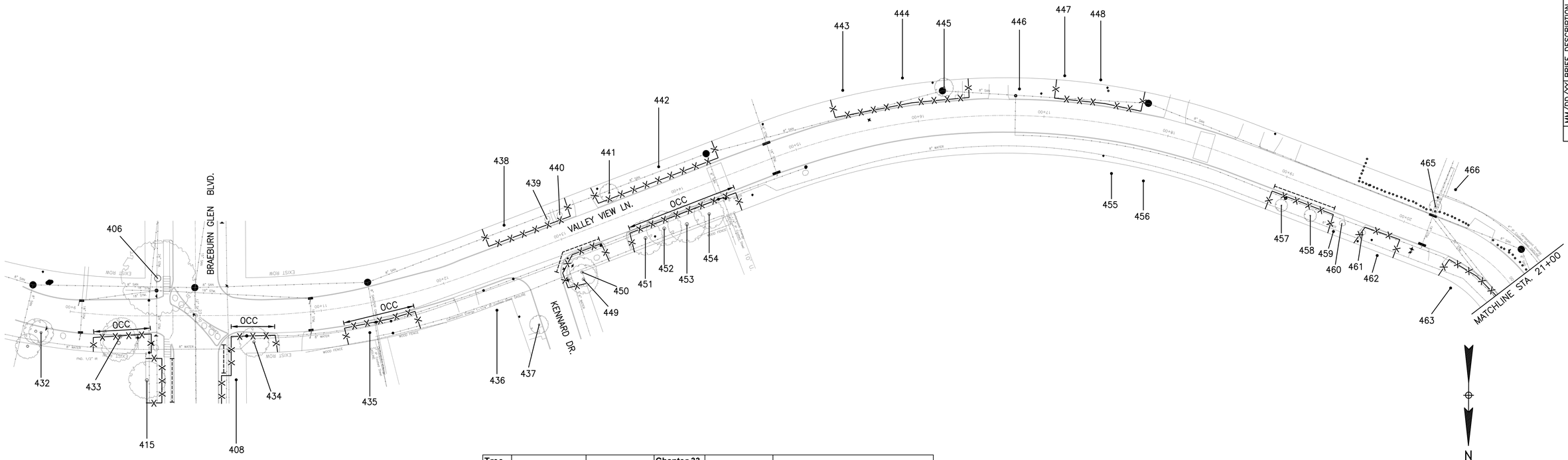

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40 0 40 80

SCALE: 1"=40'

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
Trees on Valley View Drive					
432	9319 Braeburn Glen	19" Pine	Protected	Not impacted	
433	9319 Braeburn Glen	21" Pecan	Protected		Zero Curb Cutback, Fence, Clearance prune
434	9318 Braeburn Glen	20" Sycamore	Protected	70% dieback	Zero Curb Cutback, Fence, Clearance prune
435	9318 Braeburn Glen	20" Magnolia	Protected	80% dieback	Zero Curb Cutback, Fence, Clearance prune
436	8802 Kennard	9" Magnolia	Not Protected		
437	8802 Kennard	9" Arborvitae	Not Protected		
438	8815 Valley View	28" Water Oak	Protected	80% dieback	Fence, Clearance prune
439	8815 Valley View	4' Sago	Not Protected		
440	8815 Valley View	4' Sago	Not Protected		
441	8819 Valley View	15" Pine	Protected		Fence, Clearance prune
442	8819 Valley View	49" Live Oak	Protected	Corridor tree	Fence, Clearance prune
443	8831 Valley View	24" Green Ash	Protected	Poor	Fence, Clearance prune
444	8831 Valley View	32" Live Oak	Protected	Corridor tree	Fence, Clearance prune
445	8835 Valley View	14" Lacebark Elm	Protected		Fence, Clearance prune
446	8903 Valley View	10" Crepe Myrtle	Not Protected		
447	8903 Valley View	10" Holly	Not Protected	Private tree	
448	8903 Valley View	34" Green Ash	Protected	Corridor tree	Fence, Clearance prune
449	8826 Valley View	21" Green Ash	Protected		Root prune for street, Fence, Clearance prune
450	8826 Valley View	22" Green Ash	Protected		Root prune for street, Fence, Clearance prune
451	8826 Valley View	24" Green Ash	Protected		Zero Curb Cutback, Fence, Clearance prune
452	8826 Valley View	21" Green Ash	Protected		Zero Curb Cutback, Fence, Clearance prune
453	8826 Valley View	27" Green Ash	Protected		Zero Curb Cutback, Fence, Clearance prune
454	8826 Valley View	22" Green Ash	Protected		Zero Curb Cutback, Fence, Clearance prune
455	8902 Valley View	25" Green Ash	Protected	Private tree	
456	8902 Valley View	25" Green Ash	Protected	Private tree	
457	8918 Valley View	19" Cedar Elm	protected		Root prune for street, Fence, Clearance prune
458	8918 Valley View	10" Willow Oak	Protected		Root prune for street, Fence, Clearance prune
459	8918 Valley View	24" Willow Oak	Protected		Root prune for street, Fence, Clearance prune
460	8918 Valley View	2' Palm	Not Protected		
461	8918 Valley View	2' Palm	Not Protected		
462	8922 Valley View	23" Green Ash	Protected	Corridor tree	Fence, Clearance prune
463	8926 Valley View	15" Cedar Elm	Not Protected		Fence, Clearance prune
465	8919 Valley View	10" Black Willow	Not Protected		
466	8919 Valley View	25" Sugar berry	Not Protected	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
- ------ — ROOT PRUNING TRENCH
- OCC — ZERO CUTBACK CURB

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TREE PROTECTION PLAN

SHEET 7 OF 10

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
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CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 162 OF 227	

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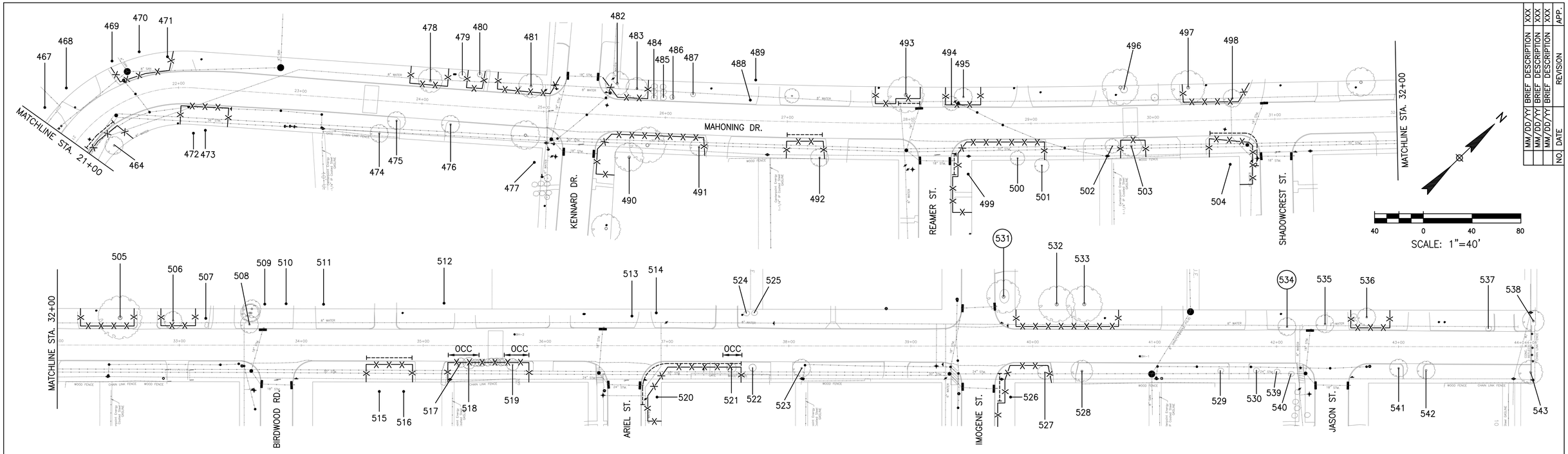

Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
Trees on Valley View Drive					
464	8926 Valley View	21" American Elm	Protected		Root prune for street, Fence, Clearance prune
467	8927 Valley View	19" Pine	Not Protected	Private tree	
468	8927 Valley View	10" Water Oak	Not Protected	Private tree	
469	8931 Valley View	34" Water Oak	Protected	80% dieback	Fence, Clearance prune
470	8931 Valley View	28" Green Ash	Protected	Corridor tree	Fence, Clearance prune
471	8935 Valley View	30" Pecan	Protected	Corridor tree	Fence, Clearance prune
Trees on Mahong Drive					
472	8926 Valley View	26" Pecan	Protected	Corridor tree	Fence, Clearance prune
473	8926 Valley View	22" Arizona Ash	Not Protected	Private tree	Fence, Clearance prune
474	8923 Kennard	6" Crepe Myrtle	Not Protected		
475	8923 Kennard	5' Sago	Not Protected		
476	8923 Kennard	5' Sago	Not Protected		
477	8923 Kennard	15" Pine	Not Protected	Private tree	
478	9322 Mahoning	20" Tallow	Protected		Fence, Clearance prune
479	9322 Mahoning	7" Loquat	Not Protected		
480	9322 Mahoning	6" Water Oak	Protected		Fence, Clearance prune
481	9314 Mahoning	23" Pine	Protected		Fence, Clearance prune
482	Not available	8" Pine	Protected		Fence, Clearance prune
483	Not available	13" Pecan	Protected		Fence, Clearance prune
484	Not available	3" Apple	Not Protected		
485	Not available	3" Apple	Not Protected		
486	Not available	3" Apple	Not Protected		
487	Not available	3" Apple	Not Protected		
488	Not available	8" Loquat	Not Protected		
489	Not available	20" Pine	Protected	Corridor tree	
490	8922 Kennard	28" Willow Oak	Protected	60% dieback	Fence, Clearance prune
491	8922 Kennard	20" Tallow	Protected		Fence, Clearance prune
492	8919 Kennard	17" American Elm	Protected		Root prune for street, Fence, Clearance prune
493	9302 Mahoning	42" Green Ash	Protected		Root prune for street, Fence, Clearance prune
494	9302 Mahoning	5" Juniper	Not Protected		
495	9230 Mahoning	15" Magnolia	Protected		Fence, Clearance prune
496	9218 Mahoning	4" Loquat	Not Protected		
497	9218 Mahoning	41" Live Oak	Protected		Fence, Clearance prune
498	Not available	23" Catalpa	Protected		Fence, Clearance prune
499	8918 Reamer	21" Pecan	Protected		Root prune for street, Fence, Clearance prune
500	8918 Reamer	21" Magnolia	Protected		Fence, Clearance prune
501	8918 Reamer	13" Magnolia	Not Protected	Private tree	Fence, Clearance prune
502	8843 Shadow Crest	8" Loquat	Not Protected		

Tree No.	Location	Description	Chapter 33 Status	Comments	Treatment
Trees on Mahong Drive					
503	8843 Shadow Crest	9" Malus spp	Not Protected		Root prune for street, Fence, Clearance prune
504	8843 Shadow Crest	23" Pecan	Protected	Corridor tree	Root prune for street, Fence, Clearance prune
505	9206 Mahoning	44" Live Oak	Protected		Fence, Clearance prune
506	9202 Mahoning	14" Green Ash	Protected		Fence, Clearance prune
507	9202 Mahoning	5" Loquat	Not Protected		
508	9202 Mahoning	6" Ligustrum	Not Protected		
509	9118 Mahoning	10" Pecan	Not Protected	Private tree	
510	9118 Mahoning	10" Magnolia	Not Protected	Private tree	
511	9114 Mahoning	21" Tallow	Not Protected	Private tree	
512	9110 Mahoning	42" Live Oak	Protected	Corridor tree	Clearance prune
513	9102 Mahoning	13" Crepe Myrtle	Not Protected		
514	9102 Mahoning	13" Crepe Myrtle	Not Protected		
515	8834 Birdwood	24" Shumard Oak	Protected	Corridor tree	Root prune for street, Fence, Clearance prune
516	8834 Birdwood	34" Live Oak	Protected	Corridor tree	Root prune for street, Fence, Clearance prune
517	8831 Ariel	7" Pecan	Protected		Zero Curb Cutback, Fence, Clearance prune
518	8831 Ariel	14" Water Oak	Protected		Zero Curb Cutback, Fence, Clearance prune
519	8831 Ariel	10" Live Oak	Protected		Zero Curb Cutback, Fence, Clearance prune
520	8830 Ariel	32" Live Oak	Protected		Root prune for street, Fence, Clearance prune
521	8830 Ariel	10" Bur Oak	Protected		Zero Curb Cutback, Fence, Clearance prune
522	8830 Ariel	7" Red Maple	Protected	Dead	
523	8827 Imogene	13" Crepe Myrtle	Not Protected		
524	9002 Mahoning	3' Sago	Not Protected		
525	9002 Mahoning	4" Peach	Not Protected		
526	8826 Imogene	9" Crepe Myrtle	Not Protected		
527	8826 Imogene	10" Crepe Myrtle	Not Protected		
528	8826 Imogene	10" Crepe Myrtle	Not Protected		
529	8819 Jason	2" Raintree	Not Protected		
530	8819 Jason	2" Raintree	Not Protected		
531	8914 Mahoning	17" Tallow	Not Protected	Remove for storm	Remove tree, No replacement required
532	8914 Mahoning	35" Live Oak	Protected	Corridor tree	Fence, Clearance prune
533	8914 Mahoning	33" Live Oak	Protected	Corridor tree	Fence, Clearance prune
534	8902 Mahoning	8" Arborvitae	Not Protected	Remove for street	Remove tree, No replacement required
535	8902 Mahoning	8" Arborvitae	Not Protected		
536	8814 Mahoning	18" Magnolia	Protected		Fence, Clearance prune
537	8810 Mahoning	4' Sago	Not Protected		
538	8810 Mahoning	15" Ligustrum	Not Protected		
539	8819 Jason	2" Raintree	Not Protected		
540	8819 Jason	(7) 1' Sago	Not Protected		
541	8818 Jason	11" Arborvitae	Not Protected		Clearance prune
542	8818 Jason	11" Arborvitae	Not Protected		Clearance prune
543	8818 Jason	12" Ligustrum	Not Protected		

NOTE:

1. THIS TREE PROTECTION PLAN WAS DEVELOPED WITH INFORMATION PROVIDED BY DESIGN ENGINEER IN DRAWINGS DATED JUNE 2025. 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.
2. CN KOEHL URBAN FORESTRY, INC. HAS NOT BEEN CONTRACTED TO COMPLETE ANY TREE RISK ASSESSMENTS ON THIS PROJECT–THIS TPP INCLUDES PROTECTION MEASURES FOR SPECIES OF TREES PROTECTED BY APPLICABLE ORDINANCE ONLY. CN KOEHL URBAN FORESTRY, INC. DOES NOT GUARANTEE CONDITION OR STRUCTURAL INTEGRITY OF ANY TREE LOCATED ON OR ADJACENT TO THIS PROJECT.
3. IN AREAS WHERE INDIVIDUAL TREES HAVE NOT BEEN TIED IN BY SURVEY, APPROXIMATE LOCATION IS INDICATED ON TPP WITH A DOT AND TREE NUMBER. ACCURACY OF REPRESENTED LOCATION IS NOT GUARANTEED BY CN KOEHL URBAN FORESTRY, INC.
4. THE CONTRACTOR'S ARBORIST WILL MARK LOCATIONS OF TREES TO BE PLANTED AND OBTAIN APPROVAL BY CITY ENGINEER AND CITY FORESTER BEFORE PURCHASING OR EXCAVATING PLANTING HOLE OF EACH TREE.

TREE PRESERVATION PLAN LEGEND

- 1 — TREE NUMBER/LOCATION
- (1) — TREE TO BE REMOVED
- –X–X– — TREE PROTECTION FENCE
- ROOT PRUNING TRENCH
- OCC — ZERO CUTBACK CURB

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

C.N. Koehl
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281-391-0022 ckoehl@koehlurbanforestry.com

APPROVED: Craig N. Koehl 03-05-2026

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

TREE PROTECTION PLAN

SHEET 8 OF 10

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 163 OF 227	

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PLOT STYLE: CNKoehl.ctb

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Arboriculturally Significant Tree List

Tree No.	Location	Description
1	Braeburn Glen Park	32" Water Oak
20	Braeburn Glen Park	24" American Elm
24	Braeburn Glen Park	25" Water Oak
56	Braeburn Glen Park	29" Crepe Myrtle
58	7818 Valley View	26" Crepe Myrtle
64	7826 Oldhaven	26" Crepe Myrtle
86	8101 Bissonnet	25" Live Oak
92	7826 Oldhaven	25" Crepe Myrtle
94	9401 S Gessner	25" Crepe Myrtle
109	Median	25" Live Oak
113	Median	24" Live Oak
128	8607 Nairn	28" Live Oak
132	Median	27" Live Oak
134	Median	25" Live Oak
136	8602 Reamer	35" Lacebark Elm
137	8603 Shadow Crest	28" Live Oak
138	8603 Shadow Crest	33" Live Oak
139	8607 Shadow Crest	25" Shumard Oak
146	8603 Shadow Crest	26" Pecan
147	8603 Birdwood	26" Eastern Red Cedar
150	9119 Gessner	25" Live Oak
152	9119 Gessner	25" Live Oak
156	Median	33" Arizona Ash
166	8610 Birdwood	26" Pine
168	8602 Birdwood	43" Live Oak
169	8602 Birdwood	37" Live Oak
170	8602 Birdwood	27" Live Oak
171	8603 Ariel	35" Water Oak
172	8603 Ariel	34" Water Oak
209	8602 Jason	35" Water Oak
212	Median	25" Live Oak
381	9503 Braeburn Glen	25" Live Oak
383	9503 Braeburn Glen	41" Water Oak
385	9423 Braeburn Glen	43" Water Oak
388	9419 Braeburn Glen	38" Water Oak
393	9426 Braeburn Glen	26" Pecan
399	9410 Braeburn Glen	28" Live Oak
408	9319 Braeburn Glen	25" Magnolia
409	9319 Braeburn Glen	24" Sycamore
410	9319 Braeburn Glen	38" Live Oak
411	9319 Braeburn Glen	42" Live Oak
413	9319 Braeburn Glen	28" Pine
414	9319 Braeburn Glen	33" Pine
415	9319 Braeburn Glen	25" Pecan
417	9319 Braeburn Glen	42" Arizona Ash
418	9319 Braeburn Glen	37" Arizona Ash
426	9307 Braeburn Glen	26" Live Oak
438	8815 Valley View	28" Water Oak
442	8819 Valley View	49" Live Oak
443	8831 Valley View	24" Green Ash
444	8831 Valley View	32" Live Oak
448	8903 Valley View	34" Green Ash
451	8826 Valley View	24" Green Ash
453	8826 Valley View	27" Green Ash
455	8902 Valley View	25" Green Ash
456	8902 Valley View	25" Green Ash
459	8918 Valley View	24" Willow Oak
469	8931 Valley View	34" Water Oak
470	8931 Valley View	28" Green Ash
471	8935 Valley View	30" Pecan
472	8926 Valley View	26" Pecan
490	8922 Kennard	28" Willow Oak
493	9302 Mahoning	42" Green Ash
497	9218 Mahoning	41" Live Oak
505	9206 Mahoning	44" Live Oak
512	9110 Mahoning	42" Live Oak
515	8834 Birdwood	24" Shumard Oak
516	8834 Birdwood	34" Live Oak
520	8830 Ariel	32" Live Oak
532	8914 Mahoning	35" Live Oak
533	8914 Mahoning	33" Live Oak

Trees Identified by City of Houston Forestry/Parks & Recreation Department as Arboriculturally Significant are identified here and/or in treatment schedule included on TPP sheets. Arboriculturally Significant trees are to be pruned under direct supervision of City of Houston Forestry. Minimal pruning will be allowed for construction equipment access, and in some cases no pruning will be allowed. Contractor must review conditions around and/or under the canopy of Arboriculturally Significant trees and consider restrictions when preparing cost estimate and planning construction equipment that will be necessary to accomplish design installation with minimal to no tree pruning.

Tree Removal List

Tree No.	Location	Description	Replacement requirement
56	Braeburn Glen Park	29" Crepe Myrtle	0
204	8602 Jason	13" Tallow	0
205	8602 Jason	21" Tallow	0
531	8914 Mahoning	17" Tallow	0
534	8902 Mahoning	8" Arborvitae	0
		TOTAL REPLACEMENT INCHES REQUIRED	**0**

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	
0-5.99"		$ 297.98	$ -
6-11.99"		496.64	$ -
12" +	0	662.19	$ -
		TOTAL REQUIRED MITIGATION FEE	**$ -**

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	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

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APPROVED: Craig N. Koehl 03-05-2026

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281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

TREE PROTECTION PLAN

SHEET 9 OF 10

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 164 OF 227	

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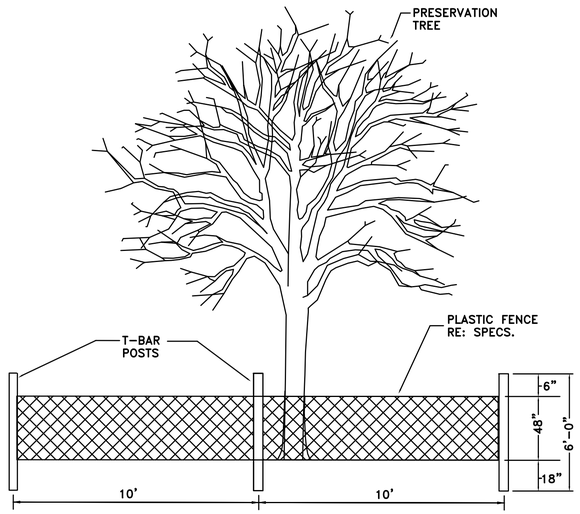
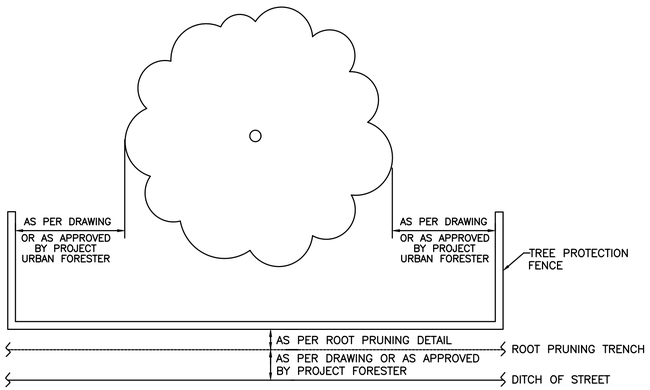


TREE PROTECTION FENCING DETAIL A
NOT TO SCALE



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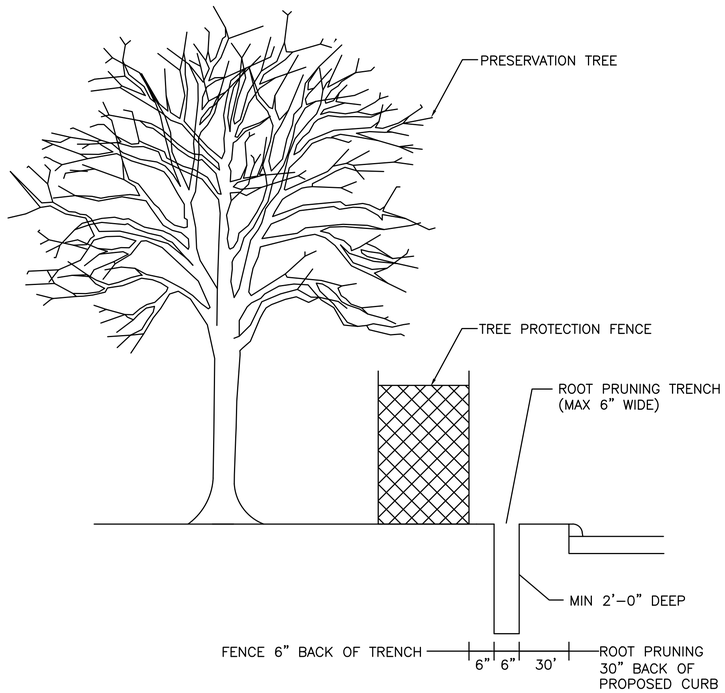
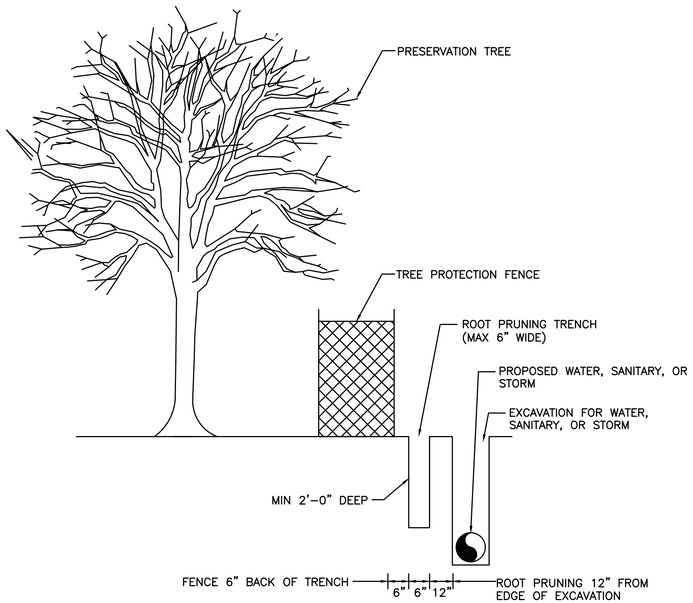
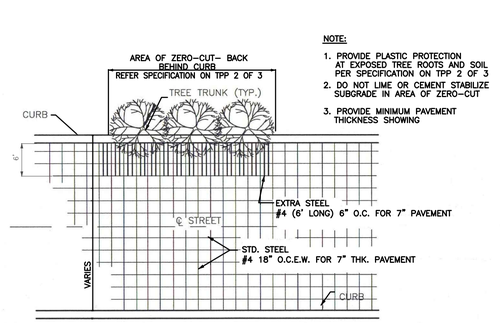


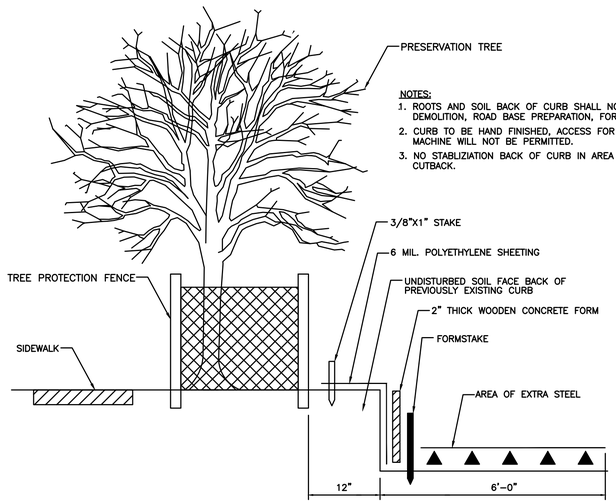
ROOT PRUNE FOR STREET-CURB & GUTTER - NO 0CC
NOT TO SCALE



ROOT PRUNE FOR WATER, SANITARY, OR STORM LINE
NOT TO SCALE



ZERO CURB CUTBACK DETAIL
EXTRA STEEL BEHIND CURB
NOT TO SCALE



ZERO CURB CUTBACK DETAIL-PROFILE VIEW
NOT TO SCALE

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

C.N. Koehl
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281-391-0022 ckoehl@koehlurbanforestry.com

APPROVED: Craig N. Koehl 03-05-2026

ENTECH CIVIL ENGINEERS, INC.
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

TREE PROTECTION PLAN

SHEET 10 OF 10

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 165 OF 227	

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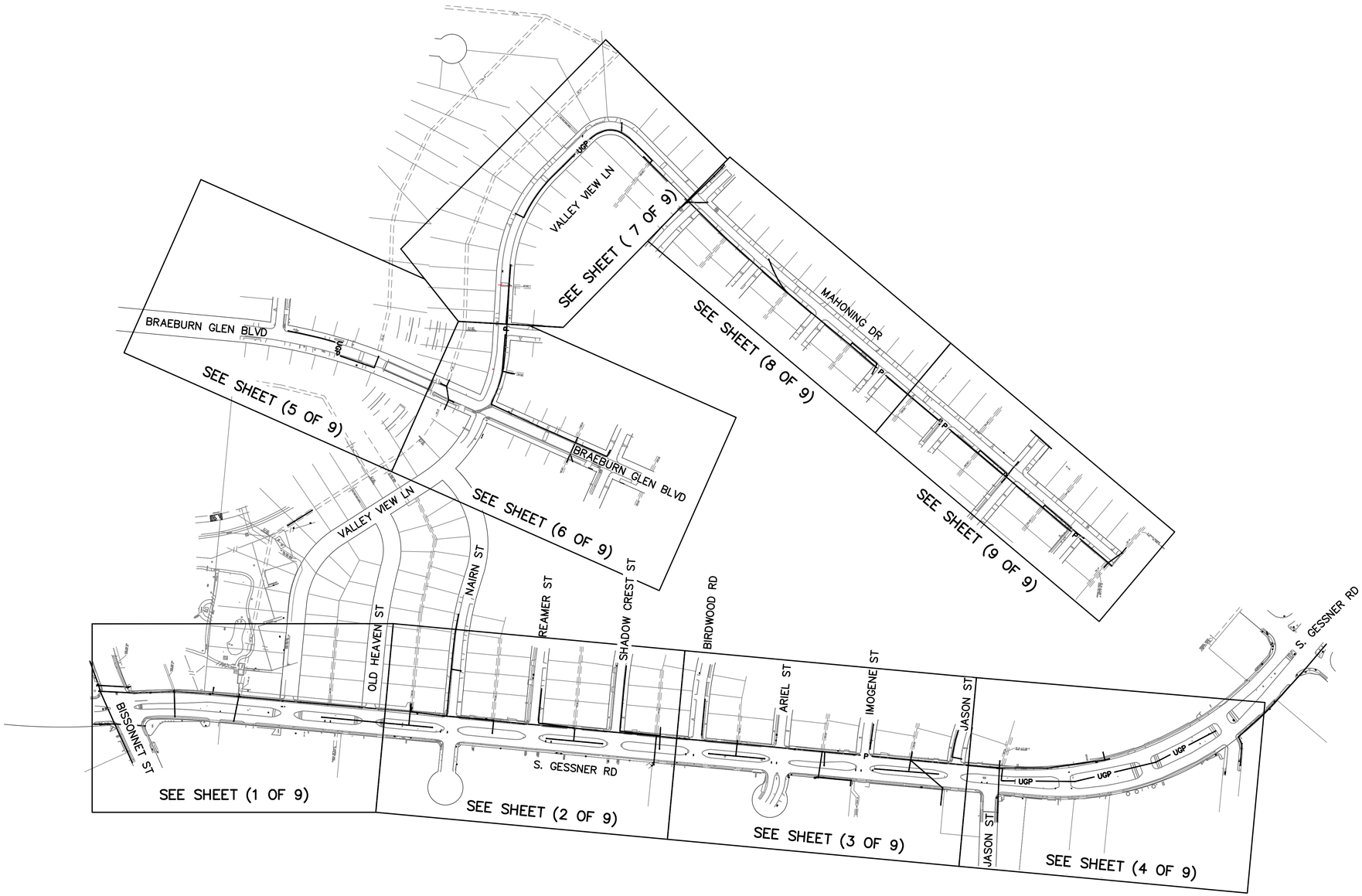

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HORIZ. 0 200 400

SCALE: 1"=200'

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.

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ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
LIGHTING PLAN
OVERALL LAYOUT

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=200'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 166 OF 227	

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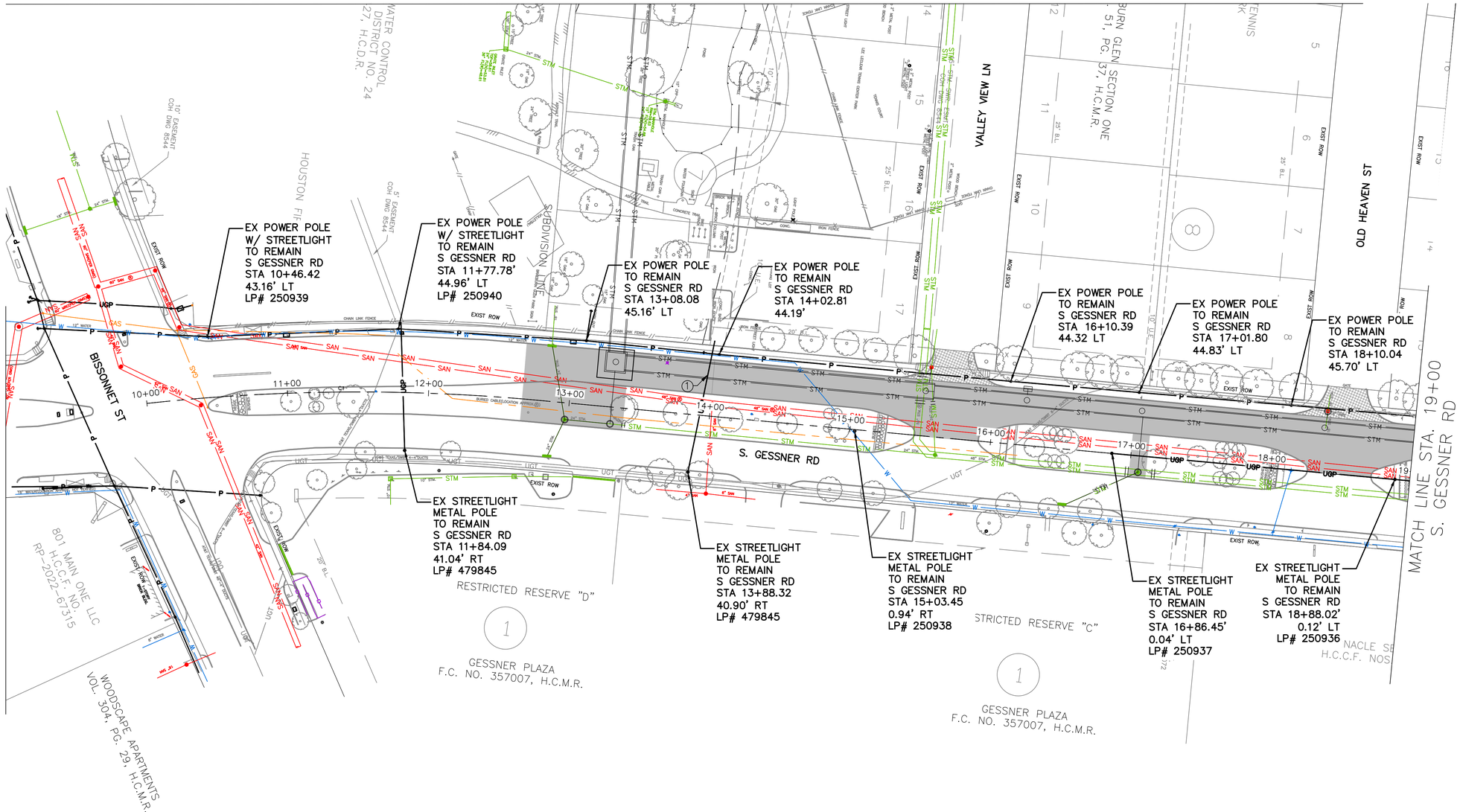

KEY NOTES:

① CONFLICT WITH EXIST CENTER POINT ENERGY UNDERGROUND ELECTRIC POWER CONDUIT.

INSTALLATION NOTES:

FIXTURES SHALL BE INSTALLED AS FOLLOWS:

1. 3 FEET BACK OF ROADWAY CURB, WHERE POSSIBLE
2. 4 FEET OFF DRIVEWAYS
3. 2 FEET OF POINTS OF TANGENT
4. 2 FEET FROM STOP SIGNS
5. 6 FEET FROM FIRE HYDRANTS
6. 2 FEET FROM CATCH BASINS
7. WITH APPROVAL FROM CITY ENGINEER, FIXTURE CAN BE MOVED UP TO 5 FEET FROM PLAN LOCATIONS TO AVOID CONFLICTS

CONSTRUCTION NOTES:

1. CENTERPOINT ENERGY IS RESPONSIBLE FOR RELOCATION OF POWER POLES AND STREET LIGHTS.
2. REMOVAL AND TRANSPORTATION COSTS OF ALL RELOCATED POWER AND LIGHT POLES AND ASSOCIATED ACCESSORIES SHALL BE BY OTHERS.
3. POLES AND OTHER DEVICES SHALL NOT BE REMOVED UNTIL TEMPORARY OR PERMANENT REPLACEMENT POLES, SIGNS, TRAFFIC SIGNALS, AND LIGHTING HAVE BEEN INSTALLED.
4. CENTERPOINT ENERGY SHALL INSTALL ALL TEMPORARY AND PERMANENT POLES A MINIMUM OF 3 FEET CLEAR FROM THE FACE OF CURB.
5. THE CONTRACTOR SHALL NOTIFY THE TRAFFIC ENGINEERING BRANCH IN WRITING CERTIFYING THAT THE STREET LIGHTING CONDUIT HAS BEEN INSTALLED AND INSPECTED, AND MEETS CENTERPOINT SPECIFICATIONS BEFORE ANY AUTHORIZATION FOR NEW/RE-INSTALLED METAL POLE STREETLIGHTS CAN PROCEED.
6. MAINTAIN STREET LIGHTING AT ALL TIMES. CONTRACTOR TO COORDINATE WITH CENTERPOINT ENERGY ON TEMPORARY STREET LIGHTING DURING CONSTRUCTION.

NOTICE:

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

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TX FIRM NUMBER: F-6932

ENTECH CIVIL ENGINEERS, INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

LIGHTING PLAN (1 OF 9)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=40'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 167 OF 227	

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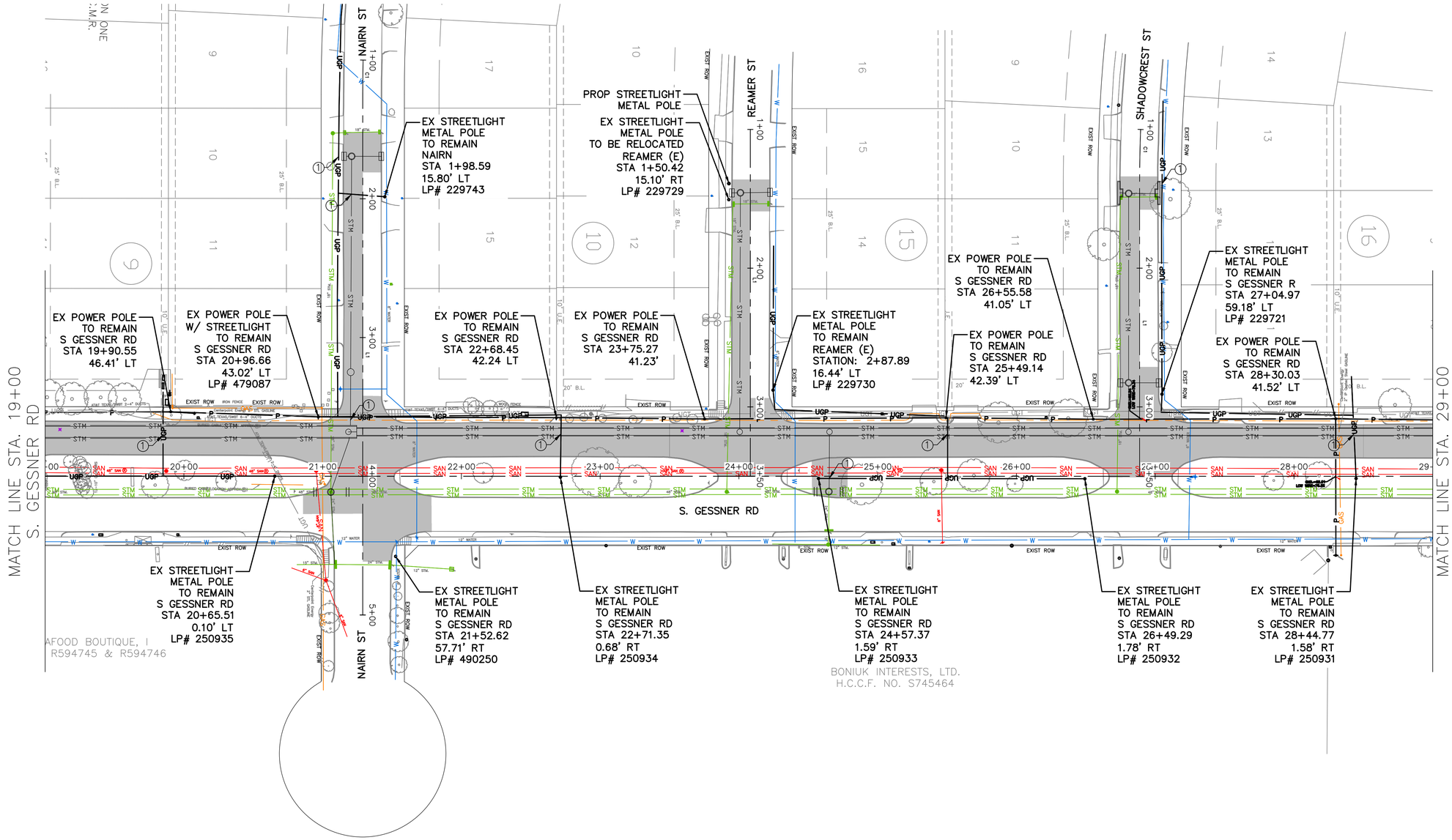

KEY NOTES:

① CONFLICT WITH EXIST CENTER POINT ENERGY UNDERGROUND ELECTRIC POWER CONDUIT.

HORIZ. 0 40 80

SCALE: 1"=40'

INSTALLATION NOTES:

FIXTURES SHALL BE INSTALLED AS FOLLOWS:

1. 3 FEET BACK OF ROADWAY CURB, WHERE POSSIBLE
2. 4 FEET OFF DRIVEWAYS
3. 2 FEET OF POINTS OF TANGENT
4. 2 FEET FROM STOP SIGNS
5. 6 FEET FROM FIRE HYDRANTS
6. 2 FEET FROM CATCH BASINS
7. WITH APPROVAL FROM CITY ENGINEER, FIXTURE CAN BE MOVED UP TO 5 FEET FROM PLAN LOCATIONS TO AVOID CONFLICTS

CONSTRUCTION NOTES:

1. CENTERPOINT ENERGY IS RESPONSIBLE FOR RELOCATION OF POWER POLES AND STREET LIGHTS.
2. REMOVAL AND TRANSPORTATION COSTS OF ALL RELOCATED POWER AND LIGHT POLES AND ASSOCIATED ACCESSORIES SHALL BE BY OTHERS.
3. POLES AND OTHER DEVICES SHALL NOT BE REMOVED UNTIL TEMPORARY OR PERMANENT REPLACEMENT POLES, SIGNS, TRAFFIC SIGNALS, AND LIGHTING HAVE BEEN INSTALLED.
4. CENTERPOINT ENERGY SHALL INSTALL ALL TEMPORARY AND PERMANENT POLES A MINIMUM OF 3 FEET CLEAR FROM THE FACE OF CURB.
5. THE CONTRACTOR SHALL NOTIFY THE TRAFFIC ENGINEERING BRANCH IN WRITING CERTIFYING THAT THE STREET LIGHTING CONDUIT HAS BEEN INSTALLED AND INSPECTED, AND MEETS CENTERPOINT SPECIFICATIONS BEFORE ANY AUTHORIZATION FOR NEW/RE-INSTALLED METAL POLE STREETLIGHTS CAN PROCEED.
6. MAINTAIN STREET LIGHTING AT ALL TIMES. CONTRACTOR TO COORDINATE WITH CENTERPOINT ENERGY ON TEMPORARY STREET LIGHTING DURING CONSTRUCTION.

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281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
3/9/2026

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

LIGHTING PLAN (2 OF 9)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=40'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 168 OF 227	

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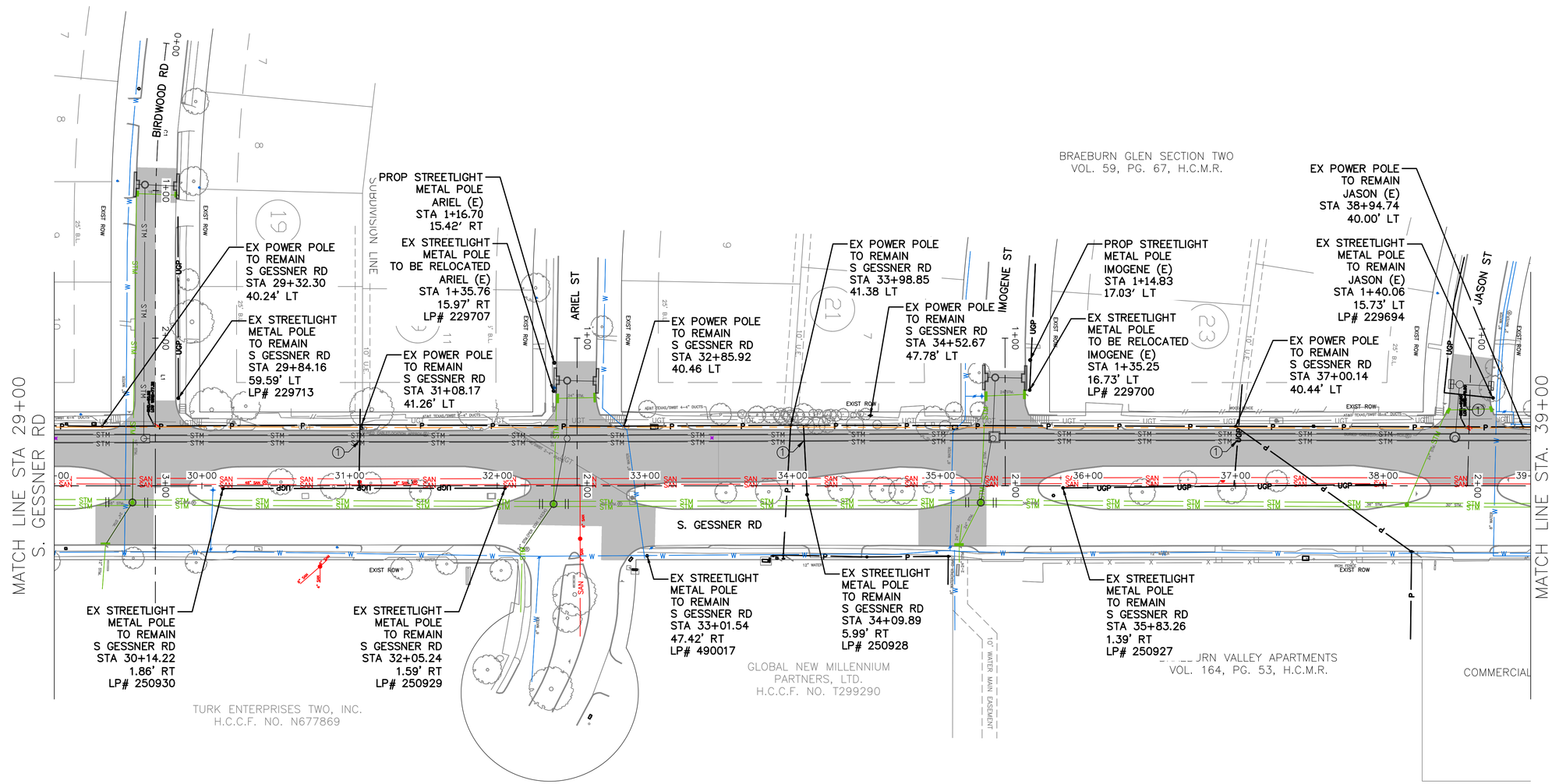

KEY NOTES:

① CONFLICT WITH EXIST CENTER POINT ENERGY UNDERGROUND ELECTRIC POWER CONDUIT.

HORIZ. 0 40 80

SCALE: 1"=40'

INSTALLATION NOTES:

FIXTURES SHALL BE INSTALLED AS FOLLOWS:

1. 3 FEET BACK OF ROADWAY CURB, WHERE POSSIBLE
2. 4 FEET OFF DRIVEWAYS
3. 2 FEET OF POINTS OF TANGENT
4. 2 FEET FROM STOP SIGNS
5. 6 FEET FROM FIRE HYDRANTS
6. 2 FEET FROM CATCH BASINS
7. WITH APPROVAL FROM CITY ENGINEER, FIXTURE CAN BE MOVED UP TO 5 FEET FROM PLAN LOCATIONS TO AVOID CONFLICTS

CONSTRUCTION NOTES:

1. CENTERPOINT ENERGY IS RESPONSIBLE FOR RELOCATION OF POWER POLES AND STREET LIGHTS.
2. REMOVAL AND TRANSPORTATION COSTS OF ALL RELOCATED POWER AND LIGHT POLES AND ASSOCIATED ACCESSORIES SHALL BE BY OTHERS.
3. POLES AND OTHER DEVICES SHALL NOT BE REMOVED UNTIL TEMPORARY OR PERMANENT REPLACEMENT POLES, SIGNS, TRAFFIC SIGNALS, AND LIGHTING HAVE BEEN INSTALLED.
4. CENTERPOINT ENERGY SHALL INSTALL ALL TEMPORARY AND PERMANENT POLES A MINIMUM OF 3 FEET CLEAR FROM THE FACE OF CURB.
5. THE CONTRACTOR SHALL NOTIFY THE TRAFFIC ENGINEERING BRANCH IN WRITING CERTIFYING THAT THE STREET LIGHTING CONDUIT HAS BEEN INSTALLED AND INSPECTED, AND MEETS CENTERPOINT SPECIFICATIONS BEFORE ANY AUTHORIZATION FOR NEW/RE-INSTALLED METAL POLE STREETLIGHTS CAN PROCEED.
6. MAINTAIN STREET LIGHTING AT ALL TIMES. CONTRACTOR TO COORDINATE WITH CENTERPOINT ENERGY ON TEMPORARY STREET LIGHTING DURING CONSTRUCTION.

NOTICE:
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VERIFICATION OF PRIVATE UTILITY LINES

Date

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Signature valid for six months.

