KLEIN RD PH 2 RECONSTRUCTION
12" WATER LINE ADJUSTMENTS
(S. WALNUT AVE. TO F.M. 725)
FINAL DESIGN SUBMITTAL
VOLUME III

New Braunfels Utilities

NEW BRAUNFELS UTILITIES BOARD OF TRUSTEES

PRESIDENT	DR. JUDITH DYKES-HOFFMANN
VICE PRESIDENT	WAYNE PETERS
MAYOR/EX-OFFICIO	RUSTY BROCKMAN
TRUSTEE	JOHN HARRELL
TRUSTEE	YVETTE VILLANUEVA BARRERA

LOCATION MAP
SCALE: 1" = 3,000'

JUNE 2022

SHEET INDEX

CITY OF NEW BRAUNFELS NOTES:

1. ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER OF RECORD. IN ACCEPTING THESES PLANS, THE CITY OF NEW BRAUNFELS MUST RELY UPON THE ADEQUACY OF THE WORK OF THE ENGINEER OF RECORD.
2. IF CONSTRUCTION HAS NOT COMMENCED WITHIN ONE-YEAR OF CITY APPROVAL FOR CONSTRUCTION INSPECTION, THAT APPROVAL IS NO LONGER VALID.
3. PROJECT IS A TYPE 3 DEVELOPMENT.
4. ACCORDING TO FEMA FIRM MAP NO. 48187C0115F, EFFECTIVE DATE 11/2/2007, THE PROJECT PARTIALLY LIES WITHIN THE 100 YR. FLOOD PLAIN AND IS SHOWN ON SHEETS C6 AND C11.
5. THIS SITE DOES NOT LIE IN THE EDWARDS AQUIFER JURISDICTIONAL ZONE.

TxDOT STANDARD DETAILS

T1 * TCP (1-1)-18
(FOR TEMPORARY BYPASS CONNECTION)

THE STANDARD SHEETS SPECIFICALLY IDENTIFIED (*) ABOVE HAVE BEEN SELECTED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT.

John J. Moy Jr. P.E. 8/24/22
JOHN J. MOY, P.E. DATE

SPECIFICATION ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION, JUNE 1, 2014 AND SPECIFICATION ITEMS SHALL GOVERN ON THIS PROJECT.

STATE OF TEXAS
JOHN J. MOY JR.
87835
LICENSED
PROFESSIONAL ENGINEER

John J. Moy P.E.
Rev. 8/24/22

FIRM No. F-9862

PAWELEK & MOY, INC.
CIVIL ENGINEERING & CONSULTING SERVICES
130 W. John Street tel: (830) 629-2563
New Braunfels, Texas 78130 fax (830) 629-2564

COVER SHEET
FOR
KLEIN ROAD RECONSTRUCTION
12" WATER LINE ADJUSTMENTS

REVISIONS		
DATE	DESCRIPTION	
08/25/22	REVISED PER CITY OF NEW BRAUNFELS COMMENTS	

TECHNICIAN:	D.G. III
JOB NO.	2101.01
DATE:	JUNE 2022
SHEET:	C1

UTILITY COMPANY NOTIFICATION:

THE LOCATION AND DEPTH OF EXISTING UTILITIES MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ALL EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION, INCLUDING THOSE NOT SHOWN ON THE DRAWINGS.

CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES 48 HOURS PRIOR TO EXCAVATION:

DIG TESS	(800) DIG–TESS – (800) 344– 8377
TEXAS ONE CALL	(800) 545–6005
AT&T	(210) 650–8449
TIMEWARNER CABLE	(830) 625–3408
CENTERPOINT GAS	(830) 643–6434
N.B.U. ELECTRIC	(830) 608–8951
N.B.U. WATER AND SEWER	(830) 608–8971

SPILL RESPONSE ACTION NOTIFICATION

IN THE EVENT OF A SIGNIFICANT OR HAZARDOUS SPILL (PER TCEQ CRITERIA) THE CONTRACTOR OR CONSTRUCTION PERSONNEL SHALL NOTIFY THE TCEQ BY TELEPHONE AS SOON AS POSSIBLE AND WITHIN 24 HOURS AT (512) 339–2929 (AUSTIN) OR (210) 490–3096 (SAN ANTONIO) AND THE NATIONAL RESPONSE CENTER AT 1–800–424–8802.

GENERAL NOTES:

FOR UTILITY CONSTRUCTION, ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY NEW BRAUNFELS UTILITIES(NBU) AND COMPLY WITH THE CURRENT NBU DETAILS AND SPECIFICATIONS.

CONTRACTOR SHALL NOT PROCEED WITH ANY PIPE INSTALLATION WORK UNTIL THEY OBTAIN A COPY OF THE PLANS FROM ENGINEER AND NOTIFY NBU WATER SYSTEMS ENGINEERING AT 830–629–8417 WITH AT LEAST TWO (2) WORKING DAYS (48 HOURS) NOTICE. WORK COMPLETED BY THE CONTRACTOR, WHICH HAS NOT RECEIVED A NOTICE TO PROCEED WITH NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING WILL BE SUBJECT TO REMOVAL AND REPLACEMENT BY AND AT THE EXPENSE OF THE CONTRACTOR.

CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNERS AND THE ENGINEER AND HIS EMPLOYEES, PARTNERS OFFICERS, DIRECTORS, OR CONSULTANTS HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF THE WORK ON THIS PROJECT, EXCEPTING FROM LIABILITY ARISING FROM SOLE NEGLIGENCE OF THE OWNER OR ENGINEER, ENGINEER'S DIRECTORS, OFFICERS, EMPLOYEES, OR CONSULTANTS.

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

CONTRACTOR TO CONTACT THE ENGINEER–OF–RECORD (EOR) FOR ANY FIELD CHANGES. ANY REVISIONS OR CHANGES TO THE APPROVED CONSTRUCTION PLANS WILL REQUIRE ADDITIONAL APPROVAL BY NBU IN WRITING.

CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION, ANY DAMAGES DONE TO EXISTING FENCES, CURBS, STREETS, LANDSCAPING, STRUCTURES, DRIVEWAYS, AND EXISTING UTILITIES (NOT ADJUSTED ON PLANS). COST OF RESTORATIONS, IF ANY, SHALL BE THE CONTRACTOR'S ENTIRE EXPENSE.

THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN ONE INCH IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATION IN VICINITY OF TREES SHALL PROCEED WITH CAUTION.

CONTRACTOR SHALL PROCURE ALL PERMITS AND LICENSES, PAY ALL CHARGES, FEES AND TAXES AND GIVE ALL NOTICES NECESSARY AND INCIDENTAL TO THE DUE AND LAWFUL PROSECUTION OF THE WORK.

NO EXTRA PAYMENT SHALL 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 UNDER THE PAY ITEM TO WHICH IT RELATES.

CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL WASTE MATERIALS UPON PROJECT COMPLETION. THE CONTRACTOR SHALL NOT PERMANENTLY PLACE ANY WASTE MATERIALS IN THE 100–YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN DEVELOPMENT PERMIT.

THE CONTRACTOR SHALL NOT PLACE ANY MATERIALS ON THE RECHARGE ZONE OF THE EDWARDS AQUIFER WITHOUT AN APPROVED WATER POLLUTION ABATEMENT PLAN FROM THE TCEQ 31 TAC 313.4 AND 31 TAC 313.9.

BARRICADES AND WARNING SIGNS SHALL CONFORM TO THE CURRENT "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND SHALL BE LOCATED TO PROVIDE MAXIMUM PROTECTION TO THE PUBLIC AS WELL AS CONSTRUCTION PERSONNEL AND EQUIPMENT WHILE PROVIDING CONTINUOUS TRAFFIC FLOW AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL DEVICES DURING CONSTRUCTION.

CONTRACTOR IS REQUIRED TO VERIFY PROJECT ELEVATIONS. THE TERM "MATCH EXISTING" SHALL BE UNDERSTOOD TO SIGNIFY BOTH HORIZONTAL AND VERTICAL ALIGNMENT.

THE LOCATION OF UTILITIES, EITHER UNDERGROUND OR OVERHEAD, SHOWN WITHIN THE PROJECT WORK AREA ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR BEFORE BEGINNING CONSTRUCTION OPERATIONS.

OSHA REGULATIONS PROHIBIT OPERATIONS THAT WILL BRING PERSONS OR EQUIPMENT WITHIN 10 FEET OF AN ENERGIZED LINE. WHERE WORKMEN AND/OR EQUIPMENT HAVE TO WORK CLOSE TO AN ENERGIZED ELECTRICAL LINE, THE CONTRACTOR SHALL NOTIFY THE ELECTRICAL POWER COMPANY INVOLVED AND MAKE WHATEVER ADJUSTMENTS NECESSARY TO ENSURE THE SAFETY OF THOSE WORKMEN.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS REQUIRED FOR CONSTRUCTION. UTILITY COMPANIES ARE ALSO PREVIOUSLY MENTIONED IN "UTILITY COMPANY NOTIFICATION". CONTRACTOR SHALL CALL ONE CALL SYSTEM FOR WATER/WASTEWATER LOCATIONS.

DUE TO FEDERAL REGULATIONS TITLE 49, PART 192[8], GAS COMPANIES MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.

MATERIALS LARGER THAN 4 INCHES IN SIZE WITHIN THE CONSTRUCTION LIMITS AND NOT INCORPORATED INTO THE ROADWAY CONSTRUCTION SHALL BE REMOVED FROM THE RIGHT OF WAY AND DISPOSED OF IN A PROPER MANNER ACCEPTABLE TO THE ENGINEER AT THE EXPENSE OF THE CONTRACTOR. THE CONTRACTOR SHALL MAINTAIN THE PROJECT WORK AREA IN A SATISFACTORY APPEARANCE AS SHOWN IN THE PLANS OR AS APPROVED BY THE ENGINEER.

THE CONTRACTOR IS FULLY RESPONSIBLE FOR THE TRAFFIC CONTROL AND WILL BE RESPONSIBLE FOR FURNISHING ALL TRAFFIC CONTROL DEVICES, AND FLAGGERS. THE CONSTRUCTION METHODS SHALL BE CONDUCTED TO PROVIDE THE LEAST POSSIBLE INTERFERENCE TO TRAFFIC SO AS TO PERMIT THE CONTINUOUS MOVEMENT OF TRAFFIC IN ONE DIRECTION AT ALL TIMES. THE CONTRACTOR SHALL CLEAN UP AND REMOVE FROM THE WORK AREA ANY LOOSE MATERIAL RESULTING FROM CONTRACT OPERATIONS AT THE END OF EACH WORK DAY.

PRIOR TO ORDERING MATERIALS TO BE USED IN CONSTRUCTION, CONTRACTOR SHALL PROVIDE THE ENGINEER WITH FOUR (4) COPIES OF THE SOURCE, TYPE, GRADATION, MATERIAL SPECIFICATION DATA AND / OR SHOP DRAWINGS, AS APPLICABLE, TO SATISFY THE REQUIREMENTS OF THE FOLLOWING ITEMS AND ALL MATERIAL ITEMS REFERRED TO IN THESE LISTED ITEMS:

A. WATER MAIN

WATER JETTING THE BACKFILL WITHIN A STREET WILL NOT BE PERMITTED. WASTEWATER TRENCHES SUBJECT TO TRAFFIC SHALL CONFORM TO NBU CONNECTION AND CONSTRUCTION POLICY MANUAL.

WHERE THE MINIMUM 9 FOOT SEPARATION DISTANCE BETWEEN WASTEWATER LINES AND WATER LINES / MAINS CANNOT BE MAINTAINED, THE INSTALLATION OF WASTEWATER LINES SHALL BE IN STRICT ACCORDANCE WITH TCEQ.

TEMPORARY EROSION CONTROL MEASURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

TIE IN (COMPLETE) (WATER MAIN) INCLUDES AS A NON SEPARATE PAY ITEM ALL HYDROSTATIC TESTING, BACTERIOLOGIC TESTING, TEMPORARY BLOW OFFS, JUMPERS, FLUSHING, AND FITTINGS (RESTRAINED) FOR VERTICAL ADJUSTMENTS. TIE IN (COMPLETE) (WATER MAIN) ALSO INCLUDES NOTIFICATION AND COORDINATION WITH CUSTOMERS AND NBU FOR ANY NBU APPROVED SERVICE INTERRUPTIONS. MANIPULATION OF EXISTING VALVES WILL ONLY BE DONE BY NBU OR BY CONTRACTOR UNDER THE DIRECTION OF NBU INSPECTIONS. NBU ASSUMES NO RESPONSIBILITY FOR WATER TIGHTNESS OF EXISTING VALVES.

ALL TRENCHING INSIDE CITY R.O.W. AND UTILITY EASEMENT(S) FOR ALL WATER INSTALL TO INCLUDE WATER REMOVAL IF NECESSARY SHALL BE BACK FILLED, COMPACTED (95%) AND TESTED PER NBU STANDARD SPECIFICATION UNLESS OTHERWISE SHOWN ON PLANS. TRENCHING, BACK FILL COMPACTION AND TESTING IS A NON SEPARATE PAY ITEM AND IS SUBSIDIARY TO THE VARIOUS BID ITEMS.

TREE PROTECTION IS A NON SEPARATE PAY ITEM AND IS SUBSIDIARY TO PREPARING RIGHT–OF–WAY.

NO EXTRA PAYMENT SHALL 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 UNDER THE PAY ITEM TO WHICH IT MOST CLOSELY RELATES.

PAYMENT FOR ALL STORM WATER POLLUTION PREVENTION PLAN ITEMS FOR THE WATERLINE ADJUSTMENTS SHALL BE INCLUDED WITH THE KLEIN ROAD RECONSTRUCTION PROJECT BID ITEMS, UNLESS OTHERWISE NOTED, DUE TO THIS BEING A JOINT BID/CONSTRUCTION PROJECT.

PAYMENT FOR ITEM 502 "BARRICADES, SIGNS AND TRAFFIC HANDLING" SHALL COVER ALL WORK ASSOCIATED WITH THE TEMPORARY BYPASS CONNECTION AND MAINTAINING ALL TRAFFIC CONTROL ITEMS INSTALLED FOR THE KLEIN ROAD RECONSTRUCTION PROJECT.

STATE OF TEXAS
JOHN J. MOY JR.
87835
LICENSED
PROFESSIONAL ENGINEER
6/21/22

FIRM No. F-9862

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GENERAL NOTES (SHEET 1 OF 4)
FOR
KLEIN ROAD RECONSTRUCTION
12" WATER LINE ADJUSTMENTS

REVISIONS

DESCRIPTION	DATE

TECHNICIAN:	D.G. III
JOB NO.	2101.01
DATE:	JUNE 2022
SHEET:	C2

CITY OF NEW BRAUNFELS
CONSTRUCTION PLAN NOTES

REVISED 03/2020

IF CONSTRUCTION HAS NOT COMMENCED WITHIN ONE-YEAR OF CITY APPROVAL FOR CONSTRUCTION INSPECTION, THAT APPROVAL IS NO LONGER VALID.

THE MOST CURRENT EDITIONS OF THE CITY OF SAN ANTONIO STANDARD SPECIFICATIONS AND THE TEXAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND BRIDGES SHALL BE FOLLOWED FOR ALL CONSTRUCTION EXCEPT AS AMENDED BY THE CITY OF NEW BRAUNFELS STANDARD DETAILS.

ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER OF RECORD. IN ACCEPTING THESE PLANS, THE CITY OF NEW BRAUNFELS MUST RELY UPON THE ADEQUACY OF THE WORK OF THE ENGINEER OF RECORD.

PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE CITY OF NEW BRAUNFELS TO SCHEDULE A PRECONSTRUCTION MEETING.

FOR PUBLIC INFRASTRUCTURE PERMIT OR GRADING PERMIT PROJECTS:

- FOR INSPECTIONS, YOU MUST CALL BEFORE 12:00 P.M., 48 HOURS PRIOR TO YOUR INSPECTION REQUEST.
- EACH INSPECTION WILL BE ALLOTTED 1 HOUR UNLESS YOU REQUEST FOR MORE TIME.
- ONCE YOUR REQUEST HAS BEEN ACCEPTED, YOU WILL RECEIVE A CALL FROM THE CITY OF NEW BRAUNFELS INSPECTOR.

FOR COMMERCIAL PERMIT (CP) PROJECTS:

- ALL INSPECTIONS ARE TO BE CALLED IN AT 830-221-4068 OR,
- FAXED IN AT 830-608-2117 OR,
- E-MAILED AT INSPECTIONS@NBTEXAS.ORG.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO SEE THAT ALL TEMPORARY AND PERMANENT TRAFFIC CONTROL DEVICES ARE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE PLANS AND LATEST EDITION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. IF, IN THE OPINION OF THE ENGINEERING REPRESENTATIVE AND THE CONSTRUCTION INSPECTOR, THE BARRICADES AND SIGNS DO NOT CONFORM TO ESTABLISHED STANDARDS OR ARE INCORRECTLY PLACED OR ARE INSUFFICIENT IN QUANTITY TO PROTECT THE GENERAL PUBLIC, THE CONSTRUCTION INSPECTOR SHALL HAVE THE OPTION TO STOP OPERATIONS UNTIL SUCH TIME
AS THE CONDITIONS ARE CORRECTED. IF THE NEED ARISES, ADDITIONAL TEMPORARY TRAFFIC CONTROL DEVICES MAY BE ORDERED BY THE ENGINEERING REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.

A TXDOT TYPE II B-B BLUE REFLECTIVE RAISED PAVEMENT MARKER SHALL BE INSTALLED IN THE CENTER OF THE ROADWAY ADJACENT TO ALL FIRE HYDRANTS. IN LOCATIONS WHERE HYDRANTS ARE SITUATED ON CORNERS, BLUE REFLECTIVE RAISED PAVEMENT MARKERS SHALL BE INSTALLED ON BOTH APPROACHES WHICH FRONT THE HYDRANT. THE RAISED PAVEMENT MARKER SHALL MEET TXDOT MATERIAL, EPOXY AND ADHESIVE SPECIFICATIONS.

GROUNDWATER

IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER, CONTRACTOR, SUBCONTRACTORS, BUILDERS, GEO-TECHNICAL ENGINEER, AND PROJECT ENGINEER TO IMMEDIATELY NOTIFY THE OFFICE OF THE CITY ENGINEER AND PROJECT ENGINEER IF THE PRESENCE OF GROUNDWATER WITHIN THE SITE IS EVIDENT. UPON NOTIFICATION THE PROJECT ENGINEER SHALL RESPOND WITH PLAN REVISIONS FOR THE MITIGATION OF THE GROUNDWATER ISSUE. THE CITY ENGINEER SHALL RESPOND WITHIN TWO (2) BUSINESS DAYS UPON RECEIPT OF THE MITIGATION PLAN. ALL CONSTRUCTION ACTIVITY, IMPACTED BY THE DISCOVERY OF GROUNDWATER, SHALL BE SUSPENDED UNTIL THE CITY ENGINEER GRANTS A WRITTEN APPROVAL OF THE GROUNDWATER MITIGATION PLAN.

