

# WASTEWATER IMPROVEMENTS PACKAGE BROWNSVILLE, TEXAS



## DOWNTOWN WATER AND WASTEWATER IMPROVEMENTS PROJECT 2

HAZEN NO.: 60405-005  
OCTOBER 2023

OWNER: BROWNSVILLE PUBLIC UTILITIES BOARD  
1425 ROBINHOOD DRIVE  
BROWNSVILLE, TEXAS 78521  
PHONE: (956) 983-6100

DISCLAIMER: THE SEAL APPEARING ON THESE CONSTRUCTION PLANS WERE AUTHORIZED BY:  
ANA MARIA GARCIA SANCHEZ, P.E. NO. 146046  
ON  
ALTERATION OF SEALED DOCUMENTS WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE  
ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT. THE RECORD COPY OF  
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HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213  
TBPELS FIRM REGISTRATION NO F-13618

ENGINEER OR RECORD: ANA MARIA GARCIA SANCHEZ, P.E. NO. 146046  
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10/19/2023

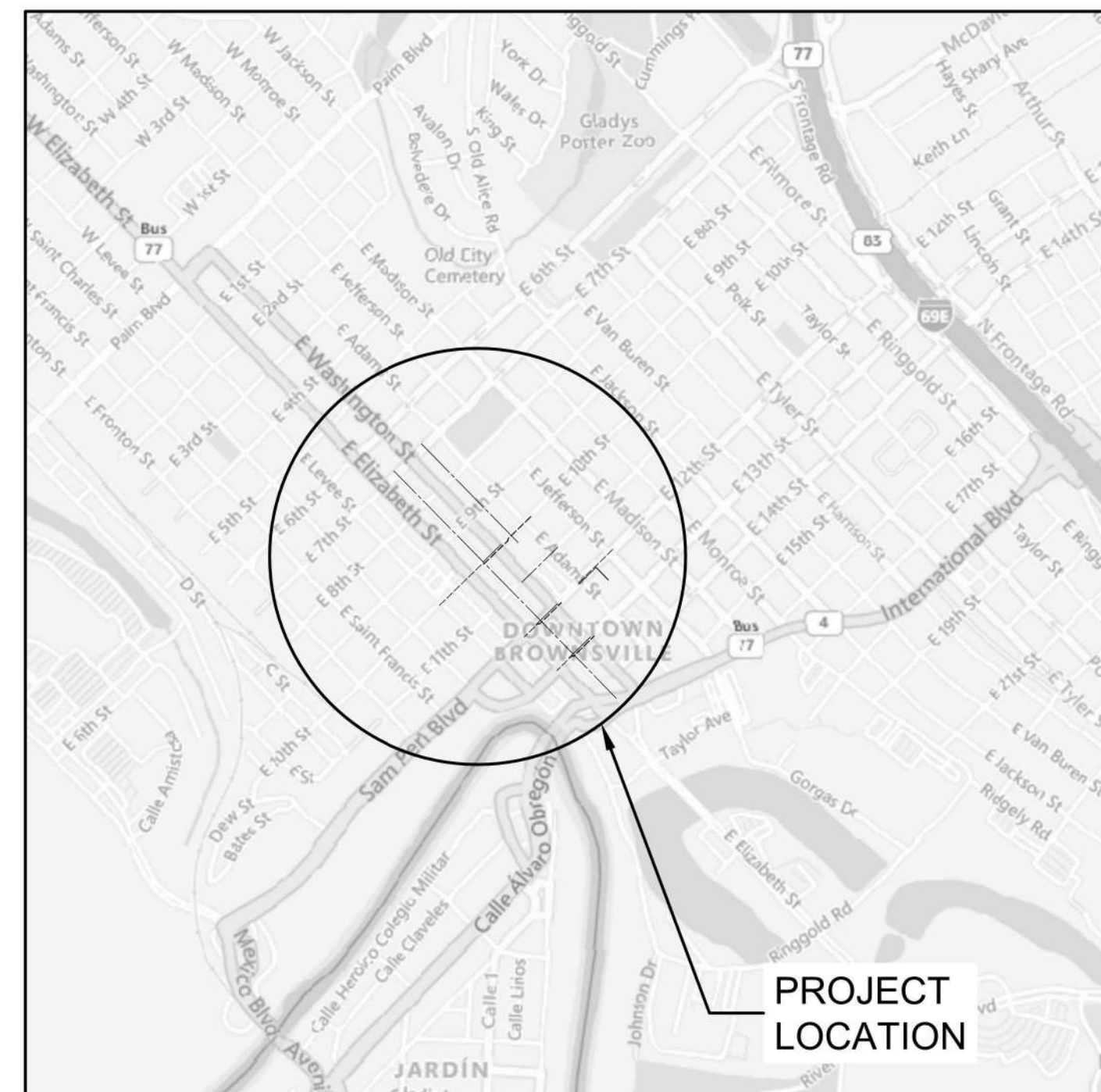
BPUB ENGINEER'S STATEMENT: THE ABOVE IDENTIFIED PLANS AND SPECIFICATIONS HAVE BEEN REVIEWED AND FOUND TO BE IN  
COMPLIANCE WITH THE APPLICABLE ENGINEERING PROVISIONS (WATER AND WASTEWATER  
IMPROVEMENTS) OF THE MUNICIPAL CODE OF THE CITY OF BROWNSVILLE AND BPUB WATER AND  
WASTEWATER STANDARD DETAILS. ISSUANCE OF THIS APPROVAL SHALL NOT BE CONSTRUCTED AS  
APPROVAL OR CONCEPT FOR THE CONSTRUCTION DETAILS OF THE PROPOSED IMPROVEMENTS  
AND SHALL NOT IN ANY WAY RELEASE THE DEVELOPER AND THE DESIGN ENGINEER FROM LIABILITY  
FOR THE ADEQUACY OF THE DESIGN NOR FROM LIABILITY CAUSED BY AND RESULTING FROM THE  
CONSTRUCTION OF IMPROVEMENTS AS PROVIDED IN THE ABOVE SPECIFIED DOCUMENTS

DATE: \_\_\_\_\_  
MARIE C. LEAL, P.E.  
DIRECTOR OF SPECIAL PROJECTS AND WATER/WASTEWATER ENGINEERING PLANNING &  
OPERATIONS FOR BROWNSVILLE PUBLIC UTILITIES BOARD

BPUB BOARD OF DIRECTORS:

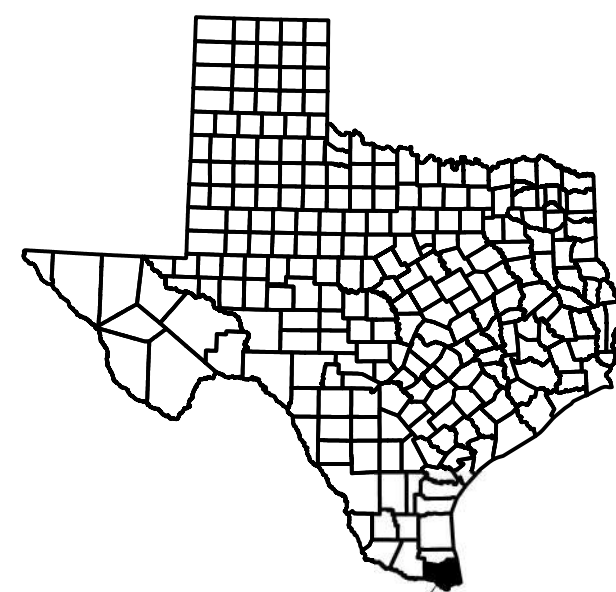
ARTHUR "ART" RENDON	CHAIR
JOSEPH L. HOLLMAN, Ph.D.	VICE CHAIR
DAISY ZAMORA, Ph.D.	SECRETARY/TREASURER
GERARDO MARTINEZ	MEMBER
PATRICIO SAMPAYO	MEMBER
ALEJANDRO "ALEX" NAJERA	MEMBER
JOHN F. COWEN, Jr.	EX-OFFICIO MEMBER, ELECTED

LEGEND  
 WATER IMPROVEMENTS  
 WASTEWATER IMPROVEMENTS



LOCATION MAP  
NOT TO SCALE

BROWNSVILLE, TEXAS  
CAMERON COUNTY



HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213  
TBPELS FIRM REGISTRATION NO. F-13618

ISSUED FOR BID

**SHEET TITLE LIST**

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C-18	SS-2 STA 20+00 TO END
C-19	SS-3 STA 10+00 TO END
C-20	SS-4 STA 10+00 TO END
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DT-06	MISCELLANIOUS DETAILS

**MASTER LEGEND**

	EX BOLLARD/POST
	EX COMMUNICATIONS BOX
	EX COMMUNICATIONS MANHOLE
	EX ELECTRICAL GUY WIRE
	EX ELECTRIC LIGHT POLE
	EX ELECTRICAL POWERPOLE
	EX ELECTRICAL POWERPOLE WITH CROSS BRACING
	EX ROAD SIGNAGE
	EX WATER LINE
	EX FIBER OPTIC CABLE
	EX OVERHEAD COMMUNICATION
	EX OVERHEAD ELECTRIC
	EX GAS LINE
	EX UNDERGROUND TELEPHONE
	EX STORM DRAIN LINE
	EX SANITARY SEWER LINE
	EX SANITARY SEWER MANHOLE
	EX ELECTRICAL BOX
	EX ELECTRICAL METER
	EX TELEPHONE BOX
	EX GAS METER
	EX TELEPHONE MANHOLE
	EX SEWER CLEANOUT
	EX WATER VAULT
	EX WATER VALVE
	EX WATER METER
	EX MAJOR CONTOUR
	EX MINOR CONTOUR
	EX DECORATIVE PAVERS
	EX SIDEWALK
	EX ASPHALT PAVEMENT
	EX CONCRETE PAVEMENT
	EX TREE
	PROP SANITARY SEWER LINE
	PROP SANITARY SEWER MANHOLE
	PROP SANITARY SEWER CLEAN-OUT
	PROP WATER LINE
	PROP WATER VALVE
	PROP WATER METER
	PROP WATER VAULT
	PROP DECORATIVE PAVERS
	PROP SIDEWALK
	PROP ASPHALT PAVEMENT
	PROP CONCRETE PAD/PAVEMENT

**ABBREVIATIONS**

BLD	BUILDING
BOL	BOLLARD
CL	CENTERLINE
CO	CLEAN OUT
COL	COLUMN
CONC	CONCRETE
CP	CONTROL POINT
CSS	CEMENT STABILIZED SAND
DI	DROP INLET
EL	SPOT ELEVATION
EM	ELECTRIC METER
FF	FINISHED FLOOR
FH	FIRE HYDRANT
FIP	FOUND IRON PIPE
FNL	FOUND NAIL
FMAG	FOUND "MAG" NAIL
FRP	FIBERGLASS REINFORCED PLASTIC (FIBERGLASS)
FXIC	FOUND "X" IN CONCRETE
GL	GROUND LIGHT
GM	GAS METER
GTS	GAS TEST
GUY	GUY WIRE
HH	HAND HOLE
HP	HIGH POINT
IRF	IRON ROD FOUND
LP	LOW POINT
OHE	OVERHEAD ELECTRIC
PP	POWER POLE
PVI	POINT OF INTERSECTION
SCPS	SET COTTON PICKER SPINDLE
SDMH	STORM DRAIN MANHOLE
SMAG	SET "MAG" NAIL
SS	SANITARY SEWER
SSMH	SANITARY SEWER MANHOLE
SV	SPRINKLER VALVE
SXIC	SET "X" IN CONCRETE
TBM	TEMPORARY BENCH MARK
UNK	UNKNOWN
WM	WATER METER
WV	WATER VALVE

File: C:\USERS\ZCROSSLEY\DRAWING\HAZEN AND SAWYER\60405-005-DOWNTOWN WATER AND WW IMPROVEMENT FILES\01\_DESIGNGENERAL\60405-005-G-INDEX.dwg Saved by ZCROSSLEY 10/12/2023 2:14 PM PLOT DATE: 10/19/2023 11:10 AM BY: ZCROSSLEY

PROJECT ENGINEER:	A. GARCIA					
DESIGNED BY:	C. JONES					
DRAWN BY:	Z. CROSSLEY					
CHECKED BY:	J. LONDON					
ISSUED FOR BID	10/19/23	AMGS	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0	1/2"	1"
REV	ISSUED FOR	DATE	BY			



**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

GENERAL  
SHEET INDEX, LEGEND, AND ABBREVIATIONS

DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	

**GENERAL CONSTRUCTION NOTES:**

- ALL MATERIALS, WORKMANSHIP AND IMPROVEMENTS SHALL BE IN ACCORDANCE WITH ALL LOCAL CODES, INCLUDING THE STANDARD CONSTRUCTION DETAILS AND TECHNICAL SPECIFICATIONS FROM BROWNSVILLE PUBLIC UTILITIES BOARD (THE OWNER), CITY OF BROWNSVILLE, TEXAS DEPARTMENT OF TRANSPORTATION AND ALL OTHER GOVERNING AGENCIES.
- PRIOR TO BEGINNING CONSTRUCTION, THE OWNER OR THEIR AUTHORIZED REPRESENTATIVE SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE CONSULTING ENGINEER, CONTRACTOR, BROWNSVILLE PUB AND ALL AFFECTED PARTIES.
- PRE-CONSTRUCTION PHOTOGRAPHS SHALL BE TAKEN THAT SHOW EXISTING CONDITIONS OF THE SITE AND ADJOINING STRUCTURES TO REMAIN. PHOTOS SHALL INCLUDE DAMAGE TO FINISH SURFACES THAT MIGHT BE MISCONSTRUED AS DAMAGE CAUSED BY DEMOLITION OPERATIONS.
- THE CONTRACTOR SHALL HAVE A PERSON ON CALL 24 HOURS A DAY TO ADDRESS CONSTRUCTION AREA MAINTENANCE ITEMS, BYPASS PUMPING, TRAFFIC CONTROL, OR OTHER NEEDS NECESSARY FOR PUBLIC SAFETY. THIS PERSON SHALL HAVE AUTHORITY TO ACT ON BEHALF OF THE CONTRACTOR IN EMERGENCY CONDITIONS. THE PERSON SHALL BE STATIONED WITHIN 1/2 HOUR TRAVEL TIME FROM THE PROJECT SITE. THE PERSON SHALL BE IDENTIFIED IN WRITING PRIOR TO START OF CONSTRUCTION. THE ON-SITE REPRESENTATIVE SHALL HAVE ACCESS ALL EQUIPMENT AND MATERIAL AND HAVE FULL AUTHORITY NECESSARY TO CORRECT ANY PROBLEMS, DEFICIENCIES, OR EMERGENCIES WHICH MAY ARISE DURING NON-WORKING HOURS AND DURING THE ABSENCE OF THE SUPERINTENDENT.
- STANDARD WORK HOURS: THE STANDARD WORK HOURS FOR THE OWNER ARE 8:00 AM TO 5:00 PM, MONDAY THROUGH FRIDAY. SHOULD THE CONTRACTOR ELECT TO WORK ON SATURDAY, SUNDAYS OR HOLIDAYS, THEY SHALL BE RESPONSIBLE FOR PAYING OVERTIME CHARGES FOR THE OWNERS PERSONNEL INVOLVED. THESE CHARGES WILL BE AT COST AND WILL BE CALCULATED EITHER AT TIME AND A HALF OR DOUBLE TIME, AS APPLICABLE TO THE PARTICULAR DAY BEING WORKED. PRE-APPROVAL SHALL BE OBTAINED FROM BROWNSVILLE PUB PRIOR TO COMMENCING ANY OVERTIME WORK. ANY WORK DONE OUTSIDE THE STANDARD WORKDAY, WITHOUT PRIOR AUTHORIZATION, SHALL BE CONSIDERED UNDER UNAUTHORIZED WORK. THE CONTRACTOR IS REQUIRED TO PAY THE OVERTIME WAGES OF THE OWNER INSPECTORS THAT WORK OVERTIME MONDAYS THROUGH FRIDAYS AT TIME IN A HALF. THE CONTRACTOR IS RESPONSIBLE FOR THE OVERTIME WAGES OF THE OWNER INSPECTORS THAT WORK HOLIDAYS AT DOUBLE TIME. MINIMUM HOURS WILL BE BILLED TO CONTRACTOR FOR CALL OUTS OR FOR INSUFFICIENT NOTICE OF TWO (2) HOURS.
- THE CONTRACTOR SHALL VERIFY ALL HORIZONTAL AND VERTICAL DIMENSIONS AND THE LOCATION OF EXISTING AND PROPOSED PROJECT ELEMENTS PRIOR TO CONSTRUCTION. ANY DISCREPANCIES BETWEEN PLAN DIMENSIONS AND ACTUAL FIELD CONDITIONS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND OWNER. NO CONSTRUCTION ACTIVITY SHALL CONTINUE WITHOUT APPROVAL FROM THE OWNER.
- ALL MATERIALS AND LABOR, WHETHER SPECIFICALLY INDICATED ON PLANS OR NOT, WHICH ARE NECESSARY FOR THE PROPER INSTALLATION AND FUNCTION OF THE SYSTEM SHALL BE FURNISHED BY THIS CONTRACTOR.
- CONTRACTOR SHALL NOT PROCEED WITH ANY WORK INVOLVING A CHANGE IN PROJECT SCOPE, EQUIPMENT, MATERIALS OR COST WITHOUT FIRST HAVING OBTAINED ENGINEER'S AND/OR OWNER'S APPROVAL IN WRITING. IF APPROVAL HAS NOT BEEN OBTAINED IN WRITING PRIOR TO PROCEEDING WITH ANY CHANGE, CONTRACTOR WILL NOT BE REIMBURSED FOR SUCH CHANGE.
- THE CONTRACTOR SHALL PLAN SEQUENCE AND PERFORM ALL CONSTRUCTION ACTIVITY IN SUCH A MANNER THAT WILL PERMIT SAFE PEDESTRIAN AND VEHICULAR MOVEMENT.
- TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION SHALL BE IN ACCORDANCE WITH TXDOT AND CITY OF BROWNSVILLE SPECIFICATIONS. CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN, FOR APPROVAL BY THE OWNER, PRIOR TO CONSTRUCTION. THE TRAFFIC CONTROL PLAN SHALL BE PREPARED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF TEXAS. ALL TRAFFIC CONTROL / TRAFFIC SAFETY SHALL BE IN ACCORDANCE WITH THE LATEST MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) CRITERIA.
- CONTRACTOR SHALL PROVIDE PROTECTIVE DEVICES SUCH AS SIGNS, LIGHTS, SIGNALS, AND OTHER DEVICES, AS NEEDED FOR THE SAFETY OF THE PUBLIC AND WORKERS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION AND SAFETY OF THE WORK SITE, WORKERS, SUBCONTRACTORS, OTHER PERSONNEL ASSOCIATED WITH THE WORK, AND MATERIALS AND EQUIPMENT.
- THE DRAWINGS AND SPECIFICATIONS REPRESENT THE COMPLETED STRUCTURES/DESIGN. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES AND MEANS NECESSARY TO PROTECT PERSONS AND STRUCTURES DURING CONSTRUCTION. OBSERVATION BY THE ENGINEER OR THE OWNER DOES NOT INCLUDE REVIEW OF THESE MEASURES.
- THESE PLANS DO NOT EXTEND TO OR INCLUDE DESIGN OF SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR ITS EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE

- SEAL OF THE REGISTERED PROFESSIONAL ENGINEER(S) HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED IN THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS, INCLUDING THE PLANS AND SPECIFICATIONS REQUIRED BY THE HOUSE BILLS 662 AND 665 ENACTED BY THE TEXAS LEGISLATURE IN THE 70TH LEGISLATURE REGULAR SESSION.
- CONTRACTOR SHALL PROVIDE A SEQUENCE OF WORK AND PERFORM ASSOCIATED GRADING THAT PROVIDES POSITIVE OUTFALLS AT ALL TIMES.
- CONSTRUCTION STAKING AND SURVEYING SHALL BE PROVIDED BY THE CONTRACTOR AND AT CONTRACTOR'S EXPENSE. ALL DIMENSIONS ARE TO BACK OF CURB OR, WHERE NO CURB EXISTS, TO EDGE OF PAVEMENT UNLESS SHOWN OTHERWISE. ALL UTILITY DIMENSIONS AND STATIONS/COORDINATES ARE TO CENTER OF THE STRUCTURE UNLESS SHOWN OTHERWISE.
- CONTRACTOR TO COORDINATE WITH THE OWNER ON WORK SCHEDULES, TESTING, GENERAL INSPECTION, AND OPERATION AND LOCATION OF EXISTING LINES.
- THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING ALL CONSTRUCTION MATERIALS TESTING AND GENERAL INSPECTIONS. THE CONTRACTOR SHALL COORDINATE THROUGH THE OWNER'S DESIGNATED FIELD REPRESENTATIVE A MINIMUM OF 24-HOURS PRIOR TO TESTING OR INSPECTION. FAILURE TO BE PREPARED FOR TESTING MAY RESULT IN TRAVEL CHARGES.
- MATERIAL TESTING SHALL BE PROVIDED BY THE OWNER. RE-TEST TO BE AT CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL INSPECT ALL MATERIALS AT DELIVERY AND NOTIFY THE OWNER OF ANY DAMAGED OR QUESTIONABLE MATERIALS. ANY DAMAGED OR QUESTIONABLE MATERIAL INSTALLED WITHOUT PRIOR INSPECTION BY THE OWNER SHALL BE REMOVED AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL COORDINATE ANY REQUIRED TEMPORARY RELOCATION OF MAILBOXES WITH THE BROWNSVILLE POSTMASTER. FINAL LOCATION SHALL BE IN ACCORDANCE WITH THE LOCAL POST OFFICE REQUIREMENTS AT CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED.
- THE CONTRACTOR IS ENCOURAGED TO INSPECT AND DOCUMENT THE PRE-CONSTRUCTION CONDITION OF ALL PRIVATE DRIVEWAYS, MAILBOXES, PAVEMENT AREAS, SIDEWALKS, CURB AND GUTTER, FENCES AND ALL OTHER ITEMS TO BE AFFECTED BY PROPOSED CONSTRUCTION PRIOR TO COMMENCING.
- ANY DAMAGE TO EXISTING PAVEMENT OR EXISTING STRUCTURES SHALL BE REPAIRED TO PRECONSTRUCTION CONDITION OR BETTER AT CONTRACTOR'S EXPENSE. EXISTING STRUCTURES MAY INCLUDE BUT ARE NOT LIMITED TO INLETS, MANHOLES, POWER POLES, SIDEWALKS, CURB AND GUTTER, FENCES, SPRINKLER SYSTEMS, LAWNS OR PRIVATE PROPERTY IMPROVEMENTS.
- NO TREES SHALL BE REMOVED WITHOUT PERMISSION OF THE OWNER OR ENGINEER, UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL GIVE NOTICE TO ALL AUTHORIZED INSPECTORS, SUPERINTENDENTS, OR PERSONS IN CHARGE OF PRIVATE AND PUBLIC UTILITIES AFFECTED BY HIS OPERATIONS PRIOR TO COMMENCEMENT OF WORK. NOTIFY TEXAS ONE CALL FOR UTILITY LOCATIONS PRIOR TO ANY AND ALL EXCAVATIONS.
- CONTRACTOR TO EXERCISE EXTREME CAUTION WHEN WORKING NEAR EXISTING FACILITIES AND/OR UTILITIES. ALL DAMAGE TO BE REPAIRED AT CONTRACTOR'S EXPENSE. ALL COSTS FOR INTERRUPTION OF GAS, ELECTRICAL, COMMUNICATIONS AND/OR WATER SERVICE DUE TO CONTRACTOR'S WORK SHALL BE BORNE BY THE CONTRACTOR.
- INFORMATION ON EXISTING UTILITIES, AS SHOWN ON THESE PLANS, IS FROM BEST AVAILABLE INFORMATION OF RECORD AND SPOT FIELD LOCATIONS. ALTHOUGH EVERY EFFORT HAS BEEN MADE TO ACCURATELY DEPICT ALL UTILITIES, NOT ALL (PUBLIC AND PRIVATE) MAY BE SHOWN. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION AND LOCATION OF THESE UNDERGROUND UTILITIES AS REQUIRED AT NO SEPARATE PAY. CONTRACTOR TO COORDINATE WITH ALL UTILITY COMPANIES.
- ALL WORK SHALL BE PERFORMED WITHIN THE OWNER'S RIGHT-OF-WAY, EASEMENTS OR ON PUBLIC-OWNED PROPERTY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN PERMISSION TO USE PRIVATE PROPERTY, IF NECESSARY, FOR THE PURPOSES OF STAGING, STOCKPILE, STORAGE OR REFUSE AREAS. THE CONTRACTOR SHALL PROVIDE WRITTEN EVIDENCE TO THE OWNER PRIOR TO USE.
- THE CONTRACTOR SHALL NOTIFY ALL AFFECTED RESIDENTS OR BUSINESS OWNERS OF CONSTRUCTION ACTIVITY THROUGH THE USE OF BILINGUAL (ENGLISH AND SPANISH) DOOR TAGS, PAMPHLETS OR SIMILAR METHODS. ALL AFFECTED PARTIES MUST BE NOTIFIED A MINIMUM OF 48-HOURS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE A SAMPLE OF THE NOTIFICATION TO THE OWNER PRIOR TO IMPLEMENTATION AND RECEIVE WRITTEN APPROVAL PRIOR TO DISTRIBUTING.
- CONTRACTOR TO ENSURE SAME DAY ACCESS TO ALL RESIDENCES AND BUSINESSES ADJACENT TO CONSTRUCTION.
- THE CONTRACTOR SHALL DO ALL NECESSARY CLEARING, EXCAVATION, TRENCHING, SHORING, DE-WATERING, DEMOLITION, GRADING, BACKFILLING, ETC. TO COMPLETE THE PROJECT. ASSOCIATED COSTS SHALL BE SUBSIDIARY TO THE RESPECTIVE

- BID ITEMS AS IDENTIFIED IN THE CONTRACT UNLESS NOTED OTHERWISE.
- THE CONTRACTOR SHALL PROVIDE A GROUNDWATER CONTROL PLAN FOR APPROVAL BY THE OWNER PRIOR TO CONSTRUCTION. THE PLAN SHALL BE DEVELOPED, SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF TEXAS AND OUTLINE THE CONTRACTOR'S MEANS AND METHODS FOR CONTROLLING GROUNDWATER INCLUDING THE LOCATION OF ALL PROPOSED GROUNDWATER MONITORING WELLS FOR VERIFICATION PRIOR TO BEGINNING EXCAVATION FOR THE CONTRACTOR'S PROPOSED EXCAVATION SAFETY SYSTEM. ADEQUACY AND IMPLEMENTATION OF THE PLAN IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE OWNER RESERVES THE RIGHT TO REJECT PLANS. THE GROUNDWATER CONTROL PLAN WILL BE MAINTAINED IN THE OWNER'S REPRESENTATIVE FILES FOR REFERENCE PURPOSES ONLY. NO REVIEW WILL BE MADE NOR IS ANY RESPONSIBILITY FOR THE PLAN ASSUMED BY THE OWNER OR THE OWNER'S REPRESENTATIVES.
- THE CONTRACTOR SHALL PROVIDE AN EMERGENCY PLAN, IN CASE OF A LARGE RAIN EVENT OR OTHER IMPACTFUL EVENT, FOR APPROVAL BY THE OWNER PRIOR TO CONSTRUCTION. THE PLAN SHALL BE DEVELOPED, SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF TEXAS. ADEQUACY AND IMPLEMENTATION OF THE PLAN IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE OWNER RESERVES THE RIGHT TO REJECT THE PLANS.
- ALL COMPACTION SHALL BE ACHIEVED BY MECHANICAL METHODS. NO WATER JETTING ALLOWED, UNLESS APPROVED BY THE OWNER.
- ALL SPOIL MATERIAL AND DEBRIS SHALL BE DISPOSED OFFSITE BY THE CONTRACTOR IN A LEGAL MANNER. FURNISHING AND TRANSPORTATION OF ALL OFFSITE MATERIAL TO BE AT CONTRACTOR'S EXPENSE.
- DEMOLITION, REMOVAL AND DISPOSAL OF ALL EXCESS CONCRETE, CURBS, RUBBLE, ETC. TO BE DONE IN A LEGAL MANNER AT CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL KEEP THE CONSTRUCTION AREA AS CLEAN AS POSSIBLE. ALL ASSOCIATED DEBRIS SHALL BE COLLECTED AND PROPERLY DISPOSED OF AT THE END OF EACH WORKDAY.
- UPON COMPLETION OF CONSTRUCTION, CONTRACTOR SHALL RETURN THE SITE TO ORIGINAL CONTOURS UNLESS DIFFERENT FINISHED ELEVATIONS ARE SHOWN ON PLANS. CONTRACTOR TO ENSURE NO AREAS OF PONDING ARE PRESENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING ALL FIELD CHANGES AND FURNISHING A LEGIBLE SET OF "AS-BUILT" DRAWINGS TO THE OWNER.
- WHEN INSTALLING ANY MANUFACTURED PRODUCT, THE CONTRACTOR SHALL FOLLOW ALL MANUFACTURER'S RECOMMENDED INSTALLATION DIRECTIONS. IF ANY CONFLICTS OR DISCREPANCIES BETWEEN MANUFACTURER'S DIRECTIONS AND THE CONTRACT DOCUMENTS ARE FOUND, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING AND SHALL NOT PERFORM ANY WORK ON ANY ITEM UNTIL SUCH CONFLICT HAS BEEN RESOLVED IN WRITING.

**PAVING CONSTRUCTION NOTES:**

- CONTRACTOR TO SHAPE, FILL, GRADE AND COMPACT TO ENSURE PROPER DRAINAGE. ALL PAVEMENTS SHALL BE NEATLY SAW-CUT PARALLEL OR PERPENDICULAR TO THE PAVEMENT EDGE (NO ANGLED SAW CUTS). DAMAGE TO PAVEMENT BEYOND THE EXTENTS OF CONSTRUCTION LIMITS AS A RESULT OF FAILURE TO PROPERLY SAW-CUT SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- CONSTRUCTION JOINTS TO EXISTING PAVEMENT SHALL BE MADE BY EITHER CUTTING BACK EXISTING TO PRODUCE A SLIGHTLY BEVELED EDGE FOR THE FULL THICKNESS OF THE WEARING COURSE OR A SUITABLE LAP JOINT SHALL BE SAW CUTTING REQUIRED.
- NO TRAFFIC SHALL BE ALLOWED ON THE FINISHED WEARING SURFACE UNTIL AT LEAST 12 HOURS, OR UNTIL THE PAVEMENT HAS COOLED TO NO LESS THAN 160°F, AFTER COMPLETION OF ROLLING.
- ANY SETTLEMENT UNDER PAVEMENT DUE TO INADEQUATE COMPACTION OF UTILITY LINE BACKFILL SHALL BE CAUSE FOR RECOMPACTION OF TRENCH AND REPLACEMENT OF PAVEMENT SECTION AT CONTRACTOR'S EXPENSE.
- HOT MIX ASPHALT CONCRETE TRANSPORT TRUCKS TO BE EQUIPPED WITH CANVAS COVERS TO BE UTILIZED DURING MATERIAL HAULING. MATERIAL DELIVERED TO SITE AT IMPROPER TEMPERATURE SHALL BE REJECTED. HOT MIX SHALL BE LAID AT A MINIMUM TEMPERATURE OF 225 DEGREES FAHRENHEIT.
- CONTRACTOR TO REPLACE ALL PAVEMENT MARKINGS AND MARKERS THAT WERE REMOVED, DEMOLISHED, OR DAMAGED DURING CONSTRUCTION AT NO ADDITIONAL COST.
- CONTRACTOR SHALL "LAY DOWN" CURB SECTION AT DRIVEWAY LOCATIONS SHOWN ON DRAWINGS. CONTRACTOR SHALL BE REQUIRED TO GRADE FROM EXISTING DRIVES AND PARKING AREAS TO MATCH GRADES AND ALLOW SMOOTH TRANSITIONS AND PROPER DRAINAGE.

**STRIPING NOTES:**

- ALL SIGNS AND MARKINGS SHALL BE PLACED BY THE CONTRACTOR IN ACCORDANCE WITH THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES LATEST EDITION, UNLESS OTHERWISE SHOWN OR DIRECTED.

- THE PAVEMENT SURFACE SHALL BE MADE FREE OF DELETERIOUS MATERIAL PRIOR TO APPLICATION OF PERMANENT MARKINGS.
- ALL STRIPING SHALL BE A HI-PERFORMANCE ZONE MARKING PAINT AND SHALL BE PLACED PER MANUFACTURER RECOMMENDATIONS.

**UTILITY GENERAL NOTES:**

- THE TYPE, SIZE AND LOCATION OF ALL UNDERGROUND UTILITIES DEPICTED ON THE CONSTRUCTION PLANS WERE RESEARCHED WITH RESPECT TO THE BEST AVAILABLE DATA AND THEREFORE SHOWN APPROXIMATE. ALTHOUGH EVERY EFFORT HAS BEEN MADE TO ACCURATELY DEPICT ALL UTILITIES, NOT ALL (PUBLIC AND PRIVATE) MAY BE NEITHER THE ENGINEER NOR THE OWNER IS RESPONSIBLE FOR THE ACCURACY OF THE LOCATION OF THE UTILITIES SHOWN ON THE CONSTRUCTION PLANS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT ALL UTILITY COMPANIES WITH JURISDICTION WITHIN THE LIMITS OF CONSTRUCTION FOR FIELD VERIFICATION AT NO ADDITIONAL EXPENSE TO THE OWNER. UTILITY COMPANIES TO INCLUDE BUT NOT LIMITED TO THE FOLLOWING:

BROWNSVILLE PUB	(956) 983-6100
BROWNSVILLE ENGINEERING DEPT.	(956) 541-1012
TXDOT - BROWNSVILLE OFFICE	(956) 542-2260
TEXAS (DIGTESS)	(800) DIG-TESS
TEXAS GAS SERVICE	(800) 959-5325
SPECTRUM/TIME WARNER CABLE	(800) 222-5355
AT&T TEXAS	(956) 630-8261
FRONTIER COMMUNICATIONS	(800) 921-8101
CHARTER COMMUNICATIONS	(866) 874-2389
VERIZON	(800) 922-0204


- CONTRACTOR SHALL EXPOSE ANY EXISTING UTILITY THAT MAY BE IN CONFLICT PRIOR TO COMMENCING CONSTRUCTION AND EXCAVATION.
- THE CONTRACTOR SHALL NOTIFY ALL AUTHORIZED INSPECTORS, SUPERINTENDENTS, OR PERSONS RESPONSIBLE FOR PUBLIC AND PRIVATE UTILITIES AFFECTED BY THEIR OPERATIONS PRIOR TO COMMENCING CONSTRUCTION.
- CONTRACTOR SHALL AT ALL TIMES ALLOW ACCESS TO EXISTING DRIVEWAY OR PROVIDE/MAINTAIN ALTERNATIVE ALL-WEATHER ROUTES.
- ALL TRAFFIC CONTROL DEVICES SHALL BE IN CONFORMANCE WITH TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES LATEST EDITION.
- ANY DAMAGES TO FENCES, WALKS, OR PRIVATE PROPERTY SHALL BE REPAIRED BY THE CONTRACTOR AT THEIR EXPENSE.
- ALL CONSTRUCTION MATERIALS TESTING WILL BE COORDINATED THROUGH THE OWNER.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REMOVE ALL EXCAVATED MATERIAL, EXCESS CONCRETE, AND DEBRIS FROM THE CONSTRUCTION SITE AT NO ADDITIONAL EXPENSE TO THE OWNER.
- THE CONTRACTOR SHALL MEET THE REQUIREMENTS FOR TRENCH SAFETY AS OUTLINED IN THE CURRENT VERSION OF THE UNITED STATES DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION STANDARDS, 29 CFR, PART 1926, SUBPART P-EXCAVATIONS.
- PRIOR TO COMMENCING ANY EXCAVATION, THE CONTRACTOR SHALL PROVIDE A TRENCH SAFETY PLAN. ALL PLANS SHALL BE PREPARED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF TEXAS. THE PLAN SHALL BE SUBMITTED TO THE OWNER FOR APPROVAL.
- IN THE EVENT CONDITIONS ENCOUNTERED IN THE FIELD REQUIRE TRENCH SAFETY SYSTEMS OUTSIDE OF THE EXTENTS OF THE APPROVED TRENCH SAFETY PLAN, ALL EXCAVATION SHALL CEASE AND THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING A REVISED TRENCH SAFETY PLAN. NO EXCAVATION SHALL RESUME UNTIL THE REVISED TRENCH SAFETY PLAN HAS BEEN APPROVED.
- THE CONTRACTOR SHALL ENSURE APPROVED TRENCH SAFETY PLANS ARE IMPLEMENTED. FAILURE TO ADHERE TO THE TRENCH SAFETY PLAN WILL RESULT IN A STOP WORK ORDER. NON-COMPLIANCE INCIDENTS MAY BE REPORTED TO OSHA.
- TRENCHES OR EXCAVATIONS MAY NOT BE LEFT OPEN OVERNIGHT UNLESS AUTHORIZED IN WRITING BY THE OWNER. IN CASES WHERE TRENCHES ARE LEFT OPEN, THE CONTRACTOR MUST PROVIDE TRAFFIC-RATED, ANCHORED STEEL PLATE COVERS APPROVED BY THE OWNER.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING AND SUPPORTING ALL EXISTING UTILITIES DURING EXCAVATION ACTIVITIES.
- ALL UTILITIES SHALL REMAIN IN SERVICE AT ALL TIMES. THE PROTECTION, TEMPORARY BYPASS PUMPING, ETC. OF ALL UTILITY LINES SHALL BE INCIDENTAL TO THE INSTALLATION OF THE PROPOSED UTILITIES. CONTRACTOR SHALL COORDINATE WITH UTILITY OWNERS.
- CONTRACTOR SHALL UTILIZE EQUIPMENT THAT MEETS THE REQUIREMENTS OF 10-FOOT VERTICAL SEPARATION FROM ALL POWERLINES. ALL EQUIPMENT SPECIFICATIONS SHALL BE REVIEWED AND APPROVED BY QUALIFIED OWNER'S REPRESENTATIVE PRIOR TO DELIVERING ANY EQUIPMENT TO PROJECT SITE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING OPERATION OF SANITARY SEWER LINES DURING CONSTRUCTION.

THIS INCLUDES THE INSTALLATION OF A BY PASS PUMPING SYSTEM AND ADDITIONAL TEMPORARY PIPING TO PROVIDE UNINTERRUPTED SERVICE TO ALL CUSTOMERS.

18. CONTRACTOR SHALL REFERENCE APPENDICES FOR ADDITIONAL INFORMATION ON EXISTING UTILITIES, INCLUDING RECENTLY INSTALLED FIBER OPTIC LINES THAT ARE NOT SHOWN ON THE PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING EXACT LOCATIONS OF FIBER OPTIC LINES AND OTHER UTILITIES PRIOR TO PERFORMING ANY EXCAVATION.

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PROJECT ENGINEER:	A. GARCIA		
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DRAWN BY:	Z. CROSSLEY		
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**Hazen**  
AND SAWYER  
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**BROWNSVILLE PUBLIC UTILITIES BOARD**  
BROWNSVILLE, TEXAS

**DOWNTOWN WATER AND WASTEWATER IMPROVEMENTS PROJECT 2**

**GENERAL**

**GENERAL NOTES**

G-2

DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	



**UTILITY NOTES:**

- ALL CONSTRUCTION OPERATIONS TO BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION.
- ELECTRICAL LINES ARE LOCATED IN THE PROJECT AREA. THE ATTENTION OF THE CONTRACTOR IS DIRECTED TO STAT LAW (VERNON'S ANNOTATED TEXAS STATUTES, ARTICLE 1436 (C)) CONCERNING CONSTRUCTION OPERATIONS IN THE VICINITY OF ELECTRICAL LINES AND THE NEED FOR EFFECTIVE PRECAUTIONARY MEASURES.
- ANY CHANGES OR REVISIONS TO THE UTILITY DESIGN MUST FIRST BE SUBMITTED TO THE BROWNSVILLE PUBLIC UTILITY BOARD FOR REVIEW AND WRITTEN APPROVAL.
- THE CONTRACTOR SHALL GIVE THE BROWNSVILLE PUBLIC UTILITY BOARD 24 HOUR ADVANCE NOTICE PRIOR TO PLACEMENT OF ANY CONCRETE, TO PERMIT THE REVIEW OF FORMS, REINFORCEMENT STEEL PLACEMENT, AND OTHER PREPARATIONS.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST CITY OF BROWNSVILLE PUBLIC UTILITY BOARD STANDARD SPECIFICATIONS.
- UNLESS OTHERWISE SPECIFIED BY THE ENGINEER, ALL UTILITY CONCRETE IS TO BE CLASS "K" (4000 PSI - 28 DAYS), AND ALL REINFORCING STEEL TO BE ASTM A615 GRADE 60.
- MAXIMUM LENGTH OF OPEN TRENCH TO BE 60', OR AS DIRECTED BY THE OWNER.

**WASTEWATER NOTES:**

- ALL PIPE BEDDING MATERIAL SHALL CONFORM TO DETAILS AND THE MANUFACTURER'S RECOMMENDATION.
- ALL INTERNAL CONCRETE SURFACES FOR WASTEWATER MANHOLES TO BE COATED SHALL BE PREPARED PER MATERIALS AND PROCEDURES SPECIFIED IN CONTRACT SPECIFICATIONS AND DESIGN PLANS.
- THE DISTANCE FROM TOP OF SANITARY SEWER MANHOLE CONE TO FINISHED GRADE TO BE 12" MINIMUM OR 18" MAXIMUM (AS PER DETAIL), UNLESS NOTED OTHERWISE ON PLANS.
- EXISTING WASTEWATER LINES SHALL BE KEPT IN SERVICE UNTIL PROPOSED WASTEWATER SYSTEM IMPROVEMENTS AND/OR TEMPORARY BYPASS LINES HAVE BEEN COMPLETED AND APPROVED BY THE OWNER.
- CONTRACTOR TO CONSTRUCT WASTEWATER GRAVITY MAIN FROM DOWNSTREAM END TO UPSTREAM END WITH BELLS FACING UPSTREAM.
- ALL MANHOLES TO BE BENCHED IN THE DIRECTION OF FLOW TO MINIMIZE TURBULENCE.
- ALL SEWER LINES, MANHOLES AND FORCE MAINS SHALL BE TESTED IN ACCORDANCE WITH TCEQ CHAPTER 217.57 REGULATIONS AND CONTRACT SPECIFICATIONS.
- THE OWNER RETAINS THE RIGHTS TO TELEVIEW THE LINE TO DETERMINE THE CONDITION OF THE SEWER LINE PRIOR TO FINAL ACCEPTANCE, IN ACCORDANCE WITH CONTRACT SPECIFICATIONS.
- THE CONTRACTOR SHALL PERFORM QUALITY TESTING FOR THE WATER AND WASTEWATER SYSTEM INSTALLED AND SHALL PROVIDE ALL EQUIPMENT (INCLUDING PUMPS AND GAUGES), SUPPLIES AND LABOR NECESSARY TO PERFORM THE TESTS AT HIS EXPENSE. BROWNSVILLE P.U.B. TO BE GIVEN 48 HOURS NOTICE PRIOR TO ALL TESTING AND SHALL BE MONITORED BY BROWNSVILLE P.U.B. PERSONNEL. TESTING IS TO BE DONE IN ACCORDANCE WITH B.P.U.B. STANDARDS.
- ALL MANHOLES LOCATED WITHIN A ROADSIDE DITCH SHALL HAVE A MINIMUM COVER OF 18", AND HAVE WATERTIGHT COVERS. MANHOLES SHALL BE MARKED WITH MANHOLE MARKERS (USE MARKER DETIAL AS SHOWN IN "TYPICAL SERVICE CONNECTION") LOCATED AT THE RIGHT-OF-WAY.
- PROPOSED WATER AND SANITARY SEWER SERVICES ARE SHOWN IN AN APPROXIMATE LOCATION AND SHALL BE VERIFIED IN THE FIELD WITH AN INSPECTOR BASED ON THE LOCATION OF HOMES. SANITARY SEWER SERVICES SHALL BE SINGLE SERVICES UNLESS APPROVED OTHERWISE BY BROWNSVILLE PUB.
- CONTRACTOR SHALL INSTALL ALL PROPOSED SANITARY SEWER SERVICE CONNECTIONS WITH AN ADEQUATE DEPTH TO ACCOMMODATE THE YARD LINE TO HAVE A SLOPE OF 1/4-INCH PER FOOT PLUS 2' FEET MINIMUM COVER AT THE EXISTING HOME. THE CONTRACTOR SHALL VERIFY THAT SERVICE LINE HAS ADEQUATE DEPTH TO REACH THE RESIDENCE'S EXISTING SEWER CONNECTION(S) SHALL BE CONDUCTED.

**ABANDONMENT OF EXISTING SANITARY SEWER SYSTEM NOTES:**

- ALL SANITARY SEWER MANHOLES AND PIPING TO BE ABANDONED IN PLACE SHALL BE JETTED AND PUMPED CLEAN OF SEWAGE AND SLUDGE BY A TCEQ CERTIFIED HAULER. ALL SEWAGE SHALL BE DISPOSED OF ACCORDING TO TCEQ RULES.
- DECOMMISSIONING OF SANITARY SEWER MANHOLES INCLUDES REMOVING THE MANHOLE AND BACKFILLING WITH BANK RUN SAND. THE MANHOLE SHALL BE REMOVED TO A MINIMUM OF 4 FEET BELOW NATURAL GROUND. ALL BACKFILL SHALL BE COMPACTED TO 98% PERCENT STD. PROCTOR. HOWEVER, CONTRACTOR IS ADVISED THAT CERTAIN MANHOLES MAY REQUIRE COMPLETE REMOVAL TO ACCOMMODATE NEW SANITARY SEWER LINES. AT SUCH LOCATIONS, REMOVAL SHALL BE AT NO ADDITIONAL COST.
- THE INSPECTOR SHALL INSPECT THE MANHOLE PRIOR TO THE CONTRACTOR DECOMMISSIONING STRUCTURE(S).
- FLOWABLE FILL (ABANDONMENT GROUT) SHALL BE USED TO FILL ALL ABANDONED IN PLACE PIPES, REFER TO SPECIFICATIONS FOR DETAILS ON ABANDONMENT OF SANITARY SEWER.

**UTILITY TESTING NOTES:**

- BROWNSVILLE PUBLIC UTILITY BOARD TO BE GIVEN 48 HOURS NOTICE PRIOR TO ALL TESTING OF WATER WASTEWATER LINES, AND DENSITY TESTING. REFER TO CONTRACT SPECIFICATIONS7 AND TCEQ NOTES FOR TESTING REQUIREMENTS. ALL TESTING TO BE CONDUCTED IN PRESENCE OF B.P.U.B. INSPECTOR.
- ALL SANITARY SEWERS, EXCLUDING SERVICE LINES, SHALL BE MANDREL TESTED PER TEXAS COMMISSION ON ENVIRONMENTAL QUALITY CRITERIA. MANDREL TEST SHALL NOT BE PERFORMED UNTIL BACKFILL HAS BEEN IN PLACE FOR A MINIMUM OF 30 DAYS.
- SOIL DENSITY TESTS AND RELATED SOIL ANALYSIS TESTS TO BE ACCOMPLISHED BY AN INDEPENDENT LABORATORY UNDER CONTRACT WITH THE OWNER. TESTS WHICH SHOW UNSATISFACTORY RESULTS ARE TO BE REPEATED AT THE EXPENSE OF THE CONTRACTOR SUBSEQUENT TO CONTRACTOR'S REMEDIAL ACTIVITIES.
- DENSITY TESTING OF COMPACTED SUBGRADE MATERIAL FOR FIRST COURSE, AND SECOND COURSE OF COMPACTED BASE SHALL BE MADE AT ALL DRIVEWAYS AND INTERSECTING STREETS. IN ADDITION, ONE (1) DENSITY TEST PER LIFT PER TWO HUNDRED (200) FEET OF INSTALLED PIPELINE SHALL BE CONDUCTED.

**STORM DRAINAGE LINE CONSTRUCTION NOTES:**

- CONTRACTOR SHALL PROVIDE POSITIVE STORM WATER DRAINAGE AT ALL TIMES.
- CONTRACTOR TO PROVIDE POSITIVE OUTFLOW FOR DRAINAGE BASIN AT ALL TIMES. IN THE CASE OF A STORM EVENT, CAPACITY FOR STORM WATER RUNOFF SHALL BE PROVIDED ON SITE AS A TEMPORARY DETENTION FACILITY TO MINIMIZE ADJACENT LOCAL FLOODING.
- CONTRACTOR SHALL PROVIDE A SEQUENCE OF WORK FOR STORM DRAINAGE TIE-INS THAT PROVIDES POSITIVE OUTFLOW AT ALL TIMES.
- CONTRACTOR TO FIELD VERIFY THE LOCATION OF EXISTING UTILITIES AND FACILITIES PRIOR TO CONSTRUCTION.
- ALL REINFORCED CONCRETE STORM PIPES SHALL BE ASTM C-76 CLASS III OR CLASS IV WITH O-RING RUBBER GASKET SEALED JOINTS, UNLESS OTHERWISE NOTED ON PLANS. ALL PIPE AND APPURTENANCES (INLETS, MANHOLES, JUNCTION BOXES, ETC.) SHALL CONFORM TO THE TECHNICAL SPECIFICATIONS.
- REINFORCED CONCRETE PIPES SHALL EXTEND TO THE INSIDE FACE OF ALL STRUCTURES. ALL JOINTS SHALL BE GROUTED TO ENSURE A WATER-TIGHT FIT. IN NO INSTANCE SHALL GROUT BE USED TO EXTEND AN INCOMPLETE SEGMENT OF PIPE TO THE INSIDE FACE OF A STRUCTURE.
- PRECAST REINFORCED CONCRETE STORM BOXES SHALL BE IN ACCORDANCE WITH ASTM C1577. THE JOINTS SHALL BE SEALED WITH GROUT FROM INSIDE THE BOXES.
- CAST-IN-PLACE REINFORCED CONCRETE STORM BOXES SHALL BE CONSTRUCTED WITH CLASS "C" CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AND GRADE 60 REINFORCED STEEL. WELDED WIRE REINFORCEMENT IS NOT ALLOWED.
- BANK RUN SAND BACKFILL IN LIEU OF NATIVE MATERIAL IS ALLOWED AT THE CONTRACTOR'S DISCRETION; NO SEPARATE PAY. THE CONTRACTOR SHALL SUBMIT A SAMPLE OF THE BACKFILL MATERIAL TO THE OWNER FOR INSPECTION AND SHALL UTILIZE THE MATERIAL ONLY UPON APPROVAL BY THE OWNER.
- EXPANSION JOINTS ARE REQUIRED BETWEEN ALL INLET STRUCTURES AND CURB AND GUTTER AND/OR SIDEWALK.
- MANHOLE COVERS WITHIN THE CITY OF BROWNSVILLE SHALL DISPLAY THE CITY OF BROWNSVILLE LOGO AND STORM SEWER DESIGNATION. MANHOLE COVERS IN ROADWAYS SHALL BE H-20 RATED.
- THE CONTRACTOR SHALL ENSURE THAT ALL EXISTING STORM SEWER INFRASTRUCTURE REMAINS FUNCTIONAL THROUGHOUT THE COURSE OF CONSTRUCTION. IN THE EVENT THAT ANY ASSOCIATED CONSTRUCTION ACTIVITY IMPEDES THE FUNCTION OF A SYSTEM, THE CONTRACTOR SHALL PROVIDE THE OWNER A PLAN TO ADDRESS THE ISSUE IN ANTICIPATION OF A STORM EVENT.
- ALL NEWLY INSTALLED STORM SEWER PIPE AND APPURTENANCES ARE SUBJECT TO VIDEO INSPECTION.
- ALL DIMENSION CONTROLS SHOWN ON PLANS ARE TO CENTER OF STRUCTURE, UNLESS INDICATED OTHERWISE.

**WATERLINE CONSTRUCTION NOTES:**

- ALL WATERLINES TO BE C-900 REFER TO SECTION 40 05 31 OF THE SPECIFICATIONS.
- DOUBLE CHECK VALVE WILL BE REQUIRED WHEN FILLING NEW WATERLINE FOR PRESSURE TESTING.
- ALL WATER, REUSE (RECLAIMED), & WASTEWATER COLLECTION LINE CROSSINGS TO BE CONSTRUCTED IN ACCORDANCE WITH TCEQ REGULATION, CHAPTER 210, 290 & 217.
- CONTRACTOR TO VERIFY THE LOCATION OF ALL EXISTING LINES TO BE TIED IN TO NEW MAIN PRIOR TO SETTING LOCATION OF TIE-IN TEE AND VALVE ON MAIN.
- WATERLINE MAINS TO BE HYDROSTATICALLY AND BACTERIOLOGICALLY TESTED PER OWNER'S REQUIREMENTS PRIOR TO TIE-INS. OWNER APPROVAL OF TESTING IS REQUIRED.
- ALL CROSSINGS OF WASTEWATER COLLECTION LINES AND WATERLINES CONSTRUCTED IN ACCORDANCE WITH TCEQ REGULATIONS CHAPTER 290 AND 217. SEPARATION DISTANCES SHALL COMPLY WITH 30 TAC 217.53(D).

- CONTRACTOR SHALL MAINTAIN AS MINIMUMS 10 FEET HORIZONTAL AND 2 FEET VERTICAL SEPARATION BETWEEN WATERLINES AND ANY OTHER SEWER LINES.
- NO WATER JETTING ALLOWED; MECHANICAL COMPACTION REQUIRED.
- FIRE HYDRANTS SHALL BE PLACED NO CLOSER THAN 3- FEET BEHIND THE CURB AND NO CLOSER THAN 2- FEET FROM THE R.O.W. LINE. THE BOTTOM OF THE HYDRANT FLANGE SHALL BE NO LESS THAN 2 AND NO MORE THAN 6 INCHES ABOVE GRADE.
- CONTRACTOR SHALL MAINTAIN A MINIMUM OF 4FT OF COVER ON ALL WATERLINES, UNLESS OTHERWISE NOTED ON PLANS.
- FITTINGS TO BE USED ON DEFLECTIONS AS NEEDED. FITTINGS ARE INCIDENTAL TO THE INSTALLATION OF THE WATERLINE. (NO SEPARATE PAY)
- CONTRACTOR IS RESPONSIBLE FOR INSTALLING VALVES, FITTINGS AND ALL INCIDENTALS AS NEEDED FOR A COMPLETE IN PLACE SYSTEM AND SHALL BE SUBSIDIARY TO PIPE INSTALLATION.
- WATERLINE VALVES SHALL ONLY BE OPERATED BY THE OWNER. CONTRACTOR TO COORDINATE WITH THE OWNER IF WATERLINE VALVE OPERATIONS ARE REQUIRED DURING CONSTRUCTION.
- ALL PIPE TO BE STORED A MINIMUM OF 6 INCHES ABOVE GROUND.

**EROSION CONTROL NOTES:**

- CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH THE GENERAL CONDITIONS AND TECHNICAL SPECIFICATIONS. A SWPPP PERMIT SHALL BE OBTAINED BY THE CONTRACTOR AND POSTED AT THE PROJECT SITE PRIOR TO ANY CONSTRUCTION.
- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN PLACE PRIOR TO COMMENCING ANY EARTH DISTURBING ACTIVITY.
- ALL EFFORTS SHALL BE MADE TO CONTAIN DISTURBED SOILS WITHIN THE EXTENTS OF PERIMETER EROSION AND SEDIMENT CONTROL MEASURES.
- THE CONTRACTOR SHALL SEQUENCE ALL CONSTRUCTION IN SUCH A MANNER AS TO MINIMIZE THE AMOUNT AND EXTENTS OF DISTURBED EARTH.
- A STABILIZED CONSTRUCTION EXIT IS REQUIRED AT ALL POINTS OF DESIGNATED EGRESS FROM THE LIMITS OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE LOCATION(S) UNLESS OTHERWISE NOTED ON THE PLANS. THE LOCATION(S) OF THE STABILIZED CONSTRUCTION EXIT(S) MAY BE MODIFIED WITH RESPECT TO THE SEQUENCE OF CONSTRUCTION.
- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PROPERLY MAINTAINED DURING THE COURSE OF THEIR INTENDED USE.
- ALL STAGING, MATERIAL STORAGE, STOCKPILE AND REFUSE AREAS SHALL REQUIRE APPLICABLE EROSION AND SEDIMENT CONTROL MEASURES.
- ALL CONSTRUCTION DEBRIS SHALL BE CONTAINED WITHIN APPROPRIATE RECEPTACLES (ROLL-OFF CONTAINERS, DUMPSTERS, TRASH CANS, WIRE-MESH CAGES, ETC.) AND CONFINED WITHIN PERIMETER EROSION AND SEDIMENT CONTROLS.
- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL REMAIN IN PLACE DURING THE COURSE OF EARTH DISTURBING ACTIVITY AND UNTIL FINAL STABILIZATION IS ACHIEVED. STRUCTURAL MEASURES MAY BE REMOVED ONLY UPON FINAL PROJECT ACCEPTANCE BY THE OWNER OR AS DIRECTED BY THE OWNER.
- PERMANENT STABILIZATION SHALL BEGIN AS SOON AS PRACTICABLE OR AS DIRECTED BY THE OWNER.
- DUST CONTROL SHALL BE IMPLEMENTED AS NECESSARY OR AS DIRECTED BY THE OWNER. DUST CONTROL MAY CONSIST OF WATERING OR OTHER METHODS APPROVED BY THE OWNER. COST ASSOCIATED WITH DUST CONTROL, WHETHER THROUGH WATERING OR ANOTHER METHOD, ALL OF WHICH SHALL BE BORNE SOLELY BY THE CONTRACTOR.
- TRACKED DEBRIS SHALL BE SWEEPED AT THE END OF EACH WORKDAY OR AS DIRECTED BY THE OWNER.
- ALL DISCHARGES ASSOCIATED WITH DEWATERING OPERATIONS SHALL IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES. MEASURES MAY INCLUDE BUT ARE NOT LIMITED TO SEDIMENTATION BASINS OR FILTER SOCKS.
- CONCRETE WASH-WATER SHALL NOT BE DISCHARGED DIRECTLY INTO A STORM SEWER SYSTEM OR RECEIVING STREAM. ALL WASH ACTIVITIES MUST BE PERFORMED WITHIN THE EXTENTS OF ESTABLISHED EROSION AND SEDIMENT CONTROL MEASURES OR DESIGNATED AREAS APPROVED BY THE OWNER.
- SEDIMENT SHALL BE CLEARED FROM ALL STORM SEWER PIPES, CULVERTS AND APPURTENANCES WITHIN THE LIMITS OF CONSTRUCTION PRIOR TO FINAL PROJECT ACCEPTANCE. SEDIMENT SHALL BE PROPERLY DISPOSED.
- STAGING, STOCKPILE AND EQUIPMENT STORAGE AREAS SHALL NOT BE LOCATED WITHIN THE EXTENTS OF ANY TREE DRIP LINES.

**TCEQ WATER DISTRIBUTION SYSTEM - GENERAL CONSTRUCTION NOTES:**

- THIS WATER DISTRIBUTION SYSTEM MUST BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS 30 TEXAS ADMINISTRATIVE CODE (TAC) CHAPTER 290 SUBCHAPTER D. WHEN CONFLICTS ARE NOTED WITH LOCAL STANDARDS, THE MORE STRINGENT REQUIREMENT SHALL BE APPLIED. AT A MINIMUM, CONSTRUCTION FOR PUBLIC WATER SYSTEMS MUST ALWAYS MEET TCEQ'S RULES AND REGULATIONS FOR PUBLIC

**WATER SYSTEMS:**

- ALL NEWLY INSTALLED PIPES AND RELATED PRODUCTS MUST CONFORM TO AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)NSF INTERNATIONAL STANDARD 61 AND MUST BE CERTIFIED BY AN ORGANIZATION ACCREDITED BY ANSI [§290.44(A)(1)].
- PLASTIC PIPE FOR USE IN PUBLIC WATER SYSTEMS MUST BEAR THE NSF INTERNATIONAL SEAL OF APPROVAL (NSF-PW) AND HAVE AN ASTM DESIGN PRESSURE RATING OF AT LEAST 150 PSI OR A STANDARD DIMENSION RATIO OF 26 OR LESS [§290.44(A)(2)].
- NO PIPE WHICH HAS BEEN USED FOR ANY PURPOSE OTHER THAN THE CONVEYANCE OF DRINKING WATER SHALL BE ACCEPTED OR RELOCATED FOR USE IN ANY PUBLIC DRINKING WATER SUPPLY [§290.44(A)(3)].
- ALL WATER LINE CROSSINGS OF WASTEWATER MAINS SHALL BE PERPENDICULAR [§290.44(E)(4)(B)].
- WATER TRANSMISSION AND DISTRIBUTION LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. HOWEVER, THE TOP OF THE WATER LINE MUST BE LOCATED BELOW THE FROST LINE AND IN NO CASE SHALL THE TOP OF THE WATER LINE BE LESS THAN 24 INCHES BELOW GROUND SURFACE [§290.44(A)(4)].
- THE MAXIMUM ALLOWABLE LEAD CONTENT OF PIPES, PIPE FITTINGS, PLUMBING FITTINGS, AND FIXTURES IS 0.25 PERCENT [§290.44(B)].
- THE CONTRACTOR SHALL INSTALL APPROPRIATE AIR RELEASE DEVICES WITH VENT OPENINGS TO THE ATMOSPHERE COVERED WITH 16-MESH OR FINER, CORROSION RESISTANT SCREENING MATERIAL OR AN ACCEPTABLE EQUIVALENT [§290.44(D)(1)].
- THE CONTRACTOR SHALL NOT PLACE THE PIPE IN WATER OR WHERE IT CAN BE FLOODED WITH WATER OR SEWAGE DURING ITS STORAGE OR INSTALLATION [§290.44(F)(1)].
- WHEN WATERLINES ARE LAID UNDER ANY FLOWING OR INTERMITTENT STREAM OR SEMI-PERMANENT BODY OF WATER THE WATERLINE SHALL BE INSTALLED IN A SEPARATE WATERTIGHT PIPE ENCASEMENT. VALVES MUST BE PROVIDED ON EACH SIDE OF THE CROSSINGS WITH FACILITIES TO ALLOW THE UNDERWATER PORTION OF THE SYSTEM TO BE ISOLATED AND TESTED [§290.44(F)(2)].
- PURSUANT TO 30 TAC §290.44(A)(5), THE HYDROSTATIC LEAKAGE RATE SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY THE MOST CURRENT AWWA FORMULAS FOR PVC PIPE, CAST IRON AND DUCTILE IRON PIPE. INCLUDE THE FORMULAS IN THE NOTES ON THE PLANS. THE HYDROSTATIC LEAKAGE RATE FOR POLYVINYL CHLORIDE (PVC) PIPE AND APPURTENANCES SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY FORMULAS IN AMERICA WATER WORKS ASSOCIATION (AWWA) C-605 AS REQUIRED IN 30 TAC §290.44(A)(5).
- THE CONTRACTOR SHALL MAINTAIN A MINIMUM SEPARATION DISTANCE IN ALL DIRECTIONS OF NINE FEET BETWEEN THE PROPOSED WATERLINE AND WASTEWATER COLLECTION FACILITIES INCLUDING MANHOLES. IF THIS DISTANCE CANNOT BE MAINTAINED, THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE PROJECT ENGINEER FOR FURTHER DIRECTION. SEPARATION DISTANCES, INSTALLATION METHODS, AND MATERIALS UTILIZED MUST MEET §290.44(E)(1)-(4).
- THE SEPARATION DISTANCE FROM A POTABLE WATERLINE TO A WASTEWATER MAIN OR LATERAL MANHOLE OR CLEANOUT SHALL BE A MINIMUM OF NINE FEET. WHERE THE NINE-FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, THE POTABLE WATERLINE SHALL BE ENCASED IN A JOINT OF AT LEAST 150 PSI PRESSURE CLASS PIPE AT LEAST 18 FEET LONG AND TWO NOMINAL SIZES LARGER THAN THE NEW CONVEYANCE. THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE-FOOT INTERVALS WITH SPACERS OR BE FILLED TO THE SPRINGLINE WITH WASHED SAND. THE ENCASEMENT PIPE SHALL BE CENTERED ON THE CROSSING AND BOTH ENDS SEALED WITH CEMENT GROUT OR MANUFACTURED SEALANT [§290.44(E)(5)].
- FIRE HYDRANTS SHALL NOT BE INSTALLED WITHIN NINE FEET VERTICALLY OR HORIZONTALLY OF ANY WASTEWATER LINE, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE REGARDLESS OF CONSTRUCTION [§290.44(E)(6)].
- SUCTION MAINS TO PUMPING EQUIPMENT SHALL NOT CROSS WASTEWATER MAINS, WASTEWATER LATERALS, OR WASTEWATER SERVICE LINES. RAW WATER SUPPLY LINES SHALL NOT BE INSTALLED WITHIN FIVE FEET OF ANY TILE OR CONCRETE WASTEWATER MAIN, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE [§290.44(E)(7)].
- WATERLINES SHALL NOT BE INSTALLED CLOSER THAN TEN FEET TO SEPTIC TANK DRAINFIELDS [§290.44(E)(8)].
- THE CONTRACTOR SHALL DISINFECT THE NEW WATERLINES IN ACCORDANCE WITH AWWA STANDARD C-651-14 OR MOST RECENT, THEN FLUSH AND SAMPLE THE LINES BEFORE BEING PLACED INTO SERVICE. SAMPLES SHALL BE COLLECTED FOR MICROBIOLOGICAL ANALYSIS TO CHECK THE EFFECTIVENESS OF THE DISINFECTION PROCEDURE WHICH SHALL BE REPEATED IF CONTAMINATION PERSISTS. A MINIMUM OF ONE SAMPLE FOR EACH 1,000 FEET OF COMPLETED WATERLINE WILL BE REQUIRED OR AT THE NEXT AVAILABLE SAMPLING POINT BEYOND 1,000 FEET AS DESIGNATED BY THE DESIGN ENGINEER [§290.44(F)(3)].
- DECHLORINATION OF DISINFECTING WATER SHALL BE IN STRICT ACCORDANCE WITH CURRENT AWWA STANDARD C655-09 OR MOST RECENT.

