

B R O W N S V I L L E
PUBLIC UTILITIES BOARD

CITY OF BROWNSVILLE PUBLIC UTILITIES BOARD
DOWNTOWN WASTEWATER IMPROVEMENTS
ARPA PROJECT 1

NOVEMBER 2023

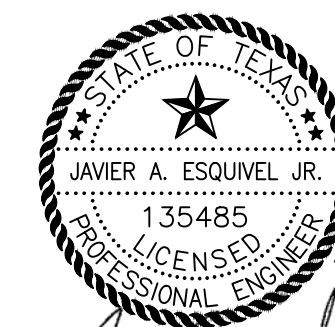
BOARD MEMBERS

- JOHN F. COWEN, JR. - MAYOR
- ARTHUR "ART" RENDON - CHAIR
- JOSEPH L. HOLLMANN, Ph.D. - VICE CHAIR
- DAISY ZAMORA, Ph. D. - SECRETARY/TREASURER
- ALEJANDRO "ALEX" NAJERA - MEMBER
- PATRICIO SAMPAYO - MEMBER
- GERARDO MARTINEZ - MEMBER

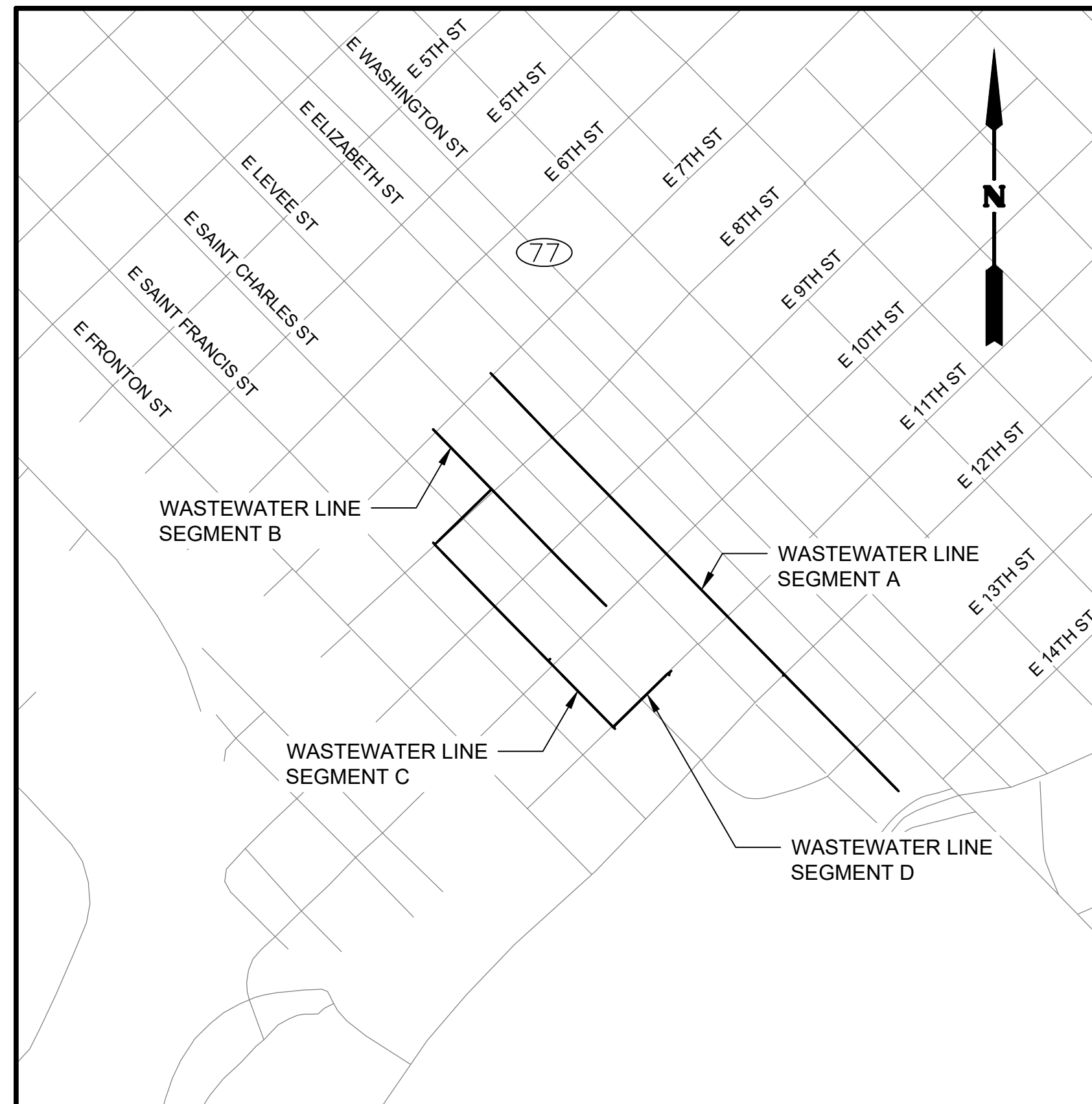
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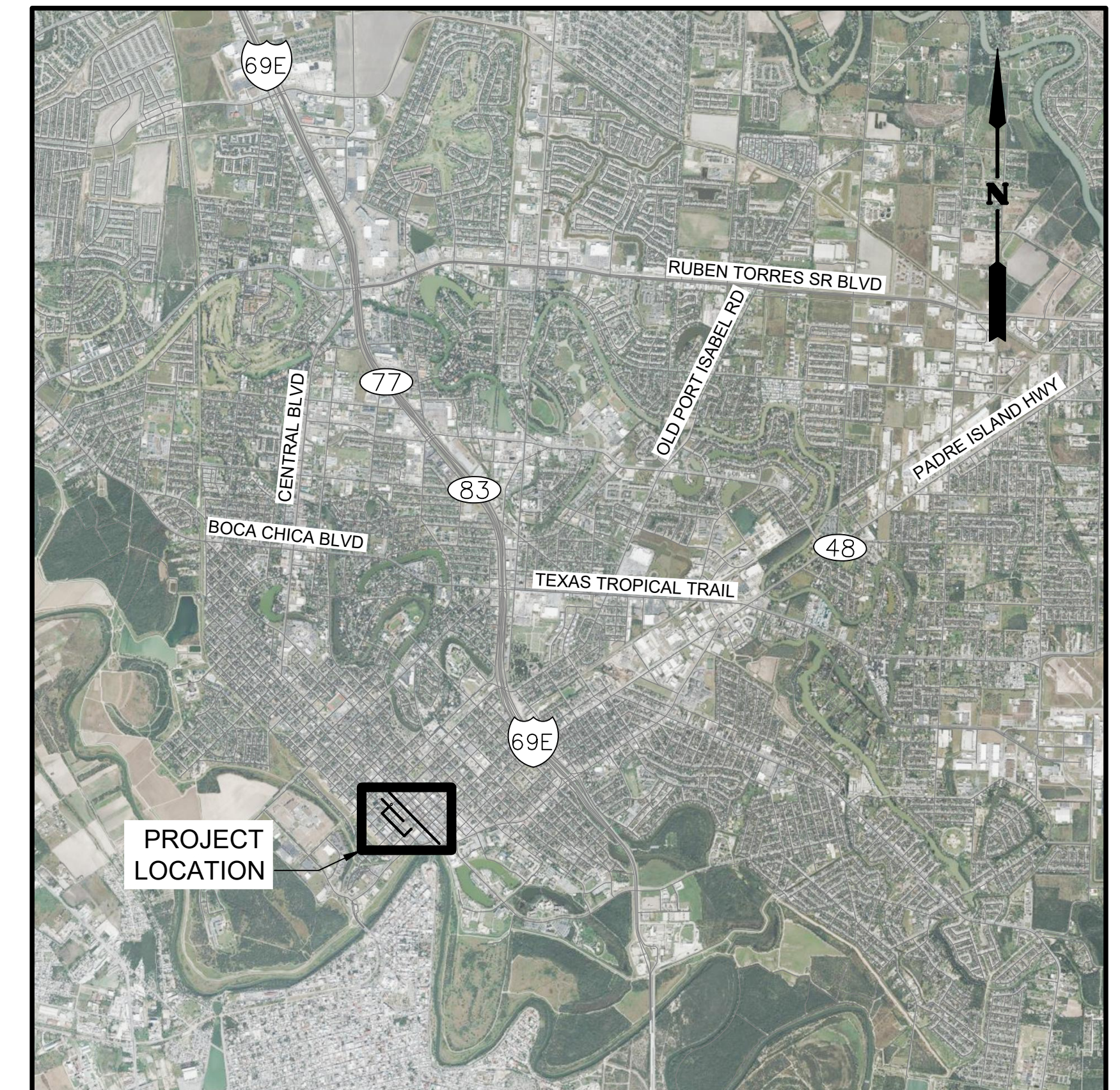
12500 SAN PEDRO, STE. 450
SAN ANTONIO, TEXAS 78216
TPBE REGISTRATION NO.: F-1741



11/10/2023



VICINITY MAP
N.T.S.



LOCATION MAP
N.T.S.

GENERAL NOTES

- ALL THE WORK UNDER THIS CONTRACT SHALL BE PERFORMED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND ALL APPLICABLE LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS.
- PRIOR TO BID AND CONSTRUCTION, CONTRACTOR SHALL CONDUCT A SITE VISIT TO VERIFY CONSTRUCTION SPACING LIMITATIONS AND PROXIMITY TO BUILDINGS. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING EXISTING STRUCTURES NOT SPECIFICALLY CALLED OUT IN PLANS AT NO ADDITIONAL COST TO THE OWNER.
- TOLERANCES:
PIPELINE AND DUCT BANKS ALIGNMENT: ±1.0"/1000'
PIPELINE AND DUCT BANKS GRADE: ±0.05"/100'
- OTHER CONTRACTORS MAY BE WORKING ON THE SITE IN CONJUNCTION WITH OTHER CONCURRENT CONTRACTS. CONTRACTOR SHALL COORDINATE ACTIVITIES WITH OTHER CONTRACTORS ON SITE, THE OWNER AND THE OWNER'S CONSTRUCTION REPRESENTATIVE.
- EXCAVATION BY "BLASTING", UNDER ANY CIRCUMSTANCES, IS NOT ALLOWED ON THIS PROJECT.
- GROUNDWATER AT THE PROPOSED SITE WILL VARY DEPENDING ON SEASONAL VARIATIONS AND SUBSURFACE CONDITIONS. GROUNDWATER LEVELS PROVIDED IN THE BORING LOGS AND SHOWN ON THE DRAWINGS ARE ONLY AN INDICATION OF GROUNDWATER LEVELS AT THE TIME OF DRILLING THE BORINGS. THE CONTRACTOR IS RESPONSIBLE FOR ANY ADDITIONAL WORK RESULTING FROM ENCOUNTERING GROUNDWATER DURING CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.
- EXISTING VALVES AND PIPELINES WILL LEAK IN THE CLOSED POSITION. CONTRACTOR SHALL PROVIDE WHATEVER MEANS AND EQUIPMENT NECESSARY TO CONTROL WATER DURING CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.
- INFORMATION SHOWN ON THE DRAWINGS CONCERNING TYPE, LOCATION, DIMENSIONS, ELEVATION AND RELATED INFORMATION OF EXISTING PIPES AND STRUCTURES WAS OBTAINED FROM CONSTRUCTION DRAWINGS OF PREVIOUS PROJECTS FURNISHED BY BPUB. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING HIS OWN DETERMINATION OF THE ACTUAL SIZE, LOCATION AND ELEVATIONS OF EXISTING FACILITIES. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MAKING WHATEVER ADJUSTMENTS ARE NECESSARY IN HIS WORK TO FIT WITHIN THE EXISTING FACILITIES AT NO ADDITIONAL COST TO THE CITY. THE LOCATIONS AND DEPTHS OF ALL EXISTING UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE, BASED ON AVAILABLE INFORMATION, AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE ENGINEER, THE OWNER, OR THE OWNER'S REPRESENTATIVE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE SIZE, ELEVATION OF EXISTING UTILITIES, AND DRAINAGE STRUCTURES AT LEAST 48 HOURS PRIOR TO SUBMITTING SHOP DRAWINGS AND COMMENCING FABRICATION OF MATERIALS. WHETHER SHOWN ON THE PLANS OR NOT, AND TO PROTECT THE SAME DURING CONSTRUCTION. FINDINGS SHALL BE DOCUMENTED BY CONTRACTOR IN RECORD DRAWINGS. THE CONTRACTOR SHALL NOTIFY ENGINEER AND BPUB INSPECTOR OF ANY CONFLICTS WITH PROPOSED WORK. THE CONTRACTOR MUST VERIFY ACTUAL LOCATIONS AND DEPTHS OF UTILITIES PRIOR TO COMMENCING FABRICATION OF MATERIALS. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
- THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UNDERGROUND UTILITIES AND DRAINAGE STRUCTURE PRIOR TO CONSTRUCTION WHETHER SHOWN ON THE PLANS OR NOT. THE FOLLOWING CONTACT INFORMATION ARE SUPPLIES FOR VERIFICATION PURPOSES.

A. CITY OF BROWNSVILLE ENGINEERING DEPARTMENT	(956) 541 - 1012
B. CITY OF BROWNSVILLE PUB	(956) 983 - 6100
C. TEXAS 811	(800) 344 - 8377
D. TEXAS GAS SERVICE	(800) 959 - 5325
E. HESCO	(956) 330 - 4758
F. SPECTRUM/TIME WARNER CABLE	(800) 222 - 5355
G. AT&T TEXAS	(800) 288 - 2020
H. AMERICAN ELECTRIC AND POWER (AEP) TEXAS	(800) 277 - 2177
I. MAGIC VALLEY ELECTRICAL COOPERATIVE (MVEC)	(866) 225 - 5683
J. BROADBAND - COORDINATE WITH COB ENGINEERING DEPARTMENT	
- CONTRACTOR'S PERSONNEL SHALL HAVE IDENTIFYING CLOTHING OR HATS AT ALL TIMES. THE CONTRACTOR SHALL HAVE IDENTIFICATION ON ALL VEHICLES.
- CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS, ANY AVAILABLE GEOTECHNICAL INFORMATION, AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO DEVELOP THE CONTRACTOR'S PLANS TO IMPLEMENT THE PROJECT SPECIFIC TRENCH SAFETY PLAN DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S PLANS SHALL PROVIDE FOR ADEQUATE TRENCH SAFETY SYSTEMS THAT COMPLY WITH, AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL DEVELOP AND IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION. THE SAFETY PROGRAM SHALL BE SUBMITTED FOR RECORD TO BPUB AND NO CONSTRUCTION OR MOBILIZATION SHALL OCCUR PRIOR TO ACCEPTANCE OF THE SAFETY PROGRAM.
- THE CONTRACTOR SHALL PROVIDE A COURSE OF ACTION PLAN FOR THE OCCURRENCE OF AN ACCIDENTAL SPILL OF FUEL OR OTHER SUBSTANCE DURING CONSTRUCTION. THE ACTION PLAN SHALL BE SUBMITTED FOR REVIEW TO BPUB. NO CONSTRUCTION OR MOBILIZATION SHALL OCCUR PRIOR TO ACCEPTANCE OF THE ACTION PLAN.
- CONTRACTOR SHALL VIDEO TAPE AND PHOTOGRAPH ALL EXISTING ROADS, FENCING, STRUCTURES, BUILDINGS, AND AREA SURROUNDING THE PROPOSED WORK PRIOR TO MOBILIZATION TO DOCUMENT THE CONDITION OF THESE ROADS AND FACILITIES. CONTRACTOR SHALL SUBMIT VIDEO TAPE AND PHOTOGRAPHS PRIOR TO MOBILIZATION. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING FACILITIES DUE TO HIS CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL REPAIR SUCH DAMAGE TO THE OWNER'S SATISFACTION AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING THE SITE TO ORIGINAL OR BETTER CONDITION FROM DAMAGES DONE TO EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING AND STRUCTURES.
- NO EXTRA PAY ITEM WILL BE ALLOWED FOR WORK CALLED FOR ON THE PLANS BUT NOT INCLUDED ON THE BID SCHEDULE. THIS INCIDENTAL WORK WILL BE REQUIRED AND SHALL BE INCLUDED IN THE PAY ITEM TO WHICH IT RELATES.

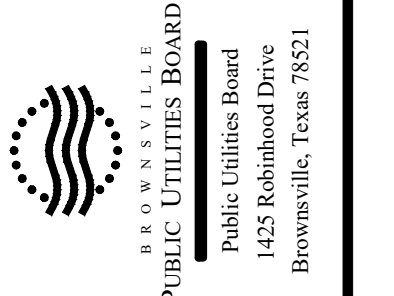
- ALL MATERIAL AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY THE BROWNSVILLE PUBLIC UTILITIES BOARD (BPUB) AND COMPLY WITH THE PROJECT PLANS AND SPECIFICATIONS UNDER THIS CONTRACT AND THE FOLLOWING AS APPLICABLE:
 - CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY DESIGN CRITERIA.
 - CURRENT BROWNSVILLE WATER SYSTEM "STANDARD SPECIFICATIONS FOR CONSTRUCTION."
 - CURRENT CITY OF BROWNSVILLE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION."
 - THE LAWS OF THE STATE OF TEXAS, INTERNATIONAL FIRE CODE, INTERNATIONAL BUILDING CODE, AND OSHA STANDARDS.
 - IN CASE OF CONFLICTS AMONG ABOVE LISTED SPECIFICATIONS AND STANDARDS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING, SUPPORTING, AND PROTECTING THE INTEGRITY OF UNDERGROUND UTILITIES, THRUST BLOCKING AND POWER POLES DURING CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO EXCAVATE OVER, UNDER AND AROUND SUCH UTILITY AND IF NECESSARY, PROVIDE A TEMPORARY BRIDGING/BRACING DURING CONSTRUCTION SO AS TO MAINTAIN CONTINUOUS SERVICE WHILE CONSTRUCTING THE PROPOSED BPUB FACILITIES. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO BACKFILL AROUND THE UTILITY FACILITY AND TO COMPLETE CONSTRUCTION IN A MANNER SUCH AS TO LEAVE THE UTILITY FACILITY SECURELY BEDDED IN ITS POSITION. ALL THIS WORK SHALL BE AT NO ADDITIONAL COST TO BPUB.
- THE CONTRACTOR SHALL ALSO COMPLY WITH THE PROVISIONS IN ITEM 31 41 33, TRENCH EXCAVATION SAFETY PROTECTION, OF THE CURRENT BROWNSVILLE WATER SYSTEM SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION.
- WHERE OVERHEAD POWER LINES ARE IN CLOSE PROXIMITY TO THE PROPOSED WORK, THE CONTRACTOR SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS ESTABLISHED BY CHAPTER 752, TEXAS HEALTH & SAFETY CODE.
- ANY EXCAVATION WITHIN A 10-FOOT RADIUS FROM THE BASE OF AN OVERHEAD DISTRIBUTION POLE WILL BE REQUIRED FOR THE POLE TO BE BRACED BEFORE THE START OF ANY WORK. COORDINATE WITH THE ELECTRICAL SERVICE PROVIDER TO BRACE AND/OR RELOCATE POWER POLES AS REQUIRED TO COMPLETE THE WORK. PAYMENT FOR POWER POLE BRACING/RELOCATION SHALL BE MADE UNDER THE ALLOWANCE INCLUDED IN THE BID. OVERHEAD ELECTRIC UTILITY COORDINATION SHALL OCCUR SUFFICIENTLY IN ADVANCE SUCH THAT CONSTRUCTION IS NOT DELAYED. NO ADDITIONAL PAYMENT SHALL BE MADE FOR DELAYS DUE TO OVERHEAD ELECTRIC UTILITY COORDINATION.
- ALL UNPAVED DISTURBED AREAS SHALL BE SEEDED AS INDICATED IN THE SPECIFICATIONS. ALL DISTURBED PAVED AREAS SHALL BE REPAVED AS INDICATED AND AS SPECIFIED. ALL DISTURBED SIDEWALKS SHALL BE REPLACED.
- THE WORDS DEMOLITION, DEMOLISH, AND REMOVE IN THIS CONTRACT REFER TO ITEMS THAT WILL BE REMOVED AND PROPERLY DISPOSED OF FROM THE CONSTRUCTION SITE. NO ITEMS MARKED DEMOLITION OR DEMOLISH SHALL BE GROUND, CRUSHED, OR PULVERIZED. ITEMS REQUIRED TO BE DEMOLISHED OR REMOVED TO COMPLETE REQUIREMENTS OF THIS CONTRACT SHALL BE COORDINATED WITH THE OWNER FOR EQUIPMENT TO BE SALVAGED. ITEMS LABELED TO BE DEMOLISHED OR REMOVED SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND LOCAL, STATE, AND FEDERAL REGULATIONS AND GUIDELINES.
- THE DETAILS DESIGNATED AS "TYPICAL DETAILS" OR "STANDARD DETAILS" APPLY GENERALLY TO THE DRAWINGS IN ALL AREAS WHERE CONDITIONS ARE SIMILAR TO THOSE DESCRIBED IN THE DETAILS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING GENERAL SAFETY AT AND ADJACENT TO THE PROJECT AREA, INCLUDING THE PERSONAL SAFETY OF THE CONSTRUCTION CREW AND PLANT STAFF IN ACCORDANCE WITH ALL APPLICABLE CITY, STATE, AND OSHA STANDARDS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ROADS ADJACENT TO AREAS OF WORK WITHIN THE PROJECT SITE AND ALONG THE CONSTRUCTION ROUTE FREE OF MUD AND DEBRIS FROM CONSTRUCTION AT ALL TIMES.
- THE CONTRACTOR SHALL REMOVE FROM THE PROJECT AREA ALL SURPLUS MATERIAL. THIS SHALL BE INCLUDED AND NOT A SEPARATE PAY ITEM. SURPLUS MATERIALS FROM EXCAVATION INCLUDING DIRT, TRASH, ETC., SHALL BE PROPERLY DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL LAWS.
- ALL UTILITIES REPRESENTED ON THESE DRAWINGS ARE SHOWN AT THE APPROXIMATE LOCATIONS BASED ON THE BEST AVAILABLE INFORMATION. SOME OF THE EXISTING UNDERGROUND UTILITIES SHOWN HEREON HAVE NOT BEEN FIELD VERIFIED. THEY HAVE BEEN PLOTTED FROM INFORMATION OBTAINED FROM BROWNSVILLE WATER SYSTEM AND/OR PRIVATE UTILITY COMPANIES. THE CONTRACTOR SHALL FIELD DETERMINE THE EXACT LOCATIONS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL DAMAGES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND MAINTAIN THESE UNDERGROUND UTILITIES.
- THIS PROJECT IS SUBJECT TO THE AMERICAN IRON AND STEEL (AIS) REQUIREMENTS OF SECTION 608 OF THE FEDERAL WATER POLLUTION CONTROL ACT. ALL IRON AND STEEL PRODUCTS FOR CONSTRUCTION, ALTERATION, MAINTENANCE, OR REPAIRS INCORPORATED IN THESE PLANS MUST BE PRODUCED IN THE UNITED STATES.
- PRIOR TO ANY CONSTRUCTION THE CONTRACTOR SHALL BE FAMILIAR WITH THE CONTRACT DOCUMENTS AND SPECIFICATIONS, THE PLANS (INCLUDING ALL NOTES), THE CITY OF BROWNSVILLE SPECIFICATIONS AND ANY OTHER APPLICABLE STANDARDS OR SPECIFICATIONS RELEVANT TO THE PROPER COMPLETION OF THE WORK SPECIFIED. FAILURE ON THE PART OF THE CONTRACTOR TO BE FAMILIAR WITH ALL STANDARDS AND SPECIFICATIONS PERTAINING TO THIS WORK SHALL IN NO WAY RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR PERFORMING THE WORK IN ACCORDANCE WITH ALL SUCH APPLICABLE STANDARDS AND SPECIFICATIONS.
- CONTRACTOR SHALL HAVE IN POSSESSION, PRIOR TO CONSTRUCTION, ALL NECESSARY PERMITS, AND LICENSES, ETC. CONTRACTOR SHALL HAVE A LEAST ONE SET OF APPROVED ENGINEERING PLANS AND SPECIFICATIONS ON-SITE AT ALL TIMES.
- CONSTRUCTION INSPECTION WILL BE PERFORMED BY REPRESENTATIVES OF THE OWNER, ENGINEER, CITY, GEOTECHNICAL ENGINEER, AND REVIEWING AUTHORITIES AND AGENCIES. UNRESTRICTED ACCESS SHALL BE PROVIDED TO THEM AT ALL TIMES. CONTRACTOR IS RESPONSIBLE FOR UNDERSTANDING AND SCHEDULING REQUIRED INSPECTIONS. TESTING SAMPLES SHALL BE COLLECTED AND PROCESSED BY CERTIFIED TECHNICIANS.
- ALL CONTRACTORS MUST CONFINE THEIR ACTIVITIES TO THE WORK AREA. NO ENCROACHMENTS ONTO DEVELOPED OR UNDEVELOPED AREAS WILL BE ALLOWED. ANY DAMAGE RESULTING THERE FROM SHALL BE CONTRACTOR'S RESPONSIBILITY TO REPAIR.
- THE PROJECT MUST COMPLY WITH THE FOLLOWING CONDITIONS:
 - STANDARD EMERGENCY CONDITION FOR THE DISCOVERY OF CULTURAL RESOURCES; AND,
 - STANDARD EMERGENCY CONDITION FOR THE DISCOVERY OF THREATENED AND ENDANGERED SPECIES.

STANDARD GRADING IMPROVEMENT NOTES

- EXISTING UTILITIES AND UNDERGROUND FACILITIES INDICATED ON THESE PLANS HAVE BEEN LOCATED FROM REFERENCE INFORMATION SUPPLIED BY VARIOUS OWNERS OF THE FACILITIES. THE ENGINEER DOES NOT ACCEPT RESPONSIBILITY FOR THE UTILITY LOCATIONS SHOWN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY BOTH HORIZONTALLY AND VERTICALLY THE LOCATION OF ALL UTILITIES AND UNDERGROUND FACILITIES PRIOR TO CONSTRUCTION, TO TAKE NECESSARY PRECAUTIONS IN ORDER TO PROTECT ALL FACILITIES ENCOUNTERED, AND TO NOTIFY THE ENGINEER PROMPTLY OF ALL CONFLICTS OF THE WORK WITH EXISTING FACILITIES. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION. ANY DAMAGES BY THE CONTRACTOR TO EXISTING UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.
- NEW FINISHED CONTOURS SHOWN ARE TOP OF PAVING IN AREAS TO RECEIVE PAVEMENT AND TOP OF TOPSOIL IN AREAS TO BE VEGETATED.
- AREAS INDICATED TO BE SEEDED SHALL RECEIVE 6 INCHES OF TOPSOIL. THIS TOPSOIL TO BE PLACED AND LEVELED BY THE GRADING CONTRACTOR.
- ROUGH GRADING ELEVATIONS SHALL BE AS FOLLOWS:
6" BELOW FINISHED CONTOURS IN GRASS AREAS.
6" OR 7" BELOW FINISHED CONTOURS IN PAVED AREAS,
REFER TO PAVEMENT LAYOUT FOR THICKNESS AND TYPE OF PAVEMENT
- GRADING CONTRACTOR SHALL NOTIFY AND COOPERATE WITH ALL UTILITY COMPANIES OR FIRMS HAVING FACILITIES ON OR ADJACENT TO THE SITE BEFORE DISTURBING, ALTERING, REMOVING, RELOCATING, ADJUSTING OR CONNECTING TO SAID FACILITIES. CONTRACTOR SHALL PAY ALL COSTS IN CONNECTION WITH THE ALTERATION OF OR RELOCATION OF THE FACILITIES.
- GRADING CONTRACTOR SHALL COOPERATE AND WORK WITH ALL OTHER CONTRACTORS PERFORMING WORK ON THIS PROJECT TO ENSURE PROPER AND TIMELY COMPLETION OF THIS PROJECT.
- REFER TO PAVING DETAILS FOR TYPE OF PAVING AND BASE TO BE USED.
- GRADING CONTRACTOR IS RESPONSIBLE FOR REMOVING ANY EXISTING STRUCTURES, FENCES, DEBRIS OR TREES REMAINING AS SHOWN ON THE DRAWINGS. COORDINATE WITH GENERAL CONTRACTOR.
- GRADING CONTRACTOR TO COMPLY WITH ALL STATE AND LOCAL SEDIMENT CONTROL AND AIR POLLUTION ORDINANCES AND/OR RULES.
- A QUALIFIED SOILS LABORATORY SHALL DETERMINE THE SUITABILITY OF THE EXISTING SUBGRADE AND EXISTING ON-SITE MATERIAL PRIOR TO BEGINNING ANY FILLING OPERATION.
- ADEQUATE MEASURES SHALL BE TAKEN TO PREVENT EROSION. IN THE EVENT THAT SIGNIFICANT EROSION OCCURS AS A RESULT OF CONSTRUCTION THE CONTRACTOR SHALL RESTORE THE ERODED AREA TO ORIGINAL CONDITION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING EROSION CONTROL AS REQUIRED BY BPUB AND THE CITY OF BROWNSVILLE'S CODE OF ORDINANCES.
- ALL AREAS NOT COVERED BY BUILDING OR PAVING ARE TO BE HYDROMULCHED/LANDSCAPED.
- UNSUITABLE EXCAVATED MATERIALS AND ALL WASTE RESULTING FROM CLEARING AND GRUBBING SHALL BE DISPOSED OF OFF-SITE BY GRADING CONTRACTOR.
- ALL EXCAVATING IS UNCLASSIFIED AND SHALL INCLUDE ALL MATERIALS ENCOUNTERED.
- BEFORE ANY MACHINE WORK IS DONE, CONTRACTOR SHALL STAKE OUT AND MARK THE ITEMS ESTABLISHED BY THE SITE PLAN. CONTROL POINTS SHALL BE PRESERVED AT ALL TIMES DURING THE COURSE OF THE PROJECT. LACK OF PROPER WORKING POINTS AND GRADE STAKES MAY REQUIRE CESSATION OF OPERATIONS UNTIL SUCH POINTS AND GRADES HAVE BEEN PLACED TO THE OWNER'S SATISFACTION.
- COORDINATE SIDEWALK GRADE TRANSITIONS WITH STANDARD DETAILS.
- THE CONTRACTOR SHALL RESTORE ALL AREAS DISTURBED BY CONSTRUCTION TO ORIGINAL CONDITION OR BETTER. RESTORED AREAS INCLUDE, BUT ARE NOT LIMITED TO TRENCH BACKFILL, SIDE SLOPES FENCES, CULVERT PIPES, DRAINAGE DITCHES, DRIVEWAYS, PRIVATE YARDS AND ROADWAYS.

STANDARD PAVING IMPROVEMENT NOTES

- ALL PAVEMENT MARKINGS SHALL BE FOUR (4) INCHES WIDE, COLOR WHITE UNLESS INDICATED OTHERWISE ON THE DRAWINGS. PROVIDE TWO COATS OF PAINT. APPLY SECOND COAT IMMEDIATELY PRIOR TO OCCUPANCY.
- ALL DIMENSIONS ARE TO FACE OF CURB OR EDGE OF PAVEMENT UNLESS INDICATED OTHERWISE.
- CONTRACTOR SHALL FURNISH AND INSTALL ALL PAVEMENT MARKINGS AS SHOWN IN THE PLANS.
- CONTRACTOR SHALL COORDINATE INSTALLATION OF ALL SIGNS, PAVEMENT MARKINGS AND OTHER TRAFFIC CONTROL DEVICES WITH OTHER CONTRACTORS ON THE SITE.
- CONTRACTOR SHALL SAW-CUT TO PROVIDE SMOOTH TRANSITION AT TIE-IN TO EXISTING EDGE OF PAVEMENT. JOINTS OR SCORE MARKS ARE TO BE SHARP AND CLEAN WITHOUT SHOWING EDGES OF JOINTING TOOL.
- CONTRACTOR SHALL SAW-CUT TIE-INS AT EXISTING CURBS AS NECESSARY TO ENSURE SMOOTH TRANSITIONS. CONTRACTOR SHALL SAW-CUT AND TRANSITION TO MEET EXISTING PAVEMENT AS NECESSARY TO ENSURE POSITIVE DRAINAGE.
- CONTRACTOR SHALL MAKE PROVISIONS FOR UTILITY VERIFICATION PRIOR TO CONSTRUCTION. REFER TO PLANS FOR EXISTING UNDERGROUND UTILITIES.



NO.	REVISION	DATE

VERIFY SCALE: BAR LENGTH EQUALS ONE INCH ON ORIGINAL DRAWING. VERIFY LENGTH ON THIS SHEET 0 1" AND ADJUST SCALE ACCORDINGLY.

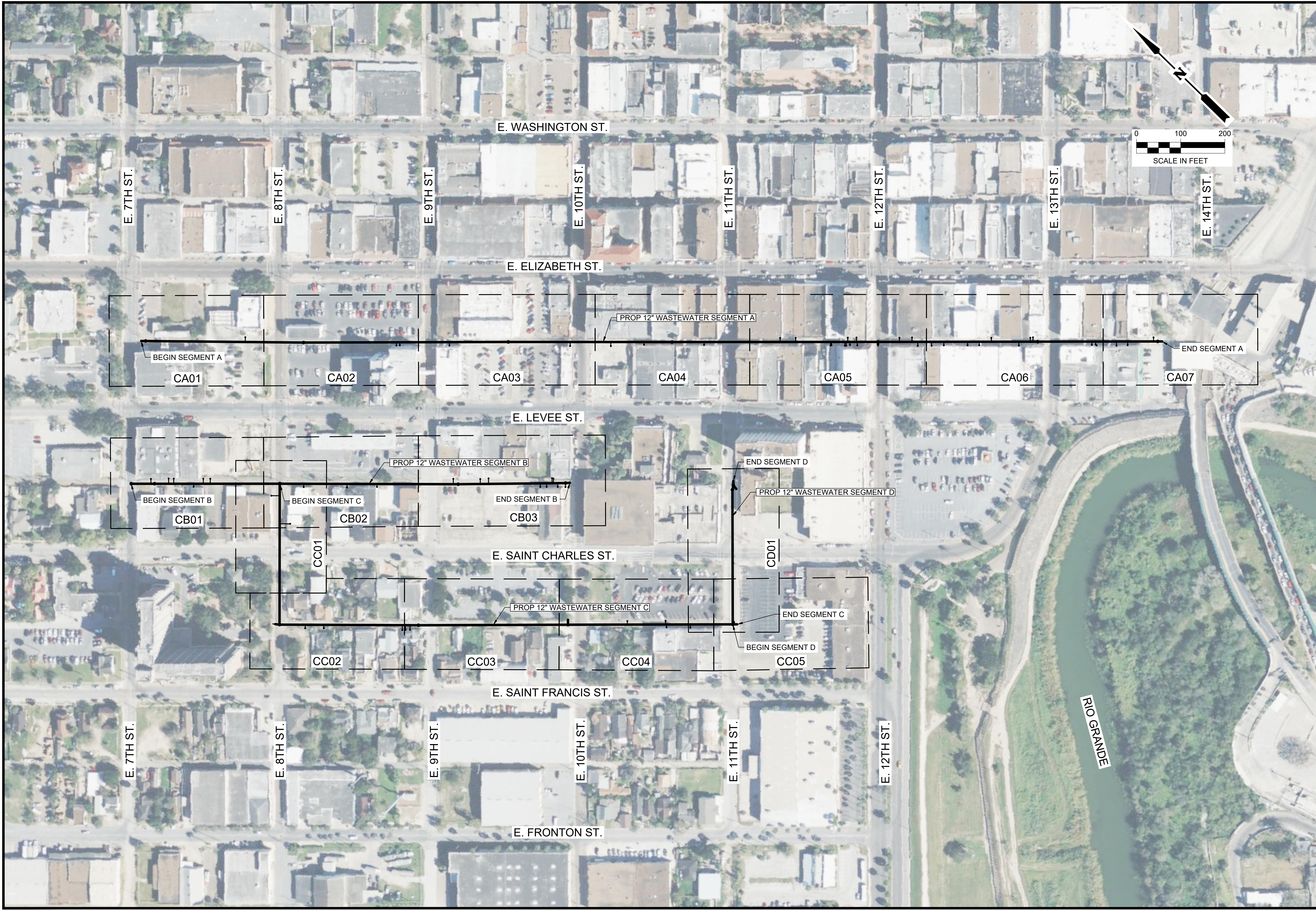
BROWNSVILLE PUBLIC UTILITIES BOARD
PROJECT 1: DOWNTOWN WW IMPROVEMENTS

GENERAL NOTES

DESIGN: GWM
DRAWN: GWM
REVIEW: JAE
STV: BPUB2200025.01

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PRINTED BY: MilksGW DATE: 9/7/2023
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BROWNVILLE
 PUBLIC UTILITIES BOARD
 Public Utilities Board
 1425 Robinhood Drive
 Brownsville, Texas 78521



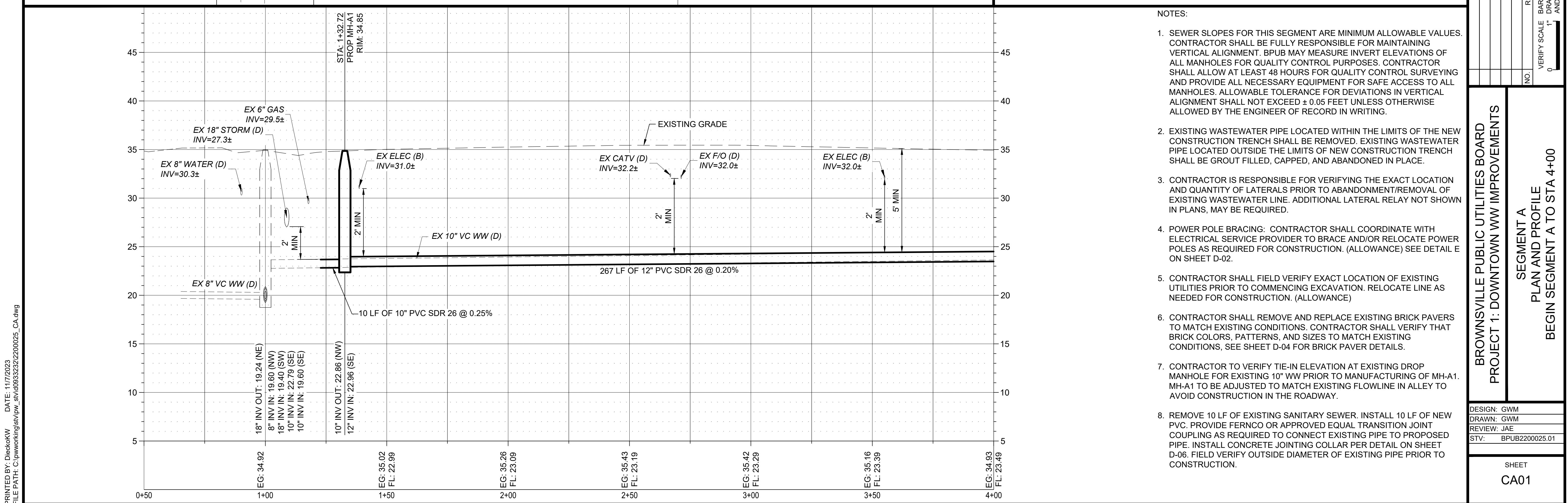
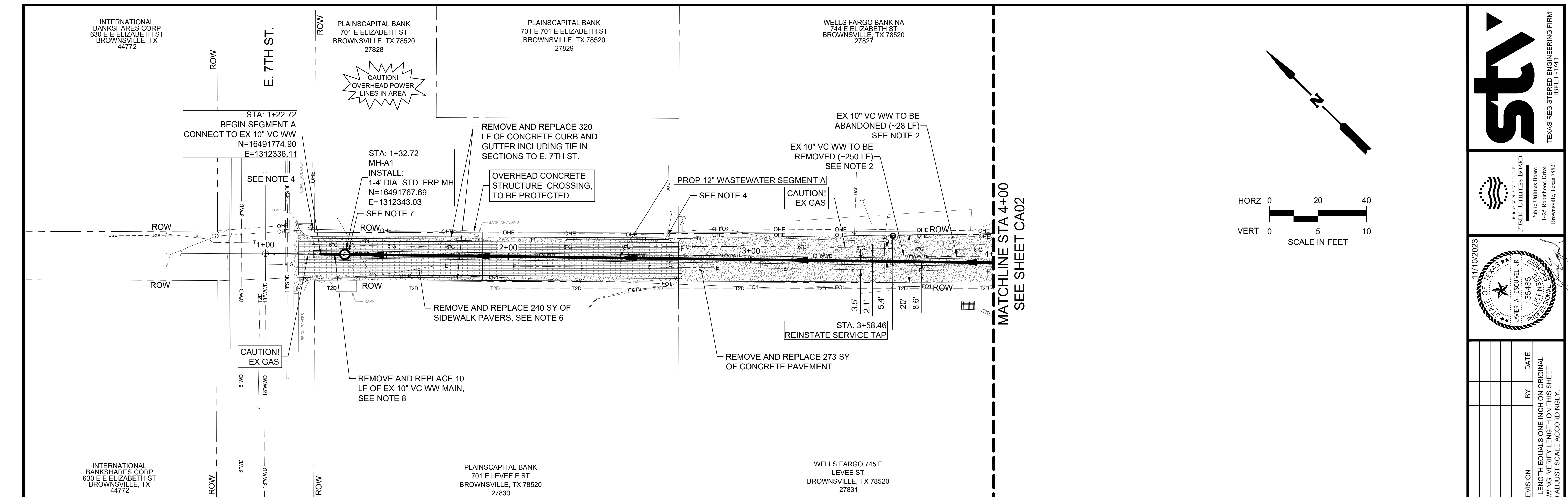
NO.	REVISION	BY	DATE

VERIFY SCALE: BAR LENGTH EQUALS ONE INCH ON ORIGINAL DRAWING. VERIFY LENGTH ON THIS SHEET AT 1" = 100' AND ADJUST SCALE ACCORDINGLY.

BROWNVILLE PUBLIC UTILITIES BOARD
 PROJECT 1: DOWNTOWN WW IMPROVEMENTS
 OVERALL PROJECT LAYOUT

DESIGN: GWM
 DRAWN: GWM
 REVIEW: JAE
 STV: BPUB2200025.01

SHEET
 G-04



- NOTES:
- SEWER SLOPES FOR THIS SEGMENT ARE MINIMUM ALLOWABLE VALUES. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR MAINTAINING VERTICAL ALIGNMENT. BPUB MAY MEASURE INVERT ELEVATIONS OF ALL MANHOLES FOR QUALITY CONTROL PURPOSES. CONTRACTOR SHALL ALLOW AT LEAST 48 HOURS FOR QUALITY CONTROL SURVEYING AND PROVIDE ALL NECESSARY EQUIPMENT FOR SAFE ACCESS TO ALL MANHOLES. ALLOWABLE TOLERANCE FOR DEVIATIONS IN VERTICAL ALIGNMENT SHALL NOT EXCEED ± 0.05 FEET UNLESS OTHERWISE ALLOWED BY THE ENGINEER OF RECORD IN WRITING.
 - EXISTING WASTEWATER PIPE LOCATED WITHIN THE LIMITS OF THE NEW CONSTRUCTION TRENCH SHALL BE REMOVED. EXISTING WASTEWATER PIPE LOCATED OUTSIDE THE LIMITS OF NEW CONSTRUCTION TRENCH SHALL BE GROUT FILLED, CAPPED, AND ABANDONED IN PLACE.
 - CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXACT LOCATION AND QUANTITY OF LATERALS PRIOR TO ABANDONMENT/REMOVAL OF EXISTING WASTEWATER LINE. ADDITIONAL LATERAL RELAY NOT SHOWN IN PLANS, MAY BE REQUIRED.
 - POWER POLE BRACING: CONTRACTOR SHALL COORDINATE WITH ELECTRICAL SERVICE PROVIDER TO BRACE AND/OR RELOCATE POWER POLES AS REQUIRED FOR CONSTRUCTION. (ALLOWANCE) SEE DETAIL E ON SHEET D-02.
 - CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION OF EXISTING UTILITIES PRIOR TO COMMENCING EXCAVATION. RELOCATE LINE AS NEEDED FOR CONSTRUCTION. (ALLOWANCE)
 - CONTRACTOR SHALL REMOVE AND REPLACE EXISTING BRICK PAVERS TO MATCH EXISTING CONDITIONS. CONTRACTOR SHALL VERIFY THAT BRICK COLORS, PATTERNS, AND SIZES TO MATCH EXISTING CONDITIONS, SEE SHEET D-04 FOR BRICK PAVER DETAILS.
 - CONTRACTOR TO VERIFY TIE-IN ELEVATION AT EXISTING DROP MANHOLE FOR EXISTING 10" WW PRIOR TO MANUFACTURING OF MH-A1. MH-A1 TO BE ADJUSTED TO MATCH EXISTING FLOWLINE IN ALLEY TO AVOID CONSTRUCTION IN THE ROADWAY.
 - REMOVE 10 LF OF EXISTING SANITARY SEWER. INSTALL 10 LF OF NEW PVC. PROVIDE FERNCO OR APPROVED EQUAL TRANSITION JOINT COUPLING AS REQUIRED TO CONNECT EXISTING PIPE TO PROPOSED PIPE. INSTALL CONCRETE JOINTING COLLAR PER DETAIL ON SHEET D-06. FIELD VERIFY OUTSIDE DIAMETER OF EXISTING PIPE PRIOR TO CONSTRUCTION.

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TEXAS REGISTERED ENGINEERING FIRM
 TBPE-F-1741

BROWNSVILLE
 PUBLIC UTILITIES BOARD
 Public Utilities Board
 1425 Robinhood Drive
 Brownsville, Texas 78521

11/10/2023

NO.	REVISION	BY	DATE

VERIFY SCALE

BAR LENGTH EQUALS ONE INCH ON ORIGINAL
 DRAWING. VERIFY LENGTH ON THIS SHEET
 AND ADJUST SCALE ACCORDINGLY.

BROWNSVILLE PUBLIC UTILITIES BOARD

PROJECT 1: DOWNTOWN WW IMPROVEMENTS

SEGMENT A

PLAN AND PROFILE

BEGIN SEGMENT A TO STA 4+00

DESIGN: GWM

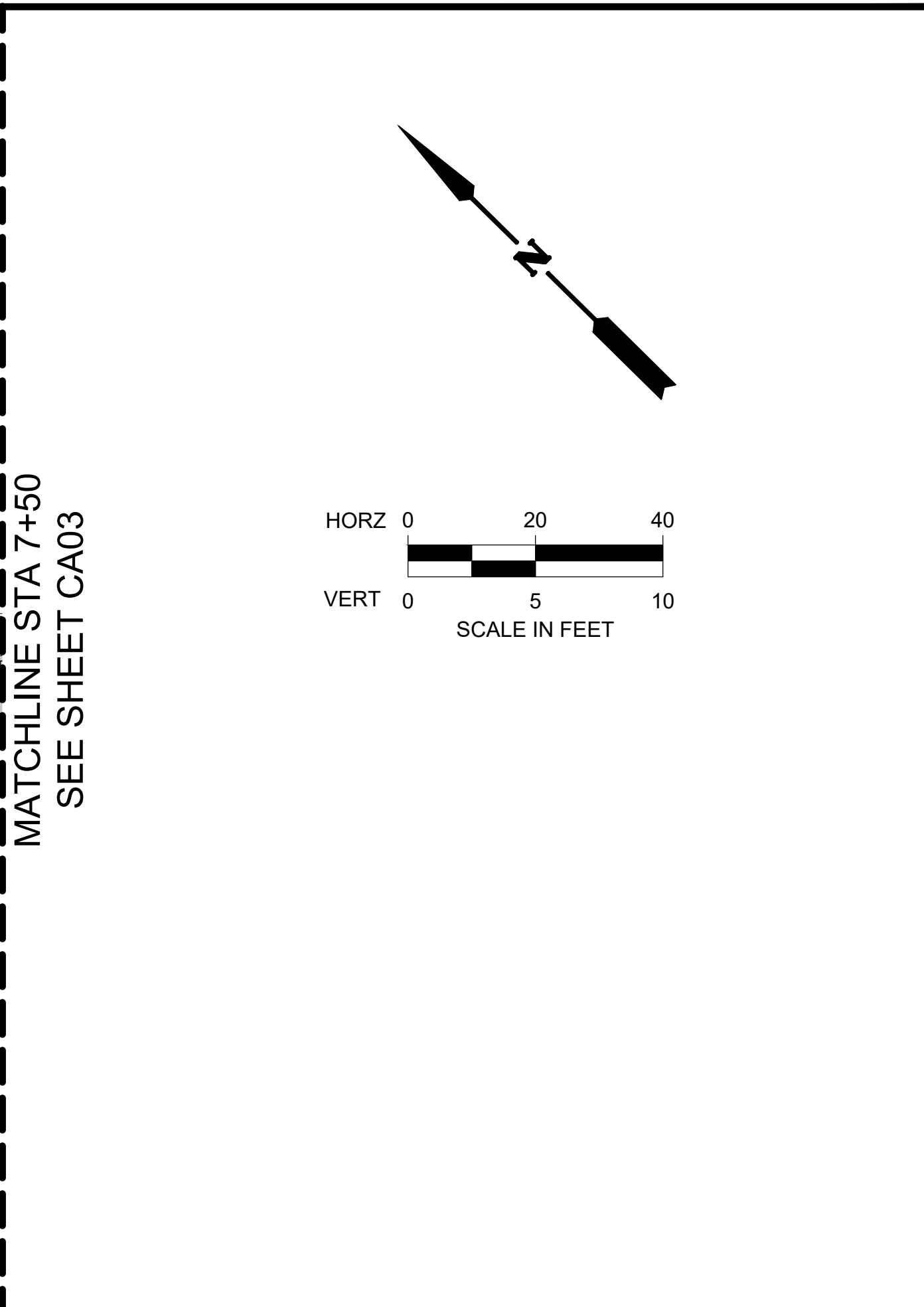
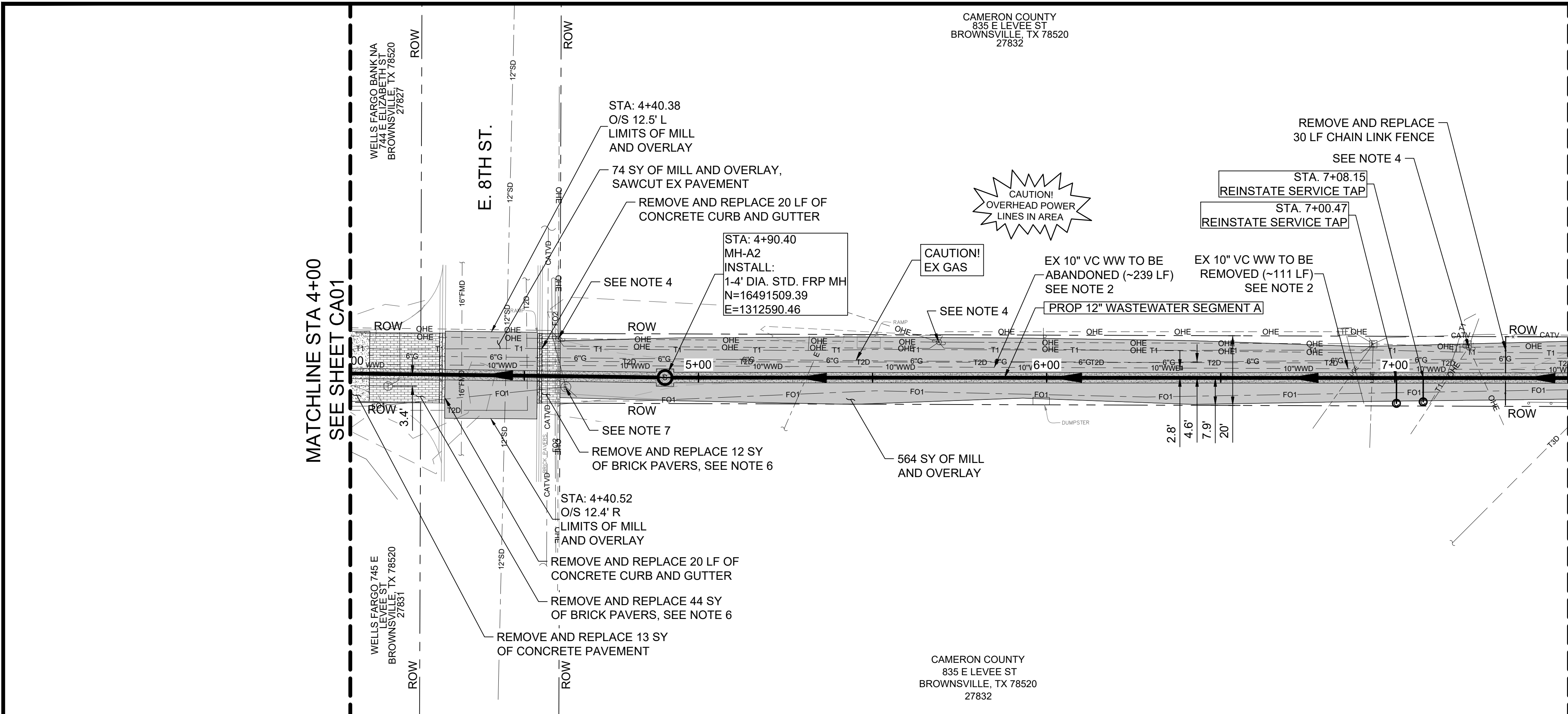
DRAWN: GWM

REVIEW: JAE

STV: BPUB2200025.01

SHEET

CA01



- NOTES:
- SEWER SLOPES FOR THIS SEGMENT ARE MINIMUM ALLOWABLE VALUES. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR MAINTAINING VERTICAL ALIGNMENT. BPUB MAY MEASURE INVERT ELEVATIONS OF ALL MANHOLES FOR QUALITY CONTROL PURPOSES. CONTRACTOR SHALL ALLOW AT LEAST 48 HOURS FOR QUALITY CONTROL SURVEYING AND PROVIDE ALL NECESSARY EQUIPMENT FOR SAFE ACCESS TO ALL MANHOLES. ALLOWABLE TOLERANCE FOR DEVIATIONS IN VERTICAL ALIGNMENT SHALL NOT EXCEED ± 0.05 FEET UNLESS OTHERWISE ALLOWED BY THE ENGINEER OF RECORD IN WRITING.
 - EXISTING WASTEWATER PIPE LOCATED WITHIN THE LIMITS OF THE NEW CONSTRUCTION TRENCH SHALL BE REMOVED. EXISTING WASTEWATER PIPE LOCATED OUTSIDE THE LIMITS OF NEW CONSTRUCTION TRENCH SHALL BE GROUT FILLED, CAPPED, AND ABANDONED IN PLACE.
 - CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXACT LOCATION AND QUANTITY OF LATERALS PRIOR TO ABANDONMENT/REMOVAL OF EXISTING WASTEWATER LINE. ADDITIONAL LATERAL RELAY NOT SHOWN IN PLANS, MAY BE REQUIRED.
 - POWER POLE BRACING: CONTRACTOR SHALL COORDINATE WITH ELECTRICAL SERVICE PROVIDER TO BRACE AND/OR RELOCATE POWER POLES AS REQUIRED FOR CONSTRUCTION. (ALLOWANCE) SEE DETAIL E ON SHEET D-02.
 - CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION OF EXISTING UTILITIES PRIOR TO COMMENCING EXCAVATION. RELOCATE LINE AS NEEDED FOR CONSTRUCTION. (ALLOWANCE)
 - CONTRACTOR SHALL REMOVE AND REPLACE EXISTING BRICK PAVERS TO MATCH EXISTING CONDITIONS. CONTRACTOR SHALL VERIFY THAT BRICK COLORS, PATTERNS, AND SIZES MATCH EXISTING CONDITIONS. SEE SHEET D-04 FOR BRICK PAVER DETAILS.
 - CONTRACTOR TO PROTECT EXISTING ELECTRICAL MANHOLE. COORDINATE WITH ELECTRICAL SERVICE PROVIDER IF MANHOLE RELOCATION IS REQUIRED.



