

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

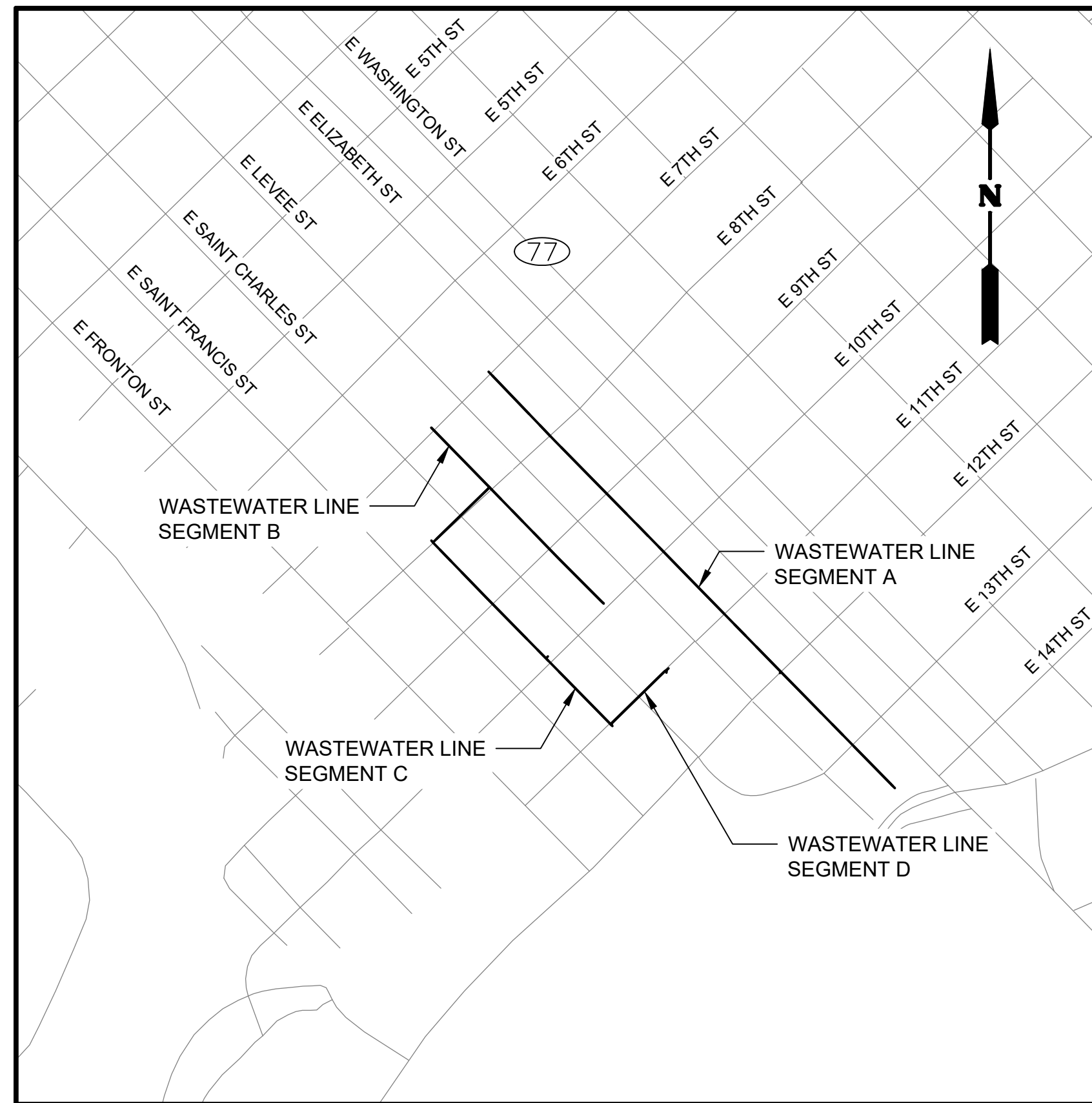
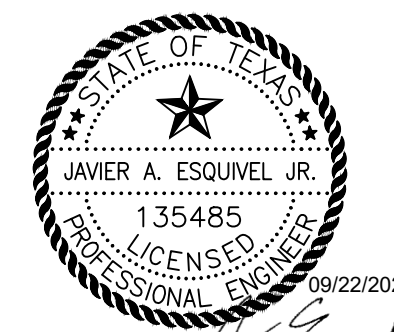
100% SUBMITTAL  
SEPTEMBER 2023

**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

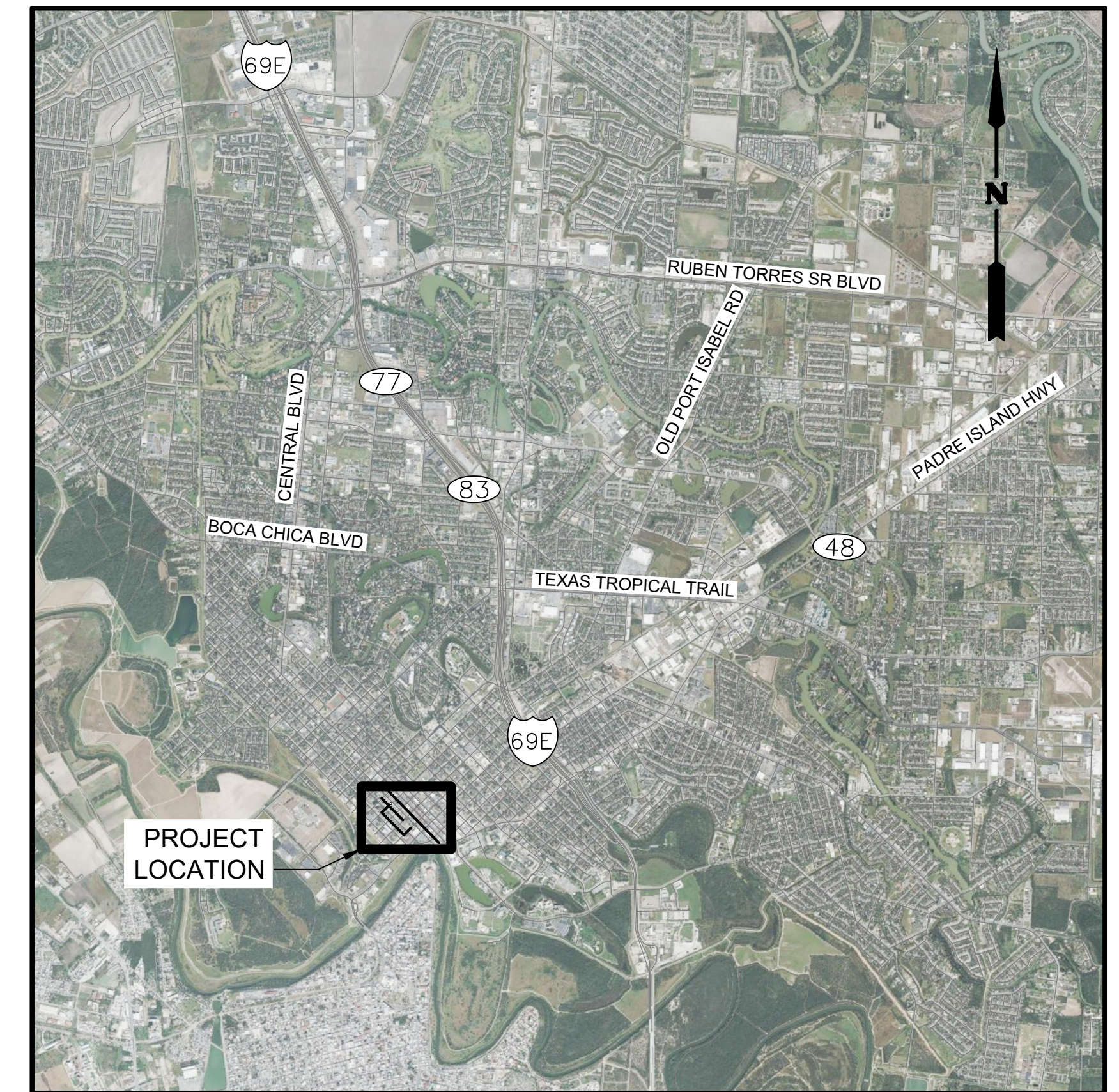
PREPARED BY



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



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.

TEXAS REGISTERED ENGINEERING FIRM  
TYPE F-1741

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

09/22/2025  
135485  
BROWNSVILLE, TEXAS

NO.	REVISION	BY	DATE

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

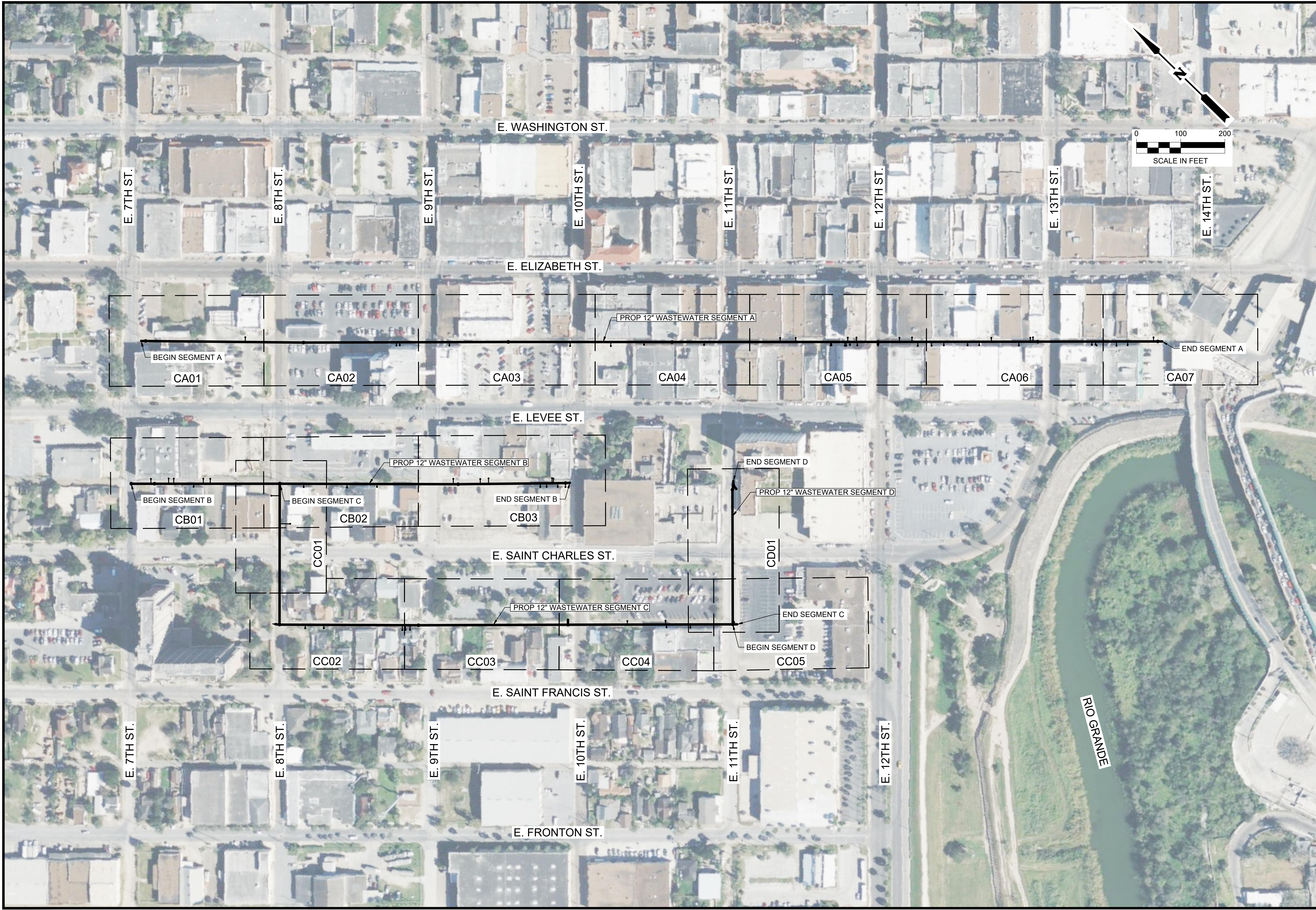
BROWNSVILLE PUBLIC UTILITIES BOARD  
PROJECT 1: DOWNTOWN WW IMPROVEMENTS

GENERAL NOTES

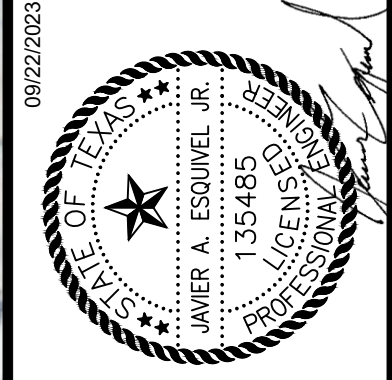
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CLIENT:	XXXX

SHEET  
G-03

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



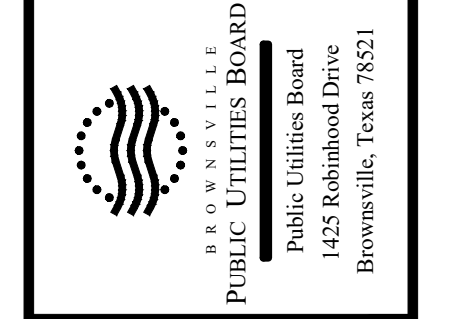
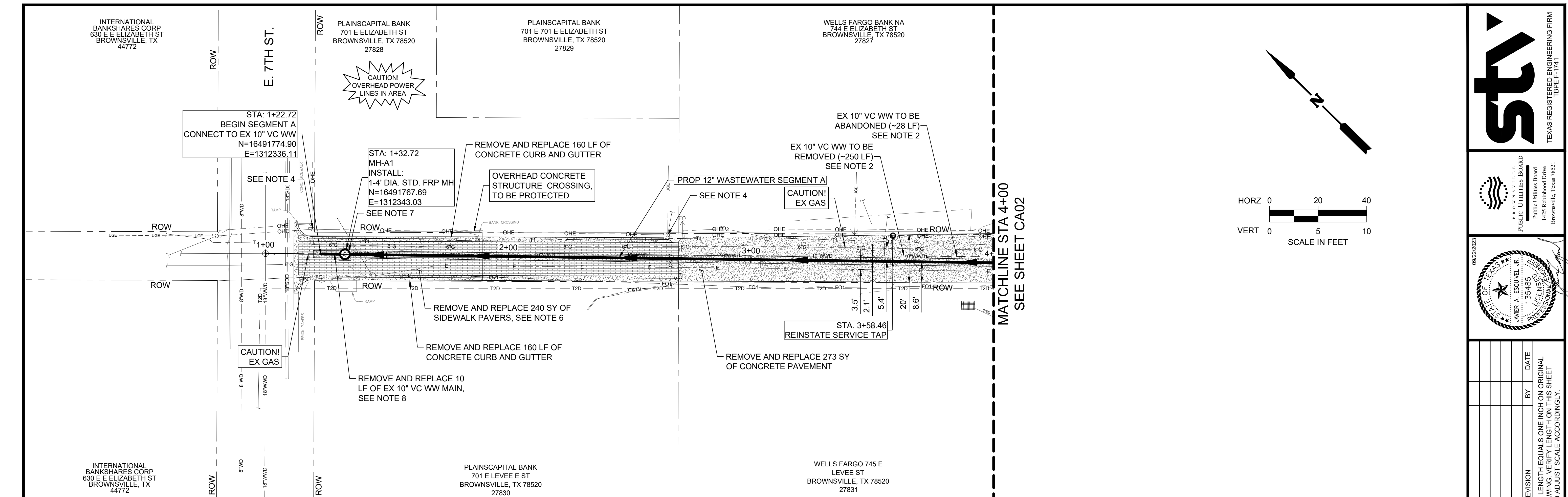
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BROWNVILLE PUBLIC UTILITIES BOARD  
 PROJECT 1: DOWNTOWN WW IMPROVEMENTS  
 OVERALL PROJECT LAYOUT

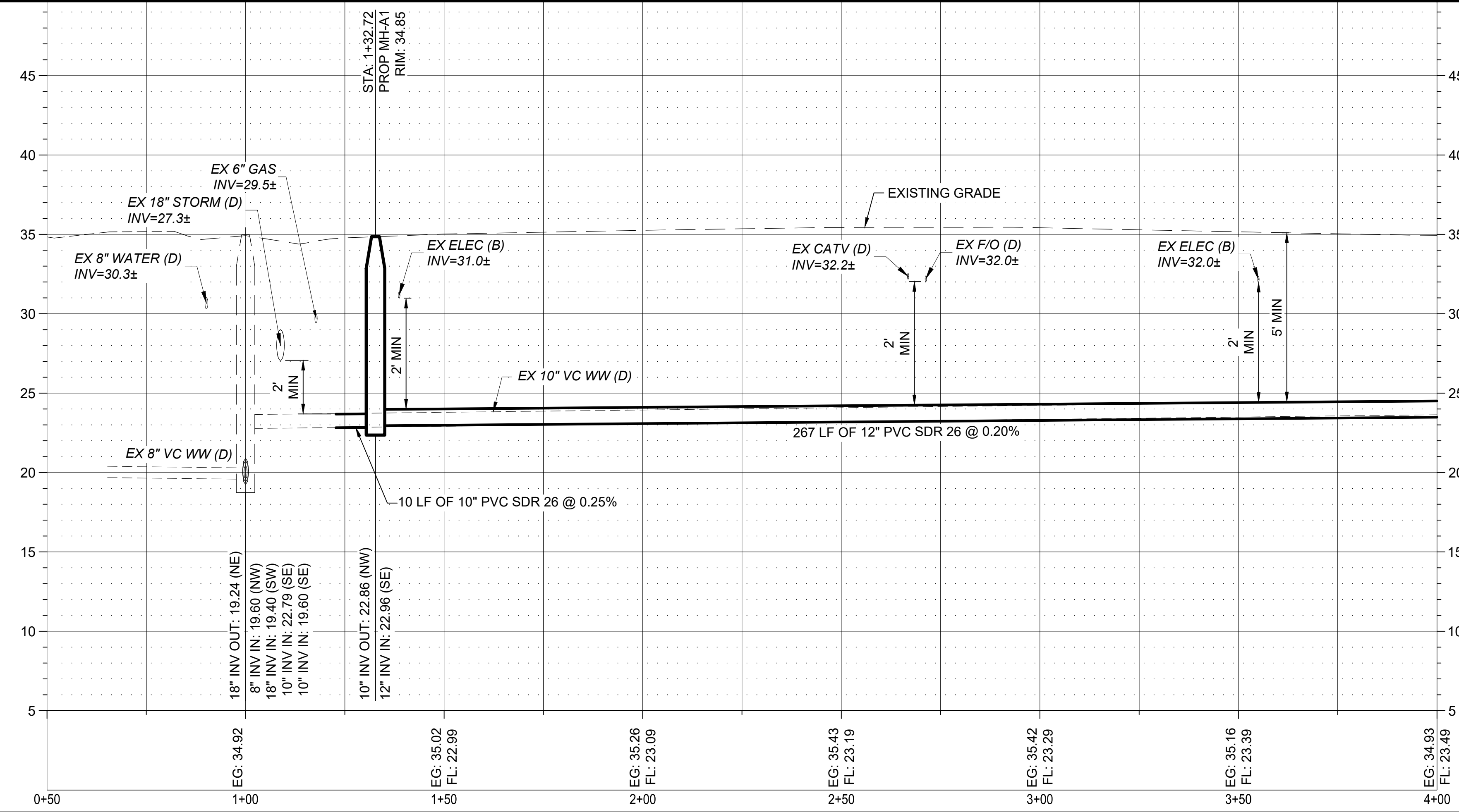
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 REVIEW: JAE  
 STV: BPUB2200025.01  
 CLIENT: XXXX

SHEET  
 G-04



NO.	REVISION	BY	DATE

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

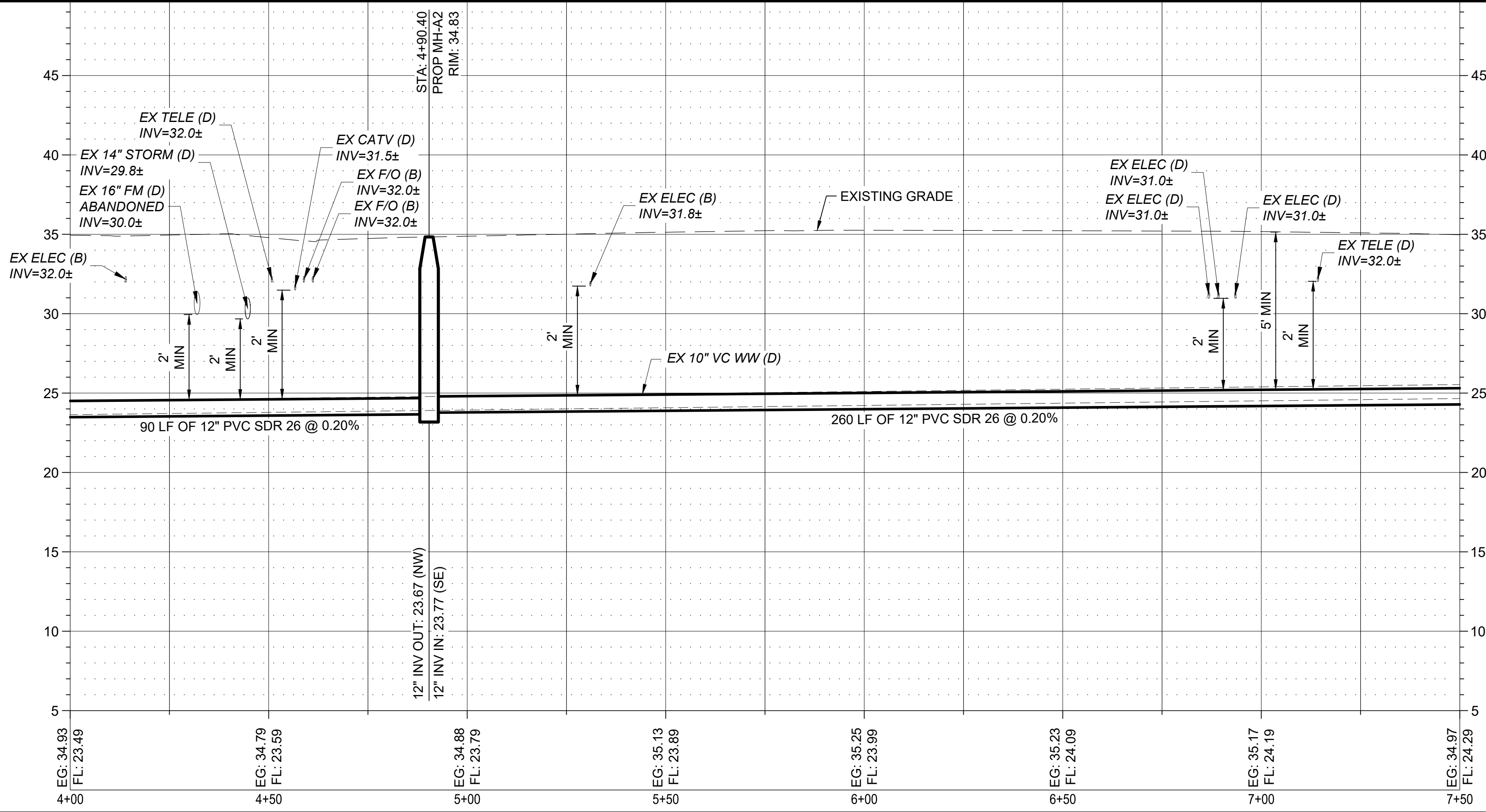
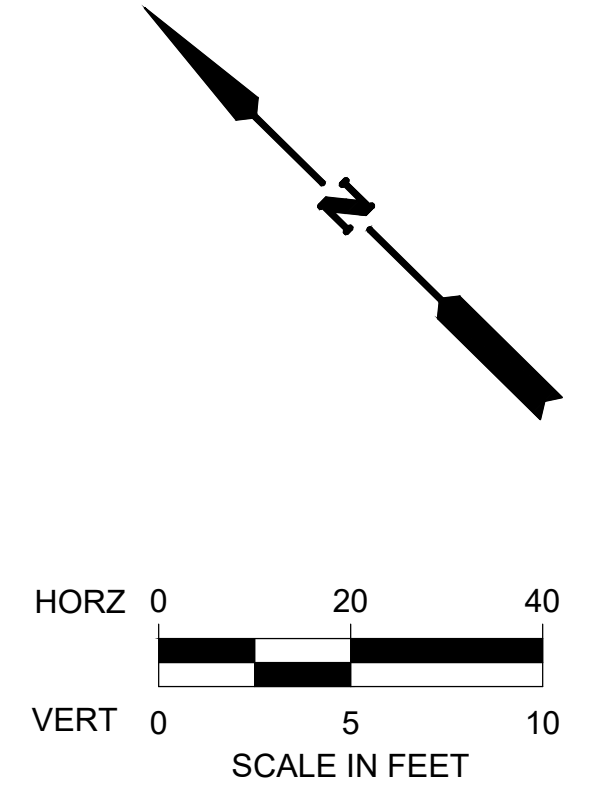
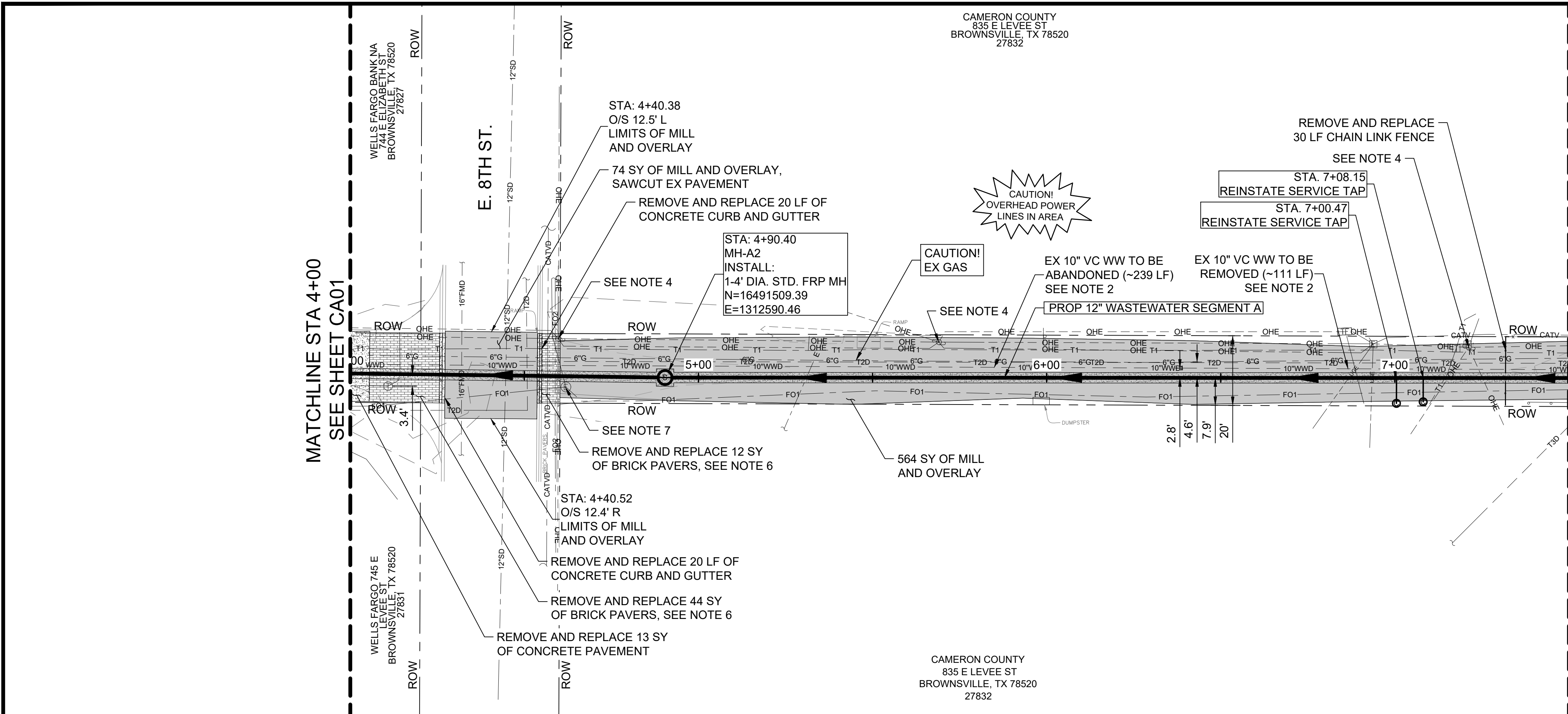


- NOTES:
- SEWER SLOPES FOR THIS SEGMENT ARE MINIMUM ALLOWABLE VALUES. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR MAINTAINING VERTICAL ALIGNMENT. BPUB MAY MEASURE INVERT ELEVATIONS OF ALL MANHOLES FOR QUALITY CONTROL PURPOSES. CONTRACTOR SHALL ALLOW AT LEAST 48 HOURS FOR QUALITY CONTROL SURVEYING AND 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.

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  
 CLIENT: XXXX

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.

TEXAS REGISTERED ENGINEERING FIRM  
TYPE F-1741

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

09/22/2023  
135485  
PROFESSIONAL ENGINEER  
STATE OF TEXAS  
WALTER L. COOK, III  
LICENSED IN THE STATE OF TEXAS

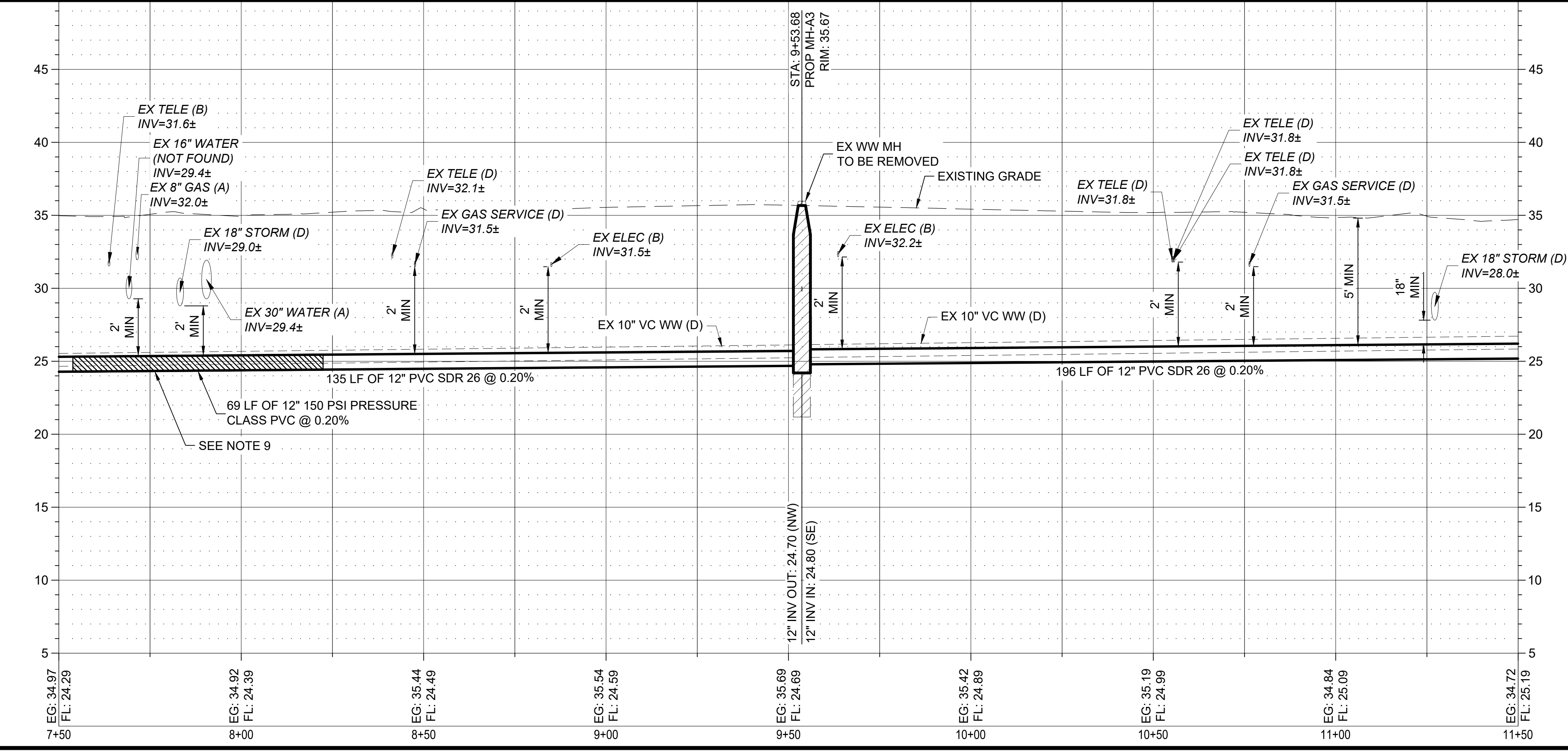
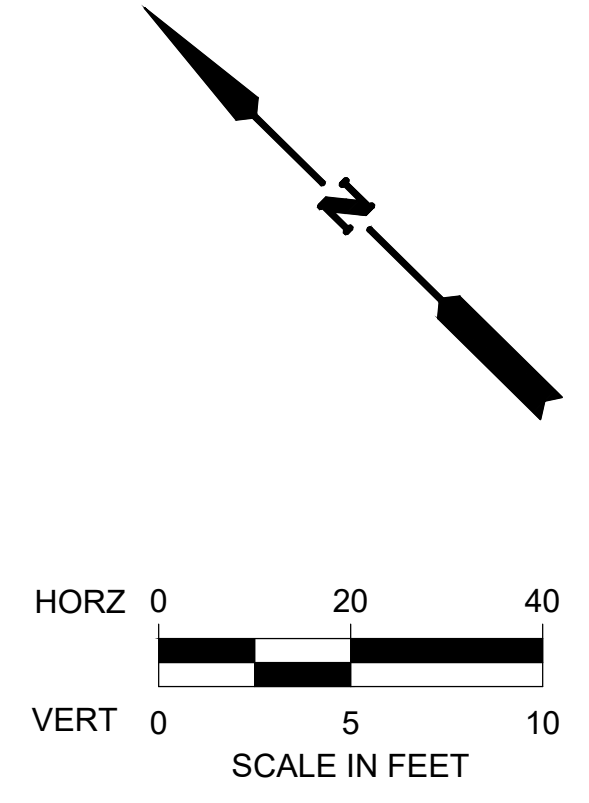
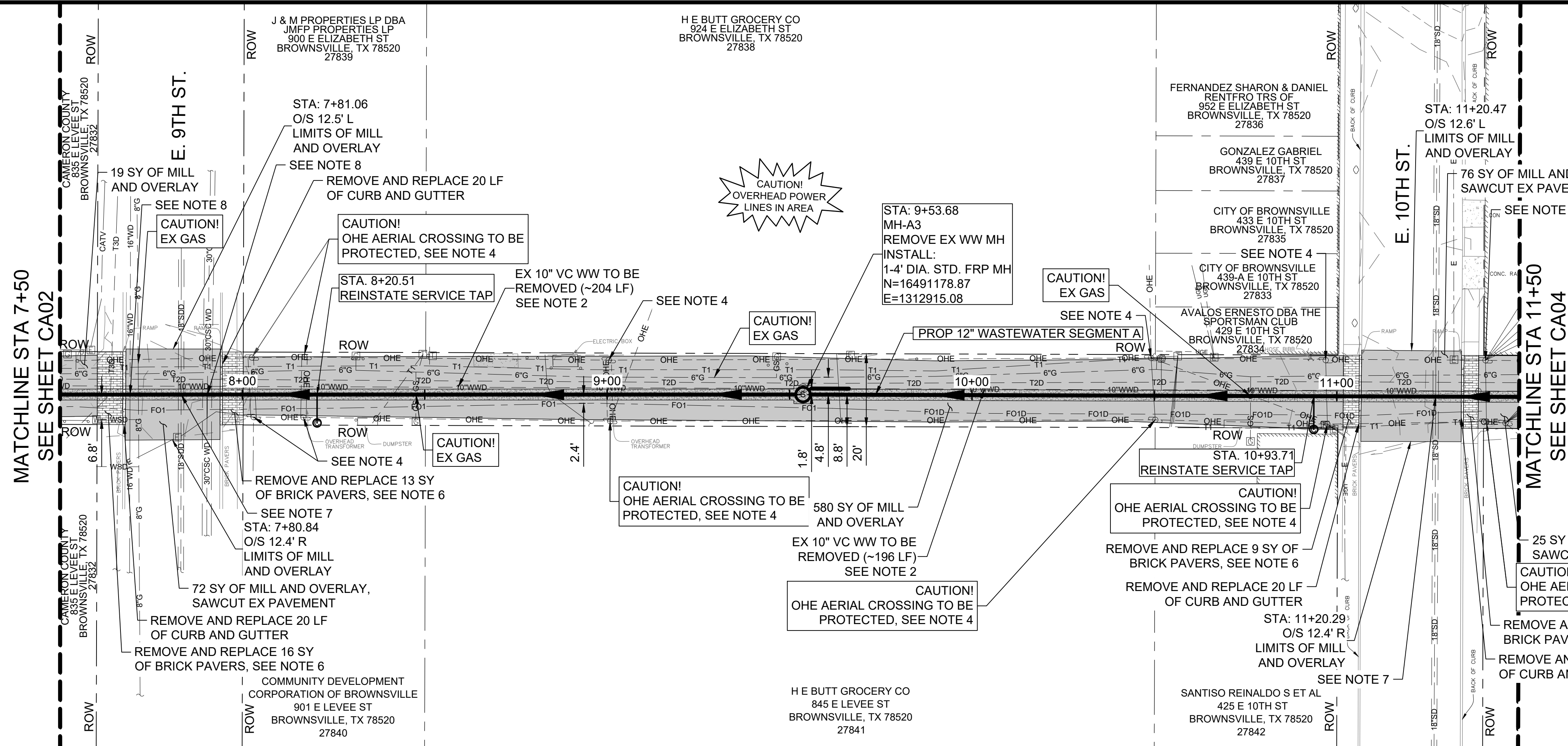
NO.	REVISION	BY	DATE

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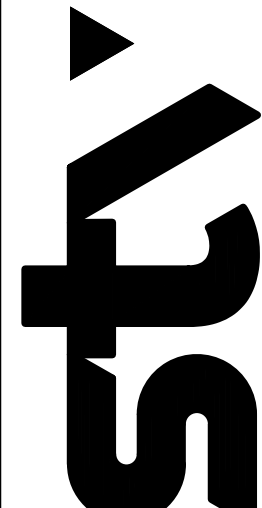
**BROWNSVILLE PUBLIC UTILITIES BOARD**  
**PROJECT 1: DOWNTOWN WW IMPROVEMENTS**  
**SEGMENT A**  
**PLAN AND PROFILE**  
**STA 4+00 TO STA 7+50**

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

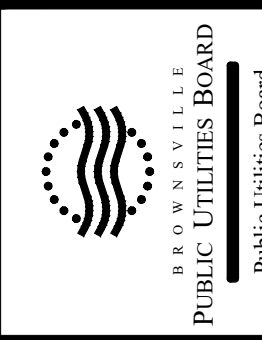
SHEET  
**CA02**



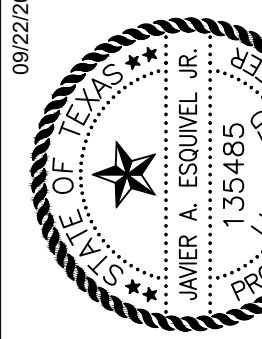
- NOTES:
- SEWER SLOPES FOR THIS SEGMENT ARE MINIMUM ALLOWABLE VALUES. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR MAINTAINING VERTICAL ALIGNMENT. BPUB MAY MEASURE INVERT ELEVATIONS OF ALL MANHOLES FOR QUALITY CONTROL PURPOSES. CONTRACTOR SHALL ALLOW AT LEAST 48 HOURS FOR QUALITY CONTROL SURVEYING AND 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.
  - 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.
  - 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.



TEXAS REGISTERED ENGINEERING FIRM  
 TPPE-F-1741



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



STIV  
 LICENSE NO. 135485  
 EXPIRES 09/22/2025

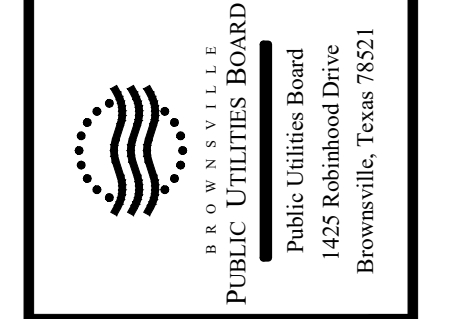
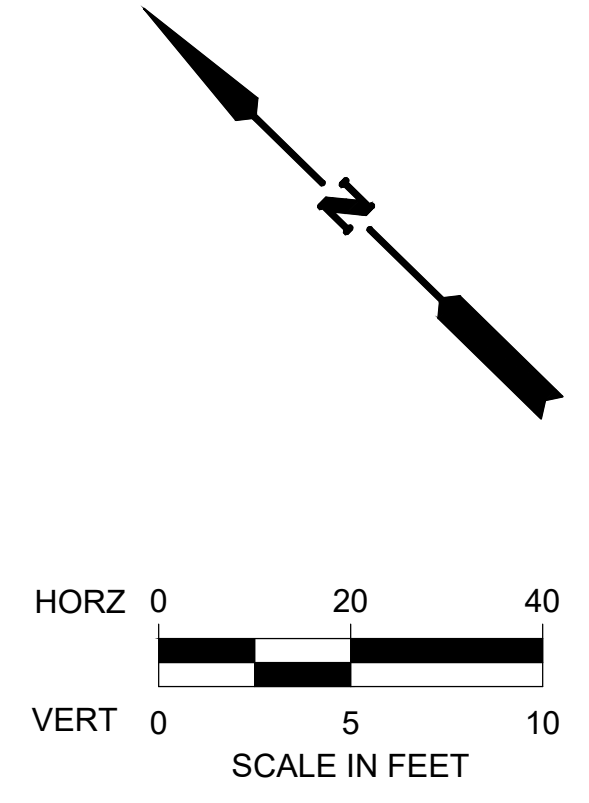
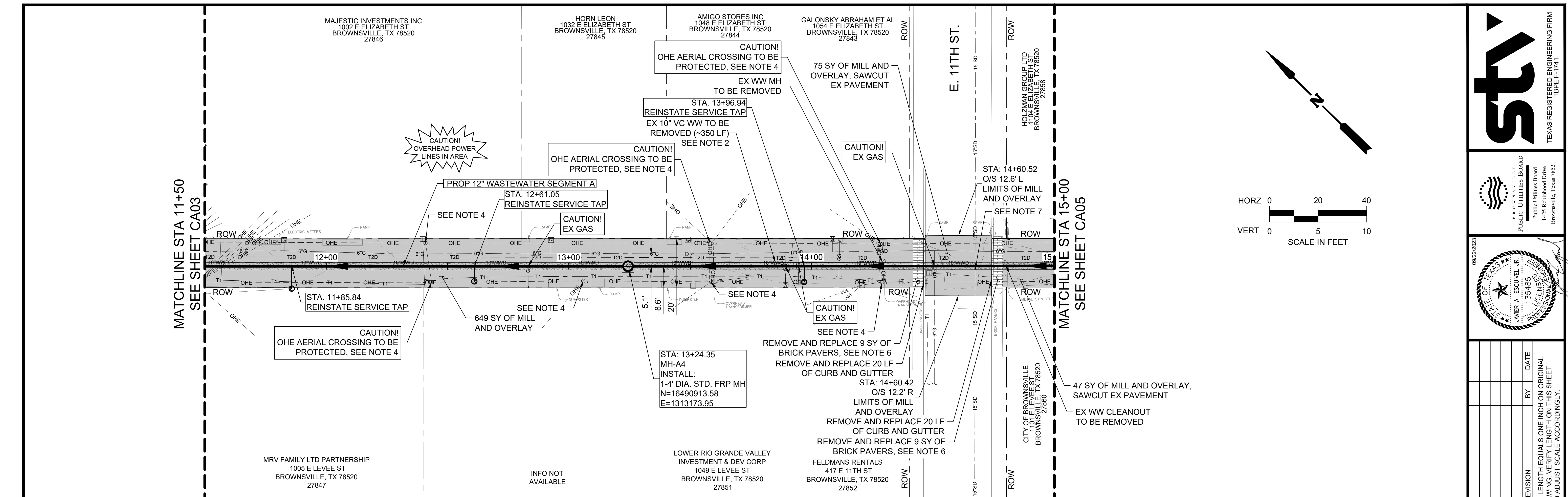
NO.	REVISION	BY	DATE

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 7+50 TO STA 11+50**

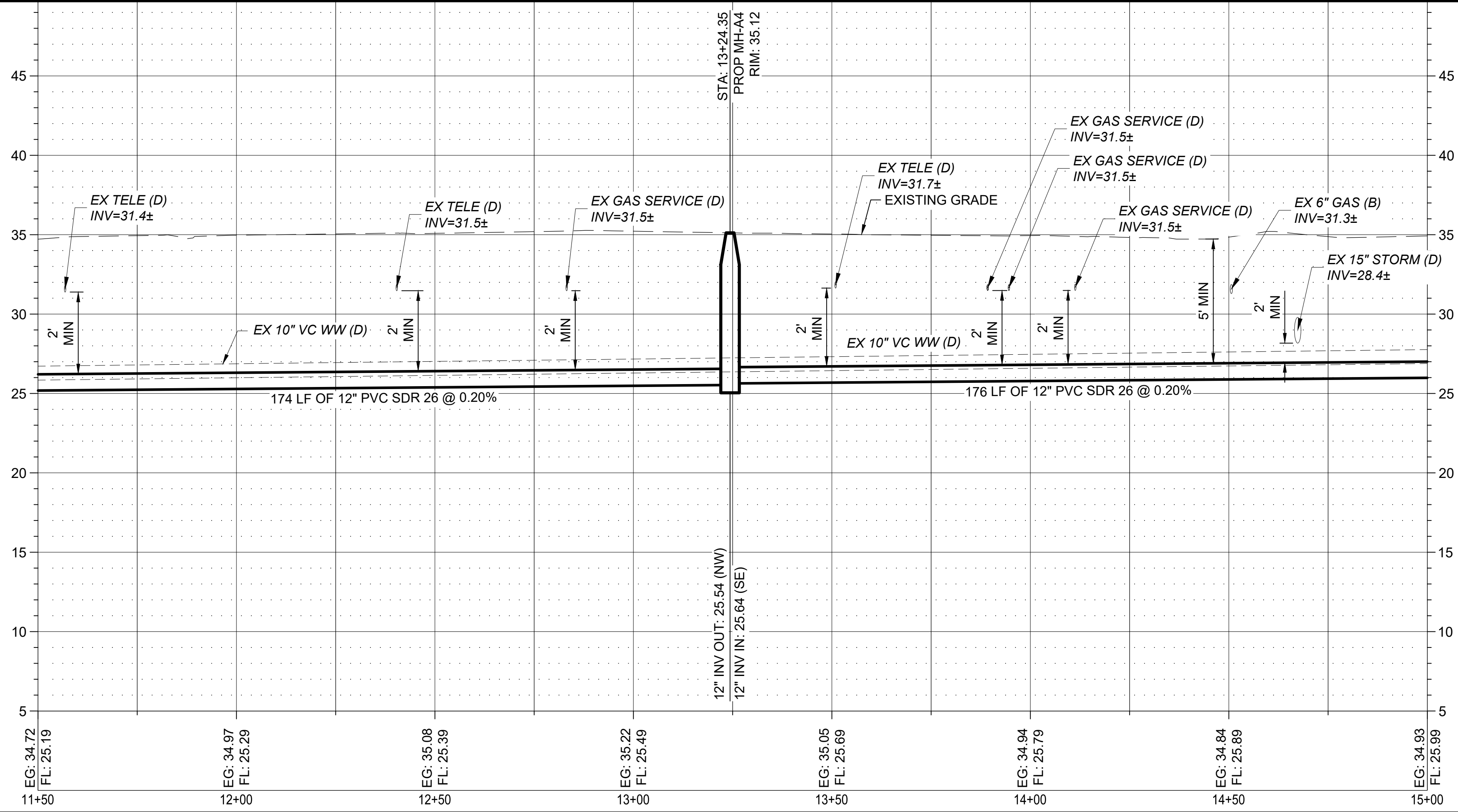
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DRAWN: GWM
REVIEW: JAE
STV: BPUB2200025.01
CLIENT: XXXX

SHEET  
**CA03**



NO.	REVISION	BY	DATE

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



- 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.
  - PROTECT EXISTING 15" 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.