RECORD DRAWINGS

AS PER PLATTING ORDINANCE SECTION 118-38M.: WHEN ALL OF THE IMPROVEMENTS ARE FOUND TO BE CONSTRUCTED AND COMPLETED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND WITH THE CITY'S STANDARDS, AND UPON RECEIPT OF ONE SET OF "RECORD DRAWING" PLANS, AND A DIGITAL COPY OF ALL PLANS (PDF COPY) THE CITY ENGINEER SHALL ACCEPT SUCH IMPROVEMENTS FOR THE CITY OF NEW BRAUNFELS, SUBJECT TO THE GUARANTY OF MATERIAL AND WORKMANSHIP PROVISIONS IN THIS SECTION.

CONSTRUCTION NOTE

ENGINEER OF RECORD IS RESPONSIBLE TO ENSURE THAT EROSION CONTROL MEASURES AND STORMWATER CONTROL SUFFICIENT TO MITIGATE OFF SITE IMPACTS ARE IN PLACE AT ALL STAGES OF CONSTRUCTION.

DRAINAGE NOTE

DRAINAGE IMPROVEMENTS SUFFICIENT TO MITIGATE THE IMPACT OF CONSTRUCTION SHALL BE INSTALLED PRIOR TO ADDING IMPERVIOUS COVER.

FINISHED FLOOR ELEVATIONS

THE ELEVATION OF THE LOWEST FLOOR SHALL BE AT LEAST 10 INCHES ABOVE THE FINISHED GRADE OF THE SURROUNDING GROUND, WHICH SHALL BE SLOPED IN A FASHION SO AS TO DIRECT STORMWATER AWAY FROM THE STRUCTURE. PROPERTIES ADJACENT TO STORMWATER CONVEYANCE STRUCTURES MUST HAVE FLOOR SLAB ELEVATION OR BOTTOM OF FLOOR JOISTS A MINIMUM OF ONE FOOT ABOVE THE 100-YEAR WATER FLOW ELEVATION IN THE STRUCTURE. DRIVEWAYS SERVING HOUSES ON THE DOWNHILL SIDE OF THE STREET SHALL HAVE A PROPERLY SIZED CROSS SWALE PREVENTING RUNOFF FROM ENTERING THE GARAGE.

SOILS TESTING

PROCTORS SHALL BE SAMPLED FROM ON-SITE MATERIAL (ON-SITE IS DEFINED AS LIMITS OF CONSTRUCTION FOR THIS (PLAN SET) AND A COPY OF THE PROCTOR RESULTS SHALL BE DELIVERED TO THE CITY OF NEW BRAUNFELS STREET INSPECTOR PRIOR TO ANY DENSITY TESTS.

ROADWAY

ALL ROADWAY COMPACTION TESTS SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEOTECHNICAL ENGINEER. FLEXIBLE BASE OR FILL/EMBANKMENT MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED EIGHT INCHES (8") LOOSE. THE REQUIRED DENSITY FOR THE FILL/EMBANKMENT MATERIAL SHALL MEET THE REQUIREMENTS OF TXDOT'S SPECIFICATION ITEM 132. THE REQUIRED DENSITY FOR THE FLEXIBLE BASE MATERIAL SHALL MEET THE REQUIREMENTS OF TXDOT'S SPECIFICATION ITEM 247. EACH LAYER OF MATERIAL, INCLUSIVE OF SUBGRADE, SHALL BE COMPACTED AS SPECIFIED AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-113-E, TEX-114-E, TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 200 LF FOR EACH LIFT. UPON COMPLETION OF TESTING, THE GEOTECHNICAL ENGINEER WILL PROVIDE THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FLEXIBLE BASE, AND FILL MATERIAL, AND SUBGRADE, HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS. ADDITIONAL DENSITY TESTS MAY BE REQUESTED BY THE CITY OF NEW BRAUNFELS INSPECTOR.

ITEM 340

ASPHALTIC CONCRETE PAVEMENT SHALL BE THE TYPE OF HOT MIX ASPHALT AS DEFINED IN TXDOT'S STANDARD SPECIFICATIONS FOR CURRENT TXDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREET AND BRIDGES.

THE CITY OF NEW BRAUNFELS WILL NOT ACCEPT THE USE OF RECYCLED ASPHALT PAVEMENT (RAP) OR RECYCLED ASPHALT SHINGLES (RAS) IN ASPHALT MIXTURES FOR NEW ROADWAYS. ANY DEBRIS INCLUSIONS WITHIN NEW ASPHALT PAVEMENTS WILL RESULT IN ASPHALT REMOVAL AND REPLACEMENT FROM CURB TO CURB FOR LIMITS TO BE DETERMINED BY THE CITY OF NEW BRAUNFELS.

THE ASPHALTIC CONCRETE PAVEMENT SURFACE COURSE SHALL BE PLANT MIXED, HOT LAID TYPE "D" MEETING THE SPECIFICATION REQUIREMENTS OF TXDOT ITEM 340. THE ASPHALTIC CONCRETE PAVEMENT SUB-SURFACE COURSES SHALL BE PLANT MIXED, HOT LAID TYPE "B" MEETING THE SPECIFICATION REQUIREMENTS OF TXDOT ITEM 340. THE MIXTURE SHALL BE DESIGNED PER THE DESIGN REQUIREMENTS SPECIFIED IN TXDOT ITEM 340 AND SHALL BE COMPACTED TO BETWEEN 91 AND 95 PERCENT OF THE MAXIMUM THEORETICAL DENSITY AS DETERMINED BY TXDOT TEST METHOD TEX-227-F. PLACE THE MIXTURE WHEN THE ROADWAY SURFACE
TEMPERATURE IS AT OR ABOVE 60°F. COMPLETE ALL COMPACTION OPERATIONS BEFORE THE PAVEMENT TEMPERATURE DROPS BELOW 160°F. THE ASPHALT CEMENT CONTENT BY PERCENT OF TOTAL MIXTURE WEIGHT SHALL FALL WITHIN A TOLERANCE OF +0.5 PERCENT FROM A SPECIFIC MIX DESIGN.

UTILITY TRENCH COMPACTION

(ADDED TO THE CONSTRUCTION PLANS ON ALL UTILITY PLAN SHEETS).

ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT/SIDEWALK SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEOTECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE. DETERMINE THE MAXIMUM LIFT THICKNESS BASED ON THE ABILITY OF THE COMPACTING OPERATION AND EQUIPMENT USED TO MEET THE REQUIRED DENSITY. EACH LAYER OF MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-113-E, TEX-114-E, TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 200 LF FOR EACH LIFT AND EVERY OTHER SERVICE LINE. UPON COMPLETION OF TESTING THE GEOTECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS. ADDITIONAL DENSITY TESTS MAY BE REQUESTED BY THE CITY OF NEW BRAUNFELS INSPECTOR.

CURB CUT DUE TO CONSTRUCTION OF NEW RIGHT-OF-WAY CONSTRUCTION

(INDICATE THE 2 OPTIONS ON THE CONSTRUCTION PLANS).

1. SAWCUT EXISTING STREET AND MATCH TO NEW CONSTRUCTION.
2. SAWCUT EXISTING CURB TO TIE INTO EXISTING CONSTRUCTION.

STATE OF TEXAS
JOHN J. MOY JR.
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6/21/22

FIRM No. F-9862

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GENERAL NOTES (SHEET 2 OF 4)
FOR
KLEIN ROAD RECONSTRUCTION
12" WATER LINE ADJUSTMENTS

REVISIONS	DESCRIPTION	DATE

TECHNICIAN:	D.G. III
JOB NO.	2101.01
DATE:	JUNE 2022
SHEET:	C3

CITY OF NEW BRAUNFELS
CONSTRUCTION PLAN NOTES

REVISED 03/2020

CONSTRUCTION STABILIZED ENTRANCE

SAWCUT CURB FOR CONSTRUCTION ENTRANCE.

STABILIZED CONSTRUCTION AREA SHALL BE CONSTRUCTED OF 3"X5" ROCK TO BE PLACED A MINIMUM LENGTH OF 25-FT. AND MAINTAINED SO THAT CONSTRUCTION DEBRIS DOES NOT FALL WITHIN THE CITY RIGHT-OF-WAY. RIGHTOF-WAY MUST BE CLEARED FROM MUD, ROCKS, ETC. AT ALL TIMES.

(NOTES TO BE PLACED ON ALL WW PLAN & DETAIL SHEETS)

ENSURE ALL DRIVEWAY APPROACHES ARE BUILT IN GENERAL ACCORDANCE WITH A.D.A. SPECIFICATIONS.

NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.

SIGNING AND PAVEMENT MARKING PLAN NOTES

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL REGULATORY AND WARNING SIGNS, STREETS NAME SIGNS AND SIGN MOUNTS IN ACCORDANCE WITH APPROVED ENGINEERING PLANS. THE CITY WILL INSPECT ALL SIGNS AT FINAL INSPECTION.

THE CONTRACTOR SHALL INSTALL ALL PAVEMENT MARKINGS IN ACCORDANCE WITH APPROVED ENGINEERING PLANS. THE CONTRACTOR SHALL NOTIFY THE CITY AT LEAST TWENTY-FOUR (24 HOURS PRIOR TO THE INSTALLATION OF ALL SEALER AND FINAL MARKINGS. THE CITY WILL INSPECT ALL MARKINGS AT FINAL APPLICATION.

SEEDING AND ESTABLISHMENT OF VEGETATION WITHIN EARTHEN CHANNELS, STORMWATER BASINS AND DISTURBED AREAS

SEEDING FOR THE PURPOSE OF ESTABLISHING VEGETATION WITHIN CONSTRUCTED EARTHEN CHANNELS, BASINS AND DISTURBED AREAS SHALL BE CONDUCTED IN ACCORDANCE WITH ITEM 164 (SEEDING FOR EROSION CONTROL OF TXDOT'S STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS AND BRIDGES MANUAL. ONLY SEED TYPES AND MIXES SPECIFIED FOR THE SAN ANTONIO DISTRICT (DISTRICT 15 IN TABLES 1 AND 2 UNDER ITEM 164 SHALL BE UTILIZED. DURING THE COOL SEASON (SEPT 1-NOV 30, CEREAL RYE AND SEED SPECIES SPECIFIED FOR THE SAN ANTONIO DISTRICT IN TABLE 3 MAY BE USED. FOR COOL SEASON SEEDING APPLICATIONS, COOL SEASON SEED MIXES SHALL BE USED IN CONJUNCTION WITH SEED MIXES FOR THE SAN ANTONIO DISTRICT AS SPECIFIED IN TABLE 1 AND 2 UNDER ITEM 164.

IT MAY BE DEEMED NECESSARY TO INCORPORATE TOPSOIL AND SOIL AMENDMENTS (I.E. COMPOST/ FERTILIZER INTO EXISTING SOIL IN ORDER TO FACILITATE VEGETATION GROWTH. TOPSOIL, COMPOST AND FERTILIZER ADDITIONS SHALL BE CONDUCTED ACCORDING TO ITEMS 160, 161 AND 166 OF TXDOT'S STANDARD SPECIFICATIONS MANUAL, RESPECTIVELY.

AREAS REQUIRING PERMANENT VEGETATION (EARTHEN CHANNELS, PONDS, ETC.) ARE REQUIRED TO MEET TXDOT SPECIFICATIONS FOR ITEM 160 TOPSOIL. TESTING PER TEX-128-E WILL BE REQUIRED AT THE CITY'S REQUEST.

WATERING MAY ALSO BE NECESSARY TO FACILITATE AND EXPEDITE THE SPROUTING AND GROWTH OF VEGETATION. ITEM 168 OF TXDOT'S STANDARD SPECIFICATIONS MANUAL SHALL BE ADHERED TO FOR VEGETATIVE WATERING.

IF EXTENDED DROUGHT CONDITIONS EXIST THAT HINDER OR PROHIBIT THE GROWTH AND ESTABLISHMENT OF VEGETATION, THE CONTRACTOR/ DEVELOPER SHALL PROVIDE A PLAN TO THE CITY OF NEW BRAUNFELS DESCRIBING THE MEASURES THAT WILL BE TAKEN TO STABILIZE EARTHEN DRAINAGE INFRASTRUCTURE UNTIL A TIME WHEN GROWING CONDITIONS BECOME MORE FAVORABLE.

CITY OF NEW BRAUNFELS NOTES:

1. GAS UTILITIES ARE NOT INCLUDED IN THE CIVIL CONSTRUCTION PLANS. FINAL GAS UTILITY DESIGN SHALL BE APPROVED BY THE CITY FOR ANY WORK WITHIN PUBLIC RIGHT-OF-WAY
2. ALL APPROXIMATE UTILITY DEPTHS SHOWN, OTHER THAN TEST HOLE INFORMATION SHOWN, ARE APPROXIMATE/TYPICAL DEPTHS ONLY OR BASED ON INFORMATION PROVIDED BY RESPECTIVE UTILITY COMPANY. CONTRACTOR SHALL VERIFY BOTH HORIZONTAL AND VERTICAL LOCATIONS OF ALL UTILITY MAINS AND SERVICES AS IT PERTAINS TO THE CONSTRUCTION ITEMS.
3. THIS PROJECT INCLUDES UTILITY INSTALLATIONS GREATER THAN 5-FEET IN DEPTH LOCATED IN PUBLIC RIGHT-OF-WAY OR EASEMENTS. DEEP TRENCHES POSE COMPACTION TESTING AND CONSTRUCTION CHALLENGES AND CITY METHODS FOR TESTING AND COMPACTION MAY NOT BE ACHIEVABLE. A UTILITY COMPACTION PLAN WILL BE REQUIRED AND MUST BE SUBMITTED FOR APPROVAL TO CITY PRIOR TO UTILITY INSTALLATION.

CONSTRUCTION SEQUENCING:

1. PLACE ALL EROSION AND SEDIMENTATION CONTROLS PER THE EROSION CONTROL PLAN AND THE ASSOCIATED CITY OF NEW BRAUNFELS KLEIN RD. RECONSTRUCTION PROJECT.
2. CONSTRUCT WATER MAIN AND ASSOCIATED ITEMS.
3. FINAL STABILIZATION ITEMS IN ACCORDANCE WITH THE ASSOCIATED CITY OF NEW BRAUNFELS KLEIN RD. RECONSTRUCTION PROJECT.
4. AFTER 70% STABILIZATION OF THE DISTURBED AREAS IS ACHIEVED, THE CONTRACTOR SHALL REMOVE THE EROSION CONTROLS.

TRAFFIC CONTROL NOTE:

THE CONTRACTOR IS FULLY RESPONSIBLE FOR THE TRAFFIC CONTROL AND WILL BE RESPONSIBLE FOR FURNISHING ALL TRAFFIC CONTROL DEVICES, AND FLAGGERS. BARRICADES AND WARNING SIGNS SHALL CONFORM TO THE CURRENT "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND SHALL BE LOCATED TO PROVIDE MAXIMUM PROTECTION TO THE PUBLIC AS WELL AS CONSTRUCTION PERSONNEL AND EQUIPMENT WHILE PROVIDING CONTINUOUS TRAFFIC FLOW AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL DEVICES DURING CONSTRUCTION.

TRENCH SAFETY NOTE:

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

EXISTING UTILITY INFORMATION NOTE:

THE LOCATION OF UTILITIES, EITHER UNDERGROUND OR OVERHEAD, ARE SHOWN IN APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION AND DEPTH(IF UNDERGROUND) OF ALL UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR WILL AGREE TO BE FULLY REPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE INCURRED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, STRUCTURES OR FACILITIES. CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER OF ANY DISCREPANCIES 24 HOURS PRIOR TO COMMENCING CONSTRUCTION.

NBU AS-BUILT REQUIREMENTS

NBU REQUIRES GPS POINTS FOR CERTAIN WATER, WASTEWATER AND ELECTRIC IMPROVEMENTS. SOME OF THIS INFORMATION/DATA MUST BE PERFORMED DURING CONSTRUCTION, PRIOR TO BACKFILLING OPERATIONS. CONTRACTOR SHALL COORDINATE WITH NBU INSPECTOR TO VERIFY ANY ADDITIONAL ITEMS NOT SHOWN BELOW THAT NEED TO BE GPS LOCATED AND THE SURVEY/DELIVERY REQUIREMENTS REGARDING THIS INFORMATION.

GPS POINTS SHALL BE REQUIRED FROM THE DEVELOPER'S CONTRACTOR AND SHALL BE SUPPLIED TO THE ENGINEER ALONG WITH MARKED UP DRAWING FOR USE OF ASBUILT. A MINIMUM OF THREE COORDINATE POINTS FOR GEOREFERENCING SHALL BE REQUIRED. THE WATER AND WASTEWATER GPS POINTS SHALL BE TO SURVEY GRADE. THE ELECTRIC GPS POINTS SHALL BE TO MAP GRADE.

WATER

VERTICAL BENDS AND EDGE OF STEEL CASING (IF APPLICABLE) PRIOR TO BACKFILL
HORIZONTAL BENDS PRIOR TO BACKFILL
TEES PRIOR TO BACKFILL
FITTINGS (REDUCERS AND COUPLINGS) PRIOR TO BACKFILL
FIRE HYDRANTS (TOP OF FLANGE)
VALVES
METERS (TOP CENTER OF BOX)
BLOW OFF ASSEMBLY
CORNER SLAB OF WATER TANK & GATE VALVE ON TANK

WASTEWATER

MANHOLES (AND INVERT DEPTH(S))
CLEANOUTS
CORNER SLAB OF LIFT STATION

ELECTRIC

POLES
TRANSFORMERS, BOTH ABOVE AND UNDERGROUND (FRONT LOCK)
PULL BOXES
STREET LIGHTS

SEE NBU'S "CAD/GPS DELIVERABLES" ON NBU WEBSITE AT NBUTEXAS.COM FOR COMPLETE DETAILS AND REQUIREMENTS.