Date

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ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
LIGHTING PLAN
(3 OF 9)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
1"=40'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
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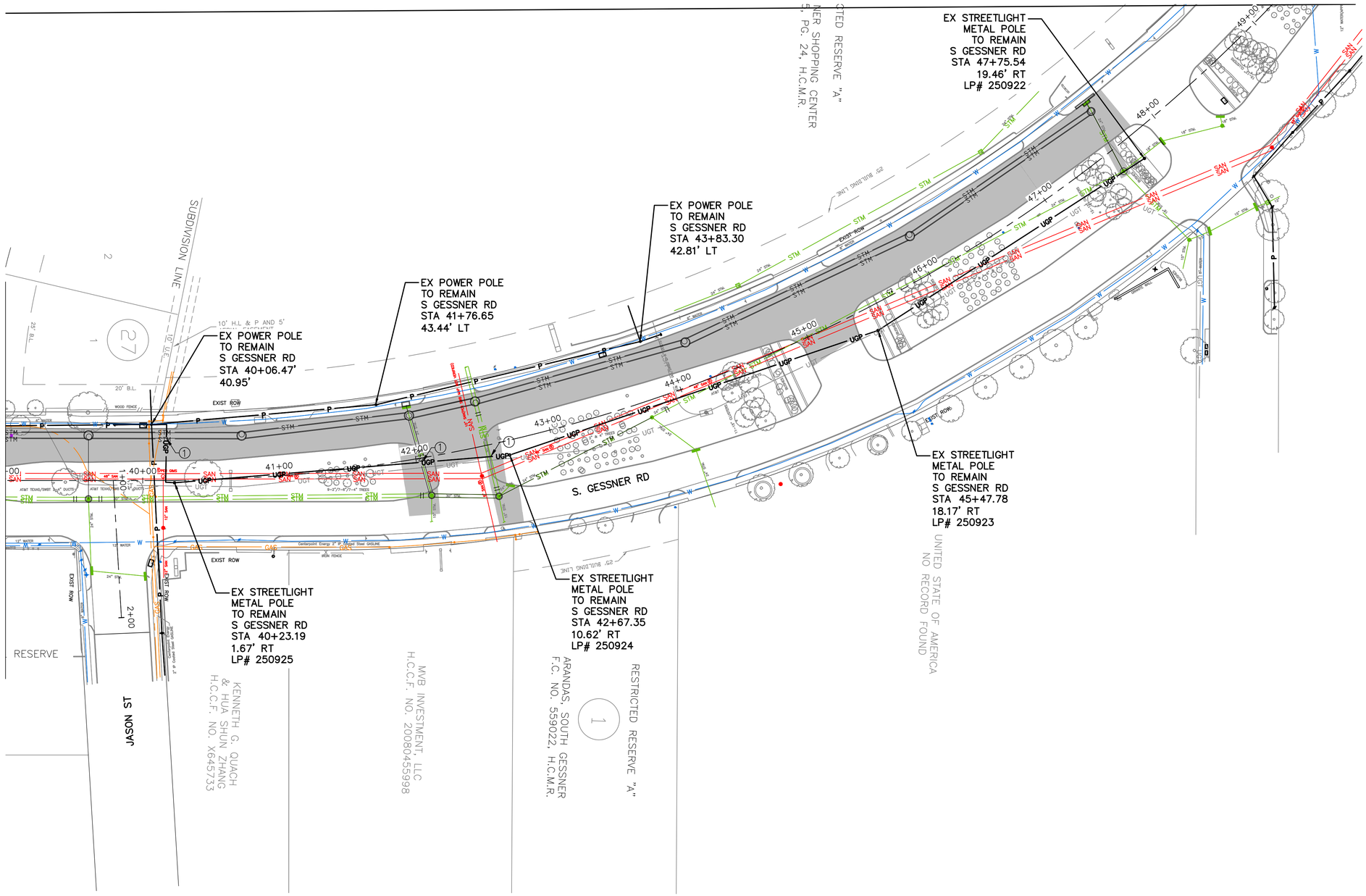

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CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

LIGHTING PLAN (4 OF 9)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
1"=40'	
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SHEET NO. 170 OF 227	

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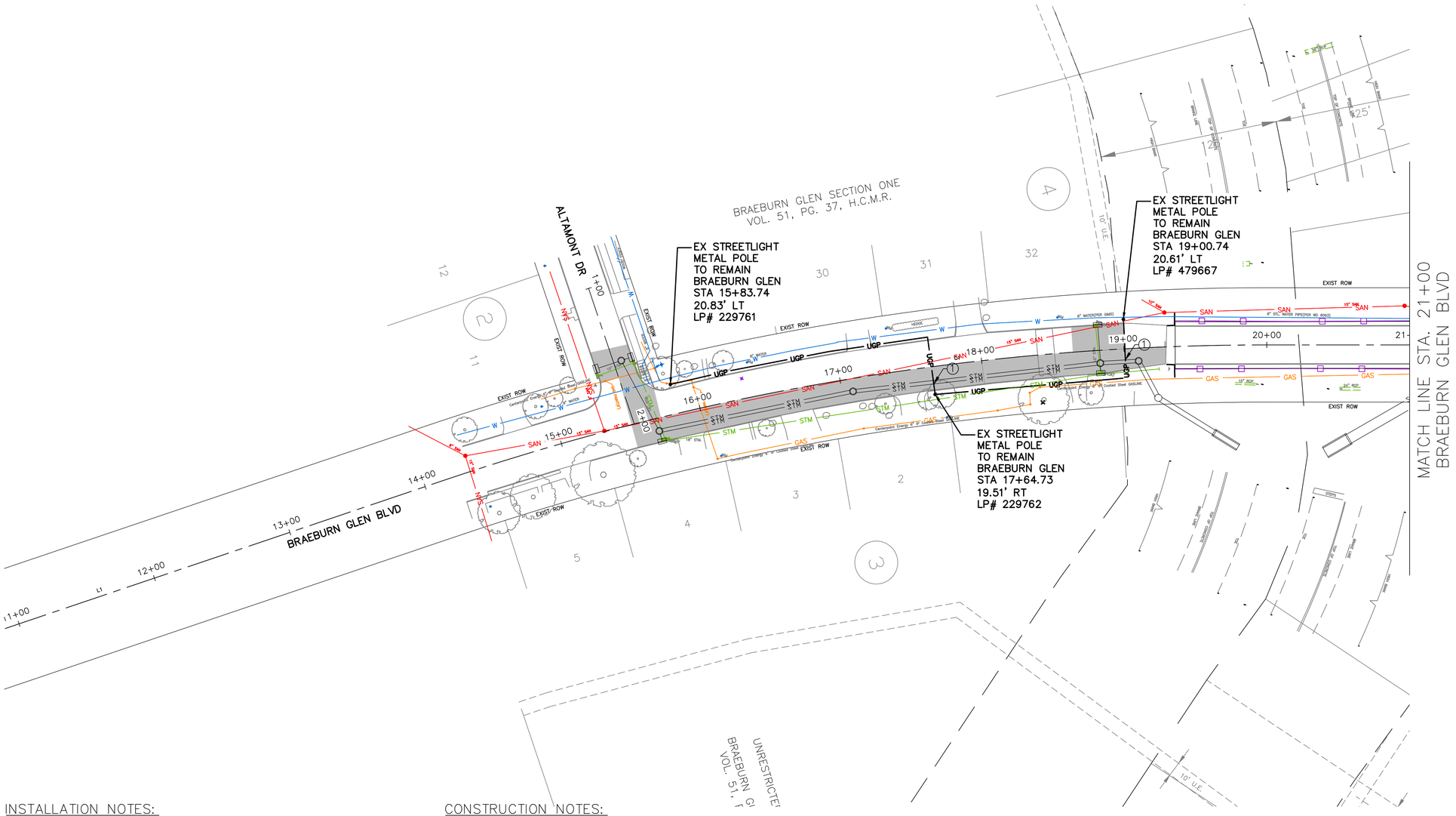

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RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS LIGHTING PLAN (5 OF 9)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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1"=40'	
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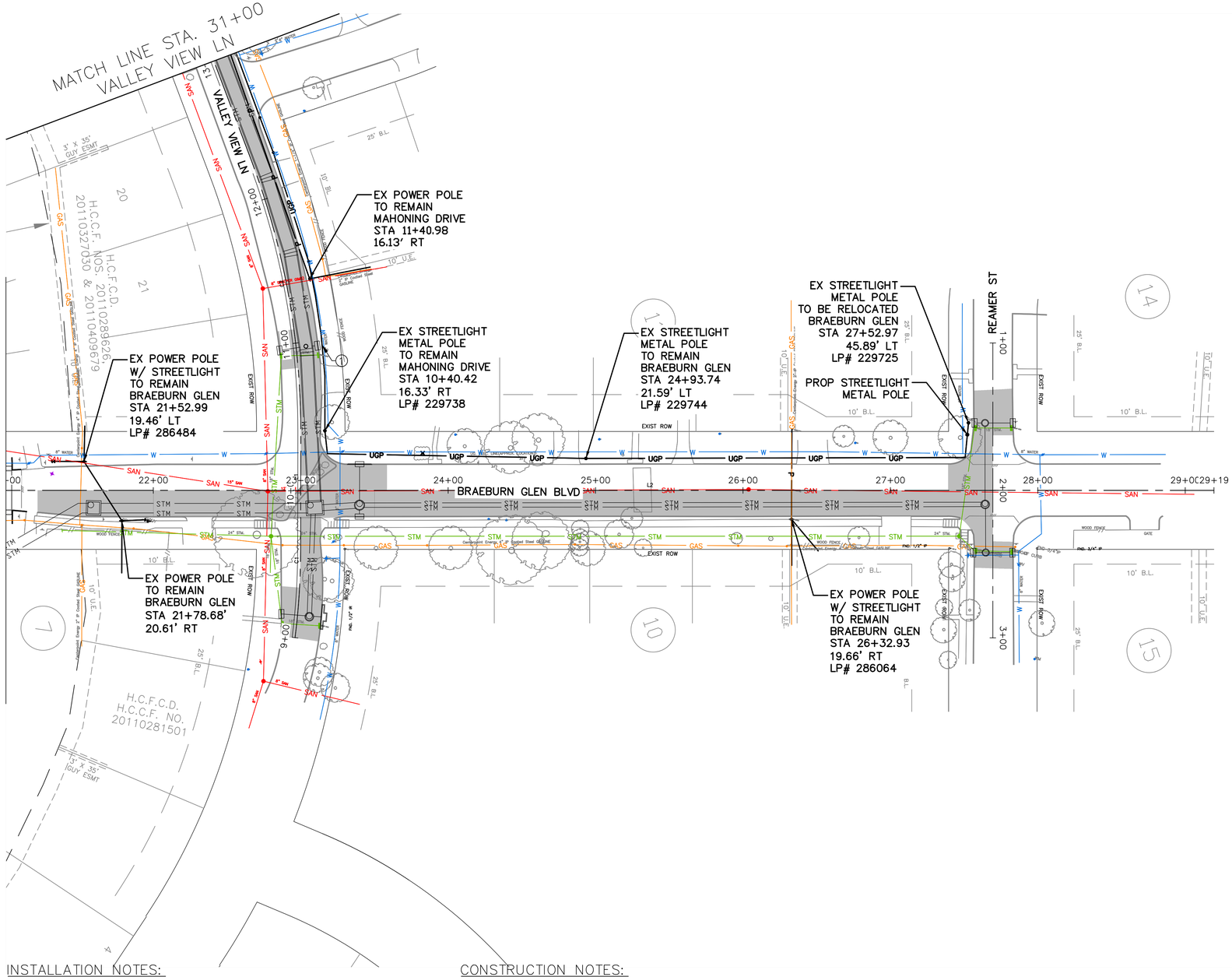
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 171 OF 227	



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Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

LIGHTING PLAN (6 OF 9)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
1"=40'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
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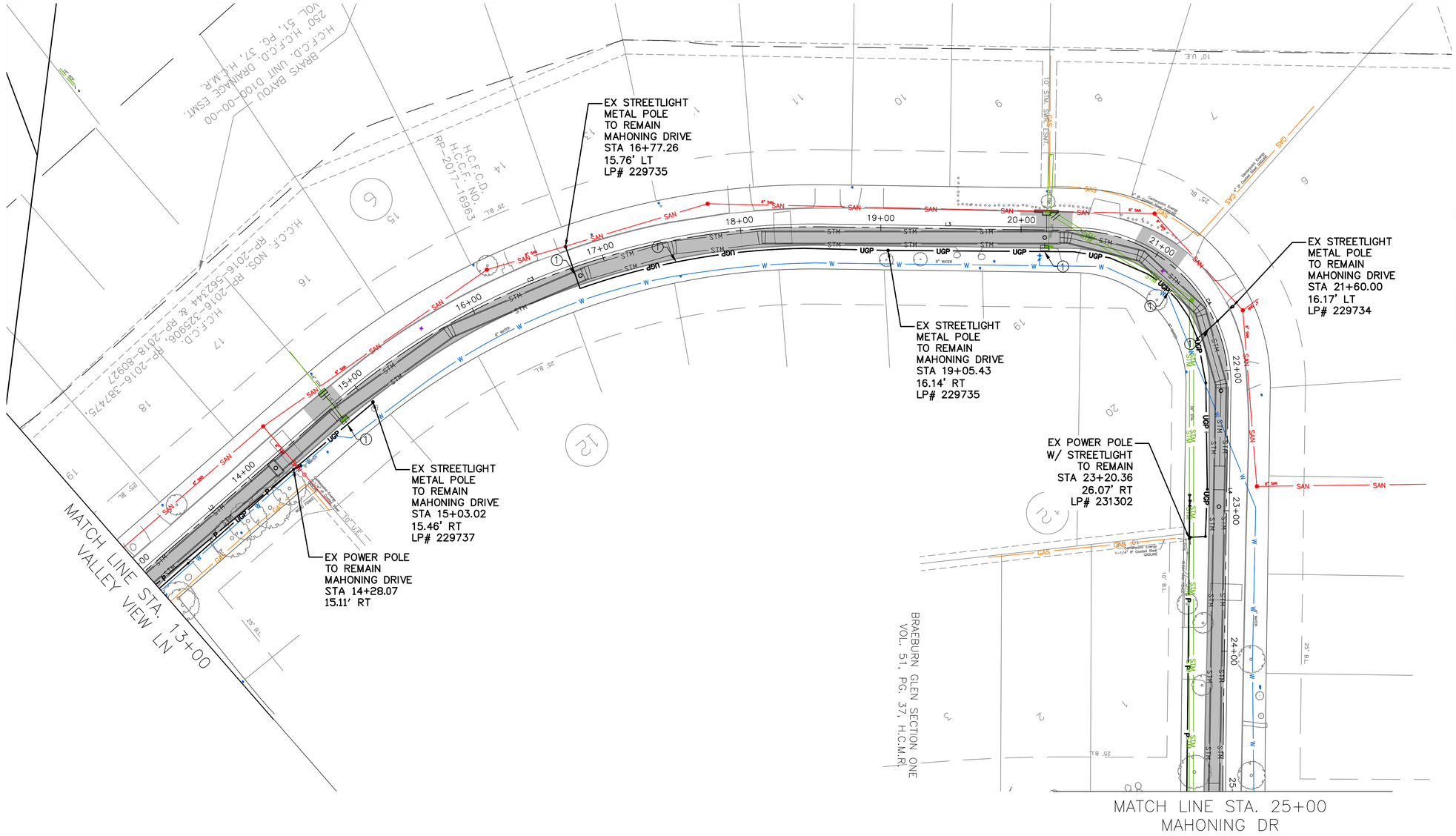
EX STREETLIGHT
METAL POLE
TO REMAIN
MAHONING DRIVE
STA 16+77.26
15.76' LT
LP# 229735
EX STREETLIGHT
METAL POLE
TO REMAIN
MAHONING DRIVE
STA 19+05.43
16.14' RT
LP# 229735
EX STREETLIGHT
METAL POLE
TO REMAIN
MAHONING DRIVE
STA 21+60.00
16.17' LT
LP# 229734
EX POWER POLE
W/ STREETLIGHT
TO REMAIN
STA 23+20.36
26.07' RT
LP# 231302
EX STREETLIGHT
METAL POLE
TO REMAIN
MAHONING DRIVE
STA 15+03.02
15.46' RT
LP# 229737
EX POWER POLE
TO REMAIN
MAHONING DRIVE
STA 14+28.07
15.11' RT
MATCH LINE STA. 13+00
VALLEY VIEW LN
MATCH LINE STA. 25+00
MAHONING DR
BRAEBURN GLEN SECTION ONE
VOL. 51, PG. 37, H.C.M.R.
BRAYS BAYOU UNIT D100-00-00
H.C.F.C.D. DRAINAGE ESMT.
25' VOL. 51, PG. 37, H.C.M.R.
H.C.C.F. NOS. RP-2016-325906, RP-2016-382475, RP-2016-502544 & RP-2018-80927
H.C.F.C.D. H.C.C.F. NO. RP-2017-19952
14+00
15+00
16+00
17+00
18+00
19+00
20+00
21+00
22+00
23+00
24+00
25+00
8" SAN
6" WATER
Centerpoint Energy 1-1/4" IP Coated Steel GASLINE
Centerpoint Energy 2" IP Coated Steel GASLINE
Centerpoint Energy 4" IP Coated Steel GASLINE
Centerpoint Energy 6" IP Coated Steel GASLINE
Centerpoint Energy 8" IP Coated Steel GASLINE
Centerpoint Energy 12" IP Coated Steel GASLINE
Centerpoint Energy 16" IP Coated Steel GASLINE
Centerpoint Energy 20" IP Coated Steel GASLINE
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Centerpoint Energy 30" IP Coated Steel GASLINE
Centerpoint Energy 36" IP Coated Steel GASLINE
Centerpoint Energy 42" IP Coated Steel GASLINE
Centerpoint Energy 48" IP Coated Steel GASLINE
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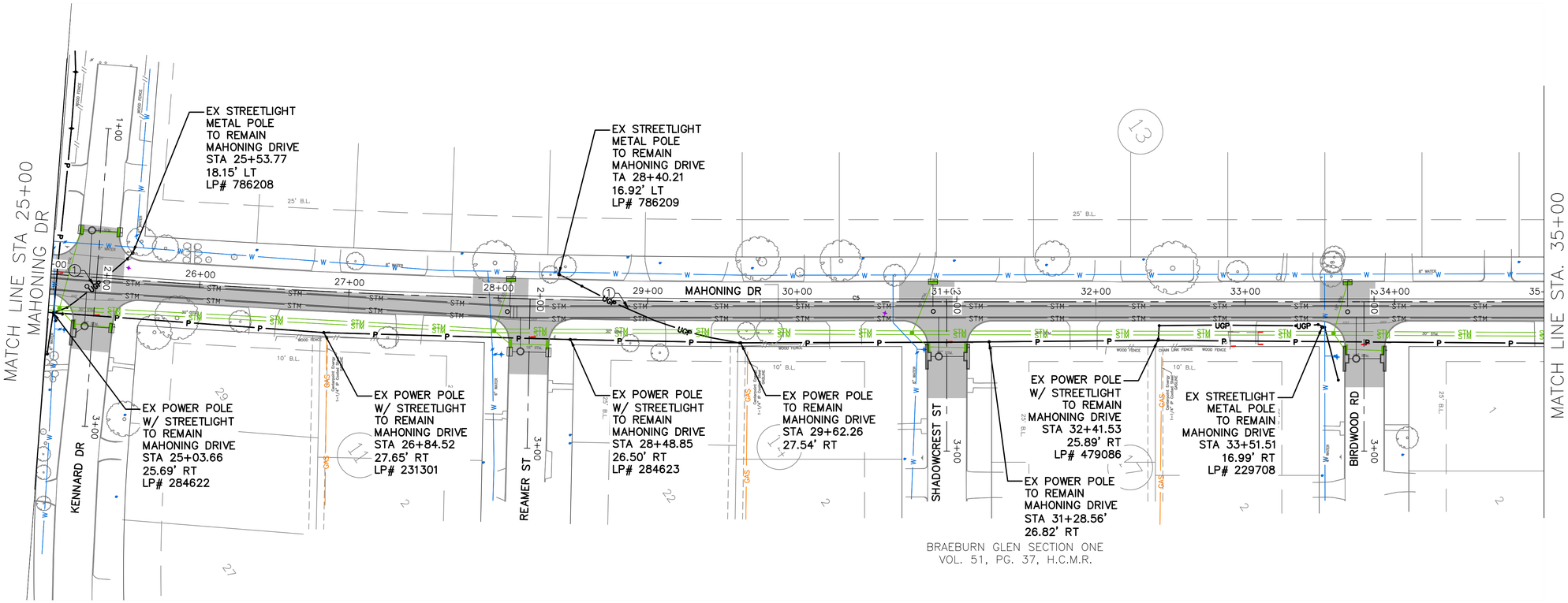

KEY NOTES:

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HORIZ. 0 40 80

SCALE: 1"=40'

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
LIGHTING PLAN
(8 OF 9)

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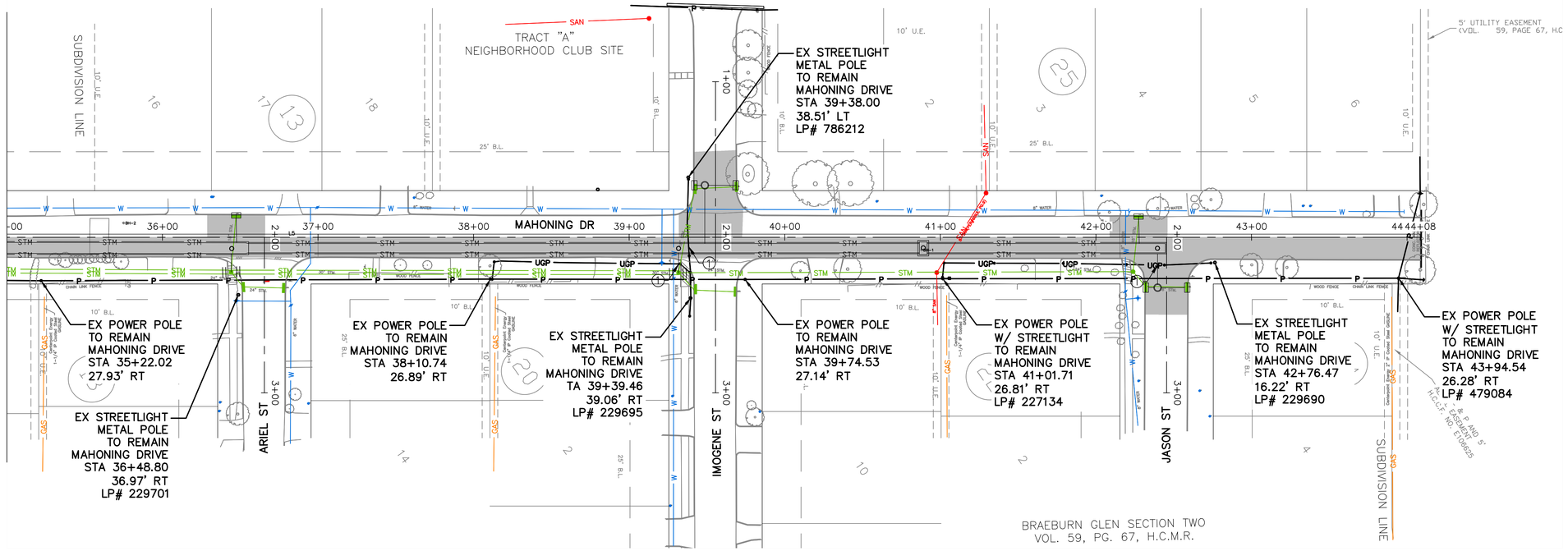

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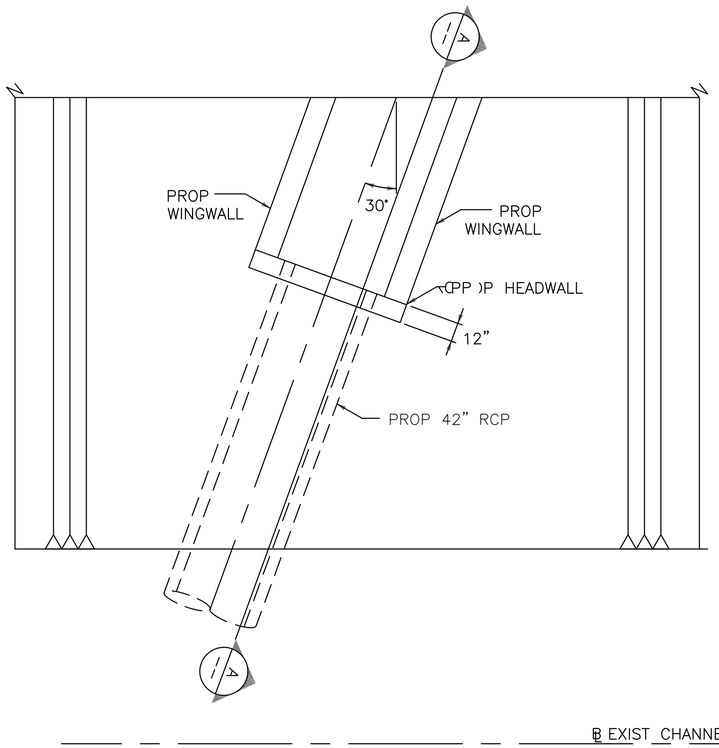
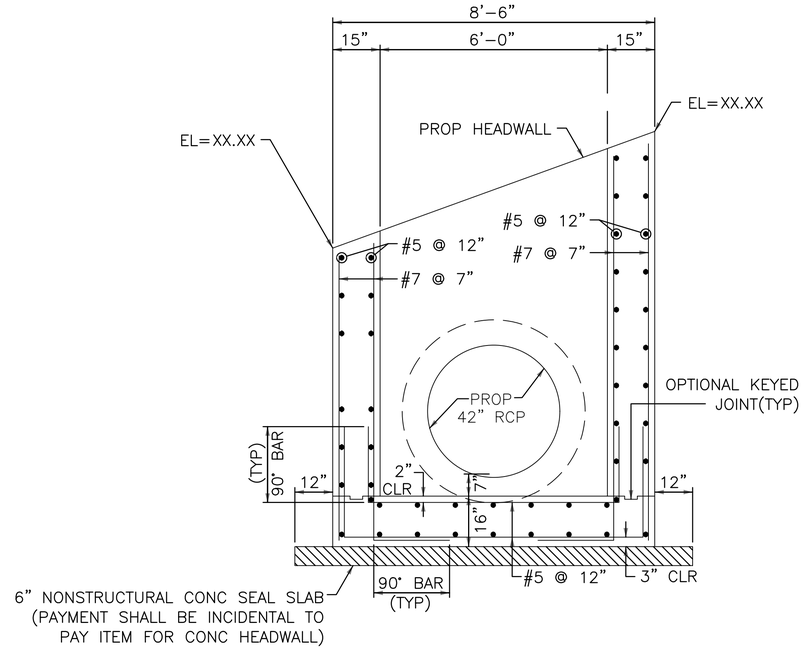
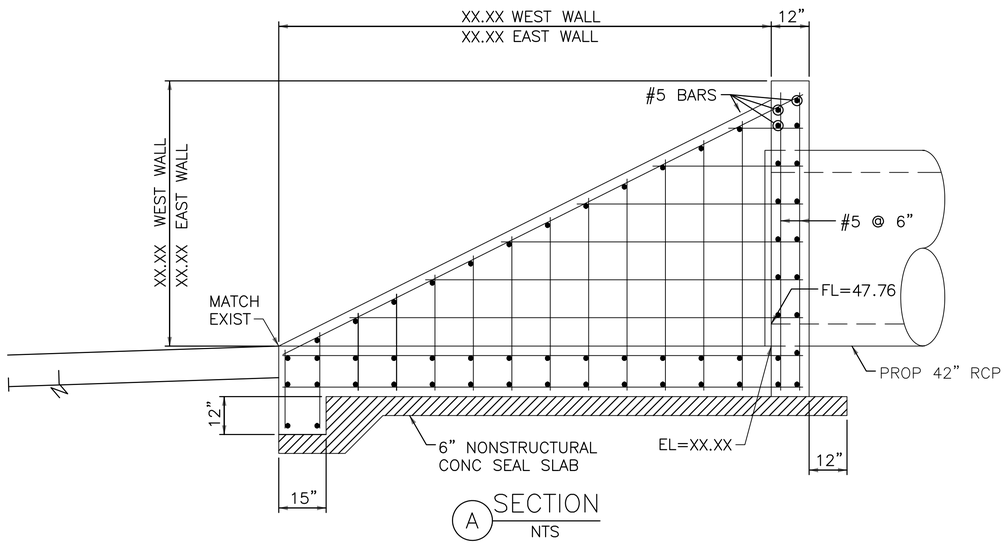


PLAN
NTS



DETAIL HEADWALL & WINGWALL FRONT VIEW
NTS



NTS

NOTE: DIMENSIONS BASED ON INSIDE FACE OF WINGWALL.

NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR THE CARE AND CONTROL OF GROUND WATER AND BASE FLOWS WITHIN BRAYS BAYOU NECESSARY TO CONSTRUCT PROPOSED IMPROVEMENTS. NO SEPARATE PAY.
2. FIELD VERFIFY ELEVATIONS.

NO.	DATE	REVISION	APP.

ENTECH CIVIL ENGINEERS, INC.
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 — STATE OF TEXAS — RODRIGO M. GUADARRAMA — 111437 — LICENSED PROFESSIONAL ENGINEER — 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

BRAEBURN GLEN BLVD. 42" OUFALL DETAIL

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO 176 OF 227	

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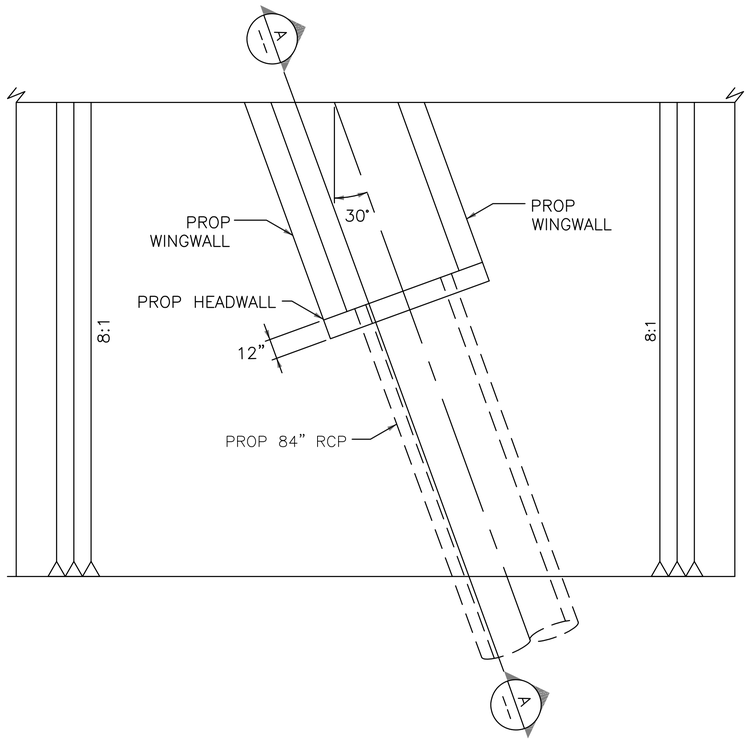
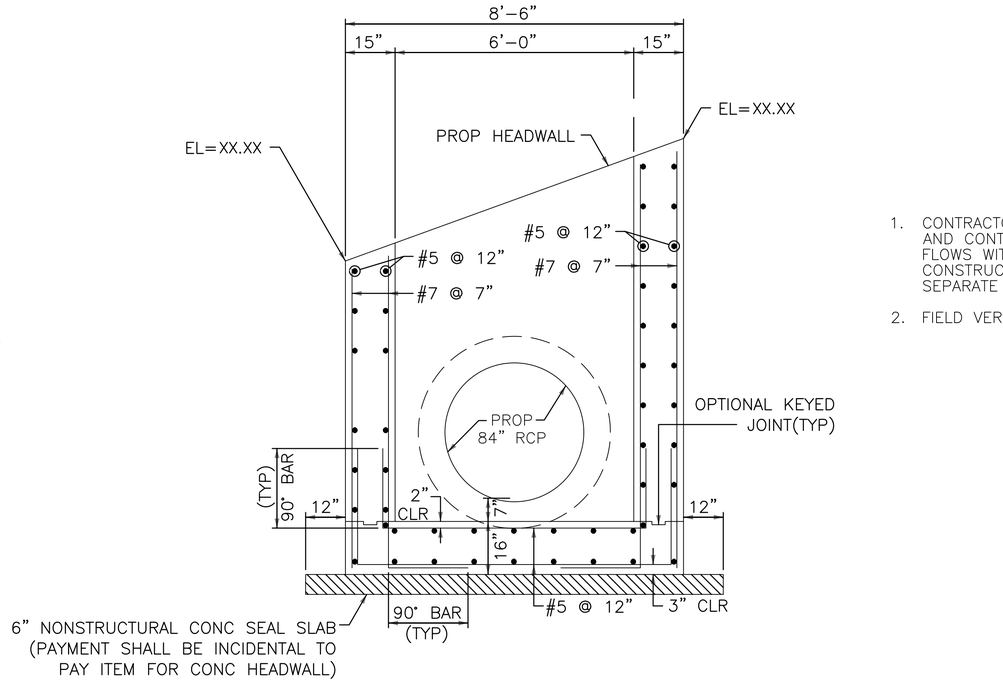
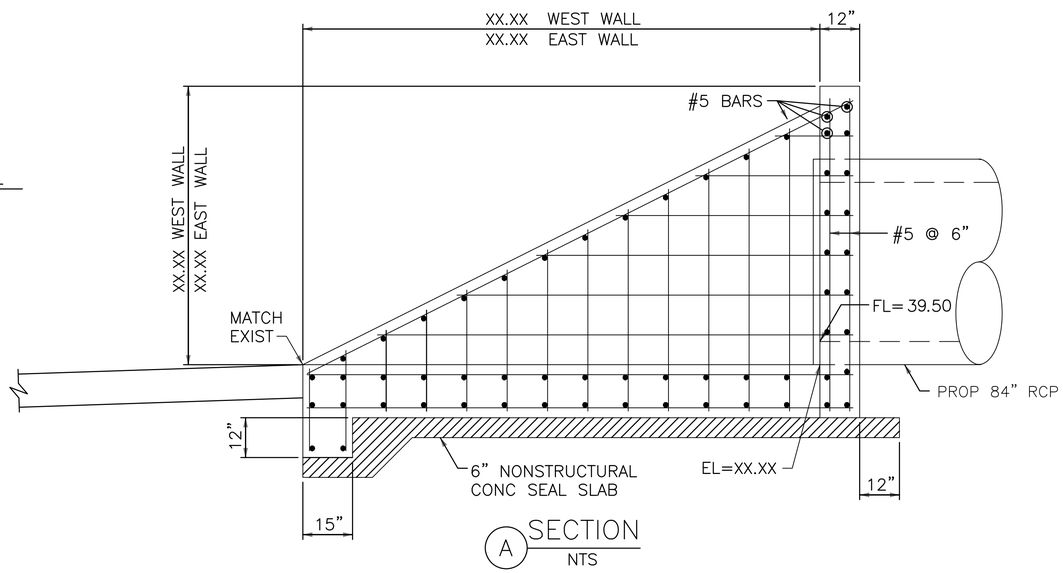


PLAN
NTS

PROP 42" RCP



DETAIL HEADWALL & WINGWALL FRONT VIEW
NTS



SECTION
NTS

NOTE: DIMENSIONS BASED ON INSIDE FACE OF WINGWALL.

1. CONTRACTOR IS RESPONSIBLE FOR THE CARE AND CONTROL OF GROUND WATER AND BASE FLOWS WITHIN BRAYS BAYOU NECESSARY TO CONSTRUCT PROPOSED IMPROVEMENTS. NO SEPARATE PAY.
2. FIELD VERFIFY ELEVATIONS.

HEADWALL DETAILS
(FOR GESSNER OUTFALL 84")
NTS

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ENTECH CIVIL ENGINEERS INC F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

BRAEBURN GLEN BLVD. 84" OUFALL DETAIL

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO 177 OF 227	

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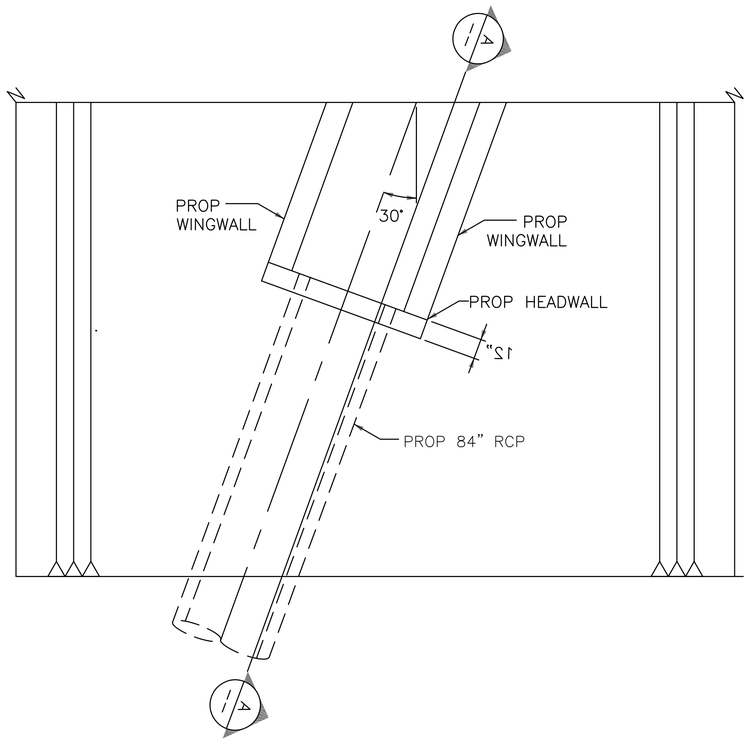

PLAN
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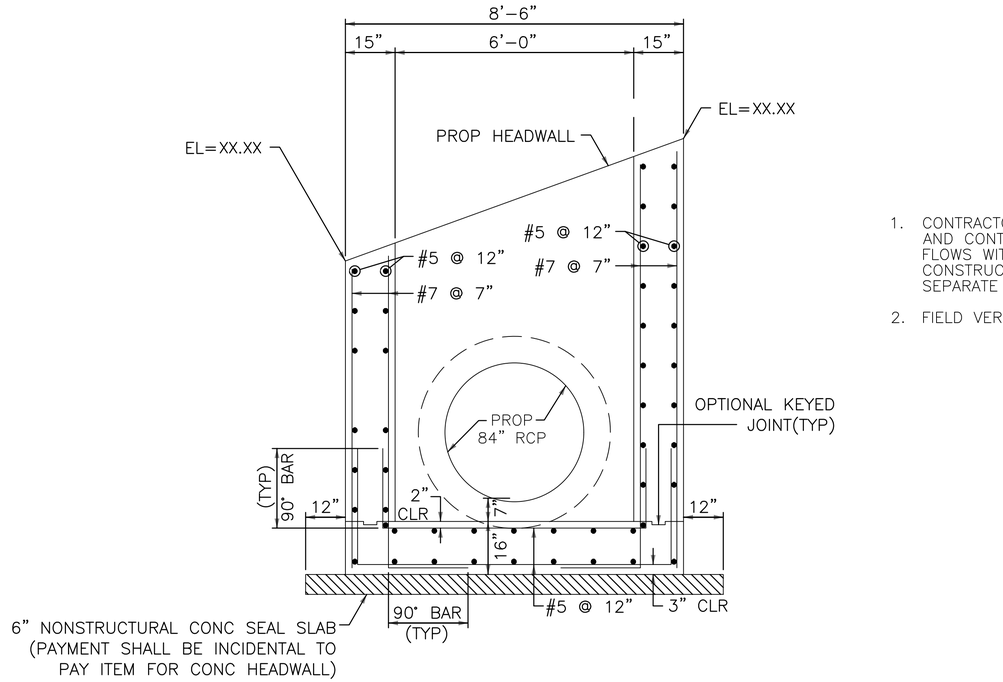
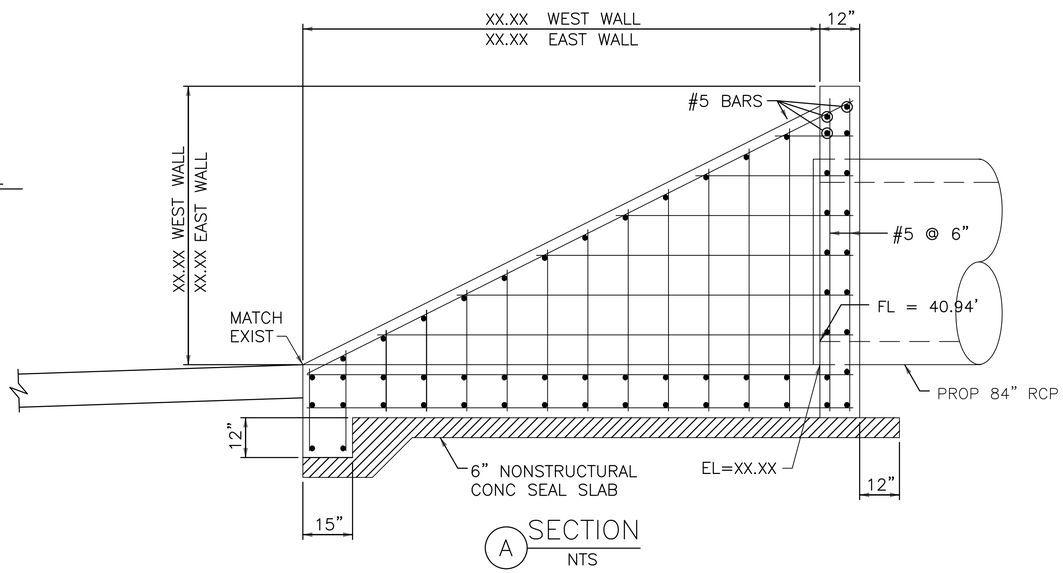


DETAIL HEADWALL & WINGWALL FRONT VIEW
NTS



A SECTION
NTS

NOTE: DIMENSIONS BASED ON INSIDE FACE OF WINGWALL.

HEADWALL DETAILS
(FOR BRAEBURN GLEN OUTFALL 84")
NTS

1. CONTRACTOR IS RESPONSIBLE FOR THE CARE AND CONTROL OF GROUND WATER AND BASE FLOWS WITHIN BRAYS BAYOU NECESSARY TO CONSTRUCT PROPOSED IMPROVEMENTS. NO SEPARATE PAY.
2. FIELD VERFIY ELEVATIONS.

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Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

GESSNER ROAD 84" OUTFALL DETAIL

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO 178 OF 227	

PLOT STYLE: Coh_ctb_230809.ctb PLOTTED: 10/15/2025 4:35 PM

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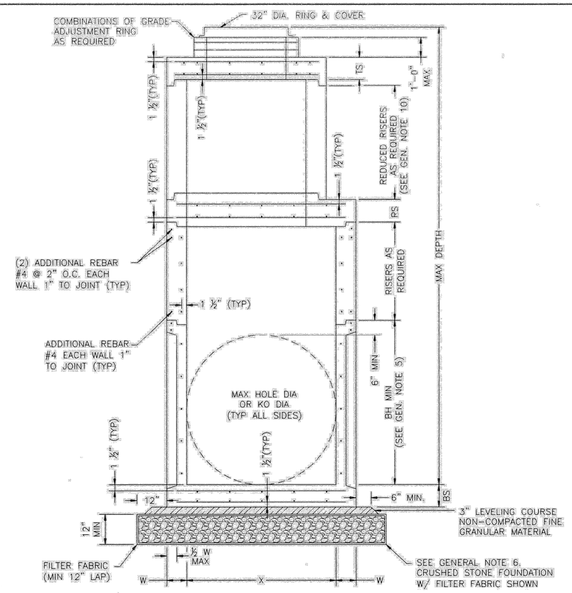
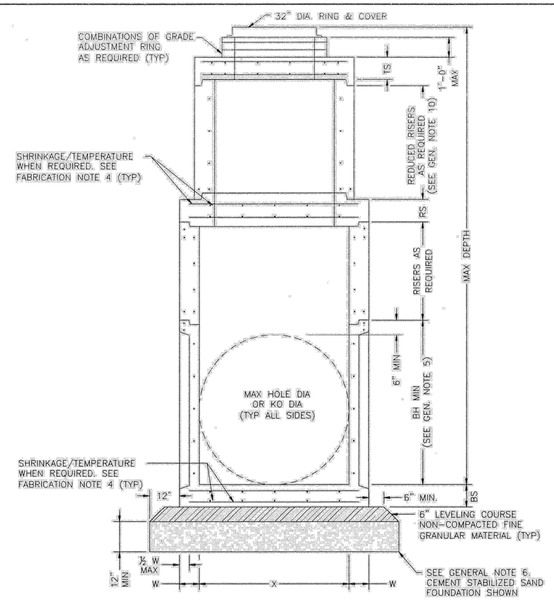
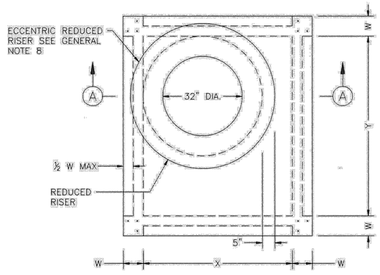


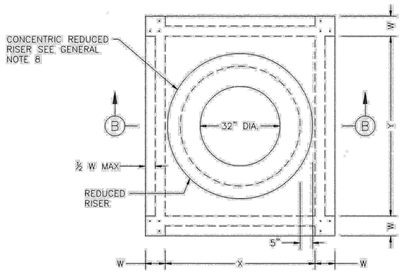
ELEVATION A–A
FLAT SLAB TOP WITH SHIP LOOSE RING & COVER OPTION



ELEVATION B–B
FLAT SLAB TOP WITH SHIP LOOSE RING & COVER OPTION



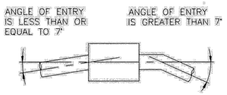
PLAN VIEW A
COVER NOT SHOWN



PLAN VIEW B
COVER NOT SHOWN

ECCENTRIC MANHOLE
(PREFERRED CONFIGURATION)

CONCENTRIC MANHOLE
(ALTERNATE CONFIGURATION)



PIPE CONNECTION DETAIL
CONNECT PIPES WITHIN 7° OF NORMAL TO PRECAST BASE WALL. IF NECESSARY, USE PIPE ELBOW OR CURVED APPROACH ALIGNMENT TO STAY WITHIN THIS LIMIT.

TABLE 1
PRECAST BOX MANHOLE (PBM) MINIMUM REQUIREMENTS FOR 24 IN. TO 78 IN. INTERNAL DIA STORM SEWER PIPES

	SIZE	BASE SLAB THICKNESS	BASE UNIT OR RISER THICKNESS	REDUCED RISER DIA	REDUCING SLAB THICKNESS	TOP SLAB THICKNESS	MAX DEPTH TO TOP OF BASE SLAB	MIN HEIGHT (SEE GEN. NOTE 5)	MAX HOLE DIA (SEE FAB. NOTE 11)	MAX KO DIA (SEE FAB. NOTE 11)
	X & Y	BS	W	ID	RS	TS	MAX DEPTH	BH MIN	MAX HOLE DIA	KO DIA
	FT.	IN.	IN.	FT.*	IN.	IN.	FT.	FT.	IN.	IN.
PBM	3X3	6	6	N/A	N/A	9	25	3.50	36	36
	4X4	6	6	N/A	N/A	9	25	4.50	48	48
	3X5	6	6	N/A	N/A	9	25	3.50	36/60	36/60
	4X5	6	6	48 IN.	9	9	25	4.50	48/60	48/60
	5X5	6	6	48 IN.	9	9	25	5.50	60	60
	5X6	9	8	48 IN.	9	9	25	5.50	60/72	60/72
	6X6	9	8	48 IN.	9	9	25	6.50	72	72
	8X8	9	10	48 IN.	12	9	25	8.50	96	96

TABLE 1 NOTES:
1. (') ROUND MANHOLES ARE PREFERRED FOR THESE SIZES.
2. (*) UNLESS OTHERWISE INDICATED.
3. TABLE IS VALID FOR UP TO 25 FT OF INSTALLATION DEPTH.

FABRICATION NOTES:
1. PROVIDE CLASS "H" CONCRETE IN ACCORDANCE WITH TEXAS DEPARTMENT OF TRANSPORTATION ITEM 421 AND HAVING A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI.
2. PROVIDE GRADE 60 REINFORCING STEEL OR EQUIVALENT AREA OF WWR. PROVIDE CIRCUMFERENTIAL REINFORCING STEEL IN VERTICAL WALLS OF RISER AND CONE IN ACCORDANCE WITH ASTM C478.
3. PROVIDE TYPICAL MINIMUM CONCRETE CLEAR COVER OF 1 ½" TO REINFORCING STEEL AT INTERIOR OR EXTERIOR WALLS.
4. SLABS WITH A THICKNESS OF 8" OR GREATER REQUIRE SHRINKAGE AND TEMPERATURE REINFORCING STEEL. PROVIDE STEEL AREA = 0.11 IN²/FT EACH WAY.
5. MANUFACTURE BASE AND RISERS TO NEAREST 3" INCREMENT.
6. DESIGN TONGUE AND GROOVE JOINTS FOR FULL CLOSURE ON BOTH SHOULDERS. MINIMUM SPIGOT DEPTH IS ¾".
7. PROVIDE LIFTING DEVICES IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS.
8. PROVIDE CAST IRON SOLID COVER, UNLESS NOTED OTHERWISE ELSEWHERE IN THE PLANS.
9. MAXIMUM SPACING OF REINFORCEMENT IS 8".
10. AT MANUFACTURERS OPTION, PROVIDE CAST OR CORED HOLES OR THIN WALL PANELS (KO) TO THE MAXIMUM DIA SHOWN FOR EACH. WHEN NO PENETRATION IS REQUIRED, IT IS ACCEPTABLE TO PROVIDE A WALL WITH NO SECTIONAL REDUCTION.
11. THREE DIFFERENT OPTIONS FOR CAPPING THE MANHOLE RISER NEAR THE FINISHED GRADE ARE ALLOWED. CONES CAN BE USED WHEN COVER IS SUFFICIENT TO ALLOW FOR PROPER PLACEMENT. FLAT LIDS ARE TO BE USED WHERE COVER IS LIMITED. REFER TO 02082-12 FOR OPTIONS.
12. BASES AND RISERS MAY HAVE CAST, CUT OR THIN WALL PANEL (KO) THAT ARE ROUND AND DO NOT EXTEND INTO THE FLOOR, INTO WALLS, OR WITHIN 6" OF THE JOINT ABOVE OR BELOW.