BROWNSVILLE PUBLIC UTILITIES BOARD  
 PROJECT 1: DOWNTOWN WW IMPROVEMENTS  
 SEGMENT A  
 PLAN AND PROFILE  
 STA 11+50 TO STA 15+00

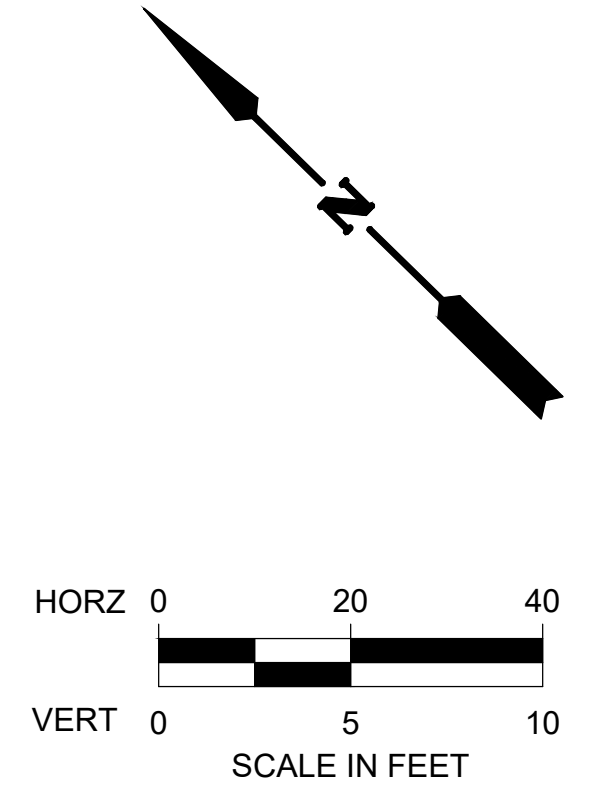
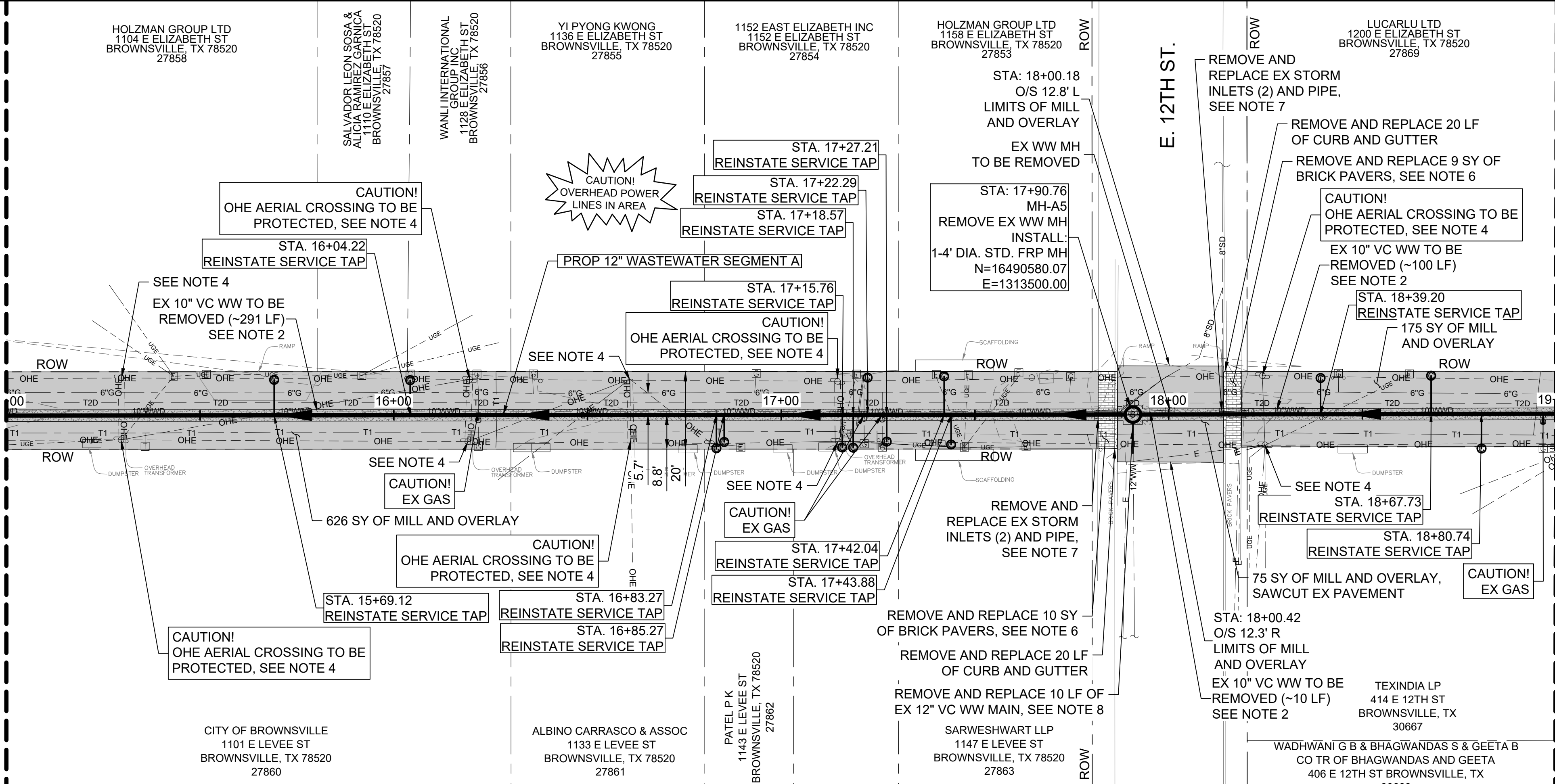
DESIGN: GWM  
 DRAWN: GWM  
 REVIEW: JAE  
 STV: BPUB2200025.01  
 CLIENT: XXXX

SHEET  
 CA04

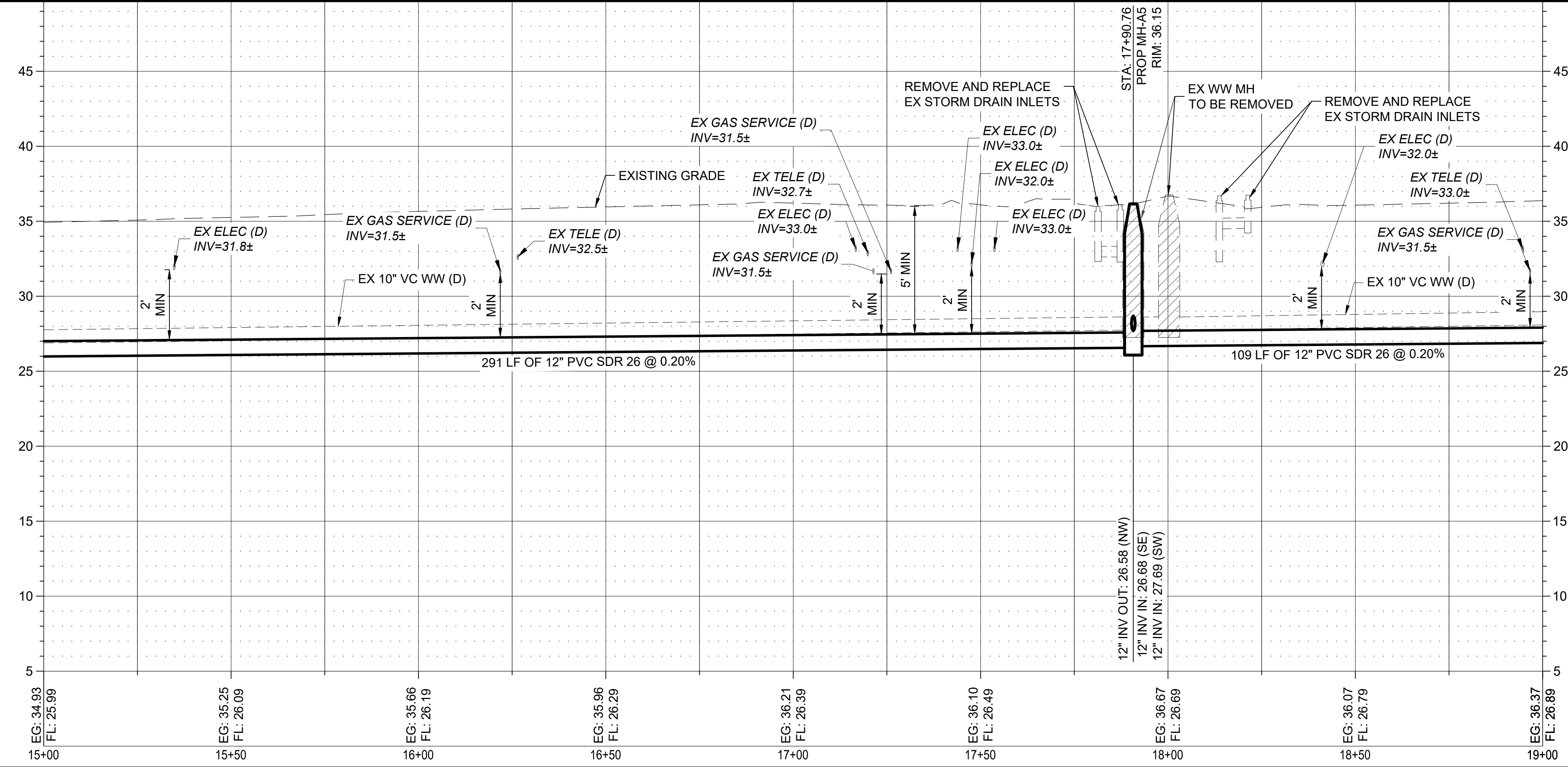


MATCHLINE STA 15+00  
 SEE SHEET CA04

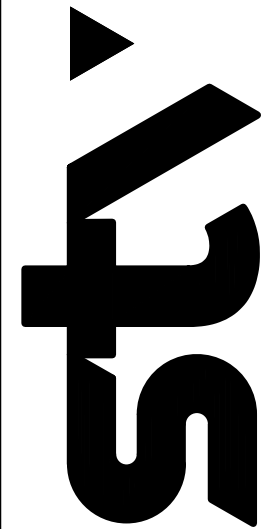
MATCHLINE STA 19+00  
 SEE SHEET CA06



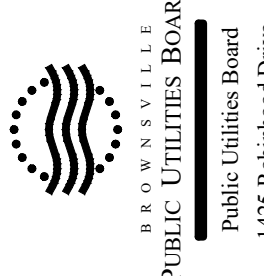
CONTRACTOR SHALL BE AWARE OF POTENTIAL FOR HAZARDOUS MATERIALS IN THE AREA. IF ENCOUNTERED, THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER OF RECORD AND HAVE THE CONTAMINATED SOIL AND GROUND WATER SAMPLED AND LAB TESTED. CONTAMINATED WATER AND/OR SOILS SHALL BE HANDLED AND DISPOSED OF IN ACCORDANCE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




- NOTES:
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  - 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.
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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



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



09/22/2023  
 135485  
 BROWNVILLE PUBLIC UTILITIES BOARD

NO.	REVISION	BY	DATE

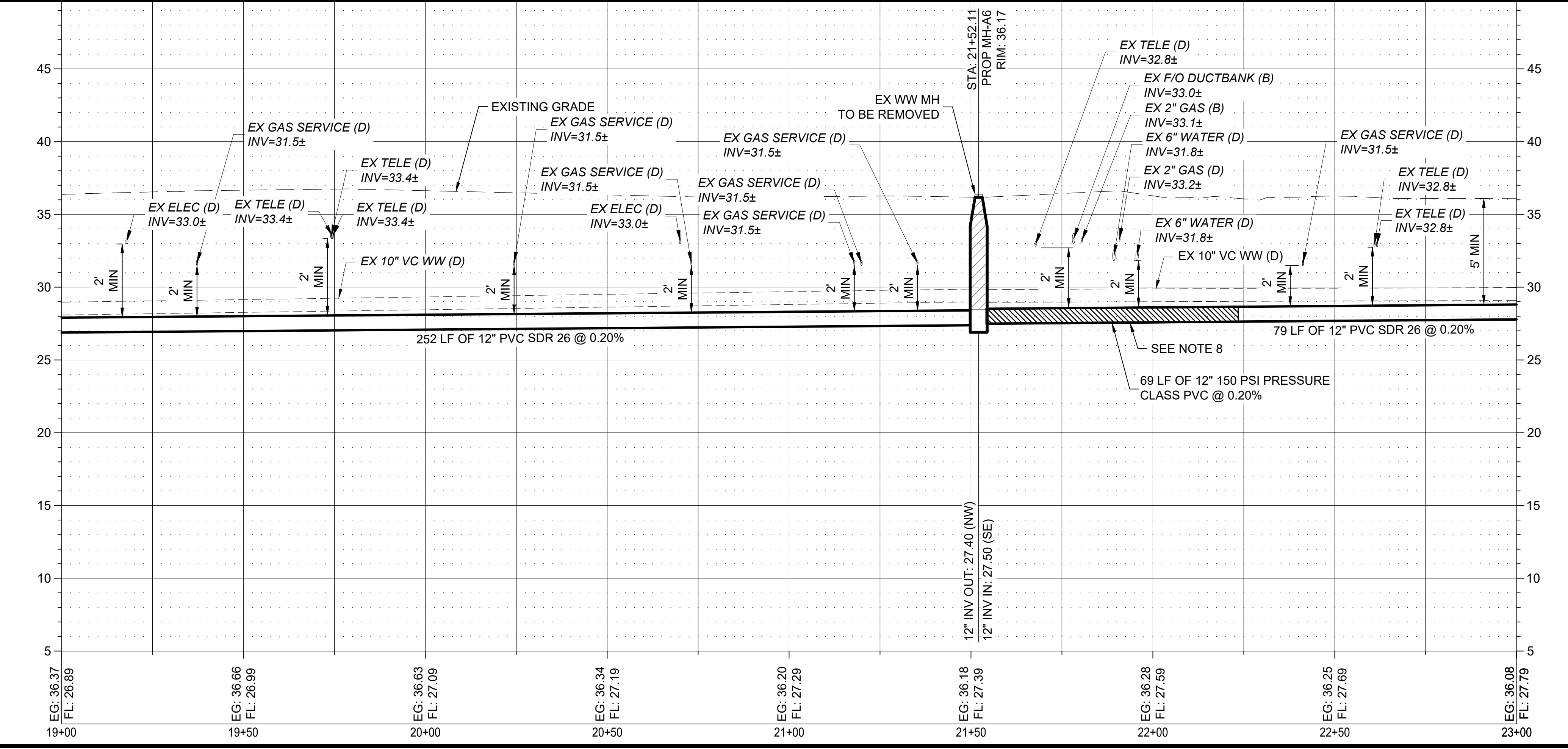
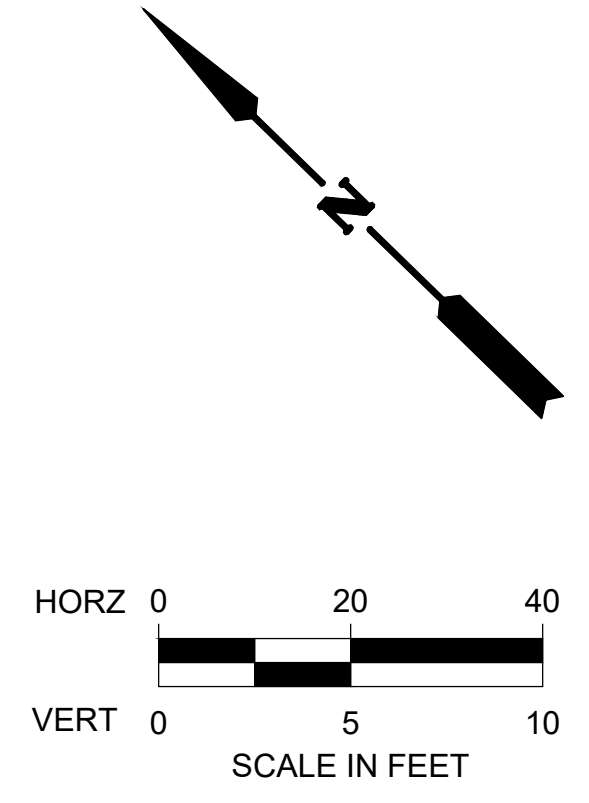
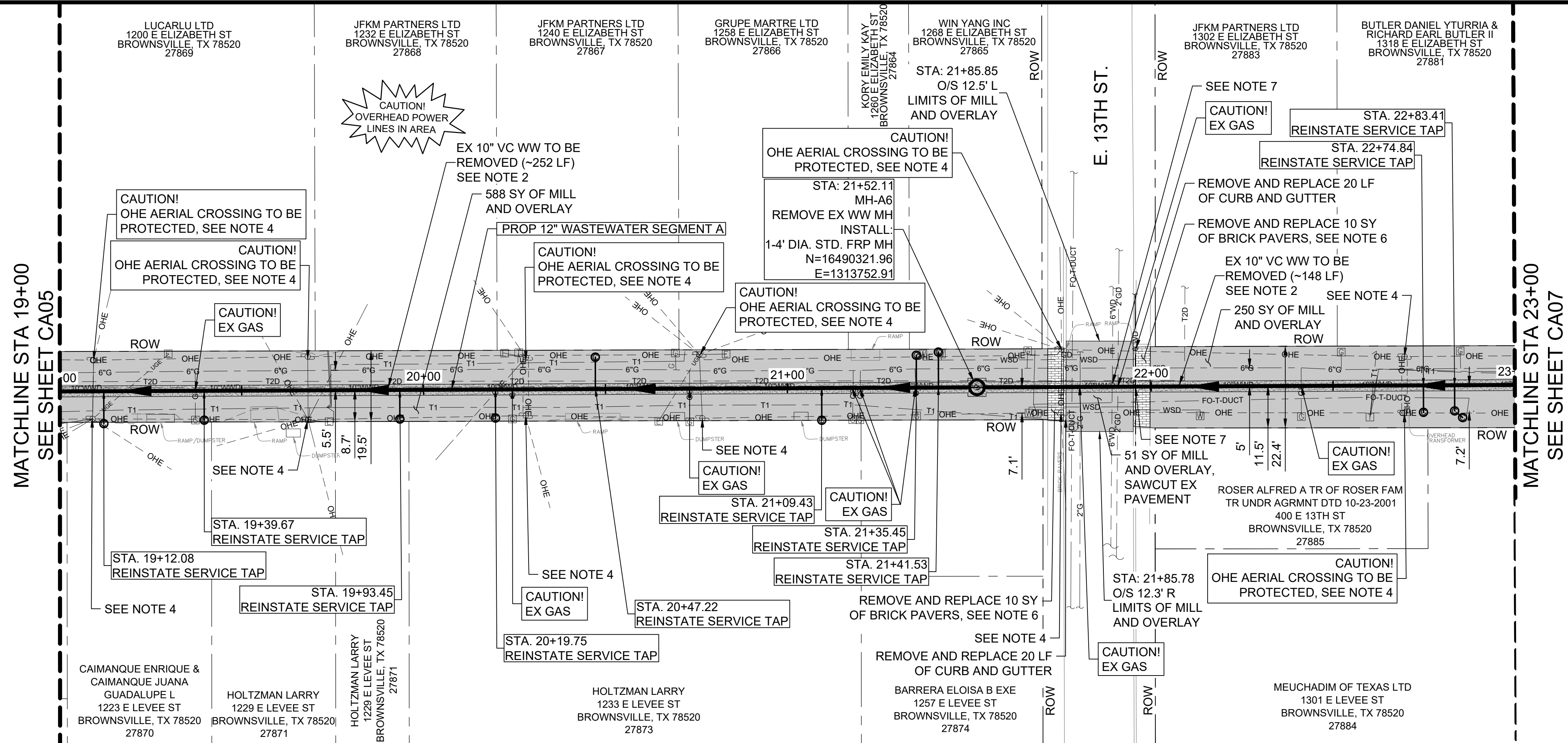
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**BROWNVILLE PUBLIC UTILITIES BOARD**  
 PROJECT 1: DOWNTOWN WW IMPROVEMENTS  
 SEGMENT A  
 PLAN AND PROFILE  
 STA 15+00 TO STA 19+00

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

SHEET  
**CA05**

PRINTED BY: MilkisGW DATE: 9/22/2023  
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- 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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  - 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



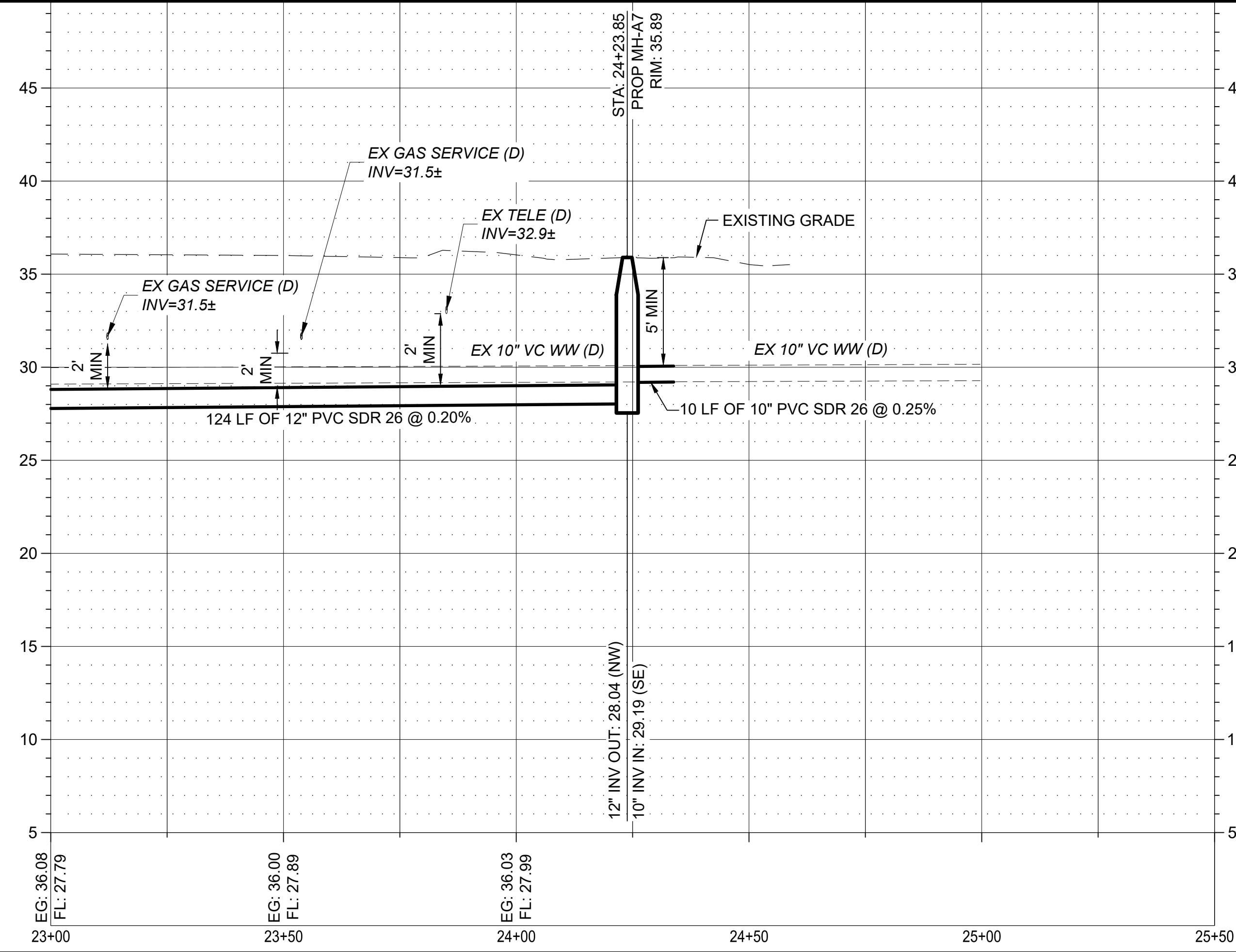
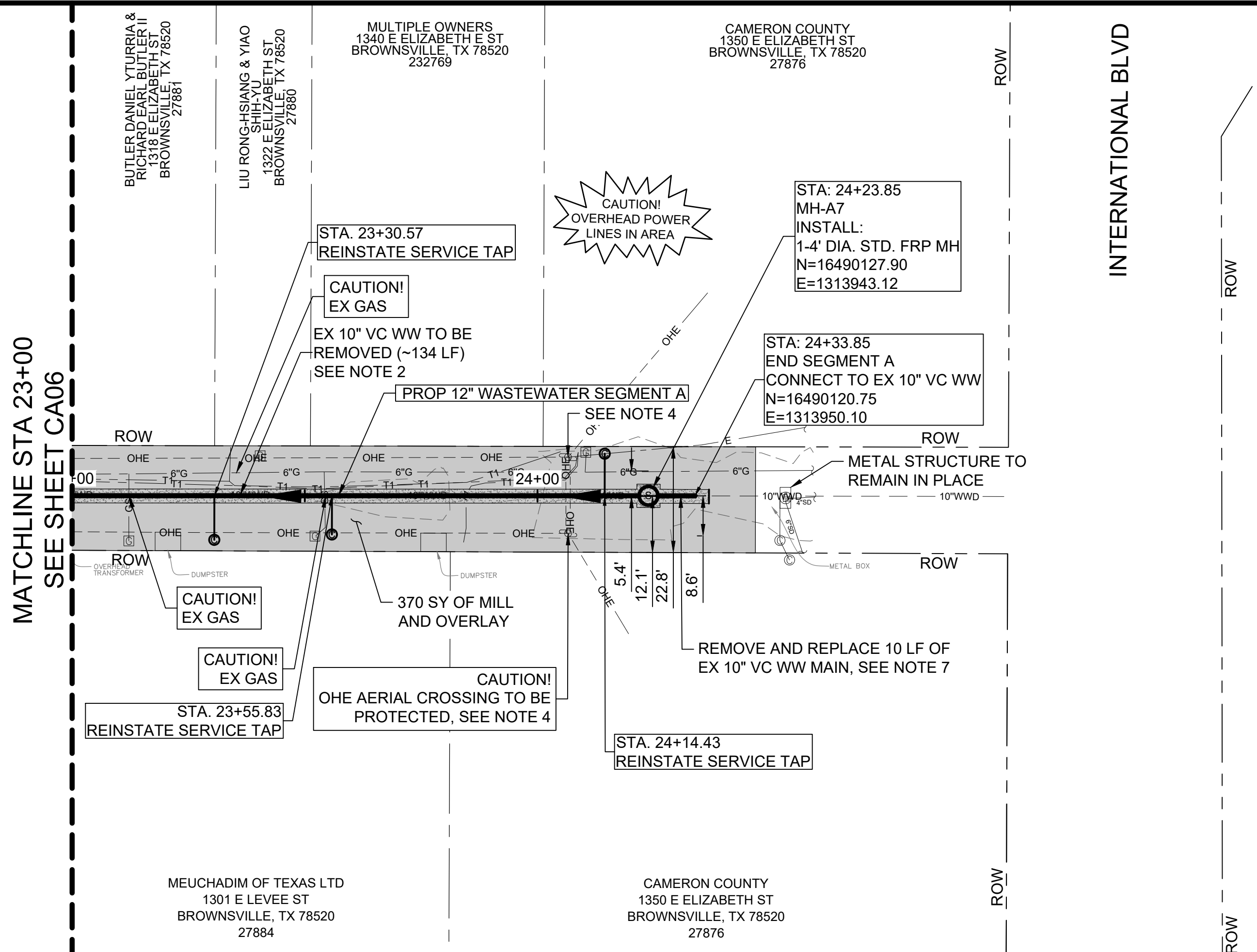
NO.	REVISION	DATE

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

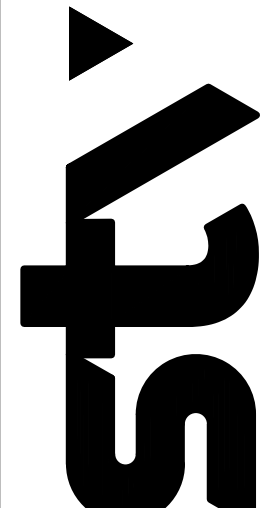
BROWNSVILLE PUBLIC UTILITIES BOARD  
 PROJECT 1: DOWNTOWN WW IMPROVEMENTS  
 SEGMENT A  
 PLAN AND PROFILE  
 STA 19+00 TO STA 23+00

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

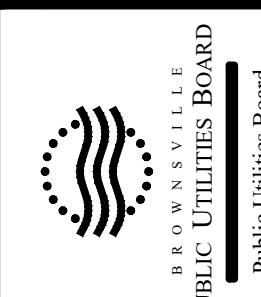
SHEET  
 CA06




- NOTES:**
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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 PAVER DETAILS.
  - 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



09/22/2023  
 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**

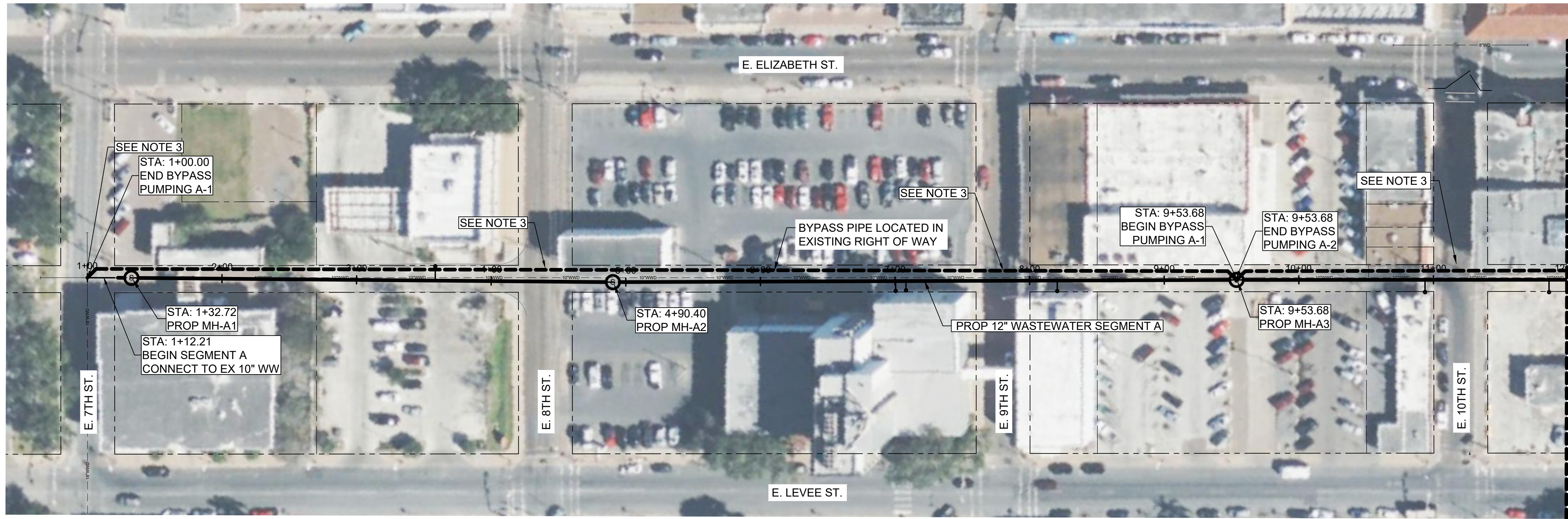
**SEGMENT A**

**PLAN AND PROFILE**

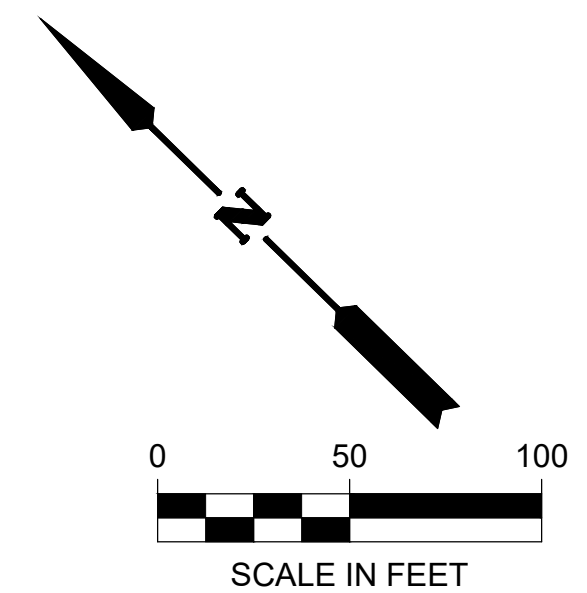
**STA 23+00 TO END SEGMENT A**

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

SHEET  
**CA07**

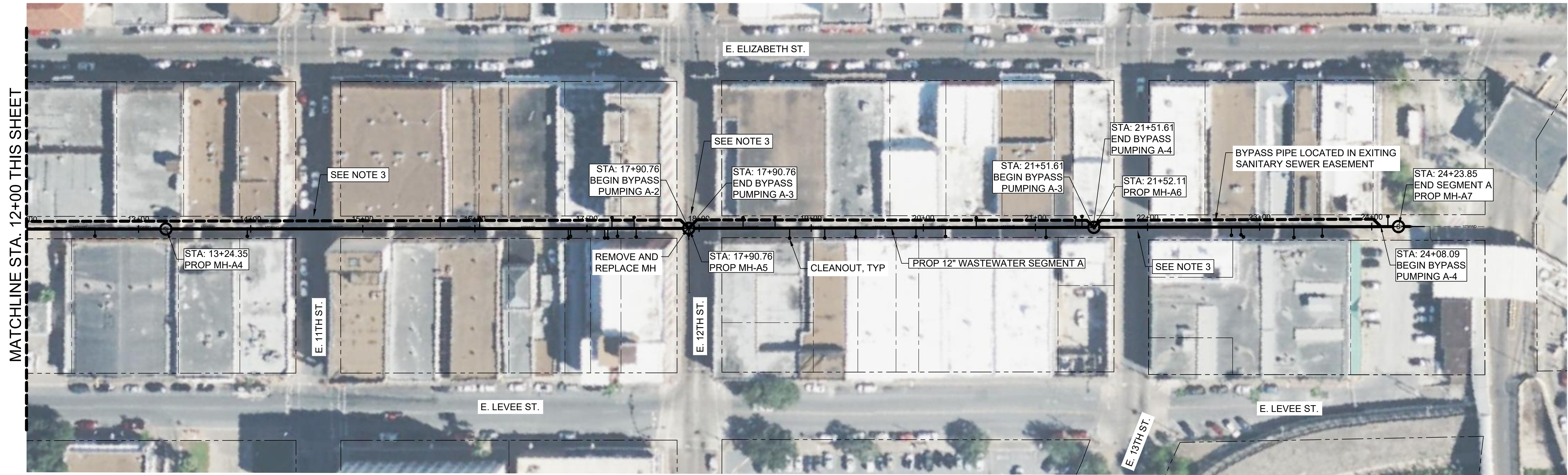


MATCHLINE STA. 12+00 THIS SHEET

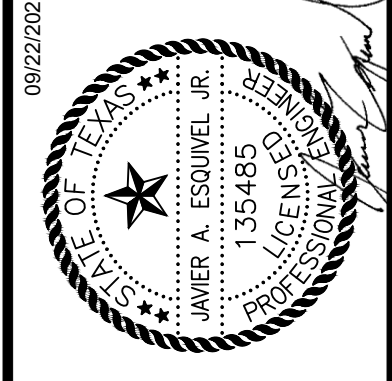
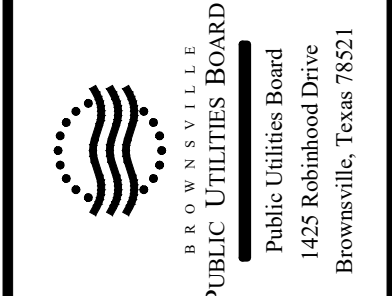


- NOTES:
1. THE BYPASS PUMPING FLOW DATA SHEET IS FOR INFORMATION PURPOSES ONLY AND THE CONTRACTOR IS REQUIRED TO DEVELOP AN INDEPENDENT BYPASS PUMPING PLAN FOR BIDDING AND CONSTRUCTION PURPOSES.
  2. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SERVICE TO EXISTING LATERALS. CONTRACTOR SHALL FIELD 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



NO.	REVISION	BY	DATE

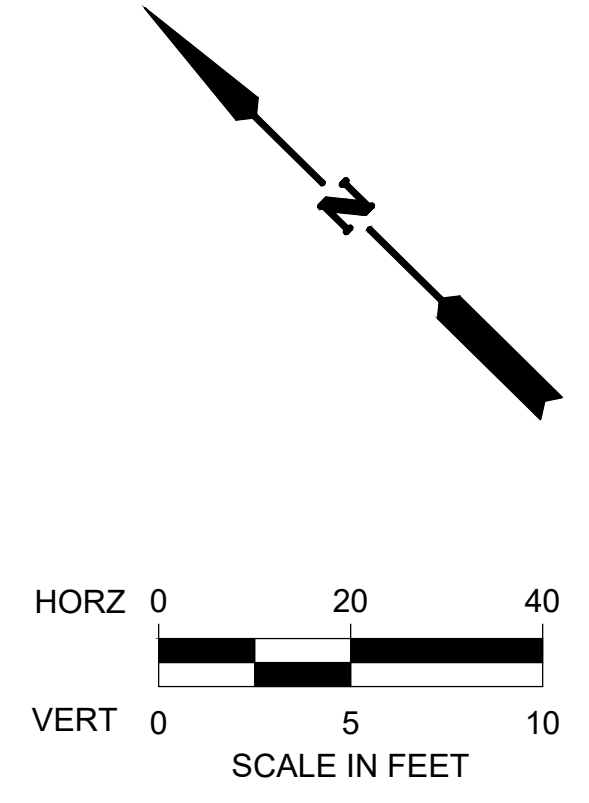
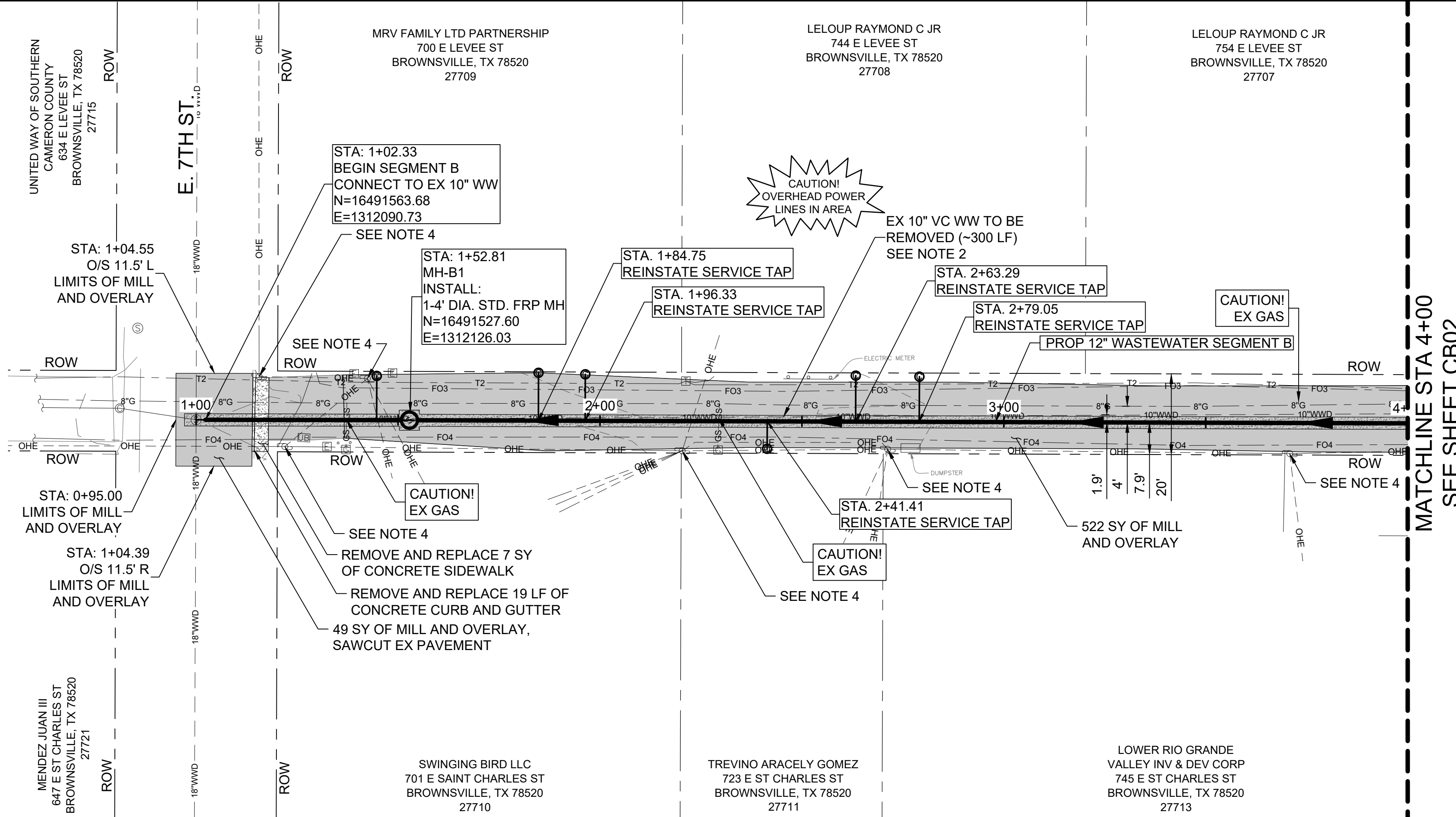
VERIFY SCALE BAR LENGTH EQUALS ONE INCH ON ORIGINAL DRAWING. VERIFY LENGTH ON THIS SHEET AND ADJUST SCALE ACCORDINGLY.

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

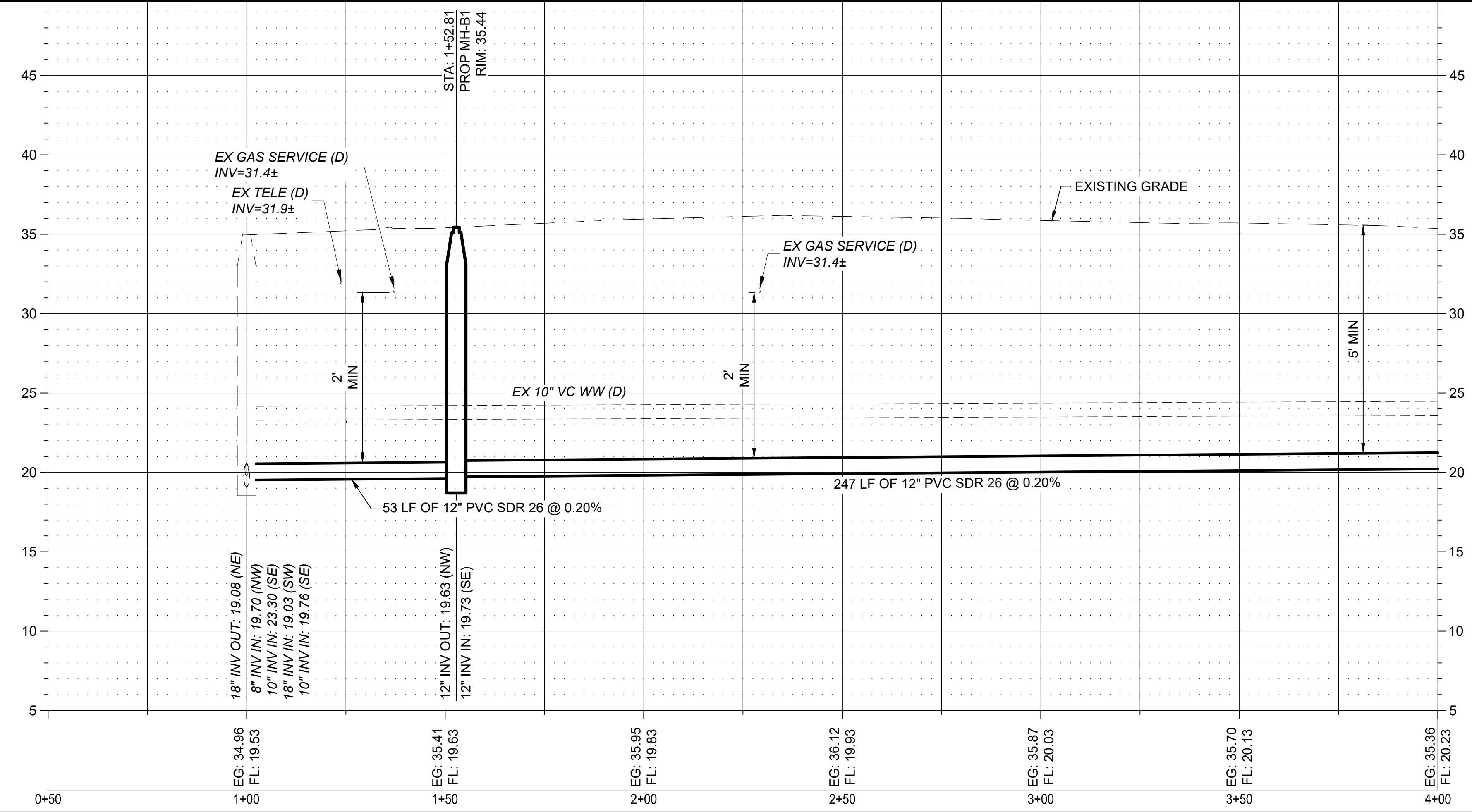
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DRAWN: GWM
REVIEW: JAE
STV: BPUB2200025.01
CLIENT: XXXX

SHEET  
 CA08

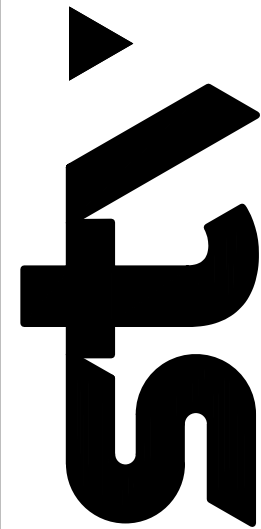
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MATCHLINE STA 4+00  
 SEE SHEET CB02

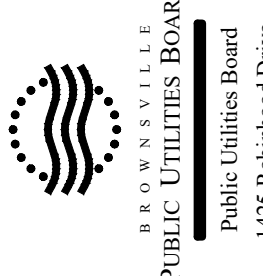


- NOTES:
- SEWER SLOPES FOR THIS SEGMENT ARE MINIMUM ALLOWABLE VALUES. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR MAINTAINING VERTICAL ALIGNMENT. BPUB MAY MEASURE INVERT ELEVATIONS OF ALL MANHOLES FOR QUALITY CONTROL PURPOSES. CONTRACTOR SHALL ALLOW AT LEAST 48 HOURS FOR QUALITY CONTROL SURVEYING AND 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.
  - 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)




TEXAS REGISTERED ENGINEERING FIRM  
 TYPE F-1741

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

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STEVEN J. ARCE  
 LICENSE NO. 135485  
 PROFESSIONAL ENGINEER  
 CIVIL  
 STATE OF TEXAS

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NO.	REVISION	BY	DATE

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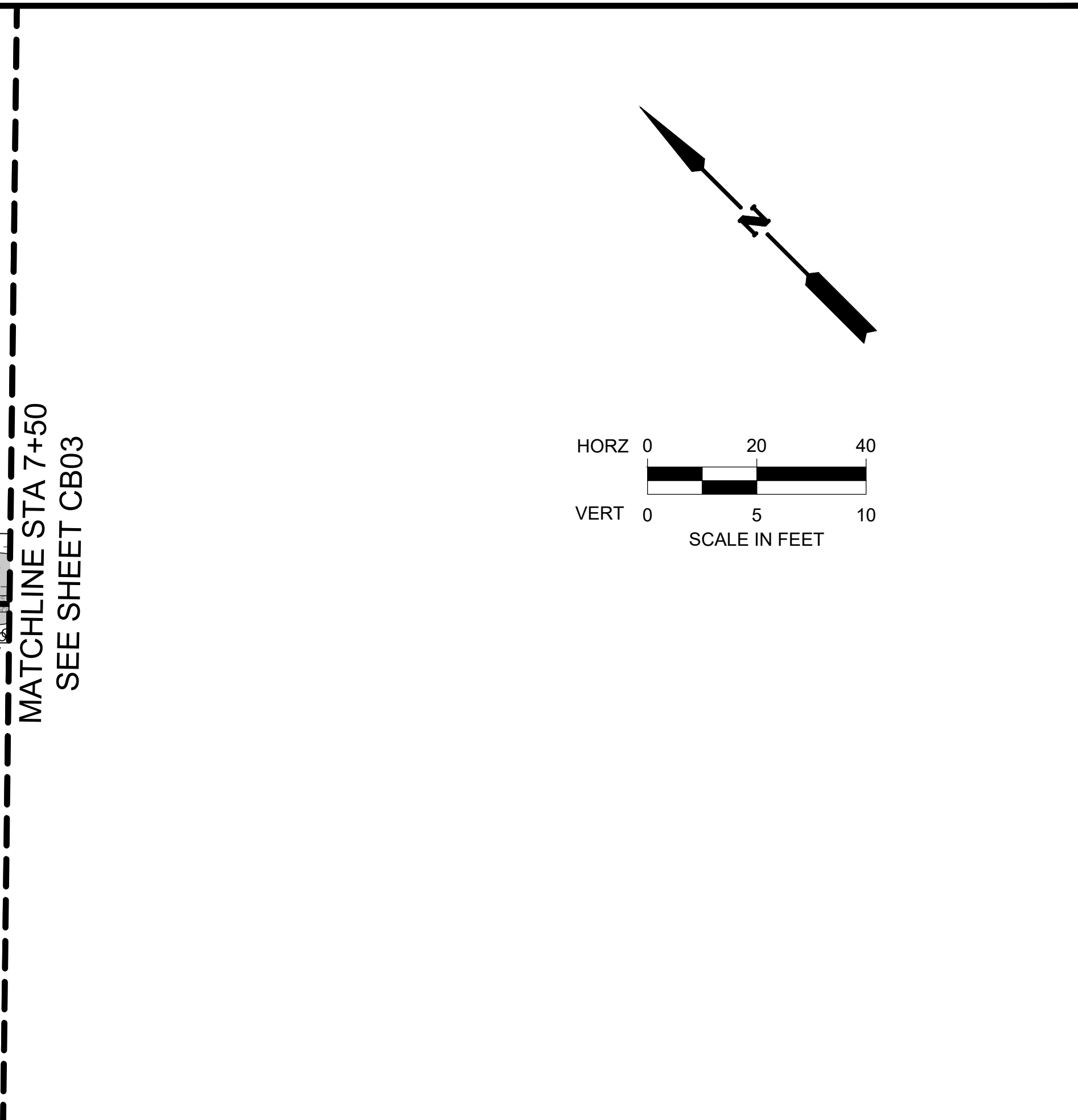
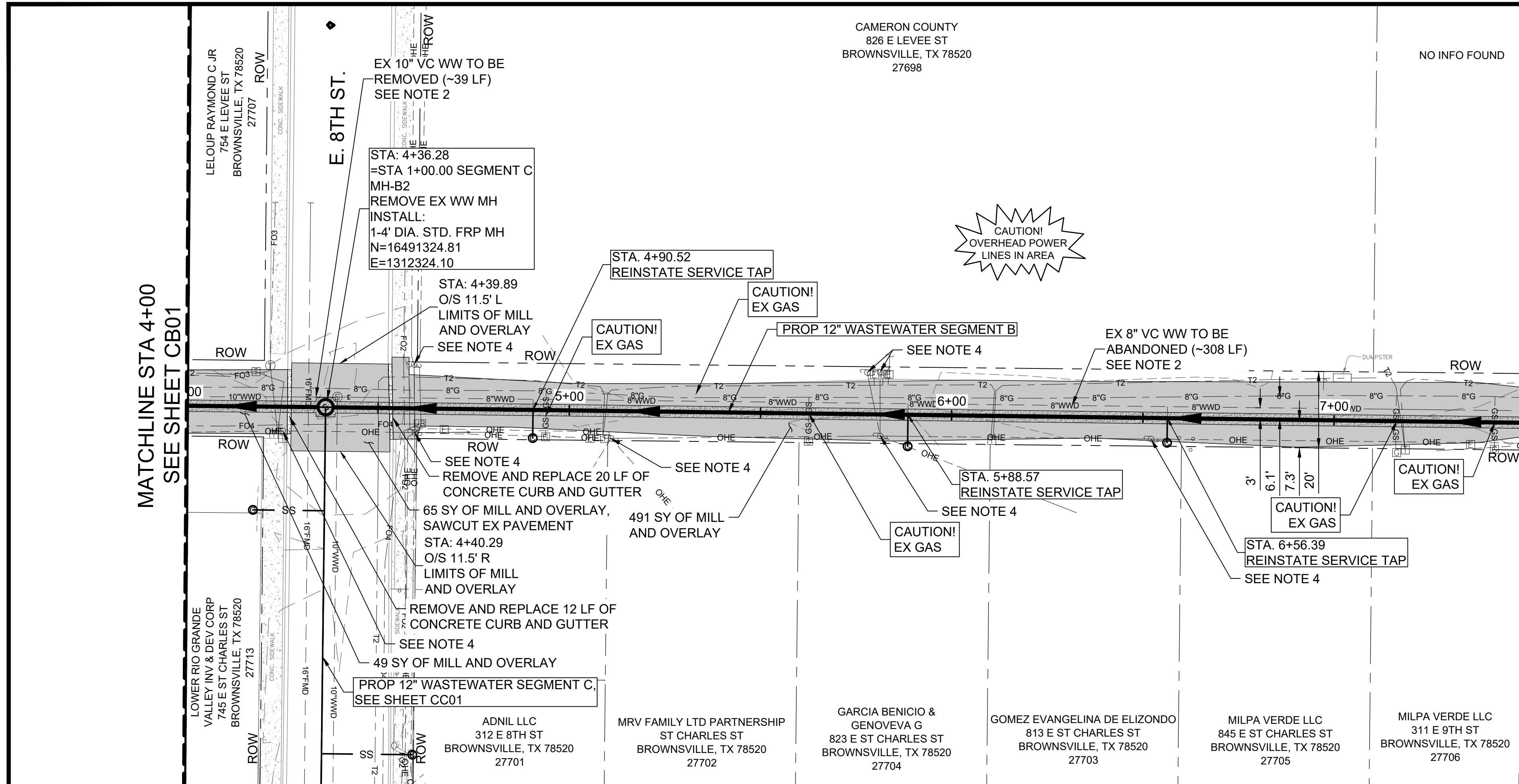
BROWNVILLE PUBLIC UTILITIES BOARD  
 PROJECT 1: DOWNTOWN WW IMPROVEMENTS  
 SEGMENT B  
 PLAN AND PROFILE  
 BEGIN SEGMENT B TO STA 4+00

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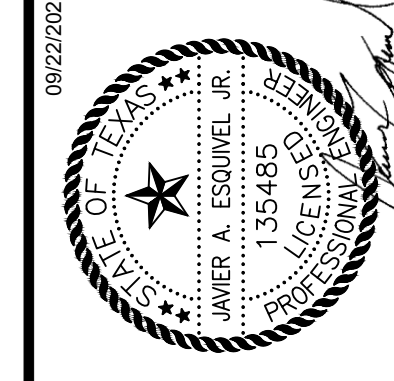
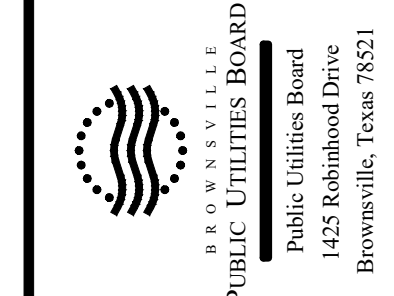
DESIGN: GWM
DRAWN: GWM
REVIEW: JAE
STV: BPUB2200025.01
CLIENT: XXXX

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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.



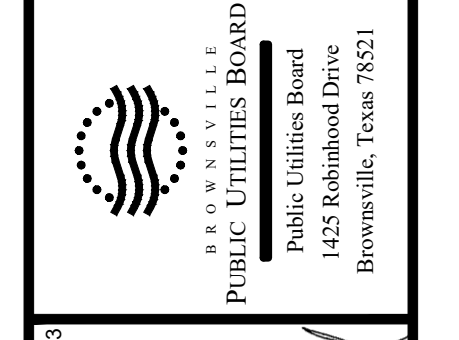
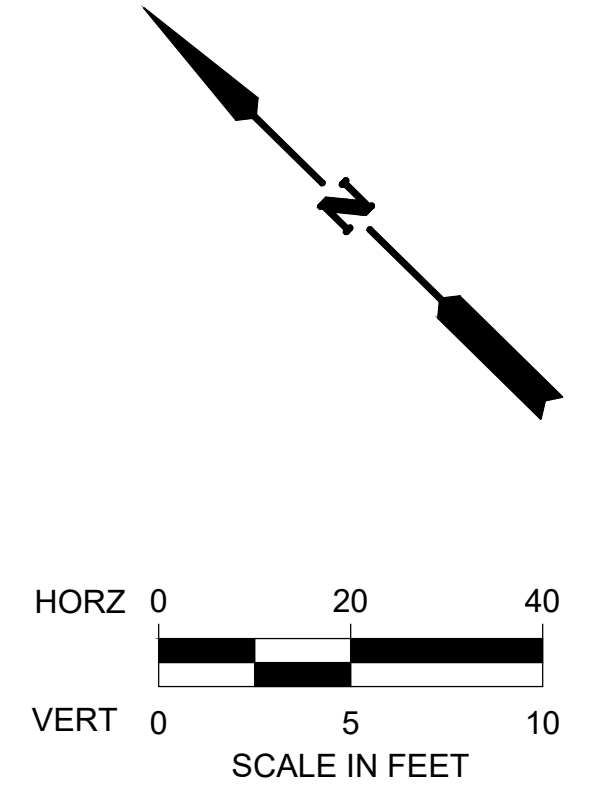
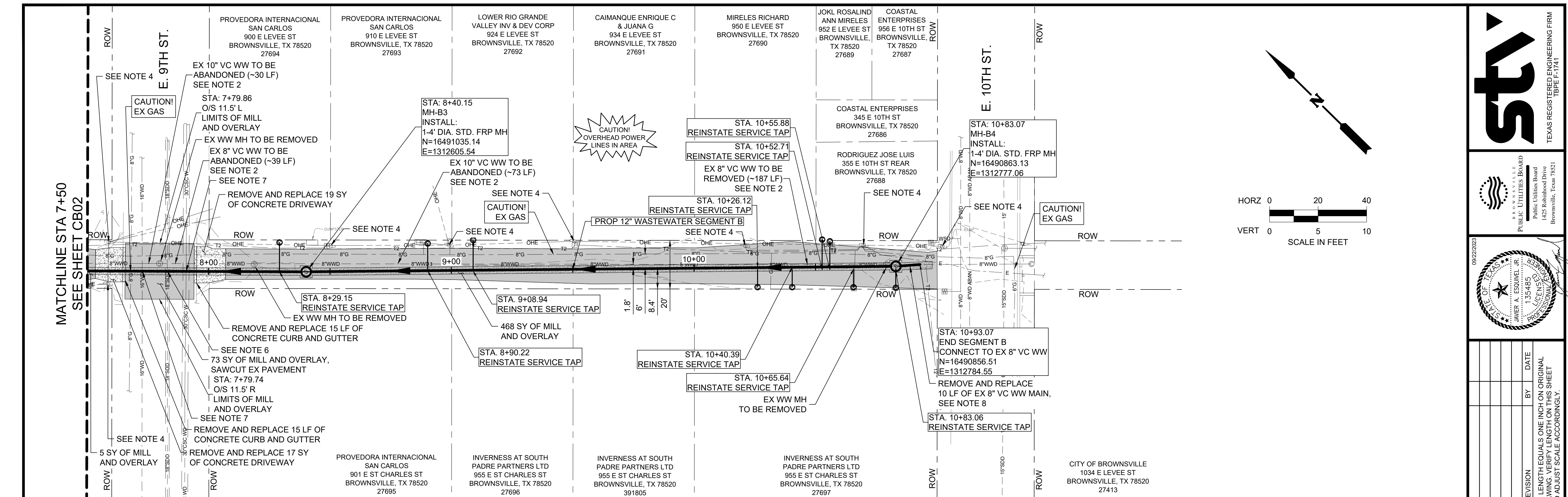
NO.	REVISION	BY	DATE

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

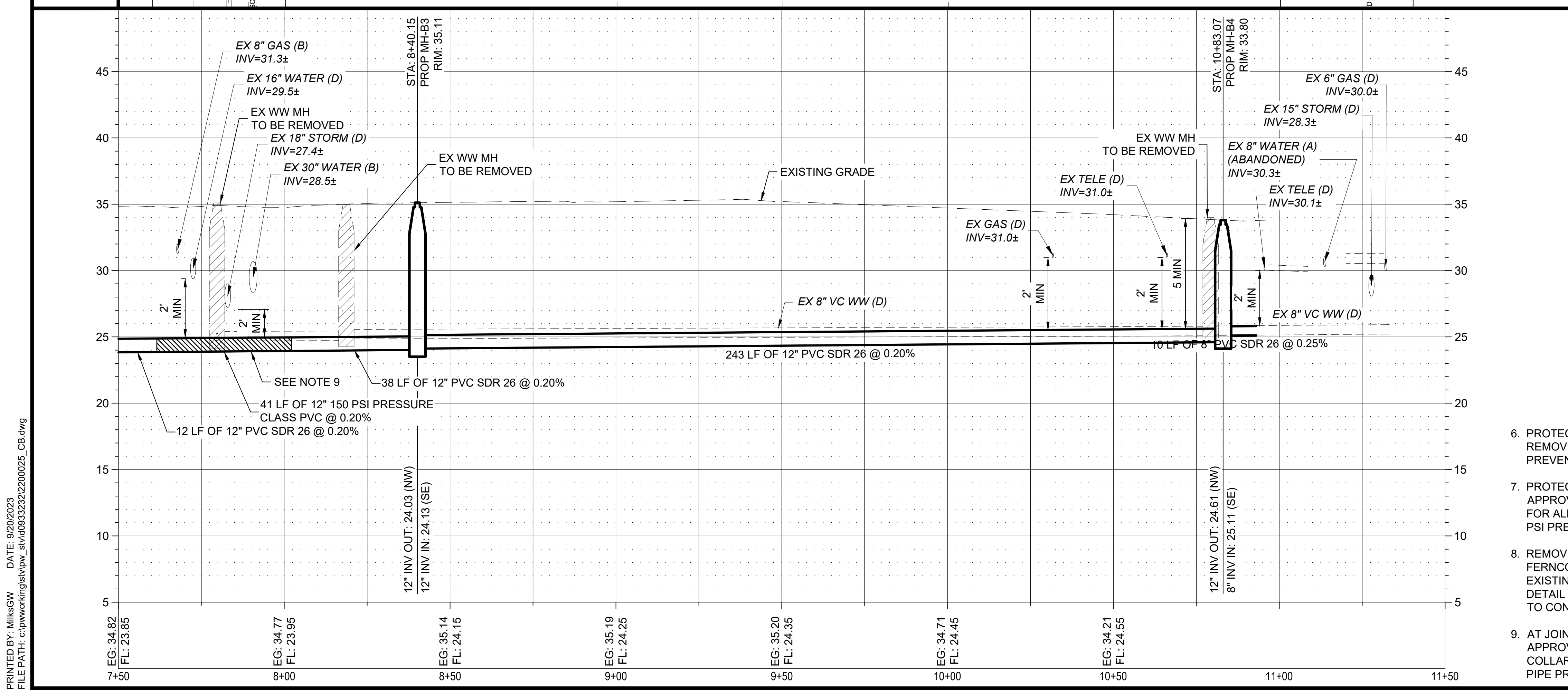
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 DRAWN: GWM  
 REVIEW: JAE  
 STV: BPUB2200025.01  
 CLIENT: XXXX

SHEET  
 CB02



NO.	REVISION	BY	DATE

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

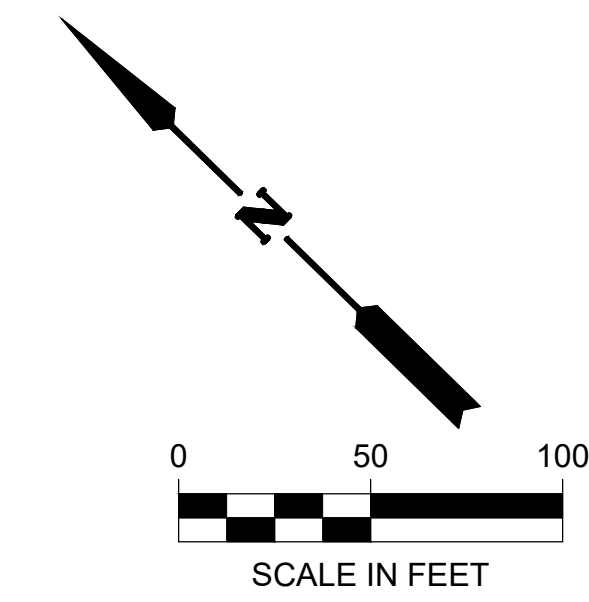
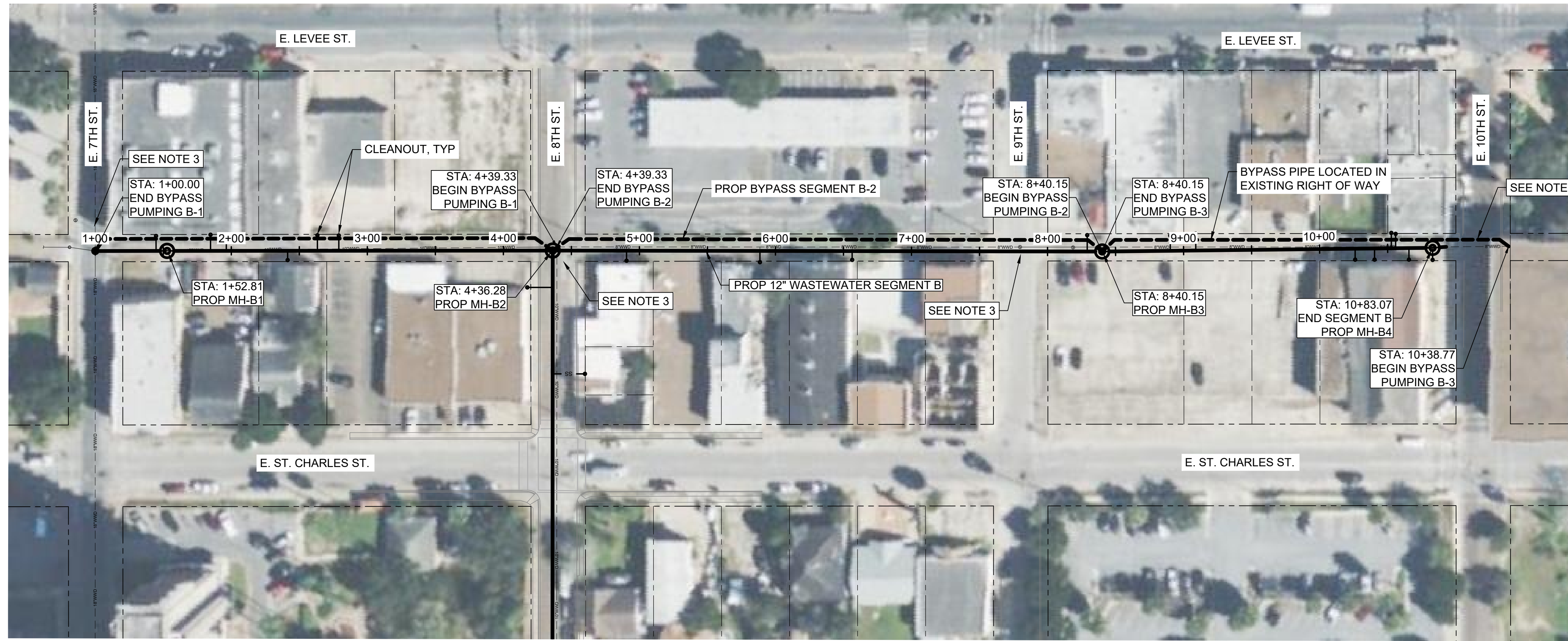


- NOTES:
- SEWER SLOPES FOR THIS SEGMENT ARE MINIMUM ALLOWABLE VALUES. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR MAINTAINING VERTICAL ALIGNMENT. BPUB MAY MEASURE INVERT ELEVATIONS OF ALL MANHOLES FOR QUALITY CONTROL PURPOSES. CONTRACTOR SHALL ALLOW AT LEAST 48 HOURS FOR QUALITY CONTROL SURVEYING AND 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 15" 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.