BROWNSVILLE
 PUBLIC UTILITIES BOARD
 Public Utilities Board
 1425 Robinhood Drive
 Brownsville, Texas 78521



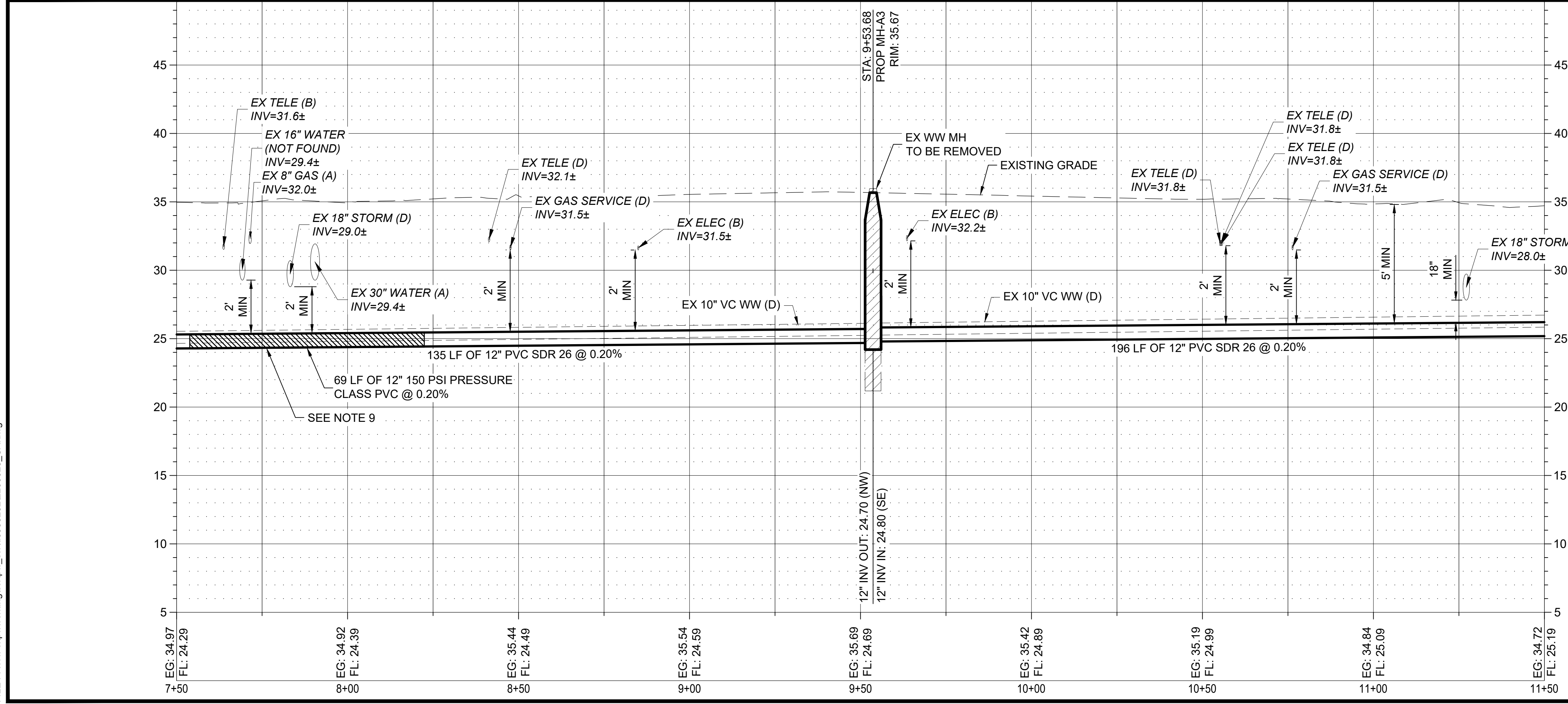
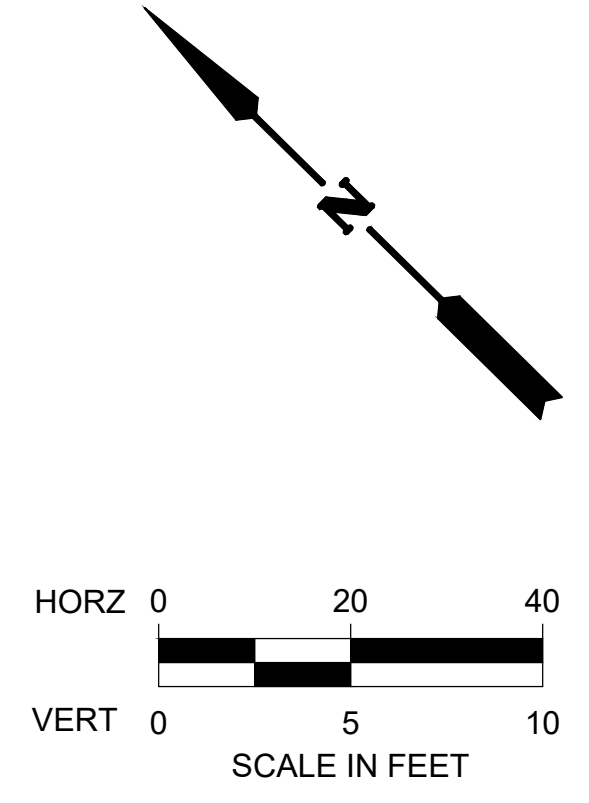
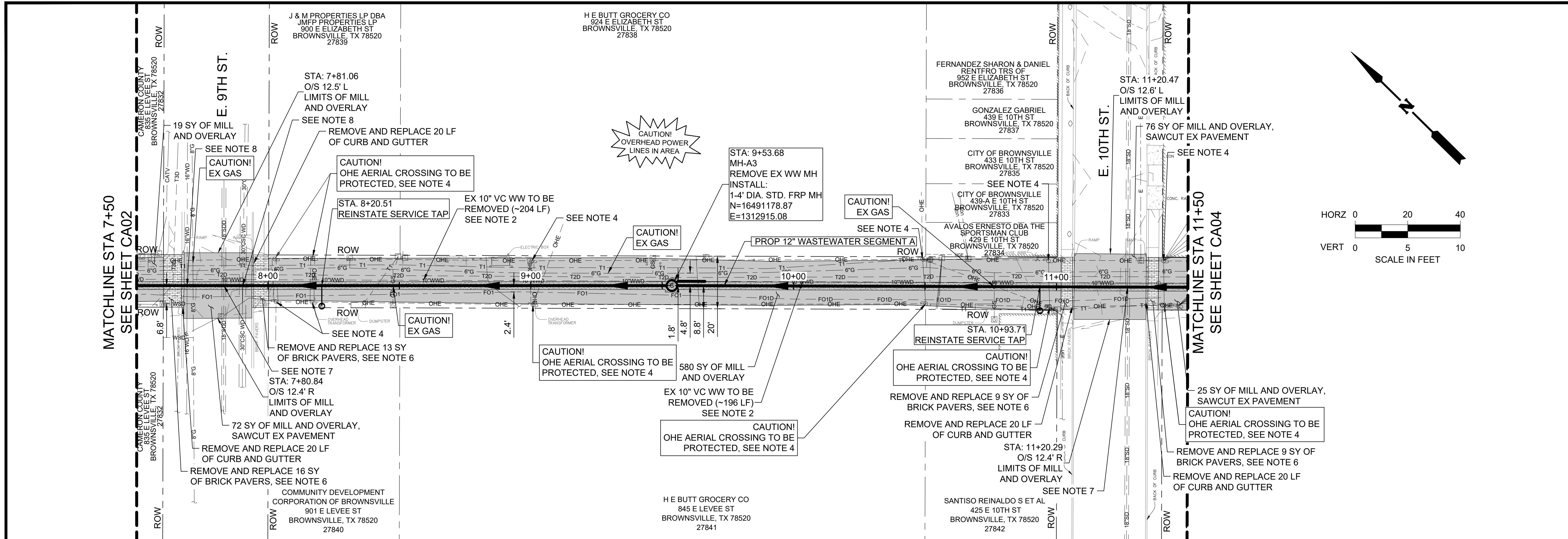
NO.	REVISION	BY	DATE

VERIFY SCALE: BAR LENGTH EQUALS ONE INCH ON ORIGINAL DRAWING. VERIFY LENGTH ON THIS SHEET AND ADJUST SCALE ACCORDINGLY.

BROWNSVILLE PUBLIC UTILITIES BOARD
 PROJECT 1: DOWNTOWN WW IMPROVEMENTS
 SEGMENT A
 PLAN AND PROFILE
 STA 4+00 TO STA 7+50

DESIGN: GWM
 DRAWN: GWM
 REVIEW: JAE
 STV: BPUB2200025.01

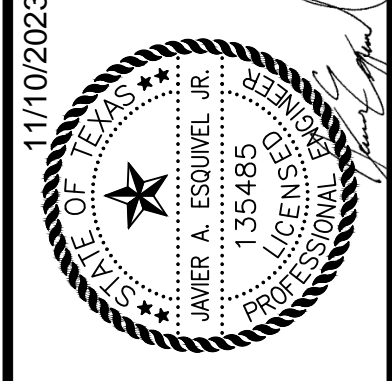
SHEET
 CA02



- NOTES:
- SEWER SLOPES FOR THIS SEGMENT ARE MINIMUM ALLOWABLE VALUES. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR MAINTAINING VERTICAL ALIGNMENT. BPUB MAY MEASURE INVERT ELEVATIONS OF ALL MANHOLES FOR QUALITY CONTROL PURPOSES. CONTRACTOR SHALL ALLOW AT LEAST 48 HOURS FOR QUALITY CONTROL SURVEYING AND PROVIDE ALL NECESSARY EQUIPMENT FOR SAFE ACCESS TO ALL MANHOLES. ALLOWABLE TOLERANCE FOR DEVIATIONS IN VERTICAL ALIGNMENT SHALL NOT EXCEED ± 0.05 FEET UNLESS OTHERWISE ALLOWED BY THE ENGINEER OF RECORD IN WRITING.
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 - PROTECT EXISTING 18" STORM DRAIN IF POSSIBLE. IF NEEDED, CONTRACTOR SHALL REMOVE AND REPLACE ±16 LF OF STORM DRAIN PIPE. MANAGE STORM WATER TO PREVENT BANK EROSION OR PONDING DURING CONSTRUCTION.
 - PROTECT EXISTING CROSSING AND PARALLEL WATERLINE. UNLESS OTHERWISE APPROVED BY BPUB, CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER SERVICE FOR ALL EXISTING WATER SERVICE. PROPOSED WASTEWATER PIPE SHALL BE 150 PSI PRESSURE CLASS PIPE.
 - AT JOINTS BETWEEN STANDARD AND PRESSURE RATED PVC PROVIDE FERNOCO OR APPROVED EQUAL TRANSITION JOINT COUPLING. INSTALL CONCRETE JOINTING COLLAR PER DETAIL ON SHEET D-06. FIELD VERIFY OUTSIDE DIAMETER OF EXISTING PIPE PRIOR TO CONSTRUCTION.



BROWNSVILLE PUBLIC UTILITIES BOARD
 Public Utilities Board
 1425 Robinhood Drive
 Brownsville, Texas 78521



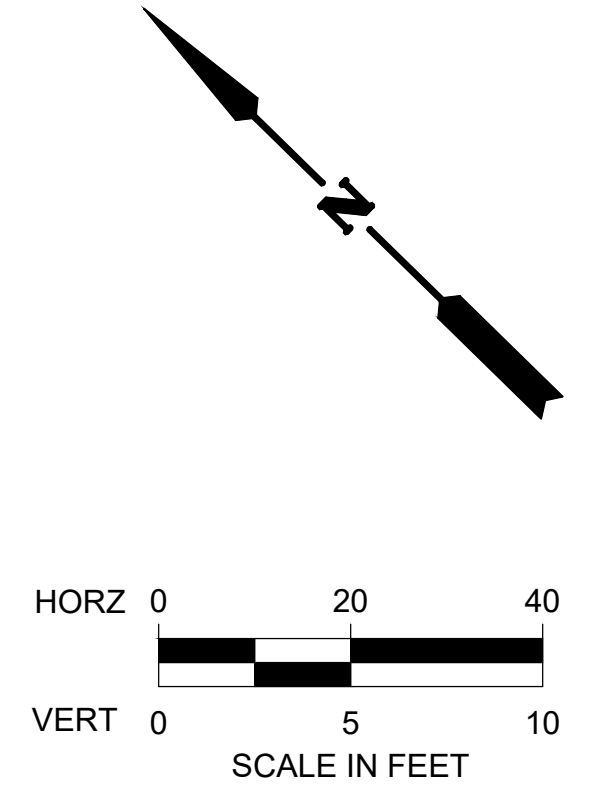
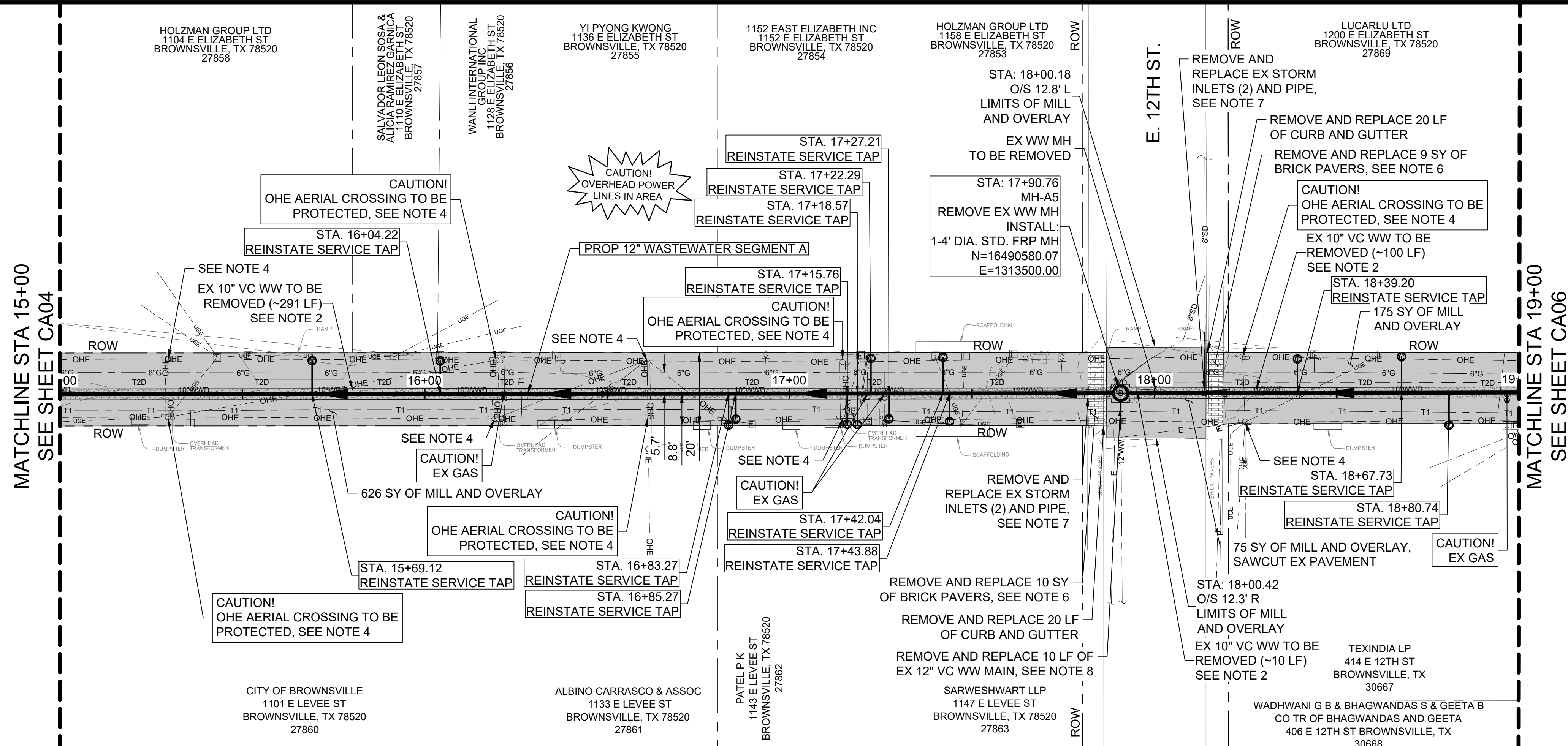
NO.	REVISION	BY	DATE

VERIFY SCALE: BAR LENGTH EQUALS ONE INCH ON ORIGINAL DRAWING. VERIFY LENGTH ON THIS SHEET AND ADJUST SCALE ACCORDINGLY.

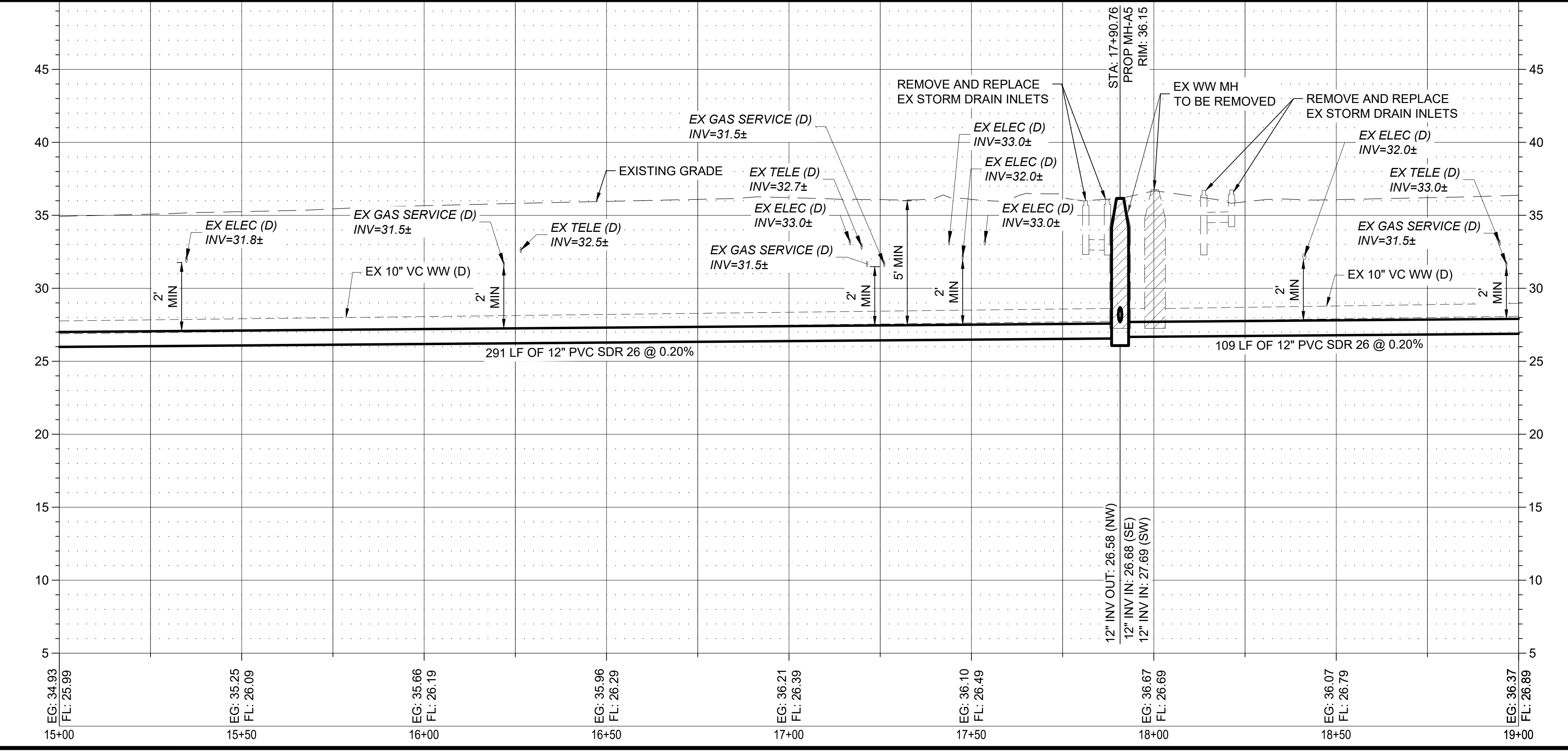
BROWNSVILLE PUBLIC UTILITIES BOARD
 PROJECT 1: DOWNTOWN WW IMPROVEMENTS
 SEGMENT A
 PLAN AND PROFILE
 STA 7+50 TO STA 11+50

DESIGN: GWM
 DRAWN: GWM
 REVIEW: JAE
 STV: BPUB2200025.01

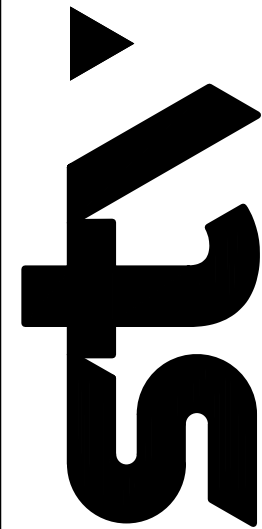
SHEET
 CA03



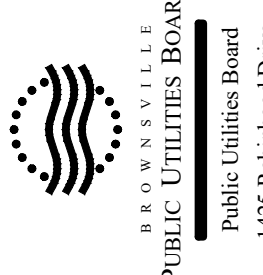
CONTRACTOR SHALL BE AWARE OF POTENTIAL FOR HAZARDOUS MATERIALS IN THE AREA. IF ENCOUNTERED, THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER OF RECORD AND HAVE THE CONTAMINATED SOIL AND GROUND WATER SAMPLED AND LAB TESTED. CONTAMINATED WATER AND/OR SOILS SHALL BE HANDLED AND DISPOSED OF IN ACCORDANCE TO SPECIAL SPECIFICATIONS.




- NOTES:
- SEWER SLOPES FOR THIS SEGMENT ARE MINIMUM ALLOWABLE VALUES. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR MAINTAINING VERTICAL ALIGNMENT. BPUB MAY MEASURE INVERT ELEVATIONS OF ALL MANHOLES FOR QUALITY CONTROL PURPOSES. CONTRACTOR SHALL ALLOW AT LEAST 48 HOURS FOR QUALITY CONTROL SURVEYING AND PROVIDE ALL NECESSARY EQUIPMENT FOR SAFE ACCESS TO ALL MANHOLES. ALLOWABLE TOLERANCE FOR DEVIATIONS IN VERTICAL ALIGNMENT SHALL NOT EXCEED ± 0.05 FEET UNLESS OTHERWISE ALLOWED BY THE ENGINEER OF RECORD IN WRITING.
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 - CONTRACTOR SHALL REMOVE AND REPLACE EXISTING BRICK PAVERS TO MATCH EXISTING CONDITIONS. CONTRACTOR SHALL VERIFY THAT BRICK COLORS, PATTERNS, AND SIZES MATCH EXISTING CONDITIONS. SEE SHEET D-04 FOR BRICK PAVEMENT DETAILS.
 - REMOVE AND REPLACE ±16 LF OF EXISTING 8" STORM DRAIN PIPE. MANAGE STORM WATER TO PREVENT TRENCH EROSION OR PONDING DURING CONSTRUCTION.
 - REMOVE 10 LF OF EXISTING SANITARY SEWER. INSTALL 10 LF OF NEW PVC. PROVIDE FERNCO OR APPROVED EQUAL TRANSITION JOINT COUPLING AS REQUIRED TO CONNECT EXISTING PIPE TO PROPOSED PIPE. INSTALL CONCRETE JOINTING COLLAR PER DETAIL ON SHEET D-06. FIELD VERIFY OUTSIDE DIAMETER OF EXISTING PIPE PRIOR TO CONSTRUCTION.



TEXAS REGISTERED ENGINEERING FIRM
 TYPE F-1741



BROWNSVILLE PUBLIC UTILITIES BOARD
 Public Utilities Board
 1425 Robinhood Drive
 Brownsville, Texas 78521



11/10/2023
 135485
 LICENSED PROFESSIONAL ENGINEER

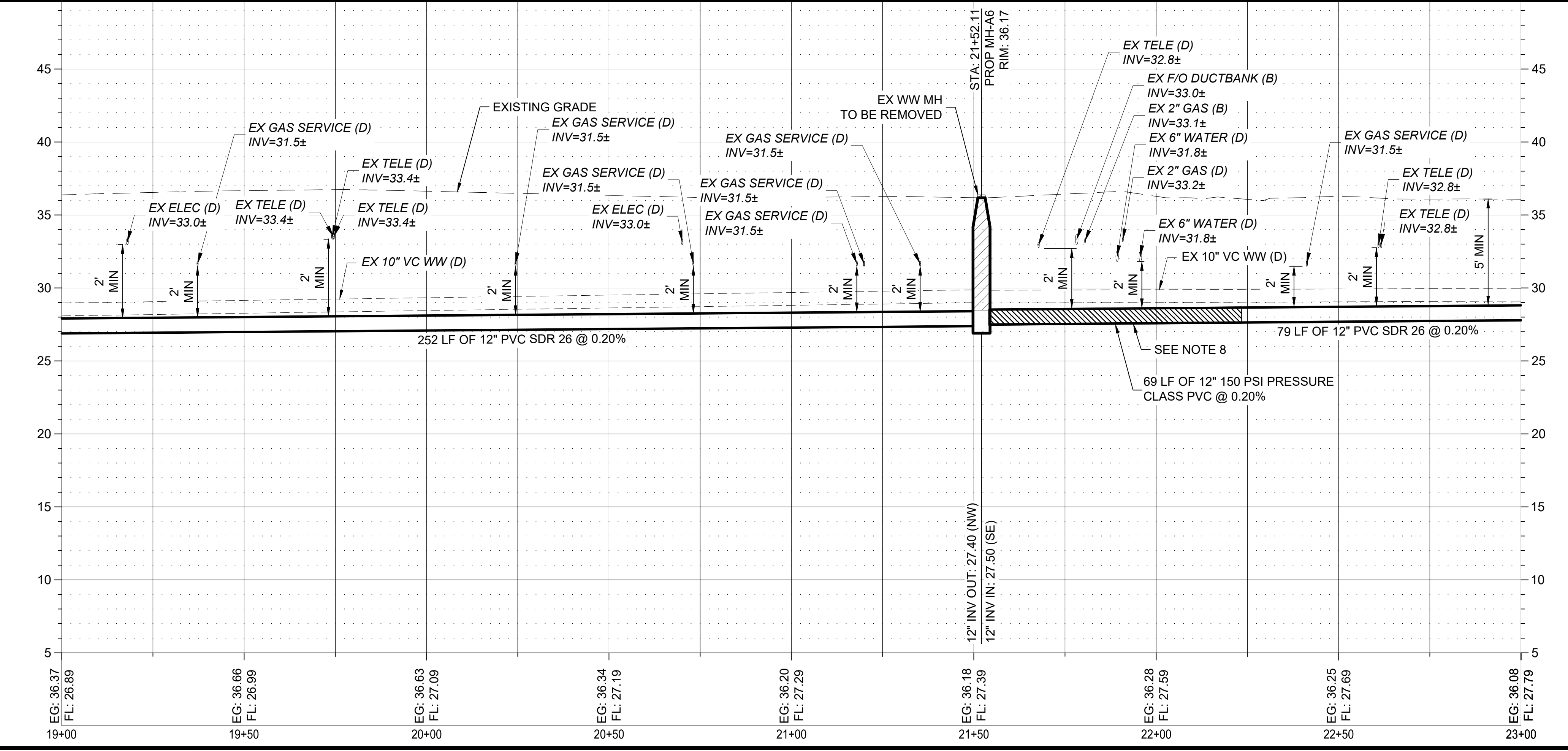
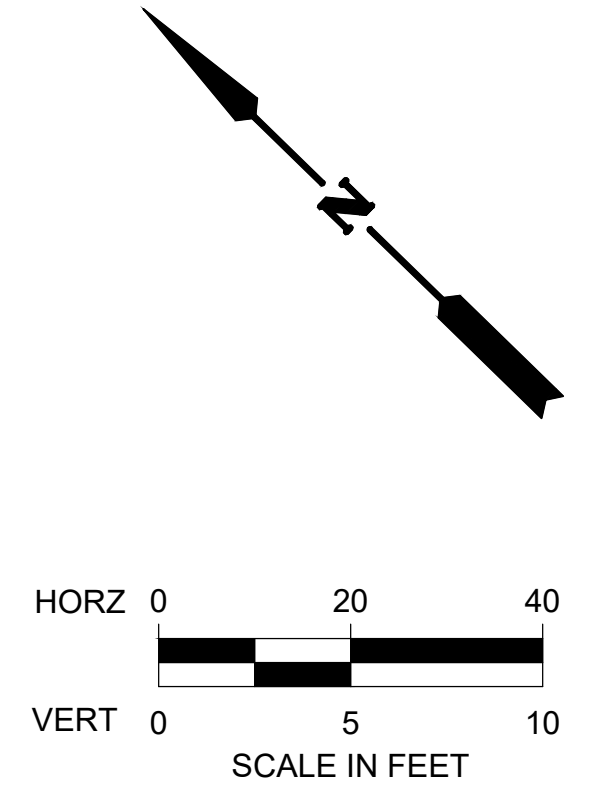
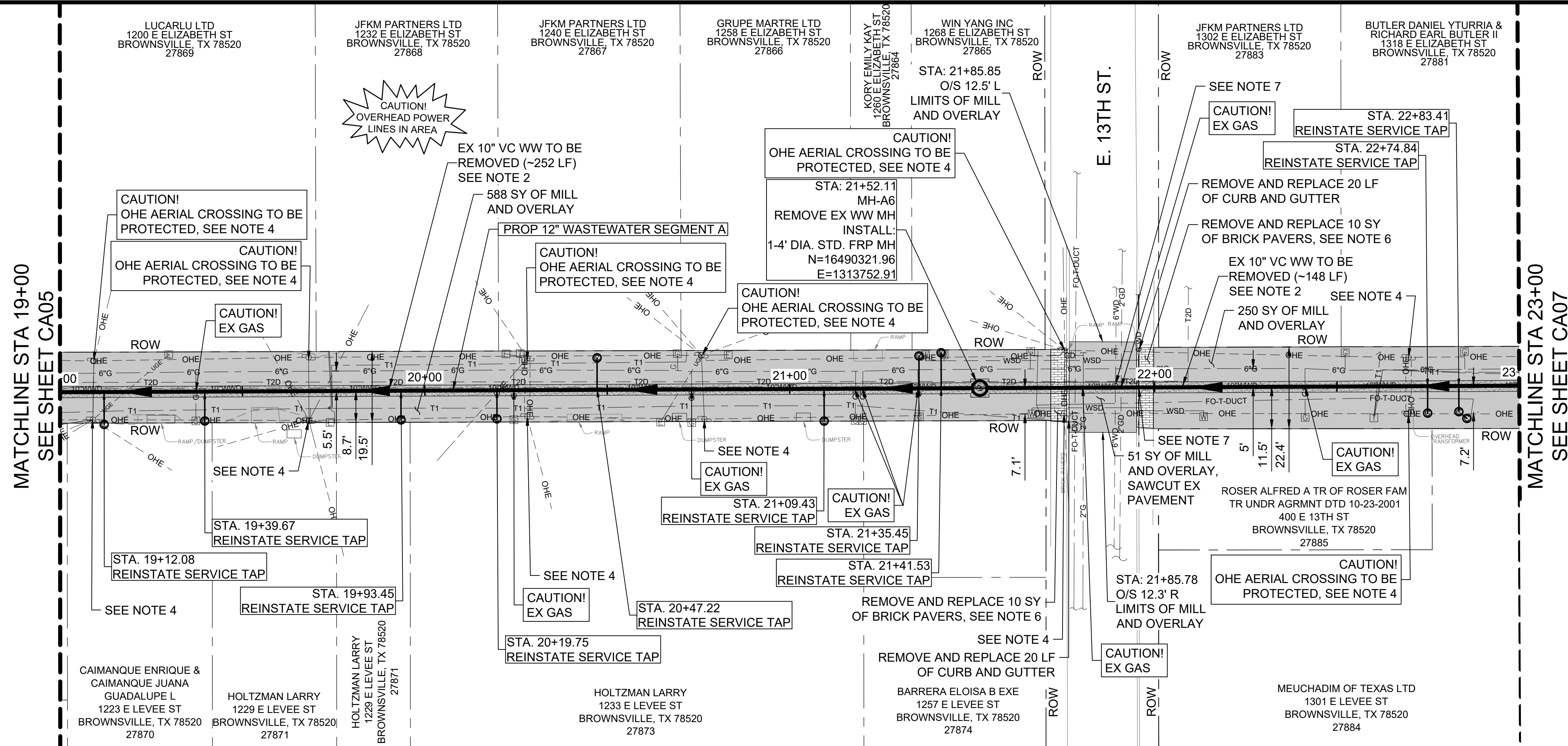
NO.	REVISION	BY	DATE

VERIFY SCALE: BAR LENGTH EQUALS ONE INCH ON ORIGINAL DRAWING. VERIFY LENGTH ON THIS SHEET 0' AND ADJUST SCALE ACCORDINGLY.

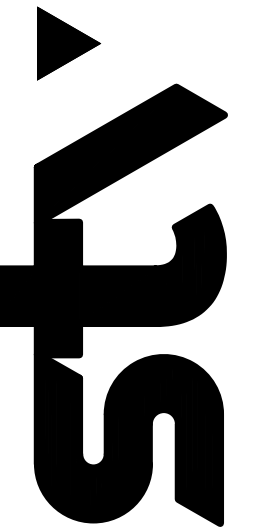
BROWNSVILLE PUBLIC UTILITIES BOARD
PROJECT 1: DOWNTOWN WW IMPROVEMENTS
SEGMENT A
PLAN AND PROFILE
STA 15+00 TO STA 19+00

DESIGN: GWM
DRAWN: GWM
REVIEW: JAE
STV: BPUB2200025.01

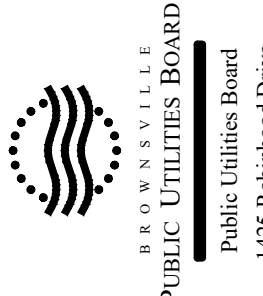
SHEET
CA05




- NOTES:
- SEWER SLOPES FOR THIS SEGMENT ARE MINIMUM ALLOWABLE VALUES. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR MAINTAINING VERTICAL ALIGNMENT. BPUB MAY MEASURE INVERT ELEVATIONS OF ALL MANHOLES FOR QUALITY CONTROL PURPOSES. CONTRACTOR SHALL ALLOW AT LEAST 48 HOURS FOR QUALITY CONTROL SURVEYING AND PROVIDE ALL NECESSARY EQUIPMENT FOR SAFE ACCESS TO ALL MANHOLES. ALLOWABLE TOLERANCE FOR DEVIATIONS IN VERTICAL ALIGNMENT SHALL NOT EXCEED ± 0.05 FEET UNLESS OTHERWISE ALLOWED BY THE ENGINEER OF RECORD IN WRITING.
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TEXAS REGISTERED ENGINEERING FIRM
 TYPE F-1741



BROWNVILLE PUBLIC UTILITIES BOARD
 Public Utilities Board
 1425 Robinhood Drive
 Brownsville, Texas 78521



11/10/2023
 135485
 PROFESSIONAL ENGINEER
 STATE OF TEXAS
 CIVIL ENGINEERING

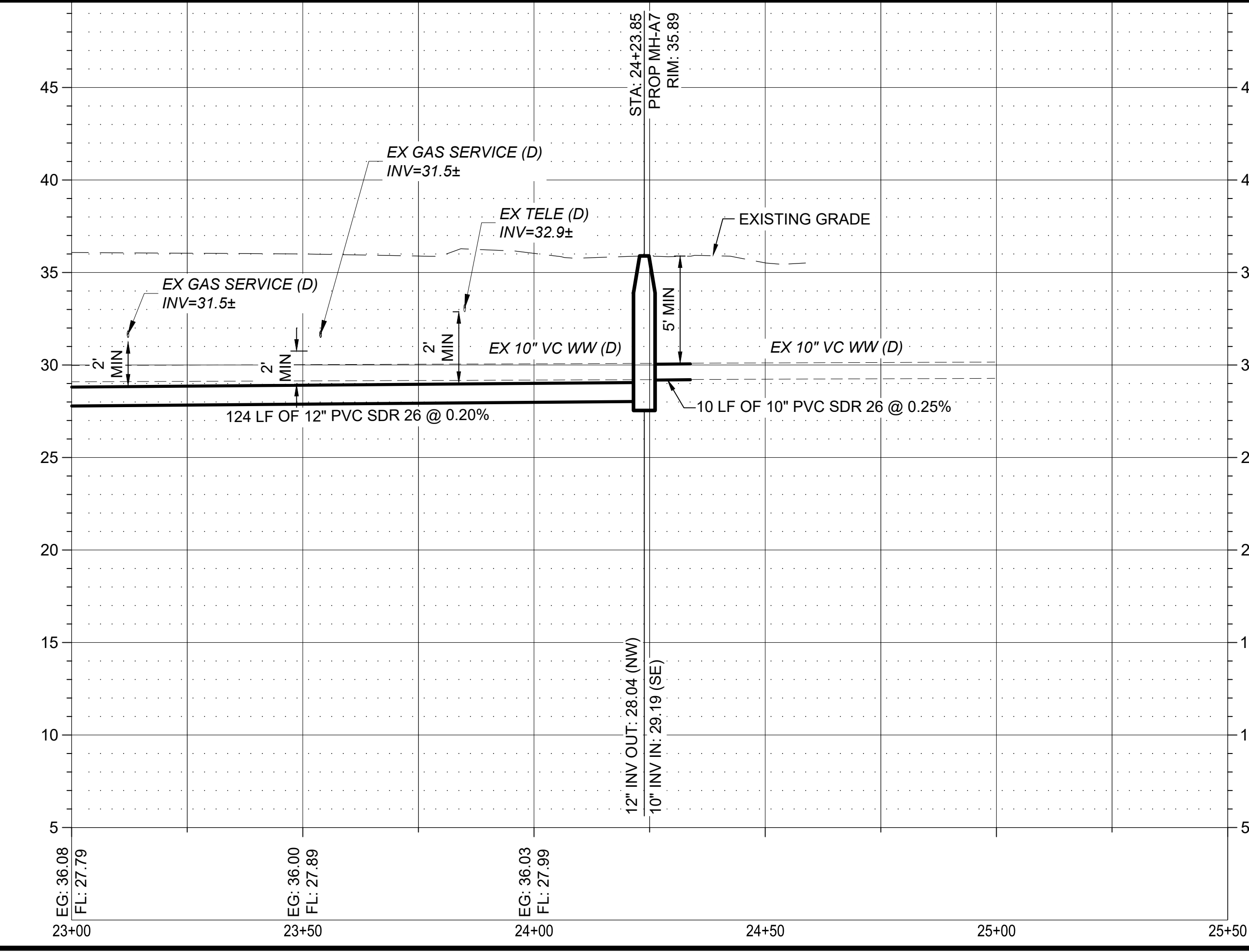
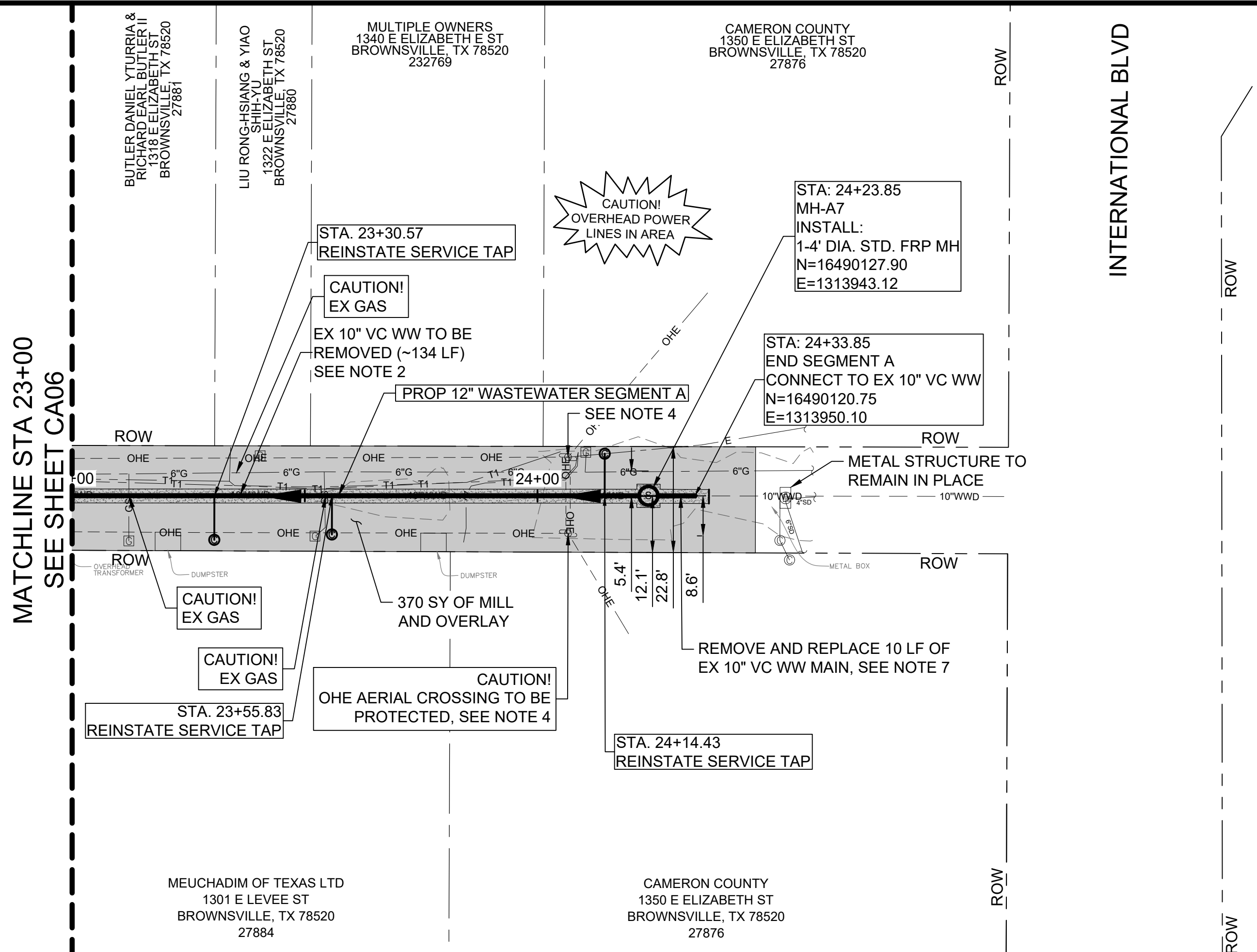
NO.	REVISION	BY	DATE

VERIFY SCALE: BAR LENGTH EQUALS ONE INCH ON ORIGINAL DRAWING. VERIFY LENGTH ON THIS SHEET AND ADJUST SCALE ACCORDINGLY.

BROWNVILLE PUBLIC UTILITIES BOARD
 PROJECT 1: DOWNTOWN WW IMPROVEMENTS
 SEGMENT A
 PLAN AND PROFILE
 STA 19+00 TO STA 23+00

DESIGN: GWM
DRAWN: GWM
REVIEW: JAE
STV: BPUB2200025.01

SHEET
 CA06



- NOTES:
- SEWER SLOPES FOR THIS SEGMENT ARE MINIMUM ALLOWABLE VALUES. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR MAINTAINING VERTICAL ALIGNMENT. BPUB MAY MEASURE INVERT ELEVATIONS OF ALL MANHOLES FOR QUALITY CONTROL PURPOSES. CONTRACTOR SHALL ALLOW AT LEAST 48 HOURS FOR QUALITY CONTROL SURVEYING AND PROVIDE ALL NECESSARY EQUIPMENT FOR SAFE ACCESS TO ALL MANHOLES. ALLOWABLE TOLERANCE FOR DEVIATIONS IN VERTICAL ALIGNMENT SHALL NOT EXCEED ± 0.05 FEET UNLESS OTHERWISE ALLOWED BY THE ENGINEER OF RECORD IN WRITING.
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 - REMOVE 10 LF OF EXISTING SANITARY SEWER. INSTALL 10 LF OF NEW PVC. PROVIDE FERNCO OR APPROVED EQUAL TRANSITION JOINT COUPLING AS REQUIRED TO CONNECT EXISTING PIPE TO PROPOSED PIPE. INSTALL CONCRETE JOINTING COLLAR PER DETAIL ON SHEET D-06. FIELD VERIFY OUTSIDE DIAMETER OF EXISTING PIPE PRIOR TO CONSTRUCTION.



BROWNSVILLE
 PUBLIC UTILITIES BOARD
 Public Utilities Board
 1425 Robinhood Drive
 Brownsville, Texas 78521



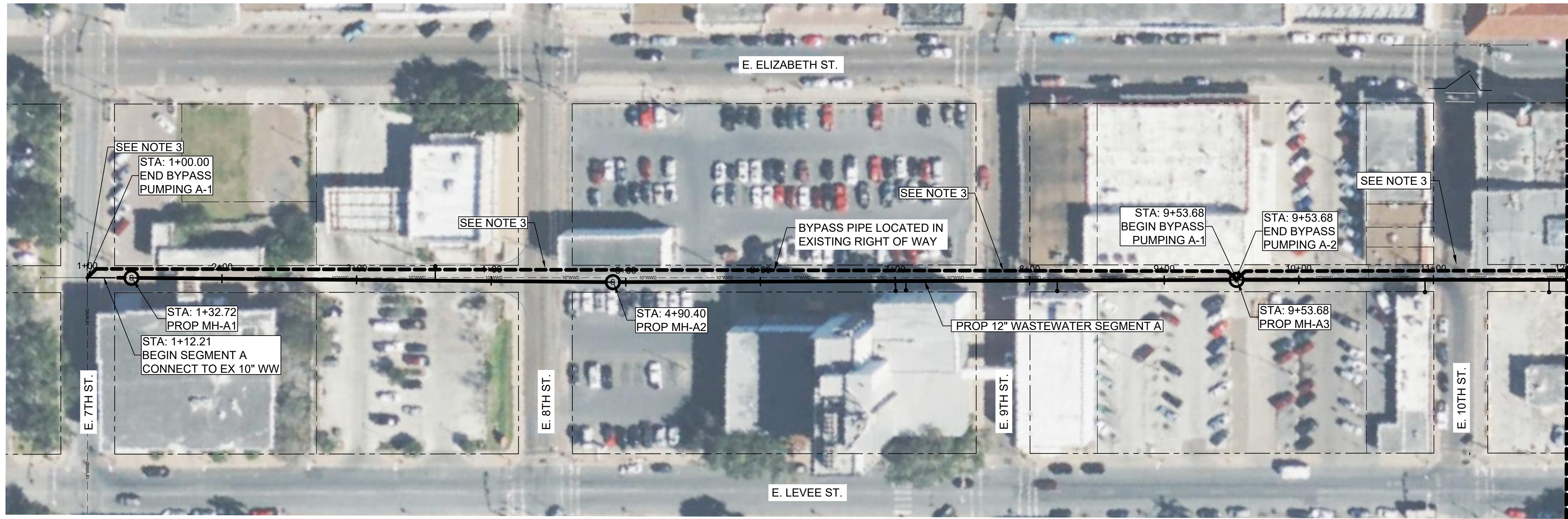
NO.	REVISION	BY	DATE

VERIFY SCALE BAR LENGTH EQUALS ONE INCH ON ORIGINAL DRAWING. VERIFY LENGTH ON THIS SHEET AND ADJUST SCALE ACCORDINGLY.

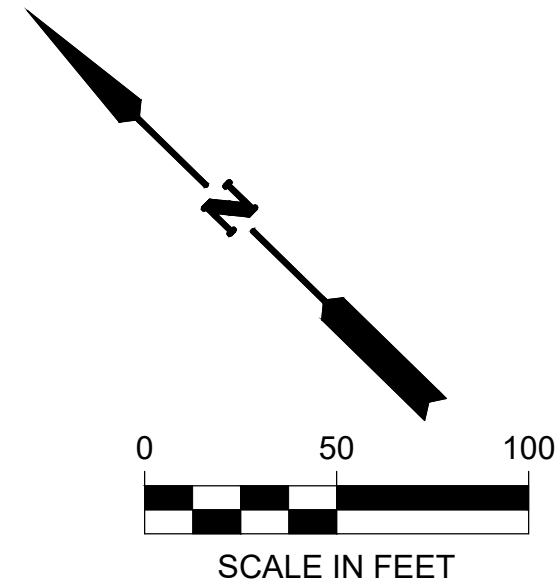
BROWNSVILLE PUBLIC UTILITIES BOARD
 PROJECT 1: DOWNTOWN WW IMPROVEMENTS
 SEGMENT A
 PLAN AND PROFILE
 STA 23+00 TO END SEGMENT A

DESIGN: GWM
 DRAWN: GWM
 REVIEW: JAE
 STV: BPUB2200025.01

SHEET
 CA07

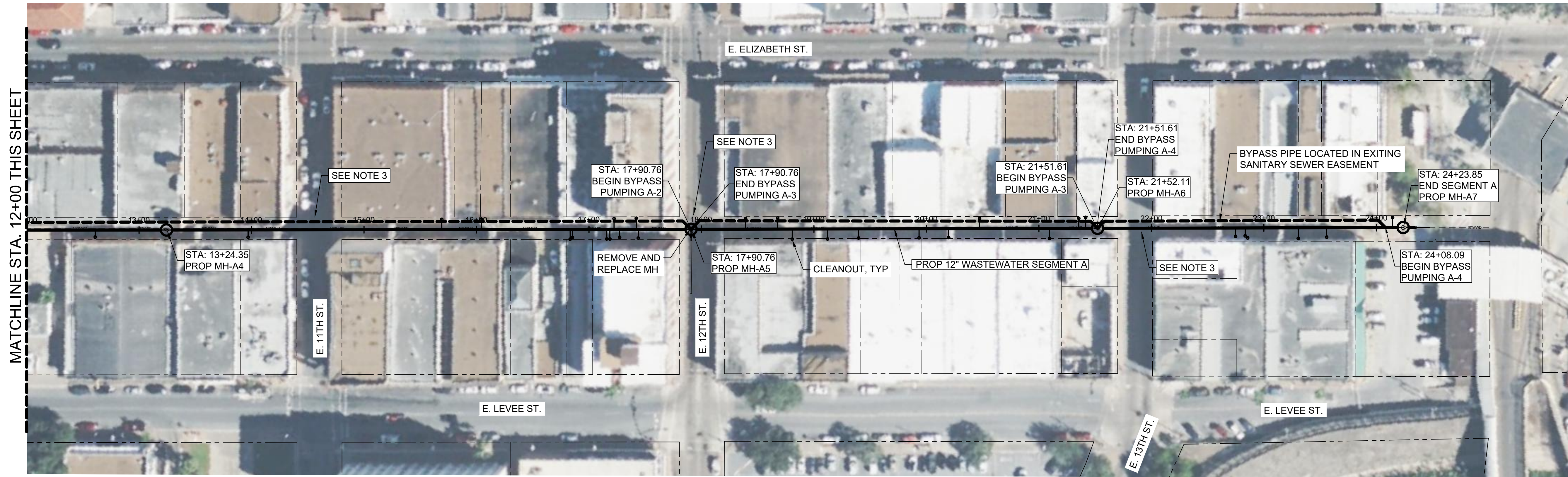


MATCHLINE STA. 12+00 THIS SHEET



- NOTES:
1. THE BYPASS PUMPING FLOW DATA SHEET IS FOR INFORMATION PURPOSES ONLY AND THE CONTRACTOR IS REQUIRED TO DEVELOP AN INDEPENDENT BYPASS PUMPING PLAN FOR BIDDING AND CONSTRUCTION PURPOSES.
 2. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SERVICE TO EXISTING LATERALS. CONTRACTOR SHALL FIELD VERIFY FLOW PRIOR TO BYPASS PUMPING.
 3. BYPASS PUMPING SHALL NOT BLOCK ANY ROADWAYS, DRIVEWAYS, SIDEWALKS, CROSSWALKS OR ANY OTHER MEANS OF INGRESS/EGRESS. UTILIZE ROAD RAMP OR OTHER MEANS TO MAINTAIN VEHICULAR AND PEDESTRIAN ACCESS.
 4. CONTRACTOR SHALL NOTIFY TxDOT, BPUB, THE CITY OF BROWNSVILLE, RESIDENTS, BUSINESS OWNERS, SCHOOLS, TRANSPORTATION DEPARTMENTS, VIA AND OTHER ENTITIES THAT MAY BE IMPACTED BY ROADWAY CLOSURE 6 WEEKS PRIOR TO ANTICIPATED ROADWAY CLOSURE. IN ADDITION, THE CONTRACTOR SHALL NOTIFY STAKEHOLDERS 72 HOURS PRIOR TO ANY ROADWAY CLOSURE.

BYPASS FLOW RATES- SEGMENT A	
MAXIMUM FLOW	1050 GPM
MAXIMUM VELOCITY	4.55 FT/S



MATCHLINE STA. 12+00 THIS SHEET

TEXAS REGISTERED ENGINEERING FIRM
 TYPE F-1741

BROWNSVILLE
 PUBLIC UTILITIES BOARD
 Public Utilities Board
 1425 Robinson Drive
 Brownsville, Texas 78521

11/10/2023

NO.	REVISION	BY	DATE

VERIFY SCALE: BAR LENGTH EQUALS ONE INCH ON ORIGINAL
 DRAWING. VERIFY LENGTH ON THIS SHEET
 0 1" AND ADJUST SCALE ACCORDINGLY.

