

ADDENDUM NO. 2

Date: **18 October 2011**

San Antonio Water System

Project Name: **Olmos Basin Central Watershed Sewer Relief Line (C-3), Reaches 1 to 4**

Project No.: **08-2512**

Solicitation No.: **B-11-051-CM**

This addendum, applicable to work referenced above, is an amendment to the bidding documents 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 in the space provided in submitted copies of the proposal.

A. Bidding and Contract Requirement Revisions:

Item 1: Bid Proposal

- a) DELETE Section "Bid Proposal" in its entirety (12 pages) and REPLACE with the attached Bid Proposal, Pages BP-1 to BP-12, Addendum No. 2 (10/18/2011). The following changes were made:
- Item No. 20: Added bid item for 12" sewer pipe.
 - Item No. 31: Bid item for Junction Structure MH# 403 was corrected (this previously incorrectly referred to MH#404).
 - Item No. 38: Added bid item for Standard 4' Manhole Extra Depth (>6').
 - Item No. 44: Revised quantity for concrete encasement.
 - Item No. 58: Revised description for trench repair item.
 - Item No. 59: Revised quantity for Salvaging, Hauling, and Stockpiling Reclaimable Asphaltic Pavement.
 - Item No. 60: Revised description for pavement overlay item.
 - Item No. 69 and 70: Added bid items for handling asbestos cement pipe.
 - Item No. 71: Added bid item for storm sewer adjustment on Sheet C-205.

Item 2: Specification Section 02504, Fiberglass Reinforced Polymer Mortar Pipe

- a) DELETE Article 1.05 A. and REPLACE with the following:
"A. Pre-approved manufacturers for fiberglass reinforced polymer mortar pipe, based on method of installation, are listed below:
1. HOBAS, USA, Inc. Approved for Open Cut, Slip Line, Jacking, Boring and Tunneling
1413 Richey Road
Houston, TX 77073
 2. FLOWTITE Pipe Approved for Open Cut only
18585 Samuels Road
Zachary, LA 70791
- b) All FRPM Pipe on project shall be 72 psi. DELETE Article 1.06 E.1. and REPLACE with the following:
"Pipe shall conform to the requirements of ASTM D 3262 and shall be manufactured of glass-fiber-reinforced thermosetting polyester resin mortar with a non-reinforced thermoset liner and non-reinforced polyester resin and sand surface layer. Pipe shall have a minimum stiffness of 72 psi (496 kPa) at 5 percent deflection for direct bury and 72 psi at 5 percent deflection for installation in tunnel and/or jack and bore where there is a primary liner when tested according to ASTM D 2412. Pipe shall meet Designation Code ASTM D 3262-1-2-3-"

Item 3: SAWS Standard Specifications for Construction, Item No. 856, Jacking, Boring or Tunneling Pipe

- a) Annular spaces between the steel casings and the carrier pipelines shall be fully grouted.
- b) Add the following Special Provision to Item No. 856, Jacking, Boring or Tunneling Pipe:
Delete paragraphs 856.4 Measurement and 856.5 Payment in their entirety and replace with the following:
“856.4 Measurement and Payment
Jacking, Boring or Tunneling Pipe will not be measured nor paid for separately. Jacking, Boring or Tunneling Pipe shall be subsidiary to the related Item 848 Sanitary Sewers pay item provided in the Bid Proposal.”
- c) A summary of steel encasement at each of the trenchless crossings is provided in following table:

Reach	Crossing Description	Sheet Reference	No. of Pipes	Carrier Pipe Dia. (in.)	Steel Casing Dia. (in.)	Steel Casing Length (LF)	Steel Casing Thickness* (in.)
1	Siphon Under Storm MBC	S-2	2	54	72	81	0.625
2	Siphon Under Storm SBC	S-3	2	48	66	103	0.625
2	Mulberry Ave.	C-205	1	66	84	72	0.625
3	Siphon Under Storm MBC	C-304	1	60	78	137	0.625
4	Witte Museum Property	C-401 / C-402	1	54	72	649	0.625

Notes:

*Refer to Addendum 2 Drawing Revisions.

Contractor's licensed professional engineer shall be responsible for confirming min. steel casing thickness."

Item 4: Item No. 3000, Special Specifications for Handling Asbestos Cement Pipe

- a) Add the attached Special Specification, Item 3000 (20 pages), to the Technical Specifications of the Contract Documents.

B. Drawing Revisions:

Item 1: Sheet G-002 – Remove and replace Sheet G-002 with the revised Sheet G-002 attached to this addendum. Revisions include:

- a) Under section entitled “Subsurface and Soil Conditions”, delete second sentence which reads “The report of their findings may be examined at the offices of the engineer.” In its entirety.
- b) Under section entitled “Excavation”, delete last paragraph (second paragraph under item 7) and replace with the following: “THE CONTRACTOR MUST STOP THE EXCAVATION IMMEDIATELY AND CONTACT THE SAWS INSPECTOR. THE CONTRACTOR CANNOT BEGIN EXCAVATION ACTIVITIES WITHOUT WRITTEN PERMISSION FROM SAWS.”
- c) Under section entitled “Excavation”, add the following paragraph: “8. ASBESTOS CEMENT (AC) PIPE, ALSO KNOWN AS TRANSITE PIPE AND WHICH IS KNOWN TO CONTAIN ASBESTOS-CONTAINING MATERIAL (ACM), IS LOCATED WITHIN THE PROJECT LIMITS. SPECIAL WASTE MANAGEMENT PROCEDURES AND HEALTH AND SAFETY REQUIREMENTS WILL BE APPLICABLE WHEN REMOVAL AND/OR DISTURBANCE OF THIS PIPE OCCUR. PAYMENT FOR SUCH WORK IS TO BE MADE UNDER SPECIAL SPECIFICATION ITEM NO 3000, “SPECIAL SPECIFICATION FOR HANDLING ASBESTOS CEMENT PIPE.””
- d) Add general note: “PROVIDE CONCRETE ENCASEMENT FOR ALL SEWER PIPES HAVING COVER LESS THAN 3 FT TO SUBGRADE. REFER TO DETAIL 3 ON SHEET D-1. NOTE CONCRETE ENCASEMENT MAY NOT BE SHOWN ON DRAWING PROFILES AT ALL LOCATIONS. CONTRACTOR SHALL PROVIDE CONCRETE ENCASEMENT PROTECTION OF PIPE BASED ON ACTUAL INSTALLED DEPTHS. ALL CONCRETE ENCASEMENT INSTALLED SHALL BE INDICATED ON REDLINES/RECORD DRAWINGS.’

Item 2: Sheet G-003 – Remove and replace Sheet G-003 with the revised Sheet G-003 attached to this addendum. Revisions include:

- a) Note that the “Estimated Quantities” table was replaced to reflect quantity and item changes described in this addendum.

Item 3: Sheet R/A-201 – Remove and replace Sheet R/A-201 with the revised Sheet R/A-201 attached to this addendum. Revisions include:

- a) At end of Note #6, delete “(APPROXIMATELY 900 FT.)” and replace with “(REFER TO SHEET C-110).”

Item 4: Sheet C-101, C-102, and C-103 – Remove and replace Sheet C-101, C-102, and C-103 with the revised Sheet C-101, C-102, and C-103 attached to this addendum. Revisions include:

- a) Delete callout on existing 12” gas line that reads:
“PROPOSED FOR RELOCATION BY OTHERS (12” GAS)”.
Note that the existing 12” gas line on Reach 1, from approx. Sta. 9+00 to approx. 14+50, is planned for abandonment by CPS prior to this SAWS Olmos C-3 project.

Item 5: Sheet C-107 – Remove and replace Sheet C-107 with the revised Sheet C-107 attached to this addendum. Revisions include:

- a) Add callout label for elevations on existing manhole, MH# 166-588/018-01:
“RIM=660.60
8” IN/OUT=652.35
4” IN=656.60”

Item 6: Sheet C-202 – Remove and replace Sheet C-202 with the revised Sheet C-202 attached to this addendum. Revisions include:

- a) On plan and profile callouts for proposed MH#201 add the following invert elevation:
“INV(6” SERVICE)=658.62 (REROUTED SERVICE FROM LIONS FIELD FACILITY)”

Item 7: Sheet C-205 – Remove and replace Sheet C-205 with the revised Sheet C-205 attached to this addendum. Revisions include:

- a) On profile view, delete callout note that reads: “137.27 LF OF 84” STEEL ENCASEMENT” and replace with: “72 LF 84” DIA., 0.625” THICK STEEL ENCASEMENT”
- b) Delete callout on existing storm drain pipe that reads:
“STA. 41+86.32
EXIST. 42” STORM DRAIN
(STORM DRAIN TO BE REROUTED TO 10’X6’ SBC)
INV 656.57
CONTRACTOR SHALL COORDINATE PROPOSED
RELOCATION WITH OWNER PRIOR TO CONSTRUCTION.”

And replace with the following callout:

“STA. 41+86.32
EXIST. 42” STORM DRAIN
INV 656.57 (ESTIMATED)
CONTRACTOR SHALL COORDINATE PROPOSED
ADJUSTMENT WITH SAWS PRIOR TO CONSTRUCTION.
NOTE: CONTRACTOR SHALL BASE THEIR BID PROPOSAL FOR THIS ITEM ON A
STORM SEWER ADJUSTMENT TO INCLUDE UP TO 100 LINEAR FEET OF 42” DIA.
RCP STORM PIPE JOINED TO EXISTING RCP PIPE WITH CONCRETE COLLARS AT
BOTH ENDS WITHIN THE LIONS FIELD PARK”

Item 8: Sheet C-401 and C-402 – Remove and replace Sheet C-401 and C-402 with the revised Sheet C-401 and C-402 attached to this addendum. Revisions include:

- a) On profile view, add note to 72” steel encasement label to indicate steel casing thickness: “72” DIA., 0.625” THICK STEEL CASING”

- Item 9: Sheet S-2** – Remove and replace Sheet S-2 with the revised Sheet S-2 attached to this addendum.
Revisions include:
- a) On profile view, delete callout note that reads: “2 x 81.00 L.F.72” DIA., 0.5” THICK STEEL CASING AT 0.52% SLOPE” and replace with “2 x 81.00 L.F.72” DIA., 0.625” THICK STEEL CASING AT 0.52% SLOPE”
- Item 10: Sheet S-3** – Remove and replace Sheet S-3 with the revised Sheet S-3 attached to this addendum.
Revisions include:
- a) Note that the alignment of the 12" SS main on Sheet S-3 has been revised.
- Item 11: Sheet S-50** – Remove and replace Sheet S-50 with the revised Sheet S-50 attached to this addendum. Revisions include:
- a) Note that the reinforcing bar sizes on sheet S-50 have been added.
- Item 12: Sheet S-55** – Remove and replace Sheet S-55 with the revised Sheet S-55 attached to this addendum. Revisions include:
- a) Note that a Sliding Gate and Stop Log Schedule has been added.
- Item 13: Sheet D-1** – Remove and replace Sheet D-1 with the revised Sheet D-1 attached to this addendum.
Revisions include:
- a) Add note to Detail 1 (Sanitary Sewer Pipe Laid in Trench):
“NOTE: TRENCHES IN PAVED STREETS SHALL BE COVERED WITH A TEMPORARY ALL WEATHER SURFACE TO ALLOW FOR VEHICULAR TRAFFIC UNTIL THE FINAL PAVING IS COMPLETE, INCLUSIVE OF PROVIDING, MAINTAINING, AND REMOVING THE TEMPORARY TRENCH REPAIR PAVEMENT.
REFER ALSO TO SAWS STANDARD SPECIFICATION ITEM NO. 804, PARAGRAPH 804.4.2.d,”

C. Questions Received During Q&A Period:

Q1: We are interested in bidding the Olmos Basin Central Watershed Sewer Relief Main (C-3) project, please confirm if a geotechnical report has been prepared for the project.

The project geotechnical reports completed for this Project, with cover letter dated September 29, 2011, are provided as Supplemental Information available for download at the SAWS Contract Solicitations Website which can be accessed at the link below:

http://www.saws.org/business_center/contractsol/Drill.cfm?id=315&View=Yes

Note that the Supplemental information documents do not supercede the San Antonio Water System construction documents, specifications, special conditions or the Contract Documents.

Q2: On Plan Sheet No. G-002, the Subsurface and Soil Conditions section identifies that a subsurface soil investigation report for this project is available for review by bidders at the office of the Engineer. It is important for bidders to have access to the subsurface soil investigation early in the pre-bid phase. As such, we're very interested in receiving a copy of this report. What is the best and quickest way for bidders to obtain it? Please advise and thanks for your help with this matter.

Refer to response to Q1 and Addendum No. 2 – B. Drawing Revision, Item 1a.

Q3: I have a question regarding the wall thickness of the casing pipes for the various bores on the “Olmos Basin Sewer Relief Main”. The wall thickness is not noted on the drawings or the engineer’s supplemental specifications for casing sizes: 66”, 72”, 78”, 84”, Please clarify

Refer to Addendum items regarding steel encasement thicknesses.

Q4: Bid Item No. 30 – Junction Structure MH#404. We could not locate this structure on Plan/Profile Drawings or specific detail drawings. Is this a required structure which is to be part of this contract?

This bid item was intended for Junction Structure MH# 403, shown on Sheet C-402 at Sta. 80+76.10. The bid proposal item will be revised to refer to MH# 403 (and not MH #404).

Q5: Precast / Removable Concrete Slabs @ All Junction Structures. Drawings / Details do not indicate embedded lifting inserts or lifting lugs. Are these items required?

Yes. The lifting inserts are described in Precast Concrete General Notes #8 on Sheet S-1.

Q6: Junction Structure 30-Inch Watertight Manhole Frames and Covers. Is Standard Detail “DD-852-07” the correct standard for these manhole frames and covers? Is there a preferred Manufacture and Manufacture Model Number for these items?

SAWS latest Standard detail DD-852-07 should be used for the 30" manhole cover.

Q7: On Page BP-11 of the Bid Proposal, it states the Contractor will complete the project with seven hundred thirty (730) calendar days. Is this for final or substantial completion? If for final, is there a substantial completion date for this project?

The specified seven hundred thirty (730) calendar days is the final Contract Time. There is not a “substantial completion date” for this project.

Q8: Concerning material and trench compaction testing, is the Owner or Contractor required to hire and pay for the services of an independent testing laboratory for this project?

Contractor is responsible for paying for and arranging for testing by an approved independent testing laboratory to perform quality control inspection and testing services identified in the individual Specification sections. Payment for testing laboratory services will not be measured or paid for directly, but shall be considered subsidiary to the related bid items of the contract requiring the testing. Refer to Page GC-16, Paragraph 5.3.2 and Paragraph 804.8 and 804.9 of the San Antonio Water System Standard Specifications for Construction, Item No. 804, Excavation, Trenching and Backfill.

Q9: In Specification Section 02504, 1.05.A., it states; “Pre-approved manufacturers for fiberglass reinforced polymer mortar (FRPM) pipe must be listed on SAWS Standard Products List.” We are unable to locate this Products list at the SAWS website. Can you please provide Bidders with the location of the SAWS Standard Products list? Can you also provide bidders with a list of approved manufacturers/vendors for FRPM pipe for this project?

Refer to addendum item for Section 2504 for list of manufacturers.

Q10: While reviewing project Plans and Specifications, we have noticed that some of the Casing pipe for this project has a specified wall thickness, while others do not. What is the required wall thickness of 84” Steel Casing for Bid Item 9 and for 72” Steel Casing in Bid Item 16?

Refer to response to Question 3.

Q11: Liner Plate is mentioned in the specifications, but no information is provided concerning allowable products. Is Liner Plate allowed in lieu of the steel casing? If yes, what is the required thickness (gauge) of liner plate for this project?

Liner plates are for micro tunneling. SAWS normally does not allow micro tunneling unless there is no other choice. Please use steel casing with Jack & Bore.

Q12: Will the annular space between the steel casings and the carrier pipeline be required to be filled with grout?

Annular spaces between the steel casings and the carrier pipelines shall be fully grouted. Refer to San Antonio Water System Standard Specifications for Construction, Item No. 856, Jacking, Boring or Tunneling Pipe, for grout materials required.

Q13: On Plan Sheet No. C-205, there is an 84" Trenchless crossing with a stated length of 132.27 LF. It appears to us that the 84" Trenchless crossing is only 72 LF in length. What is the required length of this casing?

The steel encasement length should be approximately 72 LF.

