

Addendum No. 2
E19: Seguin Road to Nacogdoches Road
SAWS Project No. 15-4506
Solicitation No. CO-00104-DW

**SAN ANTONIO WATER SYSTEM
E19: SEGUIN ROAD TO NACOGDOCHES ROAD
SAWS PROJECT NO. 15-4506
SOLICITATION NO. CO-00104-DW
ADDENDUM NO. 2**

November 22, 2016

This addendum, applicable to work designated above, is an amendment to the proposal and specification documents and as such shall be a part of and included in the Contract. Acknowledge receipt of this addendum by entering the addendum number and issue date in the spaces provided on all submitted copies of the proposal.

1.0 Addenda Purpose

The purpose of this addendum is to issue a revision to the Contract Documents, plans and specifications for E19: Seguin Road to Nacogdoches Road (SAWS Job No. 15-4506).

2.0 Questions and Answers

Q1: The E-19 Seguin Road to Nacogdoches Road – Segment 1 project only allows the 96” tunnels to be performed by micro tunnel method. Is there a possibility that SAWS would consider allowing hand tunnel or TBM tunnel methods for this work? We understand there are some concerns with liner plate and we would like to propose installation of steel casing by other methods.

Response: *SAWS has chosen to utilize micro-tunneling for this project, due to schedule and ground water management considerations. Hand tunneling and other methods will not be considered for this project.*

Q2: Will a site visit be conducted, and if not, is the site accessible for a walk through after the pre-bid meeting?

Response: *There will not be a site visit conducted by SAWS after the pre-bid meeting. It is the responsibility of the contractor to perform site visits as necessary to satisfactorily bid this project. Photos of the Fort Sam Houston portion of the site were provided at the pre-bid meeting, for the convenience of interested contractors. These photos have also been placed on the SAWS website.*

Q3: Section SS 804A – Contaminated Soil and Water Control. Specification identifies potential for contaminated soil and groundwater and the requirements for testing and disposal of such. There is no information provided for locations or quantity of each. Please provide quantities of contaminated soil and water that contractor should anticipate testing and disposing or provide an allowance item to cover these costs.

Response: *This question will be clarified on a subsequent addendum.*

Q4: Future Pipe Industries would like to respectfully request to be added as an approved manufacturer/supplier of FRP piping for the E-19 Seguin Road to Nacogdoches Road – Segment 1 project.

Response: *Product approval will not occur as part of this bid process.*

Q5: Due to the complexity of the E-19 Seguin Rd. project while also striving to include the maximum number of minority subcontractors, we are asking for SAWS to please consider extending the bid date by one week.

Response: *Please see Modifications to Contract Documents, Item A, below.*

Q6: I was reviewing your Seguin Road project and our Spirolite Pipe with its new profiles would be a good fit for the 48” and larger pipe. Please review the information and let me know if we could do a presentation for future considerations and or as an alternate on the project.

Response: *Please see response to Q4.*

Q7: The costs of mob/demob for microtunnel and open cut crews are dramatically different due to the complexity of the microtunnel system and its subsystems. At the pre-bid meeting, it was mentioned that contaminated material may be encountered in the microtunnel work and archeological artifacts may be found in the open cut work. Pay Item 93-Intermediate Demobilization/Remobilization does not sufficiently address the differences in the costs in the event only one form of construction requires a demob/remob. Can that pay item be split into two items, one for each form of work (open cut and microtunnel)?

Response: *This question will be clarified on a subsequent addendum.*

Q8: Is there a list of all permits required, including the agencies and contacts, that SAWS will share with the bidders?

Response: *This question will be clarified on a subsequent addendum..*

Q9: There are no permits or permit applications included in the bid documents. It is likely some permits will have requirements that are more stringent than SAWS or COSA requiring more effort by the contractor (e.g. railroad flaggers). Will SAWS share any the conditions required by the agencies for obtaining all permits on this project prior to the bid?

Response: *This question will be clarified on a subsequent addendum..*

Q10: SS 02315 and SS 02345 both list ASCE Standard Design and Construction Guidelines for Microtunneling (ASCE/CI 36-14 (or later)) as part of their specifications. The most recent ASCE Standard Design and Construct Guidelines for Microtunneling (ASCE/C 36-15) contains guidelines and

recommendations (not specifications) that are in opposition to best practices commonly used in Texas. Treating ASCE/CI 16-15 as a specification and not a guideline may lead to Owner's representatives not experienced with microtunneling in the project region to require methods or practices not included in the qualified microtunnel contractor's bid. Please confirm that the microtunneling work will be construction to technical specifications of SS 02345 and not ASCE guidelines?

Response: *This question will be clarified on a subsequent addendum..*

Q11: Addendum 1, section E.3.b removed the Obstruction section of SS 02345. Does SAWS intend to make the Contractor responsible for all microtunneling costs associated with removal, repair, and recovery from any encountered obstruction of any size or make, known or unknown? Why has SAWS changed from sharing this risk to placing it all on the contractor?

Response: *This question will be clarified on a subsequent addendum.*

Q12: SS 02345-1.05 A.5 specifies the maximum and minimum overcut, potentially superseding the contractor's means and methods. If the qualified microtunnel contractor proposes an overcut outside of the limits specified, will he be able to use his means and methods, or will SAWS take responsibility for issues arising from used of the specified overcut limits?

Response: *This question will be clarified on a subsequent addendum.*

Q13: How long is the follow-up question-and-answer period for questions generated from the responses to pre-bid questions or information provided in subsequent addenda?

Response: *The question and answer period has closed. A follow up question and answer period for this project is not anticipated.*

Q14: If the qualified microtunnel contractor installs more tunnel shafts than shown on the drawings to suit his means and methods, will a manhole be required in those shafts or will a closure be acceptable?

Response: *A closure will be acceptable.*

Q15: Will casing inside the limits of tunnel shafts be paid under Pay Item 73-Microtunneling – 96” Inclusive of Casing, or some other item?

Response: *Additional Casing inside the limits of the tunnel shafts are subsidiary to line item No. 73 “Microtunneling – 96” Inclusive of Casing”*

Q16: SS 02660 lists pre-approved manufacturers for FRP. Addendum 1 replaces SS 02660 with SS 857, but no list of pre-approved manufacturers exists. Does the same list from SS 02260 apply SS 857 or are there changes?

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Response: *Hobas and Flowtite are the only manufacturers currently approved by the SAWS Standards committee. Either may be used, provided the product meets supplementary specification SS 857 provided in Addendum No. 1.*

Q17: Can SAWS provide a copy of the UPRR Permit?

Response: *A UPRR permit has been applied for, but not yet received. A copy of the permit can be provided, once it is received from the UPRR. Some of the requirements that are expected can be found in Special Conditions, Paragraph 1.4*

Q18: Can micro-tunneling be performed 24/7?

Response: *This question will be clarified on a subsequent addendum.*

Q19: Can SAWS provide distance between (inside wire to inside wire) and height of lowest wire on each side?

Response: *This question will be clarified on a subsequent addendum.*

Q20: Can the bid date be extended 1 or 2 weeks?

