Multiple Sewershed - Package 5
Solicitation Number: CO-00237
Job No.: 17-4551

ADDENDUM 3
OCTOBER 26, 2018

To Bidder of Record:

This addendum, applicable to work referenced above, is an amendment to the bid proposal, plans and specifications and as such will be a part of and included in the Contract Documents. Acknowledge receipt of this addendum by entering the Addendum number and issue date on the space provided in submitted copies of the bid proposal.

RESPONSES TO QUESTIONS

1. **Question:** Please confirm that suction/discharge manholes used or installed to execute the work will be coated to the flow line under low flow conditions and not tested.

   Response: *Existing manholes used as suction/discharge manholes to execute sewer bypass shall be coated in accordance with paragraph 855.4.6 – Interior Coating to the flow line under low flow conditions and shall not require Leakage or Vacuum testing if only the cone sections were removed and replaced. Any existing manhole riser sections damaged by the contractor shall be replaced by the contractor and the manhole shall require Leakage Testing in accordance with paragraph 855.6 – Testing, at contractor's expenses.*
   New doghouse manholes installed as suction/discharge manholes to execute sewer bypass shall be tested for leakage in accordance with paragraph 855.6 – Testing, before cutting of the existing sewer pipe. All interior surfaces of the new manhole shall be coated in accordance with paragraph 855.4.6 – Interior Coating before cutting of the existing sewer pipe. After completion of the sewer bypass if any manhole riser sections were found to be damaged, the damaged riser sections shall be replaced by the contractor and the manhole shall require Leakage Testing in accordance with paragraph 855.6 – Testing, at contractor's expenses.

2. **Question:** Please confirm that concrete manholes may be used for doghouse installations.

   Response: *Concrete doghouse manholes satisfying the requirements of Item 852 may be used for doghouse installations.*

3. **Question:** The requirements for project A-3 can be satisfied by experience with diameters no greater than 48", and there is 54" & 72" CIPP on this project, we recommend that at least a third project be added to the experience form requiring the bidder to show experience in larger diameters, up to and including 72".

Response: *The requirements for Project A-3 has been revised to include CIPP size 72-inhes or larger and the qualifying length has been reduced to 1000 LF.*

4. **Question:** Per the discussion at the pre-bid meeting yesterday, the work to be performed for the additive alternates is for the same section of sewer with different means and methods. We are confused on how the basis of award would be done by SAWS as it stands. Given the previous history, limited subcontractor resources, expected cost of the scope, and the risk involved, we propose that SAWS remove Additive Alternate "A" and combine Additive Alternate "B" with the base bid items. We believe that this option will offer the best value to SAWS and its customers and allow a more efficient proposal evaluation.

   Response: *Additive Alternate "A" has been deleted and Additive Alternate "B" has been combined into the Base Bid.*

5. **Question:** Are the bidders required to provide pricing for both Additive Alternates A and B, or can the bidder choose to bid only one of the Additive Alternates? If the bidder is only required to bid one of the Additive Alternates, is it the bidder's choice of which one to bid?

   Response: *See Response to Question 4 in this Addendum.*

6. **Question:** For this contract, since it has Additive Alternates, how do the bidders determine percent of local SBE utilization in the bid? Is it just calculated based on the local SBE participation in the Base Bid against the Base Bid total, or will participation in the Additive Alternates also contribute, and if so, for which Alternate?

   Response: *See Response to Question 4 in this Addendum.*

7. **Question:** The bypass drawings provide flow data in terms of Qmax and Qavg. Are these flow rates based on actual measured flows in the pipes or on calculated pipe capacities?

   Response: *The sewer flow rate provided on the bid documents are based on SAWS master planning calibrated Infoworks model of the peak wet weather flow and the average dry weather flow for the given mains.*

8. **Question:** Are there any items on the bid schedule that are to be based on either a CoSA spec or a TXDOT spec? If so, please identify which bid items are per CoSA spec and which are per TXDOT spec.

   Response: *Items 205.4, 206.1 and 208.1 have been renumbered to 341.1, 341.2 and 305 respectively. Items 341.1, 341.2, 305 and 3041 are based on TXDOT specifications. Item 530.1 is based on CoSA specifications. All other Items, including Item 550, are based on SAWS specifications.*

9. **Question:** Please confirm that SAWS either has obtained or will be obtaining the required Right-Of-Entry (ROE) agreements for this project and, where applicable, provide the pertinent ROE duration &/or completion deadline for each ROE.

   Response: *All work shall be confined within CoSA, TXDOT and SAWS right-of-way, and SAWS easements. Any additional space beyond what is shown on the plans as one of the above will require the contractor to obtain the ROE at no additional cost to the owner.*

10. **Question:** For the manholes being reconstructed under spec 855.0, please clarify what portions of the manholes are required by SAWS to be removed & replaced? The Standard Specifications for section 855.0 indicate that reconstruction includes the replacement of manhole ring and covers, the cones, and manhole section(s), but since all parts of a manhole can be considered to be a section, these specs could be interpreted to require the entire manhole to be replaced. What portions of these manholes are

required to be removed & replaced by SAWS as a necessary permanent improvement to the structure, regardless of the access needs for CIPP?

Response: *Only the manhole cones, including the rings and covers, shall be removed to facilitate the sewer bypass and CIPP processes. SAWS does not require the removal of the entire manhole, unless the manhole is damaged by the contractor. If a new manhole cover, ring, or reconstructed manhole is damaged by the Contractor, it shall be replaced (as directed by Inspector) by the Contractor at his own expense.*

11. **Question:** At PL #2 on drawing sheets 7 & 9, please clarify what is included in the sewer lateral reconnections - are the sewer laterals just being internally reinstated without excavation, or are the lateral pipes being replaced and reconnected externally with new sewer connections? If the lateral pipes are being replaced, what limits will be replaced? Under what circumstances will the bid item for Sanitary Sewer Laterals under spec 854.0 be used?

    Response: *Unless otherwise directed by the owner or his authorized representative, all laterals will be reinstated in accordance with paragraph 901.5.10.i. Open cut excavation for service reconnections will only be allowed if it has been approved in writing from a SAWS Inspector. Service reconnections shall be in accordance with Item No. 1109, "Sanitary Sewer Lateral Stub Outs or Reconnections."*

12. **Question:** At PL #4, please confirm that TxDOT will allow lane restrictions on the Hunt Lane overpass while the bypass system that is to be placed on that overpass is being set up, and then again when it is being torn down.

    Response: *TXDOT will not allow any lane restrictions on Hunt Lane or Hunt Lane overpass bridge while the bypass system is being set up or being torn down.*

13. **Question:** At PL #4, there is a boxed note on the left side of drawing sheet 15 that says, "Contractor shall not excavate within this property". Please confirm that this is intended to apply to the City of San Antonio property noted as NCB 18159, Blk 26, Lot 1. If that is the correct property, then it appears that manhole 75815 is required to be reconstructed on that property, which will require excavation. Will excavation be allowed to reconstruct that manhole? Please clarify.

    Response: *The said note "Contractor shall not excavate within this property" is intended to apply to the said CoSA property only. This property now belongs to SAWS. Excavations to reconstruct manhole 75815 will be allowed. See revised sheet 15 of 29.*

14. **Question:** At PL #5 for Additive Alternate A on drawing sheet 21, there is a note that is pointing to the piping in Castroville Road that says no excavation is allowed in the paved area. However, it appears that manhole 34321 is required to be reconstructed in the paved area of that street, which will require excavation. Will excavation be allowed to reconstruct that manhole? Please clarify.

    Response: *See Response to Question 4 in this Addendum.*

15. **Question:** At PL #5 for Additive Alternate A on drawing sheets 18 & 19, the 14-foot diameter, 28-foot deep slip-lining pit shown at approximately STA 2+80 for slip-lining Line 5A is not constructible at that location. At the depth and diameter that pit will need to be, there is not adequate room to build and safely shore it in that location given the existing construction limits and obstacles. It will not fit between the buffer zone for the existing retaining wall and the existing manhole 33842. Please revise the location of the slip-lining access point for slip-lining of Line 5A.

    Response: *See Response to Question 4 in this Addendum.*

16. **Question:** At PL #5 for Additive Alternate A, the bypass plan shows an 8" sewer main requiring a bypass system from MH 34320, but there is no pay item for small diameter bypass for this project location and bid item 15 indicates it is only for PL #4. Should there be a pay item 864-S1 for small diameter bypass in PL #5 in Additive Alternate A?

    Response: *See Response to Question 4 in this Addendum.*

17. **Question:** At PL #5 for Additive Alternate B, there is a 410 SY mill & overlay shown at Castroville & Airlawn and a 1,610 SY mill & overlay shown at Castroville & Acme, which adds up to 2,020 SY. However, the bid quantity for this work is 2,392 SY. Is there another mill & overlay area at PL #5 for Additive Alternate B?

    Response: *Additive Alternate "B" has been combined into the Base Bid, and the said total quantity for mill & overlay has been revised to 2020 SY. Please see attached revised drawings.*

18. **Question:** What will be the basis for award? Now that a bypass route has been approved for Location 5, CIPP will be the best option. Please eliminate the Alternate items pertaining to Slip-Lining and incorporate the remaining Alternate items, pertaining to the CIPP, into the Base items.

    Response: *See Response to Question 4 in this Addendum.*

19. **Question:** Can the Slip-Lining Project A-2, for the Bidder's Experience, be for the Bidder's sub-contractor?

    Response: *The Bidder's and/or the Bidder's subcontractors experiences may be counted as the Bidder's experience for slip-lining Project A-2.*

20. **Question:** If a Manhole is called out for Reconstruction but does not need to be Reconstructed for the purpose of installing the CIPP, then will the contractor be permitted to only Rehabilitate the Manhole? If yes, then please provide a pay item with the specification reference for the task of Manhole Rehabilitation.