Q14: On Plan Sheet No. C-104, there is a note stating; "Soil and/or groundwater encountered during construction may contain or have or the potential to contain petroleum hydrocarbons." Is this note only for Plan Sheet No. C-104? We are also assuming that SAWS will be the Generator of petroleum hydrocarbons encountered during construction of this project. Is this correct?

This location is the only known area of concern. SAWS will be the generator.

Q15: Concerning Bid Item 56, we are assuming there is no maximum allowable trench width for the payment of Trench Repair. Is this correct?

Refer to Detail D-1 on Sheet D-1 for Pay Limits for trench pavement replacement. Reference Addendum No. 2, B. Drawing Revisions, Item 12 for clarification notes regarding temporary pavement for trench repair.

Q16: Concerning Bid Item 57, the quantity of 136 CY appears to be light for amount of pavement that will be removed on this project. If there is only 136 CY of salvaged, hauled and reclaimable asphaltic pavement, where on project will this material be removed from?

Refer to Revised Bid Proposal for revised quantity for this item.

Q17: Concerning Bid Item 58, does the quantity of 3" curb to curb asphalt overlay also include the cost of 3" curb to curb roto-milling of in place existing asphalt, or is the 3" curb to curb pavement removal paid for in Bid Item 57?

Milling is included in Bid Item No. 205, "Salvaging, Hauling, and Stockpiling Reclaimable Asphaltic Pavement." Removal of the temporary trench repair pavement shall be subsidiary to the trench repair bid proposal item.

Q18: Concerning Bid Item 58, does the 16,297 SY quantity include removing and replacing the 3" asphalt Trench Repair pavement placed and paid for in Bid Item 56?

No. Reference addendum item clarification notes regarding temporary pavement for trench repair. Removal of the temporary trench repair pavement shall be subsidiary to the trench repair bid proposal item.

Q19: Areas of existing asphaltic pavement along the project alignment include parking lots, radii at cross streets and edges of asphaltic pavement without adjoining curb and gutter. Can SAWS please identify the specific locations and surface dimensions for the 3" asphaltic pavement that will be paid for in Bid Item 58?

Pavement restoration shall include overlay of the existing paved areas of Avenue B with limits measured for payment not to extend beyond 20 feet from outside edge of installed improvements. Contractor is responsible for repairing, to pre-existing or better conditions, any areas outside the payment limits at no additional cost to SAWS.

Q20: Several of the Plan Sheets identify existing irrigation sprinkler systems along the project alignment. The note on the Plan Sheets indicate that repair or replacement of the sprinkler system is incidental to the cost of the project. (No pay item). Can the Owner please provide Bidders with a schematic or as built drawing of these sprinkler systems identifying the size of irrigation piping and location of any electrical boxes and wires associated with the sprinkler systems?

Irrigation as-builts for the lions field irrigation will be provided as supplemental information on the SAWS website. Irrigation as-builts for the Witte Museum were not available. Bidders shall note that the as-builts are provided for information purposes only. SAWS cannot verify the accuracy of these documents.

Q21: Review of the issue for bid drawings indicate there are no lifting inserts for the removable precast concrete slabsWill such items be required? If yes, we will require a detail and/or manufactures model or type of device.

Yes. The lifting inserts are described in Precast Concrete General Notes #8 on Sheet S-1.

Q22: Construction of Reaches 1 – 4 will require Bypass Pumping for existing 12”, 24”, 54” and 60” Sanitary Sewer pipelines. Can you please provide Bidders with the peak gallon per minute flow rates for these four (4) pipeline sizes?

54”

Total wet	Flow (MGD)
Min	6.45
Max	72.22
Average	25.22

24”

Total wet	Flow (MGD)
Min	0.53
Max	7.03
Average	1.78

12”

Total wet	Flow (MGD)
Min	0.24
Max	0.79
Average	0.67

60”

Total wet	Flow (MGD)
Min	6.51
Max	72.33
Average	25.34

Q23: What is the pipe material type for the existing 12", 24", 54" and 60" sewer lines?

60"- Reinforced Concrete Pipe

54"- Reinforced Concrete Pipe

24"- Cast Iron Pipe, Concrete Pipe, Reinforced Concrete Pipe

12" - Vitrified Clay Pipe (VCP) and Polyvinyl Chloride (PVC)

Q24: Bid item 37 shows a quantity of 200 vertical feet of manhole rehabilitation. There are four manholes listed on sheets R/A 101-R/A 401 to be rehabilitated or adjusted. Please confirm the four listed manholes are the only ones requiring rehabilitation.

This bid item quantity includes rehabilitation of existing manholes at locations in which the proposed improvements will connect to (listed on sheets R/A-101 to R/A-401 as rehab/adjusted) and manholes and junction manholes on the existing 60" and 54" parallel sewer that will remain in service.

Q25: Sheet C-205 contains a note on the profile view directing the contractor to reroute the 42" storm drain pipe to a 10' x 6' single box culvert. Please provide plan and profile for this operation.

Refer to Addendum No. 2 – B. Drawing Revision, Item 7.

Q26: Sheet C-101 contains a note on the profile view directing the contractor to relocate a water service as required. What size is the water service?

Record drawings show that it is a 6" Water Service Line. Contractor shall confirm the location and depth of the water line.

Q27: Sheet C-104 contains a note on the plan view directing the contractor to reconnect a wastewater service at station 15+32.32. What size is the service?

Records show that this service is 8". Existing service connections shall be confirmed by Contractor (number, location, size, material, elevations). Refer to San Antonio Water System Standard Specifications for Construction, Item No. 854, Sanitary Sewer Laterals and Item No. 1109, Sanitary Sewer Service, Stubs or Reconnections.

Q28: Sheet C-107 contains a note on the plan view directing the contractor to reroute an existing wastewater service line to manhole 114. What size is the service and will manhole 114 a drop manhole as a result of the service line?

The size of existing service line is 4" (Inv = 656.60 at MH#166-588/018-001). No, the proposed manhole does not become a "drop manhole." The manhole is a tee base fiberglass manhole with a connection to be made with approved fittings as per the specifications.

Q29: Sheet R/A-201 contains a note to reconnect the wastewater service line from the Lions Field Adult Center to manhole 201. The plan view shows a new line. What size is the line? Is the entire line going to be replaced? Will manhole 201 be a drop manhole as a result of the service line?

Contractor is responsible for confirming existing wastewater service lines (number, location, size, material, elevations) from the Lions Field Adult Center facility and rerouting the service connection line(s) to the proposed 66" sewer. line at manhole #201. The bid proposal includes a pay item for new 6" PVC SDR 26 pipe to reroute the service line. Contractor is to submit plan for the sewer/service line relocation. No, proposed MH# 201, does not become a "drop manhole." The manhole is a tee base fiberglass manhole with a connection to be made with approved fittings as per the specifications.

Q30: On Plan Sheet C-101, Sta. 0+12, Contractor is cautioned concerning the relocation and rerouting of an existing 6" potable water service line. We are assuming the water line material is 6" asbestos cement. Is this correct?

Existing service connections shall be confirmed by Contractor (number, location, size, material, elevations).

Q31: On Plan Sheet C-104, Sta. 15+32, Contractor is to locate and connect an existing 8" Waste Water Service at the property line. We're assuming the 8" sewer line material is PVC SDR 35 and only serves the Brackenridge Golf Course Club House. Is this correct?

Records indicate that the existing service line is 8" PVC and provides wastewater service to the golf course club house. Existing service connections shall be confirmed by Contractor (number, location, size, material, elevations).

Q32: On Plan Sheet C-104, Sta. 15+32, Contractor is to locate and connect an existing Waste Water service line for Lots 56 – 58. We are assuming this is a single service line and is 4" PVC SDR 35. Is this correct?

Existing service connections shall be confirmed by Contractor (number, location, size, material, elevations). Refer to San Antonio Water System Standard Specifications for Construction, Item No. 854, Sanitary Sewer Laterals and Item No. 1109, Sanitary Sewer Service, Stubs or Reconnections.

Q33: On Plan Sheet C-107, Sta. 26+10, we are assuming the existing 4" pipe material for the WW Service line is PVC SDR 35. We are also assuming this is a gravity line. Is this correct?

Existing service connections shall be confirmed by Contractor (number, location, size, material, elevations). Refer to San Antonio Water System Standard Specifications for Construction, Item No. 854, Sanitary Sewer Laterals and Item No. 1109, Sanitary Sewer Service, Stubs or Reconnections. The existing service line at MH# 166-588/018-01 is a gravity sewer lateral.

Q34: On Plan Sheet C-107, Sta. 26+73, Contractor is to relocate an existing 6" potable water line. We are assuming the 6" pipe material is asbestos cement. Is this correct?

Existing service connections shall be confirmed by Contractor (number, location, size, material, elevations).

Q35: On Plan Sheet C-205, Sta. 41+86, Contractor is to coordinate with Owner the rerouting of an existing 42" Storm Drain Pipe to a 10' x 6' Single Box Culvert (SBC). We are assuming the referenced SBC is located on Plan Sheet C-204 at Sta. 38+15. There is no Bid Item or Plan Sheet Details for rerouting the 42" Storm Drain Pipe and we are assuming its relocation will be performed by others. Is this correct?

Revised Bid Proposal includes pay item for the storm sewer adjustment. Refer to Addendum item related to Sheet C-205 (Addendum No. 2 – B. Drawing Revision, Item 7).

Q36: On Plan Sheets C-304 thru C-307, Sta. 58+00 – 70+50, Contractor is instructed to protect and support an existing 6" potable water line during trenching and construction of the 54" Sanitary Sewer Main. What is the working pressure class of this existing 6" Ductile Iron Pipe? What type of aggregate material is the 6" pipe bedded in and what are the dimensions of its bedding envelope?

Contractors may obtain SAWS as-builts from SAWS Counter Services.

Q37: On Plan Sheet C-108 and C-109, Contractor is to locate and connect existing Waste Water service lines. We are assuming all these service connections are 4" PVC SDR 35. Is this correct?

Existing service connections shall be confirmed by Contractor (number, location, size, material, elevations). Replaced/new service connections shall be min. 6" diameter, PVC SDR 26. Refer to Details

on Sheet D-5 and San Antonio Water System Standard Specifications for Construction, Item No. 854, Sanitary Sewer Laterals and Item No. 1109, Sanitary Sewer Service, Stubs or Reconnections.

- Q38: Concerning Cast in Place Junction Structure MH# 101, 104, 105, 111, 204, 205, 208 and 310, the width of flow fill around the exterior of each structure isn't clearly identified. What is the required width of flow fill around the exterior of each of these Junction Structures?**

The width of the flowable fill around the structure varies depending on the size of the excavation. The flowable fill is to replace compacted backfill.

- Q39: On Plan Sheet D-2, Details D-2/2 and D-2/3 for precast and monolithic concrete manholes require flow fill to be a minimum 6" width around the exterior of the riser, but this width may vary by project. What is the width of flow fill encasement for concrete manhole risers on this project?**

The width of the flowable fill around the structure varies depending on the size of the excavation. The flowable fill is to replace compacted backfill. The 6" minimum width is to ensure proper filling of all voids.

- Q40: On Plan Sheet D-4, the Detail for Fiberglass Tee Base Manholes shows no flow fill encasement of the riser section. As such, we are assuming the exterior of the fiberglass riser section is not flow fill encased. Is this correct?**

No. All manholes and junction structures shall be backfilled with flowable fill. Refer to Detail 2 on Sheet D-1.

- Q41: The Plan Sheets indicate that some existing electrical / light poles will be in conflict with the planned location of the new sewer piping and structures. We are assuming the Owner or affected utility company will pay all costs associated with the support or relocation of these poles and overhead wires. Is this correct?**

No. Contractor is responsible paying all costs associated with the support or relocation of these poles and overhead wires.. This cost shall be considered subsidiary to the related bid items of the contract requiring this work. Refer to Page GC-25 –GC-26, Paragraph 5.17.

- Q42: We are assuming the Owner or affected utility company will pay all costs associated with the removal and relocation of existing underground utilities in conflict with new sewer piping and structures. Is this correct?**

No. Contractor is responsible for utility location adjustments. Payment for utility location adjustments will not be measured or paid for directly, but shall be considered subsidiary to the related bid items of the contract requiring the adjustment. Refer to Page GC-25 –GC-26, Paragraph 5.17. Refer to Sheet C-104 for notes regarding the existing 12" gas line which will be partially abandoned prior to construction.

- Q43: We are assuming the leak testing of pipe joints, manholes and junction structures for this project will be performed by the Owner or an independent laboratory retained by the Owner. Is this correct?**

No. Contractor is responsible for paying for and arranging for testing by an approved independent testing laboratory to perform quality control inspection and testing services identified in the individual Specification sections. Payment for testing laboratory services will not be measured or paid for directly, but shall be considered subsidiary to the related bid items of the contract requiring the testing. Refer to Page GC-16, Paragraph 5.3.2.

- Q44: Will the deflection testing of sewer piping be performed by the Contractor or Owner?**

Contractor is responsible for deflection testing. Refer to San Antonio Water System Standard Specifications for Construction, Item No. 849, Air And Deflection Testing (Sanitary Sewer).

Q45: Does SAWS have a disposal site for the excess soils generated during the Contractors trenching operations?

No. Contractor is responsible for disposal of excavated materials. Refer to Paragraph 804.6 Disposal of Excavated Materials” of the San Antonio Water System Standard Specifications for Construction, Item No. 804, Excavation, Trenching and Backfill.

Q46: Does SAWS have a disposal site for the asbestos cement pipe that will be excavated and removed from this project?

No. Contractor is responsible for the transport and disposal of asbestos containing waste materials to a duly licensed landfill facility permitted to accept asbestos waste. Refer to San Antonio Water System Standard Specifications for Construction, Item No. 3000, Special Specifications for Handling Asbestos Cement Pipe (attached in Addendum No. 2).

Q47: Regarding the fire hydrants along Avenue B, [bidder] assumes they are in service and can be used for construction water. Is this true?

Refer to Page GC-27, Paragraph 5.25. Contractor is responsible for providing and maintaining water supply. Use of hydrants and payment/metering of water must be coordinated through SAWS.

Q48: Will this contract also cover pavement of adjacent parking lots to Avenue B that are in disrepair?

Pavement restoration in parking areas is limited to only areas along the proposed pipeline. Any areas damaged by the Contractor shall be restored at the expense of the Contractor. Contractor shall document any pre-construction damaged areas in Contractor’s pre-construction video and photographs.

Q49: The 6” sanitary sewer service runs through a golf course and will interrupt several of the tee boxes. Will the contractor be responsible for the reconstruction of the golf course section or have arrangements been made between SAWS and the golf course owner’s to reconstruct these areas?

Contractor is responsible for coordinating this work with golf course representatives. Note that Contractor will not be allowed to work weekends at the golf course.

Q50: Was the 8” line from the golf course club house rerouted during the new bridge construction? Additionally the plans show two man holes on the driveway to the golf course club house do these man holes still exist? On our site tour we could not locate them after the new construction.

No, SAWS is not aware of any sewer rerouting related to the bridge construction. The referenced existing manholes still exist.

Q51: Do any time constraints exist with the construction associated with the golf course section of the project?

Contractor is responsible for coordinating this work with golf course representatives.

Q52: Bid Item #44 states: Twenty-nine (29) manholes are to be abandon throughout the project, after review of the plans; we were unable to identify all 29 manholes that are to be abandoned. Please verify count of manholes to be abandoned.

Manholes to be abandoned include:

- | | | | |
|----------------|-----------------|-----------------|-----------------|
| 1. 166-586/041 | 9. 166-588/044 | 17. 166-588/016 | 25. 168-592/034 |
| 2. 166-586/004 | 10. 166-588/202 | 18. 166-588/015 | 26. 168-592/035 |
| 3. 166-586/001 | 11. 166-588/013 | 19. 166-588/014 | 27. 168-592/040 |
| 4. 166-588/023 | 12. 166-588/012 | 20. 166-588/025 | 28. 170-592/807 |
| 5. 166-588/022 | 13. 166/588/011 | 21. 166-588/030 | 29. 170-592/035 |
| 6. 166-588/021 | 14. 166-588/204 | 22. 166-588/029 | |
| 7. 166-588/020 | 15. 166-588/200 | 23. 166-588/049 | |
| 8. 166-588/019 | 16. 166-588/017 | 24. 168-592/033 | |

This Addendum, including these 12 pages, is 60 pages with attachments in its entirety.