INSTALLATION NOTES:
1. IF REQUIRED ELSEWHERE, INVERTS (BENCHING) TO BE PROVIDED BY CONTRACTOR. CONCRETE OR MORTAR USED FOR INVERT IS SUBSIDIARY TO MANHOLE. REFER TO CITY OF HOUSTON SPECIFICATION SECTION 02082 FOR INVERT (BENCHING) REQUIREMENTS.
2. SEAL TONGUE AND GROOVE JOINTS WITH PREFORMED OR BULK MASTIC IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS. TONGUE AND GROOVE JOINTS MAY BE GROUTED NO MORE THAN 1" BETWEEN EACH SECTION, OR ½ THE JOINT DEPTH, WHICHEVER IS GREATER.
3. DO NOT GROUT RUBBER GASKET JOINTS WITHOUT MANUFACTURER'S RECOMMENDATION.
4. FOR RIGID PIPE, CUT HOLE IN THIN WALL PANEL (KO) 4" MAX, 2" MIN LARGER THAN PIPE OD.
5. FOR FLEXIBLE PIPE, CONSULT BOOT/SEAL MANUFACTURER'S SPECIFICATION FOR PLACEMENT TOLERANCE AND HOLE SIZE. CENTER PIPE IN HOLE AND INSTALL BOOT/SEAL PER MANUFACTURER'S SPECIFICATION.
6. INITIAL INSTALLATION OF GRADE ADJUSTMENT RINGS IS LIMITED TO 1'–0" MAX AS SHOWN.
7. GRADE ADJUSTMENT RINGS MAY BE INCREASED TO 1'–6" MAX WHEN FUTURE CONSTRUCTION AFFECTS FINAL GRADE OF STRUCTURE. MAKE ADJUSTMENTS GREATER THAN 1'–6" WITH ADDITIONAL RISERS. ADJUSTMENTS MAY BE MADE UP TO THE MAX DEPTH OF 25'–0". STRUCTURE MUST BE EVALUATED IF MAX DEPTH WILL BE EXCEEDED.

GENERAL NOTES:
1. SEE TABLE 1 FOR MINIMUM DESIGN REQUIREMENTS. CONCENTRIC RISER WITH RESPECT TO BASE (ALTERNATIVE CONFIGURATION) FALLS OUTSIDE THE SCOPE OF REQUIREMENTS PROVIDED. ENGINEER OF RECORD ACCEPTS RESPONSIBILITY FOR SAFETY AND ADEQUACY OF MANHOLE IF THE ALTERNATIVE CONFIGURATION IS USED.
2. DESIGNED ACCORDING TO ASTM C478 AND/OR ASTM C913.
3. PAYMENT FOR PRECAST MANHOLE PER SECTION 02082 "PRECAST CONCRETE MANHOLES."
4. PRECAST BASE CONSISTS OF BASE SLAB, BASE UNIT, RISERS (AS REQUIRED), REDUCING SLAB (AS REQUIRED), AND REDUCED RISERS (AS REQUIRED).
5. MIN HEIGHT SHOWN FOR STOCK BASE UNITS. USE STOCK BASE UNITS WHENEVER PRACTICAL. SMALLER HEIGHT BASE UNITS CAN BE USED IN SPECIAL INSTALLATION CIRCUMSTANCES, WHEN NOTED ELSEWHERE IN THE PLANS. ABSOLUTE MINIMUM HEIGHT OF BASE UNITS IS 2'–6".
6. FOUNDATION/SUBGRADE TO BE DESIGNED BY ENGINEER AND MEET MINIMUM REQUIREMENTS ACCORDING TO SECTION 02082.
7. ALL STORM WATER MANHOLES ARE TO BE PRECAST CONCRETE, UNLESS OTHERWISE NOTED ELSEWHERE IN THE PLANS.
8. ECCENTRIC REDUCED RISER WITH RESPECT TO BASE IS THE PREFERRED MANHOLE CONFIGURATION. CONCENTRIC REDUCED RISER WITH RESPECT TO BASE MANHOLE CONFIGURATION IS AN ALTERNATIVE DESIGN THAT WILL BE ACCEPTED BASED ON THE NEEDS OF THE CITY OF HOUSTON. MANHOLE SIZE SHALL CONSIDER ENGINEERING ECONOMY. THIS DETAIL IS NOT APPLICABLE TO BOX MANHOLES LARGER THAN 8–FOOT BY 8–FOOT.
9. REFER TO STORM SEWER TYPE 'C' PRECAST ROUND MANHOLE DETAIL (02082–12) FOR REDUCED RISER DESIGN REQUIREMENTS.

DISCLAIMER:
THE USE OF THIS STANDARD IS GOVERNED BY THE TEXAS ENGINEERING PRACTICE ACT. THE DESIGN REQUIREMENTS ON THIS STANDARD DO NOT PURPORT TO ADDRESS ALL OF THE SAFETY CONCERNS ASSOCIATED WITH THEIR USE. THE ENGINEER OF RECORD (EOR) IS TO REVIEW THESE DESIGN REQUIREMENTS AND BY AUTHORIZING THEIR USE, ACCEPTS RESPONSIBILITY FOR THEIR APPLICABILITY, ADEQUACY AND SAFETY. NO WARRANTY OF ANY KIND IS MADE BY THE CITY OF HOUSTON FOR ANY PURPOSES WHATSOEVER. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

ENTECH CIVIL ENGINEERS, INC
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Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STORM SEWER PRECAST BOX MANHOLE
(NOT TO SCALE)

APPROVED BY:	APPROVED BY:
CITY ENGINEER	DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2021	DWG NO: 02082-13

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

STORM SEWER PRECAST BOX MANHOLE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 179 OF 227	

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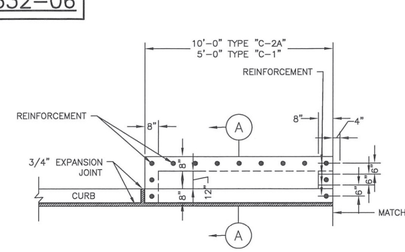
02632-06



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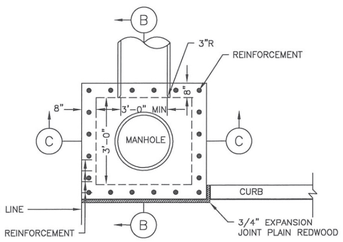
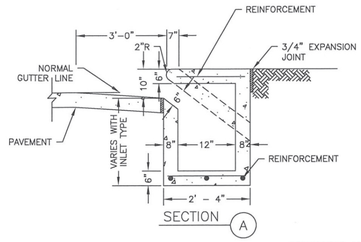
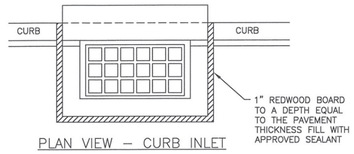


INLET

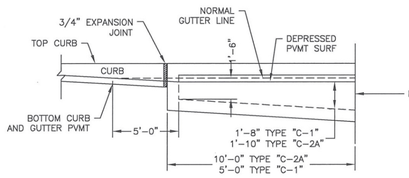
PLAN



SECTION A

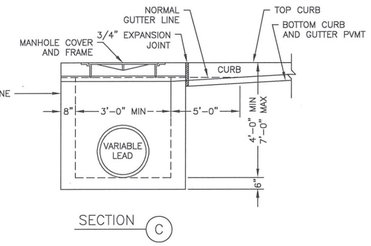


PLAN VIEW – CURB INLET



ELEVATION

MATCH LINE



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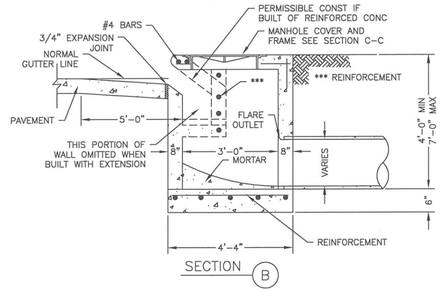


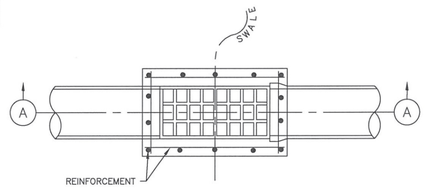
SECTION B

NOTES:

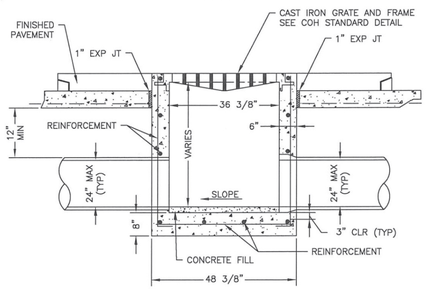
1. FOR TYPE "C-2A" INLETS PROVIDE A CENTER 6'X6' COLUMNS IN THE CURB LINE BETWEEN ALL EXTENSIONS.
2. WALLS TO BE 6" IF BUILT WITH REINFORCED CONCRETE.

STORM SEWER TYPE "C-1", "C-2" AND "C-2A" INLET
NTS

02632-07



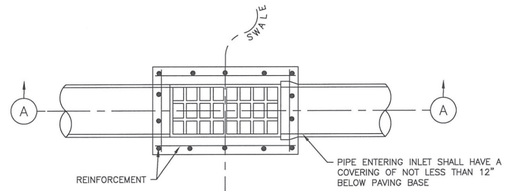
PLAN



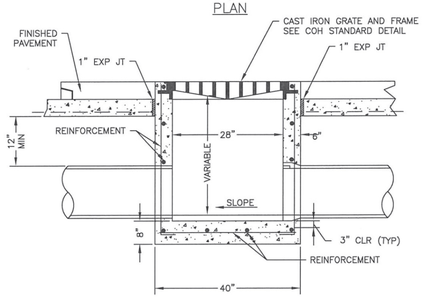
SECTION A

STORM SEWER TYPE "D" INLET
NTS

02632-08



PLAN



SECTION A

STORM SEWER TYPE "D-1" INLET
NTS

NO.	DATE	REVISION	APP.

FIRM INFORMATION

ENGINEER'S SEAL

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STORM SEWER
02632-06 THROUGH 08

APPROVED BY:	APPROVED BY:
CITY ENGINEER	DEPUTY DIRECTOR
APPROVED BY:	
DIRECTOR	
EFFECTIVE DATE: JUL-01-2019	
FOR CITY OF HOUSTON USE ONLY	

SHEET NO.

ENTECH
CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA
DRAINAGE AND PAVING
IMPROVEMENTS
STORM SEWER DETAILS
(1 OF 11)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 180 OF 227	

PLOTTED: 1/13/2026 10:36 AM coh_ctb_230809.ctb
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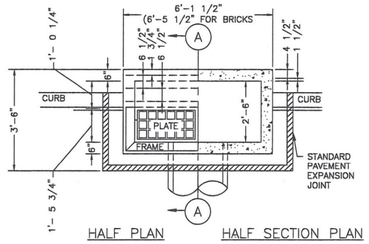
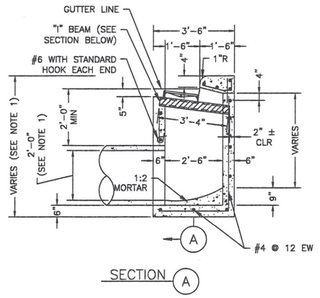
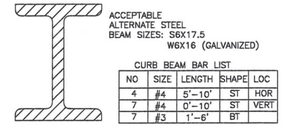
02632-04



HALF PLAN HALF SECTION PLAN



SECTION A



CURB BEAM BAR LIST

NO	SIZE	LENGTH	SHAPE	LOC
4	#4	5'-10"	ST	HOR
7	#4	0'-10"	ST	VERT
7	#3	1'-6"	BT	

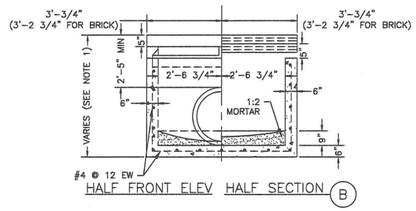
SECTION THRU BEAM

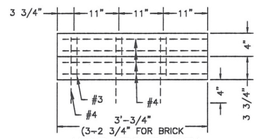
NOTES:

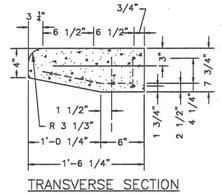
1. DIMENSION VARIES BASED ON PIPE DIAMETER AND WALL THICKNESS.
2. CENTER REINFORCING IN SLAB AND WALLS. CENTER STEEL BEAM ON INLET AND CAST INTO WALLS AS SHOWN.
3. WHEN TOP OF CURB TO FLOWLINE IS GREATER THAN 8 FEET USE TYPE "C" INLET.

GENERAL NOTES:

USE STANDARD CAST IRON FRAME & PLATES. LEAD SHALL LEAVE INLET AT LOCATION AND GRADE REQUIRED.





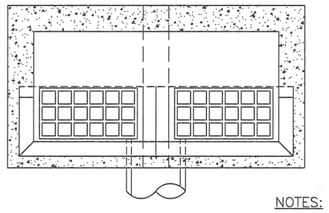


PRECAST CURB BEAM

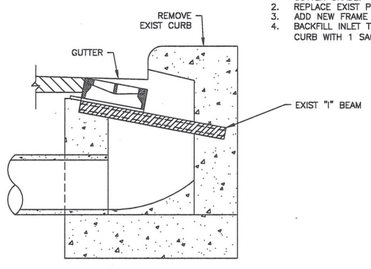
STORM SEWER TYPE "B-B" INLET
NTS

02632-05

STEP 1: EXIST TYPE "B" INLET

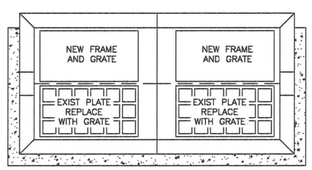


TOP VIEW

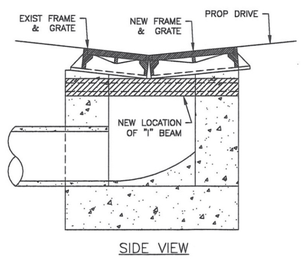


SIDE VIEW

STEP 2:



TOP VIEW

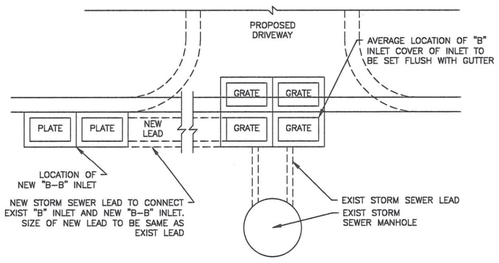


SIDE VIEW

NOTES:

1. AFTER REMOVING EXIST CURB, RAISE EXIST FRAME TO GUTTER GRADE.
2. REPLACE EXIST PLATE WITH A GRATE.
3. ADD NEW FRAME AND GRATE NEXT TO EXIST FRAME.
4. BACKFILL INLET TO A POINT ONE FOOT BEHIND THE CURB WITH 1 SACK/TON CEMENT STABILIZED SAND.

STEP 3: CONSTRUCT NEW TYPE "B-B" INLET ON CURB RETURN OF PROPOSED DRIVEWAY



STORM SEWER TYPE "B" INLET RELOCATION
NTS

NO.	DATE	REVISION	APP.

FIRM INFORMATION | ENGINEER'S SEAL

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STORM SEWER
02632-04 THROUGH 05

APPROVED BY:	APPROVED BY:
CITY ENGINEER	DEPUTY DIRECTOR
APPROVED BY: DIRECTOR	
EFFECTIVE DATE: JUL-01-2019	
FOR CITY OF HOUSTON USE ONLY	

SHEET NO.

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA
DRAINAGE AND PAVING
IMPROVEMENTS
STORM SEWER DETAILS
(2 OF 11)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 181 OF 227	

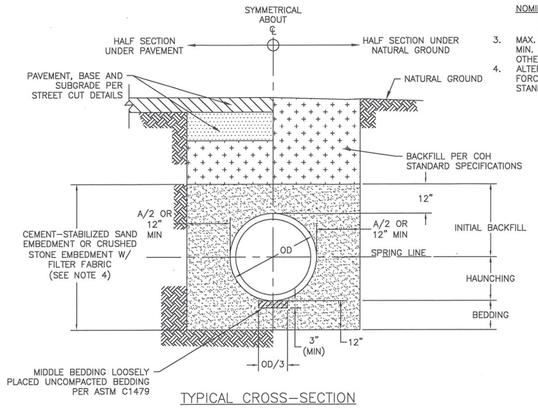
02317-03

NOTES:

1. THIS DETAIL MAY BE USED ONLY FOR DRY STABLE TRENCH CONDITIONS PER COH STANDARD. SEE COH STANDARD SPECIFICATION FOR REQUIREMENTS IN OTHER CONDITIONS.
2. MIN. TRENCH WIDTH SHALL BE PIPE OD PLUS AN ALLOWANCE "A" FOR THE NOMINAL PIPE SIZE:

NOMINAL PIPE SIZE	"A"
18" TO 30"	24"
OVER 30"	36"

3. MAX. TRENCH WIDTH SHALL BE NOT GREATER THAN MIN. TRENCH WIDTH PLUS 24 INCHES, UNLESS OTHERWISE NOTED.
4. ALTERNATIVE EMBEDMENT BACKFILL MATERIALS FOR FORCE MAINS MAY BE ALLOWED. SEE COH STANDARD SPECIFICATIONS.



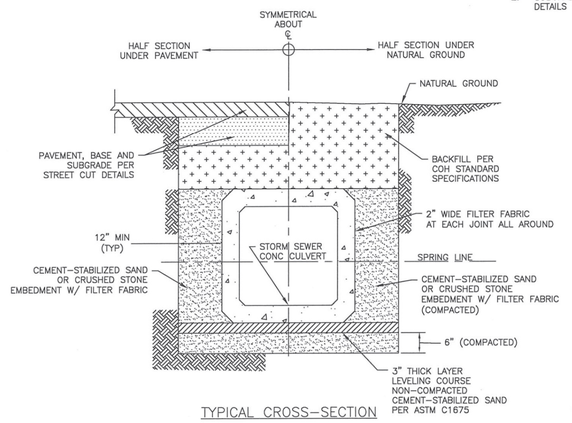
TYPICAL CROSS-SECTION

SANITARY OR STORM SEWER BEDDING AND BACKFILL FOR DRY STABLE TRENCH
NTS

02317-05

NOTES:

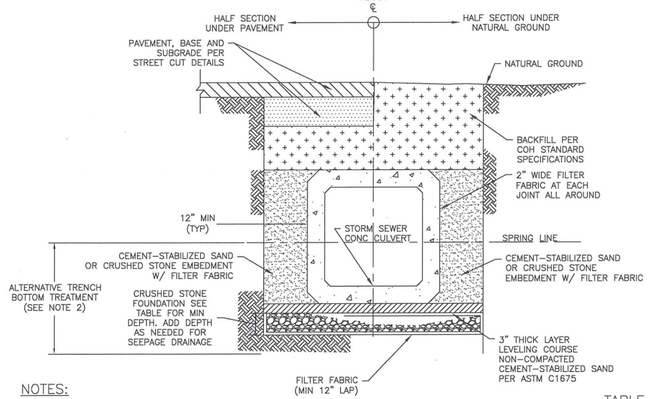
1. WHERE MULTIPLE BOX SEWER ARE USED IN THE SAME TRENCH, MIN. OUTSIDE TO OUTSIDE BOX SEWER SEPERATION SHALL BE 6".
2. SUBGRADE AND PAVEMENT FOR STREET CUT DETAILS – 02951.



TYPICAL CROSS-SECTION

PRECAST CONCRETE BOX STORM SEWER BEDDING AND BACKFILL FOR DRY STABLE TRENCH
NTS

02317-06



NOTES:

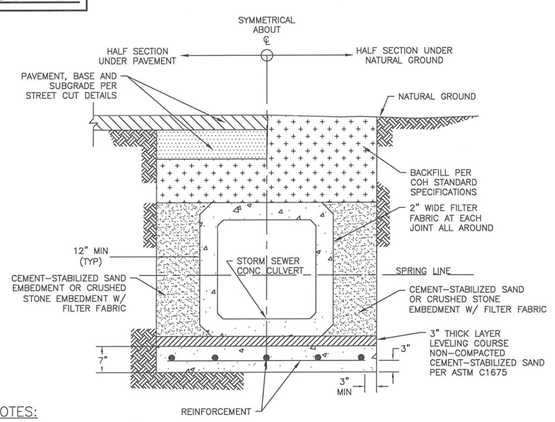
1. WHERE MULTIPLE BOX SEWER ARE USED IN THE SAME TRENCH, MIN. OUTSIDE TO OUTSIDE BOX SEWER SEPERATION SHALL BE 6".
2. ALTERNATIVE TRENCH BOTTOM TREATMENT MAY BE USED AS APPROVED BY THE CITY OF ENGINEERS AND AS PAID FOR IN THE PROPOSAL.

TABLE

CULVERT SIZE (FT)	FOUNDATION DEPTH(INCHES)
3' X 2' TO 6' X 6'	12
6' X 6' AND LARGER	18

PRECAST CONCRETE BOX STORM SEWER BEDDING AND BACKFILL FOR WET STABLE TRENCH
NTS

02317-07



NOTES:

1. WHERE MULTIPLE BOX SEWER ARE USED IN THE SAME TRENCH, MIN OUTSIDE TO OUTSIDE BOX SEWER SEPERATION SHALL BE 6".
2. REINFORCED CONCRETE SLAB PIPE BEDDING TO BE PLACED IN DRY TRENCH ONLY.
3. CONCRETE IN SLAB TO REACH MIN COMPRESSIVE STRENGTH OF 1000 PSI BASED ON MAX DESIGN BEFORE PIPE IS LAID.
4. PRECAST SEAL SLAB MAYBE USED AS APPROVED BY CITY ENGINEER.

PRECAST CONCRETE BOX STORM SEWER BEDDING AND BACKFILL WITH SEAL SLAB
NTS

NO.	DATE	REVISION	APP.

FIRM INFORMATION | ENGINEER'S SEAL

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STORM SEWER
02317-03 THROUGH 07

APPROVED BY: CITY ENGINEER | APPROVED BY: DEPUTY DIRECTOR

APPROVED BY: DIRECTOR

EFFECTIVE DATE: JUL-01-2019

FOR CITY OF HOUSTON USE ONLY

SHEET NO.

ENTECH
CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
STORM SEWER DETAILS
(3 OF 11)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 182 OF 227	

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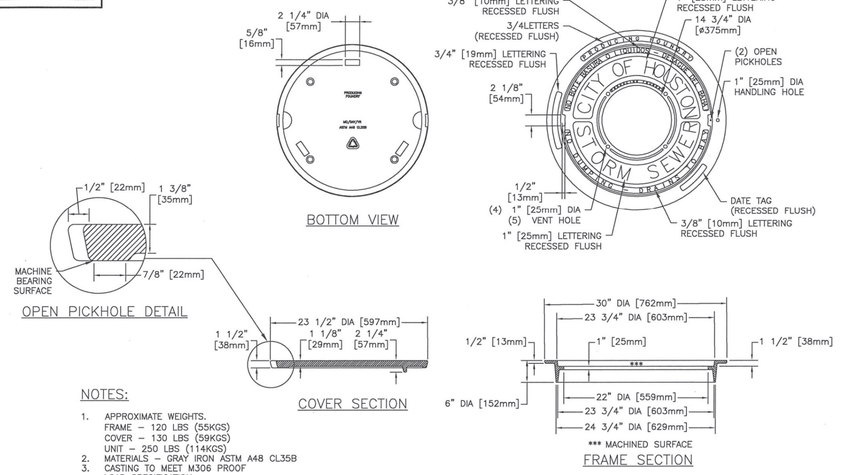
02084–09

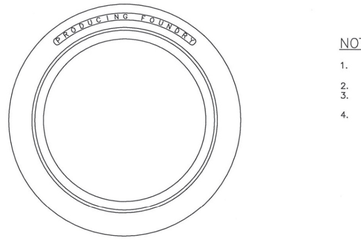


NOTES:

1. APPROXIMATE WEIGHTS.
   FRAME – 120 LBS (55KGS)
   COVER – 130 LBS (59KGS)
   UNIT – 250 LBS (114KGS)
2. MATERIALS – GRAY IRON ASTM A48 CL35B
3. CASTING TO MEET M306 PROOF LOAD SPECIFICATION
4. EJIW V–1814 ASY OR APPROVED EQUAL

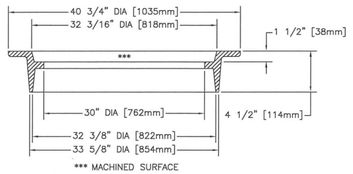
STORM SEWER TYPE "C–1, C–2, C–2A" AND "H–2" INLET FRAME AND COVER
NTS

02084–10



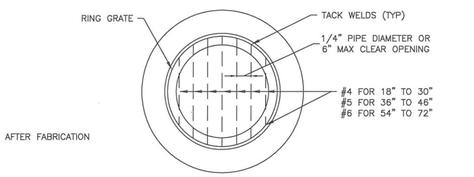
NOTES:

1. APPROXIMATE WEIGHTS.
   FRAME – 190 LBS (86KGS)
2. MATERIALS – GRAY IRON ASTM A48 CL35B
3. CASTING TO MEET M306 PROOF LOAD SPECIFICATION
4. EJIW V–1816 ASY OR APPROVED EQUAL



32" INVERTED MANHOLE FRAME
NTS

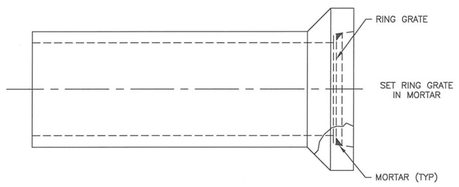
02084–11



NOTES:

1. GALVANIZED GRATE AFTER FABRICATION

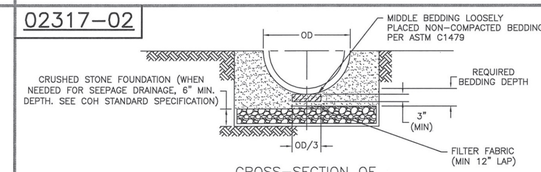
END VIEW



SIDE VIEW

STORM SEWER RING GRATE FOR OPEN END OF 18" TO 72" RCP STUBS TO DITCH
NTS

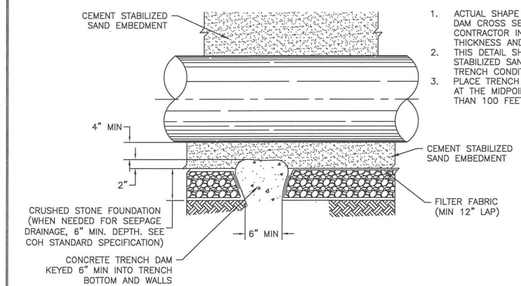
02317–02



CROSS–SECTION OF CRUSHED STONE FOUNDATION

NOTES:

1. ACTUAL SHAPE OF CONCRETE TRENCH DAM CROSS SECTION MAY BE DETERMINED BY CONTRACTOR IN FIELD, MEETING MINIMUM THICKNESS AND KEY DEPTH REQUIREMENTS.
2. THIS DETAIL SHALL BE USED WITH CEMENT STABILIZED SAND EMBEDMENT, IN WET STABLE TRENCH CONDITIONS.
3. PLACE TRENCH DAMS IN CLASS I EMBEDMENTS AT THE MIDPOINT OF LINE SEGMENTS LONGER THAN 100 FEET BETWEEN MANHOLES.



LONGITUDINAL SECTION ALONG PIPE ℄ AT FOUNDATION TRENCH DAM

SANITARY OR STORM SEWER CRUSHED STONE FOUNDATION FOR WET STABLE TRENCH
NTS

NO.	DATE	REVISION	APP.

FIRM INFORMATION | ENGINEER'S SEAL

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STORM SEWER
02084–09 THROUGH 11
AND 02317–02

APPROVED BY: CITY ENGINEER
APPROVED BY: DEPUTY DIRECTOR
APPROVED BY: DIRECTOR

EFFECTIVE DATE: JUL–01–2019

FOR CITY OF HOUSTON USE ONLY

SHEET NO.

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281–945–0069
TX FIRM NUMBER: F–6932
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FB NO. P–6331

ENTECH CIVIL ENGINEERS INC F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA
DRAINAGE AND PAVING
IMPROVEMENTS
STORM SEWER DETAILS
(4 OF 11)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410040–0001–3	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 183 OF 227	

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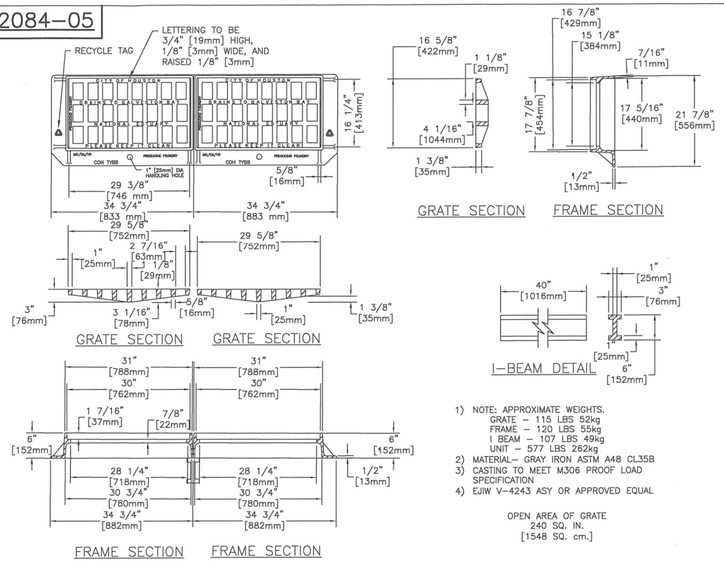
02084-05

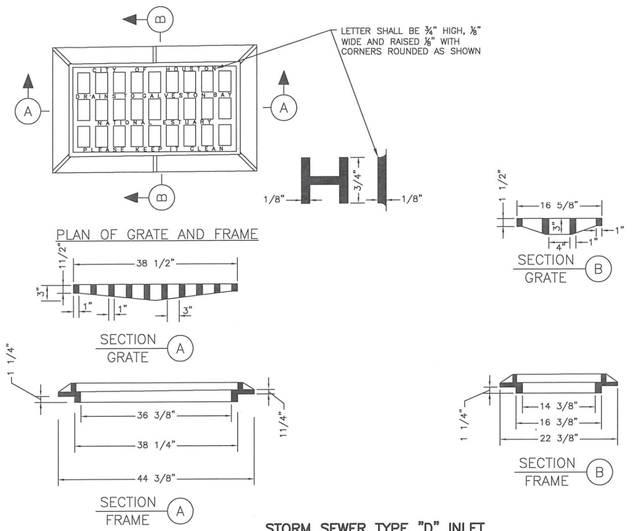


1) NOTE: APPROXIMATE WEIGHTS.
GRATE – 115 LBS 52kg
FRAME – 120 LBS 55kg
I BEAM – 107 LBS 49kg
UNIT – 577 LBS 262kg
2) MATERIAL– GRAY IRON ASTM A48 CL35B
3) CASTING TO MEET M306 PROOF LOAD SPECIFICATION
4) EJIW V-4243 ASY OR APPROVED EQUAL

OPEN AREA OF GRATE
240 SQ. IN.
[1548 SQ. cm.]

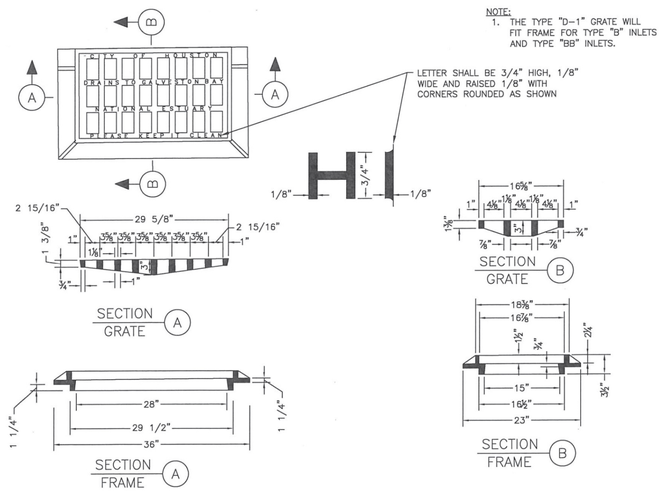
STORM SEWER FRAME AND GRATE FOR TYPE B-B INLET DOUBLE ASSEMBLY
NTS

02084-06



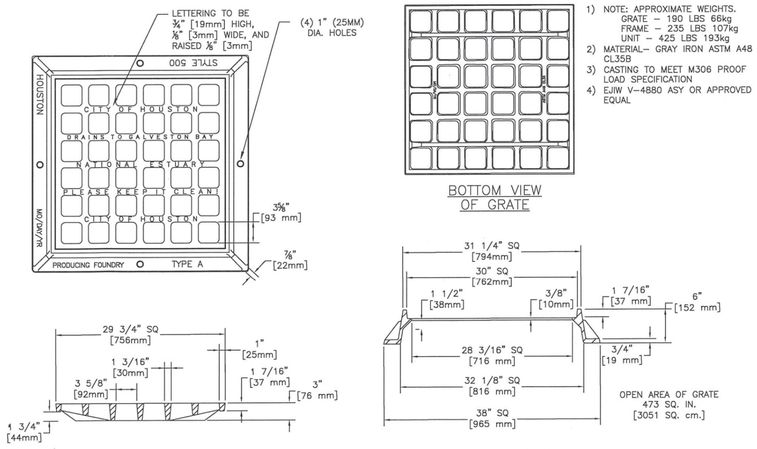
STORM SEWER TYPE "D" INLET GRATE AND FRAME
NTS

02084-07



STORM SEWER TYPE "D-1" INLET GRATE AND FRAME
NTS

02084-08



1) NOTE: APPROXIMATE WEIGHTS.
GRATE – 190 LBS 66kg
FRAME – 235 LBS 107kg
UNIT – 425 LBS 193kg
2) MATERIAL– GRAY IRON ASTM A48 CL35B
3) CASTING TO MEET M306 PROOF LOAD SPECIFICATION
4) EJIW V-4880 ASY OR APPROVED EQUAL

STORM SEWER TYPE "A" INLET GRATE AND FRAME
NTS

NO.	DATE	REVISION	APP.

FIRM INFORMATION | ENGINEER'S SEAL

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STORM SEWER
02084-05 THROUGH 08

APPROVED BY: CITY ENGINEER
APPROVED BY: DEPUTY DIRECTOR
APPROVED BY: DIRECTOR
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ENTECH CIVIL ENGINEERS INC F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA
DRAINAGE AND PAVING
IMPROVEMENTS
STORM SEWER DETAILS
(5 OF 11)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 184 OF 227	

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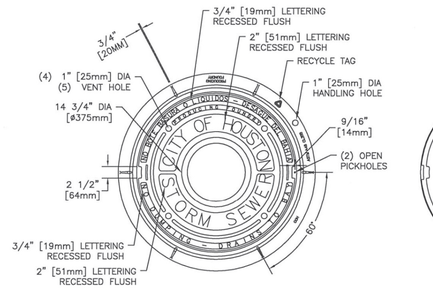
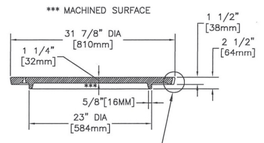
02084-02



BOTTOM VIEW OF COVER

NOTES:

1. APPROXIMATE WEIGHTS.
   FRAME – 170 LBS (77KGS)
   COVER – 270 LBS (123KGS)
   UNIT – 440 LBS (200KGS)
2. MATERIALS – GRAY IRON ASTM A48 CL35B
3. CASTING TO MEET M306 PROOF LOAD SPECIFICATION
4. EJIW V-1420 ASY OR APPROVED EQUAL



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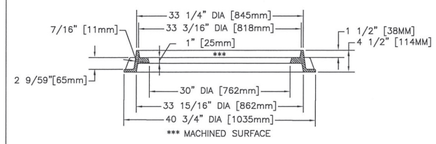

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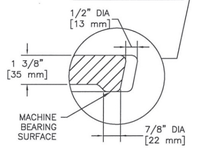
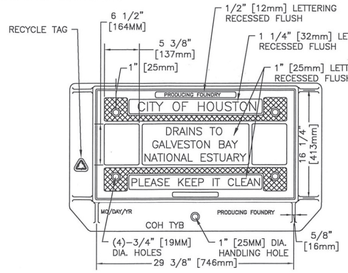
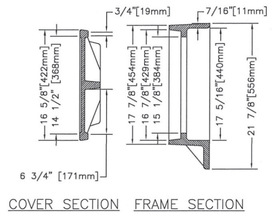


OPEN PICKHOLE DETAIL

STORM SEWER MANHOLE FRAME AND COVER
NTS

02084-03





COVER SECTION FRAME SECTION

NOTES:

1. APPROXIMATE WEIGHTS.
   FRAME – 125 LBS (57KGS)
   COVER – 130 LBS (59KGS)
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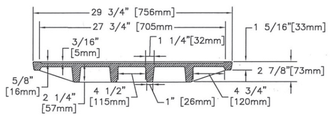

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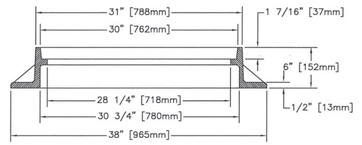

FRAME SECTION

STORM SEWER TYPE "B" INLET ASSEMBLY
NTS

02084-04

COVER SECTION

FRAME SECTION

NOTES:

1. APPROXIMATE WEIGHTS.
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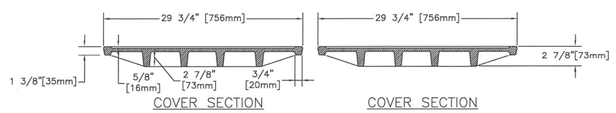

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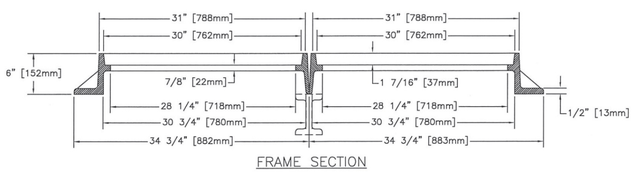

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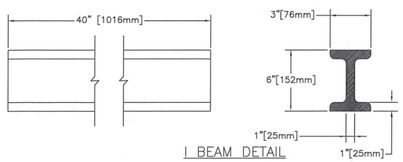

I BEAM DETAIL

STORM SEWER TYPE "BB" INLET DOUBLE ASSEMBLY
NTS

NO.	DATE	REVISION	APP.

FIRM INFORMATION | ENGINEER'S SEAL

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STORM SEWER
02084-02 THROUGH 04

APPROVED BY:	APPROVED BY:
CITY ENGINEER	DEPUTY DIRECTOR

APPROVED BY:
DIRECTOR

EFFECTIVE DATE: JUL-01-2019

FOR CITY OF HOUSTON USE ONLY

SHEET NO.

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA
DRAINAGE AND PAVING
IMPROVEMENTS
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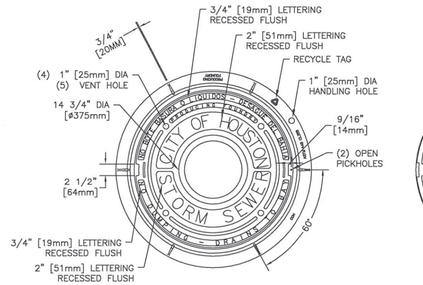

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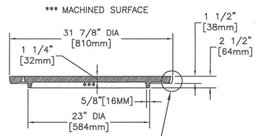

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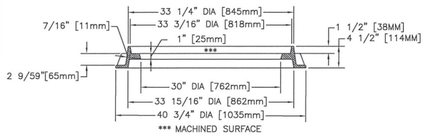

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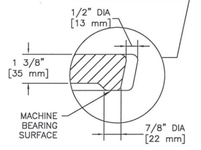

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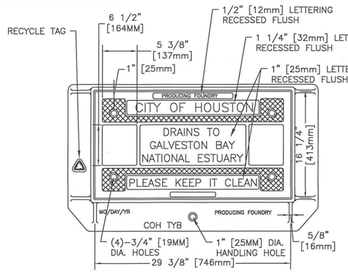
STORM SEWER MANHOLE FRAME AND COVER
NTS

02084-03



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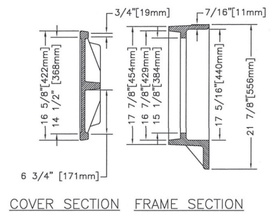

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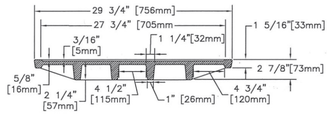

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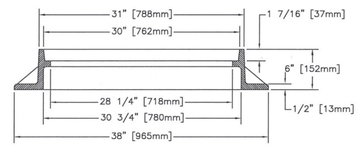
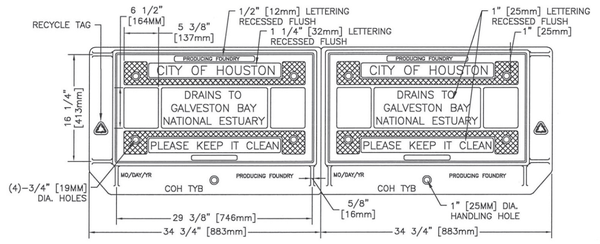
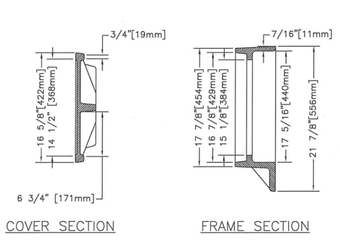


FRAME SECTION

STORM SEWER TYPE "B" INLET ASSEMBLY
NTS

02084-04





COVER SECTION FRAME SECTION

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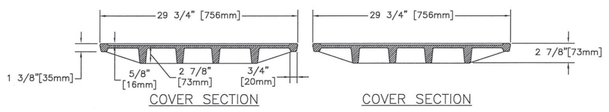

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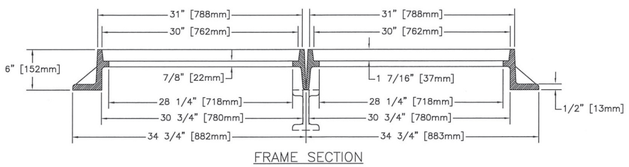

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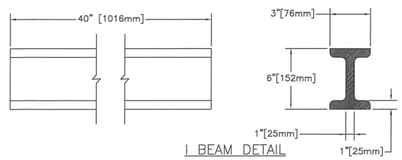

I BEAM DETAIL

STORM SEWER TYPE "BB" INLET DOUBLE ASSEMBLY
NTS

FIRM INFORMATION | ENGINEER'S SEAL

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STORM SEWER
02084-02 THROUGH 04

APPROVED BY:	APPROVED BY:
CITY ENGINEER	DEPUTY DIRECTOR
APPROVED BY:	
DIRECTOR	

EFFECTIVE DATE: JUL-01-2019

FOR CITY OF HOUSTON USE ONLY

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Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA
DRAINAGE AND PAVING
IMPROVEMENTS
STORM SEWER DETAILS
(7 OF 11)

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NO.	DATE	REVISION	APP.

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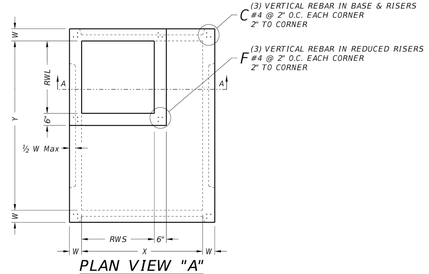
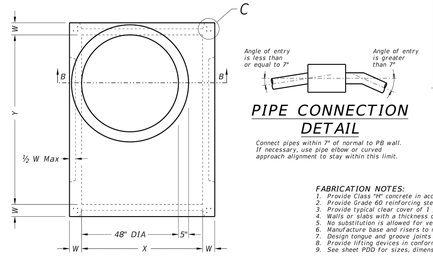
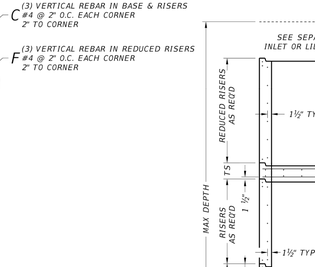


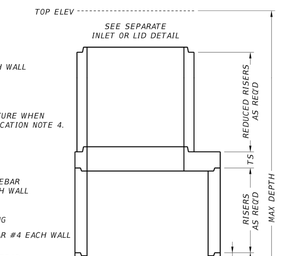
PLAN VIEW "A"
SQUARE REDUCED RISER OPTION



PLAN VIEW "B"
ROUND REDUCED RISER OPTION



SECTION A-A
SQUARE REDUCED RISER OPTION



SECTION B-B
ROUND REDUCED RISER OPTION

PIPE CONNECTION DETAIL

Connect pipes within 7° of normal to PB wall. If necessary, use pipe elbow or curved approach alignment to stay within this limit.

FABRICATION NOTES:

1. Provide Class "H" concrete in accordance with Item 421 and having a minimum compressive strength of 5,000 psi.
2. Provide Grade 60 reinforcing steel or equivalent area of WWR.
3. Provide typical clear cover of 1 ½" to reinforcing steel at interior or exterior walls.
4. Walls or slabs with a thickness of 8" or greater require shrinkage and temperature reinforcing steel. Provide steel area = 0.11 in²/ft each way.
5. No substitution is allowed for vertical and horizontal #4 bars in corners.
6. Manufacture base and risers to nearest 3" increment.
7. Design tongue and groove joints for full closure on both shoulders. Minimum spigot depth is ¾".
8. Provide lifting devices in conformance with Manufacturer's recommendations.
9. See sheet PDD for sizes, dimensions, and reinforcing steel not shown.

INSTALLATION NOTES:

1. If required elsewhere. Inverts (benching) to be provided by Contractor. Concrete or mortar used for invert is subsidiary to specified inlet or manhole.
2. Seal tongue and groove joints with preformed or bulk mastic in conformance with Manufacturer's recommendations. Tongue and groove joints may be grouted no more than 1" between each section, if the grout is flush with the inside face.
3. Do not grout rubber gasket joints without Manufacturer's recommendation.
4. For rigid pipe, cut hole in thin wall panel (KO) 4" Max, 2" Min larger than pipe OD.
5. For flexible pipe, consult boot/seal Manufacturer's specification for placement tolerance and hole size. Center pipe in hole and install boot/seal per Manufacturer's specification.

GENERAL NOTES:

1. Precast Base consists of base slab, base unit, risers (as required), reducing slab (as required), and reduced riser's (as required). See sheet PDD for sizes.
2. Designed according to ASTM C913.
3. Payment for precast base is subsidiary to the specified inlet, per Item 465, "Junction Boxes, Manholes, and Inlets."

Cover dimensions are clear dimensions, unless noted otherwise.

HL93 LOADING

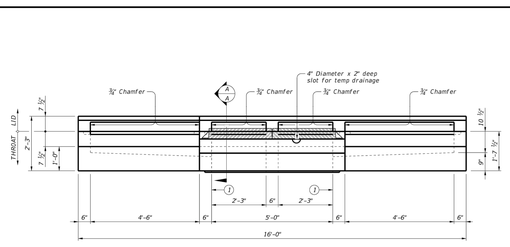
Texas Department of Transportation | Bridge Division Standard

PRECAST BASE

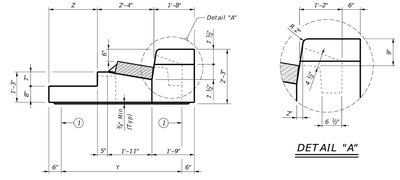
PB

prec. CD-PB-20.dgn	dw: TxDOT	ck: TxDOT	dw: TxDOT	ck: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.

NO.	DATE	REVISION	APP.

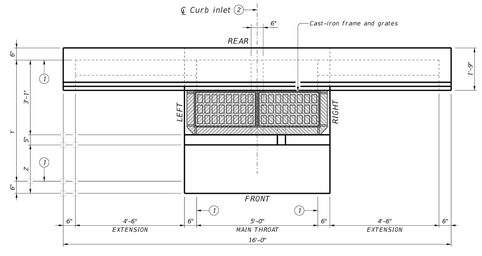


FRONT VIEW
(Showing left and right extensions)



SECTION A-A

DETAIL "A"



PLAN VIEW
(Showing left and right extensions)

TABLE OF VARIABLE DIMENSIONS	
Size (Y)	Z
3'	0'
4'	1'
5'	2'
6'	3'

(1) Matches inside face of wall of precast base or riser below inlet.

(2) Reference point is located where the ℄ of the main throat intersects the normal gutter line. See Curb and Gutter Transition Details for PCO Inlet (CGT-PCO) standard for more information.

HS20 LOADING SHEET 1 OF 2

Texas Department of Transportation | Bridge Division Standard

PRECAST CURB INLET UNDER ROADWAY

PCU

prec. CD-PCU-23.dgn	dw: TxDOT	ck: TxDOT	dw: TxDOT	ck: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.
08-2023: Added reference point.				

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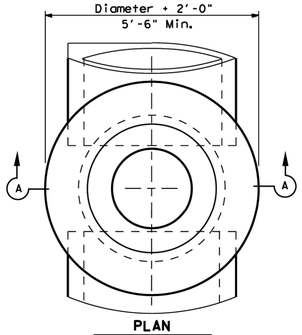
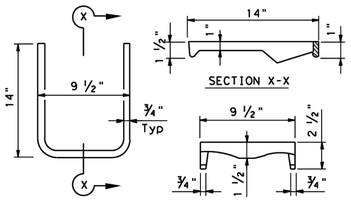


PLAN

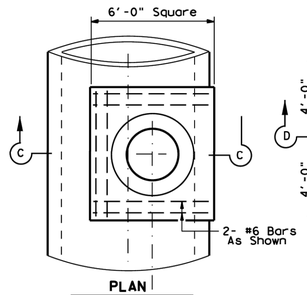
OVER 12' HEIGHT



PLAN END VIEW

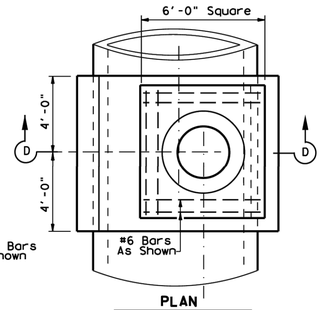
CAST IRON MANHOLE STEPS

(In Stock Locally)



PLAN

MONOLITHIC SEWERS



PLAN

PRECAST PIPE SEWERS

GENERAL NOTES:

See Standard or Detail Sheet For Excavation And Backfill Diagrams.