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JOHN J. MOY JR.
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6/21/22

FIRM No. F-9862

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PM

GENERAL NOTES (SHEET 3 OF 4)
FOR
KLEIN ROAD RECONSTRUCTION
12" WATER LINE ADJUSTMENTS

REVISIONS	
DESCRIPTION	
DATE	

TECHNICIAN:	D.G. III
JOB NO.	2101.01
DATE:	JUNE 2022
SHEET:	C4

NBU NOTES

GENERAL NOTES:

1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THE PROJECT SHALL BE APPROVED BY NEW BRAUNFELS UTILITIES AND COMPLY WITH THE CURRENT "NEW BRAUNFELS UTILITIES WATER SYSTEMS CONNECTION/CONSTRUCTION POLICY".
2. CONTRACTOR SHALL NOT PROCEED WITH ANY PIPE INSTALLATION WORK UNTIL THEY OBTAIN A COPY OF THE PLANS FROM THE CONSULTANT OR ENGINEER AND NOTIFY NBU WATER SYSTEMS ENGINEERING AT 830-608-8971 WITH AT LEAST TWO (2) WORKING DAYS (48 HOURS) NOTICE. **WORK COMPLETED BY THE CONTRACTOR, WHICH HAS NOT RECEIVED A NOTICE TO PROCEED FROM NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING WILL BE SUBJECT TO REMOVAL AND REPLACEMENT BY AND AT THE EXPENSE OF THE CONTRACTOR.**
3. THE DEVELOPER DEDICATES THE WATER/WASTEWATER MAINS UPON COMPLETION BY THE CONTRACTOR AND ACCEPTANCE BY THE NEW BRAUNFELS UTILITIES WATER SYSTEM. NBU WILL OWN AND MAINTAIN SAID WATER/WASTEWATER MAINS WHICH ARE LOCATED WITHIN PLATTED UTILITY EASEMENTS OR PUBLIC ROW OF PROPOSED DEVELOPMENTS. (AS APPLICABLE).
4. CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNERS AND THE ENGINEER AND HIS EMPLOYEES, PARTNERS OFFICERS, DIRECTORS, OR CONSULTANTS HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF THE WORK ON THIS PROJECT, EXCEPTING FROM LIABILITY ARISING FROM SOLE NEGLIGENCE OF THE OWNER OR ENGINEER, ENGINEER'S DIRECTORS, OFFICERS, EMPLOYEES, OR CONSULTANTS.
5. CONTRACTOR TO CONTACT THE ENGINEER-OF-RECORD (EOR) FOR ANY FIELD CHANGES. ANY REVISIONS OR CHANGES TO THE APPROVED CONSTRUCTION PLANS WILL REQUIRE ADDITIONAL APPROVAL BY NBU IN WRITING.
6. CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION, ANY DAMAGES DONE TO EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, LANDSCAPING AND STRUCTURES, AND EXISTING UTILITIES (NOT ADJUSTED ON PLANS). COST OF RESTORATIONS, IF ANY, SHALL BE THE CONTRACTOR'S ENTIRE EXPENSE.
8. THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN ONE INCH IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATION IN VICINITY OF TREES SHALL PROCEED WITH CAUTION.
9. CONTRACTOR SHALL PROCURE ALL PERMITS AND LICENSES, PAY ALL CHARGES, FEES AND TAXES AND GIVE ALL NOTICES NECESSARY AND INCIDENTAL TO THE DUE AND LAWFUL PROSECUTION OF THE WORK.
10. NO EXTRA PAYMENT SHALL 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 UNDER THE PAY ITEM TO WHICH IT RELATES.
11. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL WASTE MATERIALS UPON PROJECT COMPLETION. THE CONTRACTOR SHALL NOT PERMANENTLY PLACE ANY WASTE MATERIALS IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN DEVELOPMENT PERMIT.
12. THE CONTRACTOR SHALL NOT PLACE ANY MATERIALS ON THE RECHARGE ZONE OF THE EDWARDS AQUIFER WITHOUT AN APPROVED WATER POLLUTION ABATEMENT PLAN FROM THE TCEQ 31 TAC 313.4 AND 31 TAC 313.9.
13. BARRICADES AND WARNING SIGNS SHALL CONFORM TO THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND SHALL BE LOCATED TO PROVIDE MAXIMUM PROTECTION TO THE PUBLIC AS WELL AS CONSTRUCTION PERSONNEL AND EQUIPMENT WHILE PROVIDING CONTINUOUS TRAFFIC FLOW AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL DEVICES DURING CONSTRUCTION.
14. CONTRACTOR IS REQUIRED TO VERIFY PROJECT ELEVATIONS. THE TERM "MATCH EXISTING" SHALL BE UNDERSTOOD TO SIGNIFY BOTH HORIZONTAL AND VERTICAL ALIGNMENT.
15. THE LOCATION OF UTILITIES, EITHER UNDERGROUND OR OVERHEAD, SHOWN WITHIN THE RIGHT OF WAY ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR BEFORE BEGINNING CONSTRUCTION OPERATIONS.
16. OSHA REGULATIONS PROHIBIT OPERATIONS THAT WILL BRING PERSONS OR EQUIPMENT WITHIN 10 FEET OF AN ENERGIZED LINE. WHERE WORKMEN AND/OR EQUIPMENT HAVE TO WORK CLOSE TO AN ENERGIZED ELECTRICAL LINE, THE CONTRACTOR SHALL NOTIFY THE ELECTRICAL POWER COMPANY INVOLVED AND MAKE WHATEVER ADJUSTMENTS NECESSARY TO ENSURE THE SAFETY OF THOSE WORKMEN.
17. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS REQUIRED FOR CONSTRUCTION. CONTRACTORS SHALL CALL THE ONE CALL SYSTEM FOR WATER/WASTEWATER LOCATION.
18. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192 (8), GAS COMPANIES MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.
19. THE CONTRACTOR IS FULLY RESPONSIBLE FOR THE TRAFFIC CONTROL AND WILL BE RESPONSIBLE FOR FURNISHING ALL TRAFFIC CONTROL DEVICES, AND FLAGGERS. THE CONSTRUCTION METHODS SHALL BE CONDUCTED TO PROVIDE THE LEAST POSSIBLE INTERFERENCE TO TRAFFIC SO AS TO PERMIT THE CONTINUOUS MOVEMENT OF THE TRAFFIC IN ONE DIRECTION AT ALL TIMES. THE CONTRACTOR SHALL CLEAN UP AND REMOVE FROM THE WORK AREA ANY LOOSE MATERIAL RESULTING FROM CONTRACT OPERATIONS AT THE END OF EACH WORKDAY.
20. PRIOR TO ORDERING MATERIALS TO BE USED IN CONSTRUCTION, CONTRACTOR SHALL PROVIDE THE ENGINEER WITH FOUR (4) COPIES OF THE SOURCE, TYPE, GRADATION, MATERIAL SPECIFICATION DATA AND / OR SHOP DRAWINGS, AS APPLICABLE, TO SATISFY THE REQUIREMENTS OF THE FOLLOWING ITEMS AND ALL MATERIAL ITEMS REFERRED TO IN THESE LISTED ITEMS:
    a. WATER MAINS AND SERVICES

NBU NOTES

GENERAL NOTES:

21. THRUST BLOCKS WILL NOT BE ALLOWED ON THE SYSTEM WITHOUT SPECIAL APPROVAL. JOINTS WILL BE RESTRAINED WITH RESTRAINING SYSTEMS APPROVED BY NBU AND RESTRAINT LENGTH SHALL BE SUBMITTED TO NBU AT THE TIME OF PLAN SUBMITTAL.
22. WATER JETTING THE BACKFILL WITHIN A STREET WILL NOT BE PERMITTED. WASTEWATER TRENCHES SUBJECT TO TRAFFIC SHALL CONFORM TO NBU CONNECTION AND CONSTRUCTION POLICY MANUAL.
23. WHERE THE MINIMUM 9 FOOT SEPARATION DISTANCE BETWEEN WASTEWATER LINES AND WATER LINES / MAINS CANNOT BE MAINTAINED, THE INSTALLATION OF WASTEWATER LINES SHALL BE IN STRICT ACCORDANCE WITH 30 TAC 217.
24. CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.
25. UTILITY TRENCH COMPACTION WITH STREET R.O.W.
    a. ALL UTILITY TRENCH COMPACTION TEST WITHIN THE STREET PAVEMENT SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEO-TECHNICAL ENGINEER.
    b. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE.
    c. EACH LAYER OF MATERIAL SHALL BE COMPACTED AS SPECIFIED AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEXT METHODS TEX-113-E, TEX114-E, TEX-115-E.
    d. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR.
    e. UPON COMPLETION OF TESTING THE GEO-TECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS.

WATER NOTES:

1. ALL WATER MAINS SHALL BE AWWA C900 (CLASS 150 OR GREATER).
2. WATER SERVICES SHALL BE SINGLE 1" COPPER TUBING.
3. WATER LINE IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE NBU SYSTEMS CONNECTION & CONSTRUCTION POLICY.
4. WATER MAIN SHALL HAVE A MINIMUM OF 42 INCHES OF COVER, OTHERWISE CONCRETE ENCASEMENT WILL BE REQUIRED.
5. EACH UNIT IN A DUPLEX, TRIPLEX, FOURPLEX, OR CONDOMINIUM SHALL BE PROVIDED WITH AN INDIVIDUAL WATER METER. A MASTER METER CAN BE CONSIDERED FOR SEPARATE BUILDINGS, HOWEVER, THOSE BUILDINGS MUST BE PLUMBED TO ALLOW SEPARATE METERS FOR FUTURE CONSIDERATION.
6. CONTRACTOR WILL KEEP THE AREA ON TOP OF AND AROUND THE WATER METER BOX FREE OF ALL OBJECTS AND DEBRIS.
7. INITIAL BACKFILL OF WATER LINES SHALL BE MANUFACTURED SAND OR PEA GRAVEL AS PER NBU SYSTEMS CONNECTION & CONSTRUCTION POLICY.
8. SECONDARY BACKFILL OF WATER LINES SHALL GENERALLY CONSIST OF MATERIAL REMOVED FROM THE TRENCH AND SHALL BE FREE FROM BRUSH, DEBRIS AND TRASH OR STONES HAVING ANY DIMENSION LARGER THAN 6" INCHES AT THE LARGEST DIMENSION.
9. HYDROSTATIC TESTING IS DONE FROM VALVE TO VALVE.
10. NO METER BOXES TO BE SET IN DRIVEWAYS OR SIDEWALKS. ANY METER BOXES SET IN DRIVEWAYS OR SIDEWALKS WILL BE RELOCATED AT CONTRACTOR'S AND/OR DEVELOPER'S EXPENSE.
11. METER BOXES MUST BE SET AT THE PROPOSED GRADE. ANY METER BOXES THAT ARE NOT SET AT THE FINAL GRADE WILL BE ADJUSTED AT CONTRACTOR'S AND/OR DEVELOPER'S EXPENSE.
12. ACCEPTABLE METER BOXES ARE D13-BAMR AND D15-BAMR. NEW RESIDENTIAL LOTS ARE REQUIRED TO USE THE D15-BAMR METER BOXES (DOUBLE AMR). COMMERCIAL LOTS SHOULD CHOOSE WHICH BOX APPLIES TO THE DOMESTIC AND/OR IRRIGATION METER LAYOUT.
13. THRUST BLOCKS WILL NOT BE ALLOWED ON THE SYSTEM WITHOUT SPECIAL APPROVAL. JOINTS WILL BE RESTRAINED WITH RESTRAINING SYSTEMS APPROVED BY NBU AND RESTRAINT LENGTH SHALL BE SUBMITTED TO NBU AT THE TIME OF PLAN SUBMITTAL.
14. CONTRACTOR SHALL PLACE TRACER WIRE ON TOP OF THE WATER MAINS. TRACER WIRE SHOULD RUN FROM VALVE TO VALVE AND EXIT AT THE VALVE BOX. THE TRACER WIRE SHOULD BE ATTACHED TO THE TOP OF THE PIPE USING TAPE. EXCESS WIRE SHOULD BE LEFT WITHIN VALVE BOXES TO BE PLACED WITHIN LID OF COVER.
15. WATER QUALITY SHALL BE PROTECTED WITH APPROPRIATE BACKFLOW PREVENTION ASSEMBLIES INSTALLED ON ALL IRRIGATION SYSTEMS, FIRE SUPPRESSION SYSTEMS AND MULTI-UNIT COMPLEXES ALONG WITH MULTI-LEVEL PROPERTIES ON THE DOMESTIC METER CONTAINMENT. NBU CAN ASSIST WITH THE DECISION ON APPROPRIATE BACKFLOW ASSEMBLIES ON A CASE BY CASE BASIS. CONTACT NBU BACKFLOW PREVENTION SPECIALIST FOR MORE DETAILS. EMAIL QUESTIONS TO CROSSCONNECTION@NBUTEXAS.COM
16. ALL BACKFLOW PREVENTION ASSEMBLIES SHALL BE TESTED UPON INSTALLATION AND REPORT SENT TO NBU VIA THE ONLINE TRACKING SYSTEM, CONTACT NBU BACKFLOW PREVENTION SPECIALIST FOR MORE DETAILS. EMAIL QUESTIONS TO CROSSCONNECTION@NBUTEXAS.COM
17. ALL RESIDENTIAL AND COMMERCIAL PROPERTIES SHALL HAVE A CUSTOMER SERVICE INSPECTION CERTIFICATE (CSI INSPECTION) COMPLETED UPON COMPLETION OF THE BUILDING OR HOME STRUCTURE. CONTACT NBU BACKFLOW PREVENTION SPECIALIST FOR MORE DETAILS. EMAIL QUESTIONS TO CROSSCONNECTION@NBUTEXAS.COM

STATE OF TEXAS
JOHN J. MOY JR.
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John J. Moy, P.E.
6/21/22

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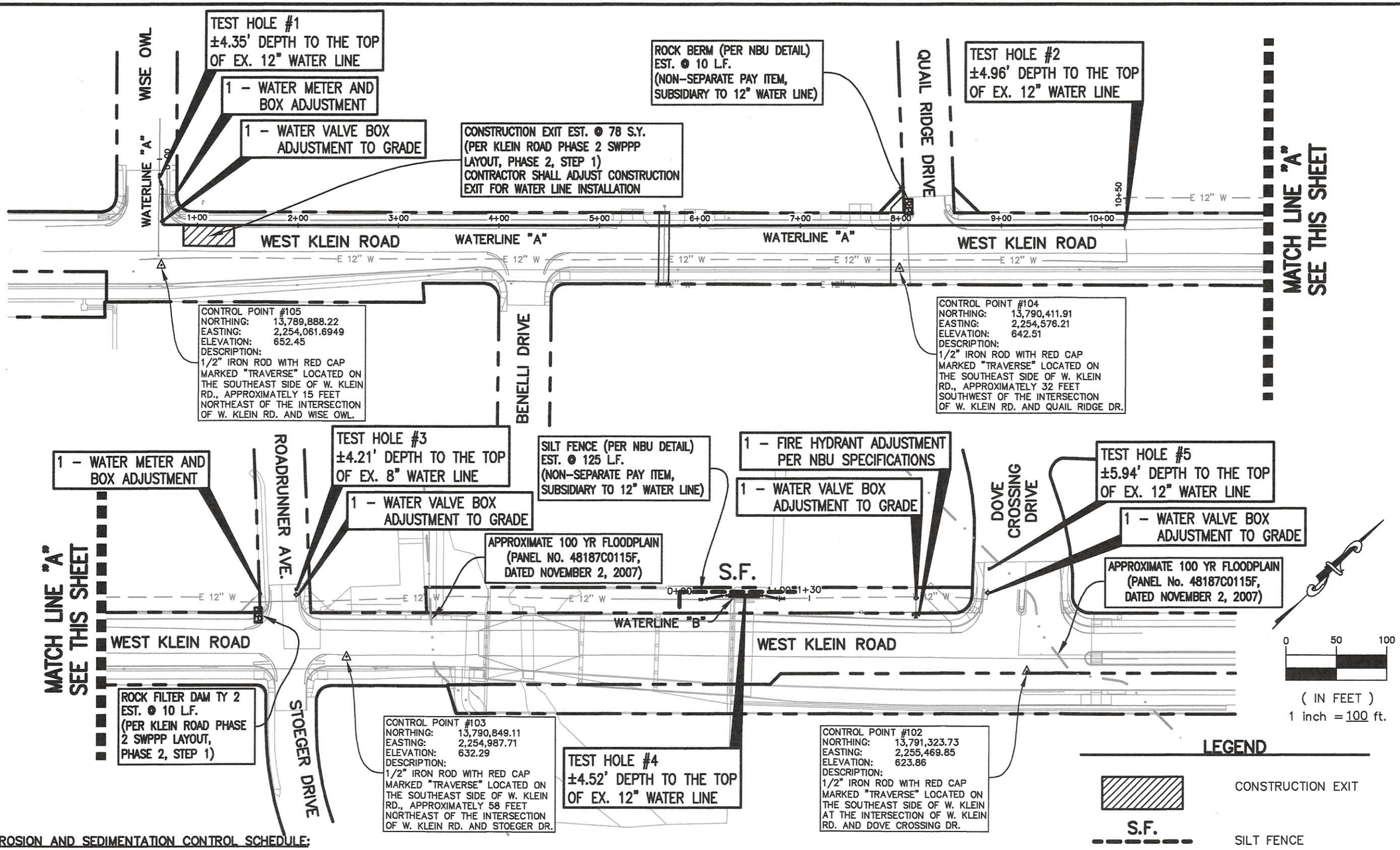
GENERAL NOTES (SHEET 4 OF 4)
FOR
KLEIN ROAD RECONSTRUCTION
12" WATER LINE ADJUSTMENTS

REVISIONS

DESCRIPTION	DATE

TECHNICIAN:	D.G. III
JOB NO.	2101.01
DATE:	JUNE 2022
SHEET:	C5



EROSION AND SEDIMENTATION CONTROL SCHEDULE:

PRIOR TO CONSTRUCTION

1. INSTALL SILT FENCES PER THIS SHEET AND ASSOCIATED EROSION CONTROL ITEMS PER KLEIN ROAD PHASE 2 SWPPP LAYOUT, PHASE 2 STEP I.

DURING CONSTRUCTION

1. MAINTAIN SILT FENCES AND ASSOCIATED EROSION CONTROL ITEMS PER KLEIN ROAD PHASE 2 SWPPP LAYOUT, PHASE 2 STEP I.
2. IF ANY STAGING/STORAGE/SPOILS ARE TO BE PROVIDED ON A SITE DETERMINED BY THE CONTRACTOR, THEY SHALL BE ENCLOSED WITH SILT FENCE. IT IS ANTICIPATED THAT THE EXCAVATED TRENCH MATERIAL WILL BE HAULED OFF BY THE CONTRACTOR AND REPLACED WITH MATERIAL IN ACCORDANCE WITH THE TRENCH BACKFILL DETAILS ON SHEET C15.