    Response: *If a Manhole is called out for Reconstruction but does not need to be Reconstructed for the purpose of installing the CIPP, then the contractor shall be permitted to only Rehabilitate the Manhole if it has been approved in writing from SAWS. After completion of CIPP processes if any manhole riser sections were found to be damaged, the manhole shall be reconstructed in accordance with Item 855.*

21. **Question:** If any of the locations that have CIPP specified fall within the 100-year flood plain, then please provide the elevation of the 100-year flood plain. This information is necessary for CIPP wall thickness design and hydrostatic loading. Currently we only see that Location 1 is within the 100-year flood plain, please verify this when providing the elevation.

    Response: *The 100-year flood elevation at Project Location 1 is 637'. Only Project Locations 1 is in the flood plain.*

CHANGES TO THE SPECIFICATIONS

Table of Contents

Insert the following specification under "(Separate Documents)".

TEXAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS, AND BRIDGES.

Bid Proposal

Remove the Bid Proposal in its entirety and replace with the revised version included in this Addendum. This is the version Bidder's should use when submitting a bid for this project.

Statement of Bidder's Experience

Remove the Statement of Bidder's Experience in its entirety and replace with the revised version included in this Addendum. This is the version Bidder's should use when submitting a bid for this project.

Supplemental Conditions

Remove section 26 of the Instruction to Bidders in its entirety (originally inserted as a Supplemental Condition in Addendum 1). There will be no Additive Alternative in this project.

Special Provisions

Remove Item 3040 - Alternatives in its entirety.

CHANGES TO THE PLANS

Remove sheets 2,3,5,15,18 through 24 in its entirety and replace with the revised sheets 2,3,5,15,18,19, and 20 included in this Addendum.

END OF ADDENDUM

This Addendum, including these Five (5) pages, is Eighteen (18) pages with attachments in its entirety.

Engineer Name
Company

2018.10.26 10:46:04-05'00'

BID PROPOSAL

PROPOSAL OF_____, a corporation

a partnership consisting of

_____

an individual doing business as

_____

THE SAN ANTONIO WATER SYSTEM:
Pursuant to Instructions and Invitation to Bidders, the undersigned proposes to furnish all labor and materials as specified and perform the work required for the project as specified, in accordance with the Plans and Specifications for the following prices to wit:

(PLEASE SEE ATTACHED PDF LIST OF BID ITEMS)

Mobilization and Prep of ROW shall be inclusive of line items listed on the attached list.

_____
BIDDER'S SIGNATURE & TITLE

_____
FIRM'S NAME (TYPE OR PRINT)

_____
FIRM'S ADDRESS

_____
FIRM'S PHONE NO. /FAX NO.

_____
FIRM'S EMAIL ADDRESS

The Contractor herein acknowledges receipt of the following:

Addendum Nos._____

The bidder offers to construct the Project in accordance with the Contract Documents for the contract price, and to complete the Project within **355** calendar days after the start date, as set forth in the Authorization to Proceed. **The bidder understands and accepts the provisions of the contract Documents relating to liquidated damages of the project if not completed on time.**

Complete the additional requirements of the Bid Proposal which are included on the following pages.

Solicitation No.: CO-00237
SAWS Sewer Job No: 17-4551
Proposal: Multiple Sewershed - Package 5

ITEM N0.	SPEC NO.	ITEM DESCRIPTION	UNIT	QUAN	UNIT PRICE	TOTAL PRICE
1	341.1	D-GR HMA TY-D SAC-A PG70-22 (3" COMP DEPTH)	S.Y.	3515	$	$
2	341.2	D-GR HMA TY-B PG 64-22	S.Y.	103	$	$
3	305.0	SALVAGING, HAULING & STOCKPILING RECLAIMABLE ASPHALTIC PAVEMENT(3" DEPTH)	S.Y.	3515	$	$
4	530.1	BARRICADE,SIGNS AND TRAFFIC HANDLING (PL #1)	EA.	1	$	$
5	530.1	BARRICADE,SIGNS AND TRAFFIC HANDLING (PL #2)	EA.	1	$	$
6	530.1	BARRICADE,SIGNS AND TRAFFIC HANDLING (PL #3)	EA.	1	$	$
7	530.1	BARRICADE,SIGNS AND TRAFFIC HANDLING (PL #4)	EA.	1	$	$
8	530.1	BARRICADE,SIGNS AND TRAFFIC HANDLING (PL #5)	EA.	1	$	$
9	550.0	TRENCH EXCAVATION SAFETY PROTECTION	L.F.	41	$	$
10	853.0	TEE BASE FIBERGLASS MANHOLE	EA.	3	$	$
11	853.0	TEE BASE FIBERGLASS MANHOLE, EXTRA DEPTH	V.F.	21	$	$
12	854.0	SANITARY SEWER LATERALS	L.F.	155	$	$
13	854.1	TWO-WAY SANITARY SEWER CLEAN-OUT	EA.	7	$	$
14	855.0	RECONSTRUCTION OF EXISTING MANHOLE	EA.	25	$	$
15	858.0	CONCRETE ENCASEMENT, CRADLES, SADDLES AND COLLARS	C.Y.	120	$	$
16	864-S1	BYPASS PUMPING SMALL DIA. SANITARY SEWERS (LP #4)	EA.	1	$	$
17	864-S1	BYPASS PUMPING SMALL DIA. SANITARY SEWERS (LP #5)	EA.	2	$	$
18	864-S2	BYPASS PUMPING LARGE DIA. SANITARY SEWERS (LP #1)	EA.	1	$	$
19	864-S2	BYPASS PUMPING LARGE DIA. SANITARY SEWERS (LP #2)	EA.	1	$	$
20	864-S2	BYPASS PUMPING LARGE DIA. SANITARY SEWERS (LP #3)	EA.	1	$	$
21	864-S2	BYPASS PUMPING LARGE DIA. SANITARY SEWERS (LP #4)	EA.	1	$	$
22	864-S2	BYPASS PUMPING LARGE DIA. SANITARY SEWERS (LP #5)	EA.	1	$	$
23	866.0	SEWER MAIN PRE-TELEVISING (18"-30")	L.F.	1614	$	$
24	866.0	SEWER MAIN PRE-TELEVISING (36"-72")	L.F.	5658	$	$
25	901.0	INSTALL CIPP SANITARY SEWER PIPE-24" DIA. (HOT WATER CURED), ALL DEPTHS	L.F.	616	$	$
26	901.0	INSTALL CIPP SANITARY SEWER PIPE-30" DIA. (HOT WATER CURED), ALL DEPTHS	L.F.	982	$	$
27	901.0	INSTALL CIPP SANITARY SEWER PIPE-48" DIA. (HOT WATER CURED), ALL DEPTHS	L.F.	1000	$	$
28	901.0	INSTALL CIPP SANITARY SEWER PIPE-54" DIA. (HOT WATER CURED), ALL DEPTHS	L.F.	2264	$	$
29	901.0	INSTALL CIPP SANITARY SEWER PIPE-72" DIA. (HOT WATER CURED), ALL DEPTHS	L.F.	2063	$	$
31	1100.0	SLIP-LINING SANITARY SEWERS-72" DIA.(63" FRP)	L.F.	331	$	$
32	1103.1	POINT REPAIR, 30" AND SMALLER IN DIA. (0' - 9' LENGTH)	EA.	3	$	$

33	1103.1	POINT REPAIR, 48" DIA. (0' - 9' LENGTH)	EA.	1	$	$
34	1103.1	POINT REPAIR, 54" DIA. (0' - 9' LENGTH)	EA.	1	$	$
35	1103.1	POINT REPAIR, 72" DIA. (0' - 9' LENGTH)	EA.	1	$	$
36	1103.2	EXTRA LENGTH POINT REPAIR, 30" AND SMALLER IN DIA.	L.F.	12	$	$
37	1103.2	EXTRA LENGTH POINT REPAIR, 48" DIA.	L.F.	5	$	$
38	1103.2	EXTRA LENGTH POINT REPAIR, 54" DIA.	L.F.	5	$	$
39	1103.2	EXTRA LENGTH POINT REPAIR, 72" DIA.	L.F.	5	$	$
40	1103.3	OBSTRUCTION REMOVAL, 30" AND SMALLER IN DIA.(0" - 6' LENGTH)	EA.	3	$	$
41	1103.3	OBSTRUCTION REMOVAL, 48" DIA.	EA.	1	$	$
42	1103.3	OBSTRUCTION REMOVAL, 54" DIA.	EA.	1	$	$
43	1103.3	OBSTRUCTION REMOVAL, 72" DIA.	EA.	1	$	$
44	1109.0	SANITARY SEWER LATERAL STUBOUT OR RECONNECTIONS	EA.	9	$	$
45	3041.0	UNDERSEAL COAT	GAL.	527	$	$
		TOTAL BID (ITEMS 1-45)				$

STATEMENT OF BIDDER'S EXPERIENCE

Multiple Sewershed – Package 5
SAWS Job No. 17-4551
SAWS Solicitation No. CO-00237

A. Please complete **all** the fields below.

If all fields are not completed, the bid may be rejected due to non-responsiveness.

It is not acceptable to indicate "See attached".

Project A-1 is to have been completed by the Bidder or Subcontractor.

□ Project A-1 demonstrates construction of a minimum of 1500 LF by CIPP construction for sanitary sewer mains at least 24 inches in diameter.

□ Project A-1 was completed between 2013 and 2018.

Project A-1 Description

Name of Project:_____ Location:_____

Scope of Work:_____

Pipe Sizes:_____ Pipe Lengths:_____

Owner Name:_____ Owner Title: _____

Owner Phone Number:_____ Construction Cost: _____

Project Start Date:_____ Project End Date: _____

Additional Information: _____

If all fields are not completed, the bid may be rejected due to non-responsiveness.

It is not acceptable to indicate "See attached".

Project A-2 is to have been completed by the Bidder or Subcontractor.

- □ Project A-2 demonstrates construction of a minimum of 1000 LF by Sliplining construction for sanitary sewer mains from 48- through 72-inches.
- □ The Bidder's and/or the Bidder's subcontractors experiences may be counted as the Bidder's experience for slip-lining Project A-2.
- □ Project A-2 was completed between 2013 and 2018.