Response: *Please see response to Q5.*

Q21: Please confirm all tunnels must be slurry micro-tunnel method. Alternate tunnel methods are not acceptable.

Response: *Please see response to Q1.*

Q22: Is it possible to extend the bid date by two (2) weeks?

Response: *Please see response to Q5.*

Q23: Please confirm that Addendum 2 will be issued by tomorrow 11/18/16? If Addendum 2 is issued tomorrow, we cannot send in additional questions should we have any since the deadline for questions is today at 5pm?

Response: *Per Invitation to Bidders, the deadline for questions was 4:00 PM (CT) on November 17, 2016. Addendum No. 2 is hereby posted on November 22, 2016 with answers to some of the questions that were formally submitted. A subsequent addendum is forthcoming, with answers to the remaining formally submitted questions.*

Q24: We are requesting the bid date by extended by 2 weeks so that we can thoroughly review the contract documents including Addendum 2 to properly bid the work.

Response: *See Response to Q5.*

Q25: We are requesting additional photos of the immediate area of the railroad crossing.

Response: *Additional photos will not be provided. However, the immediate area of the railroad crossing has public access via CPS service road. Contractors may view this area as needed.*

Q26: It was mentioned in the pre-bid meeting that the schedule is aggressive, and once the NTP is issued the project duration is 730 calendar days, and the year 2023 was stated. Please confirm how soon SAWS plans to award this project and expects construction to begin?

Response: *This question will be clarified on a subsequent addendum.*

Q27: It was stated in the meeting that the permit for crossing underneath the Railroad will be provided. The contract documents also state this and that SAWS will pay for and provide the license. Does SAWS have the license/permit from the railroad already?

Response: *See Response to Q17.*

Q28: The 25 feet was stressed in the military base area, which is clear, however, when the pits are dug, the excavator will need to turn and load the dump truck, the 25 feet is only limited to the excavation limits correct? The turning radius of the machine arm may exceed the limit.

Response: *Correct. Excavation limits are limited to existing 25-foot easement. Turning and loading dump trucks can be done in the adjacent CPS easements, provided it can be done safely in proximity to live electric wires.*

Q29: Please see Section SS 02445 page 2 of 6, Section 1.05, Design Criteria, Table 1-maximum allowable settlement values; Has systematic settlement calculations been conducted that verifies these values within table 1 are achievable based on the ground conditions, pipe size, cover and overcut? If so can this calculation be provided to the bidders?

Response: *This question will be clarified on a subsequent addendum.*

Q30: The 25-foot maximum easement is stated on the plans and stated again in the pre-bid meeting. At the two locations within the military base where we are turning the 25-foot easement is not feasible for the construction of the shafts. The microtunnel's manufacturer recommendation is for a minimum outside width of 26 feet for the shaft. Also, is a safety concern for access along intermediate shafts if emergency were to occur. So, our question is can the easement or construction of the shafts be larger if need be at the turning points and in the intermediate shafts within the straights run along the railroad within the military base?

Response: *No. Excavations within Fort Sam Houston must be devised to occur entirely within existing easements.*

Q31: Can curved microtunnel drives be used to eliminate shafts if feasible?

Response: *No*

Q32: Contract Plan sheet C38 shows approximately 215 feet of microtunnel underneath the crossing of the bridge structure of Rittiman Road, then shows open cut for approximately 408.21 feet and then shows microtunnel for approximately 298 feet on the plan sheet C40/C41 for crossing under existing box culverts.

- a. Could open Cut be eliminated in this area?
- b. Could microtunnel be eliminated in this area?

Response: *Neither open-cut nor microtunnel will be eliminated from the area mentioned above. Contractor should prepare bid in accordance with the provided bid documents.*

2.0 Modifications to CONTRACT DOCUMENTS

A. Invitation to Bidders – REVISE the date/time on which sealed bids are to be received from 10:00 AM (CT) on December 1, 2016, to 10:00 AM (CT) on December 15, 2016.

3.0 Modifications to PLANS FOR CONSTRUCTION

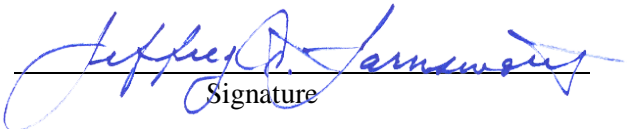
A. ADD the following note to Sheets C51 – C67

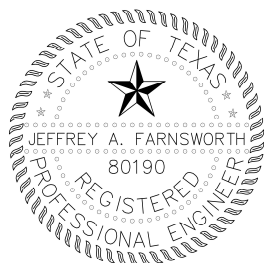
“Contractor shall disinfect proposed water lines in accordance with SAWS Standard Specification Item No. 847”

B. REMOVE – Sheets G4, C73, C74 and C76, and REPLACE with revised attached Sheets G4, C73, C74 and C76.

11/22/16

Date


Signature



Kimley-Horn and Associates, Inc.
Texas Registered Engineering Firm F-928
601 NW Loop 410, Ste. 350
San Antonio, TX 78216

General Notes (Cont.)

CPS ENERGY NOTE:

- CALL CPS LOCATOR AT 353-2970 48 HOURS BEFORE BEGINNING ANY EXCAVATION.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING CPS ENERGY OVERHEAD AND UNDERGROUND ELECTRIC FACILITIES IF ADJACENT TO WORK AREAS.
- DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.181, CPS ENERGY MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND CPS VALVES THAT ARE IN THE PROJECT AREA.
- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH CPS TO BRACE DISTRIBUTION POWER POLES. ANY POLES WITHIN 10 FEET OF CONSTRUCTION SHALL BE REVIEWED WITH CPS TO DETERMINE IF BRACING IS REQUIRED (NO SEPARATE PAY ITEM).
- NEW SEWER CONSTRUCTION IS TO OCCUR IN CLOSE PROXIMITY TO TRANSMISSION POWER LINES ON THE FORT SAM HOUSTON MILITARY INSTALLATION ON THE SAN ANTONIO MILITARY MEDICAL CENTER PROPERTY. IN THESE AREAS, THE CONTRACTOR IS DIRECTED TO CONTAIN ALL CONSTRUCTION ACTIVITIES TO REMAIN 30- FEET OR MORE FROM TRANSMISSION TOWERS/POLES. CONTRACTOR MAY USE THE EXISTING CPS ENERGY DISTRIBUTION AND TRANSMISSION LINE EASEMENTS FOR ACCESS, FOR VEHICLE PARKING AND FOR TEMPORARY LAY DOWN OF CONSTRUCTION MATERIALS. CONSTRUCTION MATERIALS THAT ARE LAID DOWN TEMPORARILY MAY NOT REMAIN IN THE EASEMENT FOR LONGER THAN 48 HOURS, WITHOUT PERMISSION FROM CPS ENERGY. STOCKPILING OF DIRT, STACKING OF CONSTRUCTION MATERIALS, OR CREATION OF ANY MEANS FOR PERSONNEL OR EQUIPMENT TO BE CLOSER TO LIVE POWER LINES, IS STRICTLY FORBIDDEN. CONTRACTOR SHALL TAKE ALL MEANS NECESSARY TO CONSTRUCT NEW SEWER IN PROXIMITY TO POWER LINES SAFELY, AND IN ACCORDANCE WITH CURRENT OSHA GUIDELINES. CONTRACTOR SHALL BE PREPARED TO RELOCATE ANY AND ALL TEMPORARILY STORED MATERIALS WITHIN CPS EASEMENT AT ANY TIME UPON REQUEST BY CPS.