FINAL EROSION/SEDIMENTATION CONTROL

1. ALL DISTURBED AREAS IN THE PROJECT LIMITS SHALL BE STABILIZED ITEMS IN ACCORDANCE WITH THE ASSOCIATED CITY OF NEW BRAUNFELS KLEIN RD. RECONSTRUCTION PROJECT.
2. PER TPDES REQUIREMENTS, DISTURBED AREAS ON WHICH CONSTRUCTION ACTIVITIES HAVE CEASED (TEMPORARILY OR PERMANENTLY) SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITY RESUMES WITHIN 21 DAYS. SEEDING DOES NOT CONSTITUTE AS STABILIZATION.

CONSTRUCTION SEQUENCING:

1. PLACE ALL EROSION AND SEDIMENTATION CONTROLS PER THIS EROSION CONTROL PLAN AND THE ASSOCIATED CITY OF NEW BRAUNFELS KLEIN RD. RECONSTRUCTION PROJECT.
2. CONSTRUCT WATER MAIN AND ASSOCIATED ITEMS.
3. FINAL STABILIZATION ITEMS IN ACCORDANCE WITH THE ASSOCIATED CITY OF NEW BRAUNFELS KLEIN RD. RECONSTRUCTION PROJECT.
4. AFTER 70% STABILIZATION OF THE DISTURBED AREAS IS ACHIEVED, THE CONTRACTOR SHALL REMOVE THE EROSION CONTROLS.

NOTE:

1. PAYMENT FOR ALL STORM WATER POLLUTION PREVENTION PLAN ITEMS FOR THE WATERLINE ADJUSTMENTS SHALL BE INCLUDED WITH THE KLEIN ROAD RECONSTRUCTION PROJECT BID ITEMS, UNLESS OTHERWISE NOTED, DUE TO THIS BEING A JOINT BID/CONSTRUCTION PROJECT.
2. PAYMENT FOR ITEM 502 "BARRICADES, SIGNS AND TRAFFIC HANDLING" SHALL COVER ALL WORK ASSOCIATED WITH THE TEMPORARY BYPASS CONNECTION AND MAINTAINING ALL TRAFFIC CONTROL ITEMS INSTALLED FOR THE KLEIN ROAD RECONSTRUCTION PROJECT.

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PROJECT LAYOUT AND EROSION CONTROL PLAN FOR KLEIN ROAD RECONSTRUCTION 12" WATER LINE ADJUSTMENTS

REVISIONS

DATE	DESCRIPTION
08/25/22	REVISED PER CITY OF NEW BRAUNFELS COMMENTS

TECHNICIAN:	D.G. III
JOB NO.	2101.01
DATE:	JUNE 2022
SHEET:	C6

TRENCH SAFETY NOTE:
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

NOTES:
1. ALL UTILITIES TO BE CONSTRUCTED PRIOR TO FINAL STREET CONSTRUCTION.
2. NO VALVES, HYDRANTS, CLEANOUTS ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.

UTILITY TRENCH COMPACTION
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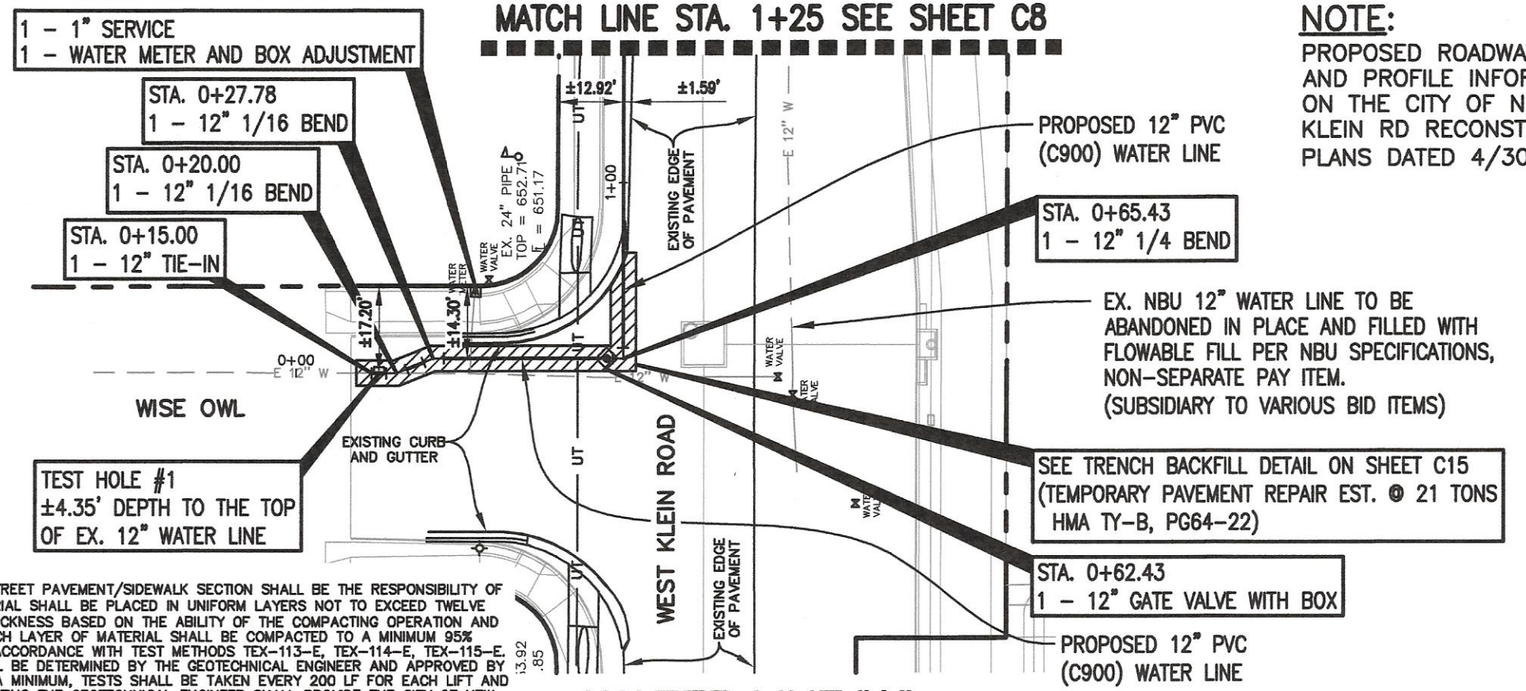
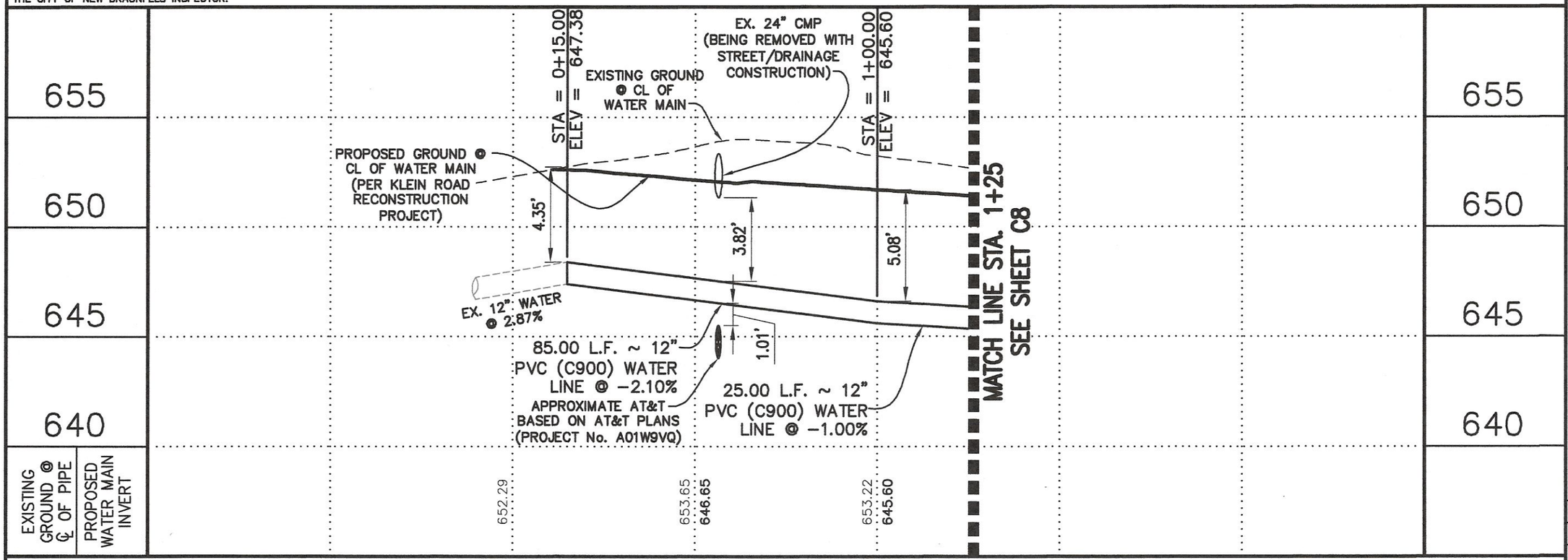


WATER LINE "A"

NOTE:
PROPOSED ROADWAY/DRAINAGE PLAN AND PROFILE INFORMATION BASED ON THE CITY OF NEW BRAUNFELS KLEIN RD RECONSTRUCTION PROJECT PLANS DATED 4/30/21.

0 15 30
1" = 30' HORZ.
1" = 5' VERT.



STATE OF TEXAS
JOHN J. MOY JR.
87835
LICENSED
PROFESSIONAL ENGINEER
8/24/22
Rev. 8/24/22

FIRM No. F-9862

PAWELEK & MOY, INC.
CIVIL ENGINEERING & CONSULTING SERVICES
130 W. John Street tel: (830) 629-2563
New Braunfels, Texas 78130 fax: (830) 629-2564

WATERLINE "A" PLAN AND PROFILE
FROM STA. 0+00 TO STA. 1+25
KLEIN ROAD RECONSTRUCTION
12" WATER LINE ADJUSTMENTS

REVISIONS

DATE	DESCRIPTION
08/25/22	REVISED PER CITY OF NEW BRAUNFELS COMMENTS

TECHNICIAN:	D.G. III
JOB NO.	2101.01
DATE:	JUNE 2022
SHEET:	C7

TRENCH SAFETY NOTE:
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

NOTES:
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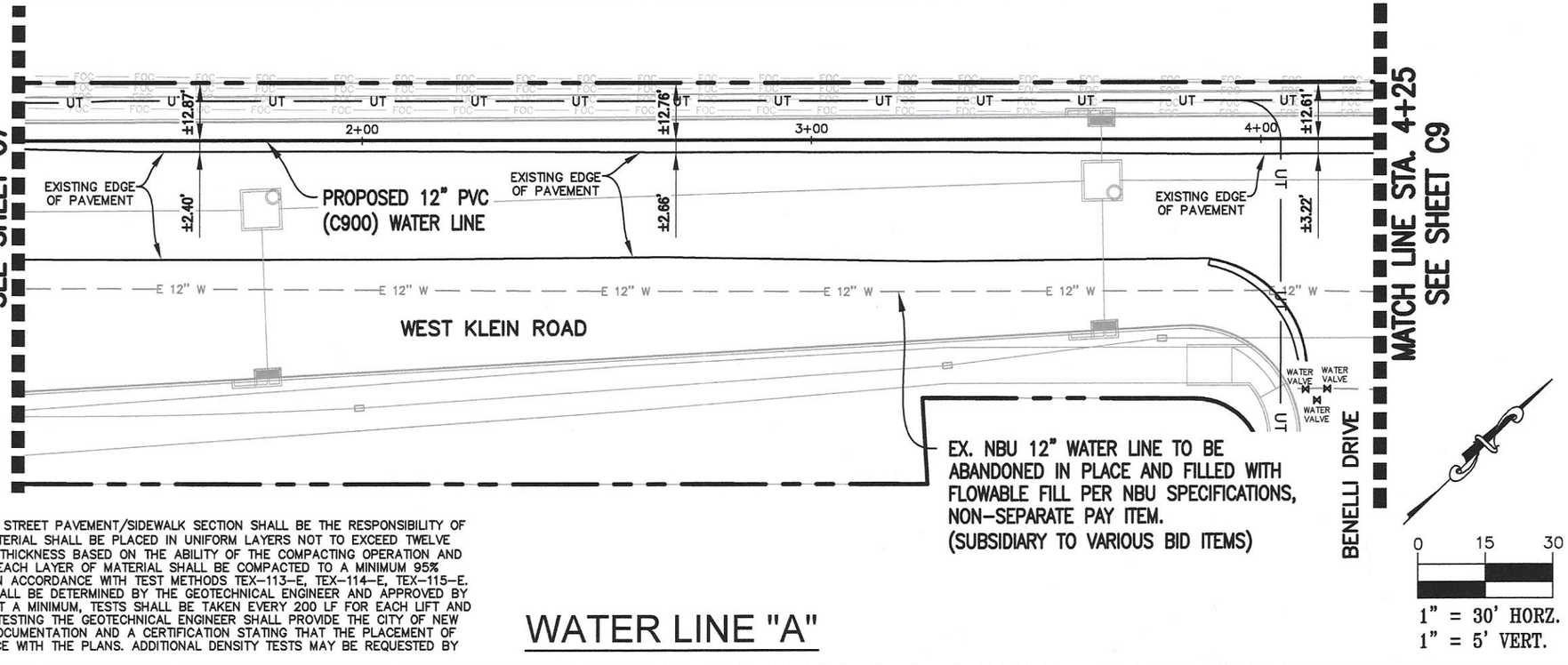
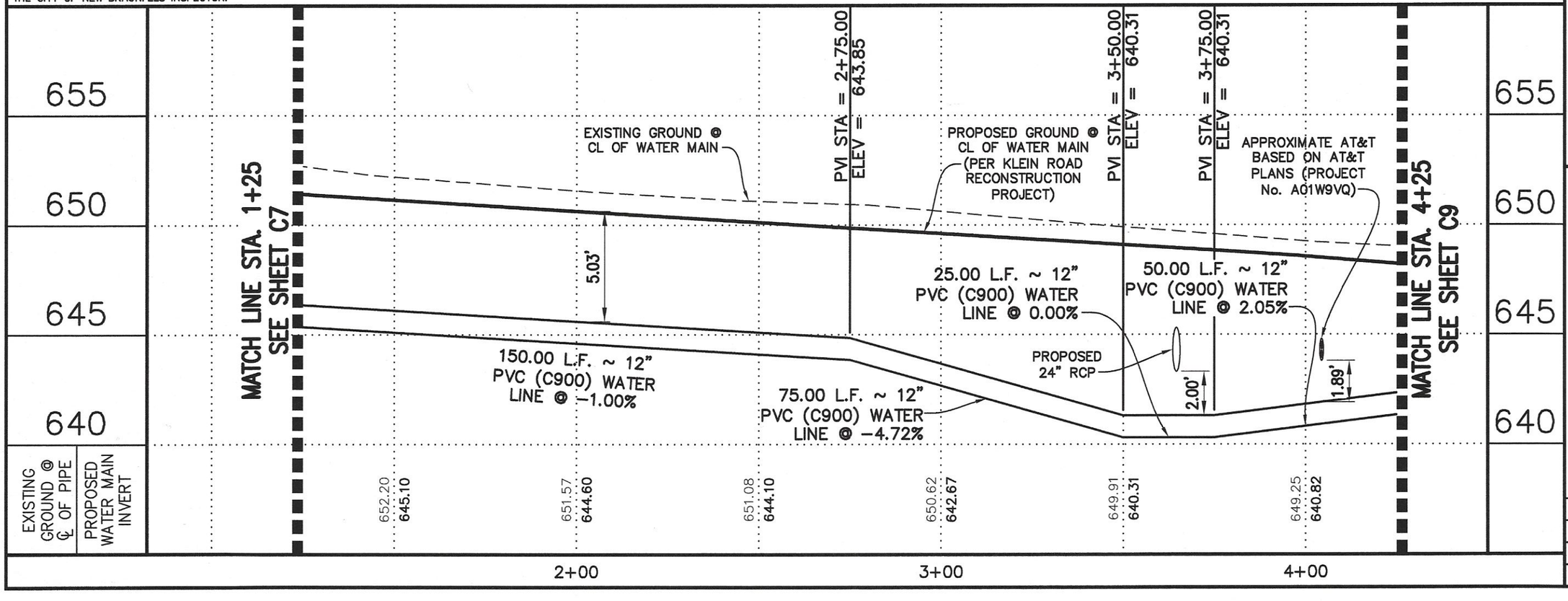


WATER LINE "A"



STATE OF TEXAS
JOHN J. MOY JR.
87835
LICENSED
PROFESSIONAL ENGINEER
6/21/22

FIRM No. F-9862

PAWELEK & MOY, INC.
CIVIL ENGINEERING & CONSULTING SERVICES
130 W. Jahn Street tel: (830) 629-2563
New Braunfels, Texas 78130 fax: (830) 629-2564