Attachments:

- Bid Proposal (12 pages)
- Item No. 3000, Special Specifications for Handling Asbestos Cement Pipe (20 pages)
- Sheet G-002 (1 page)
- Sheet G-003 (1 page)
- Sheet R/A-201 (1 page)
- Sheet C-101 (1 page)
- Sheet C-102 (1 page)
- Sheet C-103 (1 page)
- Sheet C-107 (1 page)
- Sheet C-202(1 page)
- Sheet C-205 (1 page)
- Sheet C-401 (1 page)
- Sheet C-402 (1 page)
- Sheet S-2 (1 page)
- Sheet S-3 (1 page)
- Sheet S-50 (1 page)
- Sheet S-55 (1 page)
- Sheet D-1 (1 page)

Each bidder is requested to acknowledge receipt of this Addendum No. 2 by his/her signature affixed hereto and to file same with and attached to his/her bid.



Maridel Reyes Jimenez 10-18-11

Approved by ENGINEER
WESTON SOLUTIONS, INC., TEXAS REGISTERED ENGINEERING FIRM F-3123

The undersigned acknowledges receipt of this Addendum No. 2 and the bid submitted herewith is in accordance with the information and stipulations set forth.

Date

Signature of Bidder

END OF ADDENDUM

BID PROPOSAL

PROPOSAL OF _____, a corporation
 a partnership consisting of _____
 an individual doing business as _____

THE SAN ANTONIO WATER SYSTEM:

Pursuant to Instructions and Invitations to Bidders, the undersigned proposes to furnish all labor and materials as specified and perform the work required for the construction of pipelines and appurtenances, San Antonio Water System Job Number 08-2512 in accordance with the Plans and Specifications for the following prices to wit:

No.	Item No.	Description & Estimated Quantities (Unit Price to be written in Words)	Unit Price (Figures)	Total Price (Figures)
1	550	Trench Excavation Safety Protection (All Depths) 8,013 linear feet (L.F.) _____ Dollars and _____ Cents	_____	_____
2	848	Line A, Reach 1 (Josephine to Mill Race) , MH# 101 to MH# 107 [excludes Siphon 1 from MH# 104 to MH# 105] - 66" Gravity Sewer. FRPM ASTM D-3262, SN 72. Complete and In-Place. Inclusive of Excavation, bedding, backfill, dewatering, and testing. 1,220 linear feet (L.F.) _____ Dollars and _____ Cents	_____	_____
3	848	Line A, Siphon 1 on Reach 1 , MH# 104 to MH# 105, 2-Barrel, 54" and 54" FRPM ASTM D-3262, SN 72 Inverted Siphon and 24" HDPE Air Bypass Pipe & Concrete Slab. Inclusive of Jacking, Boring, or Tunneling, Bore Pits, Steel Encasement Pipe & Casing Spacers, Excavation, Bedding, Backfill, Dewatering, and Testing. Complete and In-Place. 251 linear feet (L.F.) _____ Dollars and _____ Cents	_____	_____
4	848	Line A, Reach 1 (Mill Race to Brackenridge Ave/ Lions Field Park) , MH# 107 to MH# 115 [excludes Segment from MH# 111 to MH# 113] - 66" Gravity Sewer. FRPM ASTM D-3262, SN 72. Complete and In-Place. Inclusive of Excavation, bedding, backfill, dewatering, and testing. 885 linear feet (L.F.) _____ Dollars and _____ Cents	_____	_____

No.	Item No.	Description & Estimated Quantities (Unit Price to be written in Words)	Unit Price (Figures)	Total Price (Figures)
5	848	Line A, In Place Replacement on Reach-1, MH #111 to MH #113 -66" Gravity Sewer, FRPM ASTM D-3262, SN 72. Complete and In Place. Inclusive of Excavation, bedding, backfill, and dewatering, removal/cutting & plugging and disposal of existing 60" sewer, and testing. 401 linear feet (L.F.)	_____	_____
		_____ Dollars		
		and _____ Cents		
6	01540	Flow Management and Bypass Pumping on Reach 1 1 lump sum (L.S.)	_____	_____
		_____ Dollars		
		and _____ Cents		
7	848	Line A, Reach 2 (Lions Field Park to E. Mulberry Ave), MH# 115 to MH# 208 [excludes Siphon 2 from MH# 204 to MH# 205 and Trenchless Construction from Sta. 41+94.80 to Sta. 43+27.07] - 66" Gravity Sewer. FRPM ASTM D-3262, SN 72. Complete and In-Place. Inclusive of Excavation, bedding, backfill, and dewatering, and testing. 1,263 linear feet (L.F.)	_____	_____
		_____ Dollars		
		and _____ Cents		
8	848	Line A, Siphon 2 on Reach 2, MH# 204 to MH# 205 - 2- Barrel, 48" and 48" FRPM ASTM D-3262, SN 72, Inverted Siphon and 24" HDPE Air Bypass Pipe and Concrete Slab. Complete and In-Place. Inclusive of Jacking, Boring, or Tunneling, Bore Pits, Steel Encasement Pipe & Casing Spacers, Excavation, Bedding, Backfill, and Dewatering, and testing. 158 linear feet (L.F.)	_____	_____
		_____ Dollars		
		and _____ Cents		
9	848	Line A, Trenchless Crossing at Mulberry on Reach 2, from Sta. 41+94.80 to Sta. 43+27.07 - 66" Gravity Sewer. FRPM ASTM D-3262, SN 72. Complete and In-Place. Inclusive of Jacking, Boring, or Tunneling, Bore Pits, Steel Encasement Pipe & Casing Spacers, Excavation, bedding, backfill, dewatering and testing. 133 linear feet (L.F.)	_____	_____
		_____ Dollars		
		and _____ Cents		

No.	Item No.	Description & Estimated Quantities (Unit Price to be written in Words)	Unit Price (Figures)	Total Price (Figures)
10	01540	Flow Management and Bypass Pumping on Reach 2 1 lump sum (L.S.)	_____	_____
		_____ Dollars		
		and _____ Cents		
11	848	Line A, Reach 3 (E. Mulberry Ave to Parfun Way), MH# 208 to MH# 305 - 60" Gravity Sewer. FRPM ASTM D-3262, SN 72. Complete and In-Place. Inclusive of Excavation, bedding, backfill, and dewatering, and testing. 1,162 linear feet (L.F.)	_____	_____
		_____ Dollars		
		and _____ Cents		
12	848	Line A, Siphon 3 on Reach 3 (Trenchless Crossing at Sta 55+00 to 56+36.97), MH# 305 to MH# 306 - 60" FRPM ASTM D-3262, SN 72, Complete and In-Place. Inclusive of Jacking, Boring, or Tunneling, Bore Pits, Steel Encasement Pipe & Casing Spacers, Excavation, bedding, backfill, dewatering, and testing. 180 linear feet (L.F.)	_____	_____
		_____ Dollars		
		and _____ Cents		
13	848	Line A, Reach 3 (Parfun Way to Tuleta), MH# 306 to MH# 311 - 54" Gravity Sewer. FRPM ASTM D-3262, SN 72. Complete and In-Place. Inclusive of Excavation, bedding, backfill, and dewatering, and testing. 1,592 linear feet (L.F.)	_____	_____
		_____ Dollars		
		and _____ Cents		
14	01540	Flow Management and Bypass Pumping on Reach 3 1 lump sum (L.S.)	_____	_____
		_____ Dollars		
		and _____ Cents		
15	848	Line A, Reach 4 (at Tuleta and at North Witte Parking Lot), MH# 311 to MH# 401 and MH#402 to MH# 403 - 54" Gravity Sewer. FRPM ASTM D-3262, SN 72. Complete and In-Place. Inclusive of Excavation, bedding, backfill, and dewatering, and testing. 160 linear feet (L.F.)	_____	_____
		_____ Dollars		
		and _____ Cents		

No.	Item No.	Description & Estimated Quantities (Unit Price to be written in Words)	Unit Price (Figures)	Total Price (Figures)
16	848	Line A, Trenchless Construction at Witte on Reach 4, MH# 401 to MH# 402 - 54" Gravity Sewer. FRPM ASTM D-3262, SN 72. Complete and In-Place. Inclusive of Jacking, Boring, or Tunneling, Bore Pits, Steel Encasement Pipe & Casing Spacers, Excavation, bedding, backfill, and dewatering, and testing. 679 linear feet (L.F.) _____ Dollars and _____ Cents	_____	_____
17	848	24" Gravity Sewer Pipe, Reach 3 (at MH# 309), PVC ASTM F-679, Complete In-Place. Inclusive of excavation, bedding, backfill, dewatering and testing. 30 linear feet (L.F.) _____ Dollars and _____ Cents	_____	_____
18	848	24" Gravity Sewer Pipe, Reach 4 (at North Witte Parking Lot), MH# 403 to MH# 404- PVC ASTM F-679, Complete In-Place. Inclusive of excavation, bedding, backfill, dewatering and testing. 156 linear feet (L.F.) _____ Dollars and _____ Cents	_____	_____
19	01540	Flow Management and Bypass Pumping on Reach 4 1 lump sum (L.S.) _____ Dollars and _____ Cents	_____	_____
20	848	PVC ASTM D-3034, Gravity Sewer Pipe, 12-inch Diameter (all depths), Complete In-Place. Inclusive of excavation, bedding, backfill, dewatering and testing. 75 linear feet (L.F.) _____ Dollars and _____ Cents	_____	_____
21	848	PVC ASTM D-3034, Gravity Sewer Pipe, 8-inch Diameter (all depths), Complete In-Place. Inclusive of excavation, bedding, backfill, dewatering and testing. 767 linear feet (L.F.) _____ Dollars and _____ Cents	_____	_____

Job No. 08-2512
 Olmos Basin Central Watershed Sewer Relief Line (C-3), Reaches 1 to 4
 Solicitation No. B-11-051-CM

No.	Item No.	Description & Estimated Quantities (Unit Price to be written in Words)	Unit Price (Figures)	Total Price (Figures)
22	551	Temporary Special Shoring. 1 lump sum (LS.)	_____	_____
		_____ Dollars		
		and _____ Cents		
23	850	Junction Structure MH# 101 (Ave B at Josephine). Inclusive of Connection of Existing 60" Sanitary Sewer Line, 66" Stubout with Cap, Fiberglass Barrier Insert, Complete and In-Place. 1 lump sum (LS)	_____	_____
		_____ Dollars		
		and _____ Cents		
24	850	Junction Structure MH# 104 (Siphon 1 Downstream Siphon Structure). Complete and In-Place. 1 lump sum (LS)	_____	_____
		_____ Dollars		
		and _____ Cents		
25	850	Junction Structure MH# 105 (Siphon 1 Upstream Siphon Structure). Complete and In-Place. 1 lump sum (LS)	_____	_____
		_____ Dollars		
		and _____ Cents		
26	850	Junction Structure MH# 111 (Ave. B.) Inclusive of Connection of Existing 60" and Proposed 8" Sanitary Sewer Line, Cutting and Plugging of Existing 60" Sewer. 1 lump sum (LS)	_____	_____
		_____ Dollars		
		and _____ Cents		
27	850	Junction Structure MH# 204 (Siphon 2 Downstream Siphon Structure). Inclusive of Connection of Existing 12" Sanitary Sewer Line. Complete and In-Place. 1 lump sum (LS)	_____	_____
		_____ Dollars		
		and _____ Cents		
28	850	Junction Structure MH# 205 (Siphon 2 Upstream Siphon Structure). Complete and In-Place. 1 lump sum (LS)	_____	_____
		_____ Dollars		
		and _____ Cents		

Job No. 08-2512
 Olmos Basin Central Watershed Sewer Relief Line (C-3), Reaches 1 to 4
 Solicitation No. B-11-051-CM

No.	Item No.	Description & Estimated Quantities (Unit Price to be written in Words)	Unit Price (Figures)	Total Price (Figures)
29	850	Junction Structure MH# 208 (Mulberry Junction Box). Inclusive of Connection of Existing 60" Sanitary Sewer Line, Cutting and Plugging or Existing 60" Sewer. 1 lump sum (LS) _____ Dollars and _____ Cents	_____	_____
30	850	Junction Structure MH# 310 (Ave B at Tuleta). Inclusive of Connection of Existing 54" Sanitary Sewer Line, Cutting and Plugging of 54" Sewer. Complete and In-Place. 1 lump sum (LS) _____ Dollars and _____ Cents	_____	_____
31	850	Junction Structure MH# 403 (Upstream Structure at North Witte Parking lot). Inclusive of Connection of Existing 54" Sanitary Sewer Line, Cutting and Plugging of 54" Sewer. 1 lump sum (LS) _____ Dollars and _____ Cents	_____	_____
32	853	Tee Base Fiberglass Manhole, on 66" Pipe with 60" Riser 16 each (EA.) _____ Dollars and _____ Cents	_____	_____
33	853	Tee Base Fiberglass Manhole, on 60" Pipe with 60" Riser 5 each (EA.) _____ Dollars and _____ Cents	_____	_____
34	853	Tee Base Fiberglass Manhole, on 54" Pipe with 60" Riser 5 each (EA.) _____ Dollars and _____ Cents	_____	_____
35	853	Tee Base Fiberglass Manhole, with 54" Drop Connection, on 54" Pipe 1 each (EA.) _____ Dollars and _____ Cents	_____	_____
36	853	Tee Base MH 60" Riser Extra Depth 395 vertical feet (V.F.) _____ Dollars and _____ Cents	_____	_____

Job No. 08-2512
 Olmos Basin Central Watershed Sewer Relief Line (C-3), Reaches 1 to 4
 Solicitation No. B-11-051-CM

No.	Item No.	Description & Estimated Quantities (Unit Price to be written in Words)	Unit Price (Figures)	Total Price (Figures)
37	852/ 853	Sanitary Sewer Manhole, 4' Dia., Complete and In-Place, Inclusive of connections to existing and proposed sewers. 7 each (EA.) _____ Dollars and _____ Cents	_____	_____
38	853	Standard 4' Manhole Extra Depth (>6') 13 vertical feet (V.F.) _____ Dollars and _____ Cents	_____	_____
39	855/ 910	Manhole Rehabilitation – Structural High Sulfate Lining. 200 vertical feet (V.F.) _____ Dollars and _____ Cents	_____	_____
40	855	Reconstruction of Existing Manhole for Reroute of Service Connection (Sheet C-107 MH#166-588/018) and Lions Field Adult Center (Sheet R/A-201 MH#166-588/48), Inclusive of Coating with Structural High Sulfate Lining per Item 910. 2 each (EA.) _____ Dollars and _____ Cents	_____	_____
41	2003	Odor Control Setup and Removal 1 lump sum (L.S.) _____ Dollars and _____ Cents	_____	_____
42	2003	Odor Control Equipment Rental 1 lump sum (L.S.) _____ Dollars and _____ Cents	_____	_____
43	2003	Odor Control Biochemical Solution 1 lump sum (L.S.) _____ Dollars and _____ Cents	_____	_____
44	858	Concrete Encasement 869 cubic yard (C.Y.) _____ Dollars and _____ Cents	_____	_____
45	862	Abandon existing siphon structure 4 each (EA.) _____ Dollars and _____ Cents	_____	_____

Job No. 08-2512
 Olmos Basin Central Watershed Sewer Relief Line (C-3), Reaches 1 to 4
 Solicitation No. B-11-051-CM

No.	Item No.	Description & Estimated Quantities (Unit Price to be written in Words)	Unit Price (Figures)	Total Price (Figures)
46	862	Abandon WW Manhole 29 each (EA.) _____ Dollars and _____ Cents	_____	_____
47	862	Remove WW Manhole 13 each (EA.) _____ Dollars and _____ Cents	_____	_____
48	862	Abandonment of Sanitary Sewer Main (8"-12"). Cut and Plug with 10' of Grout. Complete and In-Place. 28 each (EA.) _____ Dollars and _____ Cents	_____	_____
49	862	Abandonment of Sanitary Sewer Main (18"-24") Cut and Plug with 10' of Grout. Complete and In-Place. 18 each (EA.) _____ Dollars and _____ Cents	_____	_____
50	862	Abandonment of Sanitary Sewer Main (30" and Larger) Cut and Plug with 10' of Grout. Complete and In-Place. 28 each (EA.) _____ Dollars and _____ Cents	_____	_____
51	854	6" Sanitary Sewer Service PVC SDR 26, ASTM D-3034, 115 psi (Relay for Lions Field Center and Golf Course), Complete and In-Place. Inclusive of coordination with sewer service customer, locating existing building service stubout/clean-out, all fittings, clean-outs, and restoration to pre-construction conditions. 1,460 linear feet (L.F.) _____ Dollars and _____ Cents	_____	_____
52	1109/ 854	Reconnection of Sanitary Sewer Service 10 each (EA.) _____ Dollars and _____ Cents	_____	_____