All Manholes In Graded Areas Shall Be Built To Stage I And Finished After All Grading Operations Are Substantially Completed.

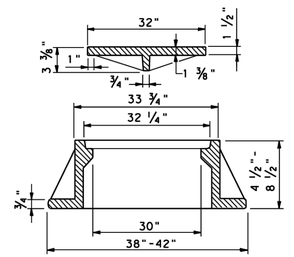
"T" Thickness Of Shell Equals That Of Larger Diameter Pipe.

Optional Monolithic Or Precast Designs Permitted. Optional Designs Shall Be Signed & Sealed By A Licensed Professional Engineer.

Provide Class "C" Concrete for C.I.P or Class "H" Concrete for Precast Elements With Modifications Per Item 465. Provide Min f'c=3,600psi. Provide Grade 60 Reinforcing Steel.

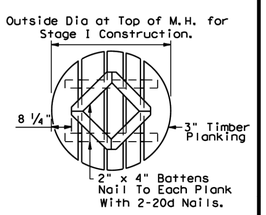
(1) But Not Less Than 6 Inches Above Highest Pipe.

(2) Alternative Ring And Covers May Only Be Used If Approved By Engineer. Refer To The "TxDOT Approved Cast Iron Product Sheets" Located On The TxDOT Bridge Standards Website For Alternatives To Be Approved.



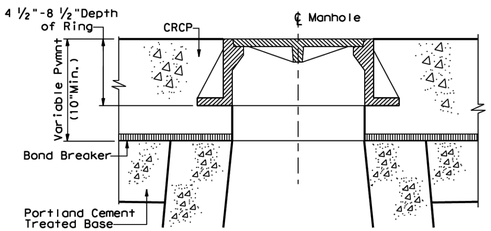
Heavy Duty 30"ID Ring as Required. EJ No. V-1419 w/ribbed cover, Neenah No. R-1930-30

RING AND COVER (2)



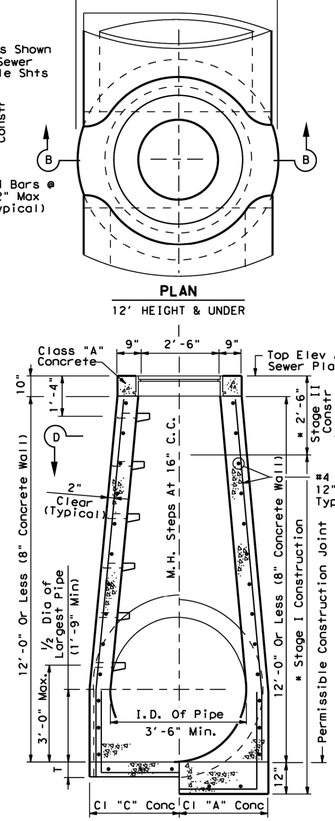
PLAN

TEMPORARY TIMBER COVER



RING AND COVER CAST MONOLITHICALLY WITH PAVEMENT

FOR DIRECT TRAFFIC



PLAN

12' HEIGHT & UNDER

MONOLITHIC SEWERS PRECAST PIPE SEWERS

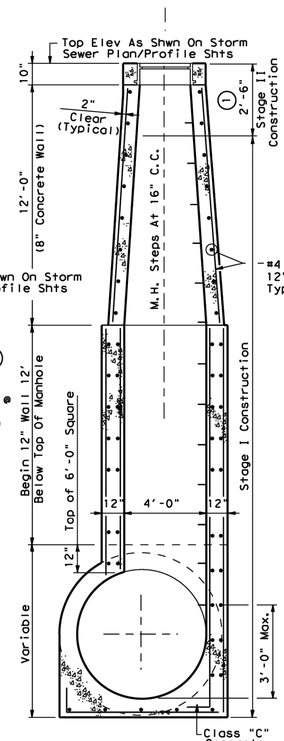
SECTION A-A

MONOLITHIC SEWERS PRECAST PIPE SEWERS

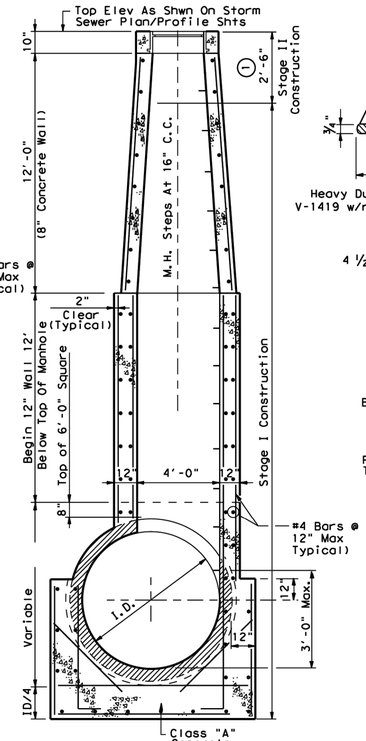
SECTION B-B

MANHOLE - TYPE A

FOR PIPES 54" AND SMALLER



SECTION C-C



SECTION D-D

MANHOLE - TYPE B

FOR PIPES 60" AND LARGER

d = Diameter
R = Radius

DATE:
FILE:

NO.	DATE	REVISION	APP.

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

Texas Department of Transportation — Bridge Houston District Standard

MANHOLES TYPE A & B

MH-A/B-25(HOU)

FILE: MH-A_B-25(HOU).DGN	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
©TxDOT May 2025	CONT	SECT	JOB	HIGHWAY
REVISIONS				
03/2015: MINOR CORRECTIONS 05/2025: 2024 Spec Updates	DIST	COUNTY		SHEET NO.

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

STORM SEWER DETAILS (9 OF 11)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 188 OF 227	

PLOTTED: 1/9/2026 2:56 PM coh_ctb_230809.ctb
FILE PATH: C:\Users\jstinson\Entech Civil Engineers, Inc\Braeburn Glen - Documents\SHARE\2525PVEN\Working\16_BRAEBURN GLEN-STANDARD DETAILS.dwg

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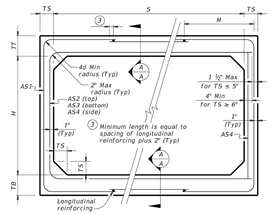
DATE:
FILE:

BOX DATA

SECTION DIMENSIONS					Fill Height	M (Min)	REINFORCING (sq. in. / ft.) ②							① Lift Weight
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	(ft.)	(in.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	(tons)
10	4	10	10	10	< 2	–	0.33	0.34	0.27	0.24	0.24	0.24	0.24	16.5
10	4	10	10	10	2 < 3	58	0.38	0.35	0.30	0.24	–	–	–	16.5
10	4	10	10	10	3 – 5	53	0.31	0.28	0.27	0.24	–	–	–	16.5
10	4	10	10	10	10	52	0.36	0.32	0.33	0.24	–	–	–	16.5
10	4	10	10	10	15	52	0.47	0.42	0.43	0.24	–	–	–	16.5
10	4	10	10	10	20	52	0.61	0.54	0.55	0.24	–	–	–	16.5
10	4	10	10	10	25	52	0.73	0.67	0.68	0.24	–	–	–	16.5
10	5	10	10	10	< 2	–	0.30	0.36	0.30	0.24	0.24	0.24	0.24	17.5
10	5	10	10	10	2 < 3	58	0.35	0.39	0.34	0.24	–	–	–	17.5
10	5	10	10	10	3 – 5	52	0.28	0.31	0.30	0.24	–	–	–	17.5
10	5	10	10	10	10	52	0.33	0.35	0.36	0.24	–	–	–	17.5
10	5	10	10	10	15	47	0.42	0.46	0.47	0.24	–	–	–	17.5
10	5	10	10	10	20	47	0.55	0.59	0.61	0.24	–	–	–	17.5
10	5	10	10	10	25	47	0.68	0.73	0.75	0.24	–	–	–	17.5
10	6	10	10	10	< 2	–	0.28	0.38	0.33	0.24	0.24	0.24	0.24	18.5
10	6	10	10	10	2 < 3	58	0.32	0.42	0.37	0.24	–	–	–	18.5
10	6	10	10	10	3 – 5	53	0.26	0.34	0.33	0.24	–	–	–	18.5
10	6	10	10	10	10	52	0.30	0.38	0.39	0.24	–	–	–	18.5
10	6	10	10	10	15	47	0.39	0.49	0.51	0.24	–	–	–	18.5
10	6	10	10	10	20	47	0.50	0.63	0.65	0.24	–	–	–	18.5
10	6	10	10	10	25	47	0.61	0.78	0.80	0.24	–	–	–	18.5
10	7	10	10	10	< 2	–	0.25	0.40	0.36	0.24	0.24	0.24	0.24	19.5
10	7	10	10	10	2 < 3	58	0.30	0.45	0.40	0.24	–	–	–	19.5
10	7	10	10	10	3 – 5	58	0.24	0.36	0.35	0.24	–	–	–	19.5
10	7	10	10	10	10	52	0.28	0.40	0.42	0.24	–	–	–	19.5
10	7	10	10	10	15	47	0.36	0.52	0.54	0.24	–	–	–	19.5
10	7	10	10	10	20	47	0.46	0.67	0.69	0.24	–	–	–	19.5
10	7	10	10	10	25	47	0.56	0.82	0.85	0.24	–	–	–	19.5
10	8	10	10	10	< 2	–	0.24	0.41	0.38	0.24	0.24	0.24	0.24	20.5
10	8	10	10	10	2 < 3	64	0.27	0.47	0.43	0.24	–	–	–	20.5
10	8	10	10	10	3 – 5	58	0.24	0.38	0.38	0.24	–	–	–	20.5
10	8	10	10	10	10	52	0.26	0.42	0.44	0.24	–	–	–	20.5
10	8	10	10	10	15	47	0.34	0.54	0.57	0.24	–	–	–	20.5
10	8	10	10	10	20	47	0.43	0.69	0.72	0.24	–	–	–	20.5
10	9	10	10	10	< 2	–	0.24	0.42	0.41	0.24	0.24	0.24	0.24	21.5
10	9	10	10	10	2 < 3	70	0.26	0.50	0.46	0.24	–	–	–	21.5
10	9	10	10	10	3 – 5	64	0.24	0.40	0.40	0.24	–	–	–	21.5
10	9	10	10	10	10	58	0.25	0.43	0.46	0.24	–	–	–	21.5
10	9	10	10	10	15	52	0.32	0.56	0.59	0.24	–	–	–	21.5
10	9	10	10	10	20	47	0.40	0.71	0.75	0.24	–	–	–	21.5
10	10	10	10	10	< 2	–	0.24	0.44	0.44	0.24	0.24	0.24	0.24	22.5
10	10	10	10	10	2 < 3	79	0.25	0.52	0.48	0.24	–	–	–	22.5
10	10	10	10	10	3 – 5	70	0.24	0.42	0.43	0.24	–	–	–	22.5
10	10	10	10	10	10	64	0.24	0.44	0.48	0.24	–	–	–	22.5
10	10	10	10	10	15	52	0.30	0.57	0.61	0.24	–	–	–	22.5
10	10	10	10	10	20	52	0.38	0.73	0.77	0.24	–	–	–	22.5

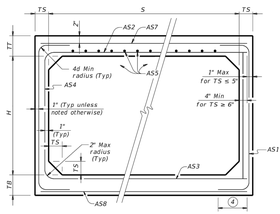
① For box length = 8'-0"

② AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.



CORNER OPTION "A" CORNER OPTION "B"

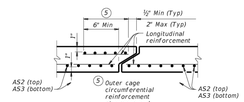
FILL HEIGHT 2 FT AND GREATER



CORNER OPTION "A" CORNER OPTION "B"

FILL HEIGHT LESS THAN 2 FT

④ Length is equal to spacing of longitudinal reinforcing plus 2". (10" Min) (Typ)



SECTION A-A

(Showing top and bottom slab joint reinforcement.)

MATERIAL NOTES:

Provide 0.03 sq. in./ft. minimum longitudinal reinforcement at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcement is used.

Provide Class H concrete (f'c = 5,000 psi).

GENERAL NOTES:

Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information or details not shown.

See Box Culverts Precast Miscellaneous Details (SCP-MD) standard sheet for details and notes not shown.

In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Submit shop plans for alternate designs in accordance with Item "Precast Concrete Structural Members (Fabrication)."

HL93 LOADING

Texas Department of Transportation | Bridge Division Standard

SINGLE BOX CULVERTS
PRECAST
10'-0" SPAN

SCP-10

FILE: CD-SCP10-20.dgn	DW: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.

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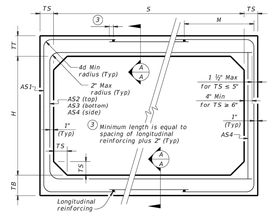
DATE:
FILE:

BOX DATA

SECTION DIMENSIONS					Fill Height	M (Min)	REINFORCING (sq. in. / ft.) ②							① Lift Weight
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	(ft.)	(in.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	(tons)
7	3	8	8	8	< 2	–	0.23	0.31	0.22	0.19	0.19	0.19	0.19	9.6
7	3	8	8	8	2 < 3	47	0.27	0.25	0.24	0.19	–	–	–	9.6
7	3	8	8	8	3 – 5	43	0.19	0.19	0.19	0.19	–	–	–	9.6
7	3	8	8	8	10	43	0.21	0.20	0.21	0.19	–	–	–	9.6
7	3	8	8	8	15	43	0.28	0.26	0.27	0.19	–	–	–	9.6
7	3	8	8	8	20	43	0.36	0.34	0.35	0.19	–	–	–	9.6
7	3	8	8	8	25	43	0.45	0.42	0.43	0.19	–	–	–	9.6
7	3	8	8	8	30	43	0.54	0.50	0.51	0.19	–	–	–	9.6
7	4	8	8	8	< 2	–	0.21	0.34	0.25	0.19	0.19	0.19	0.19	10.4
7	4	8	8	8	2 < 3	43	0.23	0.28	0.28	0.19	–	–	–	10.4
7	4	8	8	8	3 – 5	43	0.19	0.22	0.19	0.19	–	–	–	10.4
7	4	8	8	8	10	43	0.19	0.23	0.23	0.19	–	–	–	10.4
7	4	8	8	8	15	41	0.24	0.30	0.30	0.19	–	–	–	10.4
7	4	8	8	8	20	41	0.31	0.38	0.39	0.19	–	–	–	10.4
7	4	8	8	8	25	41	0.38	0.47	0.48	0.19	–	–	–	10.4
7	4	8	8	8	30	41	0.46	0.57	0.57	0.19	–	–	–	10.4
7	5	8	8	8	< 2	–	0.19	0.36	0.27	0.19	0.19	0.19	0.19	11.2
7	5	8	8	8	2 < 3	47	0.21	0.31	0.31	0.19	–	–	–	11.2
7	5	8	8	8	3 – 5	43	0.19	0.24	0.21	0.19	–	–	–	11.2
7	5	8	8	8	10	43	0.19	0.25	0.26	0.19	–	–	–	11.2
7	5	8	8	8	15	41	0.21	0.32	0.33	0.19	–	–	–	11.2
7	5	8	8	8	20	41	0.27	0.41	0.42	0.19	–	–	–	11.2
7	5	8	8	8	25	41	0.33	0.51	0.52	0.19	–	–	–	11.2
7	5	8	8	8	30	41	0.40	0.61	0.62	0.19	–	–	–	11.2
7	6	8	8	8	< 2	–	0.19	0.38	0.30	0.19	0.19	0.19	0.19	12.0
7	6	8	8	8	2 < 3	59	0.19	0.33	0.34	0.19	–	–	–	12.0
7	6	8	8	8	3 – 5	47	0.19	0.25	0.23	0.19	–	–	–	12.0
7	6	8	8	8	10	43	0.19	0.26	0.27	0.19	–	–	–	12.0
7	6	8	8	8	15	41	0.19	0.34	0.35	0.19	–	–	–	12.0
7	6	8	8	8	20	41	0.24	0.43	0.45	0.19	–	–	–	12.0
7	6	8	8	8	25	41	0.29	0.53	0.55	0.19	–	–	–	12.0
7	6	8	8	8	30	41	0.35	0.64	0.65	0.19	–	–	–	12.0
7	7	8	8	8	< 2	–	0.19	0.40	0.33	0.19	0.19	0.19	0.19	12.8
7	7	8	8	8	2 < 3	59	0.19	0.36	0.37	0.19	–	–	–	12.8
7	7	8	8	8	3 – 5	59	0.19	0.27	0.25	0.19	–	–	–	12.8
7	7	8	8	8	10	47	0.19	0.27	0.29	0.19	–	–	–	12.8
7	7	8	8	8	15	43	0.19	0.35	0.37	0.19	–	–	–	12.8
7	7	8	8	8	20	43	0.22	0.44	0.46	0.19	–	–	–	12.8
7	7	8	8	8	25	43	0.27	0.54	0.57	0.19	–	–	–	12.8
7	7	8	8	8	30	41	0.32	0.65	0.67	0.19	–	–	–	12.8

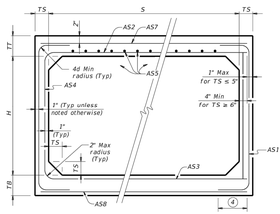
① For box length = 8'-0"

② AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.



CORNER OPTION "A" CORNER OPTION "B"

FILL HEIGHT 2 FT AND GREATER



CORNER OPTION "A" CORNER OPTION "B"

FILL HEIGHT LESS THAN 2 FT

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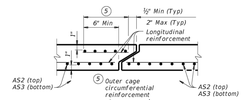

SECTION A-A

(Showing top and bottom slab joint reinforcement.)

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HL93 LOADING

Texas Department of Transportation | Bridge Division Standard

SINGLE BOX CULVERTS
PRECAST
7'-0" SPAN

SCP-7

FILE: CD-SCP07-20.dgn	DW: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	DIST	COUNTY		SHEET NO.

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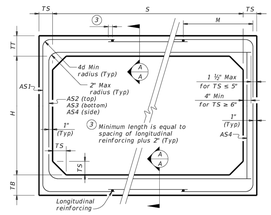
BOX DATA

SECTION DIMENSIONS					Fill Height	M (Min)	REINFORCING (sq. in. / ft.) ②							① Lift Weight
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	(ft.)	(in.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	(tons)
8	3	8	8	8	< 2	–	0.31	0.35	0.25	0.19	0.19	0.19	0.19	10.4
8	3	8	8	8	2 < 3	55	0.35	0.29	0.28	0.19	–	–	–	10.4
8	3	8	8	8	3 – 5	50	0.28	0.23	0.24	0.19	–	–	–	10.4
8	3	8	8	8	10	45	0.29	0.25	0.26	0.19	–	–	–	10.4
8	3	8	8	8	15	45	0.39	0.33	0.34	0.19	–	–	–	10.4
8	3	8	8	8	20	45	0.51	0.43	0.44	0.19	–	–	–	10.4
8	3	8	8	8	25	45	0.63	0.53	0.54	0.19	–	–	–	10.4
8	4	8	8	8	< 2	–	0.27	0.38	0.29	0.19	0.19	0.19	0.19	11.2
8	4	8	8	8	2 < 3	50	0.31	0.34	0.32	0.19	–	–	–	11.2
8	4	8	8	8	3 – 5	50	0.25	0.27	0.27	0.19	–	–	–	11.2
8	4	8	8	8	10	45	0.26	0.28	0.29	0.19	–	–	–	11.2
8	4	8	8	8	15	41	0.34	0.37	0.38	0.19	–	–	–	11.2
8	4	8	8	8	20	41	0.44	0.48	0.49	0.19	–	–	–	11.2
8	5	8	8	8	< 2	–	0.24	0.40	0.32	0.19	0.19	0.19	0.19	12.0
8	5	8	8	8	2 < 3	50	0.28	0.37	0.35	0.19	–	–	–	12.0
8	5	8	8	8	3 – 5	45	0.23	0.29	0.30	0.19	–	–	–	12.0
8	5	8	8	8	10	45	0.23	0.31	0.32	0.19	–	–	–	12.0
8	5	8	8	8	15	41	0.30	0.41	0.42	0.19	–	–	–	12.0
8	5	8	8	8	20	41	0.39	0.52	0.54	0.19	–	–	–	12.0
8	6	8	8	8	< 2	–	0.22	0.42	0.35	0.19	0.19	0.19	0.19	12.8
8	6	8	8	8	2 < 3	50	0.25	0.40	0.38	0.19	–	–	–	12.8
8	6	8	8	8	3 – 5	50	0.21	0.32	0.33	0.19	–	–	–	12.8
8	6	8	8	8	10	45	0.22	0.33	0.34	0.19	–	–	–	12.8
8	6	8	8	8	15	41	0.28	0.43	0.45	0.19	–	–	–	12.8
8	6	8	8	8	20	41	0.36	0.55	0.57	0.19	–	–	–	12.8
8	7	8	8	8	< 2	–	0.20	0.44	0.37	0.19	0.19	0.19	0.19	13.6
8	7	8	8	8	2 < 3	55	0.23	0.43	0.41	0.19	–	–	–	13.6
8	7	8	8	8	3 – 5	55	0.19	0.34	0.35	0.19	–	–	–	13.6
8	7	8	8	8	10	50	0.20	0.34	0.36	0.19	–	–	–	13.6
8	7	8	8	8	15	41	0.26	0.45	0.47	0.19	–	–	–	13.6
8	7	8	8	8	20	41	0.33	0.57	0.60	0.19	–	–	–	13.6
8	8	8	8	8	< 2	–	0.20	0.45	0.40	0.19	0.19	0.19	0.19	14.4
8	8	8	8	8	2 < 3	65	0.21	0.45	0.44	0.19	–	–	–	14.4
8	8	8	8	8	3 – 5	65	0.19	0.36	0.38	0.19	–	–	–	14.4
8	8	8	8	8	10	55	0.19	0.35	0.38	0.19	–	–	–	14.4
8	8	8	8	8	15	45	0.24	0.46	0.49	0.19	–	–	–	14.4
8	8	8	8	8	20	45	0.31	0.59	0.62	0.19	–	–	–	14.4

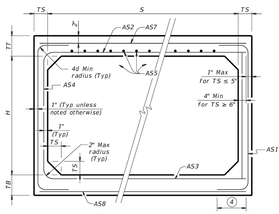
① For box length = 8'-0"

② AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.



CORNER OPTION "A" CORNER OPTION "B"

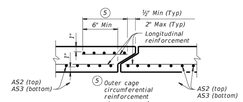
FILL HEIGHT 2 FT AND GREATER



CORNER OPTION "A" CORNER OPTION "B"

FILL HEIGHT LESS THAN 2 FT

④ Length is equal to spacing of longitudinal reinforcing plus 2". (10" Min) (Typ)



SECTION A-A

(Showing top and bottom slab joint reinforcement.)

MATERIAL NOTES:

Provide 0.03 sq. in./ft. minimum longitudinal reinforcement at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcement is used.

Provide Class H concrete (f'c = 5,000 psi).

GENERAL NOTES:

Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information or details not shown.

See Box Culverts Precast Miscellaneous Details (SCP-MD) standard sheet for details and notes not shown.

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HL93 LOADING

Texas Department of Transportation | Bridge Division Standard

SINGLE BOX CULVERTS
PRECAST
8'-0" SPAN

SCP-8

FILE: CD-SCP08-20.dgn	DW: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	DIST	COUNTY		SHEET NO.

NO.	DATE	REVISION	APP.

ENTECH
CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS, INC F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED
PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

STORM SEWER DETAILS (10 OF 11)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 189 OF 227	

PLOTTED: 1/9/2026 2:57 PM coh_ctb_230809.ctb

FILE PATH: C:\Users\jstinson\Entech Civil Engineers, Inc\Broeburn Glen - Documents\SHARE\2525PVEN\Working\16_BRAEBURN GLEN-STANDARD DETAILS.dwg

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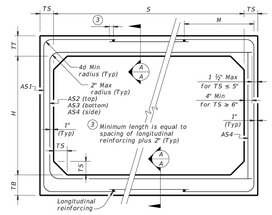
DATE:
FILE:

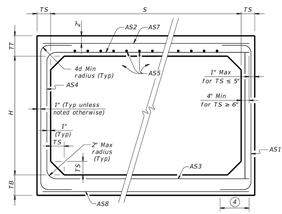
BOX DATA

SECTION DIMENSIONS							REINFORCING (sq. in. / ft.) ②							①
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	Fill Height (ft.)	M (Min) (in.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	Lift Weight (tons)
6	2	8	7	7	< 2	–	0.23	0.27	0.19	0.17	0.19	0.19	0.17	7.2
6	2	7	7	7	2 < 3	43	0.25	0.21	0.17	0.17	–	–	–	6.8
6	2	7	7	7	3 – 5	43	0.20	0.17	0.17	0.17	–	–	–	6.8
6	2	7	7	7	10	39	0.20	0.17	0.17	0.17	–	–	–	6.8
6	2	7	7	7	15	39	0.26	0.20	0.20	0.17	–	–	–	6.8
6	2	7	7	7	20	39	0.34	0.26	0.26	0.17	–	–	–	6.8
6	2	7	7	7	25	39	0.43	0.32	0.32	0.17	–	–	–	6.8
6	2	7	7	7	30	39	0.52	0.38	0.39	0.17	–	–	–	6.8
6	3	8	7	7	< 2	–	0.20	0.31	0.22	0.17	0.19	0.19	0.17	7.9
6	3	7	7	7	2 < 3	43	0.21	0.24	0.19	0.17	–	–	–	7.5
6	3	7	7	7	3 – 5	39	0.17	0.18	0.17	0.17	–	–	–	7.5
6	3	7	7	7	10	39	0.17	0.18	0.19	0.17	–	–	–	7.5
6	3	7	7	7	15	38	0.22	0.24	0.24	0.17	–	–	–	7.5
6	3	7	7	7	20	38	0.28	0.31	0.31	0.17	–	–	–	7.5
6	3	7	7	7	25	38	0.35	0.38	0.39	0.17	–	–	–	7.5
6	3	7	7	7	30	38	0.42	0.46	0.46	0.17	–	–	–	7.5
6	4	8	7	7	< 2	–	0.19	0.34	0.25	0.17	0.19	0.19	0.17	8.6
6	4	7	7	7	2 < 3	43	0.19	0.27	0.21	0.17	–	–	–	8.2
6	4	7	7	7	3 – 5	39	0.17	0.21	0.19	0.17	–	–	–	8.2
6	4	7	7	7	10	39	0.17	0.20	0.21	0.17	–	–	–	8.2
6	4	7	7	7	15	38	0.18	0.27	0.27	0.17	–	–	–	8.2
6	4	7	7	7	20	38	0.24	0.34	0.35	0.17	–	–	–	8.2
6	4	7	7	7	25	38	0.29	0.43	0.42	0.17	–	–	–	8.2
6	4	7	7	7	30	38	0.35	0.51	0.52	0.17	–	–	–	8.2
6	5	8	7	7	< 2	–	0.19	0.37	0.28	0.17	0.19	0.19	0.17	9.3
6	5	7	7	7	2 < 3	43	0.17	0.30	0.24	0.17	–	–	–	8.9
6	5	7	7	7	3 – 5	43	0.17	0.23	0.21	0.17	–	–	–	8.9
6	5	7	7	7	10	39	0.17	0.22	0.23	0.17	–	–	–	8.9
6	5	7	7	7	15	38	0.17	0.28	0.29	0.17	–	–	–	8.9
6	5	7	7	7	20	38	0.20	0.37	0.38	0.17	–	–	–	8.9
6	5	7	7	7	25	38	0.25	0.45	0.46	0.17	–	–	–	8.9
6	5	7	7	7	30	38	0.30	0.54	0.55	0.17	–	–	–	8.9
6	6	8	7	7	< 2	–	0.19	0.38	0.30	0.17	0.19	0.19	0.17	10
6	6	7	7	7	2 < 3	52	0.17	0.32	0.26	0.17	–	–	–	9.6
6	6	7	7	7	3 – 5	52	0.17	0.24	0.22	0.17	–	–	–	9.6
6	6	7	7	7	10	43	0.17	0.23	0.24	0.17	–	–	–	9.6
6	6	7	7	7	15	39	0.17	0.29	0.31	0.17	–	–	–	9.6
6	6	7	7	7	20	39	0.18	0.38	0.39	0.17	–	–	–	9.6
6	6	7	7	7	25	38	0.23	0.46	0.48	0.17	–	–	–	9.6
6	6	7	7	7	30	38	0.27	0.55	0.57	0.17	–	–	–	9.6

① For box length = 8'-0"

② AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.

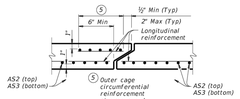




FILL HEIGHT 2 FT AND GREATER

FILL HEIGHT LESS THAN 2 FT

④ Length is equal to spacing of longitudinal reinforcing plus 2". (10" Min) (Typ)



SECTION A-A

(Showing top and bottom slab joint reinforcement.)

MATERIAL NOTES:
Provide 0.03 sq. in./ft. minimum longitudinal reinforcement at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcement is used.
Provide Class H concrete (f'c = 5,000 psi).

GENERAL NOTES:
Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information or details not shown.
See Box Culverts Precast Miscellaneous Details (SCP-MD) standard sheet for details and notes not shown.
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Texas Department of Transportation | Bridge Division Standard

SINGLE BOX CULVERTS PRECAST
6'-0" SPAN

SCP-6

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BOX DATA

SECTION DIMENSIONS							REINFORCING (sq. in. / ft.) ②							①
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	Fill Height (ft.)	M (Min) (in.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	Lift Weight (tons)
5	2	8	7	6	< 2	–	0.19	0.27	0.18	0.14	0.19	0.19	0.17	6.0
5	2	6	6	6	2 < 3	44	0.22	0.20	0.16	0.14	–	–	–	5.1
5	2	6	6	6	3 – 5	44	0.16	0.14	0.14	0.14	–	–	–	5.1
5	2	6	6	6	10	36	0.15	0.14	0.14	0.14	–	–	–	5.1
5	2	6	6	6	15	36	0.20	0.18	0.18	0.14	–	–	–	5.1
5	2	6	6	6	20	36	0.26	0.23	0.24	0.14	–	–	–	5.1
5	2	6	6	6	25	36	0.33	0.29	0.29	0.14	–	–	–	5.1
5	2	6	6	6	30	36	0.39	0.34	0.35	0.14	–	–	–	5.1
5	3	8	7	6	< 2	–	0.19	0.31	0.21	0.14	0.19	0.19	0.17	6.6
5	3	6	6	6	2 < 3	45	0.18	0.24	0.19	0.14	–	–	–	5.7
5	3	6	6	6	3 – 5	36	0.14	0.17	0.16	0.14	–	–	–	5.7
5	3	6	6	6	10	36	0.14	0.16	0.17	0.14	–	–	–	5.7
5	3	6	6	6	15	35	0.16	0.21	0.22	0.14	–	–	–	5.7
5	3	6	6	6	20	35	0.21	0.27	0.28	0.14	–	–	–	5.7
5	3	6	6	6	25	35	0.26	0.34	0.34	0.14	–	–	–	5.7
5	3	6	6	6	30	35	0.31	0.41	0.41	0.14	–	–	–	5.7
5	4	8	7	6	< 2	–	0.19	0.33	0.24	0.14	0.19	0.19	0.17	7.2
5	4	6	6	6	2 < 3	45	0.16	0.27	0.22	0.14	–	–	–	6.3
5	4	6	6	6	3 – 5	45	0.14	0.19	0.18	0.14	–	–	–	6.3
5	4	6	6	6	10	36	0.14	0.18	0.18	0.14	–	–	–	6.3
5	4	6	6	6	15	35	0.14	0.23	0.24	0.14	–	–	–	6.3
5	4	6	6	6	20	35	0.17	0.30	0.31	0.14	–	–	–	6.3
5	4	6	6	6	25	35	0.21	0.37	0.38	0.14	–	–	–	6.3
5	4	6	6	6	30	35	0.25	0.44	0.45	0.14	–	–	–	6.3
5	5	8	7	6	< 2	–	0.19	0.35	0.26	0.14	0.19	0.19	0.17	7.8
5	5	6	6	6	2 < 3	45	0.14	0.29	0.24	0.14	–	–	–	6.9
5	5	6	6	6	3 – 5	45	0.14	0.21	0.20	0.14	–	–	–	6.9
5	5	6	6	6	10	45	0.14	0.19	0.20	0.14	–	–	–	6.9
5	5	6	6	6	15	36	0.14	0.24	0.25	0.14	–	–	–	6.9
5	5	6	6	6	20	35	0.15	0.31	0.32	0.14	–	–	–	6.9
5	5	6	6	6	25	35	0.18	0.38	0.39	0.14	–	–	–	6.9
5	5	6	6	6	30	35	0.21	0.46	0.47	0.14	–	–	–	6.9

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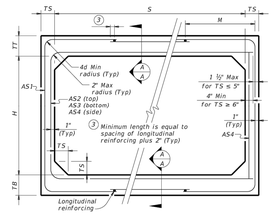

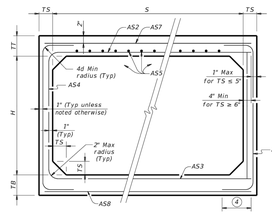

FILL HEIGHT 2 FT AND GREATER

FILL HEIGHT LESS THAN 2 FT

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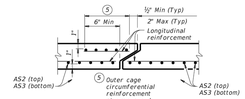

SECTION A-A

(Showing top and bottom slab joint reinforcement.)

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HL93 LOADING

Texas Department of Transportation | Bridge Division Standard

SINGLE BOX CULVERTS PRECAST
5'-0" SPAN

SCP-5

File: CO-SCP05-20.dgn		DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020		CONT	SECT	JOB	HIGHWAY
REVISIONS		DIST	COUNTY		SHEET NO.

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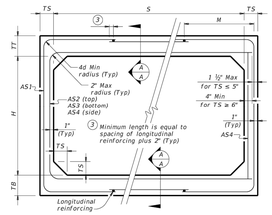
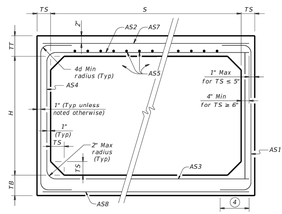
BOX DATA

SECTION DIMENSIONS							REINFORCING (sq. in. / ft.) ②							①
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	Fill Height (ft.)	M (Min) (in.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	Lift Weight (tons)
4	2	7.5	6	5	< 2	–	0.18	0.27	0.15	0.12	0.18	0.18	0.14	4.5
4	2	5	5	5	2 < 3	38	0.18	0.19	0.17	0.12	–	–	–	3.6
4	2	5	5	5	3 – 5	38	0.13	0.13	0.13	0.12	–	–	–	3.6
4	2	5	5	5	10	38	0.12	0.12	0.12	0.12	–	–	–	3.6
4	2	5	5	5	15	38	0.14	0.16	0.16	0.12	–	–	–	3.6
4	2	5	5	5	20	38	0.18	0.20	0.21	0.12	–	–	–	3.6
4	2	5	5	5	25	38	0.23	0.25	0.25	0.12	–	–	–	3.6
4	2	5	5	5	30	38	0.28	0.30	0.30	0.12	–	–	–	3.6
4	3	7.5	6	5	< 2	–	0.18	0.31	0.18	0.12	0.18	0.18	0.14	5.0
4	3	5	5	5	2 < 3	38	0.15	0.23	0.20	0.12	–	–	–	4.1
4	3	5	5	5	3 – 5	38	0.12	0.16	0.16	0.12	–	–	–	4.1
4	3	5	5	5	10	38	0.12	0.14	0.14	0.12	–	–	–	4.1
4	3	5	5	5	15	38	0.12	0.18	0.18	0.12	–	–	–	4.1
4	3	5	5	5	20	38	0.14	0.23	0.24	0.12	–	–	–	4.1
4	3	5	5	5	25	38	0.17	0.29	0.29	0.12	–	–	–	4.1
4	3	5	5	5	30	38	0.21	0.35	0.35	0.12	–	–	–	4.1
4	4	7.5	6	5	< 2	–	0.18	0.33	0.20	0.12	0.18	0.18	0.14	5.5
4	4	5	5	5	2 < 3	38	0.12	0.26	0.23	0.12	–	–	–	4.6
4	4	5	5	5	3 – 5	38	0.12	0.18	0.18	0.12	–	–	–	4.6
4	4	5	5	5	10	38	0.12	0.15	0.15	0.12	–	–	–	4.6
4	4	5	5	5	15	38	0.12	0.19	0.20	0.12	–	–	–	4.6
4	4	5	5	5	20	38	0.12	0.25	0.25	0.12	–	–	–	4.6
4	4	5	5	5	25	38	0.14	0.31	0.31	0.12	–	–	–	4.6
4	4	5	5	5	30	38	0.17	0.37	0.37	0.12	–	–	–	4.6

① For box length = 8'-0"

② AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.

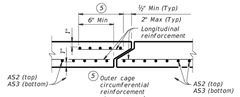




FILL HEIGHT 2 FT AND GREATER

FILL HEIGHT LESS THAN 2 FT

④ Length is equal to spacing of longitudinal reinforcing plus 2". (10" Min) (Typ)



SECTION A-A

(Showing top and bottom slab joint reinforcement.)

MATERIAL NOTES:
Provide 0.03 sq. in./ft. minimum longitudinal reinforcement at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcement is used.
Provide Class H concrete (f'c = 5,000 psi).

GENERAL NOTES:
Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information or details not shown.
See Box Culverts Precast Miscellaneous Details (SCP-MD) standard sheet for details and notes not shown.
In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Submit shop plans for alternate designs in accordance with Item "Precast Concrete Structural Members (Fabrication)."

HL93 LOADING

Texas Department of Transportation | Bridge Division Standard

SINGLE BOX CULVERTS PRECAST
4'-0" SPAN

SCP-4

File: CO-SCP04-20.dgn		DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
STORM SEWER DETAILS (11 OF 11)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 190 OF 227	

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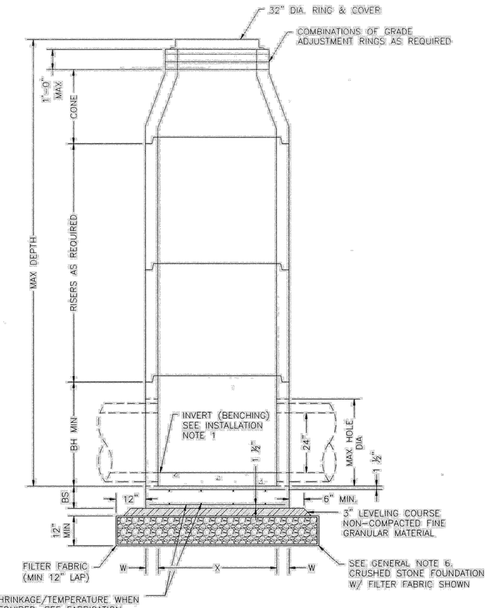
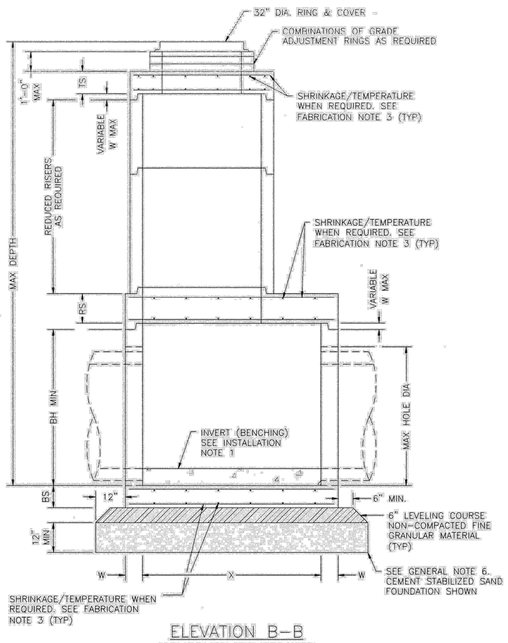
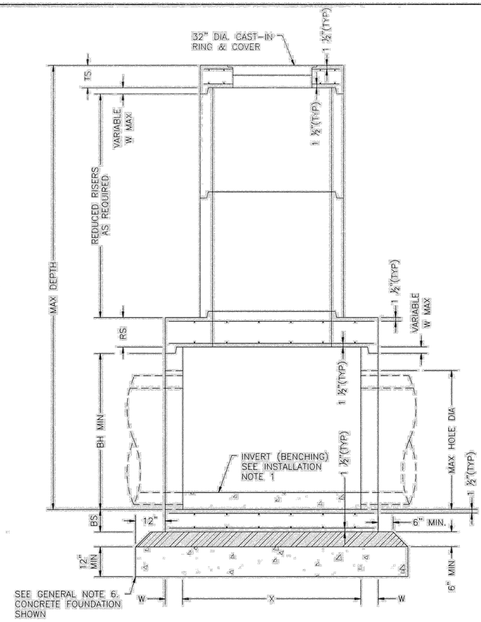
DISCLAIMER:
THE USE OF THIS STANDARD IS GOVERNED BY THE TEXAS ENGINEERING PRACTICE ACT. THE DESIGN REQUIREMENTS ON THIS STANDARD DO NOT PURPORT TO ADDRESS ALL OF THE SAFETY CONCERNS ASSOCIATED WITH THEIR USE. THE ENGINEER OF RECORD (EOR) IS TO REVIEW THESE DESIGN REQUIREMENTS AND BY AUTHORIZING THEIR USE ACCEPTS RESPONSIBILITY FOR THE APPLICABILITY AND SUITABILITY OF THESE STANDARDS FOR ANY PURPOSES WHATSOEVER. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.



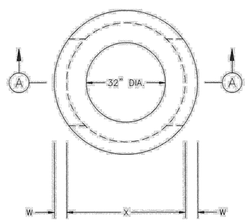
ELEVATION A–A
CONE TOP WITH SHIP LOOSE RING & COVER OPTION



ELEVATION B–B
FLAT SLAB TOP WITH SHIP LOOSE RING & COVER OPTION

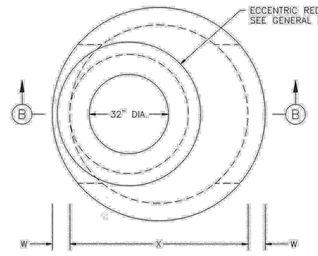


ELEVATION C–C
FLAT SLAB TOP WITH INVERTED RING & COVER OPTION



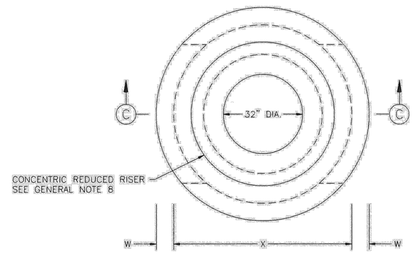
PLAN VIEW A
COVER NOT SHOWN

4–FT DIA MANHOLE



PLAN VIEW B
COVER NOT SHOWN

5–FT & 6–FT DIA MANHOLE
ECCENTRIC MANHOLE
(PREFERRED CONFIGURATION)



PLAN VIEW C
COVER NOT SHOWN

5–FT & 6–FT DIA MANHOLE
CONCENTRIC MANHOLE
(ALTERNATE CONFIGURATION)

TABLE 1
PRECAST ROUND MANHOLE (PRM) MINIMUM REQUIREMENTS FOR 24 IN. TO 42 IN. INTERNAL DIA STORM SEWER PIPES

	SIZE	BASE SLAB THICKNESS	BASE UNIT OR RISER THICKNESS	REDUCED RISER DIA	REDUCING SLAB THICKNESS	TOP SLAB THICKNESS	MAX DEPTH TO TOP OF BASE SLAB	MIN HEIGHT	MAX HOLE DIA
	X	BS	W	ID	RS	TS	MAX DEPTH	BH MIN	MAX HOLE DIA
	FT	IN.	IN.	IN.	IN.	IN.	FT.	IN.	IN.
PRM	4	9	5	—	—	9	25	42	35
	5	9	6	48	9	9	25	42	42
	6	9	7	48/60*	12	9	25	42	56

(*) 60-IN REDUCED RISER IS TO BE USED WHEN DEEMED NECESSARY TO SATISFY WALL PENETRATION SPACING REQUIREMENTS.

FABRICATION NOTES:

1. PROVIDE CLASS "H" CONCRETE IN ACCORDANCE WITH TEXAS DEPARTMENT OF TRANSPORTATION ITEM 421 AND HAVING A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI.
2. PROVIDE GRADE 60 REINFORCING STEEL OF EQUIVALENT AREA OF WWR. PROVIDE CIRCUMFERENTIAL REINFORCING STEEL IN VERTICAL WALLS OF BASE, RISER AND CONE IN ACCORDANCE WITH ASTM C478.
3. SLABS WITH A THICKNESS OF 8" OR GREATER REQUIRE SHRINKAGE AND TEMPERATURE REINFORCING STEEL. PROVIDE STEEL AREA = 0.11 IN^2/FT EACH WAY.
4. MANUFACTURE BASE AND RISERS TO NEAREST 3" INCREMENT.
5. DESIGN TONGUE AND GROOVE JOINTS FOR FULL CLOSURE ON BOTH SHOULDERS. MINIMUM SPIGOT DEPTH IS ¾".
6. PROVIDE LIFTING DEVICES IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS.
7. PROVIDE CAST IRON SOLID COVER, UNLESS NOTED OTHERWISE ELSEWHERE IN THE PLANS.
8. THREE DIFFERENT OPTIONS FOR CAPPING THE MANHOLE RISER NEAR THE FINISHED GRADE ARE SHOWN. CONES CAN BE USED WHEN COVER IS SUFFICIENT TO ALLOW FOR PROPER PLACEMENT. FLAT LIDS ARE TO BE USED WHERE COVER IS LIMITED.

INSTALLATION NOTES:

1. IF REQUIRED ELSEWHERE, INVERTS (BENCHING) TO BE PROVIDED BY CONTRACTOR. CONCRETE OR MORTAR USED FOR INVERT IS SUBSIDIARY TO THIS ITEM. REFER TO CITY OF HOUSTON SPECIFICATION SECTION 02082 FOR INVERT (BENCHING) REQUIREMENTS.
2. SEAL TONGUE AND GROOVE JOINTS WITH PREFORMED OR BULK MASTIC IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS. TONGUE AND GROOVE JOINTS MAY BE GROUTED NO MORE THAN ½" BETWEEN EACH SECTION, OR ½ THE JOINT DEPTH, WHICHEVER IS GREATER.
3. DO NOT GROUT RUBBER GASKET JOINTS WITHOUT MANUFACTURER'S RECOMMENDATION.
4. INITIAL INSTALLATION OF GRADE ADJUSTMENT RINGS IS LIMITED TO 1'–0" MAX AS SHOWN.
5. GRADE ADJUSTMENT RINGS MAY BE INCREASED TO 1'–6" MAX WHEN FUTURE CONSTRUCTION AFFECTS FINAL GRADE OF STRUCTURE. MAKE ADJUSTMENTS GREATER THAN 1'–6" WITH ADDITIONAL RISERS. ADJUSTMENTS MAY BE MADE UP TO THE MAX DEPTH OF 25'–0". STRUCTURE MUST BE EVALUATED IF MAX DEPTH WILL BE EXCEEDED.

GENERAL NOTES:

1. SEE TABLE 1 FOR MINIMUM DESIGN REQUIREMENTS. CONCENTRIC RISER WITH RESPECT TO BASE (ALTERNATIVE CONFIGURATION) FALLS OUTSIDE THE SCOPE OF REQUIREMENTS PROVIDED. ENGINEER OF RECORD ACCEPTS RESPONSIBILITY FOR SAFETY AND ADEQUACY OF MANHOLE IF THE ALTERNATIVE CONFIGURATION IS USED.
2. DESIGNED ACCORDING TO ASTM C478.
3. PAYMENT FOR PRECAST MANHOLE PER SECTION 02082 "PRECAST CONCRETE MANHOLES".
4. PIPE OD + PLACEMENT TOLERANCE MUST BE EQUAL OR LESS THAN MAX HOLE DIA. FOR RIGID PIPE, PLACEMENT TOLERANCE IS 4" MAX, 2" MIN. FOR FLEXIBLE PIPE, CONSULT BOOT/SEAL MANUFACTURER'S SPECIFICATION FOR PLACEMENT TOLERANCE.
5. STORM WATER SEWER PIPE INTERNAL DIA SHALL NOT BE LESS THAN 24".
6. FOUNDATION/SUBGRADE TO BE DESIGNED BY ENGINEER AND MEET MINIMUM REQUIREMENTS ACCORDING TO SECTION 02082.
7. ALL STORM WATER MANHOLES ARE TO BE PRECAST CONCRETE, UNLESS OTHERWISE NOTED ELSEWHERE IN THE PLANS.
8. ECCENTRIC REDUCED RISER WITH RESPECT TO BASE IS THE PREFERRED MANHOLE CONFIGURATION. CONCENTRIC REDUCED RISER WITH RESPECT TO BASE MANHOLE CONFIGURATION IS AN ALTERNATIVE DESIGN THAT WILL BE ACCEPTED BASED ON THE NEEDS OF THE CITY OF HOUSTON.
9. CONES MAY BE CONCENTRIC OR ECCENTRIC. REDUCTION CONES ARE ACCEPTABLE. REFER TO MANUFACTURER FOR CONE DIMENSIONS.
10. MANHOLE SIZE SHALL CONSIDER ENGINEERING ECONOMY. THIS DETAIL IS NOT APPLICABLE TO ROUND MANHOLES LARGER THAN 6–FOOT DIA.