WATERLINE "A" PLAN AND PROFILE
FROM STA. 1+25 TO STA. 4+25
KLEIN ROAD RECONSTRUCTION

12" WATER LINE ADJUSTMENTS

REVISIONS	
DATE	DESCRIPTION

TECHNICIAN:	D.G. III
JOB NO.	2101.01
DATE:	JUNE 2022
SHEET:	C8

TRENCH SAFETY NOTE:
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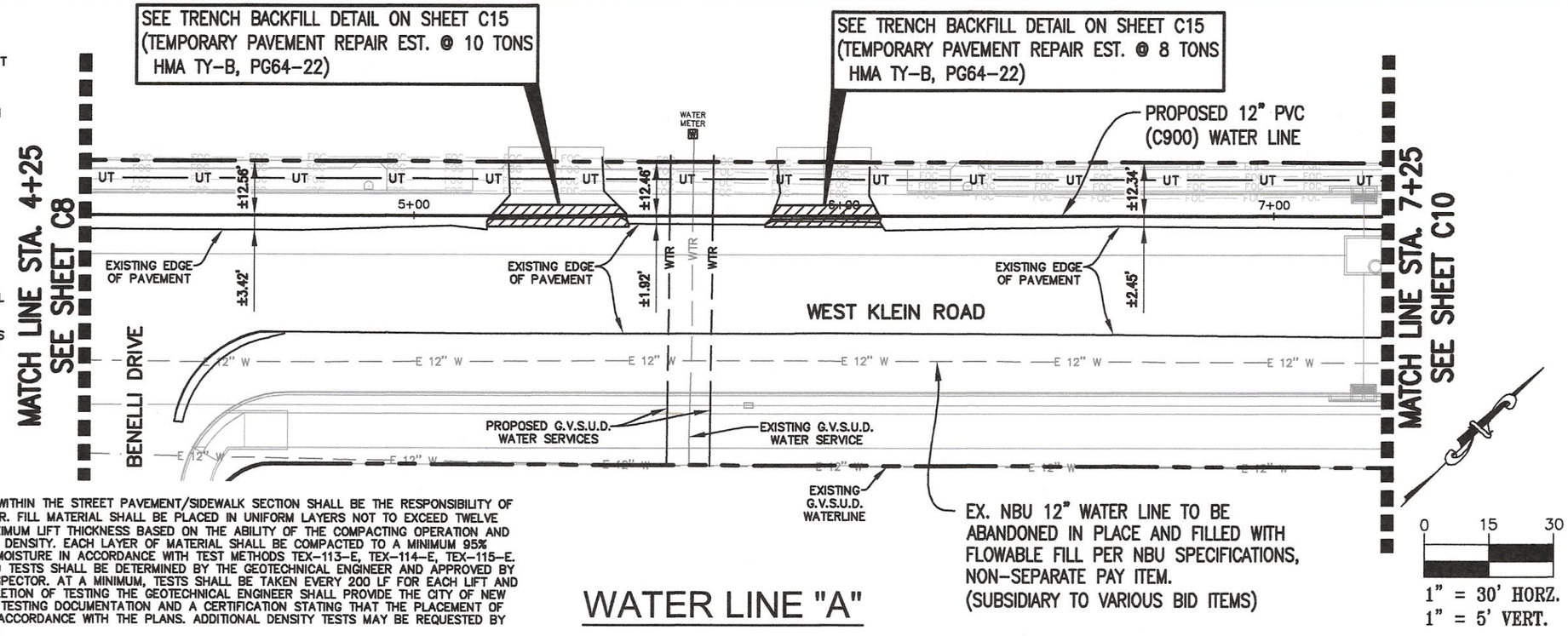
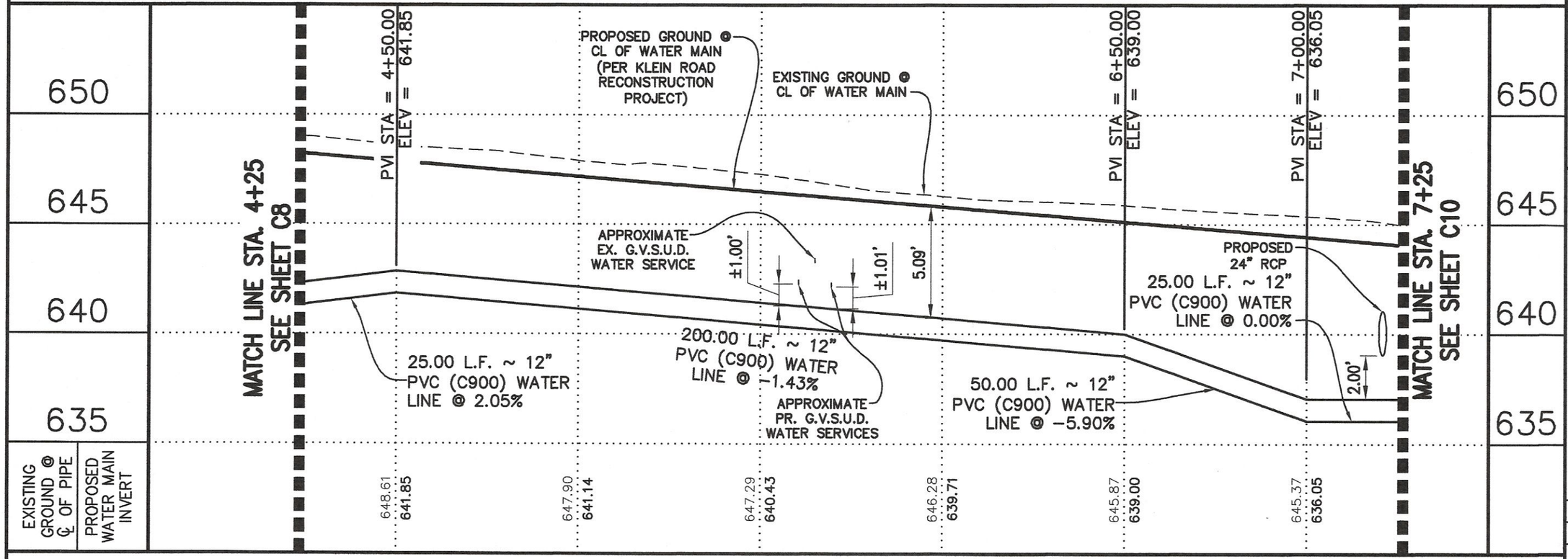


WATER LINE "A"



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WATERLINE "A" PLAN AND PROFILE
FROM STA. 4+25 TO STA. 7+25
KLEIN ROAD RECONSTRUCTION
12" WATER LINE ADJUSTMENTS

REVISIONS

DATE	DESCRIPTION
08/25/22	REVISED PER CITY OF NEW BRAUNFELS COMMENTS

TECHNICIAN:	D.G. III
JOB NO.	2101.01
DATE:	JUNE 2022
SHEET:	C9

TRENCH SAFETY NOTE:
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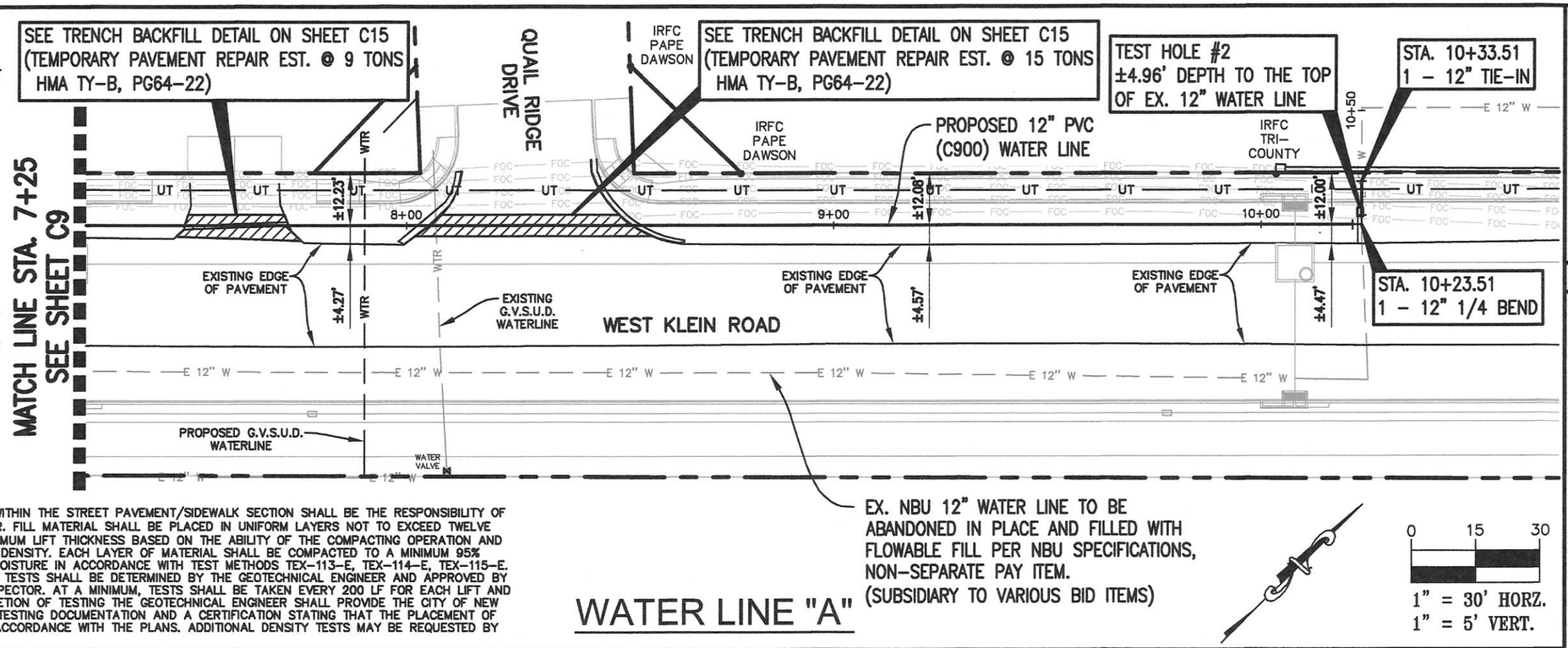
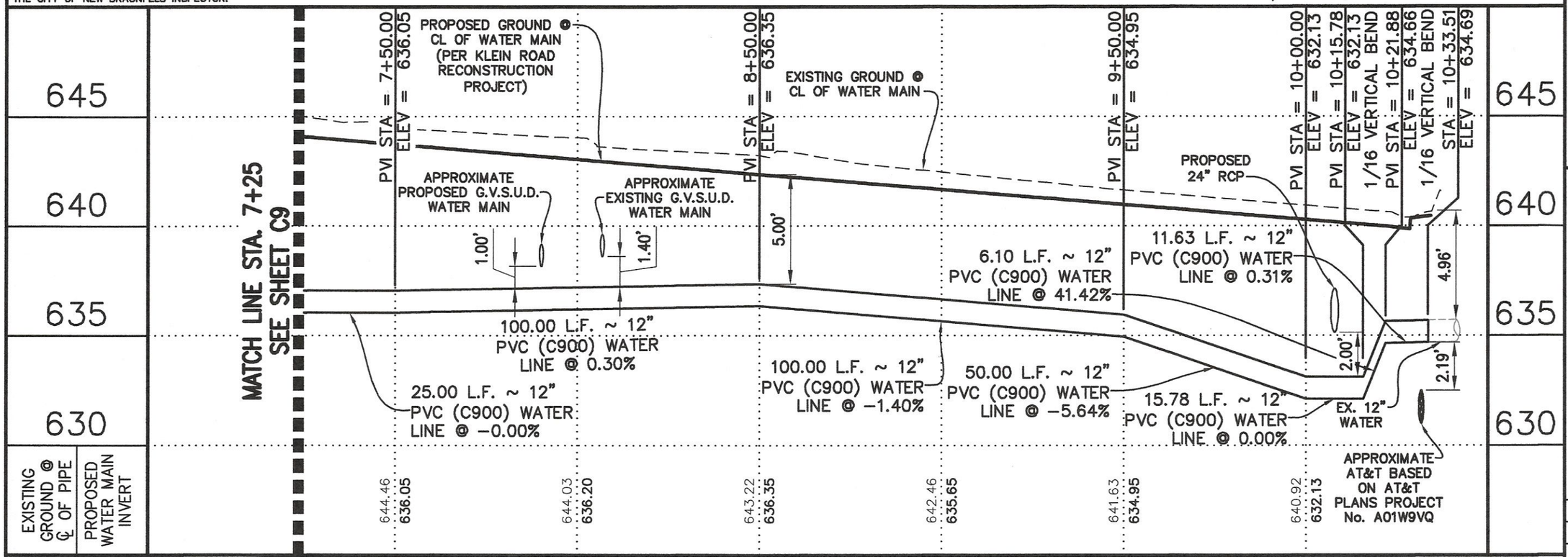


WATER LINE "A"



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130 W. Jahn Street New Braunfels, Texas 78130
tel: (830) 629-2563 fax: (830) 629-2564
FIRM No. F-9862

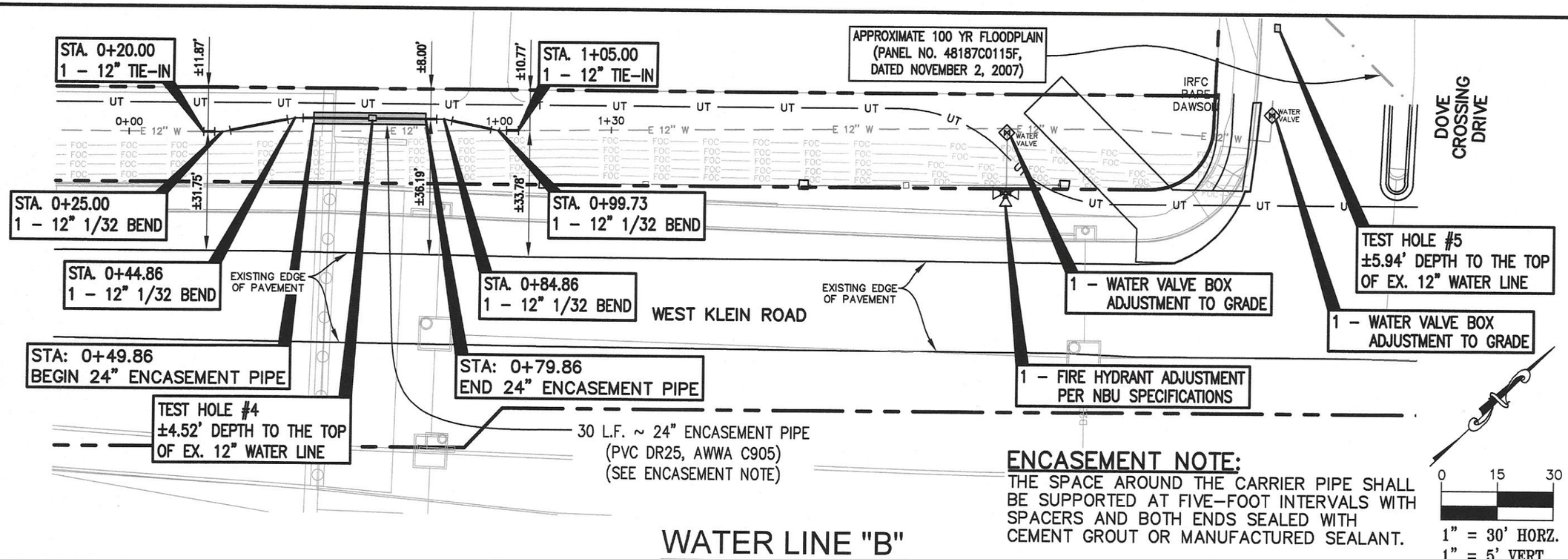
STATE OF TEXAS — JOHN J. MOY JR. — 87835 — LICENSED PROFESSIONAL ENGINEER
Rec. 8/24/22

WATERLINE "A" PLAN AND PROFILE
FROM STA. 7+25 TO STA. 10+50
KLEIN ROAD RECONSTRUCTION
12" WATER LINE ADJUSTMENTS

REVISIONS

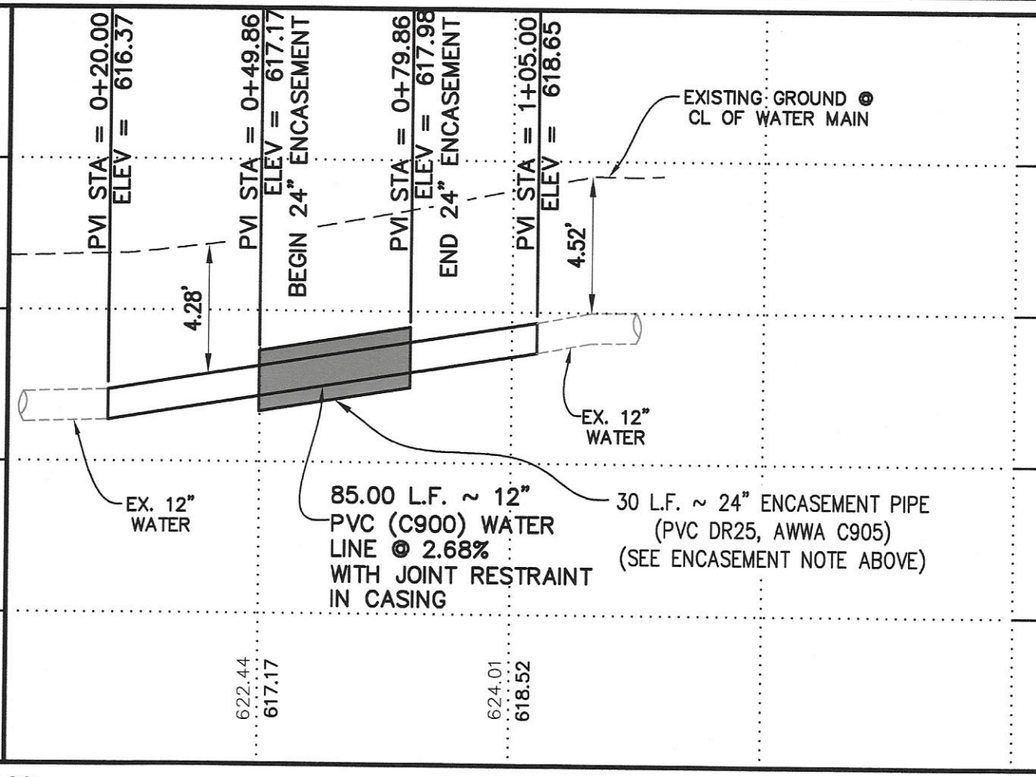
DATE	DESCRIPTION
08/25/22	REVISED PER CITY OF NEW BRAUNFELS COMMENTS

TECHNICIAN:	D.G. III
JOB NO.	2101.01
DATE:	JUNE 2022
SHEET:	C10



WATER LINE "B"

ENCASEMENT NOTE:
THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE–FOOT INTERVALS WITH SPACERS AND BOTH ENDS SEALED WITH CEMENT GROUT OR MANUFACTURED SEALANT.