BROWNSVILLE PUBLIC UTILITIES BOARD

PROJECT 1: DOWNTOWN WW IMPROVEMENTS

SEGMENT A

BYPASS PUMPING ROUTE

DESIGN: GWM

DRAWN: GWM

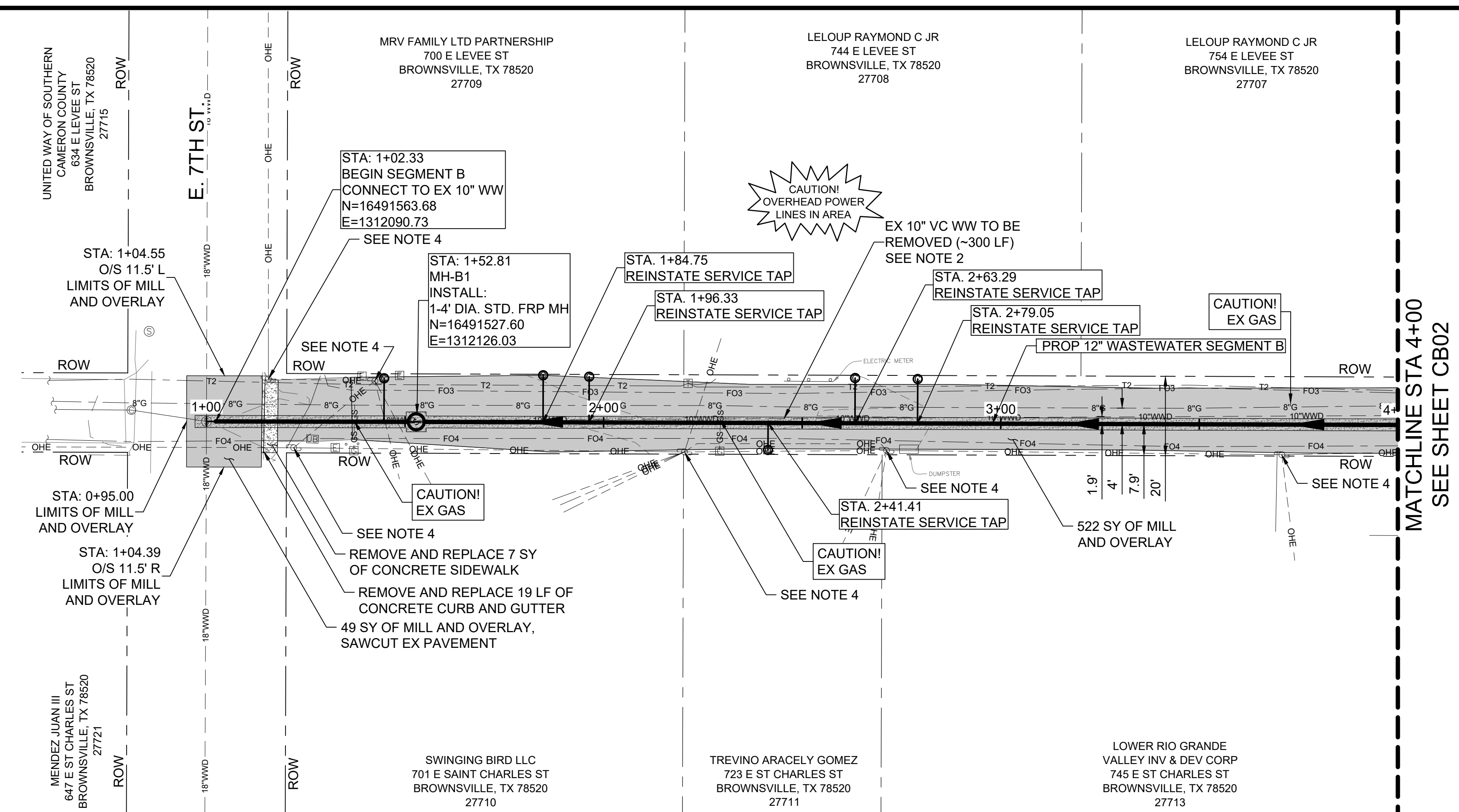
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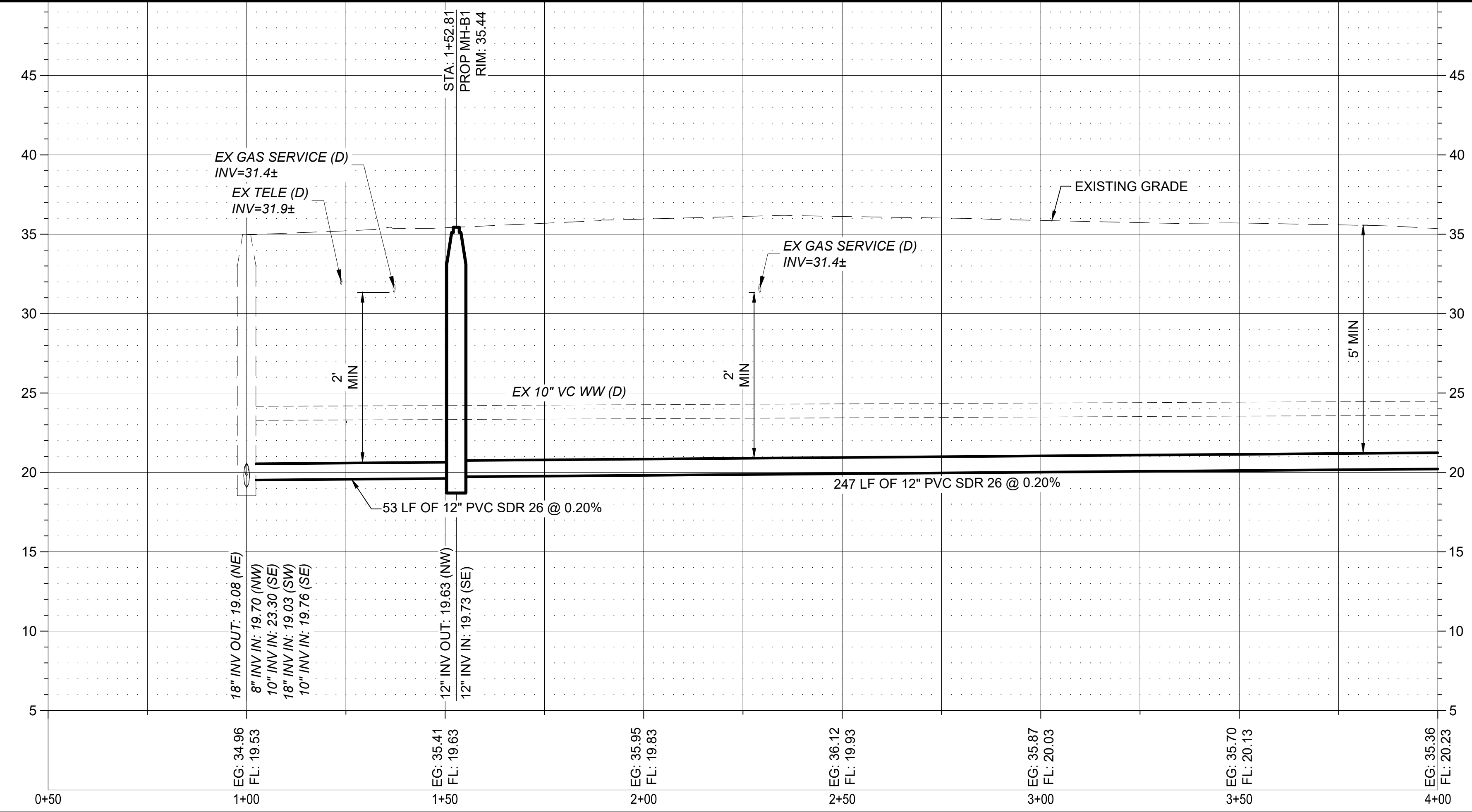
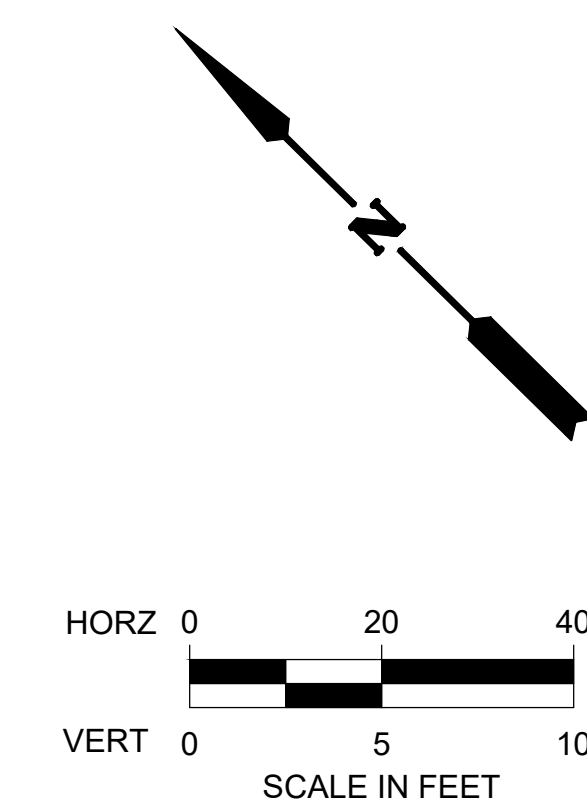
SHEET

CA08

PRINTED BY: MilkisGW DATE: 9/20/2023
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MATCHLINE STA 4+00
 SEE SHEET CB02



- NOTES:
- SEWER SLOPES FOR THIS SEGMENT ARE MINIMUM ALLOWABLE VALUES. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR MAINTAINING VERTICAL ALIGNMENT. BPUB MAY MEASURE INVERT ELEVATIONS OF ALL MANHOLES FOR QUALITY CONTROL PURPOSES. CONTRACTOR SHALL ALLOW AT LEAST 48 HOURS FOR QUALITY CONTROL SURVEYING AND PROVIDE ALL NECESSARY EQUIPMENT FOR SAFE ACCESS TO ALL MANHOLES. ALLOWABLE TOLERANCE FOR DEVIATIONS IN VERTICAL ALIGNMENT SHALL NOT EXCEED ± 0.05 FEET UNLESS OTHERWISE ALLOWED BY THE ENGINEER OF RECORD IN WRITING.
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TEXAS REGISTERED ENGINEERING FIRM
TYPE F-1741

BROWNVILLE
PUBLIC UTILITIES BOARD
Public Utilities Board
1425 Robinhood Drive
Brownsville, Texas 78521

11/10/2023

J. ARACELY GOMEZ
135485
PROFESSIONAL ENGINEER
CIVIL
STATE OF TEXAS

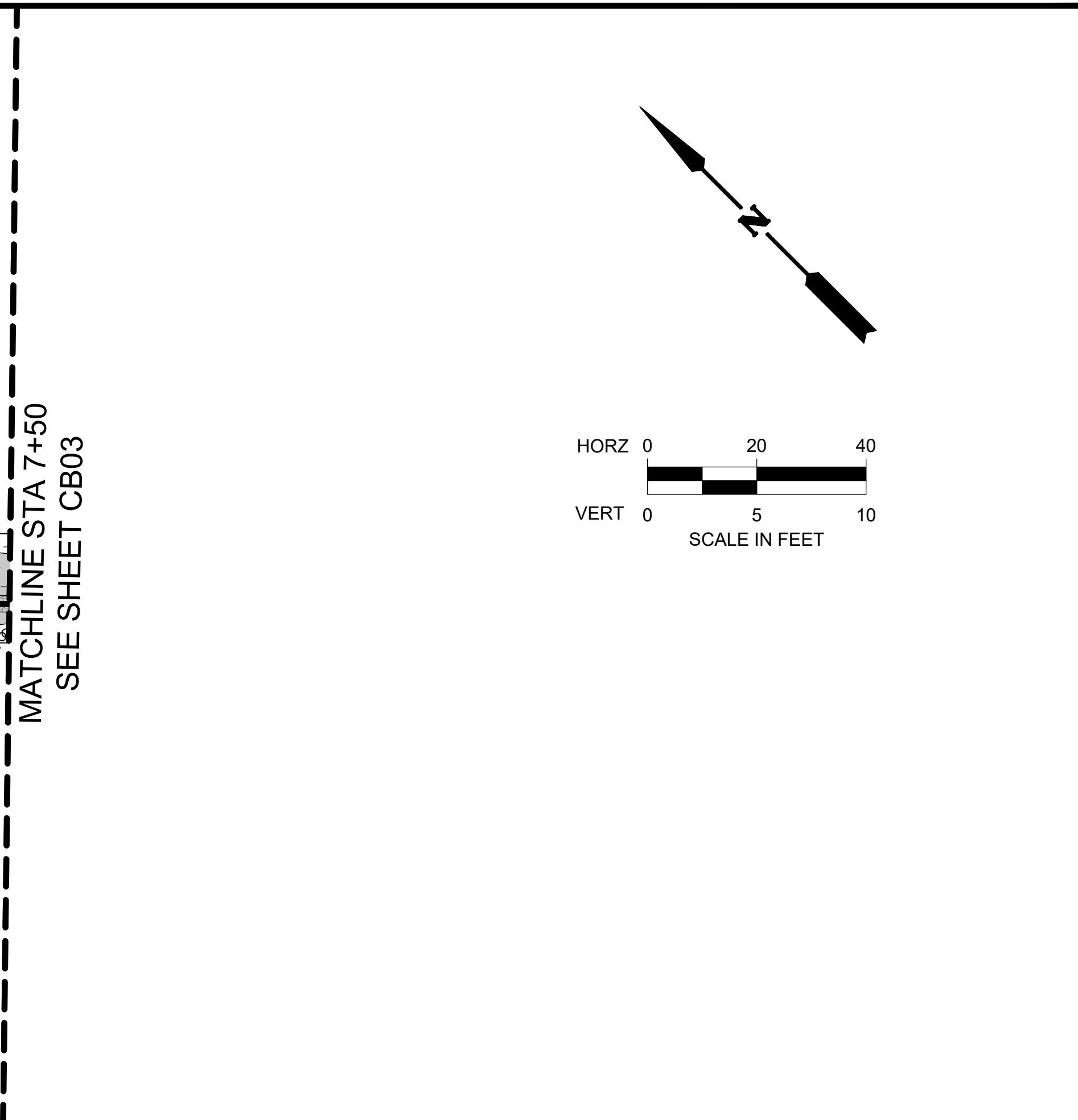
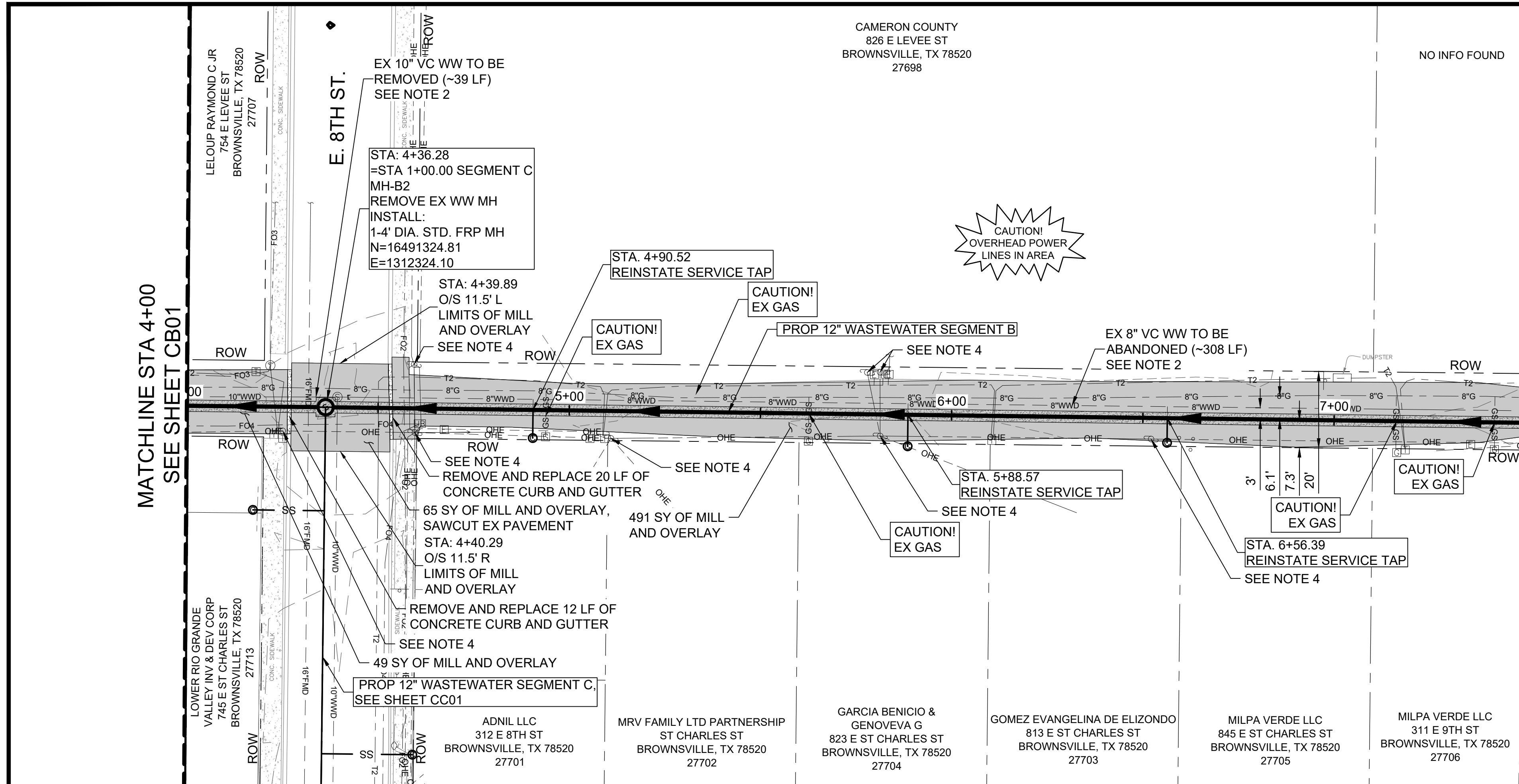
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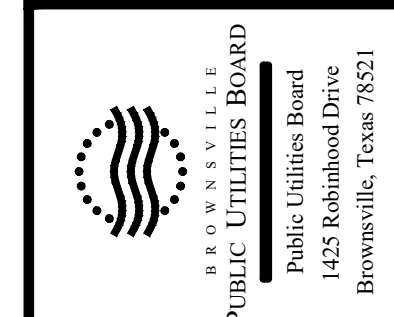
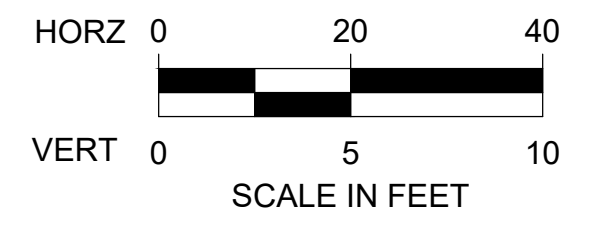
BROWNVILLE PUBLIC UTILITIES BOARD
 PROJECT 1: DOWNTOWN WW IMPROVEMENTS
 SEGMENT B
 PLAN AND PROFILE
 BEGIN SEGMENT B TO STA 4+00

DESIGN: GWM
 DRAWN: GWM
 REVIEW: JAE
 STV: BPUB2200025.01

SHEET
 CB01



- NOTES:
- SEWER SLOPES FOR THIS SEGMENT ARE MINIMUM ALLOWABLE VALUES. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR MAINTAINING VERTICAL ALIGNMENT. BPUB MAY MEASURE INVERT ELEVATIONS OF ALL MANHOLES FOR QUALITY CONTROL PURPOSES. CONTRACTOR SHALL ALLOW AT LEAST 48 HOURS FOR QUALITY CONTROL SURVEYING AND PROVIDE ALL NECESSARY EQUIPMENT FOR SAFE ACCESS TO ALL MANHOLES. ALLOWABLE TOLERANCE FOR DEVIATIONS IN VERTICAL ALIGNMENT SHALL NOT EXCEED ± 0.05 FEET UNLESS OTHERWISE ALLOWED BY THE ENGINEER OF RECORD IN WRITING.
 - EXISTING WASTEWATER PIPE LOCATED WITHIN THE LIMITS OF THE NEW CONSTRUCTION TRENCH SHALL BE REMOVED. EXISTING WASTEWATER PIPE LOCATED OUTSIDE THE LIMITS OF NEW CONSTRUCTION TRENCH SHALL BE GROUT FILLED, CAPPED, AND ABANDONED IN PLACE.
 - CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXACT LOCATION AND QUANTITY OF LATERALS PRIOR TO ABANDONMENT/REMOVAL OF EXISTING WASTEWATER LINE. ADDITIONAL LATERAL RELAY NOT SHOWN IN PLANS, MAY BE REQUIRED.
 - POWER POLE BRACING: CONTRACTOR SHALL COORDINATE WITH ELECTRICAL SERVICE PROVIDER TO BRACE AND/OR RELOCATE POWER POLES AS REQUIRED FOR CONSTRUCTION. (ALLOWANCE) SEE DETAIL E ON SHEET D-02.
 - CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION OF EXISTING UTILITIES PRIOR TO COMMENCING EXCAVATION. RELOCATE LINE AS NEEDED FOR CONSTRUCTION. (ALLOWANCE)
 - PROTECT EXISTING CROSSING AND PARALLEL WATERLINE. UNLESS OTHERWISE APPROVED BY BPUB, CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER SERVICE FOR ALL EXISTING WATER SERVICE. PROPOSED WASTEWATER PIPE SHALL BE 150 PSI PRESSURE CLASS PIPE.



NO.	REVISION	BY	DATE

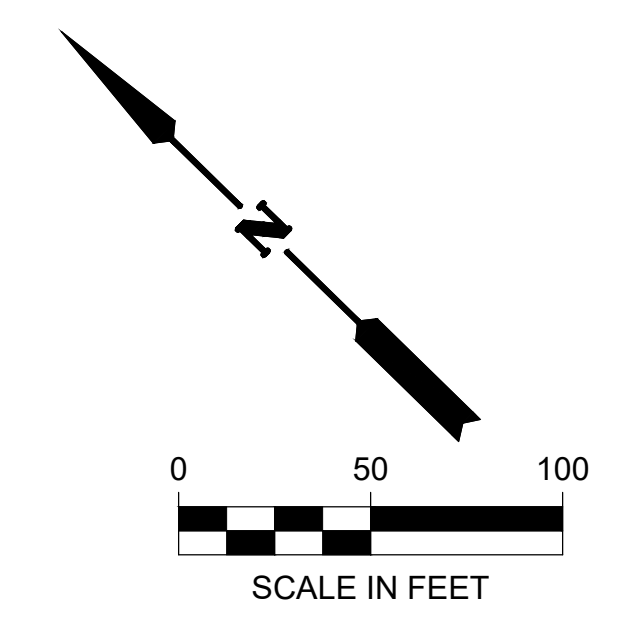
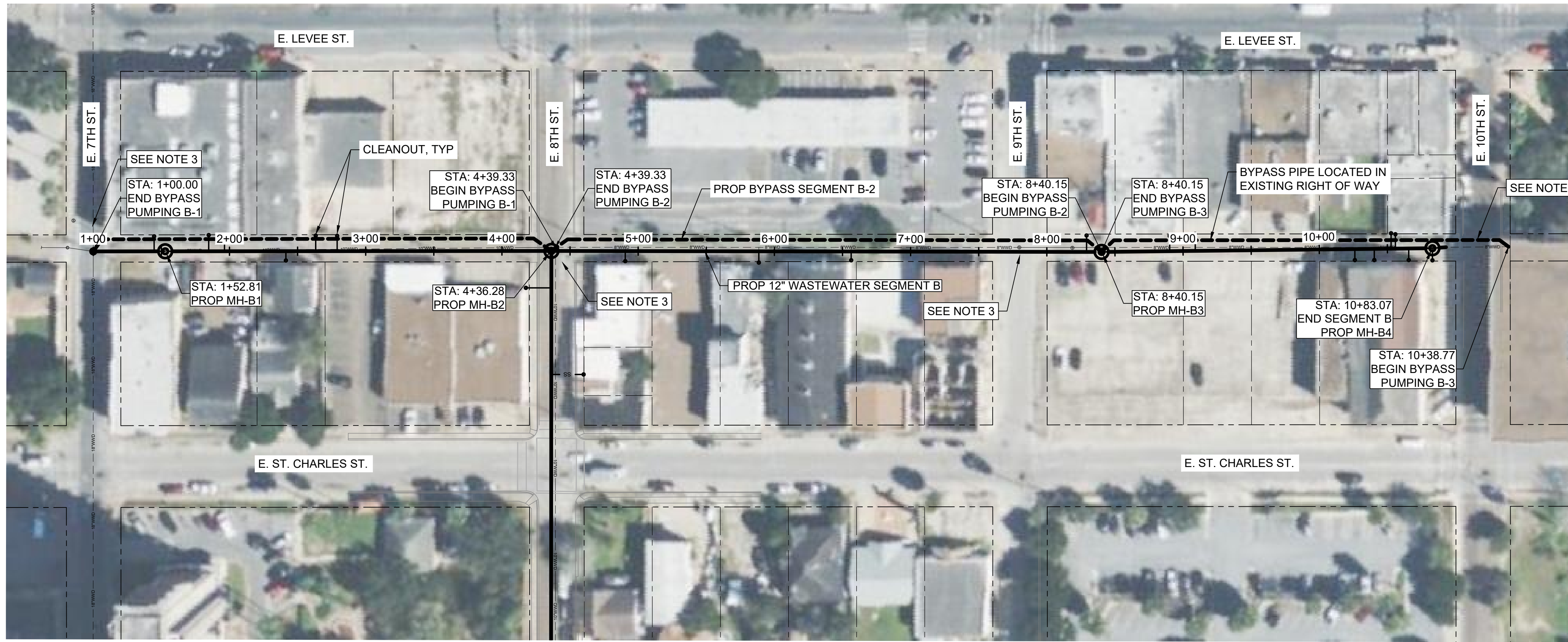
VERIFY SCALE BAR LENGTH EQUALS ONE INCH ON ORIGINAL DRAWING. VERIFY LENGTH ON THIS SHEET 0" AND ADJUST SCALE ACCORDINGLY.

BROWNSVILLE PUBLIC UTILITIES BOARD
 PROJECT 1: DOWNTOWN WW IMPROVEMENTS
 SEGMENT B
 PLAN AND PROFILE
 STA 4+00 TO STA 7+50

DESIGN: GWM
 DRAWN: GWM
 REVIEW: JAE
 STV: BPUB2200025.01

SHEET
 CB02

STV
 TEXAS REGISTERED ENGINEERING FIRM
 TYPE F-1741



- NOTES:
1. THE BYPASS PUMPING FLOW DATA SHEET IS FOR INFORMATION PURPOSES ONLY AND THE CONTRACTOR IS REQUIRED TO DEVELOP AN INDEPENDENT BYPASS PUMPING PLAN FOR BIDDING AND CONSTRUCTION PURPOSES.
 2. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SERVICE TO EXISTING LATERALS. CONTRACTOR SHALL FIELD VERIFY FLOW PRIOR TO BYPASS PUMPING.
 3. BYPASS PUMPING SHALL NOT BLOCK ANY ROADWAYS, DRIVEWAYS, SIDEWALKS, CROSSWALKS OR ANY OTHER MEANS OF INGRESS/EGRESS. UTILIZE ROAD RAMP OR OTHER MEANS TO MAINTAIN VEHICULAR AND PEDESTRIAN ACCESS.
 4. CONTRACTOR SHALL NOTIFY TxDOT, BPUB, THE CITY OF BROWNSVILLE, RESIDENTS, BUSINESS OWNERS, SCHOOLS, TRANSPORTATION DEPARTMENTS, VIA AND OTHER ENTITIES THAT MAY BE IMPACTED BY ROADWAY CLOSURE 6 WEEKS PRIOR TO ANTICIPATED ROADWAY CLOSURE. IN ADDITION, THE CONTRACTOR SHALL NOTIFY STAKEHOLDERS 72 HOURS PRIOR TO ANY ROADWAY CLOSURE.

BYPASS FLOW RATES: SEGMENT B	
MAXIMUM FLOW	346 GPM
MAXIMUM VELOCITY	2.08 FT/S

TEXAS REGISTERED ENGINEERING FIRM
 TYPE F-1741

BROWNSVILLE
 PUBLIC UTILITIES BOARD
 Public Utilities Board
 1425 Robinhood Drive
 Brownsville, Texas 78521

11/10/2023

NO.	REVISION	BY	DATE

VERIFY SCALE: BAR LENGTH EQUALS ONE INCH ON ORIGINAL
 DRAWING. VERIFY LENGTH ON THIS SHEET
 AND ADJUST SCALE ACCORDINGLY.

0

1"

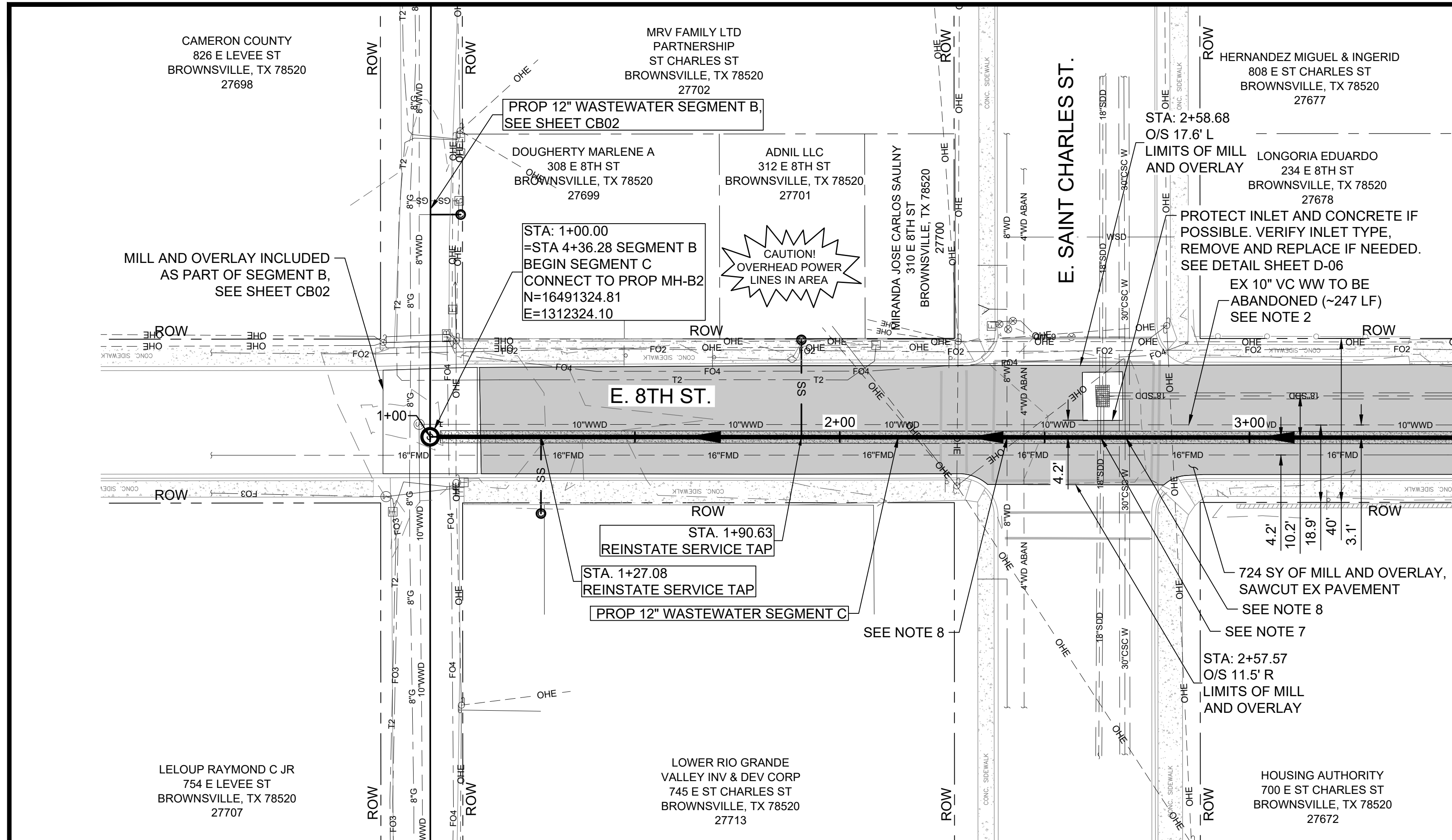
BROWNSVILLE PUBLIC UTILITIES BOARD
 PROJECT 1: DOWNTOWN WW IMPROVEMENTS

SEGMENT B
 BYPASS PUMPING ROUTE

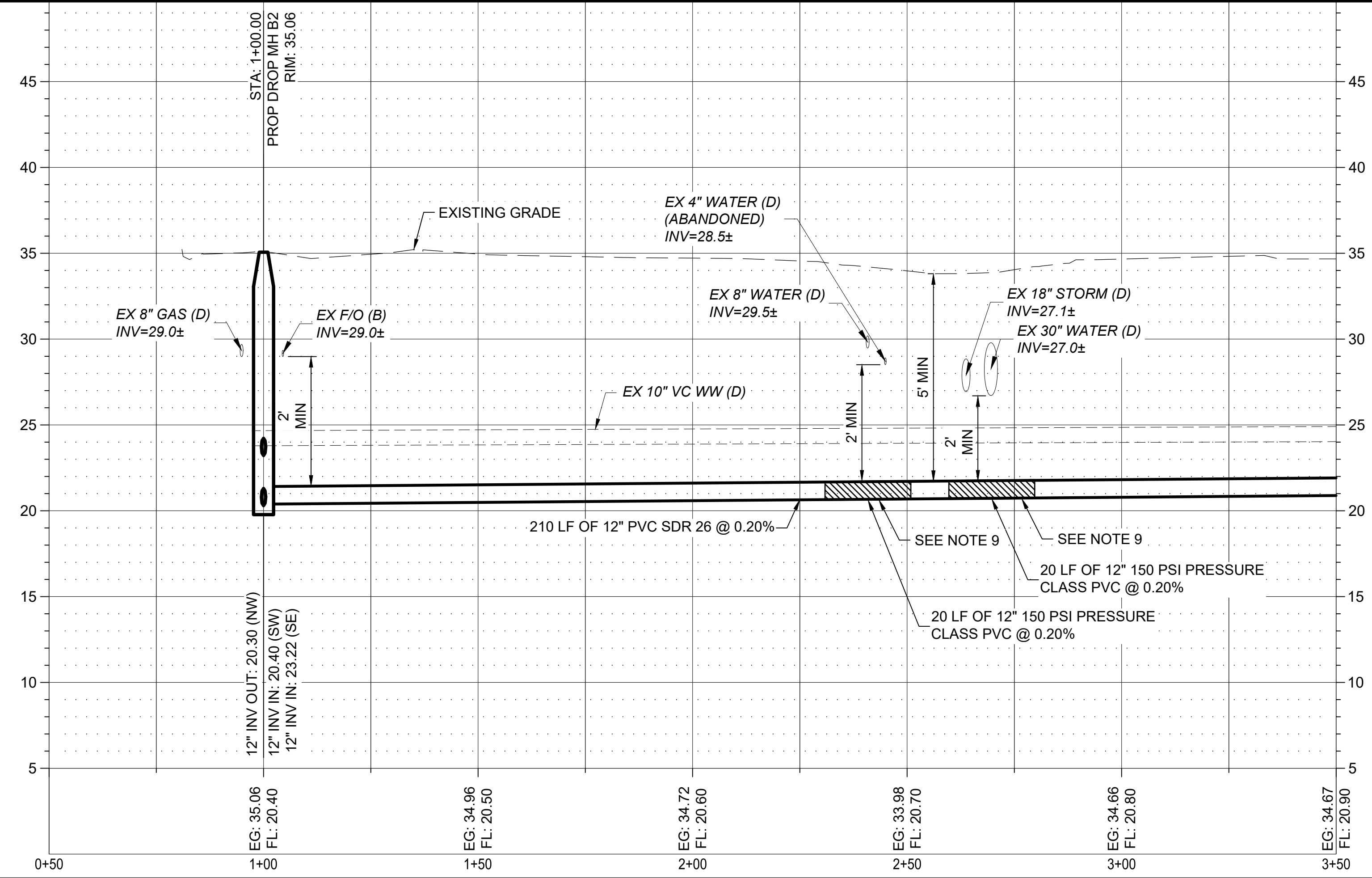
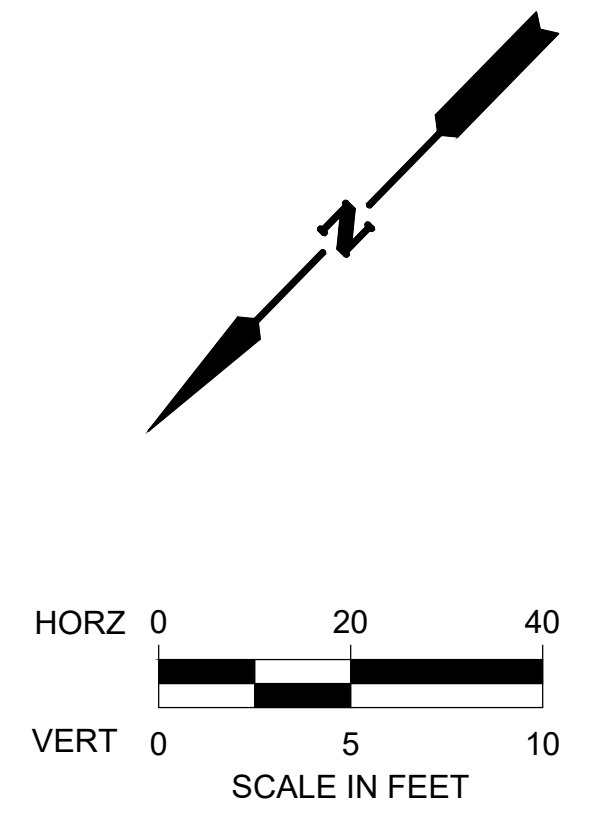
DESIGN: GWM
 DRAWN: GWM
 REVIEW: JAE
 STV: BPUB2200025.01

SHEET
 CB04

PRINTED BY: Dieckhoff DATE: 10/30/2023
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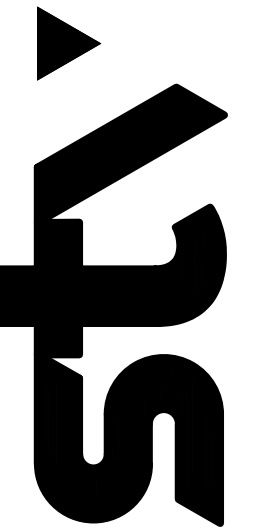


MATCHLINE STA 3+50
 SEE SHEET CC02

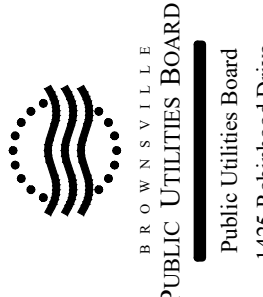


NOTES:


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- CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXACT LOCATION AND QUANTITY OF LATERALS PRIOR TO ABANDONMENT/REMOVAL OF EXISTING WASTEWATER LINE. ADDITIONAL LATERAL RELAY NOT SHOWN IN PLANS, MAY BE REQUIRED.
- POWER POLE BRACING: CONTRACTOR SHALL COORDINATE WITH ELECTRICAL SERVICE PROVIDER TO BRACE AND/OR RELOCATE POWER POLES AS REQUIRED FOR CONSTRUCTION. (ALLOWANCE) SEE DETAIL E ON SHEET D-02.
- CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION OF EXISTING UTILITIES PRIOR TO COMMENCING EXCAVATION. RELOCATE LINE AS NEEDED FOR CONSTRUCTION. (ALLOWANCE)
- PROTECT EXISTING 18" STORM DRAIN IF POSSIBLE. IF NEEDED, CONTRACTOR SHALL REMOVE AND REPLACE ±16 LF OF STORM DRAIN PIPE. MANAGE STORM WATER TO PREVENT BANK EROSION OR PONDING DURING CONSTRUCTION.
- PROTECT EXISTING CROSSING AND PARALLEL WATERLINE. UNLESS OTHERWISE APPROVED BY BPUB, CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER SERVICE FOR ALL EXISTING WATER SERVICE. PROPOSED WASTEWATER PIPE SHALL BE 150 PSI PRESSURE CLASS PIPE.
- AT JOINTS BETWEEN STANDARD AND PRESSURE RATED PVC PROVIDE FERNCO OR APPROVED EQUAL TRANSITION JOINT COUPLING. INSTALL CONCRETE JOINTING COLLAR PER DETAIL ON SHEET D-06. FIELD VERIFY OUTSIDE DIAMETER OF EXISTING PIPE PRIOR TO CONSTRUCTION.



TEXAS REGISTERED ENGINEERING FIRM
 TYPE F-1741



BROWNVILLE PUBLIC UTILITIES BOARD
 Public Utilities Board
 1425 Robinson Drive
 Brownsville, Texas 78521



11/10/2023

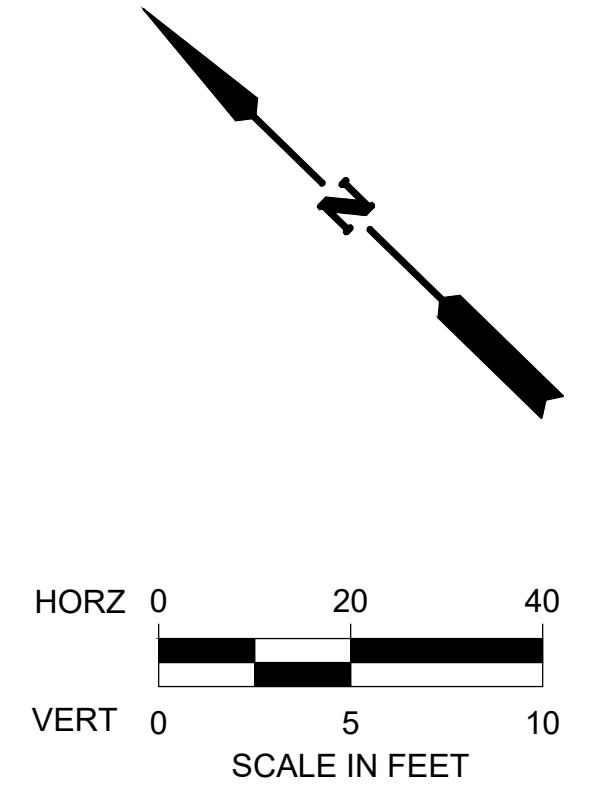
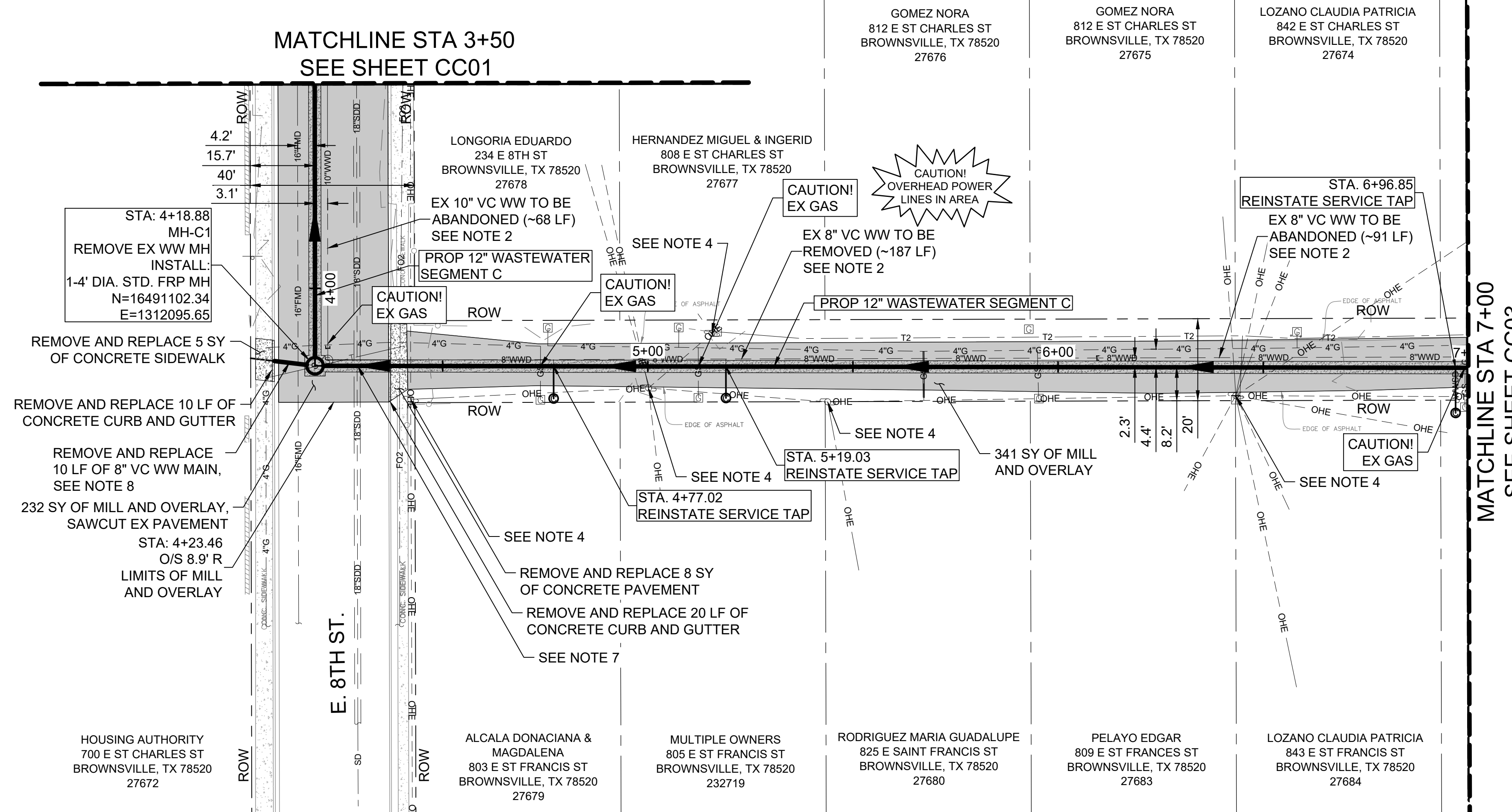
NO.	REVISION	BY	DATE

BROWNVILLE PUBLIC UTILITIES BOARD
 PROJECT 1: DOWNTOWN WW IMPROVEMENTS
 SEGMENT C
 PLAN AND PROFILE
 BEGIN SEGMENT C TO STA 3+50

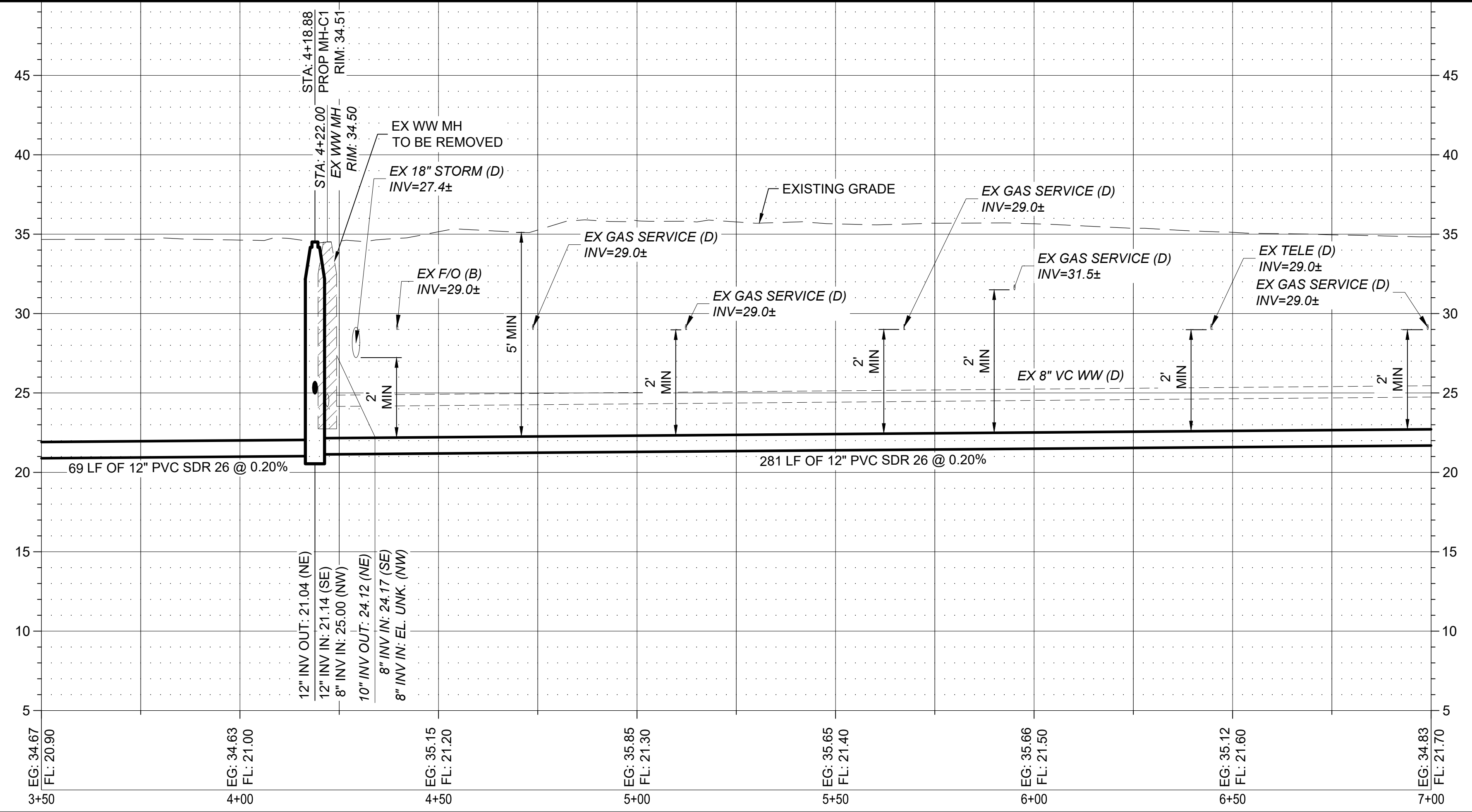
DESIGN: GWM
DRAWN: GWM
REVIEW: JAE
STV: BPUB2200025.01

SHEET
CC01

MATCHLINE STA 3+50
 SEE SHEET CC01



MATCHLINE STA 7+00
 SEE SHEET CC03



- NOTES:
- SEWER SLOPES FOR THIS SEGMENT ARE MINIMUM ALLOWABLE VALUES. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR MAINTAINING VERTICAL ALIGNMENT. BPUB MAY MEASURE INVERT ELEVATIONS OF ALL MANHOLES FOR QUALITY CONTROL PURPOSES. CONTRACTOR SHALL ALLOW AT LEAST 48 HOURS FOR QUALITY CONTROL SURVEYING AND PROVIDE ALL NECESSARY EQUIPMENT FOR SAFE ACCESS TO ALL MANHOLES. ALLOWABLE TOLERANCE FOR DEVIATIONS IN VERTICAL ALIGNMENT SHALL NOT EXCEED ± 0.05 FEET UNLESS OTHERWISE ALLOWED BY THE ENGINEER IN WRITING.
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 - REMOVE 10 LF OF EXISTING SANITARY SEWER. INSTALL 10 LF OF NEW PVC. PROVIDE FERNCO OR APPROVED EQUAL TRANSITION COUPLING AS REQUIRED TO CONNECT EXISTING PIPE TO PROPOSED PIPE. INSTALL CONCRETE JOINTING COLLAR PER DETAIL ON SHEET D-06. FIELD VERIFY OUTSIDE DIAMETER OF EXISTING PIPE PRIOR TO CONSTRUCTION.



TEXAS REGISTERED ENGINEERING FIRM
 TYPE F-1741

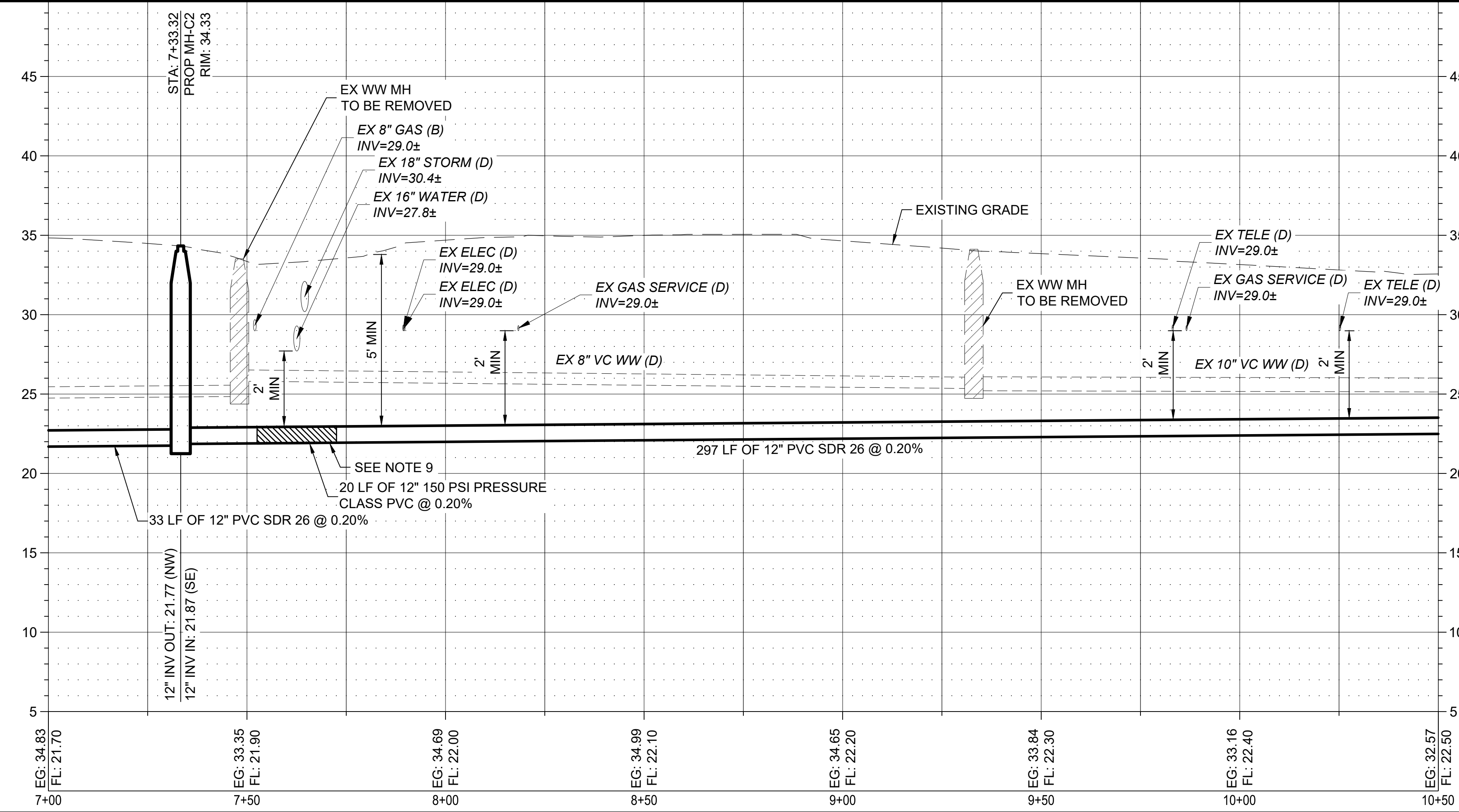
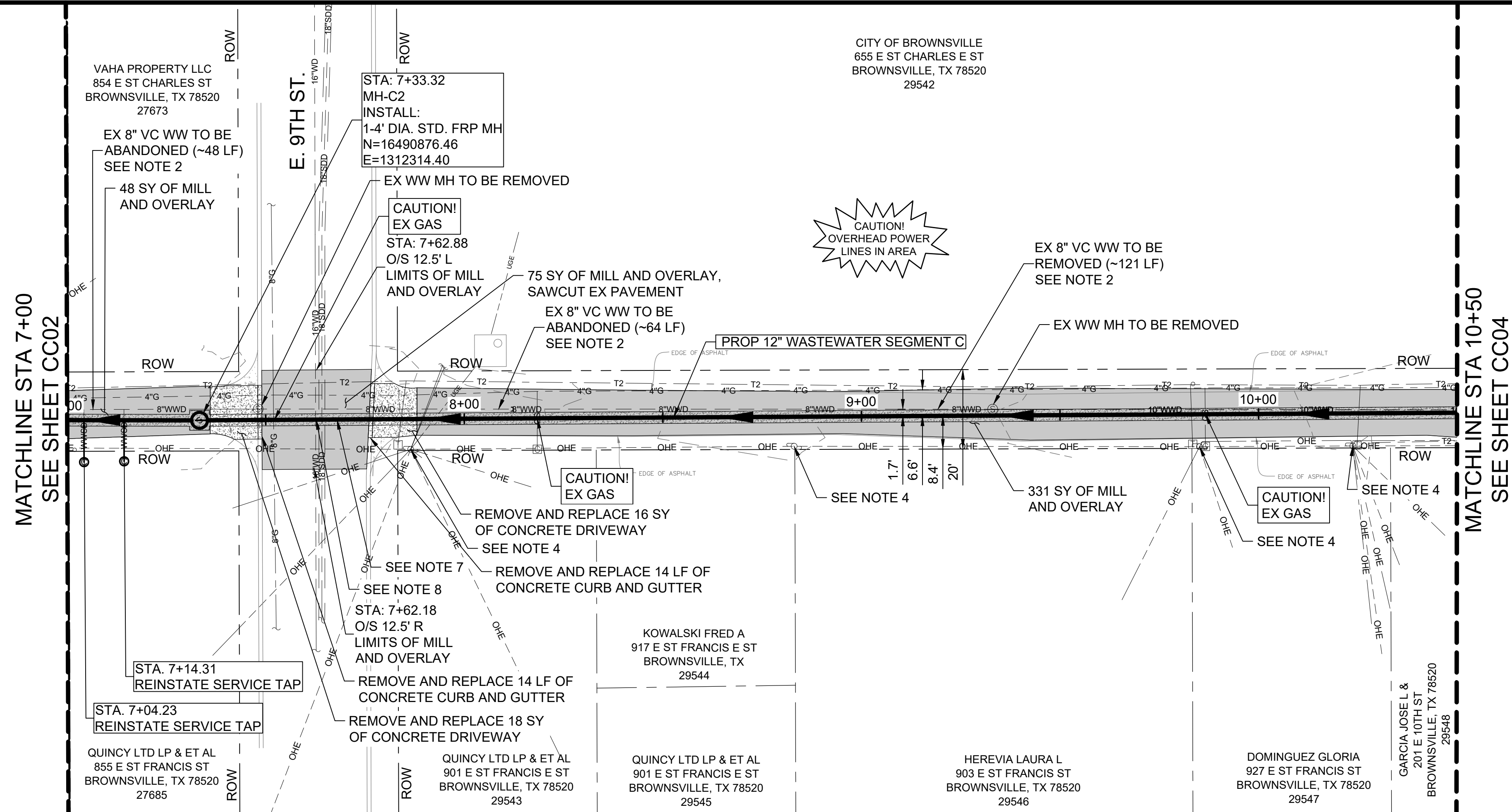


NO.	REVISION	BY	DATE
	VERIFY SCALE		
	BAR LENGTH EQUALS ONE INCH ON ORIGINAL		
	DRAWING VERIFY LENGTH ON THIS SHEET		
	0 1" AND ADJUST SCALE ACCORDINGLY.		

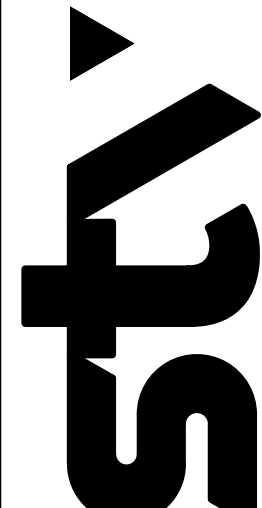
BROWNSVILLE PUBLIC UTILITIES BOARD
 PROJECT 1: DOWNTOWN WW IMPROVEMENTS
 SEGMENT C
 PLAN AND PROFILE
 STA 3+50 TO STA 7+00

DESIGN: GWM
 DRAWN: GWM
 REVIEW: JAE
 STV: BPUB2200025.01

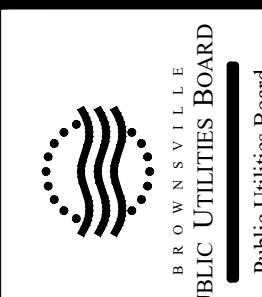
SHEET
 CC02



- NOTES:
- SEWER SLOPES FOR THIS SEGMENT ARE MINIMUM ALLOWABLE VALUES. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR MAINTAINING VERTICAL ALIGNMENT. BPUB MAY MEASURE INVERT ELEVATIONS OF ALL MANHOLES FOR QUALITY CONTROL PURPOSES. CONTRACTOR SHALL ALLOW AT LEAST 48 HOURS FOR QUALITY CONTROL SURVEYING AND PROVIDE ALL NECESSARY EQUIPMENT FOR SAFE ACCESS TO ALL MANHOLES. ALLOWABLE TOLERANCE FOR DEVIATIONS IN VERTICAL ALIGNMENT SHALL NOT EXCEED ± 0.05 FEET UNLESS OTHERWISE ALLOWED BY THE ENGINEER OF RECORD IN WRITING.
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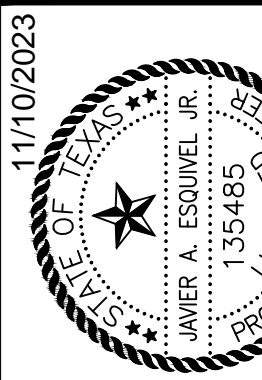


TEXAS REGISTERED ENGINEERING FIRM
 TBPE F-1741



BROWNSVILLE PUBLIC UTILITIES BOARD
 Public Utilities Board
 1425 Robinson Drive
 Brownsville, Texas 78521

11/10/2023



135485
 PROFESSIONAL ENGINEER
 CIVIL
 STATE OF TEXAS

NO.	REVISION	BY	DATE

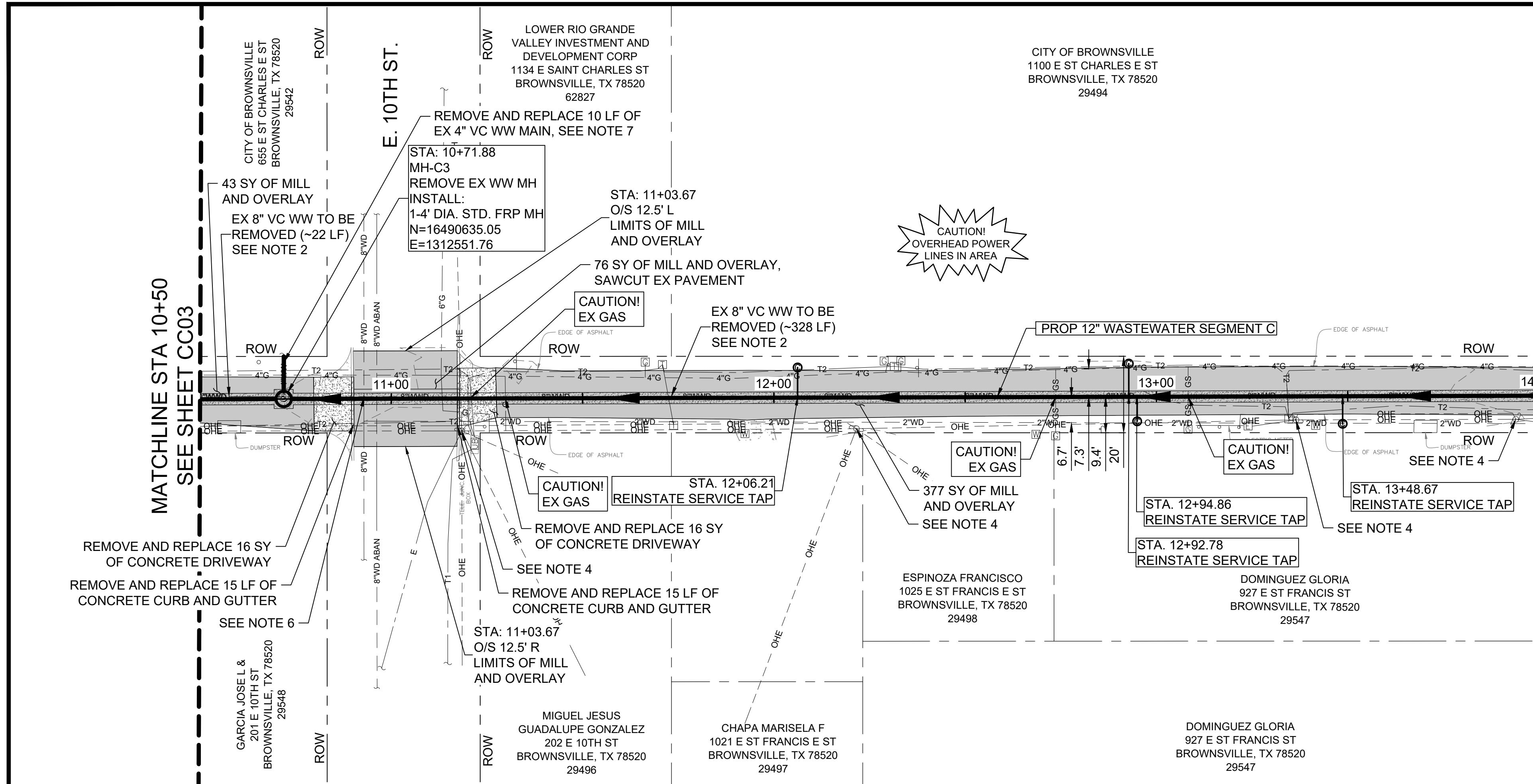
VERIFY SCALE BAR LENGTH EQUALS ONE INCH ON ORIGINAL DRAWING. VERIFY LENGTH ON THIS SHEET AND ADJUST SCALE ACCORDINGLY.