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# Hazen

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BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS

DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

DATE: OCTOBER 2023

HAZEN NO.: 60405-005

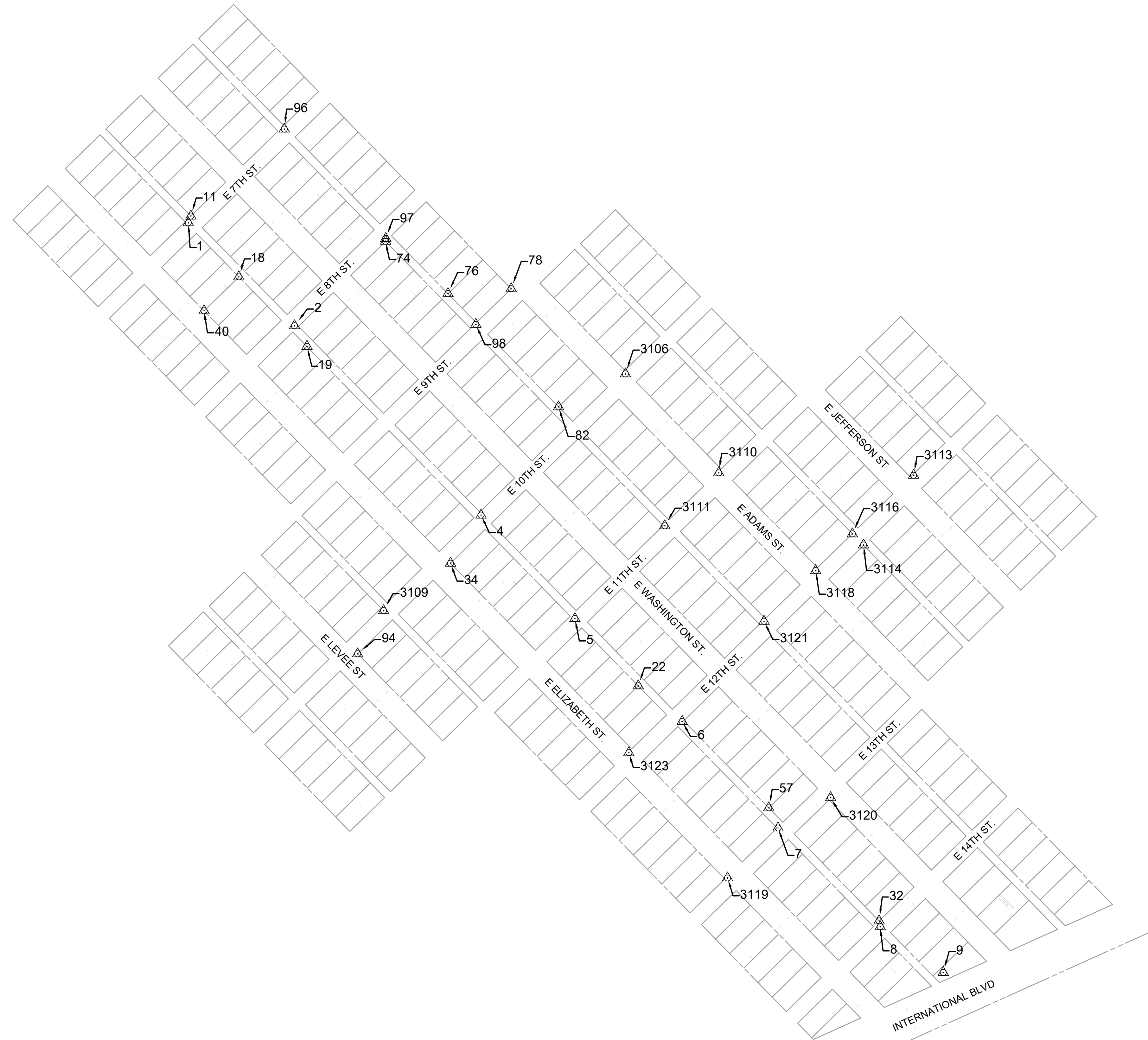
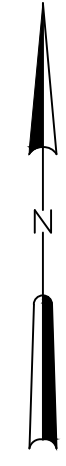
DRAWING NUMBER:

GENERAL

GENERAL NOTES CONTINUED

G-3





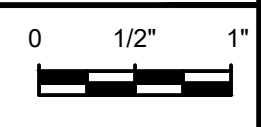
STAKING TABLE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	16492018.77	1312536.02	34.08	SCPS
2	16491764.67	1312797.79	33.86	SCPS
4	16491297.58	1313257.87	34.41	SCPS
5	16491042.27	1313489.37	34.83	SCPS
6	16490788.46	1313754.00	35.47	SMAG
7	16490525.81	1313990.35	35.58	SMAG
8	16490282.17	1314242.42	34.64	SXIC
9	16490169.41	1314397.90	34.22	SXIC
11	16492035.35	1312542.25	34.58	FIP
18	16491885.46	1312660.66	34.66	FIP
19	16491713.97	1312828.52	35.29	FNL
22	16490876.41	1313645.70	35.82	FIP
32	16490296.55	1314239.55	34.71	FIP 3/8
34	16491178.92	1313182.65	35.08	FMAG
40	16491801.66	1312574.86	35.18	FXIC
57	16490575.45	1313967.52	35.80	FIP
74	16491973.22	1313022.39	32.15	FIP
76	16491843.89	1313176.41	31.82	FIP
78	16491856.09	1313332.24	31.19	FXIC
82	16491564.68	1313449.08	33.75	FIP M&R INC 544-3022YELLOWCAP
94	16490955.50	1312953.63	34.87	FMAG
96	16492249.93	1312772.82	31.59	SMAG
97	16491980.06	1313022.89	31.19	SMAG
98	16491768.21	1313245.05	32.07	SMAG
3106	16491646.05	1313614.06	32.63	SMAG
3109	16491062.01	1313017.59	34.76	SMAG
3110	16491401.93	1313844.09	34.64	SMAG
3111	16491271.31	1313711.05	34.32	SMAG
3113	16491395.83	1314324.80	34.59	SMAG
3114	16491223.92	1314201.28	34.76	FIP
3116	16491251.36	1314173.81	34.96	FIP M&R INC 544-3022
3118	16491160.71	1314083.20	34.80	SMAG
3119	16490402.40	1313865.92	35.91	SXIC
3120	16490600.58	1314119.98	34.92	SMAG
3121	16491035.64	1313955.94	35.04	SMAG
3123	16490711.43	1313622.48	35.74	SMAG

- NOTE:
1. THE SURVEYOR, AMBIOTEC GROUP INC. COMPLETED THE TOPOGRAPHIC SURVEY ON MAY 4TH, 2023. THE SURVEY USED NAD 83, TEXAS STATE PLANES, SOUTH ZONE, US SURVEY FEET.
  2. SURVEYOR'S DESCRIPTION ABBREVIATIONS ARE INCORPORATED IN THE ABBREVIATIONS LIST FOUND ON SHEET G-1.

PLAN  
SCALE: 1" = 150'

File: C:\USERS\ZCROSSLEY\DRAWING\HAZEN AND SAWYER\6045-005-DOWNTOWN WATER AND WWT\PROJECT FILES\01\_DESIGN\GENERAL\6045-005-G-SURV-CTRL.dwg Date: 10/19/2023 11:03 AM  
PLOT DATE: 10/19/2023 11:10 AM BY: ZCROSSLEY

PROJECT ENGINEER:	A. GARCIA		
DESIGNED BY:	C. JONES		
DRAWN BY:	Z. CROSSLEY		
CHECKED BY:	J. LONDON		
ISSUED FOR BID	10/19/23	AMGS	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE
REV	ISSUED FOR	DATE	BY



**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

GENERAL  
SURVEY CONTROL PLAN

DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	G-4



**NOTES:**

1. KEY MAP INDICATES SHEET NUMBERS FOR WATER IMPROVEMENTS ONLY. KEY MAP FOR WASTEWATER IMPROVEMENTS IS LOCATED ON SHEET C-09.
2. BROADBAND IS BEING INSTALLED IN THE PROJECT AREA AT THE TIME OF BID AND IS NOT SHOWN ON THE PLANS. REFER TO THE APPENDIX B FOR THE PROPOSED LOCATION OF NEW FIBER OPTIC CONDUITS. CONTRACTOR SHALL COORDINATE EXACT LOCATIONS PRIOR TO STARTING ANY EXCAVATION.



**PLAN**  
SCALE: 1" = 150'

File: C:\USERS\ZCROSSLEY\DRAWINGS\HAZEN AND SAWYER\60405-005-DOWNTOWN WATER AND WASTEWATER IMPROVEMENTS\DWG\C-01-WL.dwg, 10/11/2023 10:10 AM  
PLOT DATE: 10/19/2023 11:10 AM BY: ZCROSSLEY

PROJECT ENGINEER:	A. GARCIA		
DESIGNED BY:	C. JONES		
DRAWN BY:	Z. CROSSLEY		
CHECKED BY:	J. LONDON		
ISSUED FOR BID	10/19/23	AMGS	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE 
REV	ISSUED FOR	DATE	



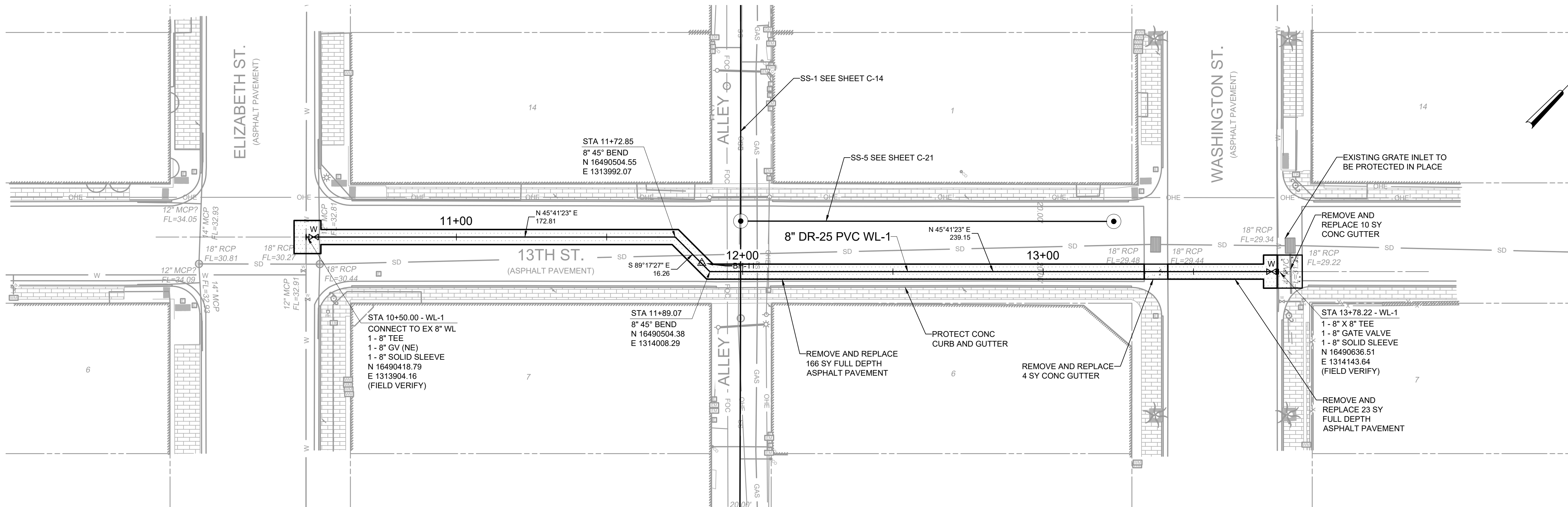
**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

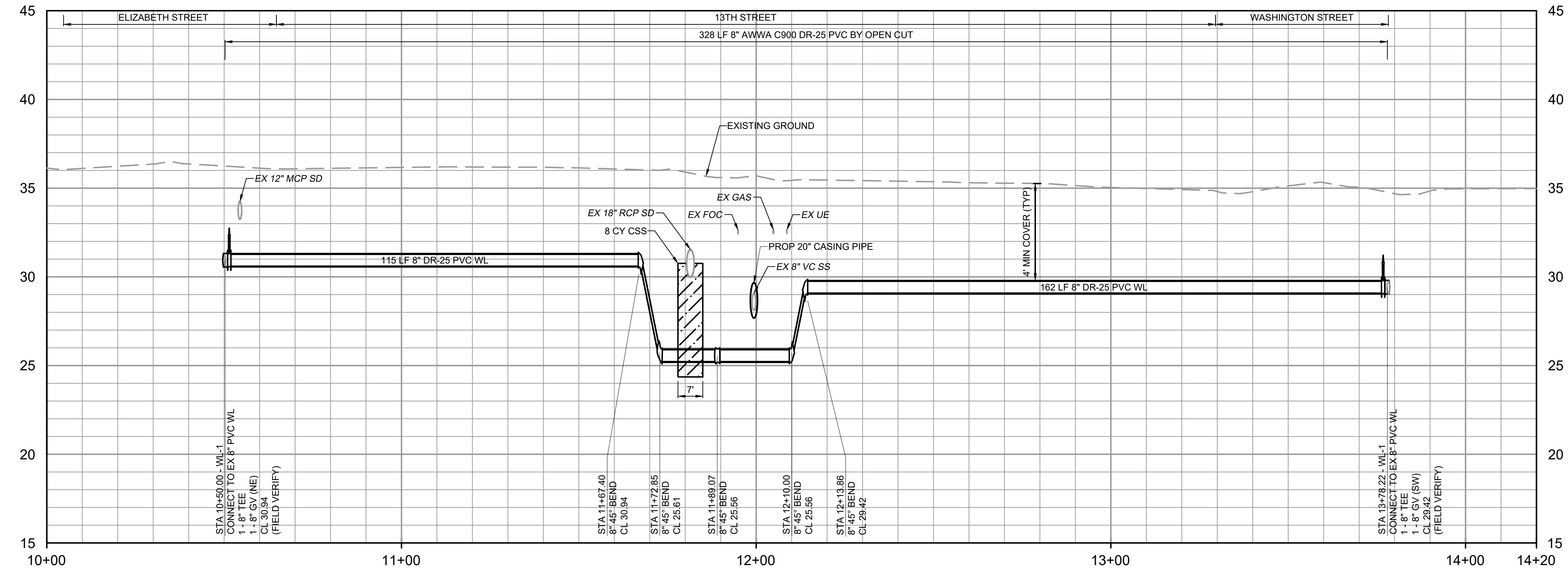
WATER IMPROVEMENTS  
SITE PLAN AND KEY MAP

DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	C-01





**PLAN**  
SCALE: 1" = 20'



**PROFILE**  
HORIZONTAL SCALE: 1" = 20'  
VERTICAL SCALE: 1" = 4'

- NOTES:**
- ALL REFERENCED DETAILS SHALL BE BROWNSVILLE PUBLIC UTILITIES BOARD OR CITY OF BROWNSVILLE UNLESS NOTED OTHERWISE.
  - THE EXISTING UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS PER AVAILABLE RECORDS. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES, WHETHER PUBLIC OR PRIVATE. PRIOR TO EXCAVATION, THE OWNER AND ENGINEER ARE NOT RESPONSIBLE FOR THE ACCURACY OF THIS INFORMATION. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO COORDINATE WITH UTILITY COMPANIES FOR NECESSARY FACILITY RELOCATION AND NO SEPARATE PAYMENT TO BE MADE. ANY EXISTING UTILITY TO BE SUPPORTED DURING WATER LINE INSTALLATION MUST NOTIFY UTILITY OWNER PRIOR TO PROVIDING TRENCH SUPPORT. ANY DAMAGE TO EXISTING UTILITIES CAUSED BY CONTRACTOR'S OPERATIONS TO BE REPAIRED OR REPLACED TO THE UTILITY OWNER'S SATISFACTION AT THE CONTRACTOR'S SOLE EXPENSE.
  - CONTRACTOR SHALL PROVIDE JOINT RESTRAINTS AT ALL LOCATIONS. REFER TO SECTION 40 05 31 OF THE SPECIFICATIONS.
  - NEW WATER LINE TRENCH MUST BE BACKFILLED AND COMPACTED TO PUB TYPICAL PIPE BEDDING AND TRENCH BACKFILL DETAIL. THE TOP PRIME COAT SEAL AND 3" MINIMUM HMAC SHOULD NOT BE COMPLETED PRIOR TO FULL WIDTH ROADWAY MILLING.
  - AREA SHOWN ON THIS DRAWING INCLUDES BOTH WATER AND SEWER IMPROVEMENTS. REFER TO DRAWING C-32 FOR FULL RESTORATION PLANS, INCLUDING ADDITIONAL MILL AND OVERLAY NOT SHOWN HERE.
  - CONTRACTOR IS RESPONSIBLE TO RECONSTRUCT CONCRETE VALLEY GUTTERS TO MATCH EXISTING GRADES. PROPOSED VALLEY GUTTERS SHALL DRAIN TO MATCH PRECONSTRUCTION CONDITIONS.
  - BROADBAND IS BEING INSTALLED IN THE PROJECT AREAS AT THE TIME OF BID AND IS NOT SHOWN ON THE PLANS. REFER TO THE APPENDIX B FOR THE PROPOSED LOCATION OF NEW FIBER OPTIC CONDUITS. CONTRACTOR SHALL COORDINATE EXACT LOCATIONS PRIOR TO STARTING ANY EXCAVATION.
  - REFER TO SHEET DT-06 FOR A TYPICAL DETAIL AT TIE-IN LOCATIONS.

**CAUTION!!!**  
EXISTING GAS LINES, FIBER OPTIC, AND OVERHEAD ELECTRIC LINES IN AREA CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION



Know what's Below.  
Call before you dig.

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File: C:\USERS\ZCROSSLEY\DRAWING\HAYEN AND SAWYER\BROWNSVILLE\60405-005-C-PP-C02-WL.dwg, 10/11/2023 1:10 PM, PLOT DATE: 10/19/2023 11:11 AM, BY: ZCROSSLEY

PROJECT ENGINEER:	A. GARCIA	
DESIGNED BY:	C. JONES	
DRAWN BY:	Z. CROSSLEY	
CHECKED BY:	J. LONDON	
ISSUED FOR BID	10/19/23	AMGS
ISSUED FOR	DATE	BY

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

0 1/2" 1"

10/19/2023

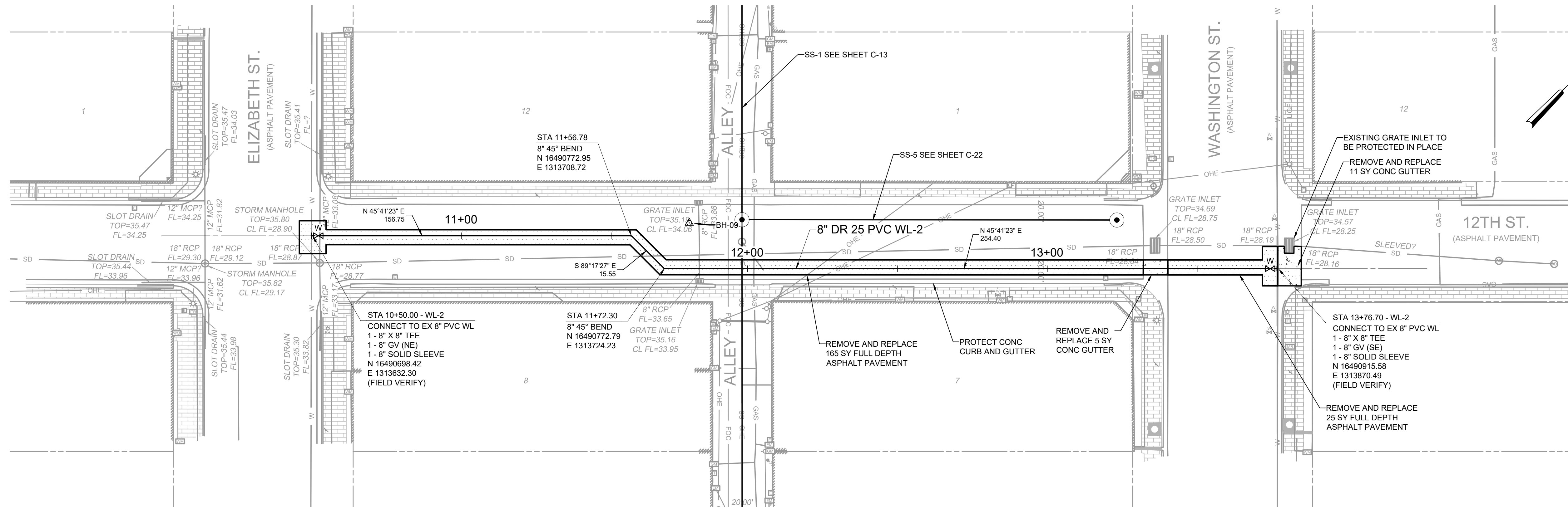


**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

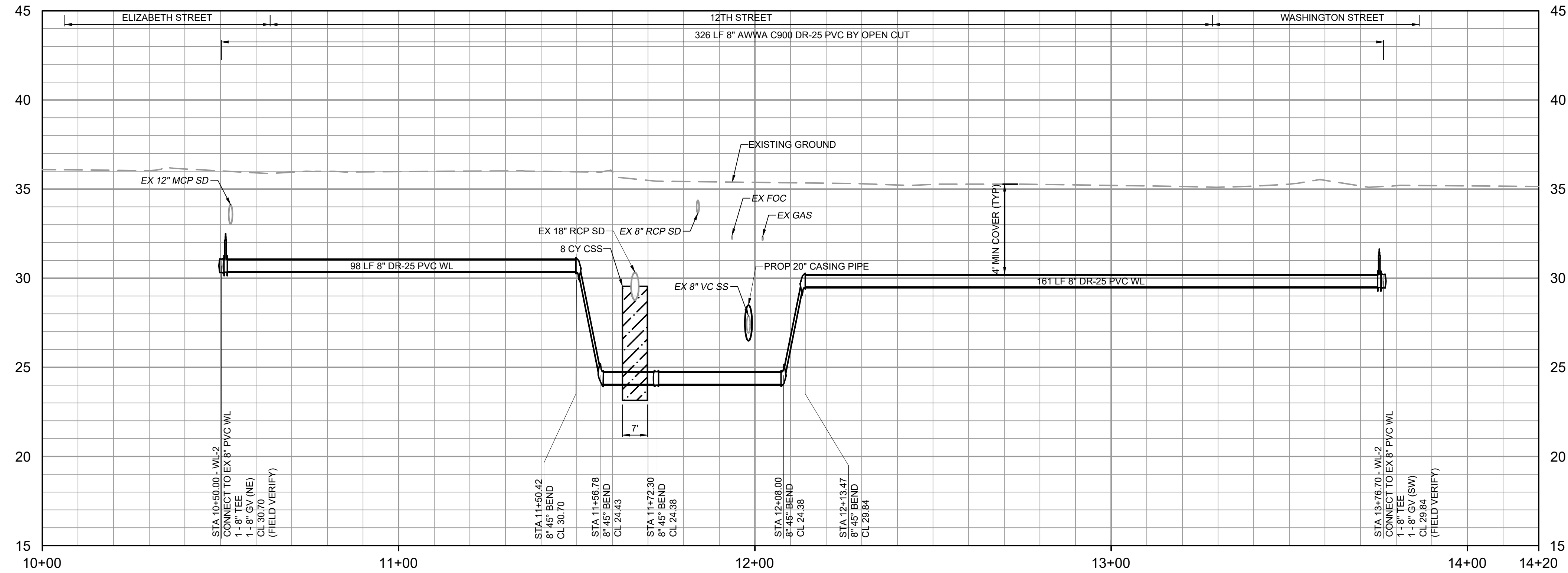
BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

WATER IMPROVEMENTS  
PLAN AND PROFILE  
WL-1 STA 10+00 TO END

DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	



PLAN  
SCALE: 1" = 20'



PROFILE  
HORIZONTAL SCALE: 1" = 20'  
VERTICAL SCALE: 1" = 4'

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- AREA SHOWN ON THIS DRAWING INCLUDES BOTH WATER AND SEWER IMPROVEMENTS. REFER TO DRAWING C-33 FOR FULL RESTORATION PLANS, INCLUDING ADDITIONAL MILL AND OVERLAY NOT SHOWN HERE.
- CONTRACTOR IS RESPONSIBLE TO RECONSTRUCT CONCRETE VALLEY GUTTERS TO MATCH EXISTING GRADES. PROPOSED VALLEY GUTTERS SHALL DRAIN TO MATCH PRECONSTRUCTION CONDITIONS.
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PROJECT ENGINEER:	A. GARCIA	
DESIGNED BY:	C. JONES	
DRAWN BY:	Z. CROSSLEY	
CHECKED BY:	J. LONDON	
ISSUED FOR BID	10/19/23	AMGS
ISSUED FOR	DATE	BY

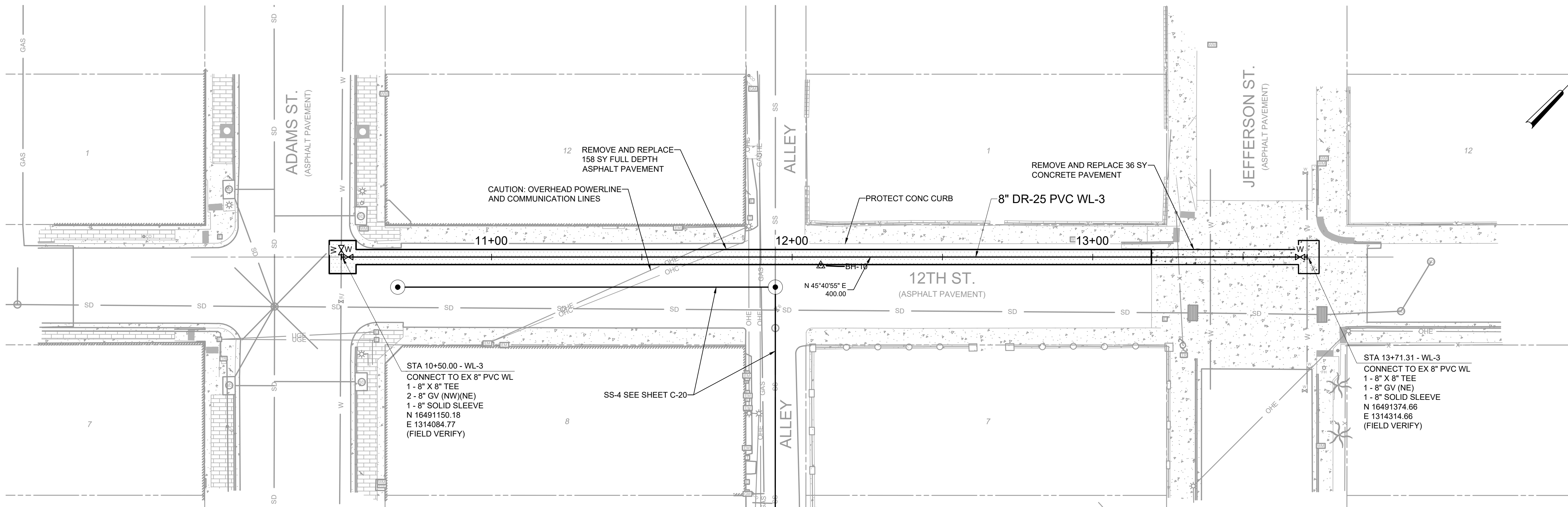
**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

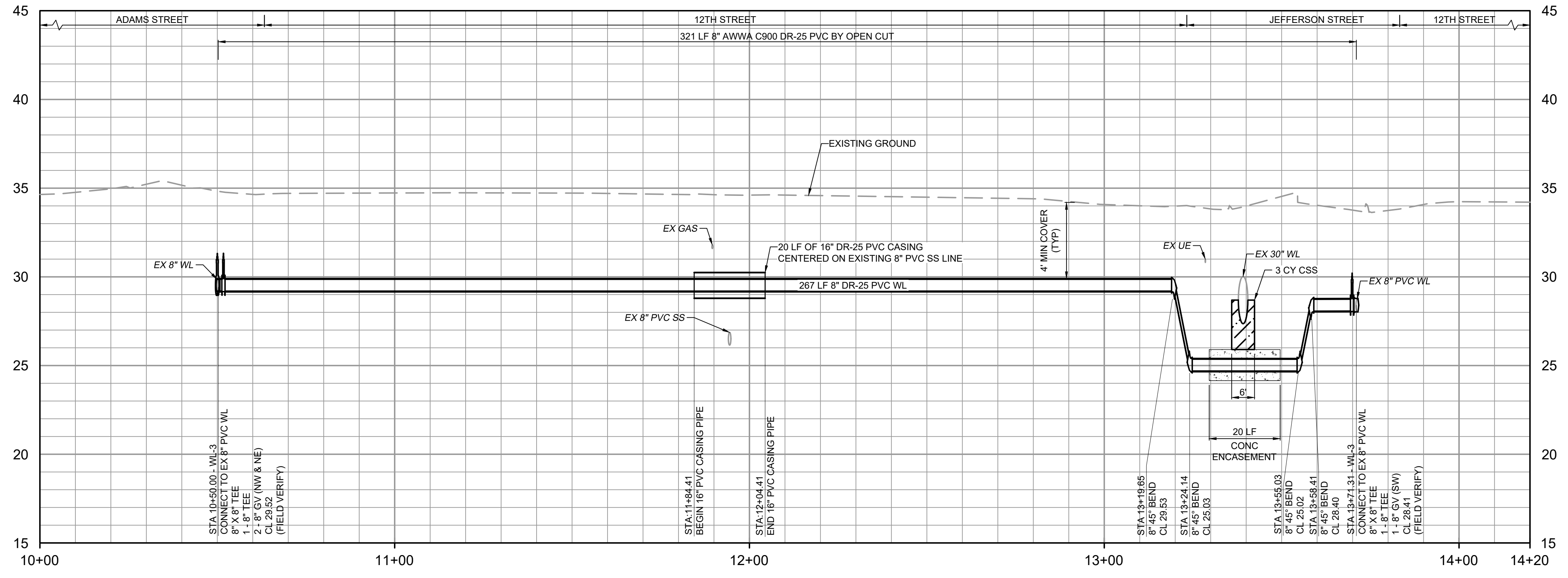
DATE: OCTOBER 2023  
HAZEN NO.: 60405-005  
DRAWING NUMBER:  
WATER IMPROVEMENTS  
PLAN AND PROFILE  
WL-2 STA 10+00 TO END

0 1/2" 1"  
C-03





**PLAN**  
SCALE: 1" = 20'



**PROFILE**  
HORIZONTAL SCALE: 1" = 20'  
VERTICAL SCALE: 1" = 4'

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PROJECT ENGINEER:	A. GARCIA	
DESIGNED BY:	C. JONES	
DRAWN BY:	Z. CROSSLEY	
CHECKED BY:	J. LONDON	
ISSUED FOR BID	10/19/23	AMGS
ISSUED FOR	DATE	BY

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

0 1/2" 1"

10/19/2023



**Hazen**  
HAZEN AND SAWYER  
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SAN ANTONIO, TEXAS 78213

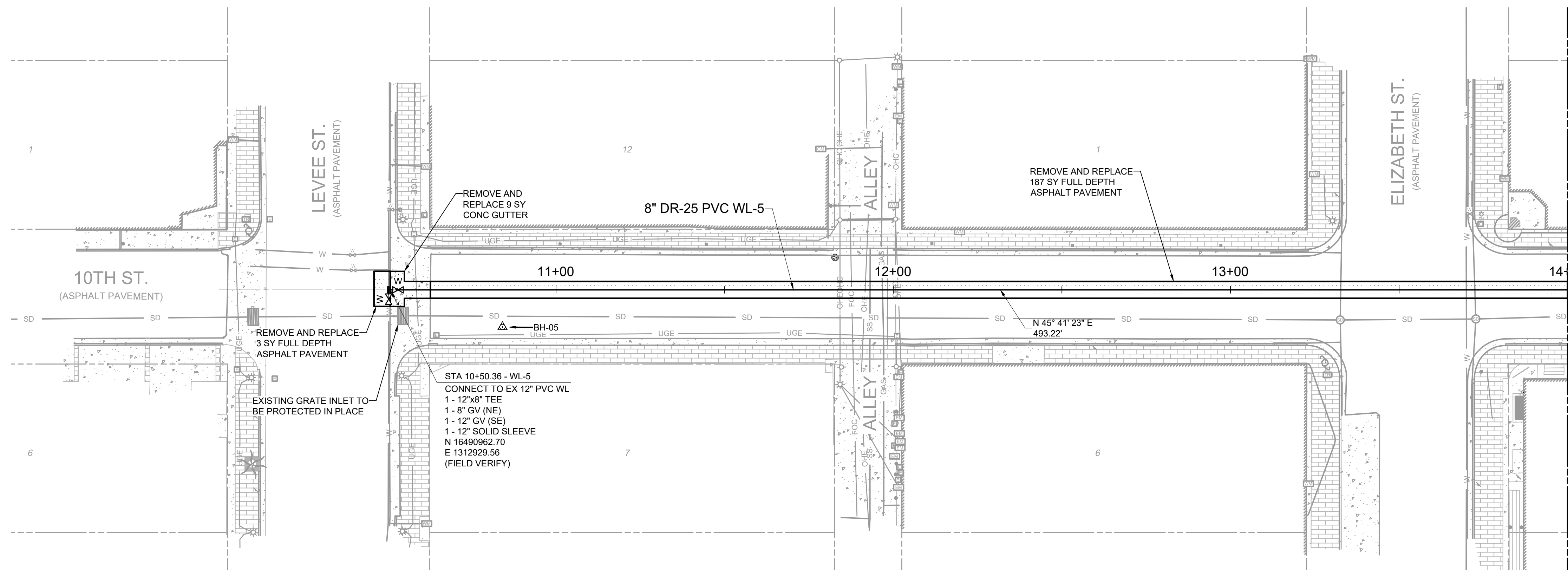
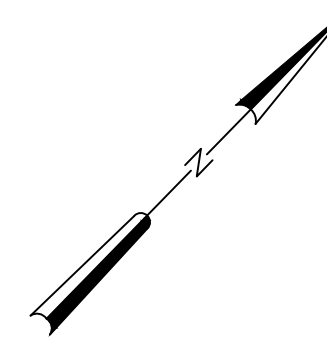
BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

WATER IMPROVEMENTS  
PLAN AND PROFILE  
WL-3 STA 10+00 TO END

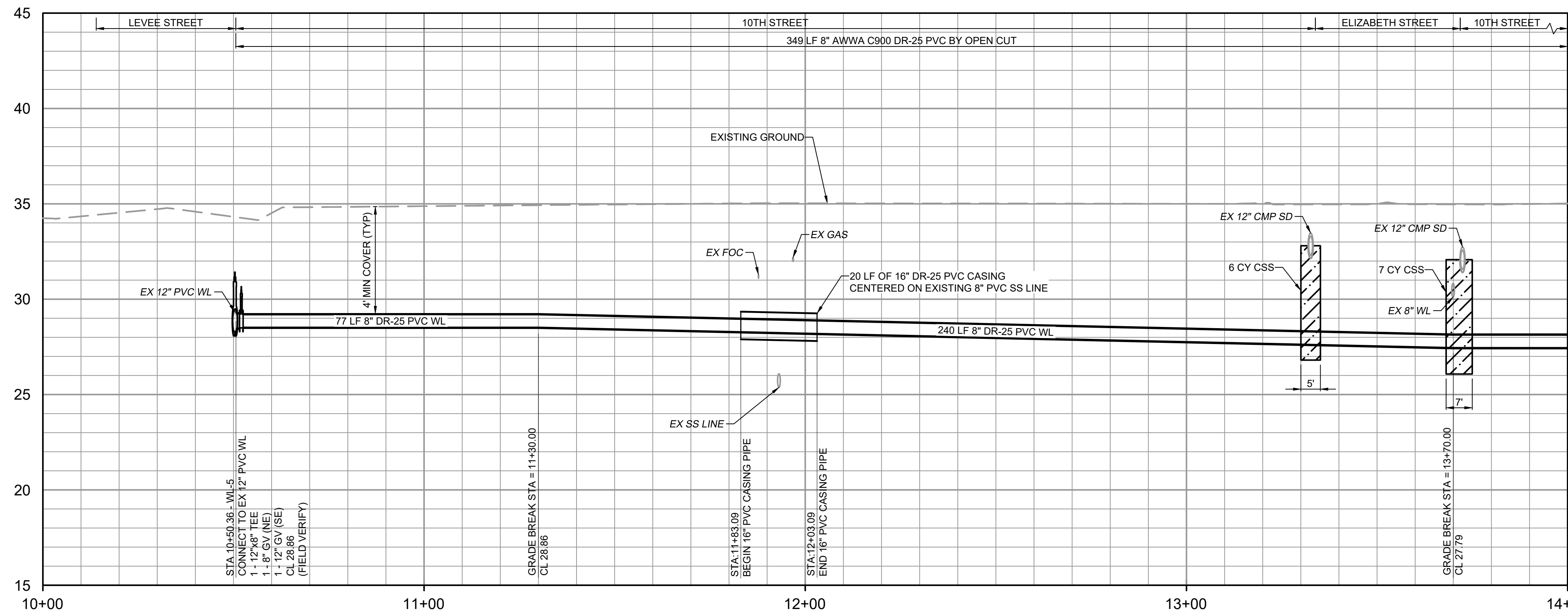
DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	

**NOTES:**

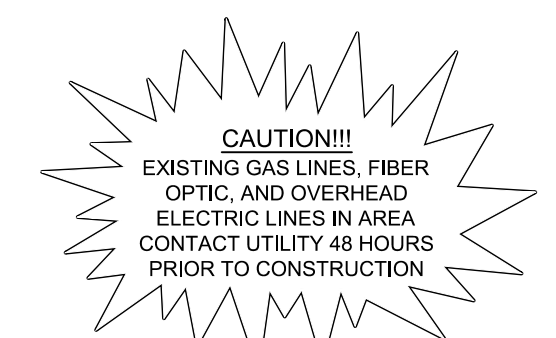
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**PLAN**  
SCALE: 1" = 20'



**PROFILE**  
HORIZONTAL SCALE: 1" = 20'  
VERTICAL SCALE: 1" = 4'



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File: C:\USERS\ZCROSSLEY\DRAWING\BROWNSVILLE\PROJECT FILES\01\_DESIGN\DWG\164045-005-C-PP-C05-WL.dwg Saved by ZCROSSLEY Save date: 10/2/2023 8:16 AM PLOT DATE: 10/19/2023 11:12 AM By: ZCROSSLEY

REV	ISSUED FOR	DATE	BY
	ISSUED FOR BID	10/19/23	AMGS
	ISSUED FOR		

PROJECT ENGINEER:	A. GARCIA
DESIGNED BY:	C. JONES
DRAWN BY:	Z. CROSSLEY
CHECKED BY:	J. LONDON
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	

10/19/2023

**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

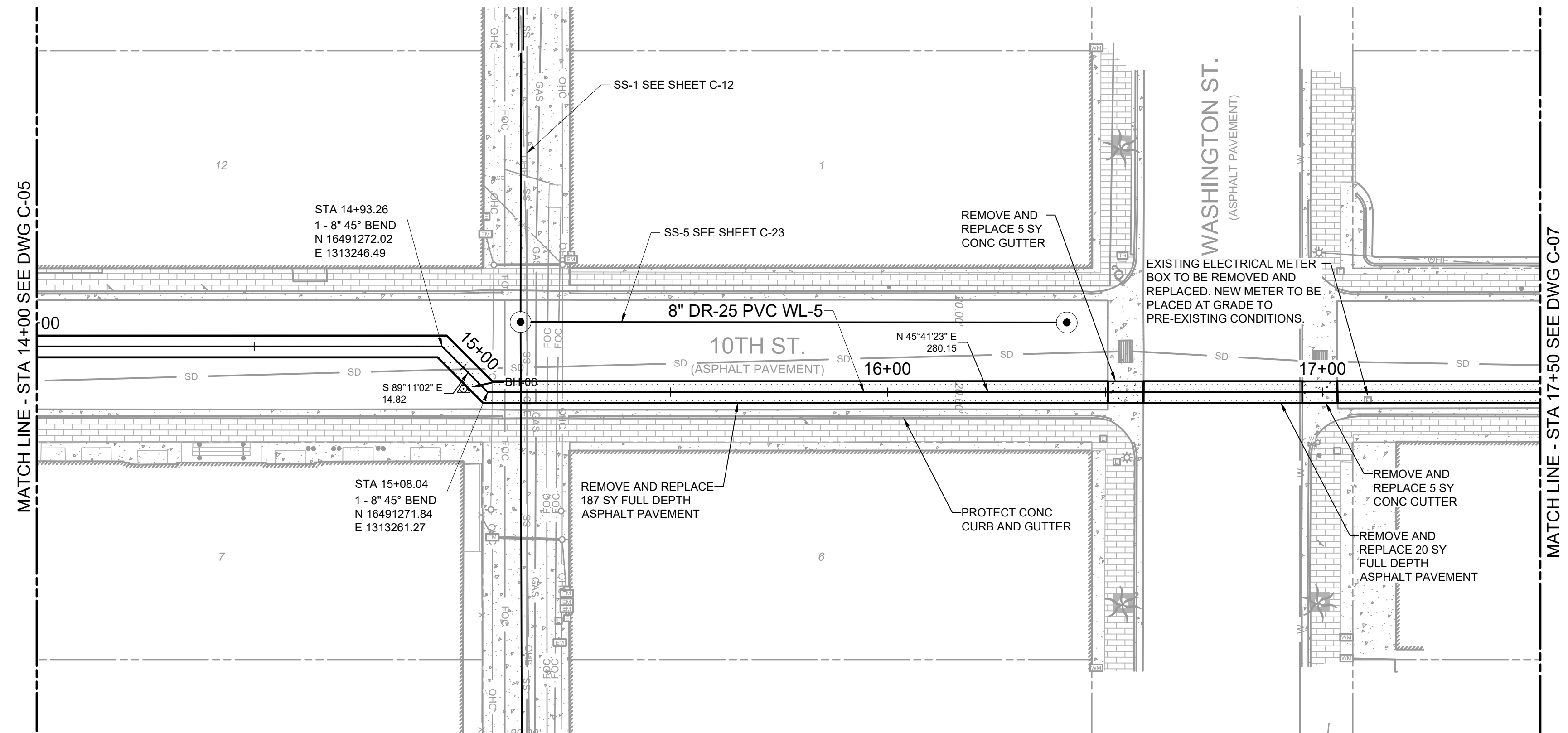
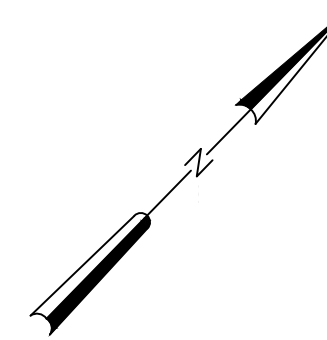
WATER IMPROVEMENTS  
PLAN AND PROFILE  
WL-5 STA 10+00 TO 14+00

DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	C-05

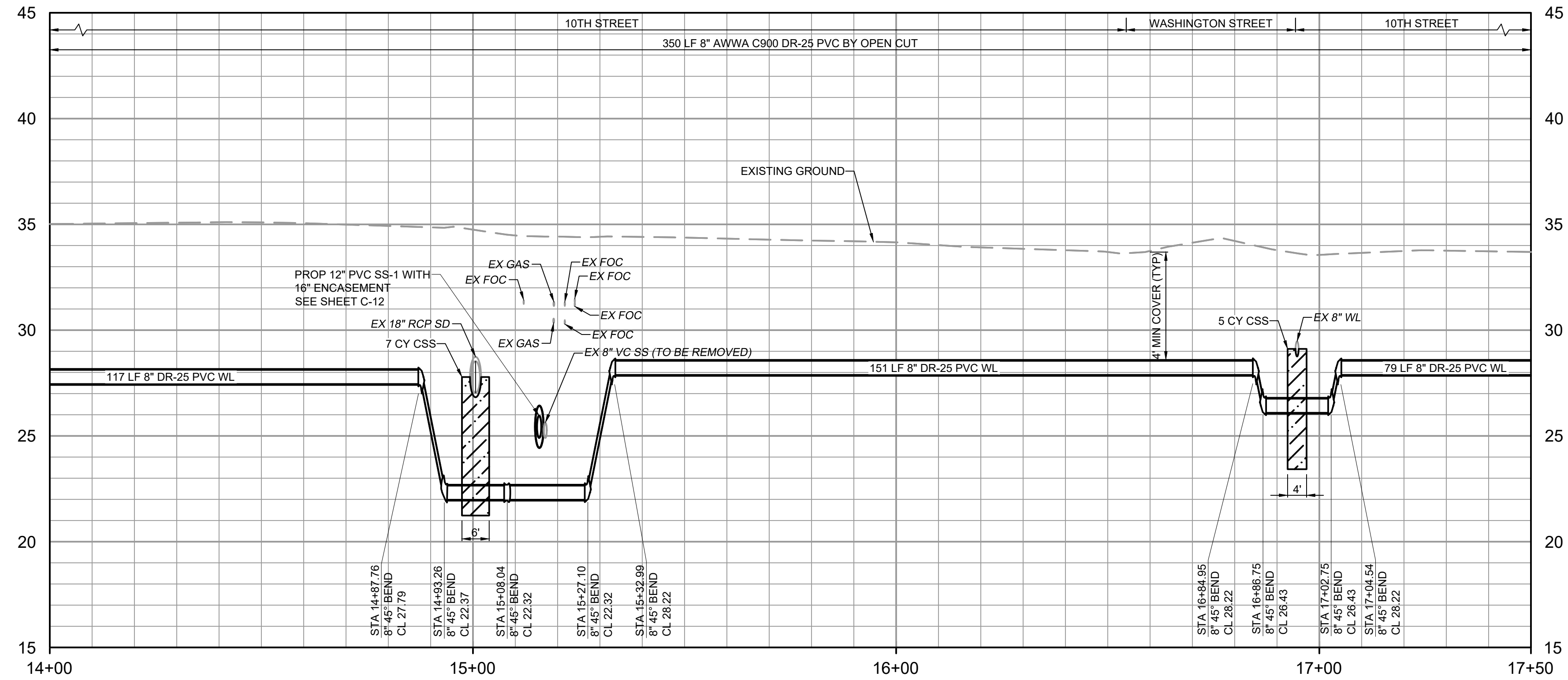


**NOTES:**

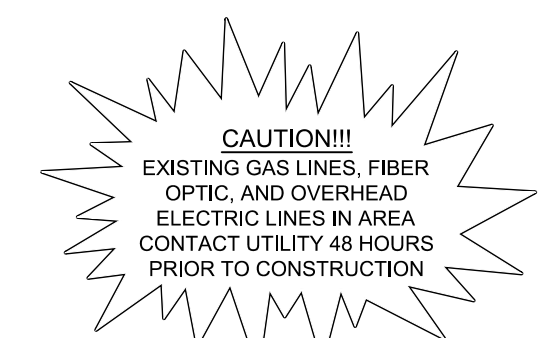
1. ALL REFERENCED DETAILS SHALL BE BROWNSVILLE PUBLIC UTILITIES BOARD OR CITY OF BROWNSVILLE UNLESS NOTED OTHERWISE.
2. THE EXISTING UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS PER AVAILABLE RECORDS. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES, WHETHER PUBLIC OR PRIVATE. PRIOR TO EXCAVATION, THE OWNER AND ENGINEER ARE NOT RESPONSIBLE FOR THE ACCURACY OF THIS INFORMATION. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO COORDINATE WITH UTILITY COMPANIES FOR NECESSARY FACILITY RELOCATION AND NO SEPARATE PAYMENT TO BE MADE. ANY EXISTING UTILITY TO BE SUPPORTED DURING WATER LINE INSTALLATION MUST NOTIFY UTILITY OWNER PRIOR TO PROVIDING TRENCH SUPPORT. ANY DAMAGE TO EXISTING UTILITIES CAUSED BY CONTRACTOR'S OPERATIONS TO BE REPAIRED OR REPLACED AT THE CONTRACTOR'S SOLE EXPENSE.
3. CONTRACTOR SHALL PROVIDE JOINT RESTRAINTS AT ALL LOCATIONS. REFER TO SECTION 40 05 31 OF THE SPECIFICATIONS.
4. NEW WATER LINE TRENCH MUST BE BACKFILLED AND COMPACTED TO BPUB TYPICAL PIPE BEDDING AND TRENCH BACKFILL DETAIL. THE TOP PRIME COAT SEAL AND 3" MINIMUM HMAC SHOULD NOT BE COMPLETED PRIOR TO FULL WIDTH ROADWAY MILLING.
5. AREA SHOWN ON THIS DRAWING INCLUDES BOTH WATER AND SEWER IMPROVEMENTS. REFER TO DRAWING C-33 FOR FULL RESTORATION PLANS, INCLUDING ADDITIONAL MILL AND OVERLAY NOT SHOWN HERE.
6. CONTRACTOR IS RESPONSIBLE TO RECONSTRUCT CONCRETE VALLEY GUTTERS TO MATCH EXISTING GRADES. PROPOSED VALLEY GUTTERS SHALL DRAIN TO MATCH PRECONSTRUCTION CONDITIONS.
7. BROADBAND IS BEING INSTALLED IN THE PROJECT AREA AT THE TIME OF BID AND IS NOT SHOWN ON THE PLANS. REFER TO THE APPENDIX B FOR THE PROPOSED LOCATION OF NEW FIBER OPTIC CONDUITS. CONTRACTOR SHALL COORDINATE EXACT LOCATIONS PRIOR TO STARTING ANY EXCAVATION.



**PLAN**  
SCALE: 1" = 20'



**PROFILE**  
HORIZONTAL SCALE: 1" = 20'  
VERTICAL SCALE: 1" = 4'



THE INFORMATION SHOWN ON THESE DRAWINGS INDICATING SIZE, TYPE AND LOCATION OF UNDERGROUND SURFACE, AND AERIAL UTILITIES IS NOT GUARANTEED TO BE EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT 'ONE CALL' SYSTEM AT 1-800-344-4377 (DIALS 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION FOR EXISTING UTILITY LOCATIONS. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR FIELD VERIFYING LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES AFFECTED BY CONSTRUCTION FOR THIS PROJECT IN ORDER TO AVOID DAMAGING THOSE UTILITIES, AND SHALL IMMEDIATELY ARRANGE FOR REPAIR AND RESTORATION OF CONTRACTOR-DAMAGED UTILITIES TO THE UTILITY COMPANY'S APPROVAL AT THE EXPENSE OF THE CONTRACTOR.

File: C:\USERS\ZCROSSLEY\DRAWING\Hazen and Sawyer\80405-005-DOWNTOWN WATER AND WASTE IMPROVEMENTS\11\12 AM - BY: ZCROSSLEY.PLOT DATE: 10/19/2023 11:12 AM

PROJECT ENGINEER:	A. GARCIA
DESIGNED BY:	C. JONES
DRAWN BY:	Z. CROSSLEY
CHECKED BY:	J. LONDON
ISSUED FOR BID	10/19/23
ISSUED FOR	DATE

**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

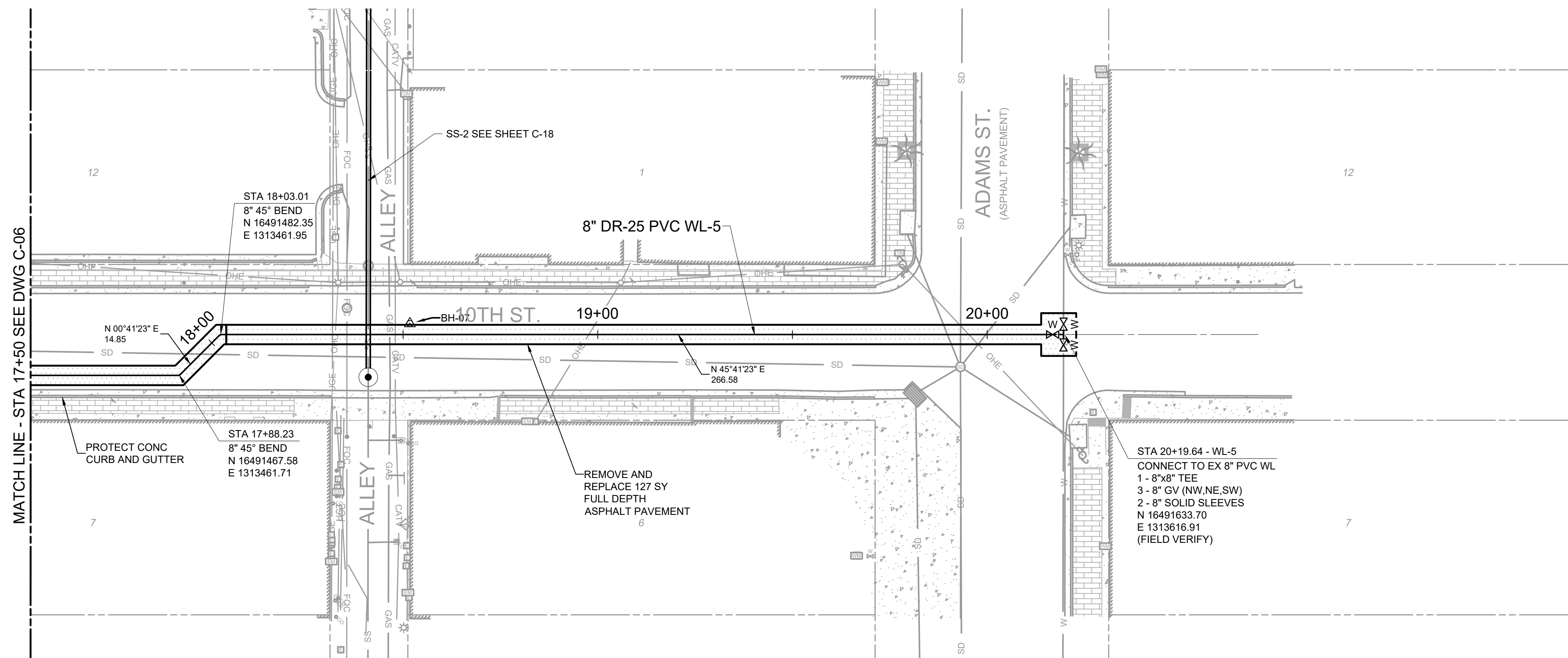
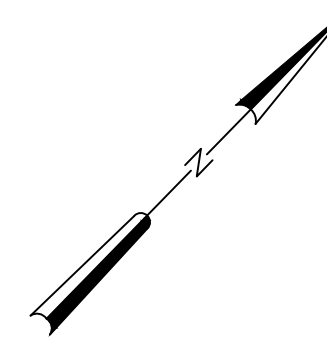
BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

DATE: OCTOBER 2023  
HAZEN NO.: 60405-005  
DRAWING NUMBER:  
WATER IMPROVEMENTS  
PLAN AND PROFILE  
WL-5 STA 14+00 TO 17+50

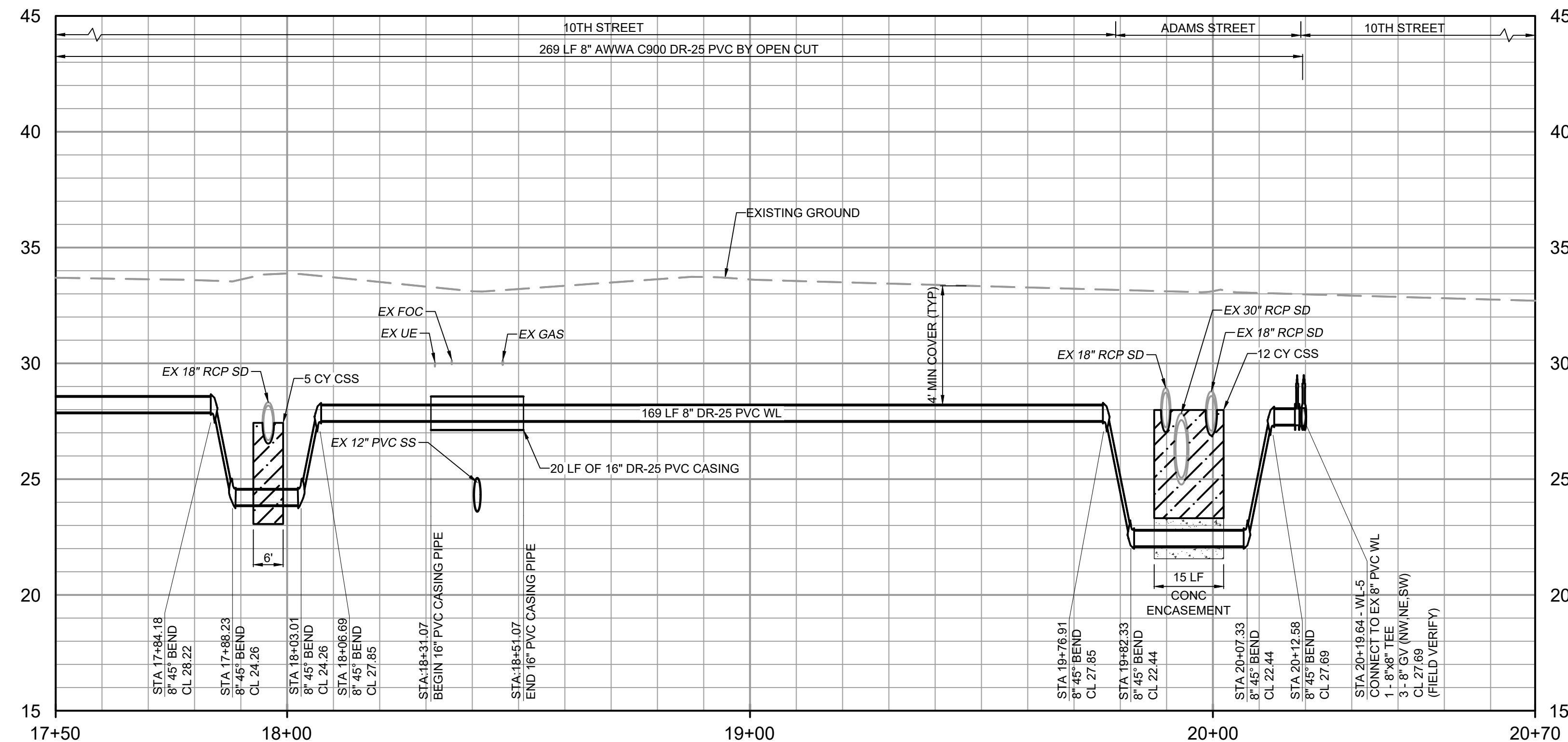
C-06

**NOTES:**

1. ALL REFERENCED DETAILS SHALL BE BROWNSVILLE PUBLIC UTILITIES BOARD OR CITY OF BROWNSVILLE UNLESS NOTED OTHERWISE.
2. THE EXISTING UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS PER AVAILABLE RECORDS. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES, WHETHER PUBLIC OR PRIVATE, PRIOR TO EXCAVATION. THE OWNER AND ENGINEER ARE NOT RESPONSIBLE FOR THE ACCURACY OF THIS INFORMATION. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO COORDINATE WITH UTILITY COMPANIES FOR NECESSARY FACILITY RELOCATION AND NO SEPARATE PAYMENT TO BE MADE. ANY EXISTING UTILITY TO BE SUPPORTED DURING WATER LINE INSTALLATION MUST NOTIFY UTILITY OWNER PRIOR TO PROVIDING TRENCH SUPPORT. ANY DAMAGE TO EXISTING UTILITIES CAUSED BY CONTRACTOR'S OPERATIONS TO BE REPAIRED OR REPLACED AT THE CONTRACTOR'S SOLE EXPENSE.
3. CONTRACTOR SHALL PROVIDE JOINT RESTRAINTS AT ALL LOCATIONS. REFER TO SECTION 40 05 31 OF THE SPECIFICATIONS.
4. NEW WATER LINE TRENCH MUST BE BACKFILLED AND COMPACTED TO BPUB TYPICAL PIPE BEDDING AND TRENCH BACKFILL DETAIL. THE TOP PRIME COAT SEAL AND 3" MINIMUM HMA SHOULD NOT BE COMPLETED PRIOR TO FULL WIDTH ROADWAY MILLING.
5. AREA SHOWN ON THIS DRAWING INCLUDES BOTH WATER AND SEWER IMPROVEMENTS. REFER TO DRAWING C-33 FOR FULL RESTORATION PLANS, INCLUDING ADDITIONAL MILL AND OVERLAY NOT SHOWN HERE.
6. BROADBAND IS BEING INSTALLED IN THE PROJECT AREA AT THE TIME OF BID AND IS NOT SHOWN ON THE PLANS. REFER TO THE APPENDIX B FOR THE PROPOSED LOCATION OF NEW FIBER OPTIC CONDUITS. CONTRACTOR SHALL COORDINATE EXACT LOCATIONS PRIOR TO STARTING ANY EXCAVATION.
7. REFER TO SHEET DT-06 FOR A TYPICAL DETAIL AT TIE-IN LOCATIONS.



**PLAN**  
SCALE: 1" = 20'



**PROFILE**  
HORIZONTAL SCALE: 1" = 20'  
VERTICAL SCALE: 1" = 4'

**CAUTION!!!**  
EXISTING GAS LINES, FIBER OPTIC, AND OVERHEAD ELECTRIC LINES IN AREA CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION



THE INFORMATION SHOWN ON THESE DRAWINGS INDICATING SIZE, TYPE AND LOCATION OF UNDERGROUND SURFACE, AND AERIAL UTILITIES IS NOT GUARANTEED TO BE EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT "ONE CALL" SYSTEM AT 1-800-344-4377 (DIALS 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION) FOR EXISTING UTILITY LOCATIONS. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR FIELD VERIFYING LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES AFFECTED BY CONSTRUCTION FOR THIS PROJECT IN ORDER TO AVOID DAMAGING THOSE UTILITIES, AND SHALL IMMEDIATELY ARRANGE FOR REPAIR AND RESTORATION OF CONTRACTOR-DAMAGED UTILITIES TO THE UTILITY COMPANY'S APPROVAL AT THE EXPENSE OF THE CONTRACTOR.

File: C:\USERS\ZCROSSLEY\DRAWING\HAZEN AND SAWYER\60405-005-DOWNTOWN WATER AND WASTE IMPROVEMENTS\101\_DESIGN\CIVIL\60405-005-C-PP-C07A.WL Saved by ZCROSSLEY Save date: 10/2/2023 12:56 PM PLOT DATE: 10/19/2023 11:12 AM BY: ZCROSSLEY

PROJECT ENGINEER:	A. GARCIA	
DESIGNED BY:	C. JONES	
DRAWN BY:	Z. CROSSLEY	
CHECKED BY:	J. LONDON	
ISSUED FOR BID	10/19/23	AMGS
ISSUED FOR	DATE	BY

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

0 1/2" 1"

10/19/2023



**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

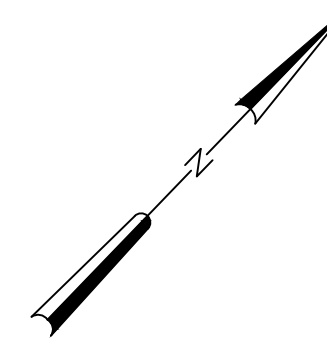
BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

WATER IMPROVEMENTS  
PLAN AND PROFILE  
WL-5 STA 17+50 TO END

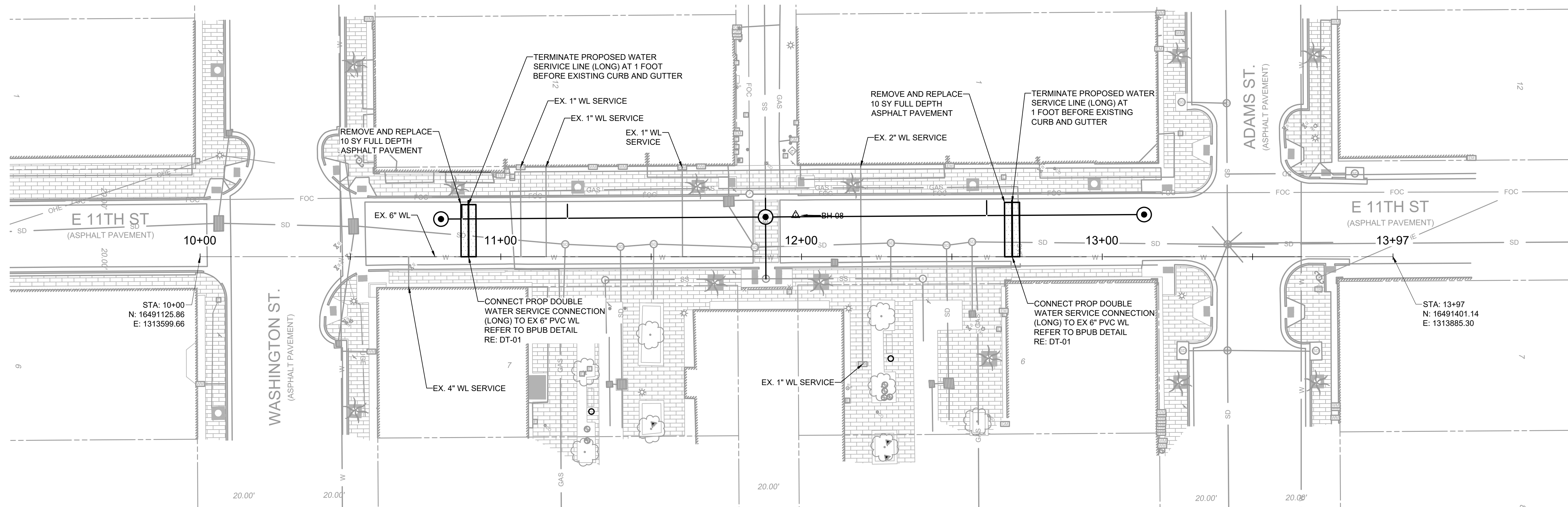
DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	C-07



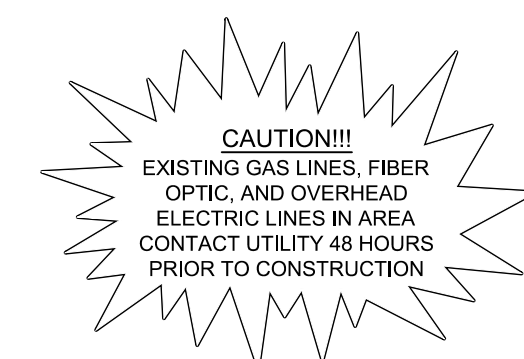
**NOTES:**



1. ALL REFERENCED DETAILS SHALL BE BROWNSVILLE PUBLIC UTILITIES BOARD OR CITY OF BROWNSVILLE UNLESS NOTED OTHERWISE.
2. THE EXISTING UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS PER AVAILABLE RECORDS. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES, WHETHER PUBLIC OR PRIVATE, PRIOR TO EXCAVATION. THE OWNER AND ENGINEER ARE NOT RESPONSIBLE FOR THE ACCURACY OF THIS INFORMATION. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO COORDINATE WITH UTILITY COMPANIES FOR NECESSARY FACILITY RELOCATION AND NO SEPARATE PAYMENT TO BE MADE. ANY EXISTING UTILITY TO BE SUPPORTED DURING WATER LINE INSTALLATION MUST NOTIFY UTILITY OWNER PRIOR TO PROVIDING TRENCH SUPPORT. ANY DAMAGE TO EXISTING UTILITIES CAUSED BY CONTRACTOR'S OPERATIONS TO BE REPAIRED OR REPLACED AT THE CONTRACTOR'S SOLE EXPENSE.
3. CONTRACTOR SHALL PROVIDE JOINT RESTRAINTS AT ALL LOCATIONS. REFER TO SECTION 40 05 31 OF THE SPECIFICATIONS.
4. NEW WATER LINE TRENCH MUST BE BACKFILLED AND COMPACTED TO BPUB TYPICAL PIPE BEDDING AND TRENCH BACKFILL DETAIL. THE TOP PRIME COAT SEAL AND 3" MINIMUM HMAC SHOULD NOT BE COMPLETED PRIOR TO FULL WIDTH ROADWAY MILLING.
5. AREA SHOWN ON THIS DRAWING INCLUDES BOTH WATER AND SEWER IMPROVEMENTS. REFER TO DRAWING C-29 FOR FULL RESTORATION PLANS, INCLUDING ADDITIONAL MILL AND OVERLAY NOT SHOWN HERE.
6. ALL PROPOSED WATER SERVICE LINES SHALL BE TERMINATED 1 FOOT FROM EXISTING GUTTER AND CAPPED.
7. BROADBAND IS BEING INSTALLED IN THE PROJECT AREA AT THE TIME OF BID AND IS NOT SHOWN ON THE PLANS. REFER TO THE APPENDIX B FOR THE PROPOSED LOCATION OF NEW FIBER OPTIC CONDUITS. CONTRACTOR SHALL COORDINATE EXACT LOCATIONS PRIOR TO STARTING ANY EXCAVATION.



**PLAN**  
SCALE: 1" = 20'



THE INFORMATION SHOWN ON THESE DRAWINGS INDICATING SIZE, TYPE AND LOCATION OF UNDERGROUND SURFACE AND AERIAL UTILITIES IS NOT GUARANTEED TO BE EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT "ONE CALL" SYSTEM AT 1-800-344-4377 (DIXIE) 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION FOR EXISTING UTILITY LOCATIONS. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR FIELD VERIFYING LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES AFFECTED BY CONSTRUCTION FOR THIS PROJECT IN ORDER TO AVOID DAMAGING THOSE UTILITIES, AND SHALL IMMEDIATELY ARRANGE FOR REPAIR AND RESTORATION OF CONTRACTOR-DAMAGED UTILITIES TO THE UTILITY COMPANY'S APPROVAL AT THE EXPENSE OF THE CONTRACTOR.

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PROJECT ENGINEER:	A. GARCIA	
DESIGNED BY:	C. JONES	
DRAWN BY:	Z. CROSSLEY	
CHECKED BY:	J. LONDON	
ISSUED FOR BID	10/19/23	AMGS
ISSUED FOR	DATE	BY

10/19/2023

**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS

DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

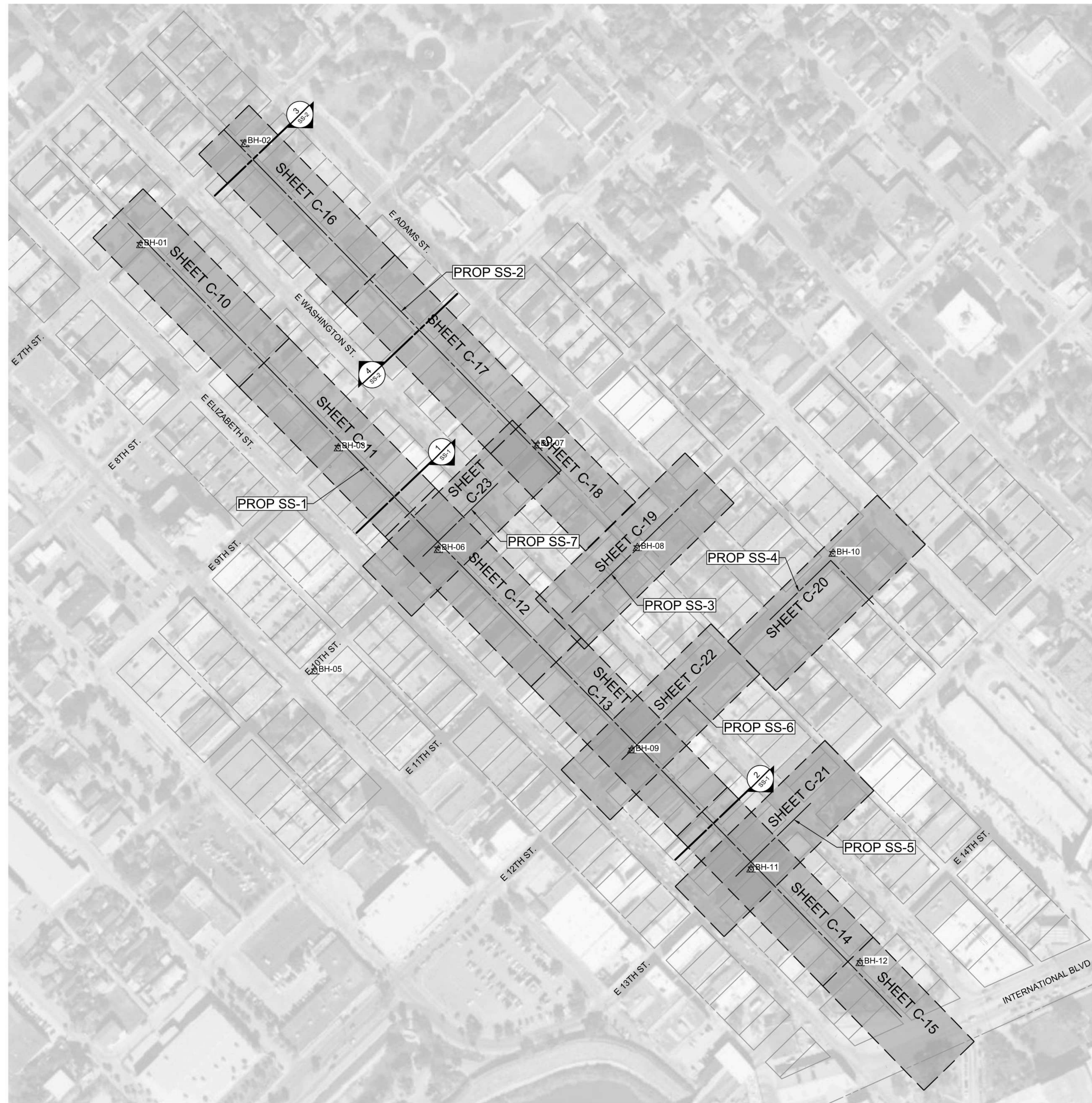
WATER IMPROVEMENTS

PLAN

WL-4 SERVICE CONNECTIONS

DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	C-08





PLAN  
SCALE: 1" = 150'



PHOTO 1  
NO SCALE SS-1



PHOTO 2  
NO SCALE SS-1



PHOTO 3  
NO SCALE SS-2



PHOTO 4  
NO SCALE SS-2

NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR FAMILIARIZING THEMSELVES WITH EXISTING CONDITIONS AND CONSTRAINTS WITHIN THE ALLEY CORRIDORS. PHOTOS BELOW ARE REPRESENTATIVE OF SUCH CONDITIONS, WHICH INCLUDE LOW CLEARANCE OVERHEAD POLES WITH TRANSFORMER PADS, ELECTRICAL POLE GUY WIRES AND VARIOUS UTILITY FIXTURES, POLES AND STRUCTURES. SECTION CUTS INDICATING LOCATION OF PHOTOS ARE SHOWN ON MAP.
2. CONTRACTOR SHALL UTILIZE EQUIPMENT THAT MEETS THE REQUIREMENTS OF 10-FOOT VERTICAL SEPARATION FROM ALL OVERHEAD POWER LINES. ALL EQUIPMENT SPECIFICATIONS SHALL BE REVIEWED AND APPROVED BY QUALIFIED OWNER'S REPRESENTATIVE PRIOR TO DELIVERING TO PROJECT SITE.
3. CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF A TRENCH SAFETY PLAN IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT, WHICH SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN TEXAS.
4. A COPY OF THE GEOTECHNICAL REPORT PREPARED FOR THE PROJECT IS INCLUDED FOR REFERENCE IN APPENDIX A. HOWEVER, THIS REPORT IS NOT PART OF THE CONTRACT DOCUMENTS AND THE CONTRACTOR IS STILL RESPONSIBLE FOR CONDUCTING THEIR OWN ADVANCED PRE-BID EXPLORATIONS AND TESTING TO DETERMINE RISK AND COST ASSOCIATED WITH SUBSURFACE CONDITIONS. REFER TO ARTICLE 4.2 OF THE GENERAL CONDITIONS.
5. BROADBAND IS BEING INSTALLED IN THE PROJECT AREA AT THE TIME OF BID AND IS NOT SHOWN ON THE PLANS. REFER TO THE APPENDIX B FOR THE PROPOSED LOCATION OF NEW FIBER OPTIC CONDUITS. CONTRACTOR SHALL COORDINATE EXACT LOCATIONS PRIOR TO STARTING ANY EXCAVATION.