Project A-2 Description

Name of Project:_____ Location:_____

Scope of Work:_____

Pipe Sizes:_____ Pipe Lengths:_____

Owner Name:_____ Owner Title: _____

Owner Phone Number:_____ Construction Cost: _____

Project Start Date:_____ Project End Date: _____

Additional Information: _____

<u>If all fields are not completed, the bid may be rejected due to non-responsiveness.</u>

<u>It is not acceptable to indicate "See attached".</u>

Project A-3 is to have been completed by the Bidder or Subcontractor.

□ Project A-3 demonstrates construction of a minimum of 1000 LF by CIPP construction for sanitary sewer mains at least 72-inches or larger in diameter.

□ Project A-3 was completed between 2013 and 2018.

Project A-3 Description

Name of Project:_____ Location:_____

Scope of Work:_____

Pipe Sizes:_____ Pipe Lengths:_____

Owner Name:_____ Owner Title: _____

Owner Phone Number:_____ Construction Cost: _____

Project Start Date:_____ Project End Date: _____

Additional Information: _____

INDEX OF DRAWINGS

LIST OF ABBREVIATIONS

A.T.B.	ASPHALT TREATED BASE	NO.	NUMBER
BLDG	BUILDING	N.S.P.I.	NO SEPARATE PAY ITEM
B.M.P.'S	BEST MANAGEMENT PRACTICES	N.T.S.	NOT TO SCALE
B.W.	BOTH WAYS	O.C.	ON CENTER
C.I.	CAST–IRON	O.D.	OUTSIDE DIAMETER
CPS	CITY PUBLIC SERVICE	P.C.	POINT OF CURVATURE
C.S.C.	CONCRETE STEEL CYLINDER PIPE	P.E.	POLISHED END
CU	COPPER	P.I.	POINT OF INTERSECTION
D.I.	DUCTILE IRON PIPE	P.P.	POWER POLE
DIA.	DIAMETER	PSI	POUNDS PER SQUARE INCH
E	OVERHEAD ELECTRIC LINE	P.T.	POINT OF TANGENCY
F.H.	FIRE HYDRANT	RJ	RESTRAINT JOINT
FND.	FOUND	R.O.W.	RIGHT–OF–WAY
F.O.C.	FIBER OPTIC CABLE	S.A.W.S.	SAN ANTONIO WATER SYSTEM
G	NATURAL GAS	SBC	SOUTHWESTERN BELL TELEPHONE COMPANY
G.I.	GALVANIZED IRON	SCH	SCHEDULE
IAW	IN ACCORDANCE WITH	SD	STORM DRAIN
INV.	INVERT	S.S.	SANITARY SEWER
I.P.	IRON PIN	STA.	STATION
IRRG	IRRIGATION	STD.	STANDARD
L.F.	LINEAR FEET	THD.	THREAD
L.L.	LAID LENGTH	UE	UNDERGROUND ELECTRIC
LPTB	LOW PROFILE TRAFFIC BARRIER	UT	UNDERGROUND TELEPHONE
MIN.	MINIMUM	W	POTABLE WATER
MH.	MANHOLE		
M.J.	MECHANICAL JOINT		

SEWER LEGEND

G 6" — EXISTING GAS	PROPOSED POINT REPAIR
T — EXISTING TELEPHONE LINE	PROPOSED SLIPLINING
E — EXISTING ELECTRICAL LINE	PROPOSED CIPP
SD — EXISTING STORM DRAIN	EXISTING SANITARY SEWER MANHOLE
COM — EXISTING COMMUNICATION	PROPOSED SANITARY SEWER MANHOLE
W 8" — EXISTING WATER MAIN	TEMPORARY BYPASS PIPE
EXISTING METER	EXISTING R.O.W.
EXISTING VALVE	EASEMENT
OHE EXISTING OVERHEAD ELECTRICAL LINE	TRAFFIC CHANNELIZING DEVICES
SS 8" — EXISTING SEWER MAIN	L.P.T.B

STATE OF TEXAS
KUM WING CHAN
65399
REGISTERED
PROFESSIONAL ENGINEER

NO.	DATE	REVISION	APP.

UNINTECH CONSULTING ENGINEERS, INC.
2431 E. Evans Road
San Antonio, Texas 78259
Phone: (210) 641-6003
TBPE Reg. No. F-5499
Fax (210) 641-8279
www.unintech.com

MULTI SEWER SHED PK5
SAWS SEWER WORK
INDEX OF DRAWINGS, LEGEND, AND ABBREVIATIONS

DEVELOPER:		CONT.	
SUBMITTED			
APPROVED			
MAP No.		BUDGET PROJ.	33
95% SUBMITTAL	PROJECT NO. 17-4551	DATE: 10/24/2018	
DRAWN: RP	DESIGN: MP	CHECK: KWC	SHEET NO. 2 OF 29

10/24/2018 2:32:17 PM
V:\17-177-V-SAWS-Multi SewerShed Pk 5\2Design Phase\1-Drawings\Util-Waste Water\DGN\17-177V-ss-02_index.dgn

SUMMARY OF QUANTITIES

ITEM	DESCRIPTION	UNIT	PROJECT LOCATION 1 QUANTITY	PROJECT LOCATION 2 QUANTITY	PROJECT LOCATION 3 QUANTITY	PROJECT LOCATION 4 QUANTITY	PROJECT LOCATION 5 QUANTITY	TOTAL QUANTITY
341.1	D-GR HMA TY-D SAC-A PG70-22 (3" COMP DEPTH)	S.Y.	0	0	0	1495	2020	**3515**
341.2	D-GR HMA TY-B PG 64-22	S.Y.	0	0	0	28	75	**103**
305	SALVAGING, HAULING & STOCKPILING RECLAIMABLE ASPHALTIC PAVEMENT (3" DEPTH)	S.Y.	0	0	0	1495	2020	**3515**
530.1	BARRICADE,SIGNS AND TRAFFIC HANDLING (PL #1)	EA.	1	0	0	0	0	**1**
530.1	BARRICADE,SIGNS AND TRAFFIC HANDLING (PL #2)	EA.	0	1	0	0	0	**1**
530.1	BARRICADE,SIGNS AND TRAFFIC HANDLING (PL #3)	EA.	0	0	1	0	0	**1**
530.1	BARRICADE,SIGNS AND TRAFFIC HANDLING (PL #4)	EA.	0	0	0	1	0	**1**
530.1	BARRICADE,SIGNS AND TRAFFIC HANDLING (PL #5)	EA.	0	0	0	0	1	**1**
550	TRENCH EXCAVATION SAFETY PROTECTION	L.F.	0	16	25	0	0	**41**
853	TEE BASE FIBERGLASS MANHOLE	EA.	1	0	2	0	0	**3**
853	TEE BASE FIBERGLASS MANHOLE, EXTRA DEPTH	V.F.	4	0	17	0	0	**21**
854	SANITARY SEWER LATERALS	L.F.	0	155	0	0	0	**155**
854.1	TWO-WAY SANITARY SEWER CLEAN-OUT	EA.	0	7	0	0	0	**7**
855	RECONSTRUCTION OF EXISTING MANHOLE	EA.	1	6	7	5	6	**25**
858	CONCRETE ENCASEMENT, CRADLES, SADDLES AND COLLARS	C.Y.	0	0	120	0	0	**120**
864-S1	BYPASS PUMPING SMALL DIA. SANITARY SEWERS (LP #4)	EA.	0	0	0	1	0	**1**
864-S1	BYPASS PUMPING SMALL DIA. SANITARY SEWERS (LP #5)	EA.	0	0	0	0	2	**2**
864-S2	BYPASS PUMPING LARGE DIA. SANITARY SEWERS (LP #1)	EA.	1	0	0	0	0	**1**
864-S2	BYPASS PUMPING LARGE DIA. SANITARY SEWERS (LP #2)	EA.	0	1	0	0	0	**1**
864-S2	BYPASS PUMPING LARGE DIA. SANITARY SEWERS (LP #3)	EA.	0	0	1	0	0	**1**
864-S2	BYPASS PUMPING LARGE DIA. SANITARY SEWERS (LP #4)	EA.	0	0	0	1	0	**1**
864-S2	BYPASS PUMPING LARGE DIA. SANITARY SEWERS (LP #5)	EA.	0	0	0	0	1	**1**
866	SEWER MAIN PRE-TELEVISING (18"-30")	L.F.	126	872	0	616	0	**1614**
866	SEWER MAIN PRE-TELEVISING (36"-72")	L.F.	0	0	4658	0	1000	**5658**
901	INSTALL CIPP SANITARY SEWER PIPE-24" DIA. (HOT WATER CURED), ALL DEPTHS	L.F.	0	0	0	616	0	**616**
901	INSTALL CIPP SANITARY SEWER PIPE-30" DIA. (HOT WATER CURED), ALL DEPTHS	L.F.	126	856	0	0	0	**982**
901	INSTALL CIPP SANITARY SEWER PIPE-48" DIA. (HOT WATER CURED), ALL DEPTHS	L.F.	0	0	0	0	1000	**1000**
901	INSTALL CIPP SANITARY SEWER PIPE-54" DIA. (HOT WATER CURED), ALL DEPTHS	L.F.	0	0	2264	0	0	**2264**
901	INSTALL CIPP SANITARY SEWER PIPE-72" DIA. (HOT WATER CURED), ALL DEPTHS	L.F.	0	0	2063	0	0	**2063**
1100	SLIP-LINING SANITARY SEWERS-48" DIA.(42" FRP)	L.F.	0	0	0	0	0	
1100	SLIP-LINING SANITARY SEWERS-72" DIA.(63" FRP)	L.F.	0	0	331	0	0	**331**
1103.1	POINT REPAIR, 30" AND SMALLER IN DIA. (0' - 9' LENGTH)	EA.	1	1	0	1	0	**3**
1103.1	POINT REPAIR, 48" DIA. (0' - 9' LENGTH)	EA.	0	0	0	0	1	**1**
1103.1	POINT REPAIR, 54" DIA. (0' - 9' LENGTH)	EA.	0	0	1	0	0	**1**
1103.1	POINT REPAIR, 72" DIA. (0' - 9' LENGTH)	EA.	0	0	1	0	0	**1**
1103.2	EXTRA LENGTH POINT REPAIR, 30" AND SMALLER IN DIA.	L.F.	5	7	0	0	0	**12**
1103.2	EXTRA LENGTH POINT REPAIR, 48" DIA.	L.F.	0	0	0	0	5	**5**
1103.2	EXTRA LENGTH POINT REPAIR, 54" DIA.	L.F.	0	0	5	0	0	**5**
1103.2	EXTRA LENGTH POINT REPAIR, 72" DIA.	L.F.	0	0	5	0	0	**5**
1103.3	OBSTRUCTION REMOVAL, 30" AND SMALLER IN DIA.(0" - 6' LENGTH)	EA.	1	1	0	1	0	**3**
1103.3	OBSTRUCTION REMOVAL, 48" DIA.	EA.	0	0	0	0	1	**1**
1103.3	OBSTRUCTION REMOVAL, 54" DIA.	EA.	0	0	1	0	0	**1**
1103.3	OBSTRUCTION REMOVAL, 72" DIA.	EA.	0	0	1	0	0	**1**
1109	SANITARY SEWER LATERAL STUBOUT OR RECONNECTIONS	EA.	0	9	0	0	0	**9**
3041	UNDERSEAL COAT	GAL.	0	0	0	224	303	**527**