TRENCHLESS

- THE CONTRACTOR SHALL SECURE ALL BORE AREAS AND RECEIVING PITS WITH SECURITY FENCING AND ALL PROPER SAFETY MEASURES (N.S.P.I.).*
- CONTRACTOR SHALL SUBMIT BORING PLAN TO INSPECTOR AND ENGINEER FOR REVIEW AND APPROVAL. BORE/RECEIVING SHAFT LOCATIONS AND DIMENSIONS ARE FOR INFORMATIONAL PURPOSES ONLY. (N.S.P.I.).*
- ONLY CASING WILL BE ALLOWED, NO LINER PLATE WILL BE PERMITTED.

ABANDONMENT/REMOVAL OF OLD MAINS AND MANHOLES

- ABANDONMENT OF SANITARY SEWER MAINS AND MANHOLES SHALL BE IN ACCORDANCE WITH SAWS SPECIFICATION NO. 862.

SUPPLEMENTARY

- ALL ASTM D-3262 SANITARY SEWER PIPE SHALL HAVE A MINIMUM PRESSURE RATING OF 150 PSF.
- 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. WORK COMPLETED BY THE CONTRACTOR WHICH HAS NOT RECEIVED A WORK ORDER OR THE NOTICE TO PROCEED FROM THE ENGINEER AND INSPECTOR WILL BE SUBJECT TO REMOVAL AND REPLACEMENT BY AND AT THE EXPENSE OF THE CONTRACTOR.
- NO MORE THAN 200 LINEAR FEET OF TRENCH EXCAVATION IN ADVANCE OF THE UTILITY WILL BE ALLOWED AT A TIME.
- CONTRACTOR MUST CALL FOR BACKFILL INSPECTIONS.
- DENSITY REPORTS MUST BE SUBMITTED TO THE INSPECTOR WITHIN 24 HOURS OF TESTING.

COSA

- NEW SEWER CONSTRUCTION IS TO OCCUR IN HOLBROOK ROAD AND ADJACENT TO THE CITY OF SAN ANTONIO SALADO CREEK GREENWAY IN SOME AREAS. IN THESE AREAS, THE CONTRACTOR IS DIRECTED TO PLACE TEMPORARY FENCING BETWEEN SAWS UTILITY CONSTRUCTION AND THE GREENWAY, SO THAT USERS OF THE GREENWAY WILL BE UNABLE TO ENTER CONSTRUCTION ZONE. IF CONSTRUCTION ACTIVITIES ARE REQUIRED THAT MAY IMPACT OR TEMPORARILY CLOSE THE GREENWAY, CONTRACTOR IS DIRECTED TO NOTIFY SAWS INSPECTIONS, COSA PARKS AND RECREATION, AND THE PROJECT DESIGN MANAGER AT LEAST 2 WEEKS IN ADVANCE OF INTENDED GREENWAY CLOSURE. CONTRACTOR WILL ALSO INSTALL TEMPORARY WARNING SIGNS, AS DIRECTED BY THE CITY OF SAN ANTONIO, PRIOR AND DURING WORK. CONTRACTOR IS DIRECTED TO TAKE A HIGH DEGREE OF CARE TO ENSURE THAT GREENWAY PATRONS ARE KEPT SAFE.

UPRR

- FOR ALL WORK WITHIN UNION PACIFIC RAILROAD RIGHT-OF-WAY, REFER TO SPECIAL CONDITIONS. CONTRACTOR SHALL NOTIFY THE FOLLOWING UNION PACIFIC RAIL ROAD (UPRR) CONTACTS AT LEAST TEN (10) WORKING DAYS PRIOR TO ANY CONSTRUCTION.
 UPRR TRACK MAINTENANCE (CONTACT): JASON M. PEDERSON 210-825-0362
 UPRR SIGNAL MAINTENANCE (CONTACT): MARIO ALCALA 210-200-3505
- CONTRACTOR SHALL CONTACT THE FOLLOWING NUMBER DURING NORMAL BUSINESS HOURS (7:00 AM TO 5:00 PM CENTRAL TIME), MONDAY THROUGH FRIDAY, EXCEPT FOR HOLIDAYS) TO DETERMINE IF FIBER OPTIC CABLE IS BURIED ANYWHERE IN THE UPRR RIGHT-OF-WAY TO BE USED BY THE CONTRACTOR:
 UPRR COMMUNICATIONS 1-800-336-9193

GENERAL SEWER NOTES:

- NEW SEWER CONSTRUCTION IS TO OCCUR IN CLOSE PROXIMITY TO EXISTING SEWER MAINS ALONG HOLBROOK ROAD, IN LOCATIONS WHERE WORKING ROOM IS LIMITED, IN SOME OF THESE LOCATIONS, SOIL STRATA MAY BE UNSTABLE/LOOSE. THIS COULD LEAD TO SLOUGHING OF TRENCH WALLS, THAT COULD BE DETRIMENTAL TO THE EXISTING ADJACENT SEWER LINE AND CAUSE A SEWER SPILL INTO THE NEW TRENCH. CONTRACTOR IS TO DEVISE A MEANS TO ENSURE THAT TRENCH WALLS REMAIN STABLE DURING CONSTRUCTION, SO THAT THE INTEGRITY OF THE ADJACENT EXISTING SEWER IS PRESERVED AT ALL TIMES. THIS IS TO BE DONE INCIDENTAL TO THE PRICE OF PIPE INSTALLATION (N.S.P.I.).*
- CONTRACTOR IS RESPONSIBLE TO SUPPORT AND PROTECT ANY EXISTING UTILITIES ADJACENT TO WORK AREA (N.S.P.I.).*
- ALL GRADES ARE CALCULATED TO THE CENTERLINE OF MANHOLE FOR MANHOLES WITH A 0.1 FOOT DROP. MANHOLES WITH POINT OF INTERSECTION SHALL HAVE 0.1 FOOT DROP PLUS INCREASE FOR PIPE GRADES. RESULTING DROP BETWEEN PIPES ACROSS ENTIRE MANHOLE WILL BE THE SUM OF THE 0.1 FOOT DROP AND THE TWO INTERSECTION PIPE GRADES MULTIPLIED BY THE RADIUS FOR ALL MANHOLES SPECIFIED IN THE PLANS TO HAVE A DROP. (TOTAL DROP ACROSS MANHOLE = 0.1 + GRADE1(R) + GRADE2(R))
- CONNECTION OF EXISTING SANITARY SEWERS TO PROPOSED MANHOLES, CONNECTION OF PROPOSED SANITARY SEWERS TO EXISTING MANHOLES, AND EXTENSIONS OF EXISTING SANITARY SEWER PIPE TO PROPOSED MANHOLES SHALL BE SUBSIDIARY TO THE COST OF THE PROJECT (NO SEPARATE PAY ITEM).
- REMOVAL OF EXISTING SEWER LINES TO BE REPLACED WITH PROPOSED LINES IN THE SAME TRENCH AT THE SAME OR SHALLOWER GRADE SHALL BE SUBSIDIARY TO THE COST OF THE PROPOSED SEWER LINES (NO SEPARATE PAY ITEM).
- THE CONTRACTOR SHALL MAINTAIN SERVICE TO EXISTING SANITARY SEWERS AT ALL TIMES DURING CONSTRUCTION.
- ALL HINGED SANITARY SEWER MANHOLES INSTALLED WITHIN PAVEMENT SHALL CLOSE IN DIRECTION OF TRAFFIC FLOW.
- ELEVATIONS POSTED FOR TOP OF MANHOLES ARE FOR REFERENCE ONLY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE ALLOWANCES AND ADJUSTMENTS FOR THE TOP OF MANHOLES TO MATCH THE FINISHED GRADE FOR THE STREET IMPROVEMENTS (N.S.P.I.).*
- MANHOLES INSTALLED IN OUTSIDE OF PAVEMENT LIMITS SHALL HAVE A RIM ELEVATION 6-INCHES ABOVE NATURAL GROUND ELEVATION.
- CONTRACTOR MAY ENCOUNTER CONCRETE ENCASEMENT IN THE IMMEDIATE VICINITY OF EXISTING MANHOLES. ANY CONCRETE REMOVAL REQUIRED FOR THE PROPER INSTALLATION OF PROPOSED SEWER MAIN AND TIE-INS SHALL BE AT NO ADDITIONAL COST TO THE OWNER. (N.S.P.I.).*
- SEWER IS TO BE BUILT IN PHASES, TEMPORARY CONNECTIONS AND BYPASS PUMPING MAY BE REQUIRED.
- ALL SANITARY SEWER MANHOLE RING AND COVERS SHALL BE WATERTIGHT.
- ALL FIBER-GLASS-REINFORCED-PIPE SHALL BE HOBAS. NO APPROVED EQUAL WILL BE ACCEPTED.