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

ENTECH
CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281–945–0069
TX FIRM NUMBER: F–6932
SURVEYED BY: LANDTECH, INC.
FB NO. P–6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

STORM SEWER TYPE 'C' PRECAST ROUND MANHOLE

(NOT TO SCALE)

APPROVED BY:	APPROVED BY:
CITY ENGINEER	DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL–01–2021	DWG NO: 02082–12

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

STORM SEWER TYPE 'C' PRECAST ROUND MANHOLE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410040–0001–4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO 191 OF 227	

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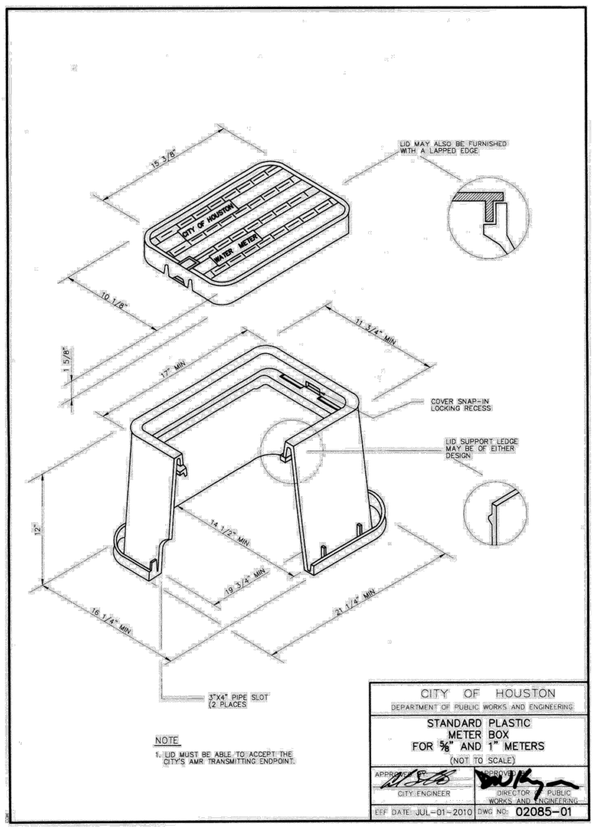
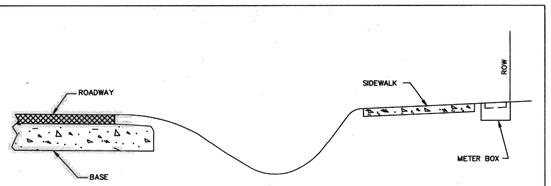


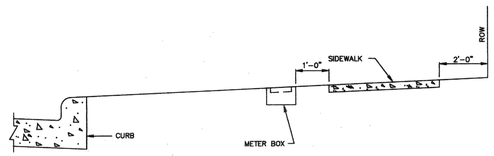
NOTE

1. LID MUST BE ABLE TO ACCEPT THE CITY'S AMR TRANSMITTING ENDPOINT.

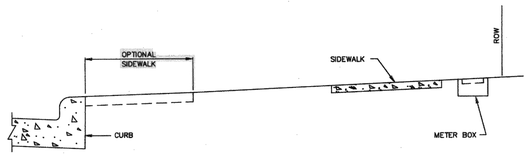
CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
STANDARD PLASTIC METER BOX FOR ¾" AND 1" METERS (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2010	DWG NO: 02085-01



OPEN DITCH STREET



CURB STREET

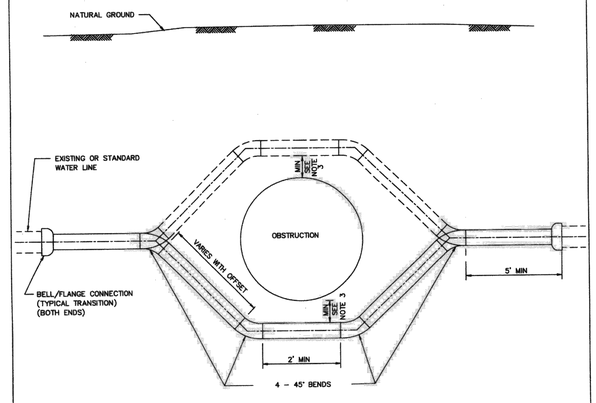


CURB STREET

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
LOCATION OF WATER METER BOX FOR 2" DIAMETER AND LESS	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2010	DWG NO: 02085-02

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

NO.	DATE	REVISION	APP.

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15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
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ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS 111437 LICENSED PROFESSIONAL ENGINEER
RODRIGO M. GUADARRAMA
3/9/2026

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

WATER DETAILS SHEET 1 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 192 OF 227	

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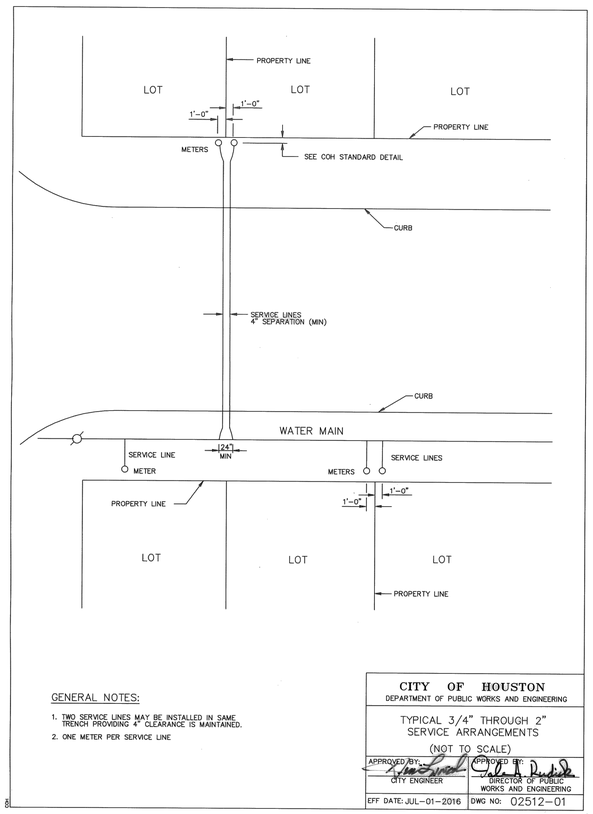


GENERAL NOTES:

1. TWO SERVICE LINES MAY BE INSTALLED IN SAME TRENCH PROVIDING 4" CLEARANCE IS MAINTAINED.
2. ONE METER PER SERVICE LINE

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

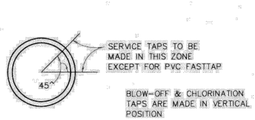
TYPICAL 3/4" THROUGH 2" SERVICE ARRANGEMENTS
(NOT TO SCALE)

APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2016	DWG NO: 02512-01

PIPE TAPPING SCHEDULE

WATER MAIN TYPE AND DIAMETER	SERVICE SIZE			
	3/4"	1"	1 1/2"	2"
4" CAST IRON OR DUCTILE IRON	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
4" ASBESTOS (EXISTING) CEMENT	WBSS	WBSS	DSS, WBSS	DSS, WBSS
4" PVC (AWWA C900)	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
6" AND 8" CAST IRON OR DUCTILE IRON	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
6" AND 8" ASBESTOS (EXISTING) CEMENT	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
6" AND 8" CAST IRON OR DUCTILE IRON	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
6" AND 8" PVC (AWWA C900)	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
12" CAST IRON OR DUCTILE IRON	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
12" ASBESTOS (EXISTING) CEMENT	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
12" PVC (AWWA C900)	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
16" AND UP CAST IRON OR DUCTILE IRON	DWBSS	DWBSS	DWBSS	DWBSS
16" AND UP ASBESTOS (EXISTING) CEMENT	DWBSS	DWBSS	DWBSS	DWBSS
16" AND UP PVC (AWWA C900)	DWBSS	DWBSS	DWBSS	DWBSS

DSS - DUAL STRAP SADDLES
WBSS - WIDE BAND STRAP SADDLES
DWBSS - DUAL WIDE BAND STRAP SADDLES



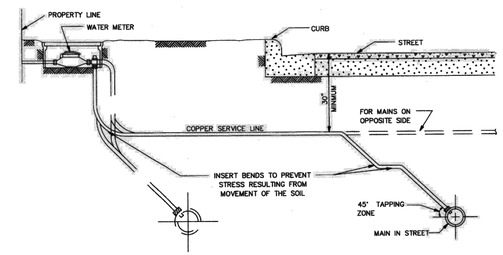
CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

SERVICE TAPS
(NOT TO SCALE)

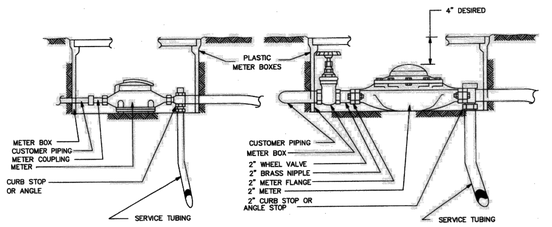
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2010	DWG NO: 02512-02

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

NO.	DATE	REVISION	APP.

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

RIVERA CIVIL ENGINEERS INC F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

WATER DETAILS SHEET 2 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 193 OF 227	

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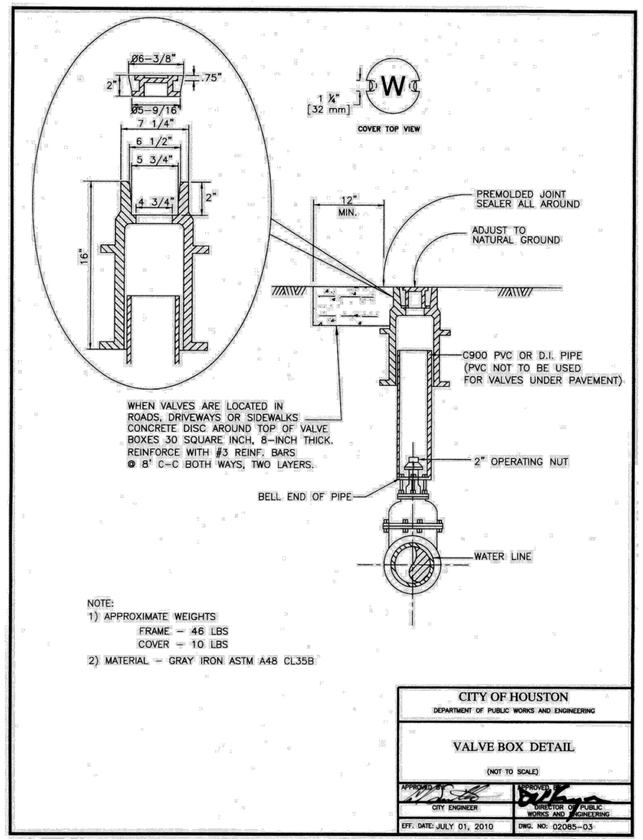
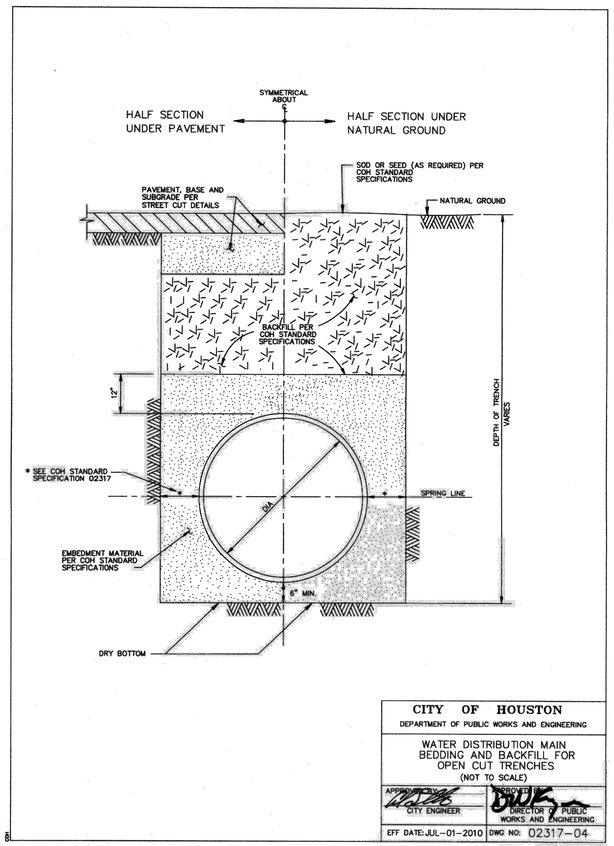
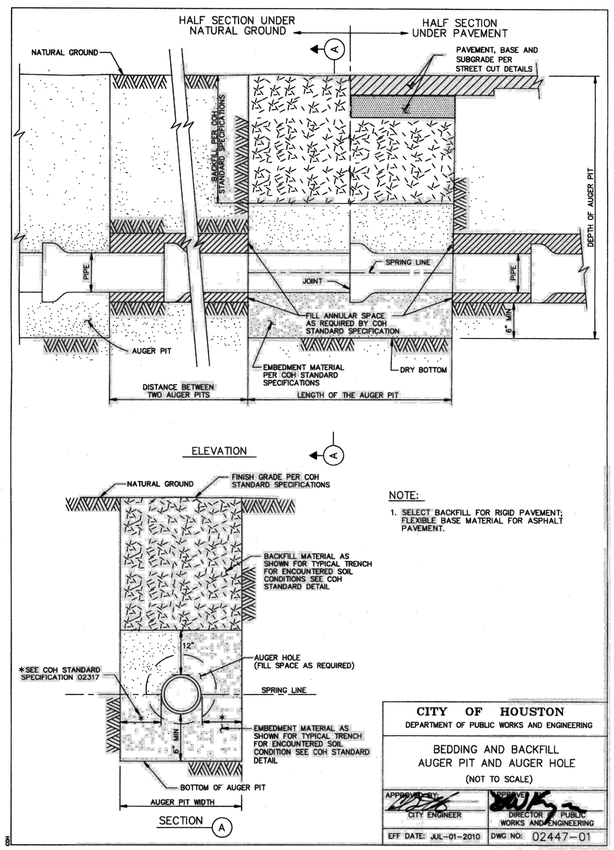


NOTE:
1) APPROXIMATE WEIGHTS
FRAME – 46 LBS
COVER – 10 LBS
2) MATERIAL – GRAY IRON ASTM A48 CL35B

CITY OF HOUSTON	
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
VALVE BOX DETAIL	
(NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF. DATE: JULY 01, 2010	DWG. NO: 02085-03



CITY OF HOUSTON	
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
WATER DISTRIBUTION MAIN BEDDING AND BACKFILL FOR OPEN CUT TRENCHES (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF. DATE: JUL-01-2010	DWG NO: 02317-04



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

NO.	DATE	REVISION	APP.

ENTECH
CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED
PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

WATER DETAILS SHEET 3 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 194 OF 227	

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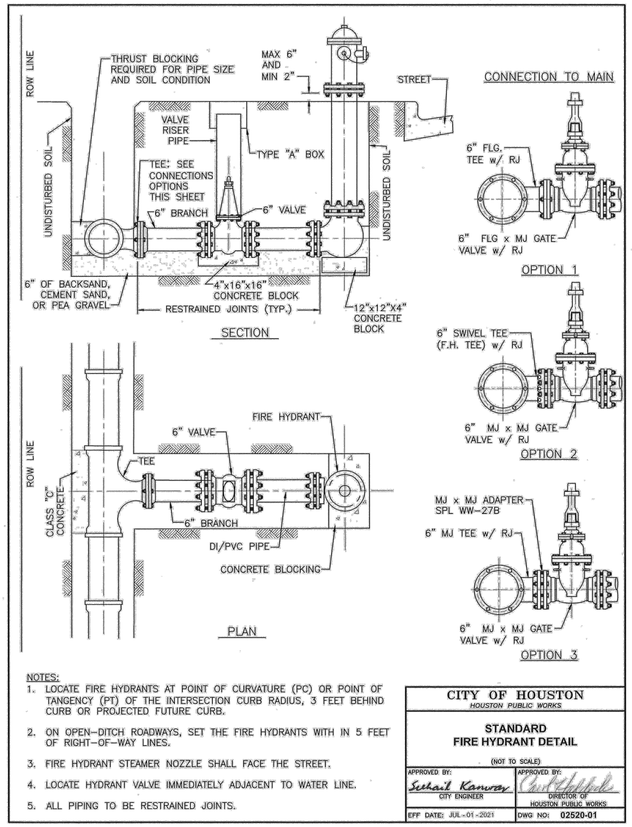
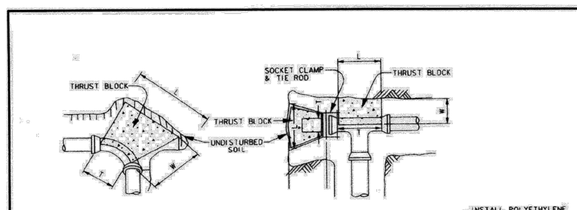
NO.	DATE	REVISION	APP.

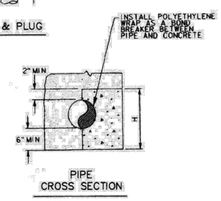


NOTES:

1. LOCATE FIRE HYDRANTS AT POINT OF CURVATURE (PC) OR POINT OF TANGENCY (PT) OF THE INTERSECTION CURB RADIUS, 3 FEET BEHIND CURB OR PROJECTED FUTURE CURB.
2. ON OPEN-DITCH ROADWAYS, SET THE FIRE HYDRANTS WITH IN 5 FEET OF RIGHT-OF-WAY LINES.
3. FIRE HYDRANT STEAMER NOZZLE SHALL FACE THE STREET.
4. LOCATE HYDRANT VALVE IMMEDIATELY ADJACENT TO WATER LINE.
5. ALL PIPING TO BE RESTRAINED JOINTS.

CITY OF HOUSTON HOUSTON PUBLIC WORKS	
STANDARD FIRE HYDRANT DETAIL (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: JUL-01-2021	DWG NO: 02520-01





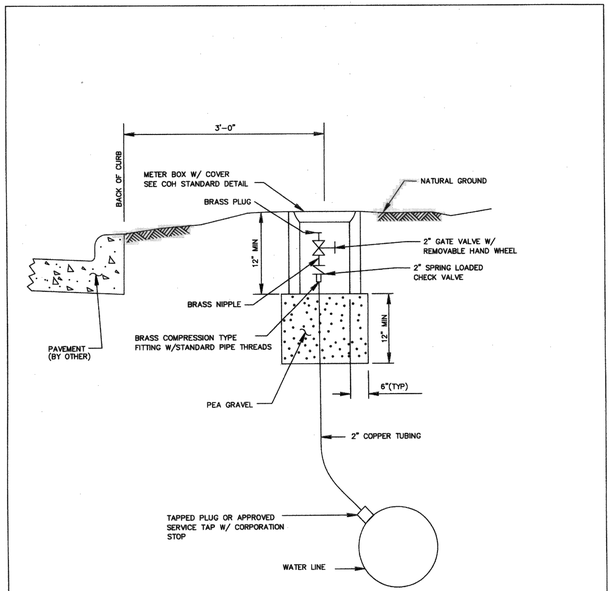
MINIMUM BLOCKING DIMENSION IN INCHES												
PIPE SIZE	90° BEND				45° BEND				TEE/PLUG			
	W	H	L	T	W	H	L	T	W	H	L	T
4"	6	12	14	10	6	8	11	8	6	10	12	12
6"	8	14	26	12	8	14	14	12	8	14	19	19
8"	10	16	40	16	10	18	20	16	10	18	26	26
10"	12	24	42	18	12	22	25	18	12	24	30	30
12"	14	36	40	30	14	26	30	22	14	26	40	40

CORRECTION FACTORS		
SOIL TYPE	SOIL BEARING STRENGTH S_b (lb/ft²)	MULTIPLY "L" AND "H" BY:
SOFT CLAY	1000	1.73
SILT	1500	1.41
SANDY SILT	3000	1.00
SAND	4000	0.87
SANDY CLAY	6000	0.71
HARD CLAY	9000	0.58

NOTES:

1. DEPTH "W" MAY BE GREATER THAN SPECIFIED TO ALLOW WORKING SPACE.
2. BLOCKING MUST BE PLACED AGAINST UNDISTURBED EARTH. WHERE THIS IS NOT POSSIBLE, THE FILL BETWEEN THE BEARING SURFACE AND UNDISTURBED SOIL MUST BE COMPACTED TO AT LEAST 90% STANDARD PROCTOR DENSITY.
3. PROVIDE CONCRETE IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 03315 - CONCRETE FOR UTILITY CONSTRUCTION.
4. BLOCKING DIMENSIONS SHOWN ARE BASED ON 3000 PSI SOIL BEARING STRENGTH AND 125 PSI INTERNAL WATER PRESSURE. FOR OTHER SOIL CONDITIONS, MULTIPLY DIMENSIONS "L" AND "H" BY THE APPROPRIATE CORRECTION FACTOR.

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
THRUST BLOCK DETAIL FOR WATER LINES (4-INCH TO 12 INCH) (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JULY-01-2010	DWG NO: 02511-02



GENERAL NOTES:

1. PLACE GATE VALVE VERTICAL TO GROUND WITH END OF BRASS PLUG 3 INCHES FROM SURFACE
2. PLACE METER BOX CENTER AROUND GATE VALVE BOX WITH LONG SIDE PARALLEL TO VALVE.

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
PERMANENT BLOW-OFF-DETAIL (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JULY-01-2010	DWG NO: 02524-01

ENTECH CIVIL ENGINEERS, INC.
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. STATE OF TEXAS F-6932 RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER

Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

WATER DETAILS SHEET 4 OF 4

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 195 OF 227	

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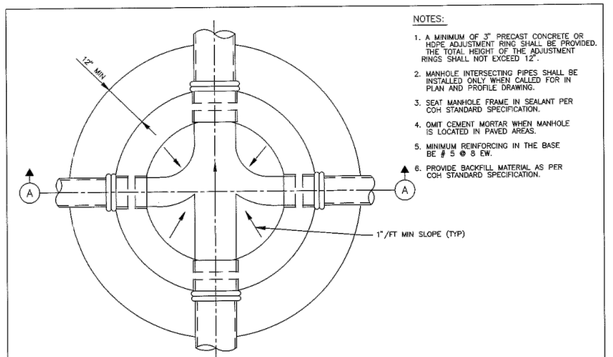
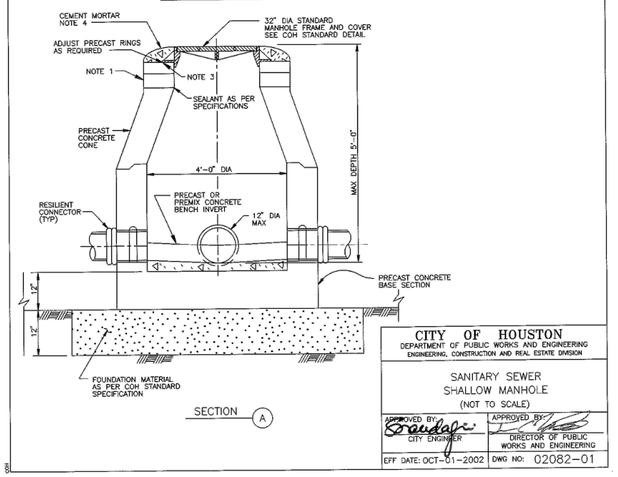
NO.	DATE	REVISION	APP.



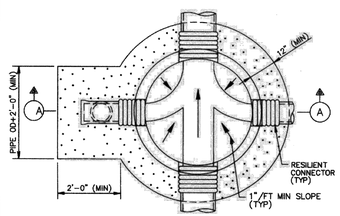
FOUNDATION PLAN

NOTES:

1. A MINIMUM OF 3" PRECAST CONCRETE OR HDPE ADJUSTMENT RING SHALL BE PROVIDED. THE TOTAL HEIGHT OF THE ADJUSTMENT RINGS SHALL NOT EXCEED 12".
2. MANHOLE INTERSECTING PIPES SHALL BE INSTALLED ONLY WHEN CALLED FOR IN PLAN AND PROFILE DRAWING.
3. SEAT MANHOLE FRAME IN SEALANT PER COH STANDARD SPECIFICATION.
4. OMIT CEMENT MORTAR WHEN MANHOLE IS LOCATED IN PAVED AREAS.
5. MINIMUM REINFORCING IN THE BASE BE # 5 @ 8 EW.
6. PROVIDE BACKFILL MATERIAL AS PER COH STANDARD SPECIFICATION.



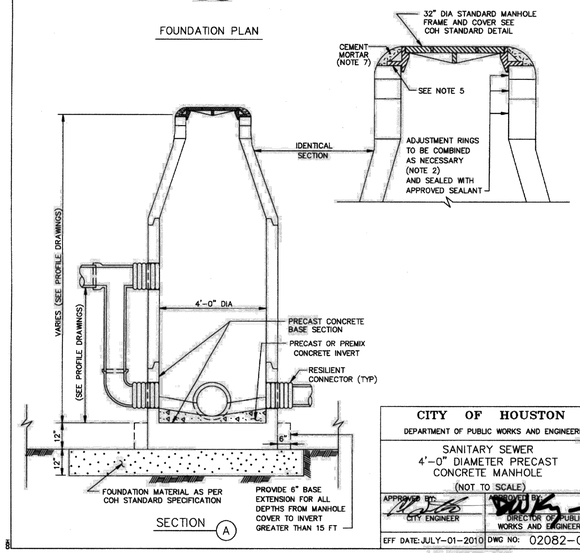
CITY OF HOUSTON	
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION	
SANITARY SEWER SHALLOW MANHOLE (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002	DWG NO: 02082-01



FOUNDATION PLAN

NOTES:

1. DEPTH OF MANHOLE DETERMINES SECTIONS REQUIRED.
2. PRECAST CONCRETE RINGS SHALL BE PROVIDED FOR A COMBINED ADJUSTMENT HEIGHT OF AT LEAST 12". THE TOTAL HEIGHT OF THE ADJUSTMENT RINGS SHALL NOT EXCEED 1'-6".
3. MANHOLE WALL THICKNESS FOR DEPTH EXCEEDING 12'-0" SHALL BE DETERMINED TO MEET LOADING CONDITIONS. MIN THICKNESS 5".
4. MANHOLE DROP AND INTERSECTING PIPES SHALL BE INSTALLED ONLY WHEN CALLED FOR IN PLAN AND PROFILE DRAWING.
5. SEAT MANHOLE FRAME IN SEALANT PER COH STANDARD SPECIFICATION.
6. ECCENTRIC PRECAST CONCRETE MANHOLE MAY BE USED.
7. OMIT CEMENT MORTAR WHEN MANHOLE IS LOCATED IN PAVED AREAS.
8. MIN REINFORCING IN THE PRECAST CONCRETE BASE SHALL BE # 5 @ 8 EW.

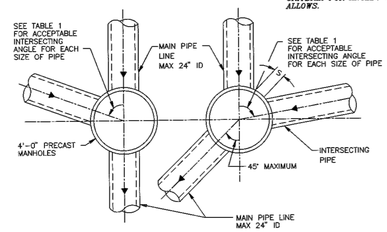


CITY OF HOUSTON	
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
SANITARY SEWER 4'-0" DIAMETER PRECAST CONCRETE MANHOLE (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JULY-01-2010	DWG NO: 02082-02

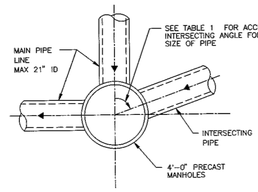
NOTES ON USE OF STANDARD DETAIL 02082-02

NOTES TO SPECIFIER:

1. *"-" INDICATES THAT A SPECIAL DESIGN OR THE NEXT LARGER MANHOLE SIZE SHALL BE USED.*
2. *TABLE 1 IS BASED ON A MIN SEPARATION DISTANCE "S" OF 15.5" OR INTERSECTION PIPE OD/2, WHICHEVER IS GREATER, BETWEEN MAIN AND INTERSECTING PIPES ALONG THE MANHOLE INSIDE WALL ARC.*
3. *PIPE WALL THICKNESS USED IN TABLE 1 ARE BASED ON RCP. THE DESIGN ENGINEER MAY CALCULATE TO SEE IF THINNER WALL PIPES CAN MEET THE SEPARATION CRITERIA FOR ANGLES SMALLER THAN THE TABLE ALLOWS.*



MAX 24" ID MAIN PIPE ALLOWED FOR STRAIGHT THROUGH TO 45° DEFLECTION



MAX 21" ID MAIN PIPE ALLOWED FOR 45° TO 90° DEFLECTION

TABLE 1

MIN ANGLE AND INTERSECTING PIPE SIZES FOR A 4'-0" DIA MANHOLE

INTERSECTING PIPE SIZE (INCHES)	MIN INTERSECTING ANGLE IN DEGREES FOR FOR VARIOUS MAIN PIPE SIZES IN INCHES							
	6"	8"	10"	12"	15"	18"	21"	24"
6	55	58	60	65	70	75	80	85
8		60	63	68	73	77	82	87
10			66	71	75	80	85	90
12				76	80	85	90	–
15					85	90	–	–
18	NOT APPLICABLE UNLESS HYDRAULICS DICTATE (INTERSECTING PIPE > MAIN PIPE)					–	–	–
21							–	–
24								–

CITY OF HOUSTON	
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION	
SANITARY SEWER 4'-0" DIAMETER PRECAST CONCRETE MANHOLE NOTES (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002	DWG NO: 02082N-02

ENTECH
CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

WASTEWATER DETAILS SHEET 1 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
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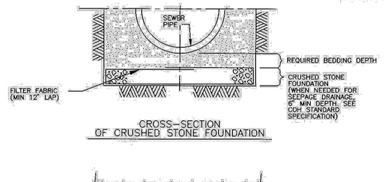
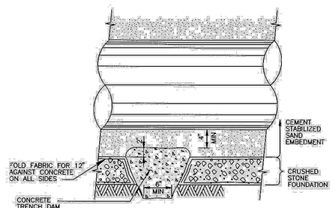
NOTES:

1. ACTUAL SHAPE OF CONCRETE TRENCH DAM CROSS SECTION MAY BE DETERMINED BY CONTRACTOR AS LONG AS MEETING MINIMUM THICKNESS AND KEY DEPTH REQUIREMENTS.
2. THIS DETAIL SHALL BE USED WITH CEMENT STABILIZED SAND EMBEDMENT, OR OTHER CLASS B 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

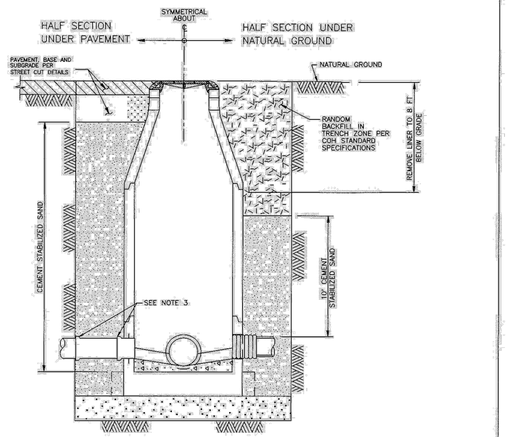


LONGITUDINAL SECTION ALONG PIPE ℄
AT FOUNDATION TRENCH DAM

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: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF. DATE: OCT-01-2002	DWG NO: 02317-02

NOTES:

1. GROUTING OF MANHOLE STRUCTURE ANNULAR SPACE WILL BE PERMITTED IN CASES WHERE INSUFFICIENT WORK SPACE EXISTS FOR PLACEMENT AND COMPACTATION OF CEMENT STABILIZED SAND, PER COH STANDARD SPECIFICATION FOR TUNNEL GROUT.
2. THIS DETAIL ALSO APPLIES TO BACKFILL OF SHAFTS WITHOUT STRUCTURES.
3. ARRANGE PIPE JOINTS AS SHOWN WHEN USING RIGID CONNECTION TO CAST IN PLACE MANHOLE BASE.

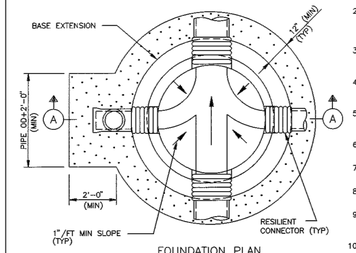


TYPICAL CROSS - SECTION

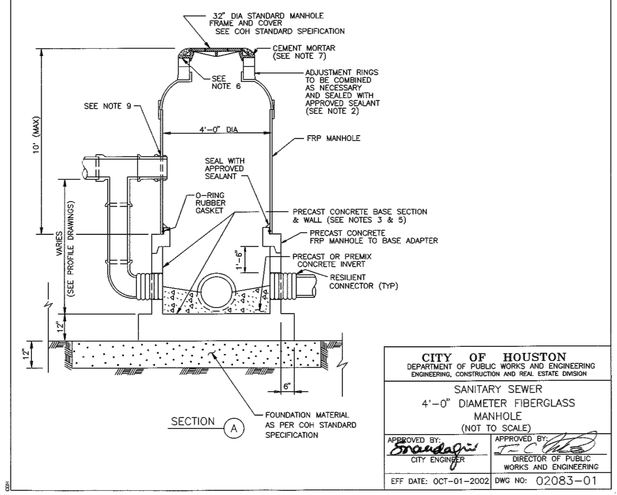
CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION	
SANITARY SEWER BACKFILL OF SHAFTS (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF. DATE: OCT-01-2002	DWG NO: 02317-08

NOTES:

1. ECCENTRIC FIBERGLASS REINFORCED PLASTIC (FRP) MANHOLE MAY BE USED.
2. PRECAST CONCRETE OR HDPE RINGS SHALL BE PROVIDED FOR A COMBINED ADJUSTMENT HEIGHT OF AT LEAST 12". THE TOTAL HEIGHT OF THE ADJUSTMENT RINGS SHALL NOT EXCEED 1'-6".
3. MANHOLE BASE WALL THICKNESS FOR DEPTH EXCEEDING 12'-0" SHALL BE DESIGNED FOR ACTUAL LOADING CONDITIONS. MIN THICKNESS SHALL BE 5 INCHES.
4. MANHOLE DROP AND INTERSECTING PIPES SHALL BE INSTALLED ONLY WHEN CALLED FOR IN PLAN AND PROFILE DRAWING.
5. PROVIDE CORROSION RESISTANT COATING ON ALL CONCRETE SURFACES ABOVE THE INVERT PER COH STANDARD SPECIFICATION.
6. SEAT MANHOLE FRAME IN SEALANT PER COH STANDARD SPECIFICATION.
7. OMIT CEMENT MORTAR WHEN MANHOLE IS LOCATED IN PAVED AREAS.
8. MIN REINFORCING IN THE PRECAST CONCRETE BASE SHALL BE # 5 @ 8 EW.
9. MANUFACTURED WATER TIGHT CONNECTOR, INSERT-A-TEE OR EQUAL, CORE DRILL HOLE AND INSTALL PER MANUFACTURERS RECOMMENDATIONS.
10. PROVIDE BACKFILL TO MATCH ADJACENT PIPE TRENCH BACKFILL PER COH STANDARD SPECIFICATION.



FOUNDATION PLAN



CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION	
SANITARY SEWER 4'-0" DIAMETER FIBERGLASS MANHOLE (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF. DATE: OCT-01-2002	DWG NO: 02083-01

NO.	DATE	REVISION	APP.

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

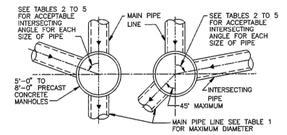
WASTEWATER DETAILS SHEET 2 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 197 OF 227	

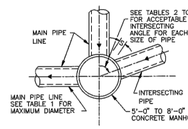
PLOTTED: 1/9/2026 4:08 PM coh_ctb_230809.ctb

FILE PATH: C:\Users\dvarghese\Entech Civil Engineers, Inc\Braeburn Glen - Documents\SHARE\2525PVEN\Working\17_Braeburn-Glen-Water-Sanitary-Details.dwg

NOTES ON USE OF STANDARD DETAIL 02082-03



FOR MAIN PIPES FROM STRAIGHT THROUGH TO 45° DEFLECTION



FOR MAIN PIPE WITH 45° TO 90° DEFLECTION

TABLE 1
MAXIMUM MAIN PIPE DIAMETER (D) IN INCHES

MANHOLE DIAMETER (FT)	STRAIGHT THROUGH TO 45° DEFLECTION	WITH 90° DEFLECTION	TABLE TO BE USED
5	36	27	2
6	42	33	3
7	48	36	4
8	60	42	5

TABLE 2
MINIMUM ANGLE AND INTERSECTING PIPE ID SIZES FOR 5'-0" DIA MANHOLE

INTERSECTING PIPE ID SIZES (INCHES)	MINIMUM INTERSECTING ANGLE IN DEGREES FOR VARIOUS MAIN PIPE ID SIZES IN INCHES										
	8"	10"	12"	15"	18"	21"	24"	27"	30"	33"	36"
8	49	50	54	58	61	66	69	73	77	82	86
10		53	57	61	64	68	71	76	79	84	88
12			61	65	68	72	75	80	83	88	–
15				68	71	75	79	83	87	–	–
18					75	79	82	87	90	–	–
21						83	86	90	–	–	–
24							90	–	–	–	–
27								–	–	–	–
30									–	–	–
33										–	–
36											–

TABLE 3
MINIMUM ANGLE AND INTERSECTING PIPE ID SIZES FOR 6'-0" DIA MANHOLE

INTERSECTING PIPE ID SIZES (INCHES)	MINIMUM INTERSECTING ANGLE IN DEGREES FOR VARIOUS MAIN PIPE ID SIZES IN INCHES										
	8"	10"	12"	15"	18"	21"	24"	27"	30"	33"	36"	42"
8	40	42	45	49	51	54	57	61	63	67	70	78
10		44	47	50	53	56	59	62	65	69	72	79
12			50	54	56	60	62	66	68	72	75	83
15				57	59	62	65	69	71	75	78	85
18					62	65	68	71	74	78	81	88
21						68	71	74	77	81	84	–
24							74	77	80	84	87	–
27								83	85	89	–	–
30									–	–	–	–
33										–	–	–
36											–	–
42												–

TABLE 4
MINIMUM ANGLE AND INTERSECTING PIPE ID SIZES FOR 7'-0" DIA MANHOLE

INTERSECTING PIPE ID SIZES (INCHES)	MINIMUM INTERSECTING ANGLE IN DEGREES FOR VARIOUS MAIN PIPE ID SIZES IN INCHES											
	8"	10"	12"	15"	18"	21"	24"	27"	30"	33"	36"	42"	48"
8	35	36	39	42	44	47	49	52	54	57	59	65	71
10		38	40	43	45	48	50	53	55	59	61	67	73
12			43	46	48	51	53	56	58	61	64	70	76
15				48	50	53	55	58	61	64	66	72	78
18					58	56	58	61	63	66	69	74	81
21						58	60	63	66	69	71	77	83
24							63	66	68	71	74	79	86
27								70	72	76	78	84	90
30									78	81	83	89	–
33										86	88	–	–
36											–	–	–
42												–	–
48													–

TABLE 5
MINIMUM ANGLE AND INTERSECTING PIPE ID SIZES FOR 8'-0" DIA MANHOLE

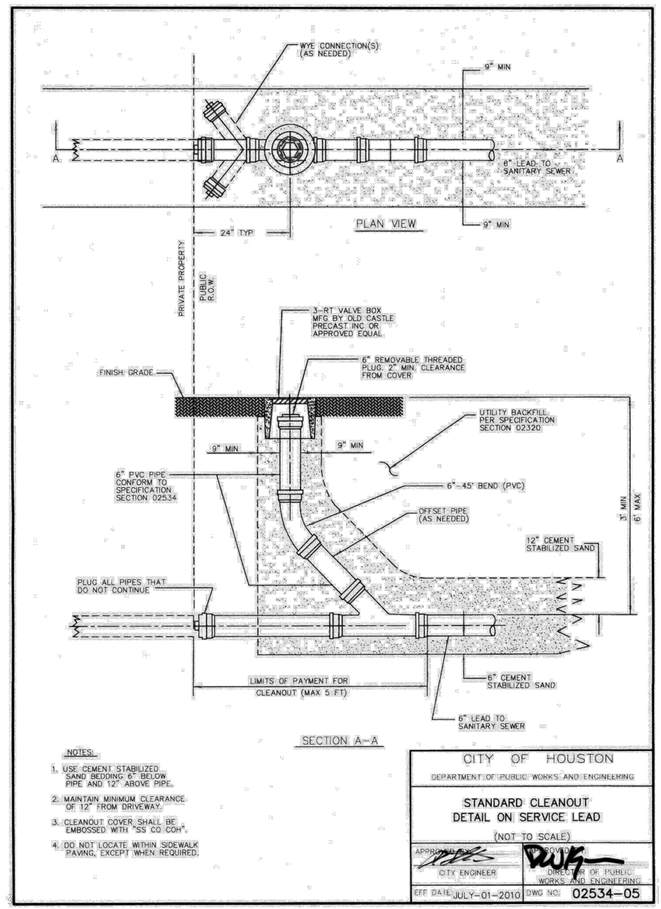
INTERSECTING PIPE ID SIZES (INCHES)	MINIMUM INTERSECTING ANGLE IN DEGREES FOR VARIOUS MAIN PIPE ID SIZES IN INCHES													
	8"	10"	12"	15"	18"	21"	24"	27"	30"	33"	36"	42"	48"	54"	60"
8	30	32	34	36	38	41	43	45	47	50	52	56	61	67	74
10		33	35	38	40	42	44	46	48	51	53	58	63	68	77
12			38	40	42	44	46	49	51	53	55	60	65	71	79
15				42	44	47	48	51	53	56	58	62	67	73	81
18					46	49	51	53	55	58	60	64	70	75	83
21						51	53	55	57	60	62	67	72	77	85
24							55	57	59	62	64	69	74	79	89
27								61	63	66	68	73	78	83	–
30									67	70	72	77	82	87	–
33										74	76	81	86	–	–
36											81	86	–	–	–
42												–	–	–	–
48													–	–	–
54														–	–
60															–

* NOT APPLICABLE (INTERSECTING PIPE GREATER THAN MAIN PIPE)

NOTES TO SPECIFIER:

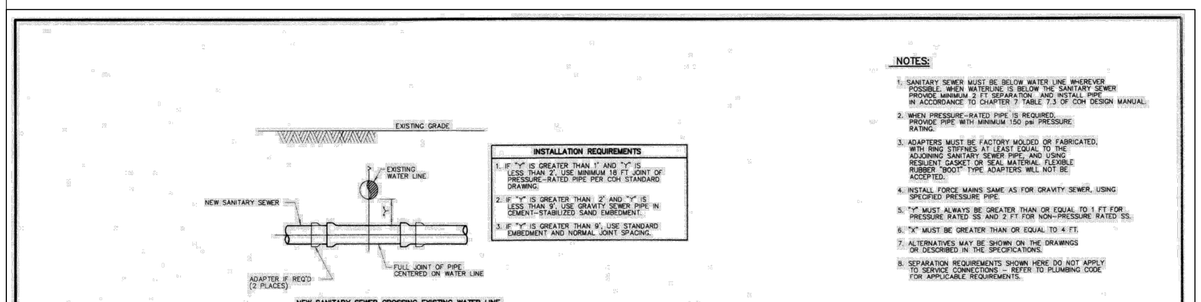
1. "–" INDICATES THAT A SPECIAL DESIGN OR THE NEXT LARGER MANHOLE SIZE SHALL BE USED.
2. TABLES 2 TO 5 ARE BASED ON A MIN SEPARATION DISTANCE "S" OF 16.5" OR INTERSECTION PIPE OD/2, WHICHEVER IS GREATER, BETWEEN MAIN AND INTERSECTING PIPES ALONG THE MANHOLE INSIDE WALL ARC.
3. PIPE WALL THICKNESS USED IN TABLES 2 TO 5 ARE BASED ON RCP. THE DESIGN ENGINEER MAY CALCULATE TO SEE IF THINNER WALL PIPES CAN MEET THE SEPARATION CRITERIA FOR ANGLES SMALLER THAN THE TABLES ALLOW.
4. LIMITATIONS TO BASE HEIGHT ARE BASED ON RESISTING BUOYANT UPLIFT FORCES BASED ON WATER AT GROUND SURFACE AND A SAFETY FACTOR OF 1.20.
5. A SPECIAL DESIGN IS REQUIRED IF MANHOLE ID IS GREATER THAN 8 FT.

CITY OF HOUSTON	
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE GROUP	
SANITARY SEWER 5'-0" TO 8'-0" DIAMETER PRECAST CONCRETE MANHOLE NOTES (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002	DWG NO: 02082N-03



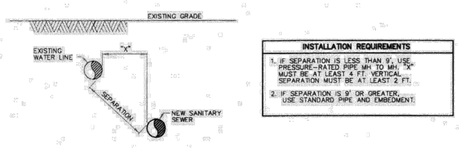
NOTES:
1. USE CEMENT STABILIZED SAND BEDDING 6" BELOW PIPE AND 12" ABOVE PIPE.
2. MAINTAIN MINIMUM CLEARANCE OF 12" FROM DRIVEWAY.
3. CLEANOUT COVER SHALL BE EMBOSSED WITH "SS CO COH".
4. DO NOT LOCATE WITHIN SIDEWALK PAVING, EXCEPT WHEN REQUIRED.

CITY OF HOUSTON	
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
STANDARD CLEANOUT DETAIL ON SERVICE LEAD (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JULY-01-2010	DWG NO: 02534-05



NEW SANITARY SEWER CROSSING EXISTING WATER LINE

INSTALLATION REQUIREMENTS
1. IF "Y" IS GREATER THAN 1' AND "Y" IS LESS THAN 2', USE MINIMUM 18 FT JOINT OF PRESSURE-RATED PIPE PER COH STANDARD DRAWING.
2. IF "Y" IS GREATER THAN 2' AND "Y" IS LESS THAN 9', USE GRAVITY SEWER PIPE IN CEMENT-STABILIZED SAND EMBEDMENT.
3. IF "Y" IS GREATER THAN 9', USE STANDARD EMBEDMENT AND NORMAL JOINT SPACING.



NEW SANITARY SEWER PARALLEL TO EXISTING WATER LINE

INSTALLATION REQUIREMENTS
1. IF SEPARATION IS LESS THAN 9', USE PRESSURE-RATED PIPE MH TO MH, "X" MUST BE AT LEAST 4 FT. VERTICAL SEPARATION MUST BE AT LEAST 2 FT.
2. IF SEPARATION IS 9' OR GREATER, USE STANDARD PIPE AND EMBEDMENT.

NOTES:
1. SANITARY SEWER MUST BE BELOW WATER LINE WHEREVER POSSIBLE. WHEN WATERLINE IS BELOW THE SANITARY SEWER PROVIDE MINIMUM 2 FT SEPARATION, AND INSTALL PIPE IN ACCORDANCE TO CHAPTER 7 TABLE 7.3 OF COH DESIGN MANUAL.
2. WHEN PRESSURE-RATED PIPE IS REQUIRED, PROVIDE PIPE WITH MINIMUM 150 psi PRESSURE RATING.
3. ADAPTERS MUST BE FACTORY MOLDED OR FABRICATED, WITH RING STIFFNES AT LEAST EQUAL TO THE ADJOINING SANITARY SEWER PIPE, AND USING RESILIENT GASKET OR SEAL MATERIAL. FLEXIBLE RUBBER "BOOT" TYPE ADAPTERS WILL NOT BE ACCEPTED.
4. INSTALL FORCE MAINS SAME AS FOR GRAVITY SEWER, USING SPECIFIED PRESSURE PIPE.
5. "Y" MUST ALWAYS BE GREATER THAN OR EQUAL TO 1 FT FOR PRESSURE RATED SS AND 2 FT FOR NON-PRESSURE RATED SS.
6. "X" MUST BE GREATER THAN OR EQUAL TO 4 FT.
7. ALTERNATIVES MAY BE SHOWN ON THE DRAWINGS OR DESCRIBED IN THE SPECIFICATIONS.
8. SEPARATION REQUIREMENTS SHOWN HERE DO NOT APPLY TO SERVICE CONNECTIONS – REFER TO PLUMBING CODE FOR APPLICABLE REQUIREMENTS.

INSTALLING SANITARY SEWERS CROSSING OR PARALLEL TO WATER LINES

CITY OF HOUSTON	
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
SANITARY SEWER INSTALLING SANITARY SEWERS CROSSING OR PARALLEL TO WATER LINES (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2010	DWG NO: 02531-05

NO.	DATE	REVISION	APP.

ENTECH
CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

WASTEWATER DETAILS SHEET 3 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 198 OF 227	

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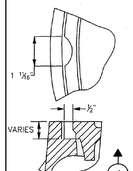
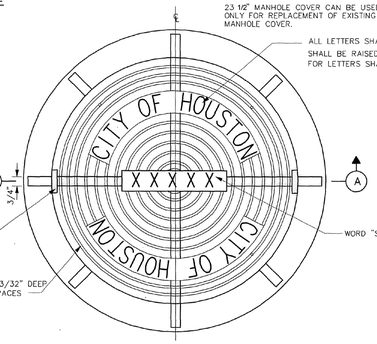
NO.	DATE	REVISION	APP.

TYPE 1
OPEN PICK HOLE

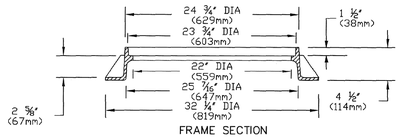


NOTE:
23 1/2" MANHOLE COVER CAN BE USED ONLY FOR REPLACEMENT OF EXISTING MANHOLE COVER.

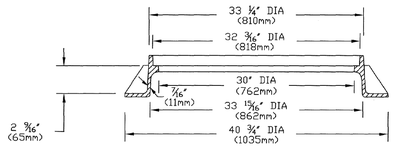


PLAN

23 1/2" MANHOLE COVER WITH FRAME



FRAME SECTION



SECTION (A)

32" MANHOLE COVER WITH FRAME

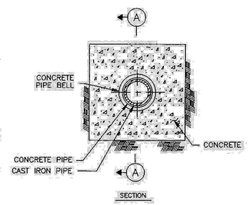
1) NOTE: APPROXIMATE WEIGHTS.
FRAME- 170 LBS 77 kg
COVER- 270 LBS 123 kg
UNIT- 440 LBS 200 kg
2) MATERIAL- GRAY IRON ASTM A48 CL35B
3) CASTING TO MEET M306 PROOF LOAD SPECIFICATION
4) MODEL V-14240 ASY OR APPROVED EQUAL

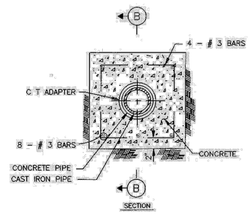
CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

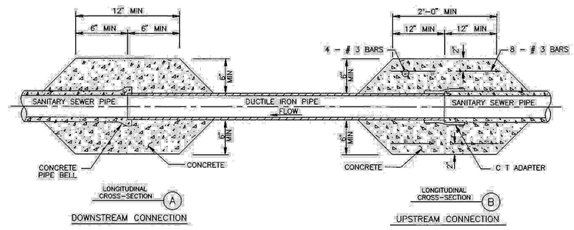
SANITARY SEWER AND WATER
MANHOLE FRAME AND COVER
(NOT TO SCALE)

APPROVED BY: CITY ENGINEER | APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JUL-01-2016 | DWG NO: 02090-01

NOTE:
1. THE CONTRACTOR SHALL CENTER A MINIMUM OF 18 FOOT JOINT OF DUCTILE IRON PIPE OR C900 PVC PIPE ACROSS THE CENTER OF THE PROPOSED STORM SEWER.