BROWNSVILLE PUBLIC UTILITIES BOARD
 PROJECT 1: DOWNTOWN WW IMPROVEMENTS
 SEGMENT C
 PLAN AND PROFILE
 STA 7+00 TO STA 10+50

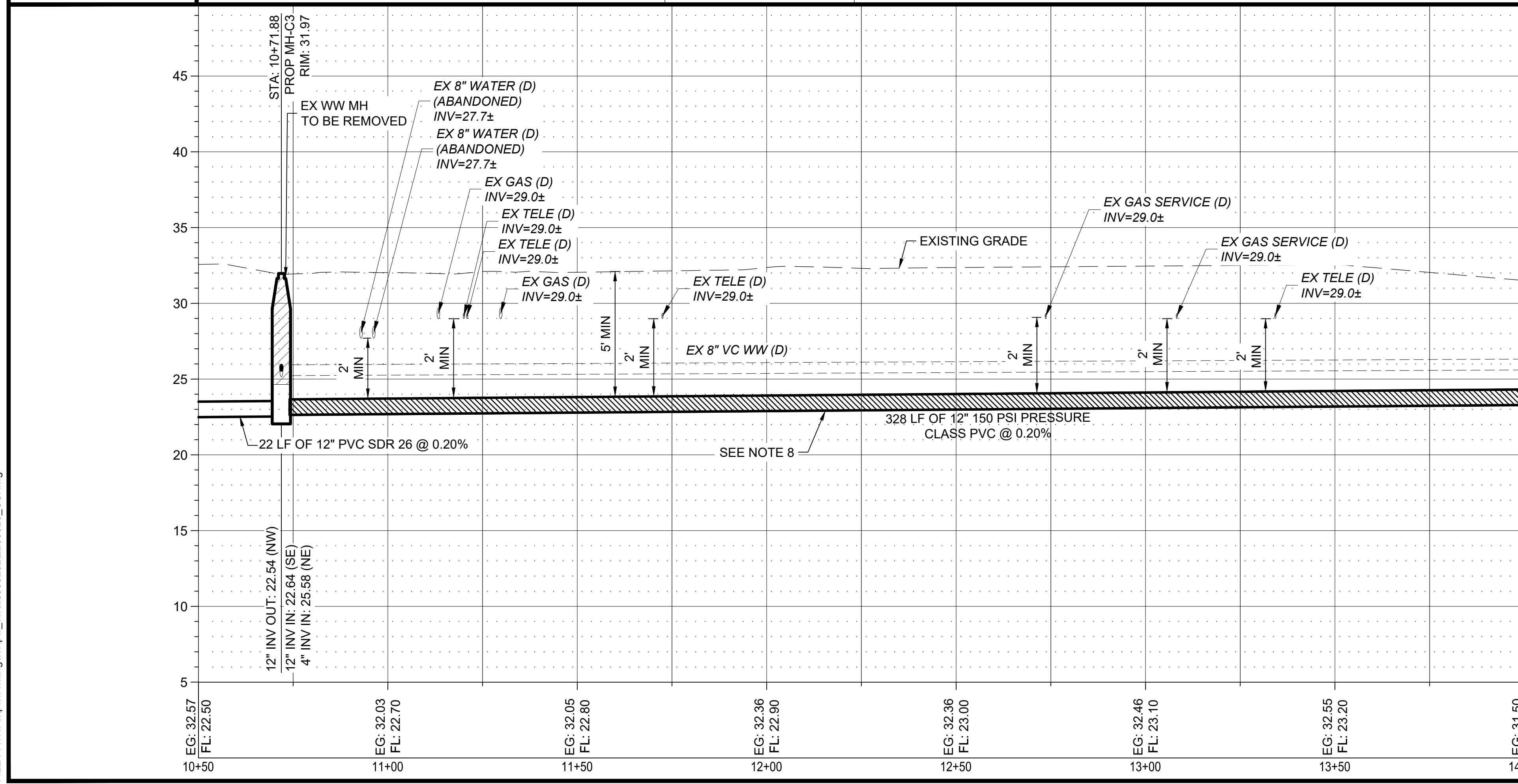
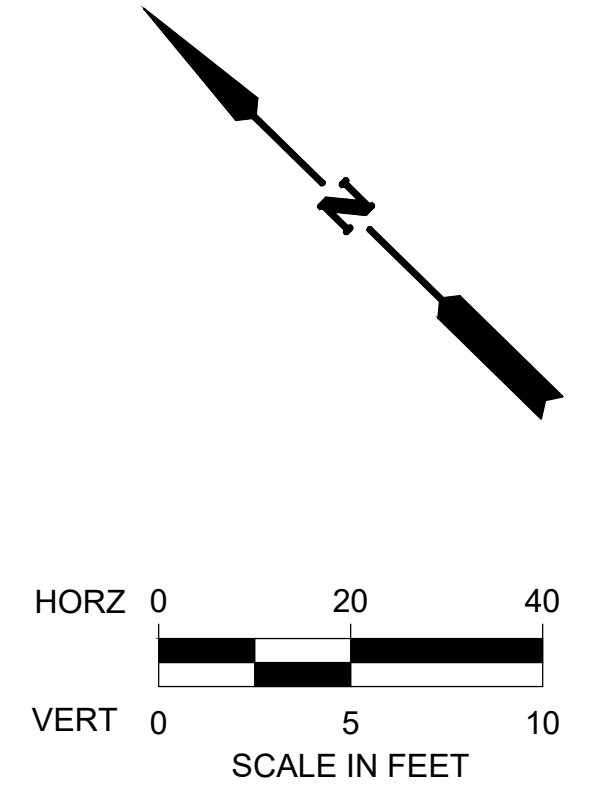
DESIGN: GWM
DRAWN: GWM
REVIEW: JAE
STV: BPUB2200025.01

SHEET
 CC03

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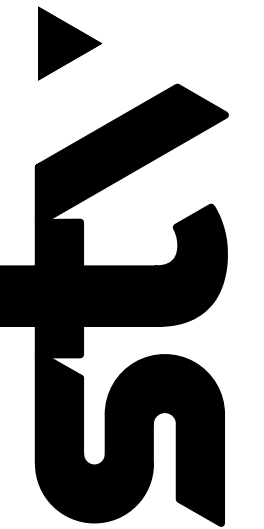


MATCHLINE STA 14+00
 SEE SHEET CC05

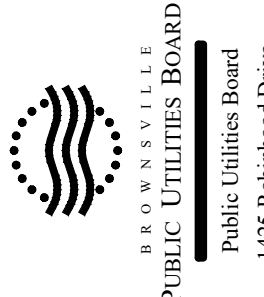


NOTES:


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- REMOVE 10 LF OF EXISTING SANITARY SEWER. INSTALL 10 LF OF NEW PVC. PROVIDE FERNCO OR APPROVED EQUAL TRANSITION COUPLING AS REQUIRED TO CONNECT EXISTING PIPE TO PROPOSED PIPE. INSTALL CONCRETE JOINTING COLLAR PER DETAIL ON SHEET D-06. FIELD VERIFY OUTSIDE DIAMETER OF EXISTING PIPE PRIOR TO CONSTRUCTION.
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TEXAS REGISTERED ENGINEERING FIRM
 TBPE F-1741



BROWNVILLE PUBLIC UTILITIES BOARD
 Public Utilities Board
 1425 Robinhood Drive
 Brownsville, Texas 78521



11/10/2023

NO.	REVISION	BY	DATE

VERIFY SCALE: BAR LENGTH EQUALS ONE INCH ON ORIGINAL DRAWING. VERIFY LENGTH ON THIS SHEET AND ADJUST SCALE ACCORDINGLY.

BROWNVILLE PUBLIC UTILITIES BOARD

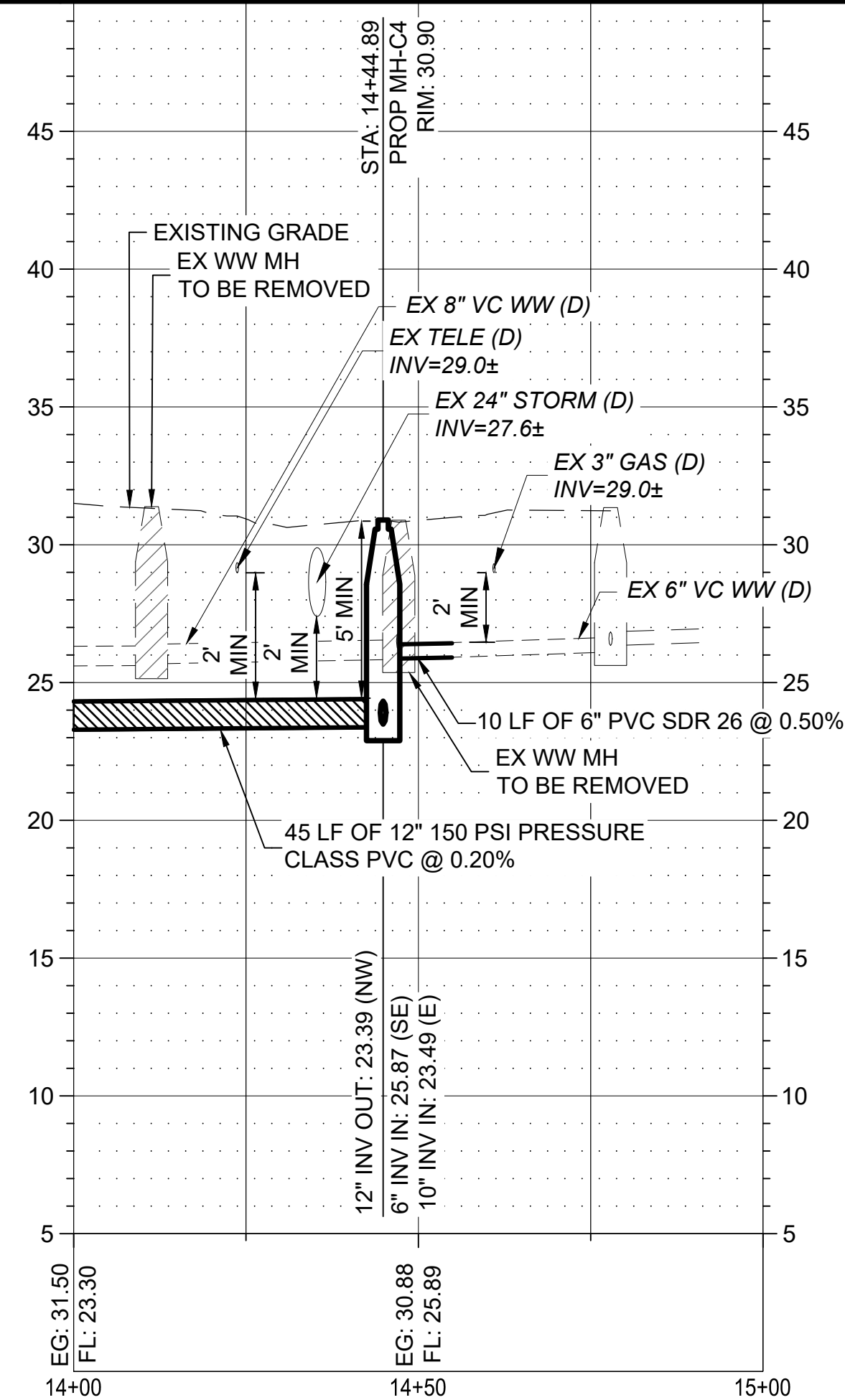
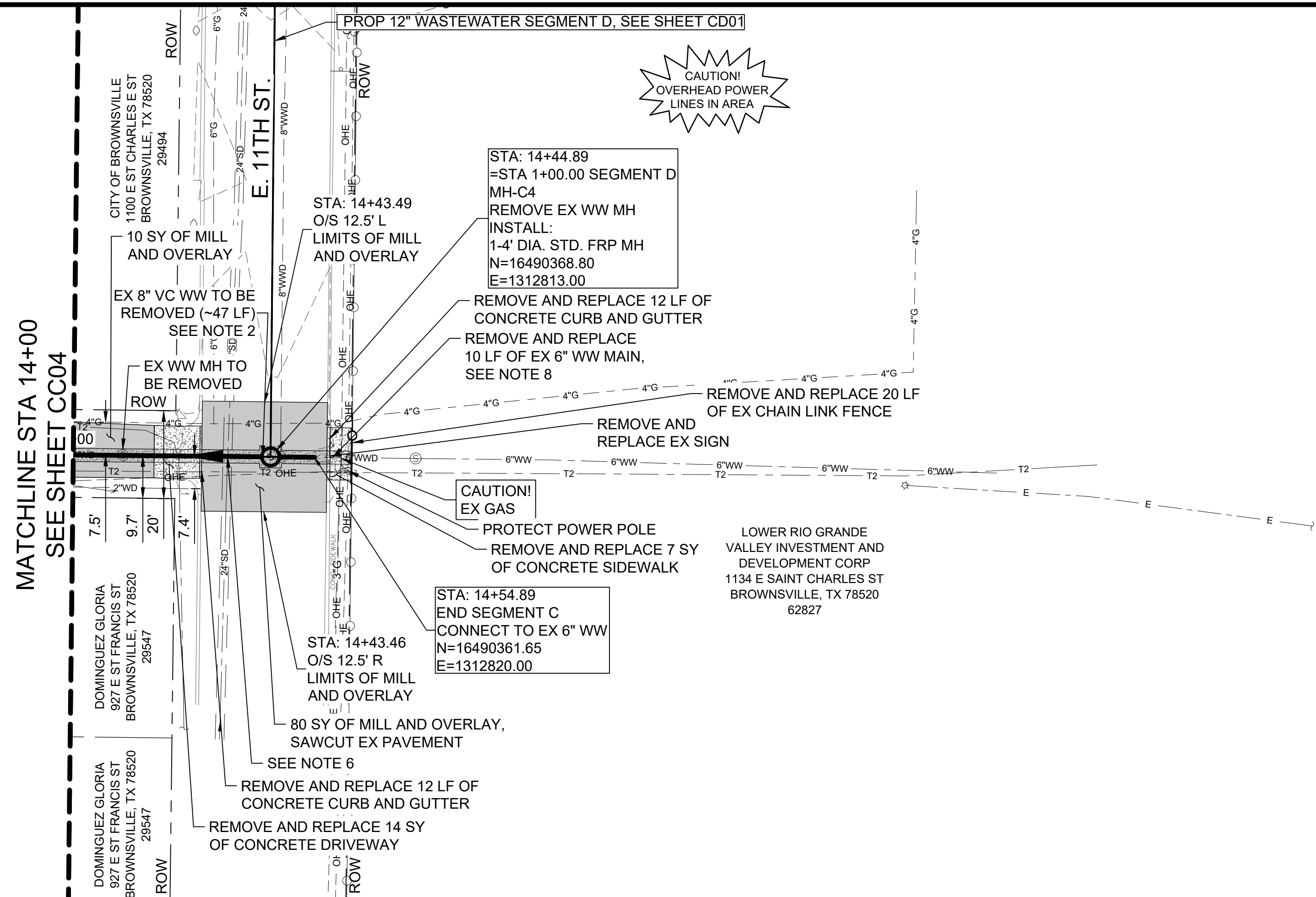
PROJECT 1: DOWNTOWN WW IMPROVEMENTS

SEGMENT C

PLAN AND PROFILE

STA 10+50 TO STA 14+00

DESIGN: GWM	STV: BPUB2200025.01
DRAWN: GWM	
REVIEW: JAE	
SHEET CC04	



NOTES:

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- CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION OF EXISTING UTILITIES PRIOR TO COMMENCING EXCAVATION. RELOCATE LINE AS NEEDED FOR CONSTRUCTION. (ALLOWANCE)
- PROTECT EXISTING 24" STORM DRAIN IF POSSIBLE. IF NEEDED, CONTRACTOR SHALL REMOVE AND REPLACE ±16 LF OF STORM DRAIN PIPE. MANAGE STORM WATER TO PREVENT BANK EROSION OR PONDING DURING CONSTRUCTION.
- PROTECT EXISTING CROSSING AND PARALLEL WATERLINE. UNLESS OTHERWISE APPROVED BY BPUB, CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER SERVICE FOR ALL EXISTING WATER SERVICE. PROPOSED WASTEWATER PIPE SHALL BE 150 PSI PRESSURE CLASS PIPE.
- REMOVE 10 LF OF EXISTING SANITARY SEWER. INSTALL 10 LF OF NEW PVC. PROVIDE FERNCO OR APPROVED EQUAL TRANSITION COUPLING AS REQUIRED TO CONNECT EXISTING PIPE TO PROPOSED PIPE. INSTALL CONCRETE JOINTING COLLAR PER DETAIL ON SHEET D-06. FIELD VERIFY OUTSIDE DIAMETER OF EXISTING PIPE PRIOR TO CONSTRUCTION.

HORZ 0 20 40
 VERT 0 5 10
 SCALE IN FEET

BROWNVILLE
 PUBLIC UTILITIES BOARD
 Public Utilities Board
 1425 Robinhood Drive
 Brownsville, Texas 78521

11/10/2023

NO.	REVISION	BY	DATE

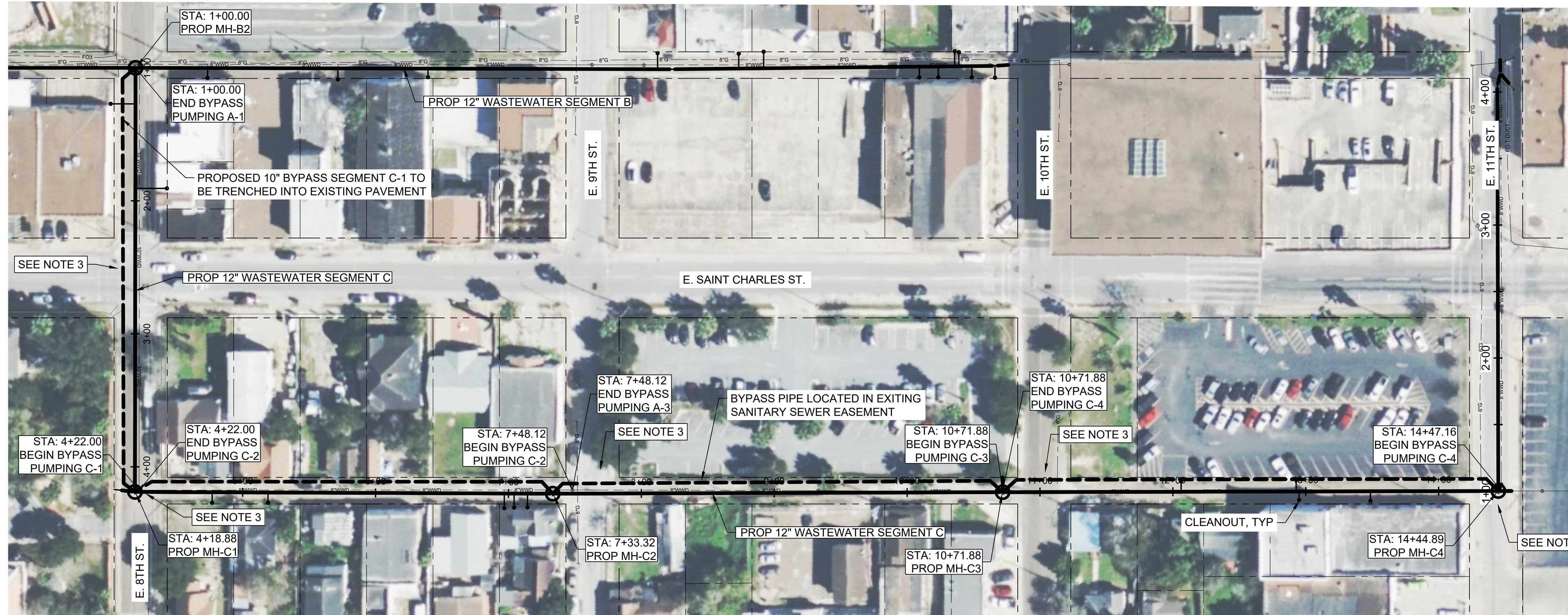
VERIFY SCALE BAR LENGTH EQUALS ONE INCH ON ORIGINAL DRAWING. VERIFY LENGTH ON THIS SHEET AND ADJUST SCALE ACCORDINGLY.

BROWNVILLE PUBLIC UTILITIES BOARD
 PROJECT 1: DOWNTOWN WW IMPROVEMENTS

SEGMENT C
 PLAN AND PROFILE
 STA 14+00 TO END SEGMENT C

DESIGN: GWM
DRAWN: GWM
REVIEW: JAE
STV: BPUB2200025.01

SHEET
CC05



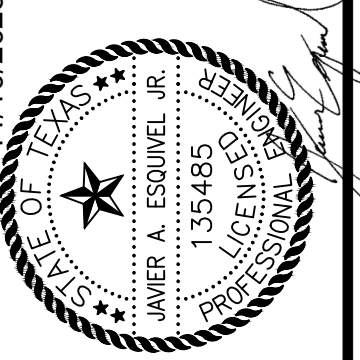
NOTES:

1. THE BYPASS PUMPING FLOW DATA SHEET IS FOR INFORMATION PURPOSES ONLY AND THE CONTRACTOR IS REQUIRED TO DEVELOP AN INDEPENDENT BYPASS PUMPING PLAN FOR BIDDING AND CONSTRUCTION PURPOSES.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SERVICE TO EXISTING LATERALS. CONTRACTOR SHALL FIELD VERIFY FLOW PRIOR TO BYPASS PUMPING.
3. BYPASS PUMPING SHALL NOT BLOCK ANY ROADWAYS, DRIVEWAYS, SIDEWALKS, CROSSWALKS OR ANY OTHER MEANS OF INGRESS/EGRESS. UTILIZE ROAD RAMP OR OTHER MEANS TO MAINTAIN VEHICULAR AND PEDESTRIAN ACCESS.
4. CONTRACTOR SHALL NOTIFY TxDOT, BPUB, THE CITY OF BROWNSVILLE, RESIDENTS, BUSINESS OWNERS, SCHOOLS, TRANSPORTATION DEPARTMENTS, VIA AND OTHER ENTITIES THAT MAY BE IMPACTED BY ROADWAY CLOSURE 6 WEEKS PRIOR TO ANTICIPATED ROADWAY CLOSURE. IN ADDITION, THE CONTRACTOR SHALL NOTIFY STAKEHOLDERS 72 HOURS PRIOR TO ANY ROADWAY CLOSURE.

BYPASS FLOW RATES: SEGMENT C	
MAXIMUM FLOW	507 GPM
MAXIMUM VELOCITY	3.42 FT/S



BROWNSVILLE
 PUBLIC UTILITIES BOARD
 Public Utilities Board
 1425 Robinhood Drive
 Brownsville, Texas 78521



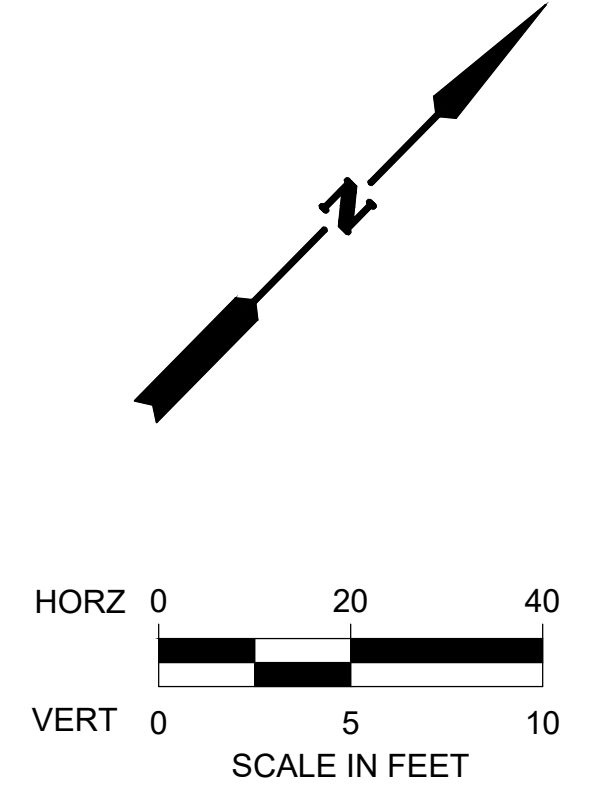
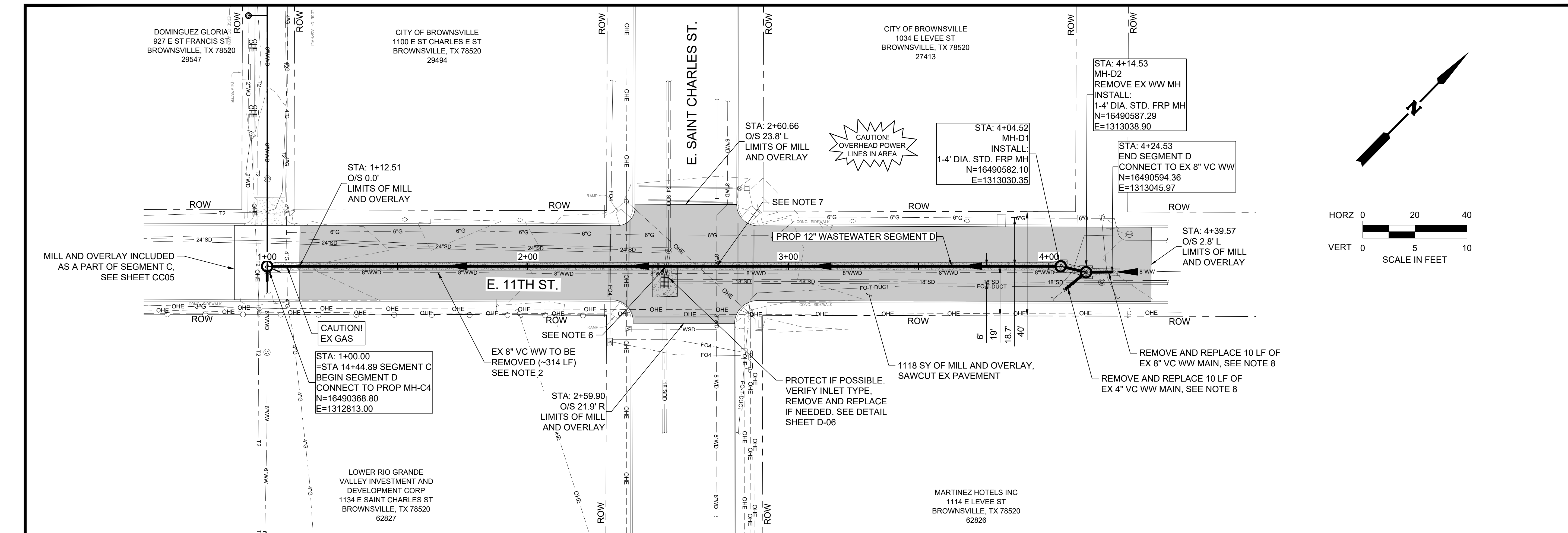
NO.	REVISION	DATE

VERIFY SCALE BAR LENGTH EQUALS ONE INCH ON ORIGINAL DRAWING. VERIFY LENGTH ON THIS SHEET 0 1" AND ADJUST SCALE ACCORDINGLY.

BROWNSVILLE PUBLIC UTILITIES BOARD
 PROJECT 1: DOWNTOWN WW IMPROVEMENTS
 SEGMENT C
 BYPASS PUMPING ROUTE

DESIGN: GWM
 DRAWN: GWM
 REVIEW: JAE
 STV: BPUB2200025.01

SHEET
 CC06



BROWNSVILLE
PUBLIC UTILITIES BOARD
Public Utilities Board
1425 Robinson Drive
Brownsville, Texas 78521



NO.	REVISION	DATE

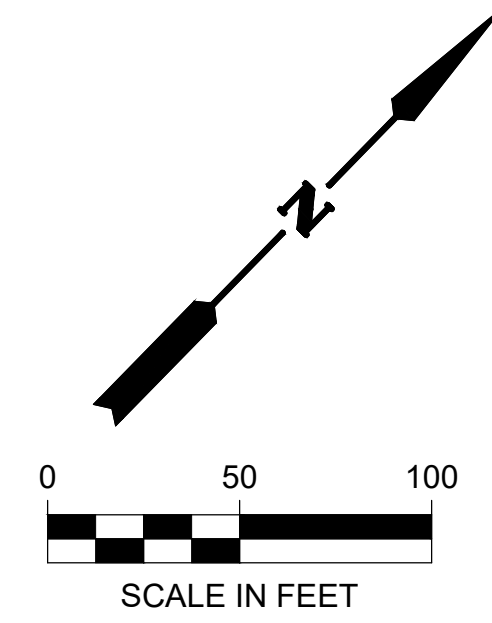
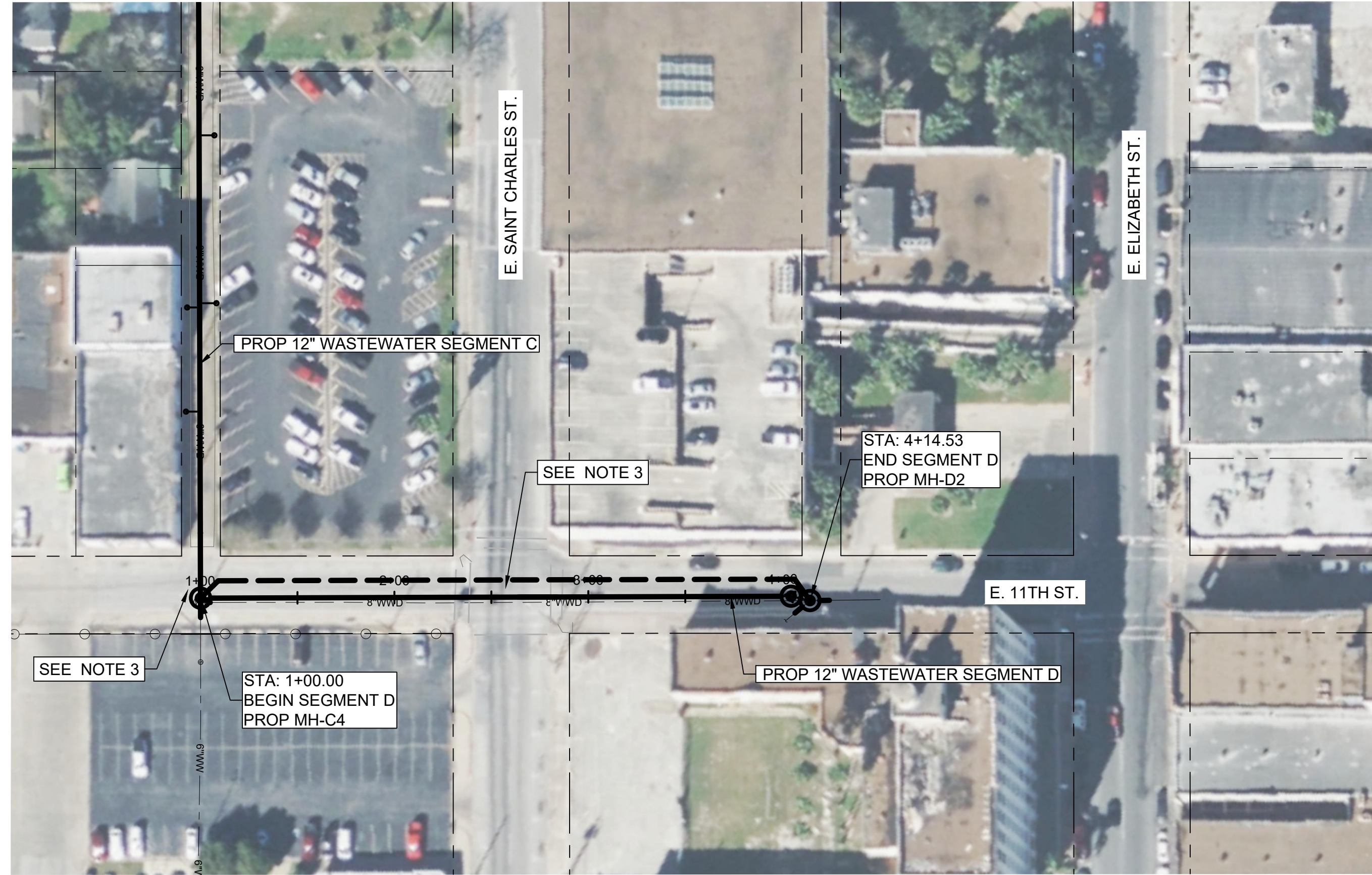
VERIFY SCALE BAR LENGTH EQUALS ONE INCH ON ORIGINAL DRAWING. VERIFY LENGTH ON THIS SHEET AND ADJUST SCALE ACCORDINGLY.

BROWNSVILLE PUBLIC UTILITIES BOARD
PROJECT 1: DOWNTOWN WW IMPROVEMENTS
SEGMENT D
PLAN AND PROFILE
BEGIN TO END SEGMENT D

DESIGN: GWM
DRAWN: GWM
REVIEW: JAE
STV: BPUB2200025.01

SHEET
CD01

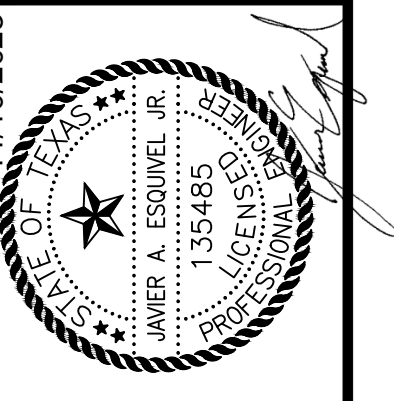
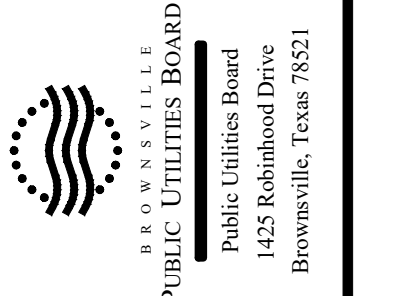
- NOTES:
- SEWER SLOPES FOR THIS SEGMENT ARE MINIMUM ALLOWABLE VALUES. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR MAINTAINING VERTICAL ALIGNMENT. BPUB MAY MEASURE INVERT ELEVATIONS OF ALL MANHOLES FOR QUALITY CONTROL PURPOSES. CONTRACTOR SHALL ALLOW AT LEAST 48 HOURS FOR QUALITY CONTROL SURVEYING AND PROVIDE ALL NECESSARY EQUIPMENT FOR SAFE ACCESS TO ALL MANHOLES. ALLOWABLE TOLERANCE FOR DEVIATIONS IN VERTICAL ALIGNMENT SHALL NOT EXCEED ± 0.05 FEET UNLESS OTHERWISE ALLOWED BY THE ENGINEER OF RECORD IN WRITING.
 - EXISTING WASTEWATER PIPE LOCATED WITHIN THE LIMITS OF THE NEW CONSTRUCTION TRENCH SHALL BE REMOVED. EXISTING WASTEWATER PIPE LOCATED OUTSIDE THE LIMITS OF NEW CONSTRUCTION TRENCH SHALL BE GROUT FILLED, CAPPED, AND ABANDONED IN PLACE.
 - CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXACT LOCATION AND QUANTITY OF LATERALS PRIOR TO ABANDONMENT/REMOVAL OF EXISTING WASTEWATER LINE. ADDITIONAL LATERAL RELAY NOT SHOWN IN PLANS, MAY BE REQUIRED.
 - POWER POLE BRACING: CONTRACTOR SHALL COORDINATE WITH ELECTRICAL SERVICE PROVIDER TO BRACE AND/OR RELOCATE POWER POLES AS REQUIRED FOR CONSTRUCTION. (ALLOWANCE) SEE DETAIL E ON SHEET D-02.
 - CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION OF EXISTING UTILITIES PRIOR TO COMMENCING EXCAVATION. RELOCATE LINE AS NEEDED FOR CONSTRUCTION. (ALLOWANCE)
 - PROTECT EXISTING 24" STORM DRAIN IF POSSIBLE. IF NEEDED, CONTRACTOR SHALL REMOVE AND REPLACE ±16 LF OF STORM DRAIN PIPE. MANAGE STORM WATER TO PREVENT BANK EROSION OR PONDING DURING CONSTRUCTION.
 - PROTECT EXISTING CROSSING AND PARALLEL WATERLINE. UNLESS OTHERWISE APPROVED BY BPUB, CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER SERVICE FOR ALL EXISTING WATER SERVICE. PROPOSED WASTEWATER PIPE SHALL BE 150 PSI PRESSURE CLASS PIPE.
 - REMOVE 10 LF OF EXISTING SANITARY SEWER. INSTALL 10 LF OF NEW PVC. PROVIDE FERNCO OR APPROVED EQUAL TRANSITION COUPLING AS REQUIRED TO CONNECT EXISTING PIPE TO PROPOSED PIPE. INSTALL CONCRETE JOINTING COLLAR PER DETAIL ON SHEET D-06. FIELD VERIFY OUTSIDE DIAMETER OF EXISTING PIPE PRIOR TO CONSTRUCTION.
 - AT JOINTS BETWEEN STANDARD AND PRESSURE RATED PVC PROVIDE FERNCO OR APPROVED EQUAL TRANSITION JOINT COUPLING. INSTALL CONCRETE JOINTING COLLAR PER DETAIL ON SHEET D-06. FIELD VERIFY OUTSIDE DIAMETER OF EXISTING PIPE PRIOR TO CONSTRUCTION.



NOTES:

1. THE BYPASS PUMPING FLOW DATA SHEET IS FOR INFORMATION PURPOSES ONLY AND THE CONTRACTOR IS REQUIRED TO DEVELOP AN INDEPENDENT BYPASS PUMPING PLAN FOR BIDDING AND CONSTRUCTION PURPOSES.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SERVICE TO EXISTING LATERALS. CONTRACTOR SHALL FIELD VERIFY FLOW PRIOR TO BYPASS PUMPING.
3. BYPASS PUMPING SHALL NOT BLOCK ANY ROADWAYS, DRIVEWAYS, SIDEWALKS, CROSSWALKS OR ANY OTHER MEANS OF INGRESS/EGRESS. UTILIZE ROAD RAMP OR OTHER MEANS TO MAINTAIN VEHICULAR AND PEDESTRIAN ACCESS.
4. CONTRACTOR SHALL NOTIFY TxDOT, BPUB, THE CITY OF BROWNSVILLE, RESIDENTS, BUSINESS OWNERS, SCHOOLS, TRANSPORTATION DEPARTMENTS, VIA AND OTHER ENTITIES THAT MAY BE IMPACTED BY ROADWAY CLOSURE 6 WEEKS PRIOR TO ANTICIPATED ROADWAY CLOSURE, IN ADDITION, THE CONTRACTOR SHALL NOTIFY STAKEHOLDERS 72 HOURS PRIOR TO ANY ROADWAY CLOSURE.

BYPASS FLOW RATES- SEGMENT D	
MAXIMUM FLOW	252 GPM
MAXIMUM VELOCITY	1.70 FT/S



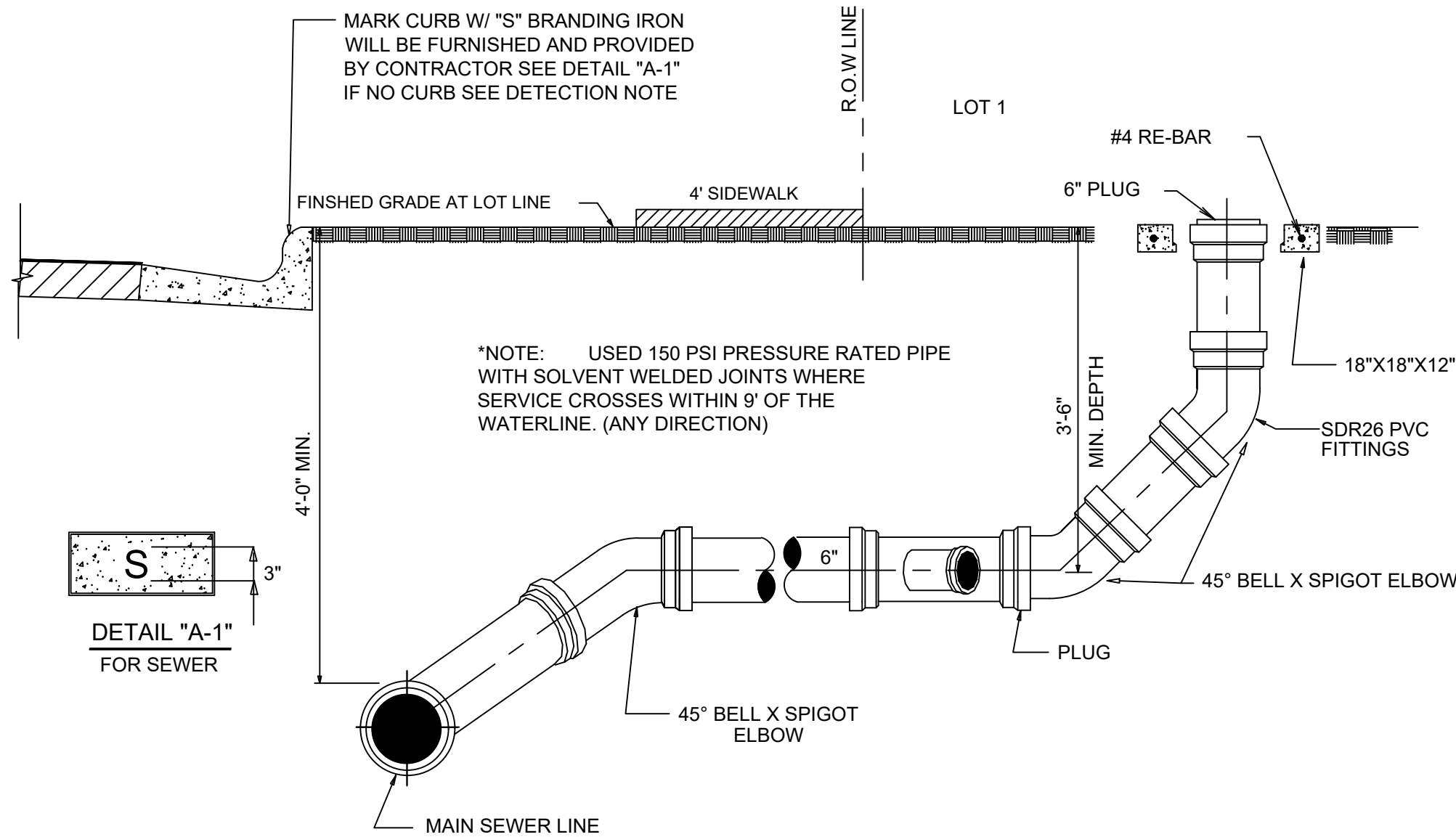
NO.	REVISION	BY	DATE

VERIFY SCALE BAR LENGTH EQUALS ONE INCH ON ORIGINAL DRAWING. VERIFY LENGTH ON THIS SHEET AND ADJUST SCALE ACCORDINGLY.

BROWNSVILLE PUBLIC UTILITIES BOARD
 PROJECT 1: DOWNTOWN WW IMPROVEMENTS
 SEGMENT D
 BYPASS PUMPING ROUTE

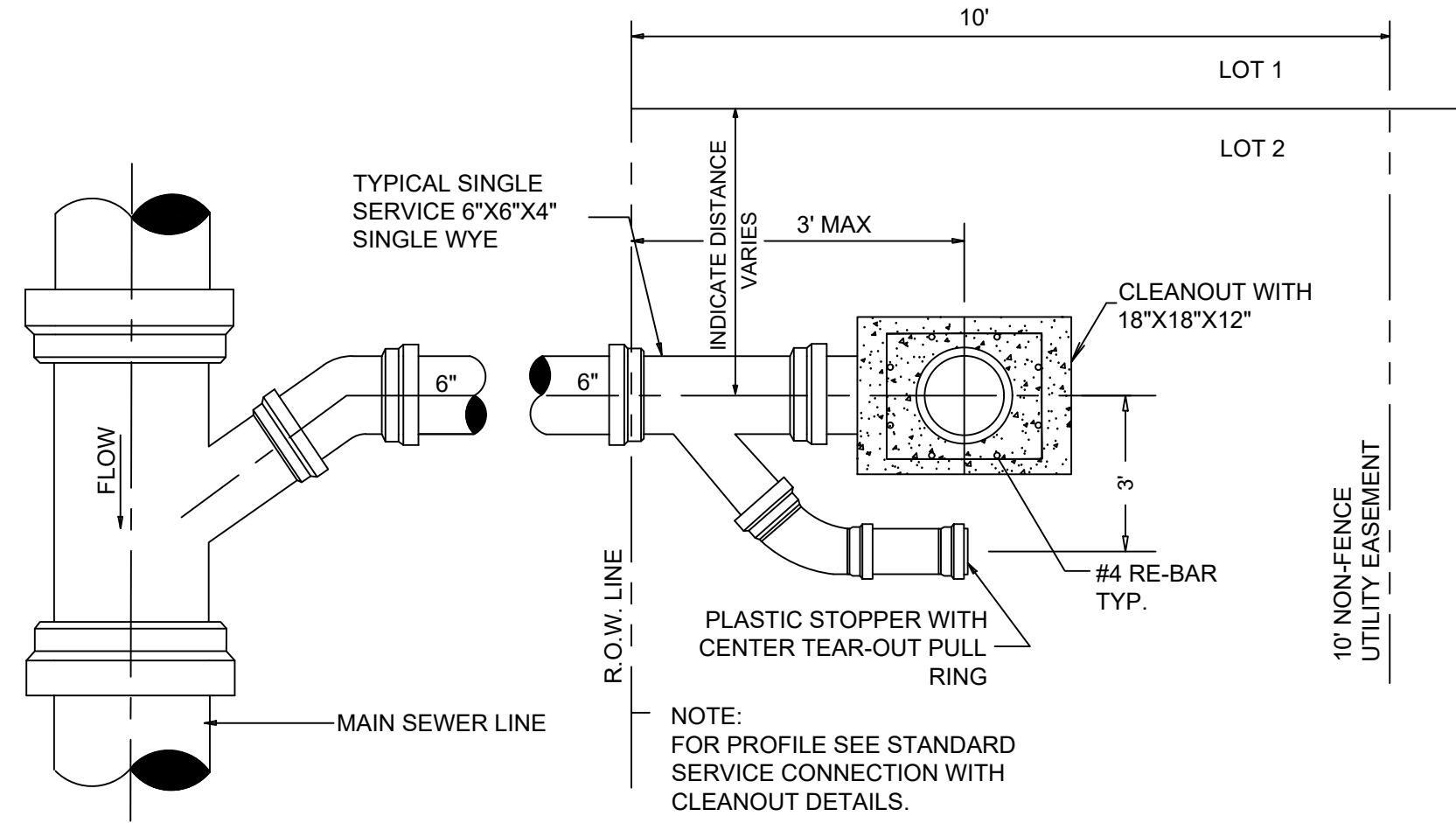
DESIGN: GWM
 DRAWN: GWM
 REVIEW: JAE
 STV: BPUB2200025.01

SHEET
 CD02



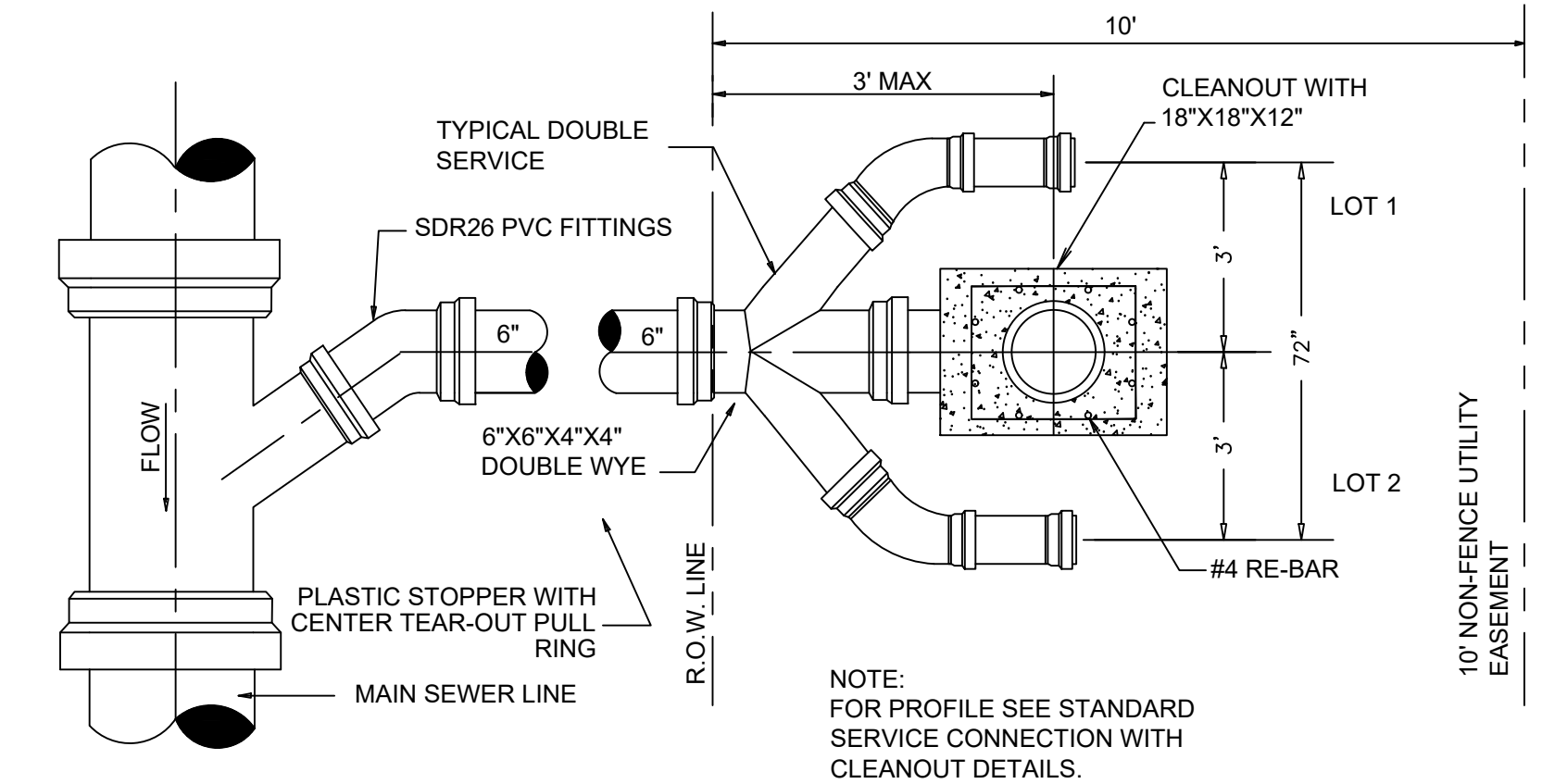
A TYPICAL SHORT SERVICE CONNECTION WITH STANDARD CLEANOUT
NOT TO SCALE

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



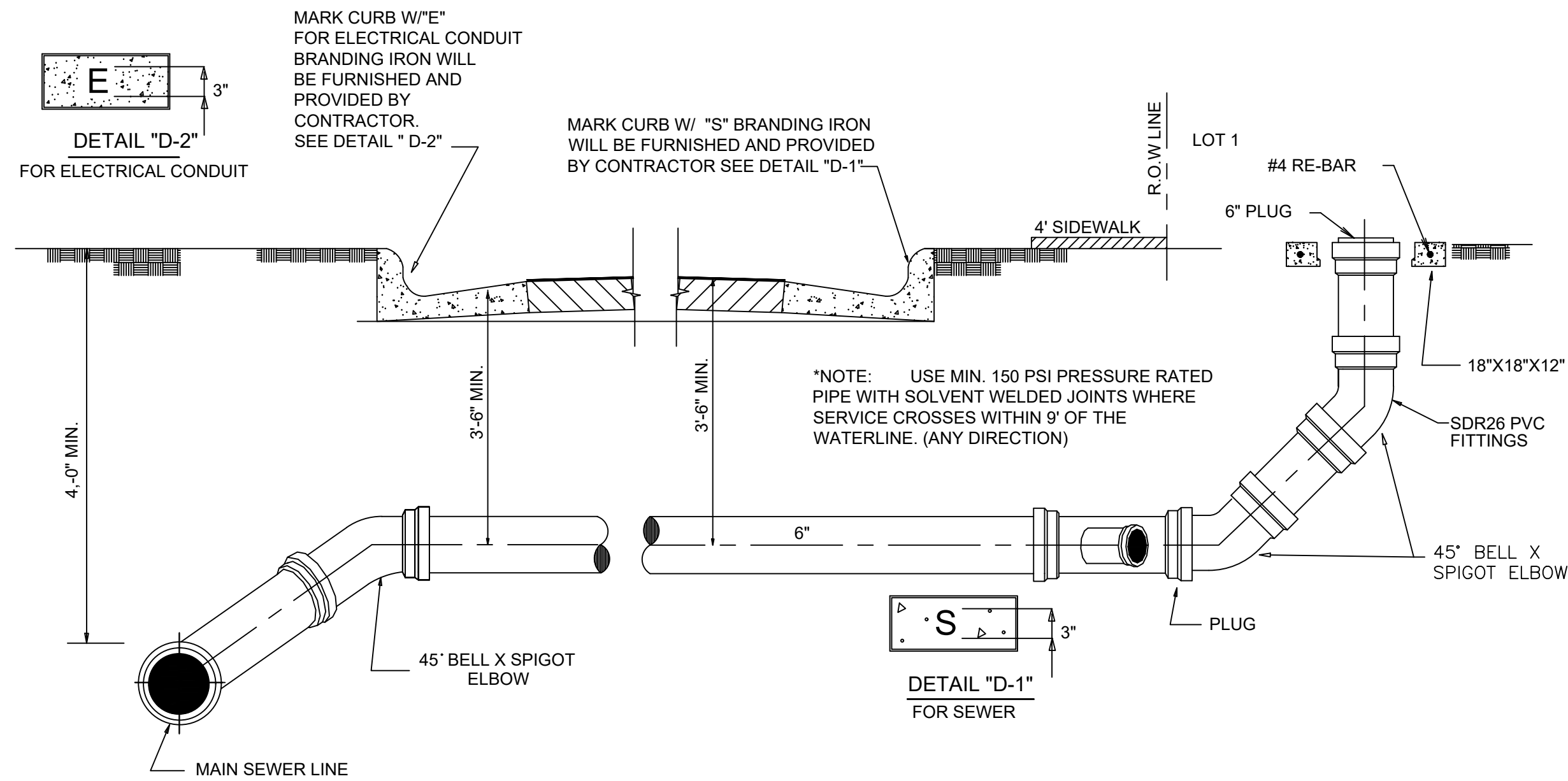
B PLAN - SINGLE SERVICE
NOT TO SCALE

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

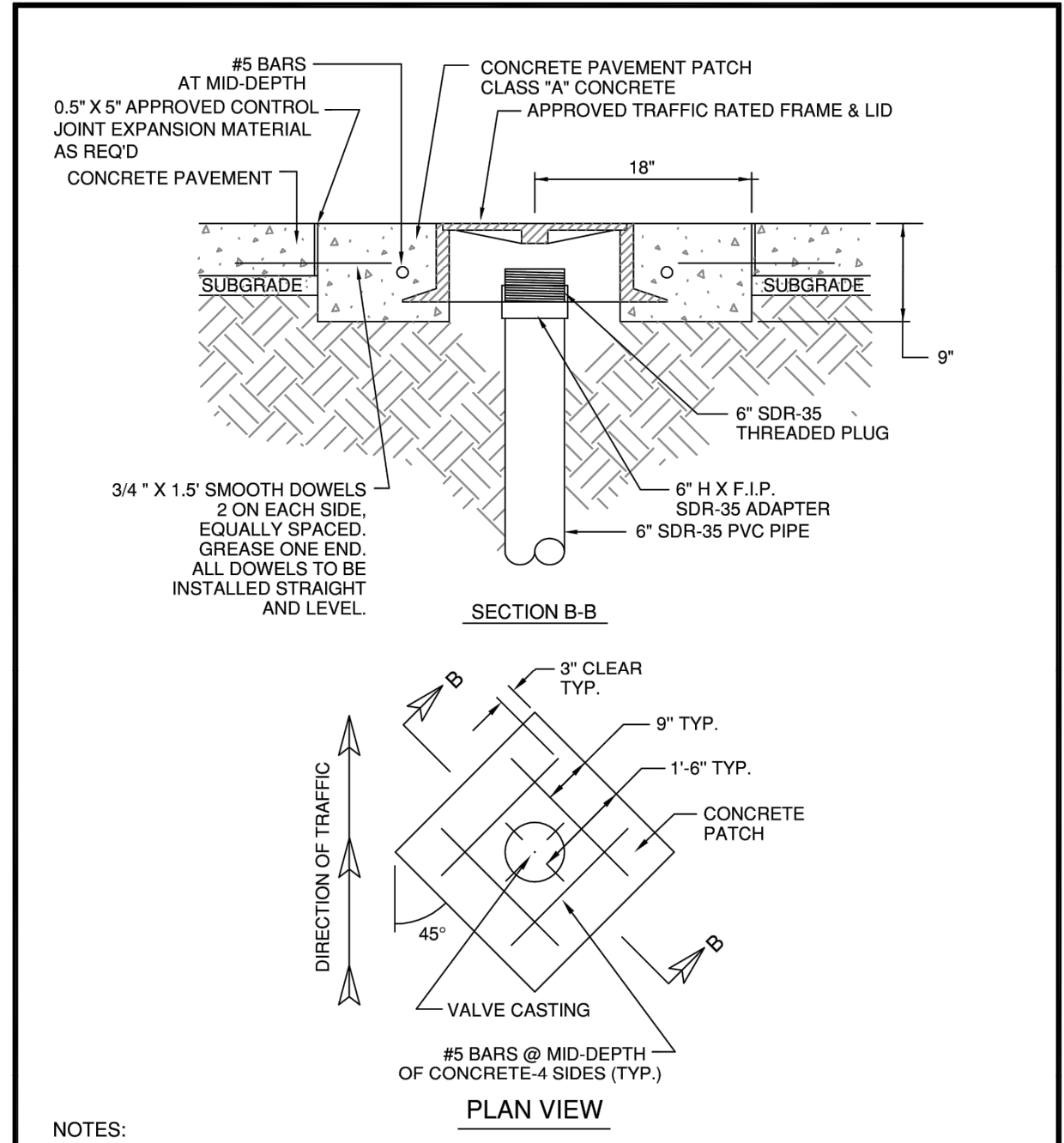


C PLAN - DOUBLE SERVICE NEW DEVELOPMENT
NOT TO SCALE

DETECTION NOTE: A SOUND DETECTION REFLECTOR "STU-DEC-TA-CAL" BY FRIFOLYN, 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.