NOTES:
1. ITEMS 341.1, 341.2, 305, AND 3041 ARE BASED ON TXDOT SPECIFICATIONS.

2. ITEM 530.1 IS BASED ON CITY OF SAN ANTONIO SPECIFICATION.

3. ALL OTHER ITEMS ARE BASED ON SAWS SPECIFICATIONS.

STATE OF TEXAS
KUM WING CHAN
65399
REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	REVISION	APP.

UNINTECH CONSULTING ENGINEERS, INC.
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www.unintech.com

MULTI SEWER SHED PK5
SAWS SEWER WORK

SUMMARY OF QUANTITIES

DEVELOPER: CONT.

SUBMITTED
APPROVED

MAP No. BUDGET PROJ. 33

95% SUBMITTAL | PROJECT NO. 17-4551 | DATE: 10/24/2018

DRAWN: RP | DESIGN: MP | CHECK: KWC | SHEET NO. 3 OF 29

3803 SEGUIN RD
CITY OF SAN ANTONIO
NCB 10568 LOT W
IRR 589.35 FT OF TR-4

GATE

MH# 48678
RIM=627.32'
INV (IN)=620.18'
INV (IN)=620.49'
INV (IN)=620.47'
INV (IN)=616.39'
INV 3 (OUT)=616.29' (30" RCP)

CONTROL POINT: AY 1526
DESCIPTION: STAINLESS STEEL ROD
UNDER BRIDGE
ELEVATION: 620.04'
NORTHING(GRID): 13711646.98
EASTHING(GRID): 2152034.12
LATITUDE: N 29° 27'00.36"
LONGITUDE: W 98° 25' 23.83"

MH# 902751
RIM=627.88'
INV 1 (IN)=617.72'
INV 2 (OUT)=617.62'

36" RL @0.06% SLOPE
(12-2514.22)

469' OF 30" FRP @0.07% SLOPE
(DJ-43191)

CAUTION: EXISTING OHE AT
LOWER HEIGHT

MH 48704
RIM=627.74'
INV 1 (IN)=617.05'
INV 2 (IN)=620.14'
INV 3 (OUT)=616.93'

1750 SHIPMAN DR
CITY OF SAN ANTONIO
NCB 10573 BLK LOT
PT OF TR-7 OR 7E

SEGUIN RD

IH 35 ACCESS RD

DO NOT BLOCK
VIA BUS STOP

CONTROL POINT 1
DESCIPTION: IRON ROD
ELEVATION: 626.81'
NORTHING(GRID): 13711393.16
EASTING(GRID): 2152033.149
LATITUDE: N 29°26'57.84"
LONGITUDE: W 98°25'23.86"

407 FT OF 36" RL
(12-2514.22)

53.44'

BILL BOARD
FOUNDATION

N INTERSTATE 35
CITY OF SAN ANTONIO
NCB 10574 BLK LOT E
IRR 238.63FT OF TR 8 OR 8-2

3740 N PANAM EXPY
SALADO CREEK VENTURES LLC
NCB 10571 BLK LOT W IRR 178.47
FT OF SE 473.53 FT OF TR-4

MH# 48762
RIM=630.69'
INV 1 (IN)=620.60'
INV 2 (OUT)=617.74'

1011185
126.12 FT OF 30" RCP @0.07% SLOPE
(DJ-43191)

STA. 1+26.12
END CIPP
MH 48748
RIM=627.97'
INV 1 (IN)=617.77' (30" RCP)
INV 2 (OUT)=617.69' (30" RCP)
REMOVE AND REPLACE WITH FRP
MANHOLE
REFER TO SAWS STD DETAIL
(DD 853-01)

SEE DETAIL "A"

47'

240 FT OF 8" PVC
@1.2% SLOPE
(DJ-4572)

DOG HOUSE MANHOLE FOR
SEWER BYPASS DISCHARGE
MANHOLE

150 FT OF 36" RCP @0.05% SLOPE
(OM-4886)

MH 60295
T 635.7'
V 623'

IH 35

TX DOT ROW

PVT ST

100 YR FLOOD PLAIN
WSEL=637'

SERVICE 121969

MH 547658
RIM=627.97'
INV 1 (IN)=617.73'
INV 2 (IN)=625.15'
INV 3 (OUT)=617.70'

329 FT OF 30" RCP @0.11% SLOPE
(DJ-43191)

MH 60294
T 638'
V 625'

200 FT OF 8" PVC @1.0% SLOPE
(DJ-4572)

3730 N PANAM EXPY
MCGRATH RENTCORP
PRESCON CORP WAREHOUSE
NCB 10574 BLK LOT W IRR 152.12FT
OF E IRR 390.75FT OF TR 8 OR 8-2

36" RL
(12-2514.22)

3714 N PANAM EXPY
CLEAR CHANNEL OUTDOOR INC
CLEAR CHANNEL
NCB 10574 BLK LOT 19

35' SAWS SANITARY
SEWER ESM'T
(VOL. 2829, PG. 487)

MH# 48479
RIM=635.80'
INV 1 (IN)=617.98' (30" RCP)
INV 2 (OUT)=617.89' (30" RCP)

JUNCTION BOX# 48763
RIM=631.0'
INV 1 (IN)=617.24'
INV 2 (OUT)=616.95'

3600 N PANAM EXPY
CHRISMARI INC
SPLASHTOWN
NCB 10574 BLK LOT 23

DOG HOUSE MANHOLE FOR
SEWER BYPASS SUCTION
MANHOLE

STA. 0+00
BEGIN CIPP
MH#48905
RIM=629.77'
INV 1 (IN)=617.98' (30" RCP)
INV 2 (OUT)=617.84' (30" RCP)
RECONSTRUCT MANHOLE

MH 547661
T 636.83'
V 617.01'

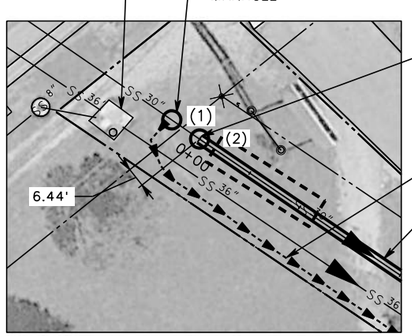
UPRR ROW

254 FT OF 36" RL
@0.05% SLOPE
(12-2514.22)

TEMPORARY SEWER BYPASS

REHABILITATE 126.12' OF 30"
RCP BY CIPP @0.21 SLOPE

FLOW DATA
PROJECT LOCATION 1
COMP KEY 1011185
QMAX =1 MGD
QAVG =0 (OVERFLOW MAIN)
VERIFY MAIN DRY DURING OPERATION



DETAIL "A"
SCALE: 1"=50'

PROJECT LOCATION 1
LAYOUT, BYPASS & CONTROL PLAN

LAYOUT PLAN
SCALE: 1"=100'

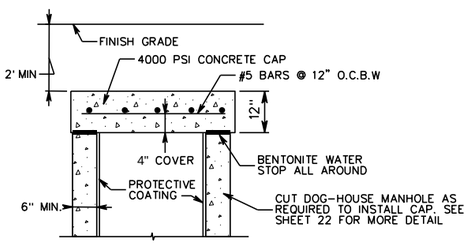
TRENCH EXCAVATION SAFETY PROTECTION

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 FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY 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.

TRENCH EXCAVATION SAFETY PROTECTION SHALL BE APPLIED TO ALL PROTECTIONS AND SHORING FOR EXCAVATIONS WHERE THE WIDTH OF A TRENCH OR EXCAVATION IS NOT GREATER THAN 15 FEET (MEASURE AT THE BOTTOM OF THE EXCAVATION). IF FORMS OR OTHER STRUCTURES ARE INSTALLED OR CONSTRUCTED IN AN EXCAVATION SO AS TO REDUCE THE DIMENSION MEASURED FROM THE FORMS OR STRUCTURE TO THE SIDE OF THE EXCAVATION TO 15 FEET OR LESS (MEASURE AT THE BOTTOM OF THE EXCAVATION), THE EXCAVATION IS ALSO CONSIDERED TO BE A TRENCH. ALL REQUIRED SHORING FOR CIPP & SLIPLINING LAUNCHING AND RECEIVING PITS SHALL BE PAID UNDER ITEM TRENCH EXCAVATION SAFETY PROTECTION. IN ADDITION, TRENCH EXCAVATION SAFETY PROTECTION WILL NOT BE LIMITED TO THESE APPLICATIONS, BUT MAY BE USED WHENEVER DEEMED EXPEDIENT AND PROPER TO ENSUING WORK.