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

DESIGN: GWM
DRAWN: GWM
REVIEW: JAE
STV: BPUB2200025.01
CLIENT: XXXX
SHEET CB03

PRINTED BY: MilksGW DATE: 9/20/2023  
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- 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  
 TBPE-F-1741

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

09/22/2023  
 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

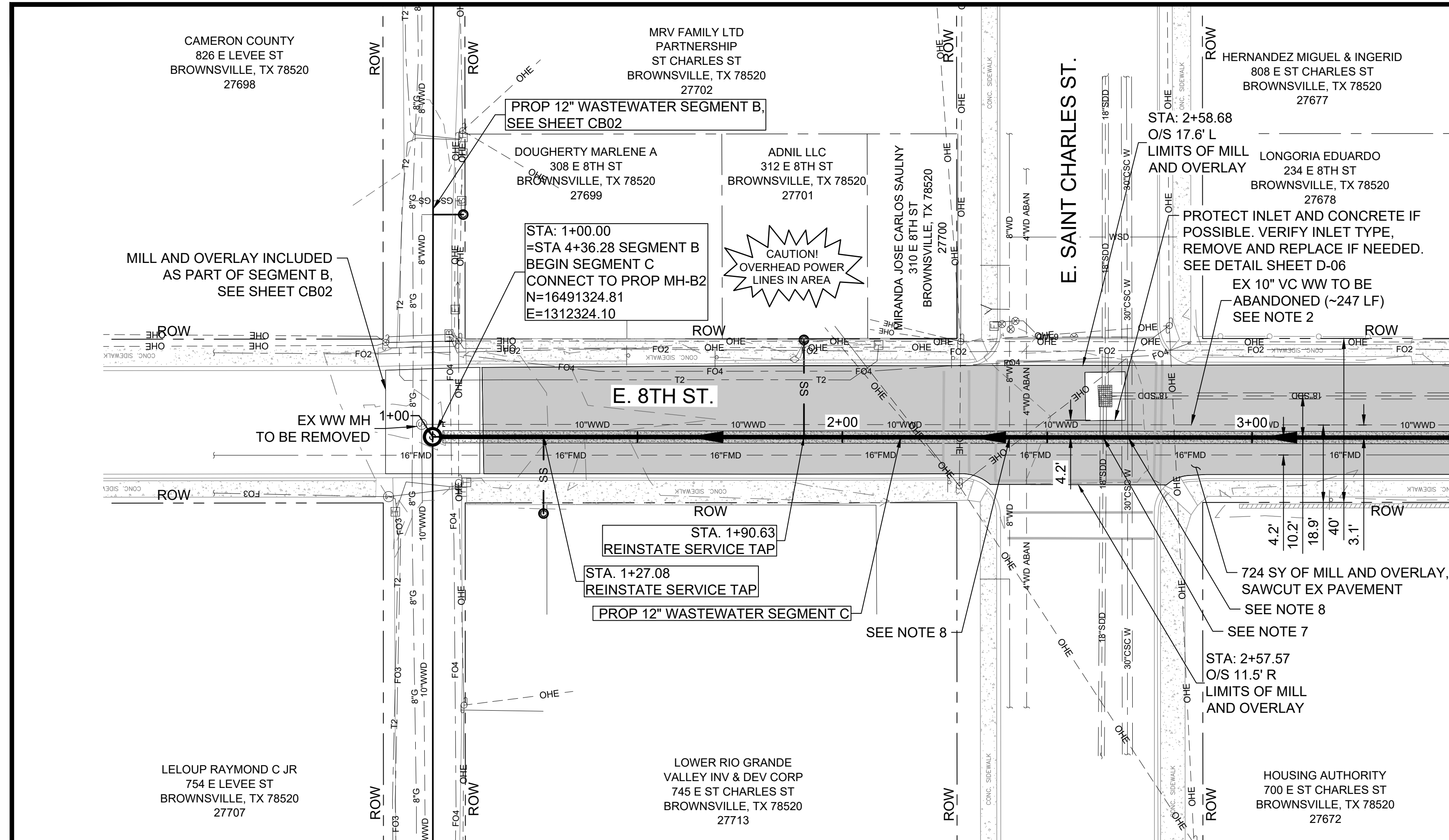
SEGMENT B  
 BYPASS PUMPING ROUTE

DESIGN:	GWM
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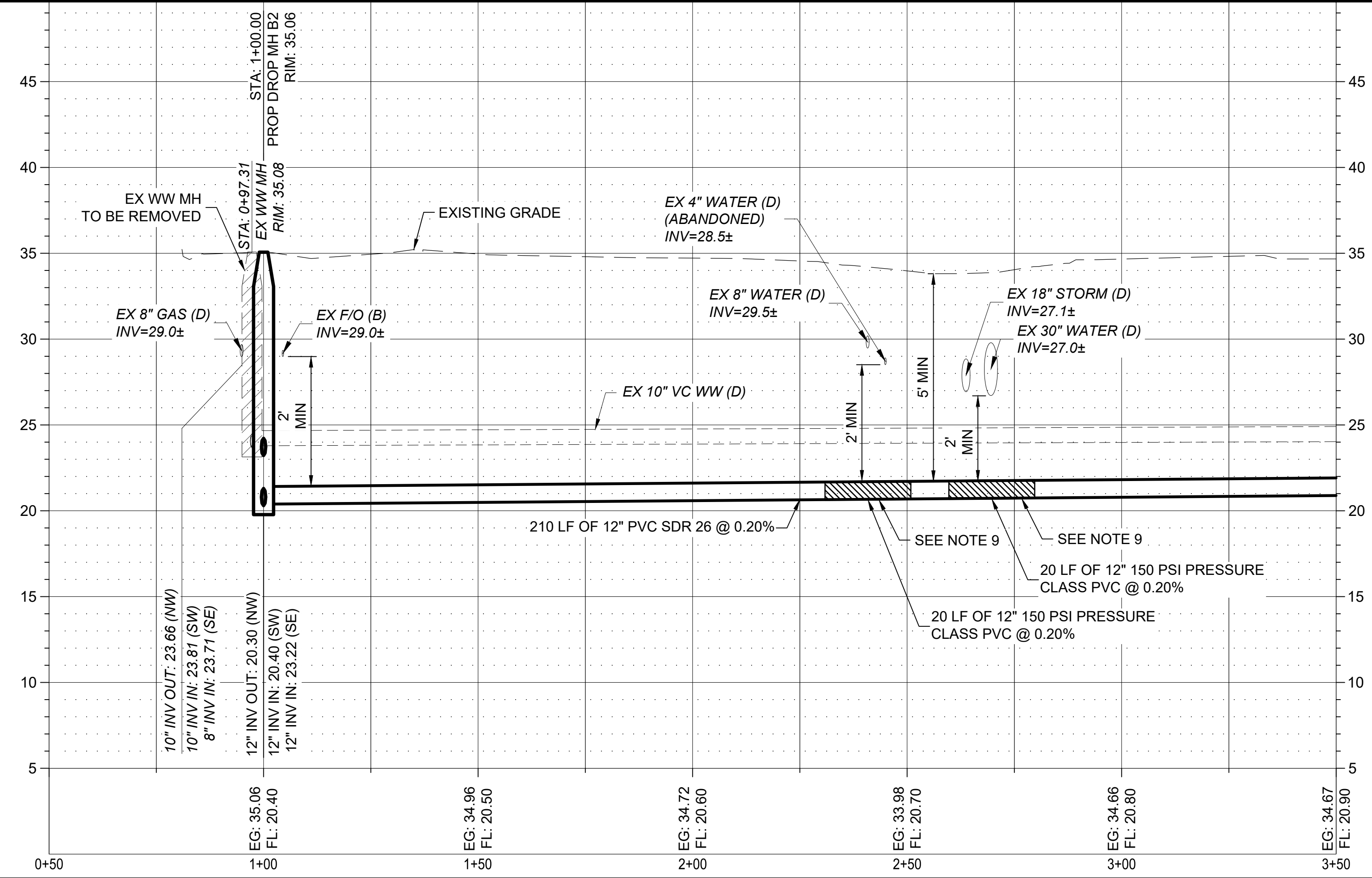
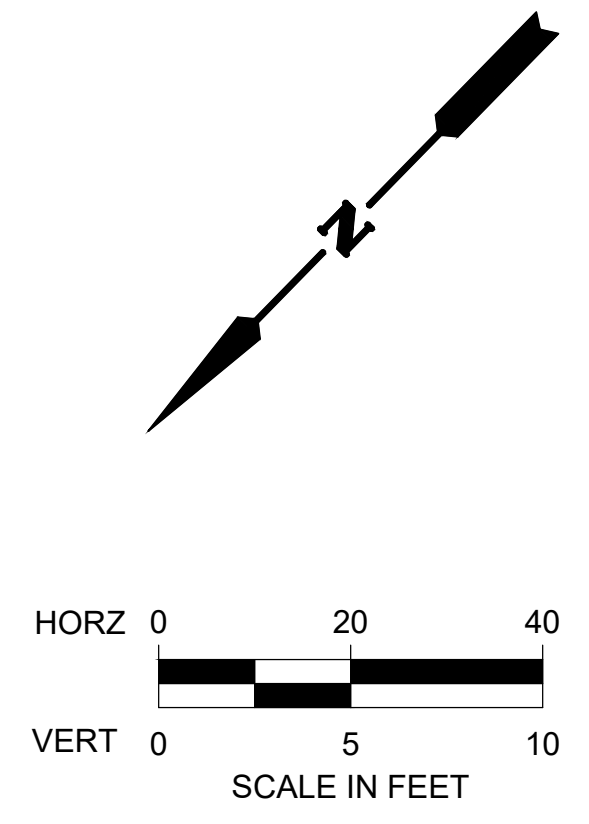
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MATCHLINE STA 3+50  
 SEE SHEET CC02



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.
- 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 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

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

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JEFFREY L. JOHNSON  
135485  
PROFESSIONAL ENGINEER  
CIVIL ENGINEERING

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NO.	REVISION	BY	DATE

---

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

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

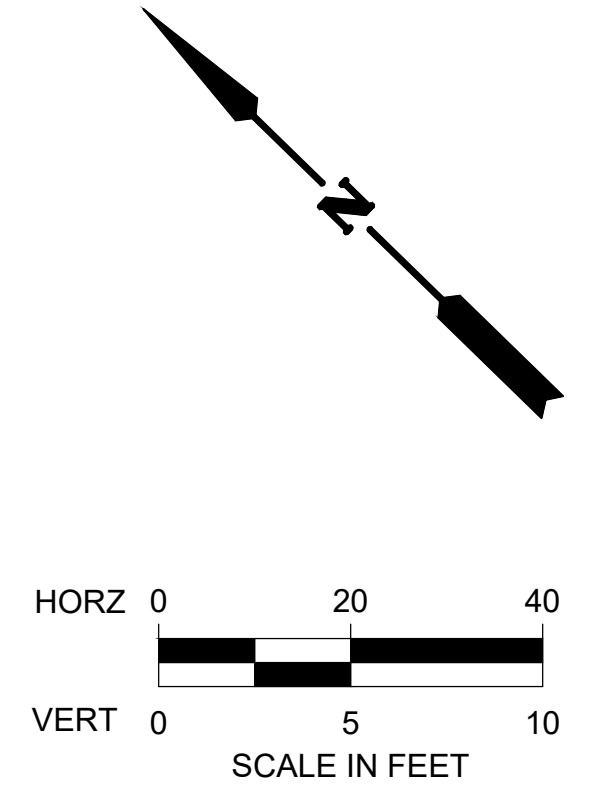
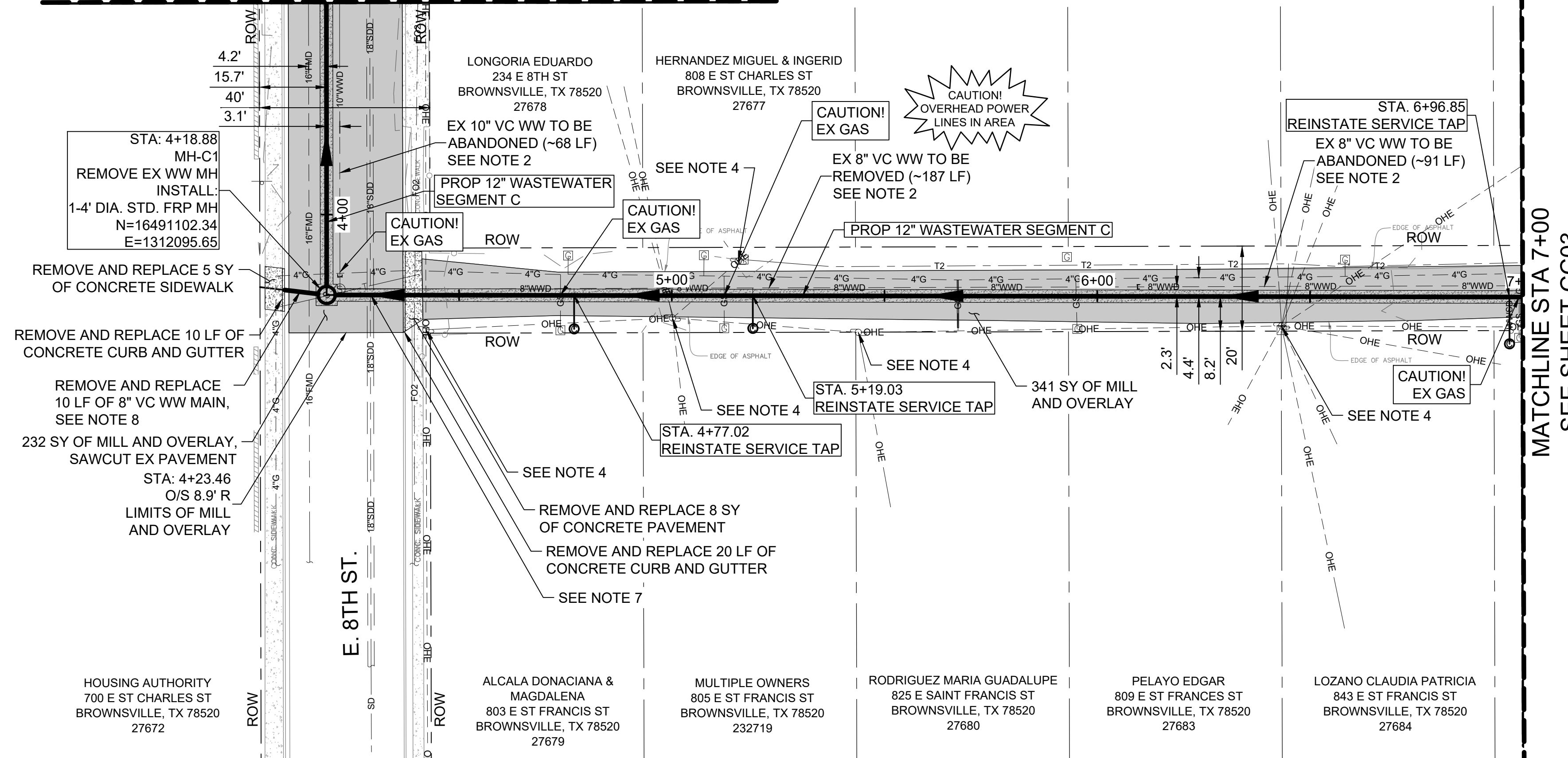
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 STV: BPUB2200025.01  
 CLIENT: XXXX

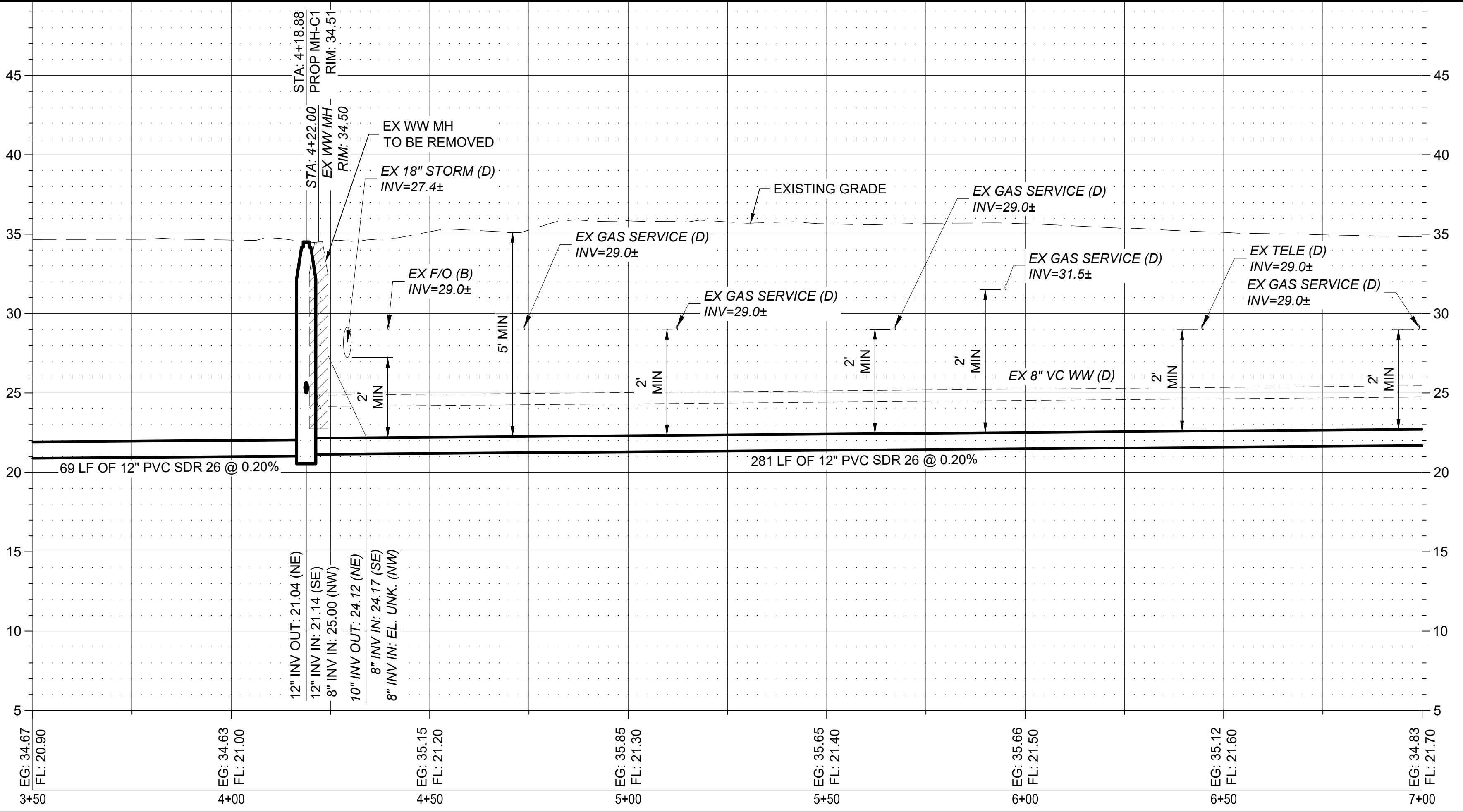
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SHEET  
 CC01

MATCHLINE STA 3+50  
SEE SHEET CC01

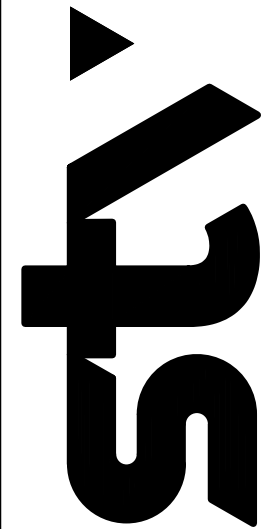


MATCHLINE STA 7+00  
SEE SHEET CC03



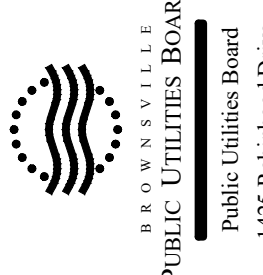
- NOTES:
- SEWER SLOPES FOR THIS SEGMENT ARE MINIMUM ALLOWABLE VALUES. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR MAINTAINING VERTICAL ALIGNMENT. BPUB MAY MEASURE INVERT ELEVATIONS OF ALL MANHOLES FOR QUALITY CONTROL PURPOSES. CONTRACTOR SHALL ALLOW AT LEAST 48 HOURS FOR QUALITY CONTROL SURVEYING AND 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 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 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.
  - 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.

PRINTED BY: MilksGW DATE: 9/20/2023  
FILE PATH: c:\pwworking\stvw\_siv\d0933232\200025\_cc.dwg




TEXAS REGISTERED ENGINEERING FIRM  
TYPE F-1741

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

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09/22/2023  
J. LOZANO  
135485  
LICENSED PROFESSIONAL ENGINEER  
CIVIL ENGINEERING

---

NO.	REVISION	BY	DATE

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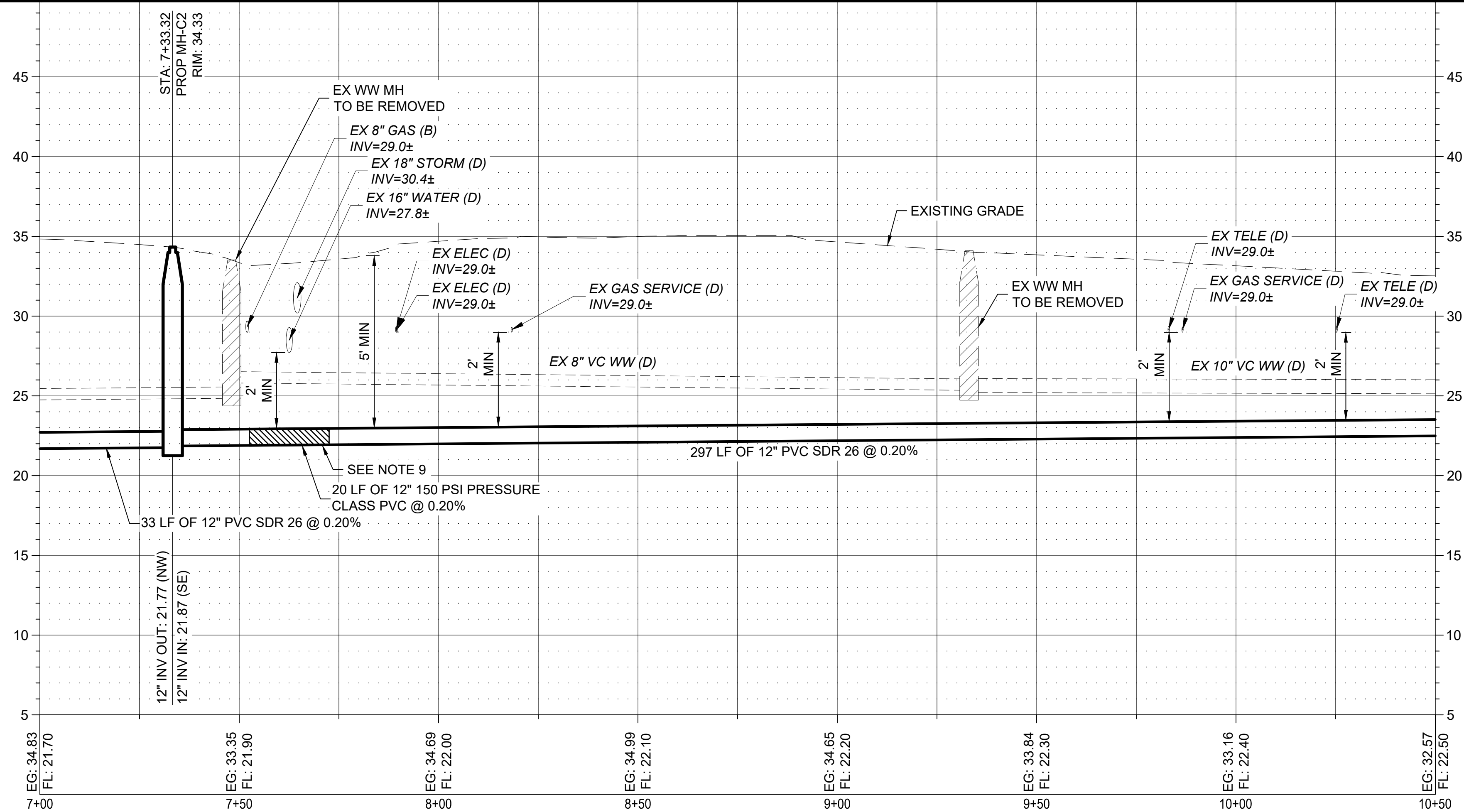
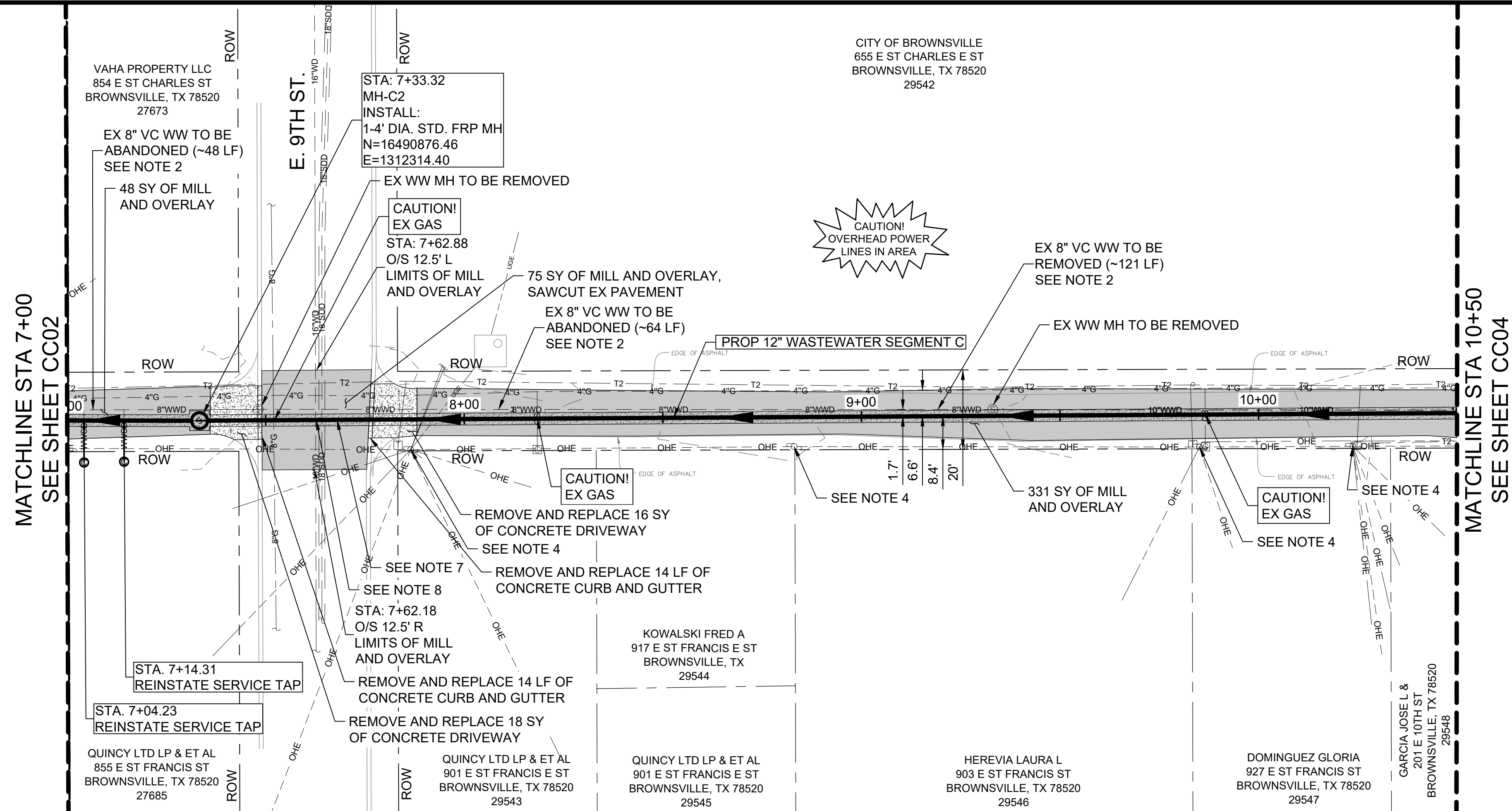
BROWNVILLE PUBLIC UTILITIES BOARD  
PROJECT 1: DOWNTOWN WW IMPROVEMENTS  
SEGMENT C  
PLAN AND PROFILE  
STA 3+50 TO STA 7+00

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

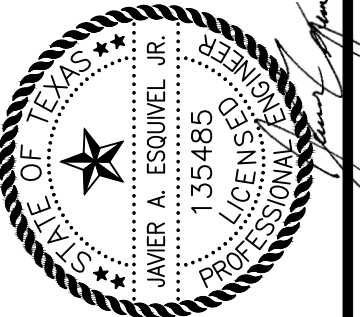
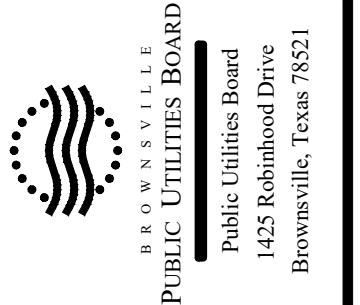
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SHEET  
CC02



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.
- 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 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.



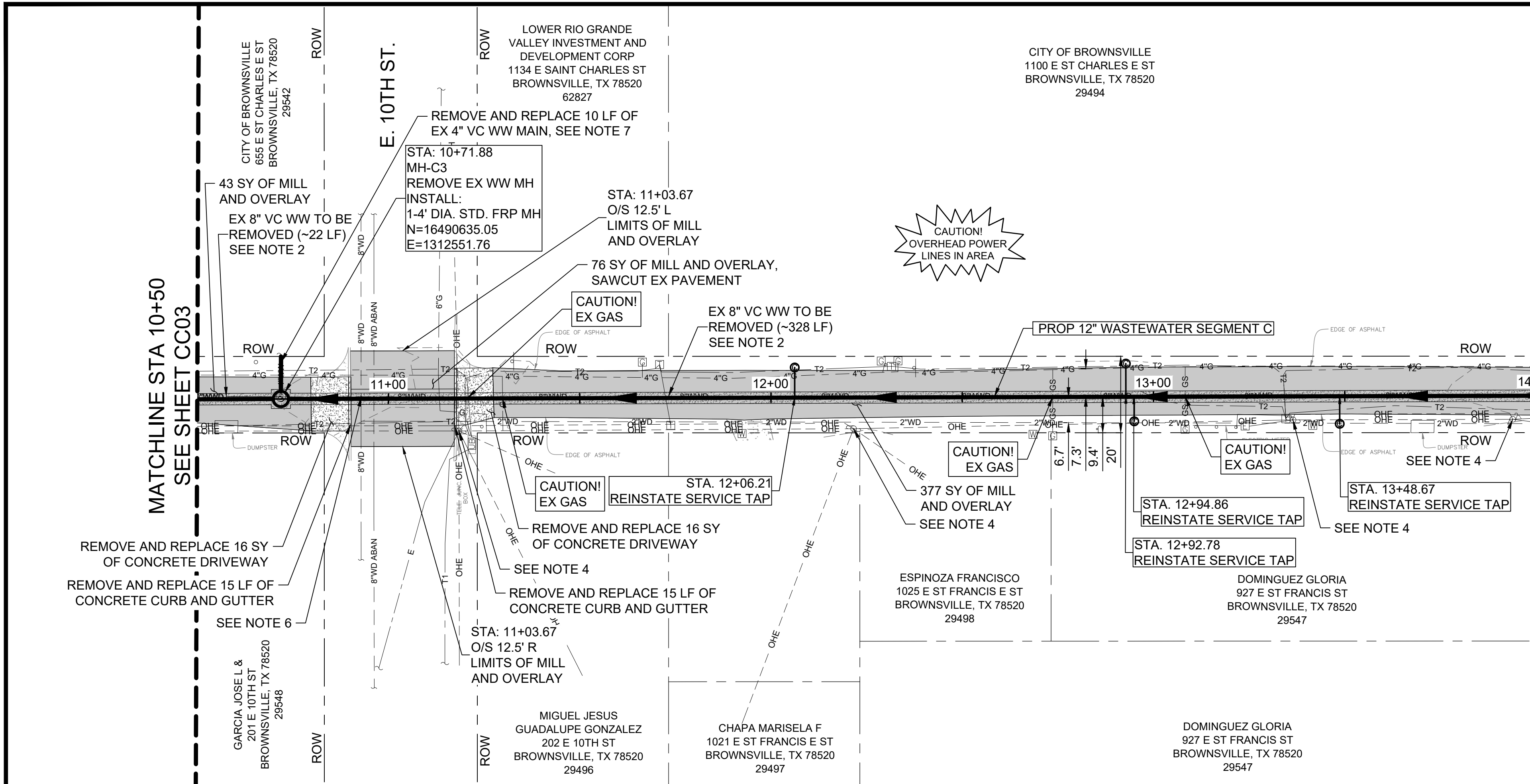
NO.	REVISION	BY	DATE

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

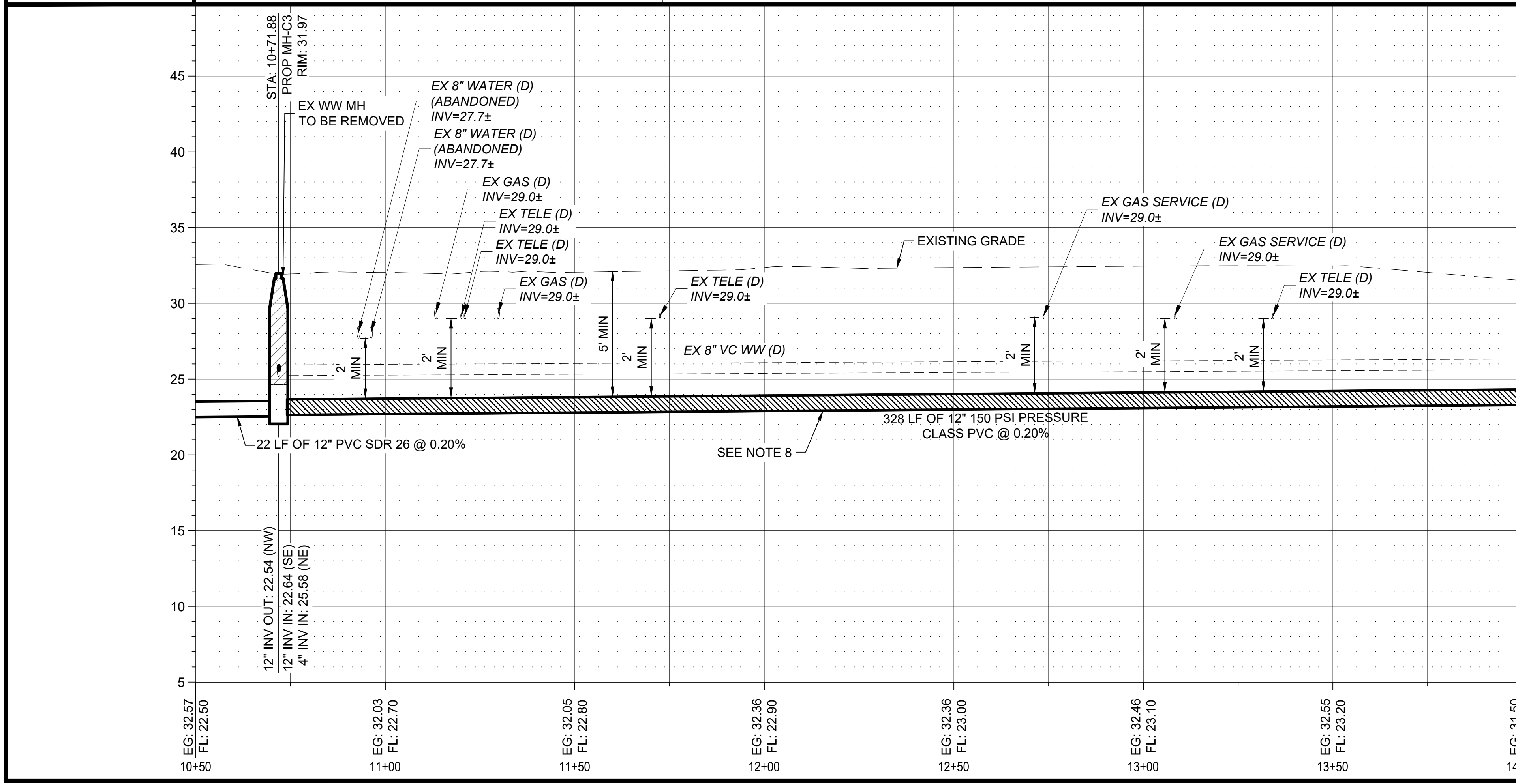
DESIGN: GWM  
 DRAWN: GWM  
 REVIEW: JAE  
 STV: BPUB2200025.01  
 CLIENT: XXXX

SHEET  
 CC03



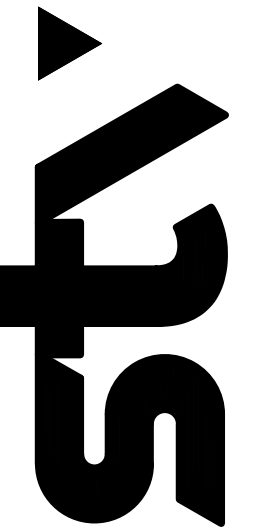
MATCHLINE STA 10+50  
SEE SHEET CC03

MATCHLINE STA 14+00  
SEE SHEET CC05

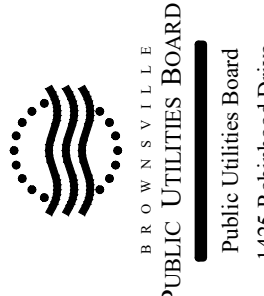


NOTES:


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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.
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- 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.



TEXAS REGISTERED ENGINEERING FIRM  
 TBPE F-1741



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



09/22/2023  
 135485  
 PROFESSIONAL ENGINEER  
 CIVIL  
 STATE OF TEXAS

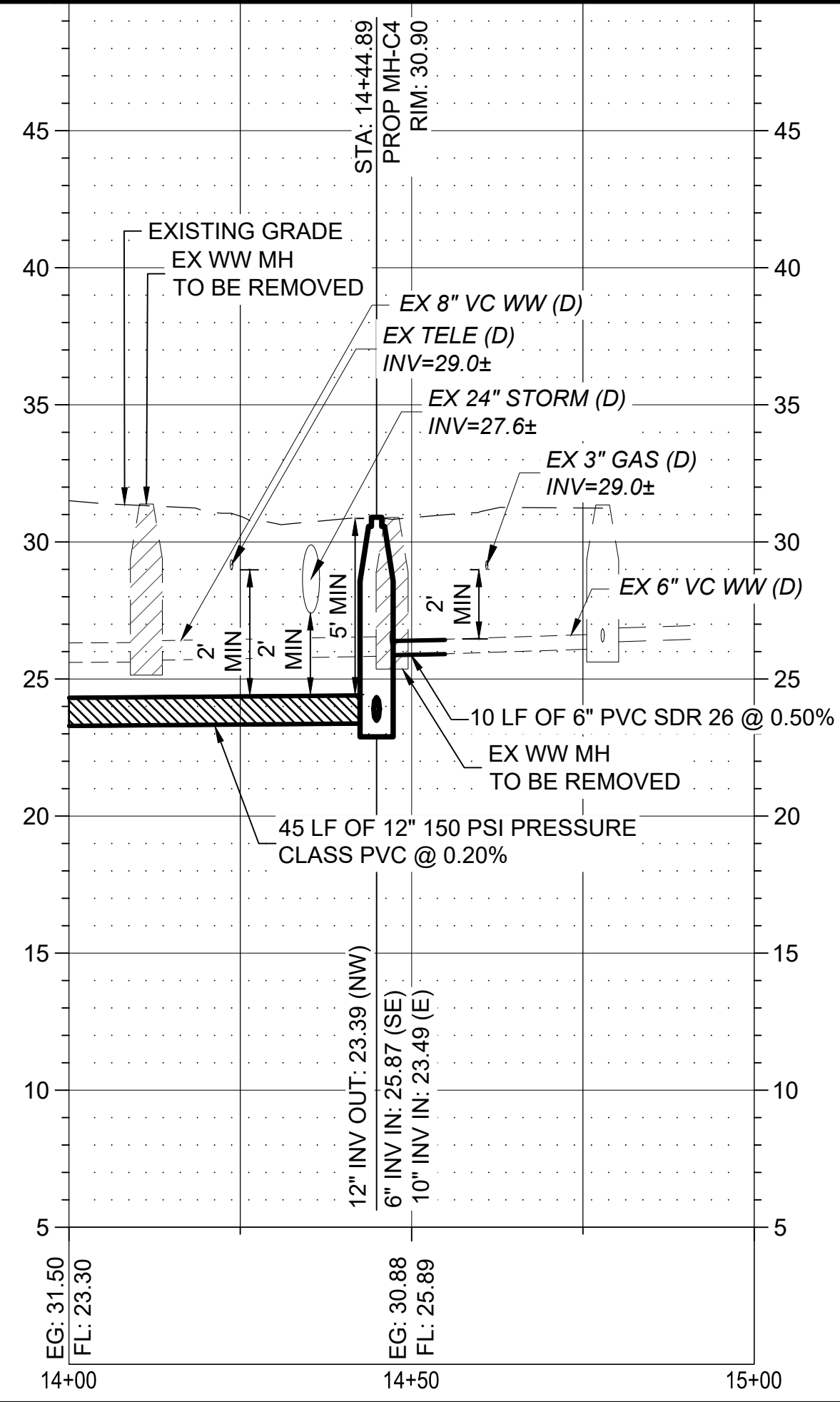
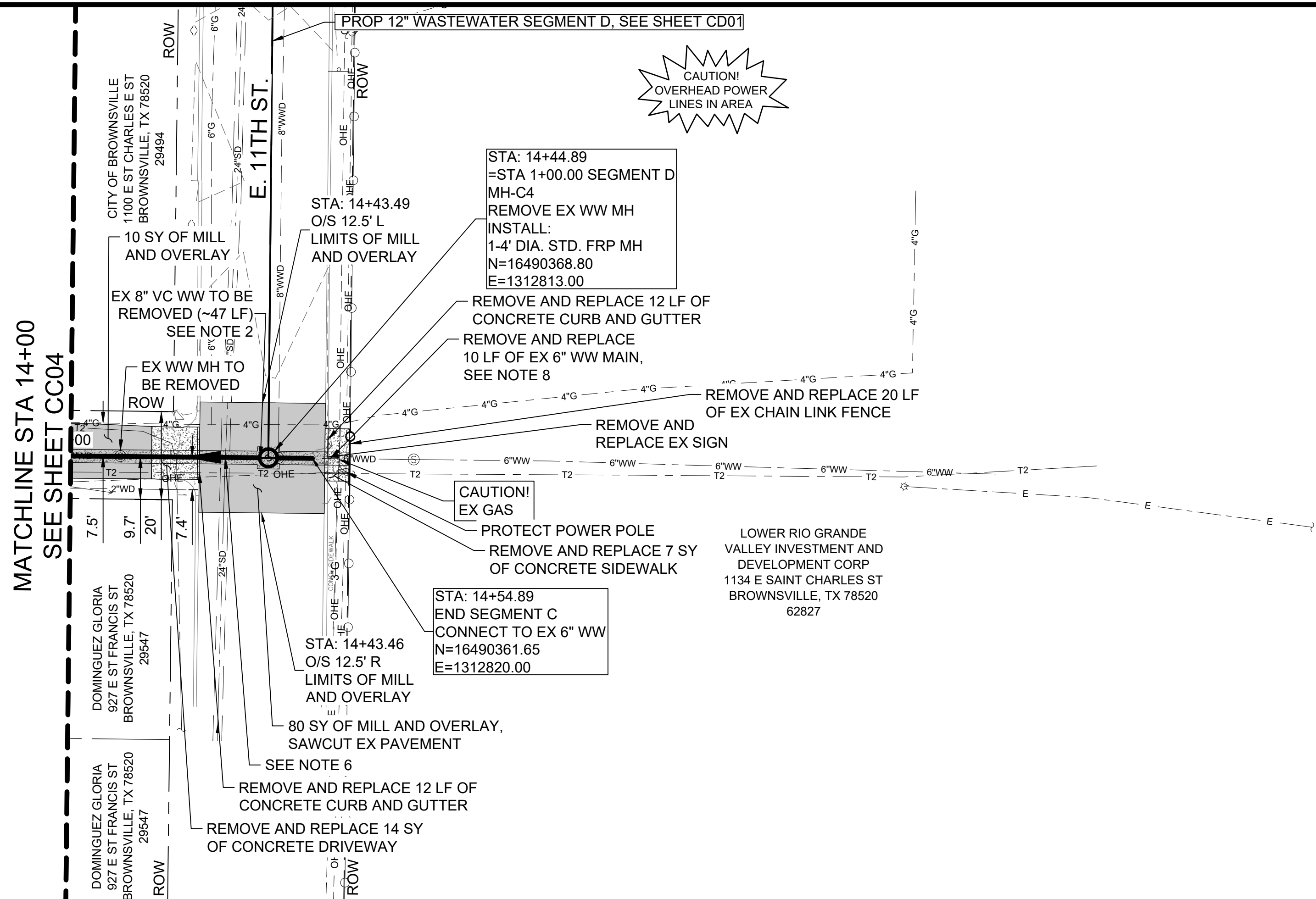
NO.	REVISION	BY	DATE

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

BROWNVILLE PUBLIC UTILITIES BOARD  
 PROJECT 1: DOWNTOWN WW IMPROVEMENTS  
 SEGMENT C  
 PLAN AND PROFILE  
 STA 10+50 TO STA 14+00

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

SHEET  
 CC04



- 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 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.

**STV**  
TEXAS REGISTERED ENGINEERING FIRM  
TYPE F-1741

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

09/22/2023  
135485  
PROFESSIONAL ENGINEER  
MILKSGW

NO.	REVISION	BY	DATE

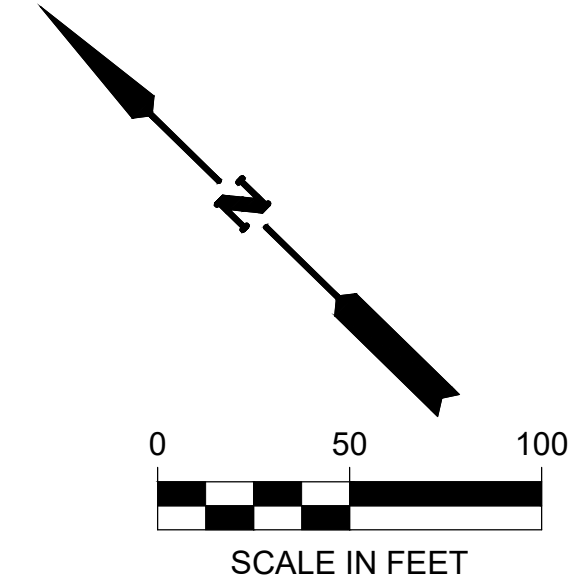
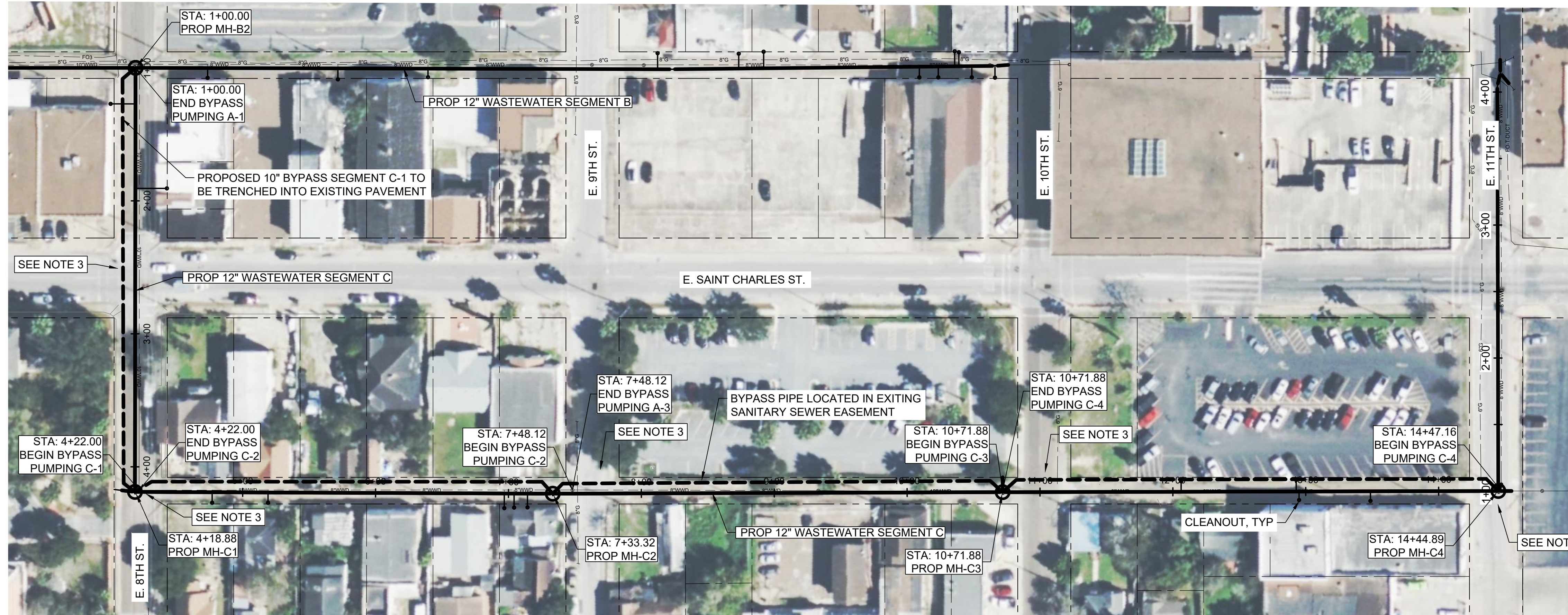
VERIFY SCALE BAR LENGTH EQUALS ONE INCH ON ORIGINAL DRAWING. VERIFY LENGTH ON THIS SHEET AND ADJUST SCALE ACCORDINGLY.