D TYPICAL LONG SERVICE CONNECTION WITH STANDARD CLEANOUT
NOT TO SCALE



NOTES:
1. SERVICES SHOULD BE DESIGNED TO AVOID ALIGNMENT WITH DRIVEWAYS.
2. SUBGRADE SHALL BE COMPACTED AS PER, SUBGRADE PREPARATION.
3. FRAME SHALL BE ADJUSTED TO GRADE AFTER FINAL LIFT OF OVERLAY IS IN PLACE.
4. REINFORCING STEEL SHALL MEET, REINFORCING STEEL.

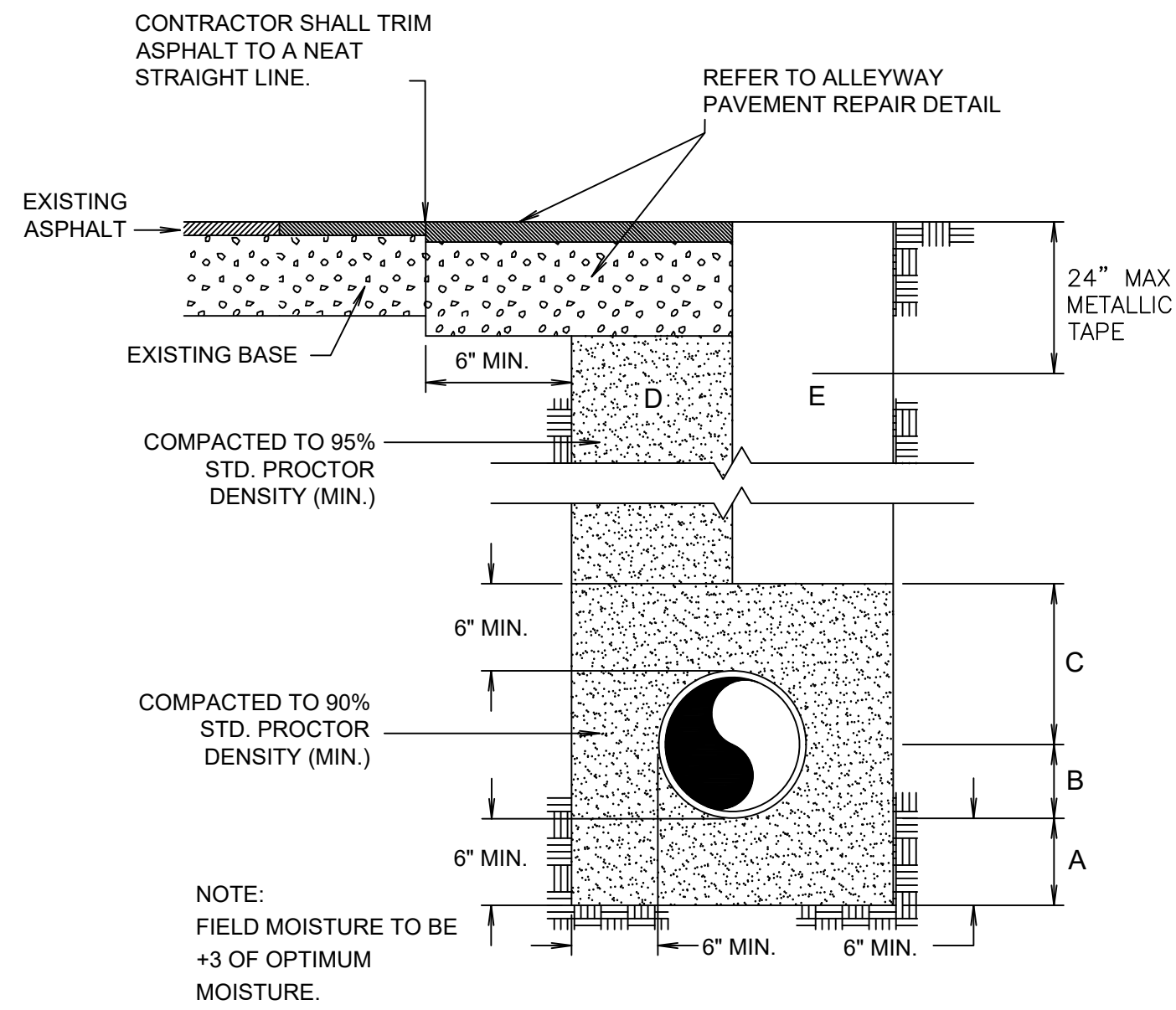
WASTEWATER CLEANOUT ADJUSTMENT TO GRADE IN DRIVEWAYS

E WASTEWATER CLEANOUT ADJUSTMENT TO GRADE IN DRIVEWAYS
NOT TO SCALE

PRINTED BY: MilkisGW DATE: 9/8/2023
FILE PATH: c:\pwworking\stvw_siv\d09332200025_D-01.dwg

NO.	REVISION	DATE

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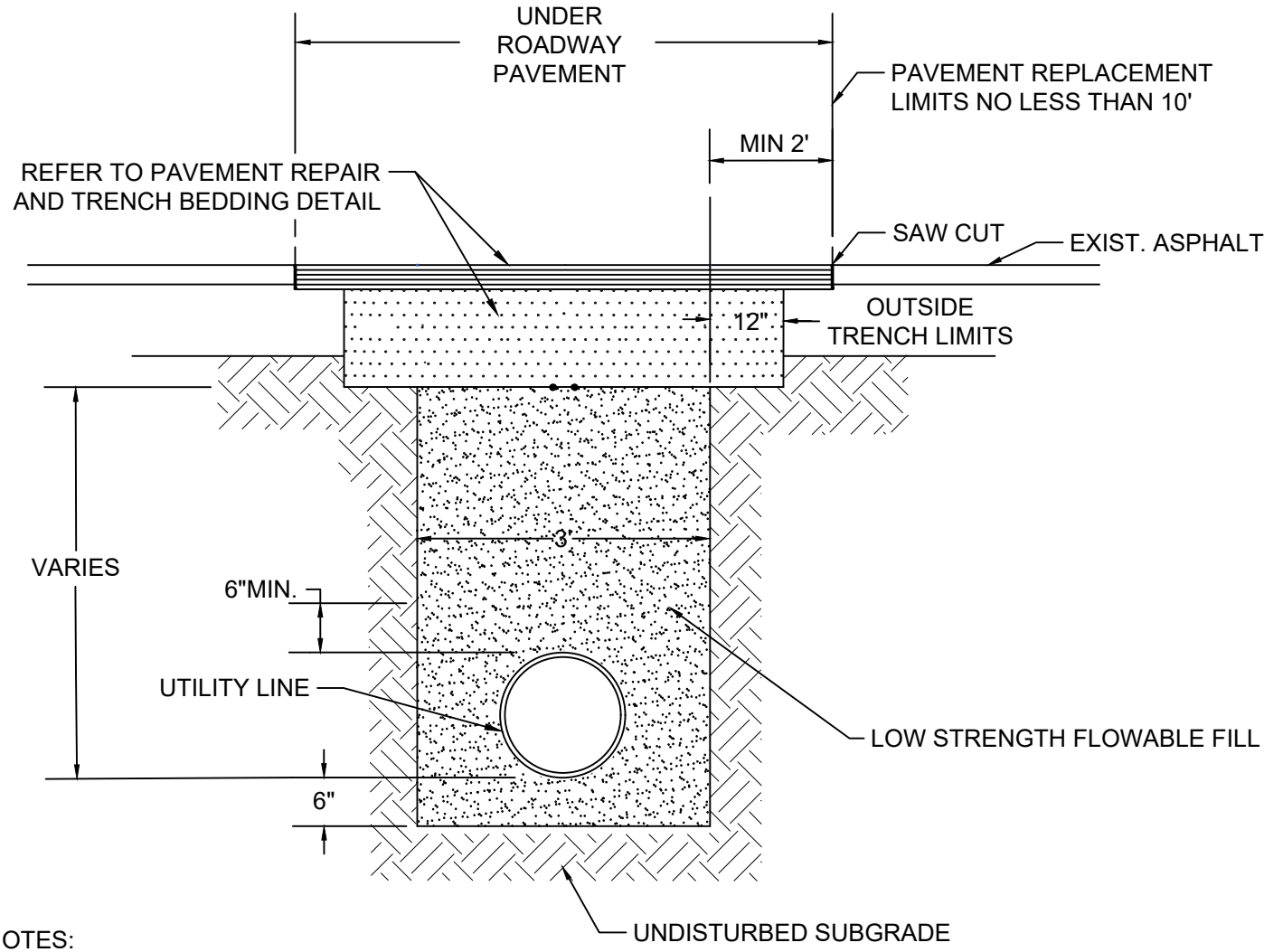


A TYPICAL PIPE BEDDING AND TRENCH BACKFILL DETAIL
NOT TO SCALE

- 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).

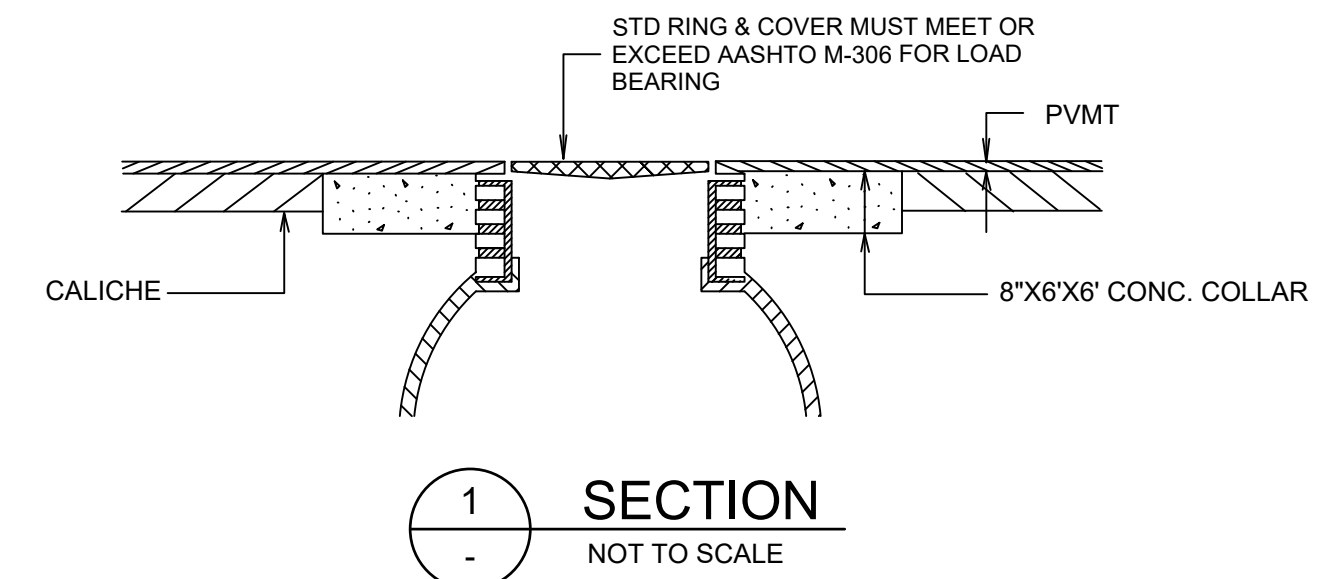
FOUNDATION PREPARATION (WELLPOINTS, GRAVEL OR CEMENT STABILIZATION, OR APPROVED SUBSTITUTE) SHALL BE REQUIRED WHEN TRENCH BOTTOM IS STABLE.

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.

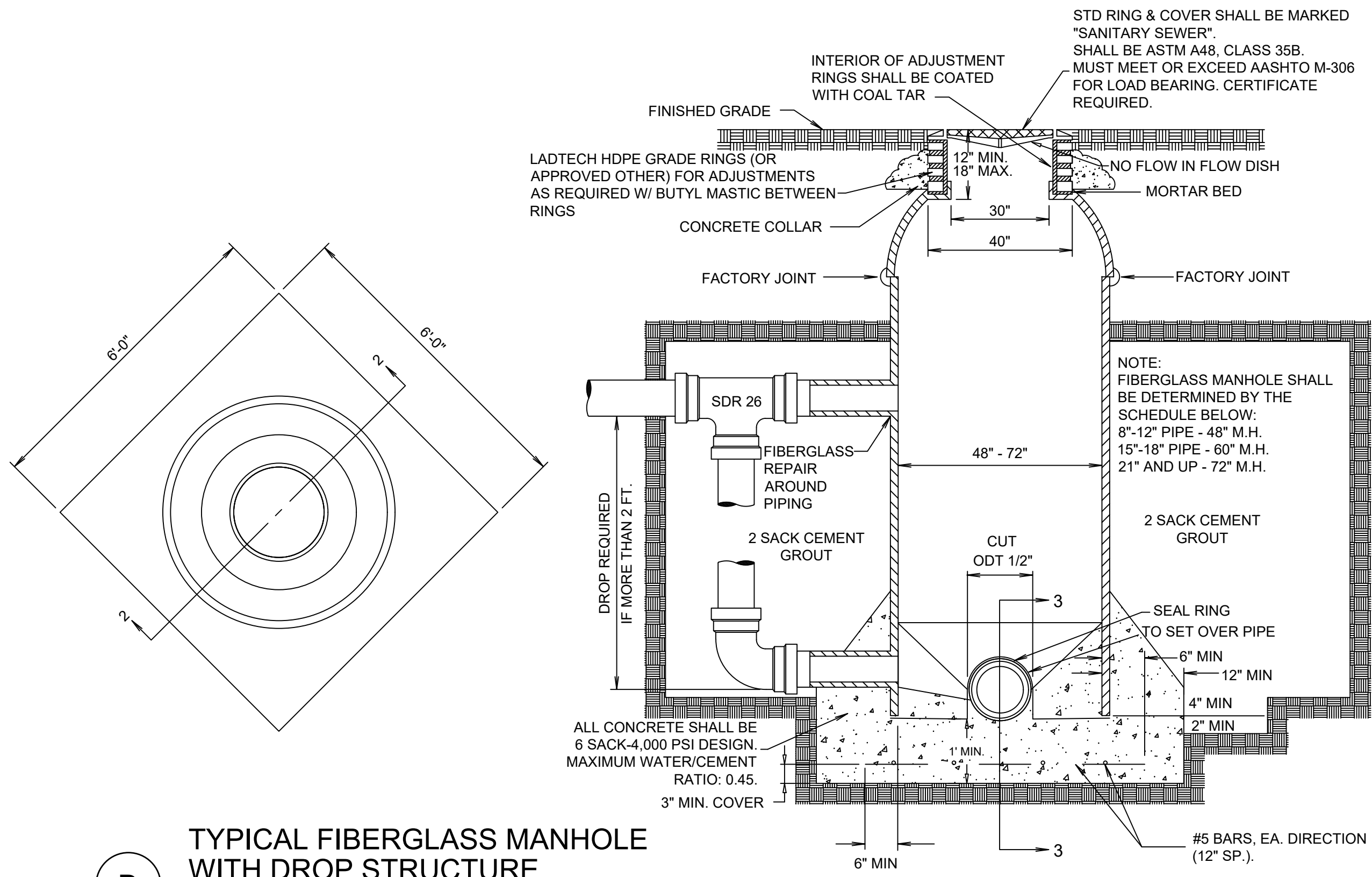
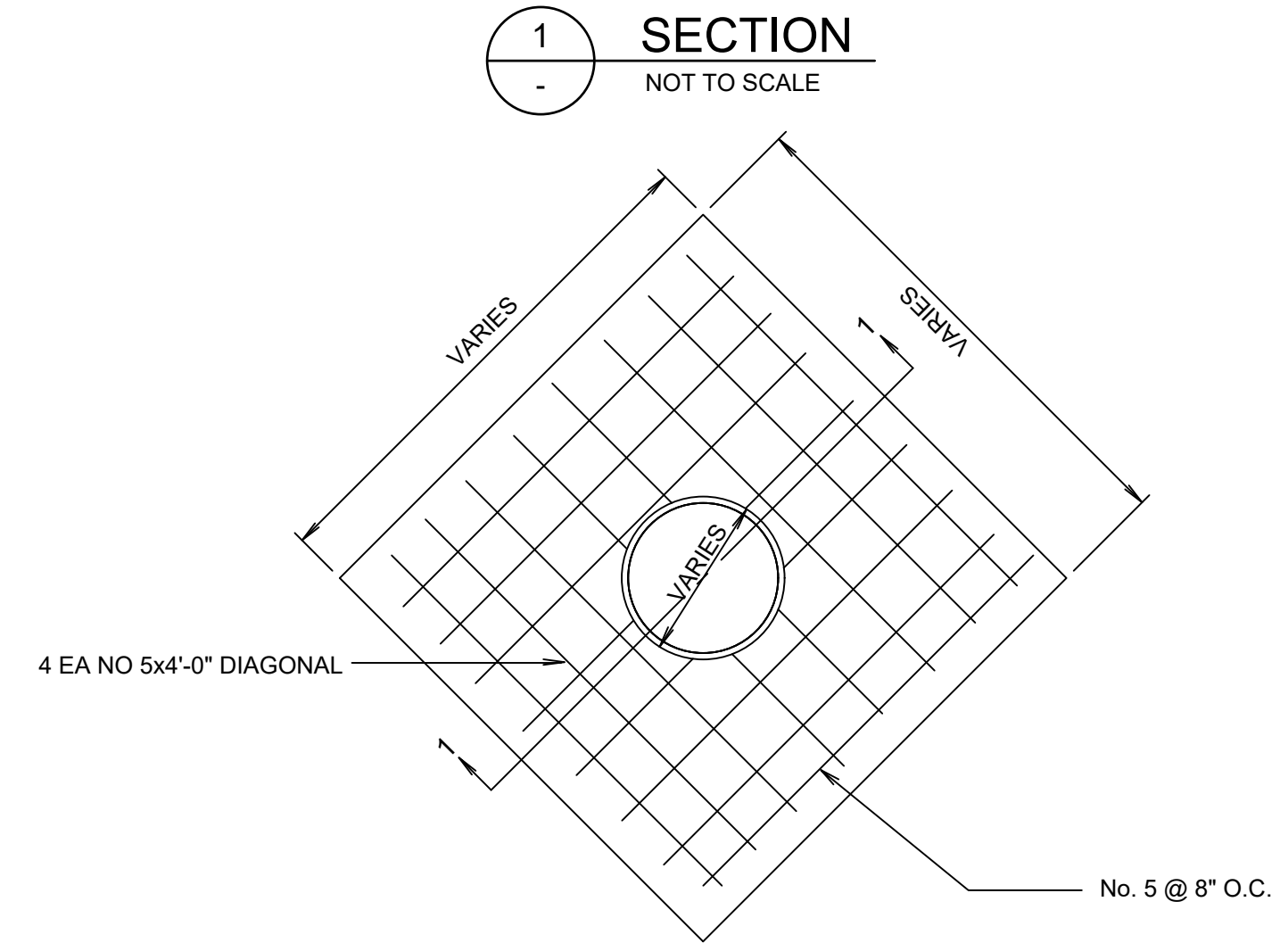


B ROADWAY INTERSECTION BEDDING AND TRENCH BACKFILL DETAIL
NOT TO SCALE

- NOTES:
- LIMITS OF PAVEMENT REPLACEMENT TO EXTEND MINIMUM 2 FEET EACH SIDE OF TRENCH OR AS SHOWN ON PLANS. PAVEMENT CUTS MUST BE SAW CUT STRAIGHT. TACK OIL AT A RATE OF 0.10 GAL/SY SHALL BE PLACED PRIOR TO PLACEMENT OF 2" HMAC TYPE "C" FINISHED SURFACE. LONGITUDINAL ROADWAY CUTS WILL BE PAVED WITH THE CLOSEST LINE EXTENSION OF THE EXISTING PAVEMENT EDGE AS A MINIMUM.
 - A 10" THICKNESS OF ASPHALT TREATED BASE (A.T.B.) BENCHED NO LESS THAN 1 FOOT EACH SIDE OF TRENCH WILL BE USED FOR FINAL LIFT OF THE TRENCH REPAIR. THE A.T.B. PLACED IN NO MORE THAN 5" LIFTS, SHALL BE BROUGHT UP WITHIN 2 INCHES OF THE EXISTING PAVEMENT SURFACE.
 - WHEN GEOGRID OR OTHER GEOSYNTHETIC SUBGRADE/BASE REINFORCEMENT IS PRESENT, THE CONTRACTOR SHALL CONDUCT EXCAVATION TO PROVIDE APPROPRIATE OVERLAP (2" MIN.) AND TIE INTO EXISTING UNDISTURBED REINFORCEMENT AS REQUIRED BY MANUFACTURER FOR EACH LAYER OF REINFORCEMENT ENCOUNTERED.
 - COMPACTED CRUSHED LIMESTONE BASE TO BE PER ITEM 200 FLEXBASE, MATERIAL TYPE A, AGGREGATE, GRADE 1.

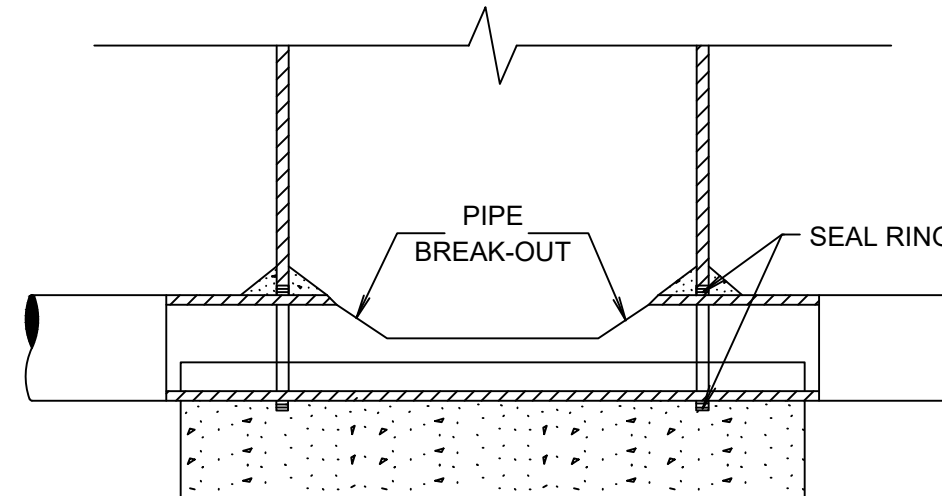


C TYPICAL FIBERGLASS MANHOLE IN PAVEMENT
NOT TO SCALE

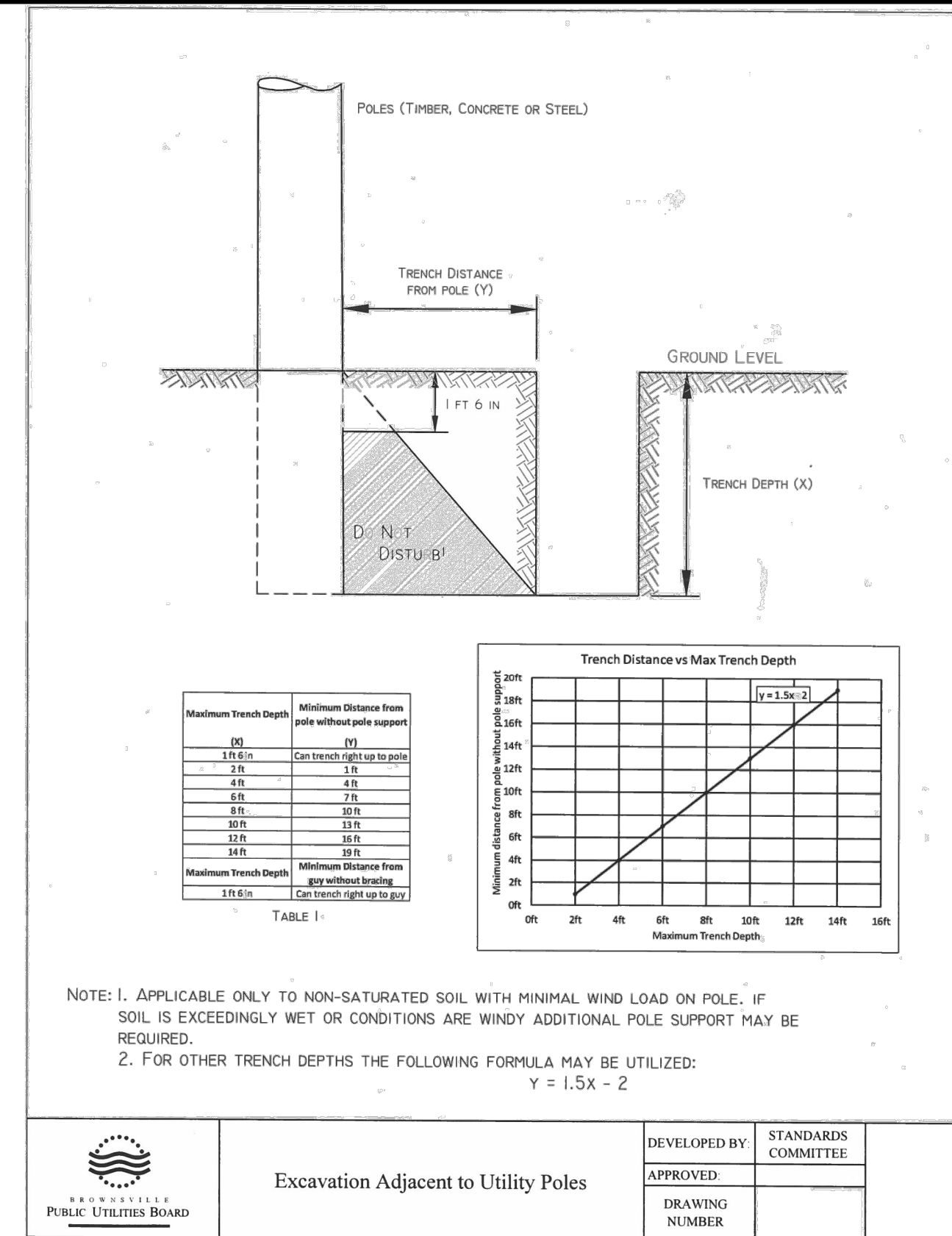


D TYPICAL FIBERGLASS MANHOLE WITH DROP STRUCTURE
NOT TO SCALE

- NOTES:
- ALL SANITARY SEWER MANHOLES WITHIN 9' OF A WATERLINE SHALL HAVE NO MEASURABLE LEAKAGE IN ACCORDANCE WITH TEXAS ADMINISTRATIVE CODE 217.58.
 - OVER EXCAVATION FOR PLACEMENT OF SANITARY SEWER MANHOLES SHALL BE BACKFILLED WITH FLOWABLE FILL. THIS COST SHALL BE SUBSIDIARY TO THE COST OF THE MANHOLE.
 - 6'X6' - 4' DIA. MH.



3 SECTION
NOT TO SCALE

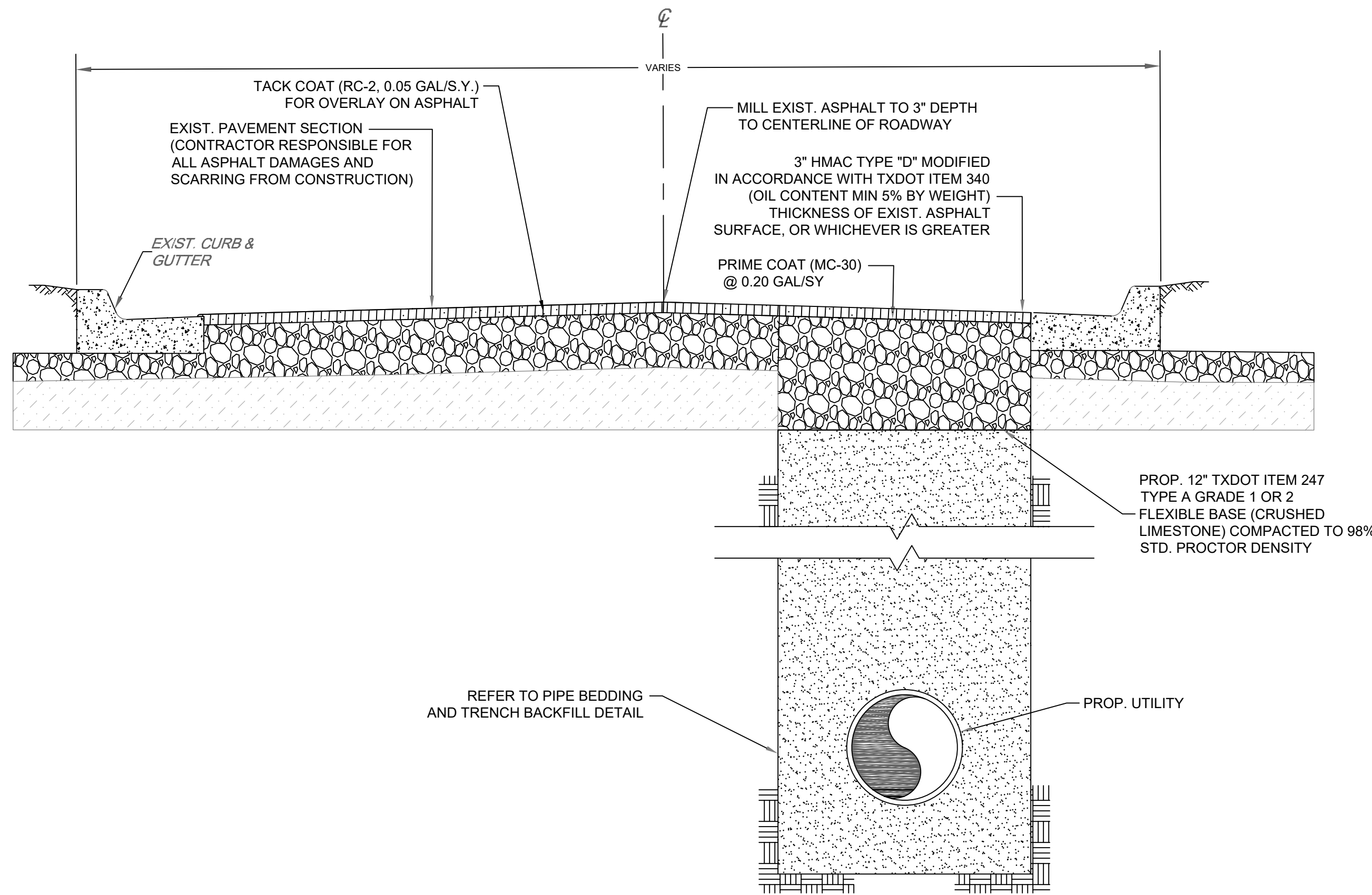


E EXCAVATION ADJACENT TO UTILITY POLES
NOT TO SCALE

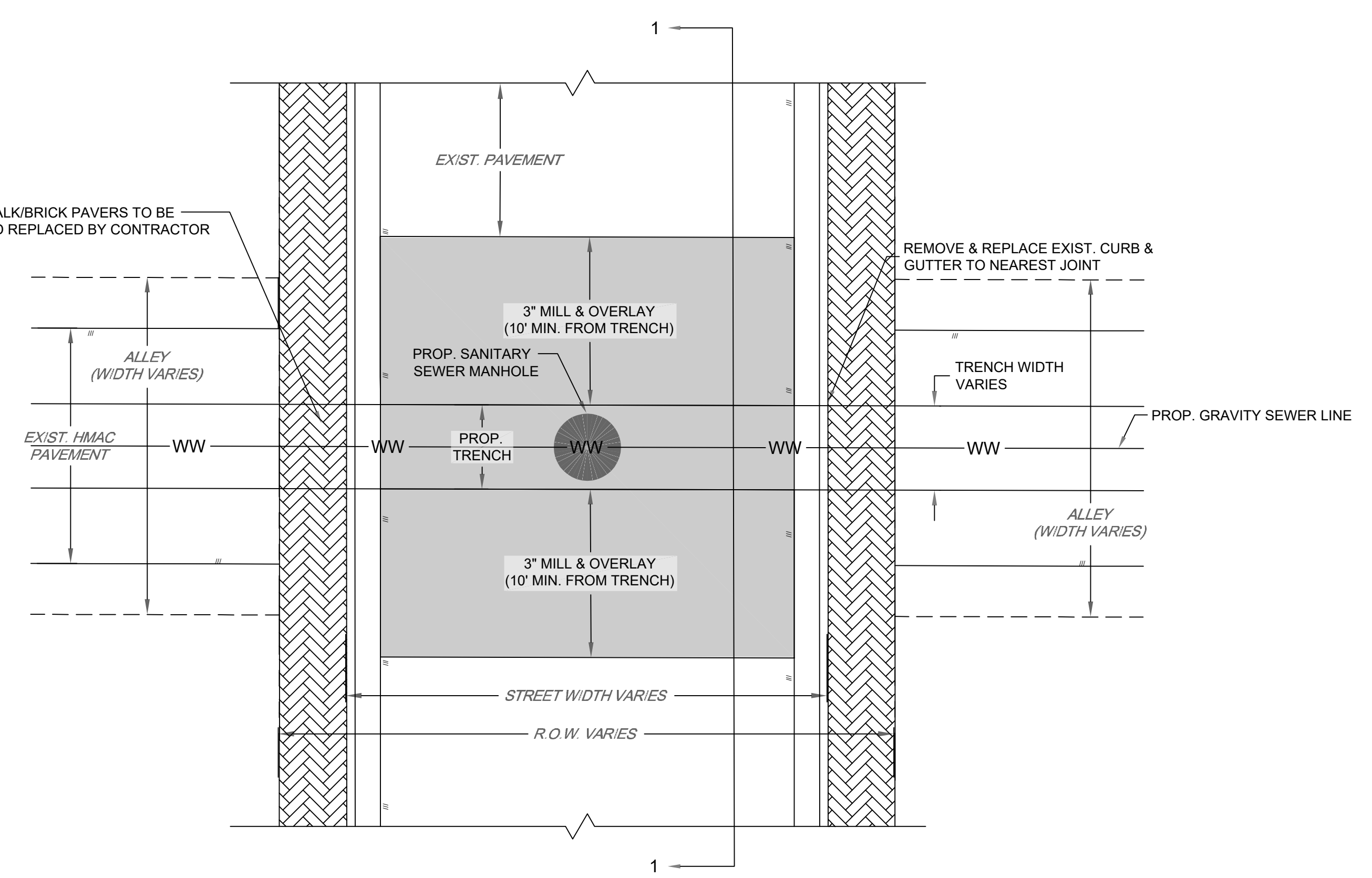
NO.	REVISION	BY	DATE

VERIFY SCALE BAR LENGTH EQUALS ONE INCH ON ORIGINAL DRAWING. VERIFY LENGTH ON THIS SHEET AND ADJUST SCALE ACCORDINGLY.

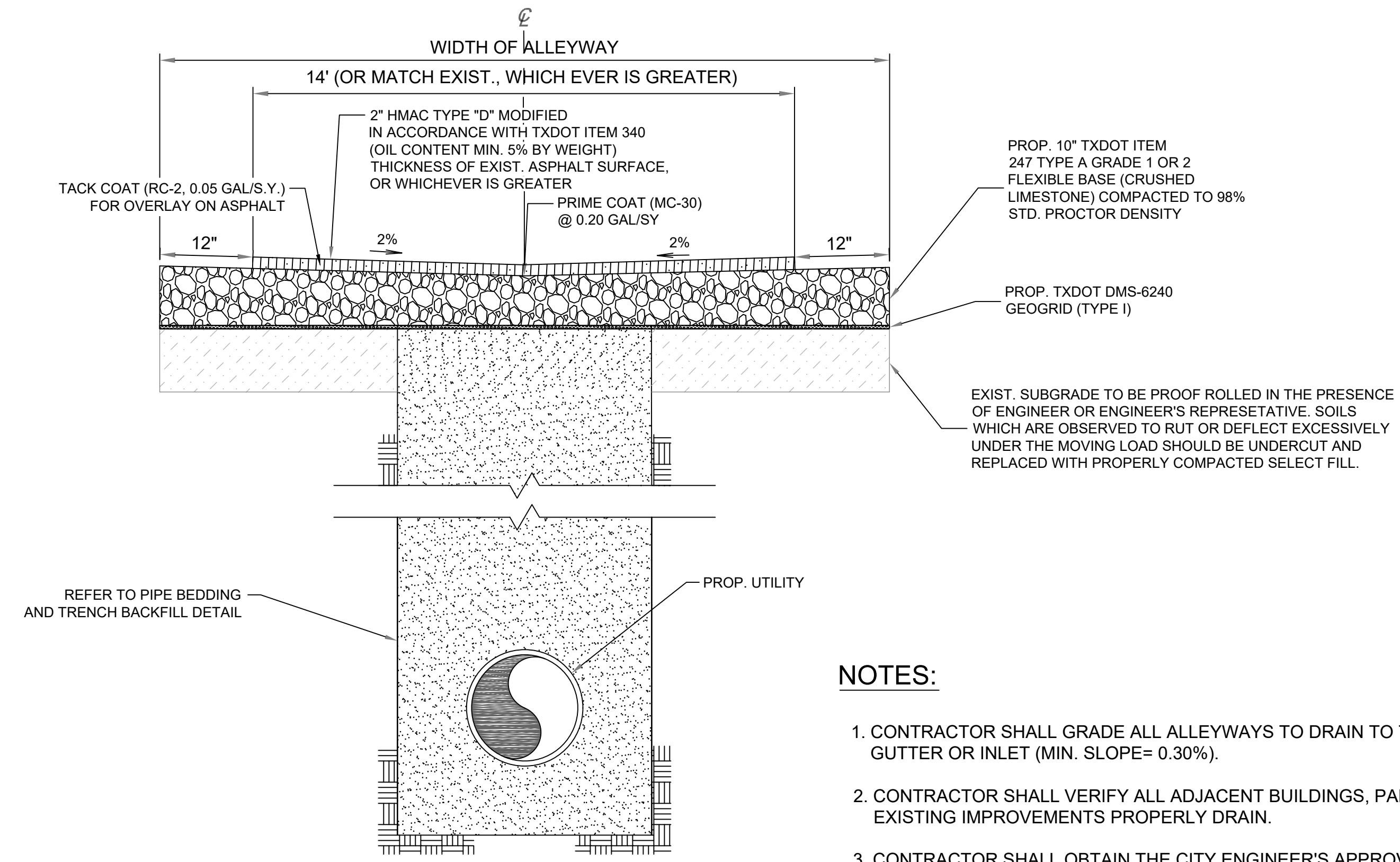
0 1" AND ADJUST SCALE ACCORDINGLY.



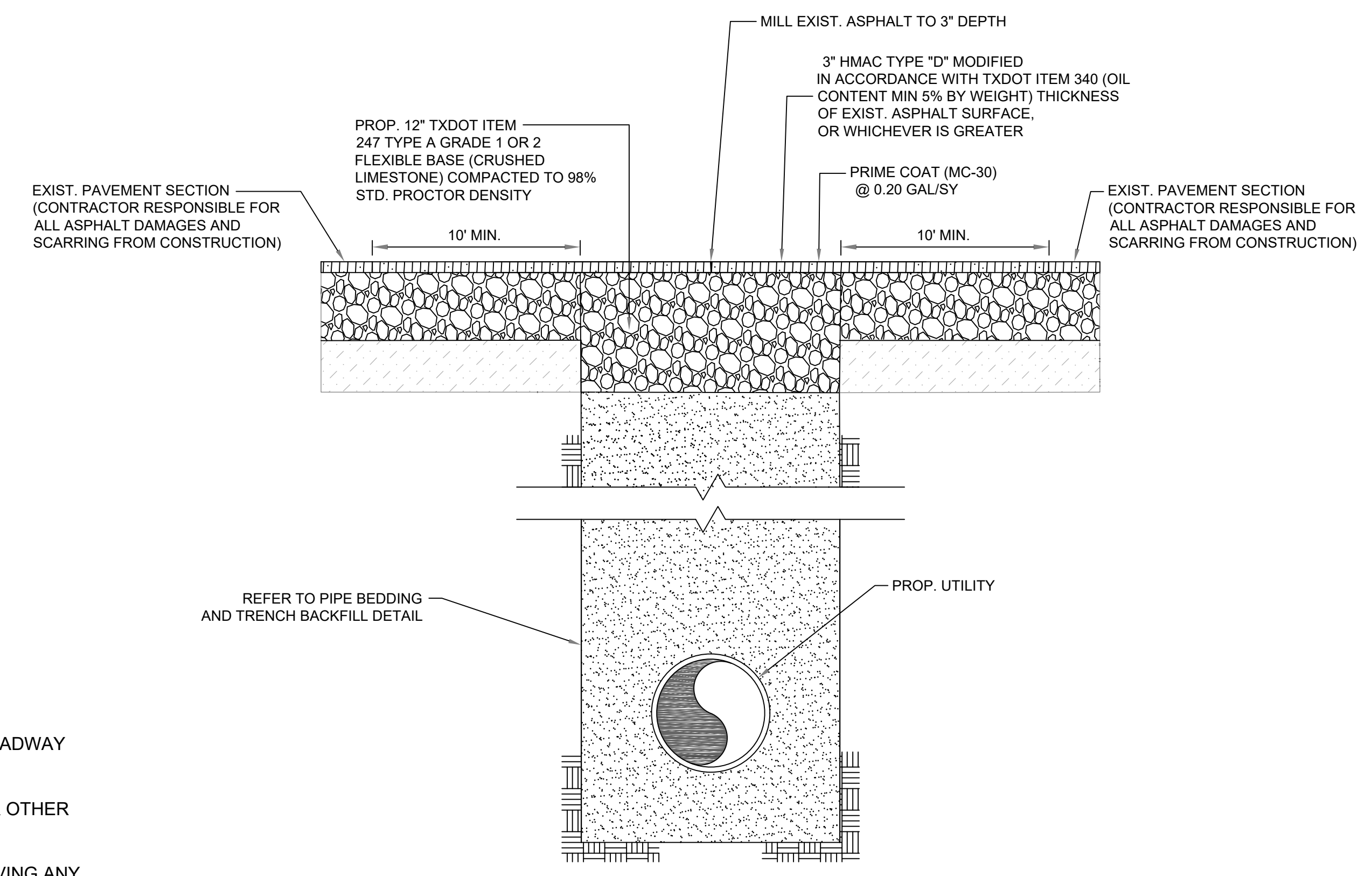
A PAVEMENT REPAIR AND TRENCH BEDDING
NOT TO SCALE



B TRENCH CUT DETAIL
NOT TO SCALE



C ALLEYWAY PAVEMENT REPAIR DETAIL
NOT TO SCALE



1 SECTION
NOT TO SCALE

NOTES:

1. CONTRACTOR SHALL GRADE ALL ALLEYWAYS TO DRAIN TO THE NEAREST ROADWAY GUTTER OR INLET (MIN. SLOPE= 0.30%).
2. CONTRACTOR SHALL VERIFY ALL ADJACENT BUILDINGS, PARKING AREAS, OR OTHER EXISTING IMPROVEMENTS PROPERLY DRAIN.
3. CONTRACTOR SHALL OBTAIN THE CITY ENGINEER'S APPROVAL PRIOR TO PAVING ANY ALLEYWAY.
4. CONTRACTOR SHALL TO PROVIDE SPECIAL VERTICAL SHORING WHERE REQUIRED. SPECIAL SHORING SHALL BE DESIGNED BY A LICENSED PROFESSIONAL ENGINEER.
5. CONTRACTOR SHALL PROVIDE DEWATERING SYSTEM IN ACCORDANCE WITH SPECIFICATION 31 23 19.

PRINTED BY: MilkisGW DATE: 9/7/2023 FILE PATH: c:\pwworking\stiv\pw_stiv\d093322200025_D-03.dwg

TEXAS REGISTERED ENGINEERING FIRM
TYPE F-1741

BROWNVILLE PUBLIC UTILITIES BOARD
Public Utilities Board
1425 Robinhood Drive
Brownsville, Texas 78521

11/10/2023

NO.	REVISION	BY	DATE

VERIFY SCALE BAR LENGTH EQUALS ONE INCH ON ORIGINAL DRAWING. VERIFY LENGTH ON THIS SHEET AND ADJUST SCALE ACCORDINGLY.

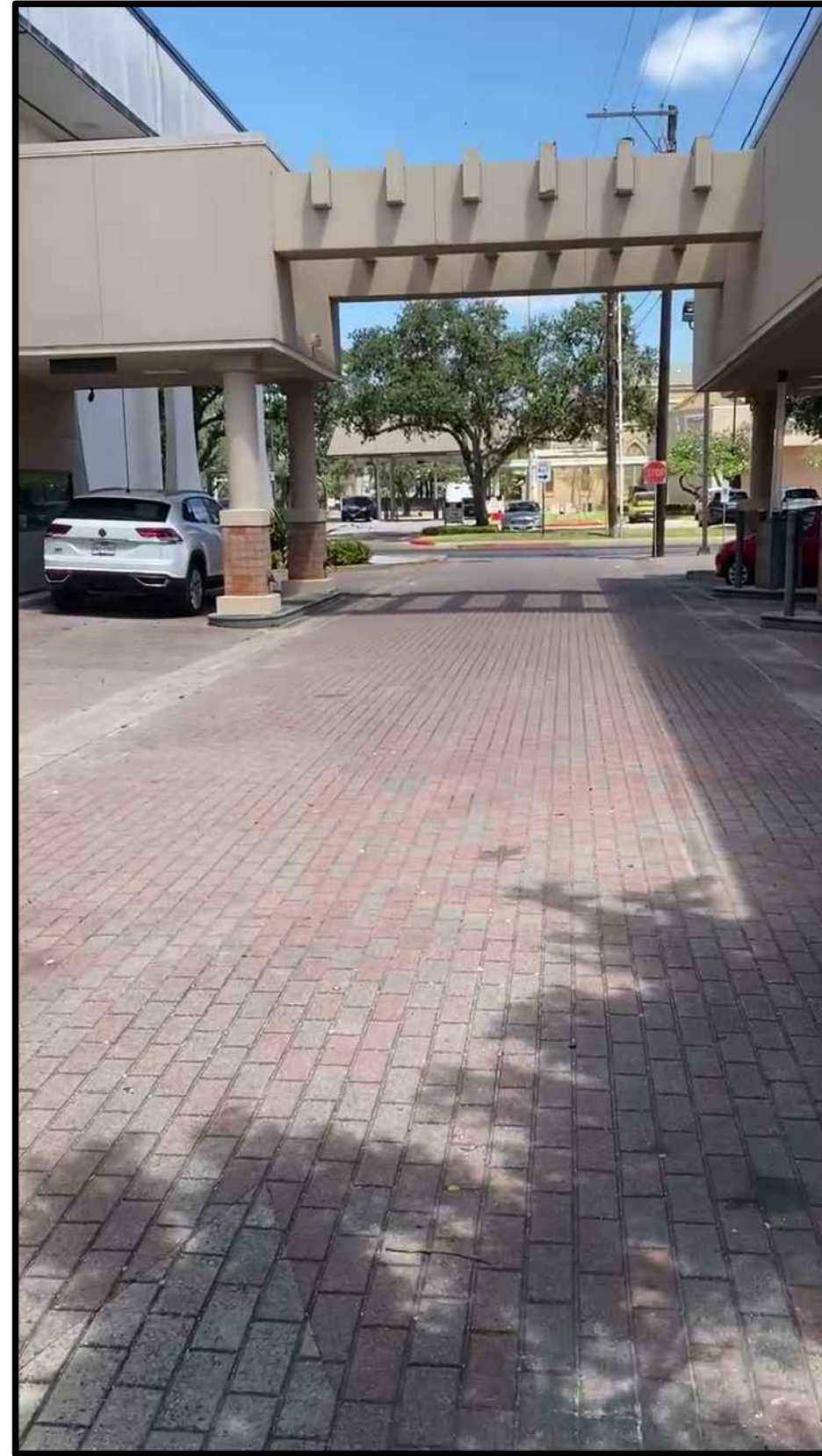
BROWNVILLE PUBLIC UTILITIES BOARD
PROJECT 1: DOWNTOWN WW IMPROVEMENTS

DETAILS III

DESIGN: GWM	
DRAWN: GWM	
REVIEW: JAE	
STV: BPUB2200025.01	

SHEET

D-03



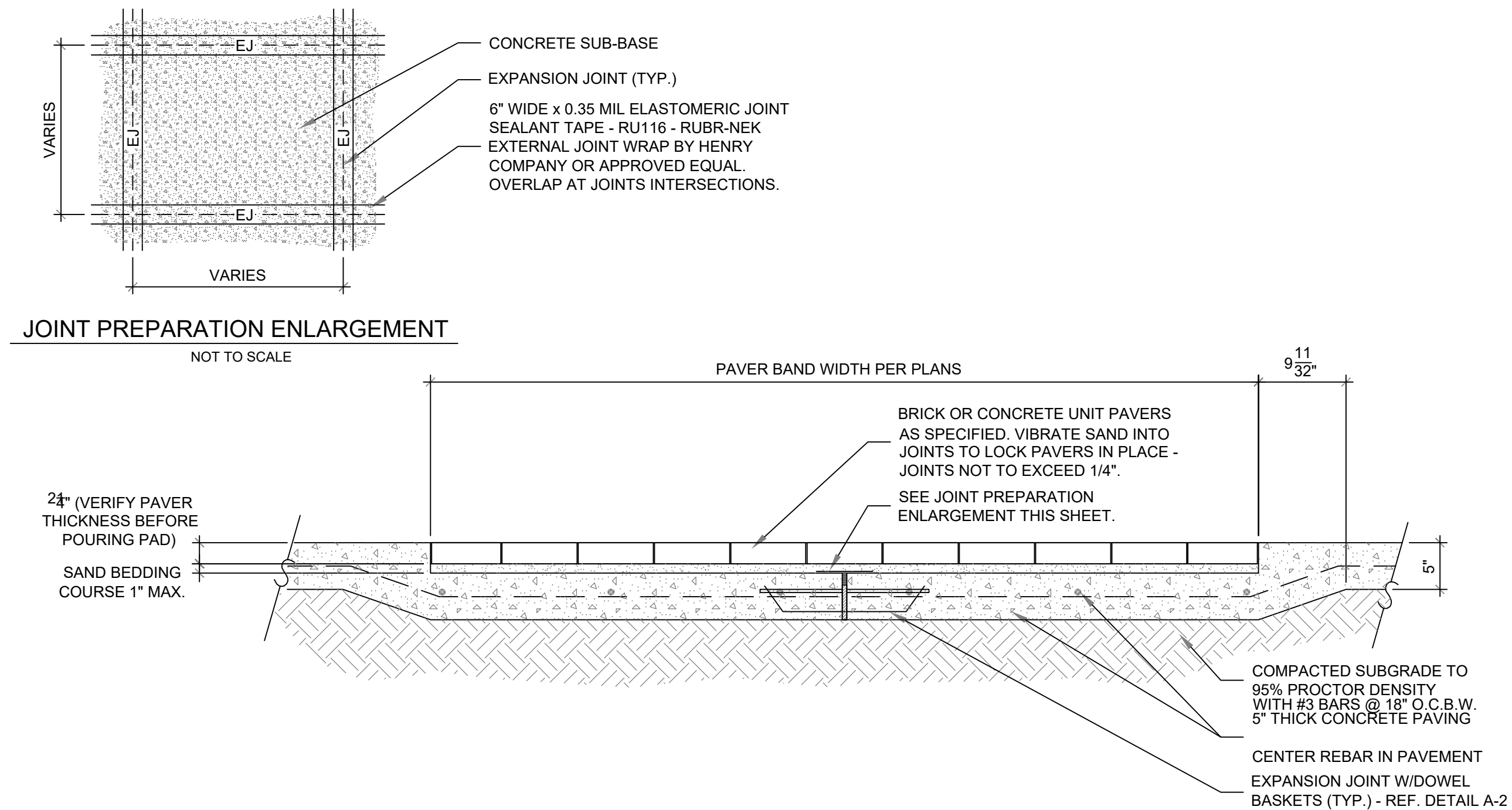
A BRICK PAVER DETAIL - (ALLEY)
NOT TO SCALE



B BRICK PAVER DETAIL - (DRIVEWAY APPROACH)
NOT TO SCALE



C BRICK PAVER DETAIL - (SIDEWALKS)
NOT TO SCALE



BRICK/UNIT PAVER NOTES:

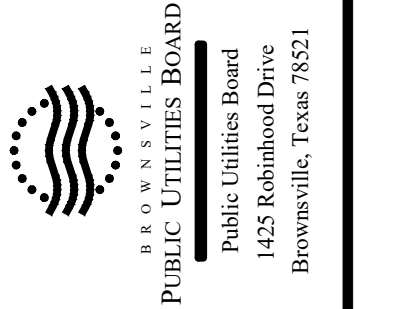
1. PAVERS AS SPECIFIED ON THE PLANS.
2. SAND IN THE BEDDING COURSE SHALL BE WASHED WELL GRADED ANGULAR SAND WITH A MAXIMUM SIZE OF 3/16\"/>

D BRICK/UNIT PAVER DETAIL
NOT TO SCALE

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FILE PATH: c:\pwworking\st\lpw_s\1\0933232200025_D-04.dwg



TEXAS REGISTERED ENGINEERING FIRM
TYPE F-1741



NO.	REVISION	BY	DATE

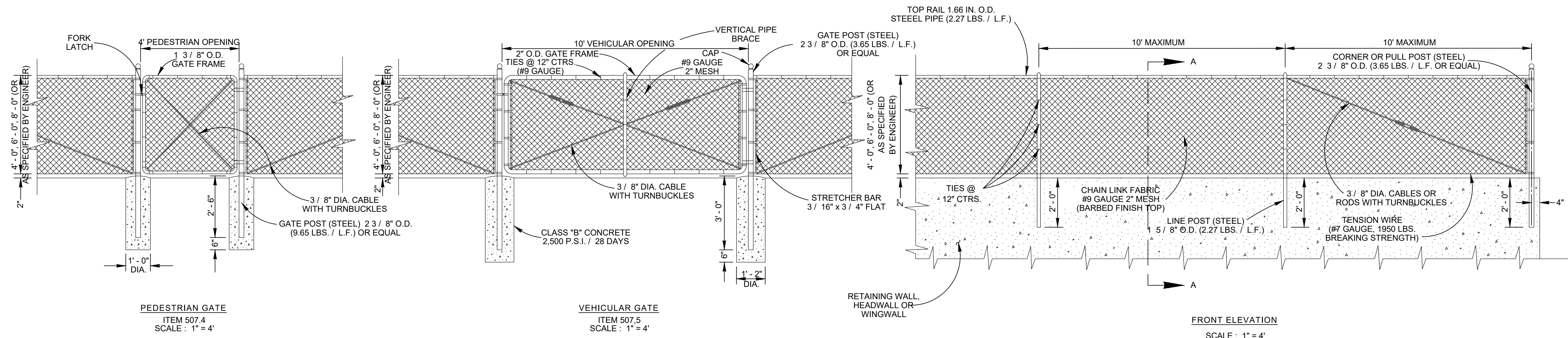
VERIFY SCALE BAR LENGTH EQUALS ONE INCH ON ORIGINAL DRAWING. VERIFY LENGTH ON THIS SHEET AND ADJUST SCALE ACCORDINGLY.