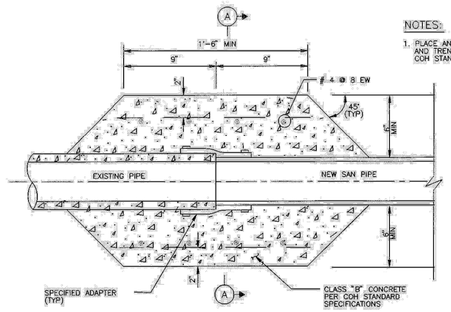


CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION

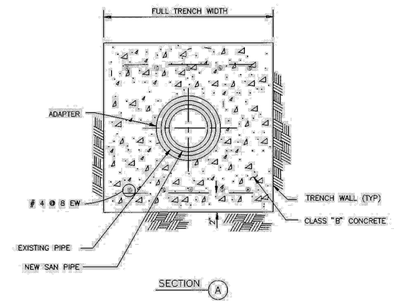
SANITARY SEWER
DUCTILE IRON PIPE
STORM SEWER CROSSING
(NOT TO SCALE)

APPROVED BY: CITY ENGINEER | APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002 | DWG NO: 02531-03

NOTES:
1. PLACE AND COMPACT EMBEDMENT AND TRENCH ZONE BACKFILL PER COH STANDARD SPECIFICATIONS.



LONGITUDINAL SECTION



SECTION (A)

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION

SANITARY SEWER
PIPE TRANSITION FOR 36"
SEWER AND SMALLER
(NOT TO SCALE)

APPROVED BY: CITY ENGINEER | APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002 | DWG NO: 02531-04

ENTECH
CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED
PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

WASTEWATER DETAILS SHEET 4 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 199 OF 227	

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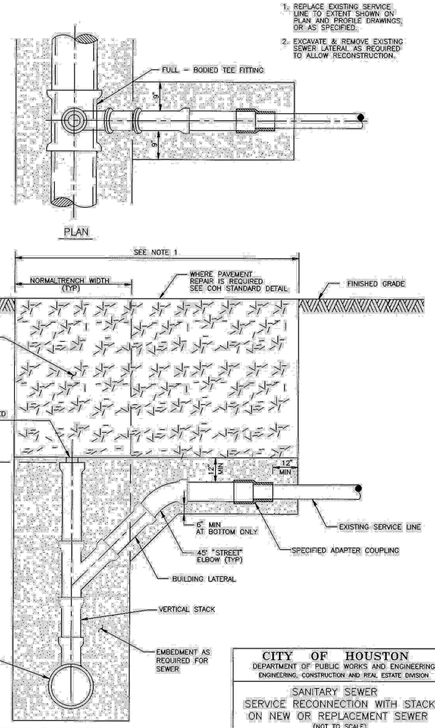
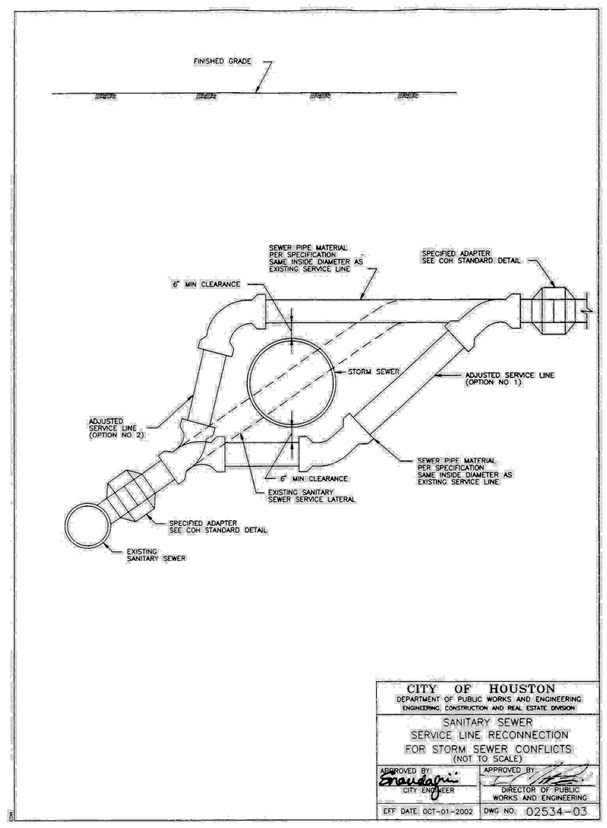
NOTES:

1. REPLACE EXISTING SERVICE LINE TO EXTENT SHOWN ON PLAN AND PROFILE DRAWINGS, OR AS SPECIFIED.
2. EXCAVATE & REMOVE EXISTING SEWER LATERAL AS REQUIRED TO ALLOW RECONSTRUCTION.



CROSS-SECTION OF SEWER AT SERVICE CONNECTION

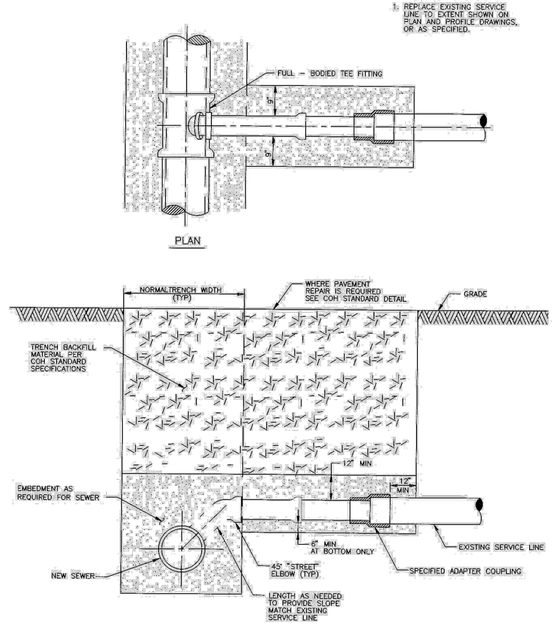
CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION	
SANITARY SEWER SERVICE RECONNECTION WITH STACK ON NEW OR REPLACEMENT SEWER (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002	DWG NO: 02534-02



CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION	
SANITARY SEWER SERVICE LINE RECONNECTION FOR STORM SEWER CONFLICTS (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002	DWG NO: 02534-03

NOTE:

1. REPLACE EXISTING SERVICE LINE TO EXTENT SHOWN ON PLAN AND PROFILE DRAWINGS, OR AS SPECIFIED.



CROSS-SECTION OF SEWER AT SERVICE CONNECTION

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION	
SANITARY SEWER SERVICE RECONNECTION ON NEW OR REPLACEMENT SEWER (NOT TO SCALE)	
APPROVED BY: CITY ENGINEER	APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002	DWG NO: 02534-04

NO.	DATE	REVISION	APP.

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

WASTEWATER DETAILS SHEET 5 OF 5

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 200 OF 227	

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DISCLAIMER:
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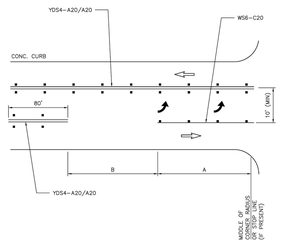
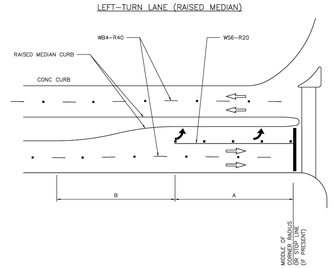
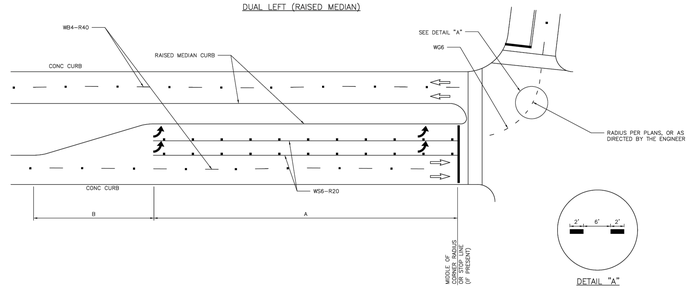
LEFT-TURN LANE



LEFT-TURN LANE (RAISED MEDIAN)



DUAL LEFT (RAISED MEDIAN)



GENERAL NOTES:

1. THE DIMENSIONS GIVEN FOR DUAL LEFT (RAISED MEDIAN) ON THIS SHEET ARE ALSO APPLICABLE FOR DUAL RIGHT-TURN LANES.
2. STORAGE LENGTHS LONGER THAN THE MINIMUMS LISTED ON THIS DRAWING MAY BE DETERMINED USING TRAFFIC ENGINEERING ANALYSIS.
3. FOR THE PLACEMENT OF PAVEMENT ARROWS AND WORDS REFER TO 02760-02 – LEFT/RIGHT TURN "ONLY" AND ARROW SPACING.
4. REFER TO APPLICABLE STANDARD PAVEMENT MARKINGS WITH REFLECTIVE RAISED PAVEMENT MARKERS FOR POSITION GUIDANCE AND LEFT- TURN & RIGHT-TURN LANE STANDARD PAVEMENT MARKINGS WITH REFLECTIVE RAISED PAVEMENT MARKINGS.
5. REFER TO BICYCLE LANE PAVEMENT MARKINGS STANDARD FOR TYPE AND PLACEMENT.

LEFT TURN BAY NOTES:

1. LEFT TURN BAY DIMENSIONS
   A = 150' MINIMUM AT INTERSECTION OF TWO (2) MAJOR STREETS WHEN PRACTICAL.
   = 100' MINIMUM AT ALL OTHER INTERSECTIONS.

   B = 100' MINIMUM ON STRAIGHT ROADWAYS.
   •TAPER LENGTH MAY BE SHORTER IF IT IS ON A HORIZONTAL CURVE TO THE LEFT.
   •TAPER LENGTH MAY BE LONGER IF CURVE IS TO THE RIGHT.
2. DIMENSIONS SHALL BE ADJUSTED AS DETERMINED BY CITY OF HOUSTON TRAFFIC ENGINEER.
3. REFER TO CITY OF HOUSTON INFRASTRUCTURE DESIGN MANUAL (FIGURE 10.8) FOR DETAILS.

APPROVED BY:	APPROVED BY:
Sukut Kumar	Hoang Nguyen
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY:	
Carol Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 02760-13

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

LEFT-TURN LANE & RIGHT-TURN LANE DESIGN

SHEET 01 OF 02

FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE

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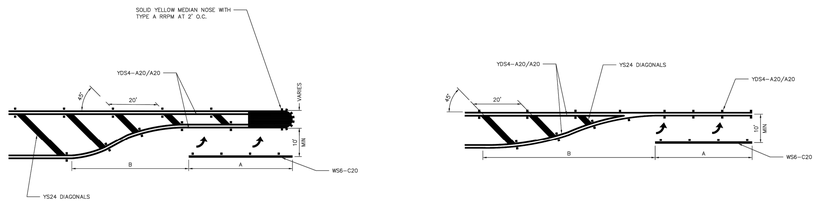
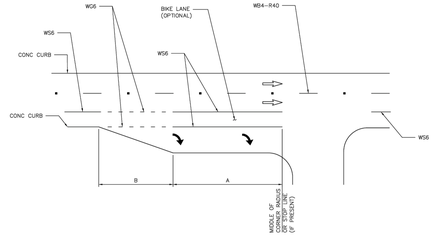
PAINTED MEDIAN LEFT TURN BAY DETAILS



UNSIGNALIZED RIGHT-TURN LANE



GENERAL NOTES:

1. STORAGE LENGTHS LONGER THAN THE MINIMUMS LISTED ON THIS DRAWING MAY BE DETERMINED USING TRAFFIC ENGINEERING ANALYSIS OR APPROXIMATE CALCULATIONS.
2. FOR THE PLACEMENT OF PAVEMENT ARROWS AND WORDS REFER TO 02760-02 – LEFT/RIGHT TURN "ONLY" AND ARROW SPACING.
3. REFER TO APPLICABLE STANDARD PAVEMENT MARKINGS WITH REFLECTIVE RAISED PAVEMENT MARKERS FOR POSITION GUIDANCE AND LEFT-TURN & RIGHT-TURN LANE STANDARD PAVEMENT MARKINGS WITH REFLECTIVE RAISED PAVEMENT MARKINGS.
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Sukut Kumar	Hoang Nguyen
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY:	
Carol Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 02760-14

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

LEFT TURN LANE & RIGHT TURN LANE DESIGN

SHEET 02 OF 02

FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE

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NO.	DATE	REVISION	APP.

ENTECH
CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932

SURVEYED BY: LANDTECH, INC.
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ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER

Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
PAVEMENT MARKING STANDARDS (1 OF 4)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
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CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 201 OF 227	

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FILE PATH: C:\Users\jstinson\Entech Civil Engineers, Inc\Broeburn Glen - Documents\SHARE\2525PVEN\Working\16_BRAEBURN GLEN-STANDARD DETAILS.dwg

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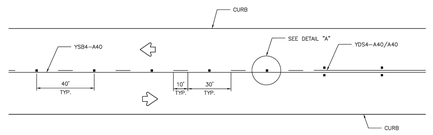
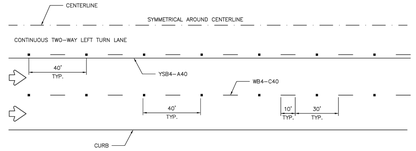
CENTERLINE & FOR ALL TWO LANE STREETS WITH PASSING ZONE



CENTERLINE & LANE LINES FOR TWO-WAY LEFT TURN LANE

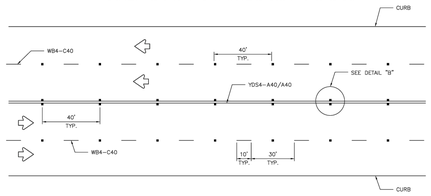


GENERAL NOTES:

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

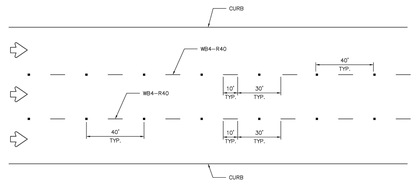
CENTERLINE & LANE LINES FOR FOUR LANE TWO-WAY STREETS

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

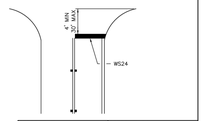


LANE LINES FOR ONE-WAY MULTILANE STREET

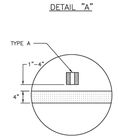
RRPM TYPE R SHALL HAVE CLEAR FACE TOWARD NORMAL TRAFFIC AND RED FACE TOWARD WRONG-WAY TRAFFIC.



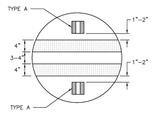
GUIDE FOR PLACEMENT OF STOP LINES & CENTERLINE



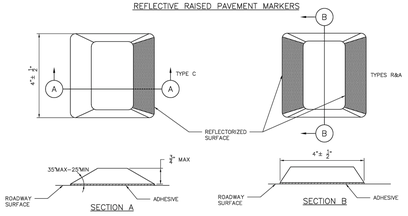
DETAIL "A"



DETAIL "B"



REFLECTIVE RAISED PAVEMENT MARKERS



APPROVED BY:	APPROVED BY:
Salad Kawar	Hang Nguyen
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY:	
Carol Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 02760-05

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

STANDARD PAVEMENT MARKINGS WITH REFLECTIVE RAISED PAVEMENT MARKERS FOR POSITION GUIDANCE

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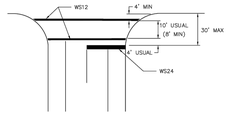
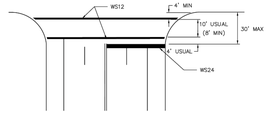
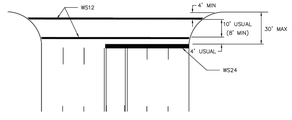
TWO LANES WITH SHOULDERS



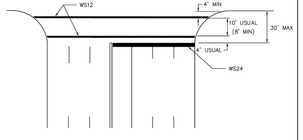
FOUR LANES WITH SHOULDERS



MULTI – LANES



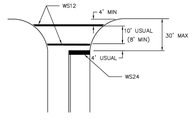
MULTI – LANE WITH MEDIAN



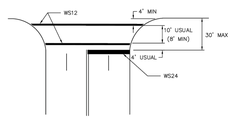
NOTES:

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

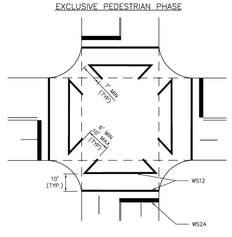
TWO LANES



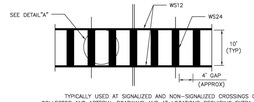
FOUR LANES



EXCLUSIVE PEDESTRIAN PHASE

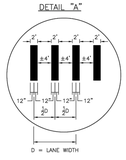


HIGH VISIBILITY CROSSWALK DETAIL

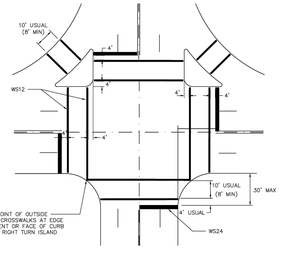


TYPICALLY USED AT SIGNALIZED AND NON-SIGNALIZED CROSSINGS ON COLLECTOR AND ARTERIAL ROADWAYS AND AT LOCATIONS REQUIRING EXTRA EMPHASIS.

DETAIL "A"



INTERSECTION WITH RIGHT – TURN ISLANDS



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

APPROVED BY:	APPROVED BY:
Salad Kawar	Hang Nguyen
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY:	
Carol Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 02760-12

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

TYPICAL CROSSWALK DETAILS

FOR CITY OF HOUSTON USE ONLY

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NOT TO SCALE

NO.	DATE	REVISION	APP.

ENTECH
CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 — STATE OF TEXAS — RODRIGO M. GUADARRAMA — 111437 — LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
PAVEMENT MARKING STANDARDS (2 OF 4)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 202 OF 227	

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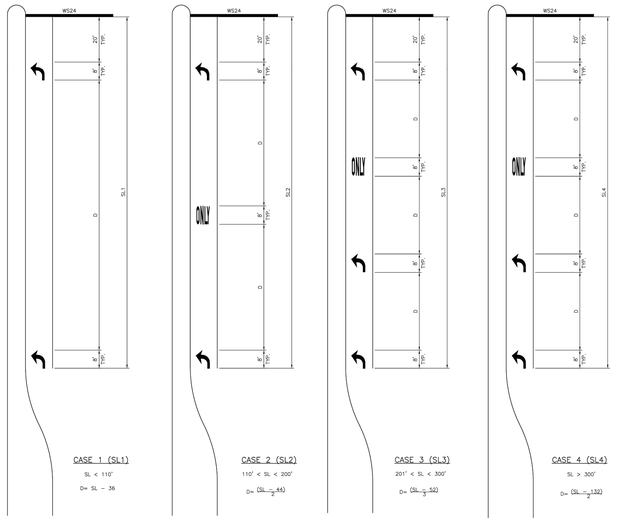


CASE 1 (SL1)

SL < 110'

D= SL − 36

CASE 2 (SL2)

110' < SL < 200'

$D = \frac{(SL - 44)}{2}$

CASE 3 (SL3)

201' < SL < 300'

$D = \frac{(SL - 52)}{3}$

CASE 4 (SL4)

SL > 300'

$D = \frac{(SL - 132)}{2}$

KEY (FOR TURN LANES ONLY):

SL – STORAGE LENGTH (FEET)

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

GENERAL NOTES:

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

APPROVED BY:	APPROVED BY:
Salud Iturrarán	Ludwig Hellerich
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: Carol Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV–27–2023	DWG NO: 02760–02

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

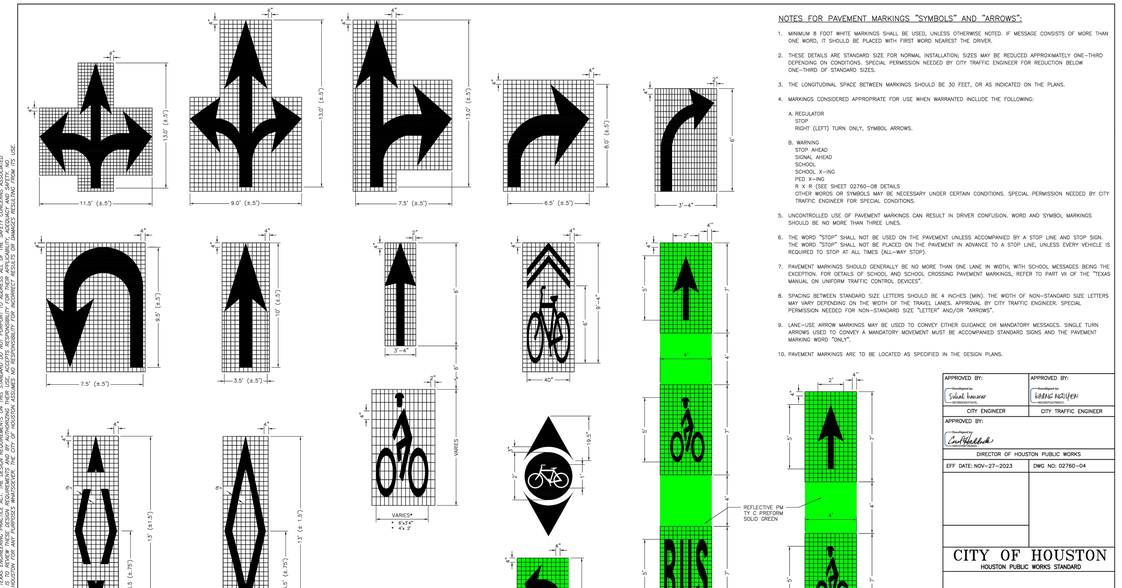
LEFT/RIGHT–TURN "ONLY" AND ARROW SPACING

FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE

NOT TO SCALE

DISCLAIMER:
THE USE OF THIS STANDARD IS GOVERNED BY THE TEXAS ENGINEERING PRACTICE ACT. THE DESIGN REQUIREMENTS ON THIS STANDARD DO NOT PURPORT TO ADDRESS ALL OF THE SAFETY CONCERNS ASSOCIATED WITH THEIR USE. THE ENGINEER OF RECORD (EOR) IS TO REVIEW THOSE DESIGN REQUIREMENTS AND BY AUTHORIZING THEIR USE, ACCEPTS RESPONSIBILITY FOR THEIR APPLICATION. ACCURACY AND SAFETY. NO WARRANTY OF ANY KIND IS MADE BY THE CITY OF HOUSTON FOR ANY PURPOSES WHATSOEVER. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.



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

1. MINIMUM 8 FOOT WHITE MARKINGS SHALL BE USED, UNLESS OTHERWISE NOTED. IF MESSAGE CONSISTS OF MORE THAN ONE WORD, IT SHOULD BE PLACED WITH FIRST WORD NEAREST THE DRIVER.
2. THESE DETAILS ARE STANDARD SIZE FOR NORMAL INSTALLATION; SIZES MAY BE REDUCED APPROXIMATELY ONE–THIRD DEPENDING ON CONDITIONS. SPECIAL PERMISSION NEEDED BY CITY TRAFFIC ENGINEER FOR REDUCTION BELOW ONE–THIRD OF STANDARD SIZES.
3. THE LONGITUDINAL SPACE BETWEEN MARKINGS SHOULD BE 30 FEET, OR AS INDICATED ON THE PLANS.
4. MARKINGS CONSIDERED APPROPRIATE FOR USE WHEN WARRANTED INCLUDE THE FOLLOWING:

   A. REGULATOR
      STOP
      RIGHT (LEFT) TURN ONLY, SYMBOL ARROWS.

   B. WARNING
      STOP AHEAD
      SIGNAL AHEAD
      SCHOOL
      SCHOOL X–ING
      PED X–ING
      R X R (SEE SHEET 02760–08 DETAILS
      OTHER WORDS OR SYMBOLS MAY BE NECESSARY UNDER CERTAIN CONDITIONS. SPECIAL PERMISSION NEEDED BY CITY TRAFFIC ENGINEER FOR SPECIAL CONDITIONS.

5. UNCONTROLLED USE OF PAVEMENT MARKINGS CAN RESULT IN DRIVER CONFUSION. WORD AND SYMBOL MARKINGS SHOULD BE NO MORE THAN THREE LINES.
6. THE WORD "STOP" SHALL NOT BE USED ON THE PAVEMENT UNLESS ACCOMPANIED BY A STOP LINE AND STOP SIGN. THE WORD "STOP" SHALL NOT BE PLACED ON THE PAVEMENT IN ADVANCE TO A STOP LINE, UNLESS EVERY VEHICLE IS REQUIRED TO STOP AT ALL TIMES (ALL–WAY STOP).
7. PAVEMENT MARKINGS SHOULD GENERALLY BE NO MORE THAN ONE LANE IN WIDTH, WITH SCHOOL MESSAGES BEING THE EXCEPTION. FOR DETAILS OF SCHOOL AND SCHOOL CROSSING PAVEMENT MARKINGS, REFER TO PART VII OF THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
8. SPACING BETWEEN STANDARD SIZE LETTERS SHOULD BE 4 INCHES (MIN). THE WIDTH OF NON–STANDARD SIZE LETTERS MAY VARY DEPENDING ON THE WIDTH OF THE TRAVEL LANES. APPROVAL BY CITY TRAFFIC ENGINEER, SPECIAL PERMISSION NEEDED FOR NON–STANDARD SIZE "LETTER" AND/OR "ARROWS".
9. LANE–USE ARROW MARKINGS MAY BE USED TO CONVEY EITHER GUIDANCE OR MANDATORY MESSAGES. SINGLE TURN ARROWS USED TO CONVEY A MANDATORY MOVEMENT MUST BE ACCOMPANIED STANDARD SIGNS AND THE PAVEMENT MARKING WORD "ONLY".
10. PAVEMENT MARKINGS ARE TO BE LOCATED AS SPECIFIED IN THE DESIGN PLANS.

APPROVED BY:	APPROVED BY:
Salud Iturrarán	Ludwig Hellerich
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: Carol Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV–27–2023	DWG NO: 02760–04

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

STANDARD PAVEMENT MARKING – SYMBOLS

FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE

NOT TO SCALE

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APPROVED BY:	APPROVED BY:
Salud Iturrarán	Ludwig Hellerich
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: Carol Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV–27–2023	DWG NO: 02760–03

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

STANDARD PAVEMENT MARKING – (WORDS)

FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE

NOT TO SCALE

NO.	DATE	REVISION	APP.

ENTECH
CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281–945–0069
TX FIRM NUMBER: F–6932
SURVEYED BY: LANDTECH, INC.
FB NO. P–6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
PAVEMENT MARKING STANDARDS (4 OF 4)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410040–0001–3	
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CITY OF HOUSTON PM	
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SHEET NO. 203 OF 227	

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DESCRIPTION AND APPLICATION OF PAVEMENT MARKING LINES

LINE SERIES	COLOR	DESCRIPTION	WIDTH (INCHES)	TYPICAL APPLICATIONS
WB	WHITE	BROKEN (10' STRIPE W/30' GAP)	4"	LANE LINES BETWEEN TRAVEL LANES IN THE SAME DIRECTION WHERE CHANGING OF LANES IS PERMITTED.
WS	WHITE	SOLID	4"	EDGE LINES TO DELINEATE THE RIGHT EDGE OF THE ROADWAY.
			6"	LEFT EDGE OF BICYCLE LANE AND LANE LINES BETWEEN TRAVEL LANES IN THE SAME DIRECTION WHERE CHANGING OF LANES IS DISCOURAGED.
			12"	PERPENDICULAR CROSSWALK LINES.
			24"	STOP BARS AT INTERSECTIONS (SIGNALIZED AND UNSIGNALIZED).
				HATCHING AT HIGH VISIBILITY CROSSWALKS.
			12", 24"	DIAGONAL HATCHING USED IN GORES BETWEEN SAME DIRECTION OF TRAVEL LANES.
WG	WHITE	GUIDE (2' STRIPE W/6' GAP)	6"	GUIDE LINES THROUGH INTERSECTIONS.
				TAPER LINES FOR TURN LANES.
				GUIDE LINES FOR BICYCLE LANES.
YS	YELLOW	SOLID	4"	EDGE LINES TO DELINEATE THE LEFT EDGE OF A DIVIDED ROADWAY, A ONE-WAY ROAD, OR RAMP.
			6"	BIDIRECTIONAL BICYCLE LANE PAVEMENT MARKING.
			12", 24"	DIAGONAL HATCHING USED IN GORES BETWEEN OPPOSING DIRECTION OF TRAVEL LANES.
YDS	YELLOW	DOUBLE SOLID	4" – (4") – 4" (GAP)	CENTERLINE THAT SEPARATES OPPOSING TRAVEL LANES AND DELINEATION OF MEDIAN ISLANDS.
YDB	YELLOW	DOUBLE BROKEN	4" – (4") – 4" (GAP)	DEFINES THE EDGES OF CENTER REVERSIBLE LANES THAT ARE USED AS TWLTLS DURING INTERMITTENT PERIODS.
YB	YELLOW	BROKEN (10' STRIPE W/30' GAP)	4"	SEPARATES TRAVEL LANES IN OPPOSITE DIRECTIONS WHERE PASSING IS PERMITTED IN BOTH DIRECTIONS OF TRAVEL.
YB (BIKE)	YELLOW	BROKEN (3' STRIPE W/9' GAP)	4"	SEPARATES BICYCLE TRAVEL LANES IN OPPOSITE DIRECTIONS WHERE PASSING IS PERMITTED IN BOTH DIRECTIONS OF TRAVEL.
YSB	YELLOW	SOLID & BROKEN BROKEN (10' STRIPE W/30' GAP)	4" – (4") – 4" (GAP)	SEPARATES TRAVEL LANES IN OPPOSITE DIRECTIONS WHERE PASSING IS PERMITTED IN ONE DIRECTION AND PROHIBITED IN THE OPPOSITE DIRECTION.
				USED FOR EDGE OF TWO-WAY LEFT TURN LANES (TWLTL).
BICYCLE GREEN	GREEN	SOLID COLORED PAVEMENT	VARIES	PED/BIKE CROSSING
				VEHICLE / BIKE/ CONFLICT AREA
YIELD LINE	WHITE	TRIANGLE	16" x 24"	MID-BLOCK CROSSING.

DESCRIPTION AND APPLICATION OF REFLECTIVE RAISED PAVEMENT MARKERS (RPM)

RRPM TYPES	COLOR	COH SPEC. SEC. 02764 EQUIVALENT	DESCRIPTION
C	CLEAR	TYPE I-C	APPROACH FACE THAT REFLECTS WHITE LIGHT, AND THE OTHER SIDE DOES NOT REFLECT.
R	CLEAR & RED	TYPE II-C-R	APPROACH FACE THAT REFLECTS WHITE LIGHT, AND THE OTHER SIDE REFLECTS RED LIGHT.
A	AMBER & AMBER	TYPE II-A-A	APPROACH FACE AND THE OTHER SIDE BOTH REFLECT AMBER LIGHT.

LINE STYLE DESIGNATION : YSB4 – A40/A40

- COLOR
- PATTERN
- WIDTH OF STRIPE
- RPM SPACING
- RPM TYPE
- RPM SPACING
- RPM TYPE

GENERAL PAVEMENT MARKING NOTES:

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

APPROVED BY:	APPROVED BY:
DocuSigned by: Sulad Kanwar 1EFEB0CB41F5478...	DocuSigned by: HIMNG NGUYEN 95AD5EF70A75B4CD...
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: DocuSigned by: Carol Haddock A60C41B8C2BE4EA...	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 02760-01

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

PAVEMENT MARKINGS GENERAL NOTES AND LEGENDS

DRAWING SCALE	FOR CITY OF HOUSTON USE ONLY
NOT TO SCALE	

ENTECH CIVIL ENGINEERS, INC.
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 — STATE OF TEXAS — RODRIGO M. GUADARRAMA — 111437 — LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
PAVEMENT MARKING DETAILS (4 OF 4)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 204 OF 227	

NO.	DATE	REVISION	APP.

DISCLAIMER:
THE USE OF THIS STANDARD IS GOVERNED BY THE TEXAS ENGINEERING PRACTICE ACT. THE DESIGN REQUIREMENTS ON THIS STANDARD DO NOT PURPORT TO ADDRESS ALL OF THE SAFETY CONCERNS ASSOCIATED WITH THEIR USE. THE ENGINEER OF RECORD (EOR) IS TO REVIEW THESE DESIGN REQUIREMENTS AND BY AUTHORIZING THEIR USE, ACCEPTS RESPONSIBILITY FOR THEIR APPLICABILITY, ADEQUACY AND SAFETY. NO WARRANTY OF ANY KIND IS MADE BY THE CITY OF HOUSTON FOR ANY PURPOSES WHATSOEVER. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.

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DRIVEWAY SUMMARY

DRIVEWAY NUMBER	CL STATION	OFFSET	LT/RT	DRIVEWAY TYPE		DRIVEWAY WIDTH (FT)	LENGTH L1 (FT)	DRIVEWAY LENGTH (FT)	CURB RETURN RADIUS (WEST)	CURB RETURN RADIUS (EAST) R2 (FT)	ELEV AT GUTTER E1 (FT)	ELEV AT EDGE OF SIDEWALK E2	SLOPE S1 (%)	SW SLOPE (%)	DRIVEWAY AREA (SY)
G1	15+68.71	50.00'	LT	CONC	COMMERCIAL	28.0	5.2	11.1	25	25	58.21	58.11	1.9%	2.7%	61.16
G2	17+19.96	44.30'	RT	CONC	COMMERCIAL	42.9	4.4	4.4	14	14	59.33	59.72	8.8%		24.17
G3	18+48.37	50.19'	LT	CONC	COMMERCIAL	28.0	5.7	10.2	25	25	59.17	59.02	2.6%	2.0%	56.51
G4	21+97.27	41.95'	LT	CONC	RESIDENTIAL	15.8	3.0	3.0	3	3	59.46	59.69	7.6%		5.83
G5	23+40.61	42.62'	LT	CONC	RESIDENTIAL	20.0	4.3	4.3	4	2	60.31	60.34	0.7%		9.76
G6	25+33.44	43.35'	LT	CONC	RESIDENTIAL	17.1	4.9	4.9	3	5	60.96	61.32	7.4%		23.32
G7	25+63.52	43.42'	LT	CONC	RESIDENTIAL	17.1	4.9	4.9	6	5	60.94	61.24	6.2%		23.42
G8	27+53.82	41.42'	LT	CONC	RESIDENTIAL	16.3	3.1	3.1	2	8	60.96	61.22	8.5%		21.67
G9	28+54.36	41.21'	LT	CONC	RESIDENTIAL	17.4	3.5	3.5	7	6	61.08	61.51	12.3%		24.76
G10	30+45.45	40.63'	LT	CONC	RESIDENTIAL	18.0	2.8	2.8	4	9	61.37	61.54	6.1%		7.40
G11	31+29.24	40.92'	LT	CONC	RESIDENTIAL	17.9	3.2	3.2	4	4	61.99	62.04	1.6%		8.54
G12	33+20.77	42.72'	LT	CONC	RESIDENTIAL	15.7	5.0	5.0	3	2	60.61	61.01	8.0%		9.56
G13	34+80.96	42.70'	LT	CONC	RESIDENTIAL	18.3	5.0	4.8	5	2	60.99	61.39	7.9%		10.59
G14	36+10.32	42.67'	LT	CONC	RESIDENTIAL	18.3	5.1	5.1	5	5	61.02	61.33	6.1%		14.31
G15	37+87.68	42.29'	LT	CONC	RESIDENTIAL	17.4	4.7	4.7	8	5	61.38	61.75	7.9%		10.04
G16	39+37.35	42.63'	LT	CONC	RESIDENTIAL	16.2	4.7	4.7	9	6	61.56	61.82	5.5%		9.60
G17	40+44.01	43.70'	LT	CONC	COMMERCIAL	34.2	5.7	5.7	3	6	61.46	61.65	3.4%		22.39
G18	42+33.20	45.33'	LT	CONC	COMMERCIAL	35.9	6.2	6.2	6	6	60.75	61.19	7.2%		25.70
G19	45+14.70	45.14'	LT	CONC	COMMERCIAL	36.5	5.8	5.8	4	6	61.37	61.82	7.8%		23.58
G20	47+29.11	45.45'	LT	CONC	COMMERCIAL	34.1	5.9	5.9	5	7	61.16	61.53	6.3%		22.83
G21	1+50.04	23.52'	LT	CONC	RESIDENTIAL	17.5	10.3	10.3	1	1	58.43	59.59	11.2%		21.79
G22	1+50.60	23.86'	RT	CONC	RESIDENTIAL	18.0	10.1	10.1	0	0	58.47	59.54	10.6%		20.60
G23	2+14.65	21.13'	RT	CONC	RESIDENTIAL	17.8	7.4	7.4	1	1	58.73	58.96	3.1%		14.72
G24	2+90.70	26.30'	RT	CONC	RESIDENTIAL	26.2	12.8	12.8	5	2	59.06	60.18	8.7%		38.30
G25	1+64.19	24.32'	LT	CONC	RESIDENTIAL	17.2	10.4	10.4	2	1	58.96	60.06	10.6%		20.13
G26	1+65.28	22.45'	RT	CONC	RESIDENTIAL	17.1	9.6	9.6	0	0	58.41	60.12	17.8%		19.36
G27	1+64.12	21.12'	RT	CONC	RESIDENTIAL	17.2	6.7	6.7	1	1	59.34	60.77	21.5%		13.98
G28	2+02.3	20.38'	LT	CONC	RESIDENTIAL	12.4	7.3	7.3	3	2	59.89	60.78	12.2%		10.15
G29	1+13.67	21.02'	RT	CONC	RESIDENTIAL	7.5	16.9	16.9	1	4	60.41	61.24	4.9%		15.68
G30	1+14.98	21.09'	LT	CONC	RESIDENTIAL	7.3	17.4	17.4	1	2	60.28	61.46	6.8%		14.57
G31	22+31.35	20.52'	RT	CONC	RESIDENTIAL	17.2	2.9	2.9	2	2	60.29	60.04	8.8%		5.77
G32	10+73.82	25.41'	RT	CONC	RESIDENTIAL	17.8	10.2	10.2	3	3	59.32	60.05	7.2%		21.51
G33	12+12.78	18.50'	RT	CONC	RESIDENTIAL	17.2	5.1	5.1	1	1	59.21	59.54	6.5%		9.94
G34	13+39.52	18.83'	RT	CONC	RESIDENTIAL	18.1	5.1	5.1	7	4	58.92	59.25	6.5%		10.71
G35	19+63.33	19.44'	RT	CONC	RESIDENTIAL	12.0	6.3	6.3	3	3	58.10	58.44	5.4%		10.68
G36	20+34.45	22.11'	RT	CONC	RESIDENTIAL	10.8	9.3	9.3	1	1	58.06	58.51	4.8%		13.00
G37	20+57.25	22.87'	LT	CONC	RESIDENTIAL	18.8	10.1	10.1	1	0	57.83	59.18	13.4%		23.16
G38	24+02.02	18.79'	RT	CONC	RESIDENTIAL	37.4	6.4	6.4	6	5	58.39	58.81	6.6%		25.39
G39	26+43.72	18.96'	RT	CONC	RESIDENTIAL	17.8	5.9	5.9	2	3	59.03	59.36	5.6%		11.66
G40	27+41.18	19.72'	RT	CONC	RESIDENTIAL	17.6	6.8	6.8	1	1	59.61	59.87	3.8%		12.67
G41	28+27.44	18.97'	RT	CONC	RESIDENTIAL	30.5	6.4	6.4	7	3	60.22	60.57	5.5%		20.50
G42	30+32.45	19.29'	RT	CONC	RESIDENTIAL	21.2	6.7	6.7	5	5	60.3	60.91	9.2%		15.48
G43	31+91.8	19.65'	RT	CONC	RESIDENTIAL	18.2	7.1	7.1	7	7	61	61.53	7.5%		14.18
G44	32+98.56	19.78'	RT	CONC	RESIDENTIAL	16.9	7.2	7.2	1	1	61.42	61.96	7.5%		13.15
G45	35+04.70	20.51'	RT	CONC	RESIDENTIAL	22.0	7.7	7.7	2	0	61.23	61.76	6.9%		18.20
G46	35+98.49	21.03'	RT	CONC	RESIDENTIAL	16.1	8.5	8.5	2	2	60.9	61.76	10.1%		14.21
G47	37+94.2	21.34'	RT	CONC	RESIDENTIAL	17.9	8.3	8.3	1	1	61.22	62.05	10.0%		15.67
G48	38+87.67	21.47'	RT	CONC	RESIDENTIAL	19.5	8.7	8.7	9	1	60.95	61.93	11.3%		17.62
G49	40+26.34	22.60'	RT	CONC	RESIDENTIAL	18.9	9.5	9.5	1	1	61.74	60.88	9.1%		20.58
G50	41+69.23	16.75'	RT	CONC	RESIDENTIAL	16.4	3.3	3.3	2	2	60.79	61.12	9.9%		5.19
G51	43+12.48	17.44'	RT	CONC	RESIDENTIAL	16.1	3.4	3.4	4	4	60.69	61.02	9.6%		5.56
G52	15+89.01	24.42'	RT	CONC	RESIDENTIAL	18.0	7.2	7.2	5	2	62.38	62.84	6.4%		14.21
G53	16+67.83	27.23'	RT	CONC	RESIDENTIAL	23.3	10.4	10.4	0	0	62.4	62.63	2.2%		26.77
G54	17+48.09	23.20'	RT	CONC	RESIDENTIAL	17.3	6.4	6.4	6	7	61.18	61.21	0.5%		13.61
G55	18+66.00	25.72'	RT	CONC	RESIDENTIAL	11.5	9.5	9.5	1	1	61.2	61.21	0.1%		13.85
G56	27+04.03	19.63'	RT	CONC	RESIDENTIAL	20.0	1.9	1.9	0	0	59.82	59.96	7.4%		4.18

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

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

VERIFICATION OF PRIVATE UTILITY LINES

Date

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

Signature valid for six months.

Date

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.

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

DRIVEWAY TABLE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
AS NOTED	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 205 OF 227	

PLOTTED: 1/9/2026 10:23 AM coh_ctb_230809.ctb
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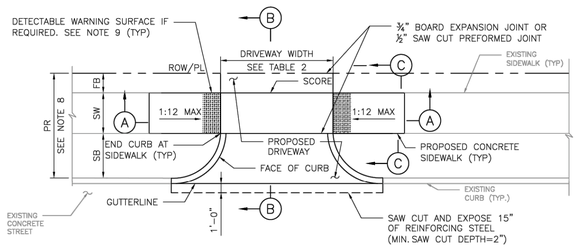
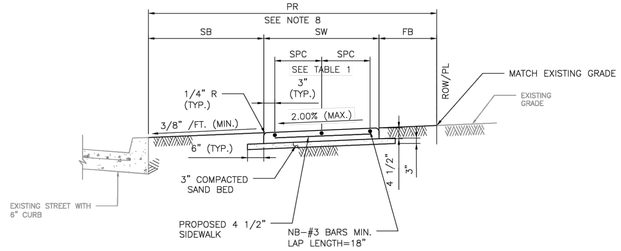


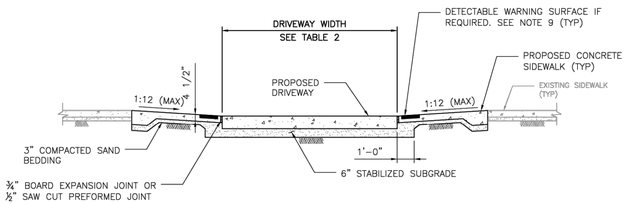
PLAN VIEW
DRIVEWAY



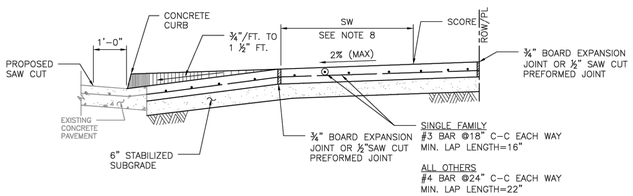
SECTION C–C
TYPICAL SIDEWALK SECTION

NOTES:

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



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



SECTION B–B
TYPICAL DRIVEWAY SECTION

TABLE 1

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

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

TABLE 2

DRIVEWAY DESIGN CRITERIA (1)(2)

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

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

APPROVED BY:	APPROVED BY:
Docusigned by: Suhail Kanwar	Docusigned by: KHANG NGUYEN
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: Docusigned by: Carol Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV–27–2023	DWG NO: 02754–01B

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.

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281–945–0069
TX FIRM NUMBER: F–6932
SURVEYED BY: LANDTECH, INC.
FB NO. P–6331

RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER — 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
DRIVEWAY DETAILS
(1 OF 3)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410040–0001–3	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 206 OF 227	

DISCLAIMER:
THE USE OF THIS STANDARD IS GOVERNED BY THE TEXAS ENGINEERING PRACTICE ACT. THE DESIGN REQUIREMENTS ON THIS STANDARD DO NOT PURPORT TO ADDRESS ALL OF THE SAFETY CONCERNS ASSOCIATED WITH THEIR USE. THE ENGINEER OF RECORD (EOR) IS TO REVIEW THESE DESIGN REQUIREMENTS AND BY AUTHORIZING THEIR USE, ACCEPTS RESPONSIBILITY FOR THEIR APPLICABILITY, ADEQUACY AND SAFETY. NO WARRANTY OF ANY KIND IS MADE BY THE CITY OF HOUSTON FOR ANY PURPOSES WHATSOEVER. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.

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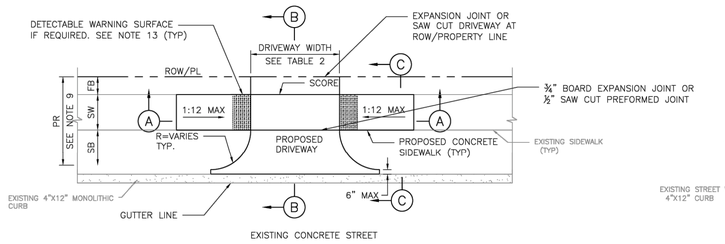
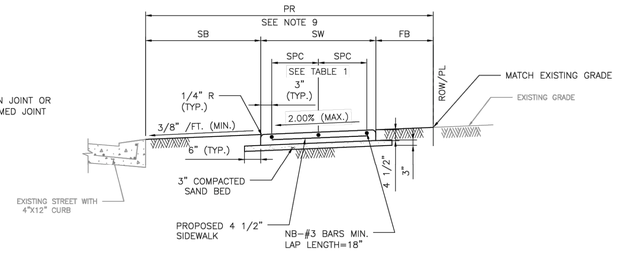
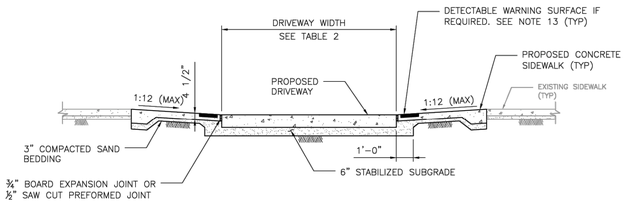


PLAN VIEW
DRIVEWAY



SECTION C–C
TYPICAL SIDEWALK SECTION

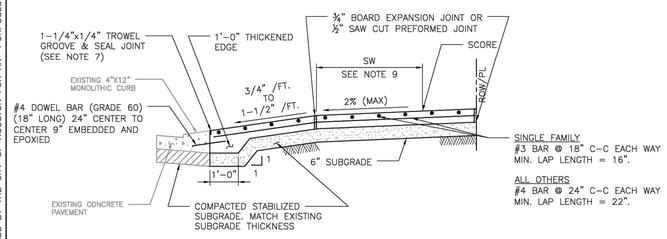


SECTION A–A
PROPOSED SIDEWALK, THROUGH DRIVEWAY WITH EXCESSIVE GRADES

TABLE 1

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

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



SECTION B–B
TYPICAL DRIVEWAY SECTION

TABLE 2

DRIVEWAY DESIGN CRITERIA (1)(2)

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

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

NOTES:

1. REPAIR, RECONSTRUCTION OR REPLACEMENT OF SIDEWALKS SHALL MEET PERMITTING REQUIREMENTS OF CODE OF ORDINANCES SECTION 40–552.
2. FOR REPAIR, RECONSTRUCTION, OR REPLACEMENT OF EXISTING SIDEWALKS:
   - 2.1. EXISTING SIDEWALKS LESS THAN OR EQUAL TO 20 FEET IN TOTAL LENGTH:
     - 2.1.1. THE PROPOSED SIDEWALK WIDTH WILL BE ALLOWED TO MATCH THE EXISTING SIDEWALK.
   - 2.2. EXISTING SIDEWALKS GREATER THAN 20 FEET IN TOTAL LENGTH:
     - 2.2.1. THE SIDEWALK WIDTH FOR THE ENTIRE PROPERTY WIDTH SHALL BE IMPROVED TO MEET WIDTH REQUIREMENTS ACCORDING TO THE LATEST INFRASTRUCTURE DESIGN MANUAL.
   - 2.3. 20 FOOT TOTAL LENGTH IS DEFINED AS:
     - 2.3.1. UP TO 10 FEET ON BOTH SIDES OF THE DRIVEWAY; OR
     - 2.3.2. UP TO 20 FEET WHEN SIDEWALK AFFECTED IS LOCATED ONLY ON ONE SIDE OF THE DRIVEWAY.
3. IF AVAILABLE ROW IS NOT SUFFICIENT TO ACCOMMODATE SIDEWALK WIDTH (SW) ACCORDING TO IDM REQUIREMENTS, ENGINEER SHALL OBTAIN A VARIANCE FROM THE CITY ENGINEER.
4. DRIVEWAYS SHALL BE 6" THICK FOR SINGLE FAMILY OR DUPLEXES.
5. DRIVEWAYS AND SIDEWALKS SHALL BE CONSTRUCTED WITH PORTLAND CEMENT CONCRETE AND INCLUDE 5 1/2 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE.
6. THE OUTER DOWEL BARS ARE TO BE LOCATED 12" FROM END OF PROPOSED EDGE OF DRIVEWAY RETURN. EXTEND DOWEL 3" INCHES INTO PROPOSED DRIVEWAY AND BEND REMAINING BAR TO EXTEND TO RADIUS RETURN BOTH SIDES.
7. TROWEL GROOVE SEALANT SHALL BE LOW MODULUS SILICONE OR POLYURETHANE SEALANT.
8. ALL JOINTS ALONG THE SIDEWALK SHALL BE CONSTRUCTED ACCORDING TO DRAWING 02752–02 AND SPECIFICATION 02752.
9. REFER TO CONTRACT DRAWINGS FOR PEDESTRIAN REALM (PR), SIDEWALK (SW), FRONTAGE BUFFER (FB), AND SAFETY BUFFER (SB) WIDTHS.
10. CEMENT STABILIZED SAND 1.5 SACKS OF CEMENT PER TON OF DRY SAND.
11. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOUSTON PUBLIC WORKS STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
12. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.
13. DETECTABLE WARNING SURFACES:
    - 13.1. SIDEWALK SHALL HAVE A DETECTABLE WARNING SURFACE WHERE:
      - 13.1.1. SIDEWALK INTERSECTS TYPE C DRIVEWAYS (COMMERCIAL DRIVEWAYS) THAT ARE STOP, YIELD OR TRAFFIC SIGNAL CONTROLLED; OR
      - 13.1.2. SIDEWALK SLOPE IS GREATER THAN 1:20 AND INTERSECTS A TYPE C DRIVEWAY (COMMERCIAL DRIVEWAY)
    - 13.2. DETECTABLE WARNING SURFACES ARE OPTIONAL WHERE SIDEWALKS INTERSECT TYPE A DRIVEWAYS (SINGLE FAMILY RESIDENTIAL HOUSES OR DUPLEXES) OR TYPE B DRIVEWAYS (SHARED ACCESS/SHARED DRIVEWAYS).
    - 13.3. REFER TO STANDARD DETAILS 02775–06 TO 02775–07 FOR DETECTABLE WARNING SURFACE STANDARDS.