SEWER LEGEND

G 6"	EXISTING GAS		PROPOSED POINT REPAIR
T	EXISTING TELEPHONE LINE		PROPOSED SLIPLINING
E	EXISTING ELECTRICAL LINE		PROPOSED CIPP
SD	EXISTING STORM DRAIN	○	EXISTING SANITARY SEWER MANHOLE
COM	EXISTING COMMUNICATION	○	PROPOSED SANITARY SEWER MANHOLE
W 8"	EXISTING WATER MAIN		TEMPORARY BYPASS PIPE
W	EXISTING METER		EXISTING R.O.W.
	EXISTING VALVE		EASEMENT
OHE	EXISTING OVERHEAD ELECTRICAL LINE		TRAFFIC CHANNELIZING DEVICES
SS 8"	EXISTING SEWER MAIN		L.P.T.B



DOG-HOUSE MANHOLE DETAIL
NOT TO SCALE
(CONTRACTOR SHALL CAP AND SEAL DOG HOUSE MH AT MIN 2' BELOW GRADE N.S.P.I)

0' 25' 50'
SCALE IN FEET

0' 50' 100'
SCALE IN FEET

NO.	DATE	REVISION	APP.

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MULTI SEWER SHED PK5
SAWS SEWER WORK

PROJECT LOCATION 1
LAYOUT, BYPASS & CONTROL PLAN

STATE OF TEXAS
KUM WING CHAN
65399
REGISTERED
PROFESSIONAL ENGINEER

DEVELOPER:		CONT.	
SUBMITTED			
APPROVED			
MAP No. 182586		BUDGET PROJ.	33
95% SUBMITTAL	PROJECT NO. 17-4551		DATE: 10/24/2018
DRAWN: RP	DESIGN: MP	CHECK: KWC	SHEET NO. 5 OF 29

10/24/2018 2:32:50 PM
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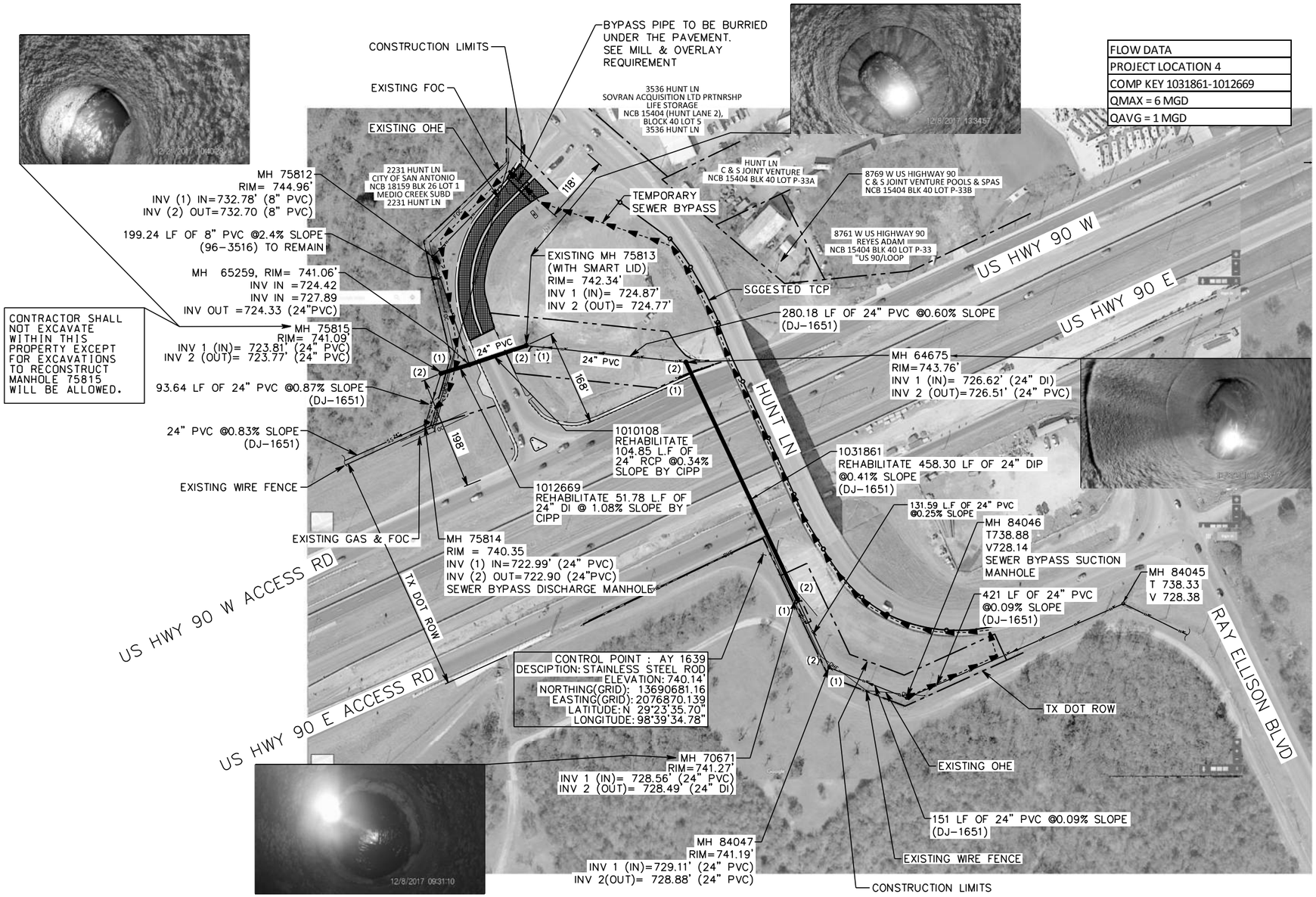


FLOW DATA
PROJECT LOCATION 4
COMP KEY 1031861-1012669
QMAX = 6 MGD
QAVG = 1 MGD

TRENCH EXCAVATION SAFETY PROTECTION

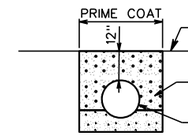
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS, AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY 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.

TRENCH EXCAVATION SAFETY PROTECTION SHALL BE APPLIED TO ALL PROTECTIONS AND SHORING FOR EXCAVATIONS WHERE THE WIDTH OF A TRENCH OR EXCAVATION IS NOT GREATER THAN 15 FEET (MEASURE AT THE BOTTOM OF THE EXCAVATION). IF FORMS OR OTHER STRUCTURES ARE INSTALLED OR CONSTRUCTED IN AN EXCAVATION SO AS TO REDUCE THE DIMENSION MEASURED FROM THE FORMS OR STRUCTURE TO THE SIDE OF THE EXCAVATION TO 15 FEET OR LESS (MEASURE AT THE BOTTOM OF THE EXCAVATION), THE EXCAVATION IS ALSO CONSIDERED TO BE A TRENCH. ALL REQUIRED SHORING FOR CIPP & SLIPLINING LAUNCHING AND RECEIVING PITS SHALL BE PAID UNDER ITEM TRENCH EXCAVATION SAFETY PROTECTION. IN ADDITION, TRENCH EXCAVATION SAFETY PROTECTION WILL NOT BE LIMITED TO THESE APPLICATIONS, BUT MAY BE USED WHENEVER DEEMED EXPEDIENT AND PROPER TO ENSUING WORK.

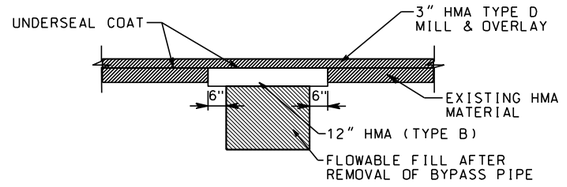
SEWER LEGEND

G 6"	EXISTING GAS		PROPOSED POINT REPAIR
T	EXISTING TELEPHONE LINE		PROPOSED SLIPLINING
E	EXISTING ELECTRICAL LINE		PROPOSED CIPP
SD	EXISTING STORM DRAIN	○	EXISTING SANITARY SEWER MANHOLE
COM	EXISTING COMMUNICATION	○	PROPOSED SANITARY SEWER MANHOLE
W 8"	EXISTING WATER MAIN	▶-▶-▶	TEMPORARY BYPASS PIPE
W	EXISTING METER		EXISTING R.O.W.
	EXISTING VALVE		EASEMENT
OHE	EXISTING OVERHEAD ELECTRICAL LINE		TRAFFIC CHANNELIZING DEVICES
SS 8"	EXISTING SEWER MAIN		L.P.T.B

NOTE:
1. CONTRACTOR SHALL PROTECT SMART LID AT MH 75813(N.S.P.I)
2. CONTRACTOR SHALL REMOVE BYPASS PIPE AND RECONSTRUCT ROADWAY PAVEMENT AS SHOWN BELOW(N.S.P.I)



TEMPORARY BYPASS TRENCH DETAIL(N.S.P.I)

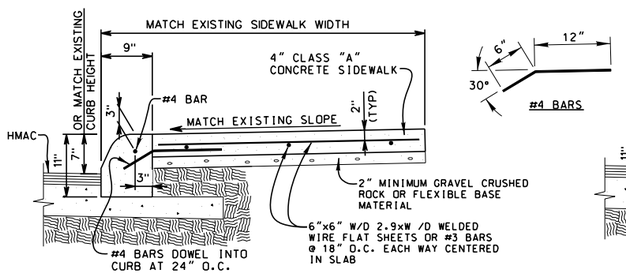


PERMANENT TRENCH REPAIR DETAIL(N.S.P.I)