File: C:\USERS\ZCROSSLEY\DRAWINGS\HAZEN AND SAWYER\6405-005-DOWNTOWN WATER AND WASTE\PROJECT FILES\01\_DESIGN\CIVIL\6405-005-C-SP-C09-SS Saved by ZCROSSLEY Save date: 10/11/2023 9:26 AM  
PLOT DATE: 10/19/2023 11:13 AM BY: ZCROSSLEY

REV	ISSUED FOR	DATE	BY
	ISSUED FOR BID	10/19/23	AMGS

PROJECT ENGINEER:	A. GARCIA
DESIGNED BY:	C. JONES
DRAWN BY:	Z. CROSSLEY
CHECKED BY:	J. LONDON
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	

0	1/2"	1"
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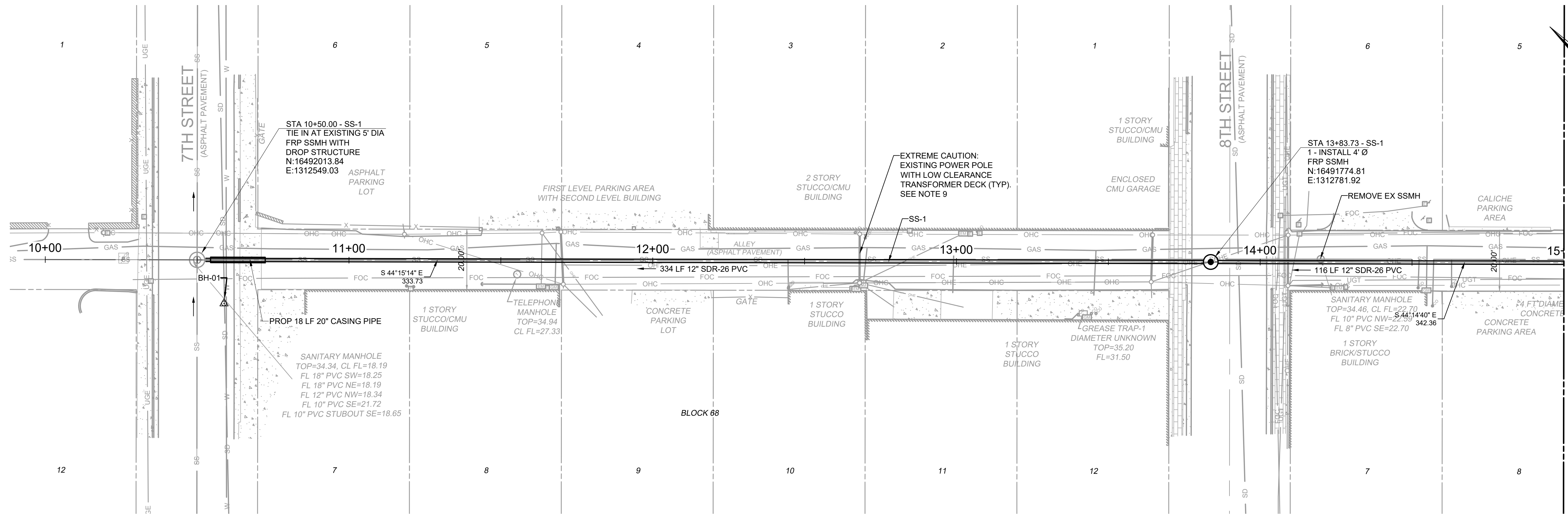
**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

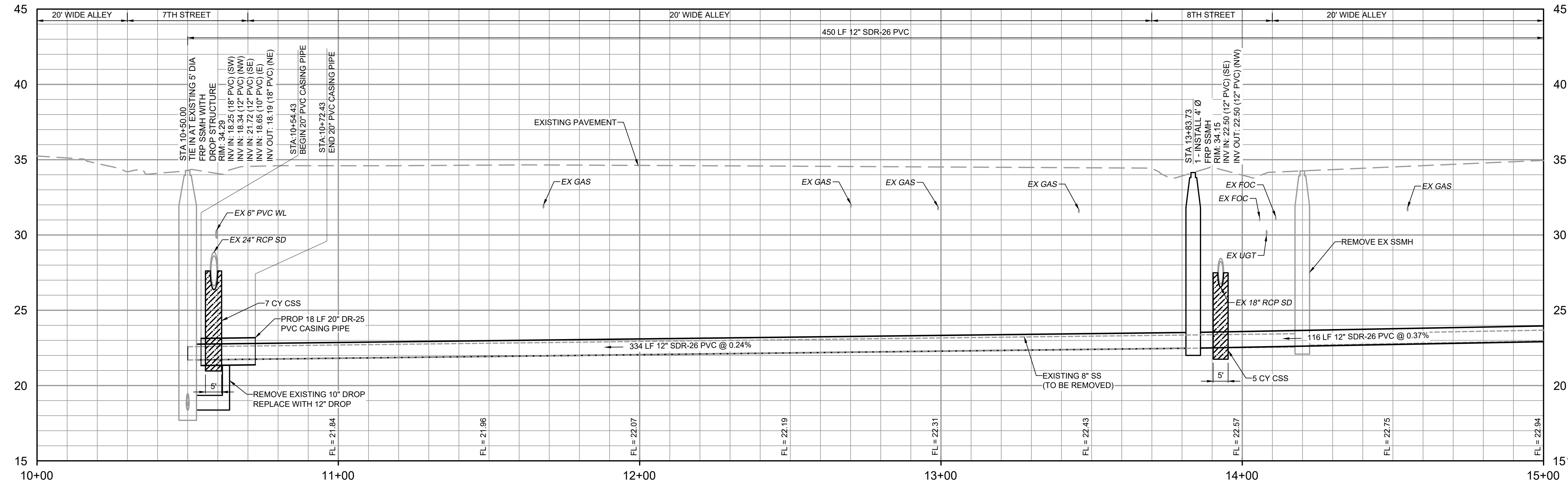
WASTEWATER IMPROVEMENTS  
SITE PLAN

DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	





PLAN  
SCALE: 1" = 20'



PROFILE  
HORIZONTAL SCALE: 1" = 20'  
VERTICAL SCALE: 1" = 4'

NOTES:

- CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING VITRIFIED CLAY PIPE AND REPLACE IT WITH NEW PVC PIPE AS SHOWN.
- CONTRACTOR SHALL REMOVE EXISTING SANITARY SEWER CONCRETE AND BRICK MANHOLES AND REPLACE THEM WITH NEW FIBERGLASS MANHOLES.
- CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH GEOTECHNICAL CONDITIONS, INCLUDING SOIL TYPES AND GROUNDWATER ELEVATION. INSTALLATION MEANS AND METHODS SHALL BE SELECTED TO PREVENT DISTURBING ADJACENT BUILDING FOOTERS AND EXISTING UTILITIES, INCLUDING POLES AND OTHER STRUCTURES.
- ALL REFERENCED DETAILS SHOULD BE BROWNSVILLE PUBLIC UTILITIES BOARD OR THE CITY OF BROWNSVILLE UNLESS NOTED OTHERWISE.
- THE EXISTING UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS PER AVAILABLE RECORDS. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES, WHETHER PUBLIC OR PRIVATE. PRIOR TO EXCAVATION, THE OWNER AND ENGINEER ARE NOT RESPONSIBLE FOR THE ACCURACY OF THIS INFORMATION. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO COORDINATE WITH UTILITY COMPANIES FOR NECESSARY FACILITY RELOCATION AND NO SEPARATE PAYMENT TO BE MADE. ANY DAMAGE TO EXISTING UTILITIES CAUSED BY CONTRACTOR'S OPERATIONS TO BE REPAIRED OR REPLACED AT THE CONTRACTOR'S SOLE EXPENSE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRENCH SAFETY REQUIREMENTS IN ACCORDANCE WITH CITY STANDARDS, TEXAS LAW AND O.S.H.A. STANDARDS FOR ALL EXCAVATIONS.
- SEE SHEET DT-2 FOR STANDARD BPUB WASTEWATER DETAILS.
- SEE SHEET DT-3 AND DT-4 FOR CITY OF BROWNSVILLE PAVING AND FACILITY DETAILS.
- SEE SHEET C-24 FOR LIST OF SEWER SERVICE LATERAL TIE-IN LOCATIONS ALONG ALIGNMENT. THERE ARE 17 SERVICE RECONNECTIONS ON THIS STREET. INDIVIDUAL SEWER SERVICE TIE-IN CALLOUTS ARE OMITTED FOR CLARITY.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPORTING ALL EXISTING UTILITIES AND STRUCTURES DURING EXCAVATION, INCLUDING UTILITY POLES AND TRANSFORMER STRUCTURES. REFER TO PHOTOS ON DRAWING C-09.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL SEWER SERVICES, RECONNECTING OF SERVICE LINES, AND BYPASS PUMPING THROUGHOUT THE ENTIRETY OF CONSTRUCTION OF THE SEWER LINE. REFER TO SECTION 01 57 40 OF THE SPECIFICATIONS FOR BYPASS PUMPING SYSTEM REQUIREMENTS.
- CONTRACTOR SHALL UTILIZE EQUIPMENT THAT MEETS THE REQUIREMENTS OF 10-FOOT VERTICAL SEPARATION FROM ALL OVERHEAD POWER LINES. ALL EQUIPMENT SPECIFICATIONS SHALL BE REVIEWED AND APPROVED BY QUALIFIED OWNER'S REPRESENTATIVE PRIOR TO DELIVERING TO PROJECT SITE.
- SEE SHEET C-25 FOR SURFACE RESTORATION LIMITS.
- BROADBAND IS BEING INSTALLED IN THE PROJECT AREA AT THE TIME OF BID AND IS NOT SHOWN ON THE PLANS. REFER TO THE APPENDIX B FOR THE PROPOSED LOCATION OF NEW FIBER OPTIC CONDUITS. CONTRACTOR SHALL COORDINATE EXACT LOCATIONS PRIOR TO STARTING ANY EXCAVATION.

**CAUTION!!!**  
EXISTING GAS LINES, FIBER OPTIC, AND OVERHEAD ELECTRIC LINES IN AREA CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION.



THE INFORMATION SHOWN ON THESE DRAWINGS INDICATING SIZE, TYPE AND LOCATION OF UNDERGROUND SURFACE AND AERIAL UTILITIES IS NOT GUARANTEED TO BE EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT "ONE CALL" SYSTEM AT 1-800-344-8077 (EXCEPTS) 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION FOR EXISTING UTILITY LOCATIONS. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR FIELD VERIFYING LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES AFFECTED BY CONSTRUCTION FOR THIS PROJECT IN ORDER TO AVOID DAMAGING THOSE UTILITIES, AND SHALL IMMEDIATELY ARRANGE FOR REPAIR AND RESTORATION OF CONTRACTOR-DAMAGED UTILITIES TO THE UTILITY COMPANY'S APPROVAL AT THE EXPENSE OF THE CONTRACTOR.

File: C:\USERS\ZCROSSLEY\DRAWING\HAZEN AND SAWYER\60405-005-DOWNTOWN WATER AND WASTE\PROJECT FILES\01\_DESIGN\DWG\60405-005-C-PP-C10-S.dwg, Saved by: ZCROSSLEY, Save date: 10/11/2023 1:25 PM, PLOT DATE: 10/19/2023 11:13 AM, By: ZCROSSLEY

PROJECT ENGINEER:	A. GARCIA		
DESIGNED BY:	C. JONES		
DRAWN BY:	Z. CROSSLEY		
CHECKED BY:	J. LONDON		
ISSUED FOR BID	10/19/23	AMGS	
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE			
REV	ISSUED FOR	DATE	BY



**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

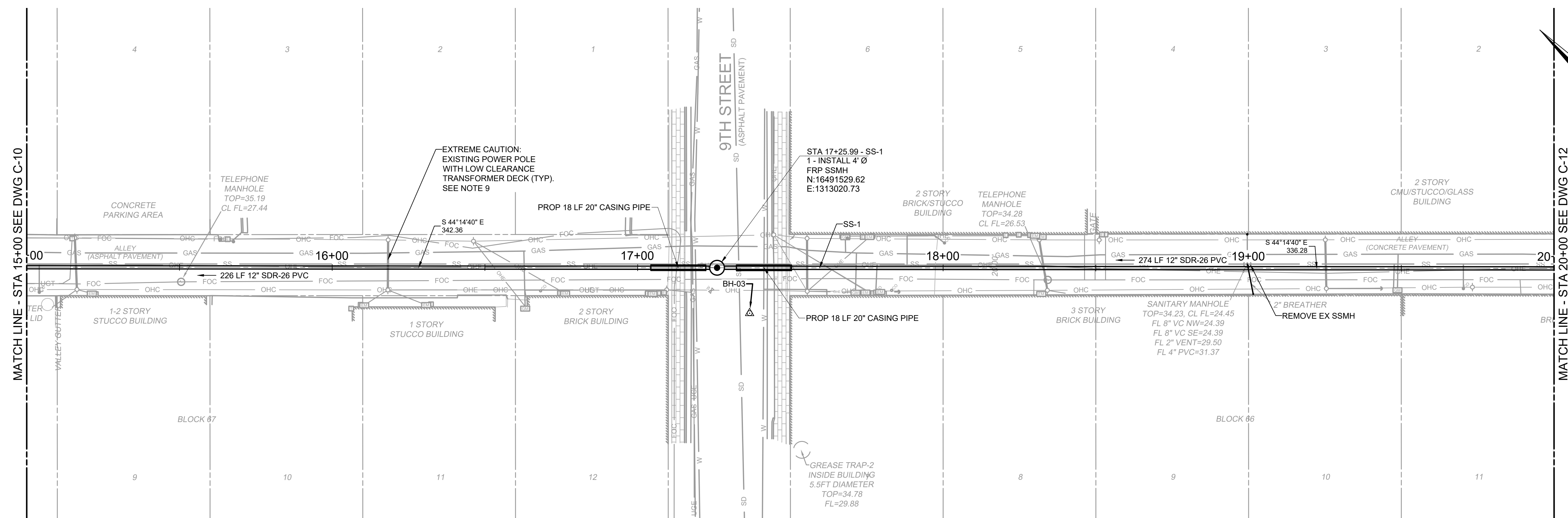
BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER IMPROVEMENTS PROJECT 2

WASTEWATER IMPROVEMENTS  
PLAN AND PROFILE  
SS-1 STA 10+00 TO STA 15+00

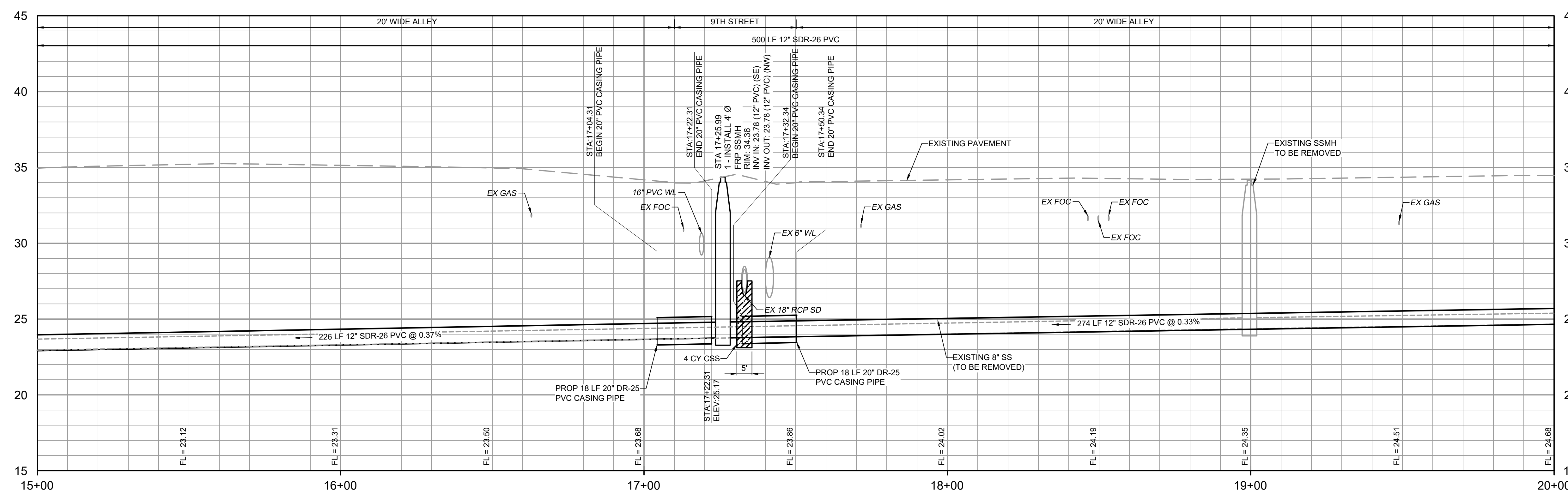
DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	

**NOTES:**

- CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING VITRIFIED CLAY PIPE AND REPLACE IT WITH NEW PVC PIPE AS SHOWN.
- CONTRACTOR SHALL REMOVE EXISTING SANITARY SEWER CONCRETE AND BRICK MANHOLES AND REPLACE THEM WITH NEW FIBERGLASS MANHOLES.
- CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH GEOTECHNICAL CONDITIONS, INCLUDING SOIL TYPES AND GROUNDWATER ELEVATION. INSTALLATION MEANS AND METHODS SHALL BE SELECTED TO PREVENT DISTURBING ADJACENT BUILDING FOOTERS AND EXISTING UTILITIES, INCLUDING POLES AND OTHER STRUCTURES.
- ALL REFERENCED DETAILS SHOULD BE BROWNSVILLE PUBLIC UTILITIES BOARD OR THE CITY OF BROWNSVILLE UNLESS NOTED OTHERWISE.
- THE EXISTING UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS PER AVAILABLE RECORDS. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES, WHETHER PUBLIC OR PRIVATE. PRIOR TO EXCAVATION, THE OWNER AND ENGINEER ARE NOT RESPONSIBLE FOR THE ACCURACY OF THIS INFORMATION. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO COORDINATE WITH UTILITY COMPANIES FOR NECESSARY FACILITY RELOCATION AND NO SEPARATE PAYMENT TO BE MADE. ANY DAMAGE TO EXISTING UTILITIES CAUSED BY CONTRACTOR'S OPERATIONS TO BE REPAIRED OR REPLACED AT THE CONTRACTOR'S SOLE EXPENSE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRENCH SAFETY REQUIREMENTS IN ACCORDANCE WITH CITY STANDARDS, TEXAS LAW AND O.S.H.A. STANDARDS FOR ALL EXCAVATIONS.
- SEE SHEET DT-1 FOR STANDARD BPUB WASTEWATER DETAILS.
- SEE SHEET DT-2 AND DT-3 FOR CITY OF BROWNSVILLE PAVING AND FACILITY DETAILS.
- SEE SHEET C-15 FOR LIST OF SEWER SERVICE LATERAL TIE-IN LOCATIONS ALONG ALIGNMENT. THERE ARE 27 SERVICE RECONNECTIONS ON THIS SHEET. INDIVIDUAL SEWER SERVICE TIE-IN CALLOUTS ARE OMITTED FOR CLARITY.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPORTING ALL EXISTING UTILITIES AND STRUCTURES DURING EXCAVATION, INCLUDING UTILITY POLES AND TRANSFORMER STRUCTURES. REFER TO PHOTOS ON DRAWING C-09.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL SEWER SERVICES, RECONNECTING OF SERVICE LINES, AND BYPASS PUMPING THROUGHOUT THE ENTIRETY OF CONSTRUCTION OF THE SEWER LINE. REFER TO SECTION 01 57 40 OF THE SPECIFICATIONS FOR BYPASS PUMPING SYSTEM REQUIREMENTS.
- CONTRACTOR SHALL UTILIZE EQUIPMENT THAT MEETS THE REQUIREMENTS OF 10-FOOT VERTICAL SEPARATION FROM ALL OVERHEAD POWER LINES. ALL EQUIPMENT SPECIFICATIONS SHALL BE REVIEWED AND APPROVED BY QUALIFIED OWNER'S REPRESENTATIVE PRIOR TO DELIVERING TO PROJECT SITE.
- SEE SHEET C-26 FOR SURFACE RESTORATION LIMITS.
- BROADBAND IS BEING INSTALLED IN THE PROJECT AREA AT THE TIME OF BID AND IS NOT SHOWN ON THE PLANS. REFER TO THE APPENDIX B FOR THE PROPOSED LOCATION OF NEW FIBER OPTIC CONDUITS. CONTRACTOR SHALL COORDINATE EXACT LOCATIONS PRIOR TO STARTING ANY EXCAVATION.



**PLAN**  
SCALE: 1" = 20'



**PROFILE**  
HORIZONTAL SCALE: 1" = 20'  
VERTICAL SCALE: 1" = 4'

**CAUTION!!!**  
EXISTING GAS LINES, FIBER OPTIC, AND OVERHEAD ELECTRIC LINES IN AREA CONTRACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION.



Know what's below.  
Call before you dig.

THE INFORMATION SHOWN ON THESE DRAWINGS INDICATING SIZE, TYPE AND LOCATION OF UNDERGROUND SURFACE AND AERIAL UTILITIES IS NOT GUARANTEED TO BE EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT "ONE CALL" SYSTEM AT 1-800-368-5877 (NOTES) 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION FOR EXISTING UTILITY LOCATIONS. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR FIELD VERIFYING LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES AFFECTED BY CONSTRUCTION FOR THIS PROJECT IN ORDER TO AVOID DAMAGING THOSE UTILITIES, AND SHALL IMMEDIATELY ARRANGE FOR REPAIR AND RESTORATION OF CONTRACTOR-DAMAGED UTILITIES TO THE UTILITY COMPANY'S APPROVAL AT THE EXPENSE OF THE CONTRACTOR.

File: C:\USERS\ZCROSSLEY\DRAWING\HAZEN AND SAWYER\60405-005-DOWNTOWN WATER AND WASTE IMPROVEMENTS\10112023\1.281 PM PLOT DATE: 10/19/2023 11:13 AM By: ZCROSSLEY

PROJECT ENGINEER:	A. GARCIA	
DESIGNED BY:	C. JONES	
DRAWN BY:	Z. CROSSLEY	
CHECKED BY:	J. LONDON	
ISSUED FOR BID	10/19/23	AMGS
ISSUED FOR	DATE	BY

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

0 1/2" 1"

10/19/2023

**Hazen**

HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS

DOWNTOWN WATER AND WASTEWATER IMPROVEMENTS PROJECT 2

WASTEWATER IMPROVEMENTS

PLAN AND PROFILE

SS-1 STA 15+00 TO STA 20+00

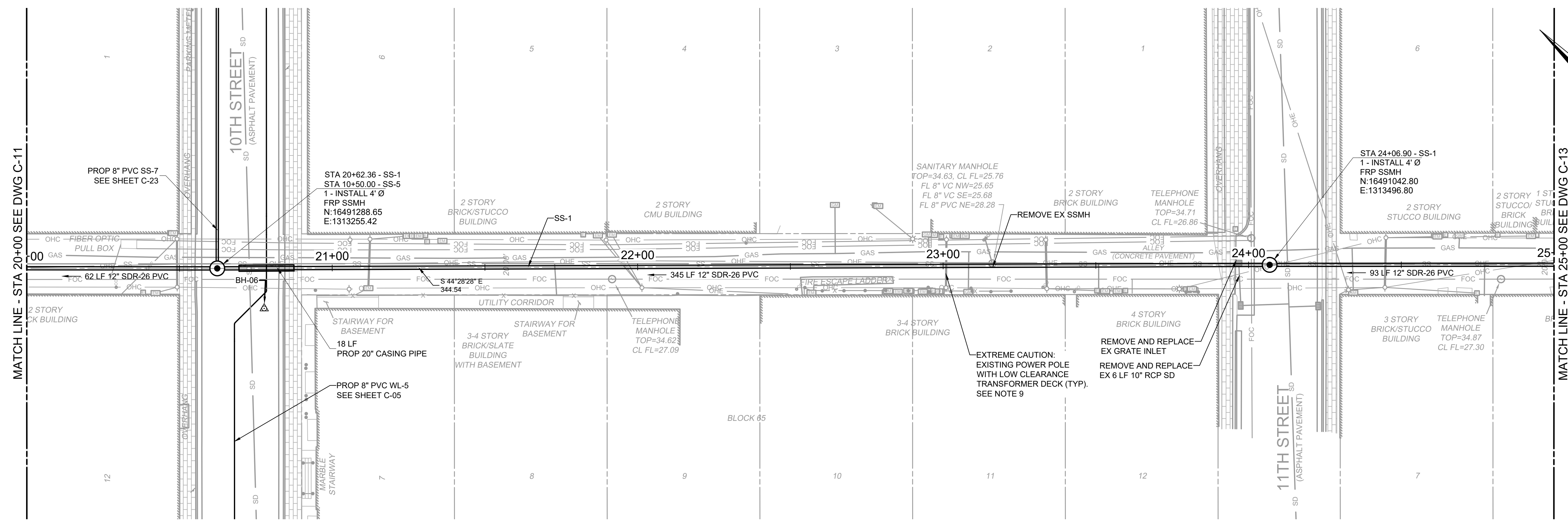
C-11

DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	

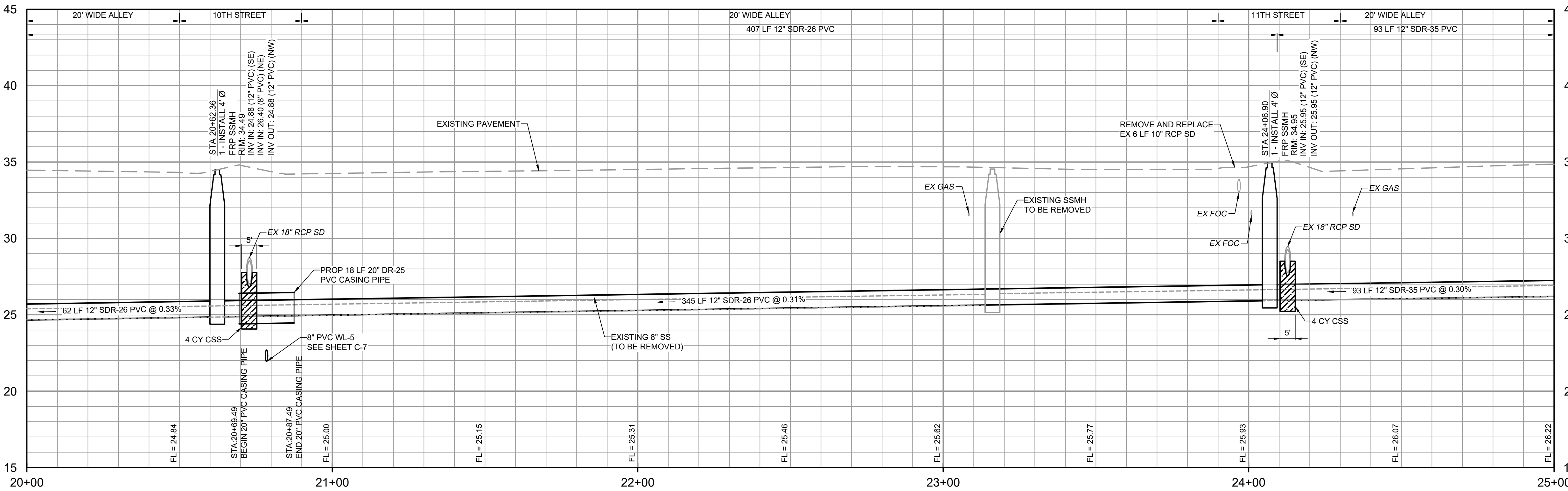


**NOTES:**

- CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING VITRIFIED CLAY PIPE AND REPLACE IT WITH NEW PVC PIPE AS SHOWN.
- CONTRACTOR SHALL REMOVE EXISTING SANITARY SEWER CONCRETE AND BRICK MANHOLES AND REPLACE THEM WITH NEW FIBERGLASS MANHOLES.
- CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH GEOTECHNICAL CONDITIONS, INCLUDING SOIL TYPES AND GROUNDWATER ELEVATION. INSTALLATION MEANS AND METHODS SHALL BE SELECTED TO PREVENT DISTURBING ADJACENT BUILDING FOOTERS AND EXISTING UTILITIES, INCLUDING POLES AND OTHER STRUCTURES.
- ALL REFERENCED DETAILS SHOULD BE BROWNSVILLE PUBLIC UTILITIES BOARD OR THE CITY OF BROWNSVILLE UNLESS NOTED OTHERWISE.
- THE EXISTING UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS PER AVAILABLE RECORDS. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES, WHETHER PUBLIC OR PRIVATE. PRIOR TO EXCAVATION, THE OWNER AND ENGINEER ARE NOT RESPONSIBLE FOR THE ACCURACY OF THIS INFORMATION. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO COORDINATE WITH UTILITY COMPANIES FOR NECESSARY FACILITY RELOCATION AND NO SEPARATE PAYMENT TO BE MADE. ANY DAMAGE TO EXISTING UTILITIES CAUSED BY CONTRACTOR'S OPERATIONS TO BE REPAIRED OR REPLACED AT THE CONTRACTOR'S SOLE EXPENSE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRENCH SAFETY REQUIREMENTS IN ACCORDANCE WITH CITY STANDARDS, TEXAS LAW AND O.S.H.A. STANDARDS FOR ALL EXCAVATIONS.
- SEE SHEET DT-1 FOR STANDARD BPUB WASTEWATER DETAILS.
- SEE SHEET DT-2 AND DT-3 FOR CITY OF BROWNSVILLE PAVING AND FACILITY DETAILS.
- SEE SHEET C-15 FOR LIST OF SEWER SERVICE LATERAL TIE-IN LOCATIONS ALONG ALIGNMENT. THERE ARE 46 SERVICE RECONNECTIONS ON THIS SHEET. INDIVIDUAL SEWER SERVICE TIE-IN CALLOUTS ARE OMITTED FOR CLARITY.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPORTING ALL EXISTING UTILITIES AND STRUCTURES DURING EXCAVATION, INCLUDING UTILITY POLES AND TRANSFORMER STRUCTURES. REFER TO PHOTOS ON DRAWING C-09.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL SEWER SERVICES, RECONNECTING OF SERVICE LINES, AND BYPASS PUMPING THROUGHOUT THE ENTIRETY OF CONSTRUCTION OF THE SEWER LINE. REFER TO SECTION 01 57 40 OF THE SPECIFICATIONS FOR BYPASS PUMPING SYSTEM REQUIREMENTS.
- CONTRACTOR SHALL UTILIZE EQUIPMENT THAT MEETS THE REQUIREMENTS OF 10-FOOT VERTICAL SEPARATION FROM ALL OVERHEAD POWER LINES. ALL EQUIPMENT SPECIFICATIONS SHALL BE REVIEWED AND APPROVED BY QUALIFIED OWNER'S REPRESENTATIVE PRIOR TO DELIVERING TO PROJECT SITE.
- SEE SHEET C-26 FOR SURFACE RESTORATION LIMITS.
- BROADBAND IS BEING INSTALLED IN THE PROJECT AREA AT THE TIME OF BID AND IS NOT SHOWN ON THE PLANS. REFER TO THE APPENDIX B FOR THE PROPOSED LOCATION OF NEW FIBER OPTIC CONDUITS. CONTRACTOR SHALL COORDINATE EXACT LOCATIONS PRIOR TO STARTING ANY EXCAVATION.



**PLAN**  
SCALE: 1" = 20'



**PROFILE**  
HORIZONTAL SCALE: 1" = 20'  
VERTICAL SCALE: 1" = 4'

**CAUTION!!!**  
EXISTING GAS LINES, FIBER OPTIC, AND OVERHEAD ELECTRIC LINES IN AREA PRIOR TO CONSTRUCTION.



THE INFORMATION SHOWN ON THESE DRAWINGS INDICATING SIZE, TYPE AND LOCATION OF UNDERGROUND SURFACE AND AERIAL UTILITIES IS NOT GUARANTEED TO BE EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT "ONE CALL" SYSTEM AT 1-800-368-5877 (NOTES) 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION FOR EXISTING UTILITY LOCATIONS. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR FIELD VERIFYING LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES AFFECTED BY CONSTRUCTION FOR THIS PROJECT IN ORDER TO AVOID DAMAGING THOSE UTILITIES, AND SHALL IMMEDIATELY ARRANGE FOR REPAIR AND RESTORATION OF CONTRACTOR-DAMAGED UTILITIES TO THE UTILITY COMPANY'S APPROVAL AT THE EXPENSE OF THE CONTRACTOR.

File: C:\USERS\ZCROSSLEY\DRAWING\BROWNSVILLE\60405-005-DOWNTOWN WATER AND WASTE IMPROVEMENTS\DWG\C-12.S Saved by: ZCROSSLEY, Save date: 10/11/2023 1:29 PM PLOT DATE: 10/19/2023 11:13 AM By: ZCROSSLEY

REV	ISSUED FOR	DATE	BY
	ISSUED FOR BID	10/19/23	AMGS
	ISSUED FOR		

PROJECT ENGINEER:	A. GARCIA
DESIGNED BY:	C. JONES
DRAWN BY:	Z. CROSSLEY
CHECKED BY:	J. LONDON
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"

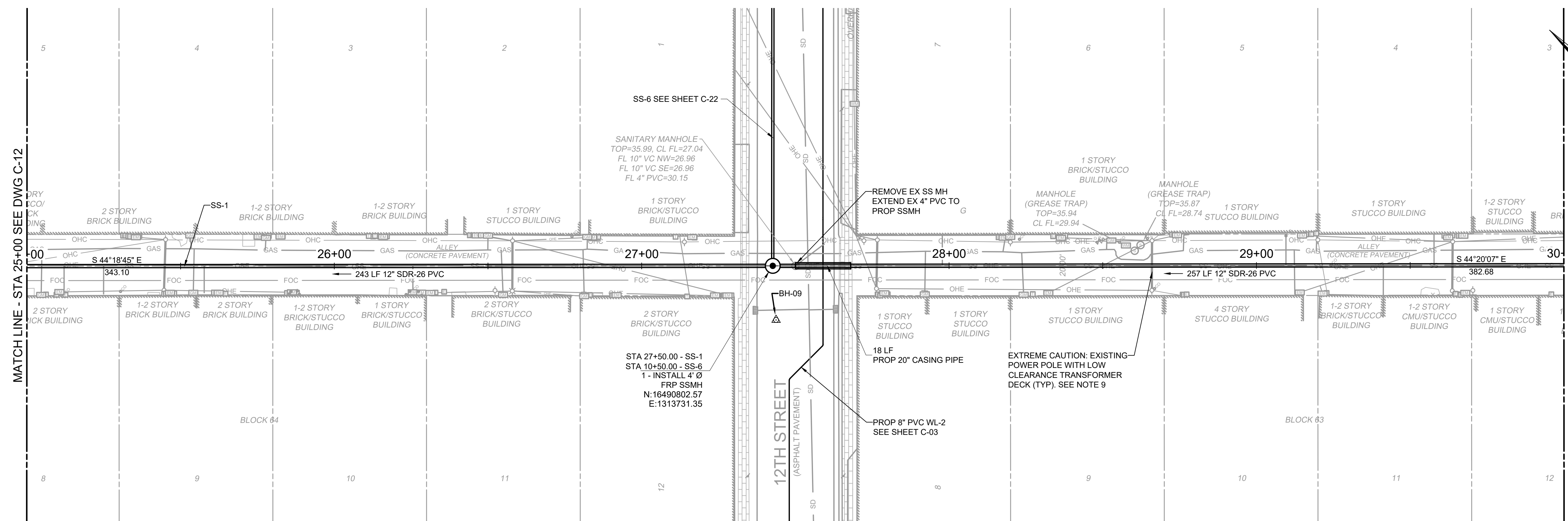


**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

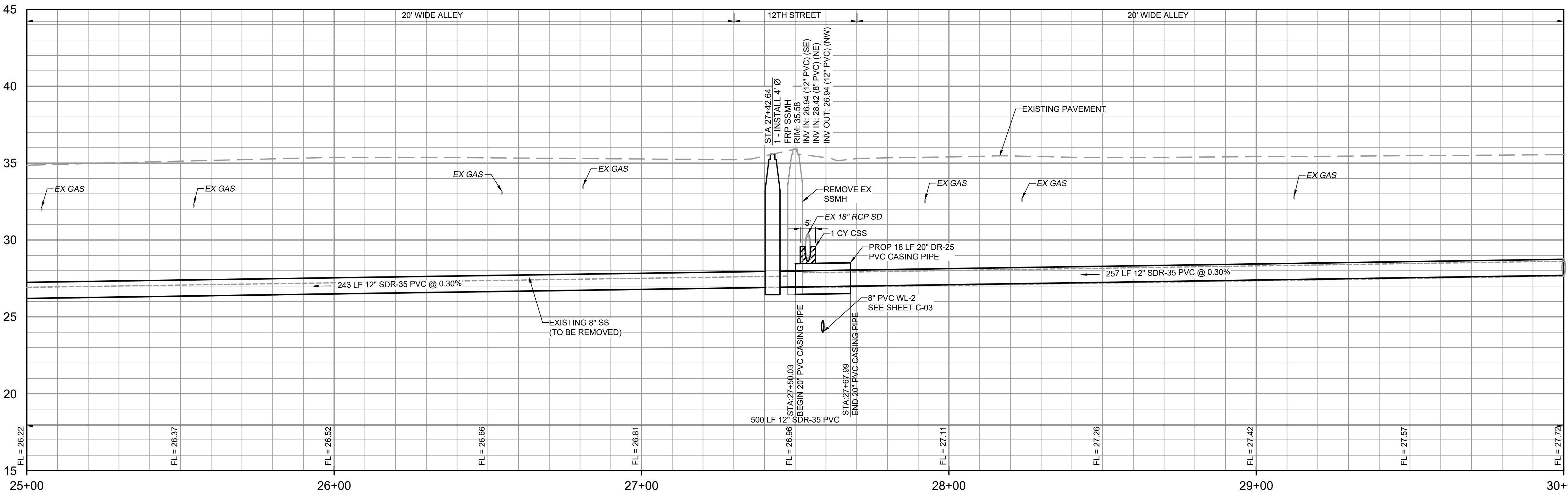
BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER IMPROVEMENTS PROJECT 2

WASTEWATER IMPROVEMENTS  
PLAN AND PROFILE  
SS-1 STA 20+00 TO STA 25+00

DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	C-12



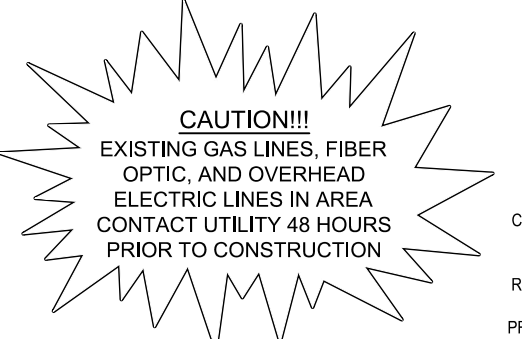
**PLAN**  
SCALE: 1" = 20'



**PROFILE**  
HORIZONTAL SCALE: 1" = 20'  
VERTICAL SCALE: 1" = 4'

**NOTES:**

- CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING 10" VITRIFIED CLAY PIPE AND REPLACE IT WITH A NEW 12" PVC PIPE AS SHOWN.
- CONTRACTOR SHALL REMOVE EXISTING SANITARY SEWER CONCRETE AND BRICK MANHOLES AND REPLACE THEM WITH NEW FIBERGLASS MANHOLES.
- CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH GEOTECHNICAL CONDITIONS, INCLUDING SOIL TYPES AND GROUNDWATER ELEVATION. INSTALLATION MEANS AND METHODS SHALL BE SELECTED TO PREVENT DISTURBING ADJACENT BUILDING FOOTERS AND EXISTING UTILITIES, INCLUDING POLES AND OTHER STRUCTURES.
- ALL REFERENCED DETAILS SHOULD BE BROWNSVILLE PUBLIC UTILITIES BOARD OR THE CITY OF BROWNSVILLE UNLESS NOTED OTHERWISE.
- THE EXISTING UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS PER AVAILABLE RECORDS. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES, WHETHER PUBLIC OR PRIVATE. PRIOR TO EXCAVATION, THE OWNER AND ENGINEER ARE NOT RESPONSIBLE FOR THE ACCURACY OF THIS INFORMATION. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO COORDINATE WITH UTILITY COMPANIES FOR NECESSARY FACILITY RELOCATION AND NO SEPARATE PAYMENT TO BE MADE. ANY DAMAGE TO EXISTING UTILITIES CAUSED BY CONTRACTOR'S OPERATIONS TO BE REPAIRED OR REPLACED AT THE CONTRACTOR'S SOLE EXPENSE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRENCH SAFETY REQUIREMENTS IN ACCORDANCE WITH CITY STANDARDS, TEXAS LAW AND O.S.H.A. STANDARDS FOR ALL EXCAVATIONS.
- SEE SHEET DT-1 FOR STANDARD BPUB WASTEWATER DETAILS.
- SEE SHEET DT-2 AND DT-3 FOR CITY OF BROWNSVILLE PAVING AND FACILITY DETAILS.
- SEE SHEET C-15 FOR LIST OF SEWER SERVICE LATERAL TIE-IN LOCATIONS ALONG ALIGNMENT. THERE ARE 55 SEWER RECONNECTIONS ON THIS SHEET. INDIVIDUAL SEWER SERVICE TIE-IN CALLOUTS ARE OMITTED FOR CLARITY.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPORTING ALL EXISTING UTILITIES AND STRUCTURES DURING EXCAVATION, INCLUDING UTILITY POLES AND TRANSFORMER STRUCTURES. REFER TO PHOTOS ON DRAWING C-09.
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- CONTRACTOR SHALL UTILIZE EQUIPMENT THAT MEETS THE REQUIREMENTS OF 10-FOOT VERTICAL SEPARATION FROM ALL OVERHEAD POWER LINES. ALL EQUIPMENT SPECIFICATIONS SHALL BE REVIEWED AND APPROVED BY QUALIFIED OWNER'S REPRESENTATIVE PRIOR TO DELIVERING TO PROJECT SITE.
- SEE SHEET C-26 FOR SURFACE RESTORATION LIMITS.
- BROADBAND IS BEING INSTALLED IN THE PROJECT AREA AT THE TIME OF BID AND IS NOT SHOWN ON THE PLANS. REFER TO THE APPENDIX B FOR THE PROPOSED LOCATION OF NEW FIBER OPTIC CONDUITS. CONTRACTOR SHALL COORDINATE EXACT LOCATIONS PRIOR TO STARTING ANY EXCAVATION.



THE INFORMATION SHOWN ON THESE DRAWINGS INDICATING SIZE, TYPE AND LOCATION OF UNDERGROUND SURFACE AND AERIAL UTILITIES IS NOT GUARANTEED TO BE EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT "ONE CALL" SYSTEM AT 1-800-368-5877 (NOTES) 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION FOR EXISTING UTILITY LOCATIONS. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR FIELD VERIFYING LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES AFFECTED BY CONSTRUCTION FOR THIS PROJECT IN ORDER TO AVOID DAMAGING THOSE UTILITIES, AND SHALL IMMEDIATELY ARRANGE FOR REPAIR AND RESTORATION OF CONTRACTOR-DAMAGED UTILITIES TO THE UTILITY COMPANY'S APPROVAL AT THE EXPENSE OF THE CONTRACTOR.

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PROJECT ENGINEER:	A. GARCIA	
DESIGNED BY:	C. JONES	
DRAWN BY:	Z. CROSSLEY	
CHECKED BY:	J. LONDON	
ISSUED FOR BID	10/19/23	AMGS
ISSUED FOR	DATE	BY

10/19/2023

**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

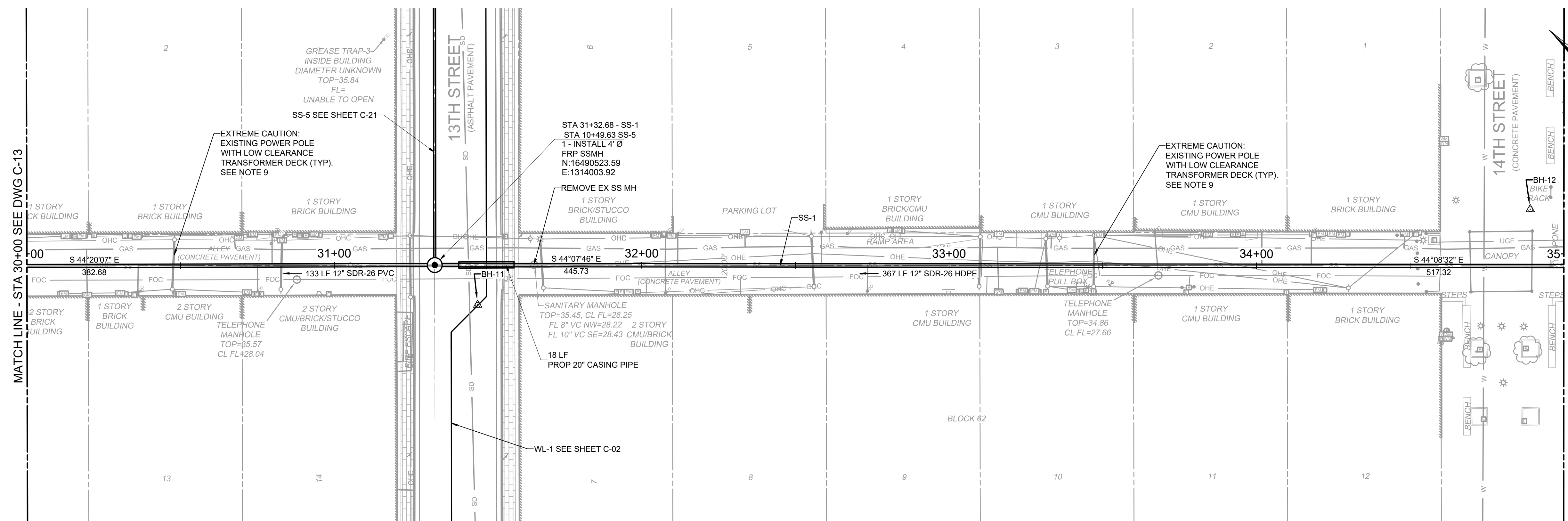
BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

WASTEWATER IMPROVEMENTS  
PLAN AND PROFILE  
SS-1 STA 25+00 TO STA 30+00

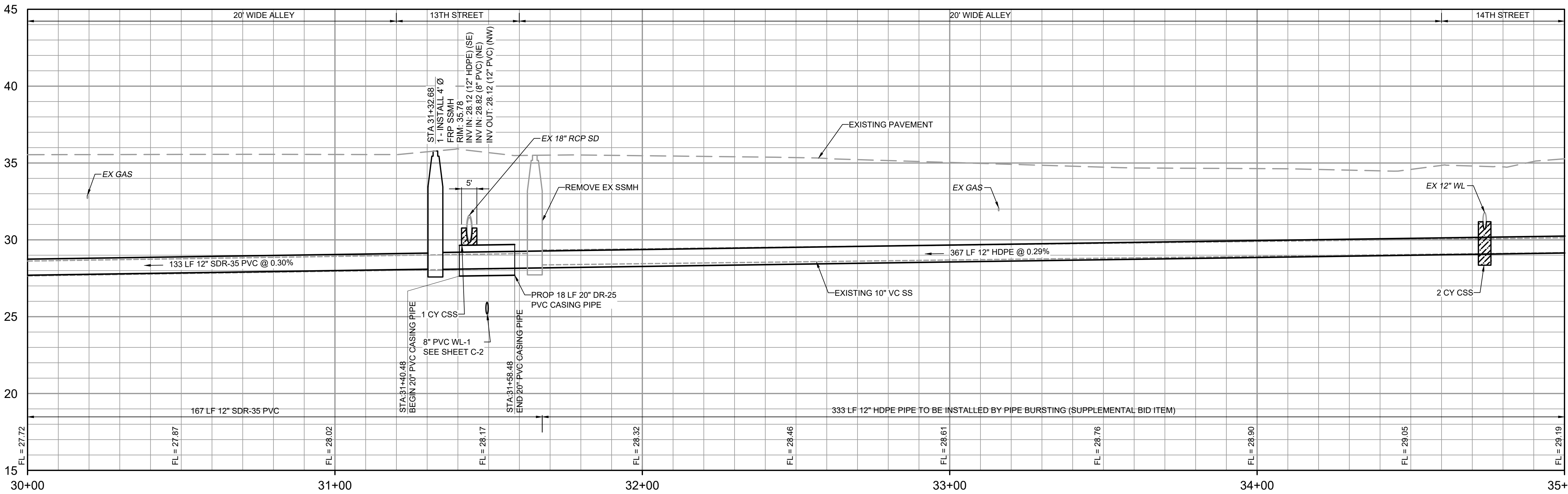
DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	C-13



- NOTES:**
- CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING VITRIFIED CLAY PIPE AND REPLACE IT WITH NEW PVC PIPE AS SHOWN.
  - CONTRACTOR SHALL REMOVE EXISTING SANITARY SEWER CONCRETE AND BRICK MANHOLES AND REPLACE THEM WITH NEW FIBERGLASS MANHOLES.
  - CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH GEOTECHNICAL CONDITIONS, INCLUDING SOIL TYPES AND GROUNDWATER ELEVATION. INSTALLATION MEANS AND METHODS SHALL BE SELECTED TO PREVENT DISTURBING ADJACENT BUILDING FOOTERS AND EXISTING UTILITIES, INCLUDING POLES AND OTHER STRUCTURES.
  - ALL REFERENCED DETAILS SHOULD BE BROWNSVILLE PUBLIC UTILITIES BOARD OR THE CITY OF BROWNSVILLE UNLESS NOTED OTHERWISE.
  - THE EXISTING UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS PER AVAILABLE RECORDS. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES, WHETHER PUBLIC OR PRIVATE. PRIOR TO EXCAVATION, THE OWNER AND ENGINEER ARE NOT RESPONSIBLE FOR THE ACCURACY OF THIS INFORMATION. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO COORDINATE WITH UTILITY COMPANIES FOR NECESSARY FACILITY RELOCATION AND NO SEPARATE PAYMENT TO BE MADE. ANY DAMAGE TO EXISTING UTILITIES CAUSED BY CONTRACTOR'S OPERATIONS TO BE REPAIRED OR REPLACED AT THE CONTRACTOR'S SOLE EXPENSE.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRENCH SAFETY REQUIREMENTS IN ACCORDANCE WITH CITY STANDARDS, TEXAS LAW AND O.S.H.A. STANDARDS FOR ALL EXCAVATIONS.
  - SEE SHEET DT-1 FOR STANDARD BPUB WASTEWATER DETAILS.
  - SEE SHEET DT-2 AND DT-3 FOR CITY OF BROWNSVILLE PAVING AND FACILITY DETAILS.
  - SEE SHEET C-15 FOR LIST OF SEWER SERVICE LATERAL TIE-IN LOCATIONS ALONG ALIGNMENT. THERE ARE 23 SEWER RECONNECTIONS ON THIS SHEET. INDIVIDUAL SEWER SERVICE TIE-IN CALLOUTS ARE OMITTED FOR CLARITY.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPORTING ALL EXISTING UTILITIES AND STRUCTURES DURING EXCAVATION, INCLUDING UTILITY POLES AND TRANSFORMER STRUCTURES. REFER TO PHOTOS ON DRAWING C-09.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL SEWER SERVICES, RECONNECTING OF SEWER LINES, AND BYPASS PUMPING THROUGHOUT THE ENTIRETY OF CONSTRUCTION OF THE SEWER LINE. REFER TO SECTION 01 57 40 OF THE SPECIFICATION FOR BYPASS PUMPING SYSTEM REQUIREMENTS.
  - CONTRACTOR SHALL UTILIZE EQUIPMENT THAT MEETS THE REQUIREMENTS OF 10-FOOT VERTICAL SEPARATION FROM ALL OVERHEAD POWER LINES. ALL EQUIPMENT SPECIFICATIONS SHALL BE REVIEWED AND APPROVED BY QUALIFIED OWNER'S REPRESENTATIVE PRIOR TO DELIVERING TO PROJECT SITE.
  - SEE SHEET C-26 FOR SURFACE RESTORATION LIMITS.
  - PIPE BURSTING SHALL USE HDPE MINIMUM SDR-17. REFER TO SECTION 33 01 30.23 OF THE SPECIFICATIONS.
  - BROADBAND IS BEING INSTALLED IN THE PROJECT AREA AT THE TIME OF BID AND IS NOT SHOWN ON THE PLANS. REFER TO THE APPENDIX B FOR THE PROPOSED LOCATION OF NEW FIBER OPTIC CONDUITS. CONTRACTOR SHALL COORDINATE EXACT LOCATIONS PRIOR TO STARTING ANY EXCAVATION.



**PLAN**  
SCALE: 1" = 20'



**PROFILE**  
HORIZONTAL SCALE: 1" = 20'  
VERTICAL SCALE: 1" = 4'

**CAUTION!!!**  
EXISTING GAS LINES, FIBER OPTIC, AND OVERHEAD ELECTRIC LINES IN AREA CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION.



Know what's below.  
Call before you dig.

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File: C:\USERS\ZCROSSLEY\DRAWING\HAZEN AND SAWYER\60405-005-DOWNTOWN WATER AND WASTE IMPROVEMENT FILES\01\_DESIGN\CIVIL\60405-005-C-PP-C14-S Saved by ZCROSSLEY Save date: 10/11/2023 1:39 PM PLOT DATE: 10/19/2023 11:14 AM By: ZCROSSLEY

PROJECT ENGINEER:	A. GARCIA	
DESIGNED BY:	C. JONES	
DRAWN BY:	Z. CROSSLEY	
CHECKED BY:	J. LONDON	
ISSUED FOR BID	10/19/23	AMGS
ISSUED FOR	DATE	BY

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

0 1/2" 1"

10/19/2023



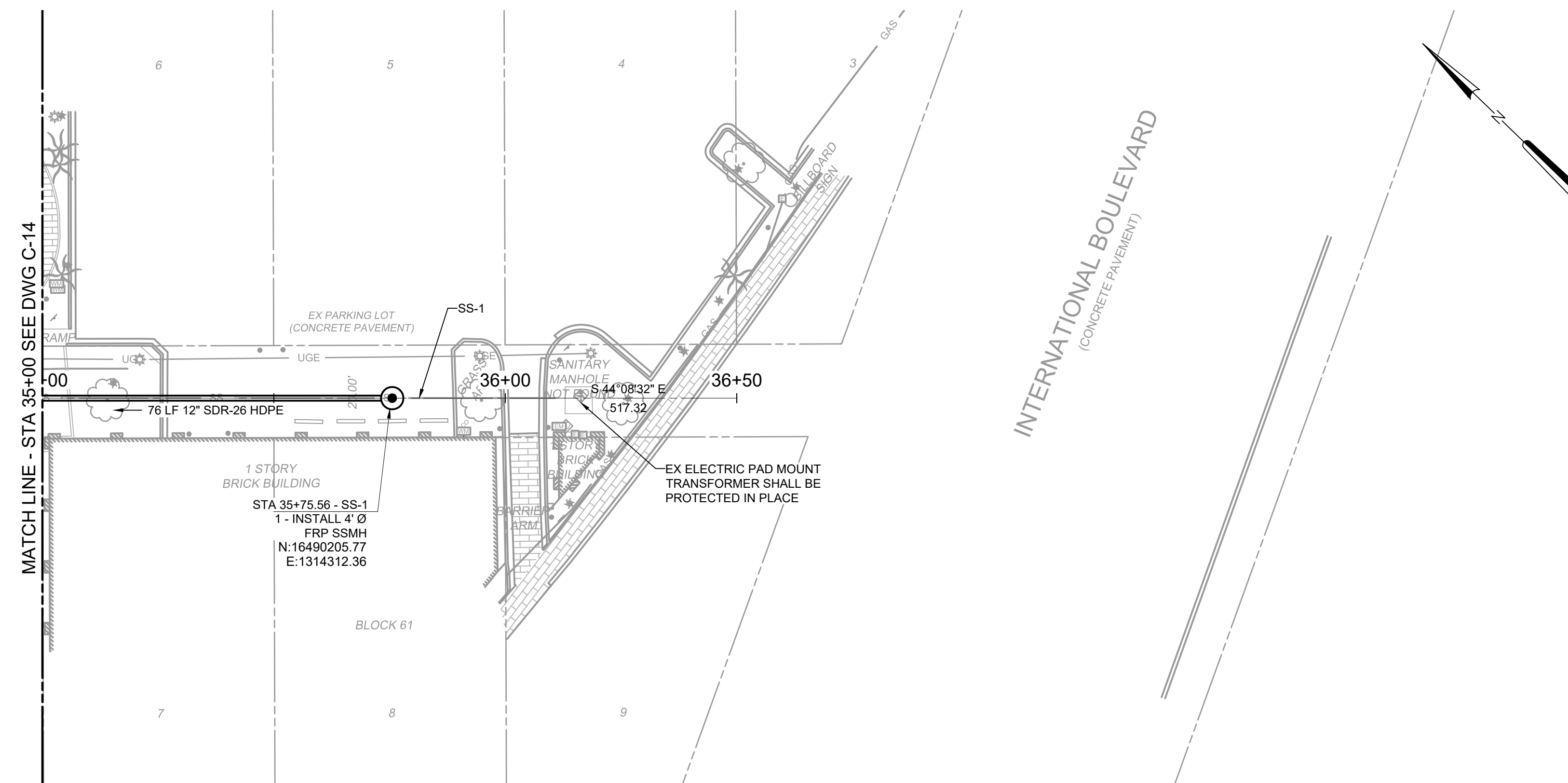
**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER IMPROVEMENTS PROJECT 2

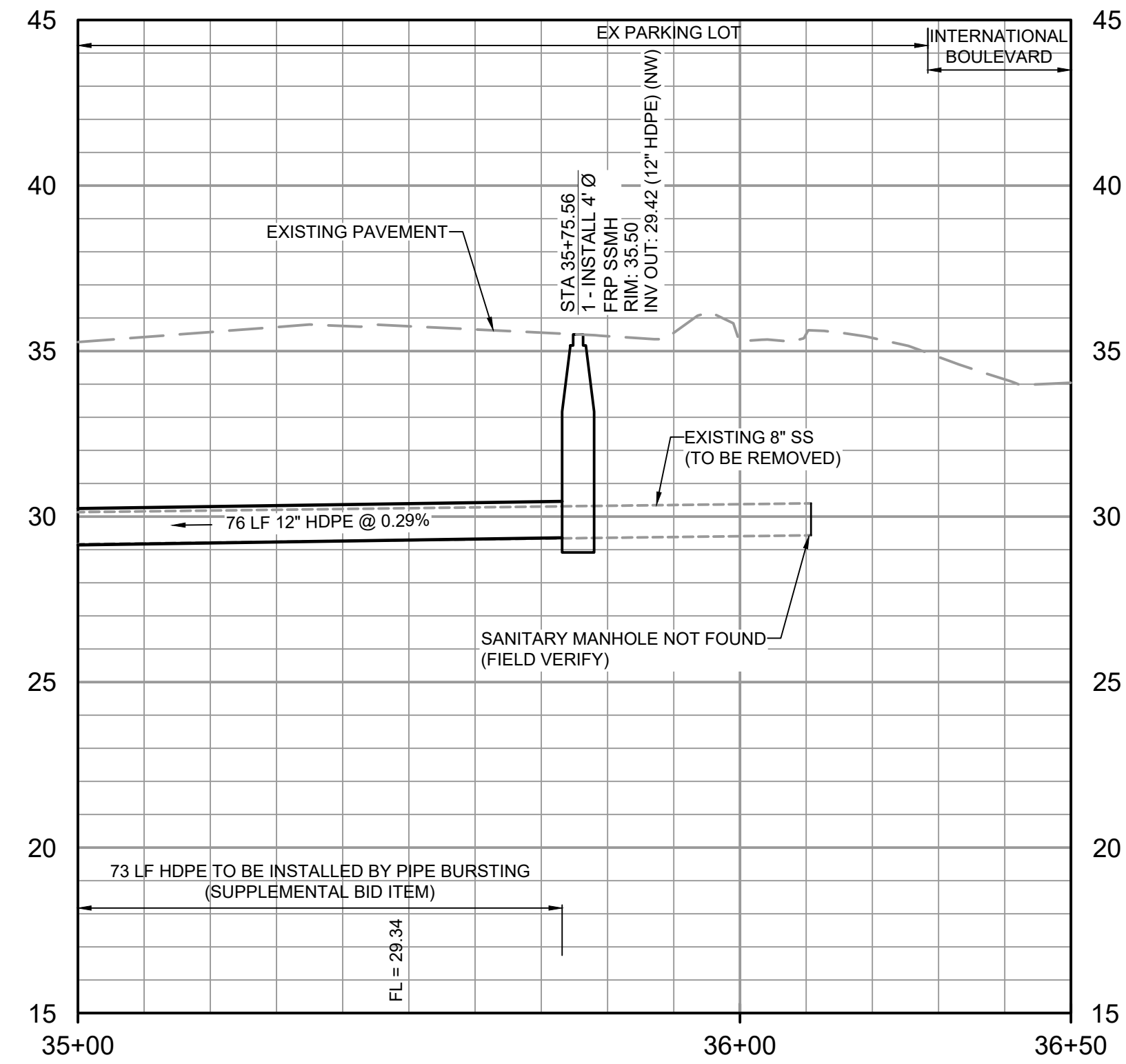
WASTEWATER IMPROVEMENTS  
PLAN AND PROFILE  
SS-1 STA 30+00 TO STA 35+00

DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	

File: C:\USERS\ZCROSSLEY\DRAWING\HAZEN AND SAWYER\BROWNSVILLE\60405-005-C-PP-C-15-S Saved by ZCROSSLEY, Save date: 10/11/2023 1:35 PM  
 PLOT DATE: 10/19/2023 11:14 AM BY: ZCROSSLEY



**PLAN**  
SCALE: 1" = 20'



**PROFILE**  
HORIZONTAL SCALE: 1" = 20'  
VERTICAL SCALE: 1" = 4'

**NOTES:**

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- SEE SHEET DT-2 AND DT-3 FOR CITY OF BROWNSVILLE PAVING AND FACILITY DETAILS.
- SEE SHEET C-15 FOR LIST OF SEWER SERVICE LATERAL TIE-IN LOCATIONS ALONG ALIGNMENT. THERE IS 1 SEWER RECONNECTION ON THIS SHEET. INDIVIDUAL SEWER SERVICE TIE-IN CALLOUTS ARE OMITTED FOR CLARITY.
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- SEE SHEET C-26 FOR SURFACE RESTORATION LIMITS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING CONSTRUCTION WITH PROPERTY OWNER IN ADVANCE.
- CONTRACTOR SHALL NOT STOCKPILE SPOILS OR ANY OTHER MATERIALS IN THE PARKING WITHOUT CONSENT FROM PROPERTY OWNER.
- FOR THE PURPOSES OF BIDDING, CONTRACTOR SHALL ASSUME THAT ALL MATERIALS AND EQUIPMENT SHALL BE REMOVED FROM PROPERTY AT THE END OF EACH DAY AND ONLY THE FOUR PARKING SPOTS LOCATED IMMEDIATELY ADJACENT TO THE PROPOSED MANHOLE LOCATION CAN BE BARRICADED AND CLOSED DURING CONSTRUCTION.
- PIPE BURSTING SHALL USE HDPE MINIMUM SDR-17. REFER TO SECTION 33 01 30.23 OF THE SPECIFICATIONS.
- BROADBAND IS BEING INSTALLED IN THE PROJECT AREA AT THE TIME OF BID AND IS NOT SHOWN ON THE PLANS. REFER TO THE APPENDIX B FOR THE PROPOSED LOCATION OF NEW FIBER OPTIC CONDUITS. CONTRACTOR SHALL COORDINATE EXACT LOCATIONS PRIOR TO STARTING ANY EXCAVATION.

**CAUTION!!!**  
EXISTING GAS LINES, FIBER OPTIC, AND OVERHEAD ELECTRIC LINES IN AREA CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION



THE INFORMATION SHOWN ON THESE DRAWINGS INDICATING SIZE, TYPE AND LOCATION OF UNDERGROUND SURFACE AND AERIAL UTILITIES IS NOT GUARANTEED TO BE EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT "ONE CALL" SYSTEM AT 1-800-368-5877 (NOTES) 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION FOR EXISTING UTILITY LOCATIONS. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR FIELD VERIFYING LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES AFFECTED BY CONSTRUCTION FOR THIS PROJECT IN ORDER TO AVOID DAMAGING THOSE UTILITIES, AND SHALL IMMEDIATELY ARRANGE FOR REPAIR AND RESTORATION OF CONTRACTOR-DAMAGED UTILITIES TO THE UTILITY COMPANY'S APPROVAL AT THE EXPENSE OF THE CONTRACTOR.