Job No. 08-2512
 Olmos Basin Central Watershed Sewer Relief Line (C-3), Reaches 1 to 4
 Solicitation No. B-11-051-CM

No.	Item No.	Description & Estimated Quantities (Unit Price to be written in Words)	Unit Price (Figures)	Total Price (Figures)
53	1501	Storm Water Pollution Prevention Plan (SWPPP) and Execution 1 lump sum (L.S.) _____ Dollars and _____ Cents	_____	_____
54	500	Concrete Curb 300 linear feet (L.F.) _____ Dollars and _____ Cents	_____	_____
55	502	Concrete Sidewalks 225 square yard (S.Y.) _____ Dollars and _____ Cents	_____	_____
56	503	Asphaltic Concrete, Portland Cement Concrete and Gravel Driveway 100 square yard (S.Y.) _____ Dollars and _____ Cents	_____	_____
57	504	Concrete Median 267 square yard (S.Y.) _____ Dollars and _____ Cents	_____	_____
58	511/ 804	Cutting and Replacing with Flexible Base and Temporary All Weather Surface to Allow For Traffic Until the Final Asphalt/Concrete Paving is Complete. (Trench Repair). Complete and In-Place. 5,400 square yard (S.Y.) _____ Dollars and _____ Cents	_____	_____
59	208	Salvaging, Hauling, and Stockpiling Reclaimable Asphaltic Pavement. 1,360 cubic yard (C.Y.) _____ Dollars and _____ Cents	_____	_____
60	205	Hot Mix Asphaltic Pavement Type D – 3 inches pavement thickness (Edge of Pavement to Edge of Pavement Overlay). Complete and In-Place. 16,297 square yard (S.Y.) _____ Dollars and _____ Cents	_____	_____

Job No. 08-2512
 Olmos Basin Central Watershed Sewer Relief Line (C-3), Reaches 1 to 4
 Solicitation No. B-11-051-CM

No.	Item No.	Description & Estimated Quantities (Unit Price to be written in Words)	Unit Price (Figures)	Total Price (Figures)
61	804	Hydromulching 1,500 square yard (S.Y.) _____ Dollars and _____ Cents	_____	_____
62	804	Sodding 15,445 square yard (S.Y.) _____ Dollars and _____ Cents	_____	_____
63	530	Barricades, Signs and Traffic Handling 1 lump sum (LS) _____ Dollars and _____ Cents	_____	_____
64	540	Inlet Protection 4 each (EA.) _____ Dollars and _____ Cents	_____	_____
65	542	Temporary Sediment Control Fence (Silt Fence) 8,013 linear feet (L.F.) _____ Dollars and _____ Cents	_____	_____
66	540	Construction Exits (Install/Remove) 311 square yards (S.Y.) _____ Dollars and _____ Cents	_____	_____
67	544	Rock Filter Dams (Type 1 - 5) 100 linear feet (L.F.) _____ Dollars and _____ Cents	_____	_____
68	801	Tree Protection 1 lump sum (LS) _____ Dollars and _____ Cents	_____	_____
69	3000	Asbestos Removal, Transportation, and Disposal 1 lump sum (LS) _____ Dollars and _____ Cents	_____	_____

No.	Item No.	Description & Estimated Quantities (Unit Price to be written in Words)	Unit Price (Figures)	Total Price (Figures)
70	3000	Asbestos Abatement Work Plan 1 lump sum (LS) _____ Dollars and _____ Cents	_____	_____
71	401	Storm Sewer Adjustment to Include Up to 100 Linear Feet of 42" Dia. RCP Storm Pipe Joined to Existing RCP Pipe with Concrete Collars at Both Ends within The Lions Field Park. Complete and In-Place. 1 lump sum (LS) _____ Dollars and _____ Cents	_____	_____

LINE ITEM "A" SUBTOTAL BASE BID (SEWER) \$ _____

No.	Item No.	Description & Estimated Quantities (Unit Price to be written in Words)	Unit Price (Figures)	Total Price (Figures)
72	100	MOBILIZATION 1 LUMP SUM - Percent of the <u>Line Item "A"</u> Subtotal Base Bid written in words _____ Percent (Maximum of 10% of the <u>Line Item "A"</u> Sub-total Base Bid amount)	_____	_____
73	101	PREPARING R.O.W. 1 LUMP SUM - Percent of the <u>Line Item "A"</u> Subtotal Base Bid written in words _____ Percent (Maximum of 5% of the <u>Line Item "A"</u> Sub-total Base Bid amount)	_____	_____

MOBILIZATION, AND PREPARING RIGHT OF WAY SUBTOTAL \$ _____

Mobilization lump sum bid shall be limited to a maximum 10% of the Line Item "A" Sub-total Base Bid amount. Preparing Right-of-Way lump sum bid shall be limited to a maximum of 5% of the Line Item "A" Sub-total Base Bid amount. The Line Item "A" Sub-total base bid is defined as all bid items **EXCLUDING** Item 100, Mobilization and Item 101, Preparing Right-of-Way. **In the event of a discrepancy between the written percentage and dollar amount shown for Mobilization and Preparation of ROW bid items the written percentage will govern. If the percentage written exceeds the allowable maximum stated for mobilization and or preparation of ROW, SAWS reserves the right to cap the amount at the percentages shown and adjust the extensions of the bid items accordingly.**

**TOTAL BID AMOUNT (Line Item "A", Mobilization,
& Preparing Right of Way)**

\$ _____

_____ DOLLARS AND
_____ CENTS

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. _____

OWNER RESERVES THE RIGHT TO ACCEPT THE OVERALL MOST RESPONSIBLE BID.

The bidder offers to construct the Project in accordance with the Contract Documents for the contract price, and to complete the Project within **seven-hundred and thirty (730) 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 Proposal which are included on the following pages.

ITEM NO. 3000

**SPECIAL SPECIFICATIONS FOR
HANDLING ASBESTOS CEMENT PIPE**

This item shall govern for the removal, handling, disturbance, and disposal of asbestos cement (AC) pipe and other asbestos containing materials (ACM) related to the AC pipe work. AC pipe is also known as transite pipe. Since buried AC pipe typically contains approximately 15% to 20% chrysotile and crocidolite asbestos, it is considered to be an asbestos-containing material. The material is classified as non-friable, unless broken at which time its classification changes to friable ACM. The removal and/or disturbance of this material is governed by the National Emissions Standards for Hazardous Air Pollutants (NESHAP) and the Occupational Safety and Health Administration (OSHA).

3000.1 Description: This item shall consist of the handling, disturbance, removal and disposal of AC water pipe, joints, wrappings and other ACM. In order to comply with NESHAP and OSHA regulations, this project will require workers with specialized training using wet work procedures to cut and remove AC pipe, AC pipe joints, valves (any type) containing ACM and surrounding soils containing ACM. A Texas Department of Health (TDH) licensed Asbestos Consultant shall develop the asbestos work practices and monitoring in the Contractor's Health & Safety Plan to be reviewed by SAWS Environmental Division and City of San Antonio (COSA) Environmental representatives. It is the contractor's responsibility to obtain the services of a licensed Asbestos Consultant authorized in the State of Texas and this work shall be considered subsidiary to this item. Any other ACM encountered that has not been identified by the SAWS inspector or not shown on SAWS plans will be not be authorized for payment. Any other disturbance, handling, or disposal of AC water pipe that is necessary due to authorized work by any other agency will be paid for by that agency under a different special specification and a different bid item number.

To meet and/or exceed NESHAP and OSHA guidelines, the contractor will subcontract the AC water pipe handling to an Environmental Protection Agency (EPA) accredited and TDH licensed Asbestos Abatement Contractor and TDH Licensed Asbestos Consultants.

An alternative method would entail the disturbance, handling, repair, and disposal of the AC pipe by an authorized TDH licensed worker with the required course of an asbestos worker awareness class or a TDH required asbestos training course preparing workers to handle disturbed ACM. Review of the asbestos work practices and monitoring in the Contractor's Health & Safety Plan will still need to be performed by a licensed TDH Asbestos Consultant.

San Antonio Water System Standard Specifications for Construction

NESHAP guidelines apply to projects with at least 260 linear feet or 35 cubic feet or 160 square feet. NESHAPS also applies when AC pipe becomes or will become “regulated asbestos containing material” or RACM. This means that if at least 260 linear feet of the AC pipe has become crushed, crumbled, or pulverized, then the project is subject to the NESHAP. If the Texas Department of Health (TDH) limit of 260 LF is exceeded, it will be the responsibility of the contractor will be responsible for the TDH administrative fee. The asbestos consultant shall be responsible for submitting the TDH notification with copies also submitted to SAWS Environmental Division and the City of San Antonio Environmental Division , if the quantity of 260 LF is exceeded.

During the disjoining operation of AC pipe removal, only the portion that has become RACM would be counted toward the threshold amount if the debris caused by the disjoining operation is cleaned up so that it does not contaminate a greater length of pipe. . If the generated AC pipe debris is not properly cleaned up, then the AC pipe must be considered contaminated, and the whole length is treated as asbestos-containing waste material. If the scope of this project may involve the threshold amount (260 linear feet or greater), then a Demolition/Renovation Notification Form will need to be sent to TDH by the Contractor. This form will need to be post-marked no later than 11 working days prior to the start of any asbestos disturbance.

All AC pipe projects will require that NESHAP and OSHA guidelines are met and/or exceeded in areas where AC pipe is to be disturbed. This means that all AC pipe disturbance will require a third party TDH licensed asbestos consultant and asbestos contractor on-site during AC pipe disturbance. An asbestos abatement work plan shall be provided to SAWS Environmental Division and City of San Antonio Environmental Division representatives by both the licensed asbestos consultant and asbestos contractor. Upon completion of the AC pipe project an air monitoring abatement report shall be required by the contractor’s asbestos consultant. Copies of the final abatement report shall be prepared and submitted to SAWS Environmental Division and COSA Environmental representatives by the contractor’s consultant. OSHA requires that during any ACM disturbance, regardless of amount, the asbestos worker(s) shall be properly protected during potential asbestos exposure, 29 CFR, Subpart Z, 1910.1101.

3000.2 Definitions: The following terms are defined for the nature of this work.

- A. Air Monitoring - The process of measuring the fiber concentration of a known volume of air collected during a specific period of time. The analysis procedure utilized for asbestos is the NIOSH Standard Analytical Method for Asbestos in Air, Method 7400. Transmission electron microscopy (TEM) may be utilized for lower detection limits and/or specific fiber identification.

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- B. Air Monitoring Technician - The person licensed by the Texas Department of Health to conduct air monitoring for an asbestos abatement project or related activity. The Air Monitoring Technician may only obtain air samples, and may only perform analysis of air samples with an upgraded Air Monitoring Technician License, which includes completion of the NIOSH-582 equivalent course. The air-monitoring technician shall be an employee of a licensed asbestos laboratory or a licensed Asbestos Consultant agency.
- C. Amended Water - Water to which a surfactant has been added.
- D. Asbestos - The asbestiform varieties of serpentines and amphiboles. Specifically, chrysotile, crocidolite, grunerite, amosite, anthophyllite, actinolite, and tremolite.
- E. Asbestos Containing Material (ACM) - Material or products that contain more than 1.0% of any kind of asbestos.
- F. Asbestos Containing Waste Material - asbestos containing material or asbestos contaminated objects requiring disposal
- G. Authorized Personnel - Any person authorized by the Contractor and required by work duties to be present in the work area or other regulated areas.
- H. Authorized Visitor – SAWS representatives, and any representative of a regulatory or other agency having jurisdiction over the project.
- I. Asbestos Consultant - That person licensed by the Texas Department of Health to perform the following asbestos related functions:
 - (1) Project design; (2) Asbestos surveys and condition assessment of ACM; (3) Asbestos Management Planning; (4) The collection of bulk material samples, airborne substance samples and the planning of sampling strategies; (5) Owner-representative services for asbestos abatement projects or O&M programs, including air monitoring and project management; (6) Consultation regarding regulatory compliance and all aspects of technical specifications and contract documents; and (7) The selection, fit testing, and appropriate use of personal protection equipment and the development of asbestos related engineering controls.
- J. Abatement Contractor - The company, agency, or entity licensed by the Texas Department of Health that has been retained by SAWS or the Contractor to perform asbestos abatement and other associated functions.

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- K. Class II Asbestos Work (OSHA Standard) – Activities involving the removal of ACM, which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.
- L. Competent Person – One who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them.
- M. Encapsulant - A specific adhesive designed to lock down and minimize the fiber release of asbestos containing materials and asbestos contaminated materials.
- N. Friable Asbestos - Asbestos-containing material, which can be crumbled to dust, when dry, under hand pressure, and includes previously non-friable material after such previously non-friable material becomes damaged to the extent that, when dry, it may be crumbled, pulverized, or reduced to powder by hand pressure.
- O. HEPA Filter - A high efficiency particulate air filter capable of removing particles > 0.3 microns in diameter with 99.97% efficiency.
- P. NESHAP - The National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61).
- Q. NIOSH - The National Institute for Occupational Safety and Health.
- R. OSHA - The Occupational Safety and Health Administration.
- S. Regulated Area – An area established by the Contractor to demarcate areas where asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work accumulate; and a work area within which airborne concentrations of asbestos, exceed or there is a reasonable possibility they may exceed the permissible exposure limit.
- T. Regulated Asbestos-containing Material (RACM) – (1) Friable asbestos material; (2) Category I non-friable ACM that has become friable; (3) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading; or, (4) Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by forces expected to act on the material in the course of the demolition or renovation operations regulated by 40 CFR Part 61, Subpart M.

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- U. Staging area – A pre-selected area where containerized asbestos containing waste material will be placed prior to removal from the project site.
- V. Surfactant - A chemical wetting agent added to water to improve penetration.

3000.3 Applicable Standards and Guidelines: All work under these specifications shall be done in strict accordance with all applicable Federal, State, and local Regulations, standards, and codes governing asbestos abatement and any other trade work done in conjunction with the asbestos abatement. Work activities must also comply with these and other SAWS and City of San Antonio Specifications related to health and safety.

The most recent edition of any relevant regulation, standard, or code shall be in effect. Where there exists conflict between the regulations, standards, codes, or these specifications, the most stringent requirements shall be utilized.

The Contractor shall comply with, at minimum, the following specific regulations:

- A. Occupational Safety and Health Administration (OSHA) including but not limited to:
 - 1. Title 29 Code of Federal Regulations Section 1910.1001 - General Industry Standard for Asbestos.
 - 2. Title 29 Code of Federal Regulations Section 1910.134 - General Industry Standard for Respiratory Protection.
 - 3. Title 29 Code of Federal Regulations Section 1926 - Construction Industry.
 - 4. Title 29 Code of Federal Regulations Section 1910.2 - Access to Employee Exposure and Medical Records.
 - 5. Title 29 Code of Federal Regulations Section 1910.1200 - Hazard Communication.
- B. Environmental Protection Agency (EPA) including but not limited to:
 - 1. Title 40 Code of Federal Regulations Part 61 Subpart M - National Emission Standard for Asbestos.
- C. Texas Department of Health including but not limited to:

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1. Texas Department of Health - Texas Administrative Code, Title 25, Chapter 295, Subchapter C - Texas Asbestos Health Protection.
 2. Texas Department of Health - Texas Administrative Code, Title 25, Chapter 325 - Texas Solid Waste Regulations.
 3. Texas Department of Health - Texas Civil Statutes, Article 4477-A, Section 12, General Provisions 295.31 to 295.73.
- D. American National Standards Institute (ANSI)
- E. American Society for Testing and Materials (ASTM)
- F. Department of Transportation - HM 181

3000.4 Submittals and Notices

- A. At the Pre-construction Conference/Meeting, all training records, certifications, medical records, and laboratory qualifications will be submitted for review to SAWS Environmental Division and COSA Environmental representatives as well as the following:
1. In order to comply with the SAWS Project Construction Health and Safety Program requirements for any project with the potential to involve friable ACM, the Contractor will be responsible for developing and implementing an asbestos removal work plan in accordance with NESHAP, OSHA, SAWS Special Specifications, Item Number 3000, and state requirements. As such, Contractors submitting bids for the project must have a Texas Department of Health (TDH) licensed Asbestos Consultant provide detailed asbestos specific safety and work plans for ensuring worker and community protection. Plans submitted by the Asbestos Consultant must include the person or firms name, address, phone number and TDH certification. Health and Safety plans for working with ACM must address the guidance provided in these special specifications. The guidance provided in this special specification is not intended and does not constitute asbestos abatement project design as described under TAC 25, Chapter 295.47 (TDH asbestos regulations).
 2. Submit documentation satisfactory to SAWS Environmental Division and COSA Environmental representatives that an Initial and/or Negative Exposure Assessment in accordance with OSHA Standard 29 CFR 1911 has or will be performed (as applicable).