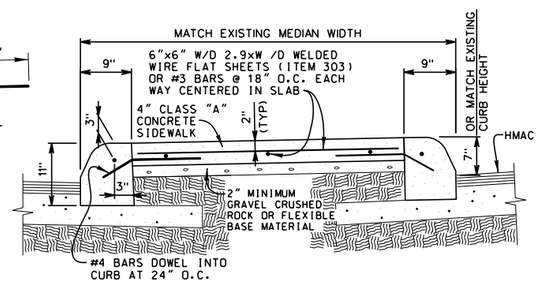
ESTIMATED QUANTITIES - PROJECT LOCATION 4 QUANTITY

ITEM	DESCRIPTION	UNIT	QUANTITIES
341.1	D-GR HMA TY-D SAC-A PG70-22 (3" COMP DEPTH)	S.Y.	1495
341.2	D-GR HMA TY-B PG 64-22	S.Y.	28
305.0	SALVAGING, HAULING & STOCKPILING RECLAIMABLE ASPHALTIC PAVEMENT (3" DEPTH)	S.Y.	1495
530.1	BARRICADE,SIGNS AND TRAFFIC HANDLING (PL #4)	EA.	1
855.0	RECONSTRUCTION OF EXISTING MANHOLE	EA.	5
864-S1	BYPASS PUMPING SMALL DIA. SANITARY SEWERS (LP #4)	EA.	1
864-S2	BYPASS PUMPING LARGE DIA. SANITARY SEWERS (LP #4)	EA.	1
866.0	SEWER MAIN PRE-TELEVISING (18"-30")	L.F.	616
901.0	INSTALL CIPP SANITARY SEWER PIPE-24" DIA. (HOT WATER CURED), ALL DEPTHS	L.F.	616
1103.1	POINT REPAIR, 30" AND SMALLER IN DIA. (0' - 9' LENGTH)	EA.	1
1103.3	OBSTRUCTION REMOVAL, 30" AND SMALLER IN DIA.(0" - 6' LENGTH)	EA.	1
3041.0	UNDERSEAL COAT	GAL.	224

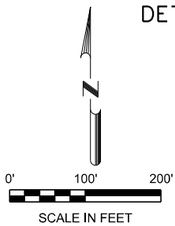
PROJECT LOCATION 4
LAYOUT, BYPASS & CONTROL PLAN



CONCRETE SIDEWALK SECTION



MEDIAN TYP. SECTION



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MULTI SEWER SHED PK5
SAWS SEWER WORK

PROJECT LOCATION 4
BYPASS AND CONTROL PLAN

DEVELOPER:		CONT.	
SUBMITTED			
APPROVED			
MAP No.	108566&106566	BUDGET PROJ.	33
95% SUBMITTAL	PROJECT NO.	17-4551	DATE: 10/25/2018
DRAWN: TR	DESIGN: MP	CHECK: KWC	SHEET NO. 15 OF 29

NOTE:
CONTRACTOR SHALL COMPLETE ALL WORK IN PROJECT LOCATIONS 1 THROUGH 4 BEFORE COMMENCING WORK AT PROJECT LOCATION 5.

STA 0+00
RECONSTRUCT MH 33840
COMP KEY 1026281
RIM 703.91'
INV IN (1)= 675.50' (48" RCP)
INV OUT (2)= 675.50' (48" RCP)

CONSTRUCTION LIMITS

EXISTING MH 34320
T= 704
V= 699.63

8" PVC @0.4% SLOPE
(DJ-4653)

STA.2+81.81
RECONSTRUCT MH 33842
RIM 703.90'
INV IN (1)= 675.52' (48" RCP)
INV IN (2)= 675.52' (8" PVC)
INV OUT (3)= 675.56' (48" RCP)

CONTROL POINT : AY 1644
DESCRIPTION: STAINLESS STEEL ROD
NEAR OLD HWY 90W AND S ACME RD
ELEVATION: 721.48'
NORTHING(GRID): 13700623.36
EASTING(GRID): 2099639.108
LATITUDE: N 29°25'13.41"
LONGITUDE: 98°35'16.97"

1940 AIR LAWN ST
RODRIGUEZ JUAN F
NCB 16322 BLK 1 LOT W
IRR 123.68 FT OF 6

EXISTING NODE 981257
RIM 704.28'
INV IN (1)= 696.41'
INV OUT (2)= 696.32'
(THIS IS NOT PART OF THE
MAIN SEWER SYSTEM)

PHASE 2

EX. POWER POLES

143 LF 48" RL @0.05% SLOPE
(14-4652)

CONSTRUCTION LIMITS

8" PVC

PHASE 2 LINE 5C
1012949
REHABILITATE 281.81 LF
OF 48" RCP
@0.02% SLOPE
(14-4652)
BY CIPP

PHASE 1 LINE 5B
1021819
REHABILITATE 572.63 LF 48" RCP @-0.42 SLOPE
(DJ-4653) BY CIPP

S. ACME RD.

1130 S ACME RD430080
BAMS MACHINE LLC
NCB: 8993 BLK: 20 LOT: 81
WEST LAUREL HEIGHTS

233 DELTA ST
HERNANDEZ JOSE D
& DORA T
NCB 8993 BLK 20
LOT 16& 17

237 DELTA ST
PLEASANTS JOE EDDIE
NCB 8993 BLK 20
LOT 14 AND 15

1119 S ACME RD
DAVIS/PARMER INVESTMENTS LP
NCB 13940 BLK LOT N
IRR 676 FT OF 2 &
E IRR 95 FT OF 6

1146 S ACME RD
HERMAN GILBERT G & MINNIE R
NCB 8993 BLK 20 LOT 80

MH 34322
T 701.53
V 695.14

DELTA ST.

240 CASTROVILLE RD
SCHIEFELBEIN ANNIE L
NCB 8993 BLK 21 LOT
31& 32&33&34

MH 33839
RIM 702.51'
INV IN (1)= 675.48' (48" RCP)
INV OUT (2)= 675.48' (48" RCP)

ACCESS RD.

STATE HWY 151

MH 34000
T 701.69
V 695.14

240 CASTROVILLE RD
SCHIEFELBEIN ANNIE L
NCB 8993 BLK 21 LOT 26
& 27&28&29&30

PHASE 1

58 LF 8" PVC @0.33% SLOPE
(95-5504)

281 LF 8" PVC @0.53% SLOPE
(95-5504)

EXISTING STORM CULVERT BOX

S ACME RD
CITY OF SAN ANTONIO
NCB 13940 BLK 10 LOT PT
TR-A ARB P-102

101 LF 8" PVC @1.28% SLOPE
(93-5510)

2939 CASTROVILLE RD
SCHIEFELBEIN ANNIE L
NCB 8993 BLK 21 LOT N
123 F FT OF 4,5,6, &
ALL OF LOT 7

AIRLAWN
CITY OF SAN ANTONIO
NCB 16322 BLK 1 LOT W
IRR 140 FT OF 10 &
W IRR 123.62 FT OF 11

TXDOT ROW

SEWER BYPASS

CONSTRUCTION LIMITS

2943
CASTROVILLE RD
SAN TEX
LUMBER CO LTD
NCB 8993 BLK
21 LOT
S IRR 29.81 FT
OF 2 &
SW IRR 18.56 FT
OF 3

2937 CASTROVILLE RD
CITY OF SAN ANTONIO
NCB 8993 BLK 21 LOT
SE IRR 2.39 FT OF 3

2935 CASTROVILLE RD
DORANTES ARMANDO
NCB 8993 BLK 21 LOT 8
AT 2935 CASTROVILLE

225 LF 8" PVC
@0.59 % SLOPE
(93-5510)

2933 CASTROVILLE RD
CITY OF SAN ANTONIO
NCB 8993 BLK 21 LOT S
2.37 FT OF 4,5,& S 1.2 FT OF 6

AIRLAWN RD

STA. 8+57.75
RECONSTRUCT MH 33998
RIM 702.43'
INV IN (1)= 675.50' (48" RCP)
INV OUT (2)= 675.50' (48" RCP)

2020 AIR LAWN ST
HICKS ALLEN S
SMITTY'S
NCB: 16322 BLK: 1 LOT: 9
VAN DE WALLE INDUST'L PK 2A

MH 47202
T 701.25
V 693.32

PHASE 2

PHASE 1 LINE 5A
1021818
REHABILITATE 141.83 LF 48" RCP @-1.75% SLOPE
(DJ-4653) BY CIPP

MH 47203
T 701.3
V 693.79

48" RCP @0.12 % SLOPE
(DJ-2253)

5051 CASTROVILLE RD
GONZALES JULIO
NCB 16322 BLK 1 LOT 4

2940 CASTROVILLE RD
SCHIEFELBEIN WILLIAM H
NCB 8671 BLK LOT N
IRR 351.1 FT OF E
IRR 257.86 FT OF 1

410 S.Y.
MILL &
OVERLAY

RECONSTRUCT MH
15'X15' PAY LIMITS ASPHALT
PAVEMENT RECONSTRUCTION

CASTROVILLE RD.

STA. 9+99.60
RECONSTRUCT MH 34321
RIM 701.82'
INV IN (1)= 675.37' (48" RCP)
INV OUT (2)= 673.12' (48" RCP)
TOP OF WEIR 677.12'
ASPHALT PAVEMENT RECONSTRUCTION
15'X15' PAY LIMITS

EXISTING MBC
STORM CULVERT BOX

MH 33999
T 701.7
V 675.23

21 LF 48" RCP @1.0% SLOPE
(DJ-4653)

RECONSTRUCT
MH 47201
INV OUT=675.74' (48" RCP)
ASPHALT PAVEMENT
RECONSTRUCTION
15'X15' PAY LIMITS

1610 S.Y.
MILL & OVERLAY

PROJECT LOCATION 5
LAYOUT AND CONTROL PLAN

0' 50' 100'
SCALE IN FEET

TRENCH EXCAVATION SAFETY PROTECTION

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 FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY 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.