PROJECT ENGINEER:	A. GARCIA	
DESIGNED BY:	C. JONES	
DRAWN BY:	Z. CROSSLEY	
CHECKED BY:	J. LONDON	
ISSUED FOR BID	10/19/23	AMGS
ISSUED FOR	DATE	BY

10/19/2023

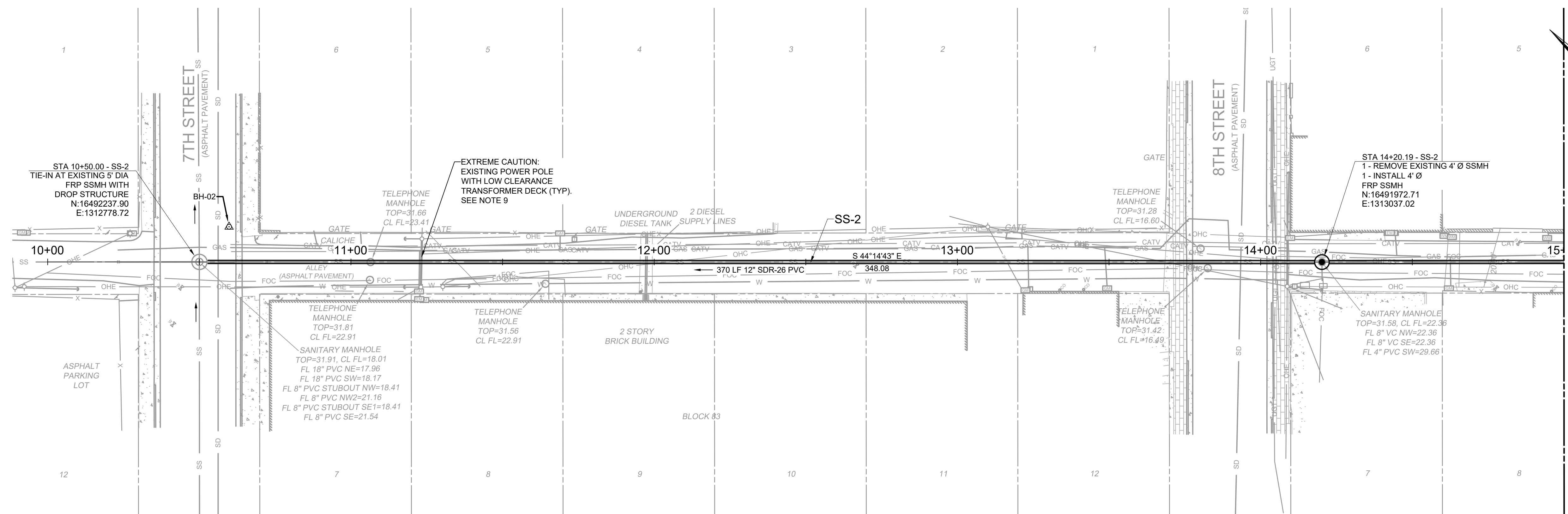
**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

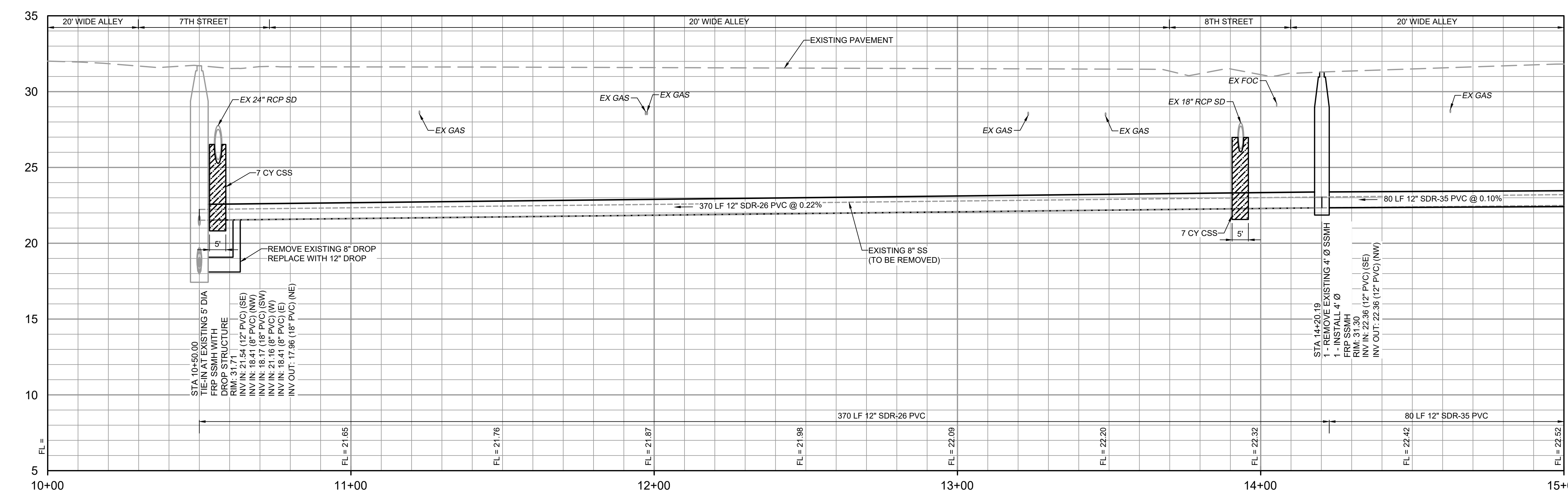
WASTEWATER IMPROVEMENTS  
PLAN AND PROFILE  
SS-1 STA 35+00 TO END

DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	C-15





PLAN  
SCALE: 1" = 20'



PROFILE  
HORIZONTAL SCALE: 1" = 20'  
VERTICAL SCALE: 1" = 4'

- NOTES:**
- CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING VITRIFIED CLAY PIPE AND REPLACE IT WITH NEW PVC PIPE AS SHOWN.
  - CONTRACTOR SHALL REMOVE EXISTING SANITARY SEWER CONCRETE AND BRICK MANHOLES AND REPLACE THEM WITH NEW FIBERGLASS MANHOLES.
  - CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH GEOTECHNICAL CONDITIONS, INCLUDING SOIL TYPES AND GROUNDWATER ELEVATION. INSTALLATION MEANS AND METHODS SHALL BE SELECTED TO PREVENT DISTURBING ADJACENT BUILDING FOOTERS AND EXISTING UTILITIES, INCLUDING POLES AND OTHER STRUCTURES.
  - ALL REFERENCED DETAILS SHOULD BE BROWNSVILLE PUBLIC UTILITIES BOARD OR THE CITY OF BROWNSVILLE UNLESS NOTED OTHERWISE.
  - THE EXISTING UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS PER AVAILABLE RECORDS. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES, WHETHER PUBLIC OR PRIVATE. PRIOR TO EXCAVATION, THE OWNER AND ENGINEER ARE NOT RESPONSIBLE FOR THE ACCURACY OF THIS INFORMATION. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO COORDINATE WITH UTILITY COMPANIES FOR NECESSARY FACILITY RELOCATION AND NO SEPARATE PAYMENT TO BE MADE. ANY DAMAGE TO EXISTING UTILITIES CAUSED BY CONTRACTOR'S OPERATIONS TO BE REPAIRED OR REPLACED AT THE CONTRACTOR'S SOLE EXPENSE.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRENCH SAFETY REQUIREMENTS IN ACCORDANCE WITH CITY STANDARDS, TEXAS LAW AND O.S.H.A. STANDARDS FOR ALL EXCAVATIONS.
  - SEE SHEET DT-1 FOR STANDARD BPUB WASTEWATER DETAILS.
  - SEE SHEET DT-2 AND DT-3 FOR CITY OF BROWNSVILLE PAVING AND FACILITY DETAILS.
  - SEE SHEET C-15 FOR LIST OF SEWER SERVICE LATERAL TIE-IN LOCATIONS ALONG ALIGNMENT. THERE ARE 7 SEWER RECONNECTIONS ON THIS SHEET. INDIVIDUAL SEWER SERVICE TIE-IN CALLOUTS ARE OMITTED FOR CLARITY.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPORTING ALL EXISTING UTILITIES AND STRUCTURES DURING EXCAVATION, INCLUDING UTILITY POLES AND TRANSFORMER STRUCTURES. REFER TO PHOTOS ON DRAWING C-09.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL SEWER SERVICES, RECONNECTING OF SERVICE LINES, AND BYPASS PUMPING THROUGHOUT THE ENTIRETY OF CONSTRUCTION OF THE SEWER LINE. REFER TO SECTION 01 57 40 OF THE SPECIFICATION FOR BYPASS PUMPING SYSTEM REQUIREMENTS.
  - CONTRACTOR SHALL UTILIZE EQUIPMENT THAT MEETS THE REQUIREMENTS OF 10-FOOT VERTICAL SEPARATION FROM ALL OVERHEAD POWER LINES. ALL EQUIPMENT SPECIFICATIONS SHALL BE REVIEWED AND APPROVED BY QUALIFIED OWNER'S REPRESENTATIVE PRIOR TO DELIVERING TO PROJECT SITE.
  - SEE SHEET C-26 FOR SURFACE RESTORATION LIMITS.
  - BROADBAND IS BEING INSTALLED IN THE PROJECT AREA AT THE TIME OF BID AND IS NOT SHOWN ON THE PLANS. REFER TO THE APPENDIX B FOR THE PROPOSED LOCATION OF NEW FIBER OPTIC CONDUITS. CONTRACTOR SHALL COORDINATE EXACT LOCATIONS PRIOR TO STARTING ANY EXCAVATION.

**CAUTION!!!**  
EXISTING GAS LINES, FIBER OPTIC, AND OVERHEAD ELECTRIC LINES IN AREA CONTRACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION.

**811**  
Know what's below.  
Call before you dig.

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REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	A. GARCIA
DESIGNED BY:	C. JONES
DRAWN BY:	Z. CROSSLEY
CHECKED BY:	J. LONDON
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"

STATE OF TEXAS  
ANA MARIA GARCIA SANCHEZ  
146046  
LICENSED PROFESSIONAL ENGINEER  
10/19/2023

**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

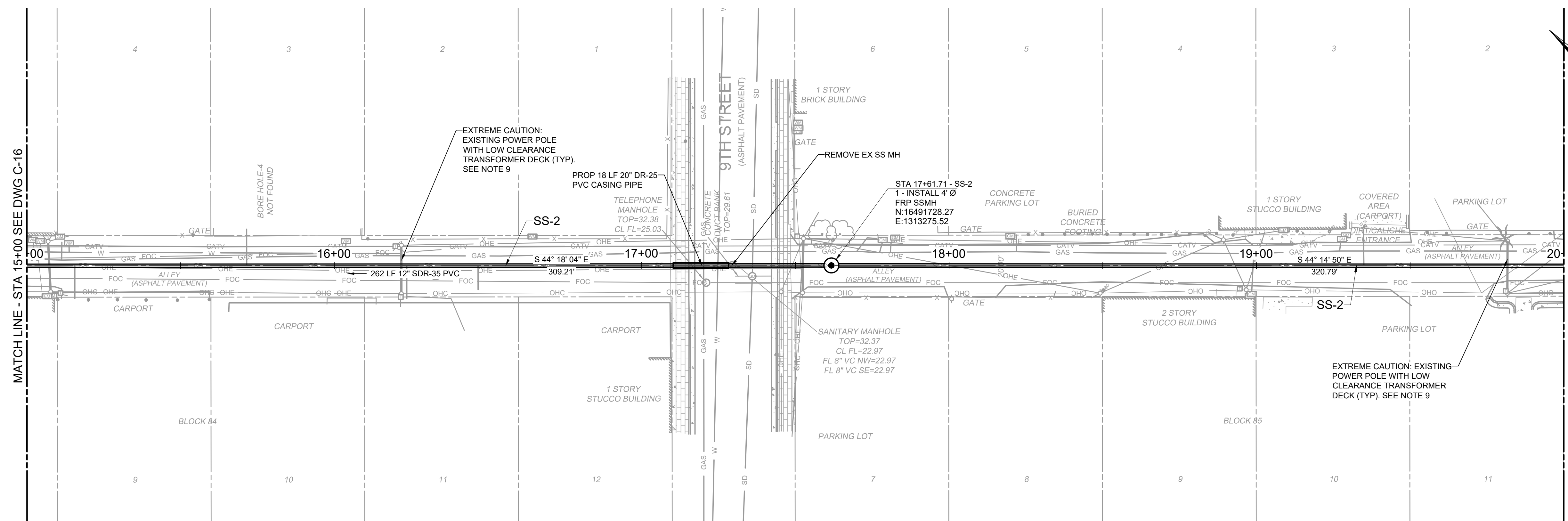
BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER IMPROVEMENTS PROJECT 2

WASTEWATER IMPROVEMENTS  
PLAN AND PROFILE  
SS-2 STA 10+00 TO STA 15+00  
C-16

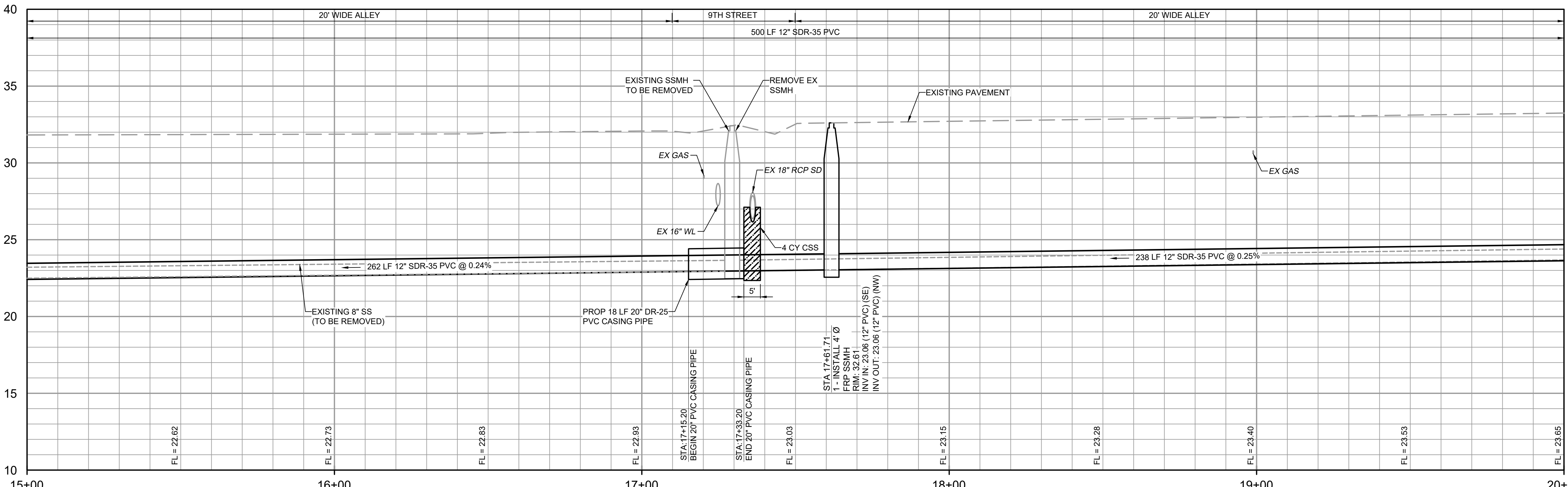
DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	

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**PLAN**  
SCALE: 1" = 20'



**PROFILE**  
HORIZONTAL SCALE: 1" = 20'  
VERTICAL SCALE: 1" = 4'

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REV	ISSUED FOR	DATE	BY
	ISSUED FOR BID	10/19/23	AMGS
	ISSUED FOR		

PROJECT ENGINEER:	A. GARCIA
DESIGNED BY:	C. JONES
DRAWN BY:	Z. CROSSLEY
CHECKED BY:	J. LONDON
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	

10/19/2023

**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

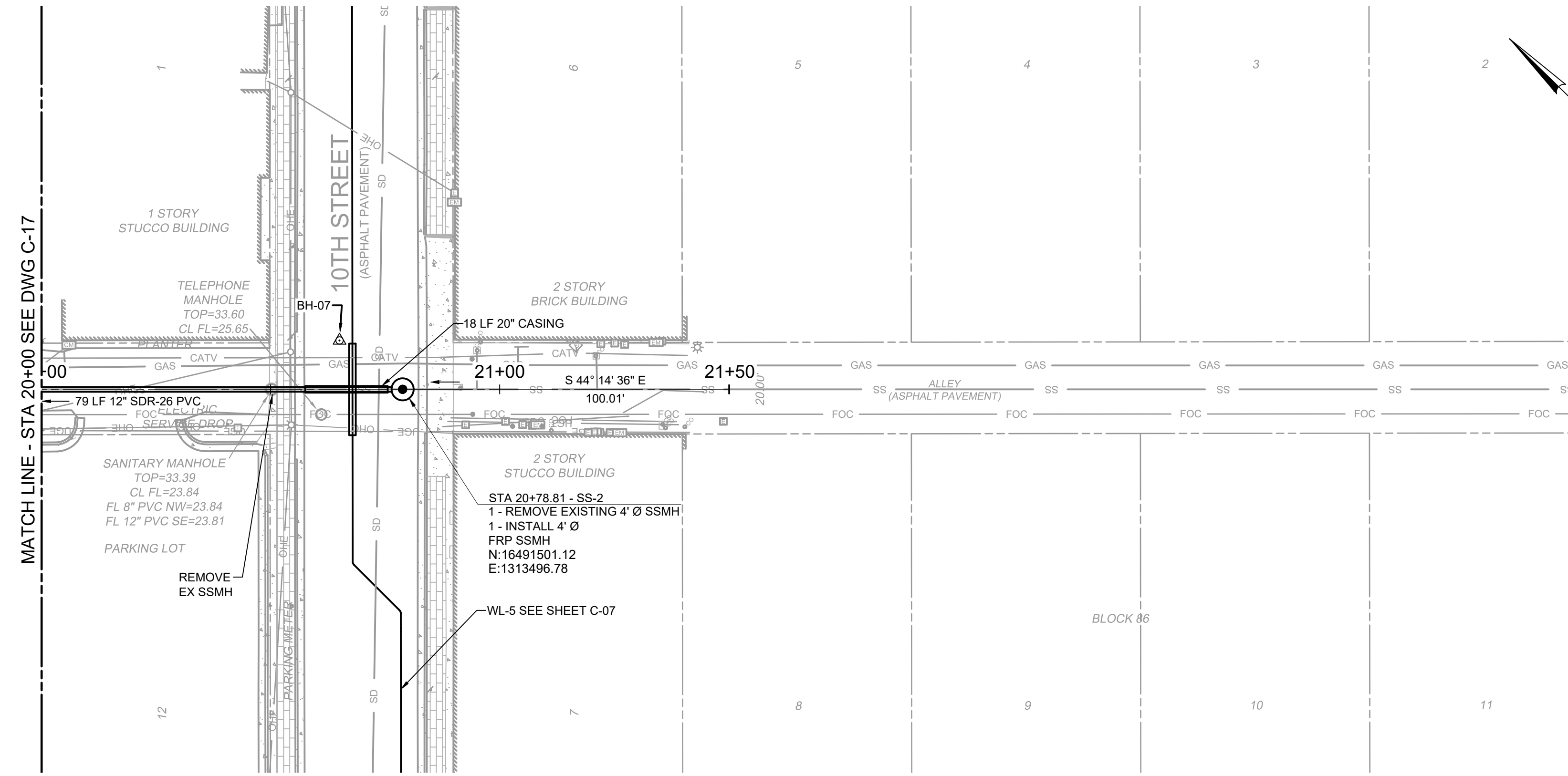
BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER IMPROVEMENTS PROJECT 2

WASTEWATER IMPROVEMENTS  
PLAN AND PROFILE  
SS-2 STA 15+00 TO STA 20+00  
C-17

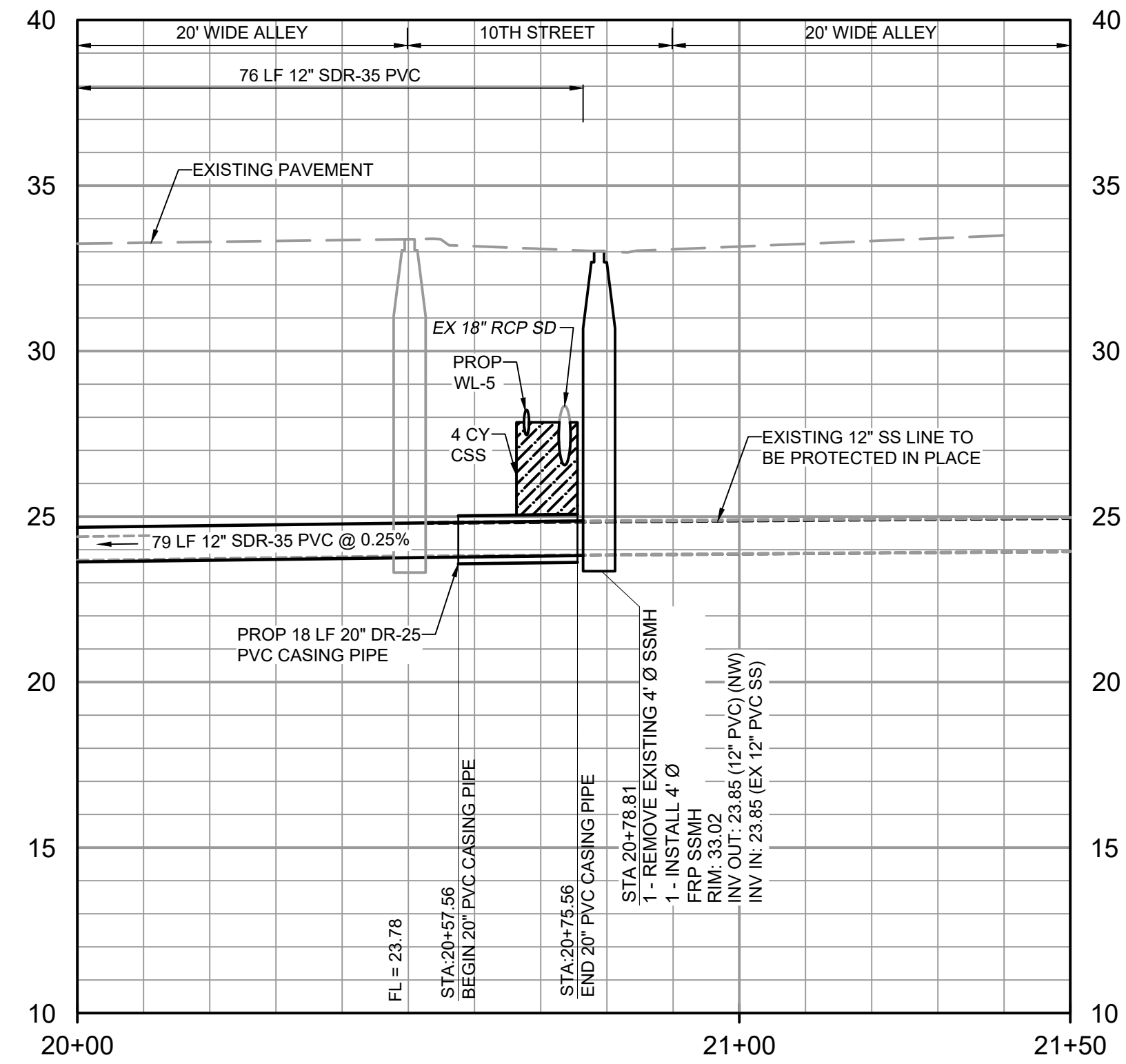
DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	



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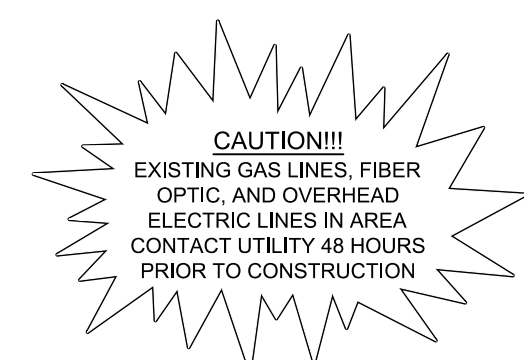
**PLAN**  
SCALE: 1" = 20'



**PROFILE**  
HORIZONTAL SCALE: 1" = 20'  
VERTICAL SCALE: 1" = 4'

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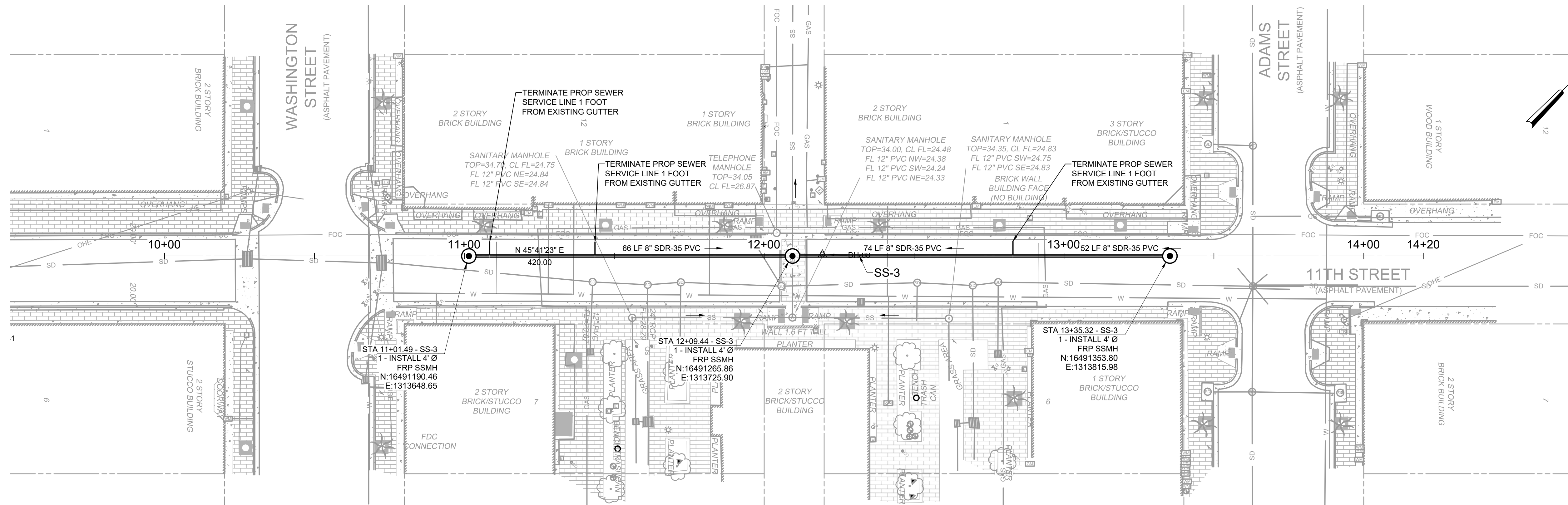
PROJECT ENGINEER:	A. GARCIA		
DESIGNED BY:	C. JONES		
DRAWN BY:	Z. CROSSLEY		
CHECKED BY:	J. LONDON		
ISSUED FOR BID	10/19/23	AMGS	
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE			
REV	ISSUED FOR	DATE	BY

**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

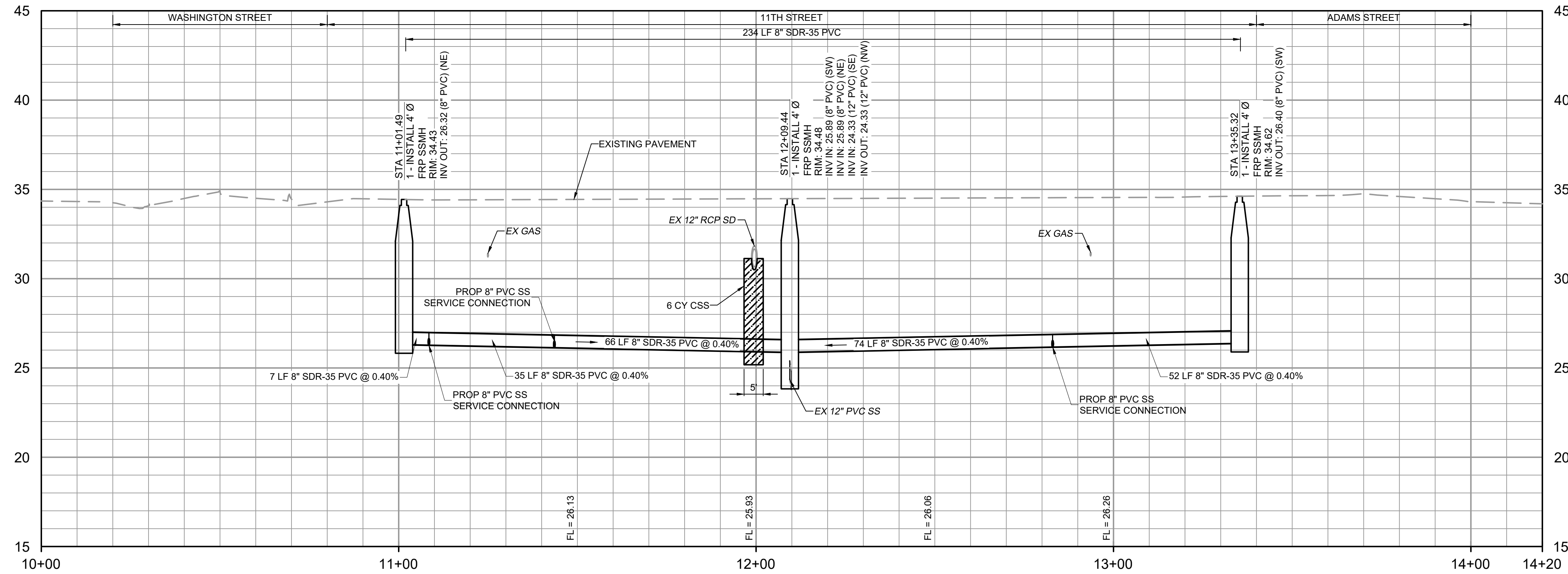
BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

WASTEWATER IMPROVEMENTS  
PLAN AND PROFILE  
SS-2 STA 20+00 TO END

DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	C-18



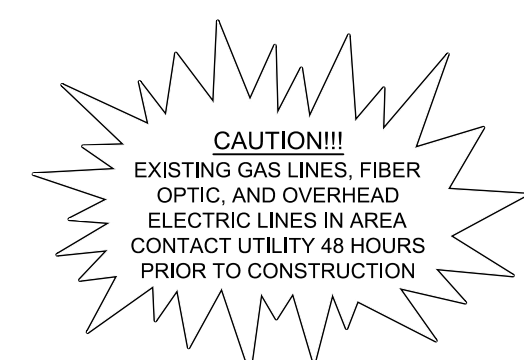
**PLAN**  
SCALE: 1" = 20'



**PROFILE**  
HORIZONTAL SCALE: 1" = 20'  
VERTICAL SCALE: 1" = 4'

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- CONTRACTOR SHALL PROVIDE THE EXACT LOCATION OF THE TERMINAL POINT FOR EACH SEWER LATERAL SHOWN ON THIS PAGE. FINAL LOCATIONS SHALL BE PROVIDED BY A LICENSED SURVEYOR.
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PROJECT ENGINEER:	A. GARCIA	
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ISSUED FOR BID	10/19/23	AMGS
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0 1/2" 1"

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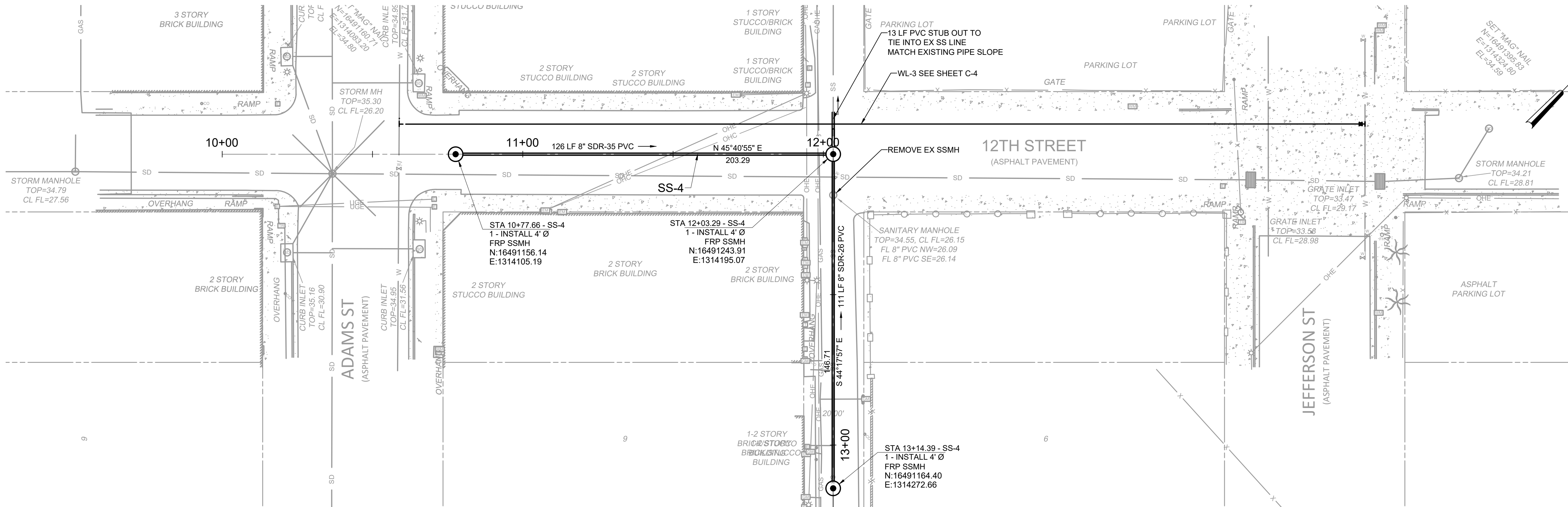
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SAN ANTONIO, TEXAS 78213

BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

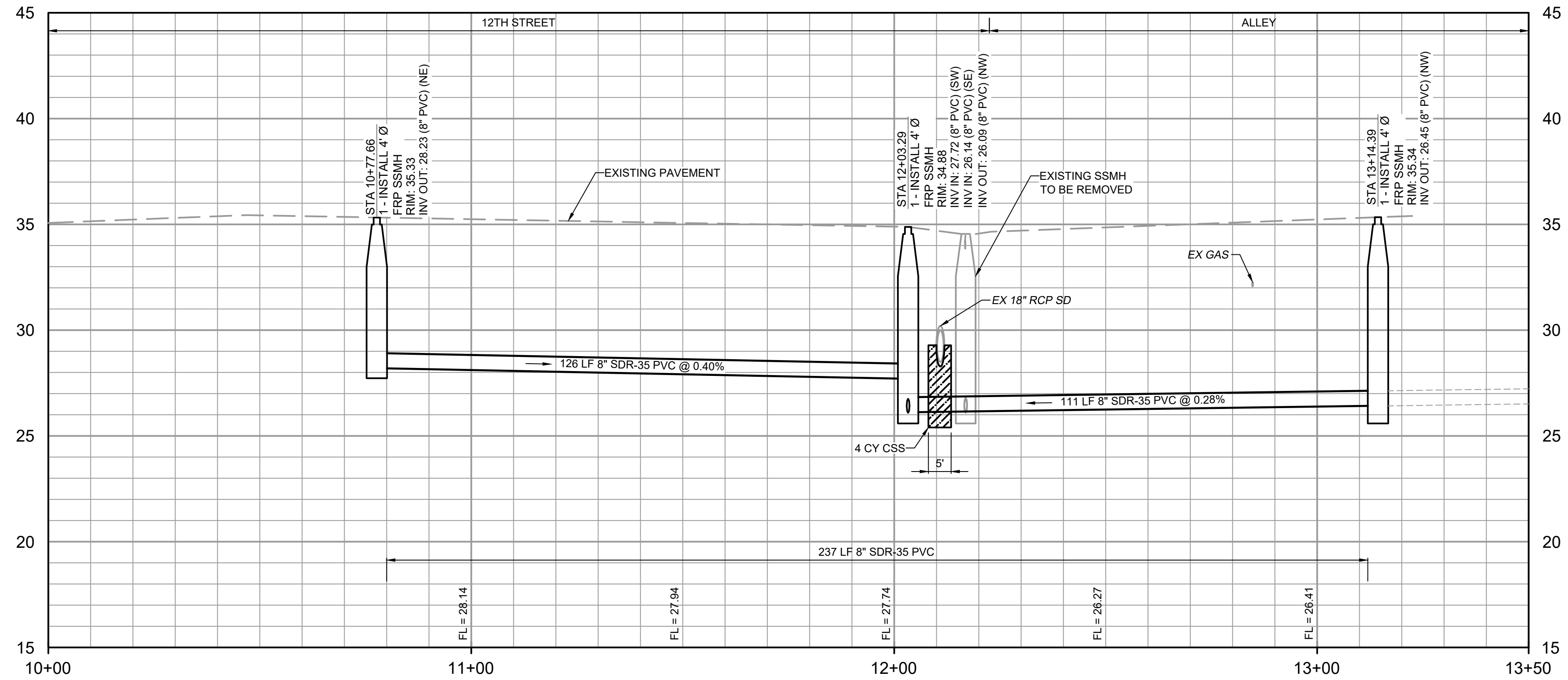
WASTEWATER IMPROVEMENTS  
PLAN AND PROFILE  
SS-3 STA 10+00 TO END

DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	





**PLAN**  
SCALE: 1" = 20'



**PROFILE**  
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- SEE SHEET DT-1 FOR STANDARD BPUB WASTEWATER DETAILS.
- SEE SHEET C-15 FOR CITY OF BROWNSVILLE PAVING AND FACILITY DETAILS.
- SEE SHEET C-15 FOR LIST OF SEWER SERVICE LATERAL TIE-IN LOCATIONS ALONG ALIGNMENT.
- SEE SHEET C-31 FOR SURFACE RESTORATION LIMITS.
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**CAUTION!!!**  
EXISTING GAS LINES, FIBER OPTIC, AND OVERHEAD ELECTRIC LINES IN AREA CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION



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Call before you dig.

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File: C:\USERS\ZCROSSLEY\DRAWING\BROWNSVILLE\60405-005-DOWNTOWN WATER AND WASTEWATER IMPROVEMENTS\FILES\01\_DESIGN\CIVIL\60405-005-C-PP-C20-SS.dwg Date: 10/11/2023 2:14 PM  
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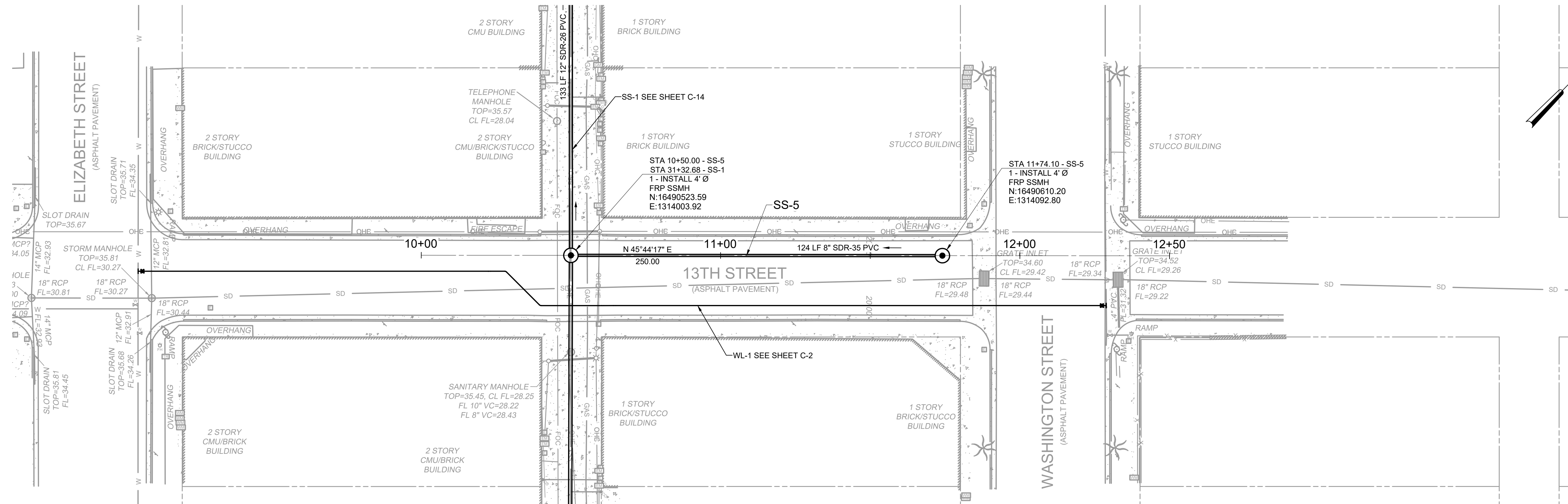
PROJECT ENGINEER:	A. GARCIA	
DESIGNED BY:	C. JONES	
DRAWN BY:	Z. CROSSLEY	
CHECKED BY:	J. LONDON	
ISSUED FOR BID	10/19/23	AMGS
ISSUED FOR	DATE	BY

**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

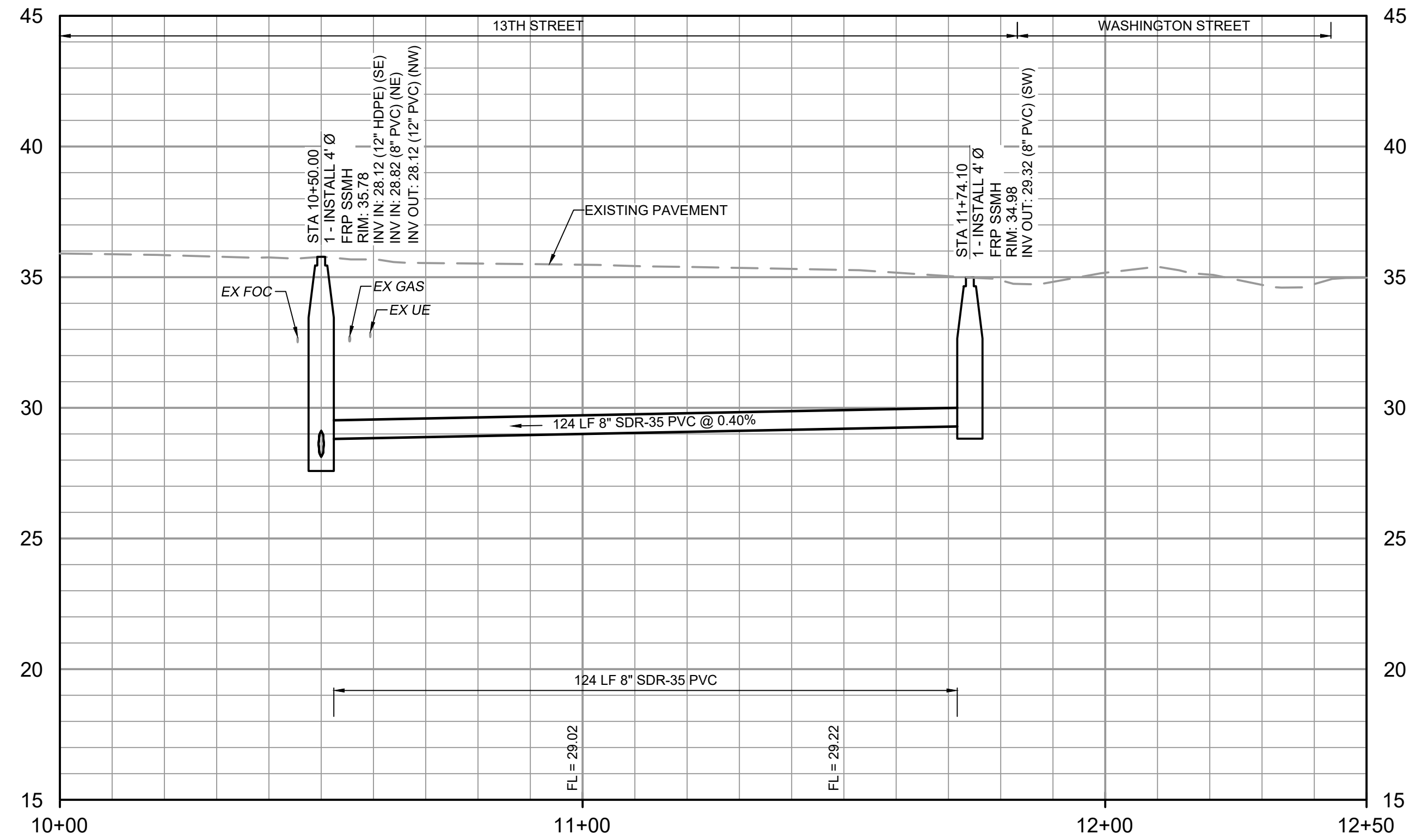
BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

WASTEWATER IMPROVEMENTS  
PLAN AND PROFILE  
SS-4 STA 10+00 TO END

DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	C-20



PLAN  
SCALE: 1" = 20'



PROFILE  
HORIZONTAL SCALE: 1" = 20'  
VERTICAL SCALE: 1" = 4'

- NOTES:**
- CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING VITRIFIED CLAY PIPE AND REPLACE IT WITH NEW PVC PIPE AS SHOWN.
  - CONTRACTOR SHALL REMOVE EXISTING SANITARY SEWER CONCRETE AND BRICK MANHOLES AND REPLACE THEM WITH NEW FIBERGLASS MANHOLES.
  - CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH GEOTECHNICAL CONDITIONS, INCLUDING SOIL TYPES AND GROUNDWATER ELEVATION. INSTALLATION MEANS AND METHODS SHALL BE SELECTED TO PREVENT DISTURBING ADJACENT BUILDING FOOTERS AND EXISTING UTILITIES, INCLUDING POLES AND OTHER STRUCTURES.
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  - SEE SHEET DT-2 AND DT-3 FOR CITY OF BROWNSVILLE PAVING AND FACILITY DETAILS.
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File: C:\USERS\ZCROSSLEY\DRAWING\Hazen\1100 NW LOOP 410, SUITE 700-773 SAN ANTONIO, TEXAS 78213\PROJECT FILES\01\_DESIGN\CIVIL\60405-005-C-PP-C2-1-SS.dwg Date: 10/11/2023 2:15 PM  
PLOT DATE: 10/19/2023 11:16 AM BY: ZCROSSLEY

PROJECT ENGINEER:	A. GARCIA	
DESIGNED BY:	C. JONES	
DRAWN BY:	Z. CROSSLEY	
CHECKED BY:	J. LONDON	
ISSUED FOR BID	10/19/23	AMGS
ISSUED FOR	DATE	BY

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

0 1/2" 1"

10/19/2023



**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

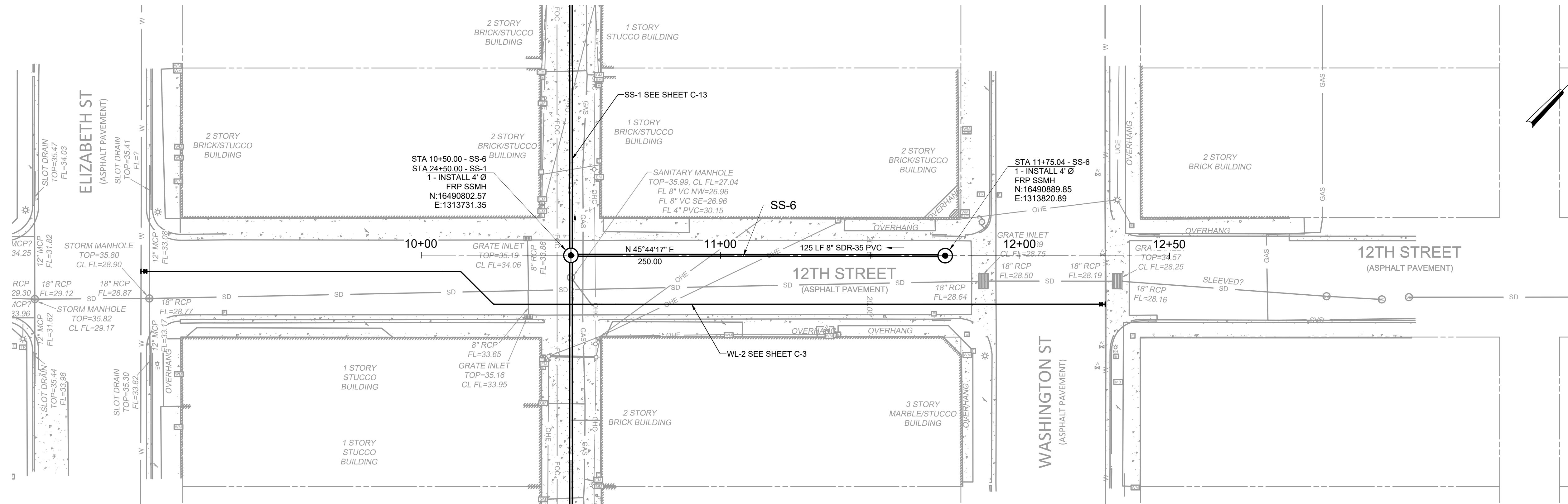
WASTEWATER IMPROVEMENTS  
PLAN AND PROFILE  
SS-5 STA 10+00 TO END

DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	C-21

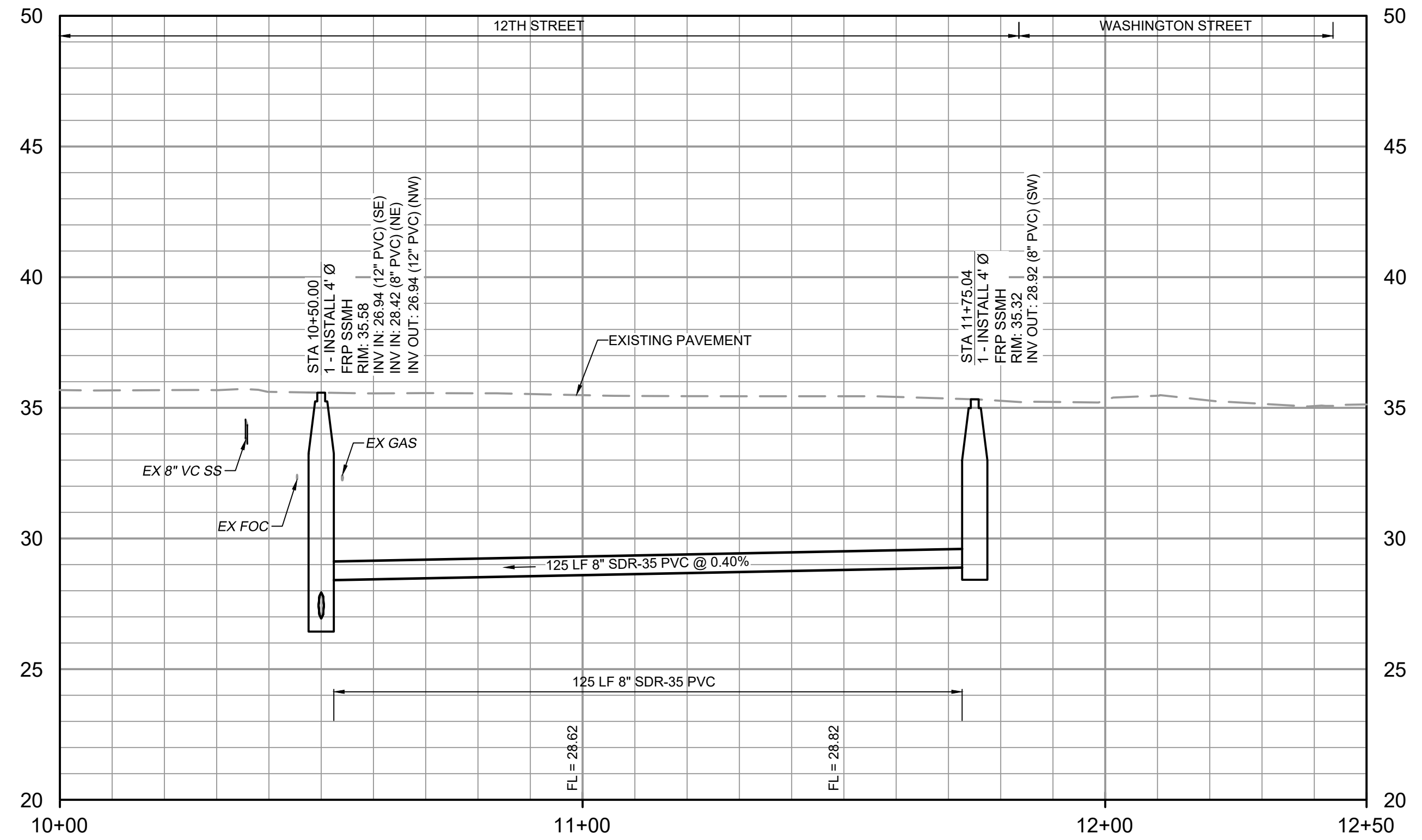


**NOTES:**

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**PLAN**  
SCALE: 1" = 20'



**PROFILE**  
HORIZONTAL SCALE: 1" = 20'  
VERTICAL SCALE: 1" = 4'

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PROJECT ENGINEER:	A. GARCIA	
DESIGNED BY:	C. JONES	
DRAWN BY:	Z. CROSSLEY	
CHECKED BY:	J. LONDON	
ISSUED FOR BID	10/19/23	AMGS
ISSUED FOR	DATE	BY

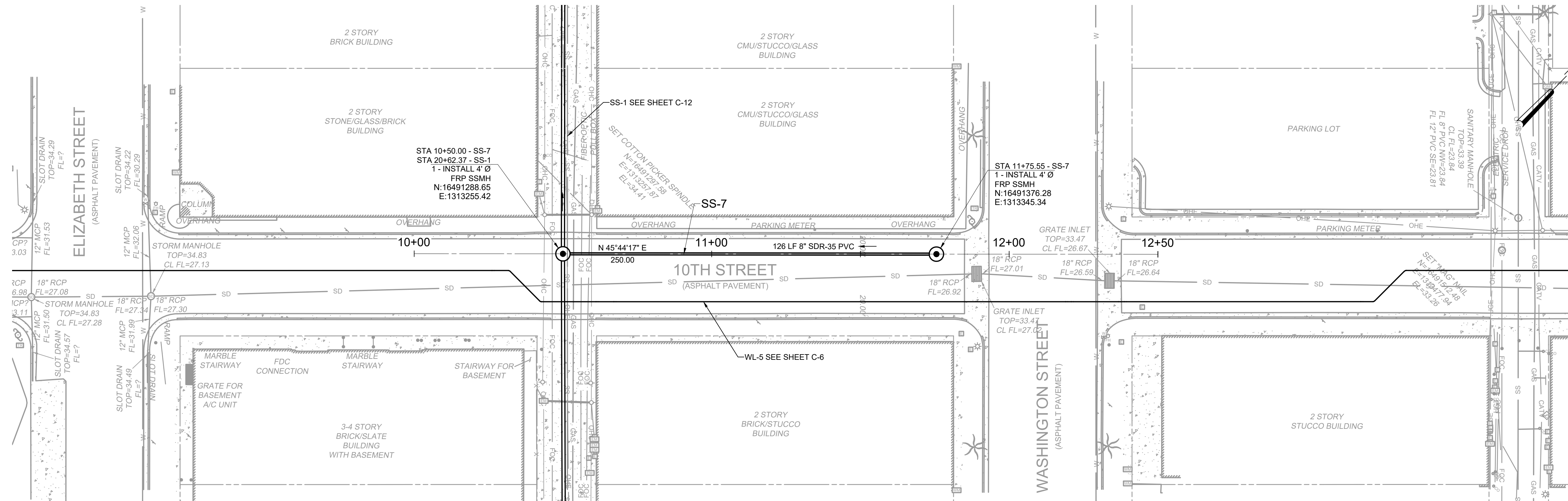
STATE OF TEXAS  
ANA MARIA GARCIA SANCHEZ  
146046  
LICENSED PROFESSIONAL ENGINEER  
10/19/2023

**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

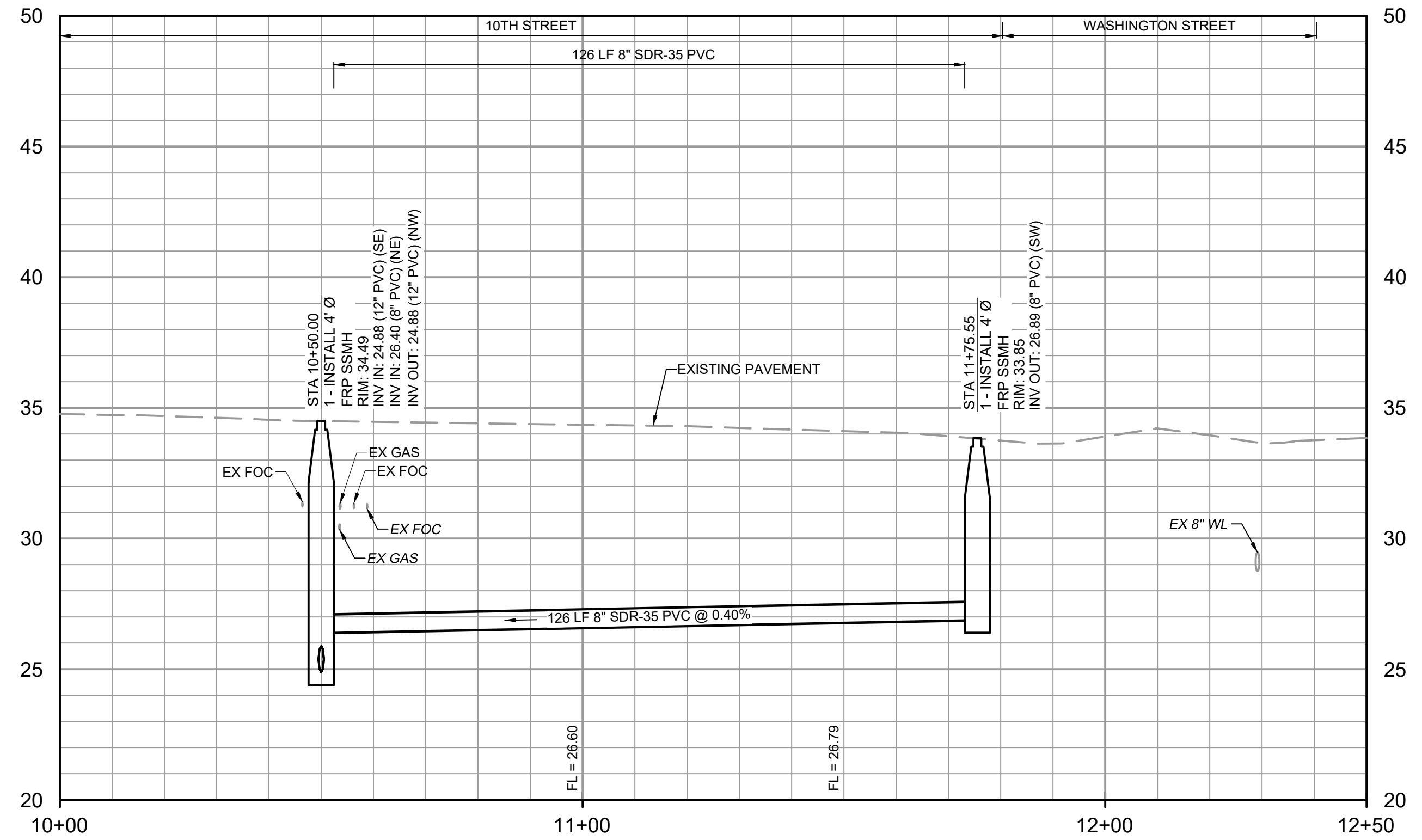
BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

WASTEWATER IMPROVEMENTS  
PLAN AND PROFILE  
SS-6 STA 10+00 TO END

DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	C-22



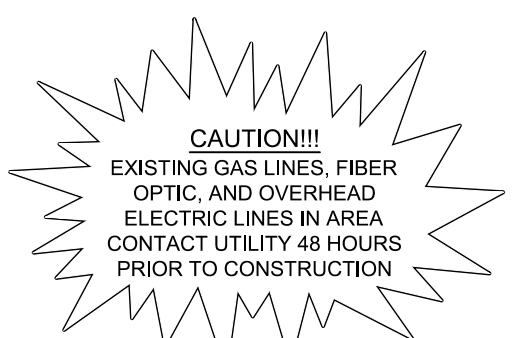
PLAN  
SCALE: 1" = 20'



PROFILE  
HORIZONTAL SCALE: 1" = 20'  
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PROJECT ENGINEER:	A. GARCIA	
DESIGNED BY:	C. JONES	
DRAWN BY:	Z. CROSSLEY	
CHECKED BY:	J. LONDON	
ISSUED FOR BID	10/19/23	AMGS
ISSUED FOR	DATE	BY

**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

DATE: OCTOBER 2023  
HAZEN NO.: 60405-005  
DRAWING NUMBER:  
WASTEWATER IMPROVEMENTS  
PLAN AND PROFILE  
SS-7 STA 10+00 TO END

C-23



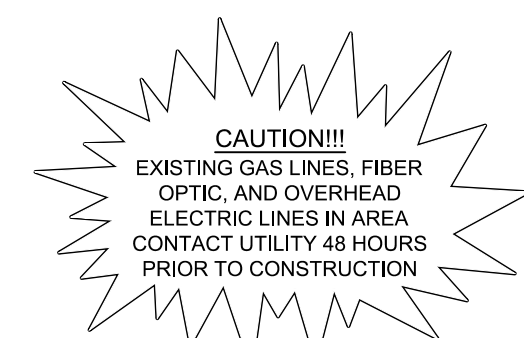
NUMBER	STATION	DESCRIPTION
1	11+09	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
2	11+45	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
3	11+61	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
4	11+66	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
5	12+12	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
6	12+26	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
7	12+36	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
8	12+45	SEWER SERVICE CONNECTION WITH DOUBLE CLEANOUT
9	12+67	CLEANOUT
10	12+67	CLEANOUT
11	12+70	DOUBLE CLEANOUTS
12	13+07	CLEANOUT
13	14+34	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
14	14+52	SEWER SERVICE CONNECTION WITH CLEANOUT
15	14+57	SEWER SERVICE CONNECTION WITH CLEANOUT
16	14+63	SEWER SERVICE CONNECTION WITH CLEANOUT
17	14+94	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
18	15+04	SEWER SERVICE CONNECTION WITH CLEANOUT
19	15+32	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
20	15+38	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
21	15+57	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
22	15+78	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
23	15+82	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
24	16+34	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
25	16+68	CLEANOUT
26	17+78	SEWER SERVICE CONNECTION WITH CLEANOUT
27	17+83	CLEANOUT
28	17+88	SEWER SERVICE CONNECTION WITH CLEANOUT
29	17+95	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
30	18+02	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
31	18+12	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
32	18+45	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
33	18+76	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
34	18+79	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
35	18+97	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
36	19+00	2 - SEWER SERVICE CONNECTIONS
37	19+09	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
38	19+12	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
39	19+34	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
40	19+48	SEWER SERVICE CONNECTION
41	19+70	SEWER SERVICE CONNECTION WITH CLEANOUT
42	19+74	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
43	19+76	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
44	19+94	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
45	20+16	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
46	20+18	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
47	20+29	CLEANOUT
48	20+45	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
49	20+49	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
50	21+03	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
51	21+10	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
52	21+24	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
53	21+36	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
54	21+47	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
55	21+73	SEWER SERVICE CONNECTION
56	21+75	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
57	21+81	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
58	21+86	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
59	21+99	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
60	22+08	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
61	22+15	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE (APPEARS TO BE PLUGGED)
62	22+24	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE (APPEARS TO BE PLUGGED)
63	22+36	CLEANOUT
64	22+39	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE (APPEARS TO BE PLUGGED)
65	22+50	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
66	22+52	CLEANOUT
67	22+62	PIPE PENETRATION - VERIFIED FROM CCTV - EAST SIDE
68	22+65	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
69	22+68	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
70	22+73	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
71	22+76	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
72	23+16	SEWER SERVICE CONNECTION WITH DOUBLE CLEANOUTS
73	23+21	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
74	23+28	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
75	23+33	CLEANOUT
76	23+43	CLEANOUT
77	23+51	SEWER SERVICE CONNECTION WITH CLEANOUT
78	23+56	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
79	23+59	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
80	23+80	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
81	23+84	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
82	24+10	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
83	24+50	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
84	24+53	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
85	24+70	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE

NUMBER	STATION	DESCRIPTION
86	24+72	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
87	24+77	SEWER SERVICE CONNECTION WITH CLEANOUT
88	24+82	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
89	24+98	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
90	25+00	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
91	25+12	SEWER SERVICE CONNECTION WITH CLEANOUT
92	25+25	SEWER SERVICE CONNECTION WITH CLEANOUT
93	25+30	CLEANOUT
94	25+34	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
95	35+38	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
96	25+56	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
97	25+58	SEWER SERVICE CONNECTION
98	25+80	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
99	25+85	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
100	26+03	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
101	26+04	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
102	26+07	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
103	26+10	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
104	26+26	SEWER SERVICE CONNECTION WITH CLEANOUT
105	26+33	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
106	26+35	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
107	26+40	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
108	26+61	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
109	26+77	CLEANOUT
110	27+10	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
111	27+12	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
112	27+22	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
113	27+38	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
114	27+50	SEWER SERVICE CONNECTION
115	27+56	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE (APPEARS TO BE PLUGGED)
116	27+58	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE (APPEARS TO BE PLUGGED)
117	27+78	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
118	27+81	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
119	27+89	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
120	27+98	SEWER SERVICE CONNECTION
121	28+04	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
122	28+06	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
123	28+17	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
124	28+23	CLEANOUT
125	28+30	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
126	28+32	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
127	28+47	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
128	28+55	CLEANOUT
129	28+65	CLEANOUT
130	28+67	CLEANOUT
131	28+71	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
132	28+79	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
133	28+82	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
134	28+93	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
135	29+05	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
136	29+10	SEWER SERVICE CONNECTION WITH CLEANOUT
137	29+17	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
138	29+24	CLEANOUT
139	29+31	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
140	29+41	(SEWER SERVICE CONNECTION)SEWER SERVICE CONNECTION
141	29+52	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
142	29+58	SEWER SERVICE CONNECTION
143	29+67	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
144	29+80	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
145	29+82	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
146	30+05	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
147	30+20	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
148	30+26	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
149	30+29	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
150	30+31	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
151	30+36	SEWER SERVICE CONNECTION WITH DOUBLE CLEANOUTS
152	30+55	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
153	30+57	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
154	30+75	SEWER SERVICE CONNECTION WITH CLEANOUT
155	30+80	SEWER SERVICE CONNECTION WITH DOUBLE CLEANOUTS
156	30+83	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
157	31+04	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
158	31+06	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
159	31+32	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
160	31+45	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
161	32+08	2 - SEWER SERVICE CONNECTIONS WITH DOUBLE CLEANOUTS
162	32+12	SEWER SERVICE CONNECTION WITH CLEANOUT
163	32+58	SEWER SERVICE CONNECTION WITH CLEANOUT
164	32+67	CLEANOUT
165	32+74	SEWER SERVICE CONNECTION WITH CLEANOUT
166	33+68	SEWER SERVICE CONNECTION WITH CLEANOUT
167	34+02	SEWER SERVICE CONNECTION
168	34+18	SEWER SERVICE CONNECTION WITH CLEANOUT
169	35+90	SEWER SERVICE CONNECTION WITH CLEANOUT

NUMBER	STATION	DESCRIPTION
1	13+11	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
2	13+15	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
3	13+34	CLEANOUT
4	13+42	CLEANOUT
5	14+20	SEWER SERVICE CONNECTION
6	14+22	CLEANOUT
7	14+96	CLEANOUT
8	15+16	SEWER SERVICE CONNECTION
9	15+57	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
10	15+72	SEWER SERVICE CONNECTION
11	15+88	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
12	16+06	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
13	16+09	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT WEST SIDE OF PIPE
14	16+24	SEWER SERVICE CONNECTION
15	16+47	SEWER SERVICE CONNECTION
16	16+74	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
17	16+80	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT EAST SIDE OF PIPE
18	17+00	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
19	17+17	PIPE PENETRATION - VERIFIED FROM CCTV - PENETRATION AT TOP OF PIPE
20	17+85	(CLEANOUT)CLEANOUT
21	18+50	DOUBLE CLEANOUTS
22	18+83	CLEANOUT
23	18+92	CLEANOUT
24	19+24	CLEANOUT
25	19+35	SEWER SERVICE CONNECTION

NOTES:

- THE LIST OF SEWER SERVICE CLEANOUTS ON THIS SHEET ARE BASED ON CCTV REVIEW. CCTV OF THE EXISTING SEWER LINES ALONG SS-1 AND SS-2 WERE PROVIDED BY BPUB ON 08/02/2023 AND ANALYZED BY HAZEN ON 08/09/2023. AS PART OF THE REVIEW, HAZEN INCORPORATED CLEANOUTS THAT WERE LOCATED ON THE SURFACE AND CAPTURED IN THE FIELD BY THE SURVEYOR. AS PIPE PENETRATIONS WERE OBSERVED IN THE CCTV REVIEW, IT WAS UNDETERMINED ON THE CURRENT STATUS OF EACH PENETRATION. DESCRIPTIONS FOR EACH PENETRATION WERE USED FOR OBSERVATION PURPOSES ONLY AND SHOULD NOT BE UTILIZED AS VERIFICATION OF EXISTING SERVICE STATUS.
- CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXACT LOCATIONS, SERVICE STATUS, AND RECONNECTIONS OF EACH SEWER SERVICE LINES ALONG SS-1 AND SS-2. CONTRACTOR SHALL RESTORE ALL SERVICE RECONNECTIONS IN ACCORDANCE WITH BPUB STANDARD WASTEWATER DETAILS ON SHEET DT-02.
- ANY EXISTING SEWER SERVICE LINES TO BE PLUGGED OR ABANDONED SHALL BE VERIFIED AND APPROVED BY QUALIFIED OWNER'S REPRESENTATIVE PRIOR TO COMMENCING.



Know what's below. Call before you dig.

THE INFORMATION SHOWN ON THESE DRAWINGS INDICATING SIDE, TYPE AND LOCATION OF UNDERGROUND SURFACE, AND AERIAL UTILITIES IS NOT GUARANTEED TO BE EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT "ONE CALL" SYSTEM AT 1-800-344-4377 (DIAL 811) 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION FOR EXISTING UTILITY LOCATIONS. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR FIELD VERIFYING LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES AFFECTED BY CONSTRUCTION FOR THIS PROJECT IN ORDER TO AVOID DAMAGING THOSE UTILITIES, AND SHALL IMMEDIATELY ARRANGE FOR REPAIR AND RESTORATION OF CONTRACTOR-DAMAGED UTILITIES TO THE UTILITY COMPANY'S APPROVAL AT THE EXPENSE OF THE CONTRACTOR.