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3. Submit documentation satisfactory to SAWS Environmental Division and COSA Environmental representatives that the Contractor's employees, including foremen, supervisors and any other company personnel or agents who may be exposed to airborne asbestos fibers or who may be responsible for any aspects of asbestos disturbance activities, have received adequate training in compliance with applicable rules and regulations.
4. Submit documentation to SAWS Environmental Division and COSA Environmental representatives of a respiratory protection program for affected employees as per OSHA Standard 29 CFR 1910.134.
5. Submit documentation to SAWS Environmental Division and COSA Environmental representatives from a physician that all personnel who may be required to wear a respirator are medically monitored to determine whether they are physically capable of working while wearing the required respiratory protection without suffering adverse health effects. In addition, document that personnel have received medical monitoring as is required in compliance with applicable rules and regulations.
6. Submit to SAWS Environmental Division and COSA Environmental representative's documentation of respirator fit testing for all Contractor employees and agents who must enter the work area. This fit testing shall be in accordance with qualitative procedures as detailed in the OSHA Standard 29 CFR 1910.134. Optionally, the fit testing may be quantitative in nature.
7. Name of OSHA monitoring Consultant/Lab. The Contractor will be responsible for air monitoring as required to meet OSHA Requirements.
8. Submit proof satisfactory to SAWS Environmental Division and COSA Environmental representatives that required permits, site location and arrangements for transport and disposal of asbestos containing waste materials have been made.

B. During Asbestos Disturbance Activities:

1. Submit copies to SAWS Environmental Division and COSA Environmental representatives of all transport manifests, trip tickets, and disposal receipts for all asbestos waste materials removed from the work area during the project. The Contractor will sign manifests as the SAWS's representative (generator) for

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the AC pipe and provide copies to SAWS Construction Inspections for final payment.

2. Upon completion of the AC pipe project an abatement report shall be required by the contractor's asbestos consultant. Copies of the final abatement report shall be prepared and submitted to SAWS Environmental Division and COSA Environmental representatives by the contractor's consultant.

3000.5 Construction Requirements

- A. The Work includes all Work specified herein, to include mobilization and demobilization, labor, materials, overhead, profit, taxes, transportation, disposal fees, administrative fees incidental cost, etc. Estimating areas, quantities, weight, etc., are the sole responsibility of the Contractor.
- B. The Contractor shall remove, seal, transport and dispose of all impacted asbestos-containing materials in compliance with all current Federal, State and local regulations, laws, ordinances, rules, standards and regulatory agency recommended requirements. Asbestos disturbance and/or removal activities shall be conducted by properly trained, accredited, and licensed personnel using proper personal protective equipment.
- C. The Contractor shall notify SAWS and City representatives, if applicable, at least 72 hours in advance prior to beginning removal and/or disturbance of the AC pipe. AC pipe disturbance shall be conducted during regular business hours, Monday-Friday. No weekend work of AC pipe disturbance is allowed, unless special circumstances require the contractor to do so.
- D. Time is of the essence in removing the asbestos-containing materials from the project area. All work must be completed within the time period specified. SAWS and the COSA representative will be responsible for coordinating this work in high-density areas, such as schools, church facilities, and residential areas.
- E. All required notifications required to state regulatory agencies will be made by the Contractor with a copies provided to SAWS and City representatives, including but not limited to the TDH Demolition/Renovation Notification Form. If 260 linear feet or greater of AC pipe will become crushed, crumbled or pulverized, then the project is subject to NESHAP regulations and a Demolition/Renovation Notification

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Form will need to be sent to TDH by the Contractor. This form will need to be post-marked no later than 11 working days prior to the start of any asbestos disturbance.

- F. The Contractor shall have an on-site supervisor, who is an OSHA Competent Person, present on the job site at all times that the work is in progress. This supervisor shall be thoroughly familiar with and experienced at asbestos disturbance and other related work and shall be familiar with and shall enforce the use of all safety procedures and equipment. He shall be knowledgeable of all applicable EPA, OSHA, NIOSH and TDH requirements and guidelines.
- G. Prior to commencing any preparation of the work areas for asbestos disturbance, the Contractor shall post all required documents, warning signs and, as necessary, erect physical barriers in order that the work area may be secured.
- H. The Contractor has sole and primary responsibility for the “means and/or methods” of the work and obligation to SAWS to make inspections of the work at all stages and has sole responsibility to supervise the performance of the work. Certain work practices for AC pipe disturbance are prohibited as per Section 3000.10.B.1.
- I. The Contractor shall be responsible for site safety and for taking all necessary precautions to protect the Contractor’s personnel, SAWS and COSA personnel and the public from asbestos exposure and/or injury. The Contractor shall be responsible for maintaining the integrity of the work area.
- J. The Contractor shall confine operations at the site to the area requiring disturbance of AC pipe and the general site area associated with the proximity of the project. Portions of the site beyond areas on which the indicated work is required are not to be disturbed. The Contractor will not unreasonably encumber the site with materials or equipment. If asbestos containing waste materials are required to be stored overnight, it will be properly labeled, secured, and containerized to preclude unauthorized disturbance of the waste materials.
- K. The Contractor shall be responsible for the transport and disposal of asbestos containing waste materials to a duly licensed landfill facility permitted to accept asbestos waste. The Contractor shall be responsible for obtaining and coordinating waste disposal authorization from a TCEQ licensed landfill. Waste manifests shall be used to transport the AC pipe from the project site to the final landfill disposal site. The Contractor will sign manifests as the SAWS’s representative (generator) for the AC pipe and provide copies to SAWS Construction Inspections for final payment.

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3000.6 Site Security

- A. The Contractor shall demarcate the area of AC pipe disturbance (“regulated area”) with barrier tape and warning signs, as per OSHA regulation 29 CFR 1926.1101. Access to the regulated area will be limited to only authorized personnel. Authorized personnel will have to have asbestos awareness training, respiratory training, etc. including SAWS and COSA personnel.
- B. Entry into the work area by unauthorized individuals shall be reported immediately to SAWS and COSA representatives by the Contractor.
- C. A logbook shall be maintained immediately outside of the regulated area. Anyone who enters the regulated area must record name, affiliation, time in, and time out for each entry

3000.7 Personal Protective Equipment

- A. All work which will or may disturb asbestos-containing materials as specified shall be accomplished utilizing, as a minimum disposal suits with protective head cover, gloves, boots, eye protection, proper respiratory protection, decontamination by HEPA vacuuming and/or wet methods and wet wiping all equipment. The Contractor shall provide hard hats and/or other protection as required for job conditions or by applicable safety regulations. Disposal suits consisting of material impenetrable by asbestos fibers shall be provided to all workers and authorized visitors in sizes adequate to accommodate movement without tearing. Workers will be provided protective clothing from the time of first disturbance of asbestos-containing or contaminated materials until final cleanup is completed.
- B. Respiratory Protection: The Contractor shall use removal techniques, methods and equipment which will not permit the fiber count to exceed the OSHA Permissible Exposure Level (PEL) of 0.1 fibers per cubic centimeter (f/cc) of air as detected by personal air sampling methods. Any remedial measures taken by the Contractor to meet this requirement will be at the Contractor’s expense.
 - 1. The Contractor’s Competent Person shall ensure use of the appropriate respiratory protection for the work being performed. For minimum legal respiratory requirements, see OSHA Standards 29 CFR 1910.134, 29 CFR 1910.1001, and 29 CFR 1926.1101. All respiratory equipment, such as respirators, filters, etc. shall be

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certified by the National Institute of Occupational Safety and Health (NIOSH) for use in asbestos contaminated atmospheres.

2. The Contractor's Competent Person shall perform an Initial and/or Negative Exposure Assessment, which shall be performed on employees who have been trained in compliance with the OSHA regulations. Employees exposures shall be collected using objective data that is to demonstrate whether the materials specified for removal can release airborne fibers in concentration levels exceeding 0.1 fibers per cubic centimeters (f/cc) during an eight-(8) hour time weighted average (TWA) and the excursion limit of 1.0 f/cc. For the purpose of the assessment, the work conditions should be those having the greatest potential for releasing asbestos fibers. Removal methods using conventional hand tools shall be performed in an area that requires a minimum of a seven-(7) hour work shift with employees performing functions normally required for a total project. Removal, for the purposes of the assessment, should be performed with methods most likely to release fibers and that do not render the asbestos-containing materials friable. Properly trained employees shall wear proper protective clothing and respirators during the assessment. Initial and/or Negative Exposure Assessments shall be performed in accordance with OSHA Standard 29 CFR 1926.1101.

The development of the Health & Safety Plan by the Contractor's TDH licensed Asbestos Consultant shall include determining the adequacy of the Contractor's air monitoring data (which must be performed within the previous 12 months of the project start date) for the Initial and/or Negative Exposure Assessment, based in part on site-specific factors such as changes in personnel or work methods used during AC pipe removal. If this type of air monitoring data needs to be reviewed during the course of a project, the Contractor's Asbestos Consultant shall review the data in order to determine if it is adequate. Any downgrade in personal protective equipment related to asbestos exposure shall be requested in writing to SAWS Health & Safety Department, the COSA Environmental Services Department, and approved by a TDH licensed Asbestos Consultant. This request may be granted only when all regulations and pertinent sections of this special specification for respiratory protection are met.

3. The Contractor shall begin AC pipe removal operations (i.e., breaking, sawing, cutting, or repairing the pipe) in powered air purifying respirators (PAPRs) equipped with dual HEPA filters. PAPRs will be utilized until such time that air monitoring results indicate that half-face respirators may be used. Any changes

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(downgrade or upgrade) in respiratory protection will be based upon an 8-hour time weighted average (TWA) of fiber concentrations in the regulated area. Eight hour TWA's will be calculated daily by the Contractor's OSHA monitoring firm, for personal samples. The highest calculated 8 hour TWA shall be used to determine the type of respirator to be worn. The type of respirators worn will be selected in accordance with 29 CFR 1926.1101 (h) (3).

The Contractor may request a respiratory protection downgrade, approved by a TDH licensed Asbestos Consultant, in writing to SAWS Health & Safety Department and COSA Environmental Services Department when all regulations and pertinent sections of this special specification for respiratory protection are met.

4. Workers shall be provided with personally issued, individually identified respirators.
5. No one wearing a beard shall be permitted to wear a respirator.

110.8 Air Monitoring

- A. **Personal Air Monitoring:** The Contractor shall provide personal air sampling as required by OSHA regulations. The OSHA TWA permissible exposure limit (PEL) for asbestos (0.1 f/cc) shall not be exceeded. Personal air samples shall be obtained by a TDH licensed Asbestos Air Monitoring Technician and analyzed by an accredited, independent TDH licensed Phase Contrast Microscopy (PCM) laboratory. OSHA monitoring results shall be posted at the project site and made available to all affected Contractor personnel on a daily basis.
- B. The Contractor shall provide, as a minimum, personal air monitoring on each worker who is cutting, (wet) sawing, breaking, or repairing the AC pipe.
- C. **Area Air Monitoring:** At any time that visible airborne fibers are generated or that wet work procedures are not used, all work will immediately cease until air monitoring by a TDH-licensed Asbestos Consultant Agency has started. The Contractor's on-site Competent Person shall be responsible for making this determination; however, periodic, random site visits by SAWS and COSA Inspectors will field-verify the objectivity of the Competent Person in these matters. Once initiated, the sampling and frequency of the area air monitoring will be dependent upon on the specific work practices being used by the workers at that time. However, the area air monitoring shall include, as a minimum, samples collected

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inside the regulated area, and upwind and downwind of the regulated area. The TDH licensed Asbestos Consultant Agency hired by the Contractor shall determine the need for additional samples and shall amend the Health & Safety Plan (with a copy to SAWS and COSA) to include sampling protocols.

- D. Area air monitoring shall be conducted in accordance with applicable Federal, State, and local requirements. The cost of area air monitoring due to failure to use adequate wet work procedures will be borne by the Contractor. Copies of all results will be provided to SAWS Environmental Division and COSA Environmental representatives.
- E. Area air sampling shall be mandatory in high density areas such as schools, residential areas, and certain other locations as determined by SAWS Environmental Division and COSA Environmental representatives and made clear in individual SAWS bid documents/plans.

3000.9 Employee Training

- A. Training shall be provided by the Contractor to all employees or agents who may be required to disturb asbestos containing or asbestos contaminated materials for AC pipe handling and auxiliary purposes and to all supervisory personnel who may be involved in planning, execution or inspection of such projects. The training shall be in accordance with OSHA Standard 29 CFR 1926.1101 for “Class II asbestos work”.
- B. At a minimum, Contractor employees who will be potentially exposed to asbestos shall have completed within the last 12 months, an 8-hour Asbestos Awareness training course taught by a TDH licensed Asbestos Training Provider. The training course shall cover topics including, but not be limited to: the health effects of asbestos and work practices related to the handling of AC pipe.
- C. The Contractor’s Competent Person shall have completed within the last 12 months, a 40-hour Asbestos Contractor Supervisor training course taught by a TDH licensed Asbestos Training Provider. The training course shall cover topics including, but not be limited to: the health effects of asbestos, employee personal protective equipment, medical monitoring requirements for workers, air monitoring procedures and requirements for workers, work practices for asbestos abatement, personal hygiene procedures, special safety hazards that may be encountered, and other topics as required.

3000.10 AC Pipe Handling:

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- A. General: The Contractor shall properly remove, handle, transport and dispose of all AC pipe specified in the SAWS bid documents/plans for this project. All work involving AC pipe and other ACM products must be addressed in Health and Safety Program documents submitted to SAWS and COSA representatives. To comply with the SAWS and COSA Project Construction Health and Safety Program, Contractors submitting bids for the project must have a TDH licensed Asbestos Consultant provide detailed asbestos specific safety and work plans for ensuring worker and community protection. Health and Safety Program plans are to include provisions for the discipline of any worker failing to use wet work procedures or failing to use designated personnel protective equipment.

The Contractor shall remove ACM with wet methods or by other controlled techniques approved by the TDH, EPA, and OSHA and in accordance with these specifications and the Contractor-provided Health & Safety Plan. Alternative removal methods must be approved at time of the Contractor's submittals. The Contractor shall take special care to prevent damage to the adjacent structures, materials and finished materials not required for demolition to access ACM.

The Contractor shall limit his use of the premises to the work area indicated. Access to the work area shall be controlled by the Contractor. All electrical equipment, etc., shall have ground fault circuit interrupter (GFCI) protection. The Contractor shall properly demarcate, barricade and contain the work and/or regulated areas.

The work consists of providing GFCI protection, the use of approved equipment with engineering controls, sufficiently wetting the asbestos-containing materials using a surfactant or lock-down encapsulant, removing the asbestos-containing materials, HEPA vacuuming the work area, wet wiping the work area, double-bagging/double-wrapping the waste and removing carefully as indicated herein and in accordance with the Contractor-provided Health & Safety Plan.

- B. Equipment: Equipment used to cut, break, or otherwise disturb AC pipe and associated asbestos-containing materials may include, but are not limited to: wet-cutting saws, saws equipped with point of cut ventilator (saw equipped with a water mister) or enclosures with HEPA filtered exhaust air, snap cutters, manual field lathes, pressure and non-pressure tapping devices.

Equipment used to either control visible emissions of fibers, contain the work area, or facilitate the clean-up of debris may include, but are not limited to: airless spray equipment, pump-up sprayers, surfactant, lock-down encapsulant, HEPA vacuums, brushes, brooms, shovels, disposable

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rags, polyethylene sheeting of 6-mil thickness, moisture resistant duct tape, asbestos warning signs, notices and barrier tape.

Alternative dismantling equipment may be substituted for the materials indicated herein, but must be approved by the SAWS Health & Safety Office and/or COSA Environmental Service Department.

1. Prohibited Work Practices and Engineering Controls: the following work practices and engineering controls shall not be used for work related to asbestos or for work which disturbs ACM, regardless of asbestos exposure or the results of Initial Exposure Assessments:
 - a. High-speed abrasive disc saws that are not equipped with point of cut ventilator or enclosures with HEPA filtered exhaust air.
 - b. Other high-speed abrasive tools, such as disk sanders.
 - c. Carbide-tipped cutting blades.
 - d. Electrical drills, chisels, and rasps used to make field connections in AC pipe.
 - e. Shell cutters used to cut entry holes in AC pipe.
 - f. A hammer and chisel used to remove couplings or collars on AC pipe.
 - g. Compressed air used to remove asbestos, or materials containing asbestos, unless the compressed air is used in conjunction with an enclosed ventilation system designed to capture the dust cloud generated by the compressed air.
 - h. Dry sweeping, dry shoveling or other dry clean-up of dust and debris containing ACM.
 - i. Employee rotation as a means of reducing employee exposure to asbestos.