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

SHEET  
**CC05**

BROWNVILLE PUBLIC UTILITIES BOARD  
PROJECT 1: DOWNTOWN WW IMPROVEMENTS

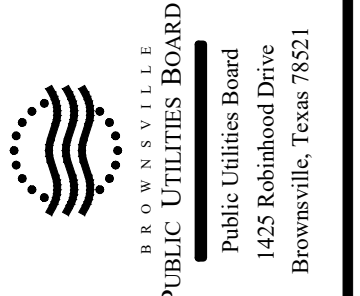
SEGMENT C  
PLAN AND PROFILE  
STA 14+00 TO END SEGMENT C



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



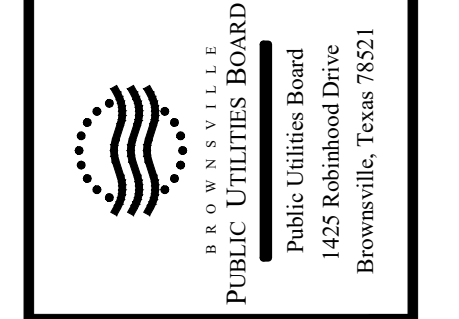
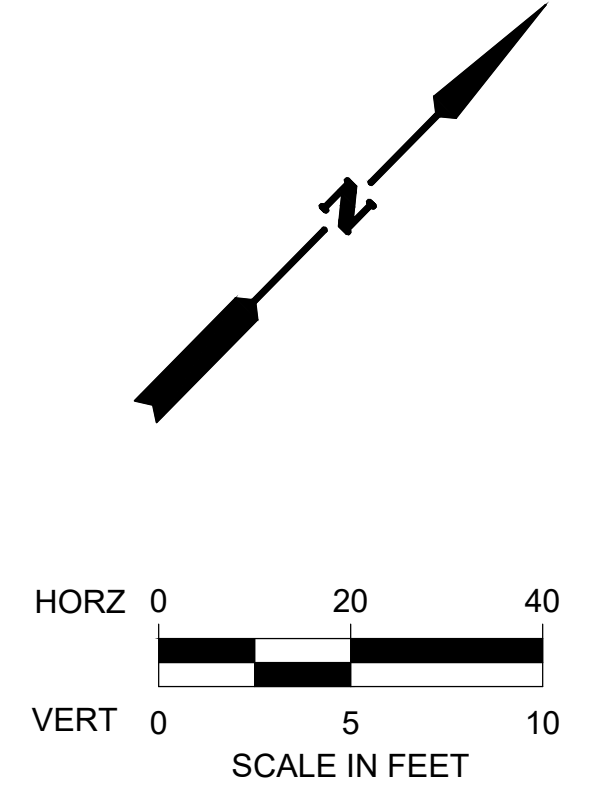
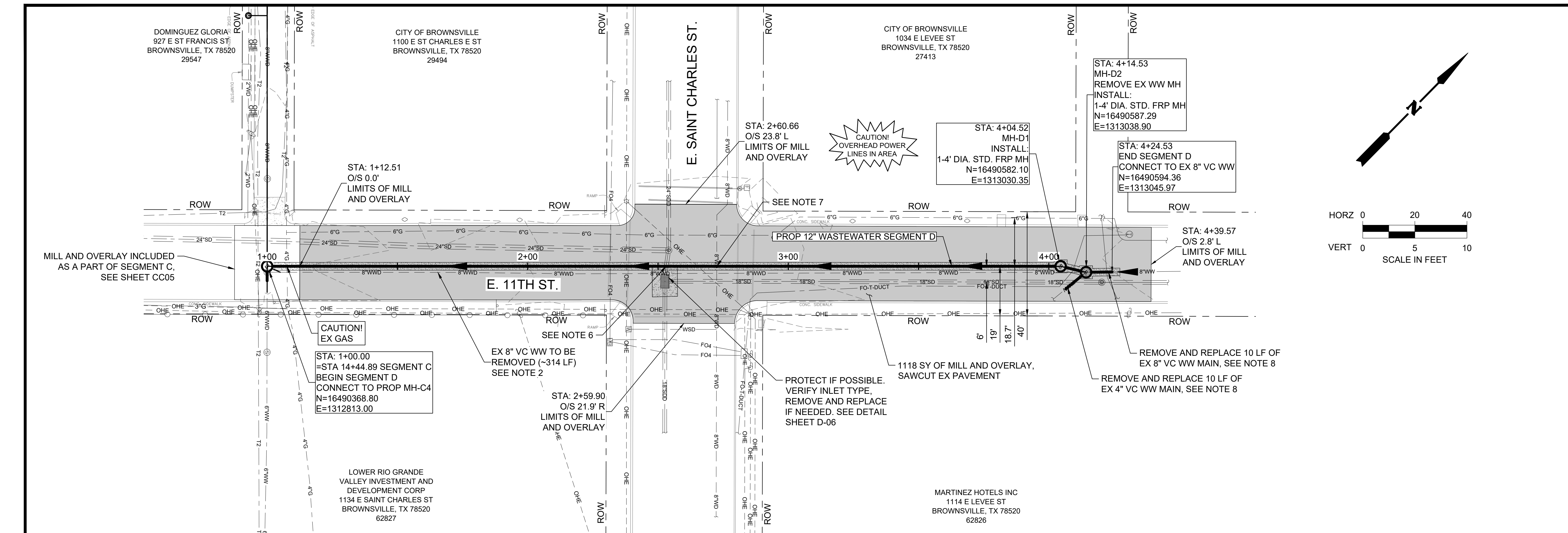
NO.	REVISION	BY	DATE

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  
 BYPASS PUMPING ROUTE

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

SHEET  
 CC06



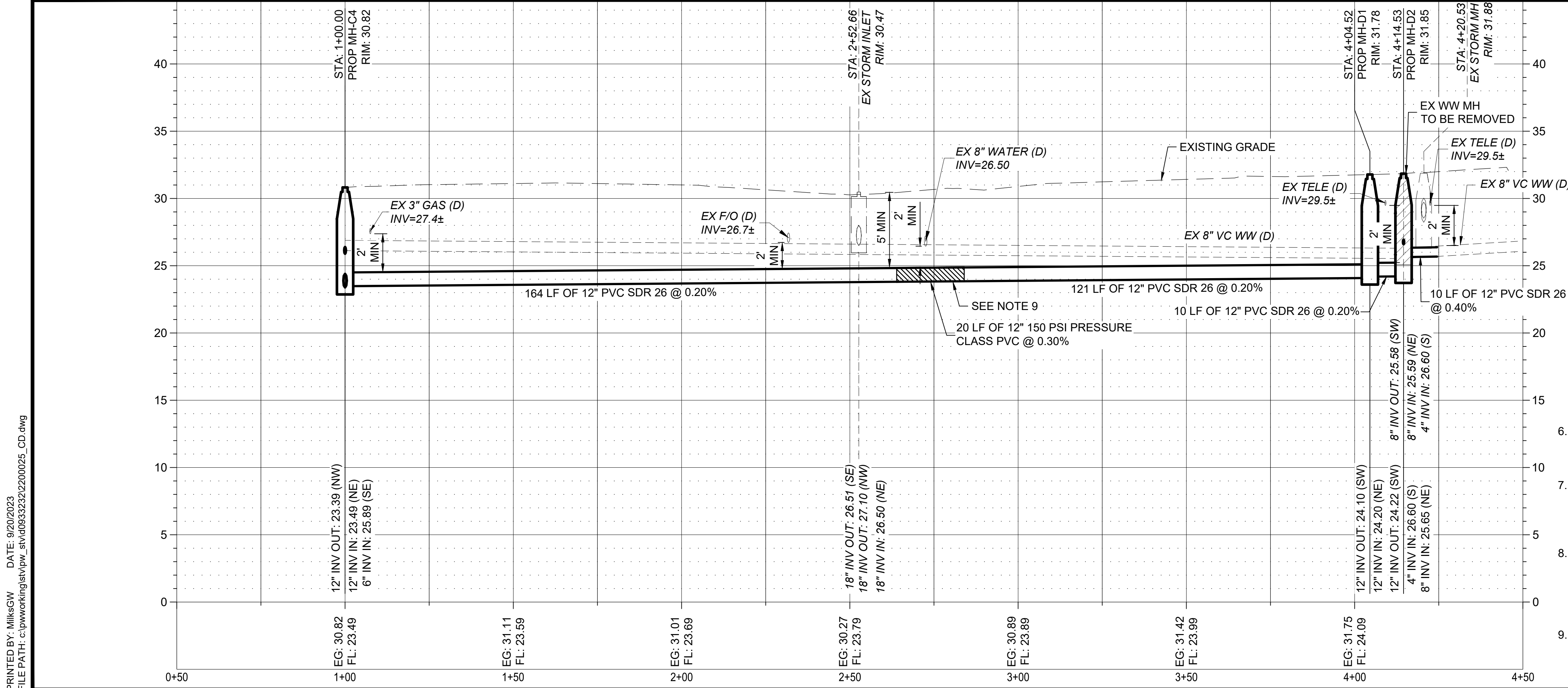
NO.	REVISION	DATE

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**

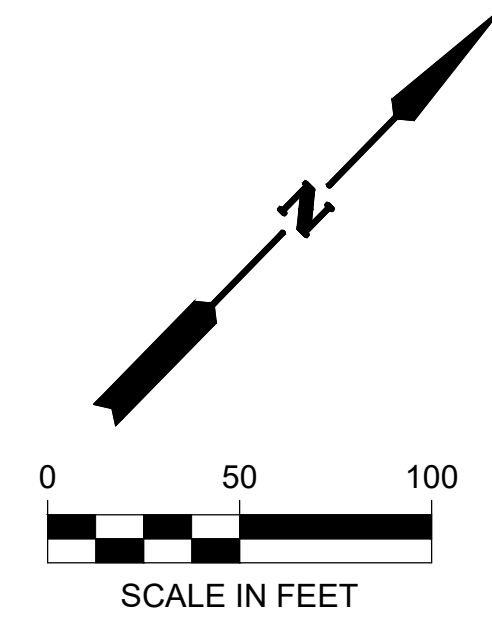
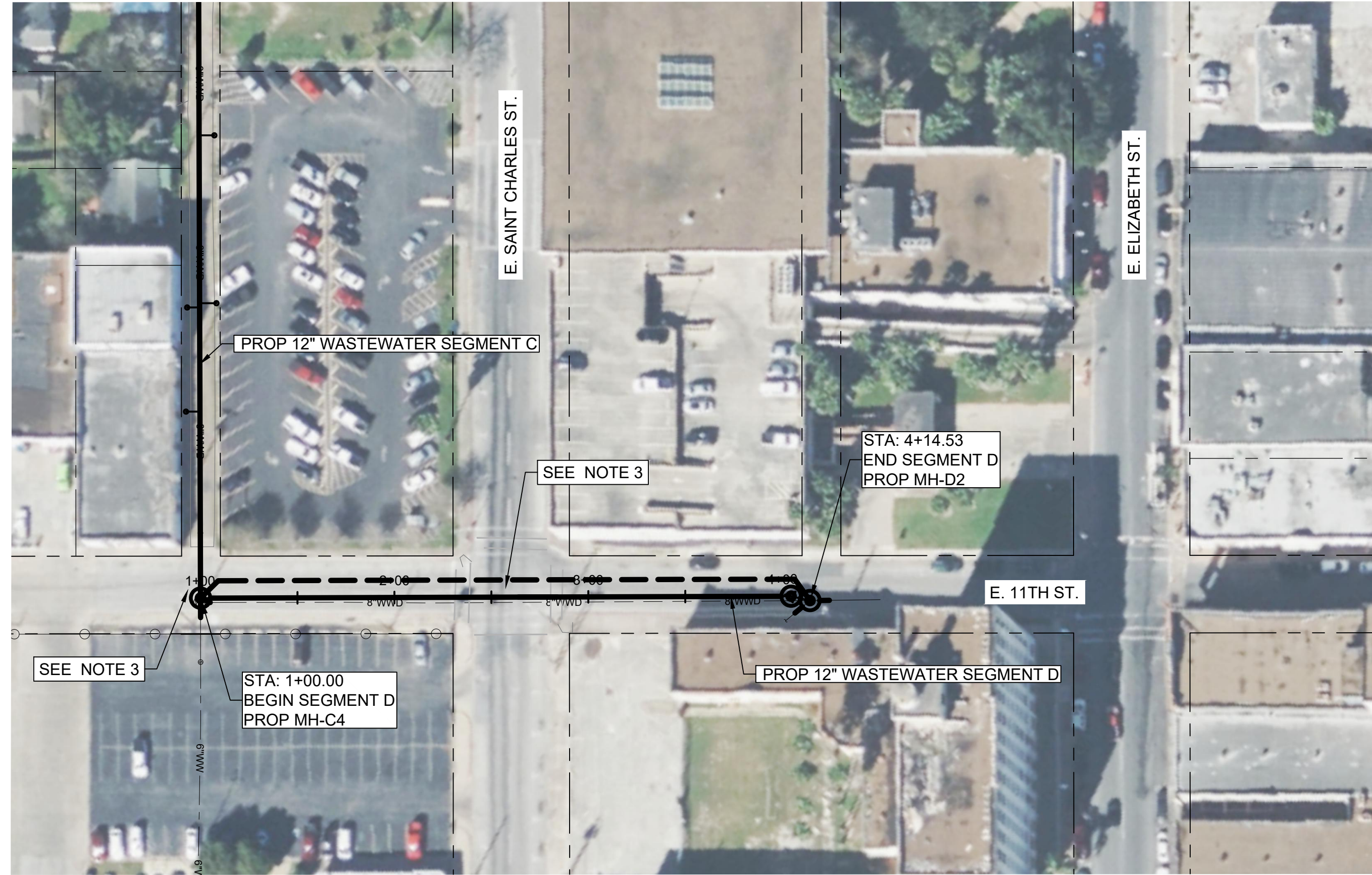
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 REVIEW: JAE  
 STV: BPUB2200025.01  
 CLIENT: XXXX

SHEET  
**CD01**



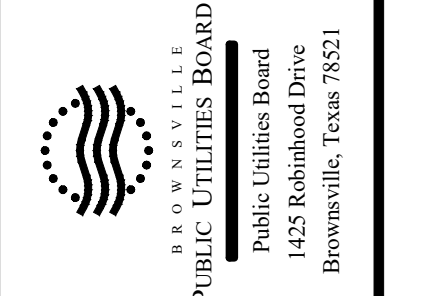
- NOTES:
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PRINTED BY: MilksGW DATE: 9/20/2023  
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- NOTES:
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BYPASS FLOW RATES- SEGMENT D	
MAXIMUM FLOW	252 GPM
MAXIMUM VELOCITY	1.70 FT/S



NO.	REVISION	BY	DATE

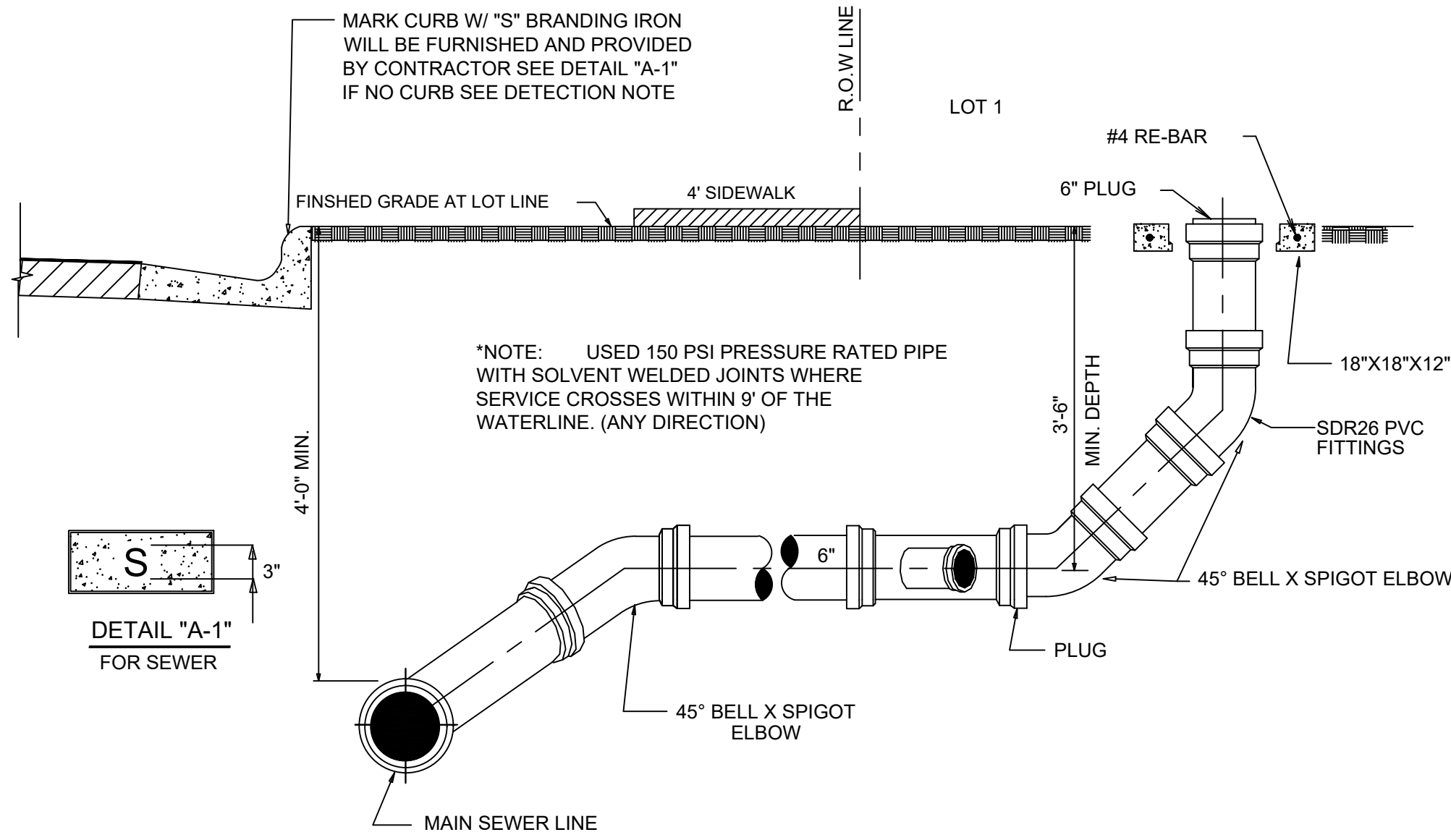
VERIFY SCALE BAR LENGTH EQUALS ONE INCH ON ORIGINAL DRAWING. VERIFY LENGTH ON THIS SHEET AND ADJUST SCALE ACCORDINGLY.

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

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

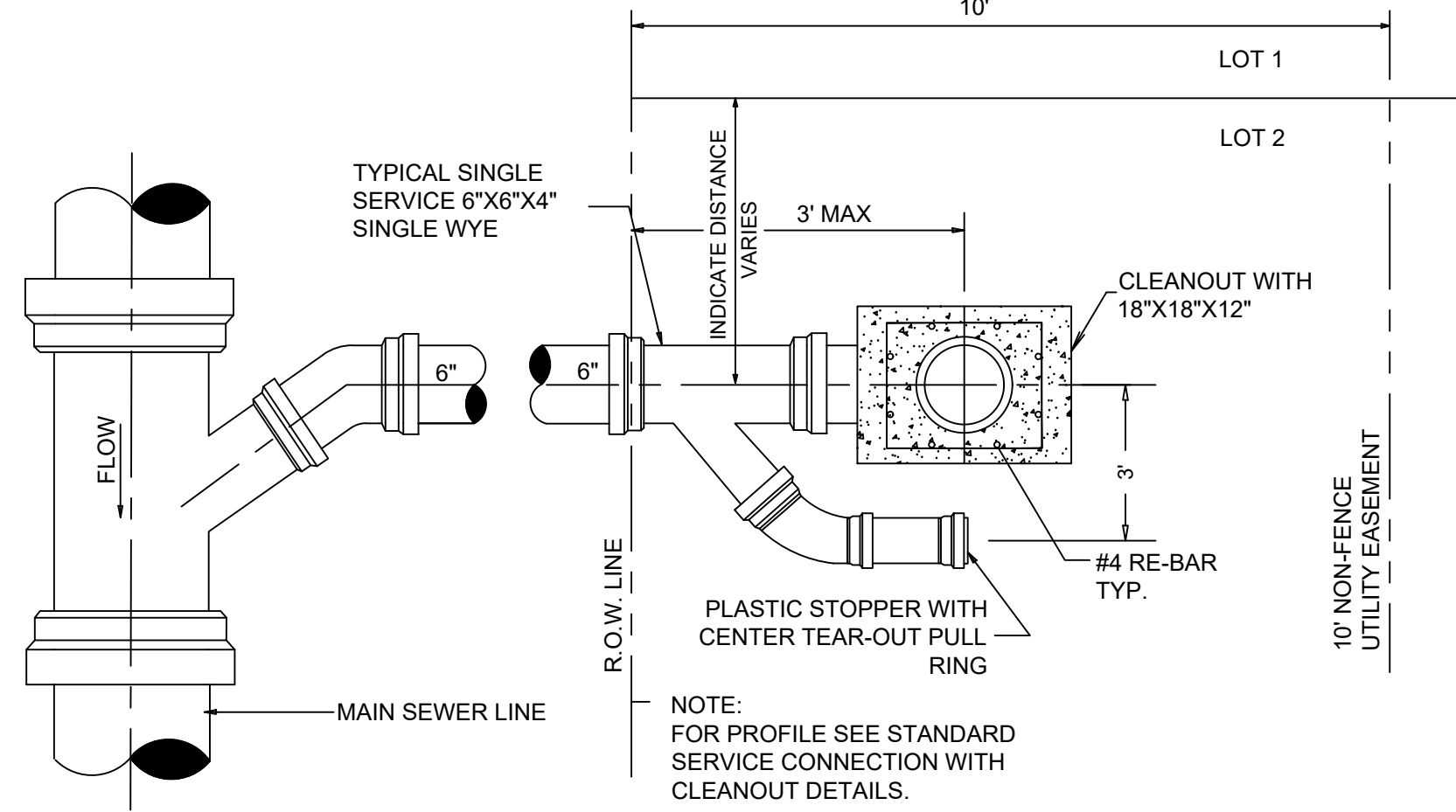
SHEET  
 CD02





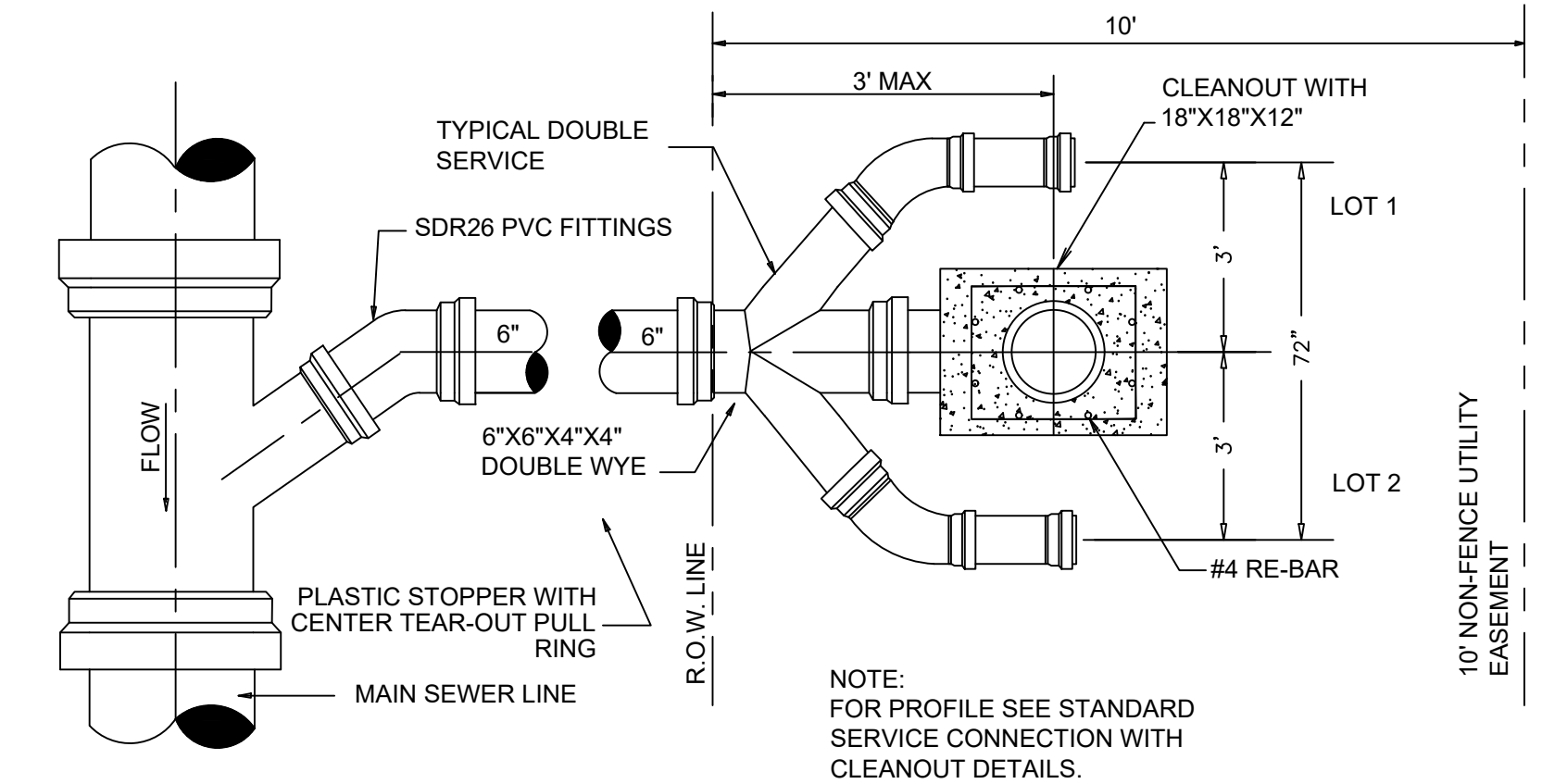
**A** TYPICAL SHORT SERVICE CONNECTION WITH STANDARD CLEANOUT  
NOT TO SCALE

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



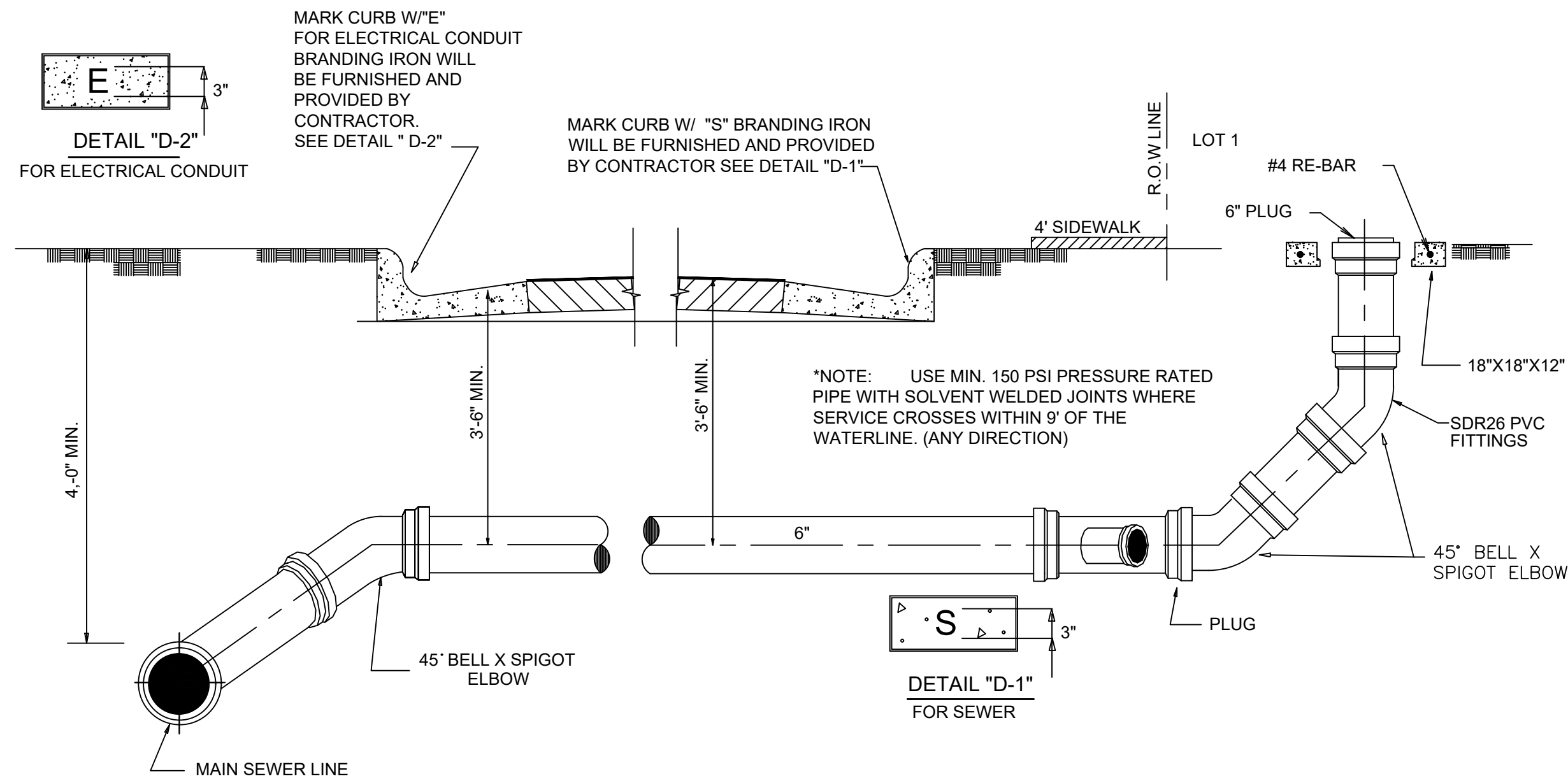
**B** PLAN - SINGLE SERVICE  
NOT TO SCALE

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

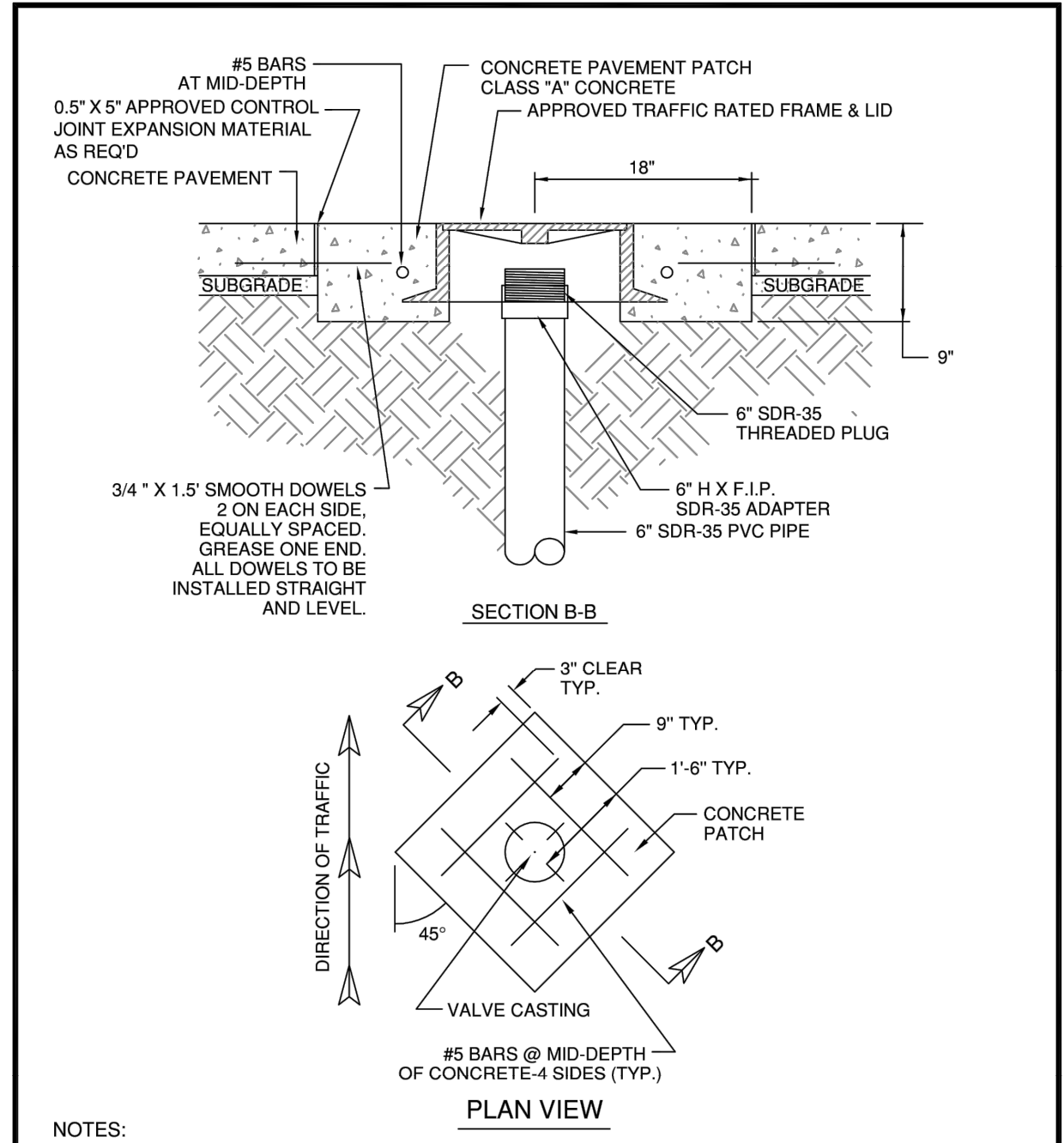


**C** PLAN - DOUBLE SERVICE NEW DEVELOPMENT  
NOT TO SCALE

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

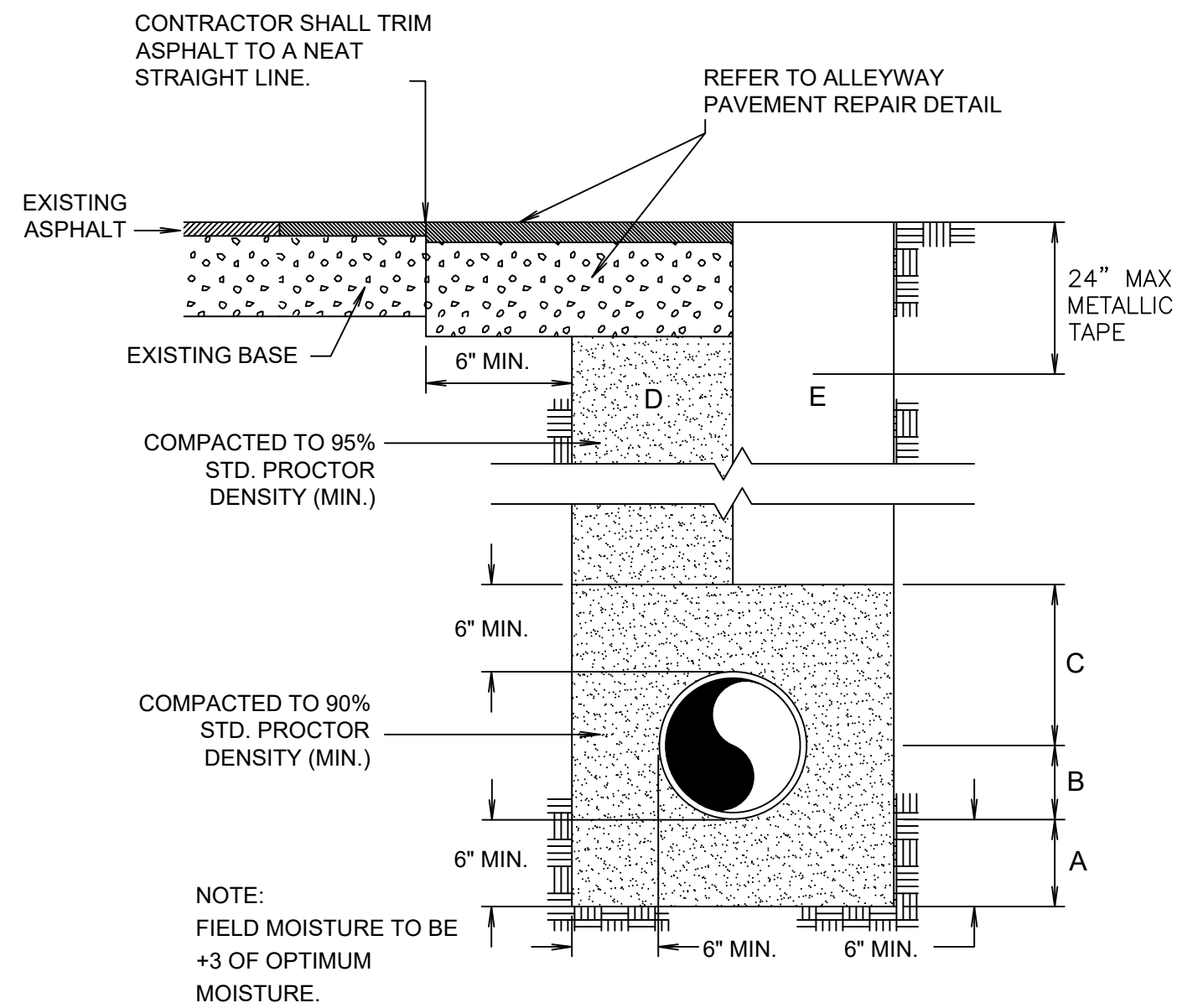
**E** WASTEWATER CLEANOUT ADJUSTMENT TO GRADE IN DRIVEWAYS  
NOT TO SCALE

**E** WASTEWATER CLEANOUT ADJUSTMENT TO GRADE IN DRIVEWAYS  
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" 1"

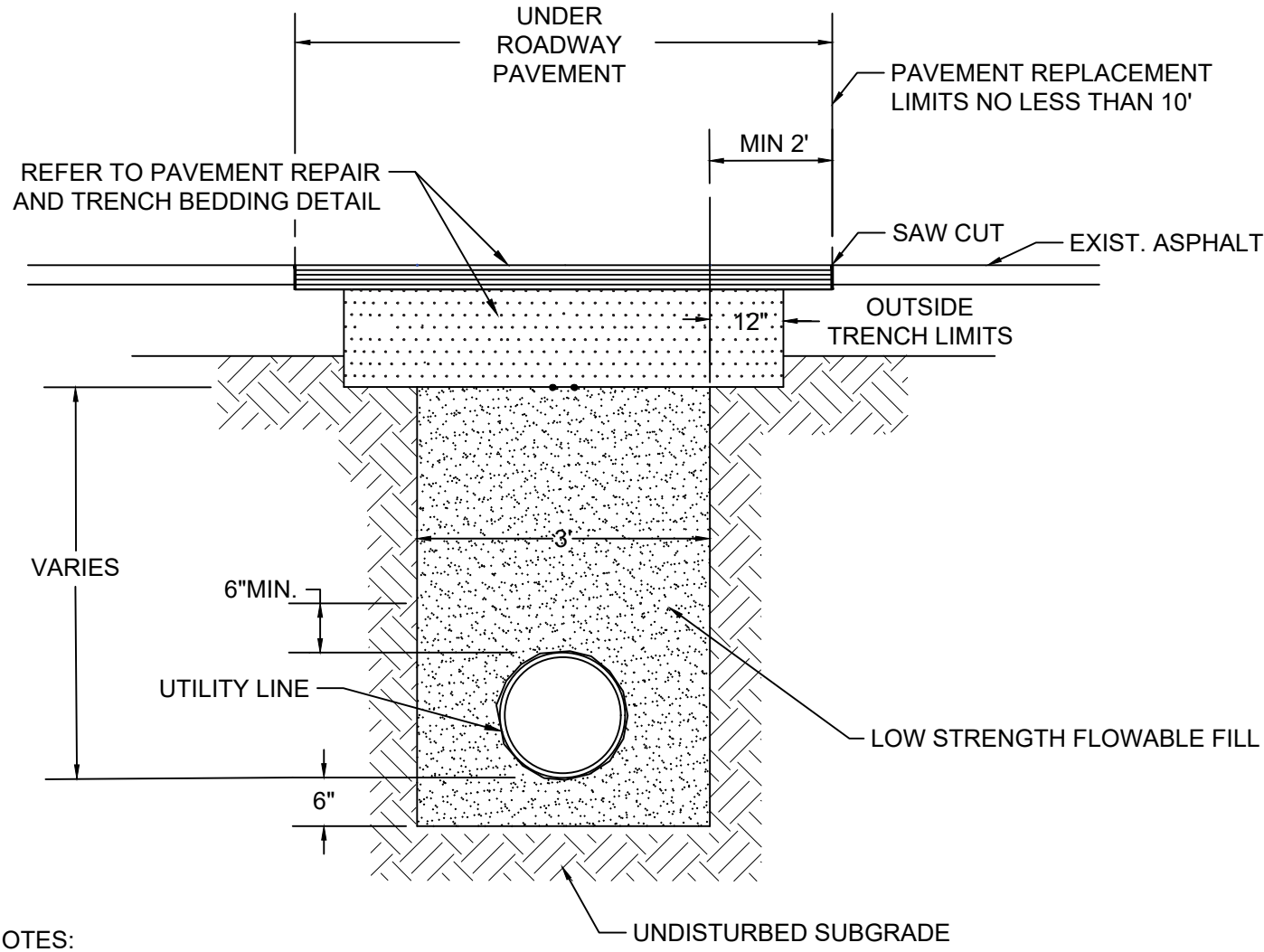


**A** TYPICAL PIPE BEDDING AND TRENCH BACKFILL DETAIL  
NOT TO SCALE

- 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).

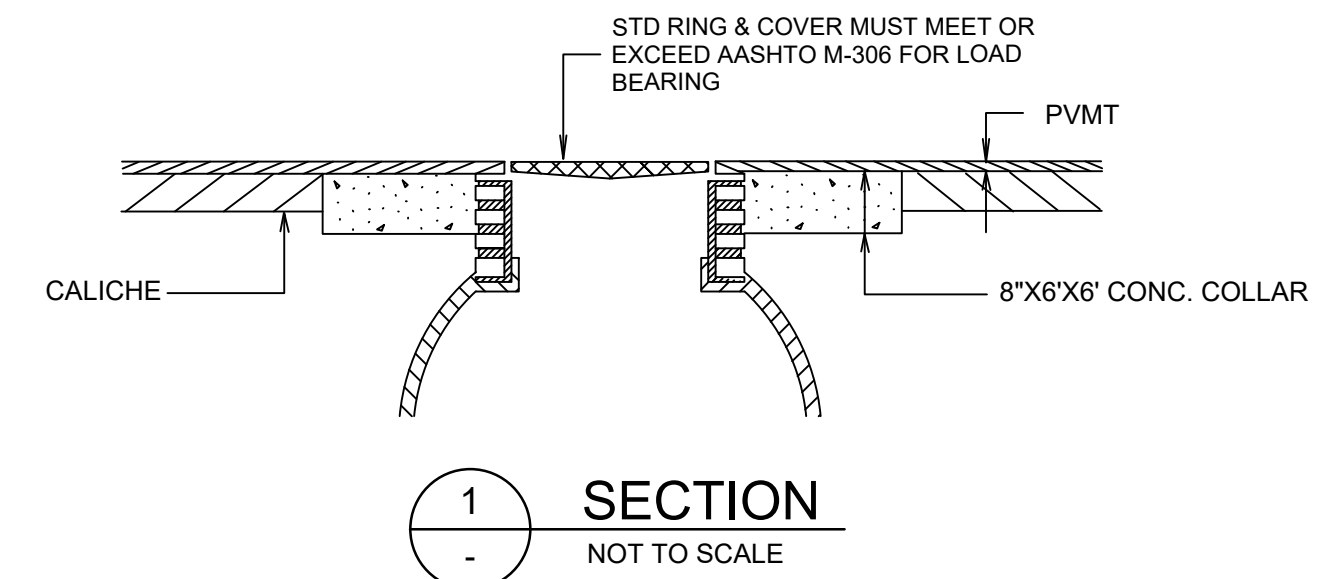
FOUNDATION PREPARATION (WELLPOINTS, GRAVEL OR CEMENT STABILIZATION, OR APPROVED SUBSTITUTE) SHALL BE REQUIRED WHEN TRENCH BOTTOM IS STABLE.

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.

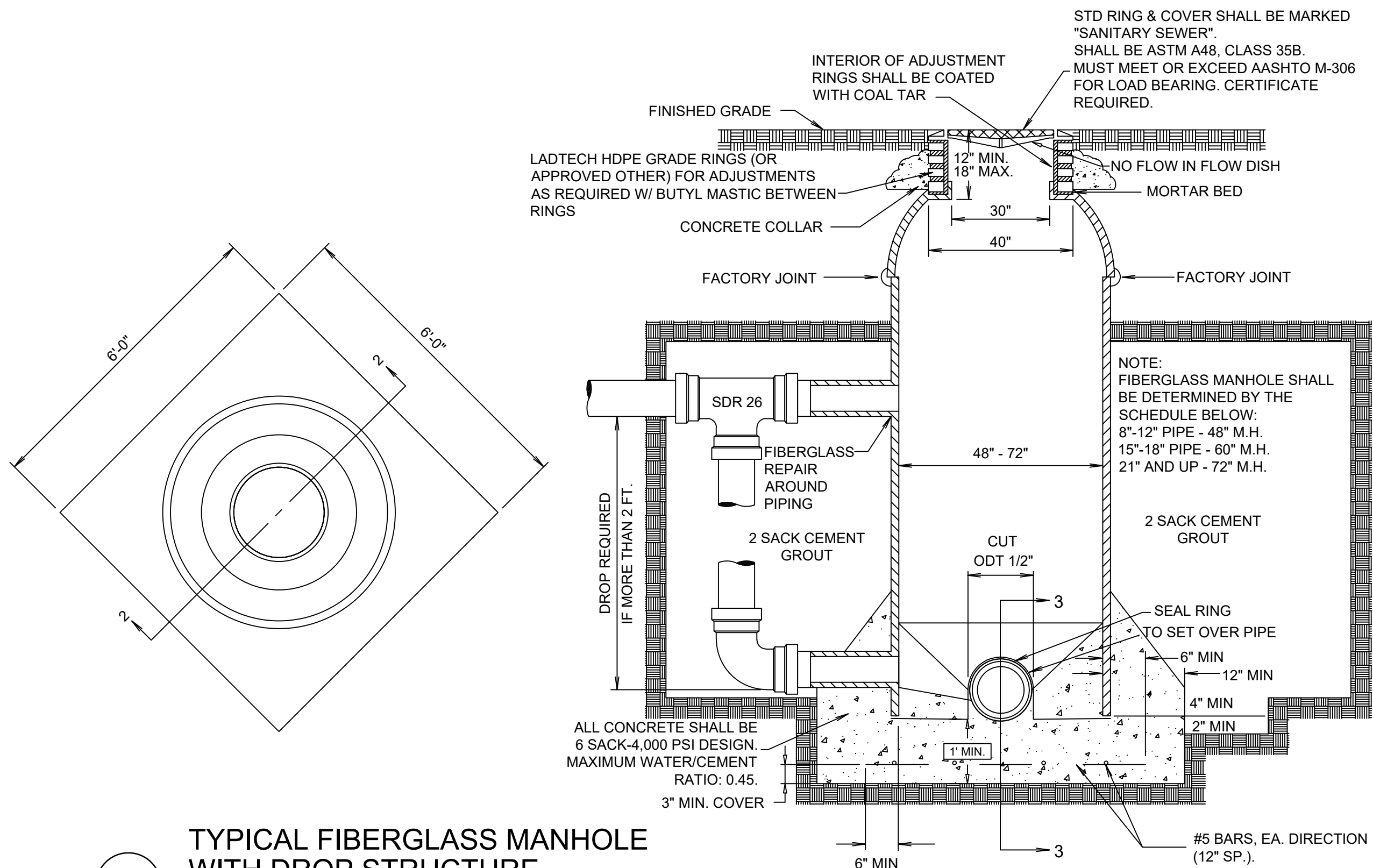
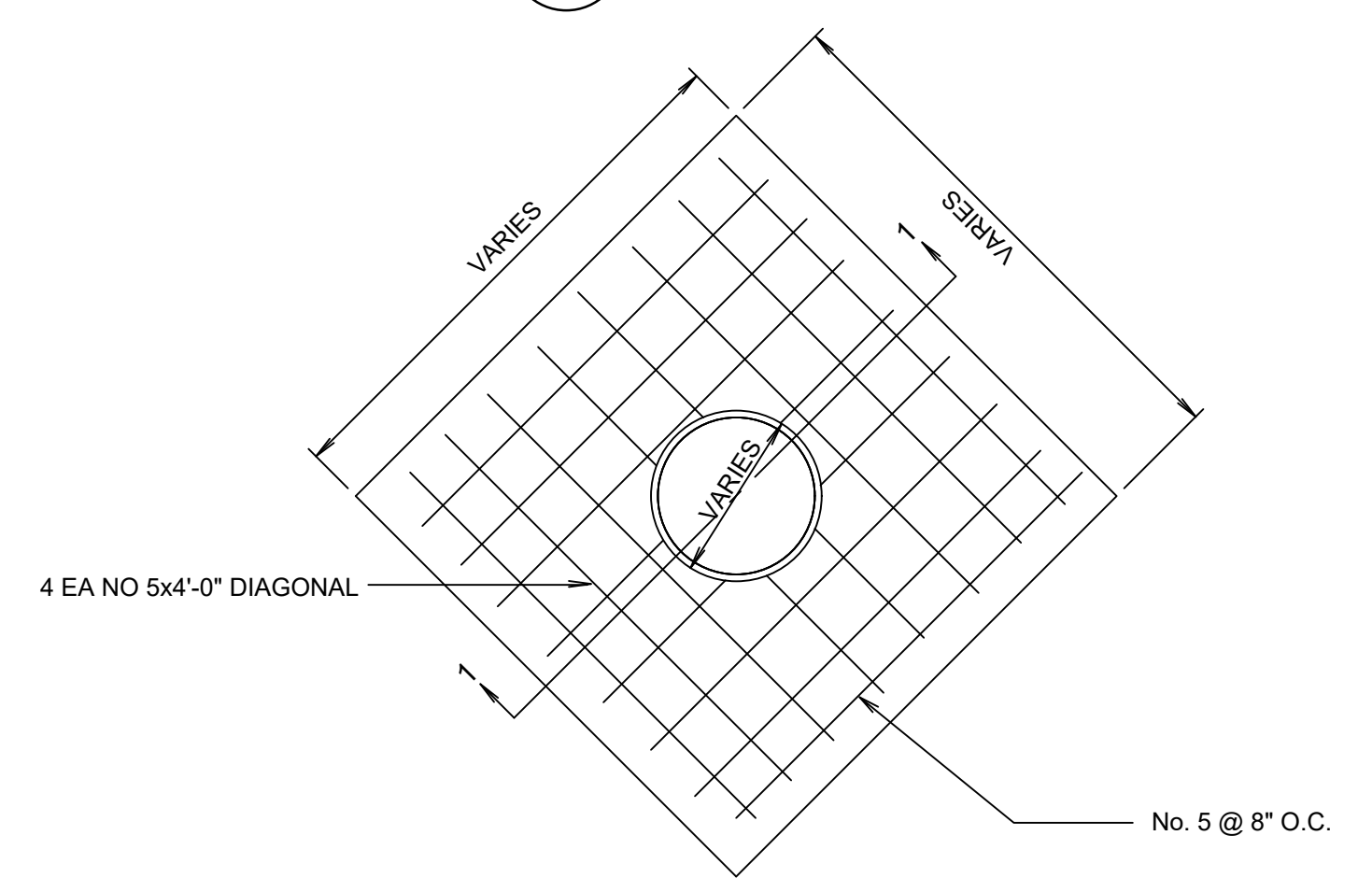


**B** ROADWAY INTERSECTION BEDDING AND TRENCH BACKFILL DETAIL  
NOT TO SCALE

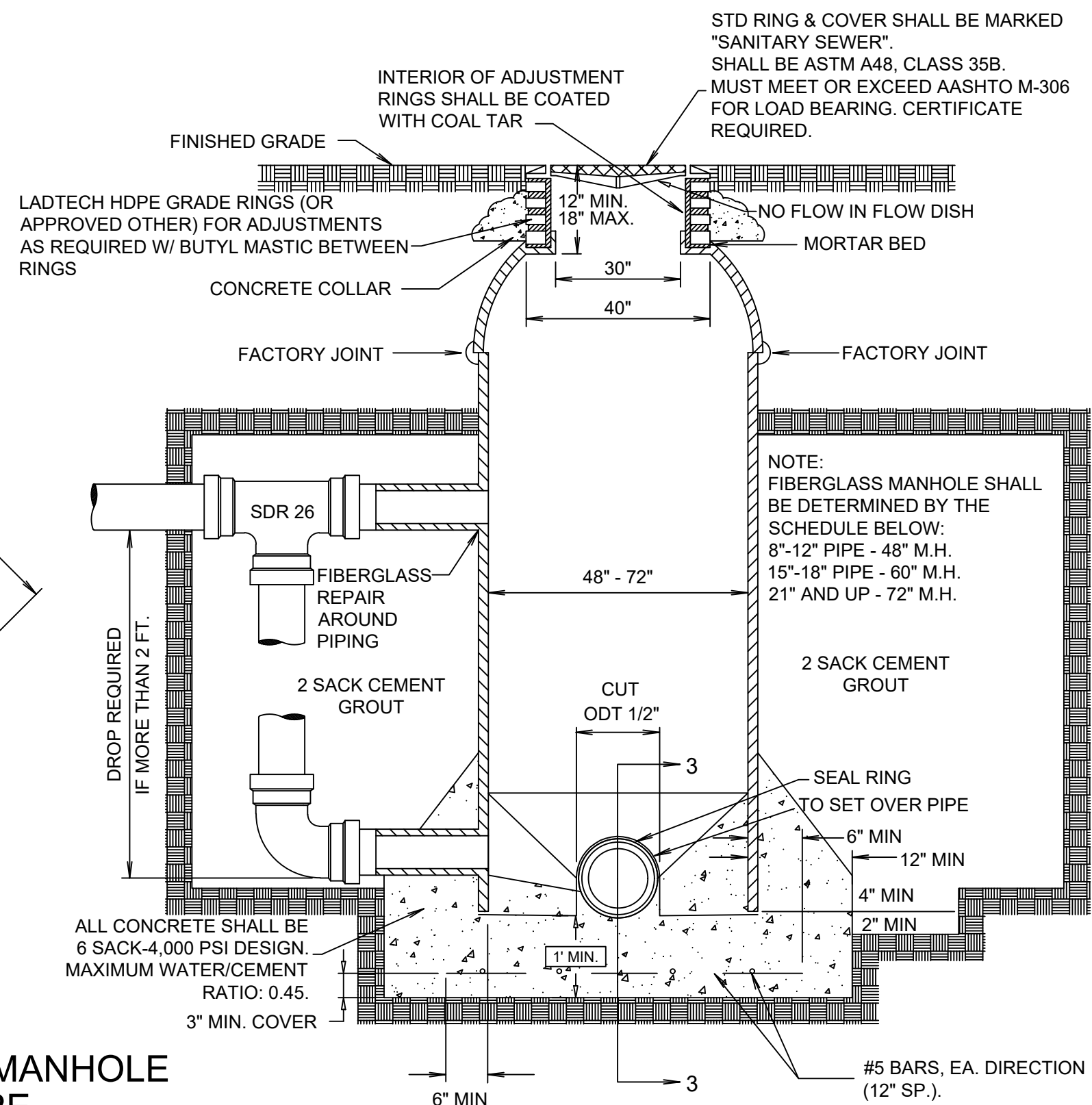
- NOTES:
- LIMITS OF PAVEMENT REPLACEMENT TO EXTEND MINIMUM 2 FEET EACH SIDE OF TRENCH OR AS SHOWN ON PLANS. PAVEMENT CUTS MUST BE SAW CUT STRAIGHT. TACK OIL AT A RATE OF 0.10 GAL/SY SHALL BE PLACED PRIOR TO PLACEMENT OF 2" HMAC TYPE "C" FINISHED SURFACE. LONGITUDINAL ROADWAY CUTS WILL BE PAVED WITH 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