APPROVED BY:	APPROVED BY:
DocuSigned by: Suhail Kanwar 8EF5B9C061F5478...	DocuSigned by: HANG NGUYEN 65A393FDCA7D4CD...
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: DocuSigned by: Carol Haddock A83C410B72D3403...	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV–27–2023	DWG NO: 02754–01A

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

DRIVEWAY DETAIL WITH 4"x12" CURB FOR LOCAL RESIDENTIAL STREETS

	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	
NOT TO SCALE	

NO.	DATE	REVISION	APP.

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281–945–0069
TX FIRM NUMBER: F–6932
SURVEYED BY: LANDTECH, INC.
FB NO. P–6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA
DRAINAGE AND PAVING IMPROVEMENTS
DRIVEWAY DETAILS
(2 OF 3)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410040–0001–3	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 207 OF 227	

DISCLAIMER:
THE USE OF THIS STANDARD IS GOVERNED BY THE TEXAS ENGINEERING PRACTICE ACT. THE DESIGN REQUIREMENTS ON THIS STANDARD DO NOT PURPORT TO ADDRESS ALL OF THE SAFETY CONCERNS ASSOCIATED WITH THEIR USE. THE ENGINEER OF RECORD (EOR) IS TO REVIEW THESE DESIGN REQUIREMENTS AND BY AUTHORIZING THEIR USE, ACCEPTS RESPONSIBILITY FOR THEIR APPLICABILITY, ADEQUACY AND SAFETY. NO WARRANTY OF ANY KIND IS MADE BY THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE. THE CITY OF HOUSTON FOR ANY PURPOSES WHATSOEVER.

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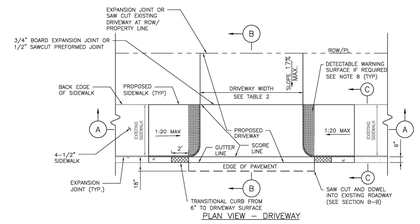

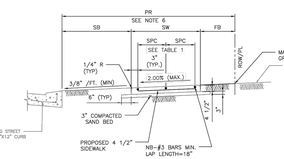

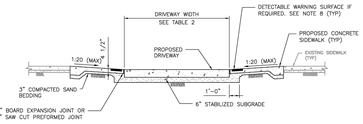

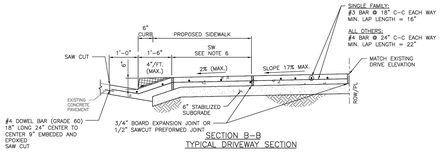

NOTES:

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

TABLE 1

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

SIDEWALK THICKNESS (IN)	SIDEWALK WIDTH (FT)	LONGITUDINAL STEEL			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 ARTICLES 15.2.07.C.1.C(1) AND 15.2.07.C.1.C(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:
Shital Sawar	Hiteng Hatiyeh
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: Carl Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 02754-04

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

PROPOSED SIDEWALK THROUGH DRIVEWAY WITH MINIMAL ELEVATION DIFFERENCE

FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE
NOT TO SCALE

NO.	DATE	REVISION	APP.

DISCLAIMER:
THE USE OF THIS STANDARD IS GOVERNED BY THE TEXAS ENGINEERING PRACTICE ACT. THE DESIGN REQUIREMENTS ON THIS STANDARD DO NOT PURPORT TO ADDRESS ALL OF THE SAFETY CONCERNS ASSOCIATED WITH ITS USE. THE ENGINEER PREPARING CONSTRUCTION PLANS UTILIZING THIS STANDARD IS RESPONSIBLE FOR THE DESIGN OF THE COMPLETE PROJECT AND ADJACENT TRAFFIC CONTROL AND TO ADDRESS SAFETY CONCERNS. USE OF THIS STANDARD IS AT THE SOLE RISK OF THE PERSON OR ENTITY USING IT OR RELYING ON IT. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE. ANY WARRANTY OF ANY KIND IS MADE BY THE CITY OF HOUSTON FOR ANY PURPOSES WHATSOEVER.

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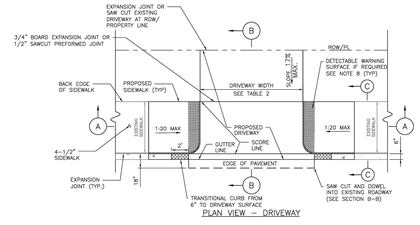

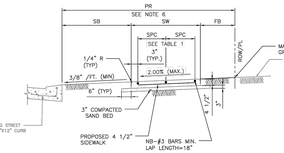

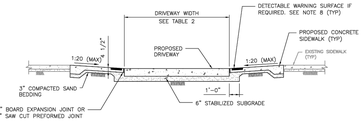

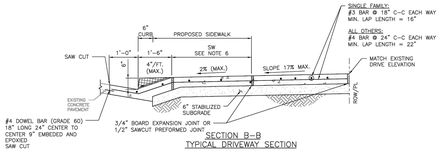

NOTES:

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.
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   - 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.
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   - 8.3. REFER TO STANDARD DETAILS 02775-06 TO 02775-07 FOR DETECTABLE WARNING SURFACE STANDARDS.

TABLE 1

REINFORCING STEEL INFORMATION
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REFER TO CONTRACT DRAWINGS FOR SIDEWALKS WIDER THAN 6 FEET.

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		#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 ARTICLES 15.2.07.C.1.C(1) AND 15.2.07.C.1.C(2) FOR TYPE 1 PAE AND TYPE 2 PAE REQUIREMENTS.
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APPROVED BY:	APPROVED BY:
Shital Sawar	Hiteng Hatiyeh
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: Carl Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 02754-04

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

PROPOSED SIDEWALK THROUGH DRIVEWAY WITH MINIMAL ELEVATION DIFFERENCE

FOR CITY OF HOUSTON USE ONLY

DRAWING SCALE
NOT TO SCALE

ENTECH
CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC F-6932 — STATE OF TEXAS — RODRIGO M. GUADARRAMA — 111437 — LICENSED PROFESSIONAL ENGINEER

Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
DRIVEWAY DETAILS (3 OF 3)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 208 OF 227	

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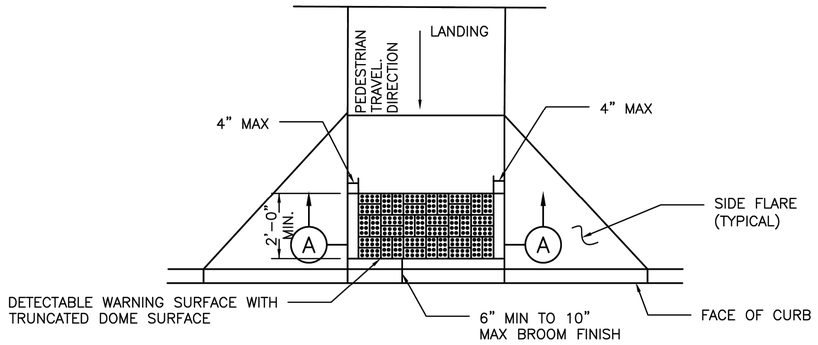
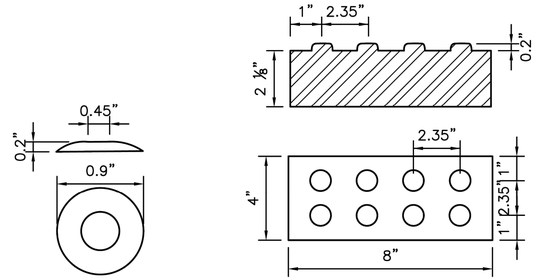


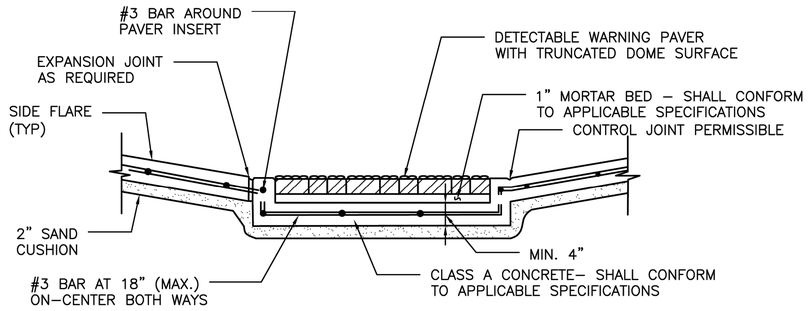
PLAN VIEW

DETECTABLE WARNING SURFACE



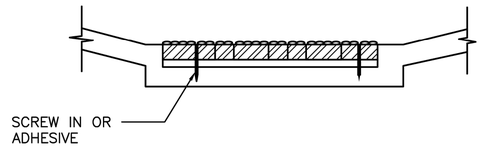
DETAIL

DETECTABLE WARNING PAVER



SECTION A–A

PAVER



DETAIL A–5

NOTES:

GENERAL NOTES

1. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOUSTON PUBLIC WORKS STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
2. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.

PAVERS

1. FURNISH DETECTABLE WARNING SURFACE UNITS MEETING ALL REQUIREMENTS OF ASTM C–936, C–33. LAY IN A TWO BY TWO UNIT BASKET WEAVE PATTERN OR AS DIRECTED.
2. LAY FULL–SIZE UNITS FIRST FOLLOWED BY CLOSURE UNITS CONSISTING OF AT LEAST 25 PERCENT OF A FULL UNIT. CUT DETECTABLE WARNING POWER UNITS USING A POWER SAW.

POLYMER CONCRETE

1. DETECTABLE WARNING TILES SHALL BE MADE OF POLYMER CONCRETE MATERIALS.
2. DETECTABLE WARNING TILES SHALL BE INSTALLED INTO FRESH CONCRETE (CAST–IN–PLACE) UTILIZING AN ANCHORING SYSTEM.
3. DETECTABLE WARNING TILES SHALL BE OF TERRACOTTA (BRICK–RED) COLOR AND COLORED THROUGHOUT TO GUARANTEE THE ADA REQUIRED COLOR CONTRAST.
4. DETECTABLE WARNING TILES SHALL MEET OR EXCEED THE FOLLOWING ASTM–BASED "STANDARDS" FOR CONCRETE MATERIALS.
   A. COMPRESSION STRENGTH > 12,500 PSI PER ASTM C 39–04
   B. WATER ABSORPTION < 0.25% PER ASTM C 97–09

PADS

1. FURNISH REQUIREMENTS OF ADAAG (MARCH 2003).
2. OTHER MATERIALS MAY BE USED IF APPROVED BY THE CITY ENGINEER

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

DETECTABLE WARNING SURFACE (OPTIONS)

(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Suhail Kanwar 9EF8B0C841F5478...
CITY ENGINEER

DocuSigned by: Carol Haddock A93C410B72B3453...
DIRECTOR OF HPW

DocuSigned by: KHANG NGUYEN 95A29EFDA75B4CD...
CITY TRAFFIC ENGINEER

EFF DATE: NOV–27–2023 | DWG NO: 02775–07

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281–945–0069
TX FIRM NUMBER: F–6932
SURVEYED BY: LANDTECH, INC.
FB NO. P–6331

ENTECH CIVIL ENGINEERS INC. F-6932 — STATE OF TEXAS — RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER — Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
DETECTABLE WARNING SURFACE

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410040–0001–4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 209 OF 227	

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

DISCLAIMER:
THE USE OF THIS STANDARD IS GOVERNED BY THE TEXAS ENGINEERING PRACTICE ACT. THE DESIGN REQUIREMENTS ON THIS STANDARD DO NOT PURPORT TO ADDRESS ALL OF THE SAFETY CONCERNS ASSOCIATED WITH THEIR USE. THE ENGINEER OF RECORD (EOR) IS TO REVIEW THESE DESIGN REQUIREMENTS AND BY AUTHORIZING THEIR USE, ACCEPTS RESPONSIBILITY FOR THEIR APPLICABILITY, ADEQUACY AND SAFETY. NO WARRANTY OF ANY KIND IS MADE BY THE CITY OF HOUSTON FOR ANY PURPOSES WHATSOEVER. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.

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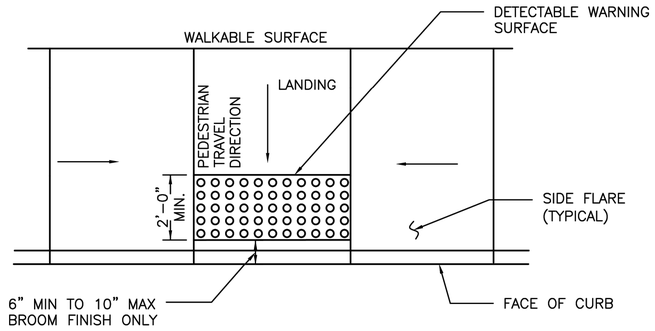
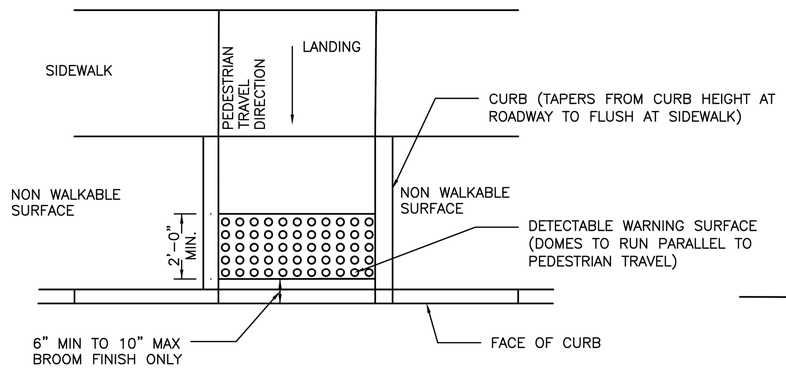
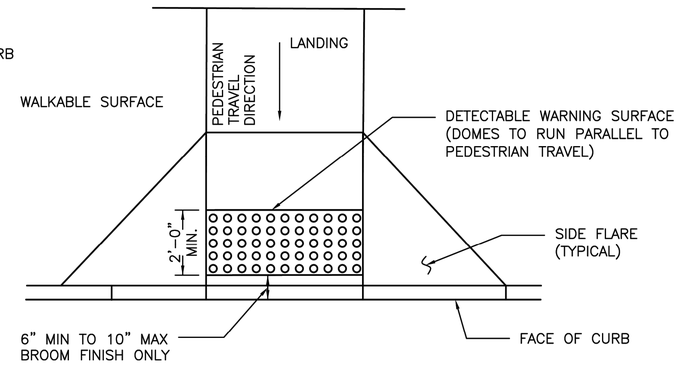


TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING AT STREET EDGE





TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN

GENERAL NOTES FOR DETECTABLE WARNINGS:

1. DETECTABLE WARNING SURFACES MUST BE FULLY ADA COMPLIANT.
2. ALL NEW CURB RAMPS MUST CONTAIN A DETECTABLE WARNING SURFACE THAT CONSISTS OF RAISED TRUNCATED DOMES. THE SURFACE MUST CONTRAST VISUALLY WITH ADJOINING SURFACE, INCLUDING SIDE FLARES. FURNISH DARK BROWN OR DARK RED DETECTABLE WARNING SURFACE ADJACENT TO UNCOLORED CONCRETE, UNLESS SPECIFIED ELSEWHERE IN THE PLANS.
3. DETECTABLE WARNING SURFACES MUST MAINTAIN A SLIP RESISTANCE WITH FA–VALUE OF EQUAL TO OR GREATER THAN 0.8.
4. DETECTABLE WARNING SURFACES MUST MAINTAIN A WATER ABSORPTION RATE OF LESS THAN 1%, DETECTABLE WARNING SHALL NOT ALLOW WATER TO ACCUMULATE.
5. DETECTABLE WARNINGS INSTALLED INTO FRESH CONCRETE SHALL BE WITHOUT VOIDS AND UTILIZING AN ACCEPTABLE ANCHORING SYSTEM.
6. ALIGN TRUNCATED DOMES IN THE DIRECTION OF PEDESTRIAN TRAVEL WHEN ENTERING THE STREET.
7. DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24" IN DEPTH IN THE DIRECTION OF PEDESTRIAN TRAVEL, AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR LANDING WHERE THE PEDESTRIAN ACCESS ROUTE ENTERS THE STREET.
8. DETECTABLE WARNING SURFACES SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6" MIN TO 10" MAX FROM THE DETECTABLE WARNING SURFACES MAY BE CURVED ALONG THE CORNER RADIUS.
9. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOUSTON PUBLIC WORKS STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

DETECTABLE WARNING CURB RAMP DETAILS

(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Sukait Kanwar 9EF8B0C641F5478...
CITY ENGINEER

DocuSigned by: Carol Haddock A93C410B72B3453...
DIRECTOR OF HPW

DocuSigned by: KHANG NGUYEN 95A29EFDA75B4CD...
CITY TRAFFIC ENGINEER

EFF DATE: NOV–27–2023 | DWG NO: 02775–06

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281–945–0069
TX FIRM NUMBER: F–6932
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ENTECH CIVIL ENGINEERS INC. F-6932 — STATE OF TEXAS — RODRIGO M. GUADARRAMA — 111437 — LICENSED PROFESSIONAL ENGINEER — Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
DETECTABLE WARNING CURB RAMP DETAILS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410040–0001–4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 210 OF 227	

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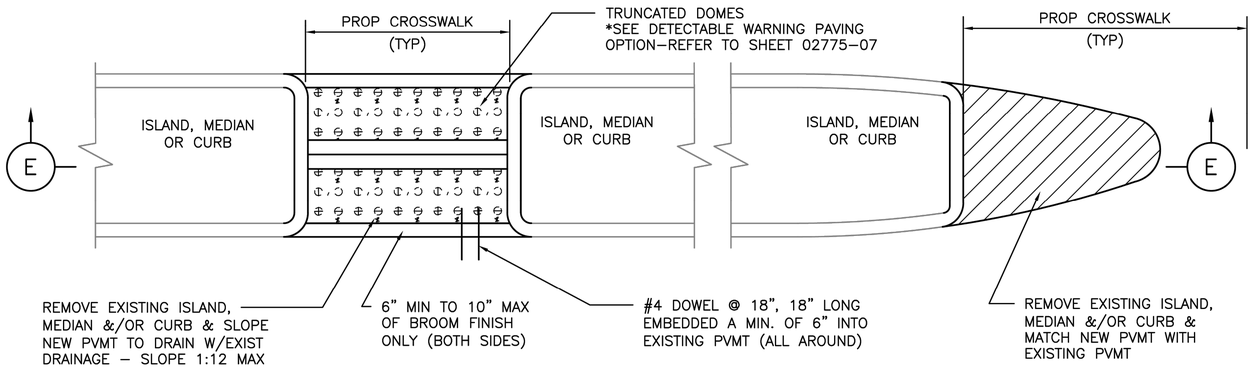
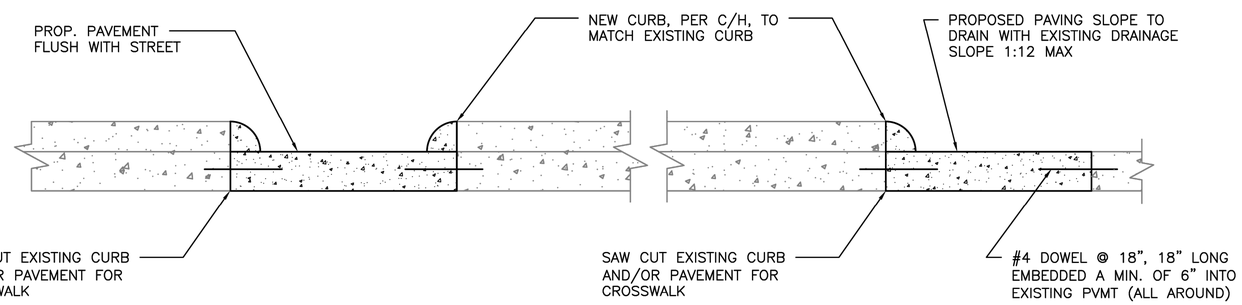


NOTES:

1. SEE COH STANDARD DETAIL FOR PAVEMENT MARKING DETAILS.
2. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOUSTON PUBLIC WORKS STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
3. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF HOUSTON.



SECTION E–E
FOR ISLAND, MEDIAN, OR CURB MODIFICATIONS FOR CROSSWALKS

DISCLAIMER:
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

CURB MODIFICATION FOR CURB RAMPS & CROSSWALKS

(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Suhail Kanwar 9EF8B0C641F5478...
CITY ENGINEER

DocuSigned by: Carol Haddock A93C410B72B3453...
DIRECTOR OF HPW

DocuSigned by: KHANG NGUYEN 95A29EFDA75B4CD...
CITY TRAFFIC ENGINEER

EFF DATE: NOV–27–2023 | DWG NO: 02775–04

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

ENTECH CIVIL ENGINEERS, INC.
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281–945–0069
TX FIRM NUMBER: F–6932
SURVEYED BY: LANDTECH, INC.
FB NO. P–6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

CURB MODIFICATION FOR CURB RAMP & CROSSWALKS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410040–0001–4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 211 OF 227	

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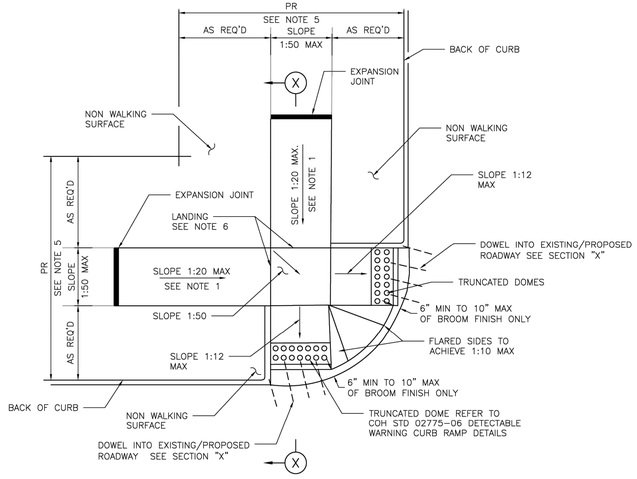
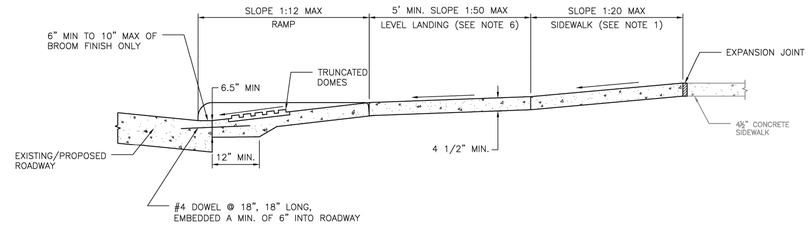


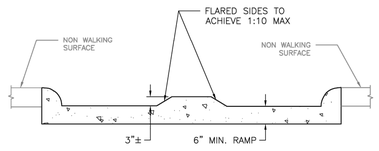
STREETS WITH NON- WALKING SURFACE BEHIND CURB
SEE NOTE-7



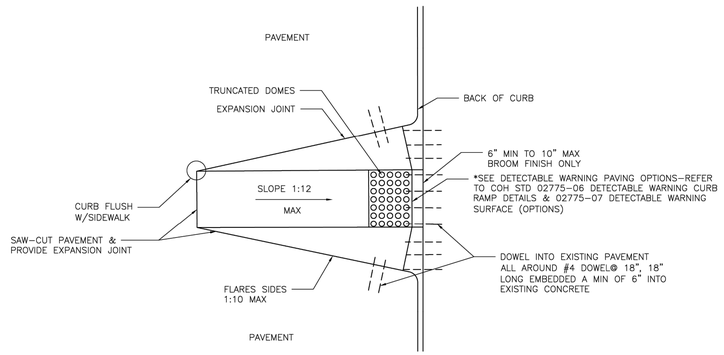
SECTION X-X

NOTES:

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



ELEVATION
LOOKING UP RAMP



CURB RAMP CONSTRUCTION FOR EXISTING PAVEMENT

APPROVED BY:	APPROVED BY:
DocuSigned by: Sukut Kanwar 8EF8B0C8A1F54F8...	DocuSigned by: KHANG NGUYEN 08A2B7EFDA7B4AD...
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: DocuSigned by: Carol Haddock A60C41087283453...	
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

	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	
NOT TO SCALE	

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	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

ENTECH
CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA
DRAINAGE AND PAVING
IMPROVEMENTS
TYPICAL CURB RAMP DETAILS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 212 OF 227	

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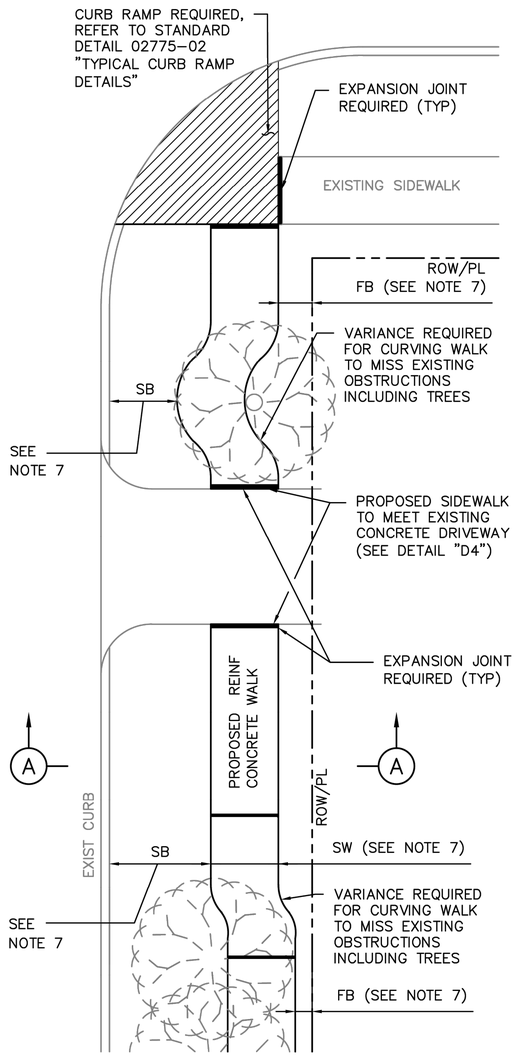
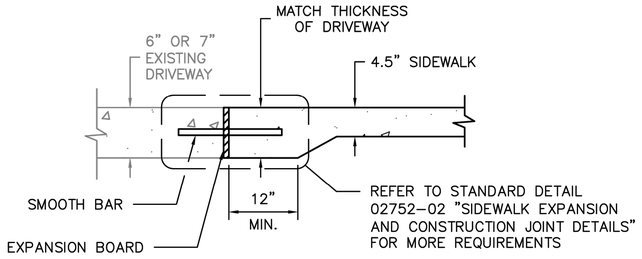


PLAN VIEW

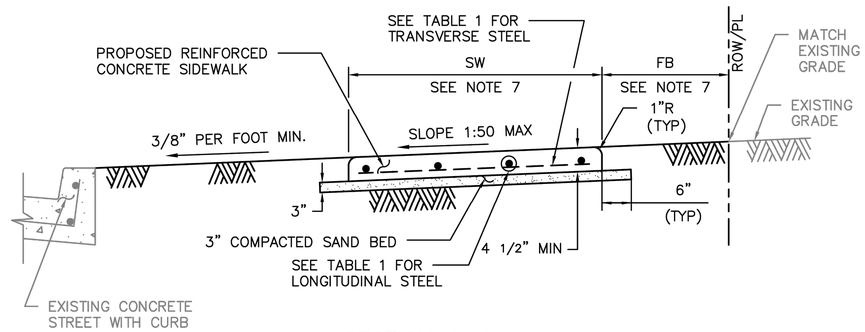


DETAIL D4
DRIVEWAY/SIDEWALK HEADER

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.

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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 Kanwar
CITY ENGINEER

DocuSigned by: KHANG NGUYEN
CITY TRAFFIC ENGINEER

DocuSigned by: Carol Haddock
DIRECTOR OF HPW

EFF DATE: NOV–27–2023 | DWG NO: 02775–01

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ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281–945–0069
TX FIRM NUMBER: F–6932
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FB NO. P–6331

ENTECH CIVIL ENGINEERS INC. F-6932 — STATE OF TEXAS — RODRIGO M. GUADARRAMA — 111437 — LICENSED PROFESSIONAL ENGINEER — 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

TYPICAL SIDEWALK LAYOUT AND DETAILS FOR STREETS WITH CURBS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
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CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
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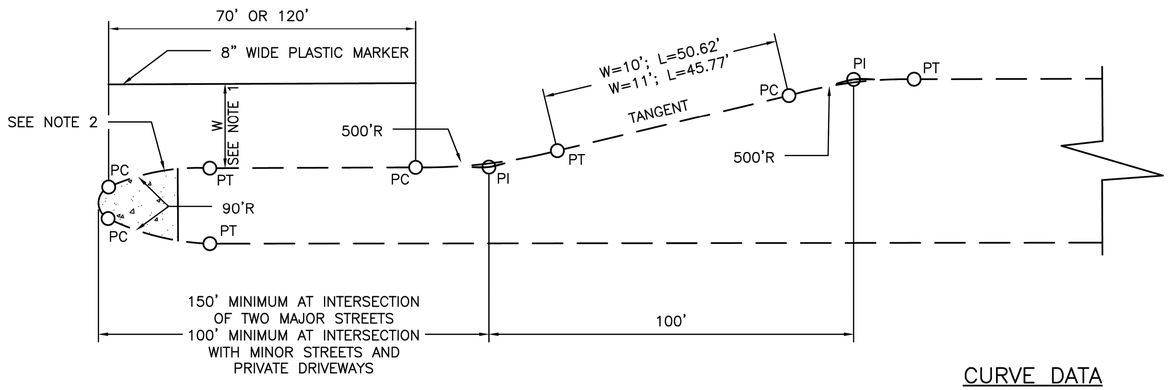


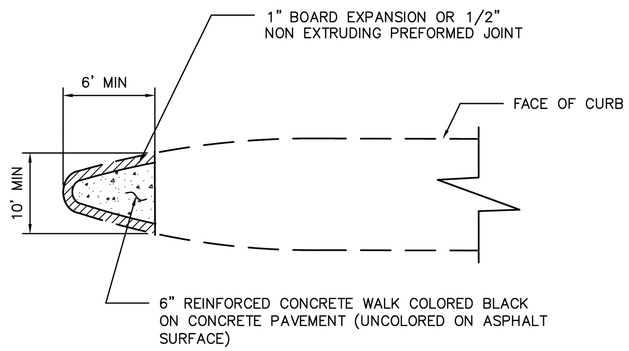
DETAIL OF LEFT TURN LANE

CURVE DATA

W=10' R=500' Δ = 5°42'38.14" L = 49.83' T=24.94'	W=11' R=500' Δ = 6°16'38.27" L = 54.78' T=27.42'

NOTES:

1. 10 FT FOR 80 FT ROW; 11 FT FOR 100 FT ROW.
2. FOR MEDIANS WITH BULLET NOSE CONFIGURATION, PAINT CURB WITH YELLOW REFLECTORIZED PAINT AROUND THE ESPLANADE NOSE TO THE PT OF THE 90 FT R. FOR MEDIANS WITHOUT BULLET NOSE CONFIGURATION, PAINT CURB FROM PC TO PT AND 30 FT BACK OF PC/PT.



ESPLANADE NOSE

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

ESPLANADE NOSE AND LEFT TURN DETAILS

(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Suhail Kanwar 9EF8B0C841F5478...
CITY ENGINEER

DocuSigned by: Carol Haddock A93C410B72B3453...
DIRECTOR OF HPW

DocuSigned by: KHANG NGUYEN 95A29EFDA75B4CD...
CITY TRAFFIC ENGINEER

EFF DATE: NOV-27-2023 | DWG NO: 02772-01

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC F-6932 — STATE OF TEXAS — RODRIGO M. GUADARRAMA — 111437 — LICENSED PROFESSIONAL ENGINEER — 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

ESPLANADE NOSE AND LEFT TURN DETAILS

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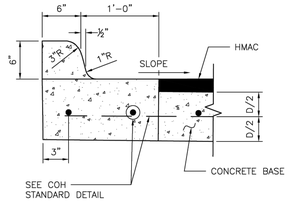
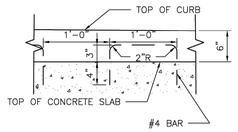
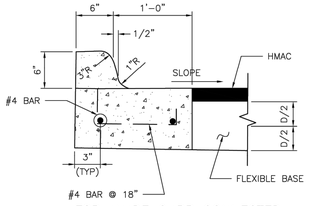


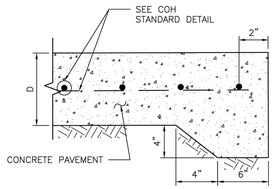
ESPLANADE CURB CONNECTED TO CONCRETE BASE



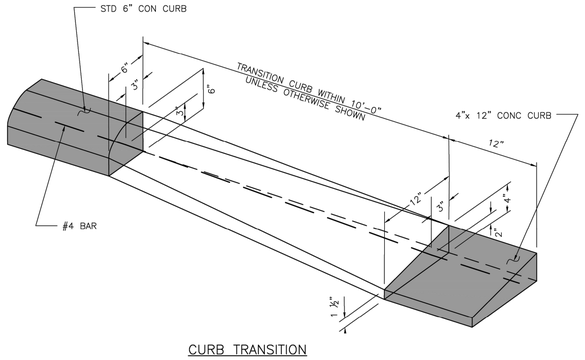
ALTERNATE CONCRETE CURB REINFORCEMENT



ESPLANADE CURB CONNECTED TO FLEXIBLE BASE

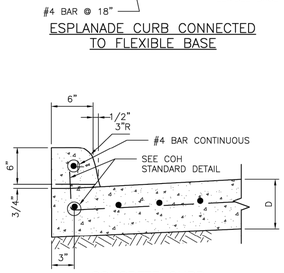


STANDARD CONCRETE PAVING HEADER

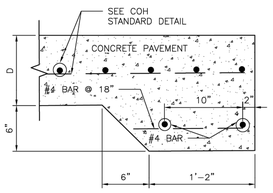


CURB TRANSITION

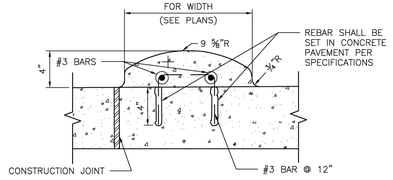
(SEE NOTES)



CONCRETE CURB

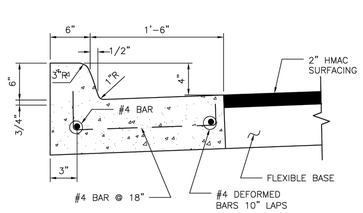


STANDARD RAILROAD HEADER

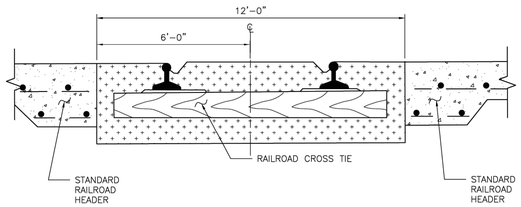


MOUNTABLE CURB

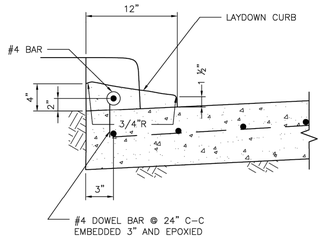
WHEN CONCRETE CURB IS TO BE PLACED EXISTING CONCRETE USE BASE #4 BAR @ 18x10" LONG, DOWELED AND SET IN EPOXY GROUT. SET #4 DOWEL BARS, 25" LONG AT 12" C-C WHEN PAVEMENT SECTION POURED.



MONOLITHIC CURB AND GUTTER

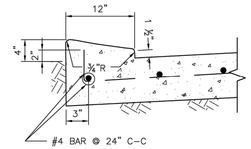


STANDARD RAILROAD CROSSING – SINGLE TRACK



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.

APPROVED BY:	APPROVED BY:
DocuSigned by: Sukut Iranwar 8EFB80C64193478...	DocuSigned by: LIHANG NGUYEN 95A28EFDA7585ACD...
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: DocuSigned by: Carol Haddock A60C41BB2B0E4D1...	
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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	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

CURB, CURB AND GUTTER AND HEADER DETAILS

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CITY OF HOUSTON PM	
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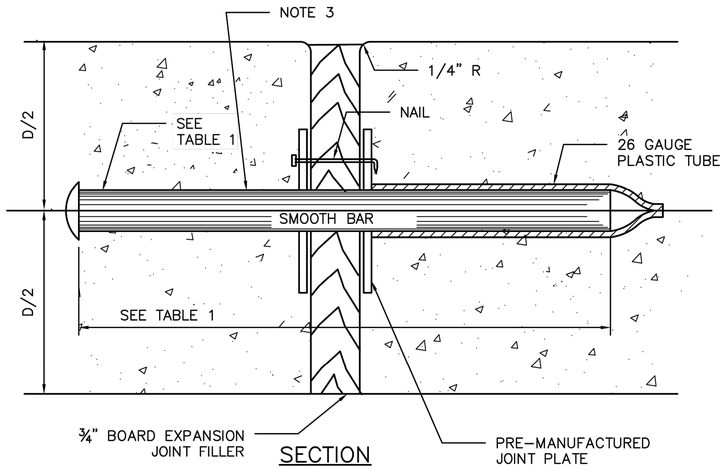
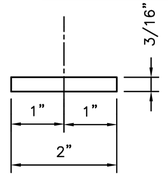


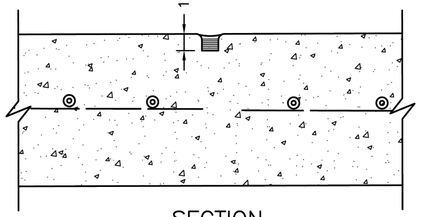
SECTION

DOWEL TYPE EXPANSION JOINT



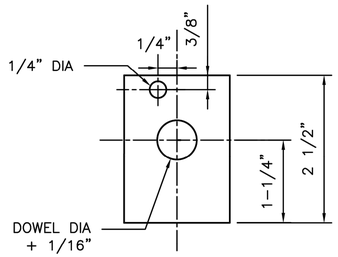
PLAN VIEW

JOINT PLATE



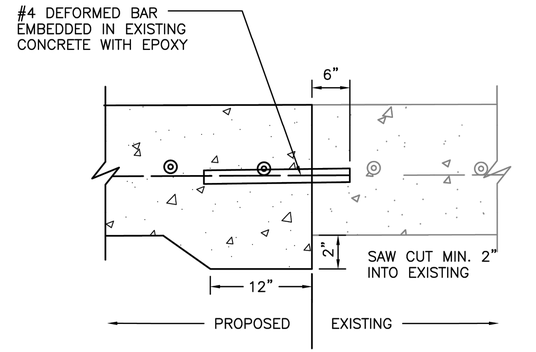
SECTION

CONTROL JOINT



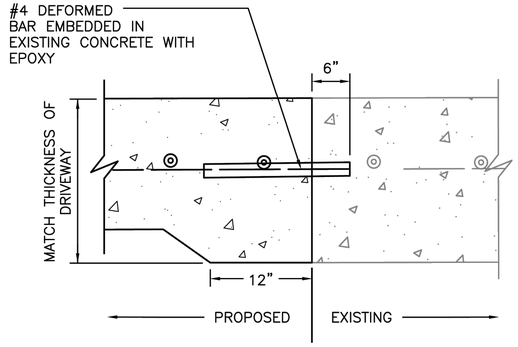
ELEVATION VIEW

JOINT PLATE



SECTION

SIDEWALK TO EXISTING SIDEWALK



SECTION

SIDEWALK TO EXISTING DRIVEWAY

NOTES:

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

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

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

SIDEWALK EXPANSION AND CONSTRUCTION JOINT DETAILS

(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Suhail Kanwar
9EFB80C641F5478...
CITY ENGINEER

DocuSigned by: KHANG NGUYEN
95A29EFDA75B4CD...
CITY TRAFFIC ENGINEER

DocuSigned by: Carol Haddock
A83C410B72B3453...
DIRECTOR OF HPW

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

NO.	DATE	REVISION	APP.
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	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED
PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

SIDEWALK EXPANSION AND CONSTRUCTION JOINT DETAILS

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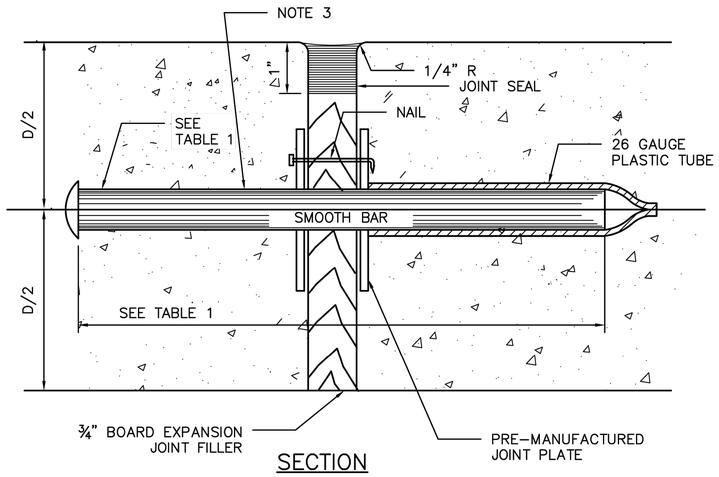
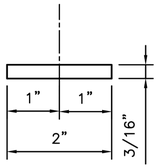


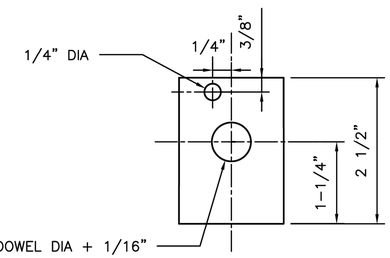
SECTION

DOWEL TYPE EXPANSION JOINT



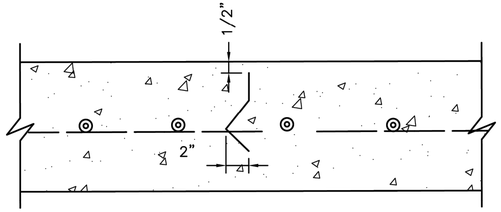
PLAN VIEW

JOINT PLATE



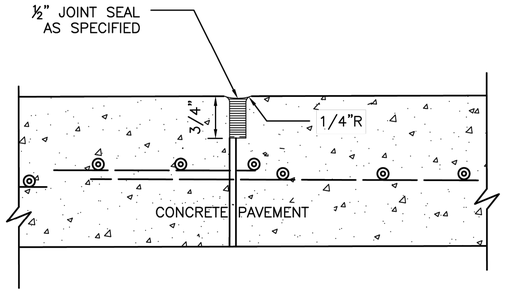
ELEVATION VIEW

JOINT PLATE



SECTION

DEFORMED METAL STRIP



SECTION

CONSTRUCTION JOINT SEAL

TABLE 1

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

NOTES:

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

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

PAVEMENT EXPANSION AND CONSTRUCTION JOINT DETAILS

(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Sukait Kanwar — 9EF8B0C641F5478...
CITY ENGINEER

DocuSigned by: KHANG NGUYEN — 95A29EFDA75B4CD...
CITY TRAFFIC ENGINEER

DocuSigned by: Carol Haddock — A93C410B72B3453...
DIRECTOR OF HPW

EFF DATE: NOV-27-2023 | DWG NO: 02752-01

NO.	DATE	REVISION	APP.
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	MM/DD/YY	BRIEF DESCRIPTION	XXX
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ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

ENTECH CIVIL ENGINEERS INC F-6932 — STATE OF TEXAS — RODRIGO M. GUADARRAMA — 111437 — LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

PAVEMENT EXPANSION AND CONSTRUCTION JOINT DETAILS

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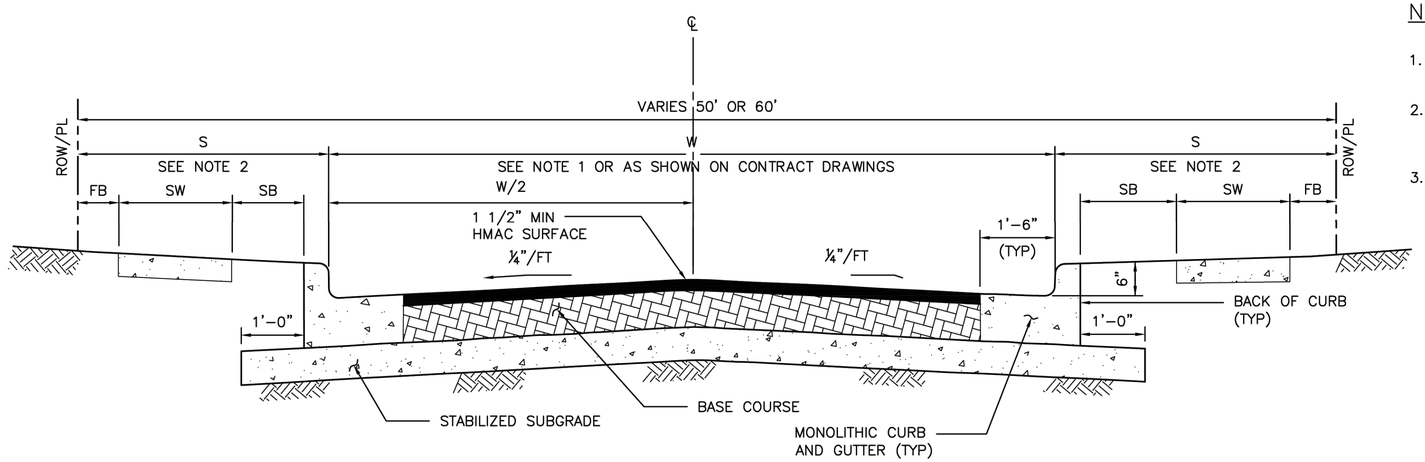
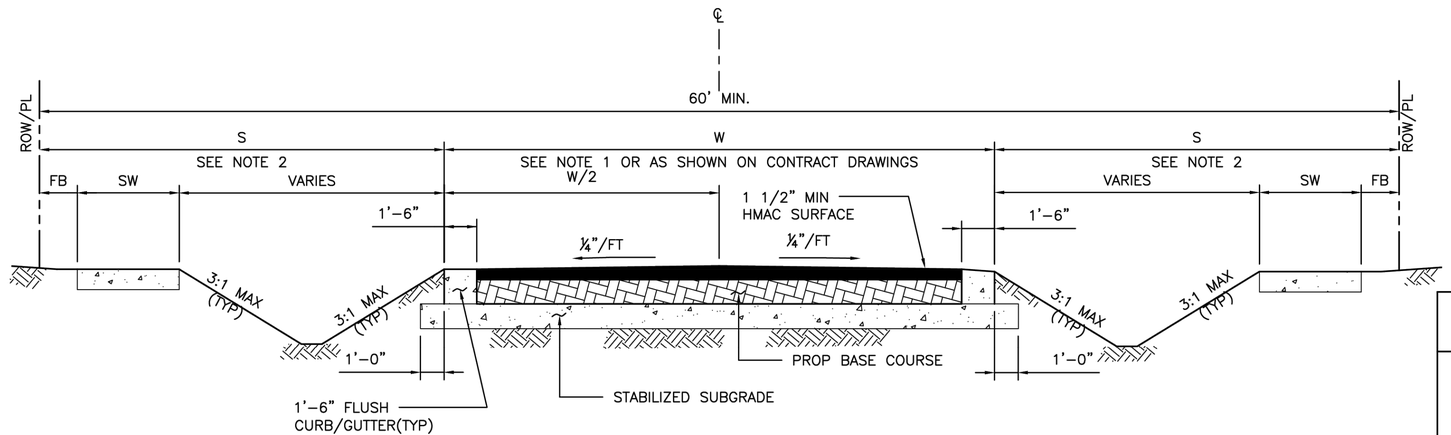


HMAC PAVEMENT – CURB & GUTTER SECTION

(NOT APPLICABLE TO ETJ OF CITY OF HOUSTON)



HMAC PAVEMENT – DITCH SECTION

(NOT APPLICABLE TO ETJ OF CITY OF HOUSTON)

NOTES:

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

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

HOT MIX ASPHALTIC CONCRETE PAVEMENT DETAILS

(SCALE: NOT TO SCALE)

APPROVED BY:

DocuSigned by: Suhail Kanwar 9EF8B0C641F5478... CITY ENGINEER

DocuSigned by: KHANG NGUYEN 95A29EFDA75B4CD... CITY TRAFFIC ENGINEER

DocuSigned by: Carol Haddock A93C410B72B3453... DIRECTOR OF HPW

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ENTECH CIVIL ENGINEERS, INC
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HOUSTON, TX. 77094
281-945-0069
TX FIRM NUMBER: F-6932
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ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS
HMAC DETAILS

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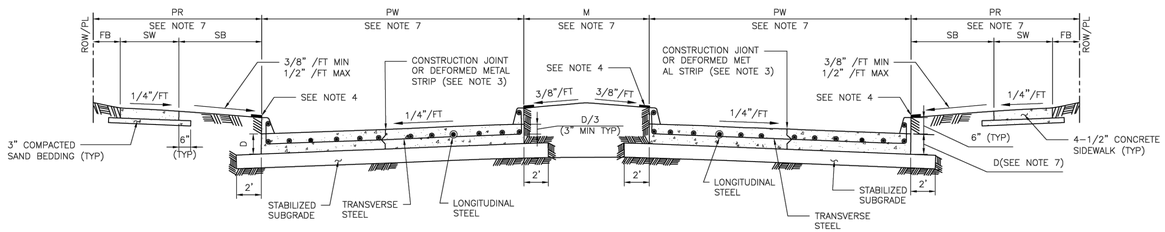
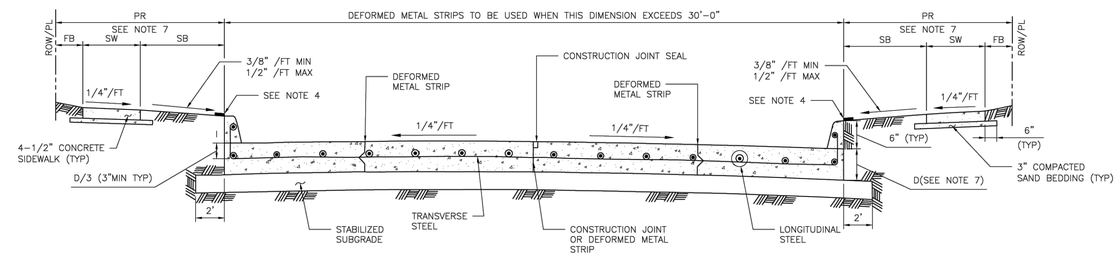


TYPICAL DOUBLE ROADWAY SECTION FOR CONCRETE PAVEMENT WITH CURBS



TYPICAL SINGLE ROADWAY SECTION FOR CONCRETE PAVEMENT WITH CURBS

TABLE 1

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

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

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

NOTES:

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

APPROVED BY:	APPROVED BY:
DocuSigned by: Suhail Kanwar	DocuSigned by: KHANG NGUYEN
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY: DocuSigned by: Carl Haddock	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV–27–2023	DWG NO: 02751–01

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

CONCRETE PAVEMENT DETAILS

	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE	
NOT TO SCALE	

NO.	DATE	REVISION	APP.