FLOODPLAIN

- THE CONTRACTOR SHALL COMPLY WITH THE APPROVED COSA FLOODPLAIN PERMIT. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ALL WASTE MATERIALS UPON PROJECT COMPLETION.
- CONTRACTOR IS RESPONSIBLE FOR PROTECTION OF WORK, MATERIAL, AND EQUIPMENT PRIOR TO RAIN EVENTS. THE LOCATION OF THE PROJECT IS LOCATED ENTIRELY WITHIN THE 100-YEAR FLOODPLAIN AND FLOODWAY AREAS OF SALADO CREEK. THE PROJECT SITE IS SUSCEPTIBLE TO QUICKLY RISING WATER IN RESPONSE TO RAINFALL EVENTS. NO MATERIAL SHALL BE STORED IN THE 100-YEAR FLOODPLAIN LONGER THAN THE END OF THE SHIFT IN WHICH IT WAS GENERATED. CONTRACTOR IS SOLELY RESPONSIBLE FOR PROTECTING TRENCHES, PITS, MATERIALS, AND EQUIPMENT FROM DAMAGE/INUNDATION OF FLOOD WATERS. ROADWAYS TO THE PROJECT SITE CAN BE EXPECTED TO BE BLOCKED OFF AS LOW WATER CROSSING DURING STORM EVENTS AND FOR EXTENDED PERIODS THEREAFTER. CONTRACTOR SHALL COORDINATE WITH SAWS TO DETERMINE WHETHER CONTRACTOR MAY RETURN TO WORK ONSITE AFTER RAIN EVENT/PARK CLOSURE.

TRAFFIC CONTROL

- BARRICADES AND WARNING SIGNS SHALL CONFORM TO THE CURRENT TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND ARE TO BE GENERALLY LOCATED TO AFFORD MAXIMUM PROTECTION TO THE PUBLIC AS WELL AS CONSTRUCTION PERSONNEL AND EQUIPMENT AND TO ASSURE AN EXPEDITIOUS TRAFFIC FLOW AT ALL TIMES. DURING THE PROGRESS OF WORK, THE CONTRACTOR SHALL PROVIDE ACCESS FOR LOCAL TRAFFIC.
- CONTRACTOR TO ESTABLISH AND MAINTAIN TRAFFIC BARRICADING AND CONTROL DEVICES ALONG THE ALIGNMENT IN ACCORDANCE WITH THE TRAFFIC CONTROL PLAN.

ROAD NOTES

- PRIOR TO BEGINNING ANY TRENCHING WITHIN ROADWAY PAVEMENT, CONTRACTOR IS EXPECTED TO PERFORM SURVEY CROSS SECTIONS OF EXISTING PAVED SURFACE AT 50-FT INTERVALS. EACH CROSS SECTION SHOULD CONTAIN A SURVEYED ELEVATION AT THE EDGE OF PAVEMENT ON EACH SIDE OF THE ROAD, AND AT THE CENTERLINE OF THE ROAD. THE CONTRACTOR SHALL USE THESE ELEVATIONS TO CONSTRUCT THIS TYPICAL SECTION AT PRIOR ROAD ELEVATIONS.
- ROAD STRIPING SHALL BE INSTALLED TO MATCH EXISTING CONDITION. ALL STRIPING SHALL BE SUBSIDIARY TO HOT MIX ASPHALTIC PAVEMENT LINE ITEM. STRIPING SHALL BE IN ACCORDANCE WITH THE LATEST LOCAL AND STATE REQUIREMENTS.
- CONTRACTOR SHALL SALVAGE RUBBER SPEED BUMP MATS OR REPLACE THEM AS NEEDED PER CITY OF SAN ANTONIO. CONTRACTOR SHALL RE-INSTALL MATS AT SAME LOCATION AFTER PAVEMENT INSTALLATION (N.S.P.I.).*

GENERAL WATER NOTES:

- THRUST RESTRAINTS ARE REQUIRED AT ALL MECHANICAL JOINT (MJ) FITTINGS AND BELL JOINTS PER SAWS STANDARD SPECIFICATION ITEM NO. 818. THIS SHALL BE CONSIDERED SUBSIDIARY TO THE COST OF THE LINE.