File: C:\USERS\ZCROSSLEY\DRAWING\SS-1 AND SS-2\SS-1 AND SS-2.dwg, Plot Date: 10/19/2023 11:17 AM, By: ZCROSSLEY

PROJECT ENGINEER:	A. GARCIA
DESIGNED BY:	C. JONES
DRAWN BY:	Z. CROSSLEY
CHECKED BY:	J. LONDON
ISSUED FOR BID	10/19/23
ISSUED FOR	DATE

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

0 1/2" 1"

10/19/2023

HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS

DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

DATE: OCTOBER 2023

HAZEN NO.: 60405-005

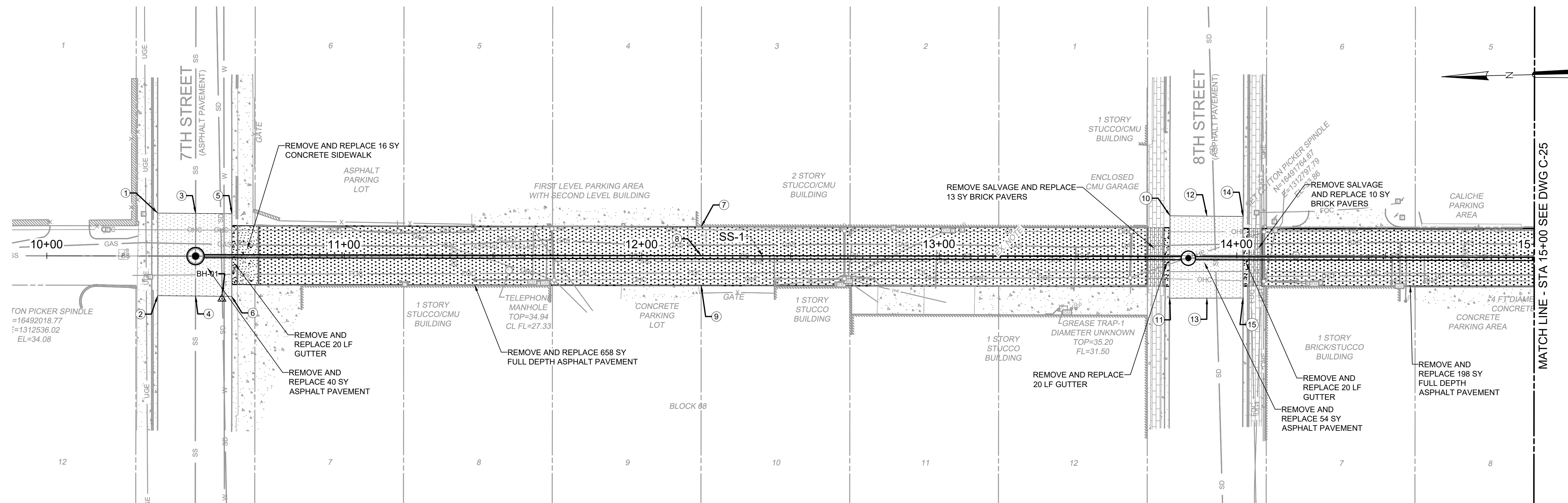
DRAWING NUMBER:

WASTEWATER IMPROVEMENTS  
SS-1 AND SS-2  
SEWER CLEANOUT LOCATIONS

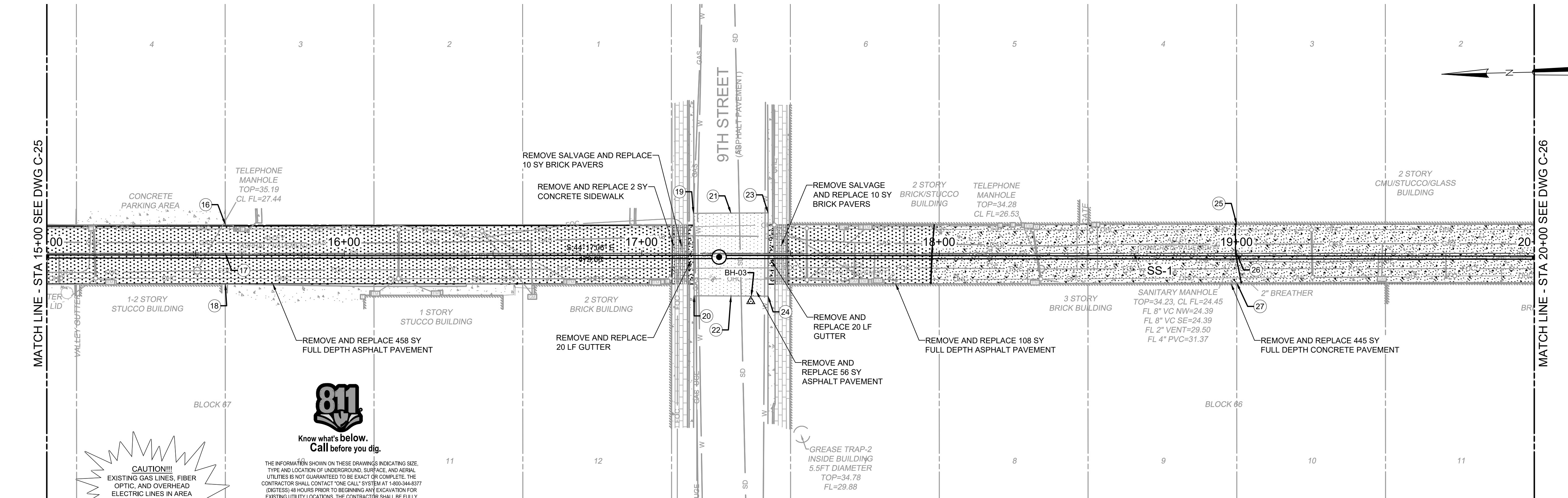
C-24

**NOTES:**

- ALL SURFACE ELEMENTS TO BE COMPLETELY REMOVED AND DISPOSED FROM PROJECT SITE PRIOR TO PREPARATION OF ANY PROPOSED SURFACE ELEMENTS.
- CONTRACTOR SHALL PLACE TEMPORARY CONSTRUCTION FENCING PRIOR TO REMOVING AND REPLACING SURFACE ELEMENTS FOR THE SAFETY OF THE PUBLIC.
- TRAFFIC CONTROL SHOULD BE ESTABLISHED PRIOR TO ANY REMOVAL OF ANY SURFACE ELEMENTS. TRAFFIC CONTROL PLANS SHOULD BE IN ACCORDANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, DESIGNED BY A TEXAS LICENSED ENGINEER, AND APPROVED BY TPUB PRIOR TO IMPLEMENTATION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPORTING ALL EXISTING UTILITIES AND STRUCTURES DURING EXCAVATION, INCLUDING UTILITY POLES AND TRANSFORMER STRUCTURES. REFER TO PHOTOS ON DRAWING G-5.
- POINT LOCATIONS SHOWN ON THE PLANS ARE GIVEN TO ESTABLISH PROJECT REMOVAL LIMITS. ALL POINT ELEVATIONS ARE CAPTURED FROM THE EXISTING GROUND SURFACE. CONTRACTOR IS SOLELY RESPONSIBLE TO CAPTURE ALL ELEVATIONS AND CONTROL NEEDED PRIOR TO REMOVAL IN ORDER TO REPLACE ASPHALT PAVEMENT TO MATCH EXISTING CONDITIONS.



**PLAN**  
SCALE: 1" = 20'



**PLAN**  
SCALE: 1" = 20'

POINT TABLE				
POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
1	34.03	N25° 54' 17.32"	W97° 30' 04.98"	CORNER OF ASPHALT PAVEMENT
2	34.06	N25° 54' 17.13"	W97° 30' 05.20"	CORNER OF ASPHALT PAVEMENT
3	34.28	N25° 54' 17.23"	W97° 30' 04.89"	CROWN OF ASPHALT PAVEMENT
4	34.30	N25° 54' 17.04"	W97° 30' 05.11"	CROWN OF ASPHALT PAVEMENT
5	34.00	N25° 54' 17.14"	W97° 30' 04.79"	CORNER OF ASPHALT PAVEMENT
6	34.04	N25° 54' 16.95"	W97° 30' 05.01"	CORNER OF ASPHALT PAVEMENT
7	35.08	N25° 54' 15.98"	W97° 30' 03.63"	EDGE OF ASPHALT PAVEMENT
8	34.87	N25° 54' 15.92"	W97° 30' 03.71"	CENTERLINE OF ASPHALT PAVEMENT
9	34.95	N25° 54' 15.85"	W97° 30' 03.79"	EDGE OF ASPHALT PAVEMENT
10	33.74	N25° 54' 14.88"	W97° 30' 02.40"	CORNER OF ASPHALT PAVEMENT
11	33.82	N25° 54' 14.69"	W97° 30' 02.62"	CORNER OF ASPHALT PAVEMENT
12	34.47	N25° 54' 14.79"	W97° 30' 02.31"	CROWN OF ASPHALT PAVEMENT
13	34.54	N25° 54' 14.61"	W97° 30' 02.53"	CROWN OF ASPHALT PAVEMENT
14	33.83	N25° 54' 14.71"	W97° 30' 02.22"	CORNER OF ASPHALT PAVEMENT
15	33.90	N25° 54' 14.52"	W97° 30' 02.44"	CORNER OF ASPHALT PAVEMENT
16	35.23	N25° 54' 13.55"	W97° 30' 01.05"	EDGE OF ASPHALT PAVEMENT
17	34.73	N25° 54' 13.49"	W97° 30' 01.13"	CENTERLINE OF ASPHALT PAVEMENT
18	35.20	N25° 54' 13.42"	W97° 30' 01.21"	EDGE OF ASPHALT PAVEMENT
19	33.88	N25° 54' 12.46"	W97° 29' 59.83"	CORNER OF ASPHALT PAVEMENT
20	34.15	N25° 54' 12.27"	W97° 30' 00.04"	CORNER OF ASPHALT PAVEMENT
21	34.50	N25° 54' 12.37"	W97° 29' 59.73"	CROWN OF ASPHALT PAVEMENT
22	34.69	N25° 54' 12.18"	W97° 29' 59.95"	CROWN OF ASPHALT PAVEMENT
23	33.92	N25° 54' 12.28"	W97° 29' 59.63"	CORNER OF ASPHALT PAVEMENT
24	34.04	N25° 54' 12.09"	W97° 29' 59.86"	CORNER OF ASPHALT PAVEMENT
25	34.50	N25° 54' 11.13"	W97° 29' 58.47"	EDGE OF ASPHALT PAVEMENT
26	34.17	N25° 54' 11.06"	W97° 29' 58.55"	CENTERLINE OF ASPHALT PAVEMENT
27	34.46	N25° 54' 10.99"	W97° 29' 58.63"	EDGE OF ASPHALT PAVEMENT

**CAUTION!!!**  
EXISTING GAS LINES, FIBER OPTIC, AND OVERHEAD ELECTRIC LINES IN AREA CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION

**811**  
Know what's below.  
Call before you dig.  
THE INFORMATION SHOWN ON THESE DRAWINGS INDICATING SIZE, TYPE AND LOCATION OF UNDERGROUND, SURFACE, AND AERIAL UTILITIES IS NOT GUARANTEED TO BE EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT "ONE CALL SYSTEM" AT 1-800-485-5877 (DIESTES) 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION FOR EXISTING UTILITY LOCATIONS. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR FIELD VERIFYING LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES AFFECTED BY CONSTRUCTION FOR THIS PROJECT IN ORDER TO AVOID DAMAGING THOSE UTILITIES, AND SHALL IMMEDIATELY ARRANGE FOR REPAIR AND RESTORATION OF CONTRACTOR-DAMAGED UTILITIES TO THE UTILITY COMPANIES' APPROVAL AT THE EXPENSE OF THE CONTRACTOR.

FILE: C:\USERS\ZCROSSLEY\DRAWINGS\HAZEN AND SAWYER\60405-005-DOWNTOWN WATER AND WASTE WIP\PROJECT FILES\01\_DESIGN\CIVIL\60405-005-C-PL-C24-SS Saved by ZCROSSLEY Save date: 10/19/2023 4:11 PM PLOT DATE: 10/19/2023 11:17 AM BY: ZCROSSLEY

REV	ISSUED FOR	DATE	BY
	ISSUED FOR BID	10/19/23	AMGS
	ISSUED FOR		

PROJECT ENGINEER:	A. GARCIA
DESIGNED BY:	C. JONES
DRAWN BY:	Z. CROSSLEY
CHECKED BY:	J. LONDON
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	

**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER IMPROVEMENTS PROJECT 2

WASTEWATER IMPROVEMENTS  
RESTORATION PLANS  
SS-1 STA 10+00 TO STA 20+00

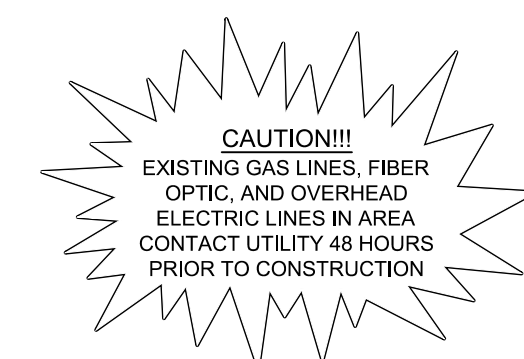
DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	C-25



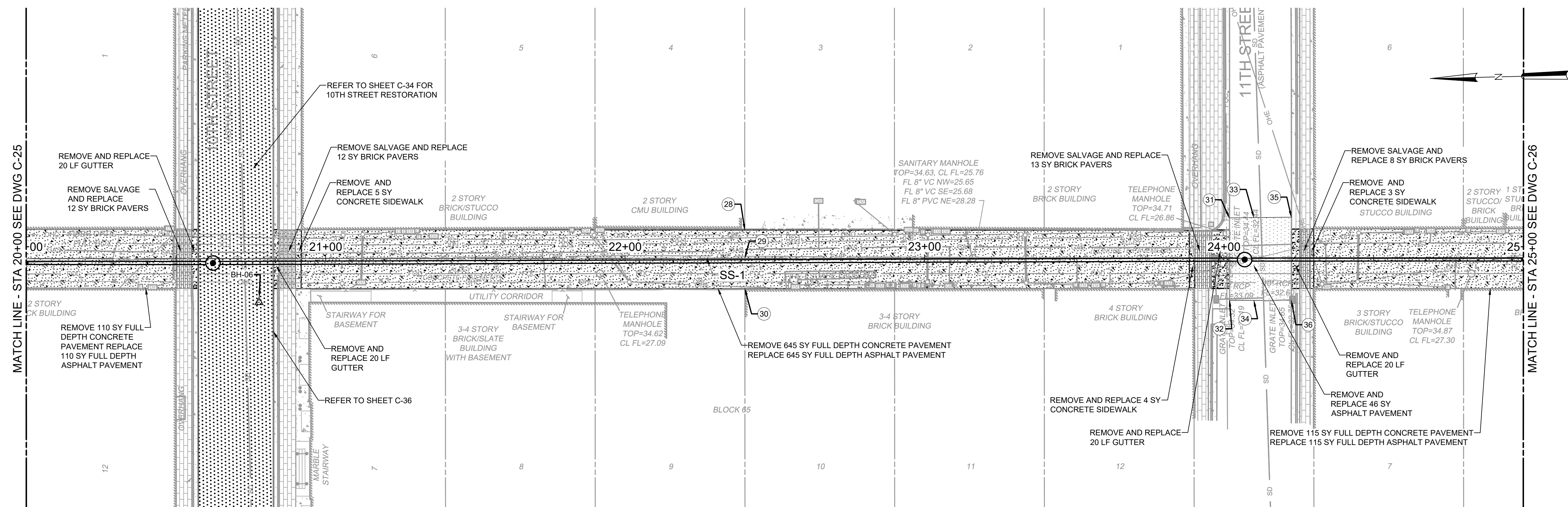
**NOTES:**

1. ALL SURFACE ELEMENTS TO BE COMPLETELY REMOVED AND DISPOSED FROM PROJECT SITE PRIOR TO PREPARATION OF ANY PROPOSED SURFACE ELEMENTS.
2. CONTRACTOR SHALL PLACE TEMPORARY CONSTRUCTION FENCING PRIOR TO REMOVING AND REPLACING SURFACE ELEMENTS FOR THE SAFETY OF THE PUBLIC.
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5. POINT LOCATIONS SHOWN ON THE PLANS ARE GIVEN TO ESTABLISH PROJECT REMOVAL LIMITS. ALL POINT ELEVATIONS ARE CAPTURED FROM THE EXISTING GROUND SURFACE. CONTRACTOR IS SOLELY RESPONSIBLE TO CAPTURE ALL ELEVATIONS AND CONTROL NEEDED PRIOR TO REMOVAL IN ORDER TO REPLACE ASPHALT PAVEMENT TO MATCH EXISTING CONDITIONS.

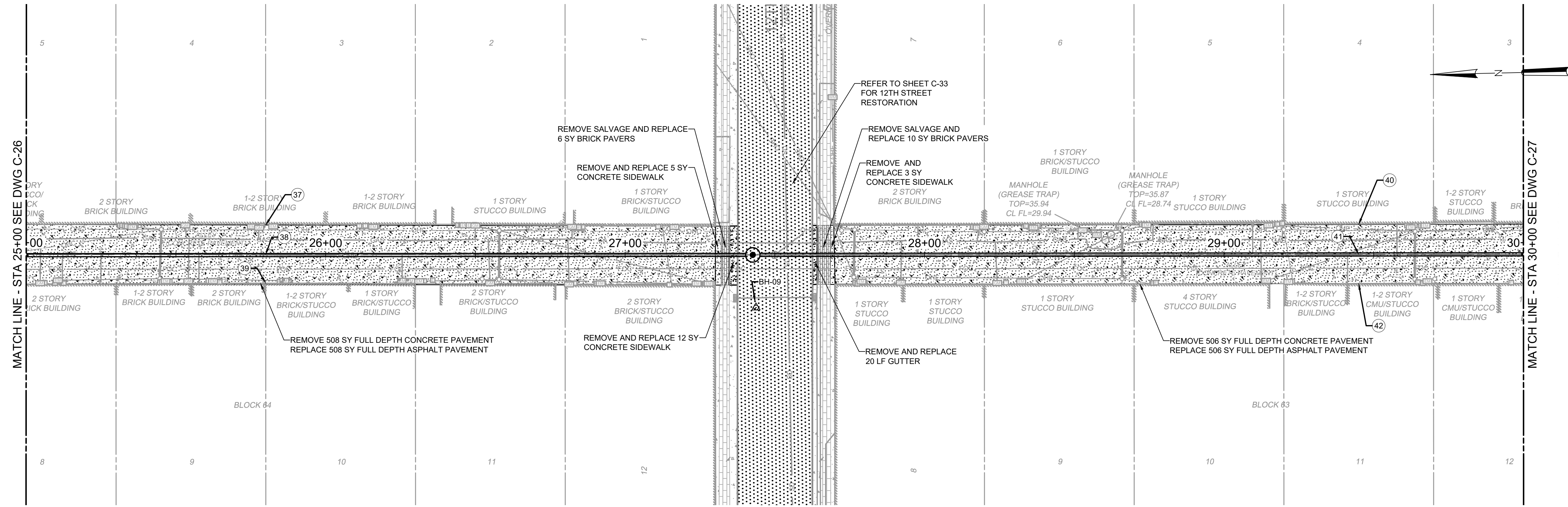
POINT TABLE				
POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
28	34.67	N25° 54' 08.70"	W97° 29' 55.89"	EDGE OF ASPHALT PAVEMENT
29	34.52	N25° 54' 08.63"	W97° 29' 55.97"	CENTERLINE OF ASPHALT PAVEMENT
30	34.96	N25° 54' 08.56"	W97° 29' 56.05"	EDGE OF ASPHALT PAVEMENT
31	34.71	N25° 54' 07.57"	W97° 29' 54.63"	CORNER OF ASPHALT PAVEMENT
32	0.00	N25° 54' 07.38"	W97° 29' 54.85"	CORNER OF ASPHALT PAVEMENT
33	35.02	N25° 54' 07.51"	W97° 29' 54.57"	CROWN OF ASPHALT PAVEMENT
34	0.00	N25° 54' 07.32"	W97° 29' 54.79"	CROWN OF ASPHALT PAVEMENT
35	0.00	N25° 54' 07.42"	W97° 29' 54.48"	CORNER OF ASPHALT PAVEMENT
36	0.00	N25° 54' 07.23"	W97° 29' 54.70"	CORNER OF ASPHALT PAVEMENT
37	35.60	N25° 54' 06.27"	W97° 29' 53.31"	EDGE OF ASPHALT PAVEMENT
38	35.14	N25° 54' 06.20"	W97° 29' 53.39"	CENTERLINE OF ASPHALT PAVEMENT
39	35.45	N25° 54' 06.14"	W97° 29' 53.47"	EDGE OF ASPHALT PAVEMENT
40	36.16	N25° 54' 03.66"	W97° 29' 50.54"	EDGE OF ASPHALT PAVEMENT
41	35.47	N25° 54' 03.59"	W97° 29' 50.62"	CENTERLINE OF ASPHALT PAVEMENT
42	36.11	N25° 54' 03.53"	W97° 29' 50.70"	EDGE OF ASPHALT PAVEMENT



THE INFORMATION SHOWN ON THESE DRAWINGS INDICATING SIZE, TYPE AND LOCATION OF UNDERGROUND SURFACE AND AERIAL UTILITIES IS NOT GUARANTEED TO BE EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT "ONE CALL" SYSTEM AT 1-800-344-4377 (DIXIE) 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION FOR EXISTING UTILITY LOCATIONS. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR FIELD VERIFYING LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES AFFECTED BY CONSTRUCTION FOR THIS PROJECT IN ORDER TO AVOID DAMAGING THOSE UTILITIES, AND SHALL IMMEDIATELY ARRANGE FOR REPAIR AND RESTORATION OF CONTRACTOR-DAMAGED UTILITIES TO THE UTILITY COMPANY'S APPROVAL AT THE EXPENSE OF THE CONTRACTOR.



**PLAN**  
SCALE: 1" = 20'



**PLAN**  
SCALE: 1" = 20'

File: C:\USERS\ZCROSSLEY\DRAWING\BROWNSVILLE\60405-005-C-PL-C25-SS Saved by ZCROSSLEY Save date: 10/19/2023 4:12 PM  
PLOT DATE: 10/19/2023 11:17 AM By: ZCROSSLEY

PROJECT ENGINEER:	A. GARCIA	
DESIGNED BY:	C. JONES	
DRAWN BY:	Z. CROSSLEY	
CHECKED BY:	J. LONDON	
ISSUED FOR BID	10/19/23	AMGS
ISSUED FOR	DATE	BY

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

0 1/2" 1"

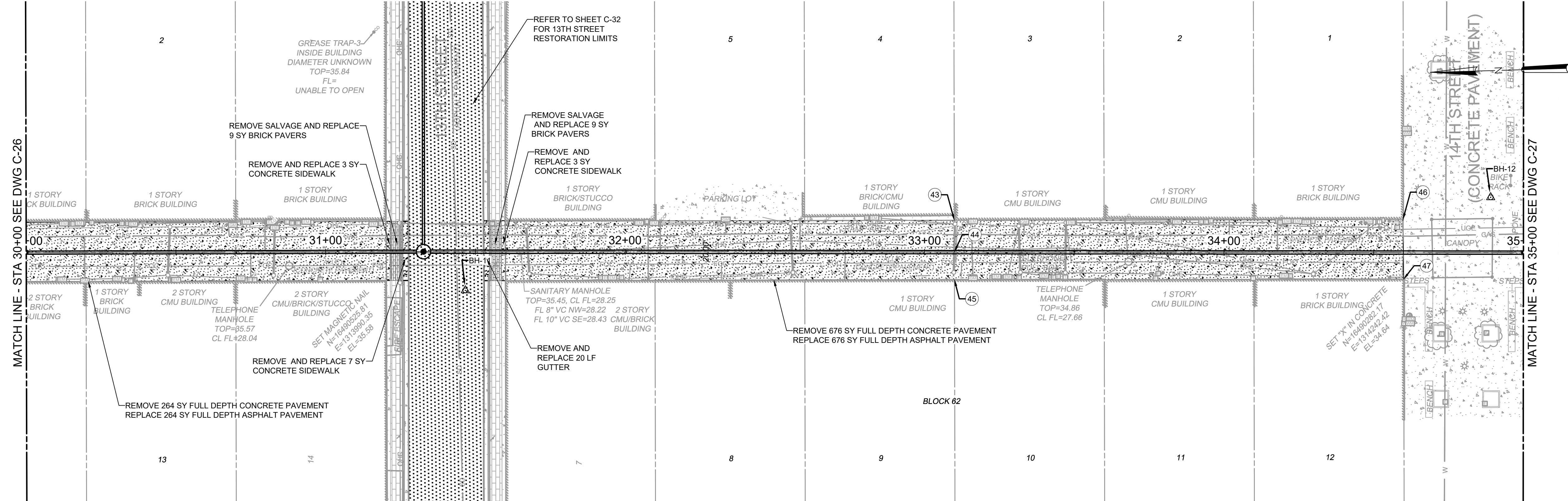
10/19/2023



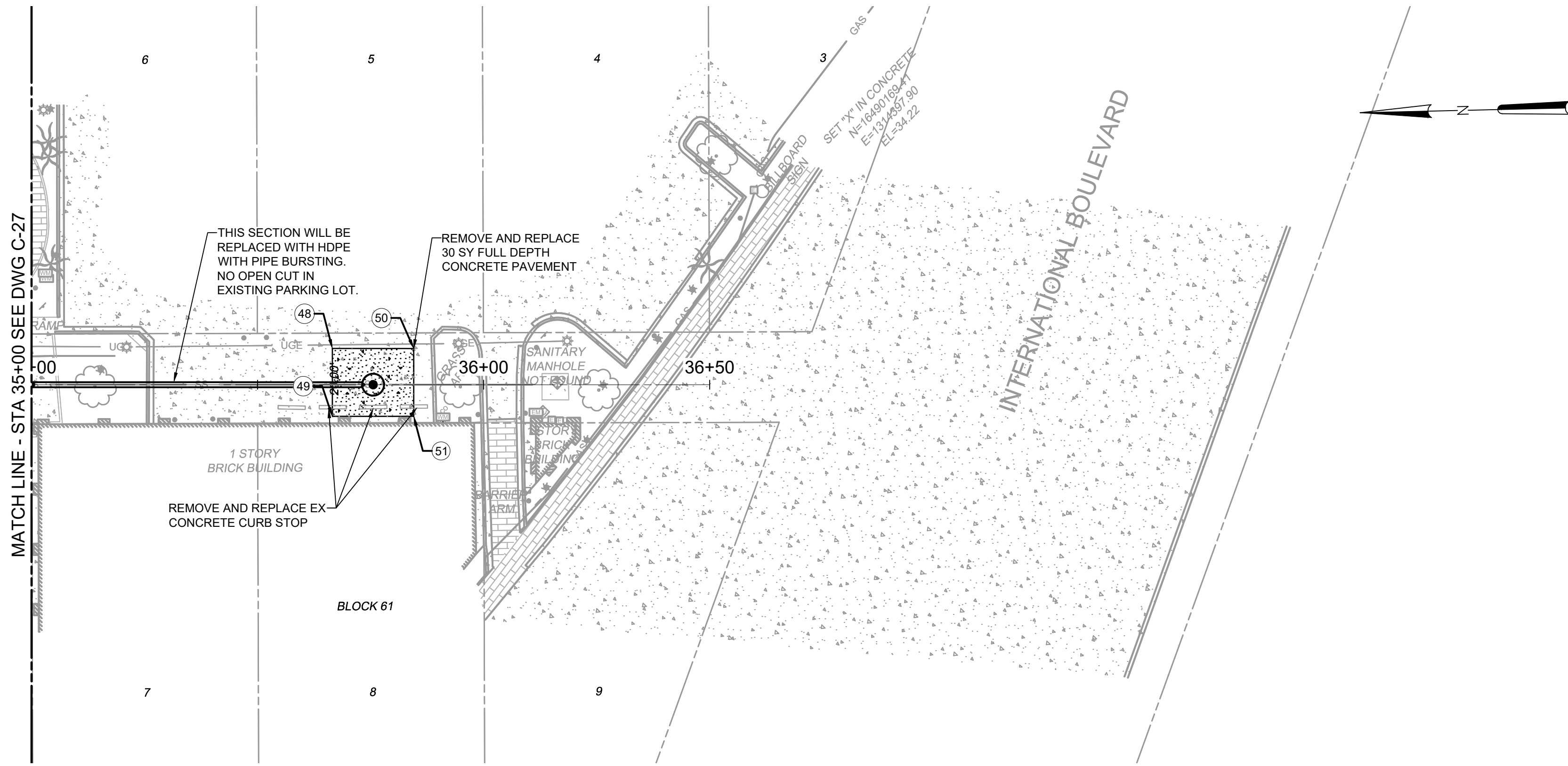
**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

DATE: OCTOBER 2023  
HAZEN NO.: 60405-005  
DRAWING NUMBER:  
WASTEWATER IMPROVEMENTS  
RESTORATION PLANS  
SS-1 STA 20+00 TO STA 30+00  
C-26



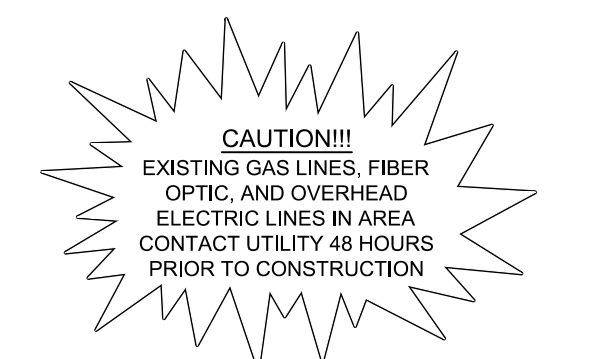
PLAN  
SCALE: 1" = 20'



PLAN  
SCALE: 1" = 20'

- NOTES:**
1. ALL SURFACE ELEMENTS TO BE COMPLETELY REMOVED AND DISPOSED FROM PROJECT SITE PRIOR TO PREPARATION OF ANY PROPOSED SURFACE ELEMENTS.
  2. CONTRACTOR SHALL PLACE TEMPORARY CONSTRUCTION FENCING PRIOR TO REMOVING AND REPLACING SURFACE ELEMENTS FOR THE SAFETY OF THE PUBLIC.
  3. TRAFFIC CONTROL SHOULD BE ESTABLISHED PRIOR TO ANY REMOVAL OF ANY SURFACE ELEMENTS. TRAFFIC CONTROL PLANS SHOULD BE DESIGNED BY A TEXAS LICENSED ENGINEER AND APPROVED BY BPUB PRIOR TO IMPLEMENTATION.
  4. CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPORTING ALL EXISTING UTILITIES AND STRUCTURES DURING EXCAVATION, INCLUDING UTILITY POLES AND TRANSFORMER STRUCTURES. REFER TO PHOTOS ON DRAWING G-5.
  5. POINT LOCATIONS SHOWN ON THE PLANS ARE GIVEN TO ESTABLISH PROJECT REMOVAL LIMITS. ALL POINT ELEVATIONS ARE CAPTURED FROM THE EXISTING GROUND SURFACE. CONTRACTOR IS SOLELY RESPONSIBLE TO CAPTURE ALL ELEVATIONS AND CONTROL NEEDED PRIOR TO REMOVAL IN ORDER TO REPLACE ASPHALT PAVEMENT TO MATCH EXISTING CONDITIONS.

POINT TABLE				
POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
43	35.34	N25° 54' 01.06"	W97° 29' 47.77"	EDGE OF ASPHALT PAVEMENT
44	34.97	N25° 54' 00.99"	W97° 29' 47.86"	CENTERLINE OF ASPHALT PAVEMENT
45	35.16	N25° 54' 00.92"	W97° 29' 47.93"	EDGE OF ASPHALT PAVEMENT
46	34.81	N25° 53' 59.99"	W97° 29' 46.64"	EDGE OF ASPHALT PAVEMENT
47	34.83	N25° 53' 59.85"	W97° 29' 46.79"	EDGE OF ASPHALT PAVEMENT
48	35.43	N25° 53' 59.20"	W97° 29' 45.85"	EDGE OF ASPHALT PAVEMENT
49	35.70	N25° 53' 59.10"	W97° 29' 45.97"	EDGE OF ASPHALT PAVEMENT
50	35.32	N25° 53' 59.07"	W97° 29' 45.72"	EDGE OF ASPHALT PAVEMENT
51	35.47	N25° 53' 58.97"	W97° 29' 45.84"	EDGE OF ASPHALT PAVEMENT



Know what's below.  
Call before you dig.

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File: C:\USERS\ZCROSSLEY\DRAWINGS\HAZEN AND SAWYER\60405-005-DOWNTOWN WATER AND WWT\PROJECT FILES\01\_DESIGN\DWG\60405-005-C-PL-C26-SS Saved by ZCROSSLEY Save date: 10/13/2023 4:12 PM PLOT DATE: 10/19/2023 11:18 AM BY: ZCROSSLEY

PROJECT ENGINEER:	A. GARCIA	
DESIGNED BY:	C. JONES	
DRAWN BY:	Z. CROSSLEY	
CHECKED BY:	J. LONDON	
ISSUED FOR BID	10/19/23	AMGS
ISSUED FOR	DATE	BY

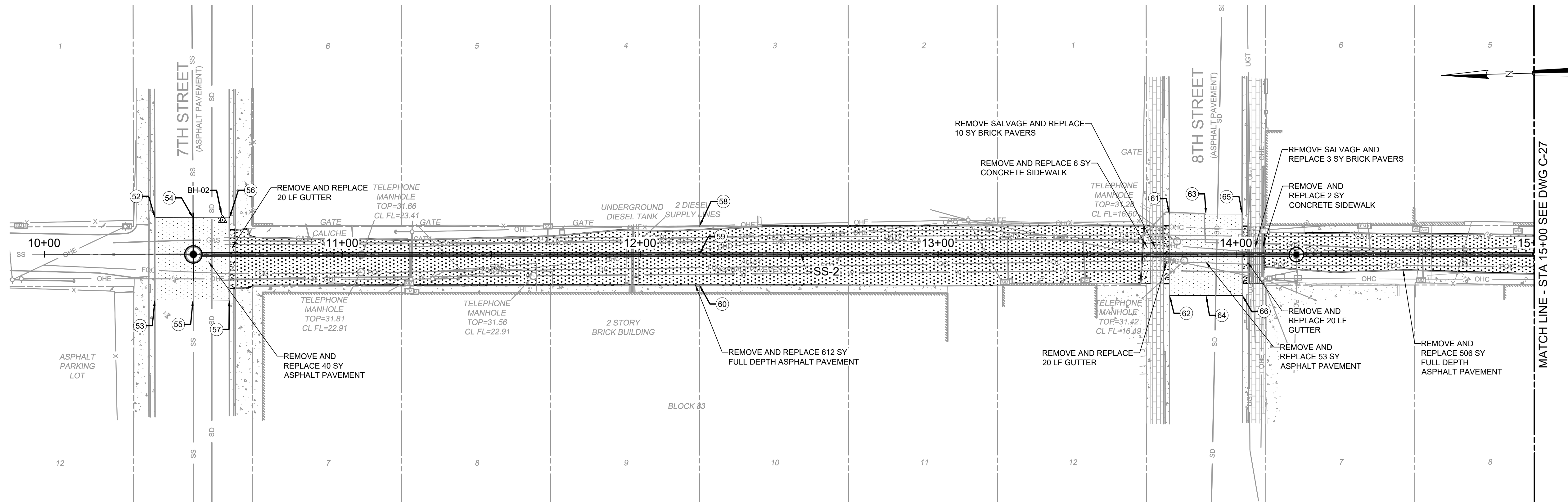
**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

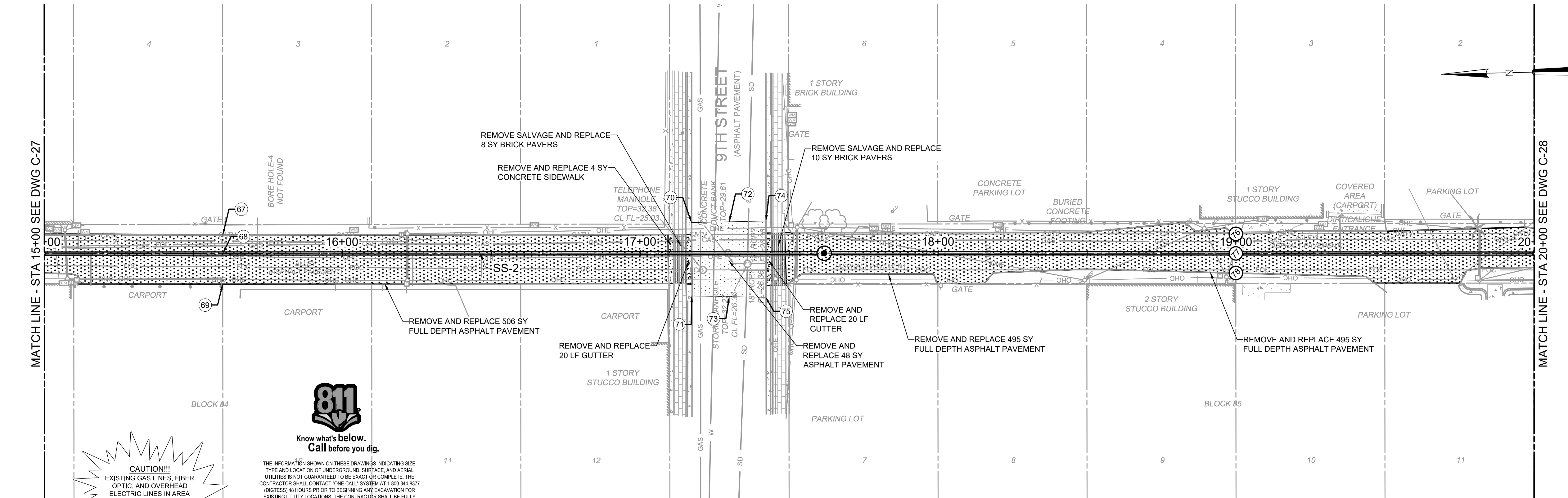
WASTEWATER IMPROVEMENTS  
RESTORATION PLANS  
SS-1 STA 30+00 TO END

DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	





PLAN  
SCALE: 1" = 20'



PLAN  
SCALE: 1" = 20'

- NOTES:**
- ALL SURFACE ELEMENTS TO BE COMPLETELY REMOVED AND DISPOSED FROM PROJECT SITE PRIOR TO PREPARATION OF ANY PROPOSED SURFACE ELEMENTS.
  - CONTRACTOR SHALL PLACE TEMPORARY CONSTRUCTION FENCING PRIOR TO REMOVING AND REPLACING SURFACE ELEMENTS FOR THE SAFETY OF THE PUBLIC.
  - TRAFFIC CONTROL SHOULD BE ESTABLISHED PRIOR TO ANY REMOVAL OF ANY SURFACE ELEMENTS. TRAFFIC CONTROL PLANS SHOULD BE DESIGNED BY A TEXAS LICENSED ENGINEER AND APPROVED BY BPUB PRIOR TO IMPLEMENTATION.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPORTING ALL EXISTING UTILITIES AND STRUCTURES DURING EXCAVATION, INCLUDING UTILITY POLES AND TRANSFORMER STRUCTURES. REFER TO PHOTOS ON DRAWING G-5.
  - POINT LOCATIONS SHOWN ON THE PLANS ARE GIVEN TO ESTABLISH PROJECT REMOVAL LIMITS. ALL POINT ELEVATIONS ARE CAPTURED FROM THE EXISTING GROUND SURFACE. CONTRACTOR IS SOLELY RESPONSIBLE TO CAPTURE ALL ELEVATIONS AND CONTROL NEEDED PRIOR TO REMOVAL IN ORDER TO REPLACE ASPHALT PAVEMENT TO MATCH EXISTING CONDITIONS.

POINT TABLE				
POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
52	31.50	N25° 54' 19.51"	W97° 30' 02.46"	CORNER OF ASPHALT PAVEMENT
53	31.81	N25° 54' 19.32"	W97° 30' 02.68"	CORNER OF ASPHALT PAVEMENT
54	31.52	N25° 54' 19.41"	W97° 30' 02.37"	CROWN OF ASPHALT PAVEMENT
55	31.95	N25° 54' 19.22"	W97° 30' 02.59"	CROWN OF ASPHALT PAVEMENT
56	31.33	N25° 54' 19.33"	W97° 30' 02.28"	CORNER OF ASPHALT PAVEMENT
57	31.74	N25° 54' 19.14"	W97° 30' 02.50"	CORNER OF ASPHALT PAVEMENT
58	31.31	N25° 54' 18.18"	W97° 30' 01.10"	EDGE OF ASPHALT PAVEMENT
59	31.57	N25° 54' 18.11"	W97° 30' 01.18"	CENTERLINE OF ASPHALT PAVEMENT
60	31.52	N25° 54' 18.04"	W97° 30' 01.26"	EDGE OF ASPHALT PAVEMENT
61	30.83	N25° 54' 17.08"	W97° 29' 59.87"	CORNER OF ASPHALT PAVEMENT
62	31.31	N25° 54' 16.89"	W97° 30' 00.09"	CORNER OF ASPHALT PAVEMENT
63	31.29	N25° 54' 16.99"	W97° 29' 59.78"	CROWN OF ASPHALT PAVEMENT
64	31.79	N25° 54' 16.80"	W97° 30' 00.00"	CROWN OF ASPHALT PAVEMENT
65	30.85	N25° 54' 16.90"	W97° 29' 59.69"	CORNER OF ASPHALT PAVEMENT
66	31.25	N25° 54' 16.72"	W97° 29' 59.91"	CORNER OF ASPHALT PAVEMENT
67	32.05	N25° 54' 15.73"	W97° 29' 58.55"	EDGE OF ASPHALT PAVEMENT
68	31.85	N25° 54' 15.68"	W97° 29' 58.60"	CENTERLINE OF ASPHALT PAVEMENT
69	32.04	N25° 54' 15.61"	W97° 29' 58.68"	EDGE OF ASPHALT PAVEMENT
70	31.89	N25° 54' 14.63"	W97° 29' 57.33"	CORNER OF ASPHALT PAVEMENT
71	32.06	N25° 54' 14.46"	W97° 29' 57.52"	CORNER OF ASPHALT PAVEMENT
72	32.36	N25° 54' 14.54"	W97° 29' 57.23"	CENTERLINE OF ASPHALT PAVEMENT
73	32.61	N25° 54' 14.37"	W97° 29' 57.43"	CENTERLINE OF ASPHALT PAVEMENT
74	31.79	N25° 54' 14.46"	W97° 29' 57.13"	EDGE OF ASPHALT PAVEMENT
75	32.05	N25° 54' 14.28"	W97° 29' 57.33"	EDGE OF ASPHALT PAVEMENT
76	33.74	N25° 54' 13.30"	W97° 29' 55.97"	EDGE OF ASPHALT PAVEMENT
77	32.98	N25° 54' 13.25"	W97° 29' 56.02"	CENTERLINE OF ASPHALT PAVEMENT
78	33.48	N25° 54' 13.21"	W97° 29' 56.07"	EDGE OF ASPHALT PAVEMENT

**CAUTION!!!**  
EXISTING GAS LINES, FIBER OPTIC, AND OVERHEAD ELECTRIC LINES IN AREA CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION

**811**  
Know what's below.  
Call before you dig.  
THE INFORMATION SHOWN ON THESE DRAWINGS INDICATING SIZE, TYPE AND LOCATION OF UNDERGROUND, SURFACE, AND AERIAL UTILITIES IS NOT GUARANTEED TO BE EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT THE CALL SYSTEM AT 1-800-485-5877 (DIESTES) 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION FOR EXISTING UTILITY LOCATIONS. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR FIELD VERIFYING LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES AFFECTED BY CONSTRUCTION FOR THIS PROJECT IN ORDER TO AVOID DAMAGING THOSE UTILITIES, AND SHALL IMMEDIATELY ARRANGE FOR REPAIR AND RESTORATION OF CONTRACTOR-DAMAGED UTILITIES TO THE UTILITY COMPANIES' APPROVAL AT THE EXPENSE OF THE CONTRACTOR.

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PROJECT ENGINEER:	A. GARCIA	
DESIGNED BY:	C. JONES	
DRAWN BY:	Z. CROSSLEY	
CHECKED BY:	J. LONDON	
ISSUED FOR BID	10/19/23	AMGS
ISSUED FOR	DATE	BY

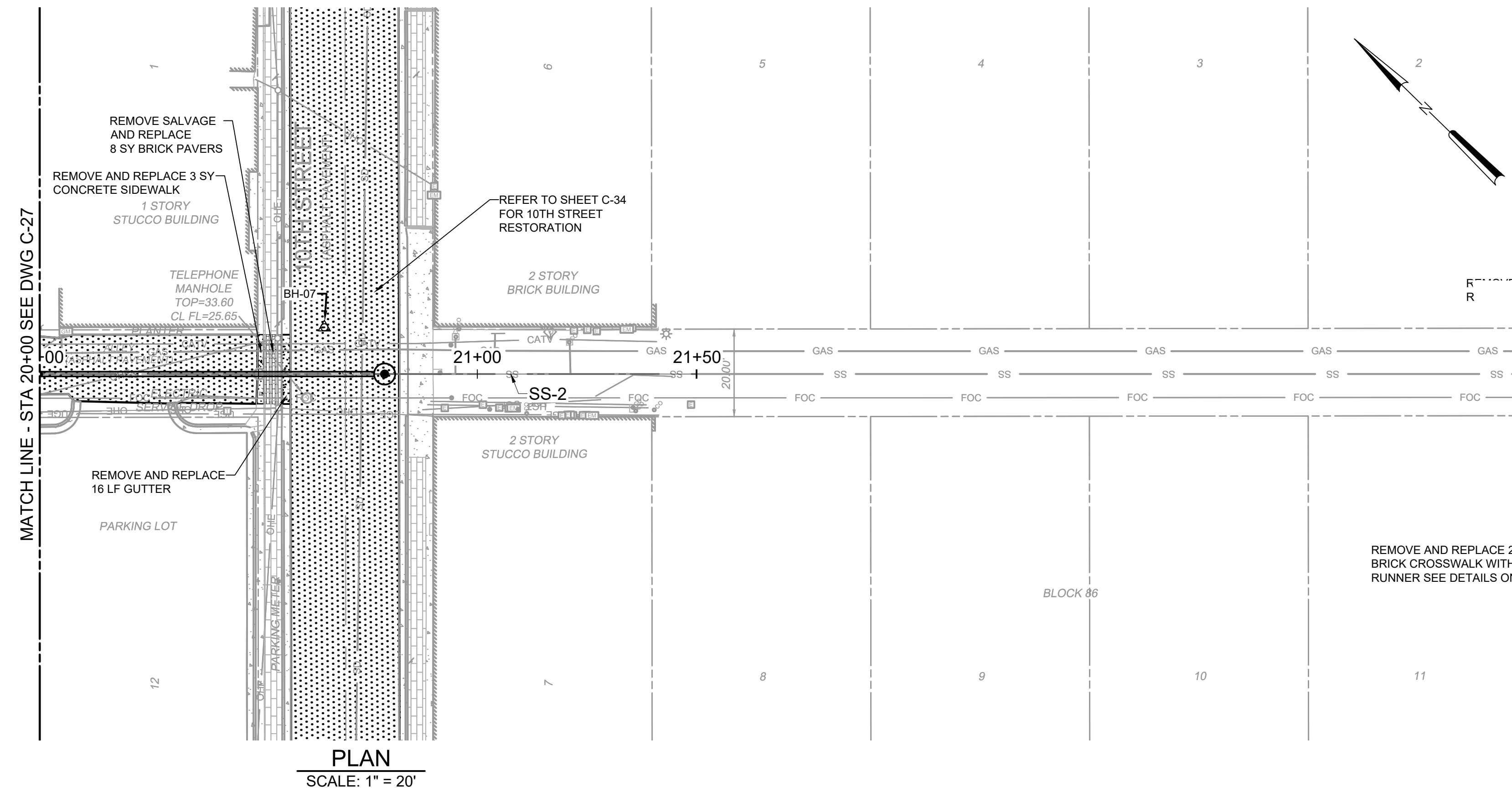
146046  
PROFESSIONAL ENGINEER  
10/19/2023

**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

WASTEWATER IMPROVEMENTS  
RESTORATION PLANS  
SS-2 STA 10+00 TO STA 20+00

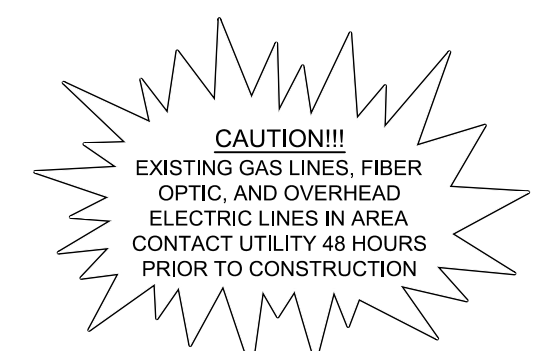
DATE: OCTOBER 2023  
HAZEN NO.: 60405-005  
DRAWING NUMBER:  
C-28



PLAN  
SCALE: 1" = 20'

NOTES:

1. ALL SURFACE ELEMENTS TO BE COMPLETELY REMOVED AND DISPOSED FROM PROJECT SITE PRIOR TO PREPARATION OF ANY PROPOSED SURFACE ELEMENTS.
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PLOT DATE: 10/19/2023 11:18 AM BY: ZCROSSLEY

PROJECT ENGINEER:	A. GARCIA		
DESIGNED BY:	C. JONES		
DRAWN BY:	Z. CROSSLEY		
CHECKED BY:	J. LONDON		
ISSUED FOR BID	10/19/23	AMGS	
REV	ISSUED FOR	DATE	BY

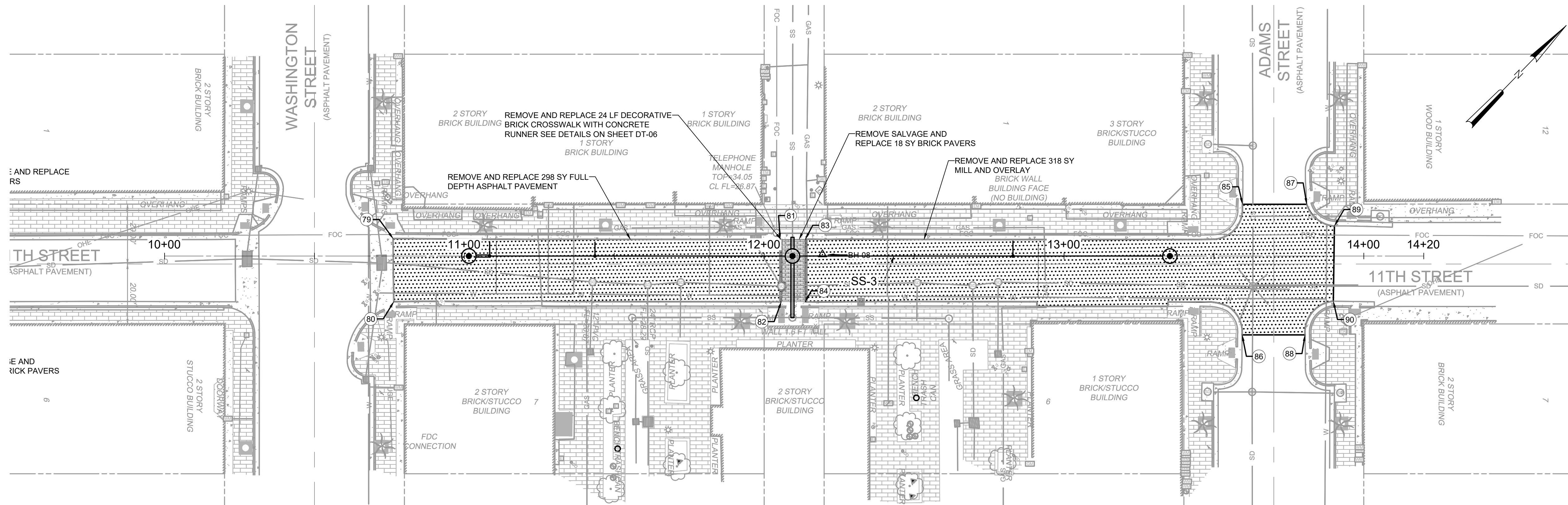
**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

WASTEWATER IMPROVEMENTS  
RESTORATION PLANS  
SS-2 STA 20+00 TO END

DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	C-29





PLAN  
SCALE: 1" = 20'

- NOTES:**
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POINT TABLE				
POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
79	34.12	N25° 54' 08.76"	W97° 29' 53.27"	CORNER OF ASPHALT PAVEMENT
80	34.31	N25° 54' 08.61"	W97° 29' 53.11"	CORNER OF ASPHALT PAVEMENT
81	34.18	N25° 54' 09.64"	W97° 29' 52.25"	CORNER OF ASPHALT PAVEMENT/EDGE OF CROSSWALK RUNNER
82	34.05	N25° 54' 09.49"	W97° 29' 52.09"	CORNER OF ASPHALT PAVEMENT/EDGE OF CROSSWALK RUNNER
83	34.19	N25° 54' 09.70"	W97° 29' 52.19"	CORNER OF ASPHALT PAVEMENT/EDGE OF CROSSWALK RUNNER
84	33.97	N25° 54' 09.55"	W97° 29' 52.03"	CORNER OF ASPHALT PAVEMENT/EDGE OF CROSSWALK RUNNER
85	34.51	N25° 54' 10.78"	W97° 29' 51.12"	CORNER OF ASPHALT PAVEMENT
86	0.00	N25° 54' 10.47"	W97° 29' 50.79"	CORNER OF ASPHALT PAVEMENT
87	34.42	N25° 54' 10.93"	W97° 29' 50.95"	CORNER OF ASPHALT PAVEMENT
88	34.65	N25° 54' 10.61"	W97° 29' 50.63"	CORNER OF ASPHALT PAVEMENT
89	34.30	N25° 54' 10.94"	W97° 29' 50.83"	CORNER OF ASPHALT PAVEMENT
90	34.40	N25° 54' 10.76"	W97° 29' 50.64"	CORNER OF ASPHALT PAVEMENT

**CAUTION!!!**  
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File: C:\USERS\ZCROSSLEY\DRAWING\Hazen\1118 AM - BY: ZCROSSLEY PROJECT FILES\01\_DESIGN\DWG\1118 AM - BY: ZCROSSLEY WATER AND WASTE IMPROVEMENTS PROJECT AND WASTE IMPROVEMENTS PROJECT DATE: 10/19/2023 11:18 AM BY: ZCROSSLEY

PROJECT ENGINEER:	A. GARCIA	
DESIGNED BY:	C. JONES	
DRAWN BY:	Z. CROSSLEY	
CHECKED BY:	J. LONDON	
ISSUED FOR BID	10/19/23	AMGS
ISSUED FOR	DATE	BY

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

0 1/2" 1"

10/19/2023



**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

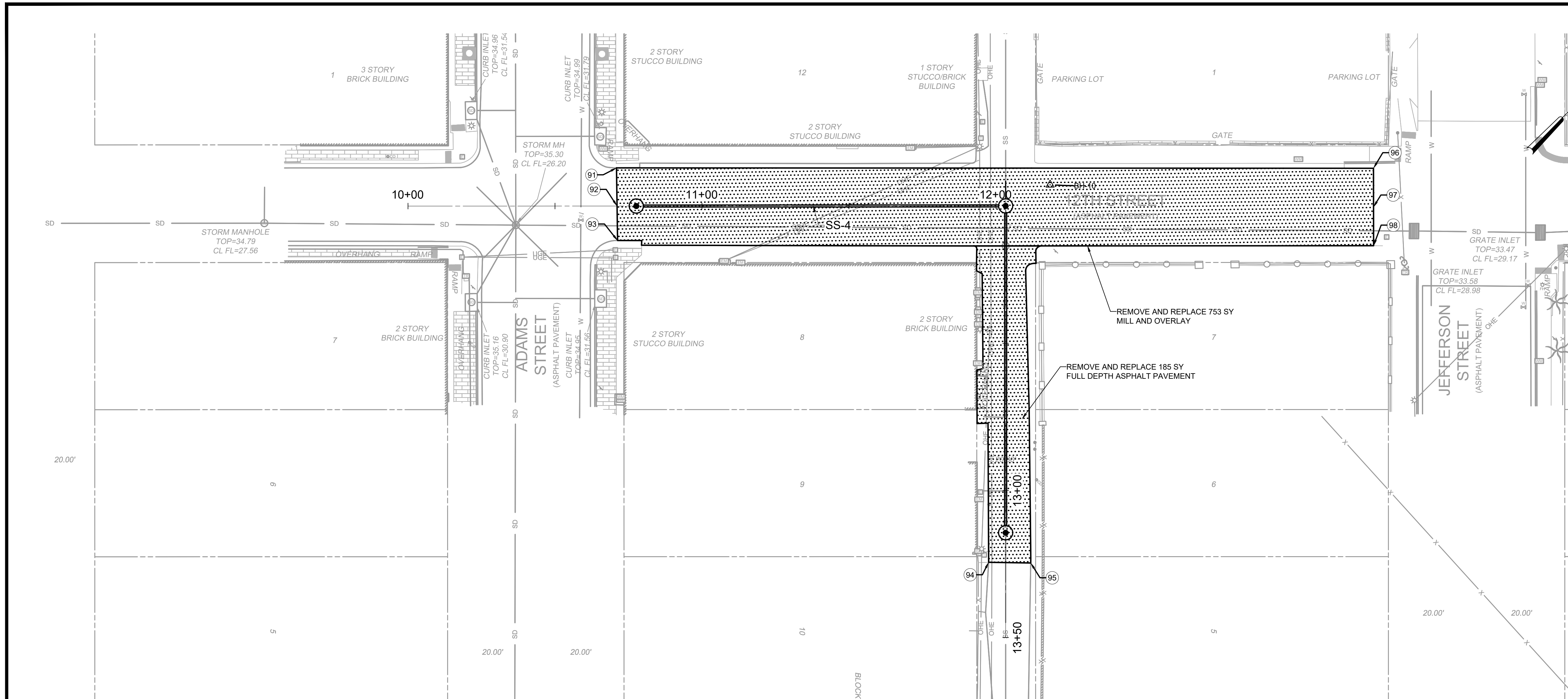
WASTEWATER IMPROVEMENTS  
RESTORATION PLANS  
SS-3 STA 10+00 TO END

DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	

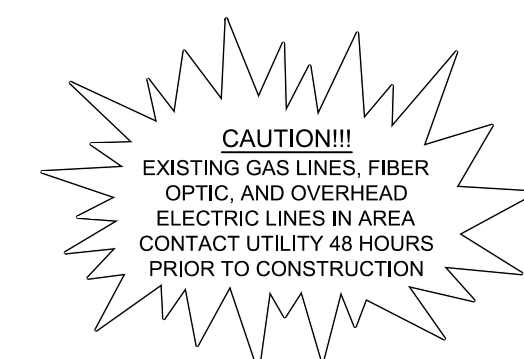
**NOTES:**

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POINT TABLE				
POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
91	0.00	N25° 54' 08.56"	W97° 29' 48.19"	CORNER OF ASPHALT PAVEMENT
92	0.00	N25° 54' 08.47"	W97° 29' 48.09"	CROWN OF ASPHALT PAVEMENT
93	0.00	N25° 54' 08.38"	W97° 29' 48.00"	CORNER OF ASPHALT PAVEMENT
94	0.00	N25° 54' 08.47"	W97° 29' 46.17"	CORNER OF ASPHALT PAVEMENT
95	0.00	N25° 54' 08.56"	W97° 29' 46.05"	CORNER OF ASPHALT PAVEMENT
96	0.00	N25° 54' 10.32"	W97° 29' 46.15"	CORNER OF ASPHALT PAVEMENT
97	0.00	N25° 54' 10.23"	W97° 29' 46.05"	EDGE OF ASPHALT PAVEMENT
98	0.00	N25° 54' 10.14"	W97° 29' 45.95"	CORNER OF ASPHALT PAVEMENT



**PLAN**  
SCALE: 1" = 20'



THE INFORMATION SHOWN ON THESE DRAWINGS INDICATING SIZE, TYPE AND LOCATION OF UNDERGROUND SURFACE, AND AERIAL UTILITIES IS NOT GUARANTEED TO BE EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT "ONE CALL" SYSTEM AT 1-800-344-4377 (DIXIE) 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION FOR EXISTING UTILITY LOCATIONS. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR FIELD VERIFYING LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES AFFECTED BY CONSTRUCTION FOR THIS PROJECT IN ORDER TO AVOID DAMAGING THOSE UTILITIES, AND SHALL IMMEDIATELY ARRANGE FOR REPAIR AND RESTORATION OF CONTRACTOR-DAMAGED UTILITIES TO THE UTILITY COMPANY'S APPROVAL AT THE EXPENSE OF THE CONTRACTOR.

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Plot Date: 10/19/2023 11:19 AM  
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REV	ISSUED FOR	DATE	BY
	ISSUED FOR BID	10/19/23	AMGS
	ISSUED FOR		

PROJECT ENGINEER:	A. GARCIA
DESIGNED BY:	C. JONES
DRAWN BY:	Z. CROSSLEY
CHECKED BY:	J. LONDON
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	

10/19/2023

# Hazen

HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS

DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

WASTEWATER IMPROVEMENTS

RESTORATION PLANS

SS-4 STA 10+00 TO END

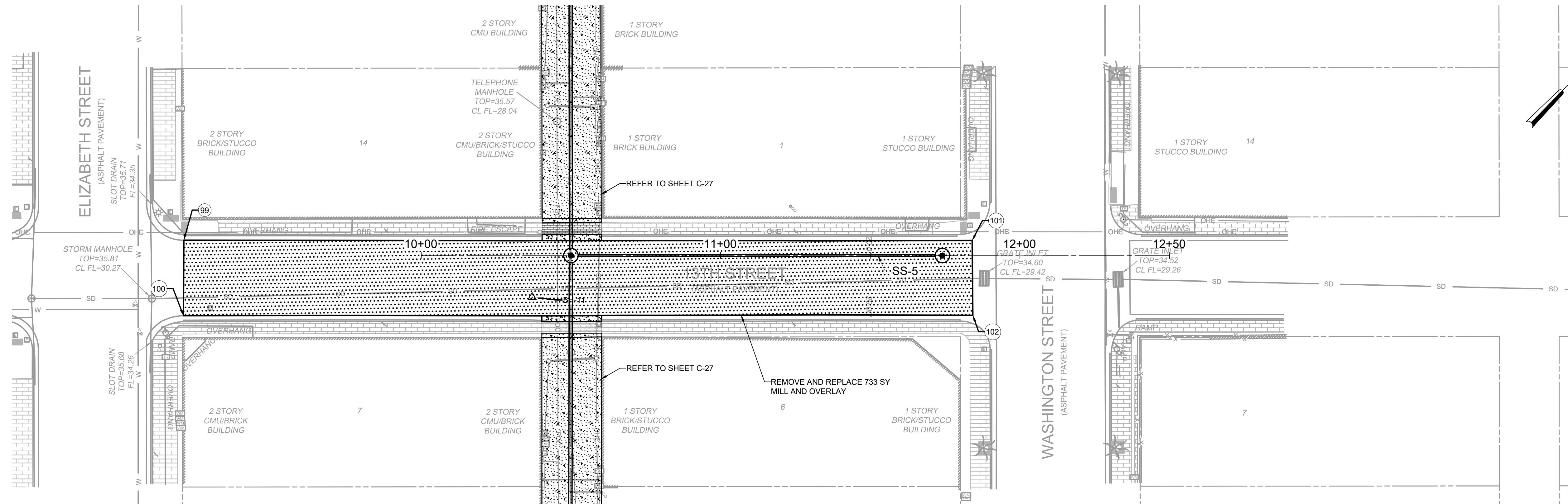
DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	



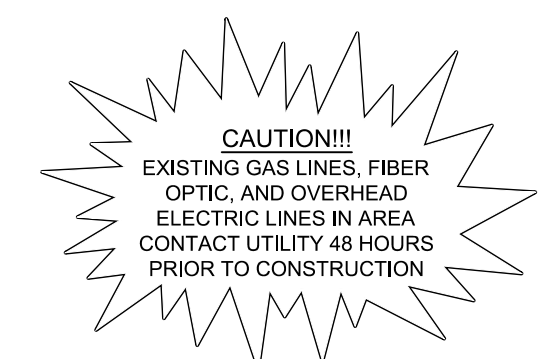
**NOTES:**

1. ALL SURFACE ELEMENTS TO BE COMPLETELY REMOVED AND DISPOSED FROM PROJECT SITE PRIOR TO PREPARATION OF ANY PROPOSED SURFACE ELEMENTS.
2. CONTRACTOR SHALL PLACE TEMPORARY CONSTRUCTION FENCING PRIOR TO REMOVING AND REPLACING SURFACE ELEMENTS FOR THE SAFETY OF THE PUBLIC.
3. TRAFFIC CONTROL SHOULD BE ESTABLISHED PRIOR TO ANY REMOVAL OF ANY SURFACE ELEMENTS. TRAFFIC CONTROL PLANS SHOULD BE DESIGNED BY A TEXAS LICENSED ENGINEER AND APPROVED BY BPUB PRIOR TO IMPLEMENTATION.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPORTING ALL EXISTING UTILITIES AND STRUCTURES DURING EXCAVATION, INCLUDING UTILITY POLES AND TRANSFORMER STRUCTURES. REFER TO PHOTOS ON DRAWING G-5.
5. POINT LOCATIONS SHOWN ON THE PLANS ARE GIVEN TO ESTABLISH PROJECT REMOVAL LIMITS. ALL POINT ELEVATIONS ARE CAPTURED FROM THE EXISTING GROUND SURFACE. CONTRACTOR IS SOLELY RESPONSIBLE TO CAPTURE ALL ELEVATIONS AND CONTROL NEEDED PRIOR TO REMOVAL IN ORDER TO REPLACE ASPHALT PAVEMENT TO MATCH EXISTING CONDITIONS.

POINT TABLE				
POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
99	0.00	N25° 54' 01.40"	W97° 29' 50.26"	CORNER OF ASPHALT PAVEMENT
100	0.00	N25° 54' 01.22"	W97° 29' 50.07"	CORNER OF ASPHALT PAVEMENT
101	0.00	N25° 54' 03.21"	W97° 29' 48.18"	CORNER OF ASPHALT PAVEMENT
102	0.00	N25° 54' 03.03"	W97° 29' 47.99"	CORNER OF ASPHALT PAVEMENT



**PLAN**  
SCALE: 1" = 20'



**Know what's below. Call before you dig.**

THE INFORMATION SHOWN ON THESE DRAWINGS INDICATING SIZE, TYPE AND LOCATION OF UNDERGROUND SURFACE AND AERIAL UTILITIES IS NOT GUARANTEED TO BE EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT "ONE CALL" SYSTEM AT 1-800-344-4337 (DIXIE) 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION FOR EXISTING UTILITY LOCATIONS. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR FIELD VERIFYING LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES AFFECTED BY CONSTRUCTION FOR THIS PROJECT IN ORDER TO AVOID DAMAGING THOSE UTILITIES, AND SHALL IMMEDIATELY ARRANGE FOR REPAIR AND RESTORATION OF CONTRACTOR-DAMAGED UTILITIES TO THE UTILITY COMPANY'S APPROVAL AT THE EXPENSE OF THE CONTRACTOR.

File: C:\USERS\ZCROSSLEY\DRAWING\HAZEN AND SAWYER\60405-005-DOWNTOWN WATER AND WW IMPROVEMENT FILES\01\_DESIGN\DWG\60405-005-C-PL-C31-SS.dwg Date: 10/19/2023 4:14 PM PLOT DATE: 10/19/2023 11:19 AM By: ZCROSSLEY

PROJECT ENGINEER:	A. GARCIA	
DESIGNED BY:	C. JONES	
DRAWN BY:	Z. CROSSLEY	
CHECKED BY:	J. LONDON	
ISSUED FOR BID	10/19/23	AMGS
ISSUED FOR	DATE	BY

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

0 1/2" 1"

**Hazen**

HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS

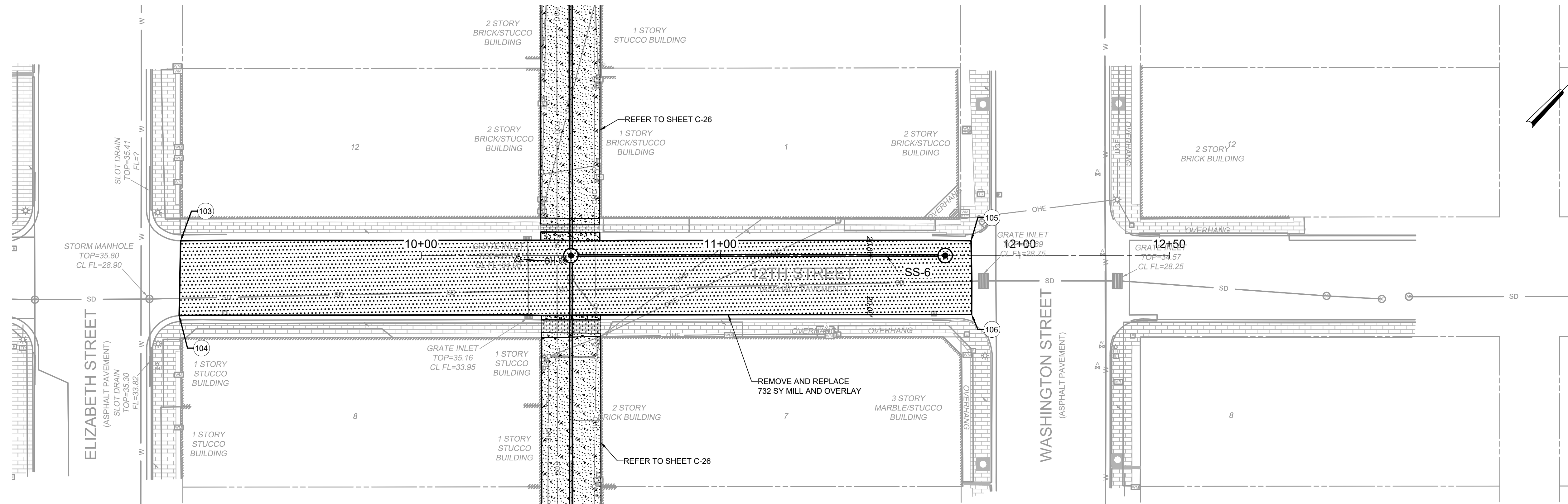
DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

WASTEWATER IMPROVEMENTS

RESTORATION PLANS

SS-5 STA 10+00 TO END

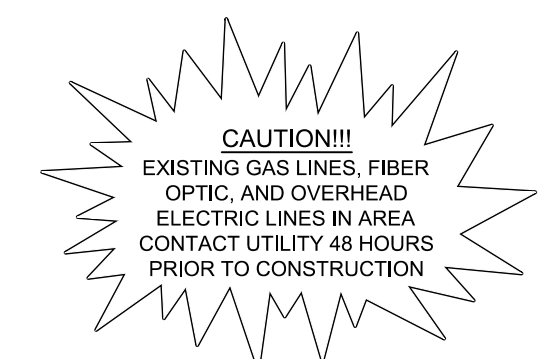
DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	C-32



- NOTES:**
1. ALL SURFACE ELEMENTS TO BE COMPLETELY REMOVED AND DISPOSED FROM PROJECT SITE PRIOR TO PREPARATION OF ANY PROPOSED SURFACE ELEMENTS.
  2. CONTRACTOR SHALL PLACE TEMPORARY CONSTRUCTION FENCING PRIOR TO REMOVING AND REPLACING SURFACE ELEMENTS FOR THE SAFETY OF THE PUBLIC.
  3. TRAFFIC CONTROL SHOULD BE ESTABLISHED PRIOR TO ANY REMOVAL OF ANY SURFACE ELEMENTS. TRAFFIC CONTROL PLANS SHOULD BE DESIGNED BY A TEXAS LICENSED ENGINEER AND APPROVED BY BPUB PRIOR TO IMPLEMENTATION.
  4. CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPORTING ALL EXISTING UTILITIES AND STRUCTURES DURING EXCAVATION, INCLUDING UTILITY POLES AND TRANSFORMER STRUCTURES. REFER TO PHOTOS ON DRAWING G-5.
  5. POINT LOCATIONS SHOWN ON THE PLANS ARE GIVEN TO ESTABLISH PROJECT REMOVAL LIMITS. ALL POINT ELEVATIONS ARE CAPTURED FROM THE EXISTING GROUND SURFACE. CONTRACTOR IS SOLELY RESPONSIBLE TO CAPTURE ALL ELEVATIONS AND CONTROL NEEDED PRIOR TO REMOVAL IN ORDER TO REPLACE ASPHALT PAVEMENT TO MATCH EXISTING CONDITIONS.