11/10/2023

BROWNVILLE PUBLIC UTILITIES BOARD
PROJECT 1: DOWNTOWN WW IMPROVEMENTS
DETAILS IV

DESIGN: GWM
DRAWN: GWM
REVIEW: JAE
STV: BPUB2200025.01

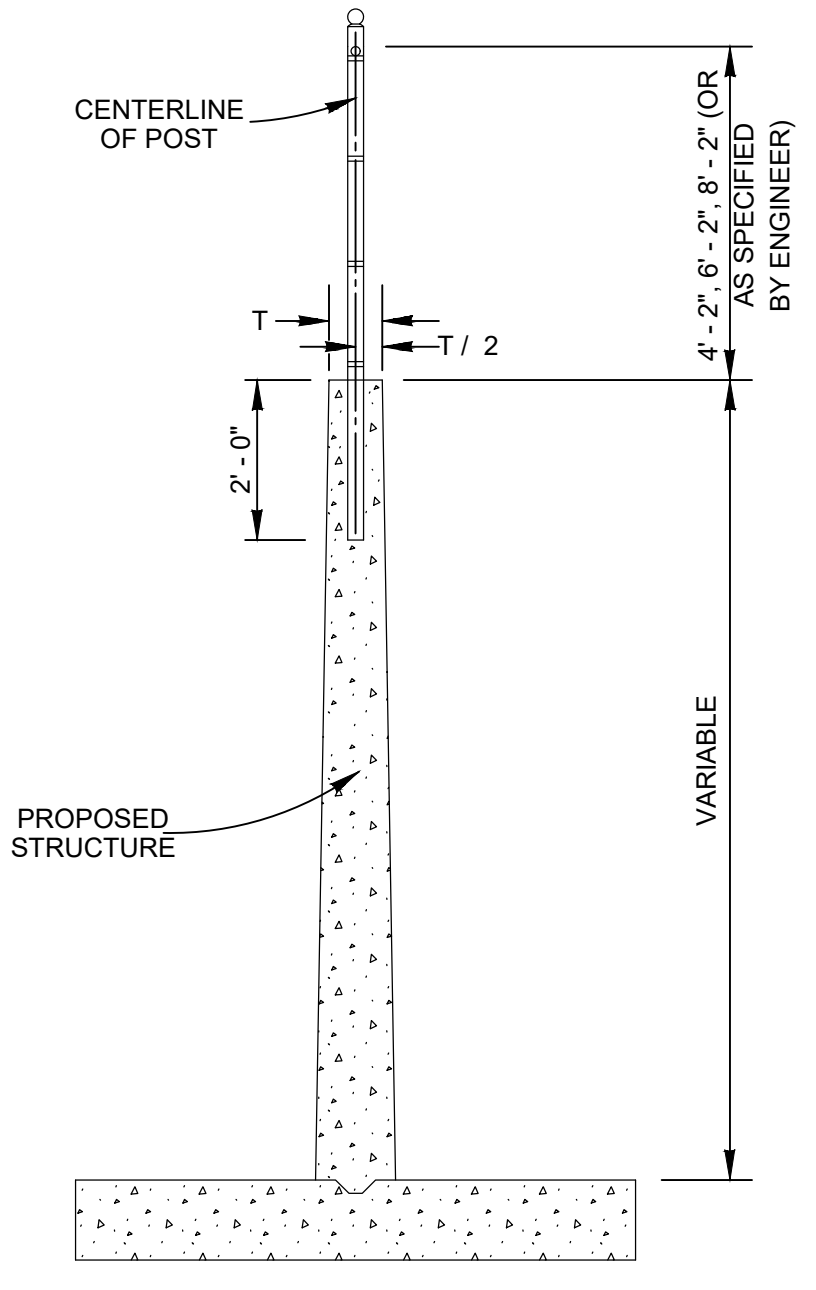
SHEET
D-04



PEDESTRIAN GATE
ITEM 507.4
SCALE: 1" = 4'

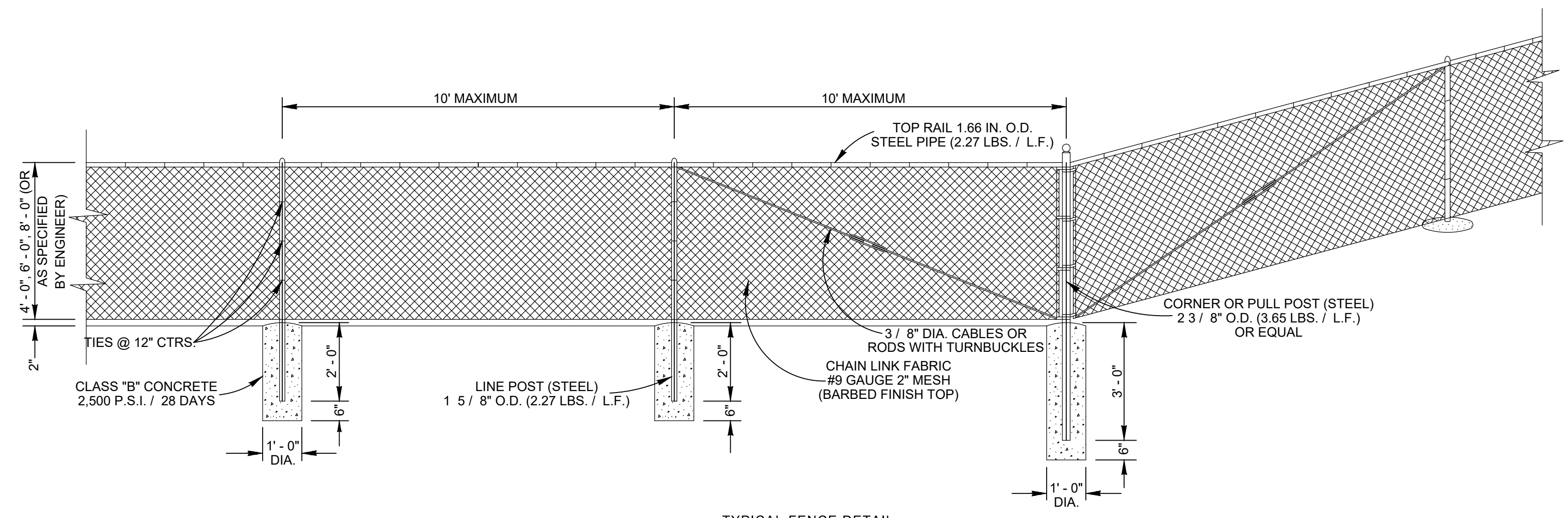
VEHICULAR GATE
ITEM 507.5
SCALE: 1" = 4'

FRONT ELEVATION
SCALE: 1" = 4'



SECTION VIEW "A-A"
SCALE: 1" = 4'

TYPICAL FOR FENCING IN RETAINING WALLS, HEADWALLS & WINGWALLS



TYPICAL FENCE DETAIL
SCALE: 1" = 4'

GENERAL NOTES

1. ALL CONCRETE FOOTINGS SHALL BE CROWNED A MINIMUM OF 1" ABOVE THE EXISTING GROUND, WHERE FOOTINGS ARE REQUIRED ONLY.
2. FENCING SHALL BE LOCATED IN RETAINING WALLS, HEADWALLS & WINGWALLS AT LOCATIONS SHOWN ON THE PLANS.
3. CORNER OR PULL POSTS WILL BE REQUIRED AT ALL END POINTS AND ANGLE POINTS.
4. CONCRETE FOR SEPARATE POST FOOTINGS SHALL BE IN ACCORDANCE WITH ITEM 300-B CLASS B CONCRETE.

A CHAIN LINK FENCE DETAIL
NOT TO SCALE

PRINTED BY: MilksGW DATE: 8/28/2023
FILE PATH: c:\pwworking\stvw_siv\d0933232\2200025_D-05.dwg



BROWNVILLE PUBLIC UTILITIES BOARD
Public Utilities Board
1425 Robinhood Drive
Brownsville, Texas 78521



NO.	REVISION	BY	DATE

VERIFY SCALE BAR LENGTH EQUALS ONE INCH ON ORIGINAL DRAWING. VERIFY LENGTH ON THIS SHEET AND ADJUST SCALE ACCORDINGLY.

BROWNVILLE PUBLIC UTILITIES BOARD
PROJECT 1: DOWNTOWN WW IMPROVEMENTS

DESIGN: GWM
DRAWN: GWM
REVIEW: JAE
STV: BPUB2200025.01

SHEET
D-05

DETAILS V

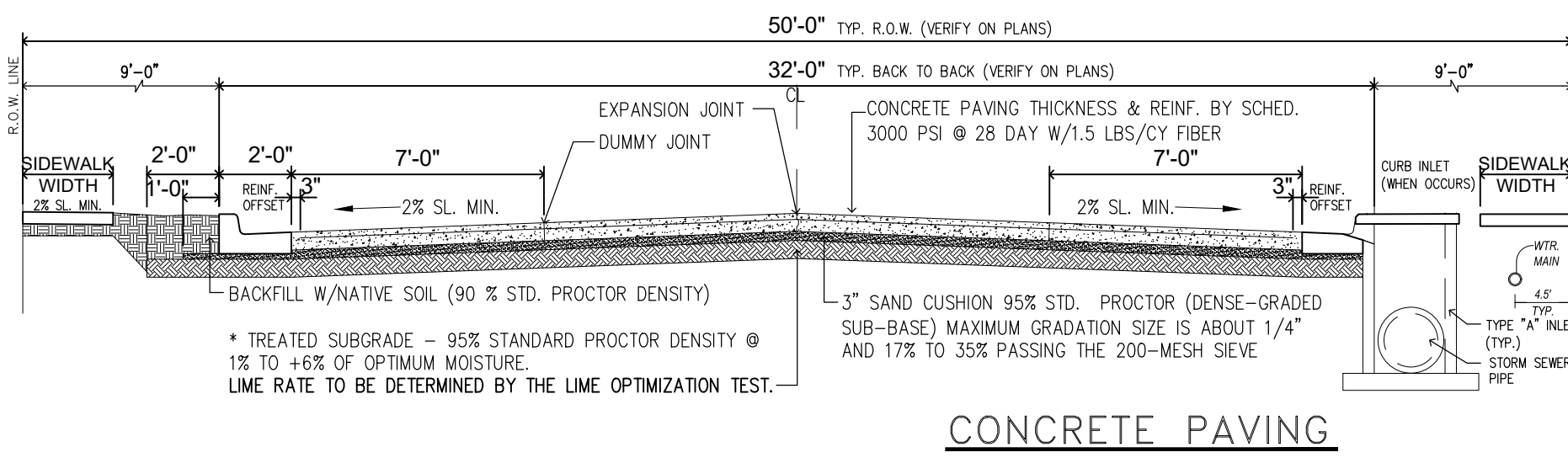
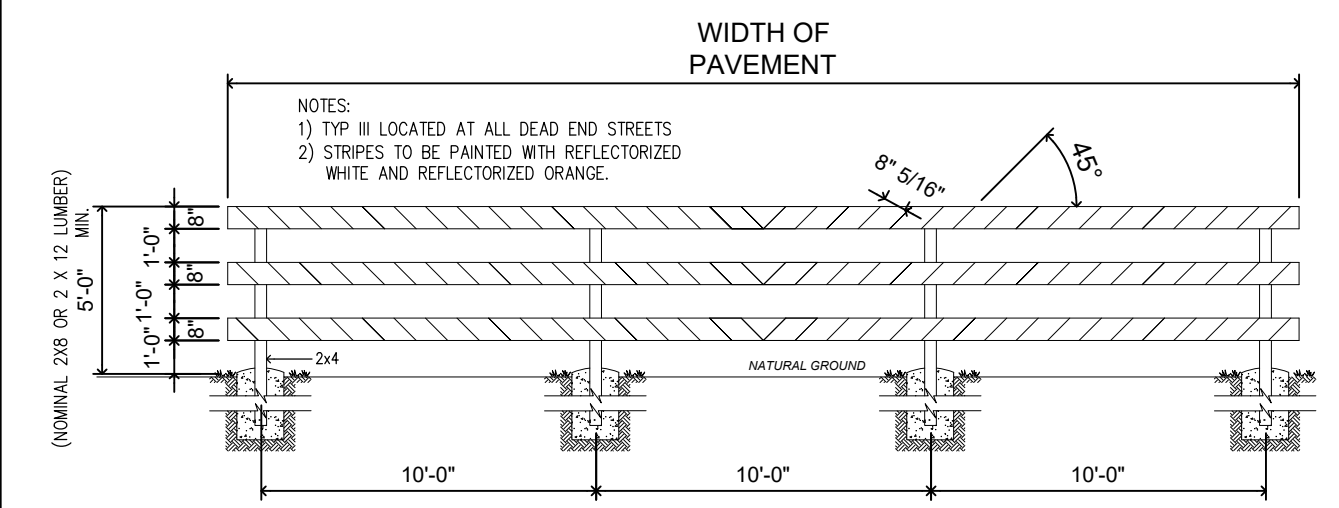
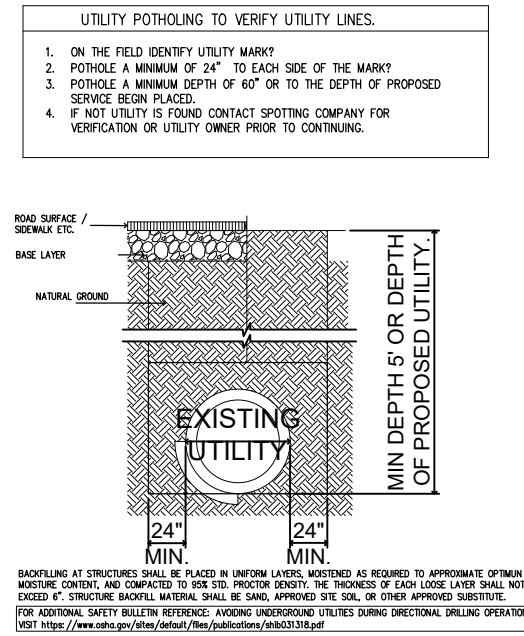
READY TO START DIGGING?
<https://call811.com/Start-Here>

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 you are required to provide varies by state.

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 been re-located. 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.



PAVING MATERIALS TESTING FOR STREETS (32' WIDE TYP.)

SUBGRADE: EVERY 300' MAX.

- OPTIMUM LIME CONTENT.
- ATTERBERG LIMITS.
- MOISTURE/DENSITY CURVES (STANDARD PROCTOR).
- SUBGRADE DENSITIES.
- LIME DEPTH (THICKNESS).

LIME STABILIZATION SUB-BASE SHALL CURE MIN. 24 HRS.

LIMESTONE / CALICHE: EVERY 400' MAX.

- ATTERBERG LIMITS.
- MOISTURE/DENSITY CURVES (STANDARD PROCTOR).
- EXTRACTION/GRADATION (OPTIONAL).
- CALIFORNIA BEARING RATIO TEST (C.B.R.).
- CALICHE BASE DENSITIES.
- LIME DEPTH (THICKNESS).

(GET PLANT CERTIFICATE FOR MODIF. TYPE I CALICHE)

PRIME COAT: MC-30 OR APPROVED SIMILAR

- CURING PERIOD 24-48 HRS.
- DURING CURING NO TRAFFIC SHALL BE ALLOWED ON SURFACE, INCLUDING EQUIPMENT.

ASPHALT: EVERY 500' MAX.

- RETAINED STABILITY. H.M.A.C. CONTENT
- HVEEM STABILITY. RET. OIL CONTENT = 5-8% MAX.
- EXTRACTION/GRADATION. RETAIN STABILITY = 70% MIN. MAXIMUM COMPACTION = 93% MIN.
- OPT. THEORETICAL DENSITY. HVEEM STABILITY = 30% MIN.
- THICKNESS. TEMP. AT PLACING = 220 F MIN.
- IN-PLACE DENSITY.

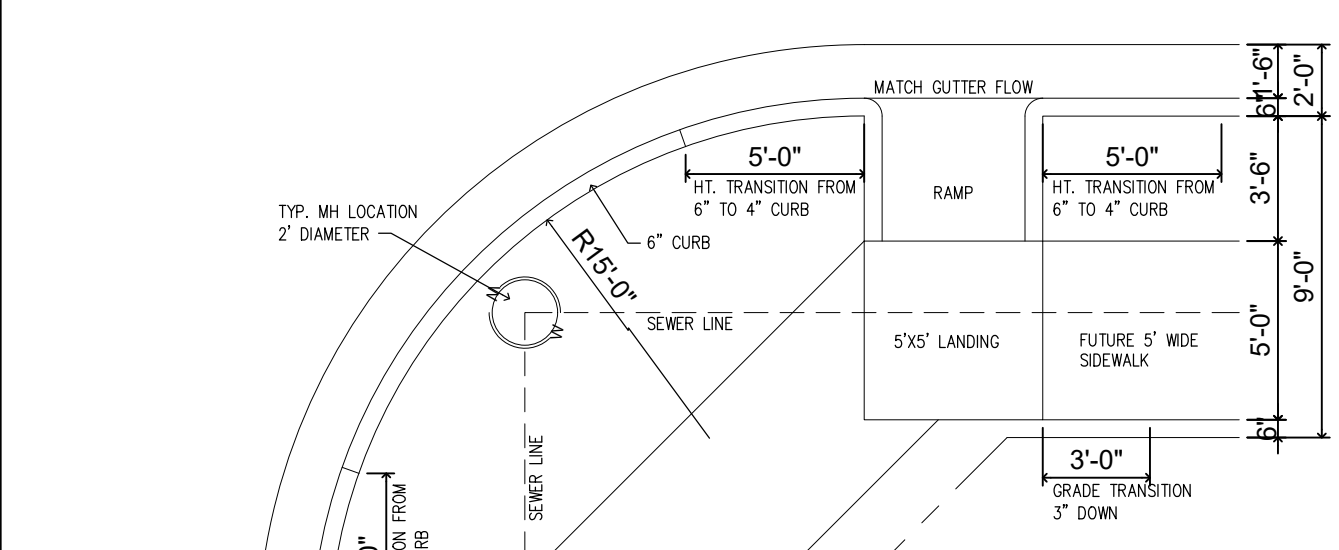
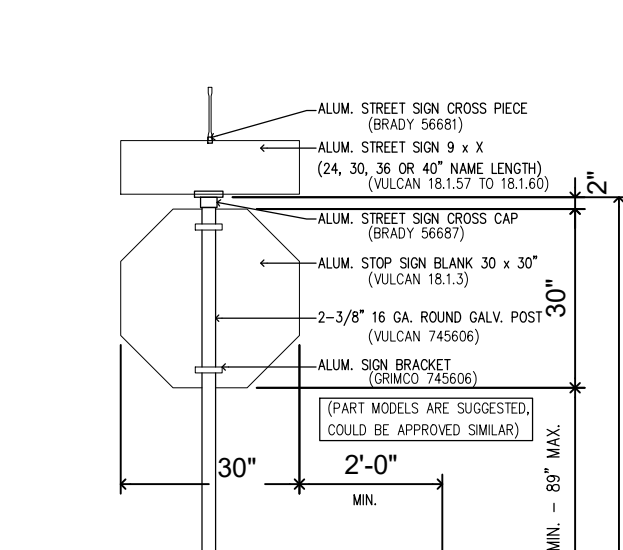
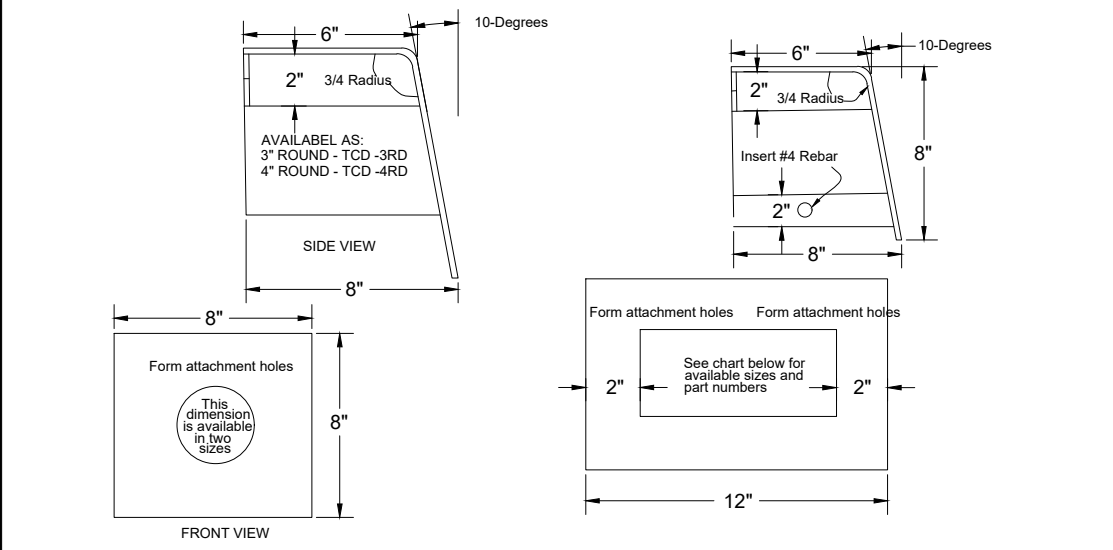
CONCRETE: CYL. EVERY 100 CY MIN. OR DAYS POUR

- STRENGTH (P.S.I.)

1) CURB SHALL BE BACKFILLED WITHIN A 6 HOUR PERIOD AFTER REMOVAL OF FORMS TO PREVENT TILTING. 2" DEEP DUMMY JOINTS AT 10 FT. O.C. MAX.

2) CONCRETE SHALL BE CLASS "A" WITH 3000 PSI MIN. COMPRESSIVE STRENGTH AT 28 DAYS WITH 1.5 LBS./CY "FIBERMESH". ALL EXP. CONCRETE SURFACES SHALL BE TREATED WITH CURING COMPOUND RESIN BASE (ASTM C 309 TYPE 2) W/ FUGITIVE DYE.

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.



CONTRACTOR SHALL NOT BEGIN ANY WORK ON ANY PORTION OF THE PAVING & DRAINAGE IMPROVEMENTS UNTIL ALL UNDERGROUND UTILITIES (STORM DRAINAGE, WATER DISTRIBUTION, SANITARY SEWER AND ALL ELECTRIC CABLE CONDUIT CROSSINGS), HAS BEEN COMPLETED.

TYPE OF STREET	SUBGRADE LIME TREATED	GEO-GRID	BASE LIMESTONE OR CALICHE	PAVEMENT CONCRETE
RESIDENTIAL	6"		6"	7" REINF. #4 @ 12 OCEW
RESIDENTIAL COLLECTOR	8"		7"	7" REINF. #4 @ 12 OCEW
COLLECTOR	11"		9"	7" REINF. #5 @ 12 OCEW
MINOR ARTERIAL / INDUSTRIAL	12"		10"	8" REINF. #5 @ 12 OCEW
MAJOR ARTERIAL	12"		11"	8" REINF. #6 @ 12 OCEW

PAVEMENT SECTION DETAIL

CONCRETE SHALL BE CLASS "A" WITH A 3000 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS W/1.5 LBS./CY "FIBERMESH".

CURBS SHALL BE BACKFILLED IMMEDIATELY AFTER REMOVAL OF FORMS TO PREVENT TILTING.

2" DEEP DUMMY JOINTS 10' O.C. MAX.

EXPANSION JOINTS WILL BE PLACED AT CURB RETURNS, INLETS AND END OF EACH POUR WITH INTERVALS NOT TO EXCEED 40 FT.

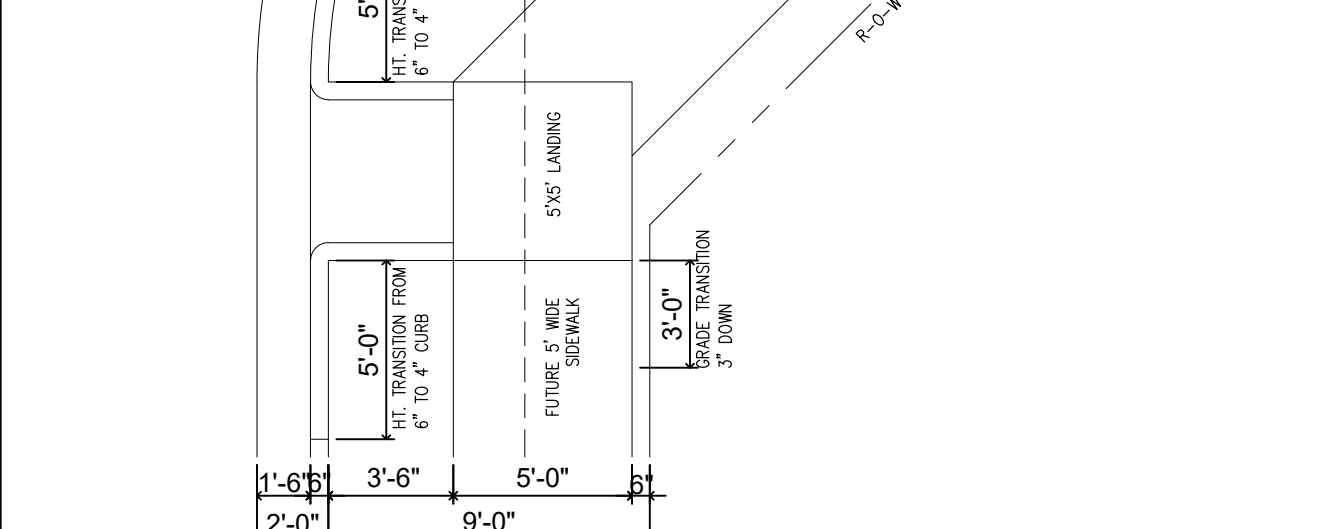
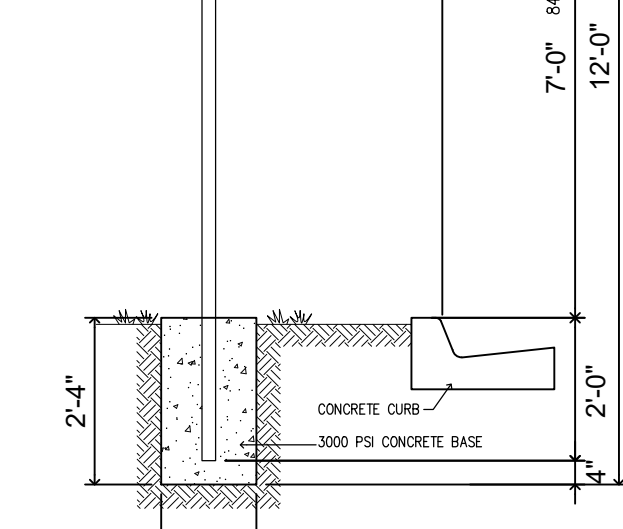
JOINTS WILL CONSIST 1/2" PRE-MOLDED BITUMINOUS MATERIAL W/ (3) #4 x 36" SMOOTH DOWELS, ONE END GREASED & WRAPPED.

CARE MUST BE TAKEN THAT THE DOWELS ARE STRAIGHT AND LAID PARALLEL WITH CURB AND NO CONCRETE "PLUGS" OR OTHER MATERIAL BE ALLOWED THROUGH THE DOWEL HOLES OR EXPANSION MATERIAL THAT WOULD PREVENT JOINT FROM OPERATING AS AN EXPANSION JOINT.

PRODUCT SPECIFICATION

ROUND EQUIV.	SIZE	MODEL	ROOF DRAIN LABEL MODEL NUMBER	COVERFLOW DRAIN LABEL MODEL NUMBER	REMARKS
3"	3" ROUND	TCD-3RD	TCD-3RD-RFD	TCD-3RD-OFD	6" 8" CURB FACE
4"	4" ROUND	TCD-4RD	TCD-4RD-RFD	TCD-4RD-OFD	6" 8" CURB FACE
4"	3"x6"	TCD-3S	TCD-3S-RFD	TCD-3S-OFD	6" 8" CURB FACE
5"	3"x8"	TCD-3B	TCD-3B-RFD	TCD-3B-OFD	6" 8" CURB FACE
6"	3"x12"	TCD-312	TCD-312-RFD	TCD-312-OFD	6" 8" CURB FACE
8"	4"x14"	TCD-414	TCD-414-RFD	TCD-414-OFD	NOTE: 8" CURB FACE ONLY
8"	3"x17"	TCD-317	TCD-317-RFD	TCD-317-OFD	6" 8" CURB FACE
10"	3"x27"	TCD-327	TCD-327-RFD	TCD-327-OFD	6" 8" CURB FACE
10"	4"x22"	TCD-422	TCD-422-RFD	TCD-422-OFD	NOTE: 8" CURB FACE ONLY

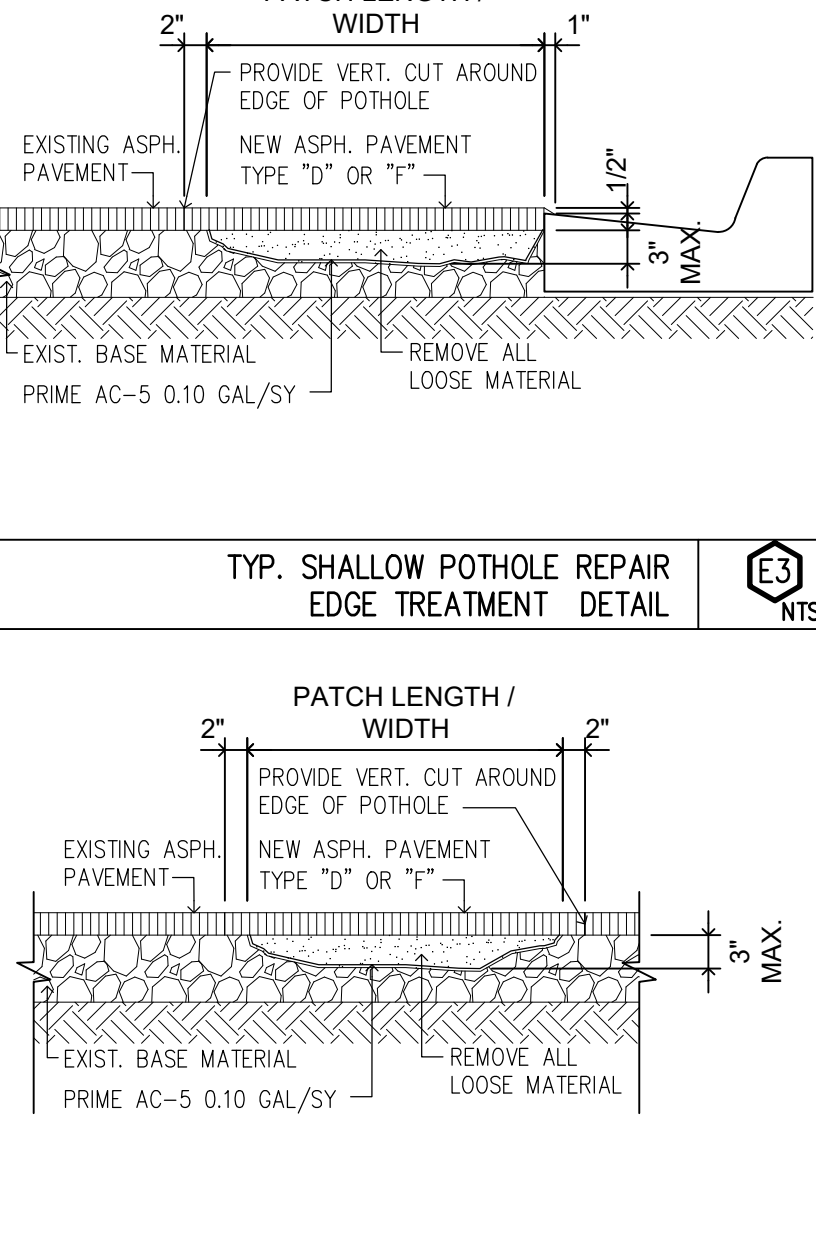
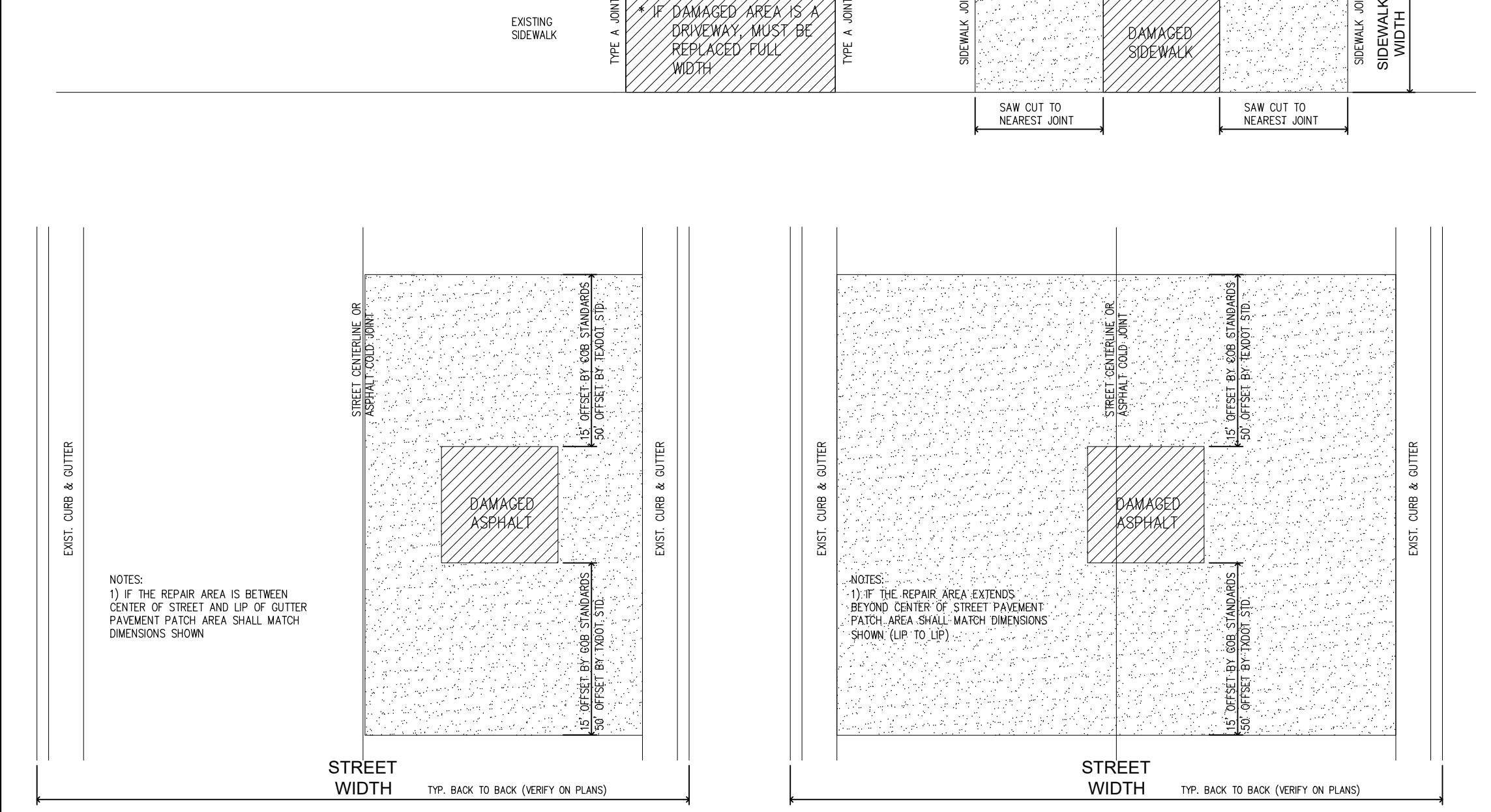
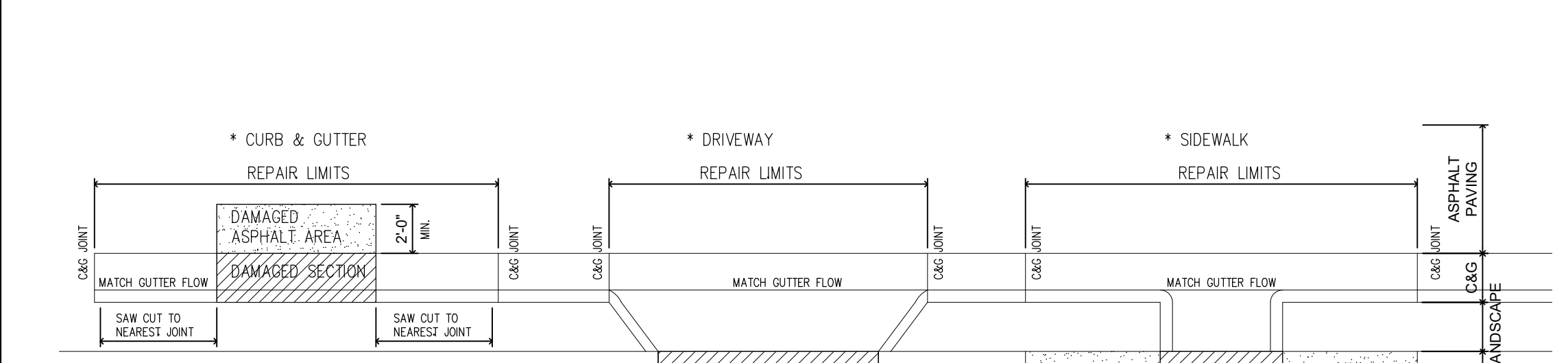
ALL CURB-OLET PRODUCTS ARE MANUFACTURED TO CLOSE TOLERANCES. VERY SLIGHT VARIATIONS IN SIZE ARE POSSIBLE. CURB-OLET FITS STANDARD 6" AND 8" CURB FACE. EPOXY COATING FINISHES AVAILABLE ON REQUEST.



TYP. CURB DRAIN DETAIL & SPECIFICATIONS

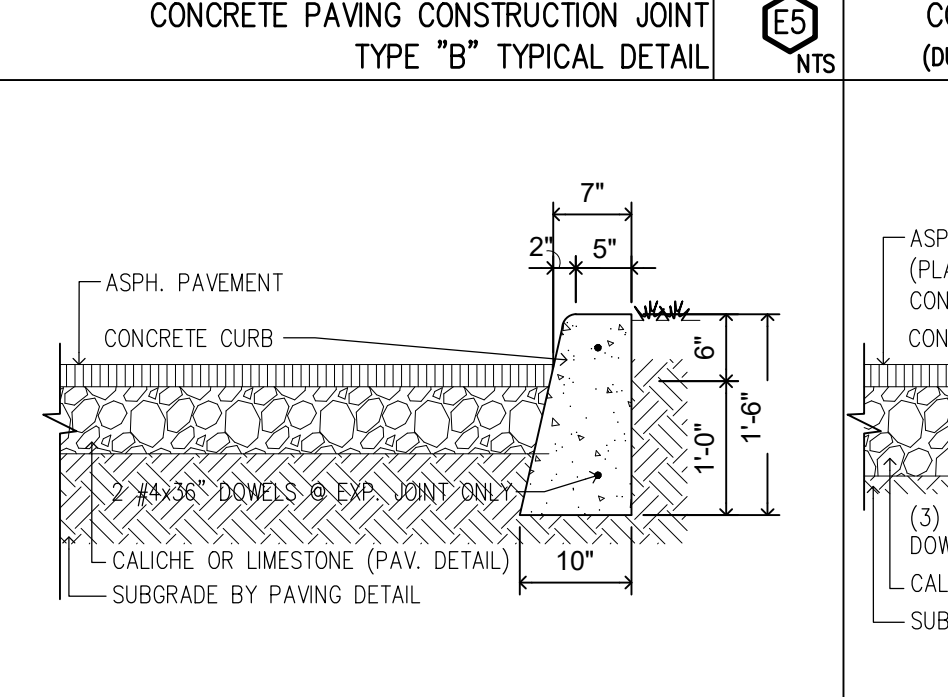
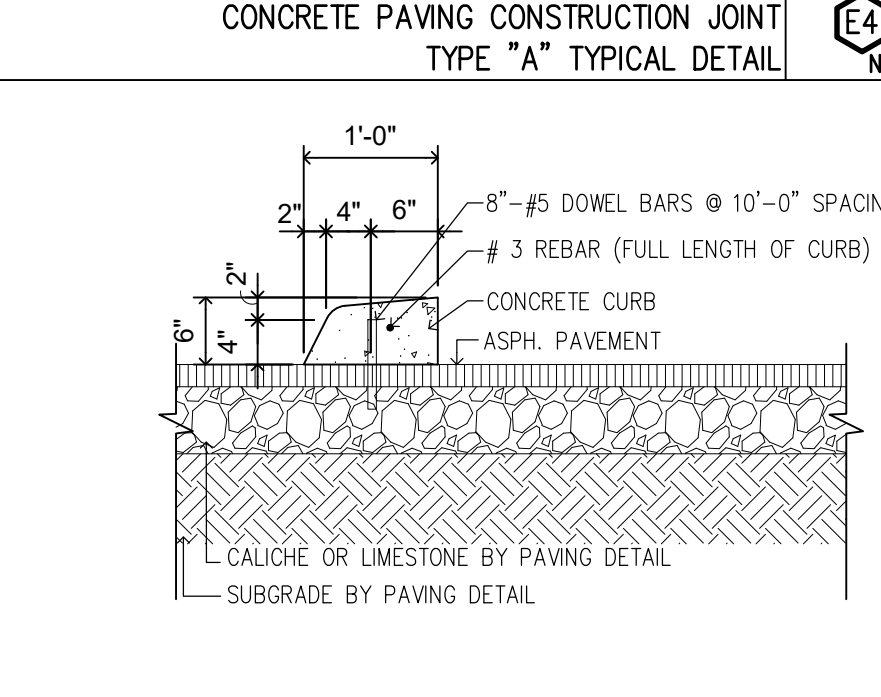
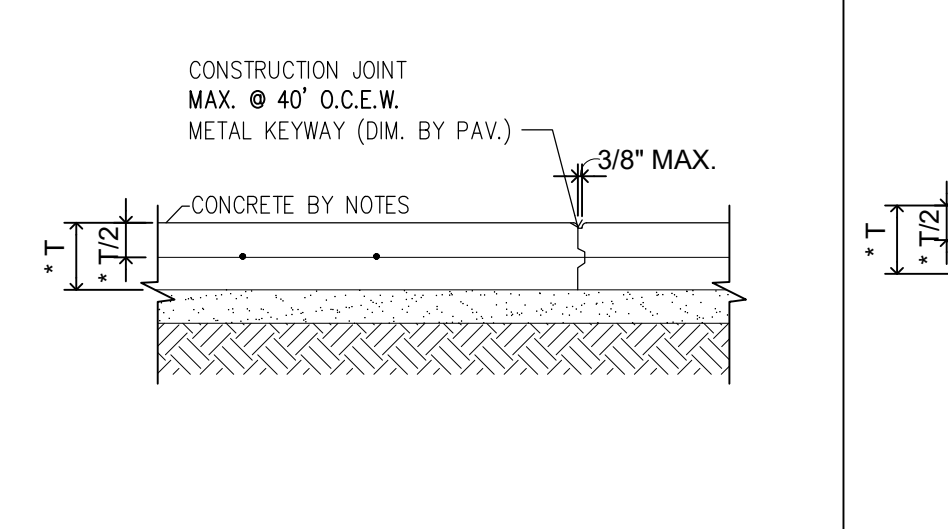
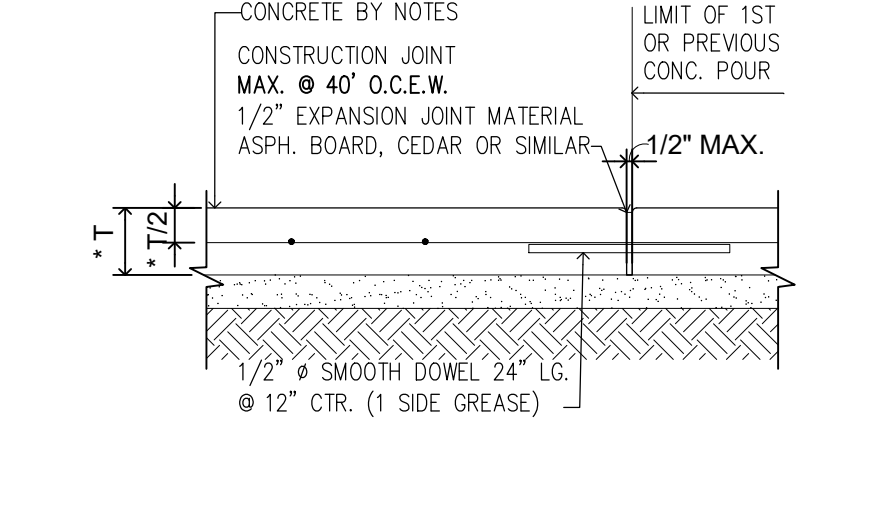
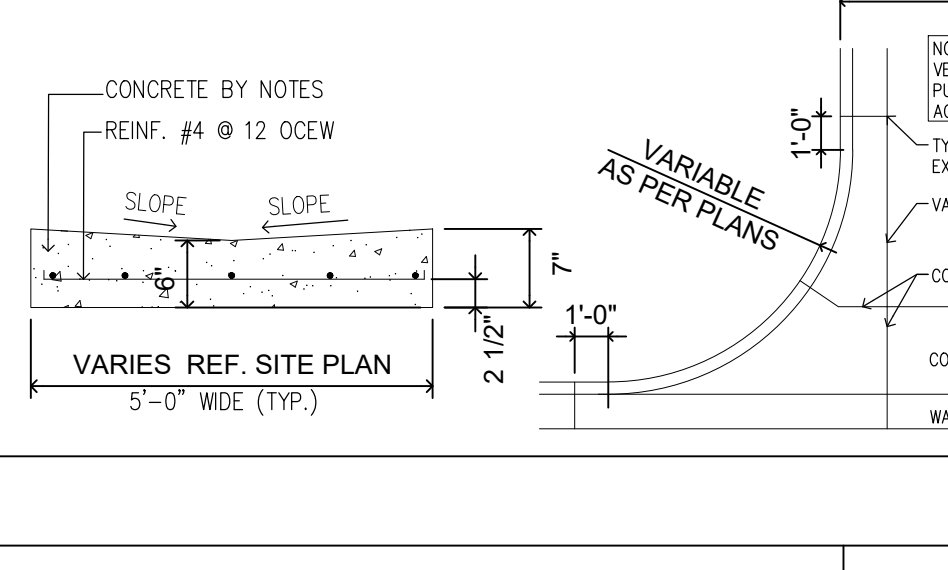
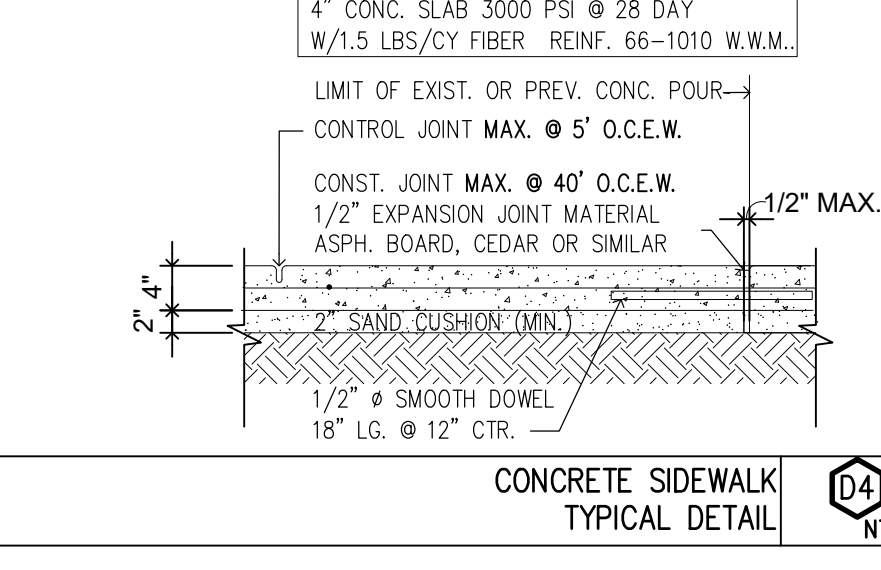
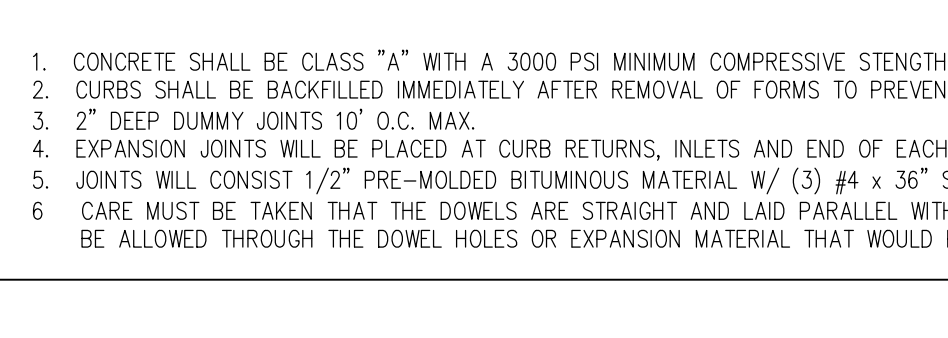
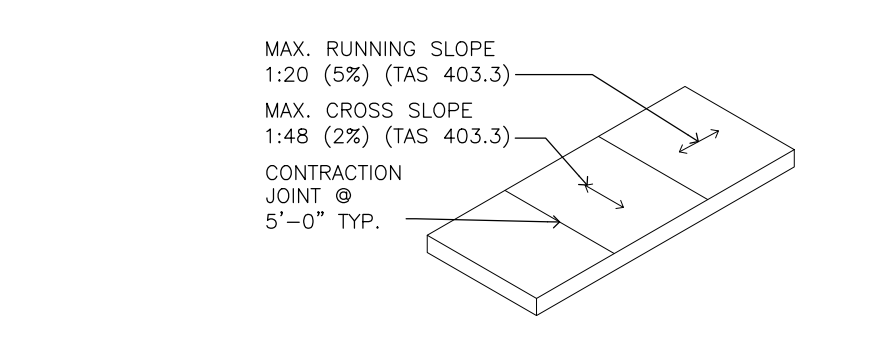
TYP. STREET SIGN INSTALLATION DETAIL

RAMP AT STREET INTERSECTION DETAIL



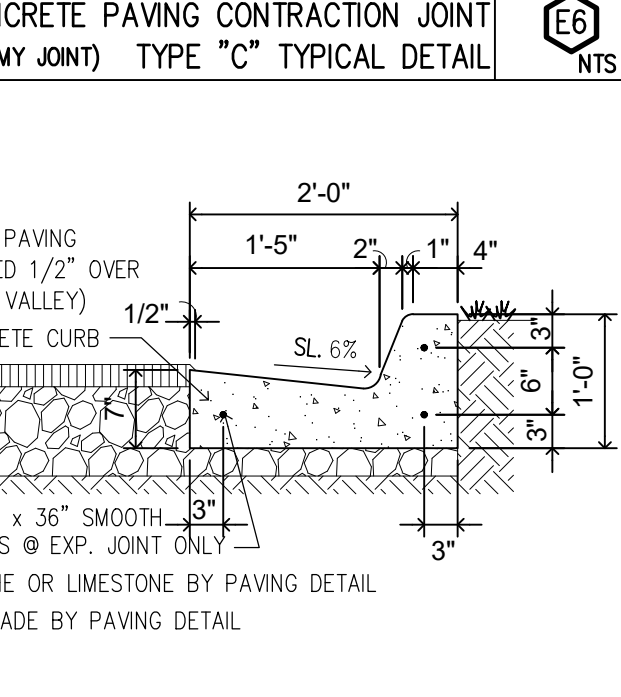
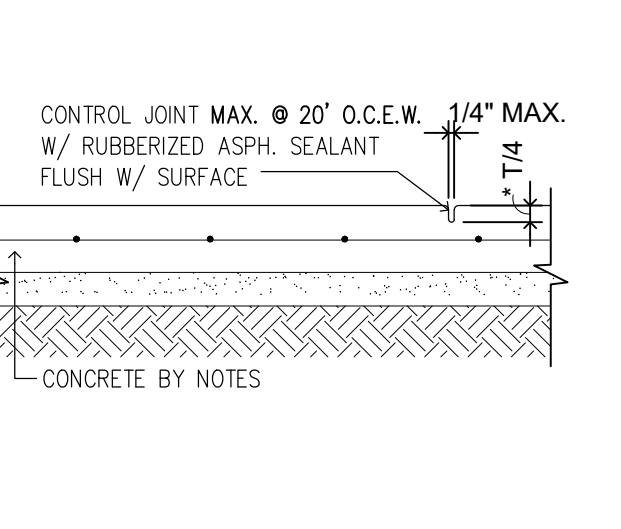
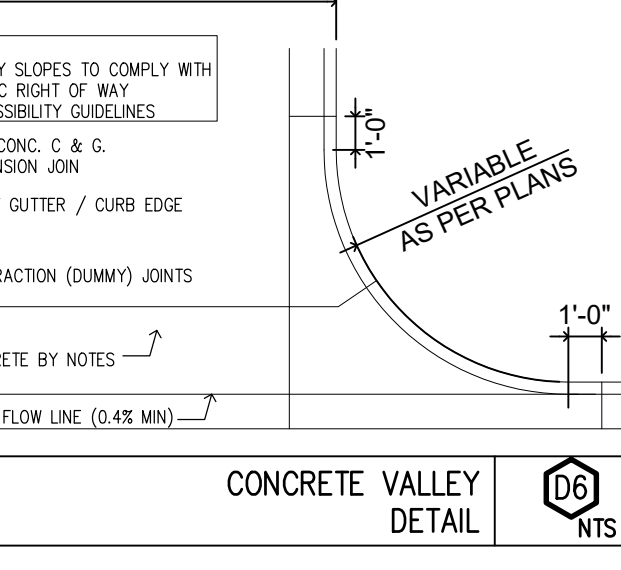
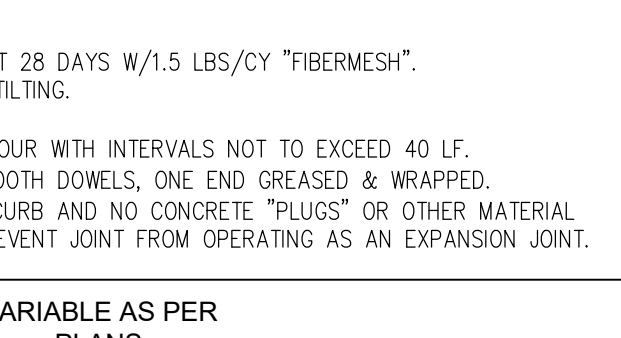
CURB, GUTTER, SIDEWALKS & ASPHALT PAVING REPAIR PREMISES DETAIL

TYP. SHALLOW POTHOLE REPAIR DETAIL



CONCRETE PAVING CONSTRUCTION JOINT TYPE "A" TYPICAL DETAIL

CONCRETE PAVING CONSTRUCTION JOINT TYPE "B" TYPICAL DETAIL

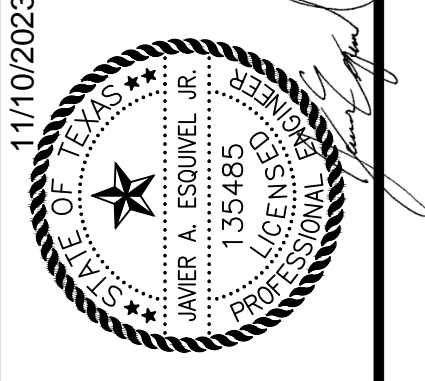


CONCRETE PAVING CONSTRUCTION JOINT TYPE "A" TYPICAL DETAIL

CONCRETE PAVING CONSTRUCTION JOINT TYPE "B" TYPICAL DETAIL



BROWNSVILLE PUBLIC UTILITIES BOARD
 Public Utilities Board
 1425 Robinhood Drive
 Brownsville, Texas 78521



REVISION

NO.	REVISION	DATE

VERIFY SCALE BAR LENGTH EQUALS ONE INCH ON ORIGINAL DRAWING. VERIFY LENGTH ON THIS SHEET 0 1" AND ADJUST SCALE ACCORDINGLY.

BROWNSVILLE PUBLIC UTILITIES BOARD
 PROJECT 1: DOWNTOWN WW IMPROVEMENTS
 DETAILS VII

DESIGN: GWM
 DRAWN: GWM
 REVIEW: JAE
 STV: BPUB220025.01

SHEET
 D-07

BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

- The Barricade and Construction Standard Sheets (BC sheets) are intended to show typical examples of temporary traffic control devices, construction pavement markings, and typical work zone signs. The information contained in these sheets meet or exceed the requirements shown in the Texas Manual on Uniform Traffic Control Devices (TMUTCD).
- The development and design of the Traffic Control Plan (TCP) is the responsibility of the Engineer.
- The Contractor may propose changes to the TCP that are signed and sealed by a licensed professional engineer for approval. The Engineer may develop, sign and seal Contractor proposed changes.
- The Contractor is responsible for installing and maintaining the traffic control devices as shown in the plans. The Contractor may not move or change the approximate location of any device without the approval of the Engineer.
- Geometric design of lane shifts and detours should, when possible, meet the applicable design criteria contained in manuals such as the American Association of State Highway and Transportation Officials (AASHTO), "A Policy on Geometric Design of Highways and Streets," the TxDOT "Roadway Design Manual" or engineering judgment.
- When projects abut, the Engineer(s) may omit the END ROAD WORK, TRAFFIC FINES DOUBLE, and other advance warning signs if the signing would be redundant and the work areas appear continuous to the motorists. If the adjacent project is completed first, the Contractor shall erect the necessary warning signs as shown on these sheets, the TCP sheets or as directed by the Engineer. The BEGIN ROAD WORK NEXT X MILES sign shall be revised to show appropriate work zone distance.
- The Engineer may require duplicate warning signs on the median side of divided highways where median width will permit and traffic volumes justify the signing.
- All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.
- The temporary traffic control devices shown in the illustrations of the BC sheets are examples. As necessary, the Engineer will determine the most appropriate traffic control devices to be used.
- Where highway construction or maintenance work is being undertaken, other than mobile operations as defined by the Texas Manual on Uniform Traffic Control Devices, CSJ limit signs are required. CSJ limit signs are shown on BC(2). The OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits. For mobile operations, CSJ limit signs are not required.
- Traffic control devices should be in place only while work is actually in progress or a definite need exists.
- The Engineer has the final decision on the location of all traffic control devices.
- Inactive equipment and work vehicles, including workers' private vehicles must be parked away from travel lanes. They should be as close to the right-of-way line as possible, or located behind a barrier or guardrail, or as approved by the Engineer.