LEGEND

	PROPOSED SANITARY SEWER LINE
	PROPERTY LINE
	PROPOSED EASEMENT
	EXISTING EASEMENT
	PROPOSED WATERLINE
	EXISTING WATERLINE
	8" W
	6" AC-W
	48" SS
	4" G
	OHE
	UOC
	EXISTING ASPHALT PAVEMENT
	EXISTING CONCRETE
	EXISTING GRAVEL PAVEMENT
	EXISTING 100-YR FLOOD PLAIN
	EXISTING STORM DRAIN
	EXISTING POST AND CABLE FENCE
	EXISTING BARBED-WIRE FENCE
	EXISTING SANITARY SEWER MANHOLE
	EXISTING STORM DRAIN MANHOLE
	PROPOSED WATER VALVE
	PROPOSED FIRE HYDRANT
	EXISTING WATER METER
	EXISTING WATER VALVE
	EXISTING FIRE HYDRANT
	EXISTING SIGN
	EXISTING POWER POLE
	EXISTING GUY WIRE ANCHOR
	EXISTING TELECOMMUNICATION BOX
	EXISTING MAILBOX
	EXISTING TREE

* N.S.P.I. (NO SEPARATE PAY ITEM)



Kimley-Horn

Texas Registered Firm, No. 928

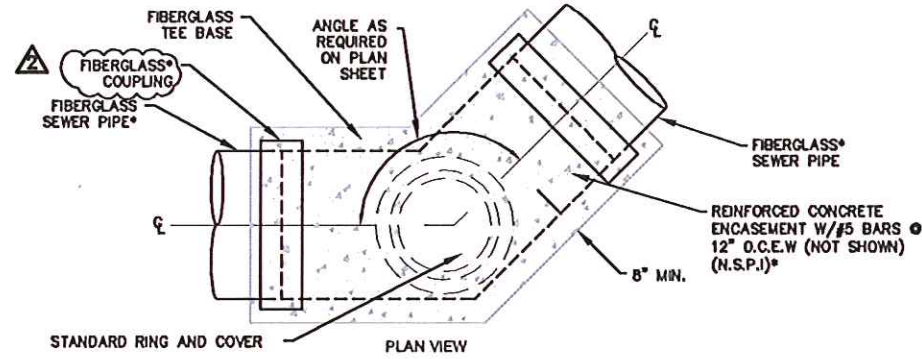
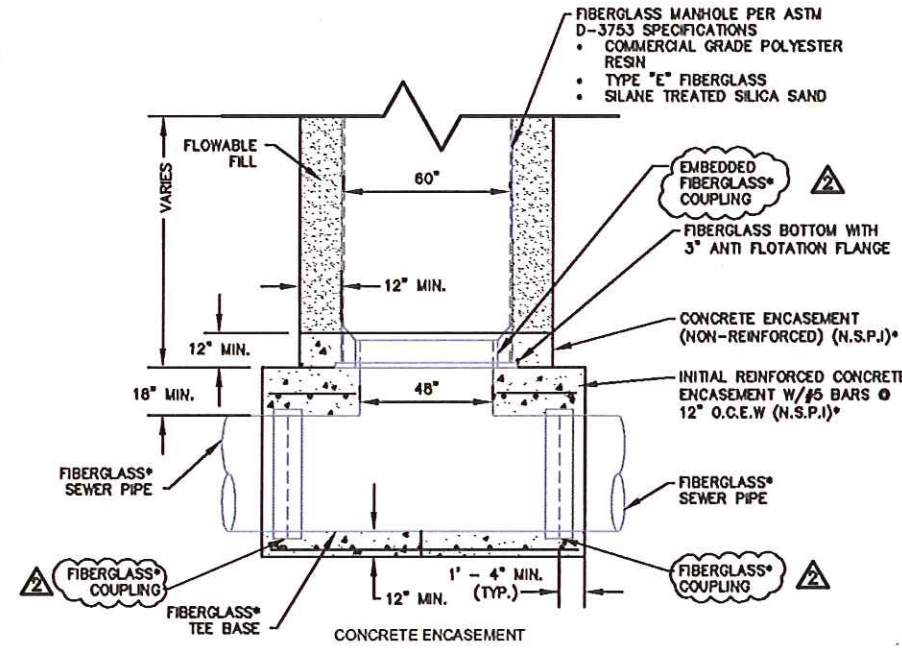
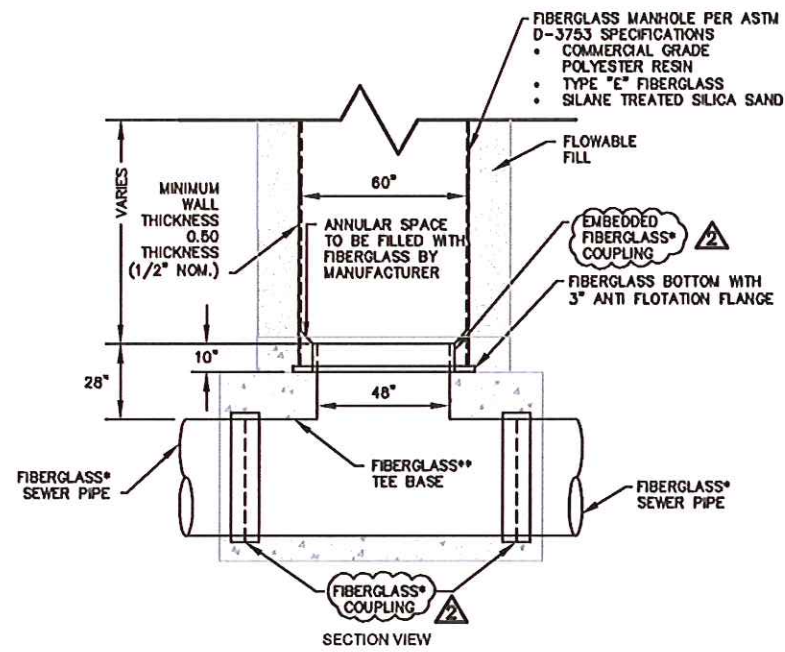
601 NW Loop 410 Suite 350 San Antonio, TX 78216 Tel No. 210-541-9166 Fax No. 210-541-8699

No.	Revision	By	Date
▲	ADDENDUM 2	JAF	11/22/2016



E19: SEGUIN TO NACOGDOCHES ROAD - SEGMENT 1 SHEET
GENERAL NOTES (SHEET 2 OF 2)

DATE: NOVEMBER 2016	SAWS PROJECT NO. 15-4506	SHEET NO. G4
DESIGN: MAV	KHA PROJECT NO. 068665018	
DRAWN: DPF		
CHECKED: GAG		



* FIBERGLASS (FRP) SEWER PIPE MEETING THE REQUIREMENTS OF ASTM D3262 FOR DIRECT BURY INSTALLATION

NOTES:

1. ENCASEMENT TO BE DESIGNED TO RESIST ALL TEE BASE DEFORMATIONS AND IS TO EXTEND PAST THE FIRST JOINT ON EITHER SIDE OF THE TEE BASE BY 1' TO 3'.
2. ALL CONCRETE ENCASEMENT REQUIRED FOR TEE BASE MANHOLES SHALL BE CONSIDERED SUBSIDIARY TO THE COST OF THE MANHOLES.
3. THE TEE BASE IS TO BE FULLY CONCRETE ENCASED AND ALLOWED TO CURE PRIOR TO INSTALLATION OF MANHOLE RISER.
4. THE TEE BASE THROAT SHALL BE FLUSH WITH THE UPPER EDGE OF THE EMBEDDED FWC COUPLING CONNECTING THE MANHOLE RISER TO THE TEE BASE.
5. BACKFILL AROUND MANHOLE SHALL BE FLOWABLE WITH A MINIMUM THICKNESS OF 12-INCHES AND FILL SHALL BE PLACED TO WITHIN 12-INCHES OF FINAL GRADE. THIS COST SHALL BE SUBSIDIARY TO THE COST OF THE MANHOLE.