TRENCH EXCAVATION SAFETY PROTECTION SHALL BE APPLIED TO ALL PROTECTIONS AND SHORING FOR EXCAVATIONS WHERE THE WIDTH OF A TRENCH OR EXCAVATION IS NOT GREATER THAN 15 FEET (MEASURE AT THE BOTTOM OF THE EXCAVATION). IF FORMS OR OTHER STRUCTURES ARE INSTALLED OR CONSTRUCTED IN AN EXCAVATION SO AS TO REDUCE THE DIMENSION MEASURED FROM THE FORMS OR STRUCTURE TO THE SIDE OF THE EXCAVATION TO 15 FEET OR LESS (MEASURE AT THE BOTTOM OF THE EXCAVATION), THE EXCAVATION IS ALSO CONSIDERED TO BE A TRENCH. ALL REQUIRED SHORING FOR CIPP & SLIPLINING LAUNCHING AND RECEIVING PITS SHALL BE PAID UNDER ITEM TRENCH EXCAVATION SAFETY PROTECTION. IN ADDITION, TRENCH EXCAVATION SAFETY PROTECTION WILL NOT BE LIMITED TO THESE APPLICATIONS, BUT MAY BE USED WHENEVER DEEMED EXPEDIENT AND PROPER TO ENSUING WORK.

SEWER LEGEND

- G 6" — EXISTING GAS
- T — EXISTING TELEPHONE LINE
- E — EXISTING ELECTRICAL LINE
- SD — EXISTING STORM DRAIN
- COM — EXISTING COMMUNICATION
- W 8" — EXISTING WATER MAIN
- (W) — EXISTING METER
- EXISTING VALVE
- OHE — EXISTING OVERHEAD ELECTRICAL LINE
- SS 8" — EXISTING SEWER MAIN
- PROPOSED POINT REPAIR
- PROPOSED SLIPLINING
- PROPOSED CIPP
- EXISTING SANITARY SEWER MANHOLE
- PROPOSED SANITARY SEWER MANHOLE
- TEMPORARY BYPASS PIPE
- EXISTING R.O.W.
- EASEMENT
- TRAFFIC CHANNELIZING DEVICES
- L.P.T.B

PROJECT LOCATION 5 QUANTITY

ITEM	DESCRIPTION	UNIT	QUANTITIES
341.1	D-GR HMA TY-D SAC-A PG70-22 (3" COMP DEPTH)	S.Y.	2020
341.2	D-GR HMA TY-B PG 64-22	S.Y.	75
305.0	SALVAGING, HAULING & STOCKPILING RECLAIMABLE ASPHALTIC PAVEMENT (3" DEPTH)	S.Y.	2020
530.1	BARRICADE,SIGNS AND TRAFFIC HANDLING (PL #5)	EA.	1
855.0	RECONSTRUCTION OF EXISTING MANHOLE	EA.	6
864-S1	BYPASS PUMPING SMALL DIA. SANITARY SEWERS (LP #5)	EA.	2
864-S2	BYPASS PUMPING LARGE DIA. SANITARY SEWERS (LP #5)	EA.	1
866.0	SEWER MAIN PRE-TELEVISING (36"-72")	L.F.	1000
901.0	INSTALL CIPP SANITARY SEWER PIPE-48" DIA. (HOT WATER CURED), ALL DEPTHS	L.F.	1000
1103.1	POINT REPAIR, 48" DIA. (0' - 9' LENGTH)	EA.	1
1103.2	EXTRA LENGTH POINT REPAIR, 48" DIA.	L.F.	5
1103.3	OBSTRUCTION REMOVAL, 48" DIA.	EA.	1
3041.0	UNDERSEAL COAT	GAL.	303

NO.	DATE	REVISION	APP.

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www.unintech.com

MULTI SEWER SHED PK5
SAWS SEWER WORK

PROJECT LOCATION 5
LAYOUT AND CONTROL PLAN

STATE OF TEXAS
KUM WING CHAN
65399
REGISTERED
PROFESSIONAL ENGINEER

DEVELOPER:		CONT.	
SUBMITTED			
APPROVED			
MAP No.		BUDGET PROJ.	33
95% SUBMITTAL	PROJECT NO. 17-4551	DATE: 10/24/2018	
DRAWN: TR	DESIGN: MP	CHECK: KWC	SHEET NO. 18 OF 29

10/24/2018 2:36:11 PM
V:\17-177-V-SAWS-Multi Sewer Shed Pk 5\2Design Phase 1\-Drawings\Util-Waste Water\DGN\17-177V-ss-61-PL5B-layout.dgn

CONSTRUCTION LIMITS

EXISTING MH 34320
T= 704
V= 699.63

8" PVC @0.4% SLOPE
(DJ-4653)

RECONSTRUCT MH 33842
RIM 703.90'
INV IN (1)= 675.52' (48" RCP)
INV IN (2)= 675.52' (8" PVC)
INV OUT (3)= 675.56' (48" RCP)

MAINTAIN 2-WAY TRAFFIC AT ALL TIME. CONTRACTOR SHALL PROVIDE ROAD CROSSOVER RAMP TO PROTECT BYPASS PIPE.

1940 AIR LAWN ST
RODRIGUEZ JUAN F
NCB 16322 BLK 1 LOT W
IRR 123.68 FT OF 6

COMP KEY
1026281

MH 33839
RIM 702.51'
INV IN (1)= 675.48' (48" RCP)
INV OUT (2)= 675.48' (48" RCP)

PHASE 2

PHASE 2 LINE 5C
1012949
REHABILITATE
281.81 LF OF 48"
RCP
@0.02% SLOPE
(14-4652)
BY CIPP

PHASE 1 LINE 5B
1021819
REHABILITATE 572.63 LF 48" RCP @-0.42 SLOPE
(DJ-4653) BY CIPP

S. ACME RD.

1130 S ACME RD80080
BAMS MACHINE LLC
NCB: 8993 BLK: 20 LOT: 81
WEST LAUREL HEIGHTS

233 DELTA ST
HERNANDEZ JOSE D & DORA T
NCB 8993 BLK 20 LOT 16& 17

237 DELTA ST
PLEASANTS JOE EDDIE
NCB 8993 BLK 20
LOT 14 AND 15

SEWER BYPASS
FOR ALL PHASES

1119 S ACME RD
DAVIS/PARMER INVESTMENTS LP
NCB 13940 BLK LOT N
IRR 676 FT OF 2 &
E IRR 95 FT OF 6

1146 S ACME RD
HERMAN GILBERT G & MINNIE R
NCB 8993 BLK 20 LOT 80

DELTA ST.

REFER TO DETAIL THIS SHEET

8" PVC

CONSTRUCTION LIMITS

SEWER BYPASS

MH 34000
T 701.69
V 695.14

240 CASTROVILLE RD
SCHIEFELBEIN ANNIE L
NCB 8993 BLK 21 LOT
31& 32&33&34

240 CASTROVILLE RD
SCHIEFELBEIN ANNIE L
NCB 8993 BLK 21 LOT 26
& 27&28&29&30

RECONSTRUCT MH 33840
RIM 703.91'
INV IN (1)= 675.50' (48" RCP)
INV OUT (2)= 675.50' (48" RCP)

EXISTING STORM
CULVERT BOX

2935
CASTROVILLE
RD
DORANTES
ARMANDO
NCB 8993
BLK 21 LOT
8
AT 2935
CASTROVILLE

SEWER BYPASS

EXISTING NODE 981257
RIM 704.28'
INV IN (1)= 696.41'
INV OUT (2)= 696.32'

AIRLAWN
CITY OF SAN ANTONIO
NCB 16322 BLK 1 LOT W
IRR 140 FT OF 10 &
W IRR 123.62 FT OF 11

TXDOT ROW

5 ACME RD
CITY OF SAN ANTONIO
NCB 13940 BLK 10 LOT PT
TR-A ARB P-102

CONSTRUCTION LIMITS

2939 CASTROVILLE RD
SCHIEFELBEIN ANNIE L
NCB 8993 BLK 21 LOT N
123 F FT OF 4,5,6, &
ALL OF LOT 7

2943
CASTROVILLE RD
SAN TEX
LUMBER CO LTD
NCB 8993 BLK
21 LOT
S IRR 29.81 FT
OF 2 &
SW IRR 18.56 FT
OF 3

2937 CASTROVILLE RD
CITY OF SAN ANTONIO
NCB 8993 BLK 21 LOT
SE IRR 2.39 FT OF 3

2933 CASTROVILLE RD
CITY OF SAN ANTONIO
NCB 8993 BLK 21 LOT S
2.37 FT OF 4,5,& S 1.2 FT OF 6

MH 47203
T 701.3
V 693.79

143 LF 48" RL @0.05% SLOPE
(14-4652)

PROTECT EXISTING POWER POLES

DETAIL

RECONSTRUCT MH 33998
RIM 702.43'
INV IN (1)= 675.50' (48" RCP)
INV OUT (2)= 675.50' (48" RCP)

MH 47202
T 701.25
V 693.32

2020 AIR LAWN ST
HICKS ALLEN S
SMITTY'S
NCB: 16322 BLK: 1 LOT: 9
VAN DE WALLE INDUSTL PK 2A

PHASE 1 LINE A
1021818
REHABILITATE 141.83 LF 48" RCP @-1.75% SLOPE
(DJ-4653) BY CIPP

48" RCP @0.12 % SLOPE
(DJ-2253)

EXISTING MH 47201
INV OUT=675.74' (48" RCP)

2940 CASTROVILLE RD
SCHIEFELBEIN WILLIAM H
NCB 8671 BLK LOT N
IRR 351.1 FT OF E
IRR 257.86 FT OF 1

SEWER BYPASS.
CUT EXISTING PIPE
TO PERFORM BYPASS.
REPAIR PIPE TO EXISITNG
OR BETTER CONDITION.

SUGGESTED TCP

MH 33999
T 701.7
V 675.23

AIRLAWN RD

5051 CASTROVILLE RD
GONZALES JULIO
NCB 16322 BLK 1 LOT 4

RECONSTRUCT MH 34321
RIM 701.82'
INV IN (1)= 675.37' (48" RCP)
INV OUT (2)= 673.12' (48" RCP)
TOP OF WEIR 677.12'

SEWER BYPASS

INSTALL BYPASS PIPES
INSIDE EXISTING 10' X 3' SBC

CASTROVILLE RD.