WORKER SAFETY NOTES:

- Workers on foot who are exposed to traffic or to construction equipment within the right-of-way shall wear high-visibility safety apparel meeting the requirements of ISEA "American National Standard for High-Visibility Apparel," or equivalent revisions, and labeled as ANSI 107-2004 standard performance for Class 2 or 3 risk exposure. Class 3 garments should be considered for high traffic volume work areas or night time work.
- Except in emergency situations, flagger stations shall be illuminated when flagging is used at night.

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

- Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources.
- Work zone traffic control devices shall be compliant with the Manual for Assessing safety Hardware (MASH).

THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT

<http://www.txdot.gov>

COMPLIANT WORK ZONE TRAFFIC CONTROL DEVICES LIST (CWZTCD)
DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS)
MATERIAL PRODUCER LIST (MPL)
ROADWAY DESIGN MANUAL - SEE "MANUALS (ON-LINE MANUALS)"
STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS (SHSD)
TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD)
TRAFFIC ENGINEERING STANDARD SHEETS

SHEET 1 OF 12

**BARRICADE AND CONSTRUCTION
GENERAL NOTES
AND REQUIREMENTS**

BC (1) - 21

FROM: BC (1)-21-000	DATE: 11/10/2023	BY: [Signature]	CHK: [Signature]
4-03	7-13	0000	0000
8-14	5-21	0000	0000

TYPICAL LOCATION OF CROSSROAD SIGNS

T-INTERSECTION

TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING

Sign Number or Series	Conventional Road	Expressway/Freeway	Posted Speed	Sign Δ Spacing "X"
CW20*			30	120
CW21	48" x 48"	48" x 48"	45	320
CW22			50	400
CW23			60	600
CW1, CW2, CW3, CW4, CW5, CW6, CW7, CW8, CW9, CW10, CW11, CW12	48" x 48"	48" x 48"	75	900*
			80	1000*

CSJ LIMITS AT T-INTERSECTION

WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING DOWNSTREAM OF THE CSJ LIMITS

LEGEND

- Type 3 Barricade
- Channelizing Devices
- Sign

NOTES

- The Contractor shall determine the appropriate distance to be placed on the R2-1 series signs and "BEGIN ROAD WORK NEXT X MILES" (R2-1) sign for each signing project. This distance shall replace the "X" and shall be rounded to the nearest whole mile with the approval of the Engineer. No detours shall be used.
- The "BEGIN ROAD WORK" (B1-1) and "END ROAD WORK" (E1-1) signs shall be used as shown on the sample layout when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a part of the work zone lying outside the CSJ Limits where traffic fines may double if workers are present.
- CSJ limit signing is required for highway construction and other signs or devices as called for on the Traffic Control Plan.
- Area for placement of "ROAD WORK AHEAD" (R1-2) sign and other signs or devices as called for on the Traffic Control Plan.
- Contractor will install a regulatory speed limit sign at the end of the work zone.

**BARRICADE AND CONSTRUCTION
PROJECT LIMIT**

BC (2) - 21

FROM: BC (2)-21-000	DATE: 11/10/2023	BY: [Signature]	CHK: [Signature]
9-07	5-21	0000	0000

TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

Work zone speed limits shall be regulatory, established in accordance with the "Procedures for Establishing Speed Zones," and approved by the Texas Transportation Commission, or by City Ordinance when within Incorporation City Limits.

Reduced speeds should only be posted in the vicinity of work activity and not throughout the entire project. Regulatory work zone speed signs (R2-1) shall be removed or covered during periods when they are not needed.

GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit should be included on the design of the traffic control plans when restricted geometry with a lower design speed or present in the work zone and modification of the geometrics to a higher design speed is not feasible.

Long/Intermediate Term Work Zone Speed Limit signs, when approved as described above, should be posted and visible to the motorist when work activity is present. Work activity may also be defined as a change in the roadway that requires a reduced speed for motorists to safely negotiate the work area, including:

- rough road or damaged pavement surface
- substantial alteration of roadway geometrics (verticals)
- construction detours
- grade
- other conditions relevant to the driver

As long as any of these conditions exist, the work zone speed limit signs should remain in place.

SHORT TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit may be included on the design of the traffic control plans when workers or equipment are not behind concrete barrier, when work activity is within 10 feet of the traveled way or actually in the traveled way.

Short Term Work Zone Speed Limit signs should be posted and visible to the motorist only when work activity is present. When work activity is not present, signs shall be removed or covered. (See Removing or Covering on BC(4)).

GENERAL NOTES

- Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
- Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
- Speed zone signs are illustrated for the direction of travel and are normally posted for each direction of travel.
- Frequency of work zone speed limit signs should be:
 - 40 mph and greater: 0.2 to 2 miles
 - 35 mph and less: 0.2 to 1 mile
- Regulatory speed limit signs shall have black legend and border on a white reflective background (See "Reflective Sheeting" on BC(4)).
- Facilitation, erection and maintenance of the "ADVANCE SPEED LIMIT" (R2-1) sign, "WORK ZONE" (G20-5P) plaque and the "SPEED LIMIT" (R2-1) signs shall not be paid directly, but shall be considered subsidiary to Item 502.
- Turning signs from view, laying signs over or down will not be allowed, unless otherwise noted under "REMOVING OR COVERING" on BC(4).
- Techniques that may help reduce traffic speeds include but are not limited to:
 - Low enforcement.
 - Flagger stationed next to sign.
 - Portable changeable message sign (PCMS).
 - Low-power (acorn) radar transmitter.
 - Speed monitor trailers or signs.
- Speed signs on details above or for installation only. Work Zone Speed Limits should only be posted as approved for each project.
- For more specific guidance concerning the type of work, work zone conditions and factors impacting allowable regulatory construction speed zone reduction see TxDOT Form #2024 in the TxDOT Form System.

SHEET 3 OF 12

**BARRICADE AND CONSTRUCTION
WORK ZONE SPEED LIMIT**

BC (3) - 21

FROM: BC (3)-21-000	DATE: 11/10/2023	BY: [Signature]	CHK: [Signature]
9-07	8-14	0000	0000
7-13	5-21	0000	0000

TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS

ATTACHMENT FOR SIGN SUPPORTS

NOTES

- Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
- Signs shall be installed in accordance with the plans or in the "Standard Highway Sign Designs for Texas" (SHSD). The Engineer/Inspector may require the Contractor to furnish other work zone signs that are shown in the TMUTCD but may have been omitted from the plans. Any variation in the plans shall be documented by written agreement between the Engineer and the Contractor.
- The Contractor shall furnish the sign supports listed in the "Compliant Work Zone Traffic Control Devices List" (CWZTCD) for small roadside signs. Supports for temporary large roadside signs shall meet the requirements detailed on the Temporary Large Roadside Signs (TLRS) standard sheets. The Contractor shall verify the correct procedure for erecting signs with the manufacturer's recommendations. If there is a question regarding installation procedures, the Contractor shall furnish the Engineer a copy of the manufacturer's installation recommendations so the Engineer can verify the correct procedure as directed by the Engineer/Inspector.
- The Contractor is responsible for installing signs on approved supports and replacing signs with damaged or cracked substrates and/or damaged or missing hardware as directed by the Engineer/Inspector.
- Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1 inch.
- The Contractor shall replace damaged wood posts. New or damaged wood sign posts shall not be spliced.

DEFINITION OF WORK ZONE SPEED LIMITS

The type of sign support, the size of signs, and the type of sign support shall be based on the type of work being performed. The Engineer is responsible for selecting the appropriate size sign for the type of work being performed. The Contractor is responsible for selecting the appropriate size sign for the type of work being performed. The Contractor is responsible for selecting the appropriate size sign for the type of work being performed.

GENERAL NOTES FOR WORK ZONE SIGNS

- Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
- Signs shall be installed in accordance with the plans or in the "Standard Highway Sign Designs for Texas" (SHSD). The Engineer/Inspector may require the Contractor to furnish other work zone signs that are shown in the TMUTCD but may have been omitted from the plans. Any variation in the plans shall be documented by written agreement between the Engineer and the Contractor.
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ATTACHMENT FOR SIGN SUPPORTS

NOTES

- Sign supports shall extend more than 1/2 way to the back of the sign substrate.
- Sign supports shall be attached directly to the sign support. Multiple signs shall not be joined or spliced by any means. Wood supports shall not be extended or repaired by splicing or other means.

STOP/SLOW PADDES

- STOP/SLOW padde size shall be 24" x 24".
- STOP/SLOW padde shall be retroreflective when used at night.
- STOP/SLOW padde may be attached to a post with a minimum length of 6" to the bottom of the sign.
- Any signs incorporated into the STOP or SLOW padde faces shall only be as specifically described in Section 603.1 and Signaling Devices in the TMUTCD.

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

- Permanent signs are used to give notice of traffic law regulations, call attention to conditions that are potentially hazardous to traffic operations, or route designations, destinations, directions, distances, services, points of interest, and other geographical information, specific service (LOGO), or cultural information. Drivers proceeding through a work zone need the same, if not better, route guidance as normally installed on a roadway without construction.
- When permanent regulatory or warning signs conflict with work zone conditions, remove or cover the permanent signs until the permanent sign message matches the roadway condition. For details for covering large sign signs see the 15-C standard.
- When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
- If existing signs are to be relocated on their original supports, they shall be installed on concrete bases as shown on the SMO Standard sheets. The signs shall meet the required mounting heights shown on the BC Sheets or the SMO Standard. This work should be paid for under the appropriate pay item for relocating existing signs.
- If permanent signs are to be removed and relocated using temporary supports, the Contractor shall use contractor's supports as shown on the SMO Standard sheets or the CWZTCD list. The signs shall meet the required mounting heights shown on the BC, or the SMO Standard sheets during construction. This work should be paid for under the appropriate pay item for relocating existing signs.
- Any sign or traffic control device that is struck or damaged by the Contractor or higher construction equipment shall be replaced as soon as possible by the Contractor to ensure proper guidance for the motorists. This will be subsidiary to Item 502.

SHEET 4 OF 12

**BARRICADE AND CONSTRUCTION
TEMPORARY SIGN NOTES**

BC (4) - 21

FROM: BC (4)-21-000	DATE: 11/10/2023	BY: [Signature]	CHK: [Signature]
9-07	8-14	0000	0000
7-13	5-21	0000	0000

TRAFFIC CONTROL DETAILS I

BROWNVILLE PUBLIC UTILITIES BOARD
PROJECT 1: DOWNTOWN WW IMPROVEMENTS

DESIGN: GWMM
DRAWN: GWMM
REVIEW: JAE
STV: BPUB2200025.01

SHEET
TC02

NO. REVISION BY DATE

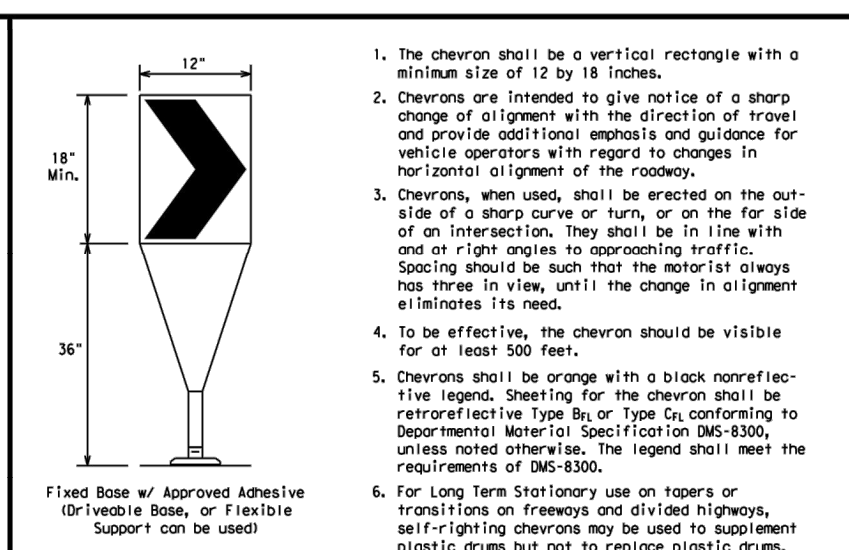
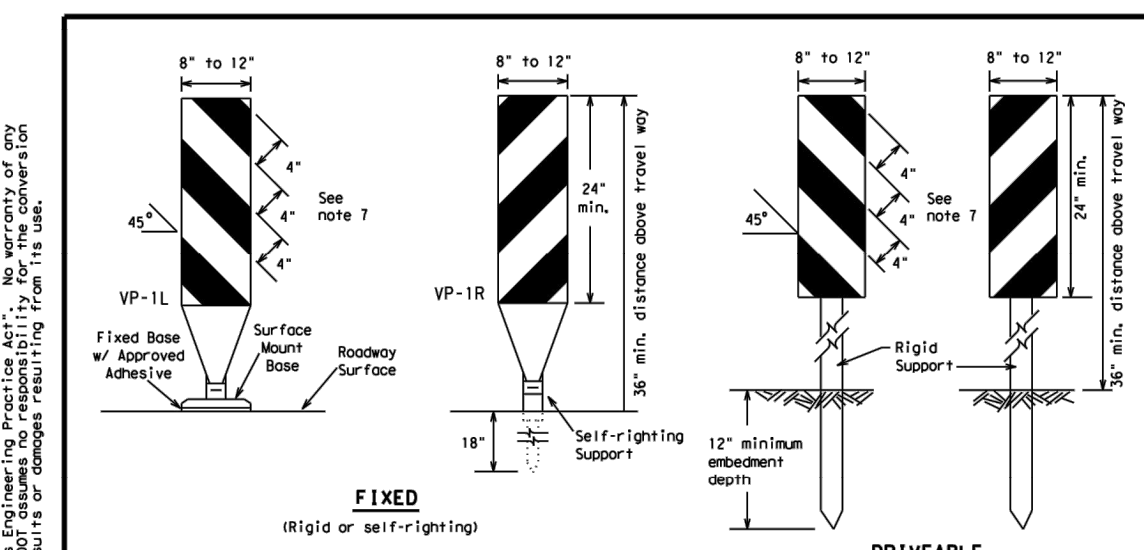
VERIFY SCALE: BAR LENGTH EQUALS ONE INCH ON ORIGINAL DRAWING. VERIFY LENGTH ON THIS SHEET 0" = 1" AND ADJUST SCALE ACCORDINGLY.

11/10/2023

BROWNVILLE PUBLIC UTILITIES BOARD
1425 Robinson Drive
Brownsville, Texas 78521

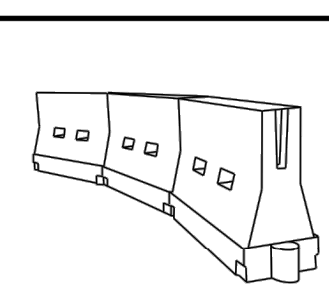
TEXAS REGISTERED ENGINEERING FIRM
TYPE F-1741

135485
PUBLIC UTILITIES BOARD
PROFESSIONAL SEAL



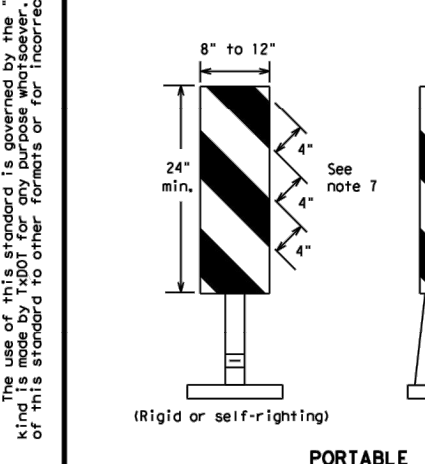
1. The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
 2. Chevrons are intended to give notice of a sharp change of alignment with the direction of travel and provide additional warning and guidance for vehicle operators with regard to changes in horizontal alignment of the roadway.
 3. Chevrons, when used, shall be erected on the outside of a sharp curve or turn, or on the far side of an intersection. They shall be in line with one or both edges of the roadway.
 4. To be effective, the chevron should be visible for at least 500 feet.
 5. Chevrons shall be orange with a black reflective legend. Sheeting for the chevron shall be retroreflective Type B₁ or Type C₁ conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.
 6. For Long Term Stationary use on freeways or travel lanes on freeways and divided highways, self-lighting chevrons may be used to supplement plastic drums but not to replace plastic drums.

CHEVRONS

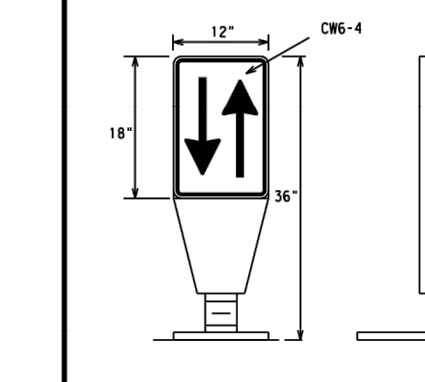


1. Vertical Panels (VPs) are normally used to channelize traffic or divide opposing lanes of traffic.
 2. VPs may be used in any type or height situation. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive outline and delineation is required. The Engineer/Inspector shall refer to the Roadway Design Manual for additional requirements on the use of VPs for drop-offs.
 3. VPs should be mounted back to back if used at the edge of cuts adjacent to two-way two-lane roadways. Stripes on the back of the VPs should be reflective orange and reflective white, and should always slope downward toward the travel lane.
 4. VPs are used on expressways and freeways or other high speed roadways, may have more than 270 square inches of retroreflective area facing traffic.
 5. Self-lighting supports are available with portable base. See "Compliant Work Zone Traffic Control Devices List" (CWZTCDL) for details.
 6. Sheeting for the VPs shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300, unless noted otherwise.
 7. Where the height of reflective material on the vertical panel is 36 inches or greater, a panel stripe of 6 inches shall be used.

VERTICAL PANELS (VPs)



OPPOSING TRAFFIC LANE DIVIDERS (OTLD)



1. Opposing Traffic Lane Dividers (OTLD) are delineation devices designed to convert a normal one-way roadway section to two-way operation. OTLD's are used on temporary centerlines. The upper and downward curves on the sign's face indicate the direction of traffic on either side of the divider. The base is secured to the pavement with an adhesive or rubber mat to minimize movement caused by a vehicle impact or wind gust.
 2. The OTLD may be used in combination with 42" cones or VPs.
 3. Spacing between the OTLD shall not exceed 50 feet. 42" cones or VPs placed between the OTLD's should not exceed 100 foot spacing.
 4. The OTLD shall be orange with a black non-reflective legend. Sheeting for the OTLD shall be retroreflective Type B₁ or Type C₁ conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.

LONGITUDINAL CHANNELIZING DEVICES (LCD)

1. LCDs are crashworthy, lightweight, deformable devices that are highly visible, have good target value and can be connected together. They are not designed to contain or redirect a vehicle on impact.
 2. LCDs may be used instead of a line of cones or drums.
 3. LCDs shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCDL.
 4. LCDs should not be used to provide positive protection for obstacles, pedestals or workers.
 5. LCDs shall be supplemented with retroreflective delineation as required for temporary barriers.
 6. LCDs when placed roughly parallel to the travel lanes.
 7. LCDs used as barriers placed perpendicular to traffic should have at least one row of reflective sheeting meeting the requirements for barricade rolls as shown on BC(10). Place reflective sheeting near the top of the LCD using the full length of the device.

WATER BALLASTED SYSTEMS USED AS BARRIERS

1. Water ballasted systems used as barriers shall not be used solely to channelize road users, but also to protect the work space per the appropriate Manual for Assessing Safety Hardware (MSHA) crashworthiness requirements based on roadway speed and barrier application.
 2. Water ballasted systems used to channelize vehicular traffic shall be supplemented with retroreflective delineation or channelizing devices to improve daytime/nighttime visibility. They may also be supplemented with pavement markings.
 3. Water ballasted systems used as barriers shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCDL.
 4. Water ballasted systems used as barriers shall not be used for a merging taper except in low speed (less than 45 MPH) urban areas. When used in a taper in a low speed urban area, the taper shall be delineated and the taper length should be designed to utilize road user operations considering the applicable operating conditions.
 5. When water ballasted systems used as barriers have blunt ends exposed to traffic, they should be attenuated as per manufacturer recommendations or fitted to a point within the clear zone.

HOLLOW OR WATER BALLASTED SYSTEMS USED AS LONGITUDINAL CHANNELIZING DEVICES OR BARRIERS

If used to channelize pedestrians, longitudinal channelizing devices or water ballasted systems must have a continuous detectable bottom for users of long cones and the top of the unit shall not be less than 32 inches in height.

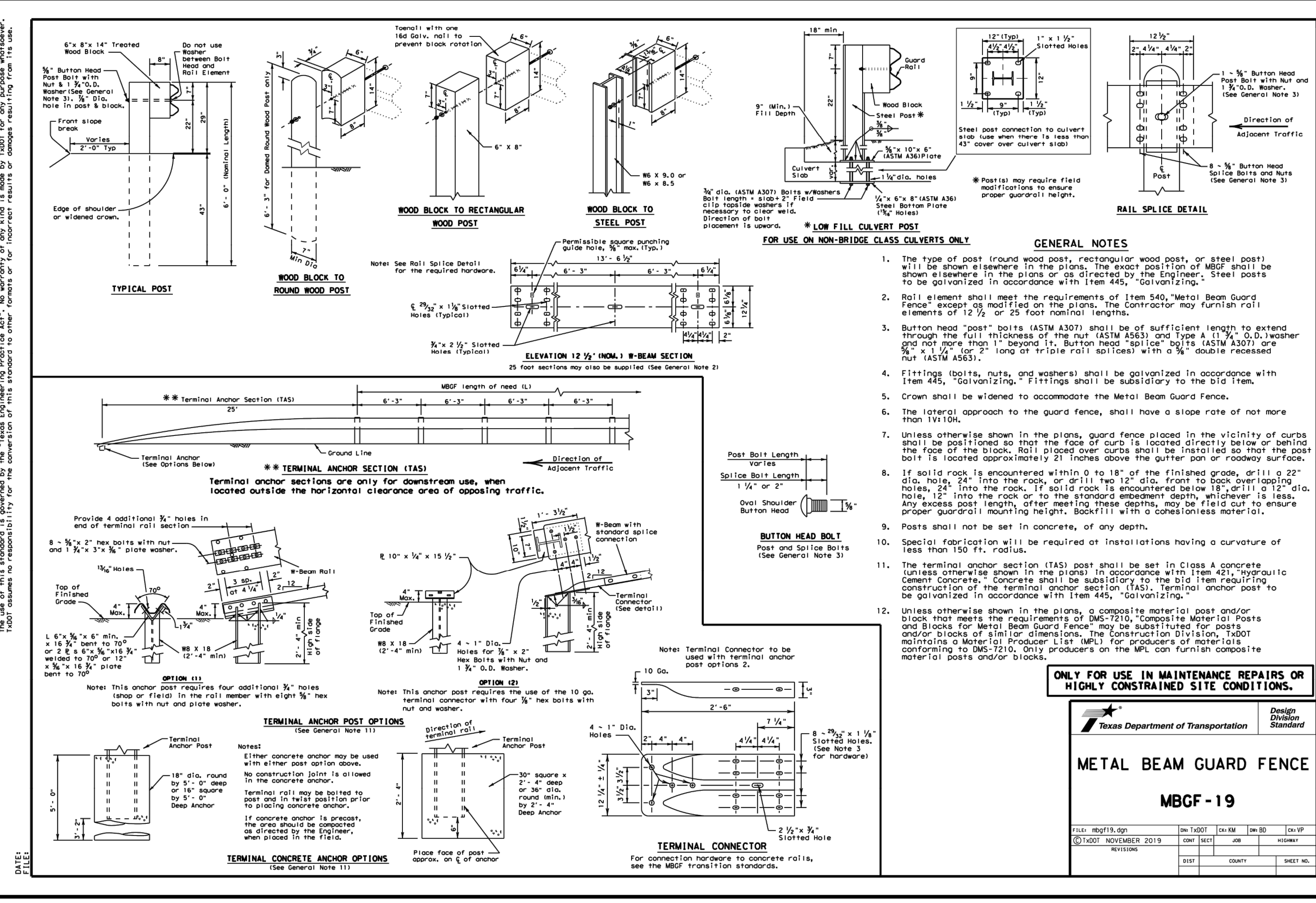
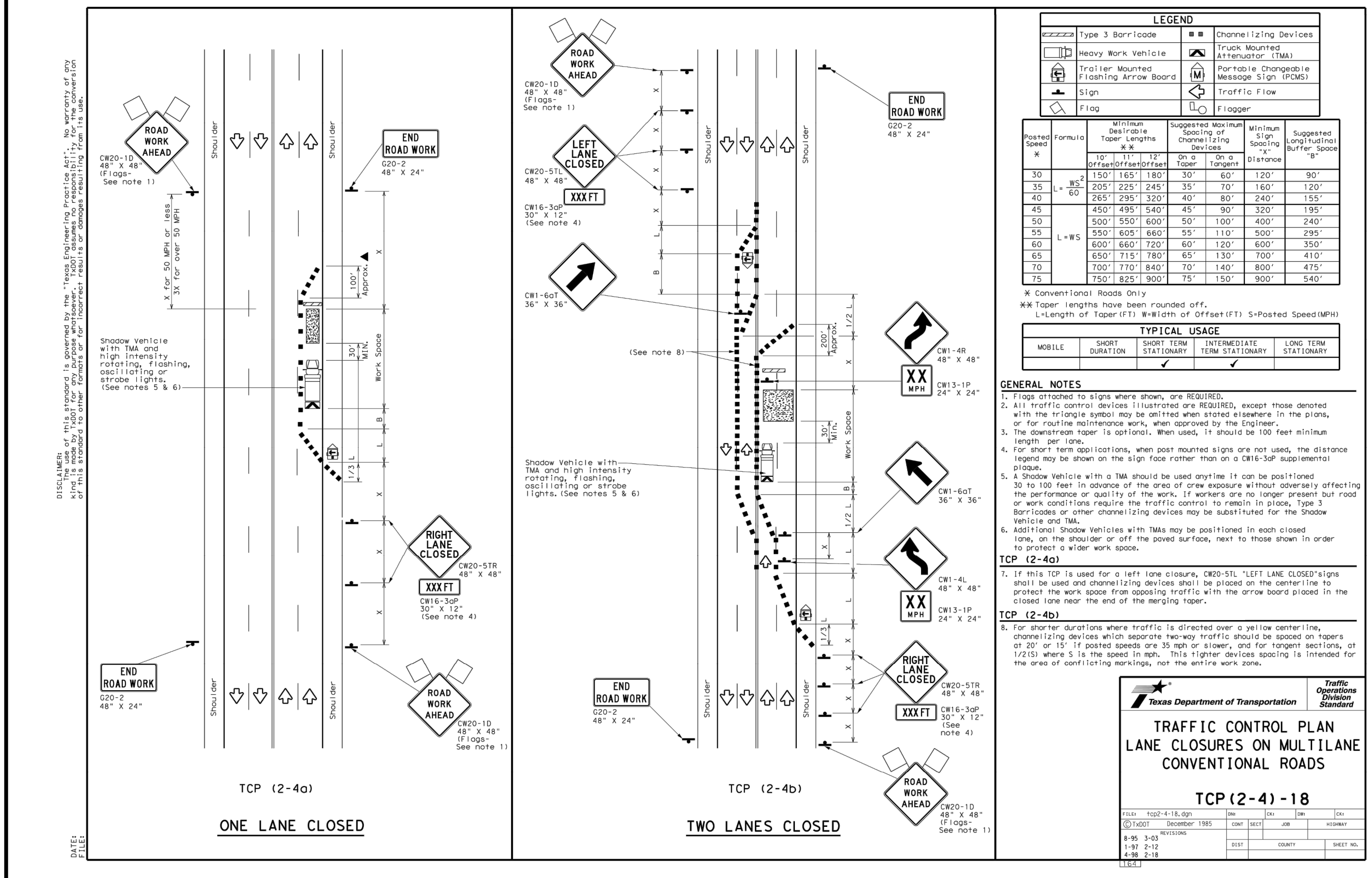
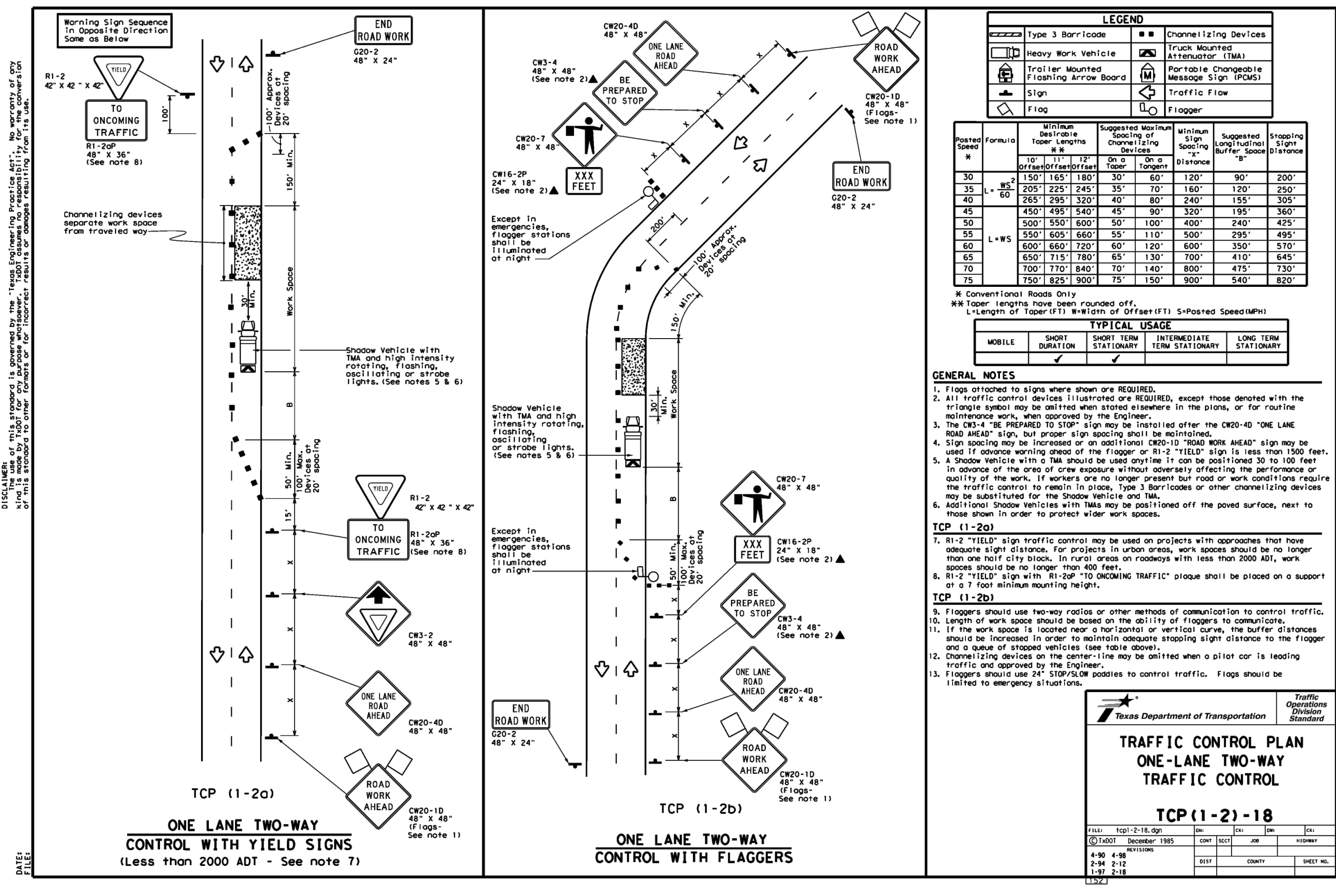
Posted Speed	Formula	Minimum Desirable Taper Lengths (ft)	Suggested Maximum Spacing of Channelizing Devices (ft)	On Target
30	150'	165' - 180'	30'	60'
35	180'	225' - 240'	35'	70'
40	265'	295' - 320'	40'	80'
45	450'	495' - 540'	45'	90'
50	500'	550' - 600'	50'	100'
55	LWS	600' - 660'	55'	110'
60	LWS	660' - 720'	60'	120'
65	LWS	715' - 780'	65'	130'
70	LWS	770' - 840'	70'	140'
75	LWS	825' - 900'	75'	150'
80	LWS	880' - 960'	80'	160'

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

SHEET 9 OF 12
 Texas Department of Transportation
 Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC (9) - 21
 1-18 1-20 1-21 1-22 1-23 1-24 1-25 1-26 1-27 1-28 1-29 1-30 1-31 1-32 1-33 1-34 1-35 1-36 1-37 1-38 1-39 1-40 1-41 1-42 1-43 1-44 1-45 1-46 1-47 1-48 1-49 1-50 1-51 1-52 1-53 1-54 1-55 1-56 1-57 1-58 1-59 1-60 1-61 1-62 1-63 1-64 1-65 1-66 1-67 1-68 1-69 1-70 1-71 1-72 1-73 1-74 1-75 1-76 1-77 1-78 1-79 1-80 1-81 1-82 1-83 1-84 1-85 1-86 1-87 1-88 1-89 1-90 1-91 1-92 1-93 1-94 1-95 1-96 1-97 1-98 1-99 1-100 1-101 1-102 1-103 1-104 1-105 1-106 1-107 1-108 1-109 1-110 1-111 1-112 1-113 1-114 1-115 1-116 1-117 1-118 1-119 1-120 1-121 1-122 1-123 1-124 1-125 1-126 1-127 1-128 1-129 1-130 1-131 1-132 1-133 1-134 1-135 1-136 1-137 1-138 1-139 1-140 1-141 1-142 1-143 1-144 1-145 1-146 1-147 1-148 1-149 1-150 1-151 1-152 1-153 1-154 1-155 1-156 1-157 1-158 1-159 1-160 1-161 1-162 1-163 1-164 1-165 1-166 1-167 1-168 1-169 1-170 1-171 1-172 1-173 1-174 1-175 1-176 1-177 1-178 1-179 1-180 1-181 1-182 1-183 1-184 1-185 1-186 1-187 1-188 1-189 1-190 1-191 1-192 1-193 1-194 1-195 1-196 1-197 1-198 1-199 1-200 1-201 1-202 1-203 1-204 1-205 1-206 1-207 1-208 1-209 1-210 1-211 1-212 1-213 1-214 1-215 1-216 1-217 1-218 1-219 1-220 1-221 1-222 1-223 1-224 1-225 1-226 1-227 1-228 1-229 1-230 1-231 1-232 1-233 1-234 1-235 1-236 1-237 1-238 1-239 1-240 1-241 1-242 1-243 1-244 1-245 1-246 1-247 1-248 1-249 1-250 1-251 1-252 1-253 1-254 1-255 1-256 1-257 1-258 1-259 1-260 1-261 1-262 1-263 1-264 1-265 1-266 1-267 1-268 1-269 1-270 1-271 1-272 1-273 1-274 1-275 1-276 1-277 1-278 1-279 1-280 1-281 1-282 1-283 1-284 1-285 1-286 1-287 1-288 1-289 1-290 1-291 1-292 1-293 1-294 1-295 1-296 1-297 1-298 1-299 1-300 1-301 1-302 1-303 1-304 1-305 1-306 1-307 1-308 1-309 1-310 1-311 1-312 1-313 1-314 1-315 1-316 1-317 1-318 1-319 1-320 1-321 1-322 1-323 1-324 1-325 1-326 1-327 1-328 1-329 1-330 1-331 1-332 1-333 1-334 1-335 1-336 1-337 1-338 1-339 1-340 1-341 1-342 1-343 1-344 1-345 1-346 1-347 1-348 1-349 1-350 1-351 1-352 1-353 1-354 1-355 1-356 1-357 1-358 1-359 1-360 1-361 1-362 1-363 1-364 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1-531 1-532 1-533 1-534 1-535 1-536 1-537 1-538 1-539 1-540 1-541 1-542 1-543 1-544 1-545 1-546 1-547 1-548 1-549 1-550 1-551 1-552 1-553 1-554 1-555 1-556 1-557 1-558 1-559 1-560 1-561 1-562 1-563 1-564 1-565 1-566 1-567 1-568 1-569 1-570 1-571 1-572 1-573 1-574 1-575 1-576 1-577 1-578 1-579 1-580 1-581 1-582 1-583 1-584 1-585 1-586 1-587 1-588 1-589 1-590 1-591 1-592 1-593 1-594 1-595 1-596 1-597 1-598 1-599 1-600 1-601 1-602 1-603 1-604 1-605 1-606 1-607 1-608 1-609 1-610 1-611 1-612 1-613 1-614 1-615 1-616 1-617 1-618 1-619 1-620 1-621 1-622 1-623 1-624 1-625 1-626 1-627 1-628 1-629 1-630 1-631 1-632 1-633 1-634 1-635 1-636 1-637 1-638 1-639 1-640 1-641 1-642 1-643 1-644 1-645 1-646 1-647 1-648 1-649 1-650 1-651 1-652 1-653 1-654 1-655 1-656 1-657 1-658 1-659 1-660 1-661 1-662 1-663 1-664 1-665 1-666 1-667 1-668 1-669 1-670 1-671 1-672 1-673 1-674 1-675 1-676 1-677 1-678 1-679 1-680 1-681 1-682 1-683 1-684 1-685 1-686 1-687 1-688 1-689 1-690 1-691 1-692 1-693 1-694 1-695 1-696 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1-863 1-864 1-865 1-866 1-867 1-868 1-869 1-870 1-871 1-872 1-873 1-874 1-875 1-876 1-877 1-878 1-879 1-880 1-881 1-882 1-883 1-884 1-885 1-886 1-887 1-888 1-889 1-890 1-891 1-892 1-893 1-894 1-895 1-896 1-897 1-898 1-899 1-900 1-901 1-902 1-903 1-904 1-905 1-906 1-907 1-908 1-909 1-910 1-911 1-912 1-913 1-914 1-915 1-916 1-917 1-918 1-919 1-920 1-921 1-922 1-923 1-924 1-925 1-926 1-927 1-928 1-929 1-930 1-931 1-932 1-933 1-934 1-935 1-936 1-937 1-938 1-939 1-940 1-941 1-942 1-943 1-944 1-945 1-946 1-947 1-948 1-949 1-950 1-951 1-952 1-953 1-954 1-955 1-956 1-957 1-958 1-959 1-960 1-961 1-962 1-963 1-964 1-965 1-966 1-967 1-968 1-969 1-970 1-971 1-972 1-973 1-974 1-975 1-976 1-977 1-978 1-979 1-980 1-981 1-982 1-983 1-984 1-985 1-986 1-987 1-988 1-989 1-990 1-991 1-992 1-993 1-994 1-995 1-996 1-997 1-998 1-999 1-1000 1-1001 1-1002 1-1003 1-1004 1-1005 1-1006 1-1007 1-1008 1-1009 1-1010 1-1011 1-1012 1-1013 1-1014 1-1015 1-1016 1-1017 1-1018 1-1019 1-1020 1-1021 1-1022 1-1023 1-1024 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TRAFFIC CONTROL PLAN
LANE CLOSURES ON MULTILANE CONVENTIONAL ROADS
TCP (2-4) - 18

Texas Department of Transportation
Traffic Operations Division Standard

REV	DATE	BY	DATE
1	11/10/2023		

VERIFY SCALE: BAR LENGTH EQUALS ONE INCH ON ORIGINAL DRAWING. VERIFY LENGTH ON THIS SHEET 0' 1" AND ADJUST SCALE ACCORDINGLY.

BROWNSVILLE PUBLIC UTILITIES BOARD
PROJECT 1: DOWNTOWN WW IMPROVEMENTS
TRAFFIC CONTROL DETAILS III

DESIGN: GWM
DRAWN: GWM
REVIEW: JAE
STV: BPUB220025.01

SHEET
TC04

st
TEXAS REGISTERED ENGINEERING FIRM
TYPE F-1741

BROWNSVILLE
PUBLIC UTILITIES BOARD
1425 Robinson Drive
Brownsville, Texas 78521

11/10/2023

135485
LICENSED PROFESSIONAL ENGINEER

NO. REVISION BY DATE

DATE: 8/9/2023
FILE PATH: c:\pwworking\stvw_siv\093232\220025_TC04.dwg

SITE DESCRIPTION

PROJECT NAME AND LOCATION: _____
DOWNTOWN WASTEWATER PROJECT 1

CONTACT AND PHONE NO.: _____
STV INC., 12500 SAN PEDRO, STE. 450, SAN ANTONIO, TX 78216

PROJECT DESCRIPTION: _____
INSTALL APPROXIMATELY 5,000 LF OF 12-INCH WASTEWATER GRAVITY MAINS ALONG ALLEYS BETWEEN E. ELIZABETH AND E. ST. FRANCIS

MAJOR SOIL DISTURBING ACTIVITIES: _____
PLACEMENT OF 12-INCH WASTEWATER MAIN, BASE, PAVEMENT, AND EARTHWORK

TOTAL PROJECT AREA (ACRES): _____

TOTAL AREA TO BE DISTURBED: _____

WEIGHTED RUNOFF COEFFICIENT: (AFTER CONSTRUCTION) _____

EXISTING CONDITION OF SOIL, VEGETATIVE COVER AND % OF VEGETATIVE COVER: _____

DESCRIPTION OF WATER DISCHARGED NOT ASSOCIATED WITH CONSTRUCTION: _____

NAME OF RECEIVING WATERS: _____

IDENTIFY STORMWATER DISCHARGE POINTS: _____

A DESCRIPTION AND TIME FRAME FOR INSTALLATION OF STABILIZATION PRACTICES IN CONJUNCTION WITH CONSTRUCTION: _____

EROSION AND SEDIMENTATION CONTROLS

SOIL STABILIZATION PRACTICES:

- _____ HYDROMULCHING
- _____ TEMPORARY SEEDING
- _____ PERMANENT PLANTING, SODDING OR SEEDING
- _____ MULCHING
- _____ SOIL RETENTION BLANKET
- _____ BUFFER ZONES
- _____ PRESERVATION OF NATURAL RESOURCES

OTHER:

DISTURBED AREAS ON WHICH CONSTRUCTION ACTIVITY HAS CEASED TEMPORARILY OR PERMANENTLY, SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITIES ARE SCHEDULED TO RESUME AND DONE WITHIN 21 DAYS.

STRUCTURAL PRACTICES:

- _____ SILT FENCES
- _____ HAY BALES
- _____ GRAVEL FILTRATION BAGS
- _____ ROCK BERMS
- _____ DIVERSION, INTERCEPTOR OR PERIMETER DIKES
- _____ DIVERSION, INTERCEPTOR OR PERIMETER SWALES
- _____ DIVERSION, DIKE AND SWALE COMBINATIONS
- _____ PAVED FLUMES
- _____ ROCK BEDDING AT CONSTRUCTION EXIT (STABILIZED ENTRANCE)
- _____ TIMBER MATTING AT CONSTRUCTION EXIT (STABILIZED ENTRANCE)
- _____ CHANNEL LINERS
- _____ SEDIMENT TRAPS
- _____ SEDIMENT BASINS
- _____ STORM INLET SEDIMENT TRAP
- _____ STONE OUTLET SEDIMENT STRUCTURES
- _____ CURBS AND GUTTERS
- _____ STORM SEWERS
- _____ VELOCITY CONTROL STRUCTURES
- _____ GEOTEXTILES

OTHER:

NARRATIVE - SEQUENCE OF CONSTRUCTION (STORMWATER MANAGEMENT) ACTIVITIES:

THE ORDER OF ACTIVITIES WILL BE AS FOLLOWS: _____

A DESCRIPTION OF MAINTENANCE PROCEDURES FOR CONTROL MEASURES USED:

STORMWATER MANAGEMENT:

A DESCRIPTION OF PERMANENT STORM WATER MANAGEMENT CONTROLS:

OTHER EROSION AND SEDIMENTATION CONTROLS

MAINTENANCE:

ALL EROSION AND SEDIMENT CONTROLS WILL BE MAINTAINED IN GOOD WORKING ORDER. IF A REPAIR IS NECESSARY, IT WILL BE DONE AT THE EARLIEST DATE POSSIBLE, BUT NO LATER THAN 7 CALENDAR DAYS AFTER THE SURROUNDING EXPOSED GROUND HAS DRIED SUFFICIENTLY TO PREVENT FURTHER DAMAGE FROM HEAVY EQUIPMENT. THE AREAS ADJACENT TO CREEKS AND DRAINAGE WAYS SHALL HAVE PRIORITY, FOLLOWED BY DEVICES PROTECTING STORM SEWER INLETS.

INSPECTION:

AN INSPECTION WILL BE PERFORMED BY THE CONTRACTOR EVERY 14 DAYS AS WELL AS AFTER EVERY 1 / 2" OR MORE OF RAIN (RECORDED ON A NON-FREEZING RAIN GAUGE TO BE LOCATED AT THE PROJECT SITE). AN INSPECTION AND MAINTENANCE REPORT WILL BE MADE PER INSPECTION. BASED ON THE INSPECTION RESULTS, THE CONTROLS SHALL BE CORRECTED BEFORE THE NEXT SCHEDULED INSPECTION.

WASTE MATERIALS:

ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER. THE DUMPSTER WILL MEET ALL STATE AND LOCAL CITY SOLID WASTE MANAGEMENT REGULATIONS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER WILL BE EMPTIED AS NECESSARY OR AS REQUIRED BY LOCAL REGULATION AND THE TRASH WILL BE HAULED TO A LOCAL DUMP. NO CONSTRUCTION MATERIALS WILL BE BURIED ON SITE.

HAZARDOUS WASTE (INCLUDING SPILL REPORTING):

AT A MINIMUM, ANY PRODUCTS IN THE FOLLOWING CATEGORIES ARE CONSIDERED TO BE HAZARDOUS: PAINTS, ACIDS FOR CLEANING MASONRY SURFACES, GASOLINE, MOTOR OIL, CLEANING SOLVENTS, ASPHALT PRODUCTS, CHEMICAL ADDITIVES FOR SOIL STABILIZATION OR CONCRETE CURING COMPOUNDS AND ADDITIVES. IN THE EVENT OF A SPILL WHICH MAY BE HAZARDOUS AND MEETS REPORTING REQUIREMENTS, THE NATIONAL RESPONSE CENTER SHOULD BE CONTACTED AT 800-424-8802, AND ANY REQUIRED CHANGES MADE TO THE SWPPP. IN THE EVENT OF A LIFE THREATENING SPILL THE BROWNSVILLE FIRE DEPARTMENT SHOULD BE NOTIFIED AS WELL AS THE APPROPRIATE CITY INSPECTORS.

SANITARY WASTE: N/A

OFFSITE EXCAVATION SOURCE LOCATION: N/A

OFFSITE FILL SOURCE LOCATION: N/A

OFFSITE VEHICLE TRACKING: N/A

- _____ HAUL ROADS DAMPENED FOR DUST CONTROL.
- _____ LOADED HAUL TRUCKS TO BE COVERED WITH TARPULIN
- _____ EXCESS DIRT ON ROAD TO BE REMOVED DAILY
- _____ STABILIZED CONSTRUCTION ENTRANCE.

OTHER:

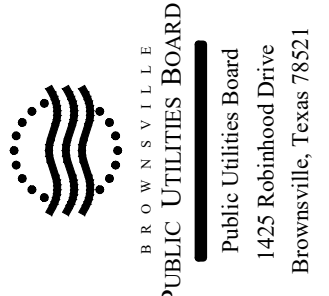
CERTIFICATION THAT SITE DISTURBANCE AND/OR DISCHARGES WILL NOT EFFECT LISTED ENDANGERED SPECIES AND THEIR HABITAT. WHAT METHOD IS USED TO SATISFY THE ENDANGERED SPECIES REQUIREMENTS?: _____

REMARKS:

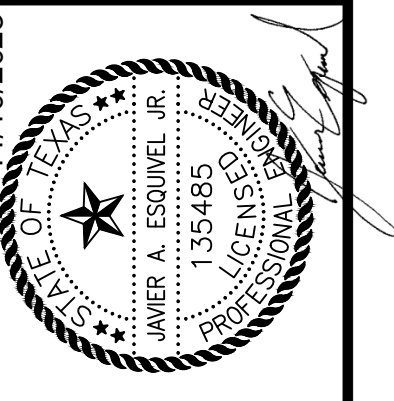
DISPOSAL AREAS, STOCKPILES AND HAUL ROADS SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE AND CONTROL THE AMOUNT OF SEDIMENT THAT ENTERS RECEIVING WATERS. DISPOSAL AREAS SHALL NOT BE LOCATED IN ANY WETLAND, BODY OF WATER, STREAMBED OR FLOODPLAIN CONSTRUCTION STAGING AREAS AND VEHICLE MAINTENANCE AREAS SHALL BE CONSTRUCTED BY THE CONTRACTOR IN A MANNER TO MINIMIZE THE RUNOFF OF POLLUTANTS. ALL WATERWAYS SHALL BE CLEARED AS SOON AS POSSIBLE OF TEMPORARY EMBANKMENT, TEMPORARY BRIDGES, MATTING, PAL SEWWORK, PILING DEBRIS OR OTHER OBSTRUCTION PLACED DURING CONSTRUCTION OPERATIONS THAT ARE NOT PART OF THE FINISHED WORK.



TEXAS REGISTERED ENGINEERING FIRM
 TYPE F-1741



BROWNSVILLE
 PUBLIC UTILITIES BOARD
 Public Utilities Board
 1425 Robinswood Drive
 Brownsville, Texas 78521



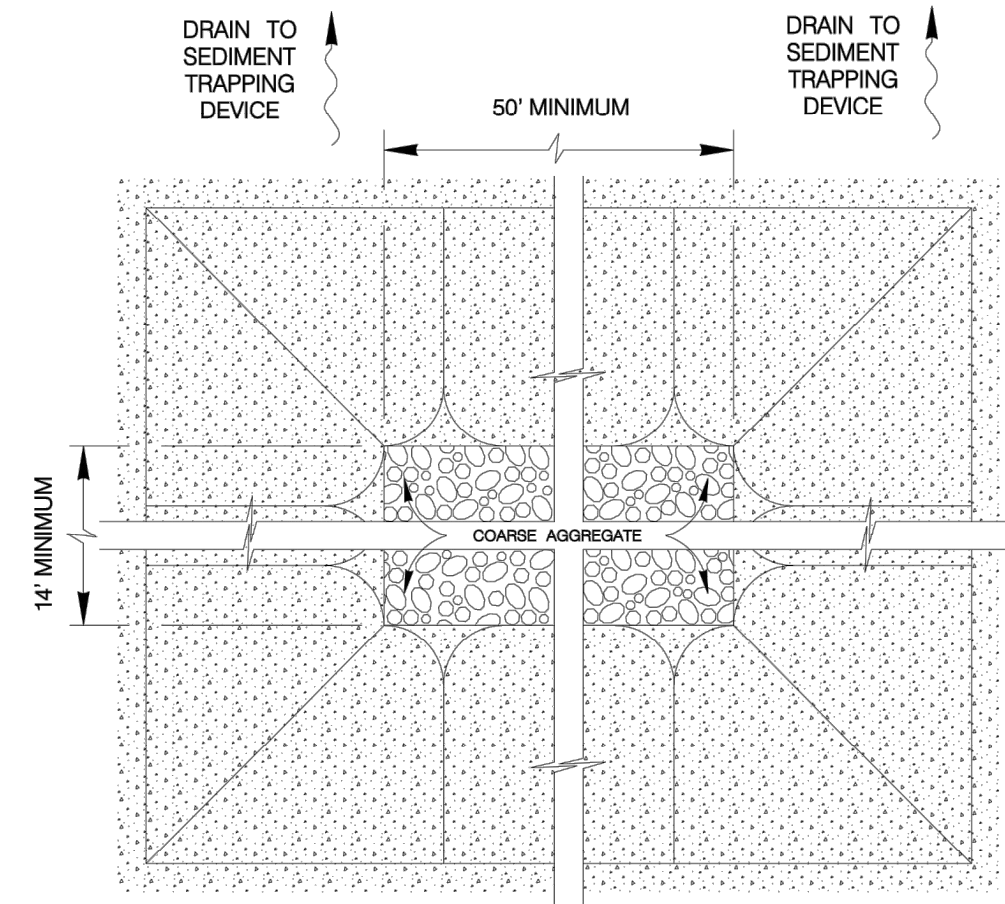
NO.	REVISION	BY	DATE

VERIFY SCALE BAR LENGTH EQUALS ONE INCH ON ORIGINAL DRAWING. VERIFY LENGTH ON THIS SHEET AND ADJUST SCALE ACCORDINGLY.