1 TEE-BASE FIBERGLASS MANHOLE DETAIL
SCALE: NTS

VALBUENA MAR 10 11:22:20 AM
 KUNSA, LUTHERUS 10/26/2016 4:41 PM
 L:\PROJECTS\2016\16-001\DRAWING\DETAILS\16-01\16-01-01-01.DWG
 11/22/2016 10:34 AM
 PLOTTED BY: D:\NAME: JAF
 LAST PAVED

SAWS STANDARD DETAILS INCORPORATED BY REFERENCE:

804	EXCAVATION, TRENCHING AND BACKFILL	DD-804-01, 02
845	GATE, FENCING, AND PROPERTY MARKER DETAILS	DD-845-01
848	SANITARY SEWERS	DD-848-01 (1 AND 2 OF 2)
850	SANITARY SEWER STRUCTURES	DD-850-01
852	SANITARY SEWER MANHOLES	DD-852-01 (1 AND 2 OF 2), 02, 03, 05, 06, 07 (1 AND 2 OF 2), 08
856	JACKING, BORING OR TUNNELING PIPE	DD-856-01 (1 AND 2 OF 2), 02 (1, 2, AND 3 OF 3)
858	CONCRETE ENCASEMENT, CRADLES, SADDLES AND COLLARS	DD-858-01, 02
862	ABANDONMENT OF SEWER MAINS AND MANHOLES	
869	PROJECT SIGNS	DD-869-01

*CONTRACTOR TO VISIT SAWS WEBSITE (WWW.SAWS.ORG) FOR UPDATED DETAILS

J. A. Farina




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No.	Revision	By	Date
▲	ADDENDUM 2	JAF	11/22/2016



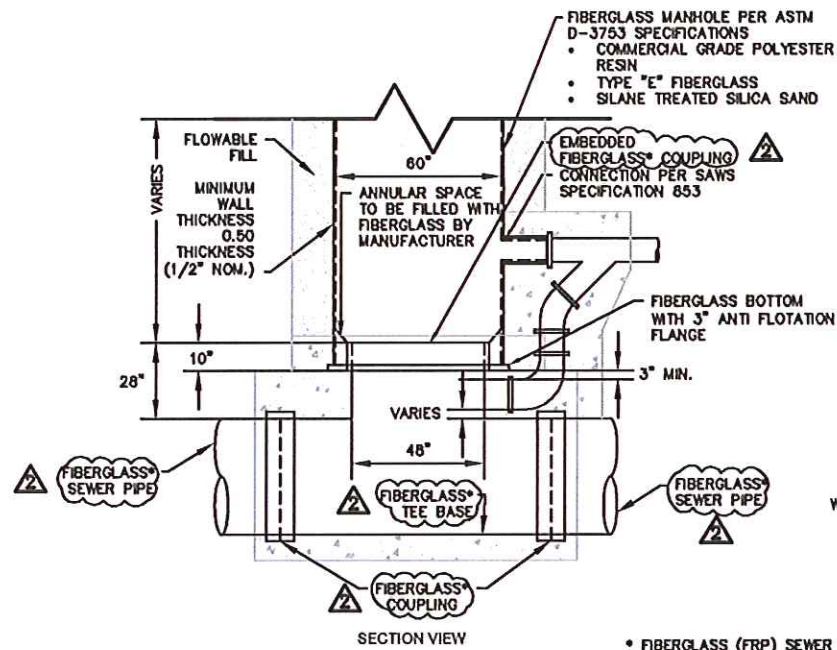
SAN ANTONIO WATER SYSTEM

E19: SEGUIN TO NACOGDOCHES ROAD – SEGMENT 1

SHEET

SEWER DETAILS (SHEET 1 OF 4)

DATE: NOVEMBER 2016	SAWS PROJECT NO. 15-4506	C73
DESIGN: MAV	KHA PROJECT NO. 068665018	
DRAWN: DPF		
CHECKED: GAG		



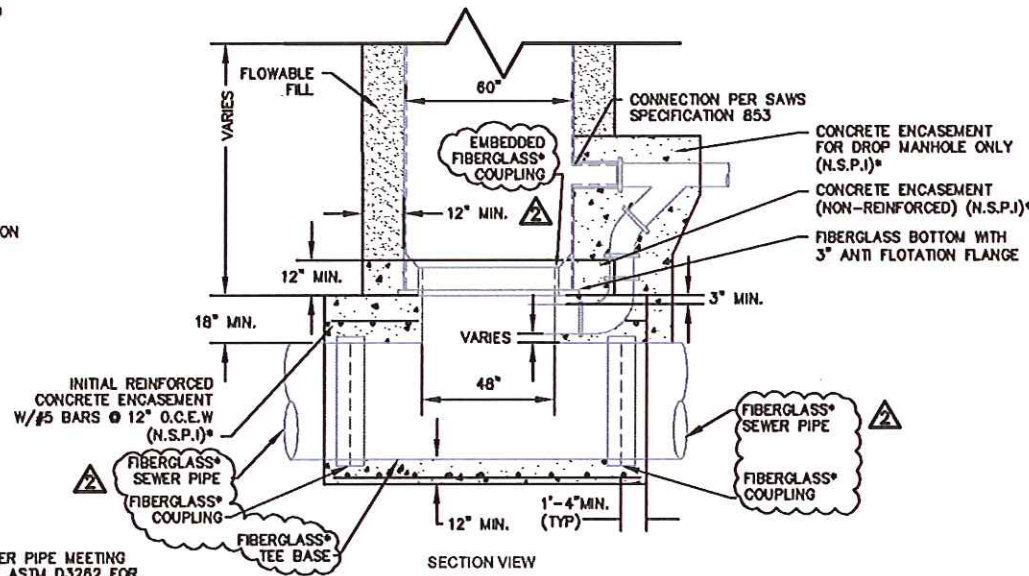
* FIBERGLASS (FRP) SEWER PIPE MEETING THE REQUIREMENTS OF ASTM D3262 FOR DIRECT BURY INSTALLATION

NOTES:

1. ENCASEMENT TO BE DESIGNED TO RESIST ALL TEE BASE DEFORMATIONS AND IS TO EXTEND PAST THE FIRST JOINT ON EITHER SIDE OF THE TEE BASE BY 1' TO 3'.
2. ALL CONCRETE ENCASEMENT REQUIRED FOR TEE BASE MANHOLES SHALL BE CONSIDERED SUBSIDIARY TO THE COST OF THE MANHOLES.
3. THE TEE BASE IS TO BE FULLY CONCRETE ENCASED AND ALLOWED TO CURE PRIOR TO INSTALLATION OF MANHOLE RISER.
4. THE TEE BASE THROAT SHALL BE FLUSH WITH THE UPPER EDGE OF THE FRP COUPLING CONNECTING THE MANHOLE RISER TO THE TEE BASE.
5. BACKFILL AROUND MANHOLE SHALL BE FLOWABLE WITH A MINIMUM THICKNESS OF 12-INCHES AND FILL SHALL BE PLACED TO WITHIN 12-INCHES OF FINAL GRADE. THIS COST SHALL BE SUBSIDIARY TO THE COST OF THE MANHOLE.