POINT TABLE				
POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
103	0.00	N25° 54' 04.18"	W97° 29' 53.23"	CORNER OF ASPHALT PAVEMENT
104	0.00	N25° 54' 04.00"	W97° 29' 53.04"	CORNER OF ASPHALT PAVEMENT
105	0.00	N25° 54' 05.99"	W97° 29' 51.14"	CORNER OF ASPHALT PAVEMENT
106	0.00	N25° 54' 05.82"	W97° 29' 50.95"	CORNER OF ASPHALT PAVEMENT

**PLAN**  
SCALE: 1" = 20'



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REV	ISSUED FOR	DATE	BY
	ISSUED FOR BID	10/19/23	AMGS
	ISSUED FOR		

PROJECT ENGINEER:	A. GARCIA
DESIGNED BY:	C. JONES
DRAWN BY:	Z. CROSSLEY
CHECKED BY:	J. LONDON
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"



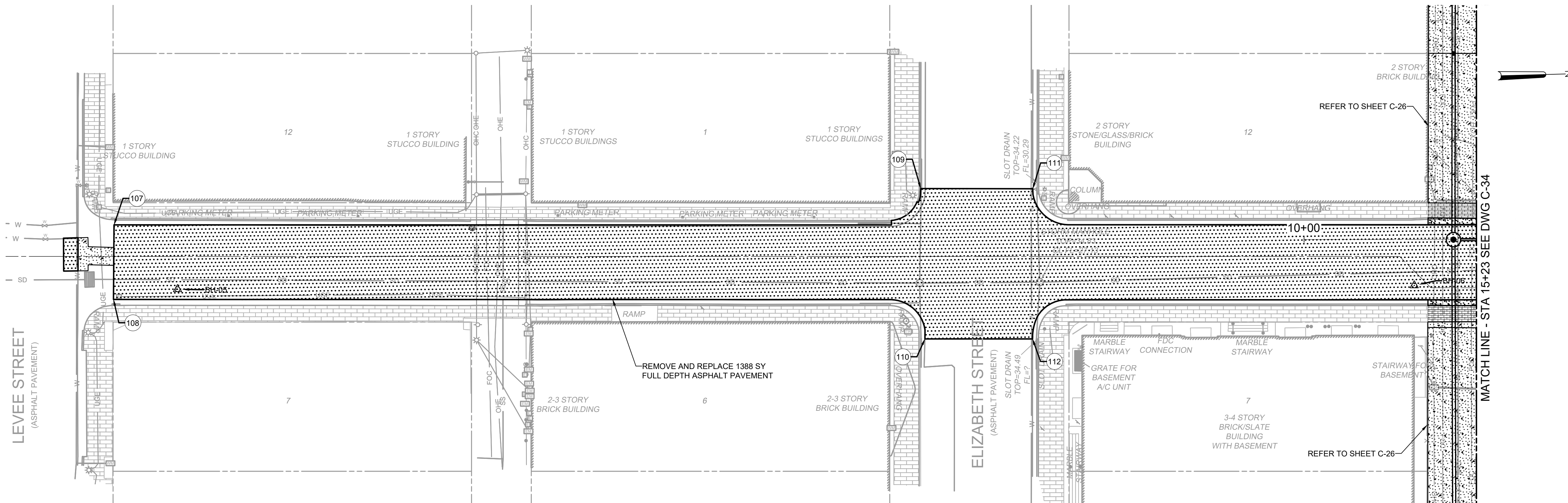
**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

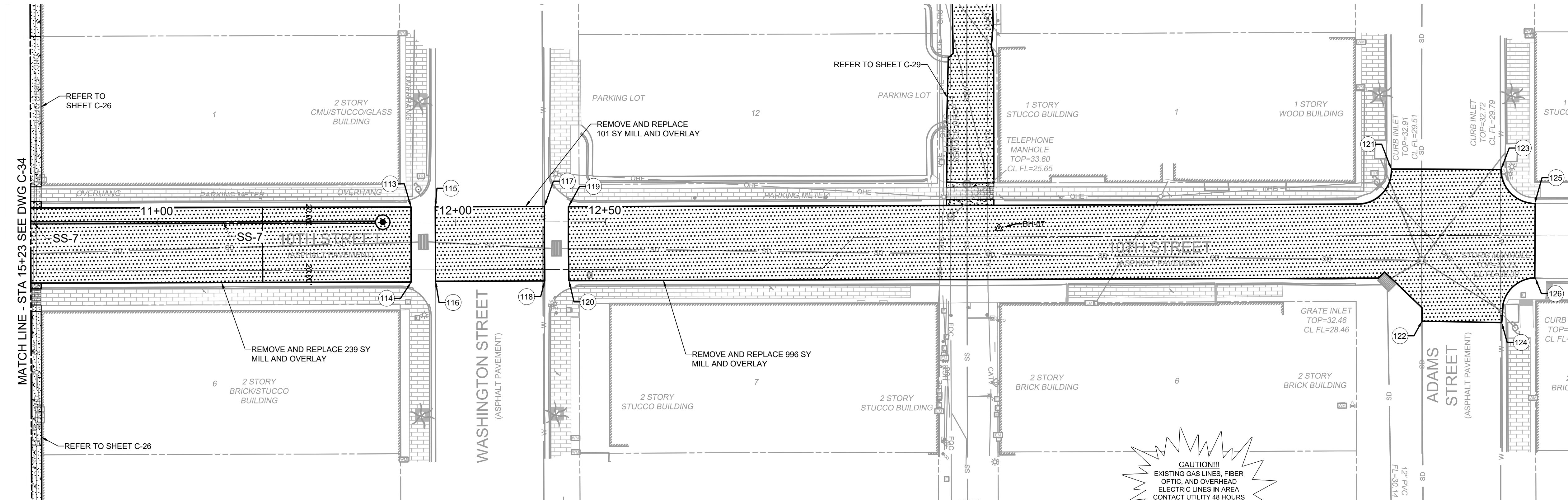
WASTEWATER IMPROVEMENTS  
RESTORATION PLANS  
SS-6 STA 10+00 TO END

DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	





PLAN  
SCALE: 1" = 20'



PLAN  
SCALE: 1" = 20'

NOTES:

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POINT TABLE				
POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
107	0.00	N25° 54' 06.85"	W97° 30' 00.91"	CORNER OF ASPHALT PAVEMENT
108	0.00	N25° 54' 06.67"	W97° 30' 00.72"	CORNER OF ASPHALT PAVEMENT
109	0.00	N25° 54' 08.79"	W97° 29' 58.87"	CORNER OF ASPHALT PAVEMENT
110	0.00	N25° 54' 08.44"	W97° 29' 58.47"	CORNER OF ASPHALT PAVEMENT
111	0.00	N25° 54' 09.05"	W97° 29' 58.57"	CORNER OF ASPHALT PAVEMENT
112	0.00	N25° 54' 08.69"	W97° 29' 58.19"	CORNER OF ASPHALT PAVEMENT
113	0.00	N25° 54' 10.85"	W97° 29' 56.30"	CORNER OF ASPHALT PAVEMENT
114	0.00	N25° 54' 10.67"	W97° 29' 56.11"	CORNER OF ASPHALT PAVEMENT
115	0.00	N25° 54' 10.91"	W97° 29' 56.23"	CORNER OF ASPHALT PAVEMENT
116	0.00	N25° 54' 10.73"	W97° 29' 56.05"	CORNER OF ASPHALT PAVEMENT
117	0.00	N25° 54' 11.16"	W97° 29' 55.95"	CORNER OF ASPHALT PAVEMENT
118	0.00	N25° 54' 10.98"	W97° 29' 55.76"	CORNER OF ASPHALT PAVEMENT
119	0.00	N25° 54' 11.21"	W97° 29' 55.88"	CORNER OF ASPHALT PAVEMENT
120	0.00	N25° 54' 11.04"	W97° 29' 55.69"	CORNER OF ASPHALT PAVEMENT
121	0.00	N25° 54' 13.19"	W97° 29' 53.80"	CORNER OF ASPHALT PAVEMENT
122	0.00	N25° 54' 12.89"	W97° 29' 53.33"	CORNER OF ASPHALT PAVEMENT
123	0.00	N25° 54' 13.44"	W97° 29' 53.50"	CORNER OF ASPHALT PAVEMENT
124	0.00	N25° 54' 13.07"	W97° 29' 53.12"	CORNER OF ASPHALT PAVEMENT
125	0.00	N25° 54' 13.43"	W97° 29' 53.33"	CORNER OF ASPHALT PAVEMENT
126	0.00	N25° 54' 13.26"	W97° 29' 53.14"	CORNER OF ASPHALT PAVEMENT



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**CAUTION!!!**  
EXISTING GAS LINES, FIBER OPTIC, AND OVERHEAD ELECTRIC LINES IN AREA CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION

File: C:\USERS\ZCROSSLEY\DRAWING\HAZEN AND SAWYER\60405-005-DOWNTOWN WATER AND WASTE WASTEWATER IMPROVEMENTS\101\_DESIGN\DWG\C-34-SS Saved by ZCROSSLEY Save date: 10/19/2023 4:15 PM PLOT DATE: 10/19/2023 11:19 AM BY: ZCROSSLEY

PROJECT ENGINEER:	A. GARCIA
DESIGNED BY:	C. JONES
DRAWN BY:	Z. CROSSLEY
CHECKED BY:	J. LONDON
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"
ISSUED FOR BID	10/19/23 AMGS
ISSUED FOR	DATE BY



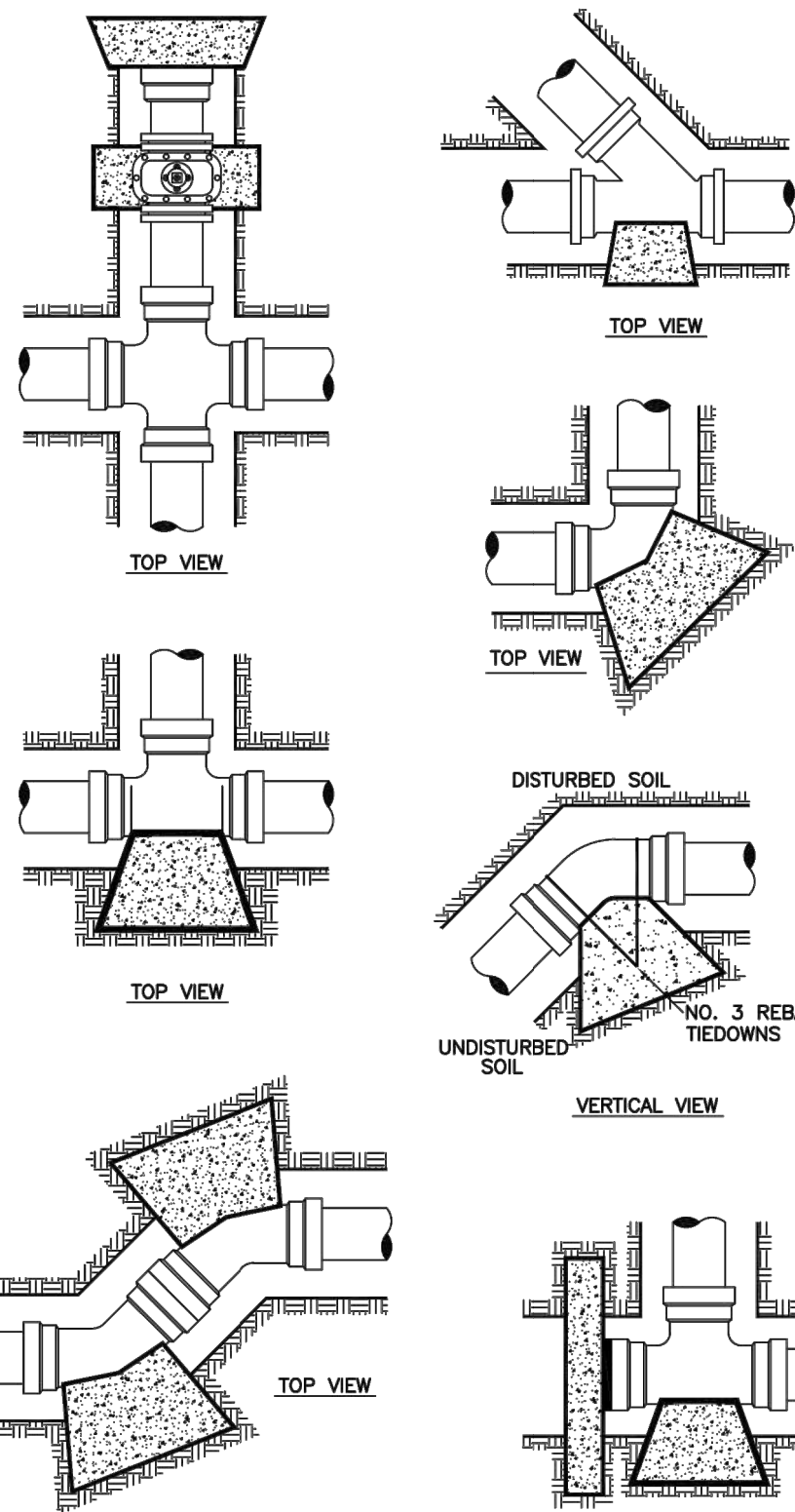
**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER IMPROVEMENTS PROJECT 2

WASTEWATER IMPROVEMENTS  
RESTORATION PLANS  
SS-7 STA 10+00 TO END

DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	





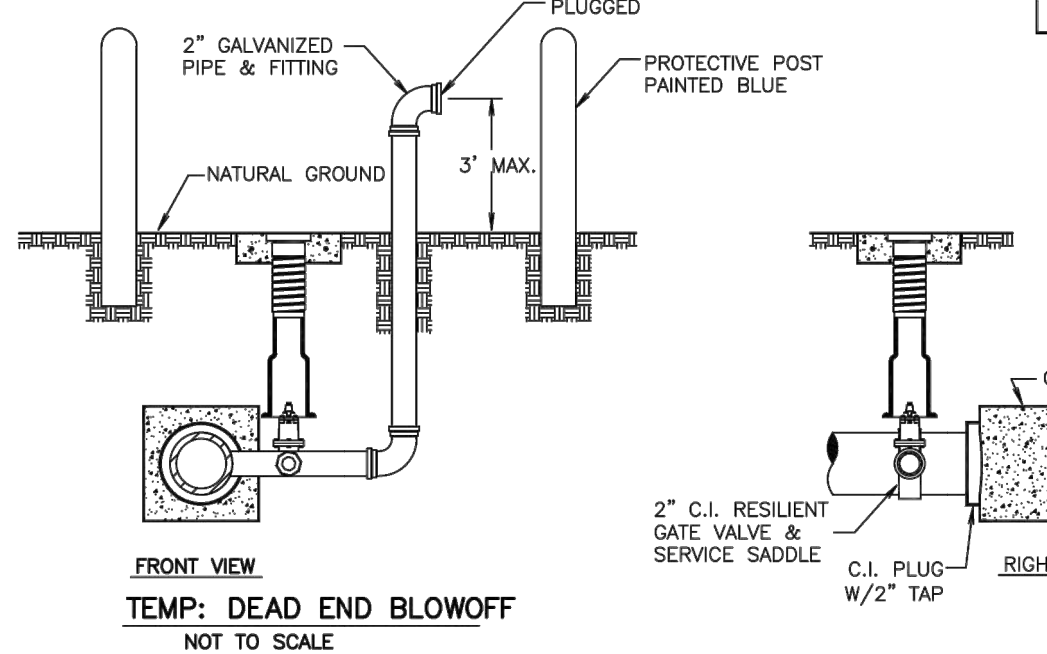
ALL MJ FITTINGS WILL REQUIRE RESTRAINERS (MEGA LUGS) WITH THRUST BLOCKS

NOTES ON THRUST BLOCKING:

- ALL BLOCKING SHALL BE AGAINST UNDISTURBED HAND DUG SOIL AND SHALL BE CONCRETE HAVING A MINIMUM 28 DAY STRENGTH OF 2000 LBS. PER SQUARE INCH.
- THRUST CALCULATIONS TO BE BASED ON THRUST DUE TO WATER PRESSURE AT 100% OF TEST PRESSURE.  $THRUST = 2 AP SIN 1/2 \theta$  WHERE A = AREA OF PIPE, P = WATER PRESSURE,  $\theta$  = DEFLECTION ANGLE.
- VERTICAL LIFT BLOCKS SHALL BE DESIGNED ON THE BASIS OF 150 LBS. PER CU. FT. FOR CONCRETE AND SOIL AT 120 LBS. PER FT. OVER THE AREA OF BLOCK.
- VERTICAL DOWN THRUST BLOCKS SHALL BE DESIGNED ON THE BASIS OF 2000 LBS. PER SQ. FT. ALLOWABLE SOIL BEARING PRESSURE. DIMENSION MAY BE DECREASED WITH APPROVAL OF THE ENGINEER IF MEASURED SOIL CONDITIONS PERMIT. IN POOR SOIL CONDITIONS, BLOCK DIMENSIONS SHALL BE INCREASED IN PROPORTION TO ALLOWABLE BEARING VALUE.
- THRUST BLOCKS ON HORIZONTAL BENDS, TEES, CROSSES, AND REDUCERS SHALL BE SIZED BASED ON 24000 LBS. PER SQ. FT. OF BLOCKING SURFACE AREA IN CONTACT WITH UNDISTURBED SOIL. BLOCK DIMENSIONS MAY BE DECREASED WITH APPROVAL OF THE ENGINEER IF MEASURED SOIL CONDITIONS PERMIT. IN POOR SOIL CONDITIONS, BLOCK DIMENSIONS SHALL BE INCREASED IN PROPORTION TO THE ALLOWABLE BEARING VALUE.
- ALL BLOCKING SHALL HAVE A MINIMUM SOIL COVER OF 1 FT.
- ADDITIONAL REINFORCING MAY BE REQUIRED FOR HORIZONTAL BLOCKING TO HANDLE UNUSUAL SHEAR LOADING CONDITIONS.

**GENERAL DATA FOR BLOCKING STANDARD FITTING**

PIPE SIZE	THRUST IN TONS EXERTED AT PLUGS, TEES AND BENDS FOR EACH 100 LBS. PER SQ. IN. OF TEST PRESSURE				
	PLUG	TEE	90° BEND	45° BEND	22-1/2° BEND
4"	0.63	0.63	0.89	0.48	0.25
6"	1.40	1.40	2.00	1.08	0.55
8"	2.50	2.50	3.55	1.92	0.98
10"	3.93	3.93	5.55	3.00	1.53
12"	5.65	5.65	8.00	4.33	2.21
14"	7.70	7.70	10.88	5.89	3.00
16"	10.05	10.05	14.21	7.69	3.85
18"	12.70	12.70	17.99	9.74	4.96
20"	15.71	15.71	22.22	12.02	6.13
24"	22.67	22.67	32.00	17.31	8.83
27"	28.63	28.63	40.48	21.91	11.17
30"	35.35	35.35	50.00	27.08	13.79
36"	50.90	50.90	72.98	38.95	19.89
42"	69.27	69.27	97.97	53.02	27.03
48"	90.48	90.48	127.96	69.25	35.90
54"	114.51	114.51	161.94	87.64	44.68



**FRONT VIEW TEMP: DEAD END BLOWOFF**  
NOT TO SCALE

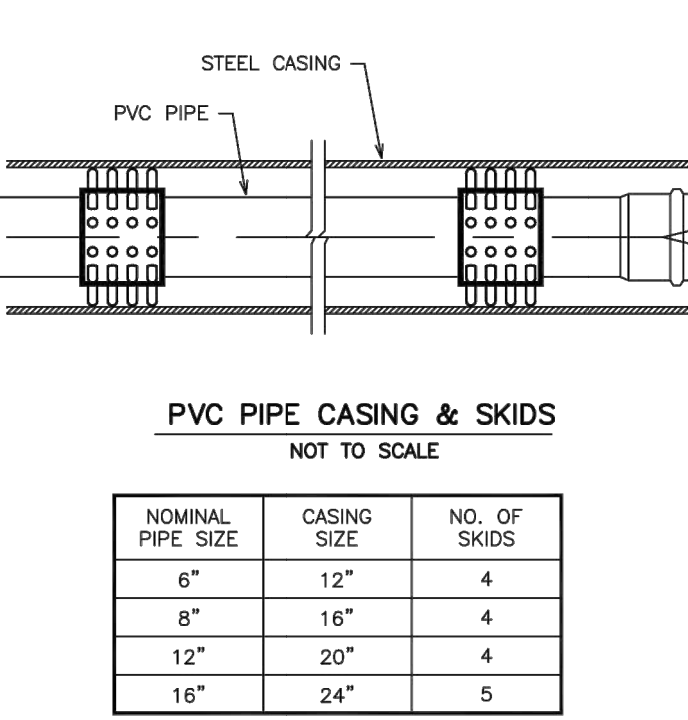
**SERVICE MARKING FOR NO CURB**  
NOT TO SCALE

**STEEL CASING WALL THICKNESS CHART**

MINIMUM THICKNESS	DIAMETER OF CASING PIPE
1/4"	12" OR LESS
5/16"	OVER 12"-18"
3/8"	OVER 18"-22"
7/16"	OVER 22"-28"
1/2"	OVER 28"-34"
9/16"	OVER 34"-42"
5/8"	OVER 42"-48"

OVER 48" MUST BE APPROVED BY B.P.U.B.

NOTE: THIS CHART IS ONLY FOR SMOOTH STEEL CASING PIPES WITH MINIMUM YIELD STRENGTH OF 35,000 PSI



**PVC PIPE CASING & SKIDS**  
NOT TO SCALE

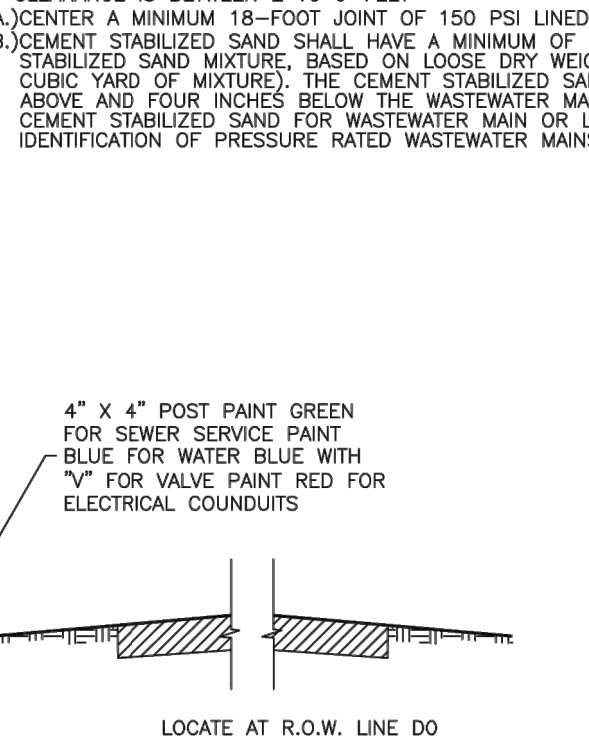
NOMINAL PIPE SIZE	CASING SIZE	NO. OF SKIDS
6"	12"	4
8"	16"	4
12"	20"	4
16"	24"	5

**WATER MAIN - SANITARY SEWER CROSSINGS**

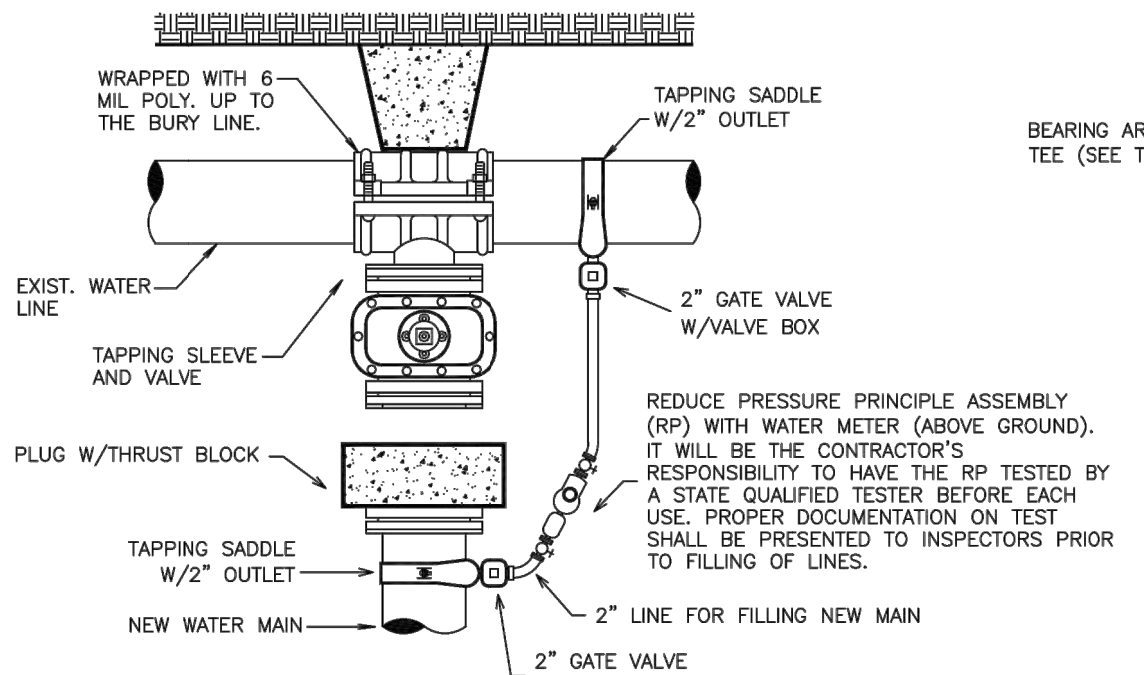
PRIMARY CONDITION	PROPOSED WATER EXISTING SANITARY SEWER				PROPOSED WATER EXISTING WATER PROPOSED SANITARY SEWER			
	WATER OVER SANITARY SEWER	WATER UNDER SANITARY SEWER	WATER OVER SANITARY SEWER	WATER UNDER SANITARY SEWER	WATER OVER SANITARY SEWER	WATER UNDER SANITARY SEWER	WATER OVER SANITARY SEWER	WATER UNDER SANITARY SEWER
IF THE CLEARANCE IS	LESS THAN 2'	GREATER THAN 2' BUT LESS THAN 9'	LESS THAN 2'	GREATER THAN 2' BUT LESS THAN 9'	LESS THAN 2'	GREATER THAN 2' BUT LESS THAN 9'	LESS THAN 2'	GREATER THAN 2' BUT LESS THAN 9'
*PROTECTION REQUIREMENT	1	2	3	4	5	6(B)	3	6

\*PROTECTION REQUIREMENTS FOR SANITARY SEWER CROSSINGS (UNLESS VARIANCE IS GRANTED BY THE TCEQ)

- CENTER ONE (1) 20'-FOOT JOINT OF C-900 PVC DR18, CLASS 150, WATERLINE PIPE OVER SANITARY SEWER; 6-INCH ABSOLUTE MINIMUM CLEARANCE.
- IF NO EVIDENCE OF SANITARY SEWER LEAKAGE, CENTER ONE JOINT OF WATER LINE OVER SANITARY SEWER; 24-INCH ABSOLUTE MINIMUM CLEARANCE. IF THE SEWER LINE IS LEAKING, THE SEWER LINE SHALL BE REPLACED FOR AT LEAST NINE FEET IN BOTH DIRECTIONS (18 FEET TOTAL) WITH AT LEAST 150 PSI PRESSURE-RATED PIPE EMBEDDED IN CEMENT STABILIZED SAND FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOINT ON EACH END.
- SEWER LINE SHALL BE ENCASED. THE CASING PIPE SHALL BE CONSTRUCTED OF AT LEAST 150 PSI PRESSURE RATED PIPE CLASS 150, AT LEAST 18 FEET LONG, SEALED IN BOTH ENDS WITH CEMENT GROUT OR A MANUFACTURED SEAL AT LEAST 2 NOMINAL SIZES LARGER THAN THE WASTEWATER COLLECTION PIPE. AN ABSOLUTE MINIMUM SEPARATION OF ONE FOOT BETWEEN WATER LINE AND ENCASEMENT PIPE, OR WATER LINE SHALL BE CONSTRUCTED OF DUCTILE IRON OR STEEL PIPE WITH MECHANICAL OR WELDED JOINTS AS APPROPRIATE. AN ABSOLUTE MINIMUM SEPARATION DISTANCE OF ONE FOOT BETWEEN THE WATER LINE AND WASTEWATER MAIN OR LATERAL SHALL BE PROVIDED.
- AUGER 9'-FEET MINIMUM EACH SIDE OF SANITARY SEWER. PLACE ONE 20'-FOOT JOINT OF C900 PVC, 150 PSI, CENTERED UNDER SANITARY SEWER. FILL BORED HOLE WITH BENTONITE/CLAY MIXTURE; 2'-FOOT ABSOLUTE MINIMUM CLEARANCE OR REPLACE THE EXISTING SANITARY SEWER WITH 150 PSI LINED DUCTILE IRON OR PVC PIPE WITH APPROPRIATE ADAPTERS ON ALL PORTIONS OF THE SANITARY WITHIN 9'-FEET OF THE WATER MAIN.
- WHERE A NEW POTABLE WATER LINE CROSSES A NEW, PRESSURE RATED WASTEWATER MAIN OR LATERAL, ONE SEGMENT OF THE WATER LINE PIPE SHALL BE PERPENDICULAR TO THE WASTE WATER LINE SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTER LINE OF THE WASTEWATER MAIN OR LATERAL. THE POTABLE WATER LINE SHALL BE AT LEAST SIX INCHES ABOVE THE WASTEWATER MAIN OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN JOINTS OF THE WASTEWATER MAIN OR LATERAL. THE WASTEWATER PIPE SHALL HAVE A MINIMUM PRESSURE RATING OF AT LEAST 150 PSI. THE WASTEWATER MAIN OR LATERAL SHALL BE EMBEDDED IN CEMENT STABILIZED SAND FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOINT ON EACH END.
- IF CLEARANCE IS BETWEEN 2 TO 9'-FEET:
  - CENTER A MINIMUM 18'-FOOT JOINT OF 150 PSI LINED DUCTILE IRON OR PVC PIPE AT WATER LINE.
  - CEMENT STABILIZED SAND SHALL HAVE A MINIMUM OF 10% CEMENT PER CUBIC YARD OF CEMENT STABILIZED SAND MIXTURE. BASED ON LOOSE DRY WEIGHT VOLUME NOT LEAST 2.5 BAGS OF CEMENT PER CUBIC YARD OF MIXTURE. THE CEMENT STABILIZED SAND BEDDING SHALL BE A MINIMUM OF SIX INCHES ABOVE AND FOUR INCHES BELOW THE WASTEWATER MAIN OR LATERAL. THE USE OF BROWN COLORING IN CEMENT STABILIZED SAND FOR WASTEWATER MAIN OR LATERAL BEDDING IS RECOMMENDED FOR THE IDENTIFICATION OF PRESSURE RATED WASTEWATER MAINS DURING FUTURE CONSTRUCTION.



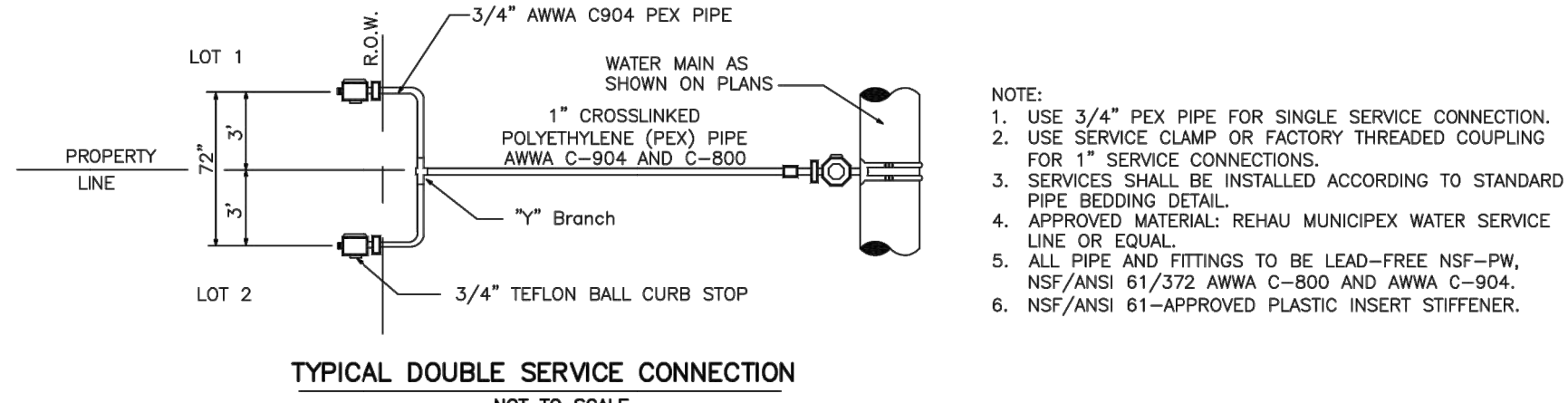
**SERVICE MARKING FOR NO CURB**  
NOT TO SCALE



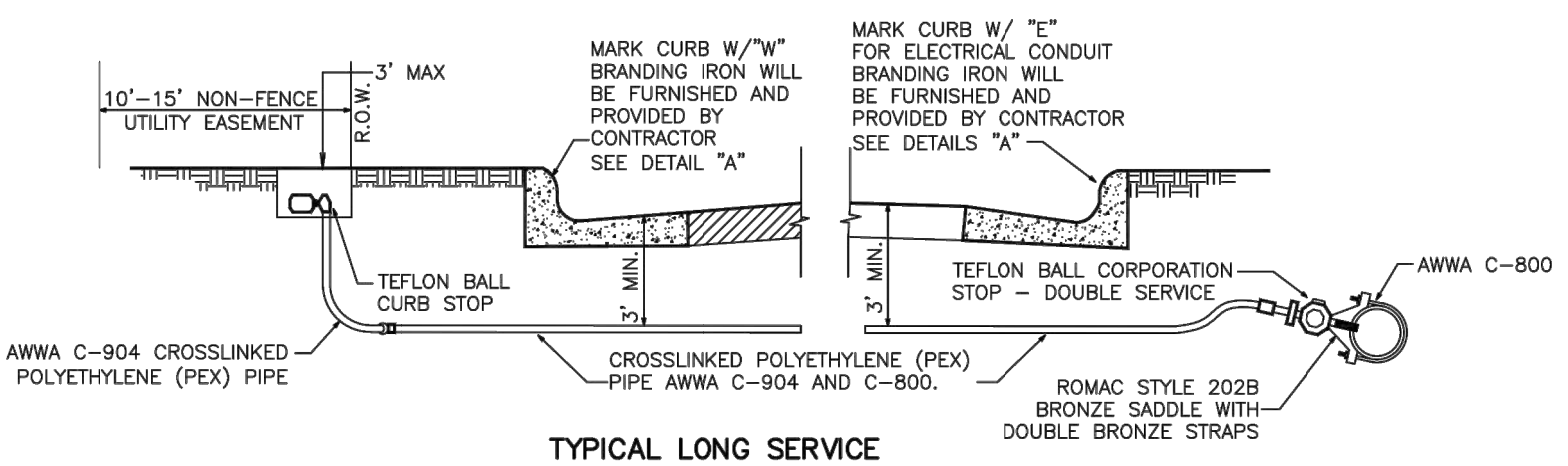
**METHOD FOR FILLING AND FLUSHING NEW WATER LINES**  
NOT TO SCALE

NOTE: WATER USAGE FOR ALL INITIAL TESTING WILL NOT BE BILLED TO THE CONTRACTOR. ANY RE-TESTING NEEDED WILL BE THE RESPONSIBILITY OF THE CONTRACTOR INCLUDING PAYMENT OF ADDITIONAL WATER NEEDED. CONTRACTOR WILL BE ALLOWED TO FLUSH THE WATERLINE INITIALLY FOR A MAXIMUM OF 12-24 HRS. OR AS DETERMINED BY THE ENGINEER. IF FLUSHING IS DETERMINED TO BE LONGER, THE ENGINEER WILL BE REQUIRED TO SUPPLY THE PROPER DOCUMENTATION AND CALCULATIONS TO SUPPORT SUCH FINDINGS.

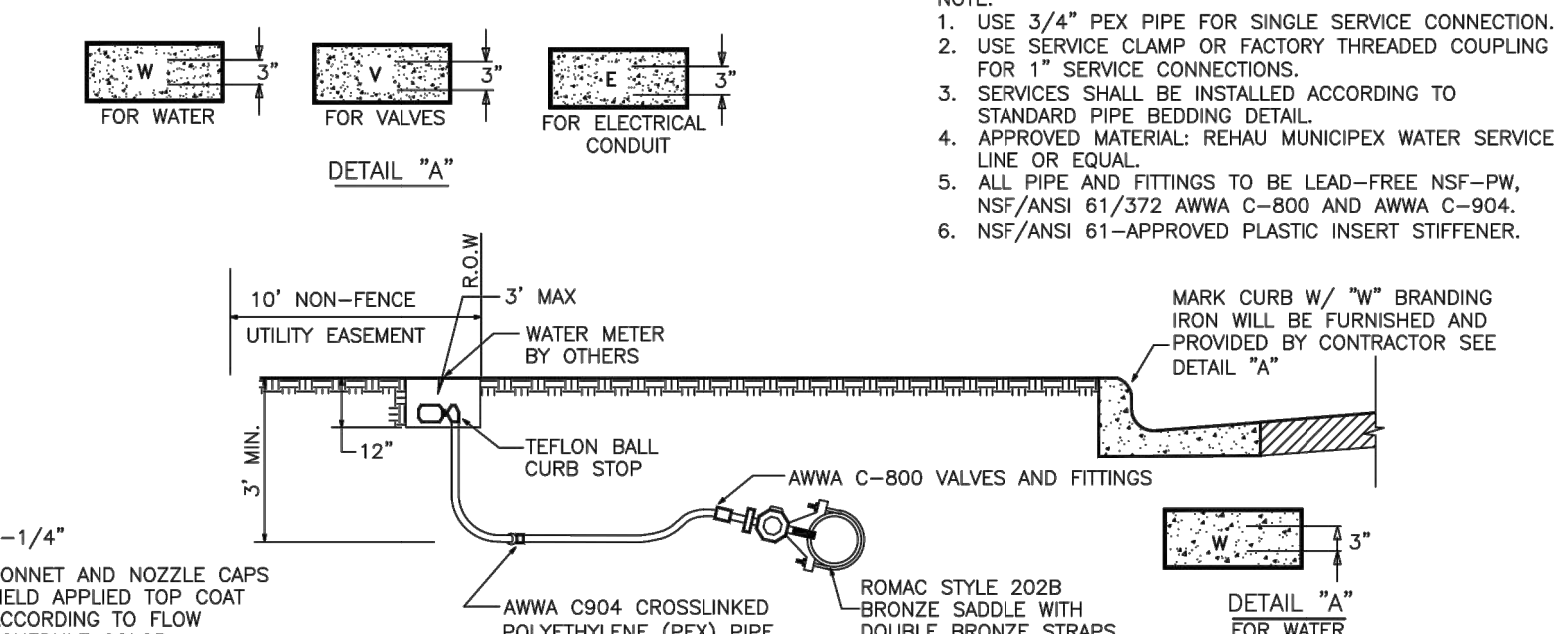
AMOUNT OF FLOW TO BE USED FOR FLUSHING WILL BE MONITORED AND REGULATED BY THE BRUB INSPECTORS. CONTRACTOR WILL NOT BE ALLOWED TO TIE-IN TO EXISTING WATER LINE UNTIL ALL TEST ON NEW LINES HAVE BEEN COMPLETED AND APPROVED.



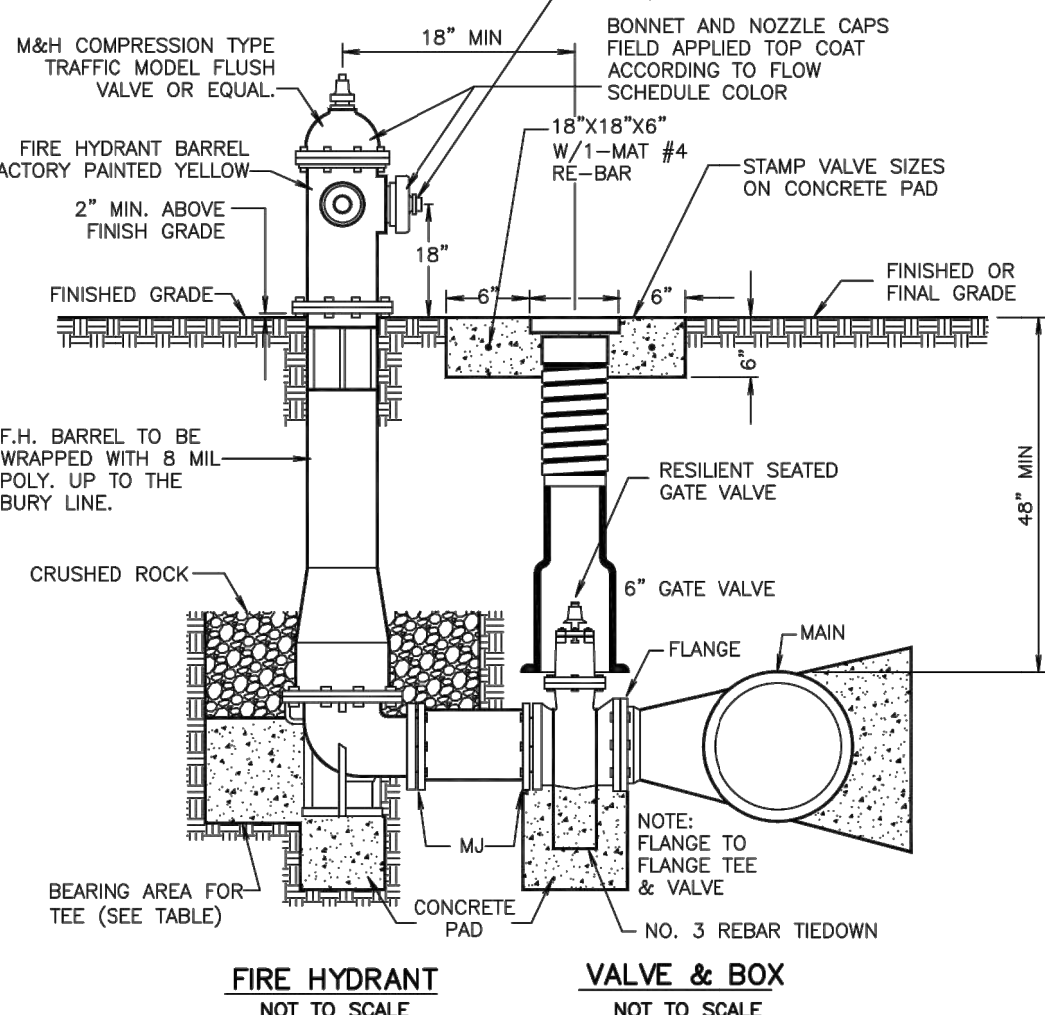
**TYPICAL DOUBLE SERVICE CONNECTION**  
NOT TO SCALE



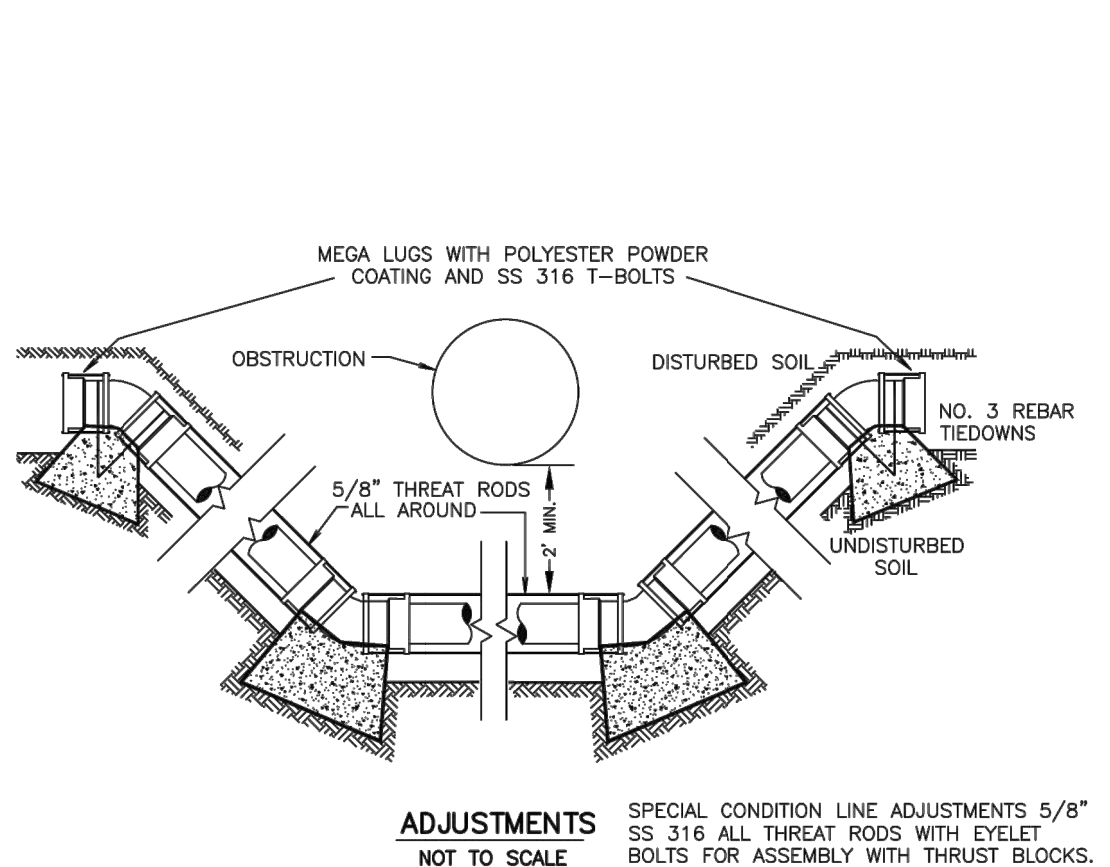
**TYPICAL LONG SERVICE**  
NOT TO SCALE



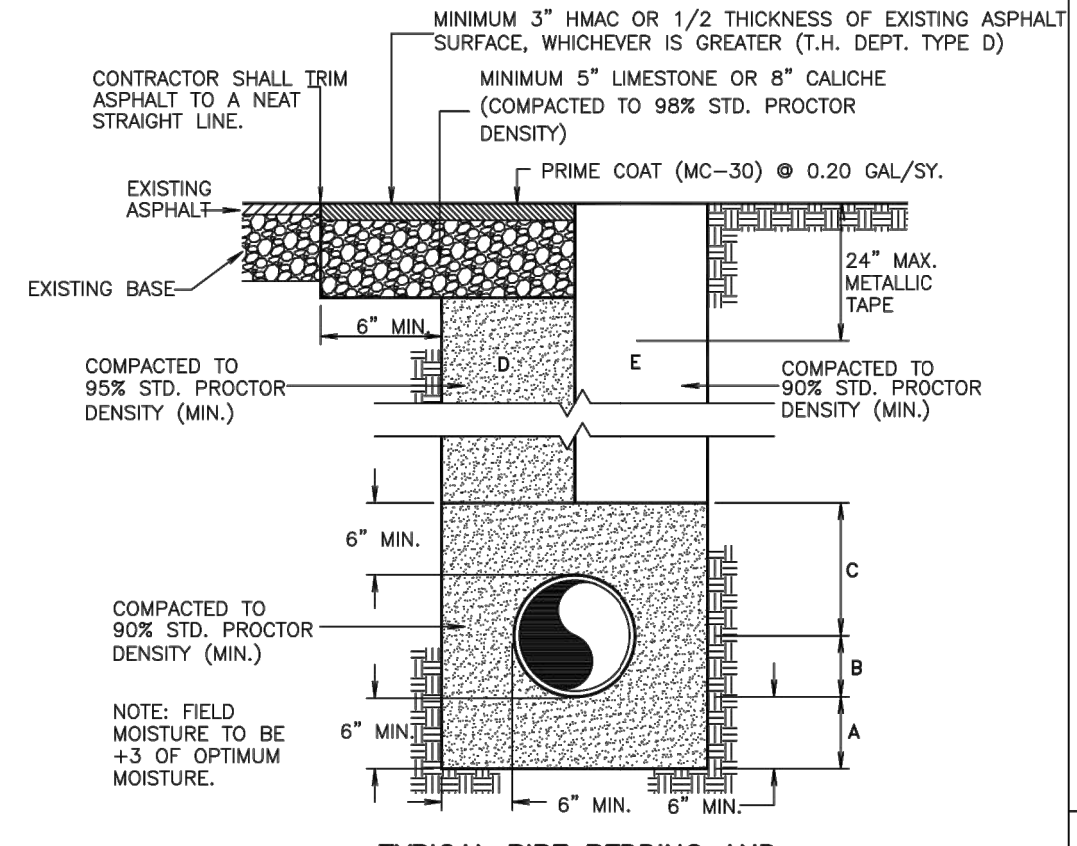
**TYPICAL SHORT SERVICE**  
NOT TO SCALE



**FIRE HYDRANT VALVE & BOX**  
NOT TO SCALE



**ADJUSTMENTS**  
NOT TO SCALE



**TYPICAL PIPE BEDDING AND TRENCH BACKFILL DETAIL**  
NOT TO SCALE

A SAND BEDDING PLACED BEFORE PIPE IS LAID UP TO FLOW LINE OF PIPE (MIN. THICKNESS = 6").

B SAND BACKFILL PLACED AFTER PIPE IS LAID FROM BOTTOM OF PIPE TO SPRING LINE OF PIPE (4" LIFTS, HAND TAMPED).

C SAND BACKFILL PLACED FROM SPRING LINE OF PIPE TO 6" ABOVE TOP OF PIPE (6" LIFTS, HAND TAMPED).

D SAND BACKFILL, CLASS "A" (6" LIFTS, MECHANICAL COMPACTION).

E EARTH BACKFILL, CLASS "B" (12" LIFTS, MECHANICAL COMPACTION).

FOUNDATION PREPARATION (WELLPOINTS, GRAVEL OR CEMENT STABILIZATION, OR APPROVED SUBSTITUTE) SHALL BE REQUIRED WHEN TRENCH BOTTOM IS UNSTABLE).

BACKFILLING AT STRUCTURES SHALL BE PLACED IN UNIFORM LAYERS, MOISTENED AS REQUIRED TO APPROXIMATE OPTIMUM MOISTURE CONTENT, AND COMPACTED TO 95% STD. PROCTOR DENSITY. THE THICKNESS OF EACH LOOSE LAYER SHALL NOT EXCEED 6". STRUCTURE BACKFILL MATERIAL SHALL BE SAND, APPROVED SITE SOIL, OR OTHER APPROVED SUBSTITUTE.

STANDARD DETAILS REVISED: OCTOBER 15, 2021

Scale: N/A Date: \_\_\_\_\_

Designed by: \_\_\_\_\_

Drawn by: \_\_\_\_\_

Approved by: BRUB

Project #:

SHEET

OF

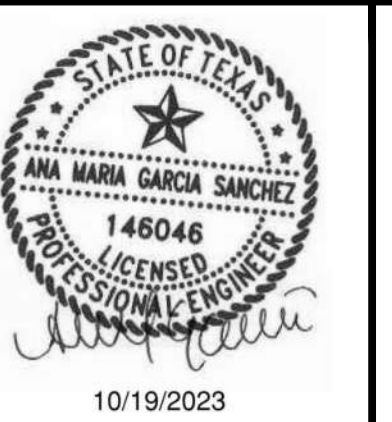
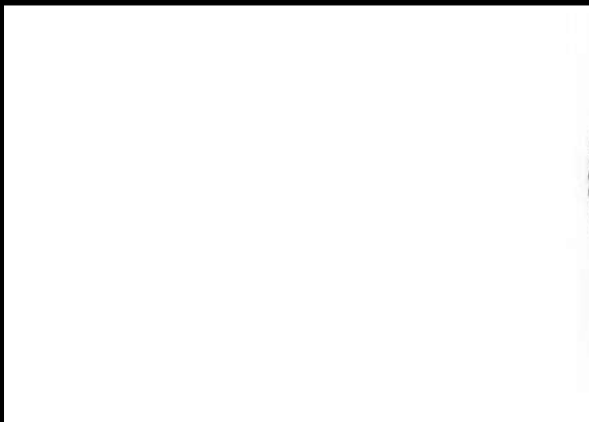
Public Utilities Board  
1425 Robbinkwood Drive  
Brownsville, Texas 78521  
1-800-869-2922  
Water and Wastewater  
Engineering Department  
(956) 983-6215  
FAX: (956) 983-6220

WATER DETAILS

File: C:\USERS\ZCROSSLEY\DRAWING\BROWNSVILLE\60405-005-DT1-DT2 Saved by ZCROSSLEY Save date: 9/14/2023 4:34 PM PLOT DATE: 10/19/2023 11:19 AM By: ZCROSSLEY

REV	ISSUED FOR	DATE	BY
	ISSUED FOR BID	10/19/23	AMGS
	ISSUED FOR		

PROJECT ENGINEER:	A. GARCIA
DESIGNED BY:	C. JONES
DRAWN BY:	Z. CROSSLEY
CHECKED BY:	J. LONDON



**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS

DOWNTOWN WATER AND WASTEWATER  
IMPROVEMENTS PROJECT 2

BPUB STANDARD WATER DETAILS

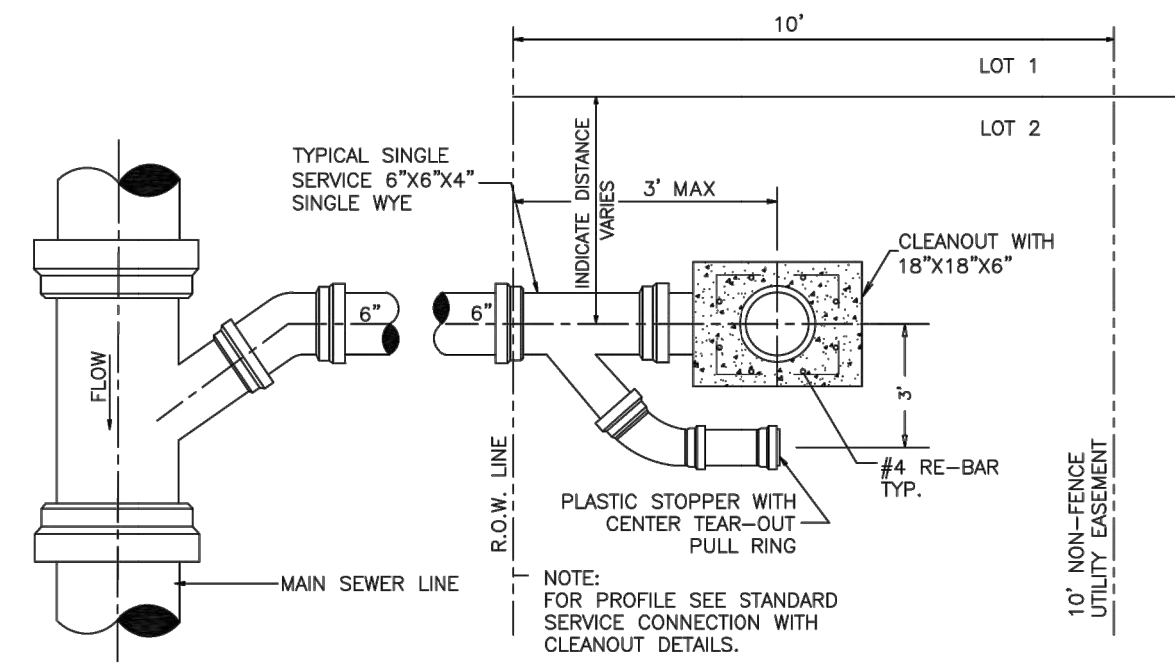
DATE: OCTOBER 2023

HAZEN NO.: 60405-005

DRAWING NUMBER: DT-01



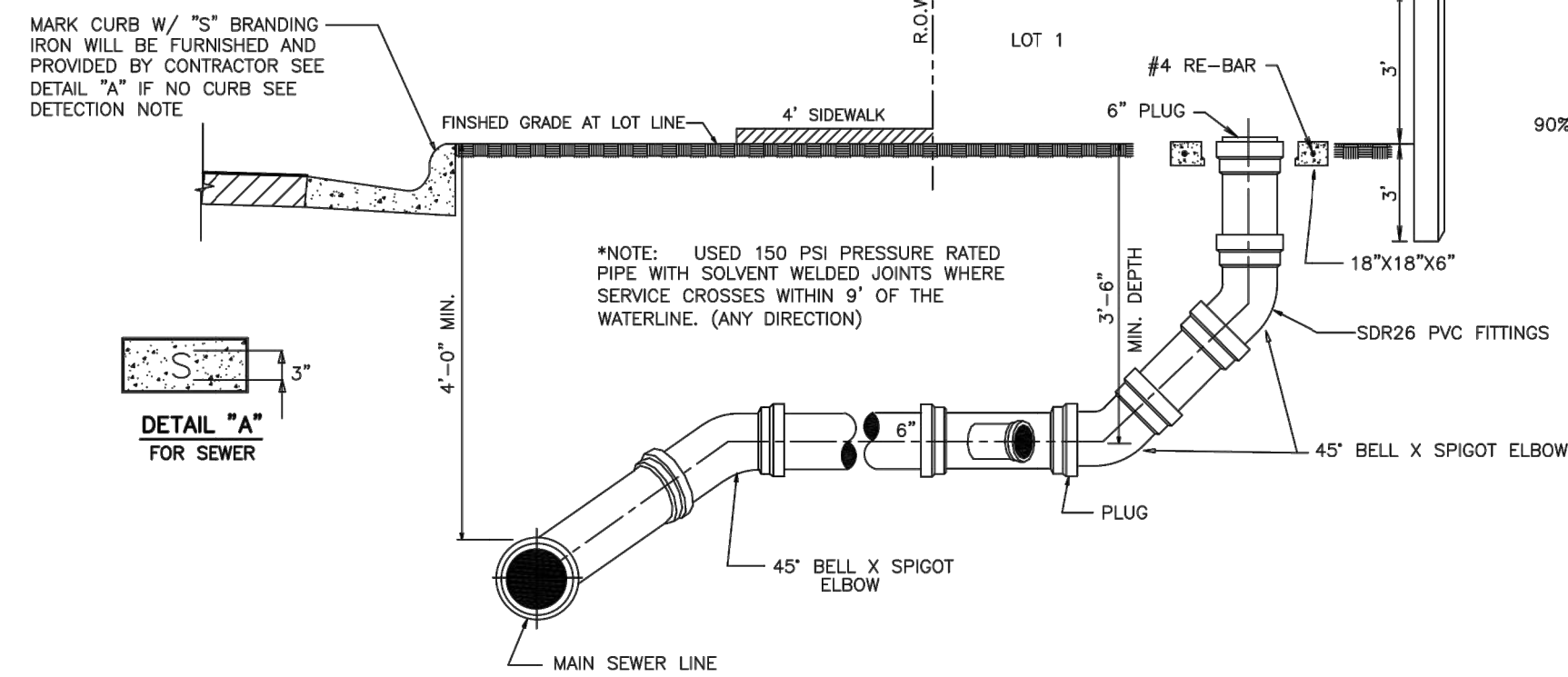
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 PLOT DATE: 10/19/2023 11:19 AM BY: ZCROSSLEY



**PLAN - SINGLE SERVICE**  
NOT TO SCALE

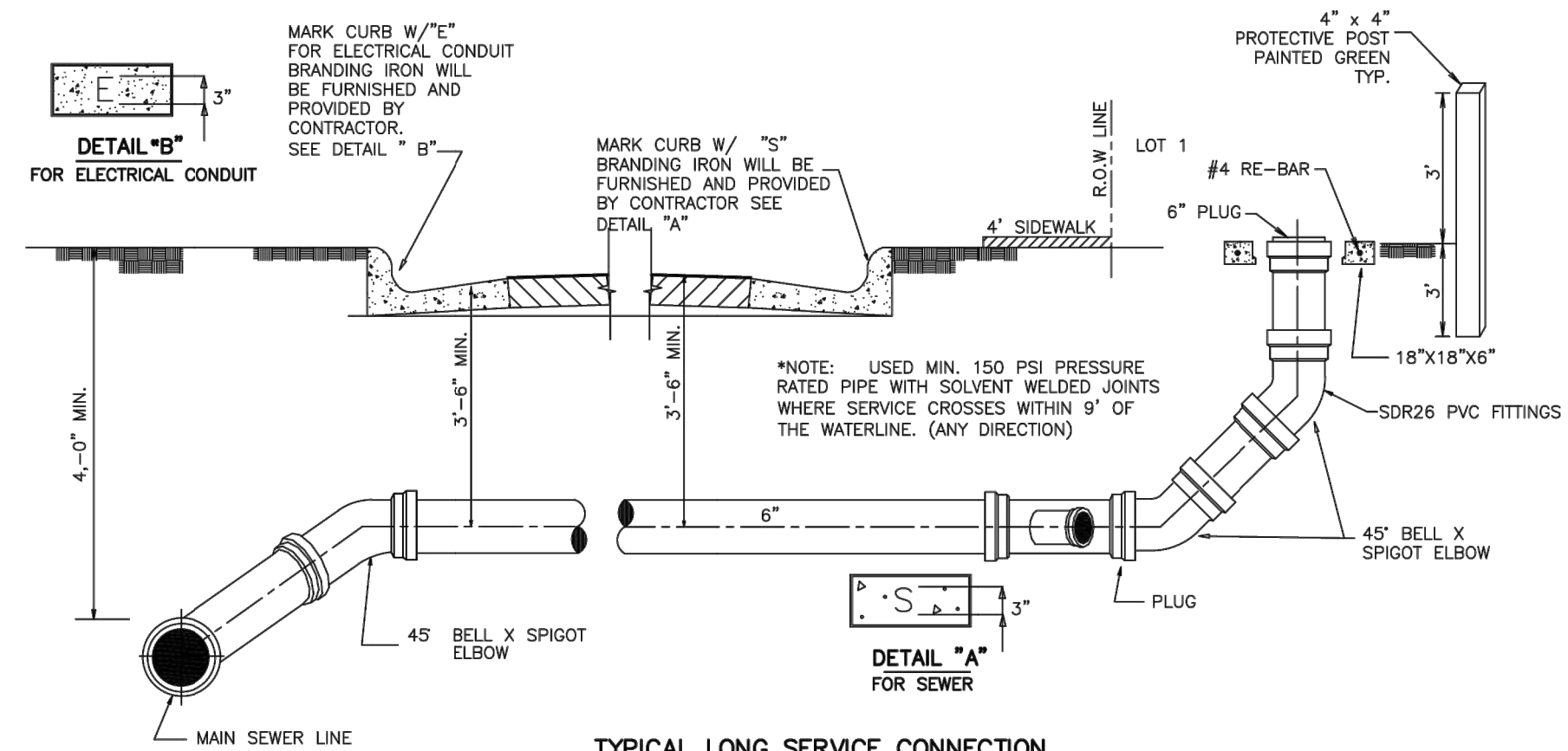
NOTE: CONTRACTOR SHALL COORDINATE WITH INSPECTOR ON THE LOCATION OF ALL SERVICE LATERALS.

DETECTION NOTE: A SOUND DETECTION REFLECTOR "STU-DEC-TA-CAL" BY TRIFOLLY, INC. OR AN APPROVED SUBSTITUTE, WILL BE FASTENED TO THE END OF EACH SERVICE CONNECTION AND EXTENDED TO BE VISIBLE ABOVE FINAL GRADE TO FACILITATE LOCATING SERVICE STUBS.

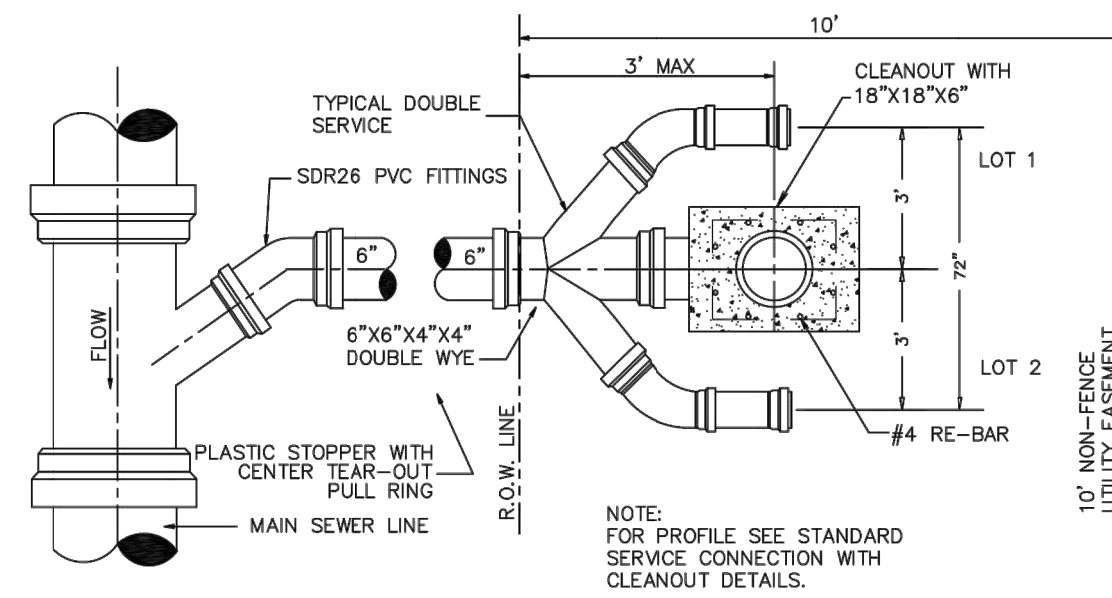


**TYPICAL SHORT SERVICE CONNECTION WITH STANDARD CLEANOUT**  
NOT TO SCALE

NOTE: CONTRACTOR SHALL COORDINATE WITH INSPECTOR ON THE LOCATION OF ALL SERVICE LATERALS.