- C. General Removal Work Practices: AC pipe has been identified as a non-friable ACM with the potential to become friable ACM. The material is classified as non-friable, unless broken at which time its classification changes to friable. NESHAP guidelines apply to projects with at least 260 linear feet or 35 cubic feet or 160 square feet. NESHAPS also applies when AC pipe becomes or will become “regulated asbestos containing material” or RACM. This means that if at least 260 linear feet of the AC

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pipe has become crushed, crumbled, or pulverized, then the project is subject to the NESHAP. During the disjoining operation of AC pipe removal, only the portion that has become RACM would be counted toward the threshold amount if the debris caused by the disjoining operation is cleaned up so that it does not contaminate a greater length of pipe. . If the generated AC pipe debris is not properly cleaned up, then the AC pipe must be considered contaminated, and the whole length is treated as asbestos-containing waste material. If the scope of this project may involve the threshold amount (260 linear feet or greater), then a Demolition/Renovation Notification Form will need to be sent to TDH by the Contractor. This form will need to be post-marked no later than 11 working days prior to the start of any asbestos disturbance.

All AC pipe projects will require that NESHAP and OSHA guidelines are met and/or exceeded in areas where AC pipe is to be disturbed. This means that all AC pipe disturbance will require a third party TDH licensed asbestos consultant and asbestos contractor on-site during AC pipe disturbance. An asbestos abatement work plan shall be provided to SAWS and City representatives by both the licensed asbestos consultant and asbestos contractor. Upon completion of the AC pipe project an air monitoring abatement report shall be required by the contractor's asbestos consultant. Copies of the final abatement report shall be prepared and submitted to SAWS and COSA representatives by the contractor's consultant. OSHA requires that during any ACM disturbance, regardless of amount, the asbestos worker(s) shall be properly protected during potential asbestos exposure, 29 CFR, Subpart Z, 1910.1101.

In order to comply with SAWS Project Construction Health and Safety Program requirements for any project with the potential to involve friable ACM, the Contractor will be responsible for developing and implementing an asbestos removal work plan in accordance with NESHAP, OSHA, and state requirements. As such, Contractors submitting bids for the project must have a TDH licensed Asbestos Consultant provide detailed asbestos specific safety and work plans for ensuring worker and community protection. Health and Safety plans for working with ACM must address the guidance provided in these special specifications.

- D. A sufficient supply of disposable rags for work area decontamination shall be available.
- E. Disposal bags for RACM shall be of true 6-mil polyethylene, pre-printed with labels as required by EPA regulation 40 CFR 61.152 (b)(i)(iv) or OSHA requirement 29 CFR 1926.1101(k)(8).

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- F. Stick-on labels identifying the Generator's name (SAWS) and address and the project site location shall be applied to any asbestos waste bags that contain RACM, as per EPA or OSHA and Department of Transportation HM 181 requirements.

- G. Work Area Preparation: Post warning signs and barrier tape meeting the specification of OSHA 29 CFR 1910.1001 and 40 CFR 61 at any location and approaches to a location where airborne concentrations of asbestos may exceed the PEL. Signs shall be posted at a distance sufficiently far enough away from the work area to permit an employee to read the sign and take the necessary protective measures to avoid exposure. Maintain constant security against unauthorized entry past warning signs and barrier tape. Signs will be in both English and Spanish.

- H. Personnel exit procedures
 - 1. Before leaving the work area all personnel shall remove gross contamination from the outside of respirators and protective clothing by brushing and/or wet wiping procedures. (Small HEPA vacuums with brush attachments may be utilized for this purpose.) Adequate washing facilities shall be provided and utilized on-site.

 - 2. Upon completion of the work, contaminated gloves shall be disposed of as asbestos contaminated waste. Disposable cloth gloves may be substituted for leather gloves, at the Contractor's discretion. (Rubber boots may be decontaminated at the completion of the project.)

- I. Specific Removal Work Practice Requirements
 - 1. The Contractor has sole and primary responsibility for the "means and/or methods" of the work and obligation to SAWS and COSA to make inspections of the work at all stages and has sole responsibility to supervise the performance of the work.

 - 2. The Contractor shall isolate the regulated area with barrier tape and asbestos warning signs.

 - 3. The Contractor shall lay and secure 6-mil polyethylene sheeting on the ground on both sides of the AC pipe for the length of the work area.

 - 4. Working within the regulated area, using wet removal methods, the Contractor shall thoroughly soak each section of AC pipe to be disturbed, prior to any removal activity, with a surfactant or lock-

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down encapsulant. The Contractor shall use equipment capable of producing a “mist” application to reduce the potential for release of fibers. The Contractor shall take care to use as much encapsulant or surfactant as needed in order to lockdown possible fallout debris from edges and joints during removal. Provide continuous wetting of the materials throughout the entire removal process. The Contractor shall take care to limit the breakage of asbestos containing materials and remove these materials as intact as possible.

5. Any AC pipe debris on adjacent surfaces shall be removed. The Contractor shall promptly clean up asbestos wastes and debris following AC pipe disturbance. Remove and containerize all visible accumulations of asbestos containing material and asbestos-contaminated debris by hand. Asbestos debris mixed with soil may be picked up with shovels, with the contaminated soil being containerized as a regulated ACM waste. Clean-up activities may also involve vacuum cleaners equipped with HEPA filtration or wet-wiping surfaces with disposable rags. Contaminated rags shall be containerized as a regulated ACM waste.
 6. After disturbance and clean-up activities and prior to removal of the AC pipe from the regulated area, the Contractor shall encapsulate damaged and exposed areas and ends of the AC pipe with a lock-down encapsulant.
 7. The Contractor may now remove the Category II non-friable asbestos-containing material “that is not in poor condition and is not friable” as defined in NESHAP regulations. The Contractor shall remove all AC pipe “intact” and in whole complete sections by carefully lifting the AC pipe to the disposal container using approved equipment. The Category II non-friable AC pipe must not become “friable” (crumbled, pulverized, or reduced to a powder). The Contractor shall not drop, break and/or otherwise make the AC pipe susceptible to release asbestos fibers. If these procedures are followed and debris is cleaned up properly, then the Category II non-friable AC pipe may be disposed of as nonregulated asbestos-containing waste material.
 8. Pieces of AC pipe debris shall be considered RACM and handled as regulated ACM waste. The debris shall be placed in two 6-mil asbestos bags or double wrapped, with proper labeling.
- J. Abandonment of AC water mains/pipes: The Contractor is responsible for isolating the existing mains to remain in service by capping, plugging and blocking as necessary. The opening of an abandoned ac water main and all

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other openings or holes shall be blocked off by manually forcing cement grout or concrete into and around the openings in sufficient quantity to provide a permanent watertight seal. Abandonment of old, existing AC water mains will be considered subsidiary to the work required, and no direct payment will be made.

- L. Abandonment of Valves that contain ACM: Valves to be abandoned in the execution of the work shall have the valve box and extension packed with sand to within eight (8") inches of the street surface. The remaining eight (8") shall be filled with 2,500 psi concrete or an equivalent sand-cement mix and finished flush with the adjacent pavement or ground surface. The valves covers shall be salvaged and return to SAWS. The abandonment of valves containing ACM will be considered subsidiary to the work required, and no direct payment will be made.

- M. Verification of Removal & Clean-up Procedures: The Contractor's on-site Competent Person shall inspect the work area and ensure that all surfaces are free of AC pipe dust and debris.

- N. Disposal Procedures
 1. If a dumpster/trailer is used for temporary storage it will be secured and closed at all times except when loading. It will be properly marked and critical barrier tape will be in place.
 2. AC pipe debris and asbestos-contaminated items shall be properly double bagged, labeled and loaded in a fully enclosed, lined, locked and placard transport container and transported and disposed of in compliance with all regulatory requirements as RACM.
 3. After being removed from the regulated area, Category II non-friable AC pipe shall be transferred to a polyethylene-lined container. Remove all containers as soon as practical, but no later than the end of the work shift.
 4. When the dumpsters/trailers are full, they will be hauled away to the closest EPA approved landfill for proper disposal. The Contractor may dispose of the Category II non-friable AC pipe waste material as non-regulated waste in a municipal solid waste landfill as defined in the NESHAP and TCEQ Rule (Type I Landfill). Written approval to transport and accept the Category II non-friable material shall be obtained from a pre-approved transporter and landfill and submitted to SAWS Environmental

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Division and COSA Environmental representatives prior to disposal.

5. Submit copies to SAWS Environmental Division and COSA Environmental representatives of all transport manifests, trip tickets, and disposal receipts for all asbestos waste materials removed from the work area during the project. The Contractor will sign manifests as the SAWS's representative (generator) for the AC pipe and provide copies to SAWS Construction Inspections for final payment.

3000.11 Measurement: Measurement of the items "Asbestos Abatement Work Plan" and "Removal, Transportation, and Disposal" as specified herein shall be by the "lump sum."

3000.12 Payment: The work performed as prescribed by these items shall be paid for at the contract lump sum price bid for "Asbestos Abatement Work Plan" and "Removal, Transportation, and Disposal," which prices shall be full compensation for the work herein specified including the furnishing of all materials, equipment, tools and for the material disposal, submittals, labor and air monitoring necessary to complete the work.

3000.13 BID ITEM:

3000.14 - Removal, Transportation, and Disposal – Lump Sum

3000.15 - Asbestos Abatement Work Plan – Lump Sum

STANDARD PLAN NOTE:

Asbestos Cement (AC) pipe, also known as transite pipe and which is known to contain asbestos-containing material (ACM), is located within the project limits. Special waste management procedures and health and safety requirements will be applicable when removal and/or disturbance of this pipe occur. Payment for such work is to be made under Special Specification Item No 3000, "Special Specification for Handling Asbestos Cement Pipe".

GENERAL NOTES

- ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY THE SAN ANTONIO WATER SYSTEM (SAWS) AND COMPLY WITH THE FOLLOWING AS APPLICABLE:
 - CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) 30 TEXAS ADMINISTRATIVE CODE (TAC) §217.51-217.70 AND 30 TAC §217.91-217.100.
 - CURRENT TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT) "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND DRAINAGE."
 - CURRENT "SAWS STANDARD SPECIFICATIONS FOR CONSTRUCTION."
 - CURRENT CITY OF SAN ANTONIO (COSA) "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION."
- THE CONTRACTOR IS TO NOTIFY AND MAKE ARRANGEMENTS WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT 233-3500 AND THE INVOLVED PROPERTY OWNERS 48 HOURS PRIOR TO EXCAVATION.
- THE LOCATION AND DEPTHS OF EXISTING UTILITIES, INCLUDING SERVICE LATERALS, SHOWN ON THE PLANS ARE APPROXIMATE ONLY. ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIFIED BY THE CONTRACTOR 48 HOURS PRIOR TO CONSTRUCTION AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS REQUIRED FOR CONSTRUCTION AND TO PROTECT THEM DURING CONSTRUCTION.
- THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT, AND TO PROTECT THE SAME DURING CONSTRUCTION.

SAWS	233-2010	
BEXAR METROPOLITAN WATER DISTRICT (BEXAR MET)	354-6538/357-5741	
COSA DRAINAGE	207-8048	
COSA TRAFFIC SIGNAL OPERATIONS	207-7720/207-7765	
TEXAS STATE WIDE UTILITY LOCATOR	1-800-344-8377	
-CITY PUBLIC SERVICE ENERGY (CPS)		
-TIME WARNER		
-AT&T		
-MCI		
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION FROM DAMAGES DONE TO EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING AND STRUCTURES (NSPI).
- THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN THREE INCH IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATION IN VICINITY OF TREES SHALL PROCEED WITH CAUTION. THE CONTRACTOR SHALL CONTACT THE CITY ARBORIST AT 207-8053 FOR GUIDANCE. SAWS CONSTRUCTION INSPECTOR SHALL ALSO BE NOTIFIED.
- THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIALS IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN PERMIT.
- DURING CONSTRUCTION AND UPON COMPLETION OF ALL WORK WITHIN THE LIMITS OF THE 100 YEAR FLOOD PLAIN, ALL EXCESS MATERIALS, WASTE, FILL, AND DEBRIS, SHALL BE REMOVED AND DISPOSED OF PROPERLY AND IN A TIMELY MANNER.
- PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING MAINS OF ANY SIZE MUST BE COORDINATED WITH THE SAWS INSPECTION AND/OR SAWS PRODUCTION GROUPS AT LEAST ONE WEEK OR MORE IN ADVANCE OF THE SHUTDOWN. THE CONTRACTOR MUST ALSO PROVIDE A SEQUENCE OF WORK AS RELATED TO THE TIE-INS; THIS IS AT NO ADDITIONAL COST TO SAWS OR THE PROJECT AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SEQUENCE THE WORK ACCORDINGLY.
- DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.181, CITY PUBLIC SERVICE MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND GAS VALVES THAT ARE IN THE PROJECT AREAS.
- 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.
- THE CONTRACTOR SHALL PROVIDE PROPER SHORING, BRACING, AND/OR OTHER SUITABLE SUPPORT FOR POWER POLES ADJACENT TO CONSTRUCTION.
- CONTRACTOR MUST BE LICENSED AND MUST OBTAIN A UTILITY EXCAVATION PERMIT FROM COSA RIGHT-OF-WAY MANAGEMENT AT 207-6949 PRIOR TO THE START OF CONSTRUCTION WITHIN THE RIGHT-OF-WAY OF A PUBLIC STREET OR ALLEY.
- THE CONTRACTOR SHALL PROVIDE RESIDENTS AND BUSINESSES WITH ACCESS TO AND FROM THEIR HOMES AND ESTABLISHMENTS AND ACCESS FOR THE DELIVERY OF MAIL BY THE U.S. POSTAL SERVICE (NO SEPARATE PAY ITEM).
- WORK COMPLETED BY THE CONTRACTOR WHICH HAS NOT RECEIVED A WORK ORDER OR THE NOTICE TO PROCEED WITH SAWS CONSTRUCTION INSPECTION DIVISION WILL BE SUBJECT TO REMOVAL AND REPLACEMENT BY AND AT THE EXPENSE OF THE CONTRACTOR.
- CONTRACTOR TO OBTAIN SAWS STANDARD DETAILS FROM SAWS WEBSITE AT www.SAWS.org.
 - A MINIMUM COMPACTION DENSITY OF 98% IS REQUIRED FOR SECONDARY BACK FILL.
 - PRIOR TO CONSTRUCTION, CONTRACTOR TO CONTACT COSA ARBORIST MARK BIRD AT 210-207-0278

GENERAL SEWER NOTES

- THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT NO OVERFLOWS OR SPILLAGE OF SEWAGE OCCURS. SHOULD THIS OCCUR, THE CONTRACTOR SHALL:
 - IDENTIFY THE SOURCE OF THE SPILL AND ATTEMPT TO ELIMINATE ANY ADDITIONAL SPILLAGE. NOTIFY CONSTRUCTION INSPECTIONS.
 - CONTAIN THE SPILL IN PLACE AND PREVENT CONTAMINATION OF STREAMS.
 - CLEAN UP THE SPILL AND DISPOSE OF CONTAMINATED MATERIALS.
 - DISINFECT THE AREA OF THE SPILL WITH A MIXTURE OF THE CHLORINE AND WATER.
 - IDENTIFY AND TRAIN PERSONNEL RESPONSIBLE FOR SPILLAGE PREVENTION AND CONTROL.

- NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE FOR THIS WORK. ALL WORK SHALL BE DONE ACCORDING TO GUIDELINES SET BY TCEQ AND SAWS.
- THE CONTRACTOR SHALL PROVIDE BY-PASS PUMPING AND FLOW MANAGEMENT AS NECESSARY OF SEWAGE AROUND EACH SEGMENT OF PIPE TO BE REPLACED, IN ACCORDANCE WITH SPECIAL SPECIFICATION "FLOW MANAGEMENT AND BYPASS PUMPING".
- CONTRACTOR SHALL SUBMIT BY-PASS AND PHASING PLAN FOR THE ENGINEER TO REVIEW PRIOR TO COMMENCEMENT OF THE CONSTRUCTION.
- SEWER WORK AND CLEAN UP SHALL BE IN ACCORDANCE WITH GUIDELINES SET FORTH BY TCEQ AND SAWS. CONTRACTOR SHALL IDENTIFY AND TRAIN PERSONNEL RESPONSIBLE FOR SPILLAGE PREVENTION AND CONTROL. CONTRACTOR SHALL ALSO DOCUMENT AND EDUCATE EMPLOYEES IN ADVANCE OF WORK ABOUT THE WORK ENVIRONMENT INCLUDING WHAT TO DO WHEN THERE ARE SEWER LEAKS AND HOW TO WORK SAFELY AROUND RAW SEWAGE.
- CONCRETE ENCASUREMENT, WHERE REQUIRED, SHALL BE PLACED THE FULL WIDTH OF THE TRENCH TO A PLANE SIX (6") INCHES ABOVE THE TOP OF THE PIPE. NO DIRECT PAYMENT WILL BE MADE FOR CONCRETE ENCASUREMENT EXTENDING FURTHER THAN SIX (6") INCHES IN A HORIZONTAL OR VERTICAL PLANE FROM THE PIPE REGARDLESS OF THE QUANTITY PLACED. REFER TO SAWS DETAIL DD-858-01 FOR INSTALLATION DIMENSIONS.

PROVIDE CONCRETE ENCASUREMENT FOR ALL SEWER PIPES HAVING COVER LESS THAN 3 FT TO SUBGRADE. REFER TO DETAIL 3 ON SHEET D-1. NOTE CONCRETE ENCASUREMENT MAY NOT BE SHOWN ON DRAWING PROFILES AT ALL LOCATIONS. CONTRACTOR SHALL PROVIDE CONCRETE ENCASUREMENT PROTECTION OF PIPE BASED ON ACTUAL INSTALLED DEPTHS. ALL CONCRETE ENCASUREMENT INSTALLED SHALL BE INDICATED ON REDLINES/RECORD DRAWINGS.
- THE SEWER LINE TRENCH DETAILS SHOWING THE CROSS SECTION WITH THE DIMENSIONS, PIPE PLACEMENT, AND BACKFILL INSTRUCTIONS ARE INCLUDED ON SHEET D-1 OF THESE PLANS. ALL SEWER PIPES JOINTS MUST MEET THE REQUIREMENTS IN 30 TAC §217.53(C) AND §217.65.
- CONTRACTOR SHALL CONSTRUCT THE SEWER LINE BY OPEN-CUT TRENCH METHODS, UNLESS TRENCHLESS METHOD OF CONSTRUCTION ARE NOTED ON THE DRAWINGS.

SEPARATION DISTANCE

WHERE WATER LINES AND NEW SEWER LINES ARE INSTALLED WITH A SEPARATION DISTANCE CLOSER THAN NINE FEET (I.E., WATER LINES CROSSING WASTEWATER LINES, WATER LINES PARALLELING WASTEWATER LINES, OR WATER LINES NEXT TO MANHOLES) THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30 TAC §217.53(D) (PIPE DESIGN) AND 30 TAC §290.44(E) (WATER DISTRIBUTION).

SERVICE LATERALS

- THE EXACT LOCATION AND ELEVATION OF THE SERVICE LATERALS AND MANHOLES SHALL BE FIELD VERIFIED BY THE CONTRACTOR. (NO SEPARATE PAY ITEM)
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISCONNECTING EACH EXISTING SERVICE LINE FROM THE EXISTING MAIN AND RE-CONNECTING THE SERVICE TO THE NEW SERVICE MAIN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CONTINUOUS SERVICE (NO SEPARATE PAY ITEM).
- A MINIMUM OF 3 FEET OF COVER IS TO BE MAINTAINED OVER THE SANITARY SEWER LATERALS AT SUBGRADE.

EXCAVATION

- AT THE END OF EACH WORK DAY, THE CONTRACTOR SHALL CLOSE EXCAVATIONS/ PIPELINE TRENCH EXCEPT FOR THE MINIMUM AMOUNT REQUIRED TO BEGIN THE NEXT DAYS WORK. IF IT IS NECESSARY TO LEAVE EXCAVATIONS OPEN AFTER WORKING HOURS, CONTRACTOR SHALL BARRICADE THE EXCAVATIONS TO PREVENT UNAUTHORIZED VEHICULAR/PEDESTRIAN ACCESS.
- 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 SYSTEM, 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 AT A MINIMUM, THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (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 OF ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.
- WATER JETTING THE BACKFILL WITHIN A STREET WILL NOT BE PERMITTED. SANITARY SEWER TRENCHES SUBJECT TO TRAFFIC SHALL CONFORM TO THE SAWS STANDARD SPECIFICATIONS FOR CONSTRUCTION, ITEM NO. 550 & 804.
- ARCHAEOLOGICAL: "UNIDENTIFIED ARCHAEOLOGICAL SITES": IF THE CONTRACTOR SHOULD ENCOUNTER A SECTION OF AN ACEQUIA (EARLY SPANISH IRRIGATION DITCH) OR ANY OTHER ARCHAEOLOGICAL DEPOSITS DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR MUST STOP EXCAVATION IMMEDIATELY AND CONTACT THE SAWS INSPECTOR WHO WILL CALL THE CITY HISTORIC PRESERVATION OFFICER AT (210) 299-8303 FOR AN ARCHAEOLOGICAL INVESTIGATION AS PER SECTION 35432.3 OF THE CITY CODE, "UNIDENTIFIED SITES ARCHAEOLOGICAL." THE CONTRACTOR CANNOT BEGIN EXCAVATION AGAIN WITHOUT WRITTEN PERMISSION FROM THE SAWS. IF MORE THAN THREE DAYS ARE REQUIRED FOR INVESTIGATION (NOT INCLUDING HOLIDAYS AND WEEKENDS) AND ALSO THE CONTRACTOR CANNOT WORK ON OTHER AREAS, THE CONTRACTOR WILL BE PERMITTED TO NEGOTIATE FOR ADDITIONAL CONSTRUCTION TIME. THE CONTRACTOR SHALL SUBMIT A REQUEST IN WRITING WITHIN TEN DAYS AFTER DATE OF THE FIRST NOTICE. IF THE TIME REQUIRED FOR INVESTIGATION DOES NOT EXCEED THREE DAYS FOR EACH EVENT, CONTRACT DURATION WILL NOT BE EXTENDED.
- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN BARRICADES, FLAGS, TORCHES, AND OTHER SAFETY DEVICES AS REQUIRED BY LOCAL, STATE, AND FEDERAL CODES AND ORDINANCES AND CONDUCT WORK TO CREATE A MINIMUM INCONVENIENCE TO THE PUBLIC. TEMPORARY SUSPENSION OF WORK DOES NOT RELIEVE RESPONSIBILITY FOR THE ABOVE REQUIREMENTS.
- THE CONTRACTOR SHALL AT ALL TIMES CONFORM TO ALL APPLICABLE REGULATIONS OF SUBPART "P" ENTITLED "EXCAVATION, TRENCHING, AND SHORING OF OSHA SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION"; AND ALL APPLICABLE STATE AND LOCAL RULES AND REGULATIONS.

- IF SUSPECTED CONTAMINATION IS ENCOUNTERED DURING CONSTRUCTION OPERATIONS, SAWS SHALL BE NOTIFIED IMMEDIATELY WHEN CONTAMINATED SOILS AND/OR GROUNDWATER ARE ENCOUNTERED AT LOCATIONS NOT IDENTIFIED IN THE PLANS. THE NOTIFICATION SHOULD INCLUDE THE STATION NUMBER, TYPE OF CONTAMINATED MEDIA, EVIDENCE OF CONTAMINATION, AND MEASURES TAKEN TO CONTAIN THE CONTAMINATED MEDIA AND PREVENT PUBLIC ACCESS. THE CONTAMINATED SOIL AND/OR GROUNDWATER SHALL NOT BE REMOVED FROM THE LOCATION WITHOUT PRIOR SAWS APPROVAL.

THE CONTRACTOR MUST STOP THE EXCAVATION IMMEDIATELY AND CONTACT THE SAWS INSPECTOR. THE CONTRACTOR CANNOT BEGIN EXCAVATION ACTIVITIES WITHOUT WRITTEN PERMISSION FROM SAWS.
- ASBESTOS CEMENT (AC) PIPE, ALSO KNOWN AS TRANSITE PIPE AND WHICH IS KNOWN TO CONTAIN ASBESTOS-CONTAINING MATERIAL (ACM), IS LOCATED WITHIN THE PROJECT LIMITS. SPECIAL WASTE MANAGEMENT PROCEDURES AND HEALTH AND SAFETY REQUIREMENTS WILL BE APPLICABLE WHEN REMOVAL AND/OR DISTURBANCE OF THIS PIPE OCCUR. PAYMENT FOR SUCH WORK IS TO BE MADE UNDER SPECIAL SPECIFICATION ITEM NO 3000, "SPECIAL SPECIFICATION FOR HANDLING ASBESTOS CEMENT PIPE."

BLASTING

BLASTING WILL NOT BE ALLOWED ON THIS PROJECT.

FENCING

- CONTRACTOR SHALL MAINTAIN EXISTING FENCES ADJACENT TO AND ACROSS THE PROJECT CORRIDOR. CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTING ANY TEMPORARY FENCES, GAPS, GATES, ETC. NECESSARY FOR CONSTRUCTION OF THE PROJECT (NO SEPARATE PAY ITEM)
- AT COMPLETION OF THE PROJECT, CONTRACTOR SHALL RESTORE ALL FENCING AFFECTED BY THE PROJECT TO ITS ORIGINAL OR BETTER CONDITION. (NO SEPARATE PAY ITEM)

TREE PRESERVATION

- CONTRACTOR SHALL INSTALL FENCE PROTECTION AROUND TREES AND PROVIDE AND MAINTAIN 4" OF MULCH OVER THE TREE ROOT ZONE, FENCE PROTECTION AND ANY REQUIRING PRUNING SHALL BE IN ACCORDANCE WITH TREE DETAILS ON SHEET ENV-2.
- CONTRACTOR IS RESPONSIBLE FOR PROVIDING A LICENSED TREE MAINTENANCE PROFESSIONAL THROUGHOUT THE PROJECT PER CITY ORDINANCE ARTICLE VIII 21-171. TREE MAINTENANCE LICENCE (o)

EROSION AND SEDIMENTATION CONTROL

- TCEQ AND THE ENVIRONMENTAL PROTECTION AGENCY (EPA) REQUIRE EROSION AND SEDIMENTATION CONTROL FOR CONSTRUCTION OF SEWER COLLECTION SYSTEMS. CONTRACTOR SHALL PROVIDE EROSION AND SEDIMENTATION CONTROL AS NOTED ON THE PROJECT'S PLAN AND PROFILE SHEETS. SEE EROSION AND SEDIMENTATION CONTROL SHEETS ENV-1 TO ENV-2.
- ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS MUST BE INSTALLED PRIOR TO CONSTRUCTION, MUST BE MAINTAINED DURING CONSTRUCTION, AND MUST BE REMOVED WHEN SUFFICIENT VEGETATION IS ESTABLISHED TO CONTROL THE EROSION AND SEDIMENTATION AND THE CONSTRUCTION AREA IS STABILIZED.
- STORMWATER POLLUTION PREVENTION PLANS (SWPPP) AND PROCEDURES SHALL BE IMPLEMENTED ACCORDING TO TCEQ AND EPA REGULATIONS FOR STORMWATER DISCHARGE FROM CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL BE THE DESIGNATED OPERATOR FOR TCEQ AND EPA REQUIREMENTS AND SHALL MEET ALL REQUIREMENTS OF THE SWPPP PLAN. FINAL PROJECT ACCEPTANCE SHALL NOT BE GRANTED UNTIL ALL PERMANENT STABILIZATION MEASURES HAVE BEEN ESTABLISHED.

SUBSURFACE AND SOIL CONDITIONS

- THE OWNER HAS EMPLOYED AN INDEPENDENT GEOTECHNICAL CONSULTANT AND TESTING LABORATORY TO PERFORM A SUBSURFACE SOIL INVESTIGATION FOR THE SITE OF THIS PROJECT. THE REPORT OF THEIR FINDINGS MAY BE EXAMINED AT THE OFFICES OF THE ENGINEER.

USE OF DATA:

 - THE INFORMATION AND RECOMMENDATIONS CONTAINED IN THE SOILS REPORT WERE OBTAINED BY THE OWNER ONLY FOR THE USE OF THE ENGINEER IN THE DESIGN AND PREPARATION OF THE CONTRACT DOCUMENTS FOR THIS PROJECT.
 - THE SOILS REPORT IS NOT A PART OF THE CONTRACT DOCUMENTS. THE REPORT IS AVAILABLE FOR EXAMINATION BY BIDDERS, BUT IS NOT A WARRANTY OF SUBSURFACE CONDITIONS AT THE SITE.
 - IN ACCORDANCE WITH THE INSTRUCTIONS TO BIDDERS, BIDDERS ARE ENCOURAGED TO VISIT THE SITE AND ACQUAINT THEMSELVES WITH ALL EXISTING CONDITIONS PRIOR TO BIDDING. BIDDERS MAY, AT THEIR OWN EXPENSE, PERFORM THEIR OWN SUBSURFACE INVESTIGATIONS; HOWEVER, ALL SUCH INVESTIGATIONS MUST BE PERFORMED UNDER TIME SCHEDULES AND ARRANGEMENTS APPROVED IN ADVANCE BY THE ENGINEER.

GROUNDWATER CONTROL

- PLACEMENT OF DEWATERING SYSTEM (HEADER, WELLS, ETC.) SHALL BE SUCH THAT PEDESTRIAN AND VEHICULAR TRAFFIC ARE NOT ADVERSELY IMPACTED. DO NOT PLACE SYSTEM ON SIDEWALKS OR CREATE A NUISANCE TO PEDESTRIANS OR TRAFFIC.
- PLACEMENT OF DEWATERING SYSTEM (HEADERS, WELLS, ETC.) SHALL NOT INTERFERE WITH VEHICULAR OR PEDESTRIAN TRAFFIC THROUGH ANY INTERSECTION ALONG ROUTE.
- IN AREAS WHERE SURFACE ACCESS IS RESTRICTED ON THE CONTRACT DRAWINGS, CONTRACTOR'S DEWATERING SYSTEM SHALL BE TRIMMED OFF BELOW GROUND LEVEL AND COVERED.
- WATER DISCHARGED FROM THE DEWATERING SYSTEM SHALL BE PUMPED DIRECTLY INTO STORM SEWER INLETS AND NOT ALLOWED TO CREATE A WATER NUISANCE ACROSS ROADWAYS.
- THE GROUNDWATER LEVEL CAN VARY DRAMATICALLY ESPECIALLY WITH RAINFALL EVENTS. CONTRACTOR SHALL ESTABLISH THE GROUNDWATER LEVEL PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

ACCESSIBILITY REQUIREMENTS

- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN VEHICULAR AND PEDESTRIAN ACCESS AT ALL TIMES TO LOCAL RESIDENCES AND BUSINESSES.
- WHEN THE WORK REQUIRES THE EXCAVATION OF THE STREET AND THE REMOVAL OF THE EXISTING DRIVEWAY APPROACHES AND SIDEWALKS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY ALL-WEATHER ACCESS TO THE BUSINESSES AND RESIDENCES. THE TEMPORARY DRIVEWAY APPROACHES SHALL BE CONSTRUCTED WITH FLEXIBLE BASE OF GRAVEL MATERIAL AT NO SEPARATE COST.
- PRIOR TO INITIATING THE CONSTRUCTION OF NEW DRIVEWAY APPROACHES, THE CONTRACTOR SHALL GIVE ADVANCE WARNING IN PERSON OR IN WRITING OF AT LEAST 48 HOURS TO EACH RESIDENCE THAT WILL BE IMMEDIATELY AFFECTED SO THAT ALTERNATE PLANS MAY BE MADE BY THE RESIDENCES.
- FOR BUSINESSES WITH MORE THAN ONE DRIVEWAY AT LEAST ONE DRIVEWAY SHALL REMAIN OPEN WHILE THE OTHER NEW DRIVEWAY APPROACHES ARE CONSTRUCTED. FOR BUSINESSES WITH ONLY ONE DRIVEWAY, THE NEW DRIVEWAY APPROACH SHALL BE CONSTRUCTED IN HALF WIDTHS, UNLESS A TEMPORARY ASPHALT DRIVEWAY IS FIRST INSTALLED AT NO SEPARATE COST.