1 TEE-BASE FIBERGLASS DROP MANHOLE DETAIL

SCALE: NTS

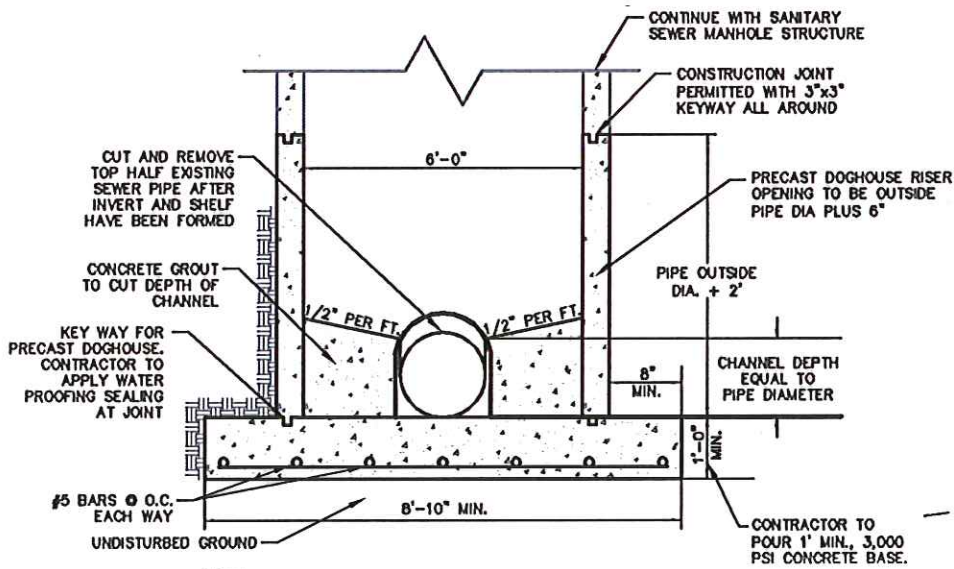
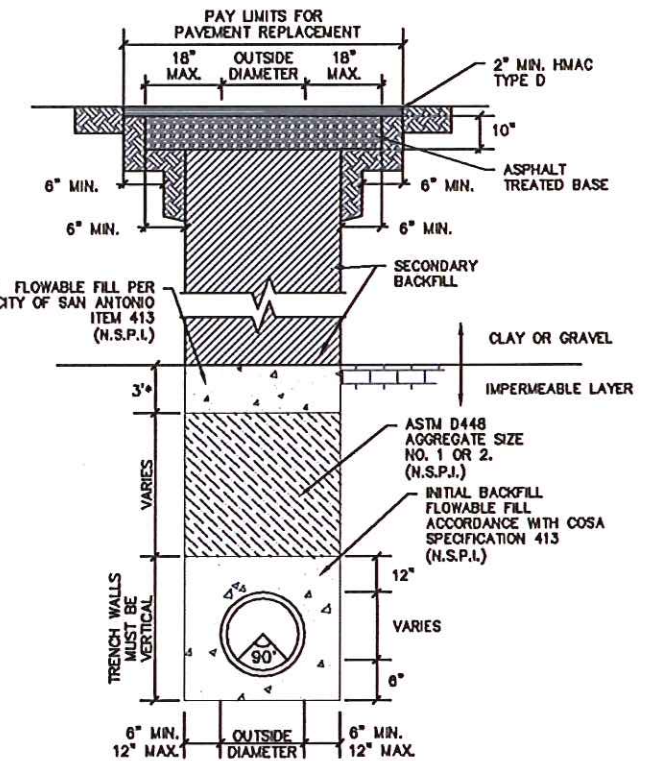


NOTE:

1. FLOWABLE FILL AND AGGREGATE SHALL BE INCLUDED IN THE COST FOR INSTALLATION OF THE PIPE.
 2. THE SURFACE OF THE BACKFILLED TRENCH SHALL BE RESTORED TO MATCH THE PREVIOUS EXISTING CONDITIONS. THIS SHALL INCLUDE FINAL GRADING, PLACEMENT OF TOPSOIL AND SEEDING, PLACEMENT OF SOG (SUCH AS AT HOMES OR BUSINESSES THAT HAD MAINTAINED GRASS), OR OTHER UNPREPARED AND PREPARED SURFACES.
- * 3 FEET OF FLOWABLE FILL IS MINIMUM THICKNESS REQUIRED AND THE MAXIMUM THICKNESS ALLOWED FOR PAYMENT.

2 SEWER MAIN EMBEDMENT AND BACKFILL DETAIL

SCALE: NTS

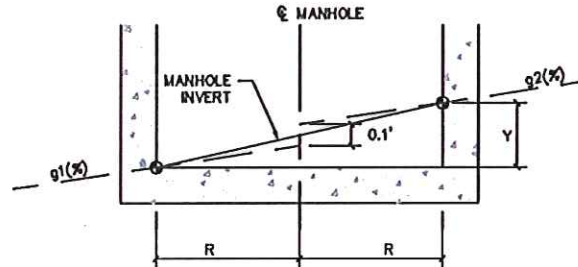


NOTE:

1. FOR PRECAST DOGHOUSE RISER, FILL OPENING AROUND EXISTING PIPE WITH 3,000 PSI CONCRETE.
2. BACKFILL AROUND MANHOLE SHALL BE FLOWABLE FILL UP TO 1 FOOT BELOW CONE SECTION.
3. CAST-IN PLACE CONCRETE SHALL BE CLASS A 3,000 PSI. PAYMENT FOR MANHOLE STRUCTURE SHALL BE INCLUSIVE TO THE BY-PASS PAY ITEM B64-S2.

3 MANHOLE STRUCTURE FOR BYPASS PUMPING DETAIL

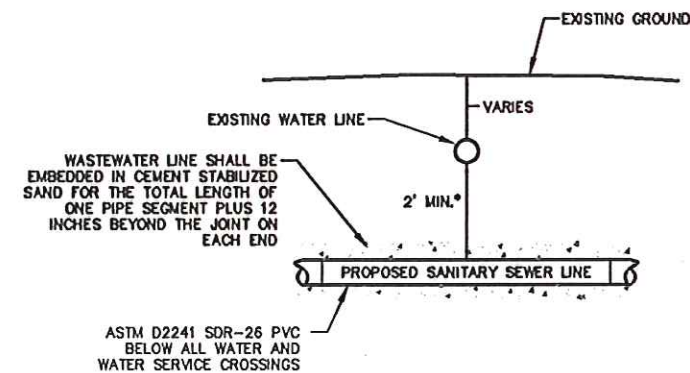
SCALE: NTS



4 MANHOLE SLOPE DETAIL


SCALE: NTS

NOTE: ALL GRADES CALCULATED TO ϕ OF MANHOLE. MANHOLES WITH POINT OF INTERSECTION SHALL HAVE 0.1' DROP PLUS INCREASE FOR PIPE GRADES. $Y = 0.1 + g1(R) + g2(R)$