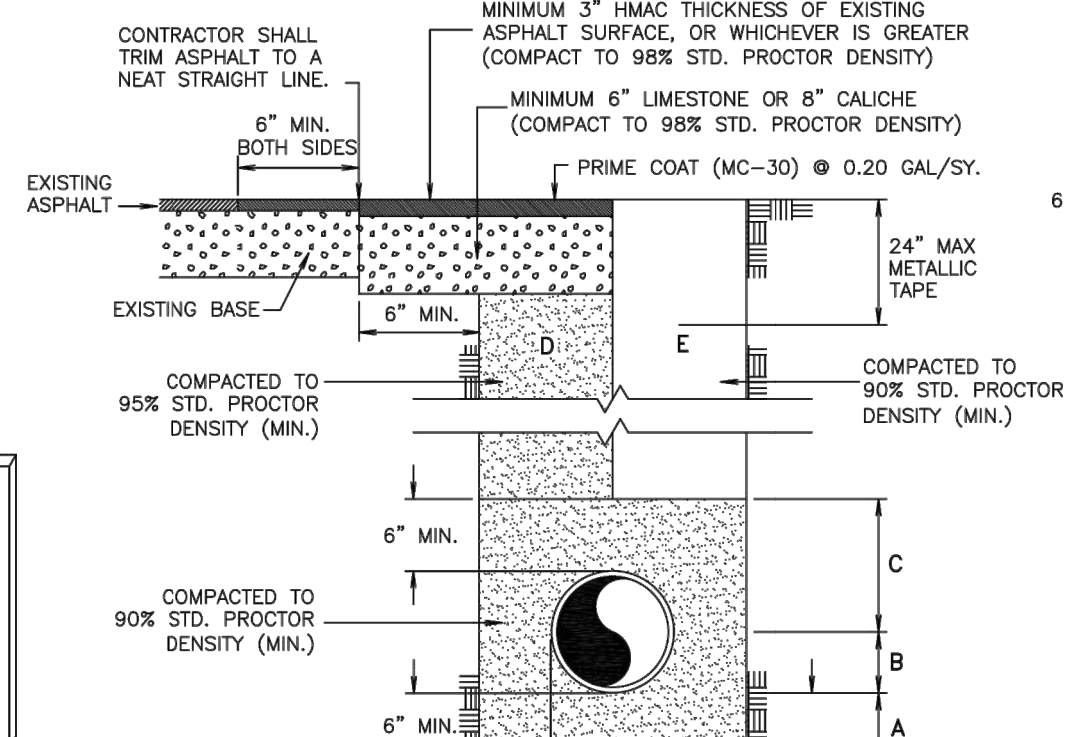


**TYPICAL LONG SERVICE CONNECTION WITH STANDARD CLEANOUT**  
NOT TO SCALE



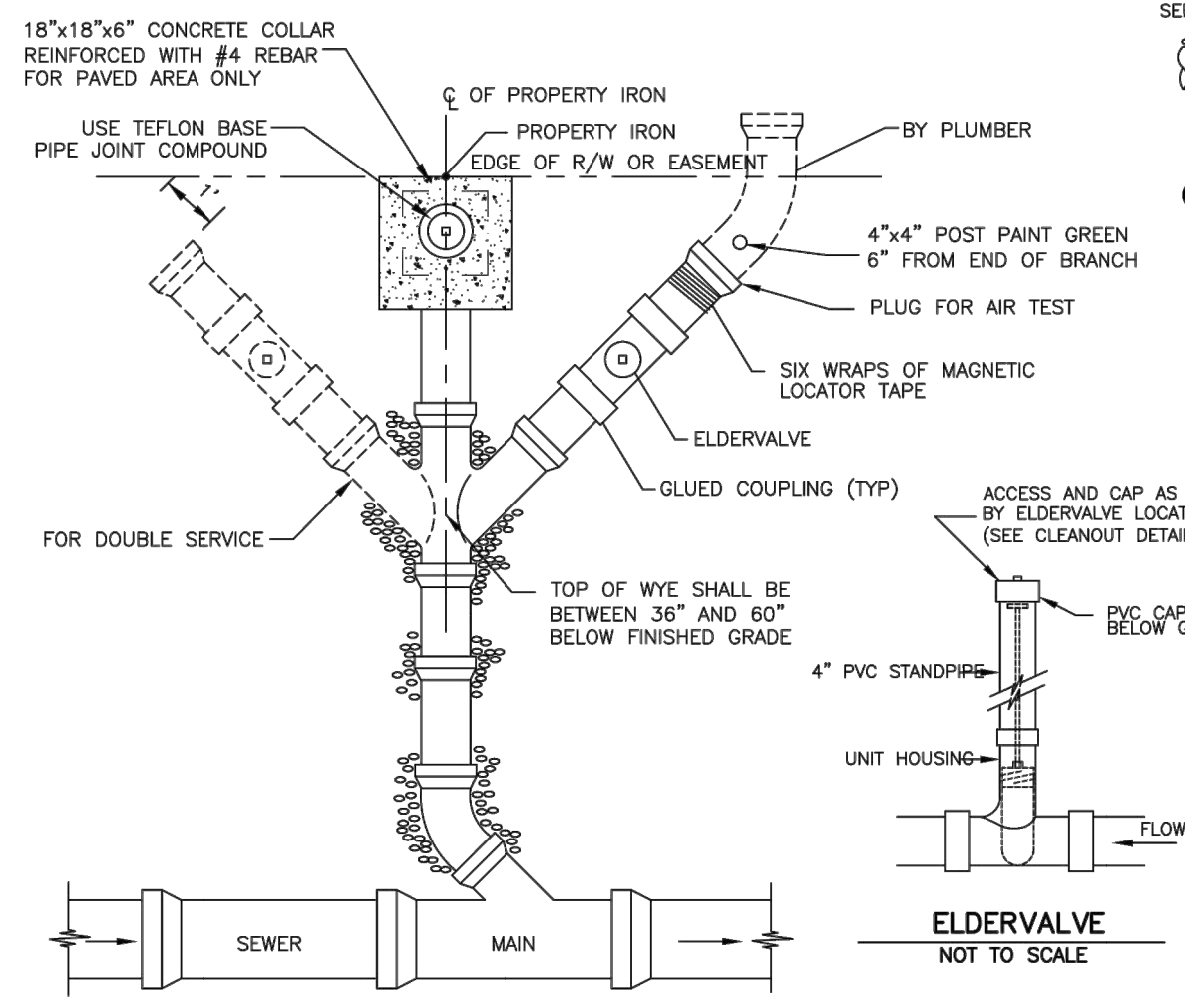
**PLAN - DOUBLE SERVICE NEW DEVELOPMENT**  
NOT TO SCALE

NOTE: FOR PROFILE SEE STANDARD SERVICE CONNECTION WITH CLEANOUT DETAILS.

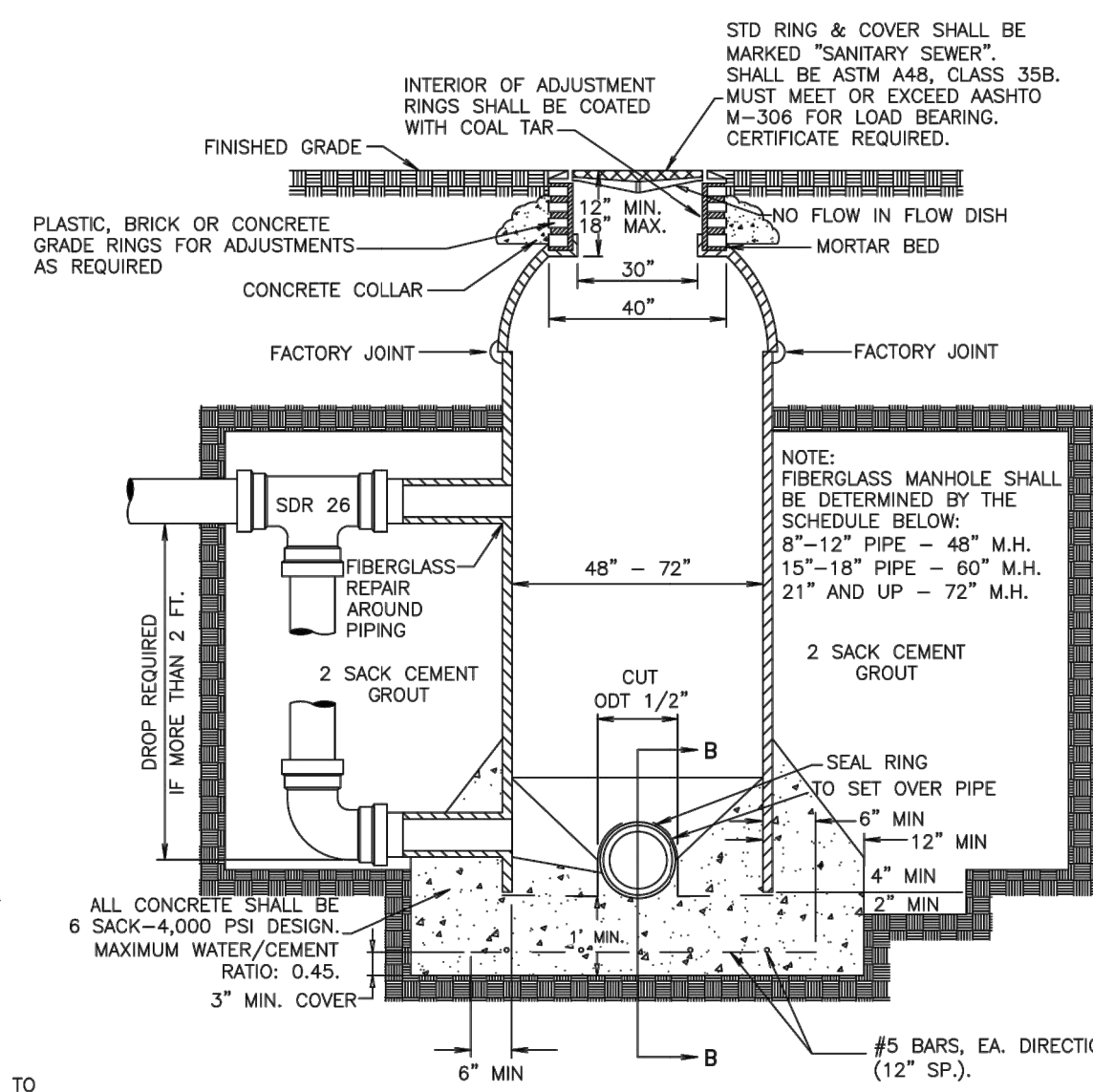


**TYPICAL PIPE BEDDING AND TRENCH BACKFILL DETAIL**  
NOT TO SCALE

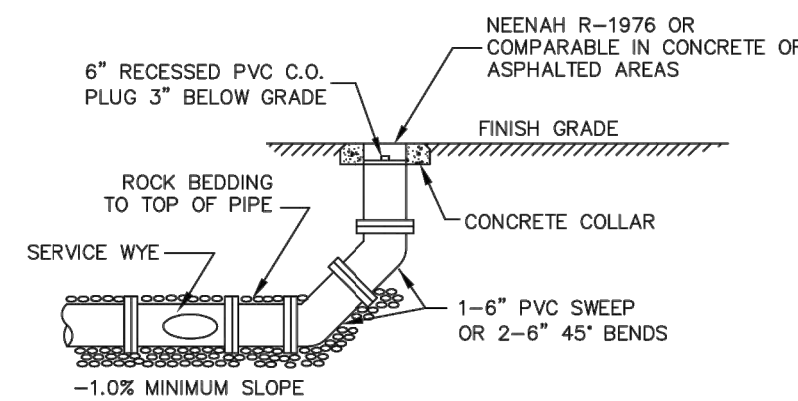
- A SAND BEDDING PLACED BEFORE PIPE IS LAID UP TO FLOW LINE OF PIPE (MIN. THICKNESS = 4").
  - B SAND BACKFILL PLACED AFTER PIPE IS LAID FROM BOTTOM OF PIPE TO SPRING LINE OF PIPE (4" LIFTS, HAND TAMPED).
  - C SAND BACKFILL PLACED FROM SPRING LINE OF PIPE TO 6" ABOVE TOP OF PIPE (6" LIFTS, HAND TAMPED).
  - D SAND BACKFILL, CLASS "A" (6" LIFTS, MECHANICAL COMPACTION).
  - E EARTH BACKFILL, CLASS "B" (12" LIFTS, MECHANICAL COMPACTION).
- FOUNDATION PREPARATION (WELLPOINTS, GRAVEL OR CEMENT STABILIZATION, OR APPROVED SUBSTITUTE) SHALL BE REQUIRED WHEN TRENCH BOTTOM IS STABLE.
- BACKFILL AT STRUCTURES SHALL BE PLACED IN UNIFORM LAYERS, MOISTENED AS REQUIRED TO APPROXIMATE OPTIMUM MOISTURE CONTENT, AND COMPACTED TO 98% STD. PROCTOR DENSITY. THE THICKNESS OF EACH LOOSE LAYER SHALL NOT EXCEED 6". STRUCTURE BACKFILL MATERIAL SHALL BE SAND, APPROVED SITE SOIL, OR OTHER APPROVED.



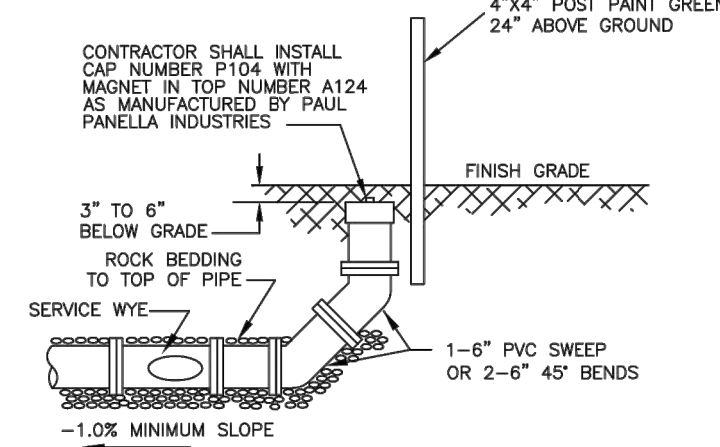
**SEWER SERVICE WITH ELDERVALVE**  
(USE ONLY FOR SEWER SERVICE WHERE BPUB DOES NOT PROVIDE THE WATER SERVICE)



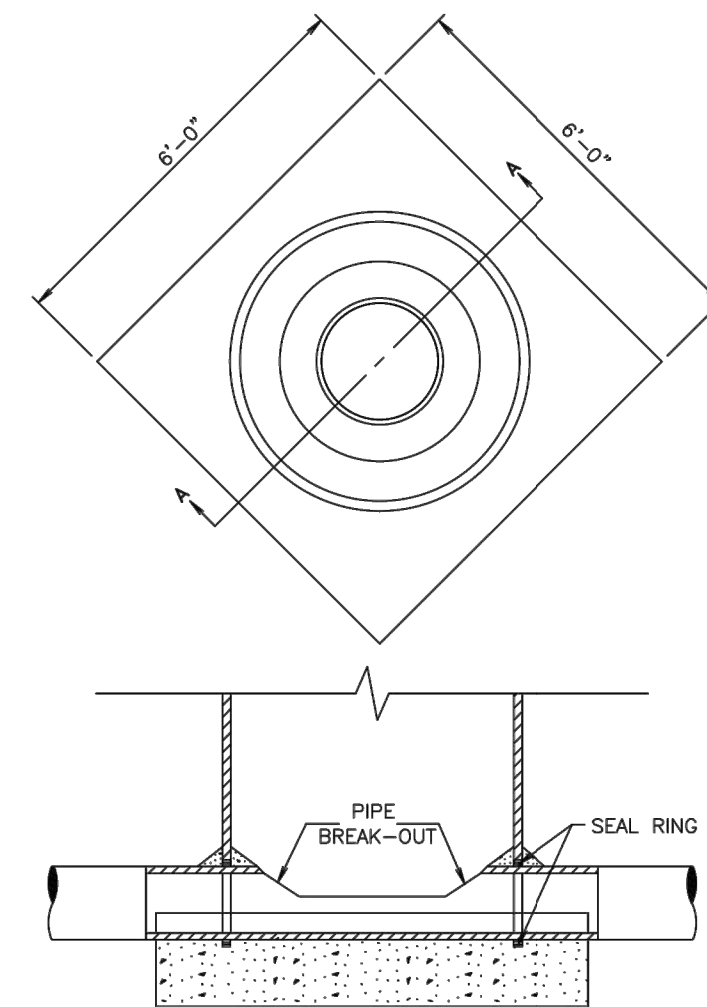
**TYPICAL FIBERGLASS MANHOLE WITH DROP STRUCTURE SECTION A-A**  
NOT TO SCALE



**CLEANOUT IN PAVEMENT**  
NOT TO SCALE

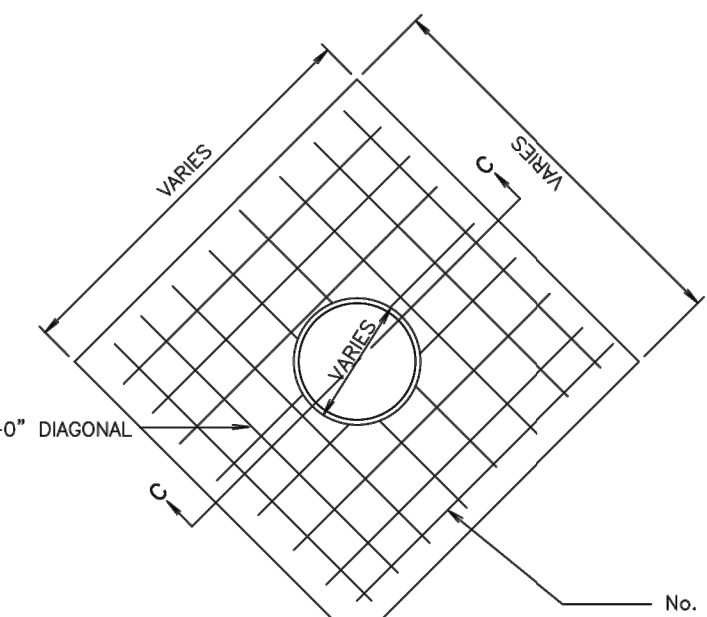


**CLEANOUT IN LANDSCAPED AREA**  
NOT TO SCALE

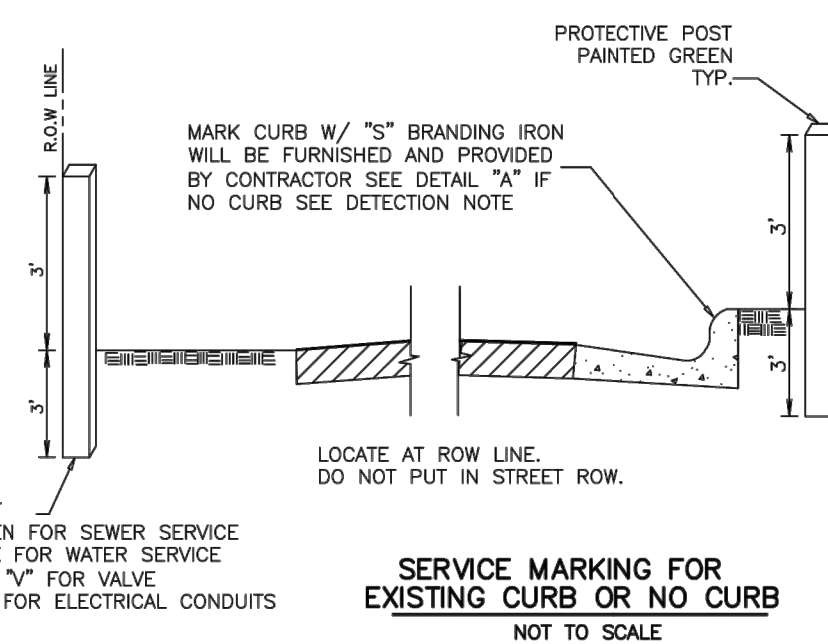


**SECTION B-B**  
NOT TO SCALE

NOTES:  
6'x6' - 4' DIA. M.H.  
7'x7' - 5' DIA. M.H.  
8'x8' - 6' DIA. M.H.



**TYPICAL FIBERGLASS MANHOLE IN PAVEMENT SECTION C-C**  
NOT TO SCALE



**SERVICE MARKING FOR EXISTING CURB OR NO CURB**  
NOT TO SCALE



Public Utilities Board  
1425 Robinhood Drive  
Brownsville, Texas 78521  
1-800-869-2922  
Water and Wastewater  
Engineering Department  
(936) 983-6215  
FAX: (936) 983-6220

BROWNVILLE  
PUBLIC UTILITIES BOARD

WASTEWATER DETAILS

Scale: N/A	Date:
Designed by:	
Drawn by:	
Approved by:	
Project #:	
SHEET	
OF	

REV	ISSUED FOR	DATE	BY
	ISSUED FOR BID	10/19/23	AMGS

PROJECT ENGINEER:	A. GARCIA
DESIGNED BY:	C. JONES
DRAWN BY:	Z. CROSSLEY
CHECKED BY:	J. LONDON
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"



10/19/2023

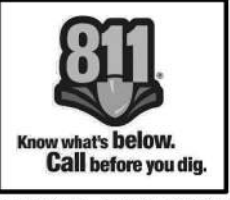
**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

BROWNVILLE PUBLIC UTILITIES BOARD  
BROWNVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER IMPROVEMENTS PROJECT 2

BPUB STANDARD WASTEWATER DETAILS

DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	DT-02



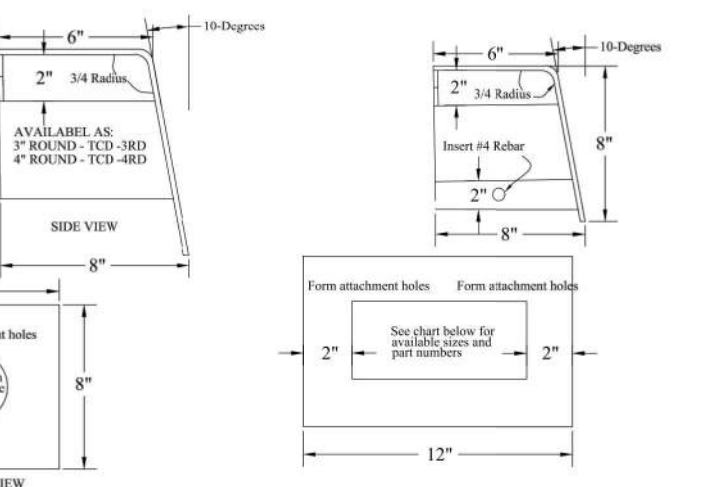


**3) WHAT INFO DO I NEED BEFORE CALLING 811?**  
 You will need to know the address of where you plan to dig, including the county and nearest cross street, as well as the type of project you're completing and the exact area on the property where you're planning to dig. Whether you call 811 or make your request online, you'll need the same info.

**4) AFTER I CALL 811, WHAT DO I DO?**  
 You need to wait a few days to allow utilities to respond to your request and ensure that all utilities have indeed responded to your request before breaking ground. Once all utilities have marked their buried lines, you should dig carefully around any utility marks and consider relocating projects that are close to buried utilities.

**1) WHAT IS 811?**  
 811 is the national call-before-you-dig phone number. Anyone who plans to dig should call 811 or go to their state 811 center's website before digging to request that the approximate location of buried utilities be marked with paint or flags so that you don't unintentionally dig into an underground utility line.

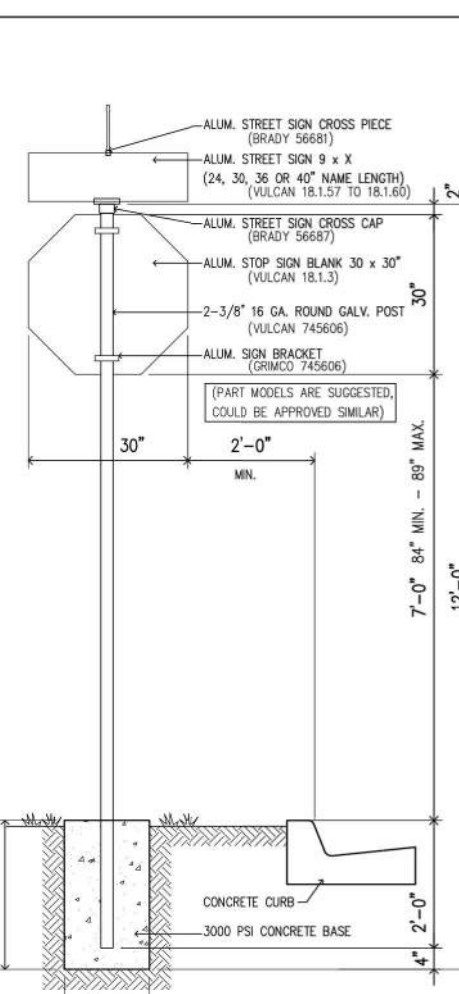
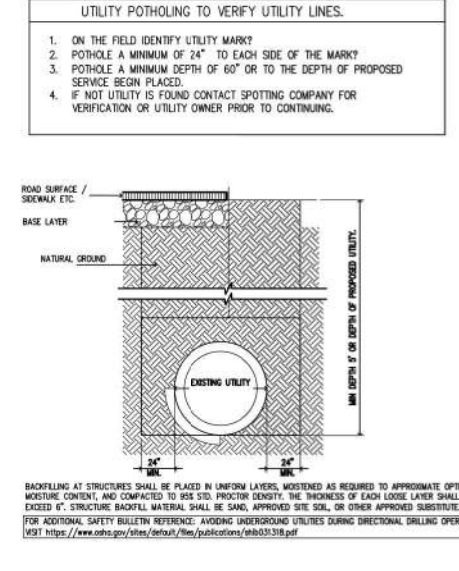
**2) WHEN DO I CALL 811?**  
 You should call 811 or use your state 811 center's website a few business days before you begin any digging, including common projects like planting trees and shrubs or installing fences and mailboxes. The specific amount of advance notice that are required to provide varies by state.



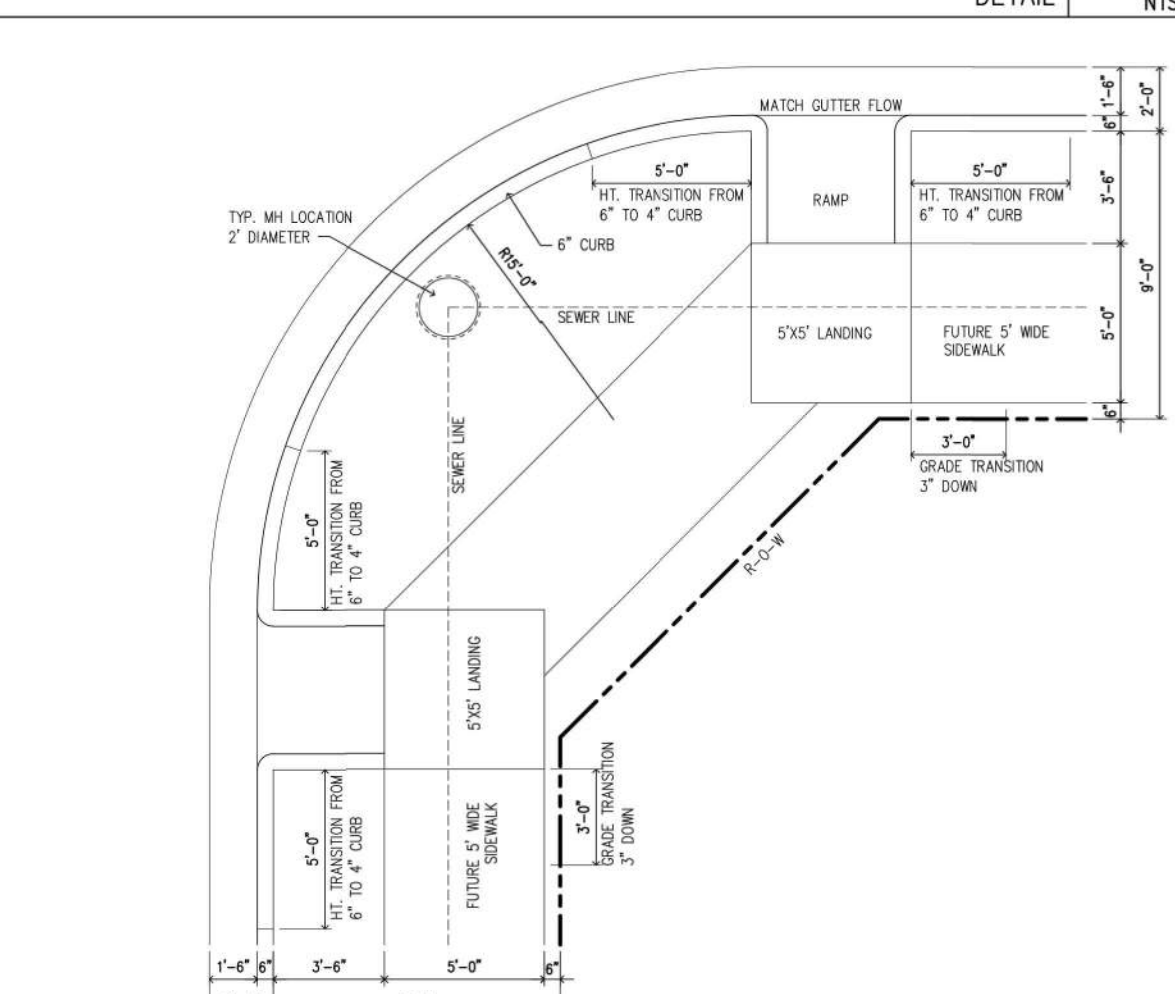
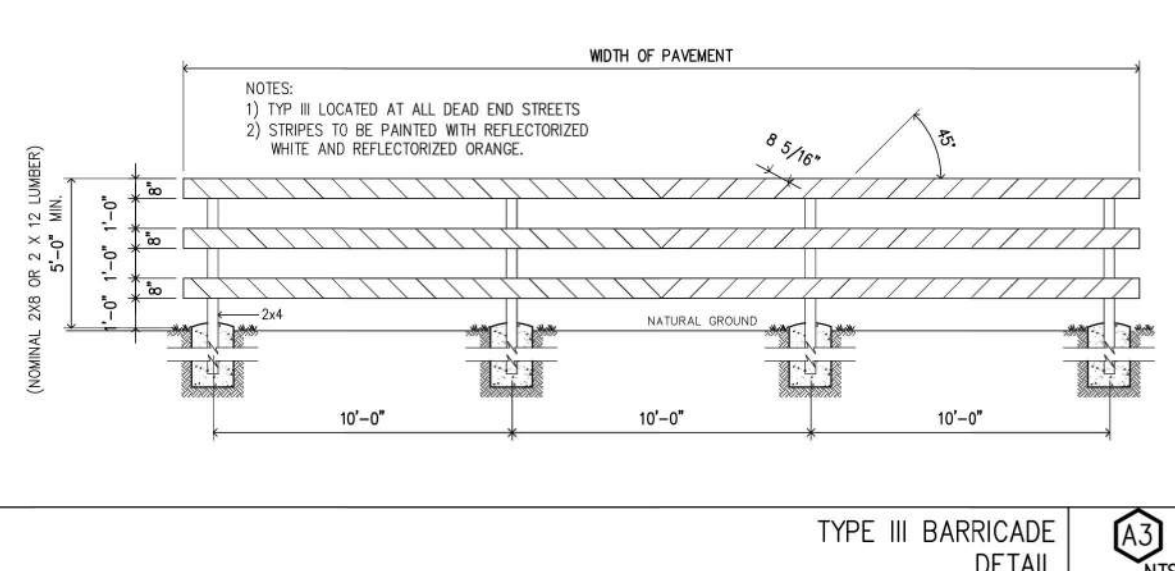
PRODUCT SPECIFICATION					
ROUND EQUIV.	SIZE	MODEL	FLOW DRAIN	OVERFLOW DRAIN	REMARKS
3"	3" ROUND	TCD-3RD	TCD-3RD-RFD	TCD-3RD-OFD	6" CURB FACE
4"	4" ROUND	TCD-4RD	TCD-4RD-RFD	TCD-4RD-OFD	6" CURB FACE
4"	3 1/2"	TCD-3S	TCD-3S-RFD	TCD-3S-OFD	6" CURB FACE
5"	3 3/4"	TCD-38	TCD-38-RFD	TCD-38-OFD	6" CURB FACE
6"	3 1/2"	TCD-312	TCD-312-RFD	TCD-312-OFD	6" CURB FACE ONLY
8"	4 1/4"	TCD-414	TCD-414-RFD	TCD-414-OFD	NOTE: 8" CURB FACE ONLY
8"	3 1/2"	TCD-317	TCD-317-RFD	TCD-317-OFD	6" CURB FACE
10"	3 1/2"	TCD-337	TCD-337-RFD	TCD-337-OFD	6" CURB FACE
10"	4 1/2"	TCD-432	TCD-432-RFD	TCD-432-OFD	NOTE: 8" CURB FACE ONLY

ALL CURB-LET PRODUCTS ARE MANUFACTURED TO CLOSE TOLERANCES. VERY SLIGHT VARIATIONS IN SIZE ARE POSSIBLE. CURB-LET FITS STANDARD 6" x 8" CURB FACE. EPOXY COATING FINISHES AVAILABLE ON REQUEST.

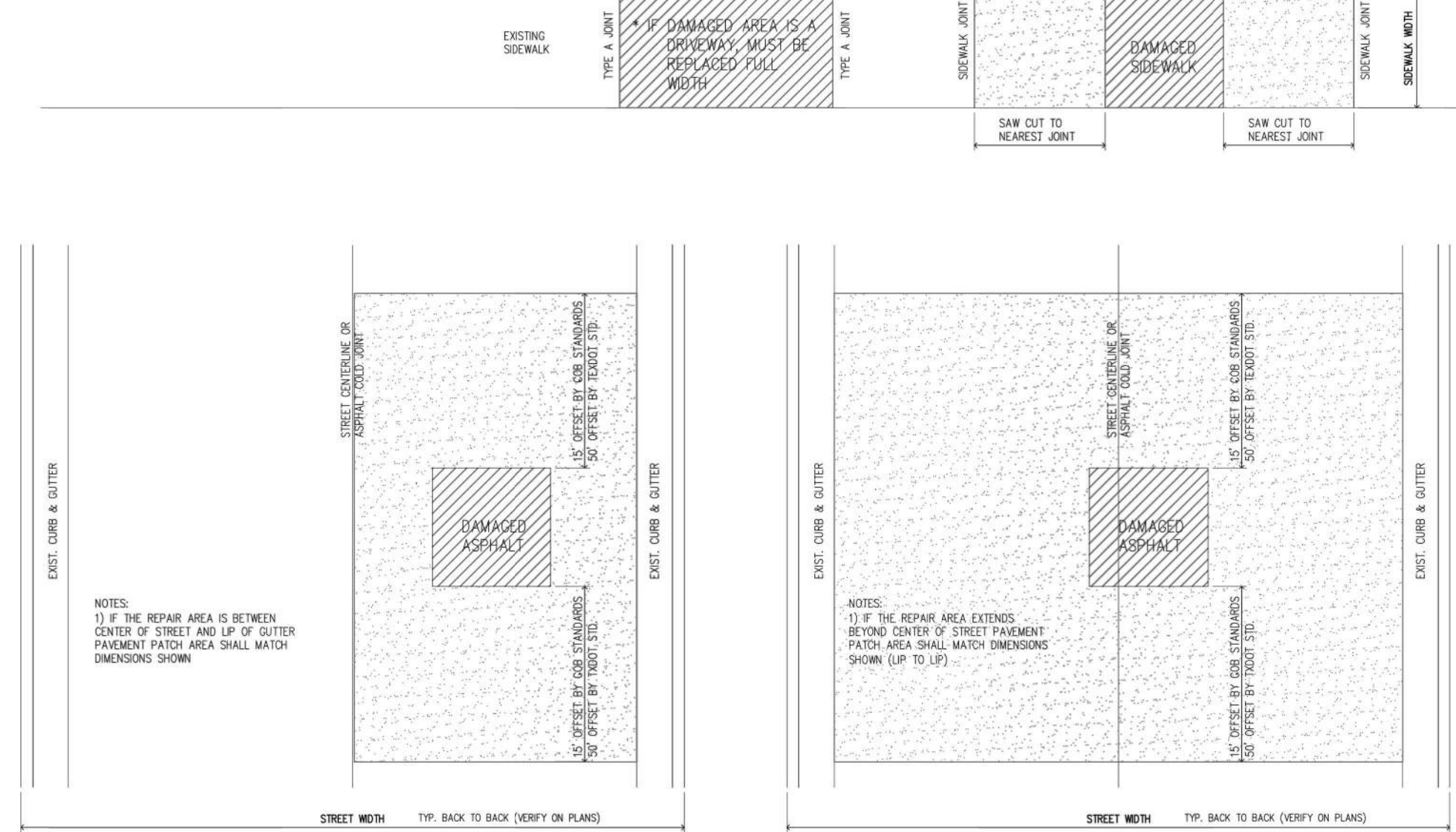
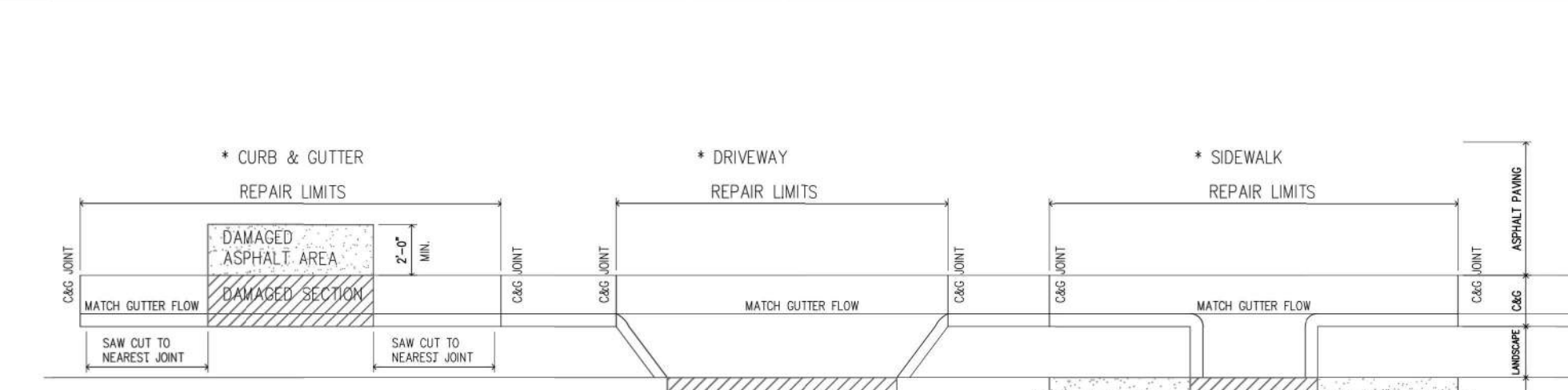
TYP. CURB DRAIN DETAIL & SPECIFICATIONS C1 NTS



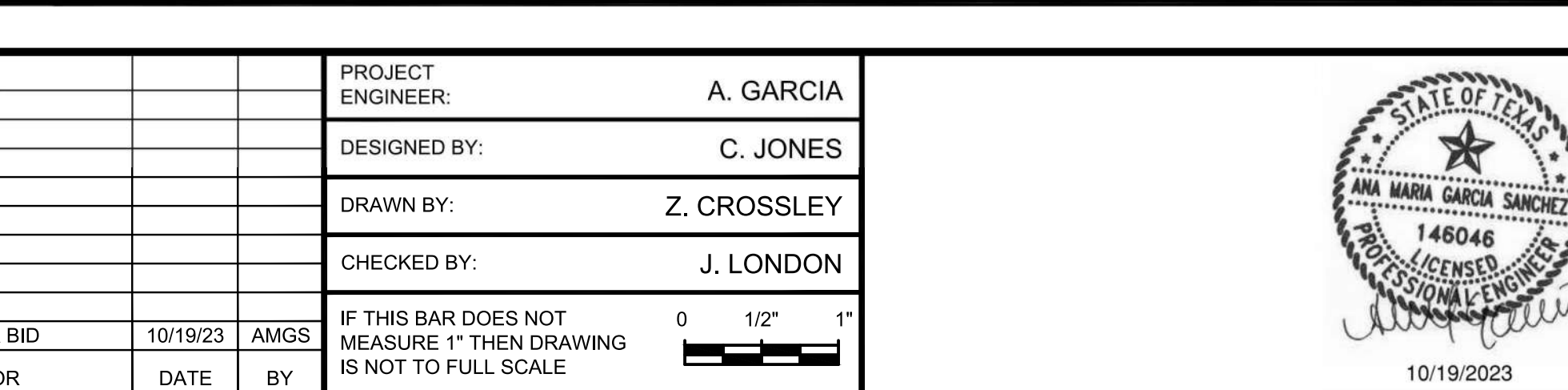
TYP. STREET SIGN INSTALLATION DETAIL C2 NTS



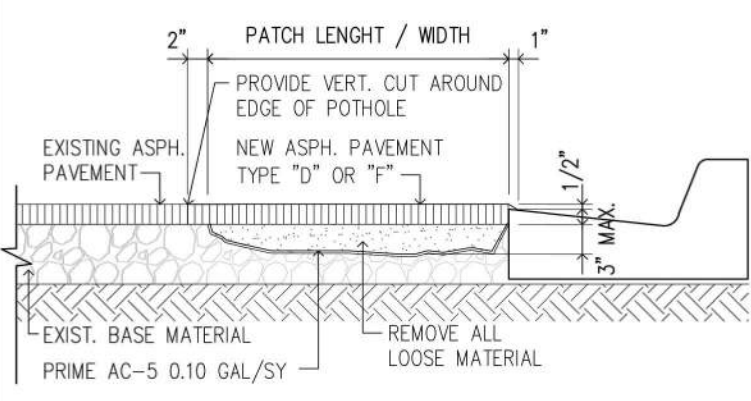
RAMP AT STREET INTERSECTION DETAIL C3 NTS



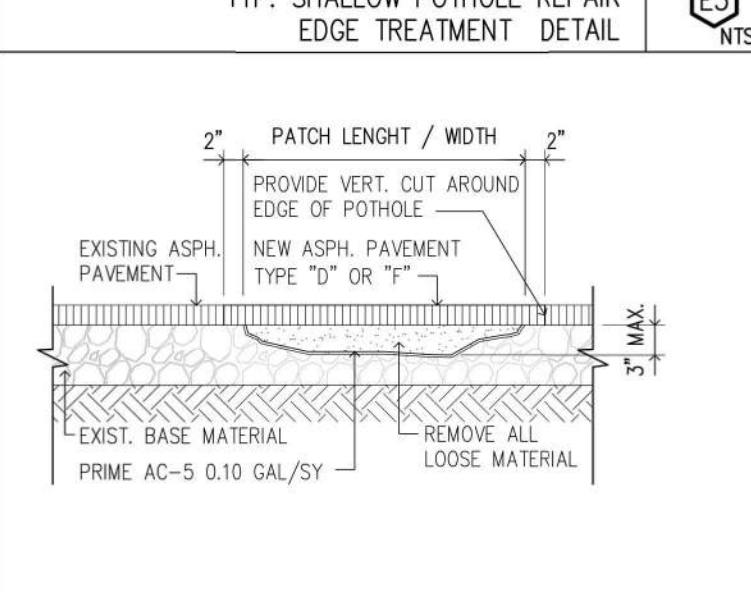
TYP. SHALLOW POTHOLE REPAIR EDGE TREATMENT DETAIL E3 NTS



CURB, GUTTER, SIDEWALKS & ASPHALT PAVING REPAIR PREMISES DETAIL F2 NTS



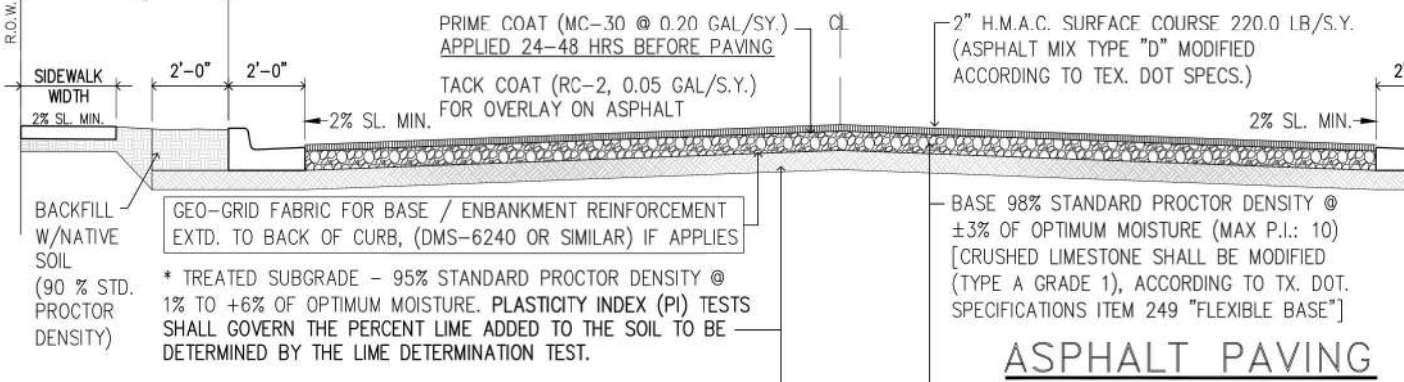
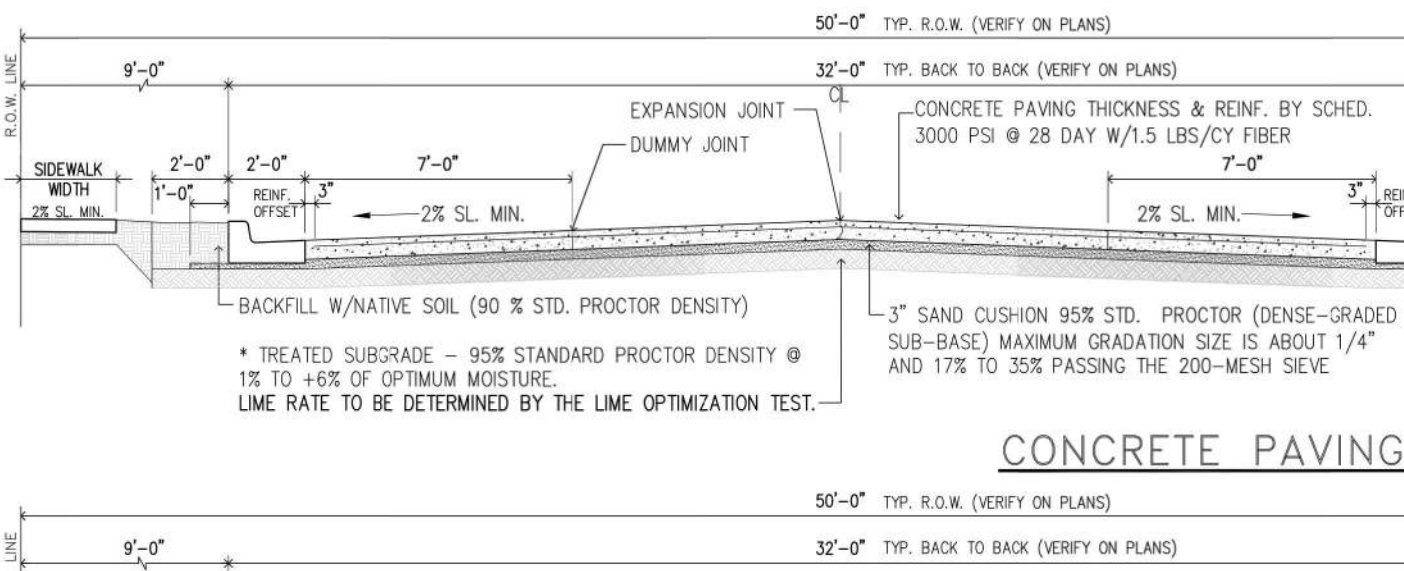
STAND UP CURB DETAIL F4 NTS



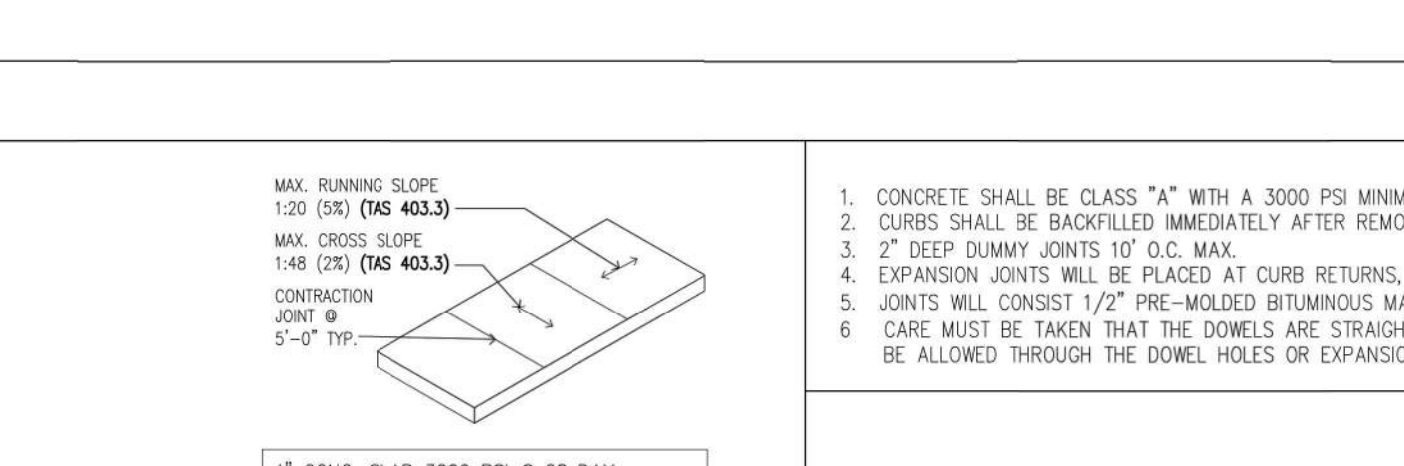
HEADER CURB & GUTTER DETAIL F5 NTS



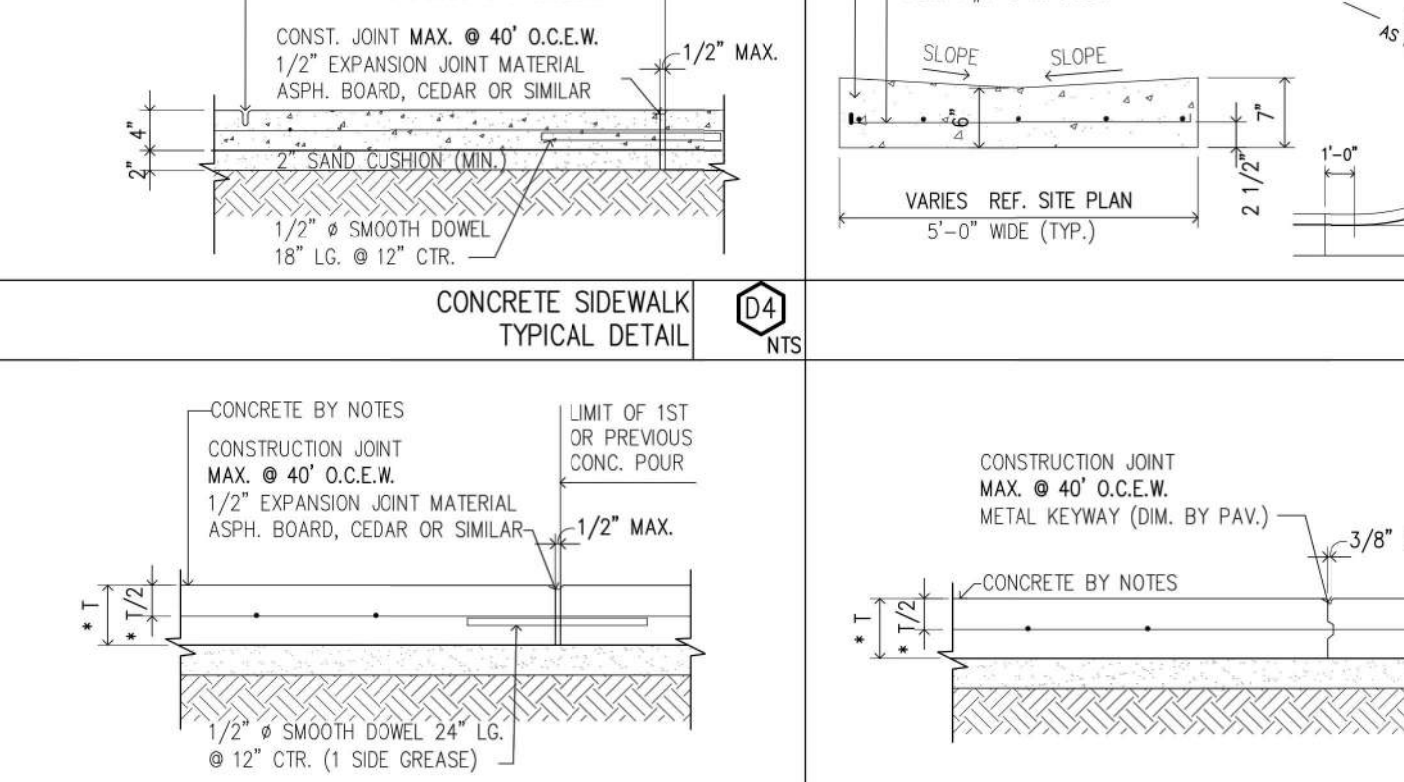
CONCRETE CURB & GUTTER DETAIL F6 NTS



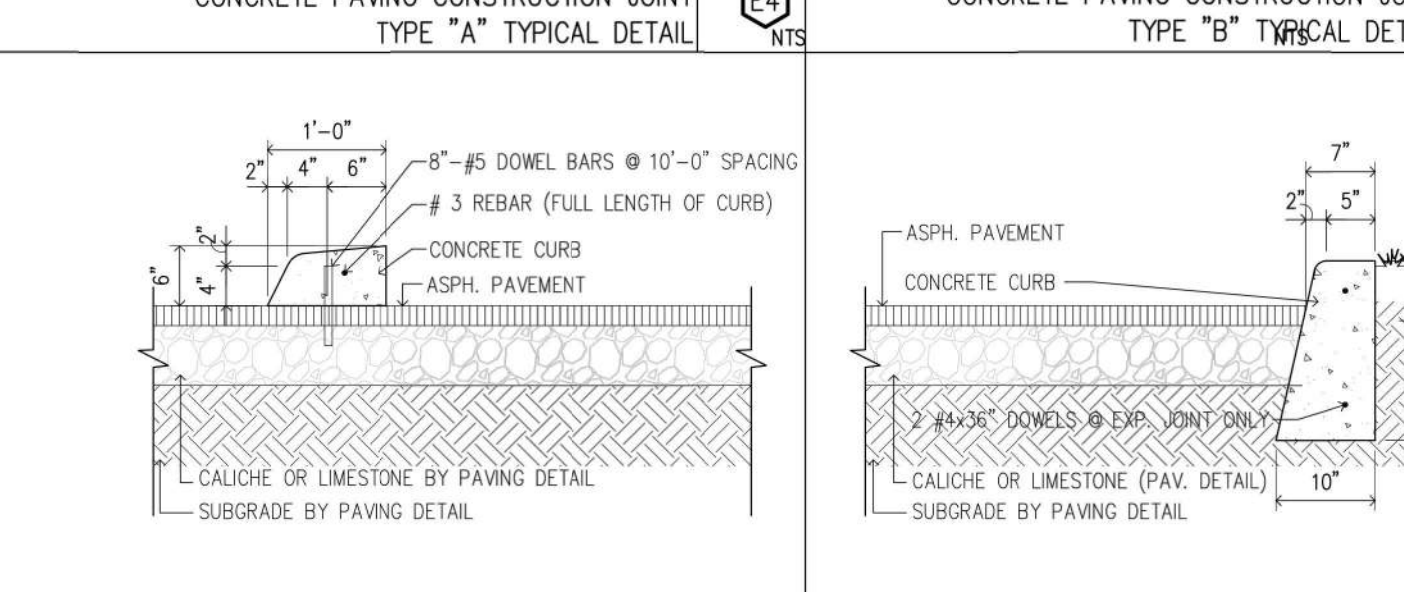
CONCRETE PAVING CONSTRUCTION JOINT TYPE 'B' TYPICAL DETAIL E5 NTS



CONCRETE PAVING CONSTRUCTION JOINT (DUMMY JOINT) TYPE 'C' TYPICAL DETAIL E6 NTS



CONCRETE SIDEWALK TYPICAL DETAIL D4 NTS



CONCRETE VALLEY DETAIL D6 NTS

**PAVING MATERIALS TESTING FOR STREETS (32" WIDE TYP.)**  
 SUBGRADE: EVERY 300' MAX.  
 1. OPTIMUM LIME CONTENT.  
 2. ATTERBERG LIMITS.  
 3. MOISTURE/DENSITY CURVES (STANDARD PROCTOR).  
 4. SUBGRADE DENSITIES.  
 5. LIME DEPTH (THICKNESS).  
 LIME STABILIZATION SUB-BASE SHALL CURE MIN. 24 HR.  
 EVERY 400' MAX.

**LIMESTONE / CALICHE:**  
 1. ATTERBERG LIMITS.  
 2. MOISTURE/DENSITY CURVES (STANDARD PROCTOR).  
 3. EXTRACTION/GRADATION (OPTIONAL).  
 4. CALIFORNIA BEARING RATIO TEST (C.B.R.).  
 5. CALICHE BASE DENSITIES.  
 6. LIME DEPTH (THICKNESS).  
 (GET PLANT CERTIFICATE FOR MOD. TYPE I CALICHE).

**PRIME COAT:** MC-30 OR APPROVED SIMILAR.  
 1. CURING PERIOD 24-48 HRS.  
 2. DURING CURING NO TRAFFIC SHALL BE ALLOWED ON SURFACE, INCLUDING EQUIPMENT.

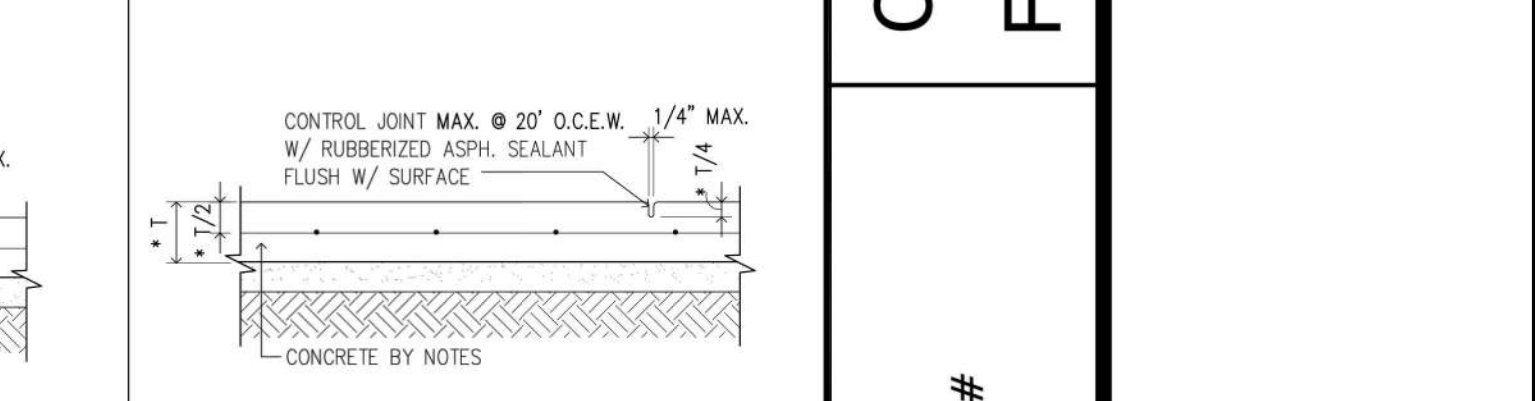
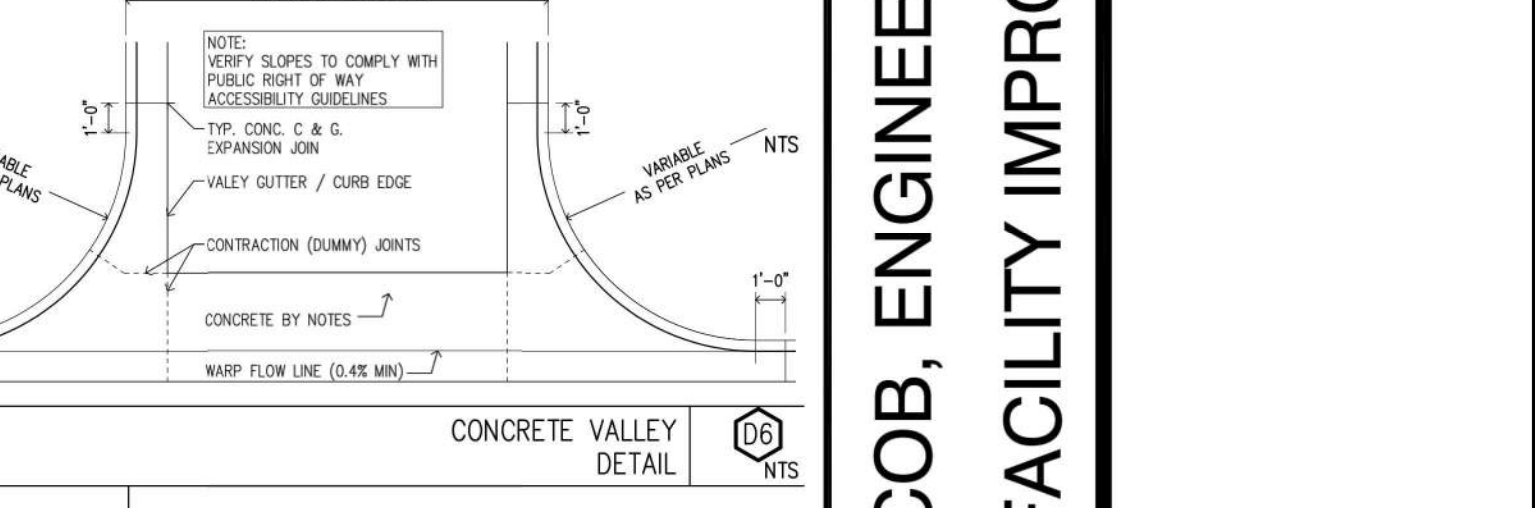
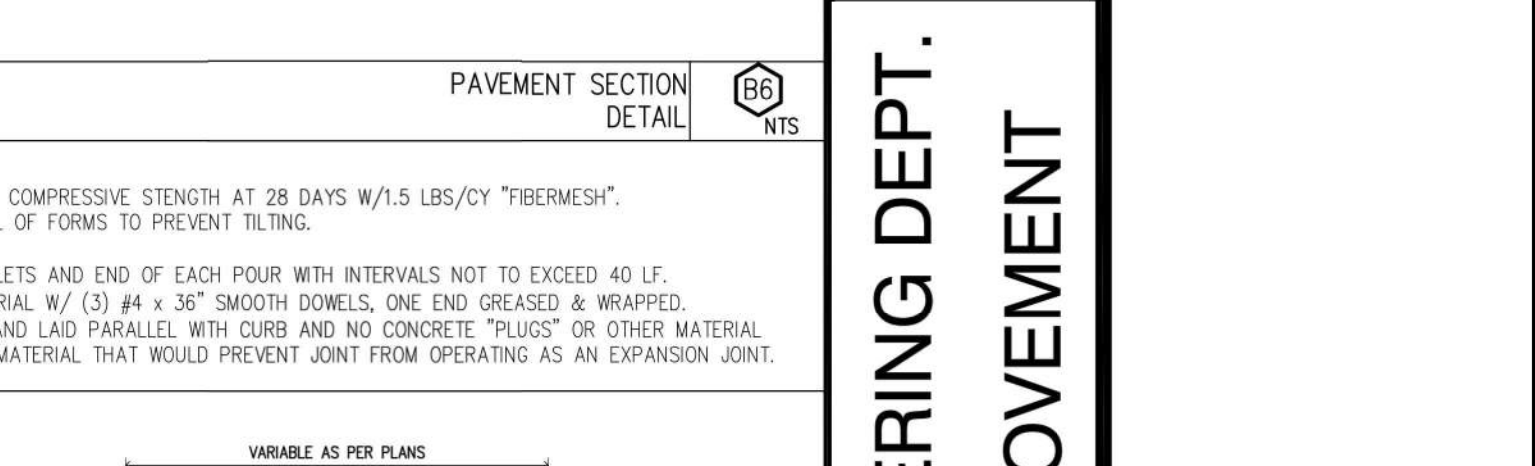
**ASPHALT:** EVERY 500' MAX.  
 1. RETAINED STABILITY.  
 2. HVEEM STABILITY.  
 3. EXTRACTION/GRADATION.  
 4. OPT. THEORETICAL DENSITY.  
 5. THICKNESS.  
 6. IN-PLACE DENSITY.

**CONCRETE:** CVL EVERY 100 CY MM OR DAYS POUR  
 1. STRENGTH (P.S.I.)  
 2. CURB SHALL BE BACKFILLED WITH A 6 HOUR PERIOD AFTER REMOVAL OF FORMS TO PREVENT TILTING. 2" DEEP DUMMY JOINTS AT 10' O.C. MAX.  
 3. CONCRETE SHALL BE CLASS "A" WITH 3000 PSI MIN. COMPRESSIVE STRENGTH AT 28 DAYS WITH 1.5 lbs./cy "FIBERESH". ALL EXP. CONCRETE SURFACES SHALL BE TREATED WITH COATING COMPOUND RESIN BASE (ASTM C 309 TYPE 2) W/ FLUOVIDE EYE.

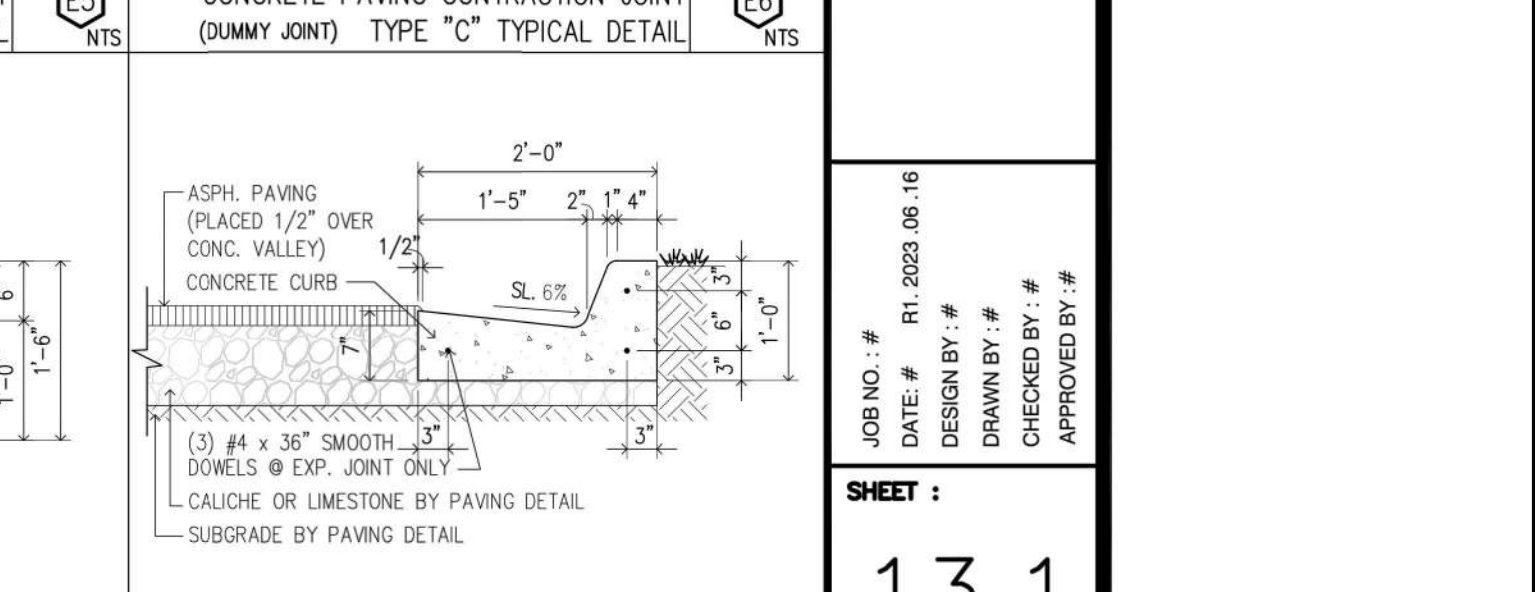
NOTES:  
 1. CONTRACTOR IS RESPONSIBLE FOR CALLING TESTING COMPANY AT PROPER TIMES DURING CONSTRUCTION FOR REQUIRED TESTING.  
 2. OWNER WILL PAY FOR ALL REQUIRED TESTING.  
 3. CONTRACTOR WILL PAY FOR ANY ADDITIONAL TESTING DONE TO ASSURE ALL MATERIALS AND WORK MEET REQUIREMENTS.  
 4. CONTRACTOR BEARS THE RESPONSIBILITY OF INFORMING CITY INSPECTORS OF ALL TESTING AT LEAST 24 HOURS IN ADVANCE.