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STATE OF TEXAS
JOHN J. MOY JR.
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6/21/22

FIRM No. F-9862

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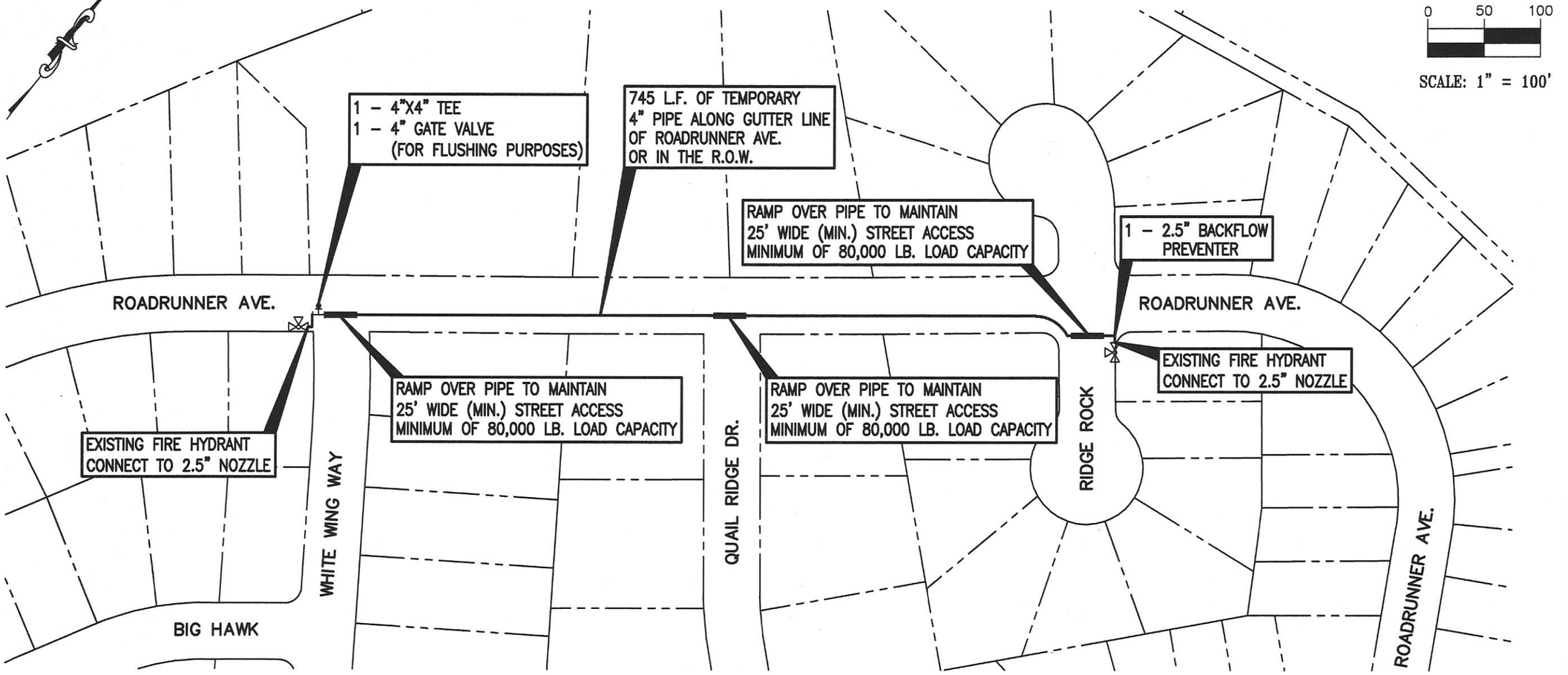
CIVIL ENGINEERING & CONSULTING SERVICES
130 W. Jahn Street tel: (830) 629-2563
New Braunfels, Texas 78130 fax: (830) 629-2564

WATERLINE "B" PLAN AND PROFILE
FROM STA. 0+00 TO STA. 1+30
KLEIN ROAD RECONSTRUCTION
12" WATER LINE ADJUSTMENTS

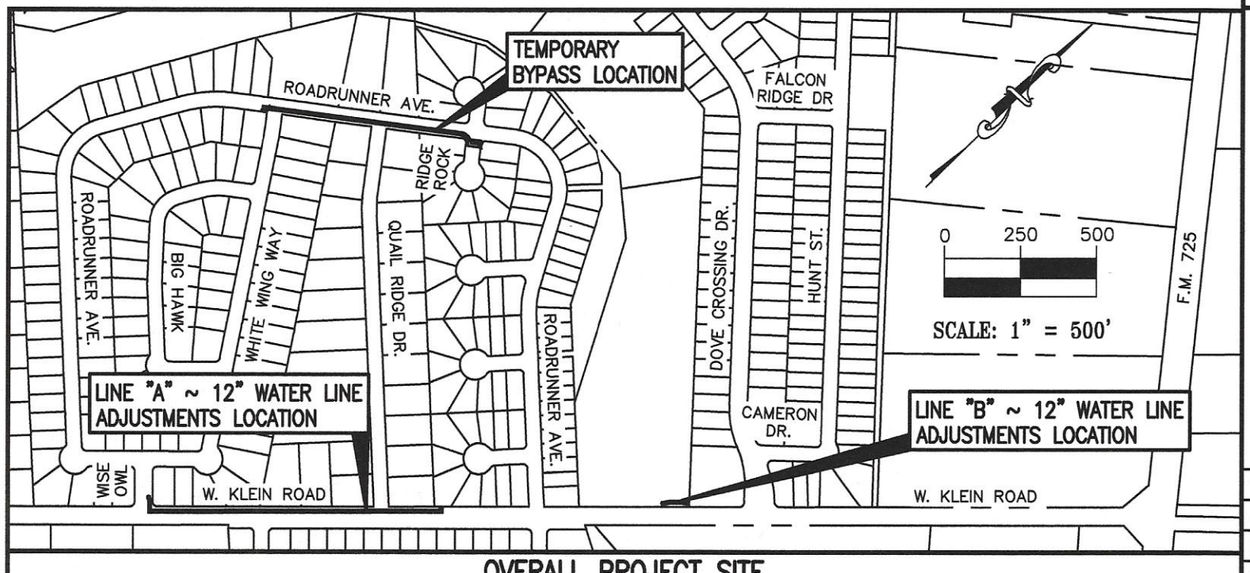
REVISIONS	
DESCRIPTION	
DATE	

TECHNICIAN:	D.G. III
JOB NO.	2101.01
DATE:	JUNE 2022
SHEET:	C11



TEMPORARY WATER LINE WITHIN CITY OF NEW BRAUNFELS R.O.W. FOR BYPASS CONNECTION–

THIS ITEM SHALL BE MEASURED BY LUMP SUM AND SHALL BE PAID AT THE PRICE IN THE BID SCHEDULE. THIS ITEM SHALL INCLUDE FURNISHING ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO INSTALL TEMPORARY 4" DIAMETER ABOVE–GROUND PIPING AND FITTINGS, PRESSURE TESTING, AND SITE RESTORATION NECESSARY TO PROVIDE A BYPASS CONNECTION WITHIN THE CITY OF NEW BRAUNFELS RIGHT OF WAY AS SHOWN ABOVE IN ACCORDANCE WITH THE LATEST NBU SPECIFICATIONS AND DETAILS. THE TEMPORARY WATERLINE SHALL BE COMPATIBLE WITH EXISTING NBU SYSTEM PIPING AND SHALL BE CERTIFIED FOR A WORKING PRESSURE OF AT LEAST 150 PSI AND A TEST PRESSURE OF AT LEAST 225 PSI. ALL OTHER ITEMS NECESSARY FOR A COMPLETE AND WORKABLE INSTALLATION ARE INCLUDED IN THIS PAY ITEM.



OVERALL PROJECT SITE

STATE OF TEXAS
JOHN J. MOY JR.
87835
LICENSED
PROFESSIONAL ENGINEER
6/21/22

FIRM No. F-9862

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TEMPORARY BYPASS LAYOUT FOR KLEIN ROAD RECONSTRUCTION 12" WATER LINE ADJUSTMENTS

REVISIONS	DESCRIPTION	DATE

TECHNICIAN:	D.G. III
JOB NO.	2101.01
DATE:	JUNE 2022
SHEET:	C12

RESTRAINED LENGTHS FOR HORIZONTAL BENDS			
PIPE SIZE (INCH)	BEND ANGLE (DEG.)	RESTRAINED LENGTH IN FEET WHEN TEST PRESSURE = 200 PSI	
12	90	40	
12	45	17	
12	22.5	8	
12	11.25	4	

RESTRAINED LENGTHS FOR VERTICAL BENDS				
PIPE SIZE (INCH)	BEND ANGLE (DEG)	LOW SIDE DEPTH (FT)	UPPER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 200 PSI	LOWER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 200 PSI
12	45	5	46	14
12	22.5	5	22	7
12	11.25	5	11	4

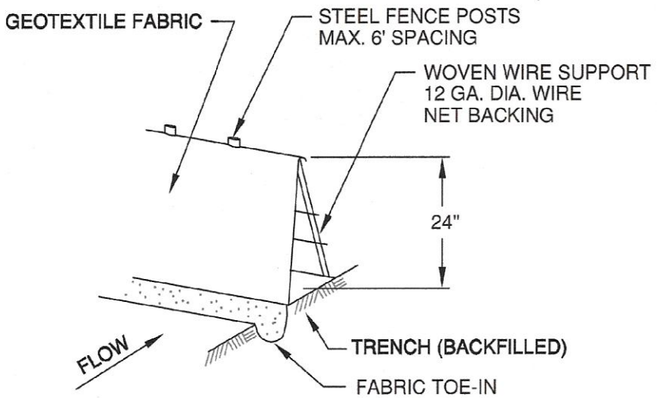
RESTRAINED LENGTHS FOR DEAD END/INLINE VALVES			
PIPE SIZE (INCH)		RESTRAINED LENGTH IN FEET TEST PRESSURE = 200 PSI	
12		110	

BASIS FOR RESTRAINED LENGTH DESIGN(Using EBAA Retraint Length Calculator(V7.1.3)

a. Safety Factor : 1.5 to 1
b. Test Pressure: 200 psi
c. Soil Type: CH(Granular) Inorganic clays of high plasticity
d. Depth of Cover: 4.0 ft. (Used For Calcs./Tie-In Areas) (5' Typical Design Cover)
e. Trench Type: 5
f. Restrained length calculations are for PVC pipe.

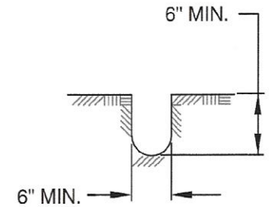
NOTES:

1. THESE CALCULATIONS ARE PROVIDED FOR REFERENCE. THE RESTRAINED LENGTH SHALL BE DESIGNED BASED UPON THE CONDITIONS ENCOUNTERED DURING THE INSTALLATION. CONTRACTOR SHALL COORDINATE/VERIFY WITH RESTRAINT JOINT MANUFACTURER AND NBU INSPECTIONS PRIOR TO INSTALLATION.
2. ALL JOINTS WITHIN THE CALCULATED LENGTH MUST BE RESTRAINED.
3. IF THE DISTANCE BETWEEN FITTINGS IS LESS OR EQUAL TO THE CALCULATED LENGTH, RESTRAIN ALL JOINTS BETWEEN THOSE FITTINGS.



STANDARD SYMBOL FOR SILT FENCE (SF)

SF
L=



TRENCH CROSS SECTION

NOTES:

1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 1".
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CAN NOT BE TRENCHED INTO THE SURFACE (E.G. PAVEMENT), THE FABRIC FLAP SHALL BE WEIGHTED DOWN WITH WASHED GRAVEL ON UPHILL SIDE TO PREVENT FLOW UNDER FENCE.
3. THE TRENCH MUST BE A MINIMUM OF 6 inches DEEP AND 6 inches WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST.
5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 6 inches. THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.

NEW BRAUNFELS UTILITIES
WATER SYSTEMS ENGINEERING

DRAWN BY: H Shadrock	STANDARD DRAWING: SILT FENCE			
APPROVED BY:				
	UPDATED: 4-29-03	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO. 501

STATE OF TEXAS
JOHN J. MOY JR.
87835
LICENSED
PROFESSIONAL ENGINEER
6/21/22

FIRM No. F-9862

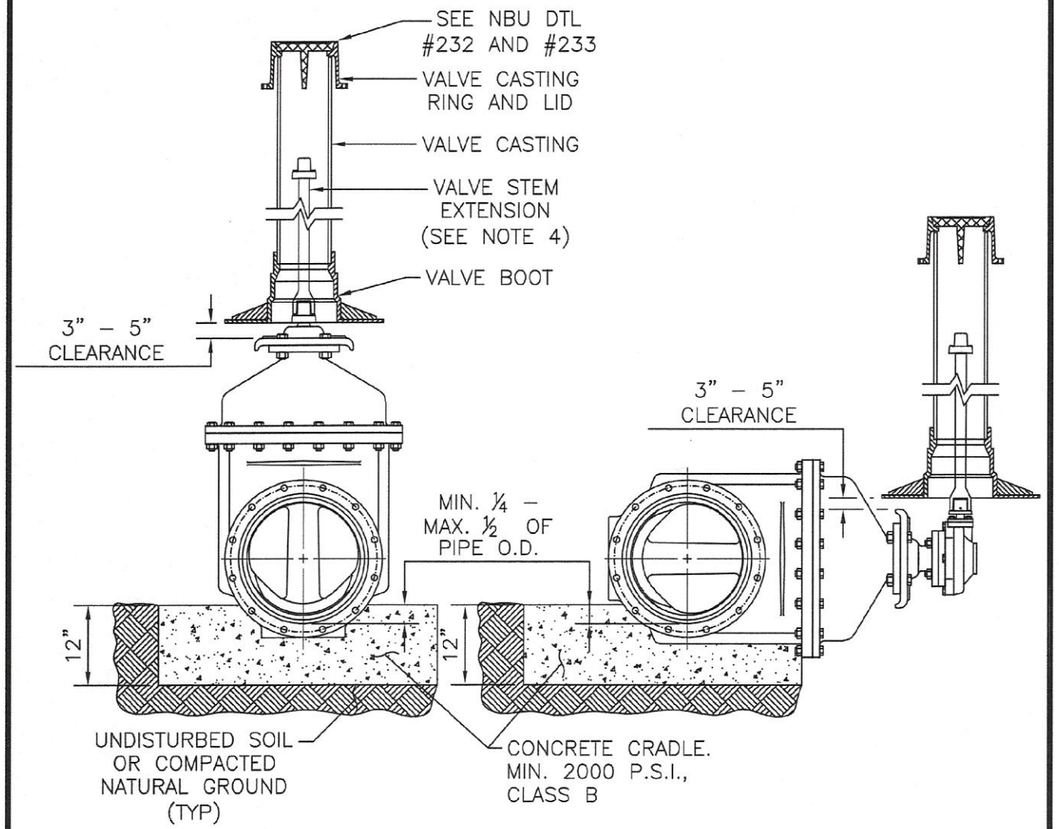
PAWELEK & MOY, INC.
CIVIL ENGINEERING & CONSULTING SERVICES
130 W. Jahn Street tel: (830) 629-2563
New Braunfels, Texas 78130 fax: (830) 629-2564

DETAIL SHEET
FOR
KLEIN ROAD RECONSTRUCTION
12" WATER LINE ADJUSTMENTS

REVISIONS

DESCRIPTION	DATE

TECHNICIAN:	D.G. III
JOB NO.	2101.01
DATE:	JUNE 2022
SHEET:	C13



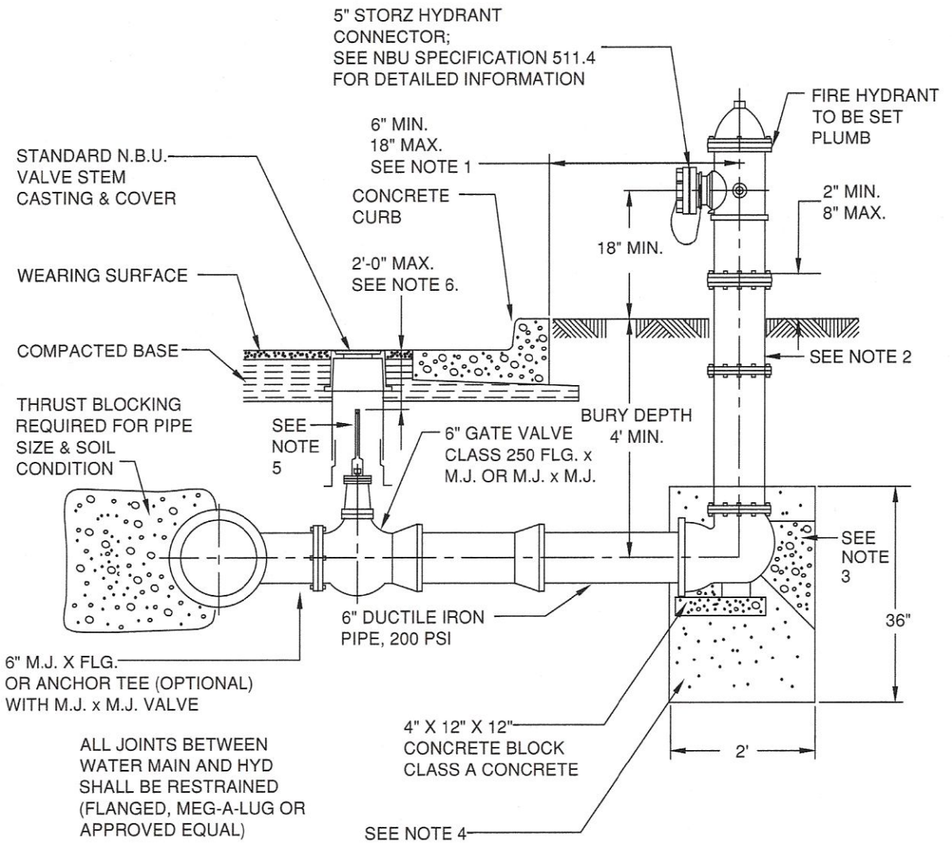
VERTICAL VALVE

HORIZONTAL VALVE
USE ONLY WHEN SPECIFIED IN DRAWINGS

NOTES:

1. WELD SOCKET 2½" x 2" DEEP TO 1" SCH. 40 CARBON STEEL ROUND STEM EXTENSION, FITTED ON OPERATING NUT, [SCH. 80 FOR LENGTHS OVER 10'.]
2. VALVE CASTING SHALL BE 6" DI PIPE WITH BELL OR COLLAR CENTERED OVER VALVE BOOT.
3. NUT AT TOP OF VALVE EXTENSION ROD SHALL BE SQUARE 2" LONG WELDED TO TOP OF ROD.
4. VALVE STEM EXTENSIONS ARE REQUIRED ON ALL VALVES THAT EXCEED 3' DEEP FROM FINISHED GRADE. VALVE EXTENSIONS SHALL BE PLACED SUCH THAT THE EXTENSION NUT IS BETWEEN 12" AND 18" FROM FINISHED GRADE.
5. TRACER WIRE SHALL EXTEND TO TOP OF THE VALVE STEM EXTENSION AND BE CONNECTED WITH WIRE CAPS.