5 SEWER/WATER CROSSING DETAIL

SCALE: NTS



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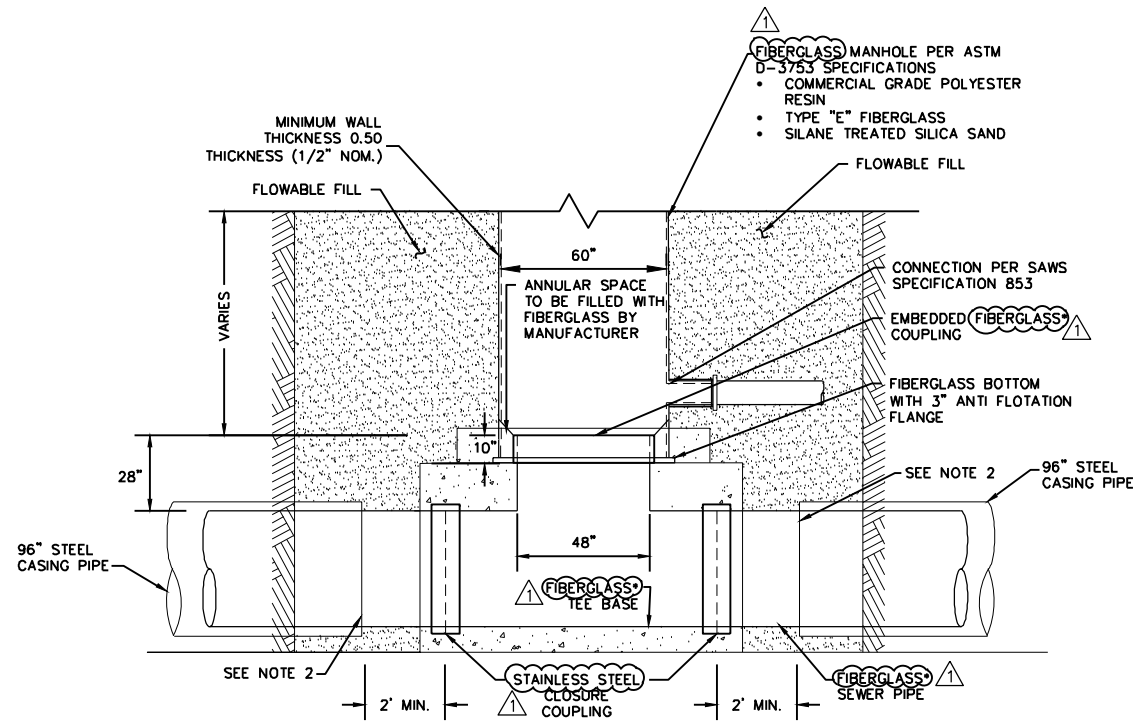
No.	Revision	By	Date
▲	ADDENDUM 2	JAF	11/22/2016

E19: SEGUIN TO NACOGDOCHES ROAD - SEGMENT 1 SHEET

SEWER DETAILS (SHEET 2 OF 4)

DATE: NOVEMBER 2016	SAWS PROJECT NO. 15-4506	SHEET NO. C74
DESIGN: MAV	KHA PROJECT NO. 068665018	
DRAWN: DPF		
CHECKED: GAG		

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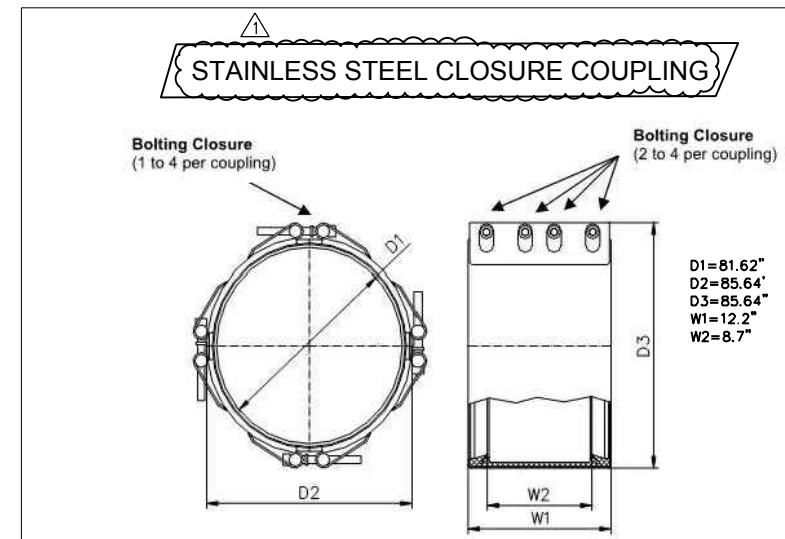
NOTES:

1. CONTRACTOR TO DETERMINE EXCAVATION METHOD AND SHORING REQUIRED TO INSTALL MANHOLE AND CUT-IN TEE AFTER TUNNELING AND INSTALLATION OF CARRIER PIPE.
2. CONTRACTOR TO SAW-CUT AND REMOVE SECTION OF CASING PIPE AFTER TUNNELING AND INSTALLATION OF CARRIER PIPE. CONTRACTOR TO TAKE ALL PRECAUTIONS NECESSARY TO PREVENT DAMAGE TO CARRIER PIPE.
3. ALL TEE BASE FIBERGLASS MANHOLE INSTALLATION, MATERIALS, EMBEDMENT PER SHEET C73, DETAIL 1.

FIBERGLASS (FRP) SEWER PIPE MEETING THE REQUIREMENTS OF ASTM 03743 FOR DIRECT BURY INSTALLATION

FORT SAM HOUSTON CLOSURE COUPLING TEE BASE FIBERGLASS MANHOLE DETAIL

1 SCALE: NTS



NOTES:

1. STAINLESS STEEL CLOSURE COUPLING MANHOLES TO BE INSTALLED AT STATIONS 41+24.67 AND 42+75.14 ON SHEET C11.
2. CASING SHALL BE 316 SS.
3. SCREWS AND BOLTS SHALL BE 316L SS OR EQUAL.
4. SEALING SLEEVE SHALL BE EPDM OR NBR RUBBER.
5. SEE DETAIL 1 ON SHEET C72 FOR CONCRETE ENCASEMENT REINFORCING.
6. MAXIMUM GAP OF FRP CARRIER PIPES EQUAL TO 1.5".

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 DATE SAVED 11/16/2016 2:54 PM

4040 Broadway Street, Suite 600 San Antonio, Texas 78209-6350 Phone - (210) 298-3800 Fax - (210) 298-3801 Texas Registered Engineering Firm F-2144			
No.	Revision	By	Date
ADDENDUM 2		DTB	11/22/2016
		E19: SEGUIN TO NACOGDOCHES ROAD - SEGMENT 1 SHEET SEWER DETAILS (SHEET 4 OF 4)	
DATE: NOVEMBER 2016	SAWS PROJECT NO. 15-4506	SHEET NO. C76	
DESIGN: RWR	FNI PROJECT NO. KMH16157		
DRAWN: DDH			
CHECKED: DTB			