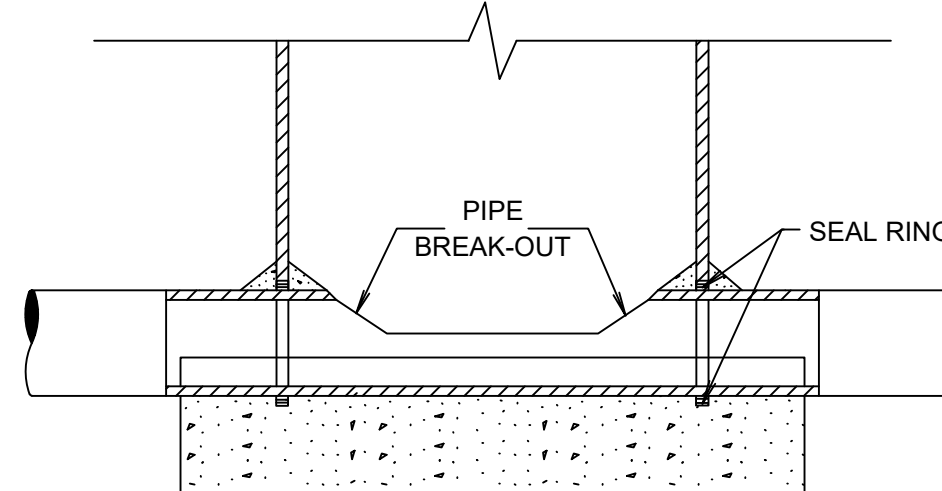


**D** TYPICAL FIBERGLASS MANHOLE WITH DROP STRUCTURE  
NOT TO SCALE

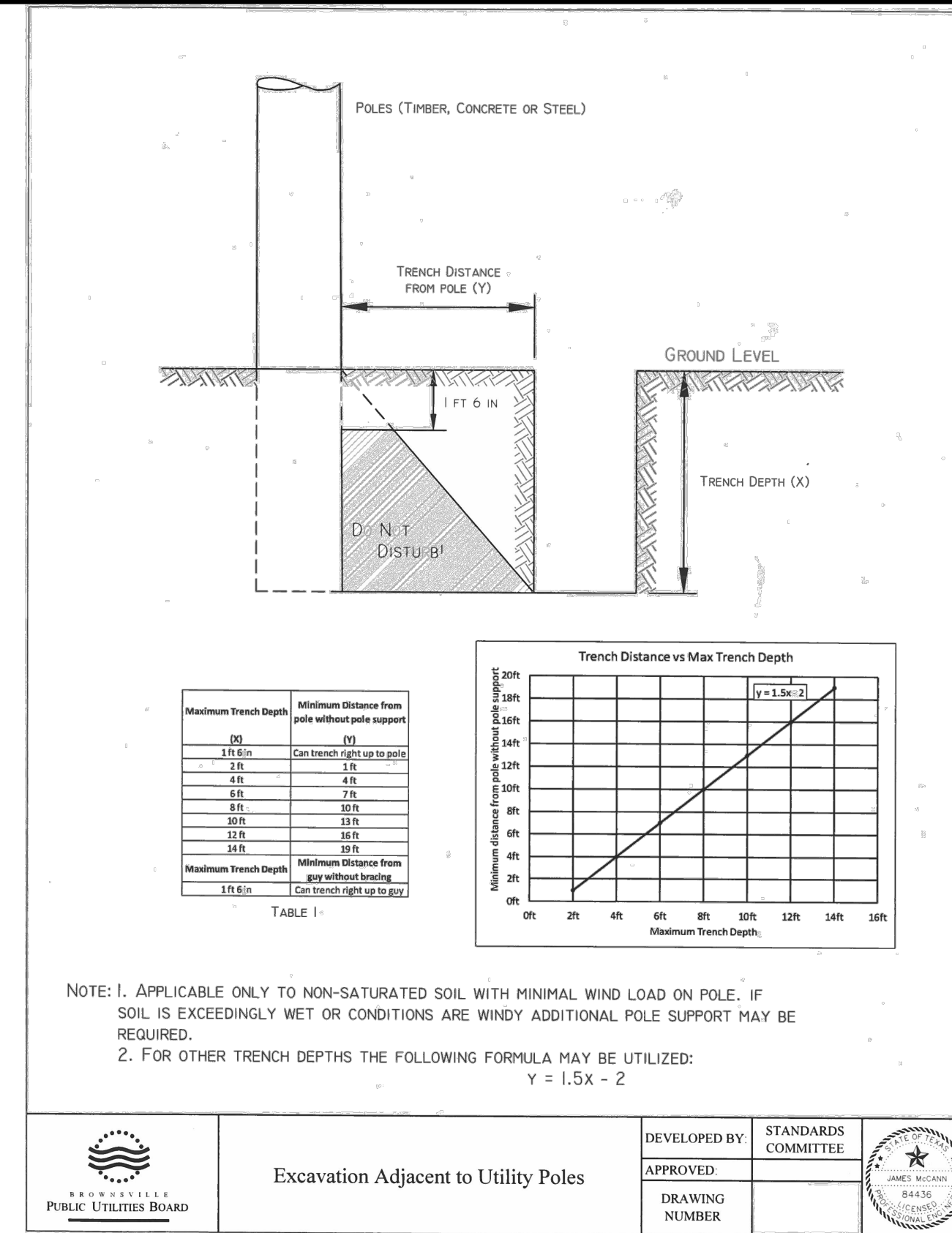


**2** SECTION  
NOT TO SCALE

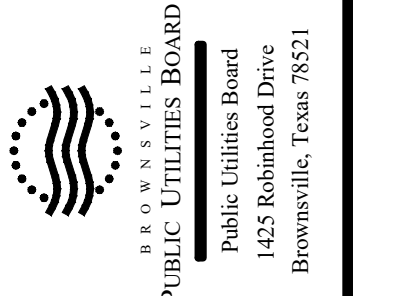
- NOTES:
- ALL SANITARY SEWER MANHOLES WITHIN 9' OF A WATERLINE SHALL HAVE NO MEASURABLE LEAKAGE IN ACCORDANCE WITH TEXAS ADMINISTRATIVE CODE 217.58.
  - OVER EXCAVATION FOR PLACEMENT OF SANITARY SEWER MANHOLES SHALL BE BACKFILLED WITH FLOWABLE FILL. THIS COST SHALL BE SUBSIDIARY TO THE COST OF THE MANHOLE.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



**3** SECTION  
NOT TO SCALE



**E** EXCAVATION ADJACENT TO UTILITY POLES  
NOT TO SCALE



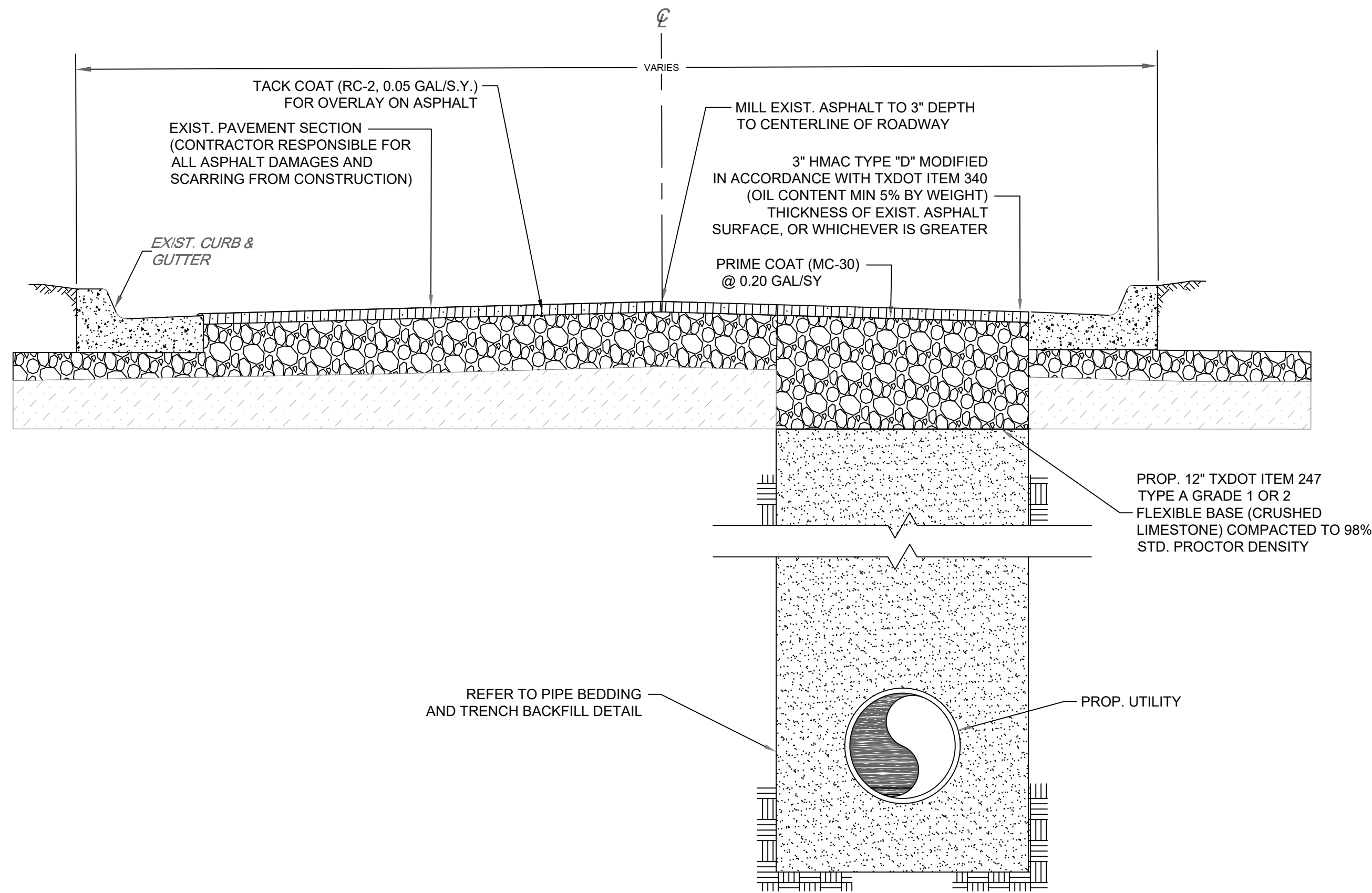
NO.	REVISION	BY	DATE

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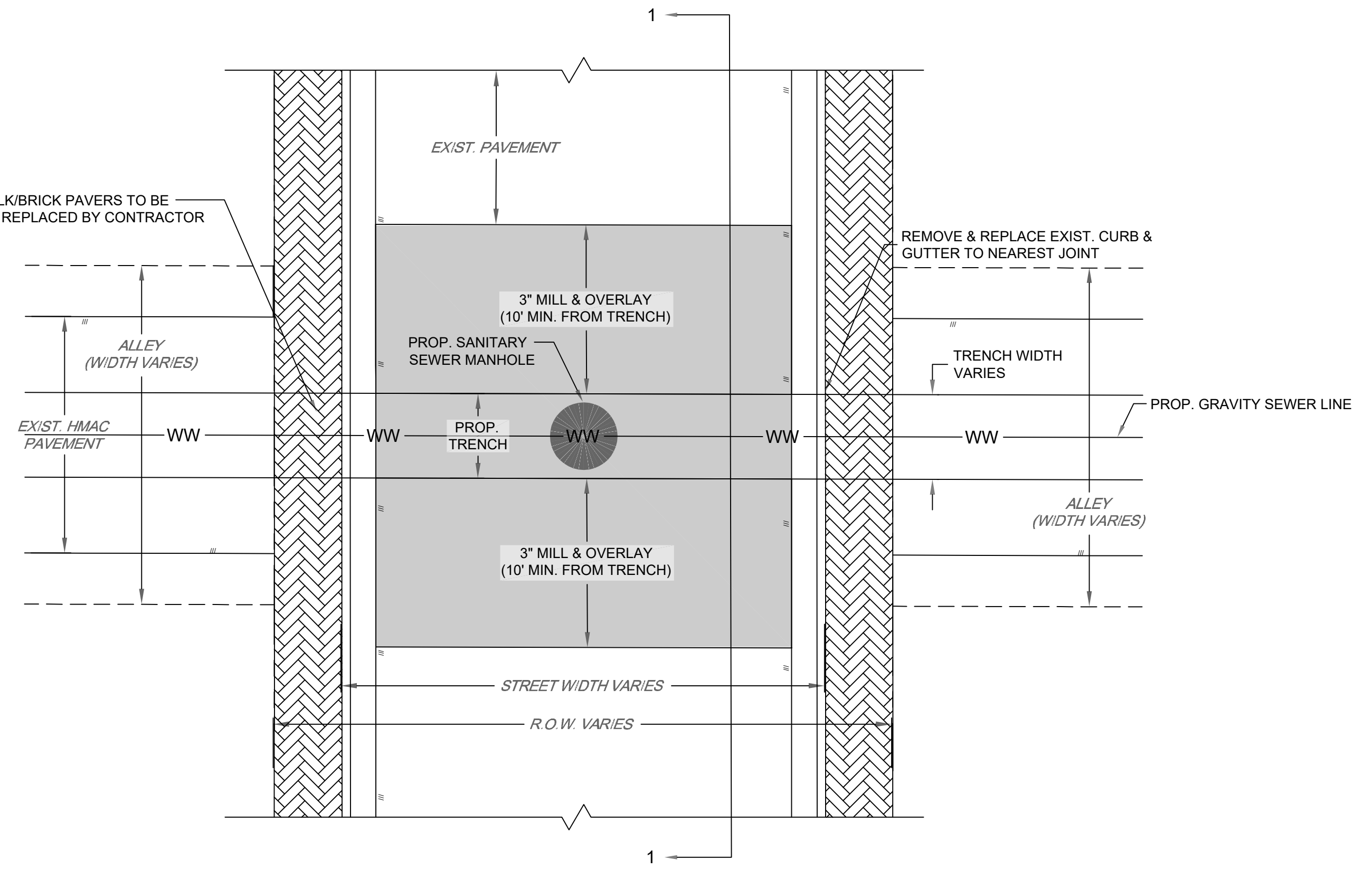
BROWNSVILLE PUBLIC UTILITIES BOARD  
PROJECT 1: DOWNTOWN WW IMPROVEMENTS  
DETAILS II

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

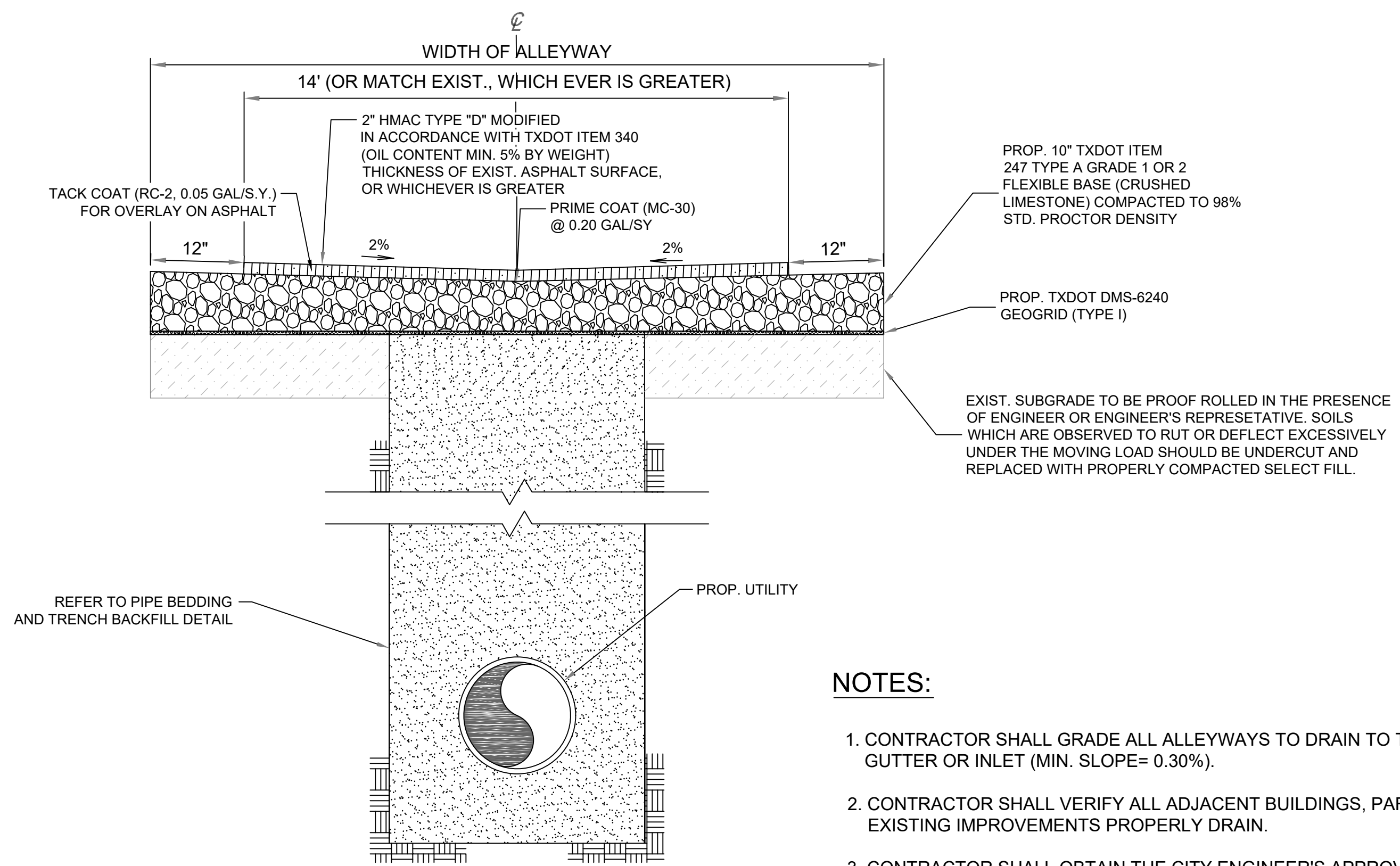
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D-02



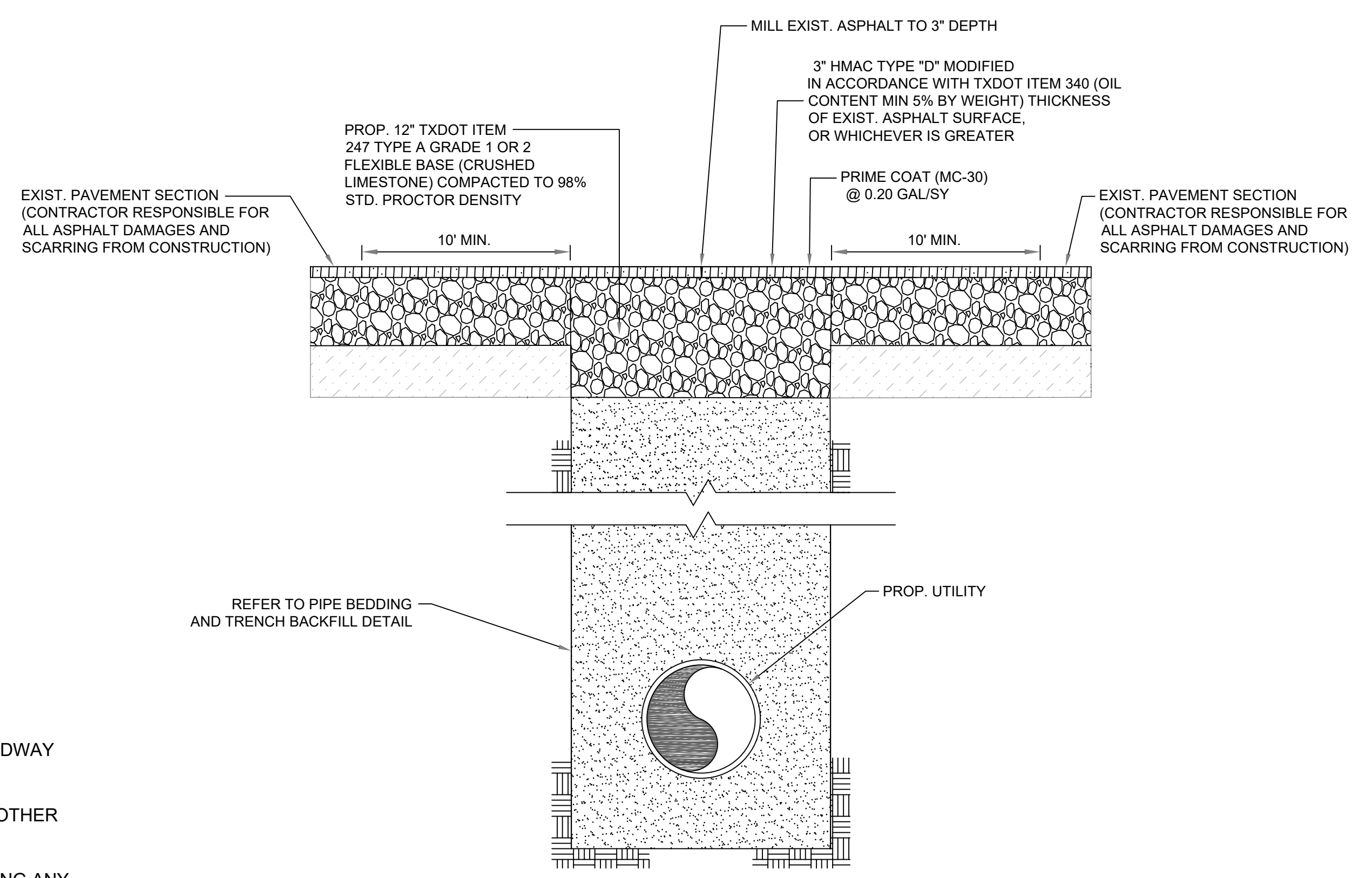
**A** PAVEMENT REPAIR AND TRENCH BEDDING  
NOT TO SCALE



**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.



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



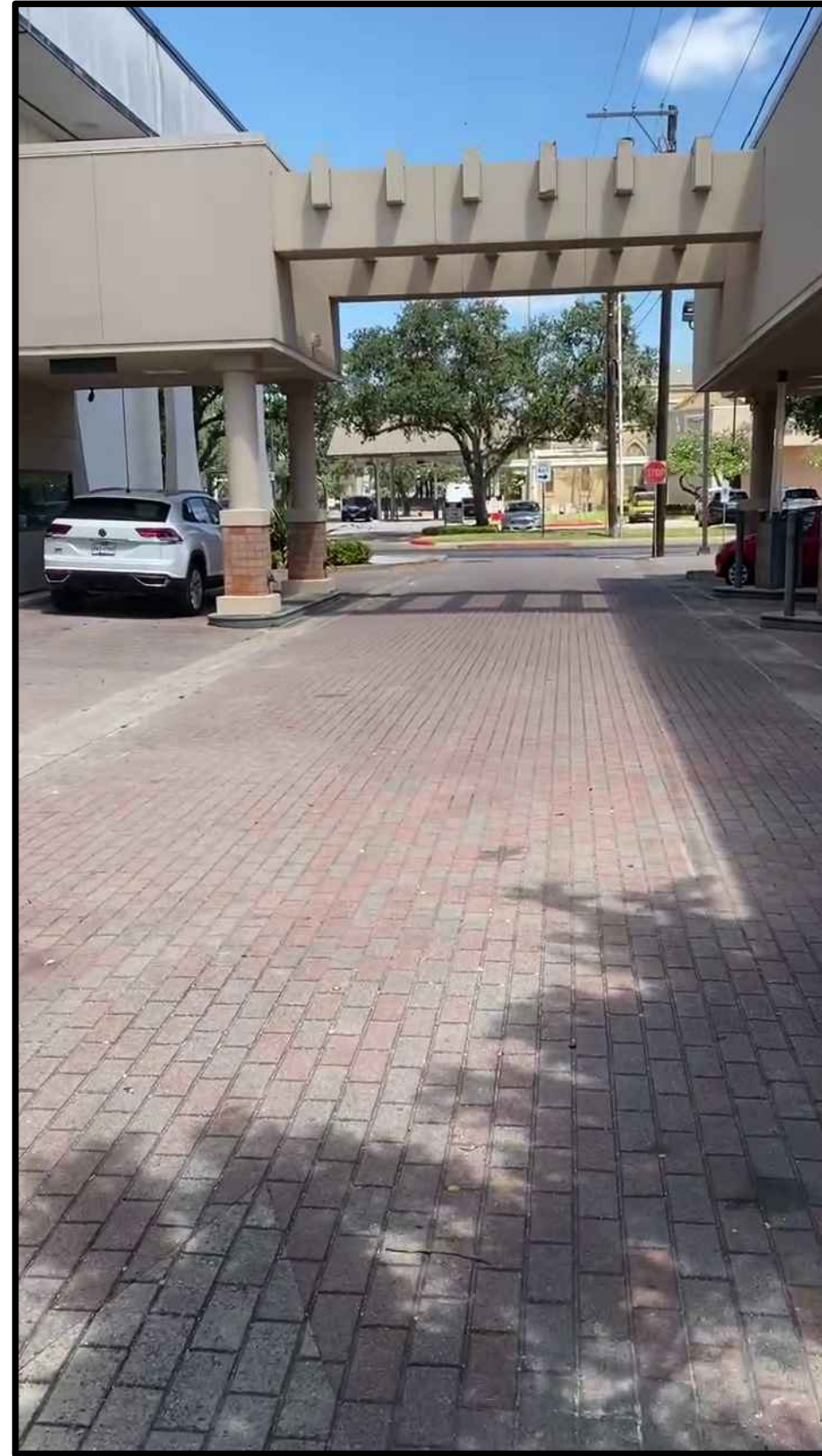
NO.	REVISION	BY	DATE

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**BROWNVILLE PUBLIC UTILITIES BOARD**  
**PROJECT 1: DOWNTOWN WW IMPROVEMENTS**  
**DETAILS III**

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

SHEET  
**D-03**



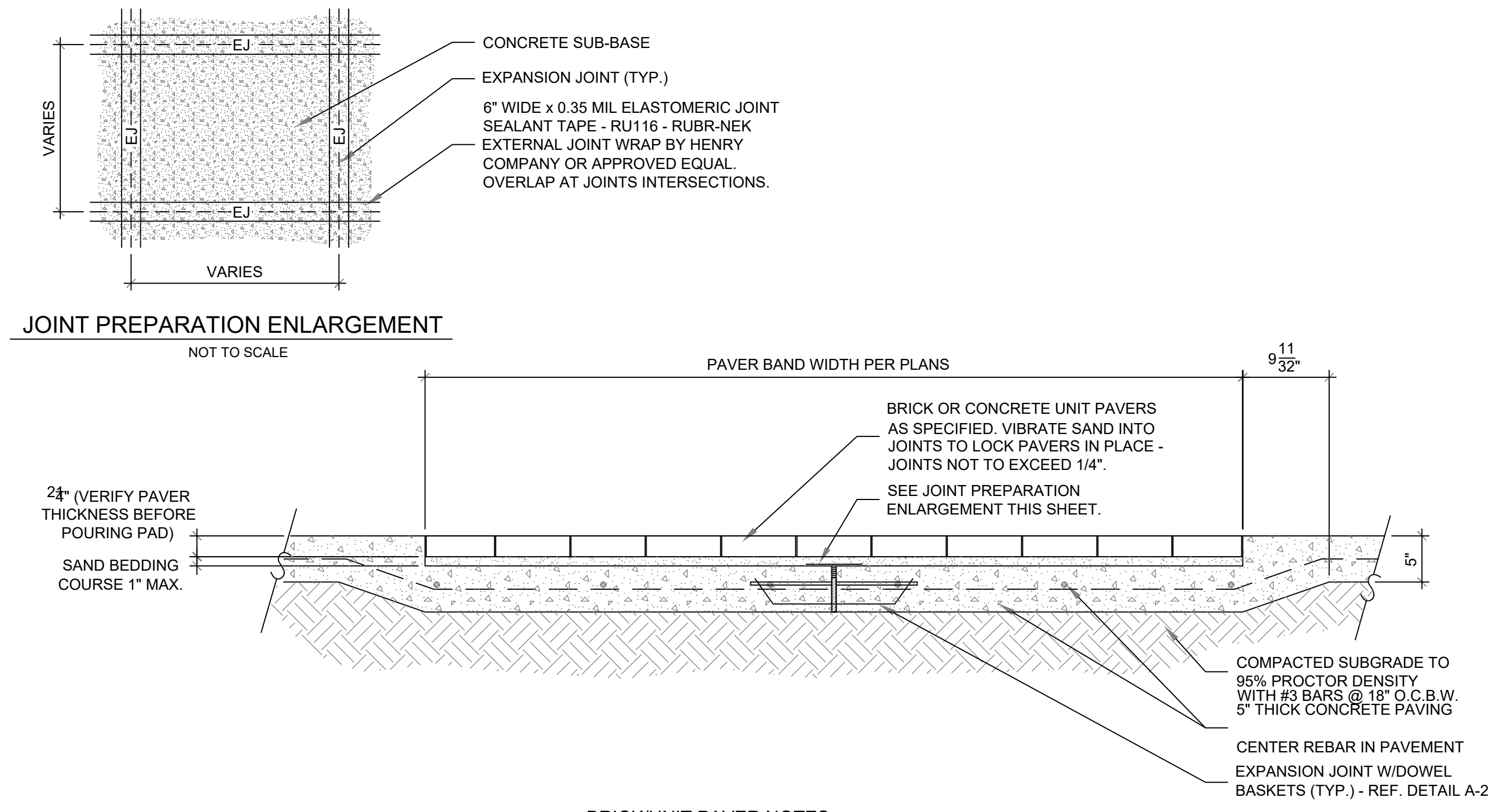
**A** BRICK PAVER DETAIL - (ALLEY)  
NOT TO SCALE



**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

PRINTED BY: MilksGW DATE: 9/7/2023  
FILE PATH: c:\pwworking\stiv\pw\_siv\d093232200025\_D-04.dwg



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



NO.	REVISION	BY	DATE

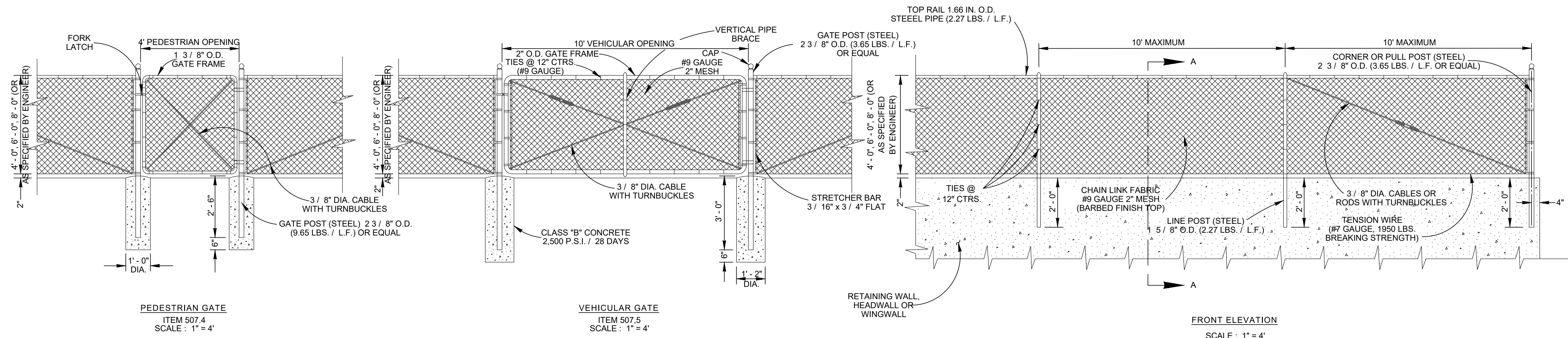
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0 1" 0

**BROWNSVILLE PUBLIC UTILITIES BOARD**  
**PROJECT 1: DOWNTOWN WW IMPROVEMENTS**  
**DETAILS IV**

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

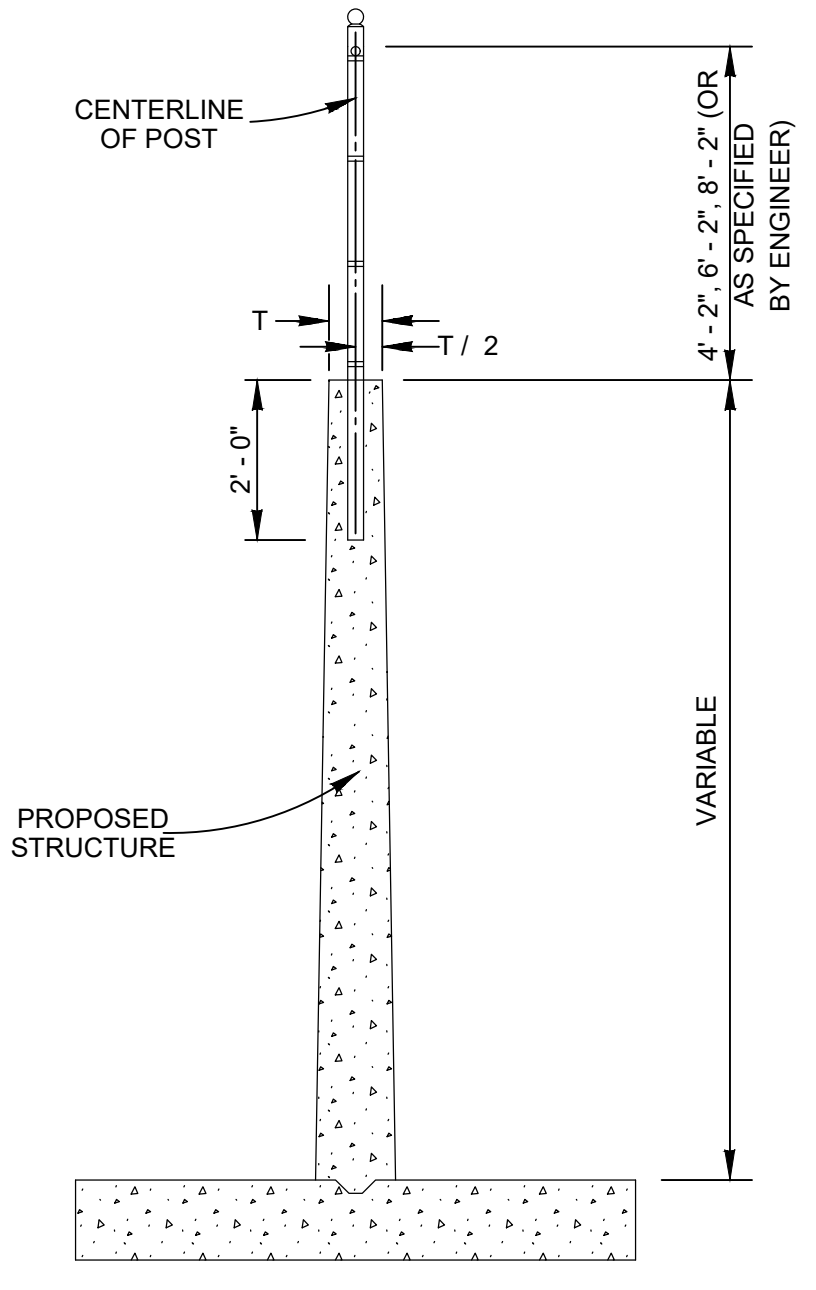
SHEET  
**D-04**



PEDESTRIAN GATE  
ITEM 507.4  
SCALE: 1" = 4'

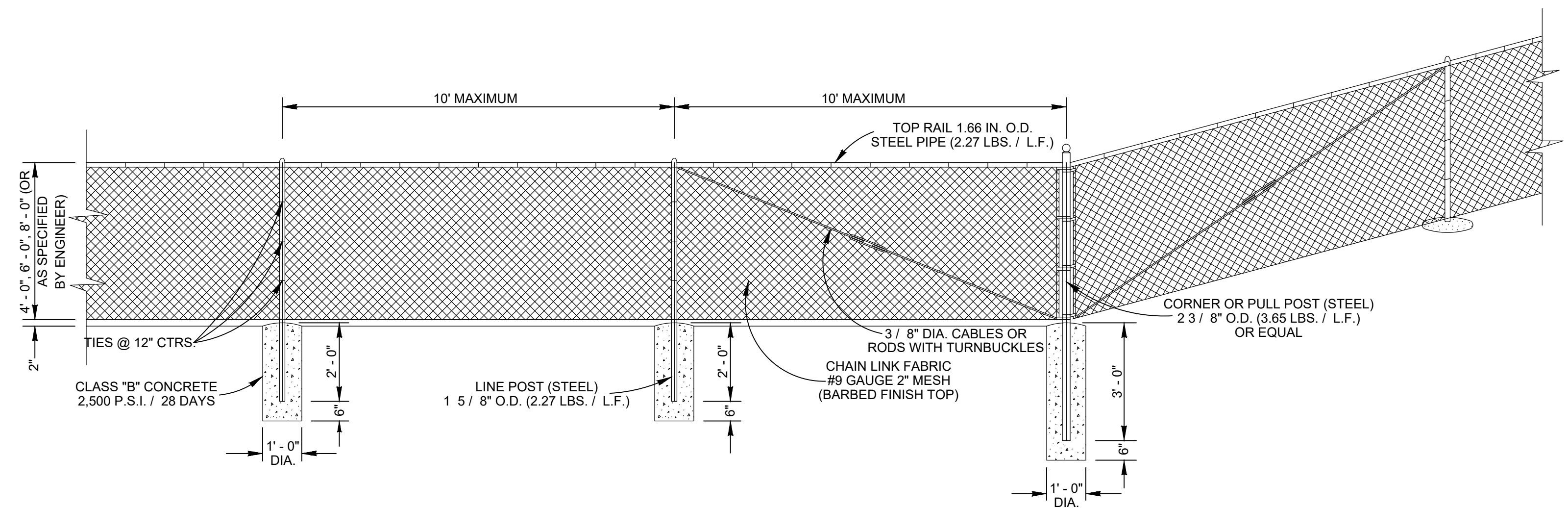
VEHICULAR GATE  
ITEM 507.5  
SCALE: 1" = 4'

FRONT ELEVATION  
SCALE: 1" = 4'



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

TYPICAL FOR FENCING IN RETAINING WALLS, HEADWALLS & WINGWALLS



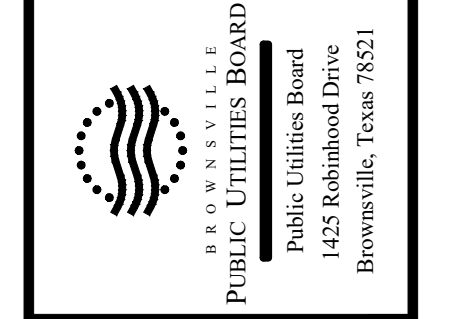
TYPICAL FENCE DETAIL  
SCALE: 1" = 4'

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.
5. PAYMENT SHALL BE MADE AS SPECIFIED IN ITEM NO. 507 "CHAIN LINK WIRE FENCE OF CITY OF SAN ANTONIO" STANDARD SPECIFICATIONS FOR CONSTRUCTION.

**A** CHAIN LINK FENCE DETAIL  
NOT TO SCALE

PRINTED BY: MilksGW DATE: 8/28/2023  
FILE PATH: c:\pwworking\st\lpw\_st\1422200025\_D-05.dwg



NO.	REVISION	BY	DATE

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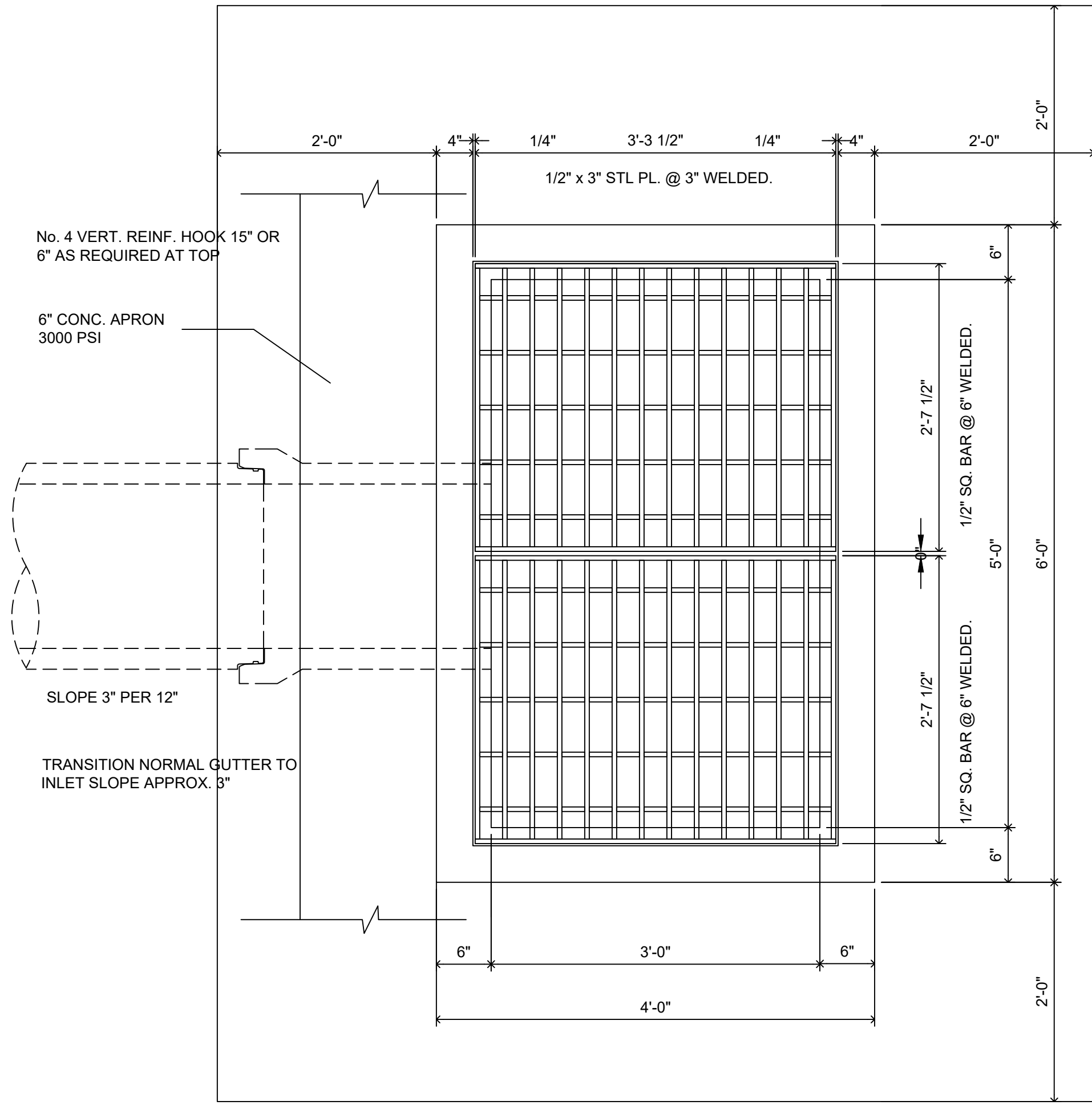
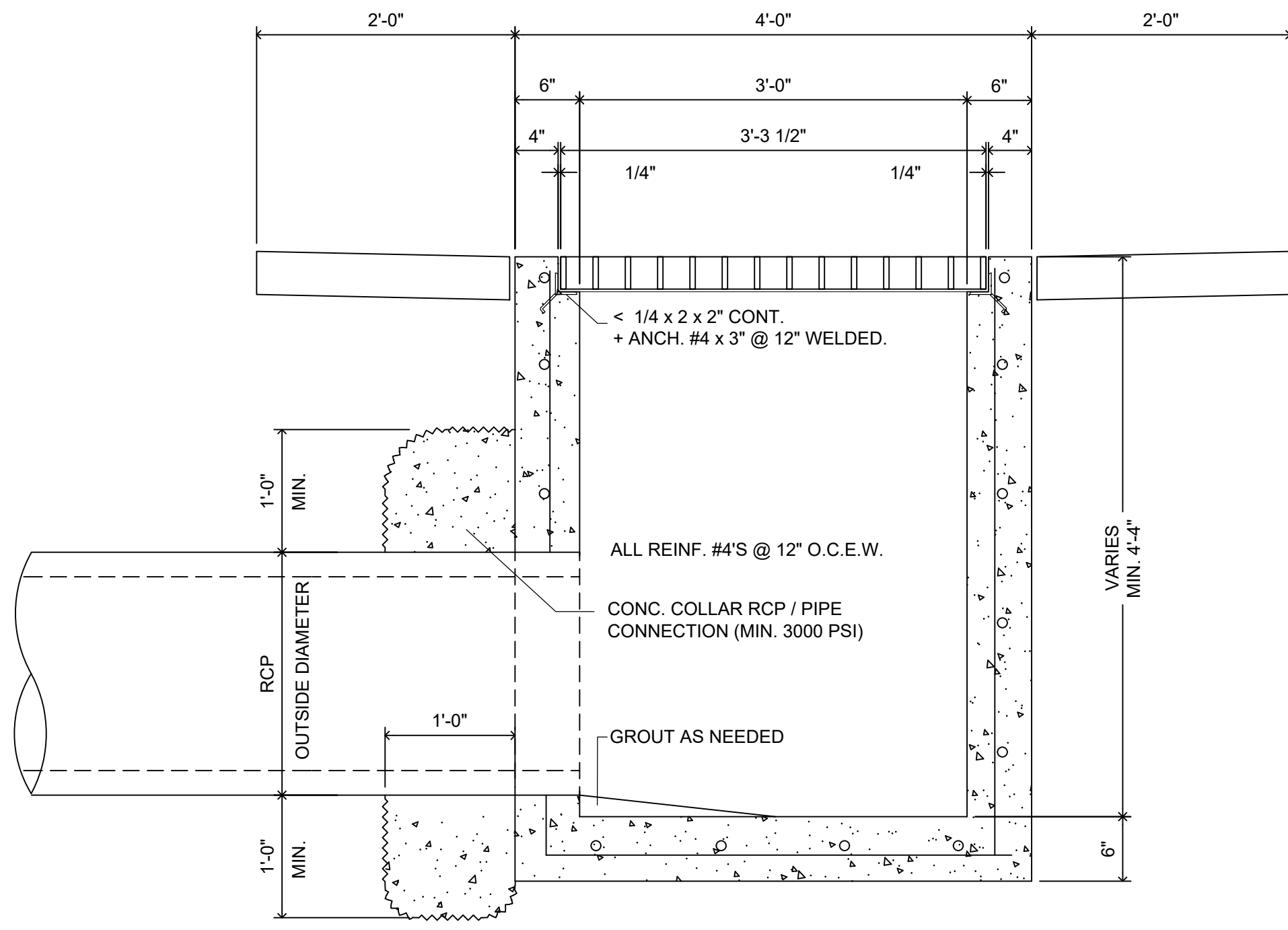
0 1" AND ADJUST SCALE ACCORDINGLY.

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

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

SHEET  
D-05

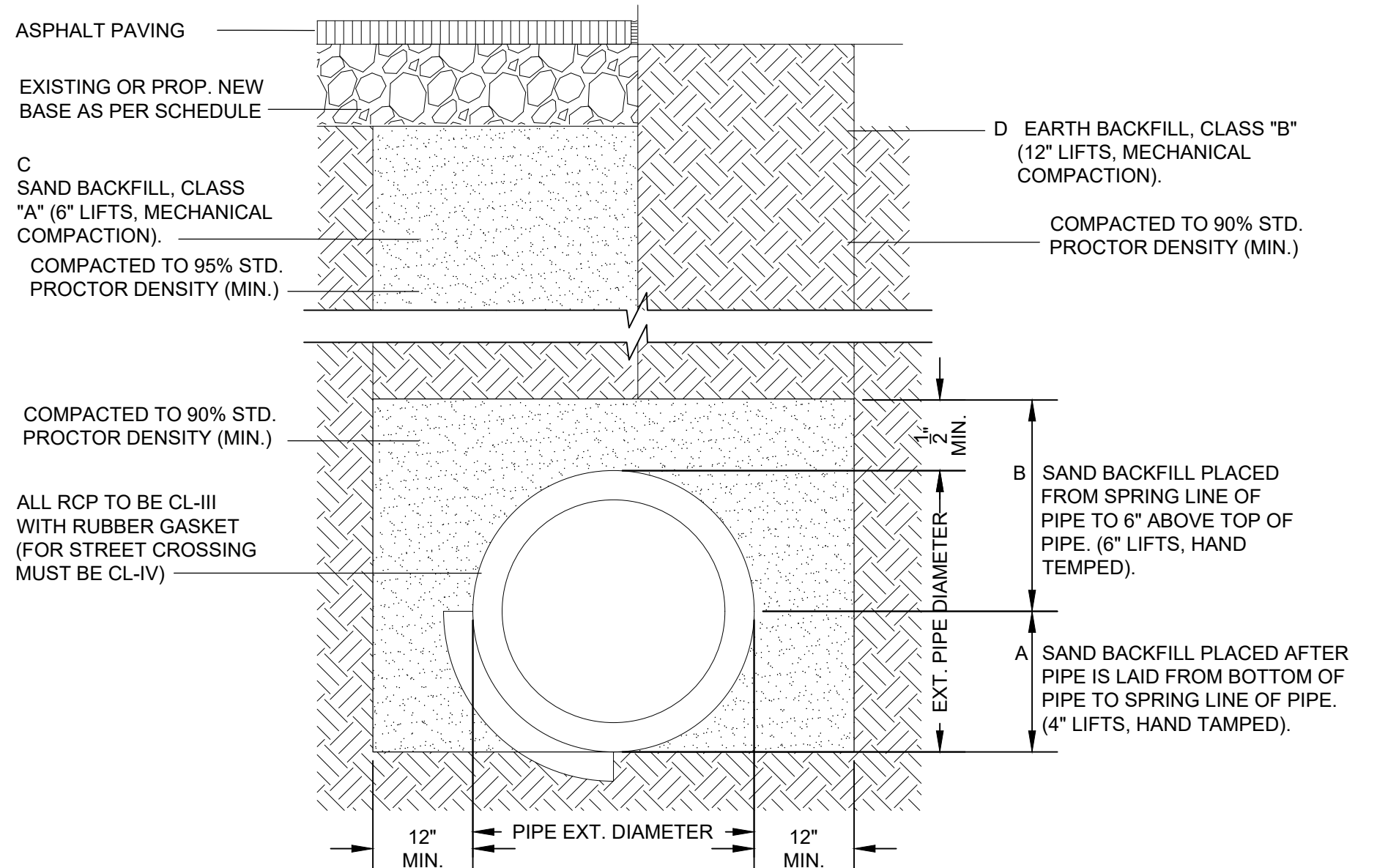
NOTES:  
 1) PRECAST INLETS MAY BE USED TO ENGINEERS APPROACH.  
 2) BASES FOR PRECAST INLETS MUST BE POURED PRIOR SETTING WALLS.  
 3) CONCRETE FOR GRATE INLET SHALL HAVE A MIN. STRENGTH OF 3,000 P.S.I. AT 28 DAYS, W/ 1.5 LBS. "FIBERMESH" PER C.Y.



**A** GRATE INLET STANDARDS  
 NOT TO SCALE

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

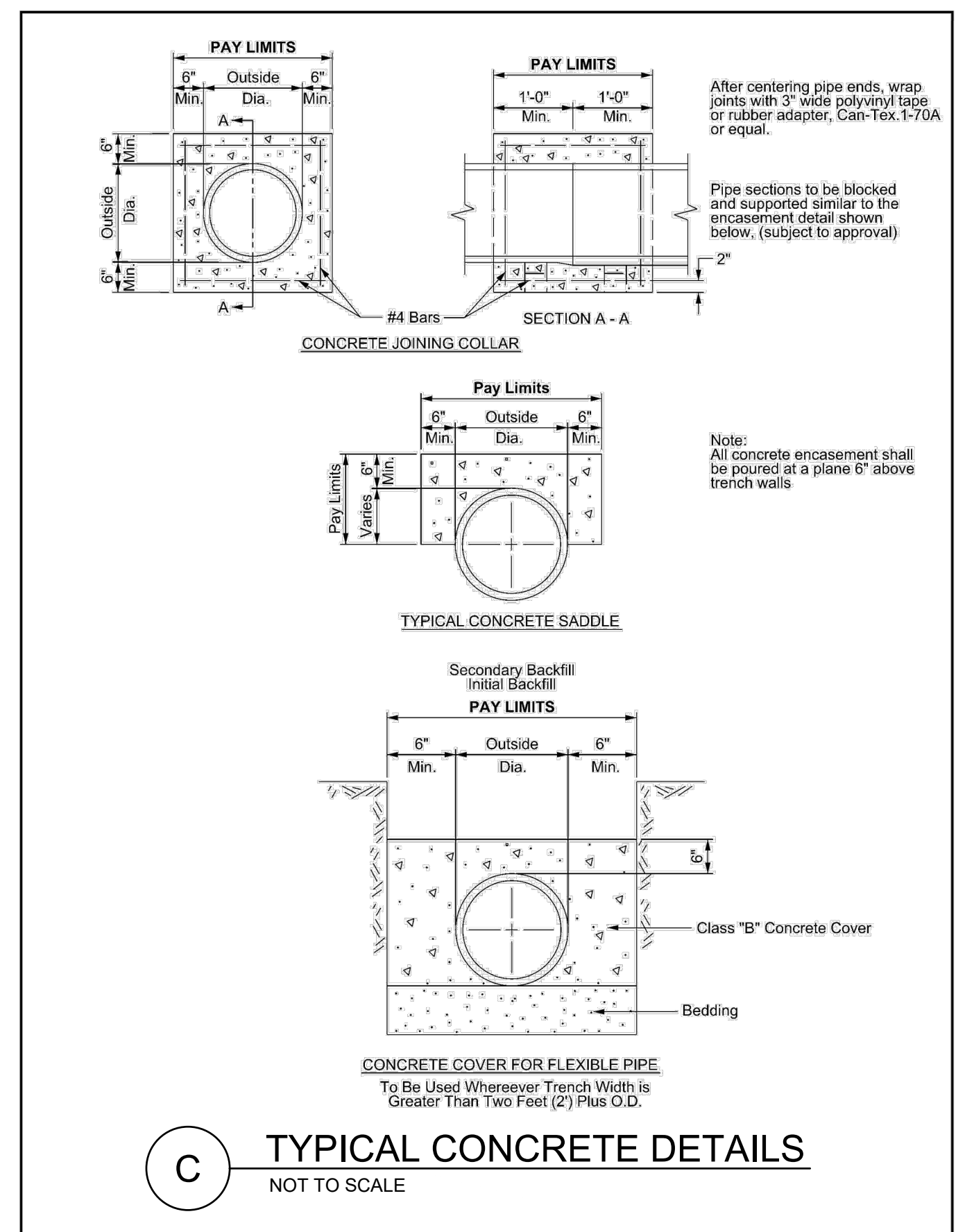
1) ALL RCP, STORM SEWER LINES MUST BE INCREASED TO CLASS IV WHEN RUNS UNDER ROAD OR STREET



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

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

**B** STANDARD PIPE BEDDING FOR CONCRETE PIPE DETAIL  
 NOT TO SCALE



**C** TYPICAL CONCRETE DETAILS  
 NOT TO SCALE

PRINTED BY: MilkisGW DATE: 9/7/2023  
 FILE PATH: c:\pwworking\stivlpw\_stv\09332200025\_D-06.dwg

TEXAS REGISTERED ENGINEERING FIRM  
 TBPE-F-1741

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

09/22/2023  
 STATE OF TEXAS  
 PUBLIC UTILITIES BOARD  
 LICENSE NO. 135485  
 STIV L. P. WILSON  
 PROFESSIONAL ENGINEER

NO.	REVISION	BY	DATE

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

BROWNVILLE PUBLIC UTILITIES BOARD  
 PROJECT 1: DOWNTOWN WW IMPROVEMENTS

DETAILS VI

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

SHEET  
 D-06

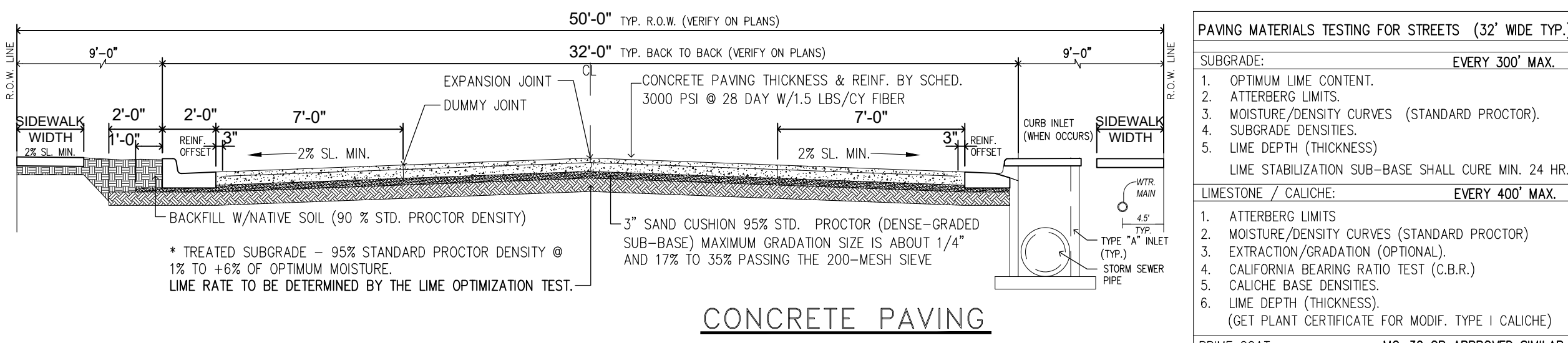
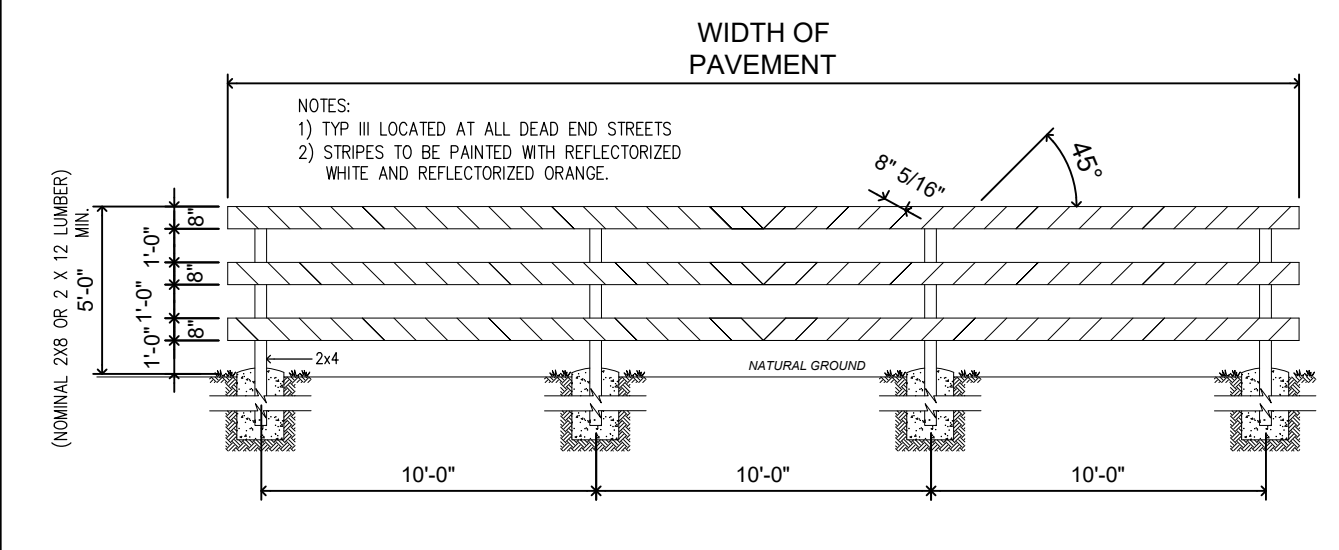
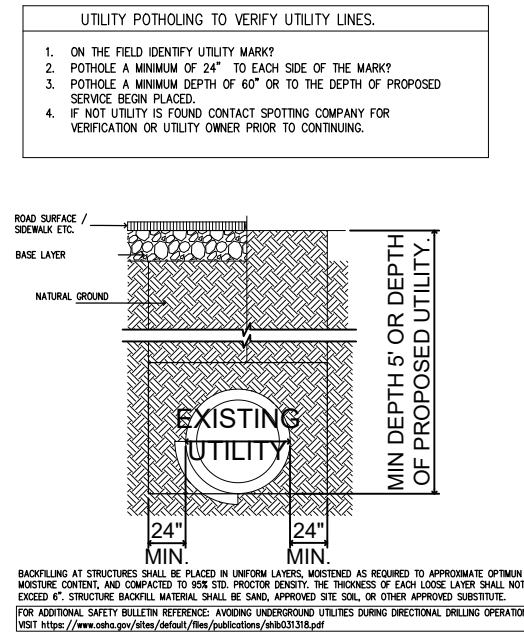
READY TO START DIGGING?  
<https://call811.com/Start-Here>

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.