MH 47198
T 699.54
V 674.3

EXISTING MBC
STORM CULVERT BOX

CONCRETE DRAINAGE CAHNNEL

INSTALL SEWER BYPASS PIPES
ALONG DRAINAGE CHANNEL

482426
CITY OF SAN ANTONIO
NCB 11380 TR-A
5010 CASTROVILLE RD SAN ANTONIO, TX 78227

INSTALL BYPASS PIPES
INSIDE EXISTING MBC

HWY 90

STATE HWY 151

HWY 151 ACCESS RD.

PHASE 1

TRENCH EXCAVATION SAFETY PROTECTION

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TRENCH EXCAVATION SAFETY PROTECTION SHALL BE APPLIED TO ALL PROTECTIONS AND SHORING FOR EXCAVATIONS WHERE THE WIDTH OF A TRENCH OR EXCAVATION IS NOT GREATER THAN 15 FEET (MEASURE AT THE BOTTOM OF THE EXCAVATION). IF FORMS OR OTHER STRUCTURES ARE INSTALLED OR CONSTRUCTED IN AN EXCAVATION SO AS TO REDUCE THE DIMENSION MEASURED FROM THE FORMS OR STRUCTURE TO THE SIDE OF THE EXCAVATION TO 15 FEET OR LESS (MEASURE AT THE BOTTOM OF THE EXCAVATION), THE EXCAVATION IS ALSO CONSIDERED TO BE A TRENCH. ALL REQUIRED SHORING FOR CIPP & SLIPLINING LAUNCHING AND RECEIVING PITS SHALL BE PAID UNDER ITEM TRENCH EXCAVATION SAFETY PROTECTION. IN ADDITION, TRENCH EXCAVATION SAFETY PROTECTION WILL NOT BE LIMITED TO THESE APPLICATIONS, BUT MAY BE USED WHENEVER DEEMED EXPEDIENT AND PROPER TO ENSUING WORK.

SEWER LEGEND

- G 6" — EXISTING GAS
- T — EXISTING TELEPHONE LINE
- E — EXISTING ELECTRICAL LINE
- SD — EXISTING STORM DRAIN
- COM — EXISTING COMMUNICATION
- W 8" — EXISTING WATER MAIN
- (W) — EXISTING METER
- EXISTING VALVE
- OHE — EXISTING OVERHEAD ELECTRICAL LINE
- SS 8" — EXISTING SEWER MAIN
- PROPOSED POINT REPAIR
- PROPOSED SLIPLINING
- PROPOSED CIPP
- EXISTING SANITARY SEWER MANHOLE
- PROPOSED SANITARY SEWER MANHOLE
- TEMPORARY BYPASS PIPE
- EXISTING R.O.W.
- EASEMENT
- TRAFFIC CHANNELIZING DEVICES
- L.P.T.B

FLOW DATA
PROJECT LOCATION 5
COMP KEY 102181-1012949
QMAX = 31 MGD
QAVG = 8 MGD

STATE OF TEXAS
KUM WING CHAN
65399
REGISTERED
PROFESSIONAL ENGINEER

0' 60' 120'
SCALE IN FEET

NO.	DATE	REVISION	APP.

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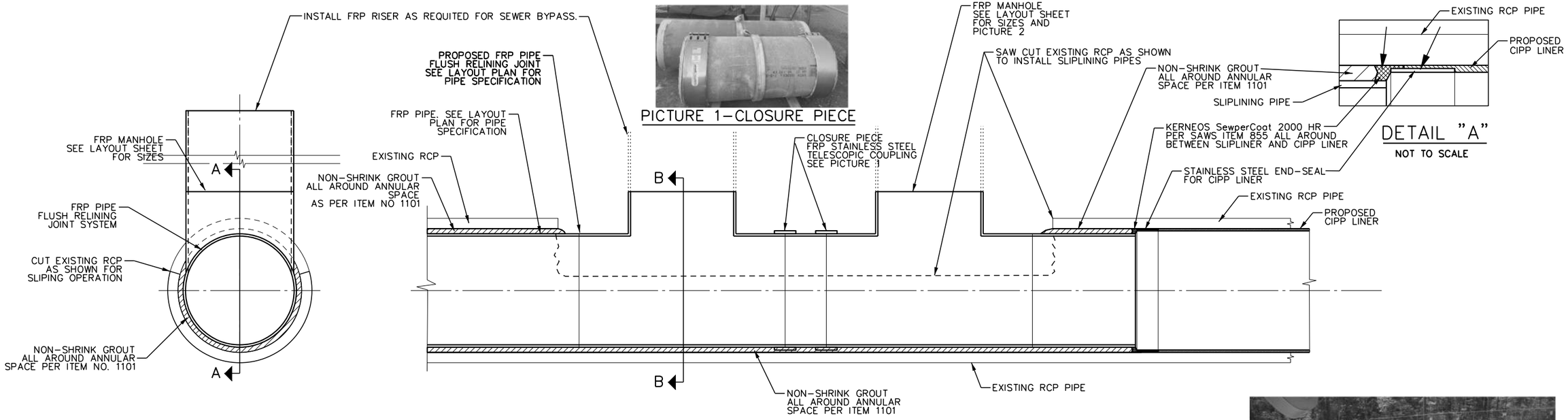
MULTI SEWER SHED PK5
SAWS SEWER WORK

PROJECT LOCATION 5
BYPASS & TRAFFIC CONTROL PLAN

DEVELOPER:		CONT.	
SUBMITTED			
APPROVED			
MAP No. 130572		BUDGET PROJ.	33
95% SUBMITTAL	PROJECT NO. 17-4551	DATE: 10/24/2018	
DRAWN: TR	DESIGN: MP	CHECK: KWC	SHEET NO. 19 OF 29

10/24/2018 2:36:28 PM
V:\17-177-V-SAWS-Multi SewerShed Pk 5\2Design Phase\1-Drawings\Util-Waste Water\DGN\17-177V-ss-62-PL5B-bypass-TCP.dgn

PROJECT LOCATION 5
BYPASS, AND TRAFFIC CONTROL PLAN



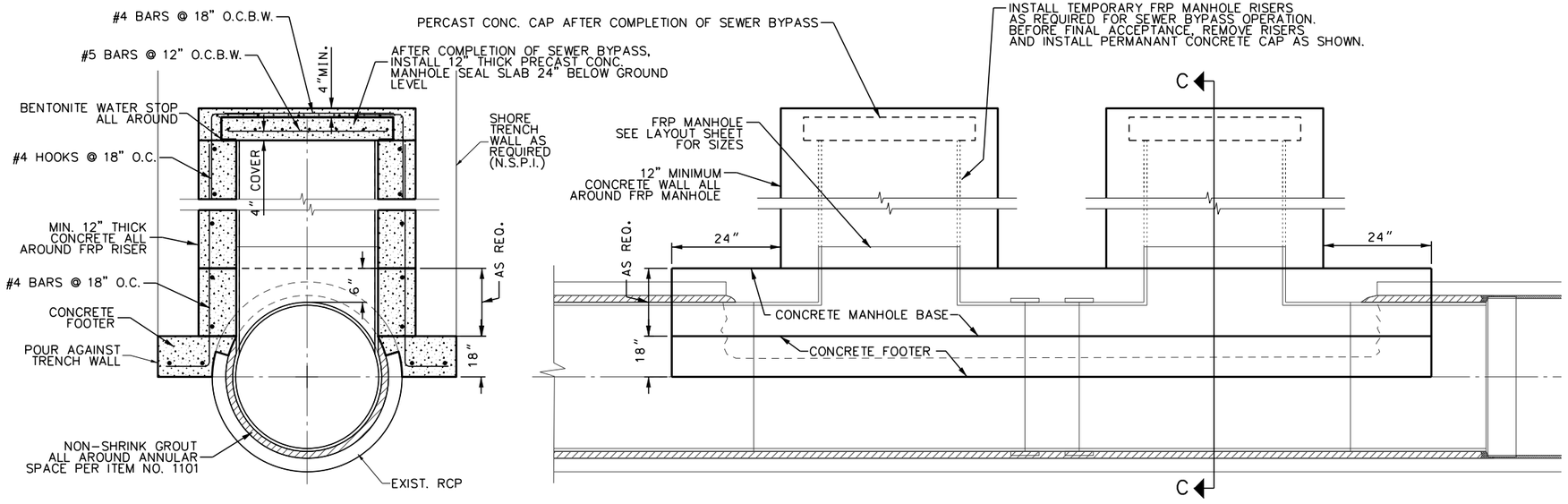
PICTURE 1–CLOSURE PIECE

DETAIL "A"
NOT TO SCALE

SECTION B–B

SLIP–LINING MANHOLE SECTION A–A
SCALE: 1" = 5'

PICTURE 2–FRP MANHOLE



SECTION C–C

SLIP–LINING MANHOLE ELEVATION – CONCRETE SADDLE
SCALE: 1" = 5'

0' 5'
SCALE IN FEET

NO.	DATE	REVISION	APP.

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MULTI SEWER SHED PK5
SAWS SEWER WORK

SLIP LINING MANHOEL DETAILS

STATE OF TEXAS
KUM WING CHAN
65399
REGISTERED PROFESSIONAL ENGINEER

DEVELOPER:		CONT.	
SUBMITTED			
APPROVED			
MAP No.		BUDGET PROJ.	33
95% SUBMITTAL	PROJECT NO. 17-4551	DATE: 10/24/2018	
DRAWN: RP	DESIGN: MP	CHECK: KWC	SHEET NO. 20 OF 29

10/24/2018 2:36:40 PM
V:\17-177-v-SAWS-Multi Sewer Shed Pk 5\2Design Phase\1-Drawings\Util-Waste Water\DGN\17-177-v-ss-81-DTL.dgn