ENTECH
CIVIL ENGINEERS, INC.
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281–945–0069
TX FIRM NUMBER: F–6932
SURVEYED BY: LANDTECH, INC.
FB NO. P–6331

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA
DRAINAGE AND PAVING
IMPROVEMENTS
CONCRETE PAVEMENT DETAILS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410040–0001–3	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 219 OF 227	

DISCLAIMER:
THE USE OF THIS STANDARD IS GOVERNED BY THE TEXAS ENGINEERING PRACTICE ACT. THE DESIGN REQUIREMENTS ON THIS STANDARD DO NOT PURPORT TO ADDRESS ALL OF THE SAFETY CONCERNS ASSOCIATED WITH THEIR USE. THE ENGINEER OR DESIGNER IS RESPONSIBLE FOR THE SAFE DESIGN AND ADEQUACY OF ALL SITE DESIGNS AND CONSTRUCTION DRAWINGS PREPARED UNDER THIS STANDARD. ACCESS TO AND USE OF THIS STANDARD IS AT THE USER'S SOLE RISK. WITHOUT LIMITING THE FOREGOING, THE USER ACKNOWLEDGES AND AGREES THAT THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE. WARRANTY OF ANY KIND IS MADE BY THE CITY OF HOUSTON FOR ANY PURPOSES WHATSOEVER. THE CITY OF HOUSTON ASSUMES

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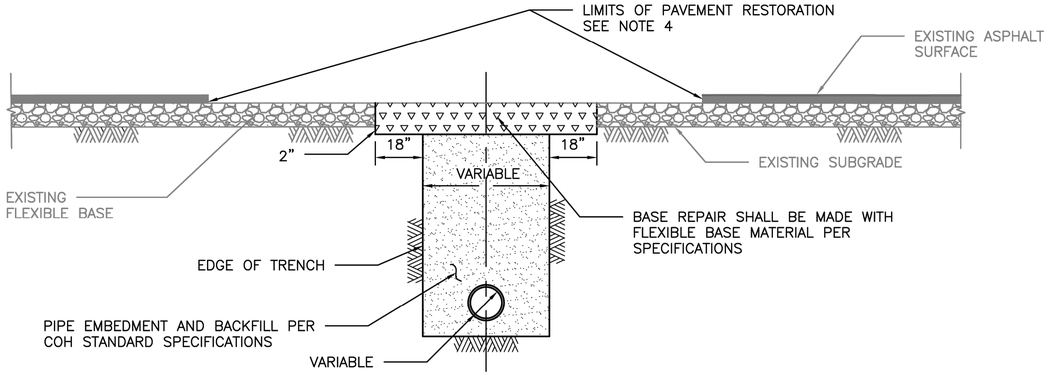
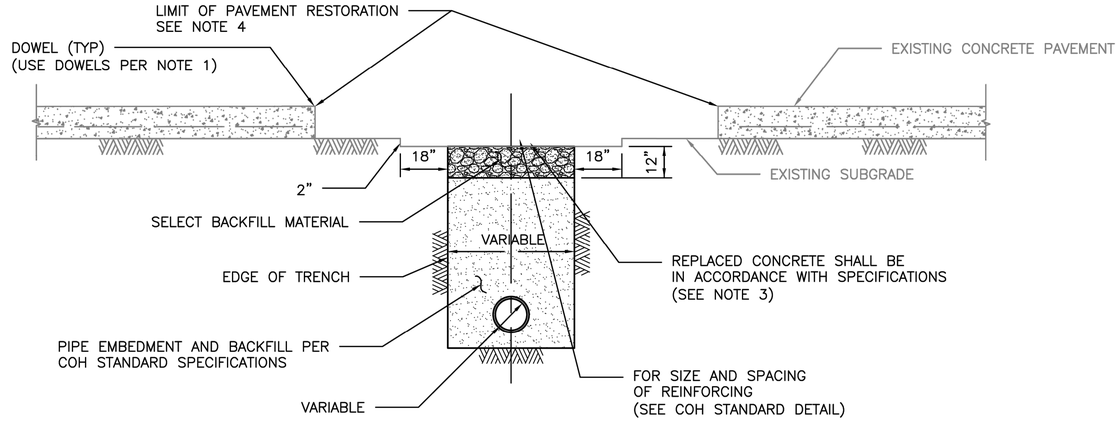


ELEVATION A
REPAIR OF FLEXIBLE BASE PAVEMENT

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.



ELEVATION B
REPAIR OF REINFORCED CONCRETE PAVEMENT

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CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

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

APPROVED BY:

DocuSigned by: Suhail Kanwar 9EF8B0C641F6478...
CITY ENGINEER

DocuSigned by: Carol Haddock A93C410B72B3453...
DIRECTOR OF HPW

DocuSigned by: KHANG NGUYEN 95A29EFDA75B4CD...
CITY TRAFFIC ENGINEER

EFF DATE: NOV–27–2023 | DWG NO: 02951–04

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

ENTECH CIVIL ENGINEERS, INC.
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281–945–0069
TX FIRM NUMBER: F–6932
SURVEYED BY: LANDTECH, INC.
FB NO. P–6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA
DRAINAGE AND PAVING
IMPROVEMENTS
PAVEMENT REPAIR DETAIL FOR
STREET CUTS

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410040–0001–4	
DRAWING SCALE	
NOT TO SCALE	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 220 OF 227	

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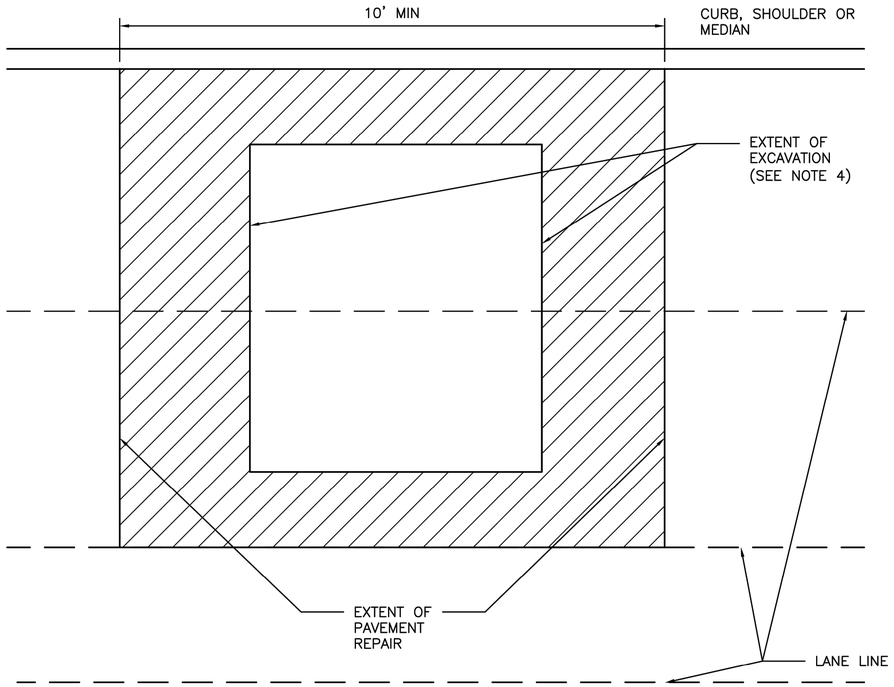

NOTES:

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.

DISCLAIMER:
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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:

CITY ENGINEER	DIRECTOR OF HPW
DocuSigned by: Suhail Kanwar 9EF8B0C641F5478...	DocuSigned by: Carol Haddock A93C410B72B3453...
CITY TRAFFIC ENGINEER	
DocuSigned by: KHANG NGUYEN 95A29EFDA75B4CD...	

EFF DATE: NOV–27–2023 | DWG NO: 02951–03

NO.	DATE	REVISION	APP.
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX
	MM/DD/YY	BRIEF DESCRIPTION	XXX

ENTECH CIVIL ENGINEERS, INC
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281–945–0069
TX FIRM NUMBER: F–6932

ENTECH CIVIL ENGINEERS INC. F-6932
STATE OF TEXAS
RODRIGO M. GUADARRAMA
111437
LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

SURVEYED BY: LANDTECH, INC.
FB NO. P–6331

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

STREET CUT FOR ASPHALT PAVEMENT REPLACEMENT RESTORATION PAVEMENT

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
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CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE, P.E.	
SHEET NO. 221 OF 227	

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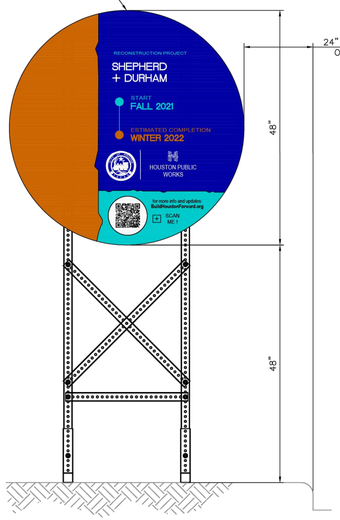
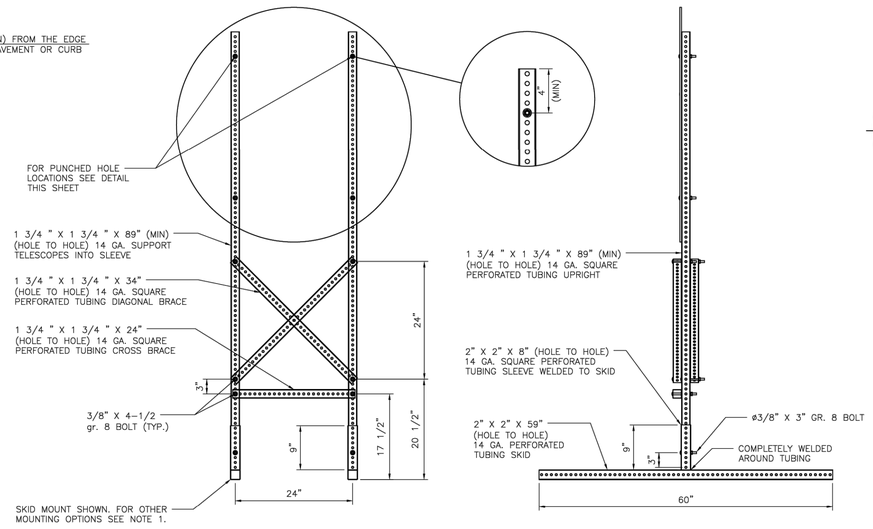


FRONT VIEW

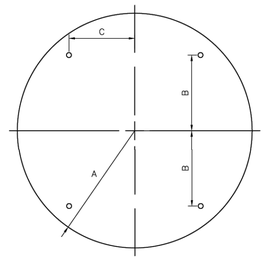
PROJECT SIGN – 48"



FRONT VIEW

SIDE VIEW

SKID MOUNTED SUPPORTS FOR 48" PROJECT SIGN



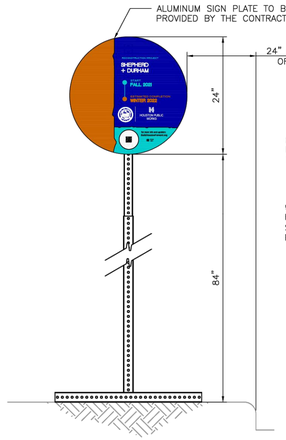
CIRCLE

A	B	C	T
24"	15"	12"	0.080"

48" SIGN PLATE HOLE DETAIL

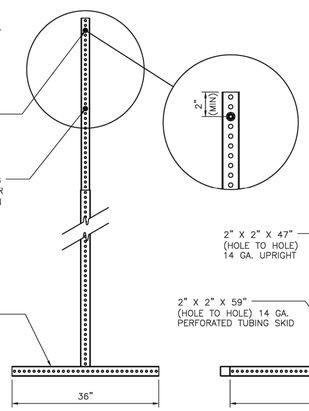
NOTES:

1. ALLOWABLE POST INSTALLATION METHODS ARE: CONCRETE FOOTING, SURFACE MOUNTING, SKID MOUNTING AND PILE DRIVEN POSTS.
2. FOR POST INSTALLATION WITH CONCRETE FOOTING, REFER TO DETAIL 01554–01.
3. FOR SURFACE MOUNTED POST INSTALLATION, REFER TO DETAIL 01554–02.
4. FOR SKID MOUNTING REQUIREMENTS REFER TO SPECIFICATION 01582.
5. PILE DRIVEN POSTS MUST BE DRIVEN TO A MINIMUM DEPTH OF 4–FEET INTO EXISTING GROUND.
6. LAYOUT, TEXT SIZE, AND OVERALL DESIGN OF THE SIGN WILL BE THE RESPONSIBILITY OF THE BUILD HOUSTON COORDINATOR.
7. ALL SIGN POSTS, SIGN TUBING, AND SIGN FASTENERS SHALL BE GALVANIZED STEEL PER SPECIFICATION 01582.

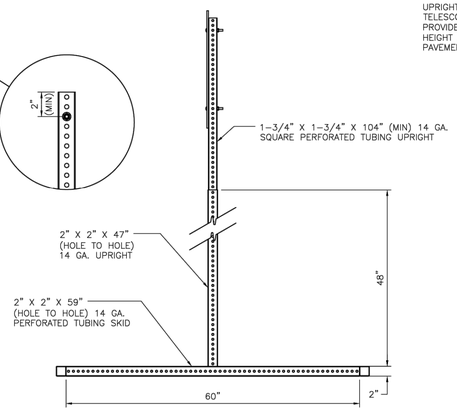


FRONT VIEW

PROJECT SIGN – 24"

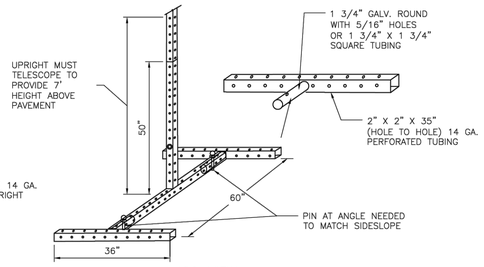


FRONT VIEW

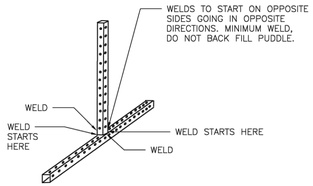


SIDE VIEW

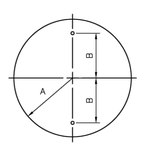
SKID MOUNTED SUPPORTS FOR 24" PROJECT SIGN



ISO VIEW



ISO VIEW



A	B	C
12"	8"	0.080"

24" SIGN PLATE HOLE DETAIL

APPROVED BY:	APPROVED BY:
DocuSigned by: Sulad Kanwar 8EFB8BDB4F5A7B...	DocuSigned by: Carl Haddock A3DCF16B7B53453...
CITY ENGINEER	DIRECTOR OF HOUSTON PUBLIC WORKS
EFF DATE: NOV–27–2023	DWG NO: 01582–01

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

CONSTRUCTION SIGN BUILD HOUSTON FORWARD

DRAWING SCALE

NOT TO SCALE

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CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 222 OF 227	

ENTECH CIVIL ENGINEERS, INC.
15021 KATY FREEWAY, STE. 500
HOUSTON, TX. 77094
281–945–0069
TX FIRM NUMBER: F–6932
SURVEYED BY: LANDTECH, INC.
FB NO. P–6331

ENTECH CIVIL ENGINEERS INC. F-6932 STATE OF TEXAS RODRIGO M. GUADARRAMA 111437 LICENSED PROFESSIONAL ENGINEER
Rodrigo Guadarrama 3/9/2026

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

CONSTRUCTION SIGN

NO.	DATE	REVISION	APP.

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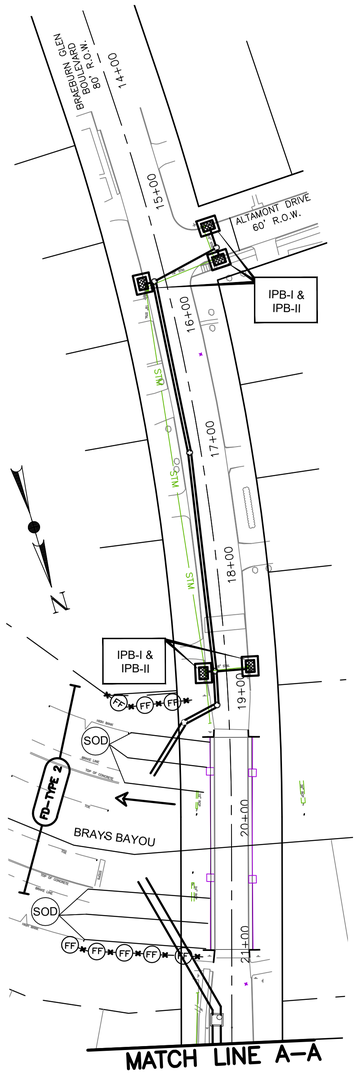

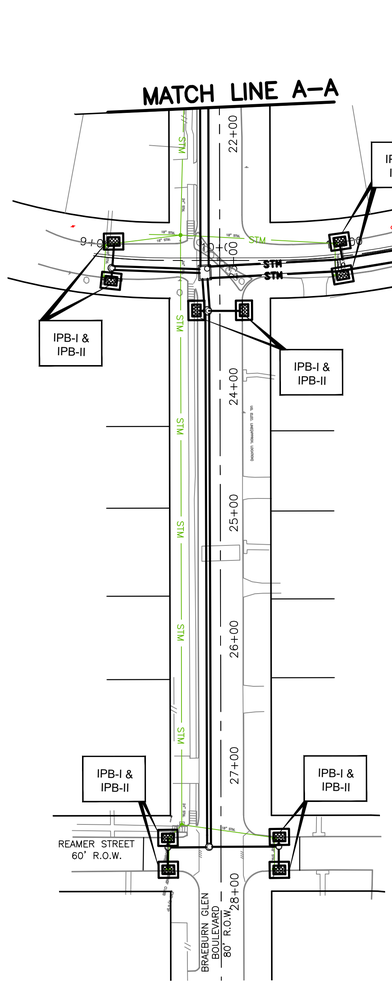

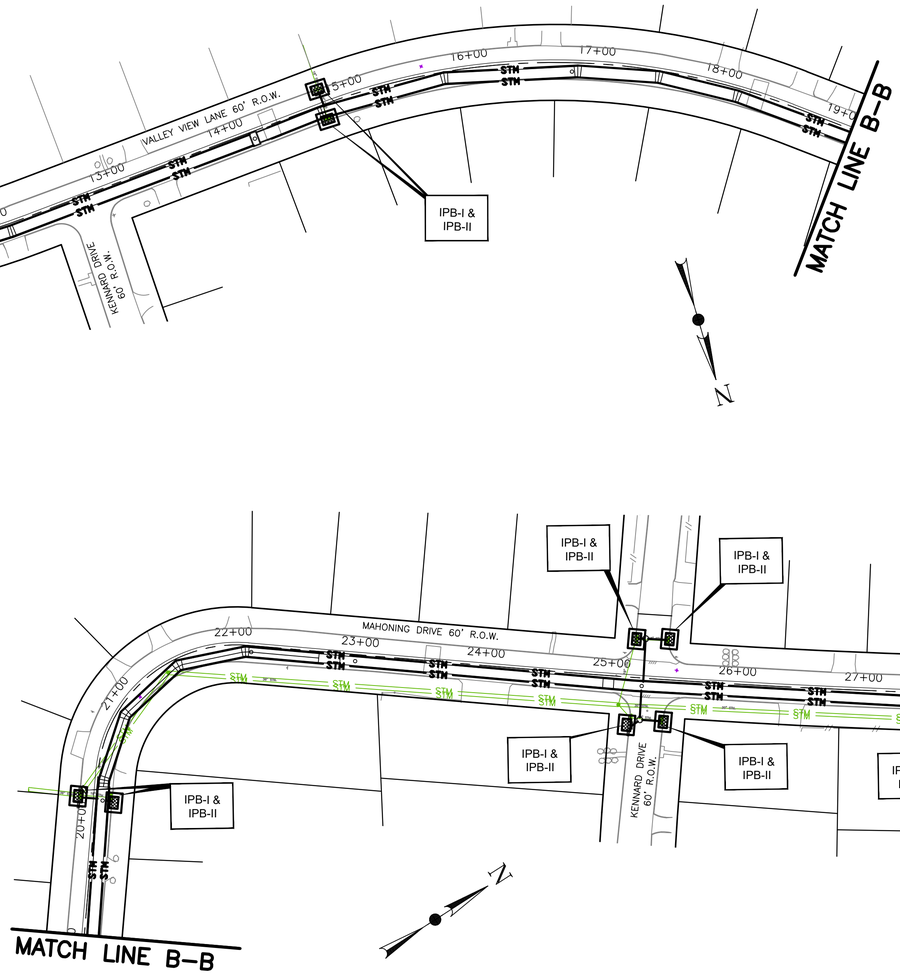

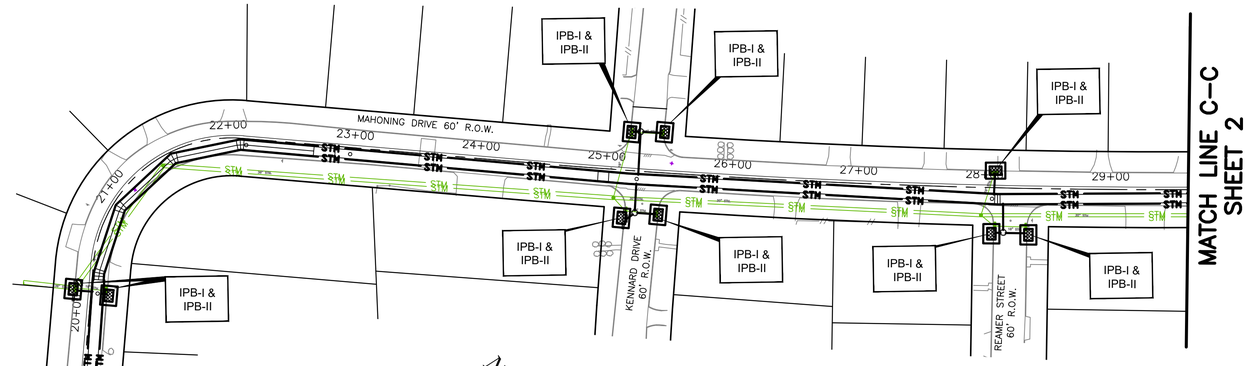

LEGEND

IPB-I	INLET PROTECTION BARRIER STAGE I
IPB-II	INLET PROTECTION BARRIER STAGE II
SCA	STABILIZED CONSTRUCTION ACCESS
IP	INTERCEPTOR STRUCTURE & INLET PROTECTION
SOD	SODDING
FD-2	ROCK FILTER DAM
	FLOW DIRECTION
FF	FILTER FABRIC FENCE

NO.	DATE	REVISION	APP.

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 SLOPE IS DISTURBED BY EXCAVATION ON BACKFILLING OPERATIONS, SUCH AREAS SHALL BE REPLACED BY SEEDING OR SODDING. SLOPES 4:1 OR STEEPER SHALL BE REPLACED BY BLOCK SODDING.
7. STABILIZED CONSTRUCTION ACCESS(SCA) LOCATION TO BE DETERMINED BY THE CONTRACTOR IN-FIELD. SCA LOCATION WILL CHANGE AS THE CONSTRUCTION PROGRESSES.
8. LOCATION OF PROP. CONCRETE TRUCK WASHOUT AREA IS TO BE DETERMINED BY CONTRACTOR IN-FIELD.

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

SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED
PROFESSIONAL ENGINEER
2/20/26

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

STORMWATER POLLUTION PREVENTION PLAN LAYOUT
SHEET 1 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
1"=60'	
CITY OF HOUSTON PM	
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SHEET NO. 223 OF 227	

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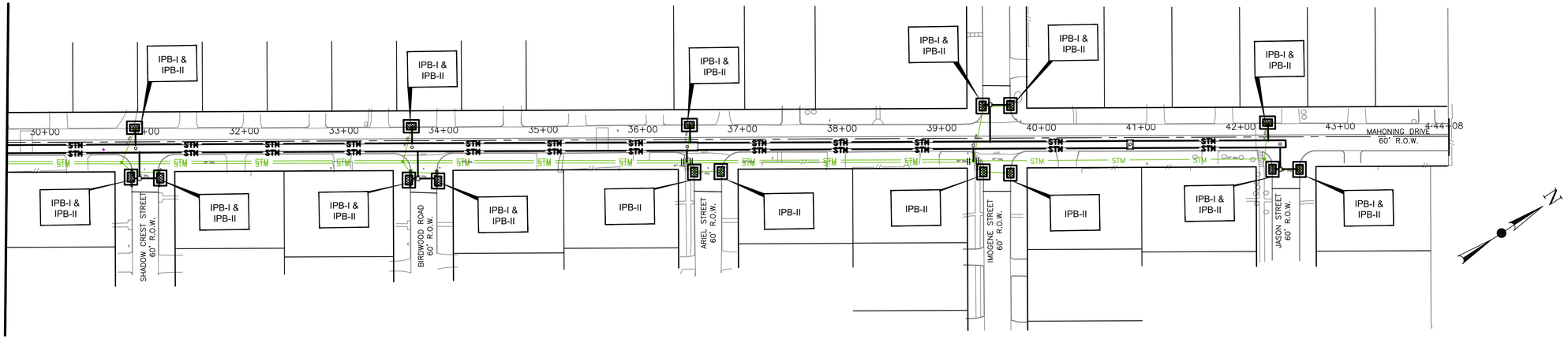
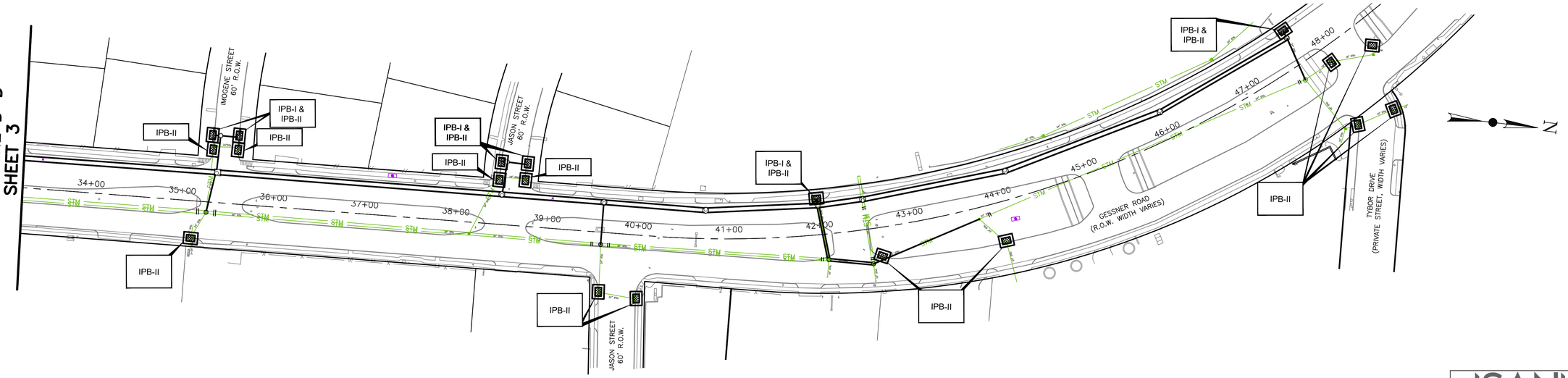
NO.	DATE	REVISION	APP.

MATCH LINE C–C SHEET 1



MATCH LINE D–D SHEET 3



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 SLOPE IS DISTURBED BY EXCAVATION ON BACKFILLING OPERATIONS, SUCH AREAS SHALL BE REPLACED BY SEEDING OR SODDING. SLOPES 4:1 OR STEEPER SHALL BE REPLACED BY BLOCK SODDING.
7. STABILIZED CONSTRUCTION ACCESS(SCA) LOCATION TO BE DETERMINED BY THE CONTRACTOR IN–FIELD. SCA LOCATION WILL CHANGE AS THE CONSTRUCTION PROGRESSES.
8. LOCATION OF PROP. CONCRETE TRUCK WASHOUT AREA IS TO BE DETERMINED BY CONTRACTOR IN–FIELD.

LEGEND

IPB-I	INLET PROTECTION BARRIER STAGE I
IPB-II	INLET PROTECTION BARRIER STAGE II
SCA	STABILIZED CONSTRUCTION ACCESS
IP	INTERCEPTOR STRUCTURE & INLET PROTECTION
SOD	SODDING
FD-2	ROCK FILTER DAM
	FLOW DIRECTION
FF	FILTER FABRIC FENCE

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

SURVEYED BY: LANDTECH, INC.
FB NO. P–6331

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
2/20/26

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

STORMWATER POLLUTION PREVENTION PLAN LAYOUT SHEET 2 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M–410040–0001–3	
DRAWING SCALE	
1"=60'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 224 OF 227	

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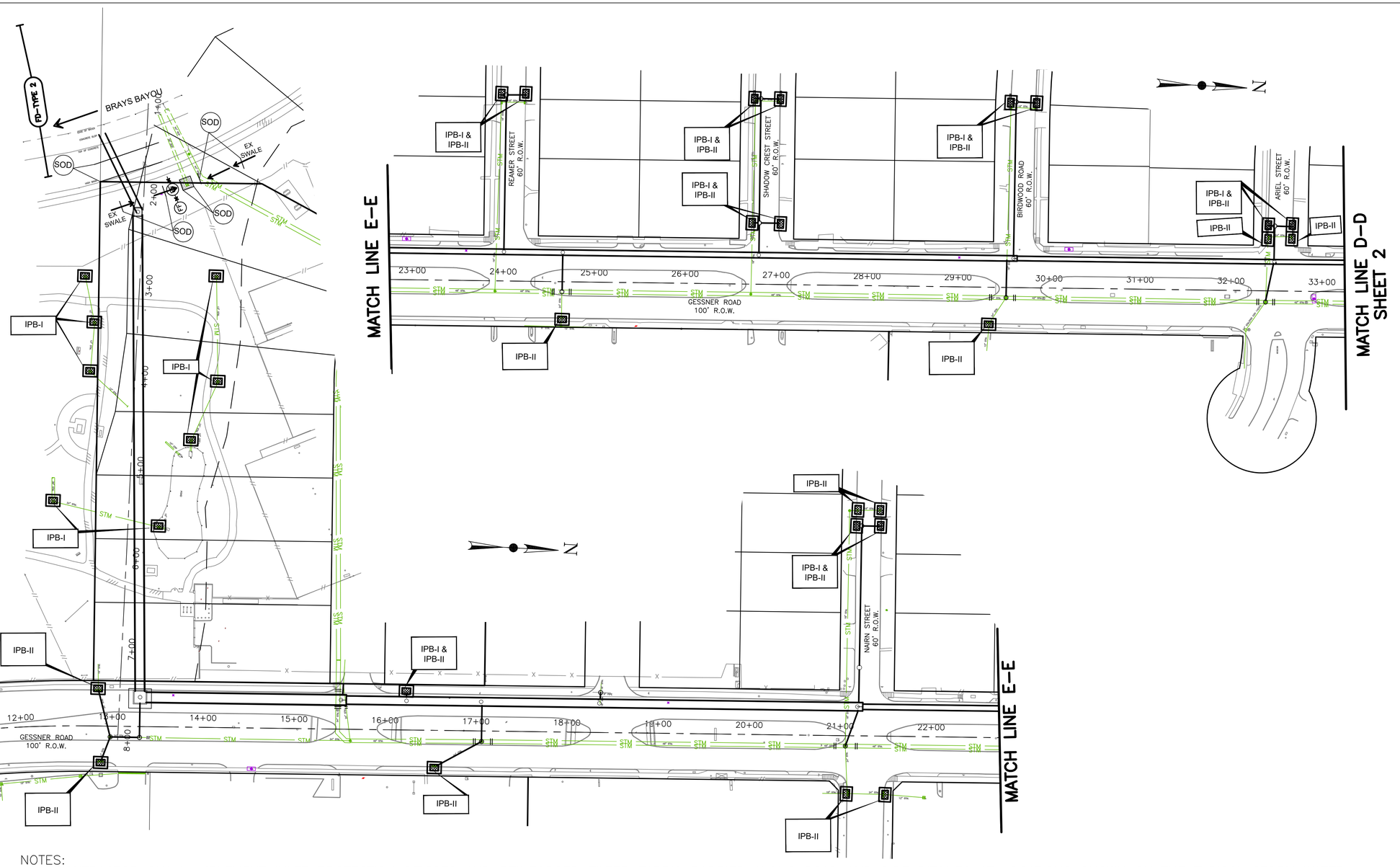

LEGEND

- IPB-I — INLET PROTECTION BARRIER STAGE I
- IPB-II — INLET PROTECTION BARRIER STAGE II
- SCA — STABILIZED CONSTRUCTION ACCESS
- IP — INTERCEPTOR STRUCTURE & INLET PROTECTION
- SOD — SODDING
- FD-2 — ROCK FILTER DAM
- FLOW DIRECTION
- FF — FILTER FABRIC FENCE

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.
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CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

STORMWATER POLLUTION PREVENTION PLAN LAYOUT
SHEET 3 OF 3

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
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DRAWING SCALE	
1"=60'	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 225 OF 227	

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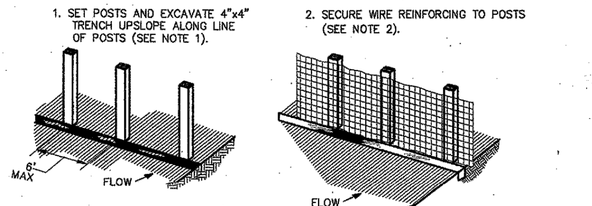
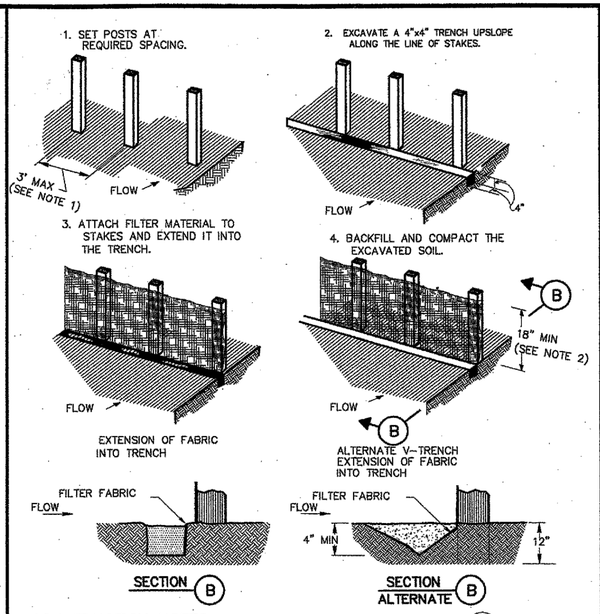


CONSTRUCTION NOTES:

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

×— (RFB) —× SYMBOL

REINFORCED FILTER FABRIC BARRIER

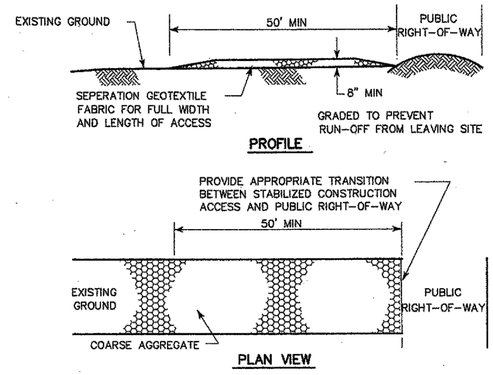


CONSTRUCTION NOTES:

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

×— (FF) —× SYMBOL

FILTER FABRIC BARRIER

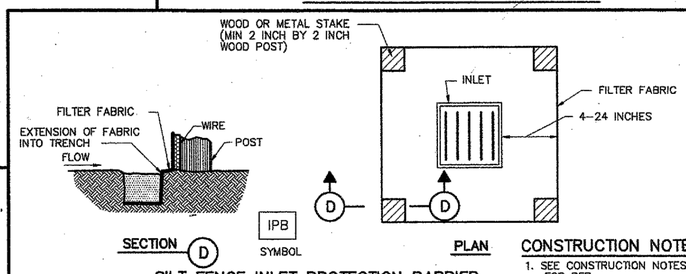


CONSTRUCTION NOTES:

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

SC SYMBOL

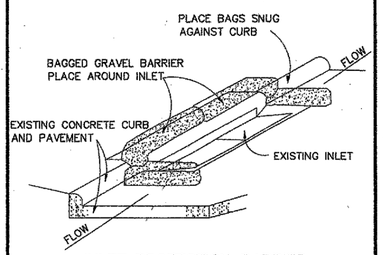
STABILIZED CONSTRUCTION ACCESS



SILT FENCE INLET PROTECTION BARRIER

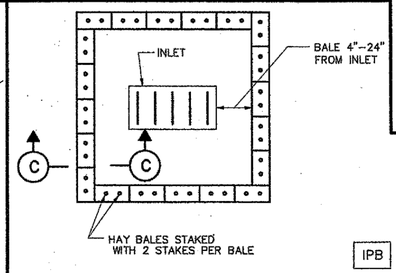
CONSTRUCTION NOTE:

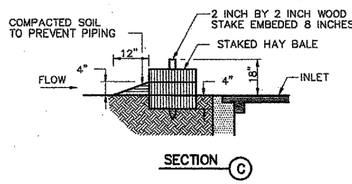
1. SEE CONSTRUCTION NOTES FOR RFB.



INLET PROTECTION BARRIER

(FOR STAGE II INLETS)
BAGGED GRAVEL BARRIER





HAY BALE INLET PROTECTION BARRIER

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

STORM WATER POLLUTION PREVENTION PLAN DETAILS

(NOT TO SCALE)

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

EFF DATE: JULY-01-2010
DWG NO: 01571-01

NO.	DATE	REVISION	APP.

ISANI
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SURVEYED BY: LANDTECH, INC.
FB NO. P-6331

STATE OF TEXAS
RAHUL B. MENON
130533
LICENSED PROFESSIONAL ENGINEER
2/20/26

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

BRAEBURN GLEN AREA DRAINAGE AND PAVING IMPROVEMENTS

STORMWATER POLLUTION PREVENTION PLAN DETAILS CITY OF HOUSTON

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
M-410040-0001-3	
DRAWING SCALE	
NTS	
CITY OF HOUSTON PM	
SUPUN ILANGAMUDALIGE	
SHEET NO. 226 OF 227	

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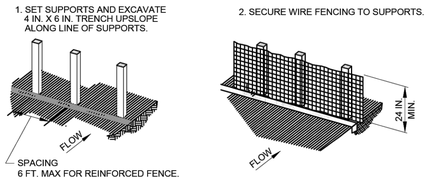
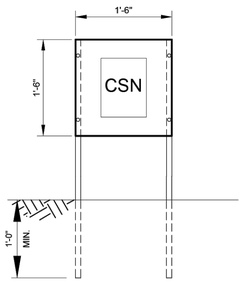


NOTE:
1. SEE SPECIFICATION SECTION NO. 02361-SILT FENCES.

RSF — REINFORCED SILT FENCE
SYMBOL

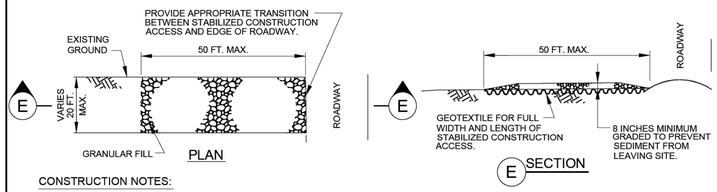
REINFORCED SILT FENCE



NOTE:
CONSTRUCT IN ACCORDANCE WITH HCFCD SPECIFICATION SECTION 01580 - PROJECT SIGNS.

CSN HOLDER

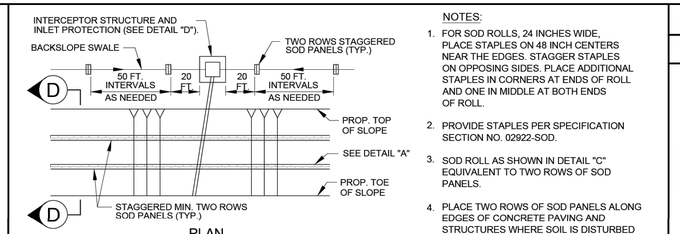
SWPPP / BMP SIGN AND CONSTRUCTION SITE NOTICE HOLDER DETAILS



CONSTRUCTION NOTES:
1. SEE SPECIFICATION SECTION NO. 02365-STABILIZED CONSTRUCTION ACCESS.

STABILIZED CONSTRUCTION ACCESS

SCA — SYMBOL



NOTES:
1. FOR SOD ROLLS, 24 INCHES WIDE, PLACE STAPLES ON 48 INCH CENTERS NEAR THE EDGES. STAGGER STAPLES ON OPPOSING SIDES. PLACE ADDITIONAL STAPLES IN CORNERS AT ENDS OF ROLL AND ONE IN MIDDLE AT BOTH ENDS OF ROLL.
2. PROVIDE STAPLES PER SPECIFICATION SECTION NO. 02922-SOD.
3. SOD ROLL AS SHOWN IN DETAIL "C" EQUIVALENT TO TWO ROWS OF SOD PANELS.
4. PLACE TWO ROWS OF SOD PANELS ALONG EDGES OF CONCRETE PAVING AND STRUCTURES WHERE SOIL IS DISTURBED EXCEPT BELOW THE NORMAL WATER SURFACE.

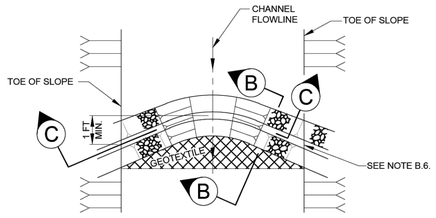
SOD — SYMBOL
IP — SYMBOL

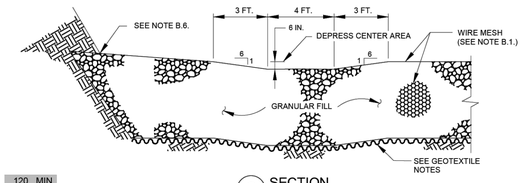
SODDING

FILTER DAM NOTES:

A. TYPES OF FILTER DAMS
1. TYPE 1 - NOT USED BY HCFCD
2. TYPE 2 (REINFORCED).
   a. HEIGHT - 18-36 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
   b. TOP WIDTH - 2 FEET (MINIMUM).
   c. SLOPES - 2:1 (MAXIMUM).
3. TYPE 3 - NOT USED BY HCFCD
4. TYPE 4 (GABION)
   a. HEIGHT - 30 INCHES (MINIMUM). MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
   b. TOP WIDTH - 2 FEET (MINIMUM).
5. TYPE 5. AS SHOWN ON THE PLANS.

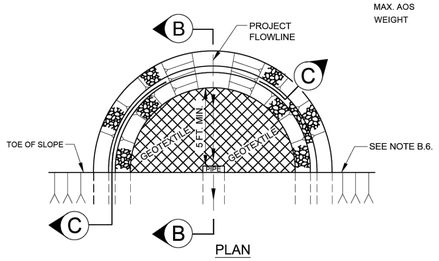
B. CONSTRUCT FILTER DAMS ACCORDING TO THE FOLLOWING CRITERIA UNLESS SHOWN OTHERWISE ON THE PLANS.
1. TYPE 2 AND 3 FILTER DAMS: SECURE WITH 20 GAUGE GALVANIZED WOVEN WIRE MESH WITH 1 INCH DIAMETER HEXAGONAL OPENINGS.
2. GRANULAR FILL:
   a. PLACE ON MESH TO HEIGHT AND SLOPES SHOWN ON PLANS OR AS SPECIFIED BY THE ENGINEER.
   b. 3-5 INCHES FOR ROCK FILTER DAM TYPES 2, AND 4. REFER TO GRANULAR FILL IN SPECIFICATION SECTION NO. 02378-RIPRAP AND GRANULAR FILL.
3. WIRE MESH: FOLD AT UPSTREAM SIDE OVER GRANULAR FILL AND TIGHTLY SECURE TO ITSELF ON THE DOWNSTREAM SIDE USING WIRE TIES OR HOG RINGS.
4. IN STREAMS: SECURE OR STAKE MESH TO STREAM BED PRIOR TO AGGREGATE PLACEMENT.
5. SEE SPECIFICATION SECTION NO. 02364-FILTER DAMS.
6. EMBED ONE FOOT MINIMUM INTO SLOPE AND AT SLOPE RAISE ONE FOOT HIGHER THAN CENTER OF DEPRESSED AREA.

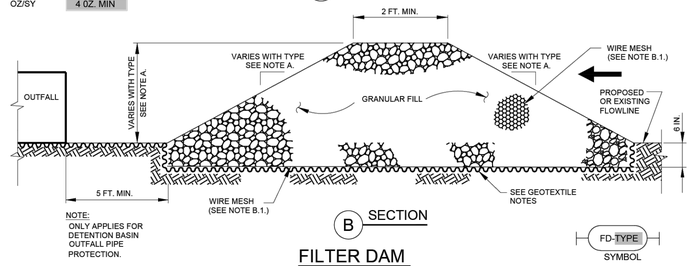




GEOTEXTILE NOTES:

MIN. AOS	SIEVE NO.	120 MIN
MAX. AOS	SIEVE NO.	50 MAX
WEIGHT	OZ/SY	4 OZ. MIN





NOTE:
ONLY APPLIES FOR DETENTION BASIN OUTFALL PIPE PROTECTION.

FILTER DAM AT DETENTION BASIN OUTFALL PIPE

FILTER DAM

FD-TYPE — SYMBOL

THIS DETAIL SHEET HAS BEEN PREPARED FOR USE ON HCFCD PROJECTS OR PROJECTS TO BE MAINTAINED BY THE HCFCD WHEN COMPLETED BY OTHERS. AN ENGINEER WHO INCORPORATES THE DETAILS ON THIS SHEET BECOMES RESPONSIBLE FOR ITS USE IN THE END PRODUCT IN ACCORDANCE WITH RULE 137.33 (b) AND (c) OF THE TEXAS BOARD OF PROFESSIONAL ENGINEERS.

P.E. SEAL AND SIGNATURE

ENGINEER - CONFIRM, CHANGE, OR FILL IN.

NO.	DATE	DESCRIPTION	REV	APPR

PROJECT ID#

PROJECT TITLE

STORMWATER POLLUTION PREVENTION DETAILS

PREPARED:
CHECKED:
APPROVED:

COMPANY INFORMATION AND LOGO GOES HERE

HARRIS COUNTY FLOOD CONTROL DISTRICT
9900 Northwest Freeway
Houston, Texas 77092

DATE: 10-23-2018
SCALE: NTS

SHEET NUMBER
OF

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

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HARRIS COUNTY FLOOD CONTROL DISTRICT

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SHEET NO. 227 OF 227	

				APP.
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				DATE
				NO.

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