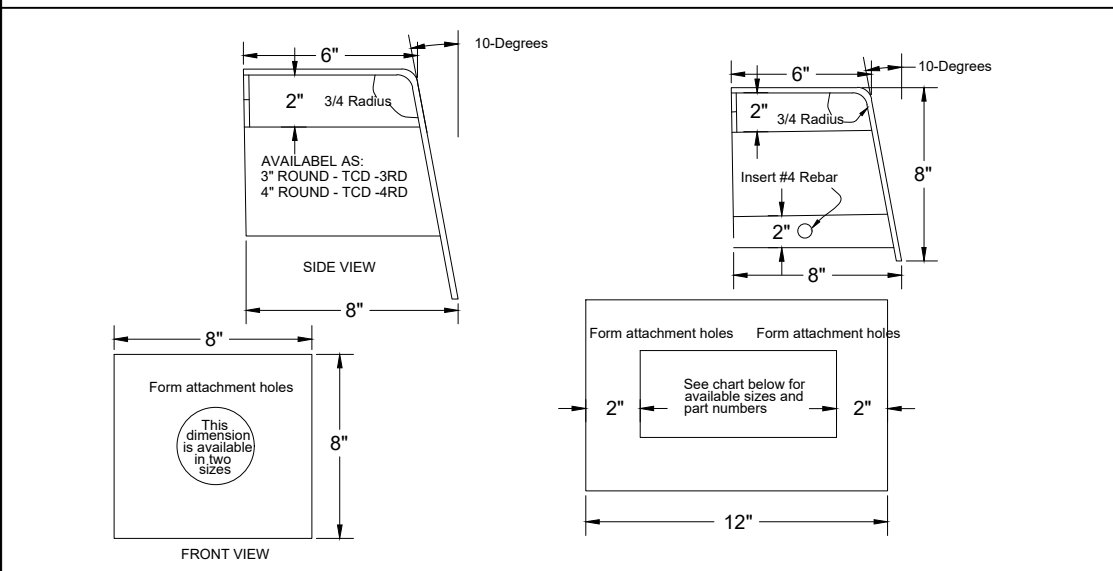
2) WHEN DO I CALL 811?  
 You should call 811 or use your state 811 center's website a few business days before you begin any digging, including common projects like planting trees and shrubs or installing fences and mailboxes. The specific amount of advance notice that you are required to provide varies 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 been re-located, you should dig carefully around any utility marks and consider relocating projects that are close to buried utilities.



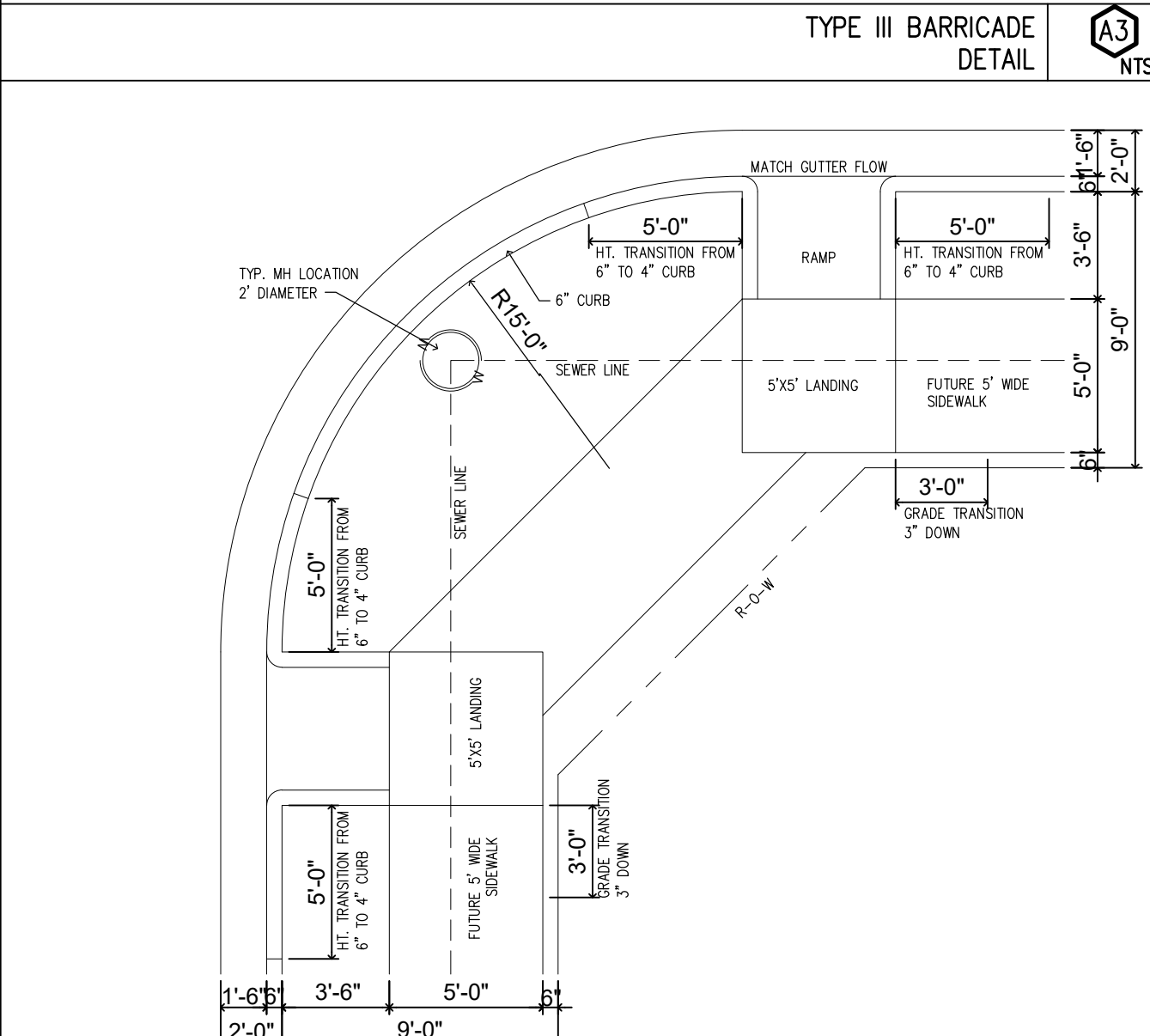
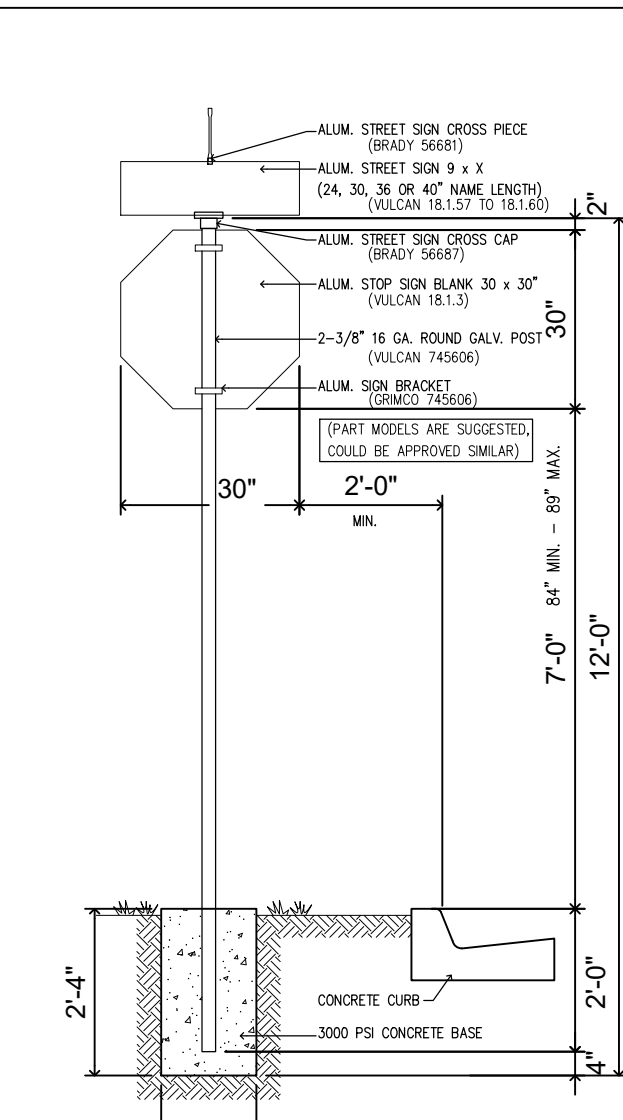
- PAVING MATERIALS TESTING FOR STREETS (32' WIDE TYP.)**
- SUBGRADE: EVERY 300' MAX.**
- OPTIMUM LIME CONTENT.
  - ATTERBERG LIMITS.
  - MOISTURE/DENSITY CURVES (STANDARD PROCTOR).
  - SUBGRADE DENSITIES.
  - LIME DEPTH (THICKNESS).
- LIME STABILIZATION SUB-BASE SHALL CURE MIN. 24 HRS.**
- LIMESTONE / 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:**
- CONTRACTOR IS RESPONSIBLE FOR CALLING TESTING COMPANY AT PROPER TIMES DURING CONSTRUCTION FOR REQUIRED TESTING.
  - OWNER WILL PAY FOR ALL REQUIRED TESTING.
  - CONTRACTOR WILL PAY FOR ANY ADDITIONAL TESTING DONE TO ASSURE ALL MATERIALS AND WORK MEET REQUIREMENTS.
  - CONTRACTOR BEARS THE RESPONSIBILITY OF INFORMING CITY INSPECTORS OF ALL TESTING AT LEAST 24 HOURS IN ADVANCE.



**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" x 8" CURB FACE
4"	4" ROUND	TCD-4RD	TCD-4RD-RFD	TCD-4RD-OFD	6" x 8" CURB FACE
4"	3"x6"	TCD-3S	TCD-3S-RFD	TCD-3S-OFD	6" x 8" CURB FACE
5"	3"x8"	TCD-3B	TCD-3B-RFD	TCD-3B-OFD	6" x 8" CURB FACE
6"	3"x12"	TCD-312	TCD-312-RFD	TCD-312-OFD	6" x 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" x 8" CURB FACE
10"	3"x27"	TCD-327	TCD-327-RFD	TCD-327-OFD	6" x 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 8" AND 6" CURB FACE. EPOXY COATING FINISHES AVAILABLE ON REQUEST.



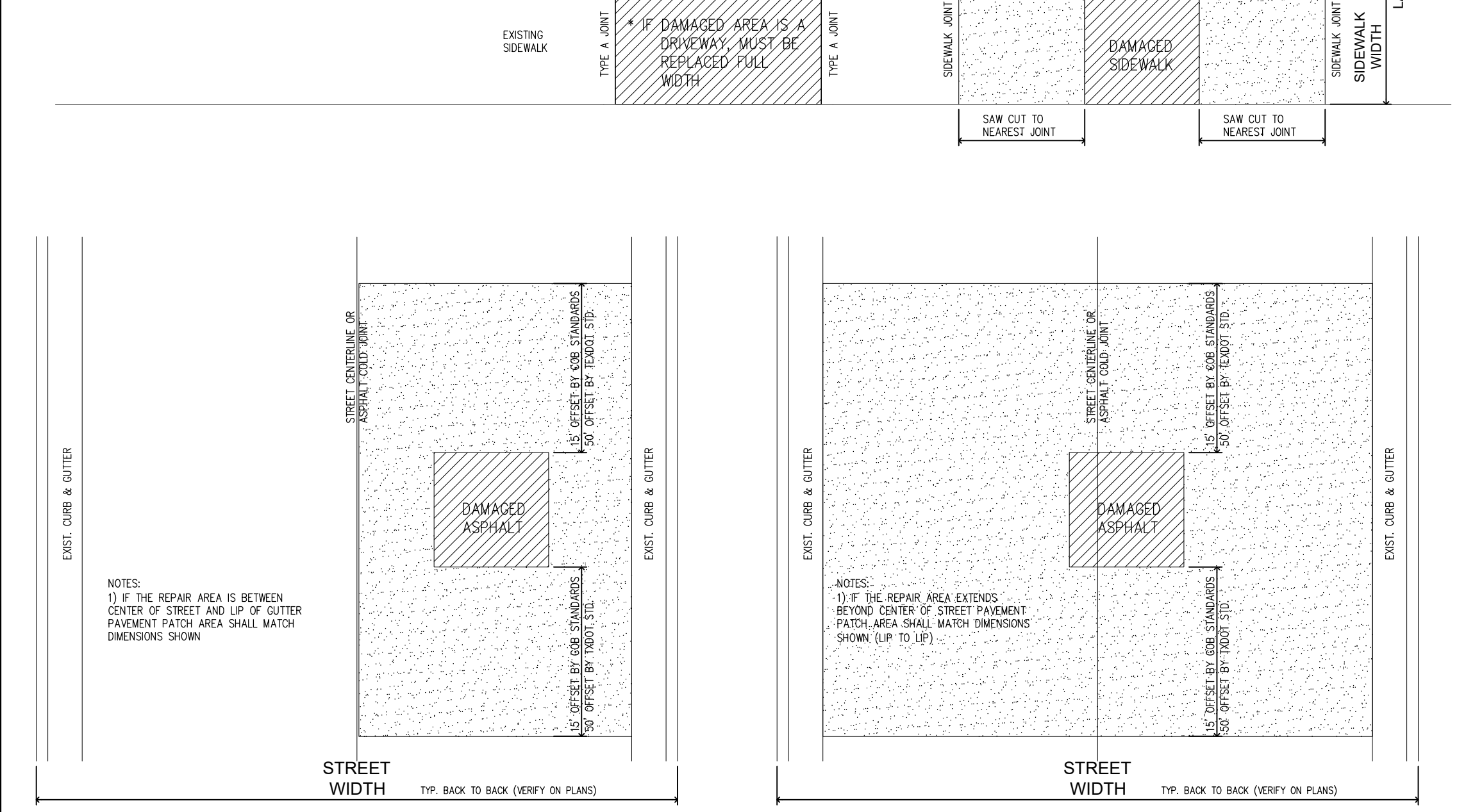
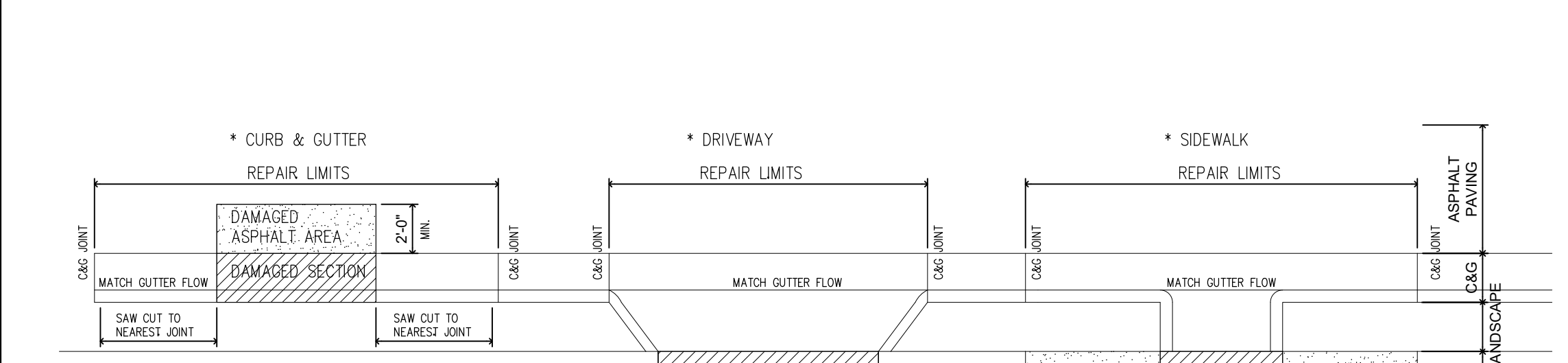
**CONTRACTOR SHALL NOT BEGIN ANY WORK ON ANY PORTION OF THE PAVING & DRAINAGE IMPROVEMENTS UNTIL ALL UNDERGROUND UTILITIES (STORM DRAINAGE, WATER DISTRIBUTION, SANITARY SEWER AND ALL ELECTRIC CABLE CONDUIT CROSSINGS), HAS BEEN COMPLETED.**

TYPE OF STREET	SUBGRADE		GEO-GRID		BASE		PAVEMENT	
	LIME TREATED	CONC.	LIME TREATED	CONC.	LIMESTONE OR CALICHE	CONCRETE	CONCRETE	
RESIDENTIAL	6"	6"	6"	6"	6"	7" REINF. #4 @ 12 OCEW	7" REINF. #4 @ 12 OCEW	
RESIDENTIAL COLLECTOR	8"	8"	8"	8"	8"	7" REINF. #4 @ 12 OCEW	7" REINF. #4 @ 12 OCEW	
COLLECTOR	11"	11"	11"	11"	11"	7" REINF. #5 @ 12 OCEW	7" REINF. #5 @ 12 OCEW	
MINOR ARTERIAL / INDUSTRIAL	12"	12"	10"	12"	10"	8" REINF. #5 @ 12 OCEW	8" REINF. #5 @ 12 OCEW	
MAJOR ARTERIAL	12"	12"	11"	13"	11"	8" REINF. #6 @ 12 OCEW	8" REINF. #6 @ 12 OCEW	

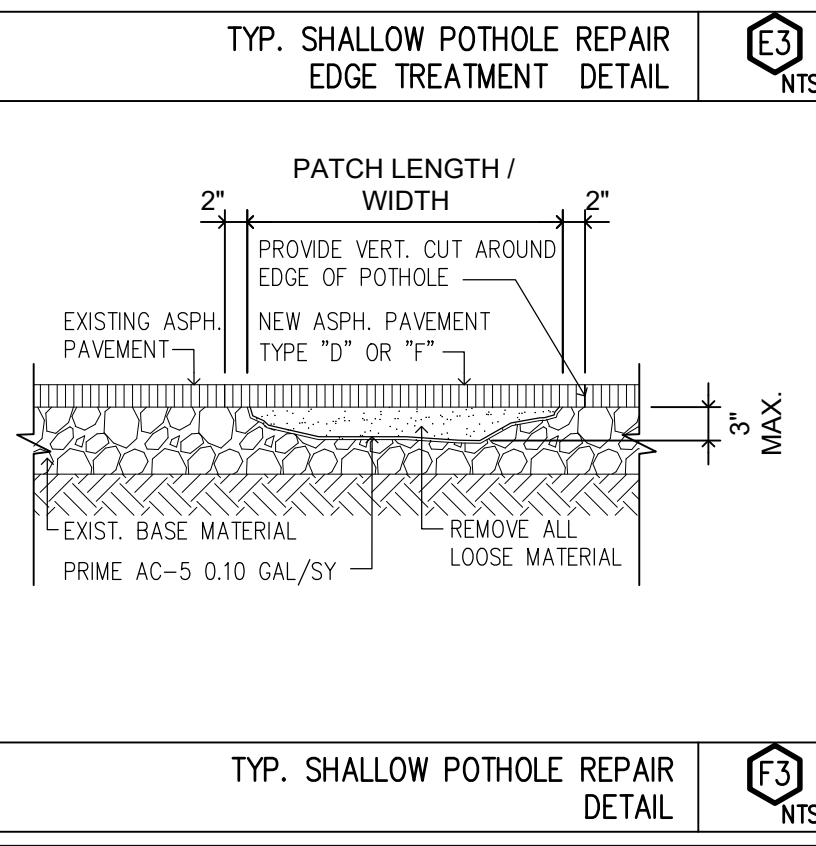
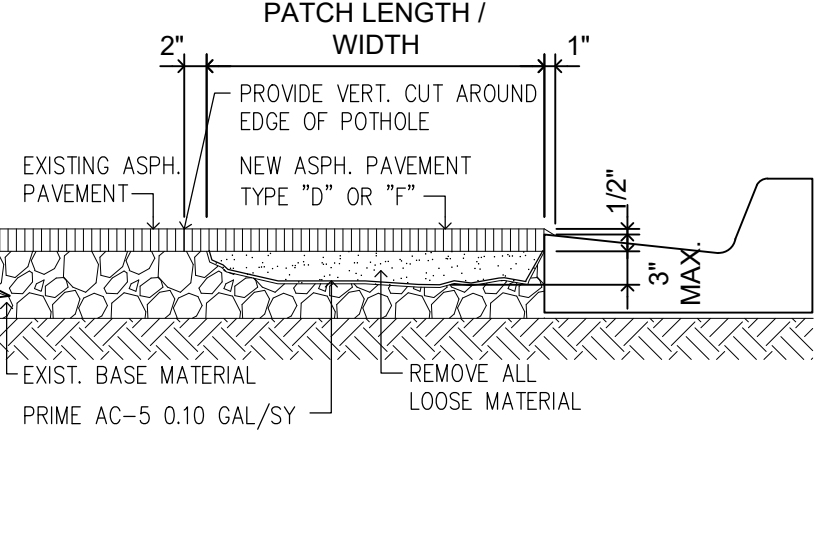
TYP. CURB DRAIN DETAIL & SPECIFICATIONS C1 NTS

TYP. STREET SIGN INSTALLATION DETAIL C2 NTS

RAMP AT STREET INTERSECTION DETAIL C3 NTS

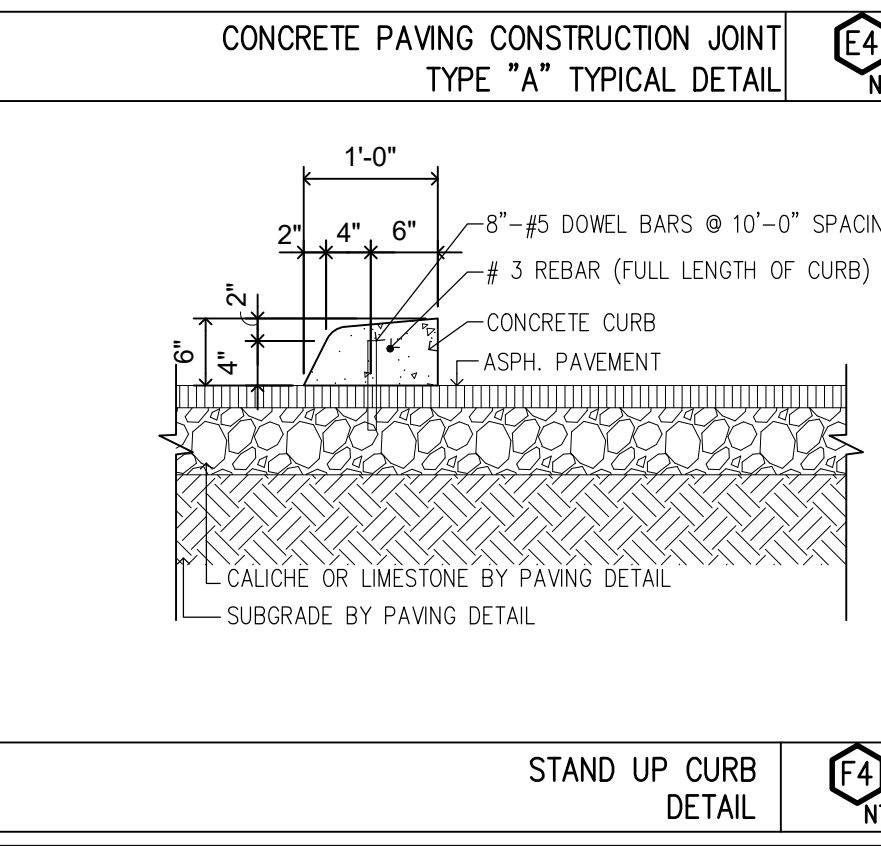
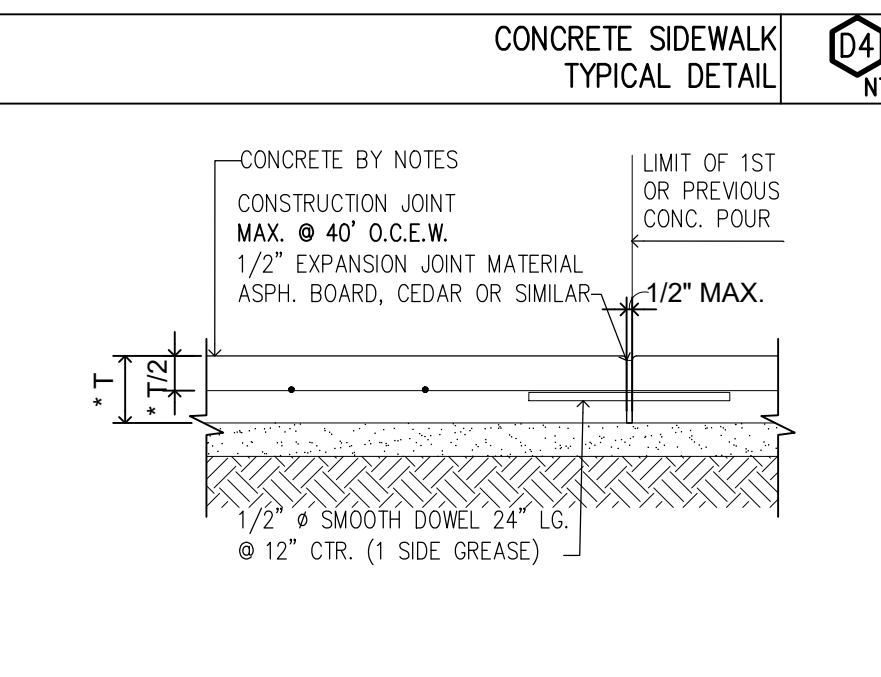
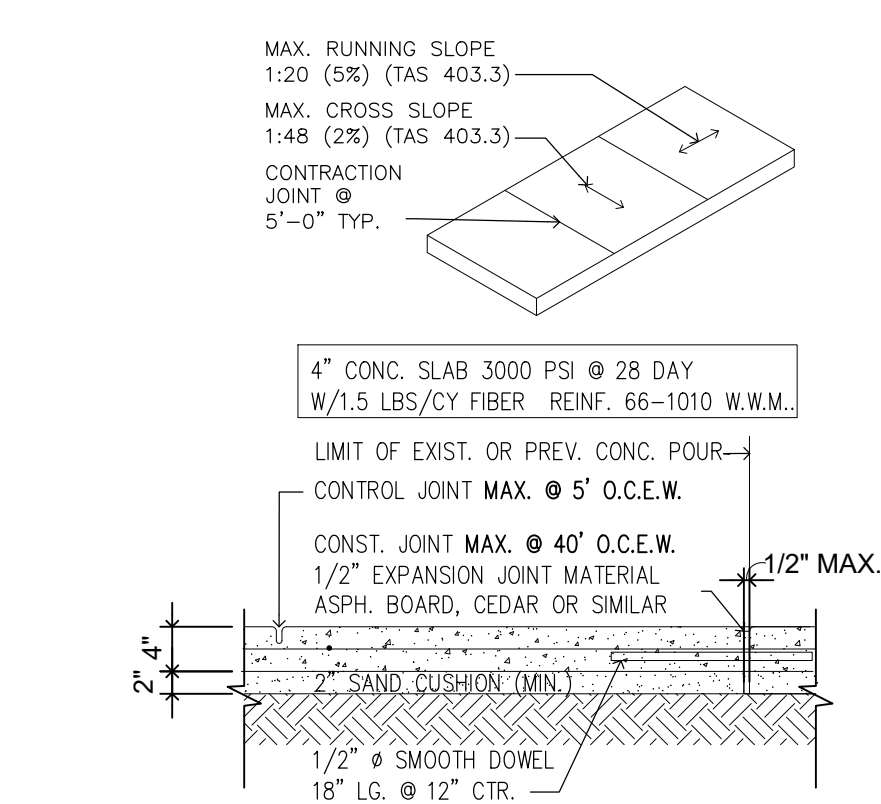


CURB, GUTTER, SIDEWALKS & ASPHALT PAVING REPAIR PREMISES DETAIL F2 NTS

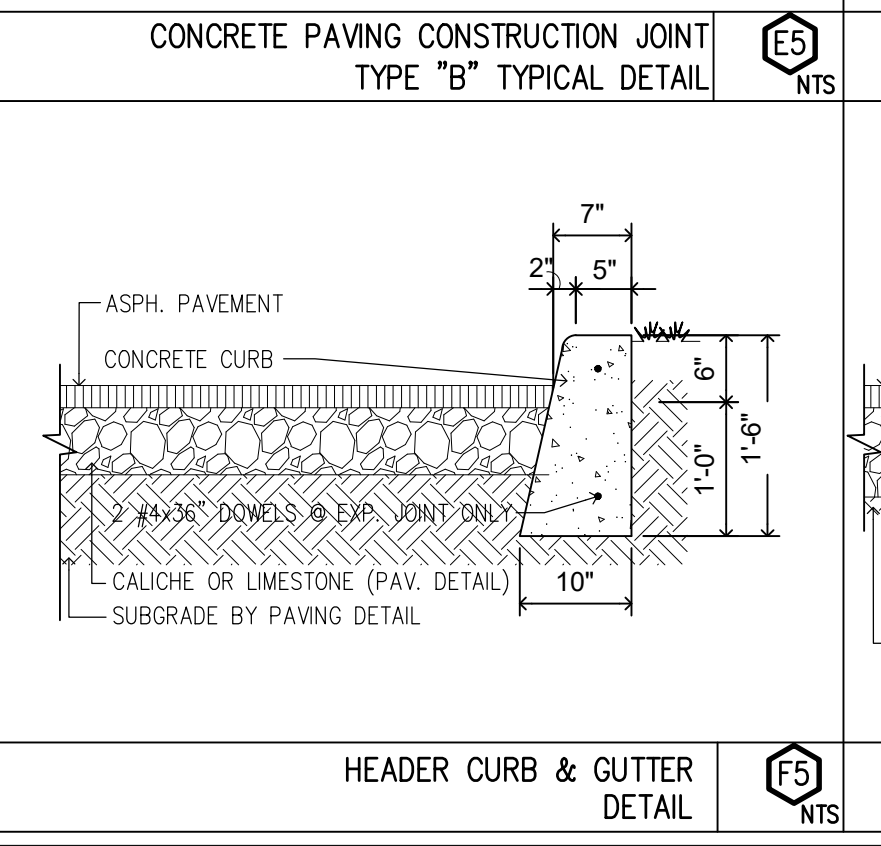
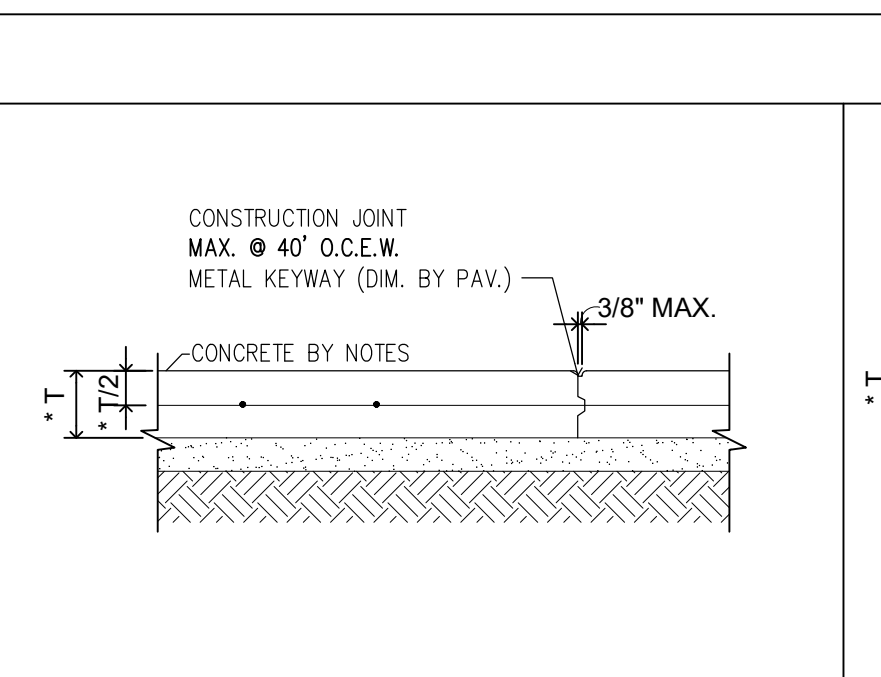
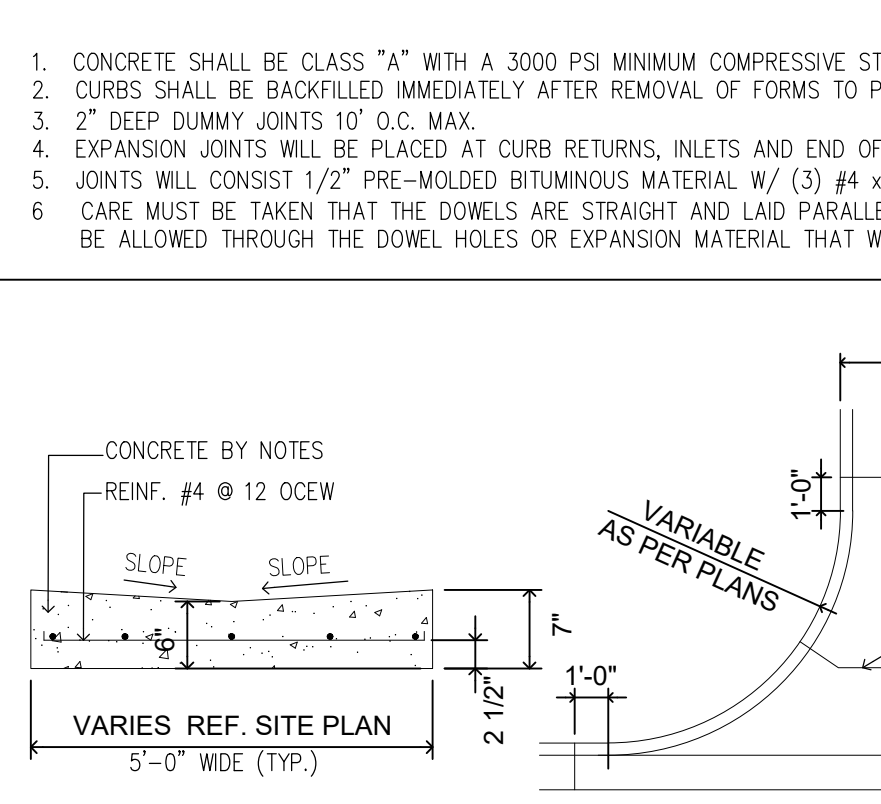


TYP. SHALLOW POT-HOLE REPAIR DETAIL F3 NTS

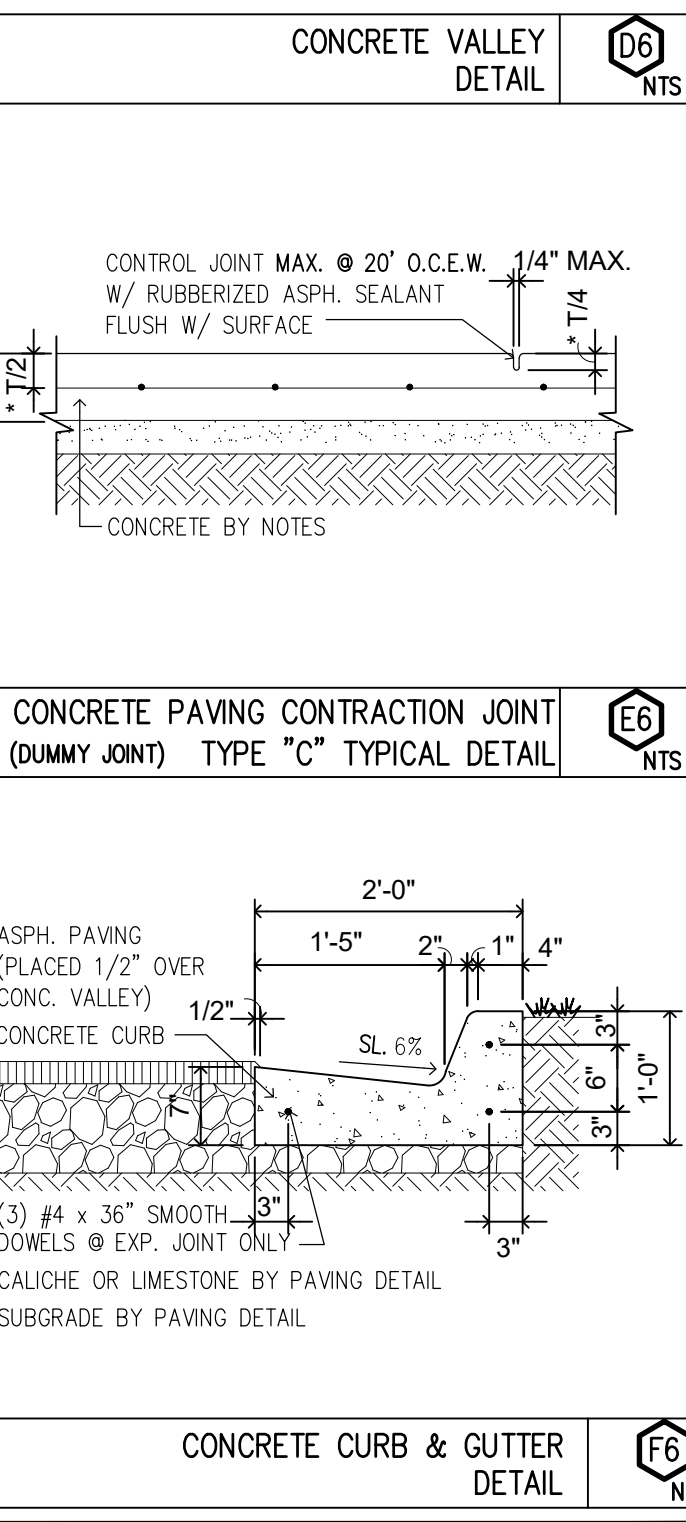
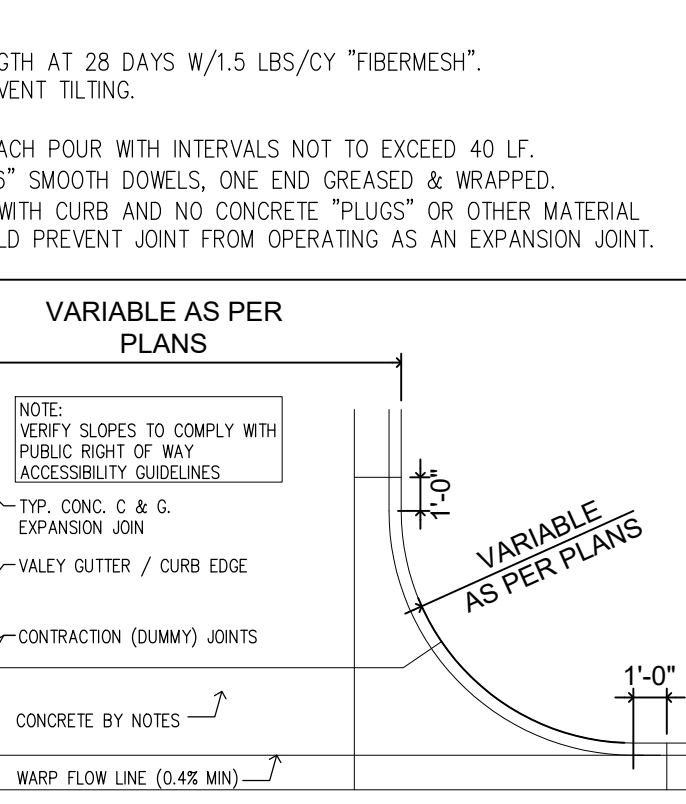
PAVEMENT SECTION DETAIL B6 NTS



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



CONCRETE VALLEY DETAIL D6 NTS



CONCRETE PAVING CONTRACTION JOINT (DUMMY JOINT) TYPE "C" TYPICAL DETAIL E6 NTS

**st**

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

135485  
 LICENSE NO.  
 PROFESSIONAL ENGINEER

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

DETAILS VII

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

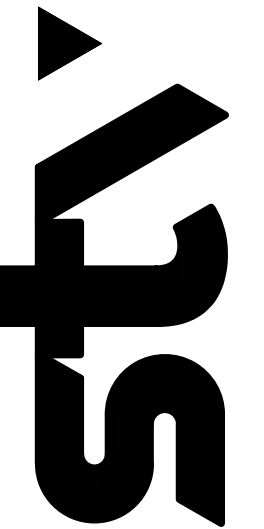
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TRAFFIC NOTES AND SPECIAL CONDITIONS

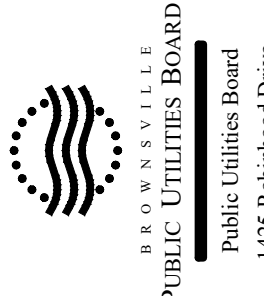
- IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO SEE THAT ALL TRAFFIC CONTROL DEVICES ARE PROPERLY INSTALLED AND MAINTAINED AT THE JOB SITE IN ACCORDANCE WITH THE PLANS, SPECIFICATIONS AND RELATED INDUSTRY STANDARDS AND REGULATIONS. THESE NOTES, DO NOT, IN OF THEMSELVES, CONSTITUTE A TRAFFIC CONTROL PLAN. IN THE EVENT THAT THESE PLANS DO NOT INCLUDE TRAFFIC CONTROL, OR THAT THE CONTRACTOR WISHES TO VARY FROM TRAFFIC CONTROL INCLUDED WITH THESE PLANS, HE/SHE SHALL SUBMIT FOR REVIEW A TRAFFIC CONTROL PLAN SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF TEXAS, INCLUDING A SIGN AND BARRICADE PLAN CONFORMING TO THE REQUIREMENTS OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. THE CITY'S RIGHT-OF-WAY AND BPUB CONSTRUCTION INSPECTOR (SCI) WILL ONLY BE RESPONSIBLE TO INSPECT THE TRAFFIC CONTROL DEVICES BEING DEPLOYED. IF, IN THE OPINION OF THE CITY RIGHT-OF-WAY INSPECTOR AND THE SCI, THE TRAFFIC CONTROL DEVICES DO NOT CONFORM TO ESTABLISHED STANDARDS OR ARE INCORRECTLY PLACED OR ARE INSUFFICIENT IN QUANTITY TO PROTECT THE GENERAL PUBLIC, THE SCI SHALL HAVE THE OPTION TO STOP CONSTRUCTION OPERATIONS AT NO EXPENSE TO BPUB UNTIL SUCH TIME AS THE CONDITIONS ARE CORRECTED BY THE CONTRACTOR.
- THE CONTRACTOR MUST CONTACT THE CITY RIGHT-OF-WAY INSPECTOR 48 HOURS IN ADVANCE (NOT INCLUDING WEEKENDS) OF ANY MINOR STREET CLOSURE. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO ADVISE THE CITY INSPECTOR 10 DAYS IN ADVANCE OF AN ARTERIAL TOTAL STREET CLOSURE. THIS MUCH TIME IS NECESSARY TO INSTALL ADVISORY SIGNS AND GIVE THE MOTORISTS A MINIMUM OF 7 DAYS NOTICE OF THE STREET CLOSURE. THE CITY INSPECTOR AFTER BEING NOTIFIED WILL CONTACT THE TRAFFIC ENGINEERING OFFICE TO MAKE THE NECESSARY ARRANGEMENTS.
- AS WORK PROGRESSES, LOCATION OF TEMPORARY TRAFFIC CONTROL DEVICES WILL BE ADJUSTED AND MODIFIED, AS NECESSARY BY THE CONTRACTOR AT CONTRACTOR'S EXPENSE.
- IF THE NEED ARISES, ADDITIONAL TEMPORARY TRAFFIC CONTROL DEVICES, SPECIAL DIRECTIONAL DEVICES, AND/OR BUSINESS NAME SIGNS MAY BE ORDERED BY THE CITY RIGHT-OF-WAY INSPECTOR AND/OR SCI AT THE CONTRACTOR'S EXPENSE.
- TEMPORARY TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE CITY "TYPICAL SIGN AND BARRICADE STANDARDS" SHEETS AND TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- THE CONTRACTOR MUST MAINTAIN ALL STREETS WITHIN PROJECT LIMITS OPEN TO THROUGH TRAFFIC BY REPAIRING TRENCHES, POTHLES, LEVELING UP WITH ASPHALT, ETC. AT NO DIRECT PAYMENT, WITH THE COST TO BE INCLUDED IN OTHER ITEMS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SUITABLE ACCESS ACCOMMODATIONS FOR SCHOOL CHILDREN AND PEDESTRIANS.
- THE CONTRACTOR SHALL PROVIDE ACCESS FOR DELIVERY OF MAIL BY THE U.S. POSTAL SERVICE.
- THE CONTRACTOR SHALL PROVIDE FOR ACCESS TO RESIDENCES AND ALL BUSINESSES AT ALL TIMES WITHIN ALL THE PHASES OF THE WORK.
- PERMANENT PAVEMENT MARKINGS SHALL BE APPLIED PRIOR TO THE OPENING OF THE COMPLETED STREET TO TRAFFIC. TEMPORARY ADDITIONAL SHORT-TERM EXPENDABLE PAVEMENT MARKINGS MAY BE PROVIDED PRIOR TO THE APPLICATION OF PERMANENT MARKINGS IN MINIMUM LENGTHS OF 36", OR RAISED PAVEMENT MARKINGS TO DELINEATE CONTINUITY UNTIL SUCH TIME AS STANDARD PAVEMENT MARKINGS IN NORMAL LENGTHS CAN BE PLACED AT NO DIRECT PAYMENT.
- ALL TEMPORARY TRAFFIC CONTROL DEVICES, ETC. SHALL BE PROVIDED BY THE CONTRACTOR WITHOUT DIRECT PAYMENT, UNLESS OTHERWISE NOTED OR STATED.
- THE CITY RIGHT-OF-WAY INSPECTOR WILL MONITOR THE CONTRACTOR'S TRAFFIC CONTROL DEVICES AND THE CONTRACTOR WILL BE RESPONSIBLE TO FURNISH ALL RESIDENTS AND BUSINESSES WITH AN INFORMATION FLYER ON ALL JOBS DURING CONSTRUCTION.
- ANY DAMAGE TO PERMANENT TRAFFIC SIGNALS, THE CONTROLLER BOX, LOOPS OR CONDUITS DURING OR UPON COMPLETION OF THE PROJECT SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE. THE DECISION TO REPAIR, AS OPPOSED TO REPLACE, THE DAMAGED EQUIPMENT SHALL BE MADE BY THE CITY INSPECTOR.
- THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL STREETS OUTSIDE OF THE PROJECT LIMITS WHICH ARE DAMAGED DUE TO CONSTRUCTION ACTIVITIES. THE REPLACED SECTION MUST BE APPROVED BY THE CITY. THERE WILL BE NO DIRECT PAYMENT FOR THIS WORK. THE COST IS TO BE INCLUDED IN OTHER ITEMS.
- THE CONTRACTOR SHALL PROVIDE THE CITY AN EMERGENCY TELEPHONE NUMBER FOR EVENINGS, WEEKENDS, AND HOLIDAYS BY THE FIRST WORKING DAY OF THE PROJECT. THIS TELEPHONE NUMBER MUST BE A COMMERCIAL ANSWERING SERVICE. THE ANSWERING SERVICE MUST BE ABLE TO CONTACT THE CONTRACTOR AND HAVE THE CONTRACTOR RESPOND TO BPUB AND CITY STAFF WITHIN TWO HOURS OF THE INITIAL CONTACT.
- THE CONTRACTOR SHALL MAINTAIN CONTINUOUS ACCESS TO ALL INTERSECTING STREETS UNLESS OTHERWISE SHOWN ON THESE PLANS. WHEN CONTINUOUS ACCESS IS SCHEDULED TO BE BLOCKED, THE CONTRACTOR SHALL CONTACT THE DISPATCHERS FOR THE FIRE DEPARTMENT AND EMS AT (956) 548-7000 AND THE POLICE DEPARTMENT AT (956) 548-7000, TO APPRISE THEM OF THE PENDING STREET CLOSURE AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE. IF THE CLOSURE FALLS ALONG A BUS ROUTE, THE CONTRACTOR SHALL ALSO CONTACT B-METRO AT (956) 548-6050.

ROW MANAGEMENT GENERAL NOTES

- A TRAFFIC CONTROL PLAN SHALL BE REQUIRED BY CONTRACTOR.
- TRENCH AND PAVEMENT RESTORATION SHALL BE PERFORMED IN ACCORDANCE WITH THE RIGHT-OF-WAY MANAGEMENT ORDINANCE AND THE UTILITY EXCAVATION CRITERIA MANUAL (UECM). THE BACKFILL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED SIX INCHES (6") IN DEPTH AND COMPACTED TO NOT LESS THAN NINETY- EIGHT PERCENT (98%) OF DENSITY. ALL TESTING WILL BE AT THE EXPENSE OF THE CONTRACTOR.
- ROW PERMITS WILL CORRESPOND TO PROJECT PHASING UNLESS AUTHORIZED BY THE RIGHT-OF-WAY MANAGEMENT DIVISION.
- ALL LANES OF TRAFFIC MUST BE OPEN TO THE PUBLIC BY THE END OF THE DAY. TRENCHES MUST BE SECURED WITH ALL SURFACE WEATHER MATERIAL AND/OR SECURED STEEL PLATES, UNLESS OTHERWISE NOTED OR STATED.
- TRADITIONAL WORKING HOURS ARE MONDAY THROUGH FRIDAY SUNUP TO SUNDOWN THROUGHOUT THE PROJECT LIMITS. IF WORK WILL BE CONDUCTED OUTSIDE THE TRADITIONAL WORKING HOURS, A REQUEST MUST BE SUBMITTED IN WRITING TO OWNER AND BPUB AT LEAST THREE (3) DAYS IN ADVANCE, AND AUTHORIZED BY THE RIGHT-OF-WAY MANAGEMENT DIVISION.
- ALL BACKFILL AND/OR FLATWORK INSPECTS WILL BE IN ACCORDANCE WITH THE UECM.
- CONTRACTOR WILL BE RESPONSIBLE FOR DAMAGES TO EXISTING STREETS, SIDEWALKS, CURBS AND PRIVATE PROPERTY, NO SEPARATE PAY ITEM (NSPI).
- TRAFFIC OPERATIONS (956) 546-HELP MUST BE NOTIFIED IF CONSTRUCTION IS WITHIN FIVE HUNDRED (500) FEET OF ANY SIGNALIZATION. ANY SIGNAL RESTORATION WILL BE UNDER THE DIRECTION OF THE TRAFFIC OPERATION SECTION.
- ANY WORK CONDUCTED IN A GARBAGE PICK UP ALLEY MUST BE COORDINATED THROUGH THE SOLIDS WASTE DEPARTMENT AT (956) 546-HELP.
- ANY WORK CONDUCTED IN A DRAINAGE EASEMENT WILL REQUIRED A REVIEW AND SEPARATE PERMIT(S) FROM THE DRAINAGE ENGINEERING SECTION TO ENSURE COMPLIANCE WITH THE STORM WATER POLLUTION PREVENTION PLAN, BMP, AND/OR SW3P PERMITS.
- CONTRACTOR WILL BE RESPONSIBLE FOR THE INSTALLATION OF TWO (2) PROJECT SIGNS IN CONSPICUOUS LOCATIONS WITHIN THE SCOPE OF THE PROJECT.
- BEFORE THE START OF ANY CONSTRUCTION, THE SITE MUST BE VIDEO-RECORDED BY THE CONTRACTOR WITH ONE COPY SUBMITTED TO THE RIGHT-OF-WAY MANAGEMENT DIVISION (NSPI).
- BPUB WILL NOTIFY THE RIGHT-OF-WAY MANAGEMENT DIVISION WITH A LETTER OF ACKNOWLEDGMENT ONCE THE PROJECT HAS BEEN COMPLETED.
- CONTRACTOR SHALL REMOVE AND REPLACE ANY TRAFFIC LOOPS DETECTORS THAT ARE DAMAGED DURING CONSTRUCTION (NSPI).
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ANY PAVEMENT MARKING DAMAGED, OBLITERATED AND/OR REMOVED FOR CONSTRUCTION PURPOSES. (NSPI)
- WORK AREA SHALL BE LIMITED TO EXISTING STREET ROW.
- CONTRACTOR SHALL NOTIFY THE CITY ROW MANAGEMENT 72-HOURS IN ADVANCE FOR WORK REQUIRED.
- CONTRACTOR SHALL NOT STORE CONSTRUCTION EQUIPMENT, MATERIALS AND ANY OTHER RELATED CONSTRUCTION RESOURCE WITHIN THE ROW WITH THE EXCEPTION OF.
- CONTRACTOR SHALL PROVIDE CITY ROW WITH A COPY OF THE LEASE AGREEMENT IN REGARDS OF THE STAGING AREA PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL PROVIDE STATIC MESSAGE BOARDS TO BE LOCATED AT THE CITY ROW INSPECTOR'S DISCRETION.
- CONTRACTOR SHALL PROVIDE SOUND ATTENUATION DEVICES FOR WASTEWATER BY-PASS PUMPING EQUIPMENT.
- CONTRACTOR SHALL PROVIDE METAL PROTECTORS FOR WASTEWATER BY-PASS PUMPING HOSES FOR ADEQUATE PROTECTION.
- CONTRACTOR SHALL PROVIDE FIELD DENSITY REPORTS OF THE COMPACTED TRENCH TO THE CITY ROW INSPECTOR.
- THE FOLLOWING SEQUENCE OF WORK IS NOT AN EXHAUSTIVE LIST OF STEPS THE CONTRACTOR SHALL ADHERE TO IN ORDER TO COMPLETE WORK WITHIN THE CITY ROW. IT IS MEANT AS A GENERAL GUIDANCE ONLY IN ORDER FOR THE CONTRACTOR TO ABIDE WITH CITY PERMITS WHILE COMPLETING PROJECT WITHIN CITY ROW AND SHALL BE FOLLOWED PER CONSTRUCTION PHASE SHOWN ELSEWHERE IN THE PLANS.
- WITH WRITTEN PERMISSION FROM CITY ROW MANAGEMENT, CONTRACTOR MAY PROVIDE TEMPORARY SURFACING OF EACH PERMITTED SECTION AND COMPLETE FINAL MILL AND OVERLAY AT A LATER DATE. HOWEVER, IF ADDITIONAL PERMITS ARE REQUIRED, THESES WILL BE PAID BY THE CONTRACTOR AT HIS/HER OWN EXPENSE.
- PHASING SHOWN IS PRELIMINARILY APPROVED BY THE CITY OF BROWNSVILLE ROW MANAGEMENT. OBTAIN ONE CITY OF BROWNSVILLE STREET CUT AND RIGHT-OF-WAY USE PERMIT FOR THE ENTIRE PROJECT. NO MORE THAN 400 LINEAR FEET OF OPEN EXCAVATION IS ALLOWED AT ONE TIME UNLESS PRIOR WRITTEN APPROVAL IS GRANTED BY THE RIGHT-OF-WAY MANAGEMENT DIVISION. COMPLETE ALL WORK ASSOCIATED WITH EACH PHASE BEFORE PROCEEDING TO NEXT PHASE. COMPLY WITH PERMIT CONDITIONS. INCLUDE COSTS OF PERMIT AND PERMIT COMPLIANCE, INCLUDING ANY MODIFICATIONS TO PERMIT DURING CONSTRUCTION, IN BASE BID.