NBU	DRAWN BY: A. Willard	STANDARD DRAWING: **TYPICAL GATE VALVE**			
NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	APPROVED BY: A. Willard				
	DRAWING DATE: 8/17/21		SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO. 230



NOTES:

1. DIMENSIONS SHOWN ARE APPLICABLE IN SPACE BETWEEN CURB AND SIDEWALK. WHERE WALK ABUTS CURB, AND IN PUBLIC OR COMMERCIAL AREAS, DIMENSION FROM BACK OF CURB SHALL BE 3' TO 9'. HYDRANTS ARE NOT TO BE PLACED IN SIDEWALK AREAS. SEE NEW BRAUNFELS UTILITIES STANDARD SPECIFICATIONS FOR LOCATION OF HYDRANT.
2. FOR BURY DEPTHS GREATER THAN 5', ONE BARREL EXTENSION NOT EXCEEDING 2' LENGTH SHALL BE INSTALLED DIRECTLY BELOW THE FIRE HYDRANT.
3. CONCRETE BLOCKING WITH A MIN, 1 1/2 FT^2 BEARING AREA. CLASS A CONCRETE. DO NOT BLOCK DRAIN HOLES.
4. CRUSHED STONE OR GRAVEL SHALL BE PLACED AROUND THE BOTTOM OF THE HYDRANT FOR A RADIUS OF AT LEAST 12" AND EXTEND AT LEAST 12" ABOVE THE OUTLET. DO NOT BLOCK DRAIN HOLES.
5. WELD SOCKET 2 1/2" X 2" DEEP TO 1" SCH. 40 ROUND STEM EXTENSION, FITTED ON OPERATING NUT, SCH. 80 FOR LENGTHS OVER 10'.
6. VALVE EXTENSIONS ARE REQUIRED ON ALL VALVES THAT EXCEED 3' DEEP FROM FINISHED GRADE. VALVE EXTENSIONS SHALL BE PLACED SUCH THAT THE EXTENSION NUT IS BETWEEN 18" AND 24" FROM FINISHED GRADE.

NBU	DRAWN BY: JD Amaro	STANDARD DRAWING: **STANDARD FIRE HYDRANT INSTALLATION WITH 5" STORZ CONNECTOR**				
NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	APPROVED BY:					
	DRAWING DATE: 4-10-03	REVISION DATE: 5-22-12	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO. 240	

FIRM No. F-9862

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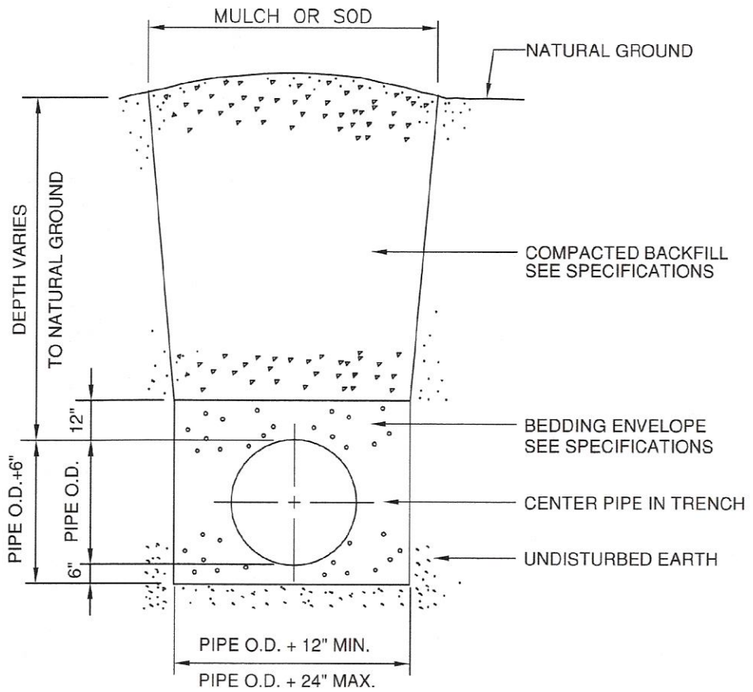
tel: (830) 629-2563 fax: (830) 629-2564

DETAIL SHEET
FOR
KLEIN ROAD RECONSTRUCTION
12" WATER LINE ADJUSTMENTS

REVISIONS

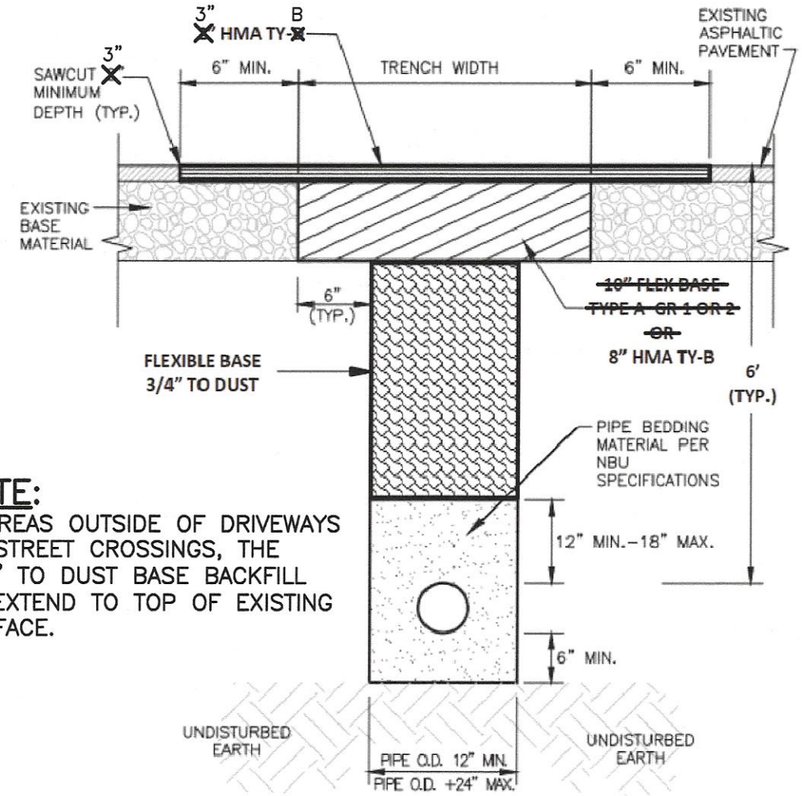
DESCRIPTION	DATE

TECHNICIAN:	D.G. III
JOB NO.	2101.01
DATE:	JUNE 2022
SHEET:	C14



NOTE:
FOR USE ON LINE "A"
@ TIE-IN LOCATION
(±STA. 10+33) AND
LINE "B"

TRENCH BACKFILL DETAIL



(FOR TRENCHES LESS THAN 6' WIDE)

NOTE:
IN AREAS OUTSIDE OF DRIVEWAYS OR STREET CROSSINGS, THE 3/4" TO DUST BASE BACKFILL TO EXTEND TO TOP OF EXISTING SURFACE.

PAVEMENT REPAIR/TRENCH BACKFILL NOTES

1. WITHIN CONB ROW, TRENCH BACKFILL SHALL BE 3/4" TO DUST BASE MEETING TXDOT SPECIFICATION ITEM "247" FLEXIBLE BASE, TYPE A, GRADE 1 OR GRADE 2.
2. 3/4" TO DUST BASE SHALL BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY DETERMINED BY TEX-113-E, UNLESS OTHERWISE SHOWN ON THE PLANS. MAINTAIN MOISTURE DURING COMPACTION WITHIN ±2 PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY TEX-113-E. MEASURE THE MOISTURE CONTENT OF THE MATERIAL IN ACCORDANCE WITH TEX-115-E OR TEX-103-E DURING COMPACTION DAILY AND REPORT THE RESULTS THE SAME DAY TO THE ENGINEER OF RECORD, NEW BRAUNFELS UTILITIES, AND THE CITY OF NEW BRAUNFELS UNLESS OTHERWISE SHOWN ON THE PLANS. DO NOT ACHIEVE DENSITY BY DRYING THE MATERIAL AFTER COMPACTION.
3. 3/4" TO DUST BASE SHALL BE PLACED UNIFORMLY AND COMPACTED IN NO MORE THAN 12" LOOSE LIFTS. EACH COMPACTED LAYER SHALL BE DENSITY CONTROLLED PER NOTE #2 ABOVE.
4. ALL UTILITY TRENCH COMPACTION TESTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR'S GEOTECHNICAL ENGINEER. (GEOTECHNICAL ENGINEER SHALL BE APPROVED BY NEW BRAUNFELS UTILITIES AND THE CITY OF NEW BRAUNFELS) GEOTECHNICAL ENGINEERING AND COMPACTION TESTING IS A NON SEPARATE PAY ITEM AND IS SUBSIDIARY TO THE VARIOUS BID ITEMS. ALL COSTS ASSOCIATED WITH GEOTECHNICAL ENGINEERING OR COMPACTION TESTING IS AT THE SOLE EXPENSE OF THE CONTRACTOR.
5. COMPACTION TESTS SHALL BE DONE AT A MINIMUM OF 1-TEST EVERY 100-FEET OF TRENCH PER EACH COMPACTED LIFT. THIS REQUIREMENT SHALL INCLUDE WATER AND SEWER SERVICES. THE NUMBER OF TESTS REQUIRED SHALL BE INCREASED BASED ON THE CONTRACTOR'S GEOTECHNICAL ENGINEER'S RECOMMENDATION. THE LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY NEW BRAUNFELS UTILITIES AND THE CITY OF NEW BRAUNFELS. ADDITIONAL TESTING BASED ON GEOTECHNICAL ENGINEER'S RECOMMENDATION SHALL BE AT THE CONTRACTOR'S SOLE EXPENSE.
6. UPON COMPLETION OF THE COMPACTION TESTING, THE CONTRACTOR SHALL IMMEDIATELY SEND THE RESULTS TO THE ENGINEER OF RECORD, NEW BRAUNFELS UTILITIES INPSECTIONS, AND THE CITY OF NEW BRAUNFELS INSPECTIONS. NON SEPARATE PAY ITEM.
7. IF AT ANY TIME A TEST FAILS. THE CONTRACTOR SHALL AT A MINIMUM AND AT HIS SOLE EXPENSE, REMOVE THAT LAYER OF BACKFILL TO 50-FEET FROM EITHER SIDE OF THE FAILED TEST LOCATION. THE CONTRACTOR, AT HIS SOLE EXPENSE, SHALL PROVIDE 2-ADDITIONAL TESTS AT THE REPLACED LOCATION WHERE THE INITIAL TEST FAILED AND AT 1-LOCATION POINT, RANDOMLY SELECTED OR AS INDICATED BY THE CONTRACTOR'S GEOTECHNICAL ENGINEER. THE RESULTS SHALL BE IMMEDIATELY SENT TO THE ENGINEER OF RECORD, NEW BRAUNFELS UTILITIES INSPECTIONS, AND THE CITY OF NEW BRAUNFELS INSPECTIONS.
8. CONTAINED WITH EACH COMPACTION TESTING REPORT, THE CONTRACTOR SHALL PROVIDE CERTIFICATION FROM THE GEOTECHNICAL ENGINEER THAT THE PLACEMENT OF TRENCH BACKFILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THESE PLANS.

NEW BRAUNFELS UTILITIES
WATER SYSTEMS ENGINEERING

DRAWN BY: H Shadrock	STANDARD DRAWING: TYPICAL TRENCH WITH UNFINISHED SURFACE			
APPROVED BY:				
	UPDATED: 4-30-03	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO. 422

STATE OF TEXAS · JOHN J. MOY JR. · 87835 · LICENSED PROFESSIONAL ENGINEER
6/21/22

FIRM No. F-9862

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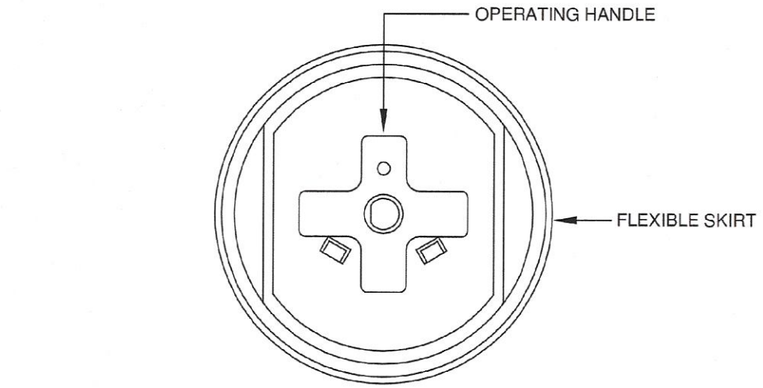
130 W. Jahn Street New Braunfels, Texas 78130
tel: (830) 629-2563 fax: (830) 629-2564

DETAIL SHEET
FOR
KLEIN ROAD RECONSTRUCTION
12" WATER LINE ADJUSTMENTS

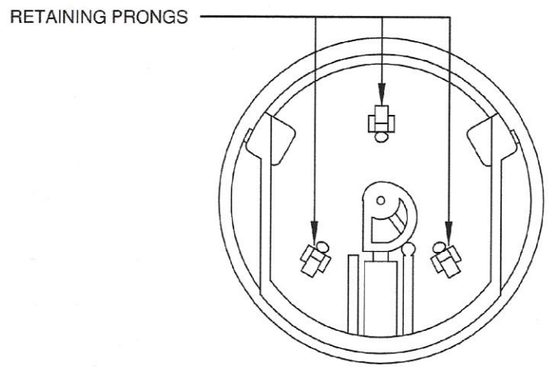
REVISIONS

DESCRIPTION	DATE

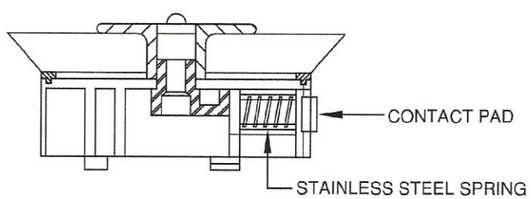
TECHNICIAN:	D.G. III
JOB NO.	2101.01
DATE:	JUNE 2022
SHEET:	C15



TOP VIEW



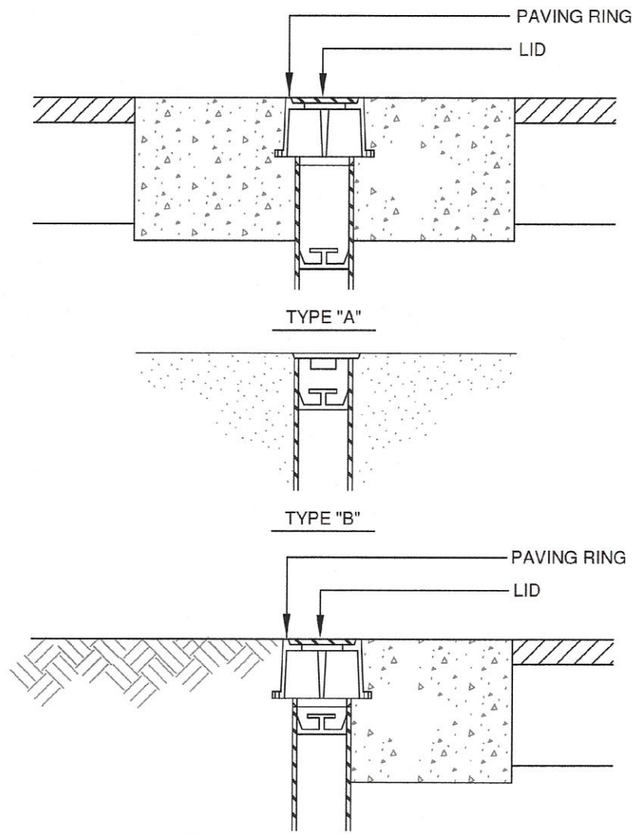
BOTTOM VIEW



SECTION VIEW

NEW BRAUNFELS UTILITIES
WATER SYSTEMS ENGINEERING

DRAWN BY:	STANDARD DRAWING:			
JD Amaro	**DEBRIS CAP INSTALLATION**			
APPROVED BY:	UPDATED: 4-10-03	SCALE: N T S	SHEET: 1 OF 2	DRAWING NO. 234



NOTES:

1. DEBRIS CAP SHALL BE INSTALLED AS CLOSE UNDER THE CAST IRON COVER WITHOUT INTERFERING WITH COVER OPERATION.
2. FLEXIBLE SKIRT SHALL BE TRIMMED TO PROVIDE A SMOOTH CONTACT WITH THE INTERIOR DIAMETER OF THE PIPE.
3. THE DEBRIS CAP SHALL BE MANUFACTURED BY SW SERVICES, INC., PHOENIX, ARIZONA OR EQUAL.
4. THE DEBRIS CAP SHALL BE COMPRISED OF A HOLLOW MEMBER HAVING A CYLINDRICAL OUTER SURFACE, A CLOSURE FOR ONE END AND THREE POINT RESILIENT CONTACT PADS PROJECTING FROM THE OUTER SURFACE. THE CAP SHALL HAVE A FLEXIBLE SKIRT PROVIDING AN OUTWARD SEAL PREVENTING DEBRIS FROM GETTING PAST THE CAP. THE CAP MUST WITHSTAND, WITHOUT SLIPPAGE, A MINIMUM VERTICAL FORCE OF 50 lbs, AT A LOADING RATE OF 1.0 in PER MINUTE. THE CAP SHALL BE MOLDED USING GENERAL ELECTRIC ABS #HIM 4500. THE CAP SHALL HAVE RETAINING PRONGS TO RETAIN A STANDRAD LOCATION COIL.