PAVEMENT SECTION DETAIL B5 NTS

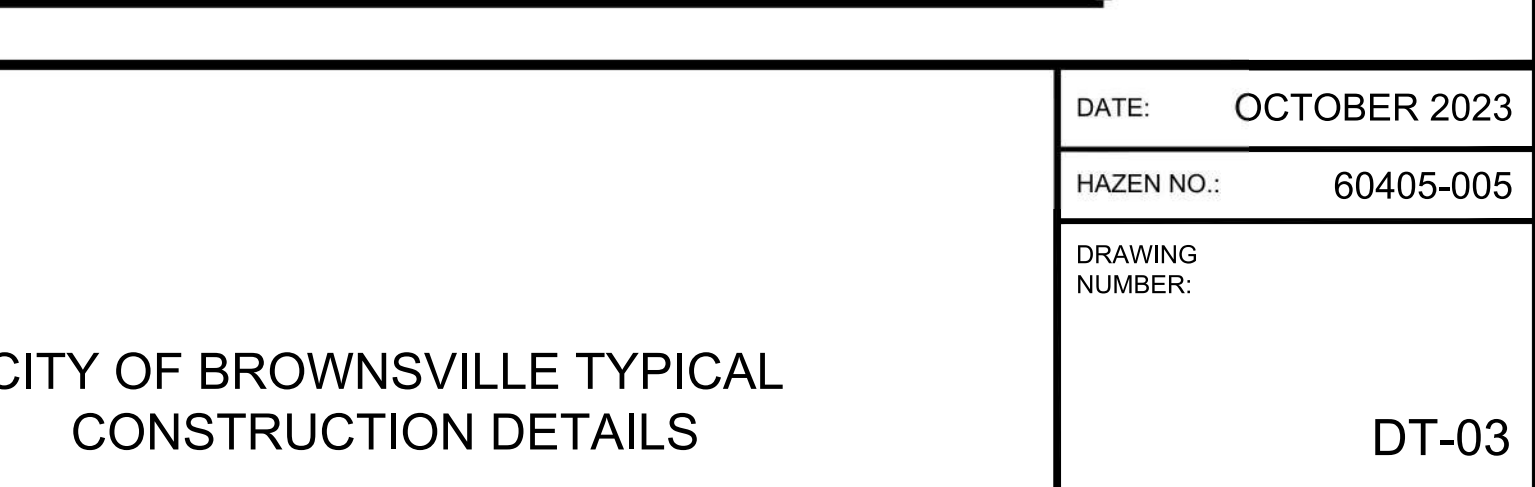
STREET PAVING SECTIONS					
TYPE OF STREET	LIME TREATED	GEO-GRID	BASE LIMESTONE OR CALICHE	PAVEMENT H.M.A.C.	CONCRETE
RESIDENTIAL			6"	8"	2"
RESIDENTIAL COLLECTOR			6"	8"	2"
COLLECTOR			7"	9"	2.5"
MINOR ARTERIAL / INDUSTRIAL			9"	11"	3.5"
MAJOR ARTERIAL			10"	12"	4"



CONCRETE PAVING CONSTRUCTION JOINT TYPE 'A' TYPICAL DETAIL E4 NTS



CONCRETE PAVING CONSTRUCTION JOINT TYPE 'B' TYPICAL DETAIL E5 NTS



CONCRETE PAVING CONSTRUCTION JOINT (DUMMY JOINT) TYPE 'C' TYPICAL DETAIL E6 NTS



CITY OF BROWNSVILLE  
**ENGINEERING DEPARTMENT**

**COB, ENGINEERING DEPT.**  
**FACILITY IMPROVEMENT**

JOB NO.: #  
 DATE: # R1, 2023.08.16  
 DESIGN BY: #  
 DRAWN BY: #  
 CHECKED BY: #  
 APPROVED BY: #

SHEET:  
 13.1

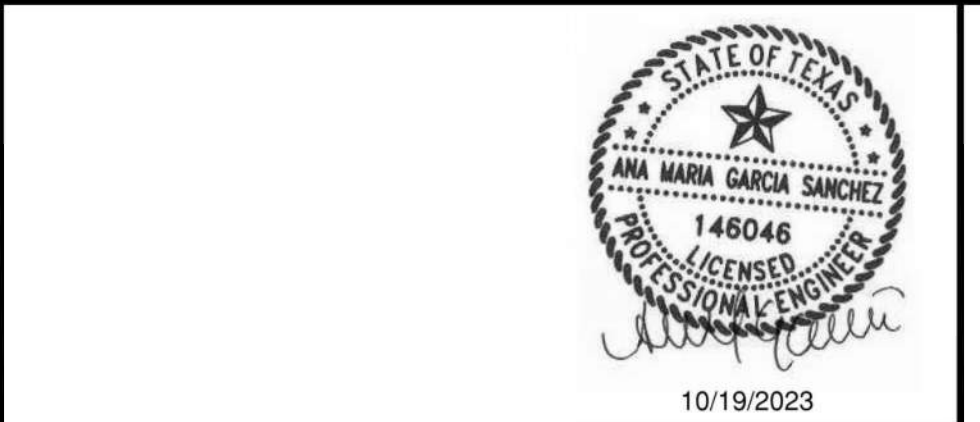
File: C:\USERS\ZCROSSLEY\DRAWING\COB\COB\HAZEN AND SAWYER\6045-005-DT-C Saved by ZCROSSLEY, Save date: 10/3/2023 10:41 AM  
 PLOT DATE: 10/19/2023 11:20 AM By: ZCROSSLEY

PROJECT ENGINEER:	A. GARCIA
DESIGNED BY:	C. JONES
DRAWN BY:	Z. CROSSLEY
CHECKED BY:	J. LONDON
ISSUED FOR BID	10/19/23 AMGS
ISSUED FOR	DATE BY

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

0 1/2" 1"

30 19/2023



**Hazen**  
 HAZEN AND SAWYER  
 1100 NW LOOP 410, SUITE 700-773  
 SAN ANTONIO, TEXAS 78213

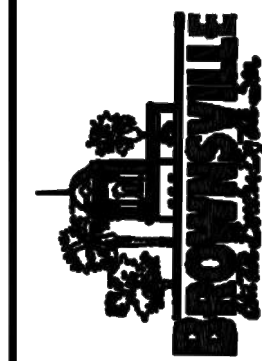
**BROWNSVILLE PUBLIC UTILITIES BOARD**  
 BROWNSVILLE, TEXAS

**DOWNTOWN WATER AND WASTEWATER IMPROVEMENTS PROJECT 2**

CITY OF BROWNSVILLE  
**TYPICAL CONSTRUCTION DETAILS**

DATE: OCTOBER 2023  
 HAZEN NO.: 60405-005  
 DRAWING NUMBER: DT-03





CITY OF BROWNSVILLE  
ENGINEERING DEPARTMENT

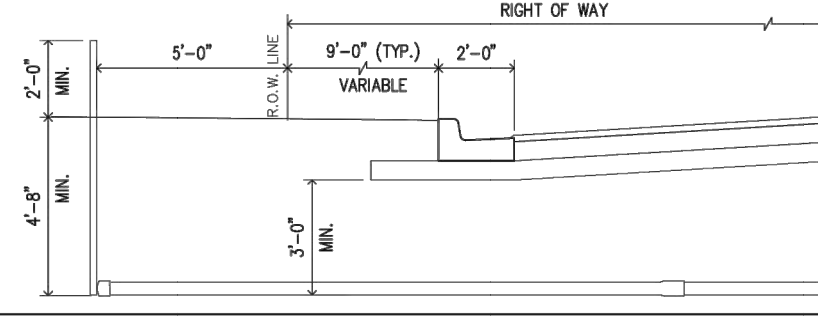
COB, ENGINEERING DEPT.  
FACILITY IMPROVEMENT

JOB NO.: #  
DATE: # R1, 2023.06.13  
DESIGN BY: #  
DRAWN BY: #  
CHECKED BY: #  
APPROVED BY: #

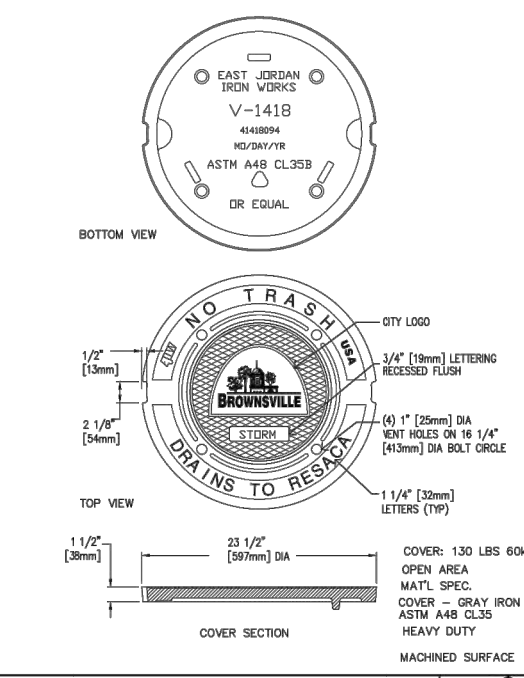
SHEET :

13.2

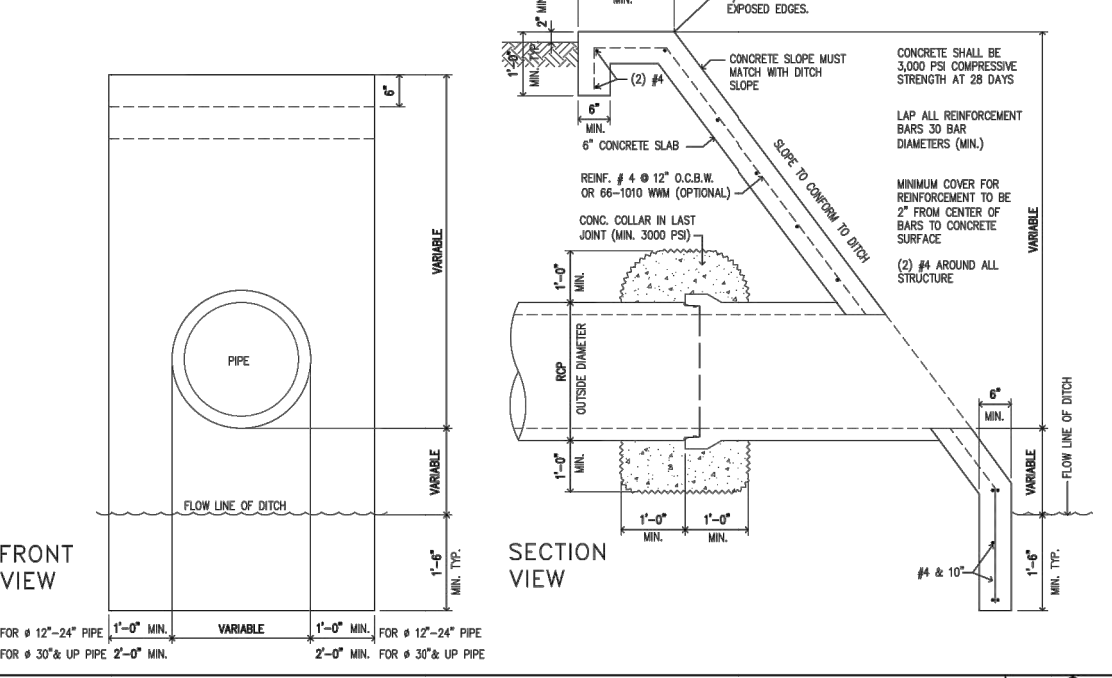
- CONTRACTOR SHALL INSTALL CONDUIT WITH PULL STRING IN CROSSING LOCATIONS INDICATED ON THE PLANS.
- CONDUIT SHALL EXTEND FIVE FEET (5') PAST RIGHT OF WAY WITH TEMPORARY CONDUIT END CAPS. WHEN WATER LINE, GAS LINE AND SEWER LINE EASEMENTS CROSS ELECTRICAL EASEMENTS, CONDUIT SHALL BE ENCASED IN CONCRETE. (1 FOOT COVERING). CONDUIT SHALL EXTEND THREE FEET (3') BEYOND EASEMENT. A WOODEN 2X4 OR OTHER VISIBLE UTILITY MARKER (PVC OR STEEL) SHALL BE INSTALLED TO LOCATE CONDUIT CROSSING ENDS. THE UTILITY MARKER SHALL BE A MINIMUM OF TWO FEET (2') ABOVE FINAL GRADE.



UNDERGROUND ELECTRICAL CROSSING DETAIL A6 NTS



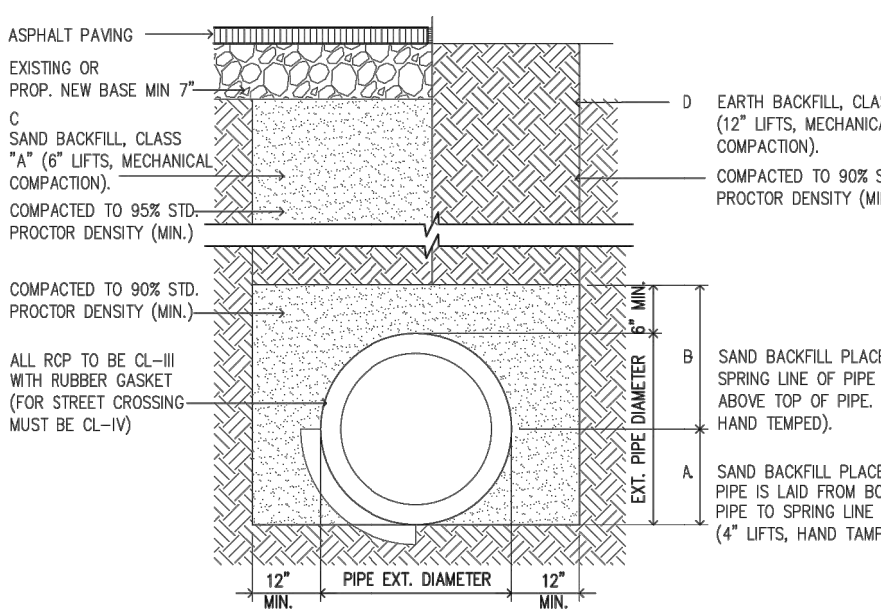
TYP. MANHOLE / INLET COVER DETAIL D2 NTS



TYP. CONCRETE HEADWALL DETAIL D4 NTS

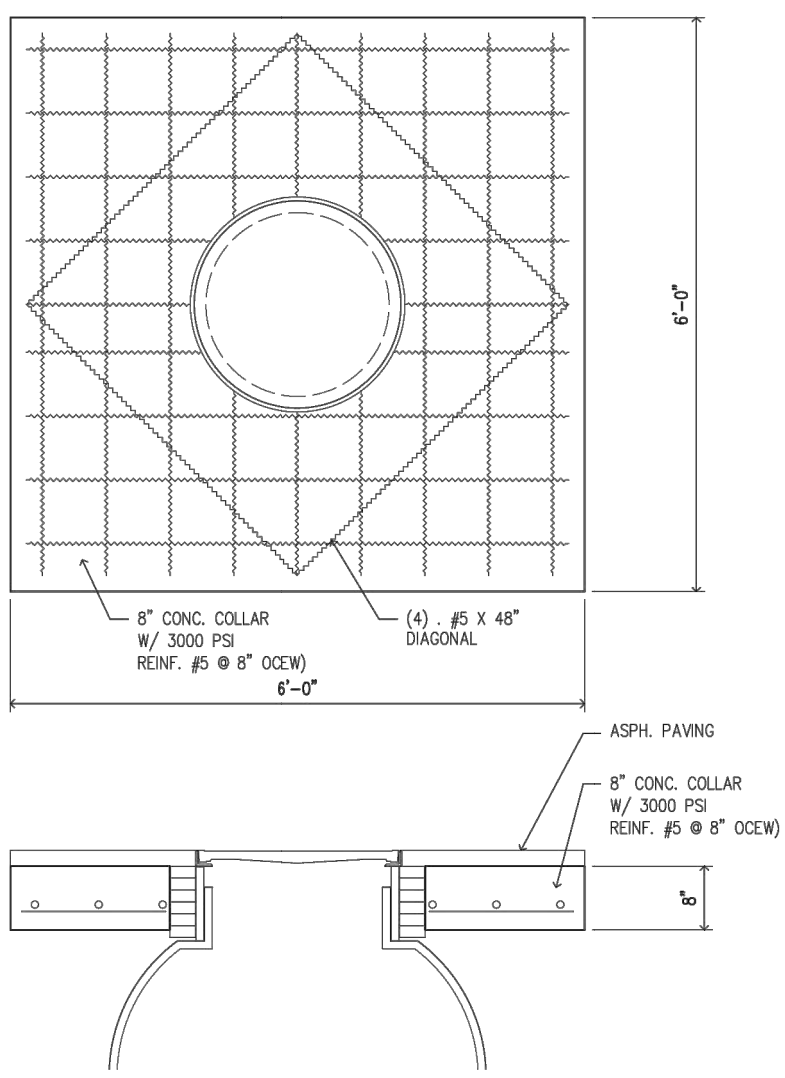
STORM DRAIN PIPES CLEARANCE					
PIPE TYPE ALLOWED	DIAMETER	EASEMENT MIN. WIDTH	CLASS / TYPE	MIN. EXCAV. WIDTH	MIN. COVER REQUIRED
RCP	18" - 30"	20'-0"	III	PIPE # + 2'	18"
RCP	36" - 72"	25'-0"	III	PIPE # + 3'	24"
RCP	LARGER	30'-0"	III	PIPE # + 3'	36"

1) ALL RCP, STORM SEWER LINES MUST BE INCREASED TO CLASS IV WHEN RUNS UNDER ROAD OR STREET

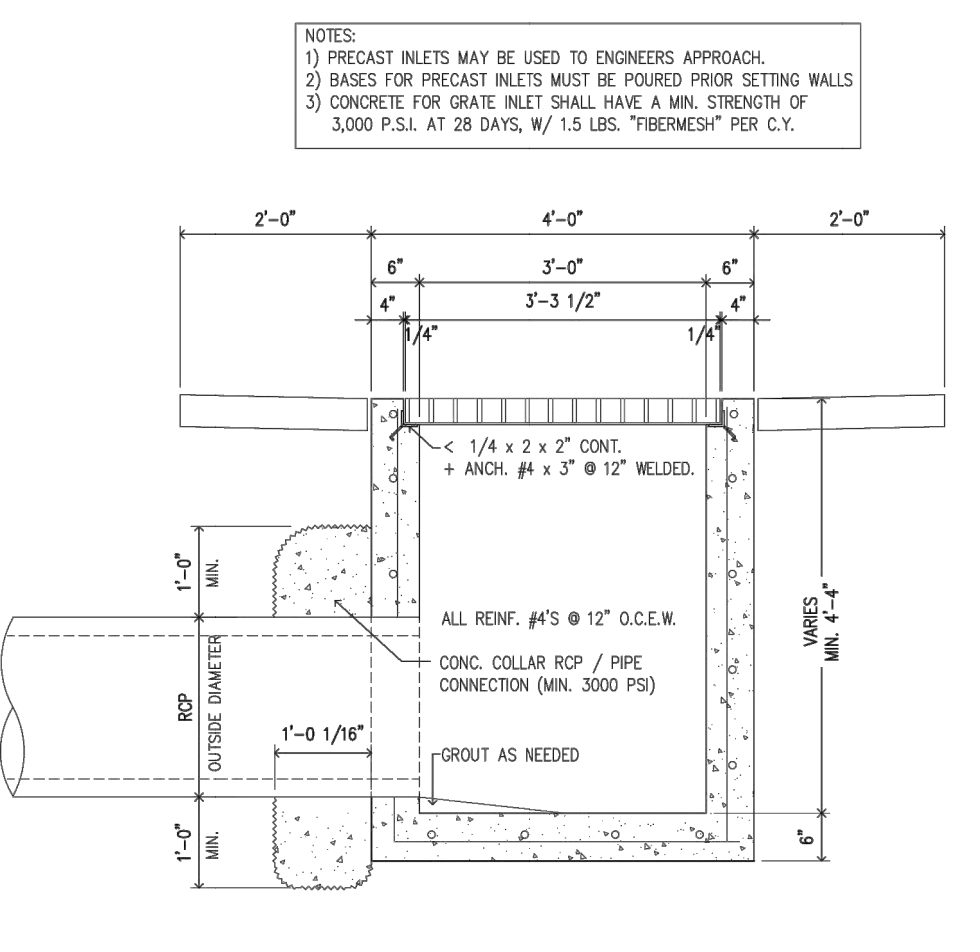


BACKFILL AT STRUCTURES SHALL BE PLACED IN UNIFORM LAYERS, MOISTENED AS REQUIRED TO APPROXIMATE OPTIMUM MOISTURE CONTENT, AND COMPACTED TO 95% STD. PROCTOR DENSITY. THE THICKNESS OF EACH LOOSE LAYER SHALL NOT EXCEED 6". STRUCTURE BACKFILL MATERIAL SHALL BE SAND, APPROVED SITE SOIL, OR OTHER APPROVED SUBSTITUTE. FOUNDATION PREPARATION (WELLPOINTS, GRAVEL OR CEMENT STABILIZATION, OR APPROVED SUBSTITUTE) SHALL BE REQUIRED WHEN TRENCH BOTTOM IS UNSTABLE.

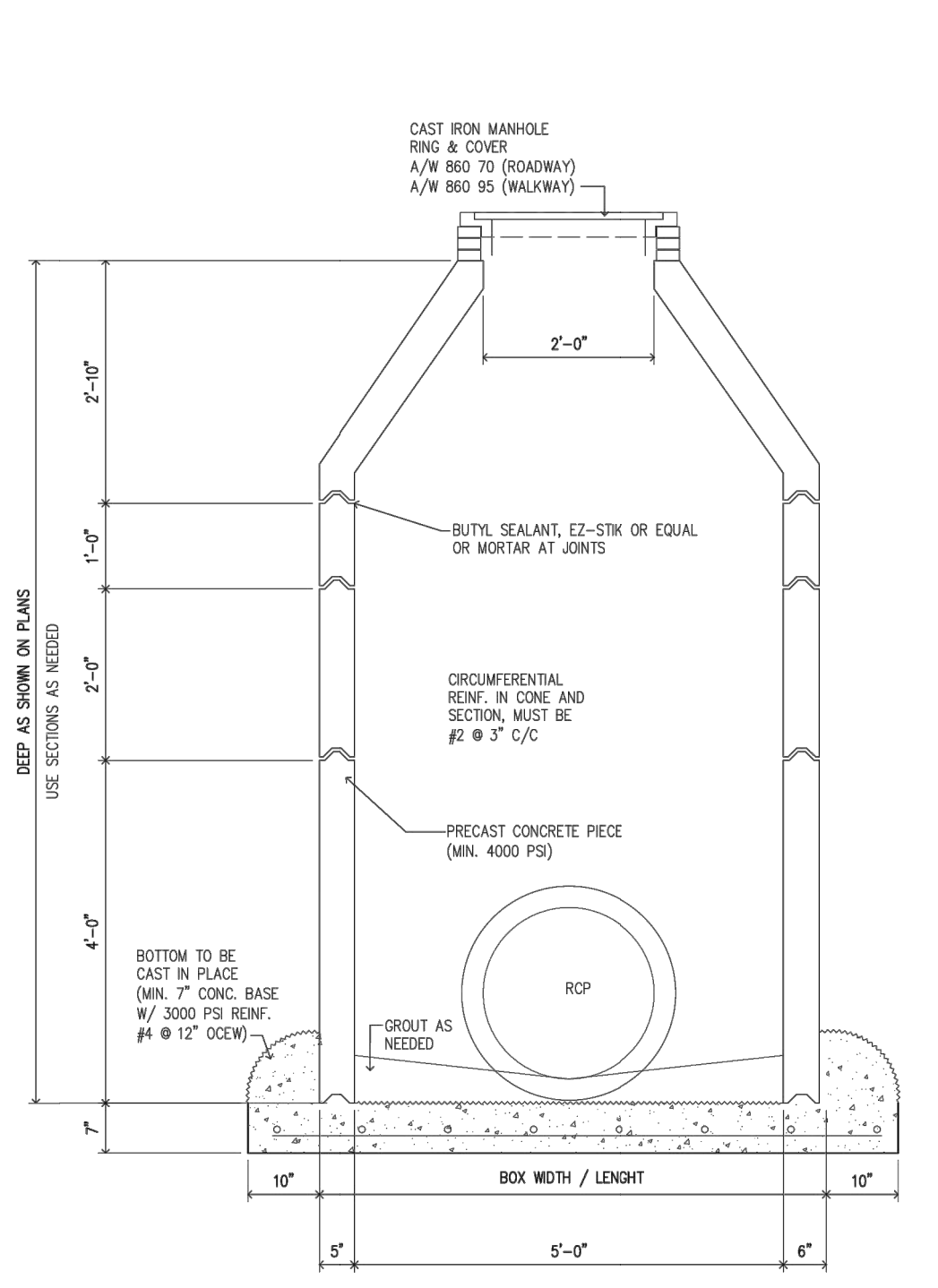
STANDARD PIPE BEDDING FOR CONCRETE PIPE DETAIL D6 NTS



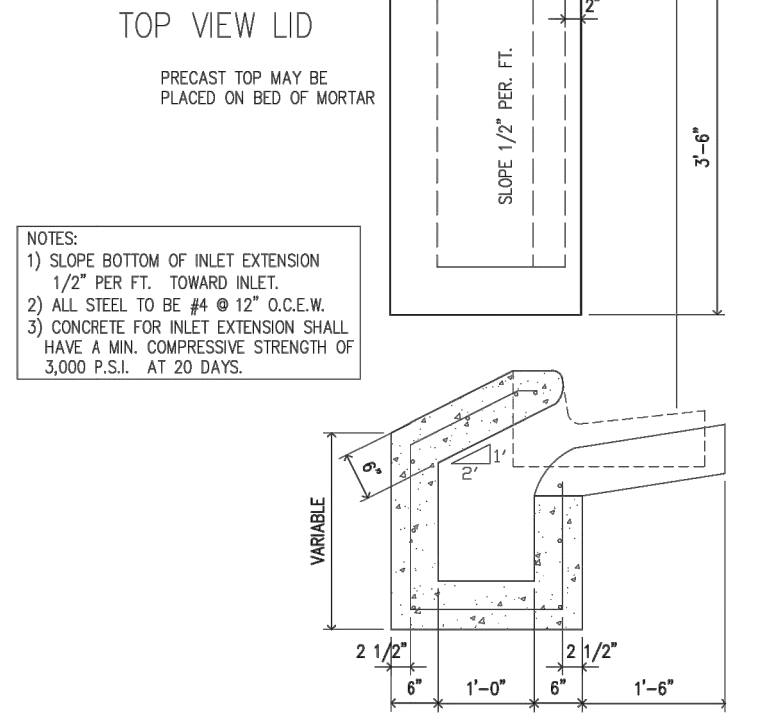
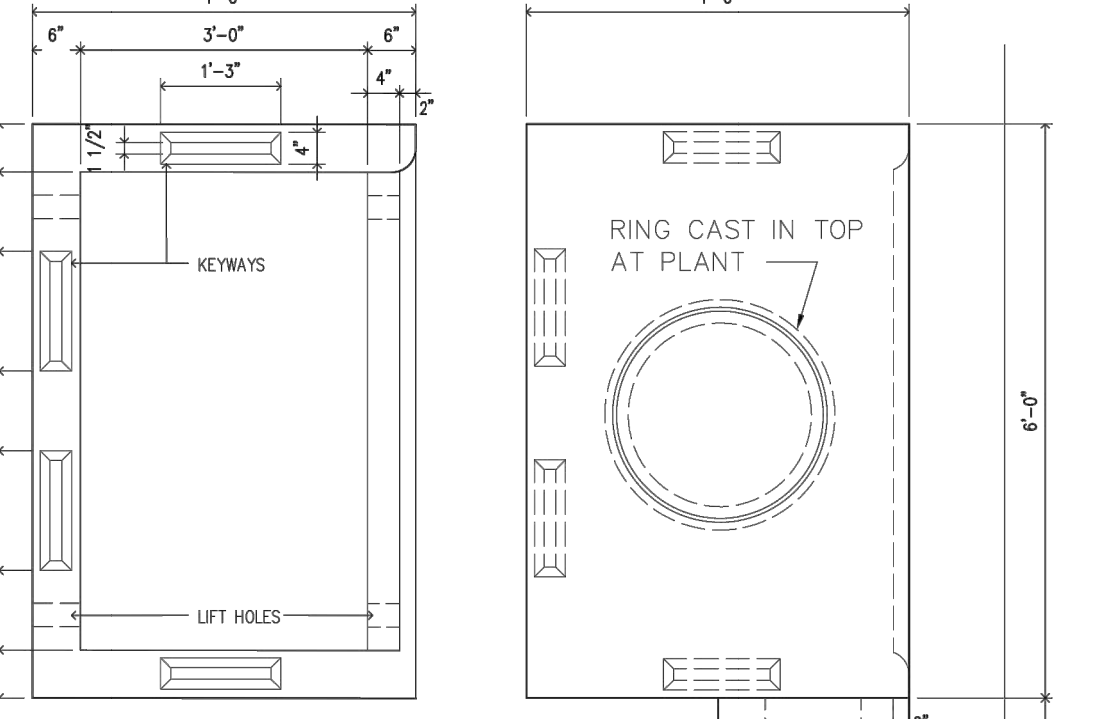
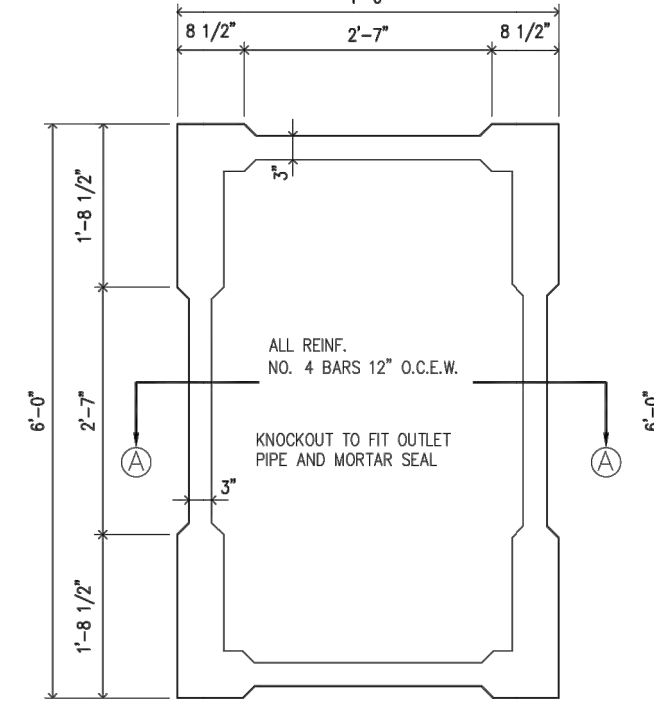
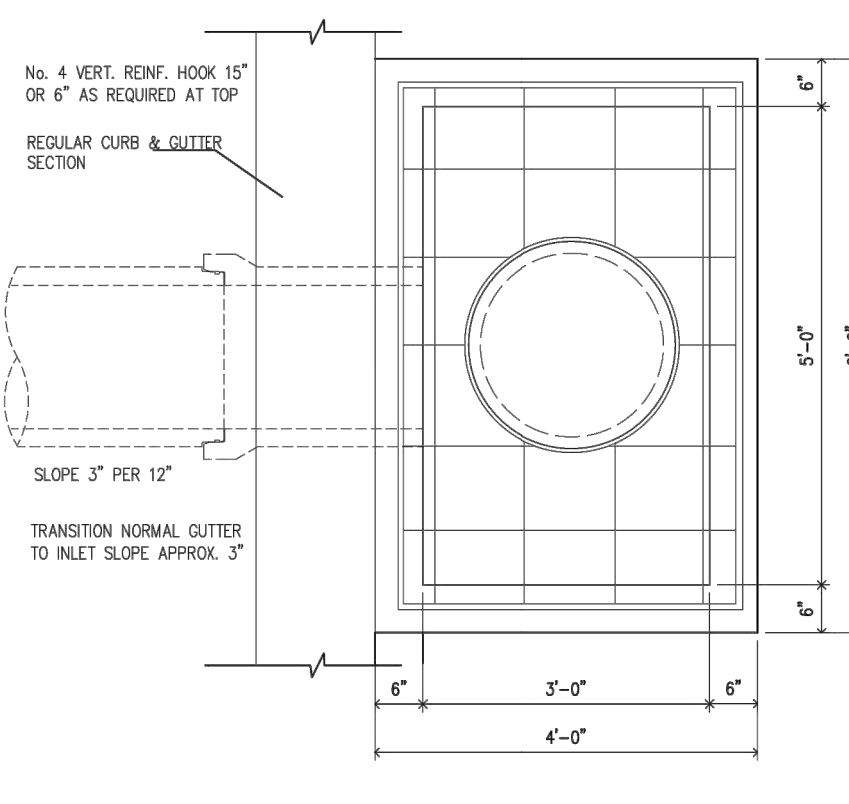
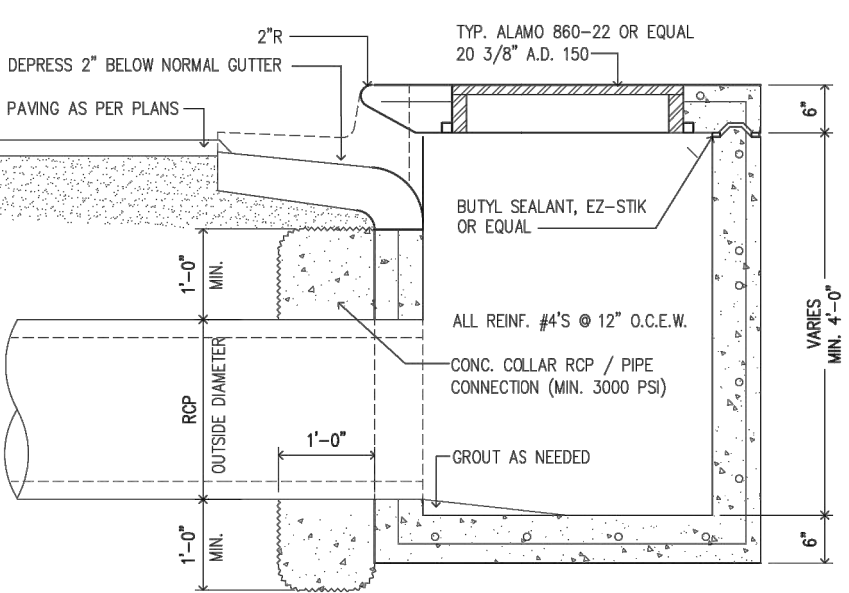
TYPICAL FIBERGLASS MANHOLE IN ASPHALT PAVING DETAIL D1 NTS



TYPICAL GRATE INLET DETAIL D4 NTS

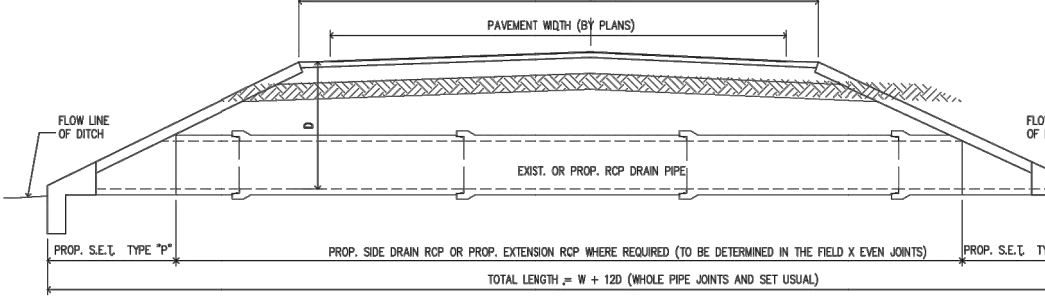
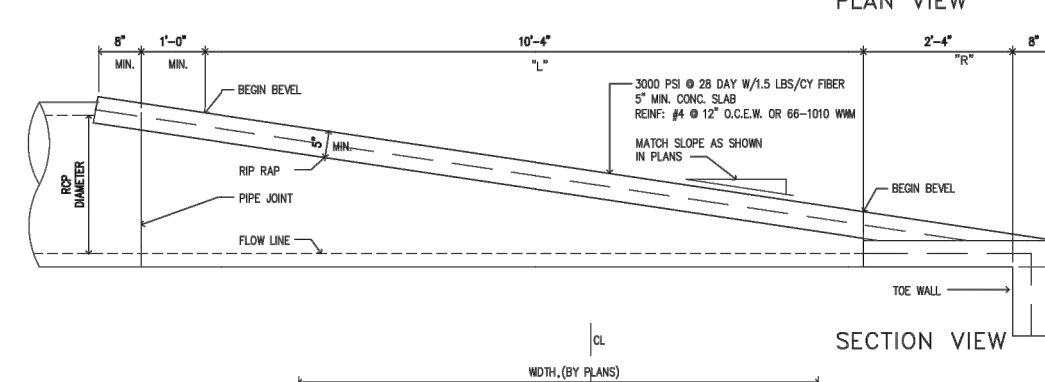
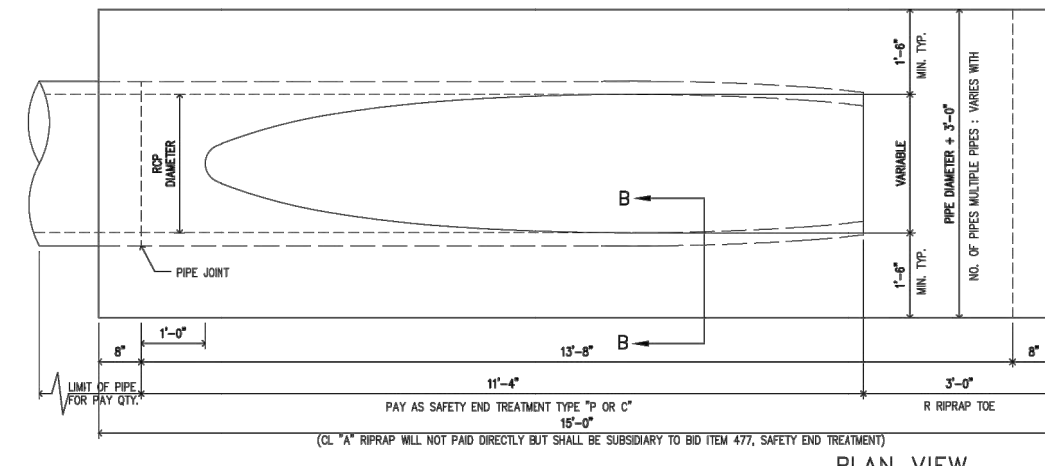


TYPICAL PRECAST CONCRETE MANHOLE DETAIL F1 NTS



TYPICAL CURB & GRATED INLET DETAIL F4 NTS

RIPRAP TOE LENGTHS	SAFETY AND TREATMENT PIPE LENGTHS					
	PIPE DIA. (IN.)	3:1	4:1	5:1	7:1	
3:1	1'-6"	12'	2'-0"	2'-6"	3'-4"	4'-0"
4:1	2'-0"	15'	2'-9 3/4"	3'-9"	4'-8 1/4"	5'-7 1/2"
5:1	2'-6"	18'	3'-7 1/2"	4'-10"	6'-0 1/2"	7'-2"
6:1	3'-0"	24'	5'-2 1/4"	6'-11"	8'-7 3/4"	10'-4 1/2"
		30'	6'-0"	8'-0"	11'-3"	13'-6"
		36'	8'-4 1/2"	11'-2"	13'-11 1/2"	16'-0"



TYP. SAFETY END DETAIL F6 NTS

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REV	ISSUED FOR	DATE	BY
	ISSUED FOR BID	10/19/23	AMGS
	ISSUED FOR		

PROJECT ENGINEER:	A. GARCIA
DESIGNED BY:	C. JONES
DRAWN BY:	Z. CROSSLEY
CHECKED BY:	J. LONDON
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"

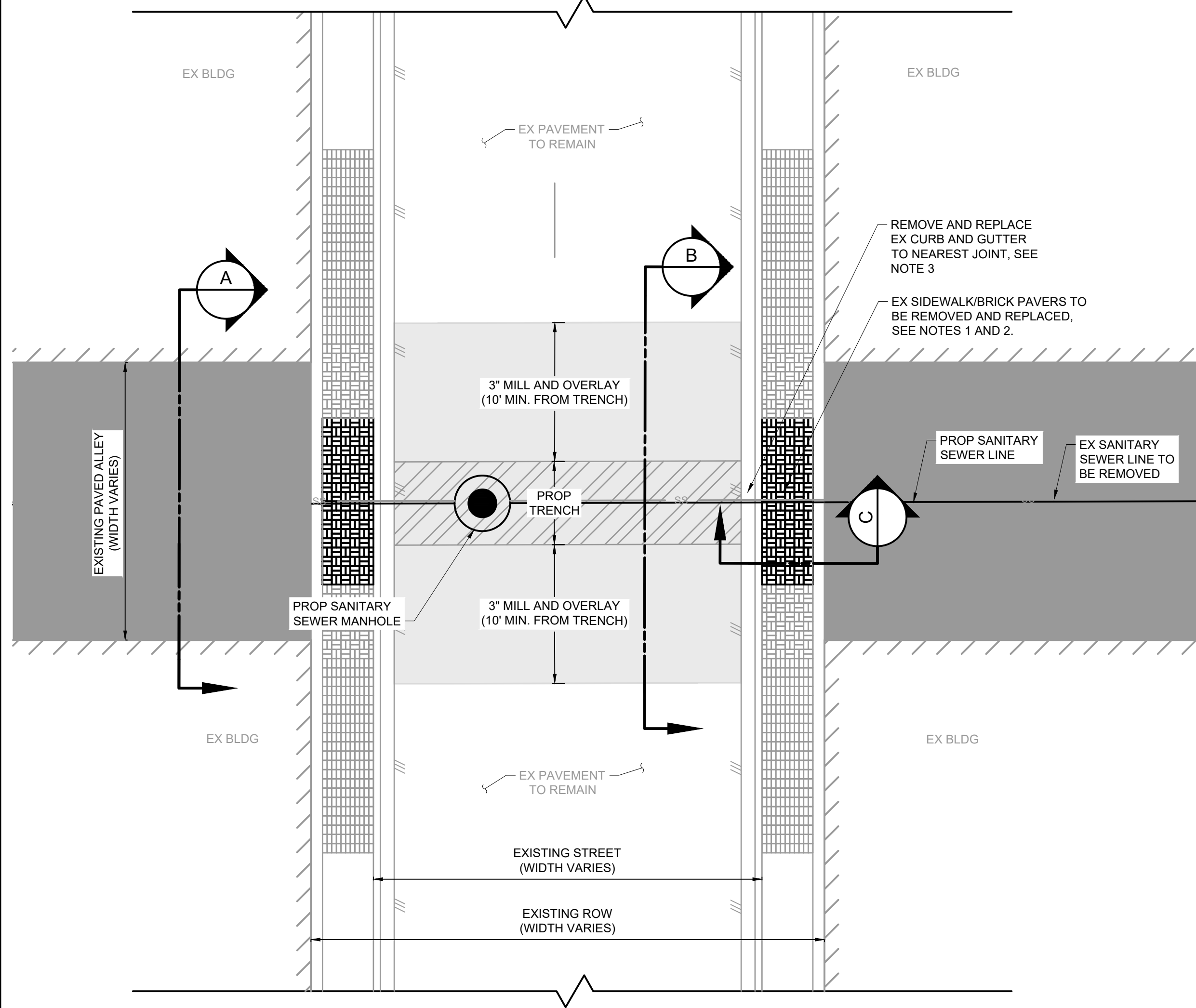


**Hazen**  
HAZEN AND SAWYER  
1100 NW LOOP 410, SUITE 700-773  
SAN ANTONIO, TEXAS 78213

BROWNSVILLE PUBLIC UTILITIES BOARD  
BROWNSVILLE, TEXAS  
DOWNTOWN WATER AND WASTEWATER IMPROVEMENTS PROJECT 2

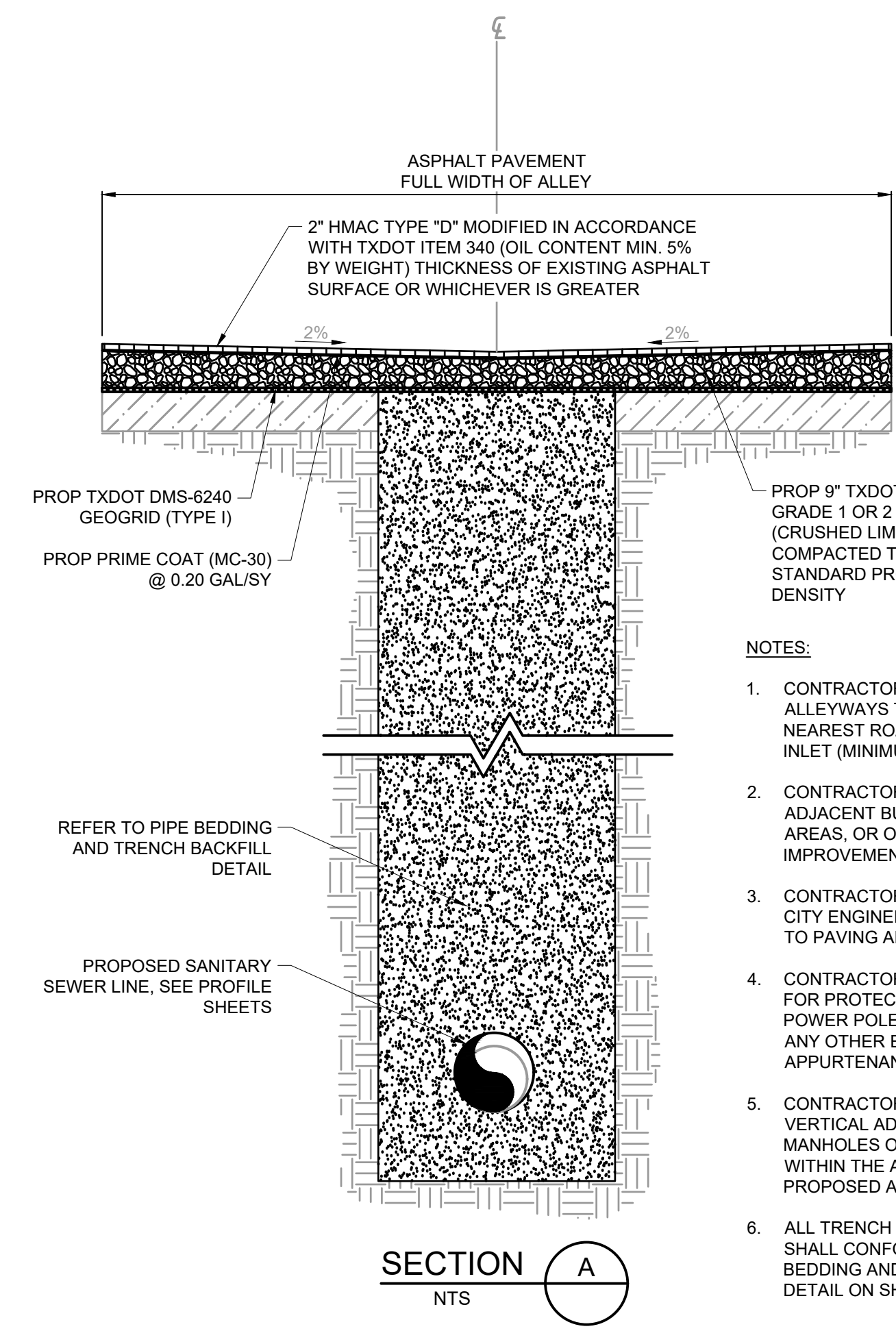
TYPICAL CONSTRUCTION DETAILS  
DATE: OCTOBER 2023  
HAZEN NO.: 60405-005  
DRAWING NUMBER:  
DT-04

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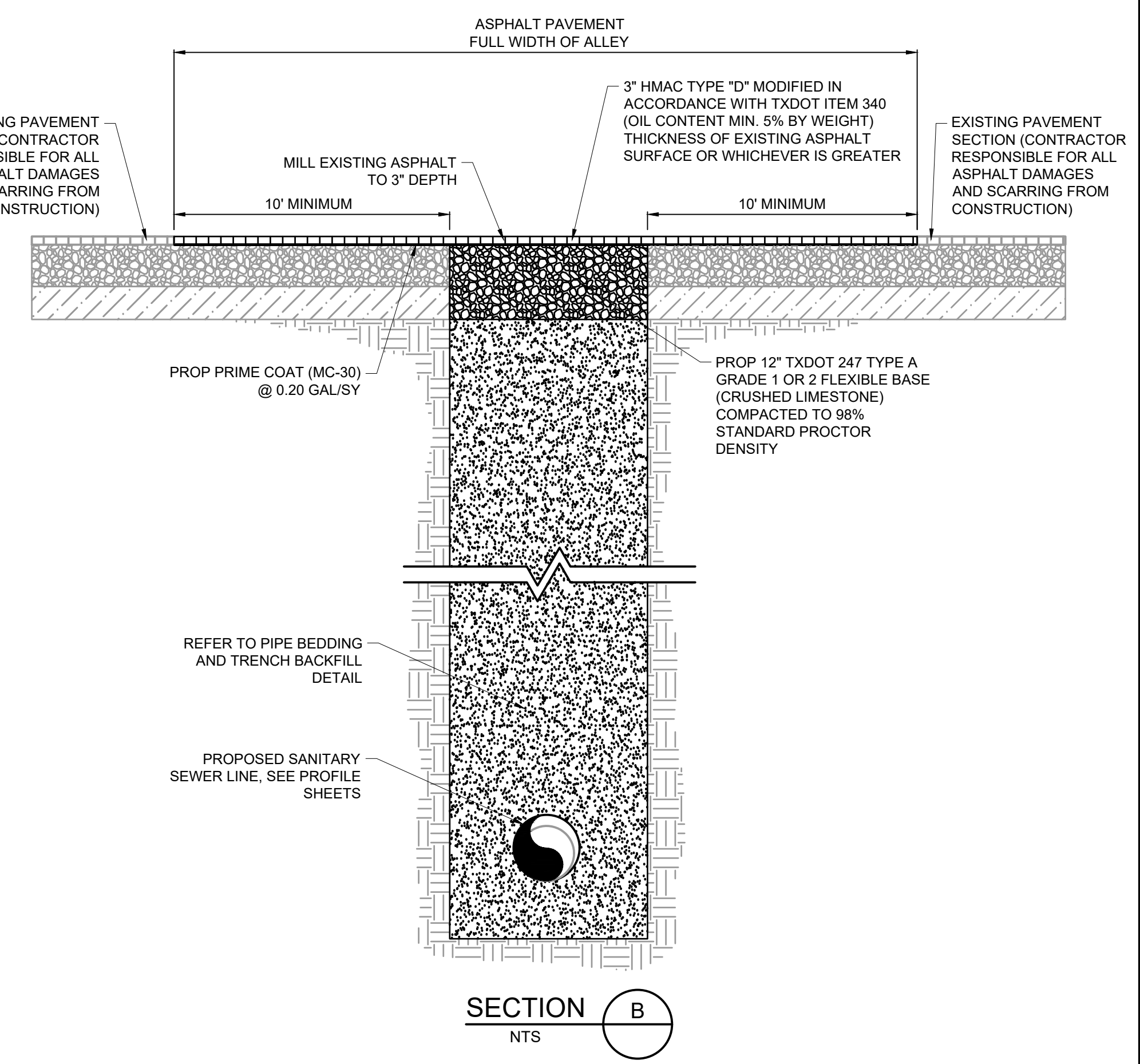
- NOTES:**
- CONTRACTOR TO REMOVE AND REPLACE SIDEWALK/BRICK PAVERS IN LIKE KIND.
  - EXISTING BRICK PAVERS SHALL BE REMOVED, STORED DURING CONSTRUCTION, AND REPLACED. CONTRACTOR TO MATCH AND REPLACE ANY EXISTING DAMAGED BRICK.
  - CONTRACTOR TO DETERMINE SIDEWALK/BRICK PAVEMENT REMOVAL LIMITS AS NEEDED BASED ON EQUIPMENT SELECTION. LIMITS SHALL NOT EXCEED FULL WIDTH OF EXISTING ALLEY.
  - CONTRACTOR IS RESPONSIBLE FOR ALL ASPHALT DAMAGES AND SCARRING FROM CONSTRUCTION.
  - TRENCH CUT DETAILS PERTAIN TO ALLEY INTERSECTIONS WITHOUT ADJACENT ROADWAY REPLACEMENT. ALLEY INTERSECTIONS AT 7TH, 8TH, 9TH, AND 11TH STREET ALONG ALIGNMENT SS-1. ALLEY INTERSECTIONS AT 7TH, 8TH, AND 9TH STREET ALONG ALIGNMENT SS-2. SEE RESTORATION PLAN SHEETS C-25-#### FOR PAVING LIMITS.

**TRENCH CUT DETAIL**  
NTS



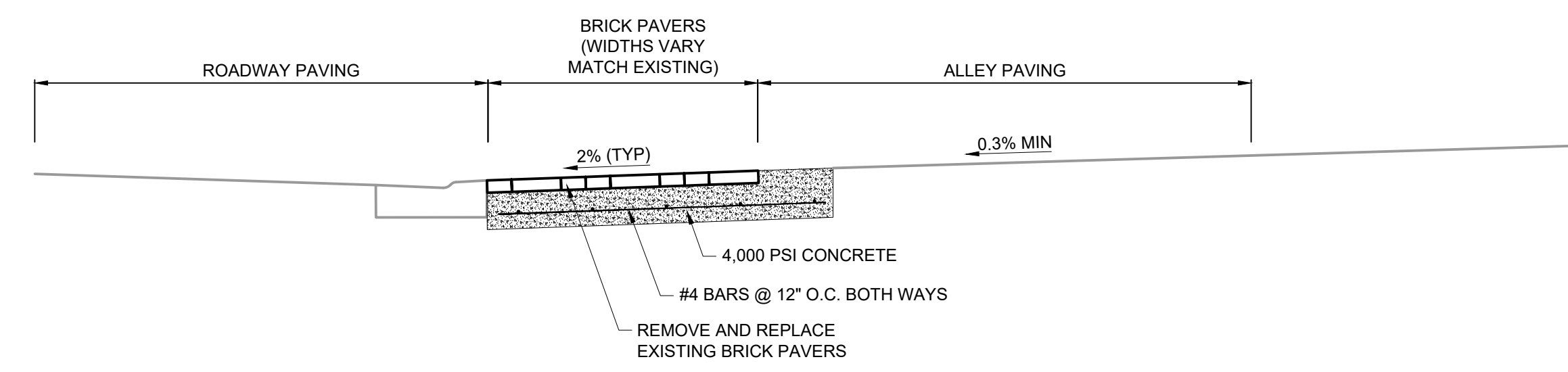
- NOTES:**
- CONTRACTOR SHALL GRADE ALL ALLEYS TO DRAIN TO THE NEAREST ROADWAY GUTTER OR INLET (MINIMUM SLOPE = 0.30%).
  - CONTRACTOR SHALL VERIFY ALL ADJACENT BUILDINGS, PARKING AREAS, OR OTHER EXISTING IMPROVEMENTS PROPERLY DRAIN.
  - CONTRACTOR SHALL OBTAIN THE CITY ENGINEER'S APPROVAL PRIOR TO PAVING ANY ALLEYWAY.
  - CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING POWER POLES, MANHOLES, AND ANY OTHER EXISTING APPURTENANCES.
  - CONTRACTOR SHALL MAKE ANY VERTICAL ADJUSTMENTS TO ALL MANHOLES OR CLEAN OUT RISERS WITHIN THE ALLEY TO MEET PROPOSED ALLEY GRADES.
  - ALL TRENCH BACKFILL DIMENSIONS SHALL CONFORM TO TYPICAL PIPE BEDDING AND TRENCH BACKFILL DETAIL ON SHEET DT-02.

**SECTION A**  
NTS



- NOTES:**
- CONTRACTOR SHALL OBTAIN THE CITY ENGINEER'S APPROVAL PRIOR TO PAVING ANY ALLEYWAY.
  - CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING POWER POLES, MANHOLES, AND ANY OTHER EXISTING APPURTENANCES.
  - CONTRACTOR SHALL MAKE ANY VERTICAL ADJUSTMENTS TO ALL MANHOLES OR CLEAN OUT RISERS WITHIN THE ALLEY TO MEET PROPOSED ALLEY GRADES.
  - ALL TRENCH BACKFILL DIMENSIONS SHALL CONFORM TO TYPICAL PIPE BEDDING AND TRENCH BACKFILL DETAIL ON SHEET DT-02.


**SECTION B**  
NTS



- NOTES:**
- CONTRACTOR SHALL RECORD EXACT REMOVAL DIMENSION LIMITS PRIOR TO REMOVAL OF EACH DRIVEWAY. ANY NON-DAMAGED BRICK PAVERS WILL THEN BE REMOVED, STORED DURING CONSTRUCTION, AND REPLACED.
  - ALL EXISTING DAMAGED BRICK MUST BE REPLACED IN KIND. BRICK PAVEMENT COLOR, SIZE, AND SPECIFICATIONS SHALL BE REVIEWED AND APPROVED. CONTRACTOR TO RECEIVE WRITTEN AUTHORIZED OWNER REPRESENTATIVE APPROVAL OF REPLACEMENT BRICKS PRIOR TO INSTALLATION.
  - ALL CONCRETE SUBBASE SHALL BE SAWCUT AT CLEAN EDGE AT BRICK PAVEMENT REMOVAL LIMITS. ALL PROPOSED CONCRETE SUBBASE SHALL BE DOWELED AT A MINIMUM OF 12\"/>
  - CONTRACTOR IS FULLY RESPONSIBLE TO REPLACE ANY DAMAGE TO BRICK PAVERS OR CONCRETE SUBBASE DURING CONSTRUCTION.

**SECTION C**  
NTS

PROJECT ENGINEER:	A. GARCIA		
DESIGNED BY:	C. JONES		
DRAWN BY:	Z. CROSSLEY		
CHECKED BY:	J. LONDON		
ISSUED FOR BID	10/19/23	AMGS	
REV	ISSUED FOR	DATE	BY

  
 10/19/2023

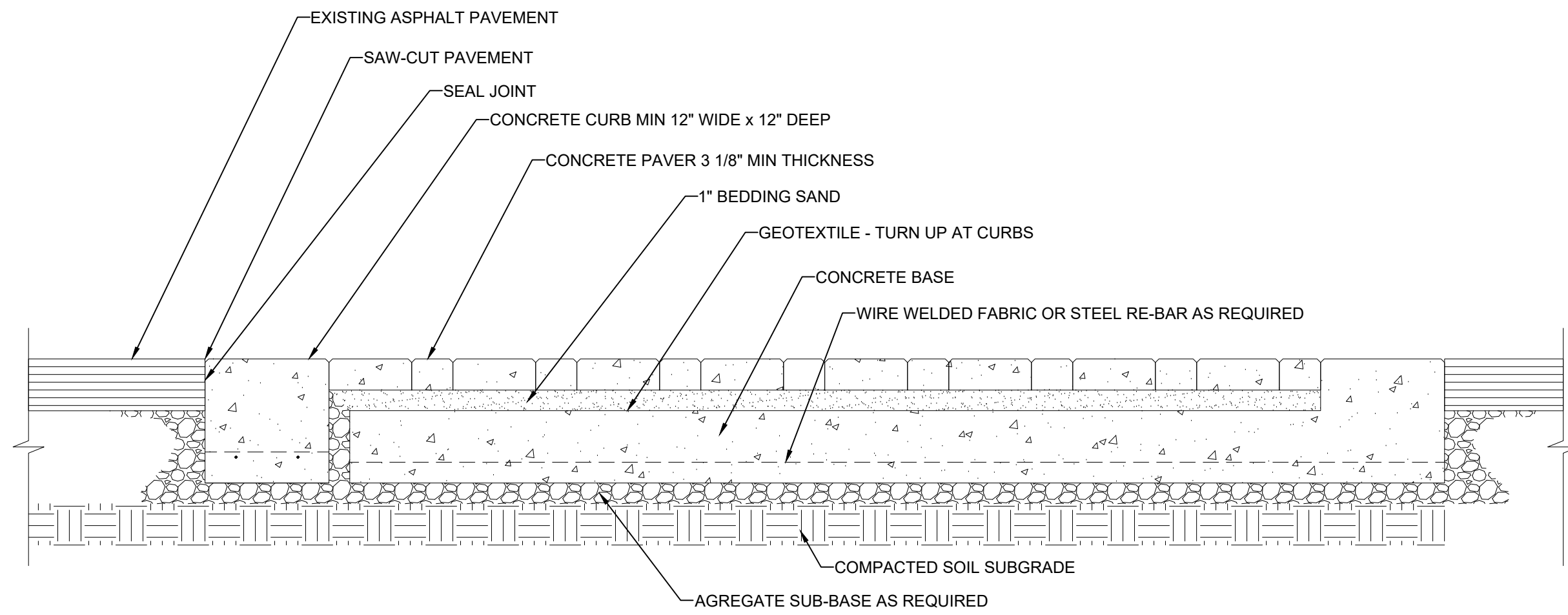
  
 HAZEN AND SAWYER  
 1100 NW LOOP 410, SUITE 700-773  
 SAN ANTONIO, TEXAS 78213

BROWNSVILLE PUBLIC UTILITIES BOARD  
 BROWNSVILLE, TEXAS  
 DOWNTOWN WATER AND WASTEWATER  
 IMPROVEMENTS PROJECT 2

MISCELLANEOUS DETAILS  
 DT-05

DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	

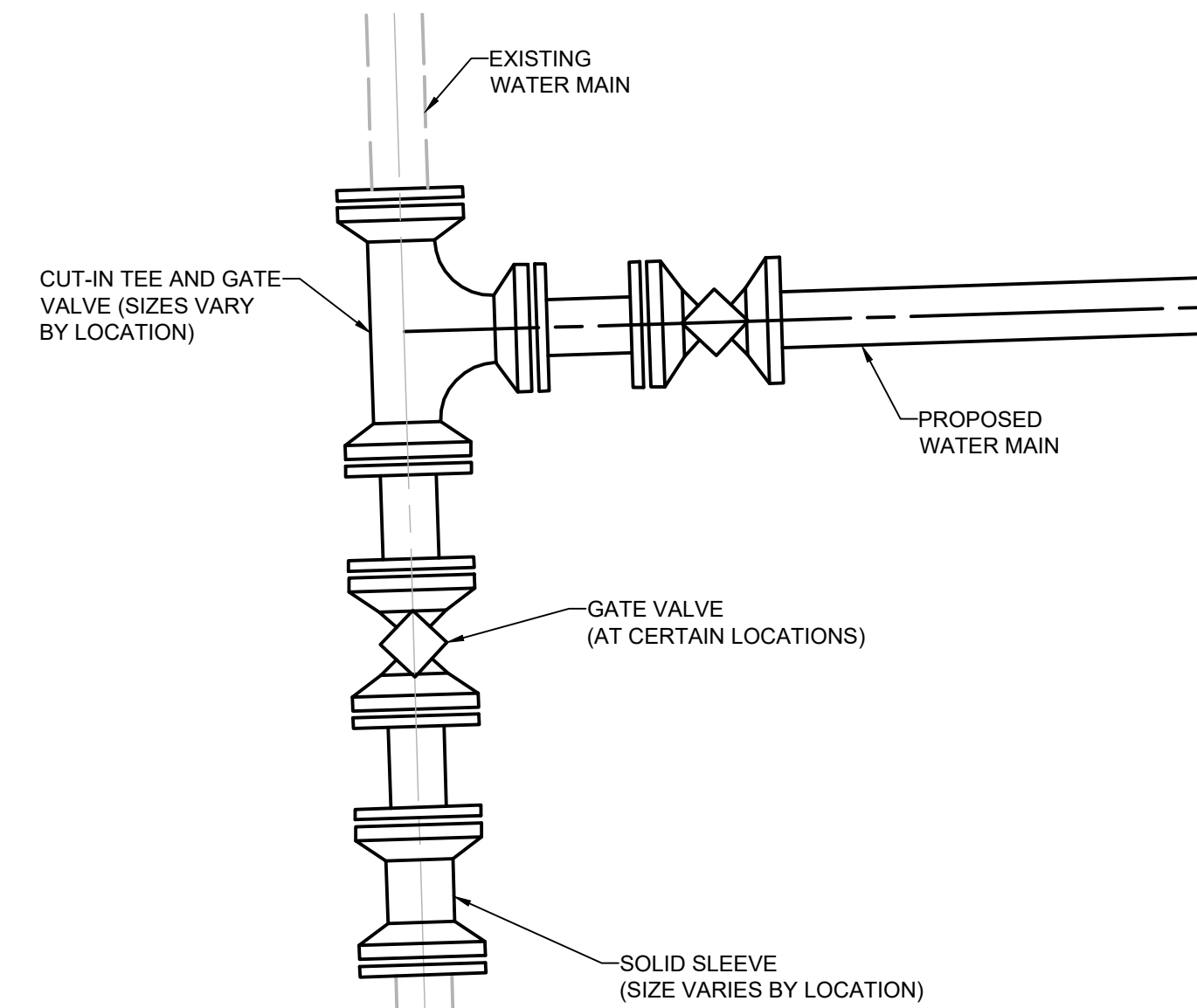




- NOTE:
1. BASE THICKNESS AND REINFORCING VARIES WITH TRAFFIC, CLIMATE, AND SUBGRADE CONDITIONS.
  2. CONCRETE BASE MINIMUM 2% SLOPE FROM CENTERLINE TO CURB.
  3. DO NOT PROVIDE DRAIN HOLES TO SUBGRADE WHEN WATER TABLE IS LESS THAN 2 FT FROM TOP OF SOIL SUBGRADE. PROVIDE DRAIN HOLES TO CATCH BASINS.

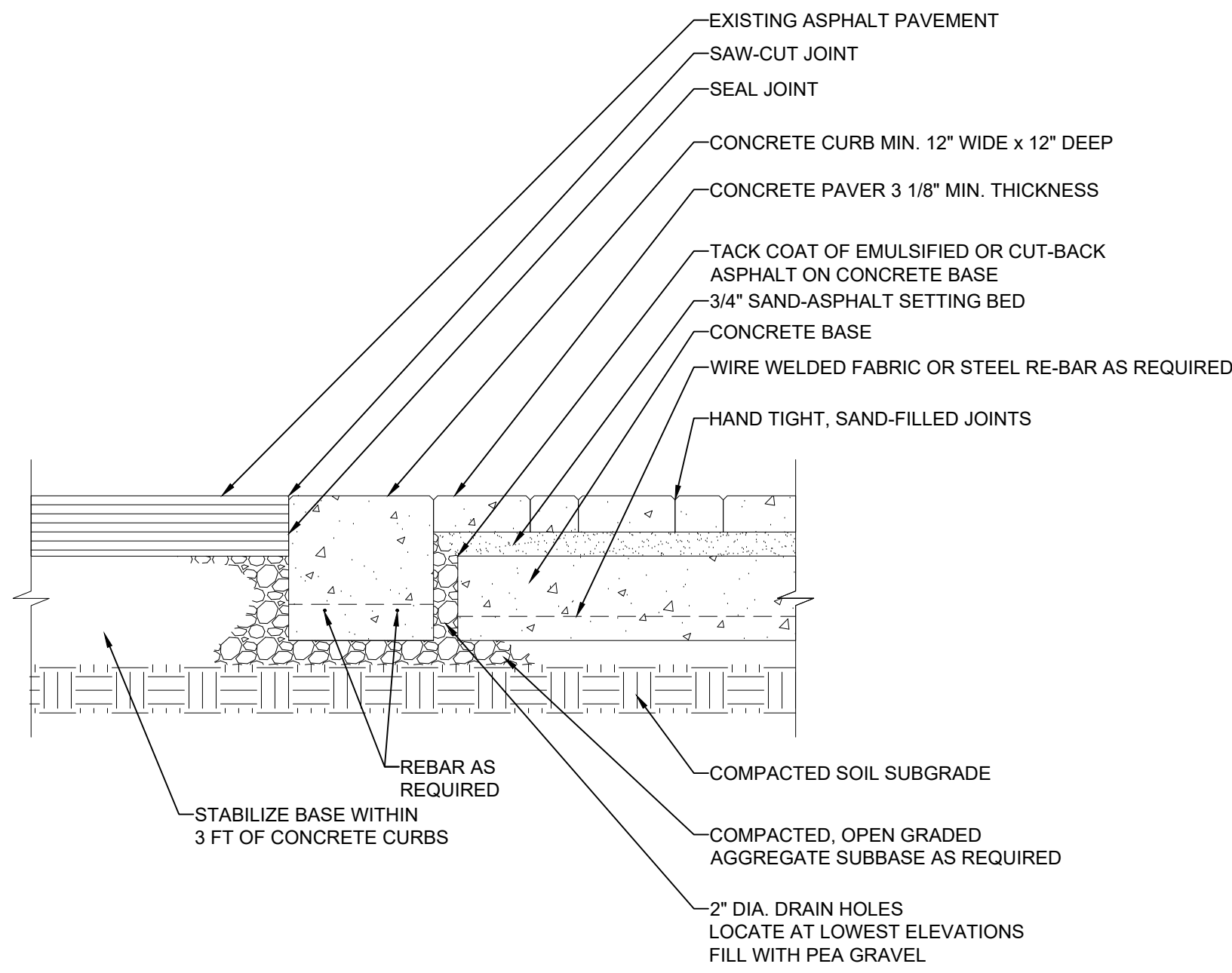
**DECORATIVE BRICK CROSSWALK WITH CONCRETE RUNNERS**

1" = 1'



**TYPICAL TIE-IN FOR WATER MAINS**

1. DETAIL IS MEANT TO INDICATE GENERAL CONFIGURATION FOR ALL WATER MAIN TIE-INS.
2. TIE-IN SIZES VARY BY LOCATION. REFER TO PLAN AND PROFILE DRAWINGS.
3. CERTAIN LOCATIONS MAY NOT INCLUDE INSTALLATION OF AN ADDITIONAL VALVE ON THE EXISTING WATER MAIN AS SHOWN ABOVE. REFER TO PLAN AND PROFILE DRAWINGS FOR EXACT REQUIREMENTS.
4. ALL JOINTS SHALL BE RESTRAINED.



**CONCRETE RUNNER DETAIL**

1" = 1'

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PLOT DATE: 10/19/2023 11:20 AM BY: ZCROSSLEY

PROJECT ENGINEER:	A. GARCIA		
DESIGNED BY:	C. JONES		
DRAWN BY:	Z. CROSSLEY		
CHECKED BY:	J. LONDON		
ISSUED FOR BID	10/19/23	AMGS	
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0	1/2"	1"
REV	ISSUED FOR	DATE	BY



**Hazen**  
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BROWNSVILLE PUBLIC UTILITIES BOARD  
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IMPROVEMENTS PROJECT 2

MISCELLANEOUS DETAILS

DATE:	OCTOBER 2023
HAZEN NO.:	60405-005
DRAWING NUMBER:	

DT-06