TEXAS REGISTERED ENGINEERING FIRM  
TYPE F-1741



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



09/22/2023  
J. A. EDWARDS  
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.

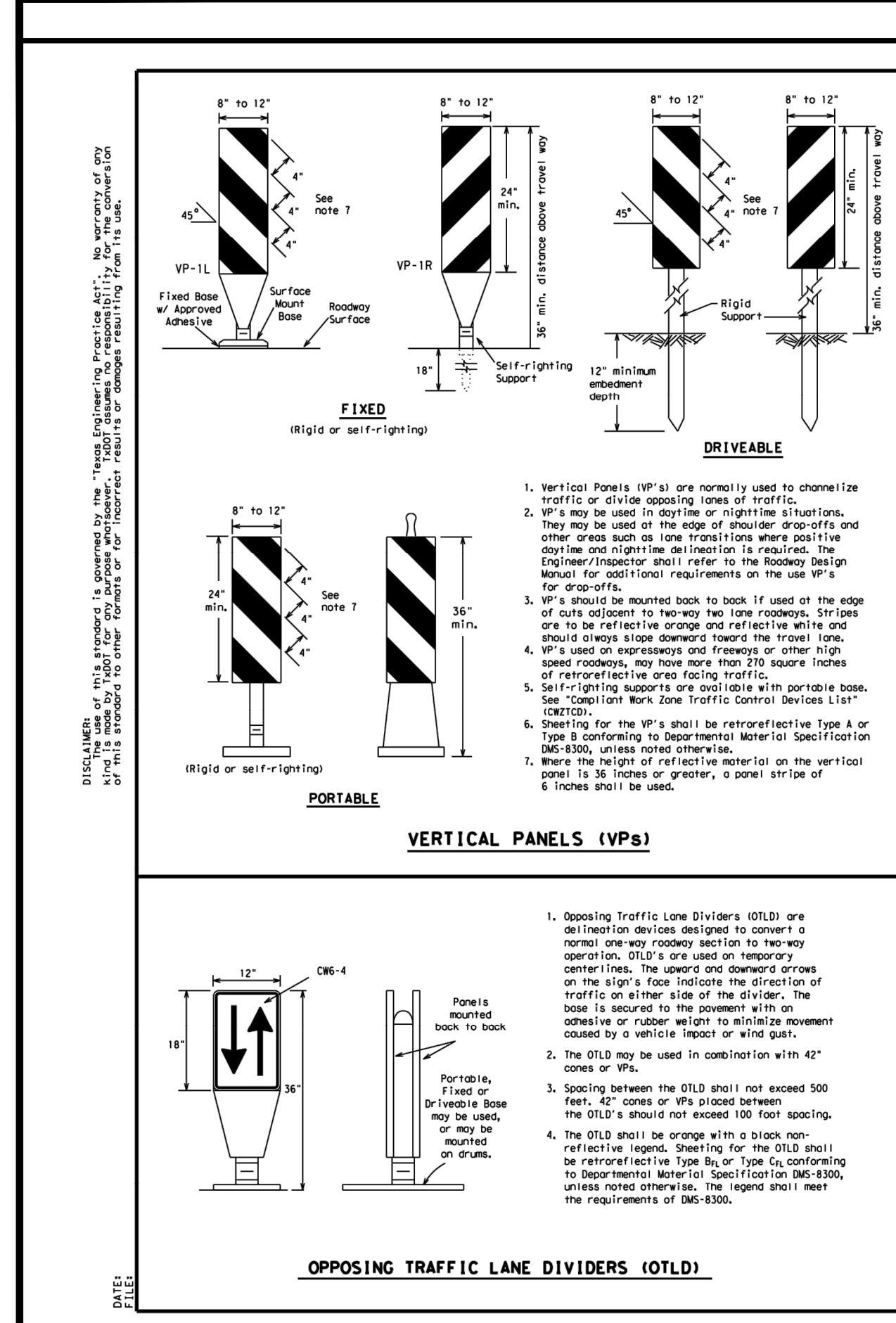
BROWNSVILLE PUBLIC UTILITIES BOARD  
PROJECT 1: DOWNTOWN WW IMPROVEMENTS  
TRAFFIC CONTROL GENERAL NOTES

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

SHEET  
TC01







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.

4. To be effective, the chevron should be visible for at least 500 feet.

5. Chevrons shall be orange with a black non-reflective legend. Sheeting for the chevron shall be reflective Type B<sub>1</sub> or Type C<sub>2</sub> 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 freeways and divided highways, self-lighting chevrons may be used to supplement plastic drums but not to replace plastic drums.

**CHEVRONS**

**GENERAL NOTES**

- Work zone channelizing devices (Type 3 Barricades, Channelizing Devices, etc.) shall be installed in close proximity to traffic and are subject for use on high or low speed roadways. The Engineer/Inspector shall ensure that spacing and placement is uniform and in accordance with the Texas Manual on Uniform Traffic Control Devices (TMUD).
- Channelizing devices shown on this sheet may have a driveable, fixed or portable base. The requirement for self-lighting chevron devices must be specified in the General Notes or other plans sheets.
- Channelizing devices on self-lighting supports should be used in work zone areas where channelizing devices are frequently impacted by work vehicles or vehicles in the lanes. Signs marking alignment of the channelizing devices difficult to maintain. Locations of these devices shall be detailed elsewhere in the plans. Signs marking alignment of the channelizing devices difficult to maintain. Locations of these devices shall be detailed elsewhere in the plans.
- The Contractor shall maintain devices in a clean condition and replace damaged, non-reflective, faded, or broken devices and bases as required by the Engineer/Inspector. The Contractor shall be required to maintain proper device spacing alignment.
- Portable bases shall be fabricated from virgin and/or recycled rubber. The portable bases shall be fixed into the road surface with a minimum of 30 lbs. of weight.
- Pavement surfaces shall be prepared in a manner that ensures proper bonding between the adhesives, the fixed mount bases and the pavement surface. Adhesives shall be prepared and applied according to the manufacturer's recommendations.
- The installation and removal of channelizing devices shall not cause differential affects to the fixed pavement surfaces, including pavement surface discoloration or surface integrity. Portable bases shall not be permitted on fixed pavement surfaces. The Engineer/Inspector shall approve all application and removal procedures of fixed bases.

**LONGITUDINAL CHANNELIZING DEVICES (LCD)**

Posted Speed	Formula	Minimum Desirable Tower Lengths W (ft)	Suggested Maximum Spacing of Channelizing Devices S (ft)	On Target	On Target
30	$W \geq 150$	150	165	180	30'
35	$W \geq 150$	150	165	180	30'
40	$W \geq 150$	225	225	240	35'
45	$W \geq 150$	265	295	320	40'
50	$W \geq 150$	450	495	540	45'
55	$W \geq 150$	500	550	600	50'
60	$W \geq 150$	600	660	720	60'
65	$W \geq 150$	650	715	780	65'
70	$W \geq 150$	700	770	840	70'
75	$W \geq 150$	750	825	900	75'
80	$W \geq 150$	800	880	960	80'

**WATER BALLASTED SYSTEMS USED AS BARRIERS**

- 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.
- 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.
- 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 CDOT list.
- 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.
- When water ballasted systems used as barriers have blunt ends exposed to traffic, they should be attenuated as per manufacturer recommendations or fixed to a solid object 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.

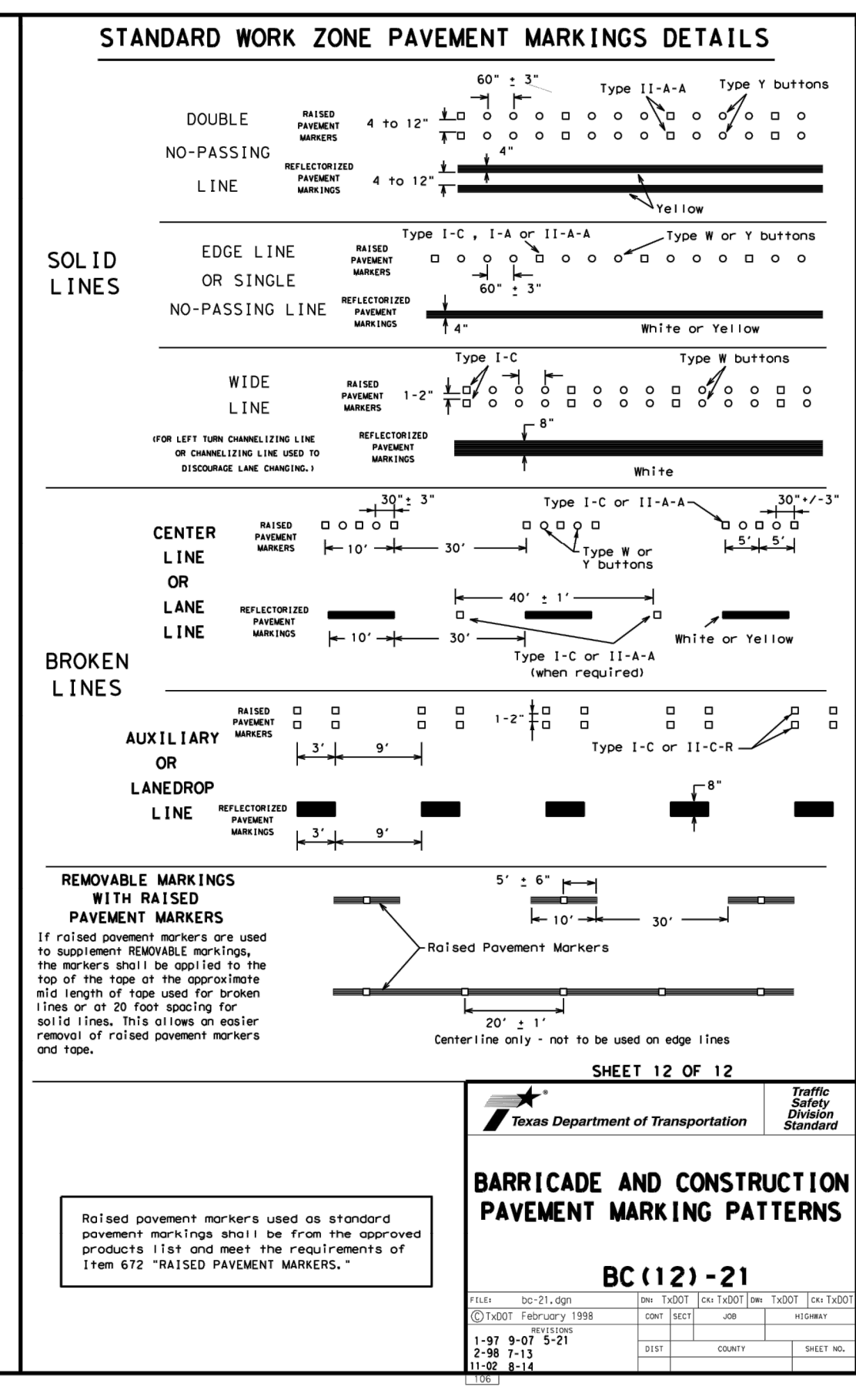
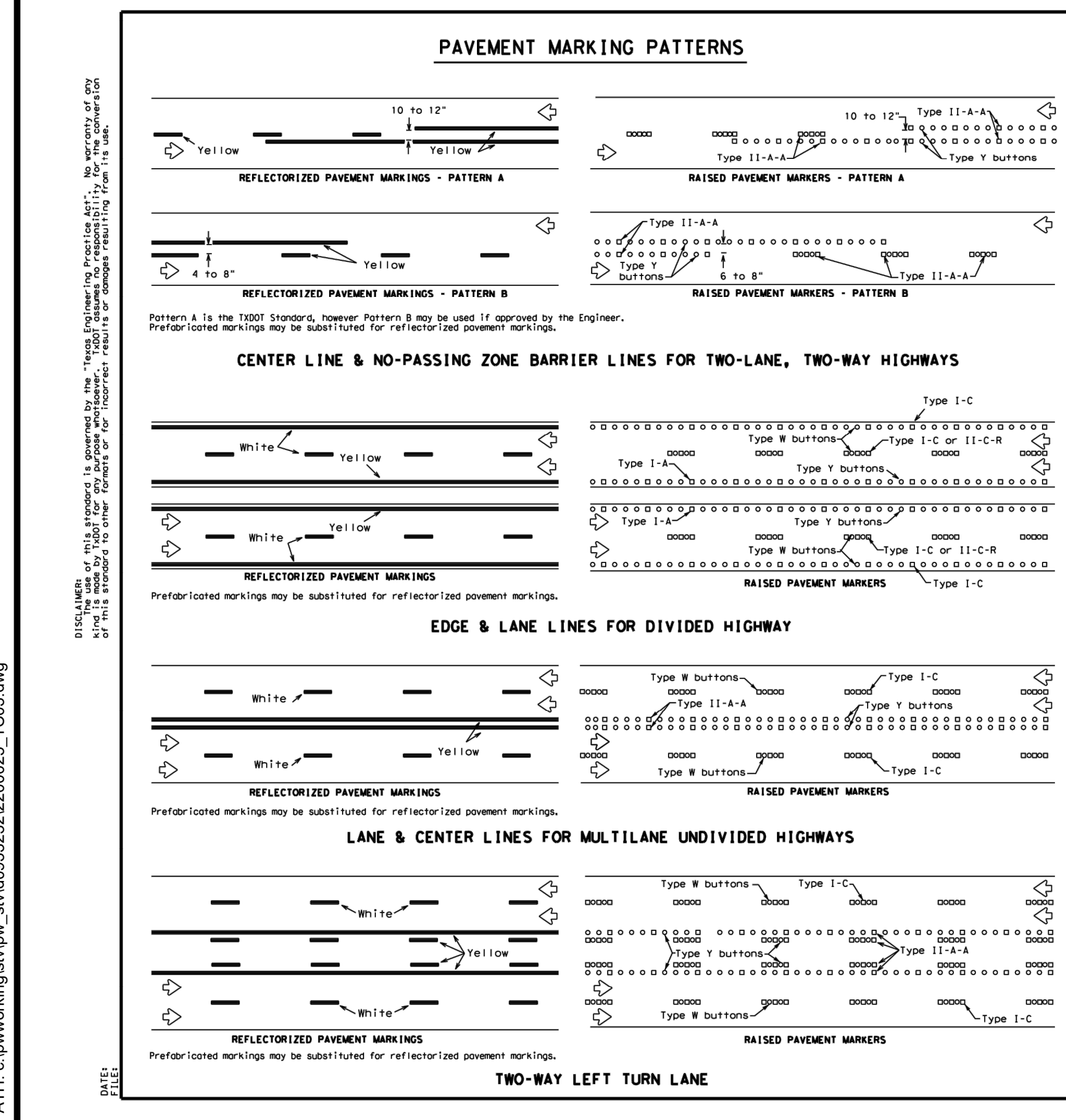
**SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS**

**SHEET 9 OF 12**

Texas Department of Transportation

**BC (9) - 21**

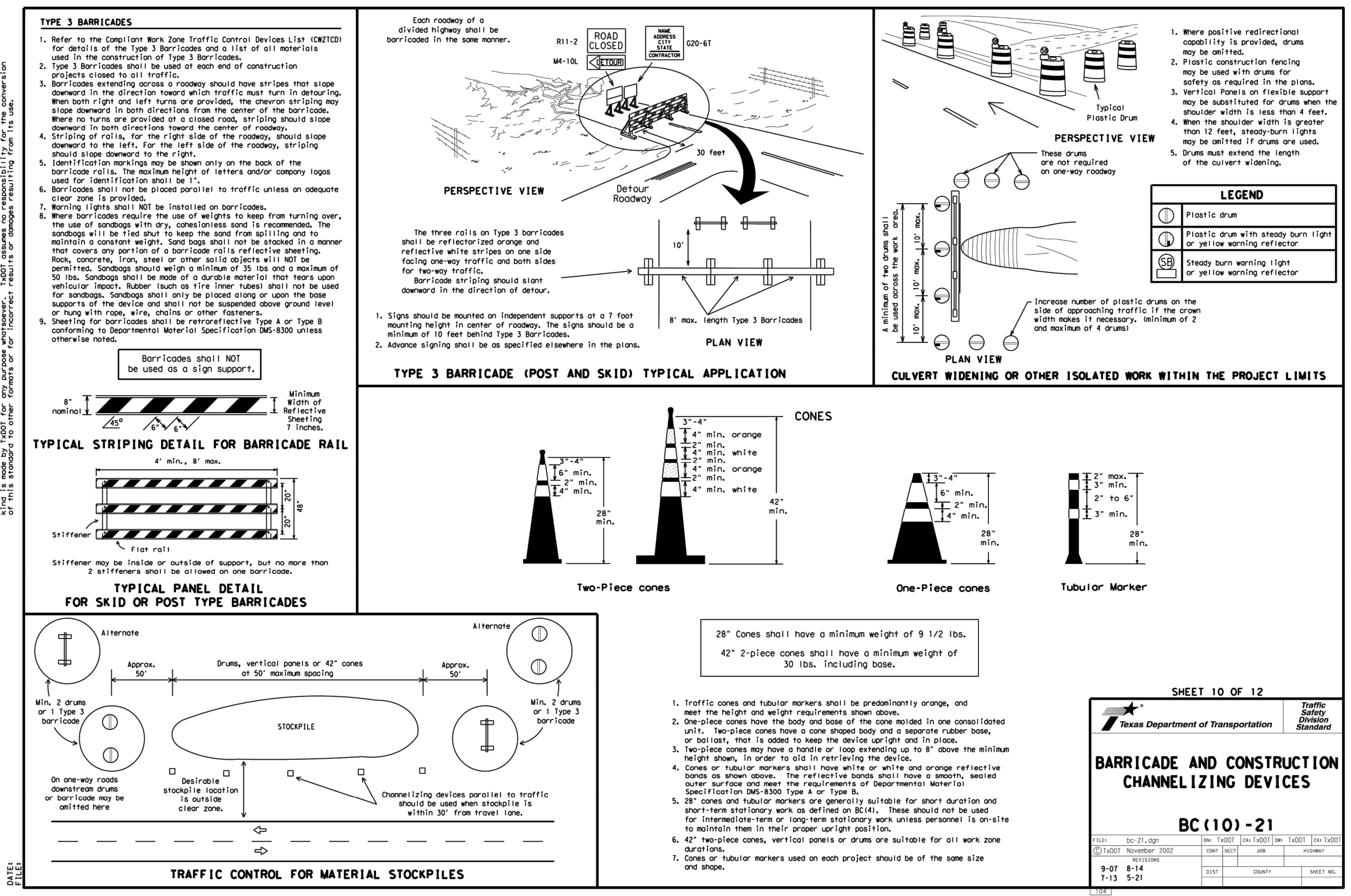
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DATE: 8/9/2023

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PRINTED BY: CamBae



DATE: 8/9/2023

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**BROWNVILLE PUBLIC UTILITIES BOARD**

Public Utilities Board  
1425 Robinson Drive  
Brownsville, Texas 78521

**TEXAS REGISTERED ENGINEERING FIRM**

REG. NO. 135485  
LICENSED PROFESSIONAL ENGINEER

NO. \_\_\_\_\_ BY \_\_\_\_\_ DATE \_\_\_\_\_

REVISION \_\_\_\_\_

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

**TRAFFIC CONTROL DETAILS II**

**PROJECT 1: DOWNTOWN WW IMPROVEMENTS**

DATE: 8/9/2023

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**LEGEND**

- Type 3 Barricade
- Channelizing Devices
- Trailer Mounted Flashing Arrow Board
- Sign
- Safety glare screen

**DEPARTMENTAL MATERIAL SPECIFICATIONS**

SIGN FACE MATERIALS	DMS-8300
DELINEATORS AND OBJECT MARKERS	DMS-8600
MODULAR GLARE SCREENS FOR HEADLIGHT BARRIER	DMS-8610

Only pre-qualified products shall be used. A copy of the Compliant Work Zone Traffic Control Devices List (CWZCD) descriptor files pre-qualified products and their sources and may be found at the following web address:  
<http://www.txdot.gov/business/resources/producer-list.html>

**TRAFFIC CONTROL PLAN TYPICAL DETAILS**

**WZ (TD) - 17**

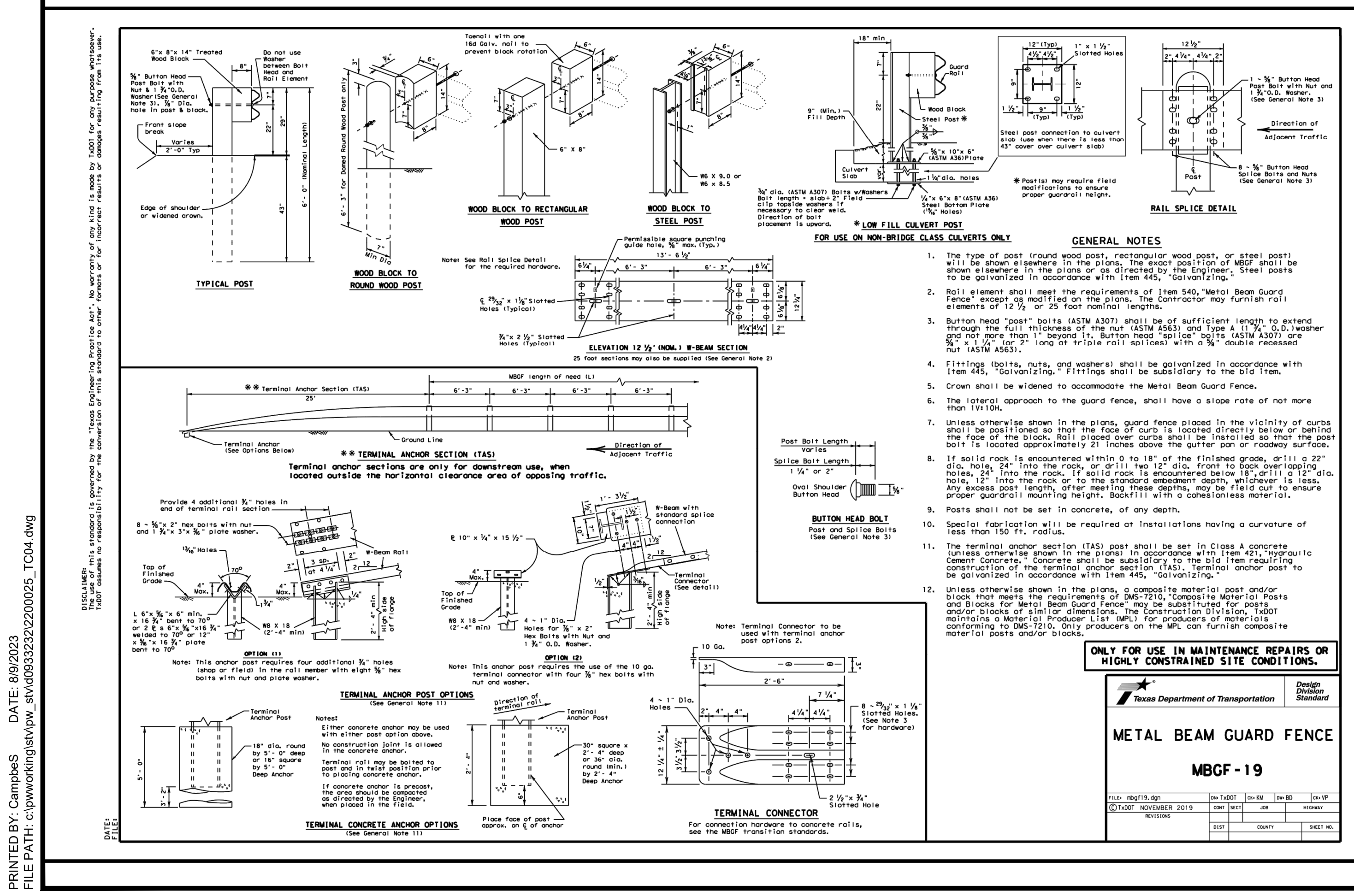
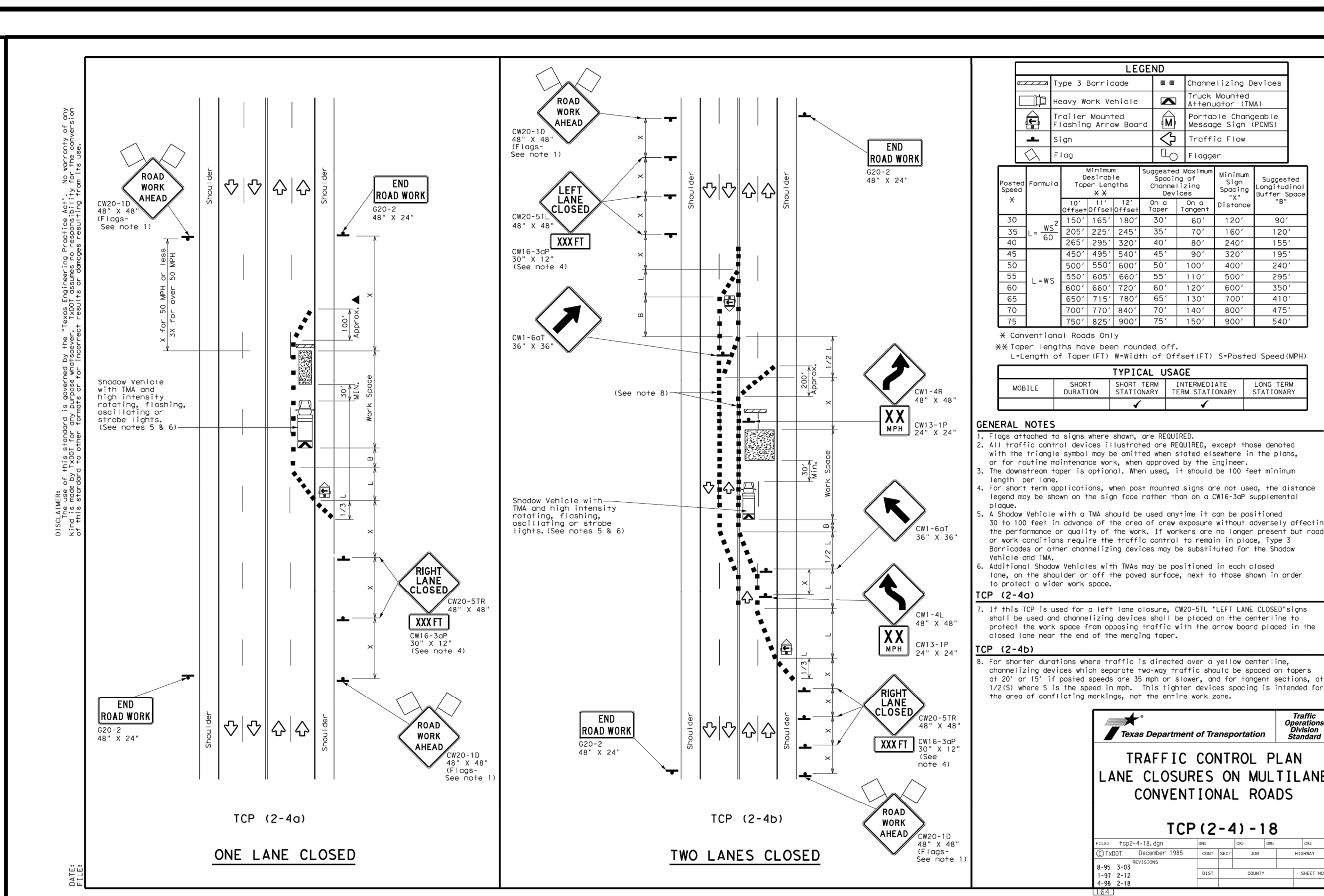
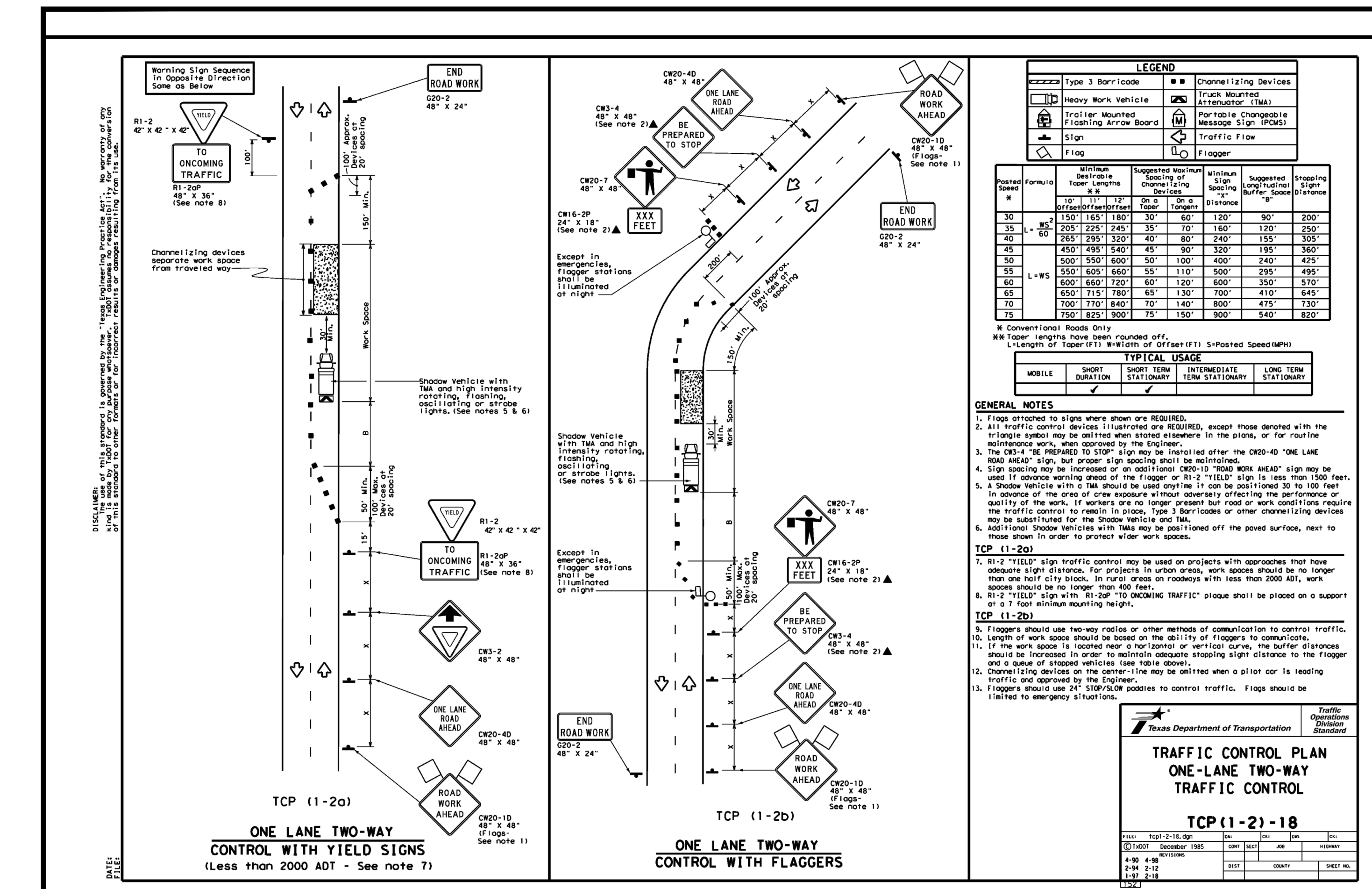
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1-02	02/07/02	FEBRUARY 2002			
1-03	01/03/02	JANUARY 2002			
1-04	02/07/02	FEBRUARY 2002			

DATE: 8/9/2023

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**st**

TEXAS REGISTERED ENGINEERING FIRM  
TYPE-FE-1741

BROWNSVILLE  
PUBLIC UTILITIES BOARD  
1425 Robinson Drive  
Brownsville, Texas 78521

09/22/2025

NO. \_\_\_\_\_

REVISION \_\_\_\_\_

DATE \_\_\_\_\_

BY \_\_\_\_\_

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: BPUB2200025.01  
CLIENT: XXXX

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TC04

**TRAFFIC NOTES**

**TRENCHING / EXCAVATING**

The following notes shall apply to excavations of trenches or pits that are located in the pavement or are within six (6) feet of the edge of roadway:

- 1.) Trench walls shall not be closer than three (3) feet from the edge of the traveled way at any stage of construction.
- 2.) Traffic control devices shall be in place before starting any excavation.
- 3.) Trenches or pits will not be permitted to be bridged by steel plates and open to traffic unless they are temporarily backfilled to finished street grade.
- 4.) For pits or trenches along or in a roadway that are going to be left open over night that are zero to fifty (0 - 50) feet in length, the following applies: **GUARD RAIL OR CONCRETE BARRIERS SHALL BE USED.**
- 5.) For pits or trenches along or in roadway that are going to be left open over night and are longer than 50 feet in length: **CONCRETE BARRIERS MUST BE USED.**
- 6.) Plastic construction fencing shall be required for any trench or pit left open over night.
- 7.) When using any guardrail or concrete barrier, protected end must be used as per the TEXAS-M.U.T.C.D.
- 8.) For vertical drop-offs greater than two (2) feet along roadway, low profile concrete with appropriate end protection must be installed.
- 9.) All concrete barriers placed on City R.O.W. shall be low profile. No high profile barriers will be allowed.

**REFLECTIVE SHEETING**

The reflectorized white and reflectorized orange stripes for channelizing devices such as barricade drums and vertical panels shall be constructed of reflective sheeting meeting the color and retro-reflectivity requirements of high intensity, unless otherwise specified in the plans.

**MAINTENANCE**

- 1.) All traffic signs shall be kept in proper position, clean and legible at all times. Damaged barricades, signs, and other traffic control devices shall be replaced without undue delay.
- 2.) To ensure adequate maintenance, a suitable schedule for inspection, cleaning, and replacement of barricading lights, and signs shall be established.
- 3.) Special attention and necessary action shall be taken to see that weeds, trees, shrubbery and construction materials do not obscure the face of any sign or barricades.

**TRAINING**

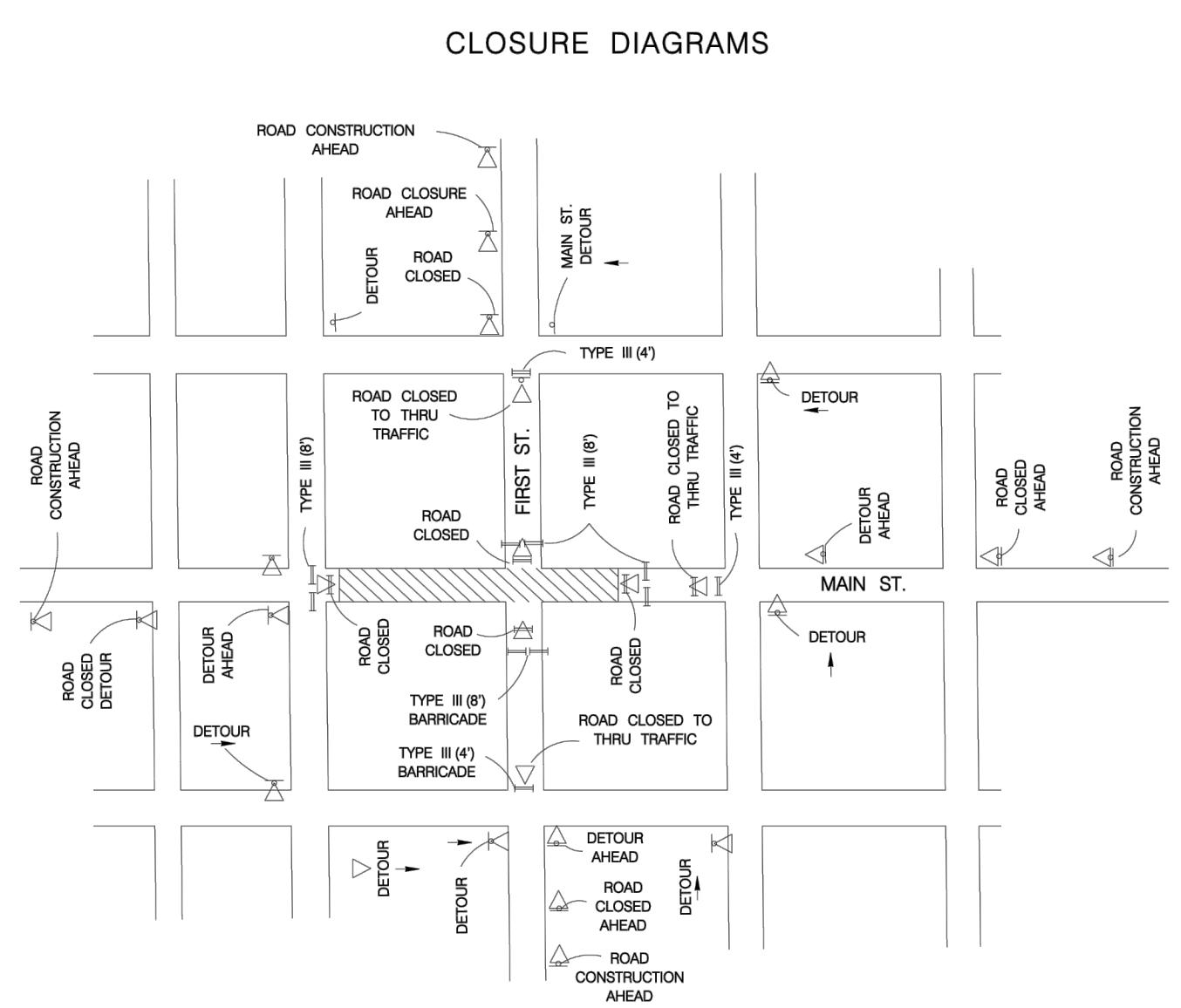
Each person whose actions affect maintenance and construction zone safety, from the upper-level management personnel through construction and maintenance field personnel, should receive training appropriate to the job decision each individual is required to make. Only those individuals who are qualified by means of adequate training in safe traffic control practices and have a basic understanding of the principles established by applicable standards and regulations, including those of the TEXAS M.U.T.C.D. should supervise the selection, placement, and maintenance of traffic control devices in maintenance and construction areas.

**SPECIAL EVENTS BARRICADING**

All Type I, (8') barricades used for special events (Dome, Runs, Walks, Parades etc.) shall be a minimum of 42" high and 96" wide. Any necessary signs will require proper sign stands.

**USE OF CITY R.O.W.**

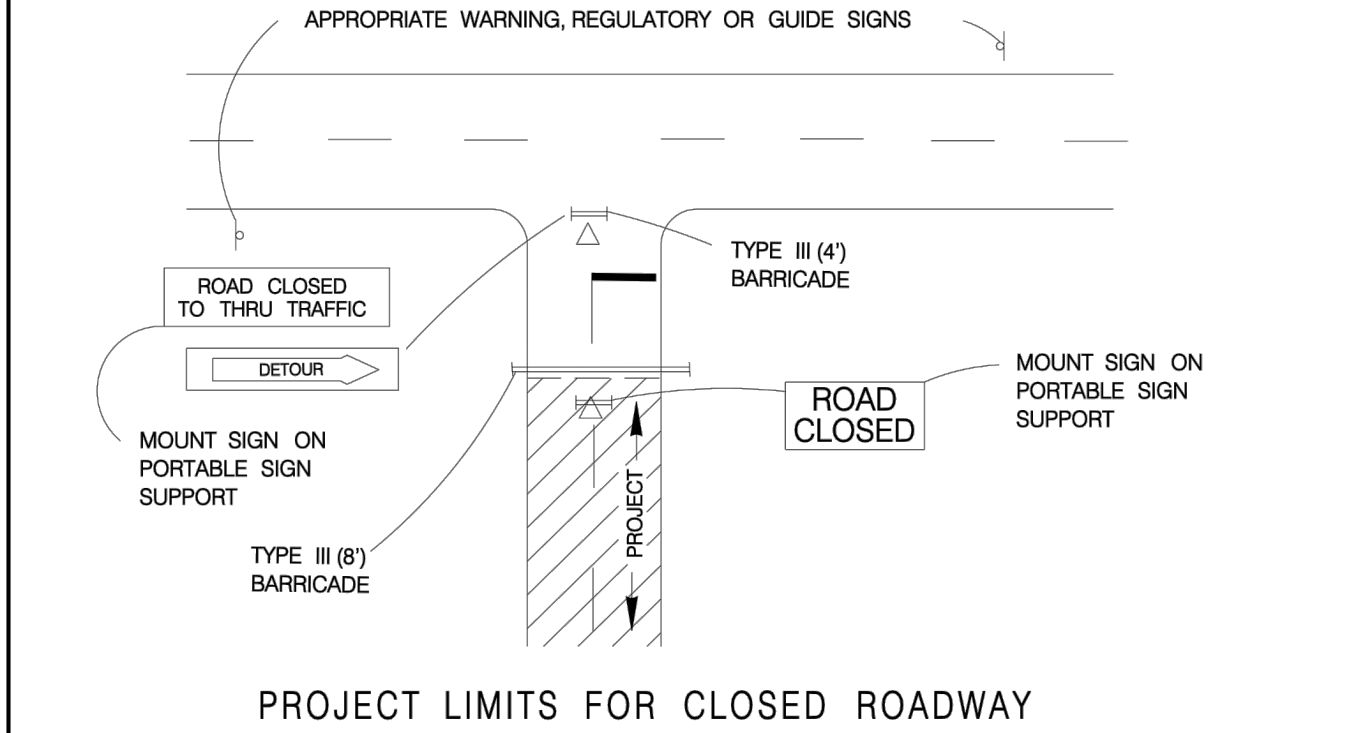
The City of San Antonio reserves the right to allow contracting and barricading sub-contractors to use the City's R.O.W. The City also reserves the right to advise contractors and barricading sub-contractors to remove stored or unused traffic control devices from the City of San Antonio R.O.W. It is the barricading sub-contractor's responsibility to remove any traffic control device from City's R.O.W. when instructed to do so by a City representative.



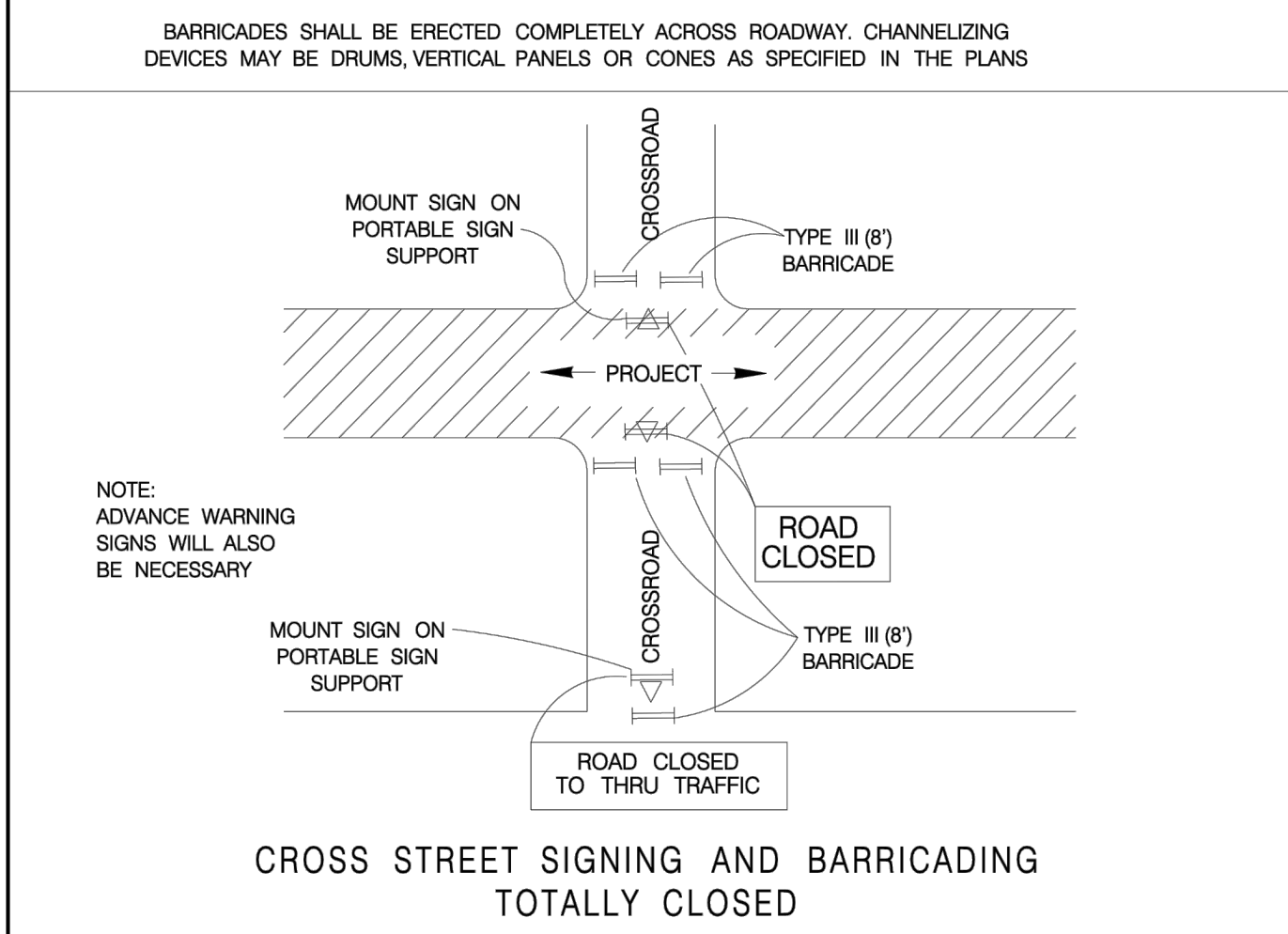
**TYPICAL INTERSECTING STREET CLOSURE FOR TWO LANE STREETS**

NOTE:  
ALL SIGNS WILL BE MOUNTED ON SIGN SUPPORTS ONLY

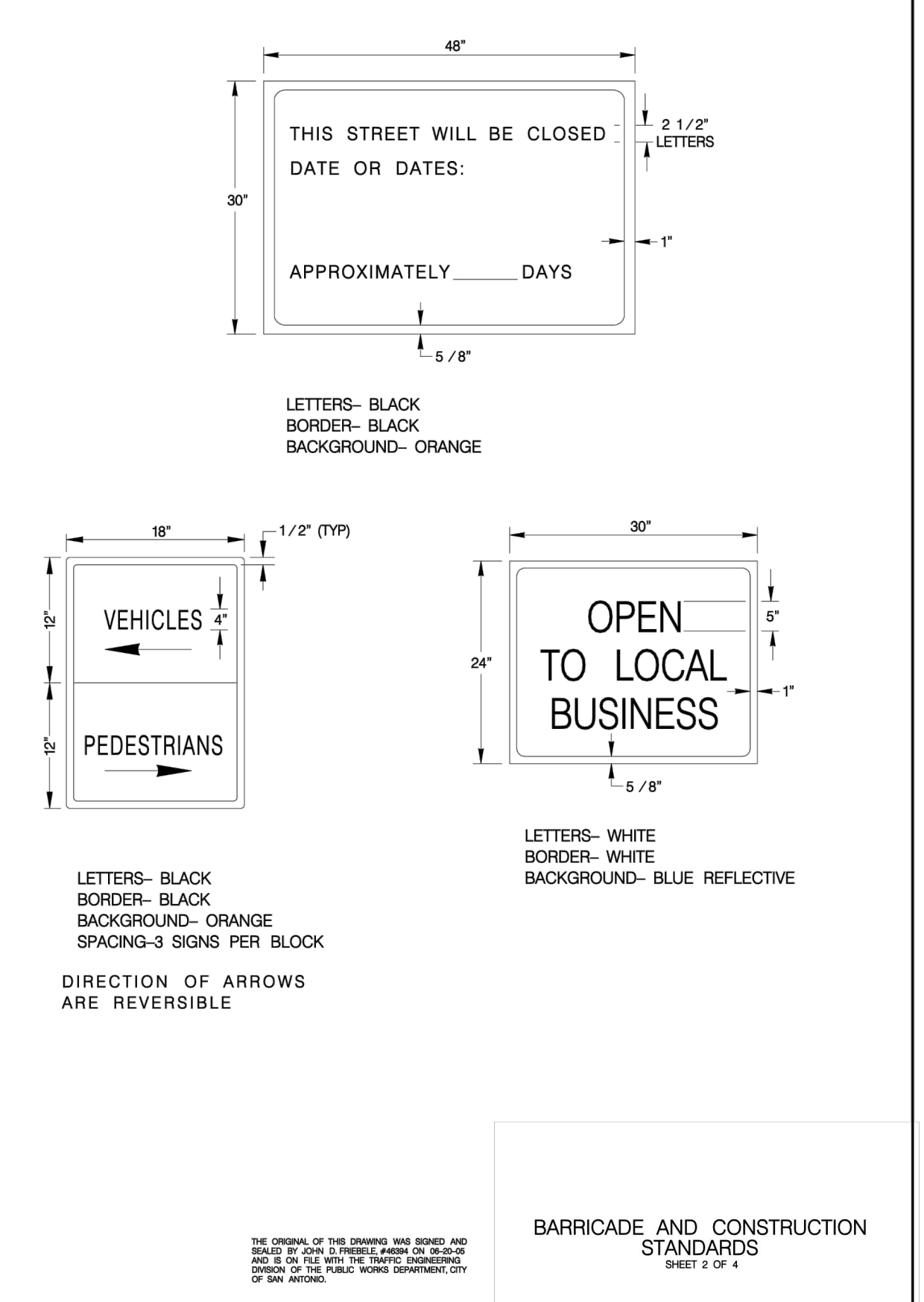
**BARRICADE AND CONSTRUCTION STANDARDS SHEET 1 OF 4**



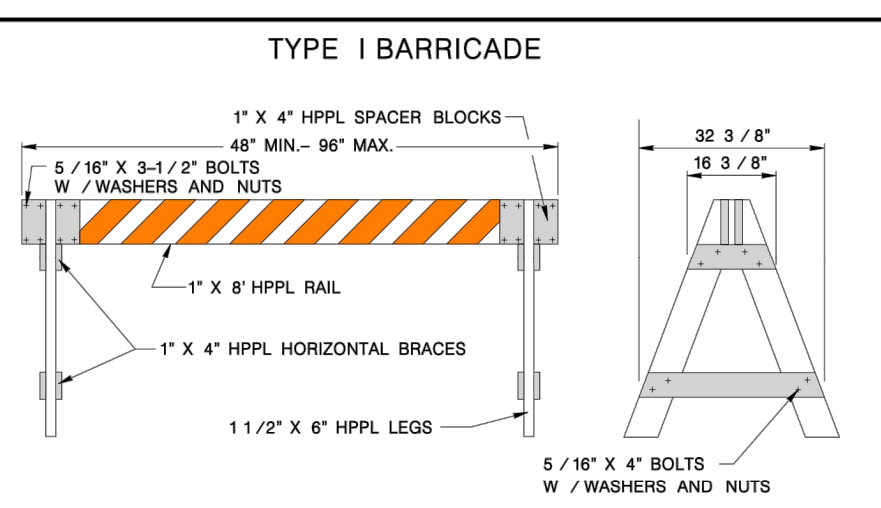
**PROJECT LIMITS FOR CLOSED ROADWAY**



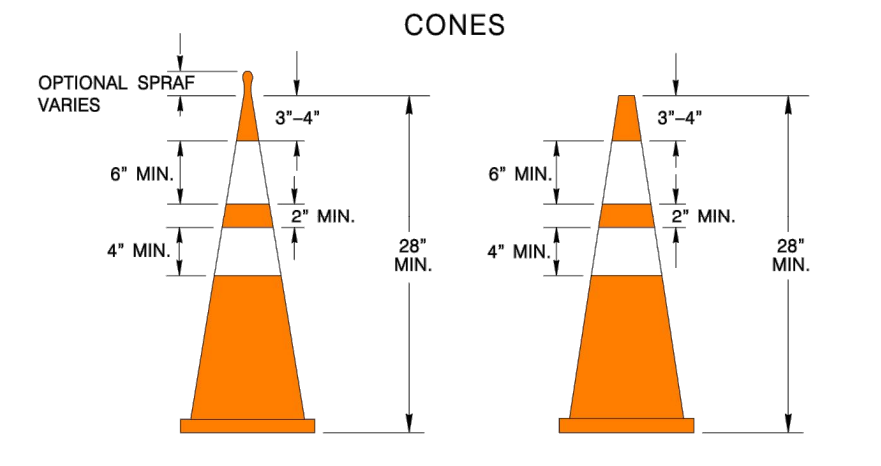
**CROSS STREET SIGNING AND BARRICADING TOTALLY CLOSED**



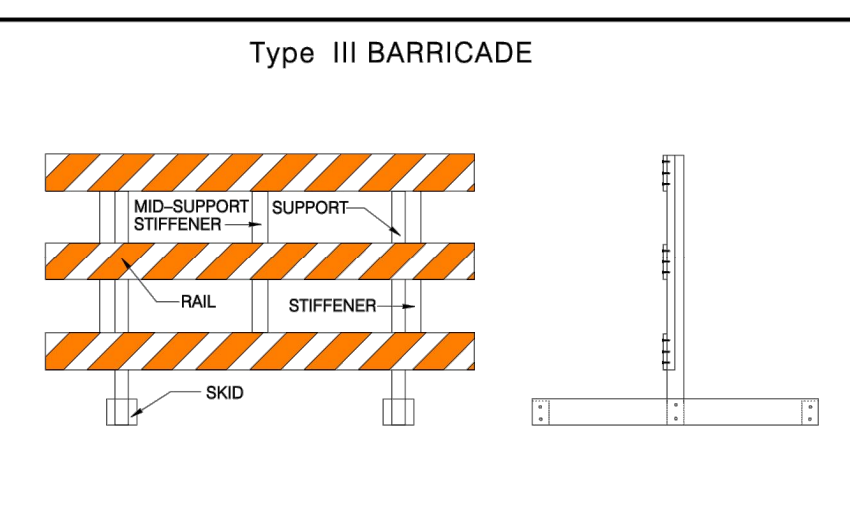
**BARRICADE AND CONSTRUCTION STANDARDS SHEET 2 OF 4**



- 1.) Only the following Type I barricade shall be used in the City of San Antonio Right-Of-Way:
  - A. 1" x 8" plastic rail with 2" x 6" wooden legs.
  - B. 1" x 8" wooden rail with plastic legs.
  - C. 1" x 8" wooden rail with 2" x 6" wood legs.
  - D. No screws allowed for assembly of A-legs or rail.
  - E. Warning lights will be used as directed by the Traffic Engineer.
  - F. All Type I (4') barricades will be a minimum of 36" high and 60" wide. (For Construction Use Only)
  - G. All Type I (8') barricades with wooden legs shall be 2" x 6" wood only.
  - H. All Type I (4') barricades with wooden legs shall be 1" x 8" wood only.
- 2.) Type I Barricades shall not be used for partial and total street closures in construction work zones. Only Type III barricades shall be used for this purpose.
- 3.) Warning lights shall not be mounted on Type I barricades. (See TxDOT BC-03 Sheets for specific construction information)



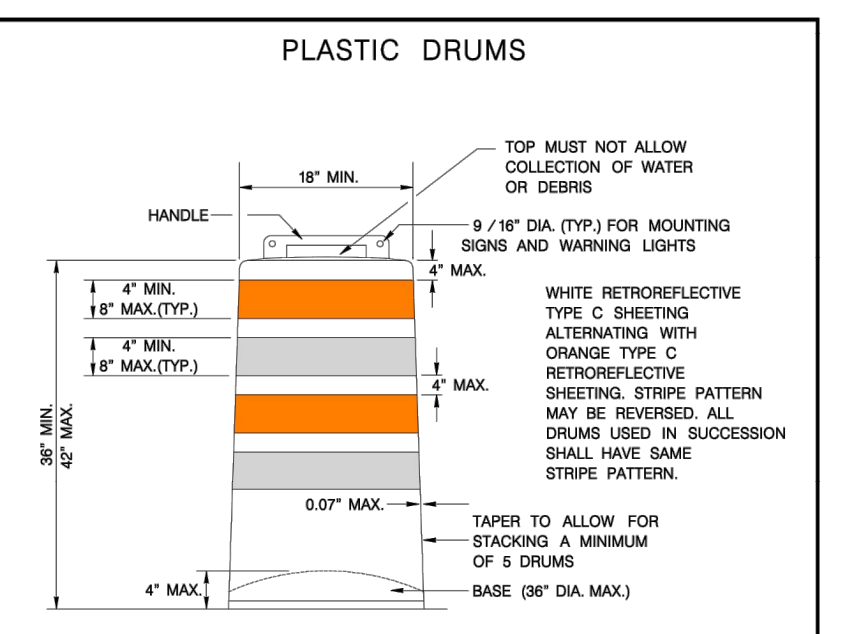
- 1.) Base for 28" high cones must weigh at least 9.5 lbs.
  - 2.) Night time cones must have reflective collars.
- (See TxDOT BC-03 Sheets for specific construction information)



- 1.) Only the following Type III barricade shall be used in the City of San Antonio Right-Of-Way:
    - A. Hollow polyvinyl or fiberglass tubing post with 1" x 8" wooden rails.
    - B. Hollow polyvinyl or fiberglass tubing post with plastic rails.
    - C. Skids must be wood or solid plastic only.
    - D. Warning lights shall not be mounted on Type III barricades.
- (See TxDOT BC-03 Sheets for specific construction information)

- TEMPORARY MARKINGS**
- 1.) Solid double yellow painted lines shall be installed for temporary division of traffic or construction duration longer than five (5) days, with repainting to occur once monthly or at the discretion of the Traffic Engineer. (All cost of upkeep will be at the contractor's expense.)
  - 2.) Solid double yellow tabs, or V/P panels shall be installed for temporary division of traffic for construction duration less than five (5) days, with re-tapping to occur at the discretion of the Traffic Engineer. **NAILS SHALL NOT BE USED TO FIX TABS TO CEMENT OR BASE** (All cost of upkeep will be at the contractor's expense.)
- (See TxDOT BC-03 Sheets for specific construction information.)