NEW BRAUNFELS UTILITIES
WATER SYSTEMS ENGINEERING

DRAWN BY:	STANDARD DRAWING:			
JD Amaro	**DEBRIS CAP INSTALLATION**			
APPROVED BY:	UPDATED: 4-10-03	SCALE: N T S	SHEET: 2 OF 2	DRAWING NO. 234

STATE OF TEXAS
JOHN J. MOY JR.
87835
LICENSED
PROFESSIONAL ENGINEER
6/21/22

FIRM No. F-9862

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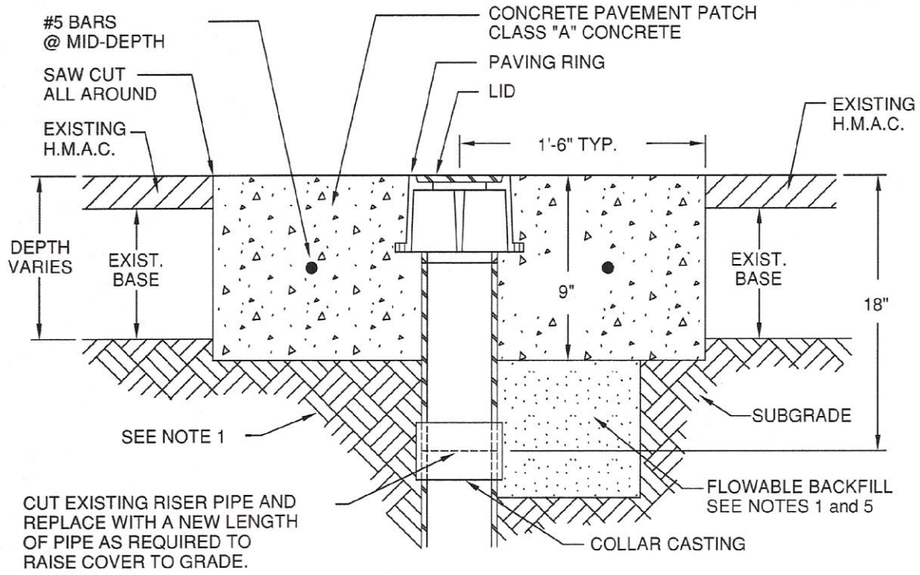
DETAIL SHEET
FOR
KLEIN ROAD RECONSTRUCTION
12" WATER LINE ADJUSTMENTS

REVISIONS

DESCRIPTION	DATE

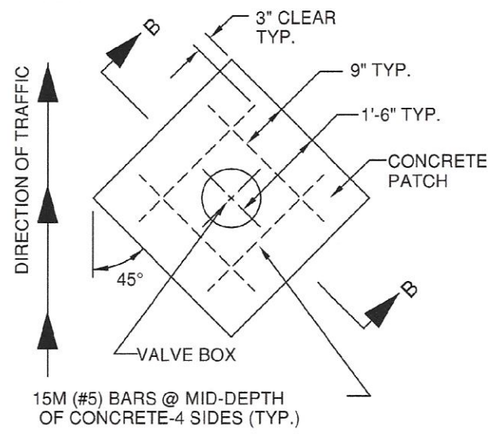
TECHNICIAN:	D.G. III
JOB NO.	2101.01
DATE:	JUNE 2022
SHEET:	C16



SECTION B-B

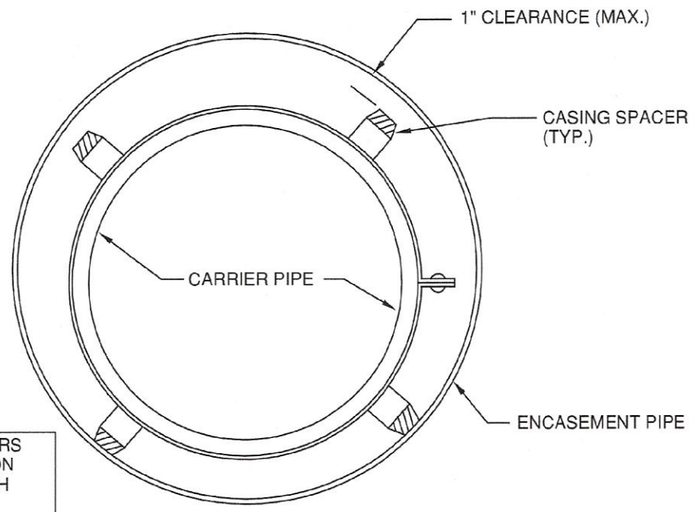
NOTES:

1. SUBGRADE SHALL BE COMPACTED AS PER SPECIFICATIONS.
2. VALVE CASTINGS SHALL BE ADJUSTED TO GRADE AFTER FINAL LIFT OF OVERLAY IS IN PLACE.
3. CLEAN VALVE BOX OF ALL DEBRIS DOWN TO THE BASE OF THE VALVE.
4. REMOVE EXISTING RISER PIPE DOWN 18" AND REPLACE TO THE NEW ELEVATION USING NEW PIPE AND A COLLAR CASTING.
5. WHERE CAST IRON CASTINGS TO BE REMOVED REQUIRE EXCAVATION GREATER THAN 20" DEEP, CONTRACTOR MAY ELECT TO FILL EXCAVATION WITH CONTROLLED LOW STRENGTH MATERIAL TO THE UNDERSIDE OF THE CONCRETE PAVEMENT PATCH IN LIEU OF COMPACTED BACKFILL.
6. REINFORCING STEEL SHALL MEET SPECIFICATIONS.

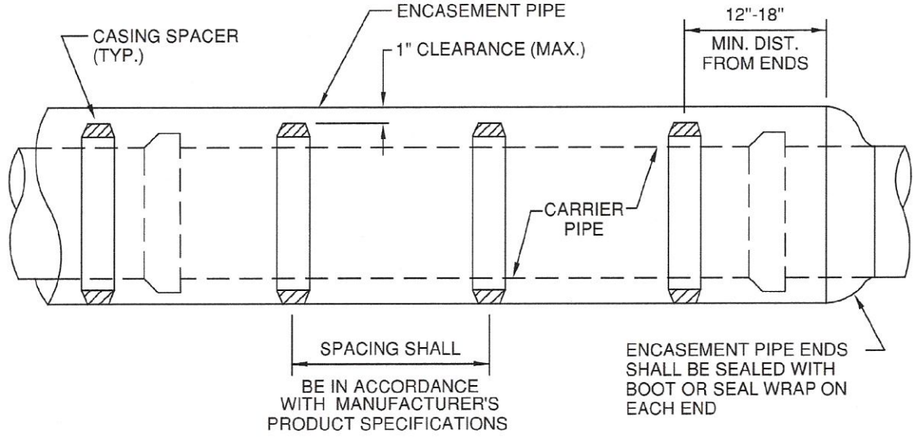


PLAN VIEW

NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: H Shadrock	STANDARD DRAWING: WATER VALVE BOX ADJUSTMENT TO GRADE W/FULL DEPTH CONCRETE FOR EXISTING STREETS			
	APPROVED BY:	UPDATED: 4-24-03	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO. 232



NUMBER OF RUNNERS AND CONFIGURATION SHALL COMPLY WITH MANUFACTURERS APPROVED SHOP SUBMITTAL.



NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: H Shadrock	STANDARD DRAWING: ENCASEMENT DETAIL WITH CASING SPACERS			
	APPROVED BY:	UPDATED: 4-28-03	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO. 420

STATE OF TEXAS
JOHN J. MOY JR.
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LICENSED
PROFESSIONAL ENGINEER
6/21/22

FIRM No. F-9862

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CIVIL ENGINEERING & CONSULTING SERVICES
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New Braunfels, Texas 78130 fax: (830) 629-2564

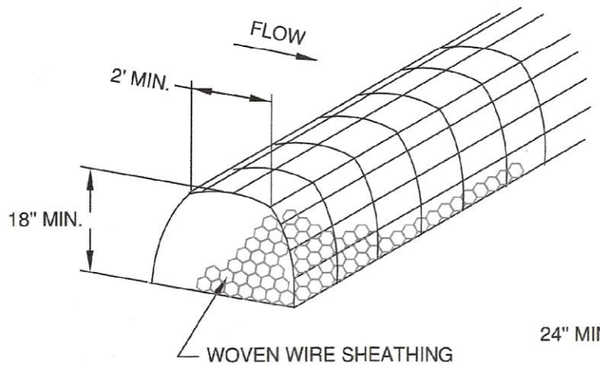
PM

DETAIL SHEET
FOR
KLEIN ROAD RECONSTRUCTION
12" WATER LINE ADJUSTMENTS

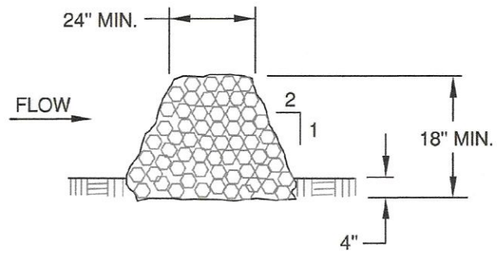
REVISIONS

DESCRIPTION	DATE

TECHNICIAN:	D.G. III
JOB NO.	2101.01
DATE:	JUNE 2022
SHEET:	C17



ROCK BERM



CROSS SECTION

STANDARD SYMBOL
FOR ROCK BERM (RB)

RB

NOTES:

1. USE ONLY OPEN GRADED ROCK 4" to 8" DIAMETER FOR STREAM FLOW CONDITIONS. USE OPEN GRADED ROCK 3" to 5" DIAMETER FOR OTHER CONDITIONS.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 1" OPENING AND MINIMUM WIRE DIAMETER OF 20 GAUGE. ROCK BERMS IN CHANNEL APPLICATIONS SHALL BE ANCHORED FIRMLY INTO THE SUBSTRATE A MINIMUM OF 6 " WITH T-POSTS OR WITH #5 OR #6 REBAR, WITH MAXIMUM SPACING APART OF 48" ON CENTER.
3. THE ROCK BERM SHALL BE INSPECTED WEEKLY OR AFTER EACH RAIN, AND THE STONE AND/OR FABRIC CORE-WOVEN SHEATHING SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED, DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
4. WHEN SILT REACHES A DEPTH EQUAL TO ONE-THIRD THE HEIGHT OF THE BERM OR 6", WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF ON AN APPROVED SITE AND IN A MANNER THAT WILL NOT CREATE A SILTATION PROBLEM.
5. DAILY INSPECTION SHALL BE MADE ON SEVERE-SERVICE ROCK BERMS; SILT SHALL BE REMOVED WHEN ACCUMULATION REACHES 6".
6. WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

NEW BRAUNFELS UTILITIES
WATER SYSTEMS ENGINEERING

DRAWN BY: H Shadrock	STANDARD DRAWING: **ROCK BERM**			
APPROVED BY:				
UPDATED: 4-29-03	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO. 502	

STATE OF TEXAS
JOHN J. MOY JR.
87835
LICENSED
PROFESSIONAL ENGINEER

Rev. 8/24/22

FIRM No. F-9862

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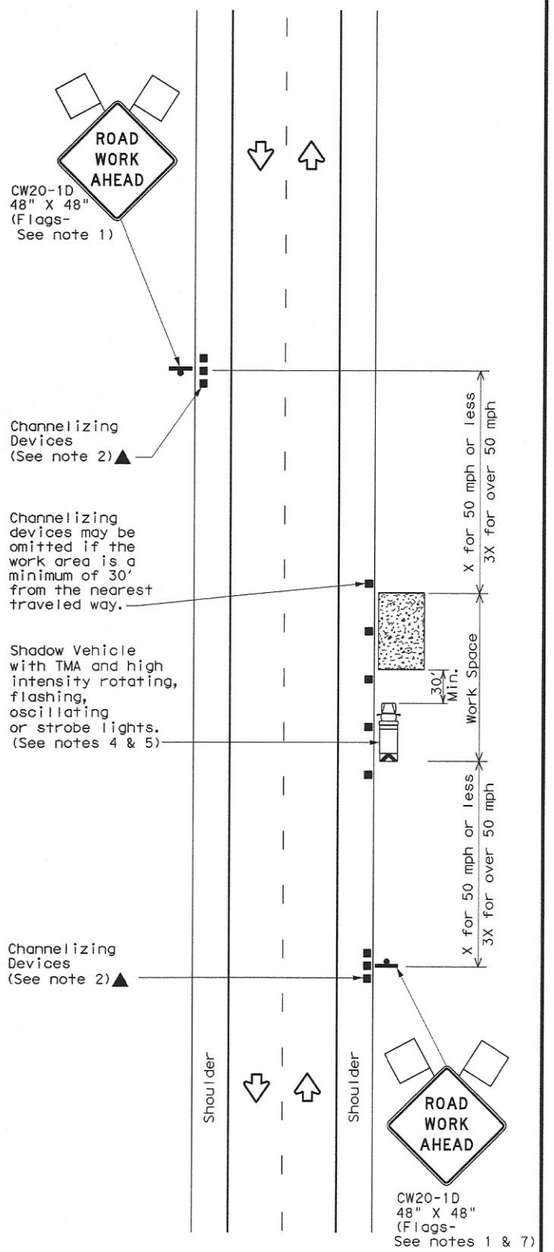
DETAIL SHEET
FOR
KLEIN ROAD RECONSTRUCTION
12" WATER LINE ADJUSTMENTS

REVISIONS

DATE	DESCRIPTION
08/25/22	ADDED PER CITY OF NEW BRAUNFELS COMMENTS

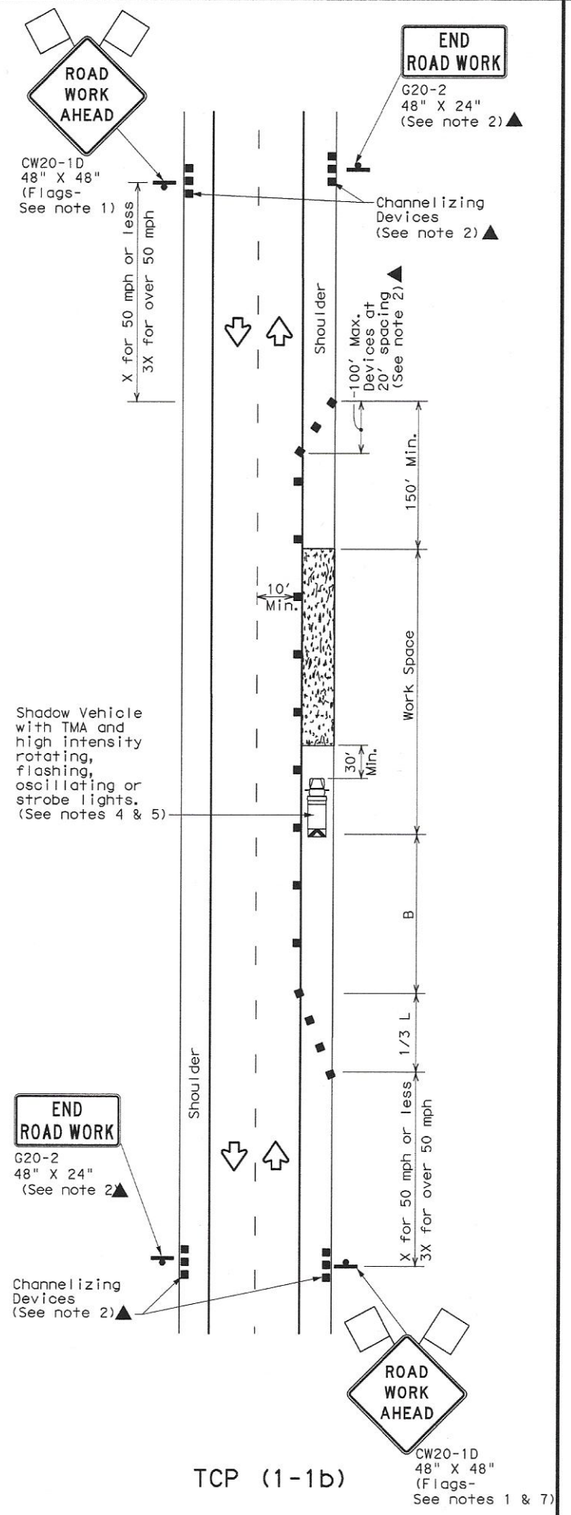
TECHNICIAN:	D.G. III
JOB NO.	2101.01
DATE:	JUNE 2022
SHEET:	C18

DATE:
FILE:



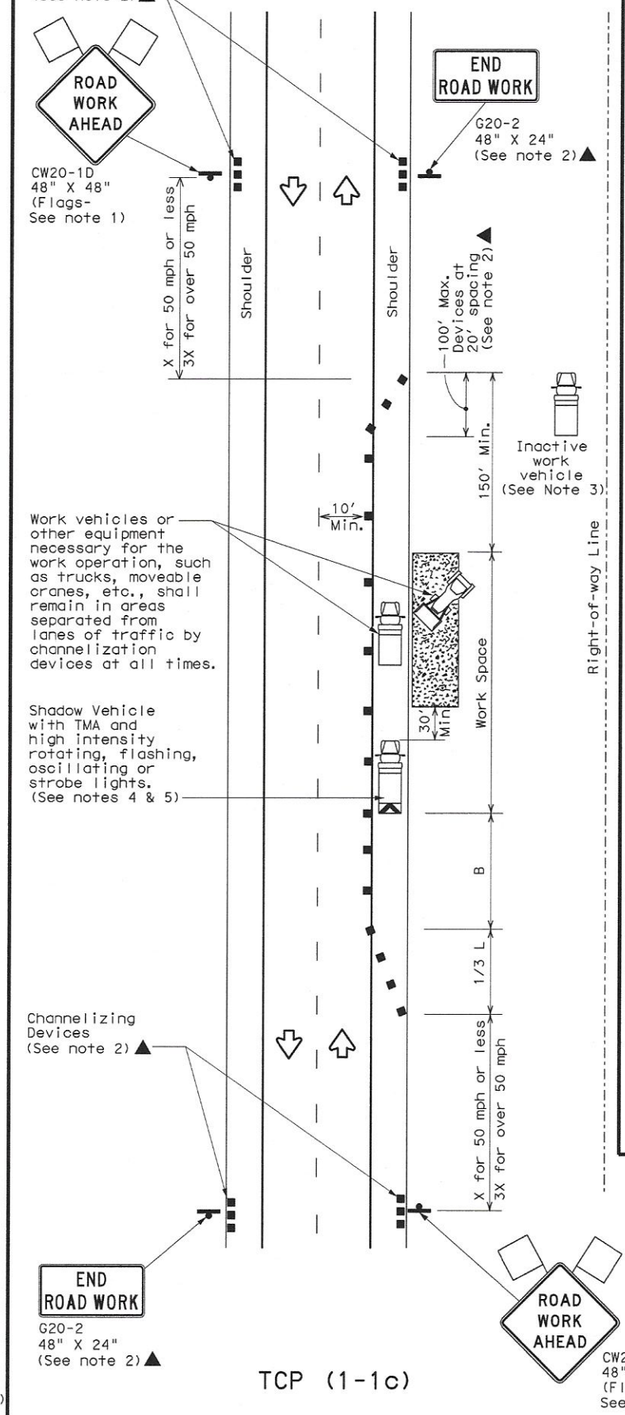
TCP (1-1a)

WORK SPACE NEAR SHOULDER
Conventional Roads



TCP (1-1b)

WORK SPACE ON SHOULDER
Conventional Roads



TCP (1-1c)

WORK VEHICLES ON SHOULDER
Conventional Roads

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

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

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

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓		

GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
4. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
5. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
6. See TCP(5-1)for shoulder work on divided highways, expressways and freeways.
7. CW21-5 "SHOULDER WORK" signs may be used in place of CW20-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN CONVENTIONAL ROAD SHOULDER WORK

TCP(1-1)-18

FILE: tcp1-1-18.dgn	DN:	CK:	DW:	CK:
©TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS				
2-94 4-98	DIST	COUNTY		SHEET NO.
8-95 2-12				T1
1-97 2-18				