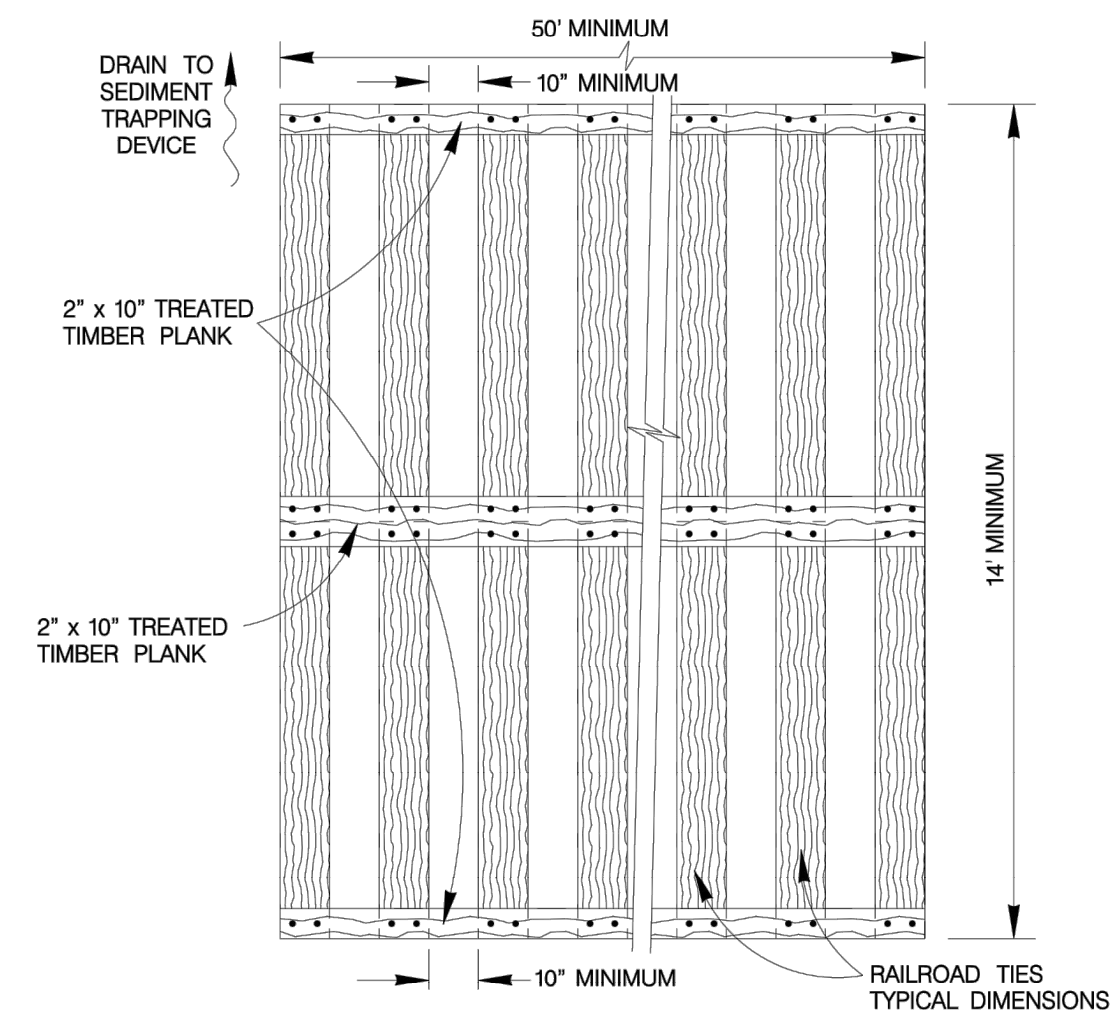
BROWNSVILLE PUBLIC UTILITIES BOARD
PROJECT 1: DOWNTOWN WW IMPROVEMENTS
EROSION AND SEDIMENTATION CONTROL
SWPPP NARRATIVE

DESIGN: GWM
 DRAWN: GWM
 REVIEW: JAE
 STV: BPUB2200025.01

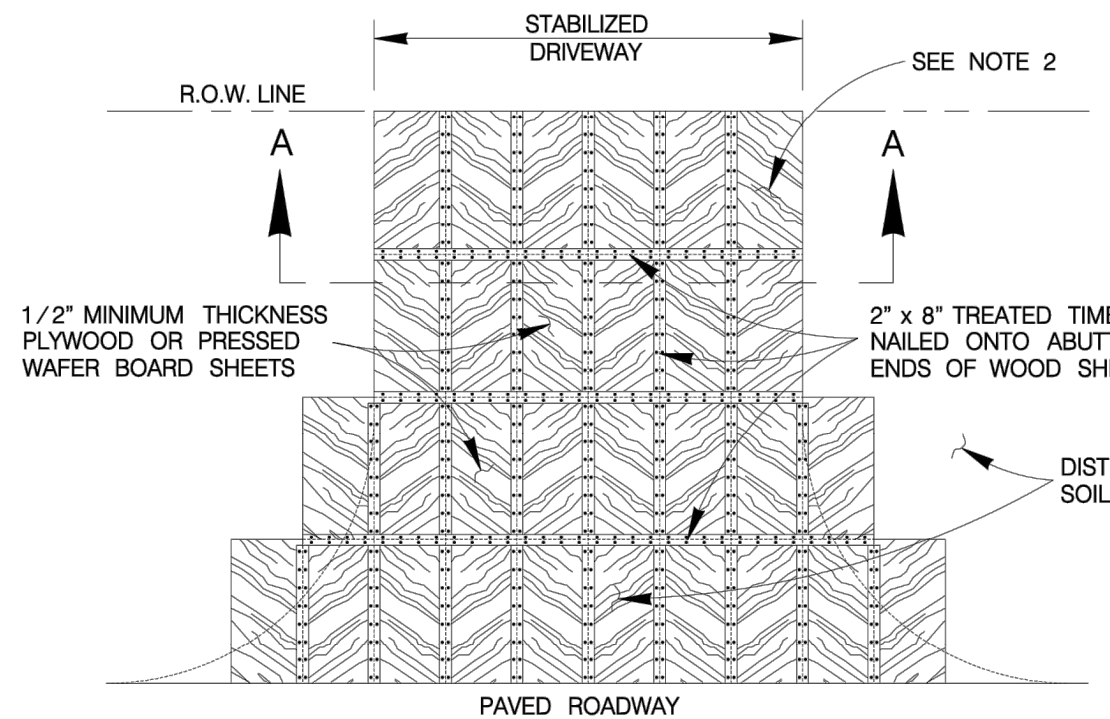
SHEET
ES01



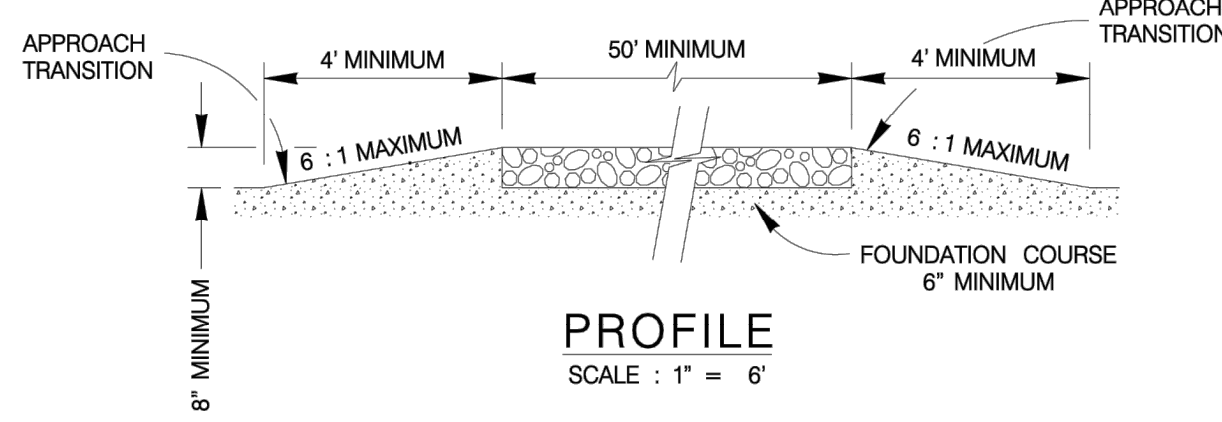
PLAN
SCALE: 1" = 6'



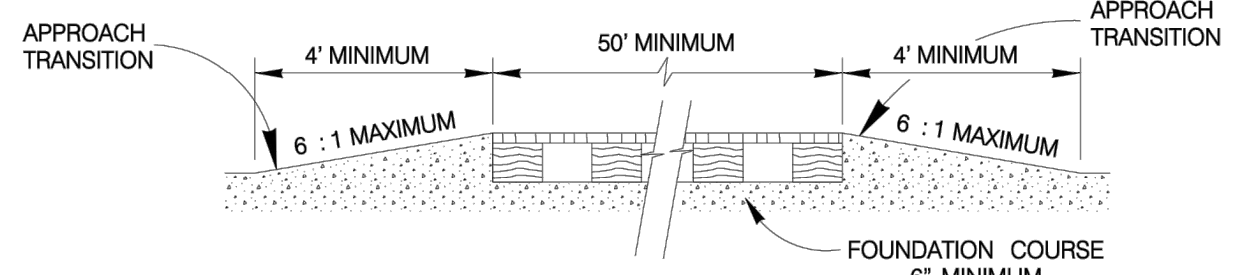
PLAN
SCALE: 1" = 6'



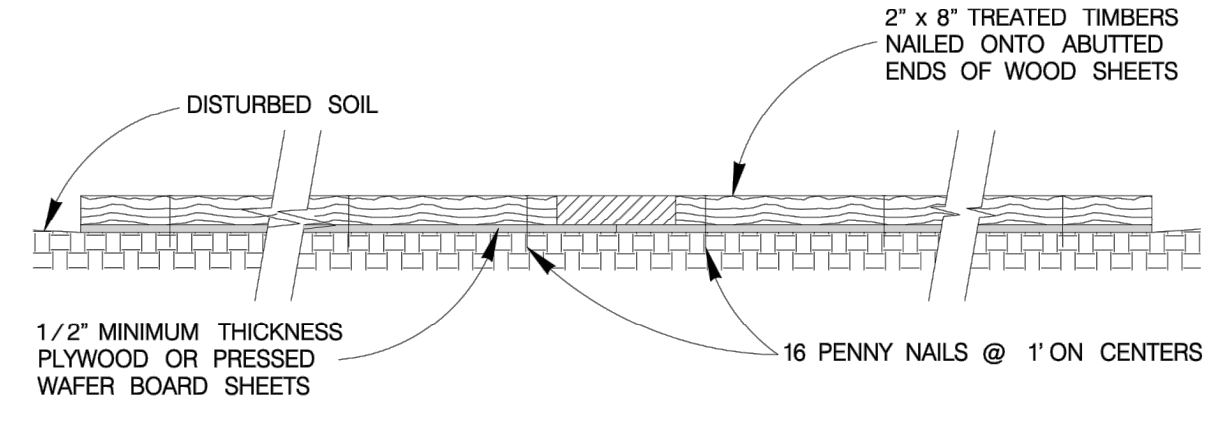
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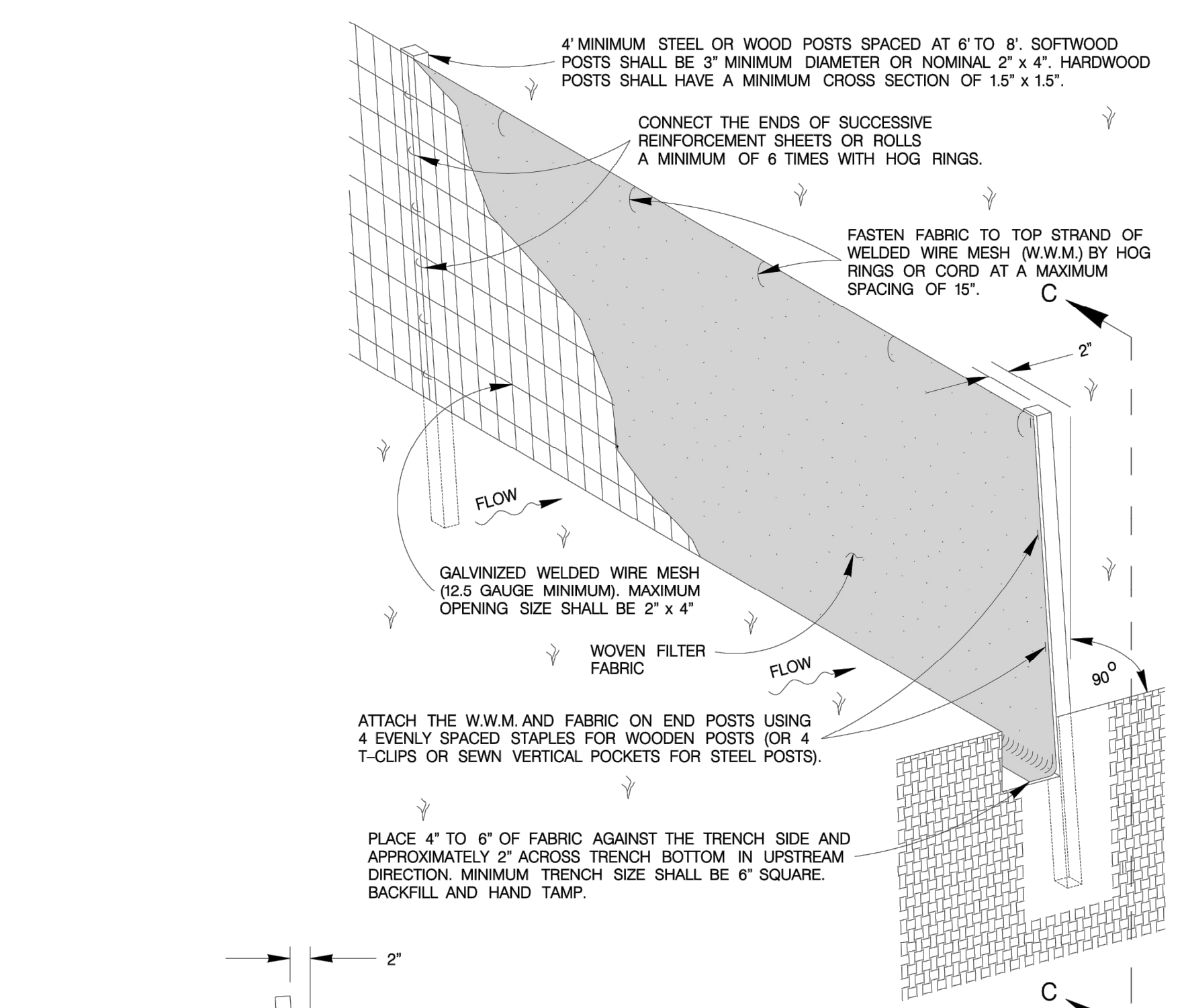
PROFILE
SCALE: 1" = 6'



PROFILE
SCALE: 1" = 6'



SECTION A-A
SCALE: 1" = 2'



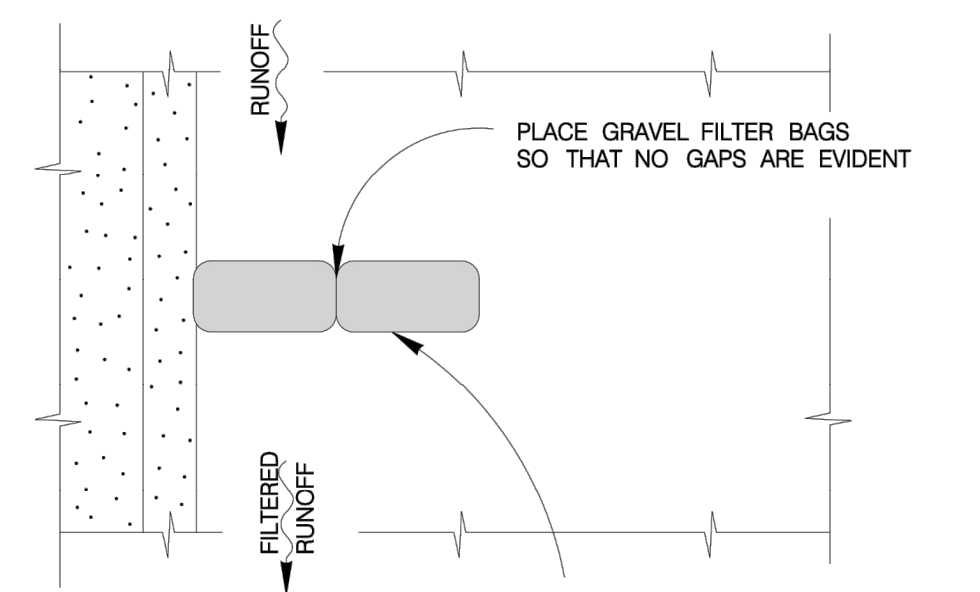
ISOMETRIC VIEW
SCALE: 1" = 2'

- GENERAL NOTES**
1. THE LENGTH OF THE TYPE 1 CONSTRUCTION EXIT SHALL BE AS INDICATED ON THE PLANS, BUT NOT LESS THAN 50'.
 2. THE COARSE AGGREGATE SHOULD BE OPEN GRADED WITH A SIZE OF 4" TO 8".
 3. THE APPROACH TRANSITIONS SHOULD BE NO STEEPER THAN 6:1 AND CONSTRUCTED AS DIRECTED BY THE ENGINEER.
 4. THE CONSTRUCTION EXIT FOUNDATION COURSE SHALL BE FLEXIBLE BASE, BITUMINOUS CONCRETE, PORTLAND CEMENT CONCRETE OR OTHER MATERIAL AS APPROVED BY THE ENGINEER.
 5. THE CONSTRUCTION EXIT SHALL BE GRADED TO ALLOW DRAINAGE TO A SEDIMENT TRAPPING DEVICE.
 6. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

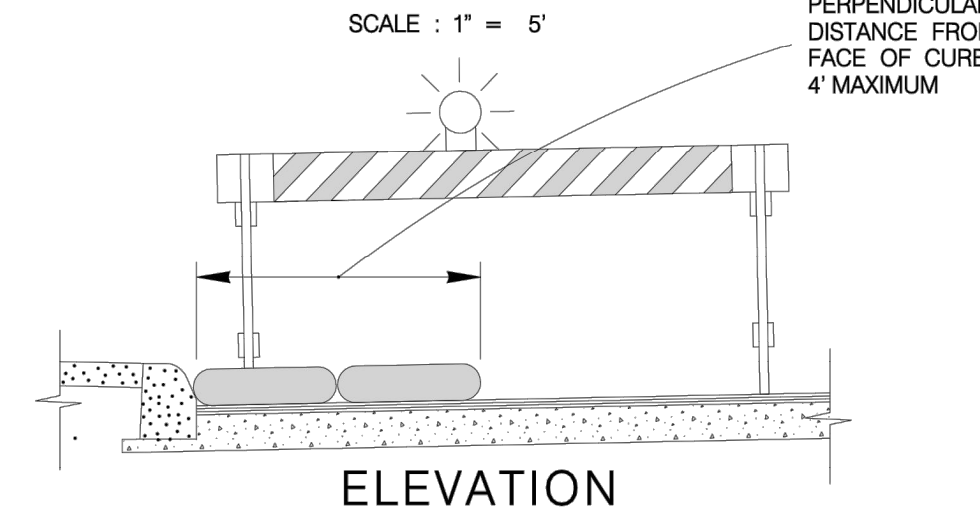
- GENERAL NOTES**
1. THE LENGTH OF THE TYPE 2 CONSTRUCTION EXIT SHALL BE AS INDICATED ON THE PLANS, BUT NOT LESS THAN 50'.
 2. THE TREATED TIMBER PLANKS SHALL BE ATTACHED TO THE RAILROAD TIES WITH 1/2" x 6" MIN. LAG BOLTS. OTHER FASTENERS MAY BE USED AS APPROVED BY THE ENGINEER.
 3. THE TREATED TIMBER PLANKS SHALL BE #2 GRADE MIN., AND SHOULD BE FREE FROM LARGE AND LOOSE KNOTS.
 4. THE APPROACH TRANSITIONS SHOULD BE NO STEEPER THAN 6:1 AND CONSTRUCTED AS DIRECTED BY THE ENGINEER.
 5. THE CONSTRUCTION EXIT FOUNDATION COURSE SHALL BE FLEXIBLE BASE, BITUMINOUS CONCRETE, PORTLAND CEMENT CONCRETE OR OTHER MATERIAL AS APPROVED BY THE ENGINEER.
 6. THE CONSTRUCTION EXIT SHOULD BE GRADED TO ALLOW DRAINAGE TO A SEDIMENT TRAPPING DEVICE.
 7. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

- GENERAL NOTES**
1. THE LENGTH OF THE TYPE 3 CONSTRUCTION EXIT SHALL BE AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
 2. THE TYPE 3 CONSTRUCTION EXIT MAY BE CONSTRUCTED FROM OPEN GRADED CRUSHED STONE WITH A SIZE OF 2 TO 4 INCHES SPREAD A MINIMUM OF 4 INCHES THICK TO THE LIMITS SHOWN ON THE PLANS.
 3. THE TREATED TIMBER PLANKS SHALL BE #2 GRADE MIN., AND SHOULD BE FREE FROM LARGE AND LOOSE KNOTS.
 4. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

CONSTRUCTION EXIT - TYPE 1



PLAN
SCALE: 1" = 5'

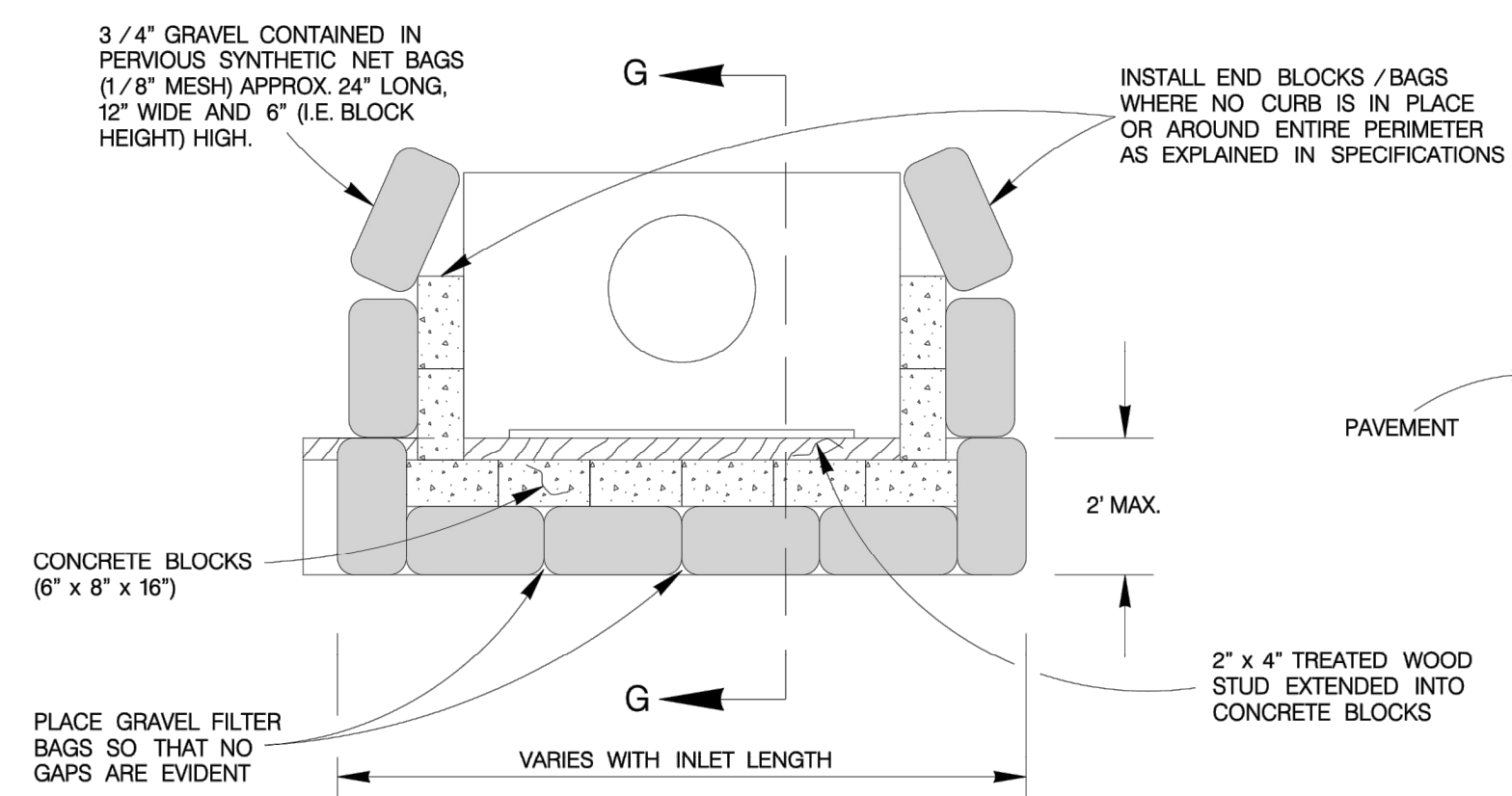


ELEVATION
SCALE: 1" = 5'

NOTE: STRADDLE GRAVEL FILTER BAGS WITH TYPE 1 BARRICADES MOUNTED WITH TYPE "A" FLASHING WARNING LIGHT. SEE BARRICADE CONSTRUCTION SIGN DETAILS. PLACE FLASHING LIGHTS AWAY FROM GUTTER, FLUSH WITH OUTSIDE EDGE OF BAG CONFIGURATION.

GRAVEL FILTER BAGS

CONSTRUCTION EXIT - TYPE 2

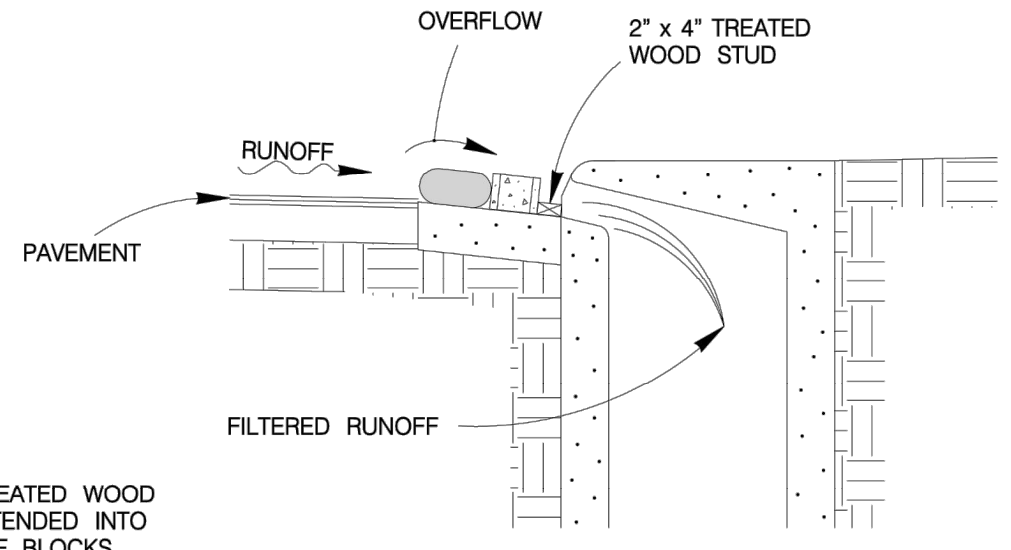


PLAN
SCALE: 1" = 5'

NOTE: GRAVEL FILTERS CAN BE USED ON PAVEMENT OR BARE GROUND.

CURB INLET GRAVEL FILTER

CONSTRUCTION EXIT - TYPE 3



SECTION G-G
SCALE: 1" = 5'

SEDIMENT CONTROL FENCE USAGE GUIDELINES

A SEDIMENT CONTROL FENCE MAY BE CONSTRUCTED NEAR THE DOWNSTREAM PERIMETER OF A DISTURBED AREA ALONG A CONTOUR TO INTERCEPT SEDIMENT FROM OVERLAND RUN-OFF. A 2 YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE TO BE FILTERED.

SEDIMENT CONTROL FENCE SHOULD BE SIZED TO FILTER A MAXIMUM FLOW THRU RATE OF 100 GPM /FT SQUARED. SEDIMENT CONTROL FENCE IS NOT RECOMMENDED TO CONTROL EROSION FROM A DRAINAGE AREA LARGER THAN 2 ACRES.

GENERAL NOTES

1. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

TEMPORARY SEDIMENT CONTROL FENCE

TEMPORARY EROSION, SEDIMENT & WATER POLLUTION CONTROL MEASURES STANDARDS 1



BROWNVILLE PUBLIC UTILITIES BOARD
Public Utilities Board
1425 Robinhood Drive
Brownsville, Texas 78521



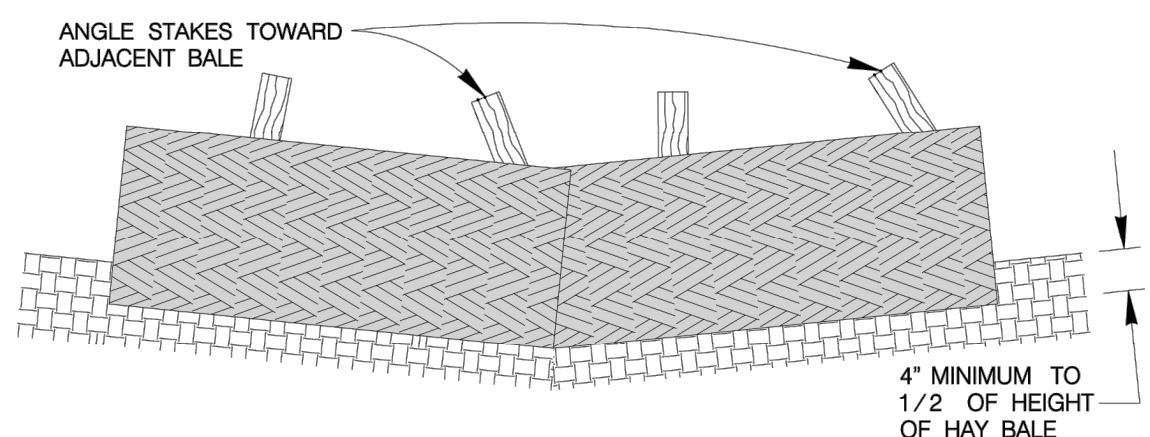
NO.	REVISION	DATE	BY

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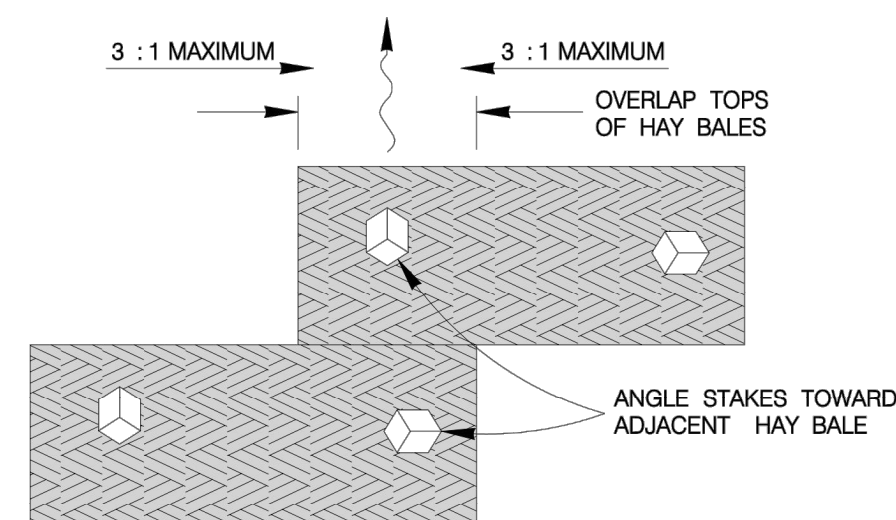
BROWNVILLE PUBLIC UTILITIES BOARD
PROJECT 1: DOWNTOWN WW IMPROVEMENTS
EROSION AND SEDIMENTATION CONTROL DETAILS 1

DESIGN: GWM
DRAWN: GWM
REVIEW: JAE
STV: BPUB2200025.01

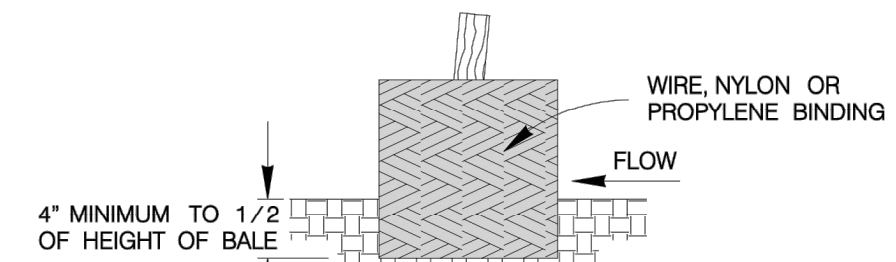
SHEET
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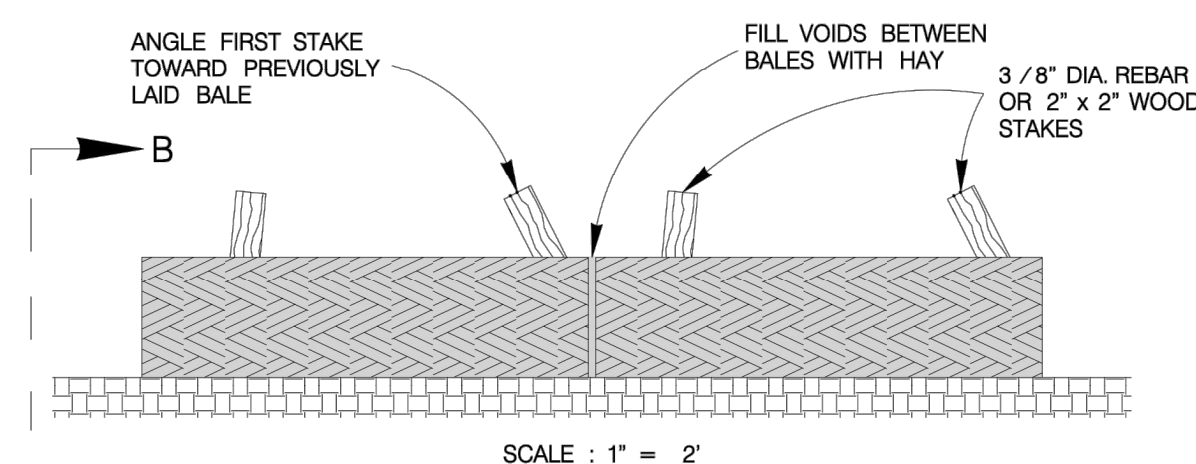
PROFILE VIEW
SCALE : 1" = 2'



PLAN VIEW
SCALE : 1" = 2'



SECTION B-B
SCALE : 1" = 2'



SCALE : 1" = 2'

BALED HAY USAGE GUIDELINES

A BAILED HAY INSTALLATION MAY BE CONSTRUCTED NEAR THE DOWNSTREAM PERIMETER OF A DISTURBED AREA ALONG A CONTOUR TO INTERCEPT SEDIMENT FROM OVERLAND RUNOFF. A TWO YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE TO BE FILTERED. THE INSTALLATION SHOULD BE SIZED TO FILTER A MAXIMUM FLOW THRU RATE OF 5 GPM /FT SQUARED OF CROSS SECTIONAL AREA. BAILED HAY MAY BE USED AT THE FOLLOWING LOCATIONS:

- WHERE THE RUNOFF APPROACHING THE BAILED HAY FLOWS OVER DISTURBED SOIL FOR LESS THAN 100'. IF THE SLOPE OF THE DISTURBED SOIL EXCEEDS 10 %, THE LENGTH OF SLOPE UPSTREAM OF THE BAILED HAY SHOULD BE LESS THAN 50'.
- WHERE THE INSTALLATION WILL BE REQUIRED FOR LESS THAN 3 MONTHS.
- WHERE THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 1/2 ACRE.

FOR BAILED HAY INSTALLATIONS IN SMALL DITCHES, THE FOLLOWING ADDITIONAL CONSIDERATIONS APPLY:

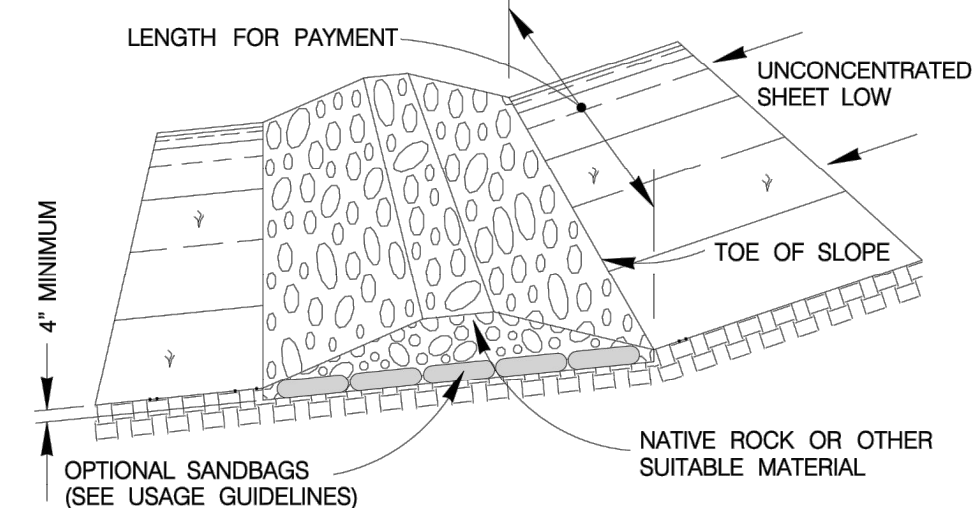
- THE DITCH SIDESLOPES SHOULD BE GRADED AS FLAT AS POSSIBLE TO MAXIMIZE THE DRAINAGE FLOW RATE THRU THE HAY.
- THE DITCH SHOULD BE GRADED LARGE ENOUGH TO CONTAIN THE OVERLAPPING DRAINAGE WHEN SEDIMENT HAS FILLED TO THE TOP OF THE BAILED HAY.

BALES SHOULD BE REPLACED USUALLY EVERY 2 MONTHS OR MORE OFTEN DURING WET WEATHER WHEN LOSS OF STRUCTURAL INTEGRITY IS ACCELERATED.

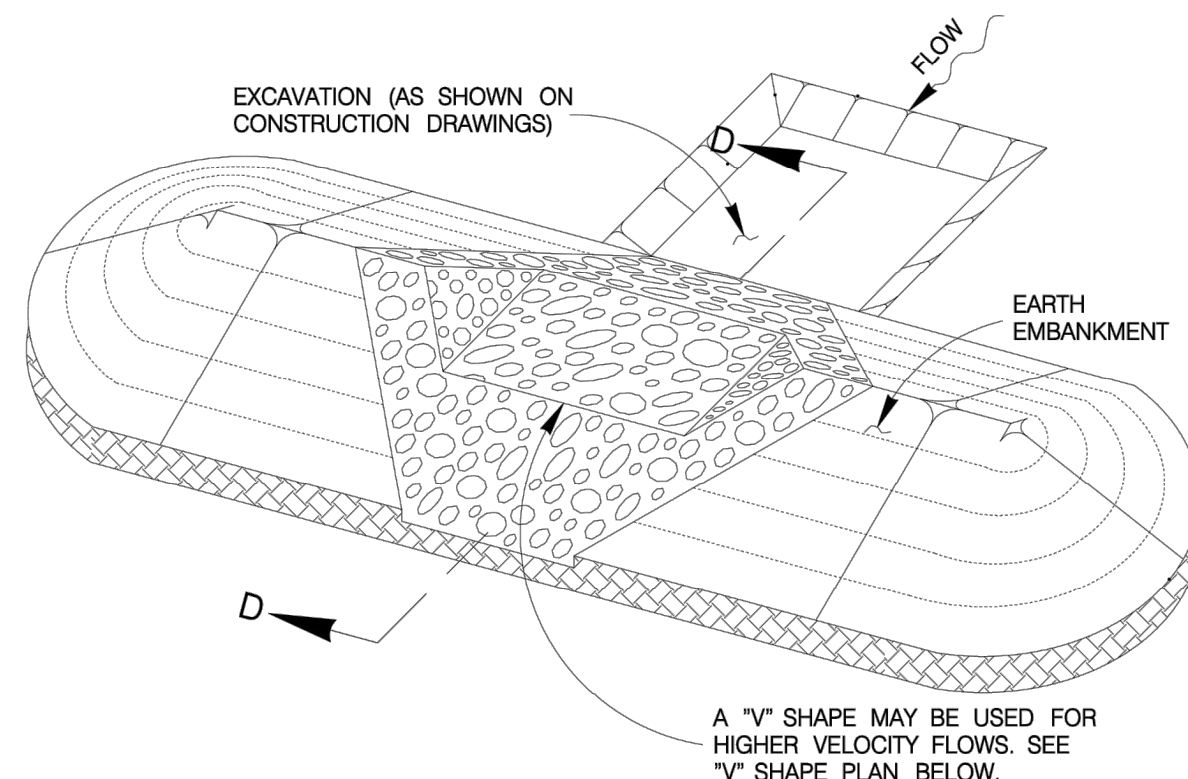
GENERAL NOTES

- HAY BALES SHALL BE A MINIMUM OF 30" IN LENGTH AND WEIGH A MINIMUM OF 50 LBS.
- HAY BALES SHALL BE BOUND BY EITHER WIRE OR NYLON OR POLYPROPYLENE STRING. THE BALES SHALL BE COMPOSED ENTIRELY OF VEGETABLE MATTER.
- HAY BALES SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4" AND, WHERE POSSIBLE, ONE-HALF THE HEIGHT OF THE BALE.
- HAY BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES. THE BALES SHALL BE PLACED WITH BINDINGS PARALLEL TO THE GROUND.
- HAY BALES SHALL BE SECURELY ANCHORED IN PLACE WITH 3/8" DIA. REBAR OR 2" x 2" WOOD STAKES DRIVEN THROUGH THE BALES. THE FIRST STAKE SHALL BE ANGLED TOWARDS THE PREVIOUSLY LAID BALE TO FORCE THE BALES TOGETHER.
- THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

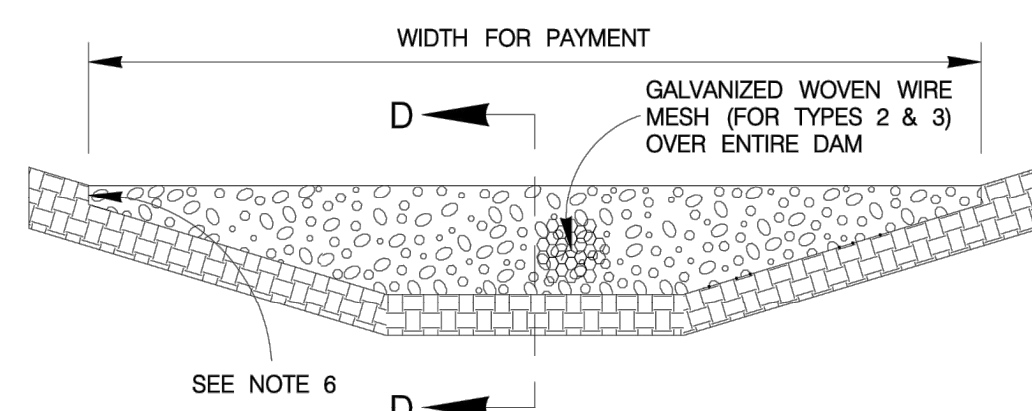
BALED HAY FOR EROSION CONTROL



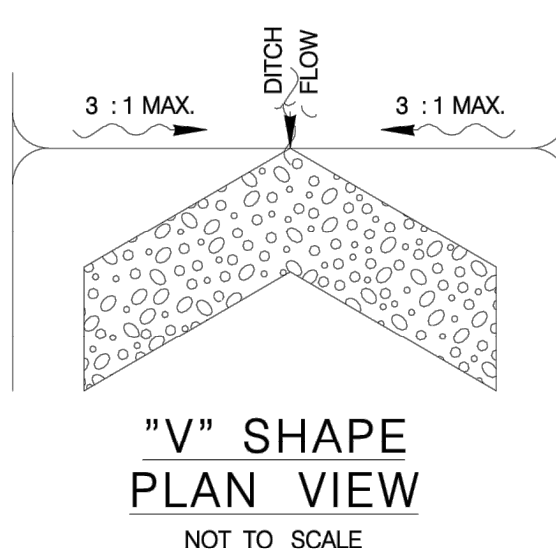
TYPE 1 FILTER DAM AT TOE OF SLOPE
SCALE : 1" = 10'



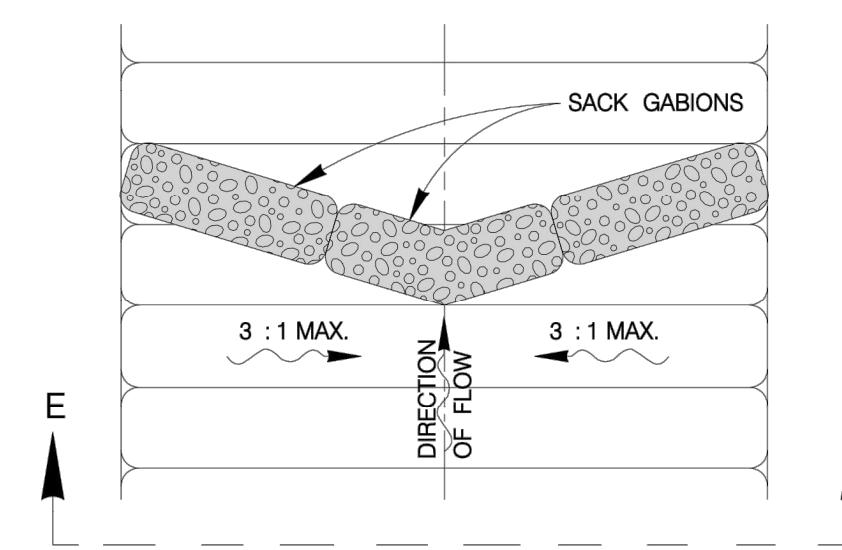
TYPE 1 & 2 FILTER DAM AT SEDIMENT TRAP
SCALE : 1" = 10'



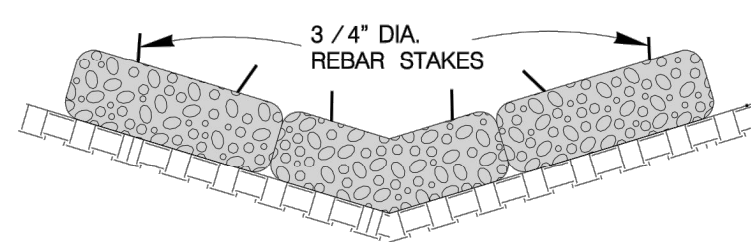
TYPE 1, 2 & 3 FILTER DAM AT CHANNEL SECTIONS
SCALE : 1" = 6'



"V" SHAPE PLAN VIEW
NOT TO SCALE

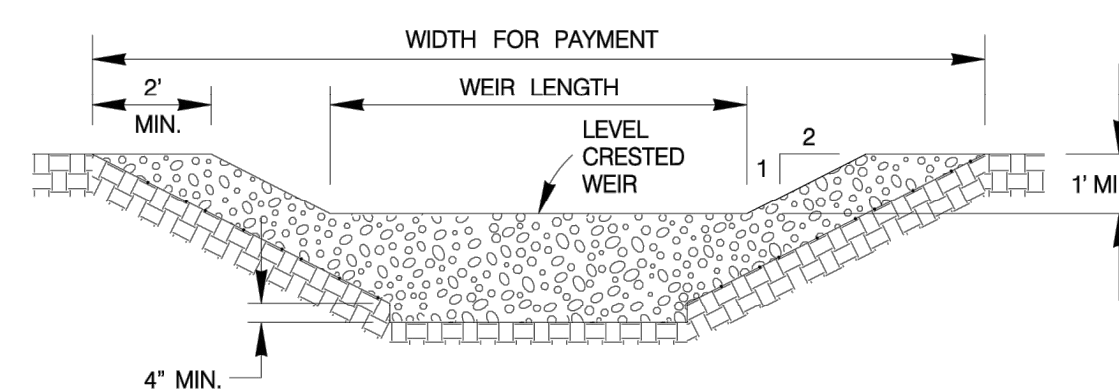


PLAN VIEW
SCALE : 1" = 10'

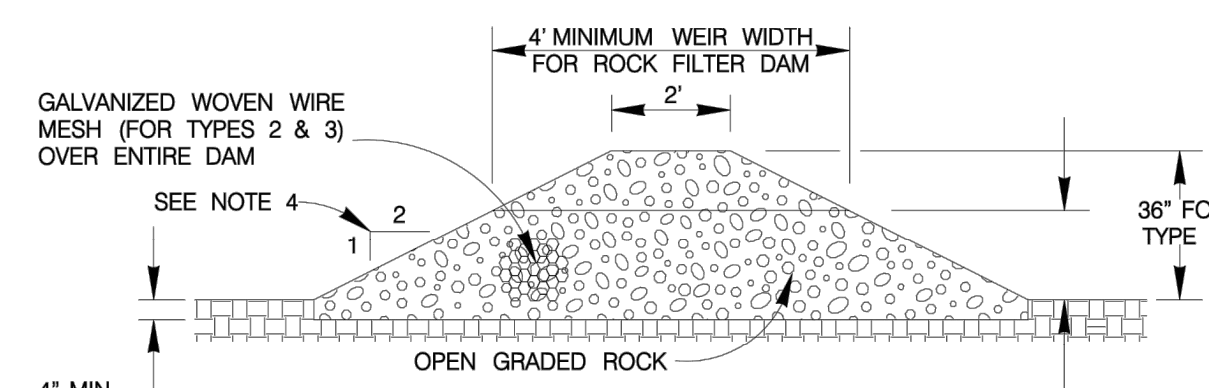


SECTION E-E
SCALE : 1" = 10'

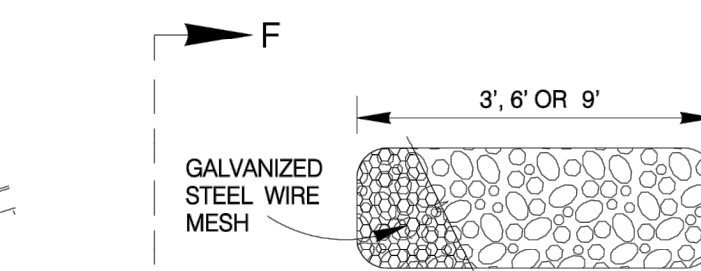
TYPE 4 FILTER DAM AT DITCHES & SMALLER CHANNELS PLAN VIEW



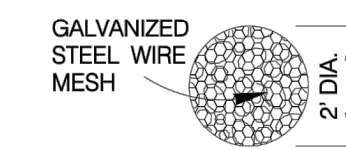
PROFILE OF TYPE 1 & 2 FILTER DAM AT SEDIMENT TRAP
SCALE : 1" = 6'



SECTION D-D
SCALE : 1" = 6'



TYPE 4 SACK GATION DETAIL
SCALE : 1" = 6'



SECTION F-F
SCALE : 1" = 6'

ROCK FILTER DAMS

ROCK FILTER DAM USAGE GUIDELINES

ROCK FILTER DAMS SHOULD BE CONSTRUCTED DOWNSTREAM FROM DISTURBED AREAS TO INTERCEPT SEDIMENT FROM OVERLOAD RUNOFF AND /OR CONCENTRATED FLOW. THE DAMS SHOULD BE SIZED TO FILTER A MAXIMUM FLOW THRU RATE OF 60 GPM /FT SQUARED OF CROSS SECTIONAL AREA. A 2 YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE.

TYPE 1 (18" HIGH WITH NO WIRE MESH) :

TYPE 1 MAY BE USED AT THE TOE OF SLOPES, AROUND INLETS, IN SMALL DITCHES AND AT DIKE OR SWALE OUTLETS. THIS TYPE OF DAM IS RECOMMENDED TO CONTROL EROSION FROM A DRAINAGE AREA OF 5 ACRES OR LESS. TYPE 1 MAY NOT BE USED IN CONCENTRATED HIGH VELOCITY FLOWS (APPROXIMATELY 8 FT./SEC. OR MORE) IN WHICH AGGREGATE WASH OUT MAY OCCUR. SANDBAGS MAY BE USED AT THE EMBEDDED FOUNDATION (4" DEEP MIN.) FOR BETTER FILTERING EFFICIENCY OF LOW FLOWS IF CALLED FOR ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

TYPE 2 (18" HIGH WITH WIRE MESH) :

TYPE 2 MAY BE USED IN DITCHES AND AT DIKE OR SWALE OUTLETS.

TYPE 3 (36" HIGH WITH WIRE MESH) :

TYPE 3 MAY BE USED IN STREAM FLOW AND SHOULD BE SECURED TO THE STREAM BED.

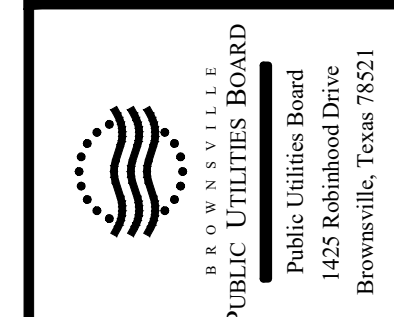
TYPE 4 (SACK GABIONS) :

TYPE 4 MAY BE USED IN DITCHES AND SMALLER CHANNELS TO FORM AN EROSION CONTROL DAM.

GENERAL NOTES

- IF SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER, FILTER DAMS SHOULD BE PLACED NEAR THE TOE OF SLOPES WHERE EROSION IS ANTICIPATED, UPSTREAM AND /OR DOWNSTREAM AT DRAINAGE STRUCTURES, AND IN ROADWAY DITCHES AND CHANNELS TO COLLECT SEDIMENT.
- MATERIALS (AGGREGATE, WIRE MESH, SANDBAGS, ETC.) SHALL BE AS INDICATED BY THE SPECIFICATION FOR ROCK FILTER DAMS FOR EROSION AND SEDIMENTATION CONTROL.
- THE ROCK FILTER DAM DIMENSIONS SHALL BE AS INDICATED ON THE STORM WATER POLLUTION PREVENTION PLANS.
- SIDE SLOPES SHOULD BE 2 : 1 OR FLATTER. DAMS WITHIN THE SAFETY ZONE SHALL HAVE SIDE SLOPES OF 6 : 1 OR FLATTER.
- MAINTAIN A MINIMUM OF 1' BETWEEN TOP OF ROCK FILTER DAM WEIR AND TOP OF EMBANKMENT FOR FILTER DAMS AT SEDIMENT TRAPS.
- FILTER DAMS SHOULD BE EMBEDDED A MINIMUM OF 4" INTO THE EXISTING GROUND.
- THE SEDIMENT TRAP FOR PONDING OF SEDIMENT LADEN RUNOFF SHALL BE OF THE DIMENSIONS SHOWN ON THE PLANS.
- ROCK FILTER DAM TYPES 2 & 3 SHALL BE SECURED WITH 20 GAUGE GALVANIZED WOVEN WIRE MESH WITH 1" DIAMETER HEXAGONAL OPENINGS. THE AGGREGATE SHALL BE PLACED ON THE MESH TO THE HEIGHT AND SLOPES SPECIFIED. THE MESH SHALL BE FOLDED AT THE UPSTREAM SIDE OVER THE AGGREGATE AND TIGHTLY SECURED TO ITSELF ON THE DOWNSTREAM SIDE USING WIRE TIES OR HOG RINGS. IN STREAM USE, THE MESH SHOULD BE SECURED OR STAKED TO THE STREAM BED PRIOR TO AGGREGATE PLACEMENT.
- SACK GABIONS SHOULD BE STAKED DOWN WITH 3/4" DIA. REBAR STAKES.
- FLOW OUTLET SHOULD BE ONTO A STABILIZED AREA (VEGETATION, ROCK, ETC.).
- THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

TEMPORARY EROSION, SEDIMENT & WATER POLLUTION CONTROL MEASURES STANDARDS 2



NO.	REVISION	BY	DATE

BROWNSVILLE PUBLIC UTILITIES BOARD
PROJECT 1: DOWNTOWN WW IMPROVEMENTS
EROSION AND SEDIMENTATION CONTROL DETAILS II

DESIGN: GWM
DRAWN: GWM
REVIEW: JAE
STV: BPUB2200025.01

SHEET
ES03

PRINTED BY: Campbell DATE: 8/9/2023
FILE PATH: c:\pwworking\stiv\p_w_siv\d0933232\2200025_ES03.dwg

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GENERAL NOTES:

- EROSION CONTROL LOGS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, OR AS DIRECTED BY THE ENGINEER.
- LENGTHS OF EROSION CONTROL LOGS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND AS REQUIRED FOR THE PURPOSE INTENDED.
- UNLESS OTHERWISE DIRECTED, USE BIODEGRADABLE OR PHOTODEGRADABLE CONTAINMENT MESH ONLY WHERE LOGS WILL REMAIN IN PLACE AS PART OF A VEGETATIVE SYSTEM. FOR TEMPORARY INSTALLATIONS, USE RECYCLABLE CONTAINMENT MESH.
- FILL LOGS WITH SUFFICIENT FILTER MATERIAL TO ACHIEVE THE MINIMUM COMPACTED DIAMETER SPECIFIED IN THE PLANS WITHOUT EXCESSIVE DEFORMATION.
- STAKES SHALL BE 2" X 2" WOOD OR #3 REBAR, 2'-4" LONG, EMBEDDED SUCH THAT 2" PROTRUDES ABOVE LOG, OR AS DIRECTED BY THE ENGINEER.
- DO NOT PLACE STAKES THROUGH CONTAINMENT MESH.
- COMPOST CRADLE MATERIAL IS INCIDENTAL & WILL NOT BE PAID FOR SEPARATELY.
- SANDBAGS USED AS ANCHORS SHALL BE PLACED ON TOP OF LOGS & SHALL BE OF SUFFICIENT SIZE TO HOLD LOGS IN PLACE.
- TURN THE ENDS OF EACH ROW OF LOGS UPSLOPE TO PREVENT RUNOFF FROM FLOWING AROUND THE LOG.
- FOR HEAVY RUNOFF EVENTS, ADDITIONAL UPSTREAM STAKES MAY BE NECESSARY TO KEEP LOG FROM FOLDING IN ON ITSELF.

EROSION CONTROL LOG SPACING TABLE

SLOPE	LOG DIAMETER			
	6"	8"	12"	18"
1:1 OR STEEPER	5'	10'	15'	20'
2:1	10'	20'	30'	40'
3:1	15'	30'	45'	60'
4:1 OR FLATTER	20'	40'	60'	90'

* ADJUSTMENTS CAN BE MADE FOR SOIL TYPE: SOFT, LOAMY SOILS-ADJUST ROWS CLOSER TOGETHER; HARD, ROCKY SOILS-ADJUST ROWS FARTHER APART

SEDIMENT BASIN & TRAP USAGE GUIDELINES

An erosion control log sediment trap may be used to filter sediment out of runoff draining from an unlandscaped area.

Log Trap: The drainage area for a sediment trap should not exceed 5 acres. The trap capacity should be 1800 CF/Acre 10.5' over the drainage area.

Control logs should be placed in the following locations:

- Within drainage ditches spaced as needed or min. 500' on center
- Immediately preceding drain inlets or drain inlets
- Just before the drainage enters a water course
- Just before the drainage leaves the construction limits where drainage flows away from the project.

The logs should be cleaned when the sediment has accumulated to a depth of 1/2 the log diameter.

Cleaning and removal of accumulated sediment deposits is incidental and will not be paid for separately.

LEGEND

- CL-D EROSION CONTROL LOG DAM
- CL-BOC EROSION CONTROL LOG AT BACK OF CURB
- CL-ROW EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY
- CL-SST EROSION CONTROL LOGS ON SLOPES STAKE AND TRENCHING ANCHORING
- CL-SSL EROSION CONTROL LOGS ON SLOPES STAKE AND LASHING ANCHORING
- CL-DI EROSION CONTROL LOG AT DROP INLET
- CL-CI EROSION CONTROL LOG AT CURB INLET
- CL-GI EROSION CONTROL LOG AT CURB & GRADE INLET

TEMPERARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES EROSION CONTROL LOG EC (9) - 16

FILE: EC16.DWG DATE: 07/20/2016 10:00 AM DESIGNED BY: JAE DRAWN BY: GWM CHECKED BY: JAE

EROSION CONTROL LOGS ON SLOPES STAKE AND TRENCHING ANCHORING

EROSION CONTROL LOGS ON SLOPES STAKE AND LASHING ANCHORING

STAKE AND TRENCHING ANCHORING DETAIL

STAKE AND LASHING ANCHORING DETAIL

TRENCH DEPTH TABLE

LOG DIAMETER	DEPTH
6"	2"
8"	3"
12"	4"
18"	5"

TEMPERARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES EROSION CONTROL LOG EC (9) - 16

FILE: EC16.DWG DATE: 07/20/2016 10:00 AM DESIGNED BY: JAE DRAWN BY: GWM CHECKED BY: JAE

EROSION CONTROL LOG AT DROP INLET

EROSION CONTROL LOG AT CURB INLET

EROSION CONTROL LOG AT CURB & GRADE INLET

SANDBAG DETAIL

NOTE: EROSION CONTROL LOGS USED AT CURB INLETS SHOULD ONLY BE USED IF THEY WILL NOT IMPED EROSION CONTROL LOGS USED AT CURB INLETS SHOULD ONLY BE USED IF THEY WILL NOT IMPED TRAFFIC OR FLOOD THE ROADWAY OR WHEN THE STORM SEWER SYSTEM IS NOT FULLY FUNCTIONAL.

TEMPERARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES EROSION CONTROL LOG EC (9) - 16

FILE: EC16.DWG DATE: 07/20/2016 10:00 AM DESIGNED BY: JAE DRAWN BY: GWM CHECKED BY: JAE

STV
 TEXAS REGISTERED ENGINEERING FIRM
 TYPE F-1741

BROWNSVILLE
 PUBLIC UTILITIES BOARD
 Public Utilities Board
 1425 Robinson Drive
 Brownsville, Texas 78521

11/10/2023

NO. _____ REVISION _____ BY _____ DATE _____

VERIFY SCALE BAR LENGTH EQUALS ONE INCH ON ORIGINAL DRAWING. VERIFY LENGTH ON THIS SHEET 0 1" AND ADJUST SCALE ACCORDINGLY.

BROWNSVILLE PUBLIC UTILITIES BOARD
 PROJECT 1: DOWNTOWN WW IMPROVEMENTS

EROSION AND SEDIMENTATION CONTROL
 DETAILS III

DESIGN: GWM
 DRAWN: GWM
 REVIEW: JAE
 STV: BPUB2200025.01

SHEET
 ES04