- TEMPORARY CONCRETE BARRIER**
- 1.) All concrete barriers placed on City R.O.W. shall be low profile.
  - 2.) No high profile barriers will be allowed.
  - 3.) Reflectors will be required on each concrete barrier.
- (See TxDOT BC-03 Sheets for specific construction information)



- 1.) Drums and all related items shall comply with the requirements of the current version of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
  - 2.) Drums, bases, and related materials shall exhibit good workmanship and shall be free from objectionable marks or defects that would adversely affect their appearance or serviceability.
  - 3.) The Engineer/inspector shall provide written notice to the Contractor regarding the replacement of drums or other traffic control devices. The Contractor shall have a maximum of 24 hours to replace any plastic drums or other traffic control devices identified for replacement by the Engineer/inspector. The replacement device must be an approved device.
  - 4.) Each drum must have a 40 lb. rubber or plastic snap on.
  - 5.) No signs larger than 18" x 24" will be allowed to be mounted on plastic drums.
  - 6.) No warning lights will be allowed to be mounted on plastic barrels.
  - 7.) In lieu of a warning light, a yellow reflector will be acceptable.
- (See TxDOT BC-03 Sheets for specific construction information)

**BARRICADE AND CONSTRUCTION STANDARDS SHEET 3 OF 4**

- TRAFFIC CONTROL NOTES:**
1. TRAFFIC SHALL BE CONTROLLED OR DETOURED AS SHOWN ON THE TRAFFIC CONTROL SHEETS OR AS DIRECTED BY THE OWNER, OR OWNER'S REPRESENTATIVE.
  2. SIGNS, BARRICADES, ETC. LISTED HEREIN ARE CONSIDERED TO BE THE MINIMUM REQUIRED FOR TRAFFIC HANDLING ON THIS PROJECT.
  3. ADDITIONAL TRAFFIC CONTROL DEVICES OR MODIFICATIONS TO THESE SHEETS MAY BE REQUIRED BASED ON CONTRACTOR'S CONSTRUCTION METHODS.
  4. OWNER, OR OWNER'S REPRESENTATIVE, MAY DIRECT THE CONTRACTOR TO VARY THE NUMBER AND LOCATION OF SIGNS, BARRICADES AND CHANNELIZING DEVICES FROM THAT INDICATED ON THESE SHEETS IN ORDER TO MAINTAIN A SAFE AND UNINTERRUPTED FLOW OF TRAFFIC, PARTICULARLY IN THOSE AREAS OF IMMEDIATE WORK.
  5. ALL TRAFFIC CONTROL WORK SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).
  6. TWO WAY TRAFFIC SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION EXCEPT AS NOTED IN THE SHEETS OR AS DIRECTED BY THE OWNER, OR OWNER'S REPRESENTATIVE.
  7. CONTRACTOR SHALL PROVIDE ACCESS TO INTERSECTING STREETS AND DRIVEWAYS AT ALL TIMES EXCEPT WHERE SPECIFICALLY DIRECTED BY THE OWNER, OR OWNER'S REPRESENTATIVE.
  8. CONTRACTOR SHALL PLACE A STEEL PLATE OVER AND TRENCH(ES) WITH ANY ROADWAYS, DRIVEWAYS, OR PARKING LOTS AT THE END OF EACH DAY. CONTRACTOR SHALL PROVIDE AN ASPHALTIC MATERIAL ALONG THE STEEL PLATE TO PROVIDE A SMOOTH TRANSITION BETWEEN PLATE AND ROADWAY SURFACE. THE PLATE SHALL WITHSTAND TRAFFIC LOADS. THE PLATE AND ASPHALTIC MATERIAL SHALL NOT BE PAID FOR DIRECTLY, BUT WILL BE CONSIDERED SUBSIDIARY TO VARIES BID ITEMS.
  9. CONTRACTOR SHALL MAINTAIN SIGNS ON A REGULAR BASIS.
  10. CONTRACTOR SHALL PROVIDE TYPE III BARRICADES AND PLASTIC FENCING AROUND ANY OPEN SENDING / RECEIVING PIT AT THE END OF EACH WORK DAY. IF ANY PIT IS WITHIN 3 FEET OR LESS OF THE FRONT FACE OF CURB, THE CONTRACTOR WILL BE REQUIRED TO PLACE LOW PROFILE CONCRETE BARRIER AT THE END OF EACH WORK DAY (WITHIN 30 FEET UNCURRED).
  11. THE LOCATIONS OF THE SIGNS SHOWN ON THE TRAFFIC CONTROL PLAN SHEETS ARE FOR GRAPHICAL REPRESENTATION ONLY. ALL SIGN PLACEMENT SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).
  12. REFER TO TxDOT BARRICADE AND CONSTRUCTION STANDARDS FOR ADDITIONAL INFORMATION.
  13. CONTRACTOR SHALL REVISE AND RESUBMIT TRAFFIC CONTROL PLANS BASED ON ACTUAL CONSTRUCTION SEQUENCE.
  14. FOR STREET/ROADWAY OVERLAY OPERATIONS REFER TO TxDOT STANDARD TCP (1-2)-98 AND (7-1)-98, RESPECTIVELY.
  15. FOR CONSTRUCTION OCCURING WITHIN 10 FEET OF ROADWAY REFER TO TCP (2-1)- 98.



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



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.

**BROWNVILLE PUBLIC UTILITIES BOARD**  
**PROJECT 1: DOWNTOWN WW IMPROVEMENTS**

**TRAFFIC CONTROL DETAILS IV**

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

SHEET  
**TC05**

## 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 SAN ANTONIO 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:

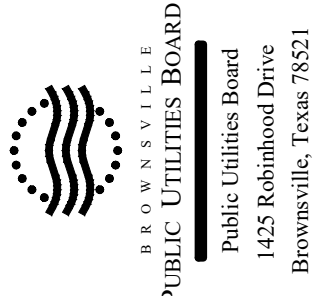
CERTIFICATION THAT SITE DISTURBANCE AND/OR DISCHARGES WILL NOT EFFECT LISTED ENDANGERED SPECIES AND THEIR HABITAT.  
 WHAT METHOD IS USED TO SATISFY THE ENDANGERED SPECIES REQUIREMENTS?:

#### 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



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



08/22/2023

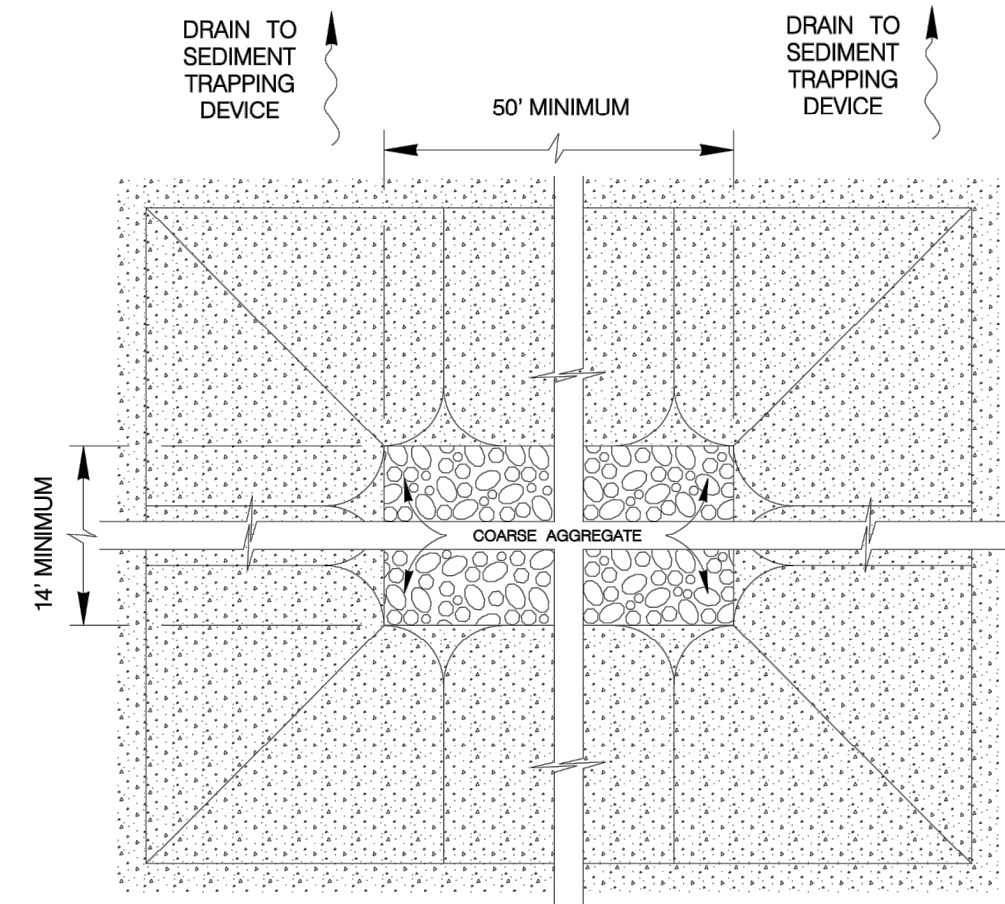
NO.	REVISION	BY	DATE

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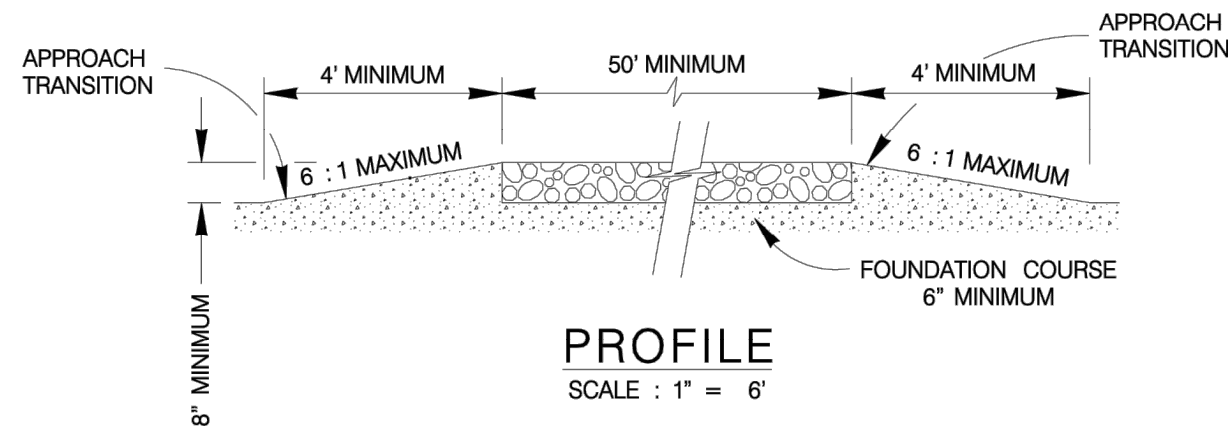
BROWNVILLE PUBLIC UTILITIES BOARD  
 PROJECT 1: DOWNTOWN WW IMPROVEMENTS  
 EROSION AND SEDIMENTATION CONTROL  
 SWPPP NARRATIVE

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

SHEET  
 ES01



**PLAN**  
SCALE: 1" = 6'

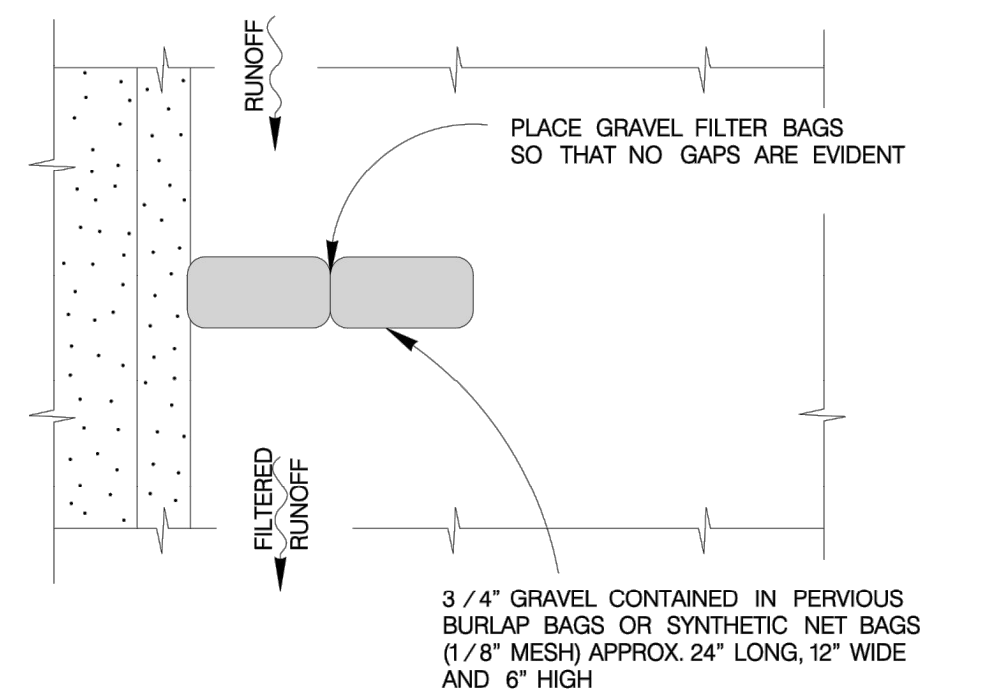


**PROFILE**  
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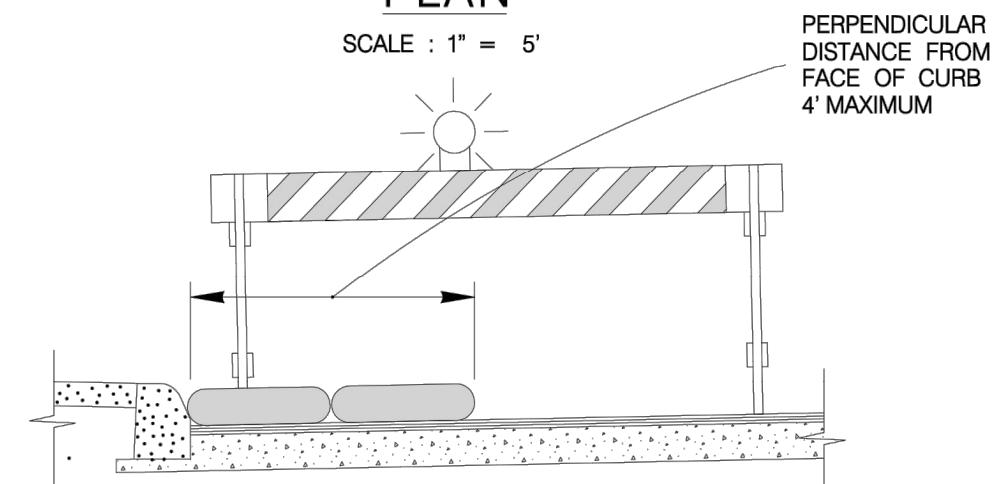
**GENERAL NOTES**

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.

**CONSTRUCTION EXIT - TYPE 1**



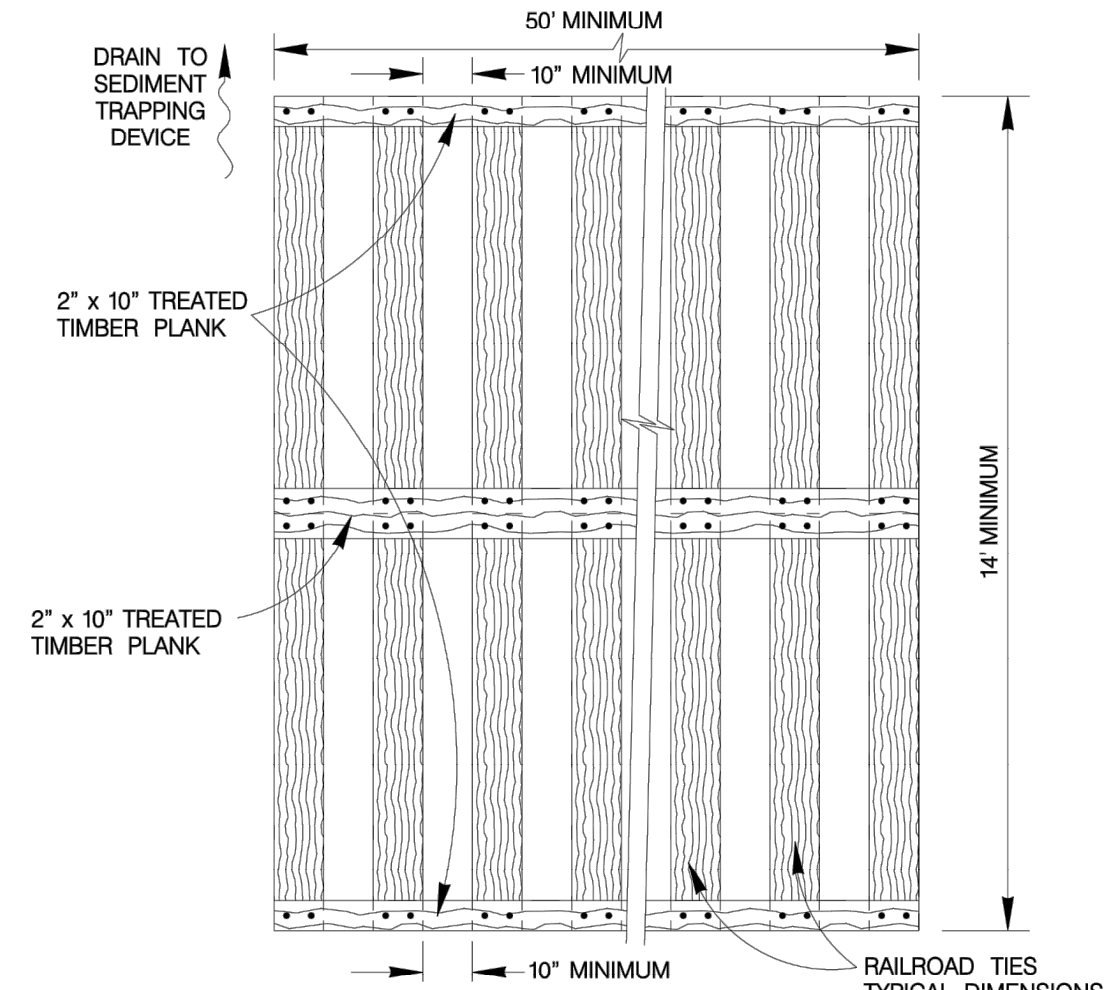
**PLAN**  
SCALE: 1" = 5'



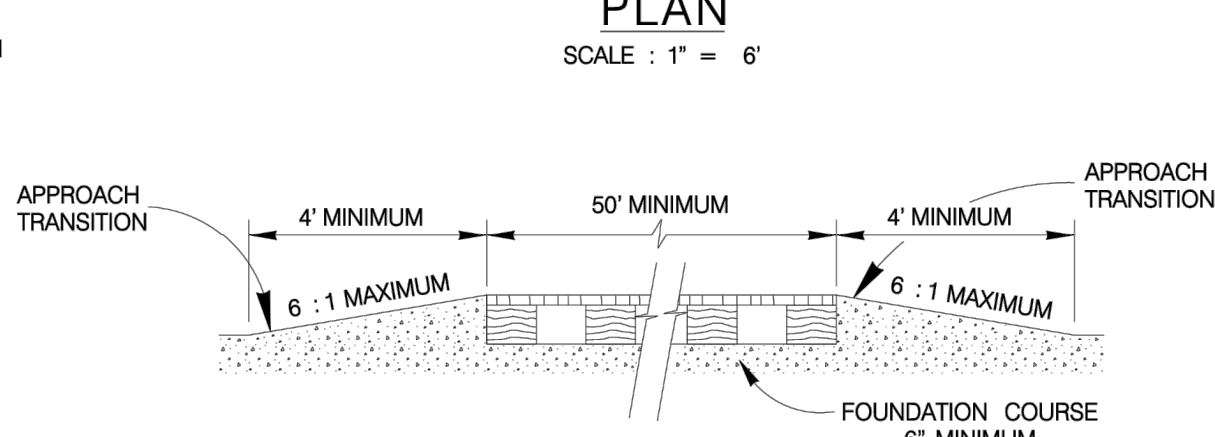
**ELEVATION**  
SCALE: 1" = 5'

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**



**PLAN**  
SCALE: 1" = 6'

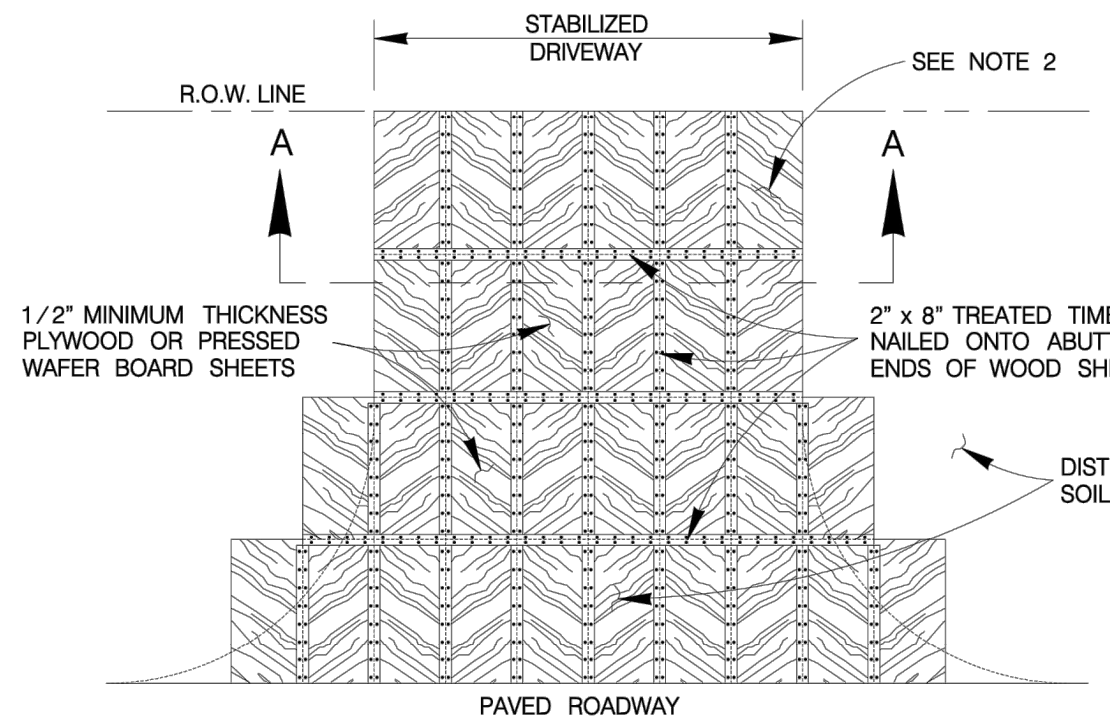


**PROFILE**  
SCALE: 1" = 6'

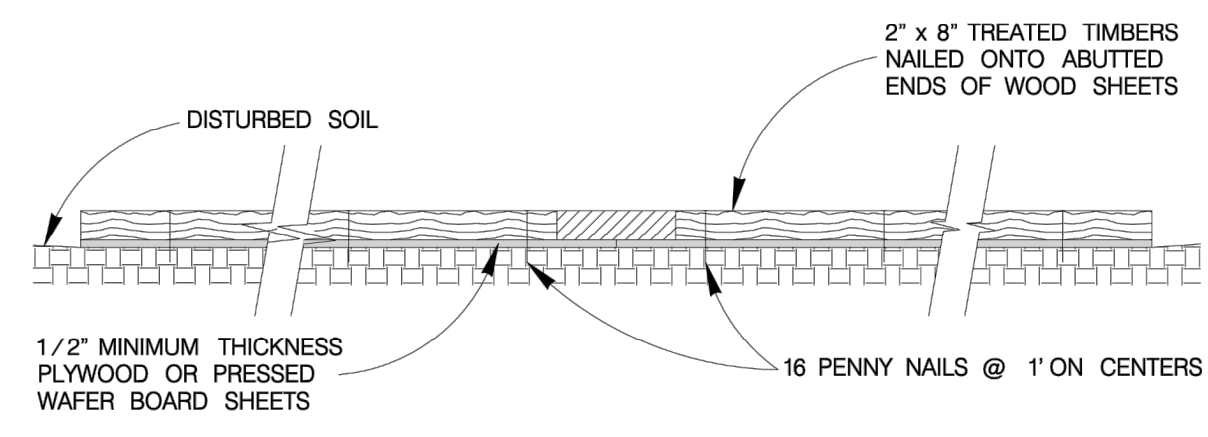
**GENERAL NOTES**

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.

**CONSTRUCTION EXIT - TYPE 2**



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

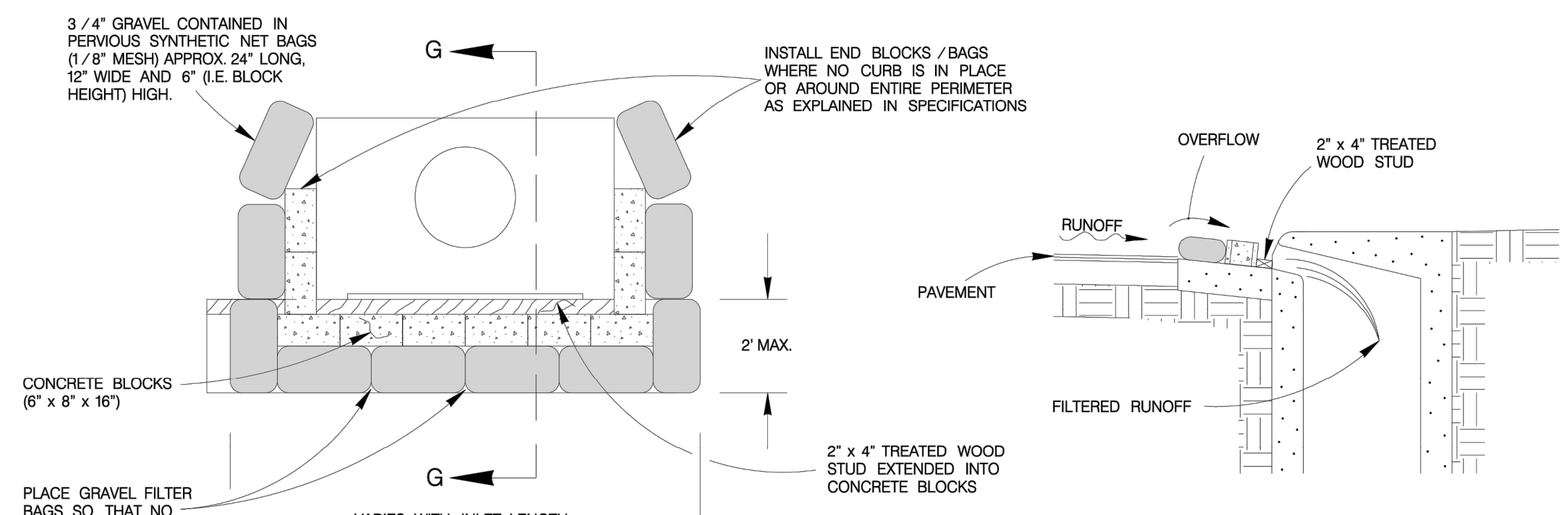


**SECTION A-A**  
SCALE: 1" = 2'

**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 3**

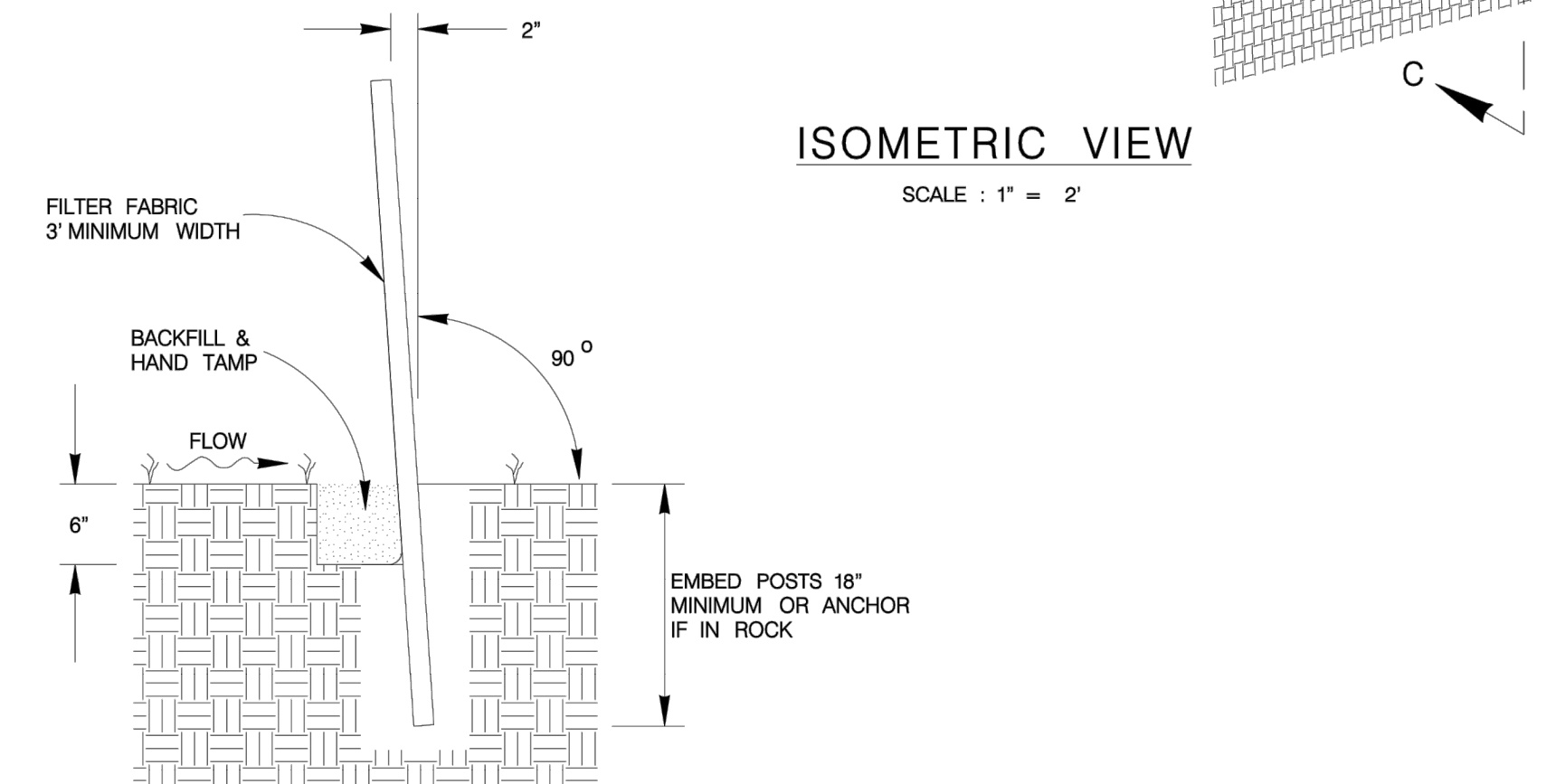


**PLAN**  
SCALE: 1" = 5'

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

**CURB INLET GRAVEL FILTER**

**SECTION G-G**  
SCALE: 1" = 5'



**ISOMETRIC VIEW**  
SCALE: 1" = 2'

**SECTION C-C**  
SCALE: 1" = 2'

**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**



BROWNSVILLE PUBLIC UTILITIES BOARD  
Public Utilities Board  
1425 Robinhood Drive  
Brownsville, Texas 77821



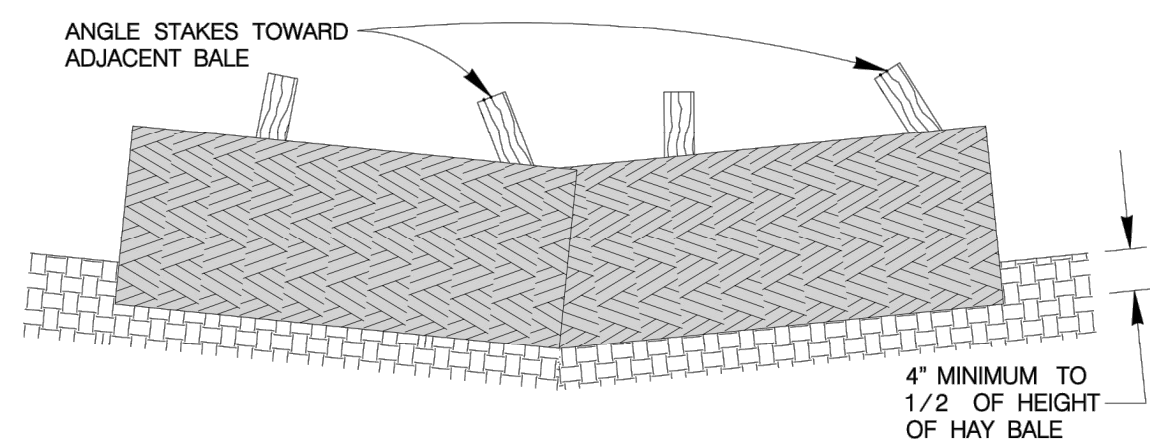
NO.	REVISION	DATE

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

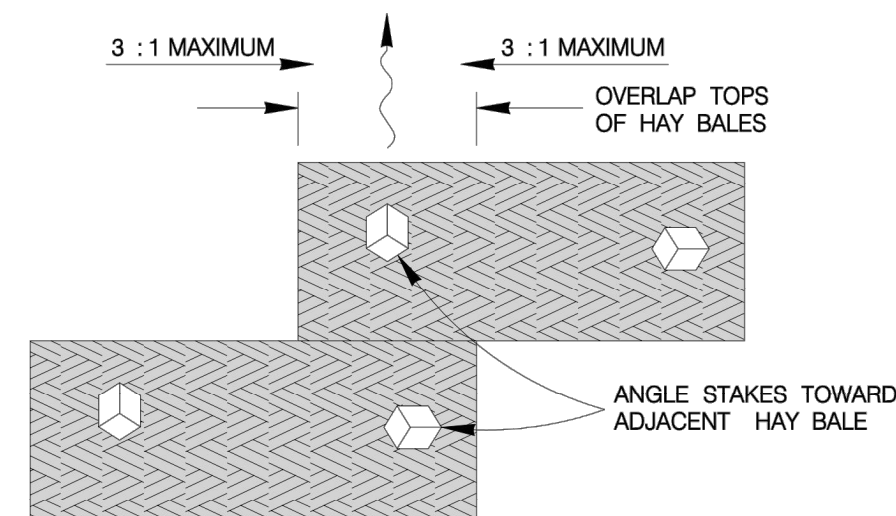
BROWNSVILLE PUBLIC UTILITIES BOARD  
PROJECT 1: DOWNTOWN WW IMPROVEMENTS  
EROSION AND SEDIMENTATION CONTROL DETAILS 1

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

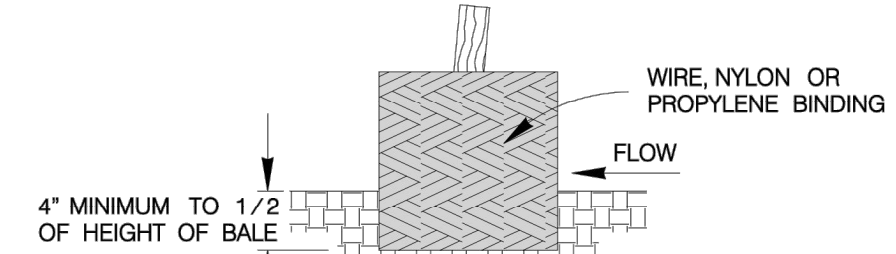
SHEET  
ES02



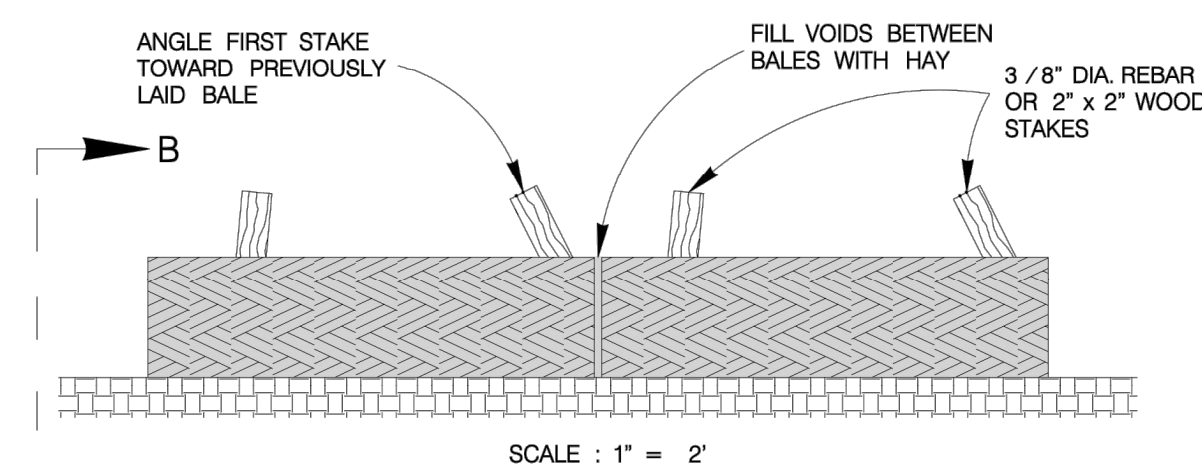
PROFILE VIEW  
SCALE : 1" = 2'



PLAN VIEW  
SCALE : 1" = 2'



SECTION B-B  
SCALE : 1" = 2'



**BALED HAY USAGE GUIDELINES**

A BALED 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. BALED HAY MAY BE USED AT THE FOLLOWING LOCATIONS:

- WHERE THE RUNOFF APPROACHING THE BALED 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 BALED 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 BALED HAY INSTALLATIONS IN SMALL DITCHES, THE FOLLOWING ADDITIONAL CONSIDERATIONS APPLY:

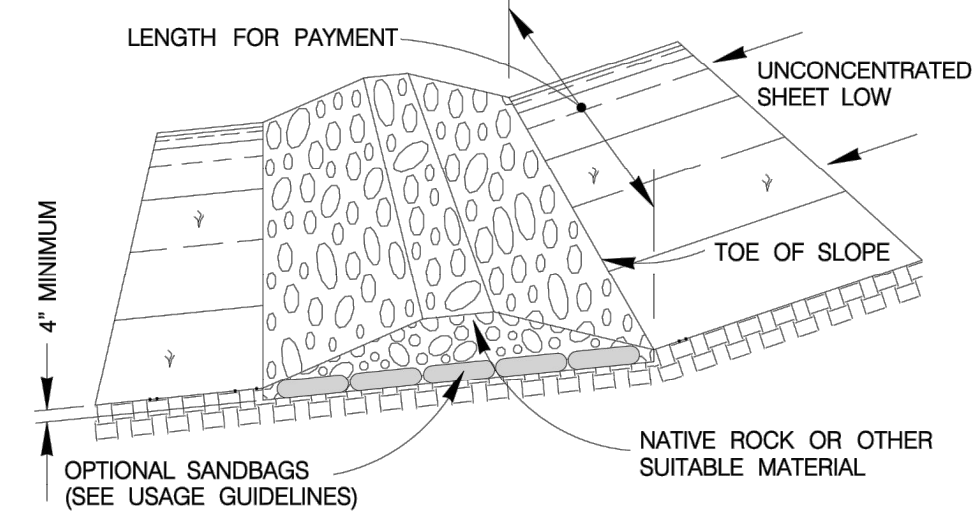
- THE DITCH SIDESLOPES SHOULD BE GRADED AS FLAT AS POSSIBLE TO MAXIMIZE THE DRAINAGE FLOW RATE THRU THE HAY.
- THE DITCH SHOULD BE GRADED LARGE ENOUGH TO CONTAIN THE OVERLAPPING DRAINAGE WHEN SEDIMENT HAS FILLED TO THE TOP OF THE BALED HAY.

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

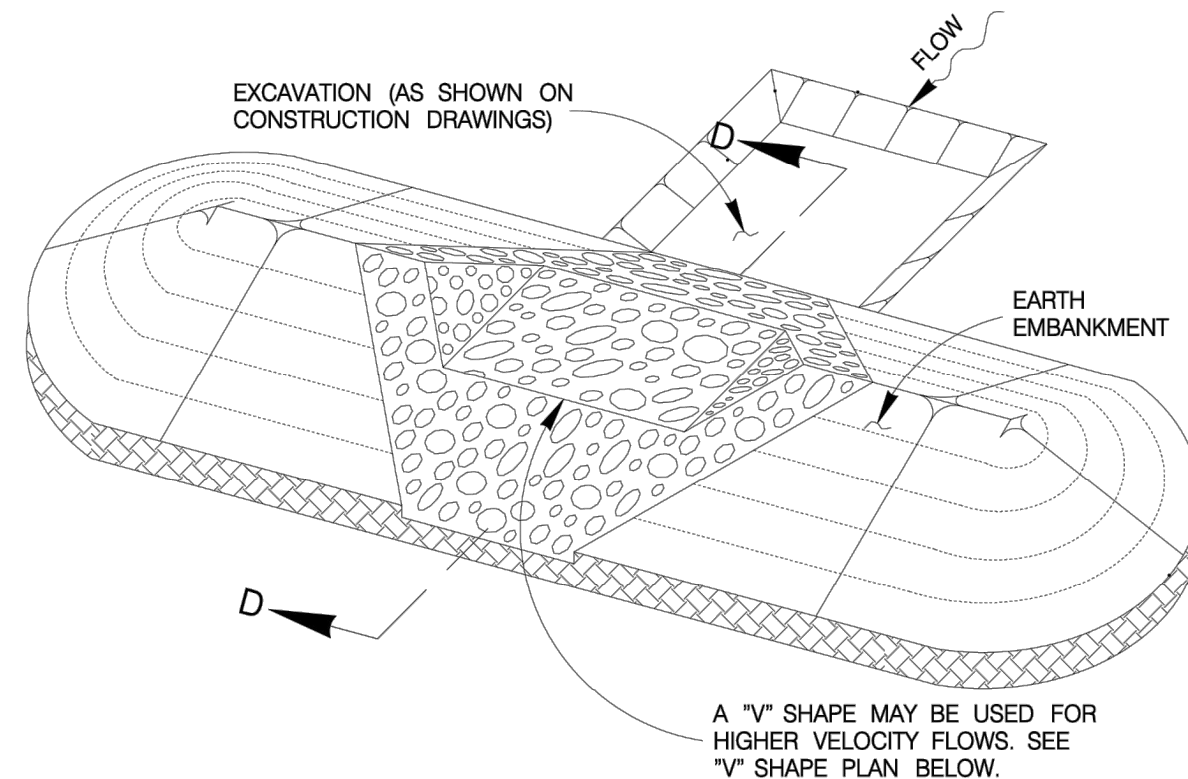
**GENERAL NOTES**

- 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.

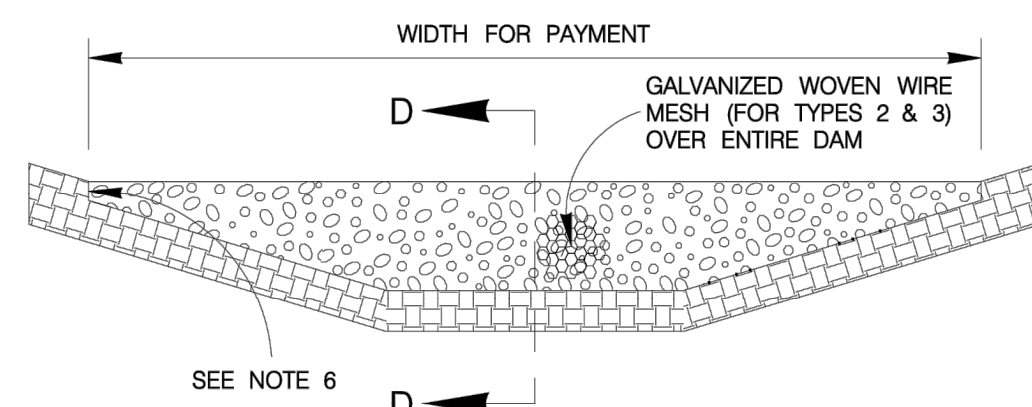
**BALED HAY FOR EROSION CONTROL**



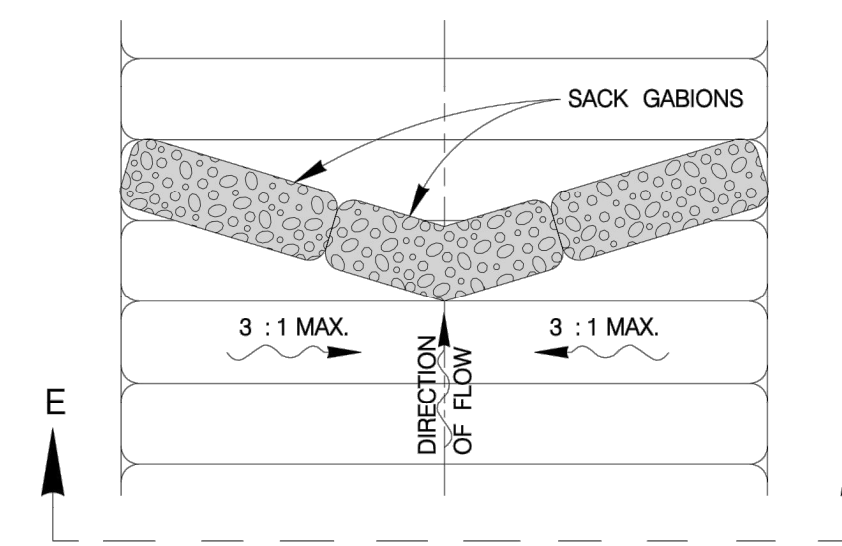
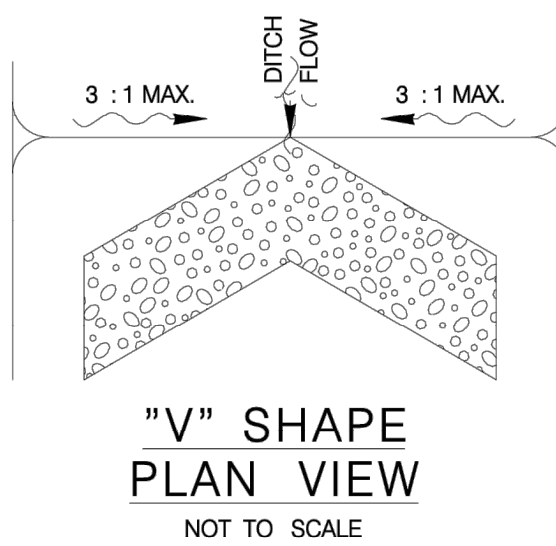
TYPE 1 FILTER DAM AT TOE OF SLOPE  
SCALE : 1" = 10'



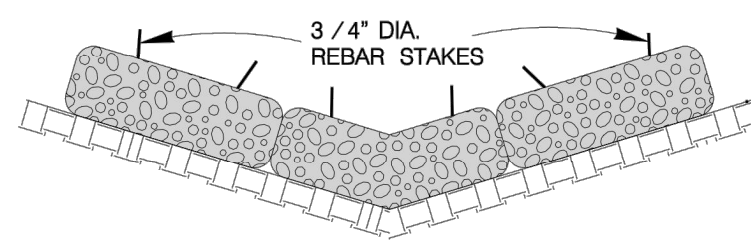
TYPE 1 & 2 FILTER DAM AT SEDIMENT TRAP  
SCALE : 1" = 10'



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

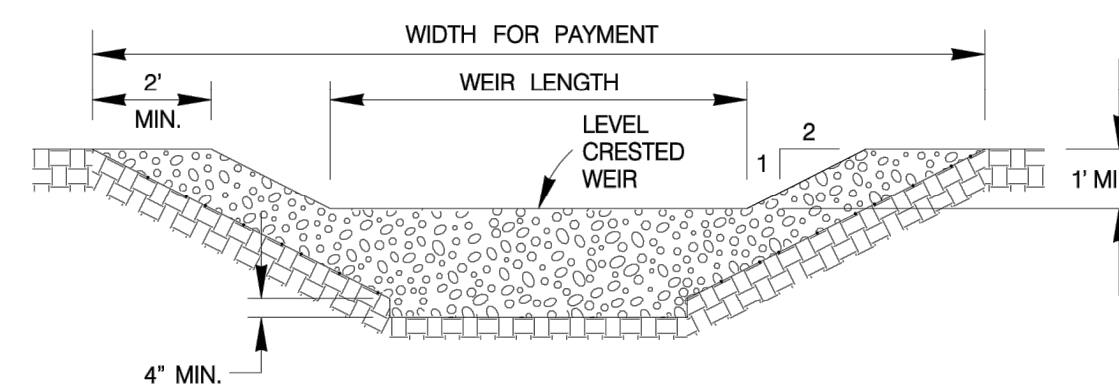


PLAN VIEW  
SCALE : 1" = 10'

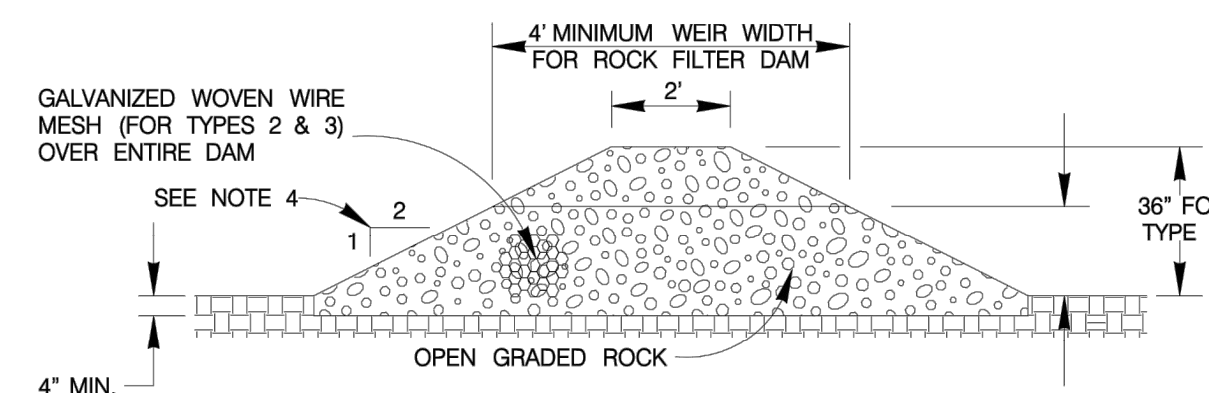


SECTION E-E  
SCALE : 1" = 10'

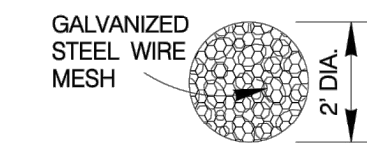
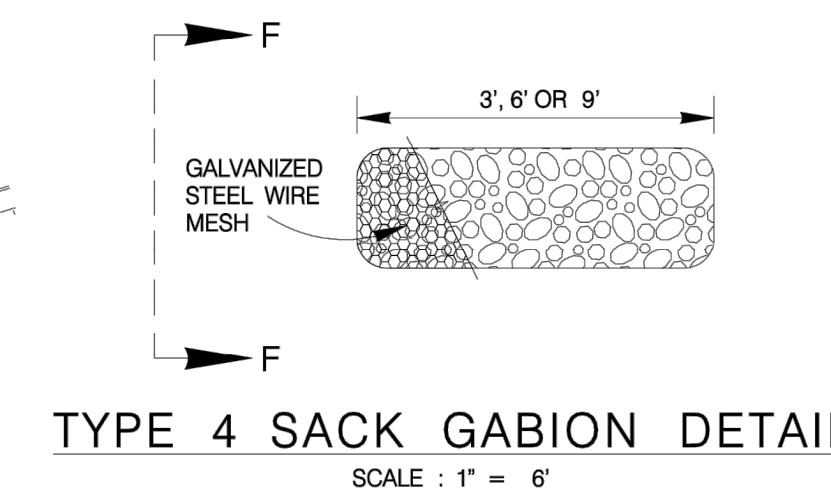
TYPE 4 FILTER DAM AT DITCHES & SMALLER CHANNELS PLAN VIEW



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



SECTION D-D  
SCALE : 1" = 6'



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**



BROWNSVILLE PUBLIC UTILITIES BOARD  
Public Utilities Board  
1425 Robinson Drive  
Brownsville, Texas 77821



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  
CLIENT: XXXX

SHEET  
ES03

DISCLAIMER: This is a technical drawing prepared by the "Texas Engineering Practice Act". No warranty of any kind is made by T&E for any purpose whatsoever. The user of this drawing is responsible for the accuracy of the information contained herein and for the consequences of any action taken thereon.

**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 unutilized 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

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

FILE: M0316 DATE: 07/20/2016 DESIGNED BY: GMM DRAWN BY: GMM 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**

**STAKE NOTCH DETAIL**

**TRENCH DEPTH TABLE**

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

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

FILE: M0316 DATE: 07/20/2016 DESIGNED BY: GMM DRAWN BY: GMM CHECKED BY: JAE

**EROSION CONTROL LOG AT DROP INLET**

**EROSION CONTROL LOG AT CURB INLET**

**EROSION CONTROL LOG AT CURB & GRADE INLET**

**SANDBAG DETAIL**

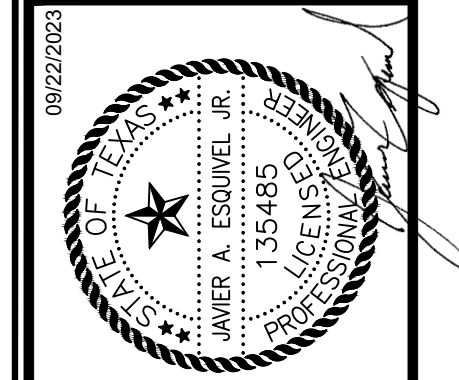
**NOTE:** EROSION CONTROL LOGS USED AT CURB INLETS SHOULD ONLY BE USED IF THEY WILL NOT IMPEDIE TRAFFIC OR FLOOD THE ROADWAY OR WHEN THE STORM SEWER SYSTEM IS NOT FULLY FUNCTIONAL.

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

FILE: M0316 DATE: 07/20/2016 DESIGNED BY: GMM DRAWN BY: GMM CHECKED BY: JAE



**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 0 1" AND ADJUST SCALE ACCORDINGLY.

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

DESIGN: GMM  
 DRAWN: GMM  
 REVIEW: JAE  
 STV: BPUB2200025.01  
 CLIENT: XXXX