VIA METROPOLITAN TRANSIT SPECIAL NOTE

CONTRACTOR SHALL NOT REMOVE OR ADJUST ANY VIA FACILITIES. THE CONTRACTOR MUST CONTACT VIA FOURTEEN DAYS PRIOR FOR THE REMOVAL OF BENCHES, STOP POLES, OR ANY OTHER VIA FACILITIES THAT MAY BE PRESENT. PLEASE PROVIDE THIRTY DAYS PRIOR NOTICE FOR SHELTER REMOVAL (TELEPHONE NOS: (210) 362-2155 OR (210) 362-2096). THE CONTRACTOR WILL BE LIABLE FOR ANY DAMAGES TO VIA FACILITIES NOT REMOVED BY VIA. THE CONTRACTOR IS REQUIRED TO REPLACE ALL FLATWORK REMOVED OR DAMAGED IN THE COURSE OF EXECUTING THE CONTRACT UNLESS OTHERWISE NOTED BY VIA. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING VIA FACILITIES IF ADJACENT TO WORK AREA.

CITY OF SAN ANTONIO RIGHT-OF-WAY ORDINANCE

- COSA ADOPTED NEW "RIGHT OF WAY MANAGEMENT REGULATIONS" EFFECTIVE MAY 1, 2001 TO MANAGE CONSTRUCTION, EXCAVATION, AND PLACEMENT OF UTILITIES WITHIN CITY RIGHT-OF-WAYS. COSA DEVELOPED THE "UTILITY EXCAVATION CRITERIA MANUAL" (UECM) TO PROVIDE POLICY AND TECHNICAL GUIDANCE FOR EXCAVATING AND BACKFILLING WITHIN CITY RIGHT-OF-WAYS.
- THE CONTRACTOR SHALL OBTAIN COPIES OF THESE DOCUMENTS AND SHALL EXECUTE HIS WORK IN ACCORDANCE WITH THE RULES, REGULATIONS, AND CRITERIA OUTLINED IN THE DOCUMENTS.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER (IN WRITING) IF DISCREPANCIES BETWEEN THE DOCUMENTS AND THE PROJECT PLANS AND/OR SPECIFICATIONS ARE DISCOVERED.

PERMIT NOTES

- THE CONTRACTOR IS RESPONSIBLE TO OBTAIN CONSTRUCTION RELATED PERMITS INCLUDING THOSE INDICATED IN THE SPECIAL CONDITIONS.
- CONTRACTOR SHALL MAINTAIN UNRESTRICTED DRAINAGE OF THE PROJECT SITE AND ADJACENT AREAS DURING CONSTRUCTION. PRE-CONSTRUCTION CONVEYANCE IN NATURAL AND MAN MADE CHANNELS SHALL BE MAINTAINED.
- CONTRACTOR SHALL NOT PLACE MATERIALS OR FILL IN EXISTING LOWS OR OTHERWISE BLOCK OR ALTER FLOW OF THE EXISTING NATURAL DRAINAGE. TEMPORARY STOCKPILES OR OTHER FLOW IMPEDIMENTS (PIPE, EQUIPMENT, ETC.) SHALL BE REMOVED AT LEAST BY END OF EVERY WORK DAY AND PRIOR TO RAIN EVENTS. DAMAGE CAUSED BY CONSTRUCTION ACTIVITIES SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
- WASTE MATERIALS FOR THIS PROJECT SHALL BE DISPOSED OF PROPERLY OFF SITE BY THE CONTRACTOR INCLUDING CONTRACTOR OBTAINING APPLICABLE AND APPROPRIATE FILL PERMIT AND/OR EASEMENT.

REV. NO.	DATE	REVISION DESCRIPTION
1	MUR10-18-11 Addendum 2	
2	MUR10-18-11 Addendum 2	
3	MUR10-18-11 Addendum 2	
4	MUR10-18-11 Addendum 2	

Mardiana Abdelkader
Professional Engineer
License No. 94279
State of Texas

10-18-11

WESTON SOLUTIONS, INC.
70 NE LOOP 410, SUITE 600
SAN ANTONIO, TEXAS 78216-6842
TEXAS REGISTERED ENGINEERING FIRM F-3123

**SAWS OLMOBAS BASIN CENTRAL WATERSHED
SEWER RELIEF LINE (C-3) REACHES 1-4**

GENERAL NOTES-1

San Antonio Water System

NOTES	INITIALS	DATE
DESIGNED BY	AH	10/18/11
REVIEWED BY	MRJ	10/18/11
SCALE:	AS SHOWN	
SHEET NO.	G-002 2 OF 123	

GENERAL TESTING

- MATERIALS TESTING FOR THIS PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. PAYMENT FOR TESTING WILL NOT BE PAID SEPARATELY BUT SHALL BE INCORPORATED INTO THE ITEMS TO WHICH IT PERTAINS.
- MATERIALS TESTING SHALL COMPLY WITH APPLICABLE REQUIREMENTS PER SAWS SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION, COSA STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, TxDOT STANDARD SPECIFICATIONS, AND THE CONTRACT DOCUMENTS.
- TESTING SHALL BE SUCCESSFULLY DEMONSTRATED PRIOR TO PLACEMENT OF FINAL SURFACES.
- CONTRACTOR SHALL COORDINATE TESTING WITH INSPECTOR AND WITH SAWS MAINTENANCE PERSONNEL.
- A COPY OF ALL TESTING REPORTS SHALL BE FORWARDED TO SAWS CONSTRUCTION INSPECTION DIVISION.
- CONTRACTOR IS RESPONSIBLE IN NEW CONSTRUCTION FOR CORRECTING ALL ABNORMALITIES INCLUDING SIGNIFICANT DEFLECTIONS, CRACKED OR BROKEN PIPE, SEPARATED OR MISALIGNED JOINTS.

PIPE MATERIAL

- SANITARY SEWER PIPE SIZE, MATERIAL, AND CLASSIFICATION SHALL BE AS INDICATED ON THE PLANS AND IN THE SPECIFICATIONS.
- CONTRACTOR MUST MAINTAIN THE SAME PIPE MATERIAL BETWEEN MANHOLES.
- PLASTIC PIPE SHALL BE INSTALLED WITH A TRACER WIRE PER THE SPECIFICATION.
- PIPE MATERIAL SUPPLIED FOR THE PROJECT SHALL BE CERTIFIED BY THE MANUFACTURER AS TO THE STRUCTURAL INTEGRITY OF THE PIPE BASED ON THE INSTALLATION REQUIREMENTS AND INSTALLATION DEPTHS DESCRIBED AND SHOWN HEREIN. PIPE SUPPORT CALCULATIONS SHALL BE PROVIDED BY THE CONTRACTOR/MANUFACTURER INCORPORATING TRENCH CONDITION, BACKFILL MATERIAL AND COMPACTION, TRENCH SHAPE, AND INSTALLATION DEPTH. CALCULATIONS SHALL INCLUDE A 15 FOOT FLOODWATER SURCHARGE IN ADDITION TO TYPICAL DEAD AND LIVE LOAD FORCES.
- TRENCHING, BEDDING AND BACKFILL MUST CONFORM WITH 30 TAC §217.54. THE BEDDING AND BACKFILL FOR FLEXIBLE PIPE MUST COMPLY WITH THE STANDARDS OF ASTM D-2321, CLASSES IA, IB, II OR III. RIGID PIPE BEDDING MUST COMPLY WITH THE REQUIREMENTS OF ASTM C 12 (ANSI A 106.2) CLASSES A, B OR C.
- SEWER PIPE CONNECTIONS TO PRE-CAST MANHOLES WILL BE COMPRESSION JOINTS AS APPROVED BY SAWS. MECHANICAL JOINT "BOOT TYPE" CONNECTIONS ALONE WILL NOT BE ALLOWED. "BOOT TYPE" JOINTS MAY BE USED IN CONJUNCTION WITH COMPRESSION JOINTS AS APPROVED BY SAWS. SEWER PIPE CONNECTIONS TO MONOLITHIC MANHOLES WILL BE AS SHOWN ON THE STANDARD DETAIL SHEET. SAWS MUST APPROVE ANY CHANGES FROM THESE METHODS.
- CONTRACTOR SHALL PROVIDE CONCRETE ENCASUREMENT AS INDICATED ON THE DRAWINGS.

PIPE TESTING

- SEWER LINES MUST BE TESTED FROM MANHOLE TO MANHOLE. WHEN A NEW SEWER LINE IS CONNECTED TO AN EXISTING STUB OR CLEAN-OUT, IT MUST BE TESTED FROM EXISTING MANHOLE TO NEW MANHOLE. IF A STUB OR CLEAN-OUT IS USED AT THE END OF THE PROPOSED SEWER LINE, NO PRIVATE SERVICE ATTACHMENTS MAY BE CONNECTED BETWEEN THE LAST MANHOLE AND THE CLEANOUT.
- GRAVITY SEWER MAINS SHALL BE AIR AND DEFLECTION TESTED PER SAWS STANDARD SPECIFICATION 849. WHEN OPERATIONS PREVENT AIR AND DEFLECTION TESTING, CONTRACTOR SHALL SUBSTITUTE VIDEO INSPECTION PER SAWS STANDARD SPECIFICATION 866. THERE IS NO ADDITIONAL PAY FOR BYPASS PUMPING OR LINE CLEANING REQUIRED WHEN VIDEO TESTING IS SUBSTITUTED FOR OTHER TESTS.
- ALL SEWER LINES MUST BE TESTED IN ACCORDANCE WITH 30 TAC §217.57. THE CONTRACTOR MUST SUBMIT COPIES OF ALL TEST RESULTS. THE ENGINEER/SAWS MUST CERTIFY IN WRITING THAT ALL WASTEWATER LINES HAVE PASSED ALL REQUIRED TESTING WITHIN 30 DAYS OF TEST COMPLETION AND PRIOR TO USE OF THE NEW COLLECTION SYSTEM.

MANHOLES/STRUCTURES

- ALL MANHOLE/STRUCTURES SHALL BE SAWS STANDARD SANITARY SEWER STRUCTURES, ASTM C-478 PRECAST REINFORCED CONCRETE MANHOLE, MONOLITHICALLY POURED CONCRETE MANHOLE, OR GLASS-FIBER REINFORCED POLYESTER MANHOLE UNLESS INDICATED OTHERWISE ON THE DRAWINGS. ALL MANHOLE/STRUCTURES SHALL MEET THE REQUIREMENTS OUTLINED IN SAWS STANDARD SPECIFICATION ITEM 850, 852, AND 853.
- ALL MANHOLES CONSTRUCTED OR REHABILITATED ON THIS PROJECT MUST HAVE WATERTIGHT SIZE ON SIZE RESILIENT CONNECTORS ALLOWING FOR DIFFERENTIAL SETTLEMENT. IF MANHOLES ARE CONSTRUCTED WITHIN THE 100-YEAR FLOODPLAIN, THE COVER MUST HAVE A GASKET AND BE BOLTED TO THE RING. WHERE GASKETED MANHOLE COVERS ARE REQUIRED FOR MORE THAN THREE MANHOLES IN SEQUENCE OR FOR MORE THAN 1500 FEET, ALTERNATE MEANS OF VENTING WILL BE PROVIDED. BRICKS ARE NOT AN ACCEPTABLE CONSTRUCTION MATERIAL FOR ANY PORTION OF THE MANHOLE.

THE DIAMETER OF THE MANHOLES MUST BE A MINIMUM OF FOUR FEET AND THE MANHOLE FOR ENTRY MUST HAVE A MINIMUM CLEAR OPENING DIAMETER OF 30 INCHES. THESE DIMENSIONS AND OTHER DETAILS CONCERNING MANHOLES AND SEWER LINE/MANHOLE INVERTS DESCRIBED IN 30 TAC §217.55 ARE INCLUDED ON PLAN SHEET D-2 AND D-3.

IT IS SUGGESTED THAT ENTRANCE INTO MANHOLES IN EXCESS OF FOUR FEET DEEP BE ACCOMPLISHED BY MEANS OF A PORTABLE LADDER. THE INCLUSION OF STEPS IN A MANHOLE IS PROHIBITED.

- ALL MANHOLES/STRUCTURES SHALL HAVE WATERTIGHT RING AND COVERS IN ACCORDANCE WITH THE MOST CURRENT SAWS STANDARD SPECIFICATIONS FOR CONSTRUCTION.
- ALL MANHOLE/STRUCTURE DESIGN AND INSTALLATION SHALL INSURE THAT FLOATION OF THE MANHOLE/STRUCTURE WILL NOT OCCUR DURING FLOODING OR GROUNDWATER SOIL SATURATION.

- ALL MANHOLES/STRUCTURES SHALL BE CONSTRUCTED SO THAT THE TOP OF THE RING IS AT LEAST SIX (6) INCHES ABOVE THE FINISHED GRADE OF THE SURROUNDING GROUND EXCEPT WHEN LOCATED IN PAVED AREAS. IN PAVED AREAS, THE MANHOLE RING SHALL BE FLUSH WITH PAVEMENT.
- DESIGNATED MANHOLE/STRUCTURES SHALL HAVE INSIDE SURFACE SEALED WITH EPOXY COATING. SEE PLAN FOR SPECIFIC MANHOLE/STRUCTURE.
- ON ANY MANHOLES TO BE ABANDONED, THE RINGS AND COVER SHALL BE SALVAGED IN ACCORDANCE WITH THE MOST CURRENT SAWS STANDARD SPECIFICATION FOR CONSTRUCTION, ITEM 101: PREPARATION OF RIGHT-OF-WAY. THE HOLE SHOULD BE BACKFILLED ACCORDING TO THESE PLANS.
- TEE BASE MANHOLES SHALL BE MANUFACTURED OF FRP PIPE AND FITTINGS MEETING THE PROJECT SPECIFICATIONS. THE CONCRETE ENCASEMENT SHALL EXTEND THE FULL WIDTH OF TRENCH AND A MINIMUM HEIGHT OF SIX INCHES (6") ABOVE THE FIBERGLASS BASE SECTION, SEE DETAIL. THE ACCESS RING & COVER SHALL BE CAST IRON WITH A 32 INCH MINIMUM THROAT OPENING.
- CAST-IN-PLACE REINFORCED CONCRETE STRUCTURES SHALL BE CONSTRUCTED ACCORDING TO THE STRUCTURAL DETAILS MEETING ALL APPLICABLE ACI, CRSI, AISC, AISI AND ASTM STANDARDS AND RECOMMENDATIONS. THE CONCRETE MIX DESIGN SHALL INCORPORATE TYPE IP OR TYPE II CEMENT AND ACHIEVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI. THE INSIDE OF ALL STRUCTURES SHALL BE COATED WITH AN EPOXY BASED, SPRAY ON LINER FOR CORROSION PROTECTION, SEE SPECIFICATIONS.

MANHOLE/STRUCTURE TESTING

- ALL MANHOLES MUST PASS A HYDROSTATIC AND VACUUM TESTS AS PER SAWS STANDARD SPECIFICATION 852 PRIOR TO ACCEPTANCE BY SAWS AND MUST MEET OR EXCEED THE REQUIREMENTS OF 30 TAC §217.58.
- TEE BASE MANHOLES AND CONCRETE STRUCTURES SHALL BE HYDROSTATICALLY TESTED BY FILLING THE MANHOLE/STRUCTURE TO THE TOP OF CONCRETE WITH WATER AND MEASURING OBSERVABLE LOSS AS OUTLINED IN THE SAWS STANDARD SPECIFICATION OF SANITARY SEWER STRUCTURES, ITEM 850. OBSERVABLE LEAKAGE SHALL REQUIRE REMEDIAL MEASURES. ENGINEER / INSPECTOR SHALL BE PRESENT FOR ALL TESTS.

PROCEDURES-SEQUENCING REQUIREMENTS/CONDITIONS

THE CONTRACTOR WILL BE ALLOWED TO DEVELOP DETAILED PROCEDURES AND A SEQUENCING PLAN AND SCHEDULE TO BE APPROVED BY SAWS. THE PLAN AND SCHEDULE SHALL INCORPORATE THE FOLLOWING REQUIREMENTS AND CONDITIONS:

- THE CONTRACTOR IS RESPONSIBLE FOR STAGING AND STORAGE AREA. CONTRACTOR SHALL NOT USE STREET RIGHT-OF-WAYS OR SEWER EASEMENTS FOR THESE PURPOSES.
- THE PROJECT SHALL PROGRESS FROM DOWNSTREAM TO UPSTREAM MAINTAINING SERVICE IN THE EXISTING LINES AT ALL TIMES. STORM EVENTS MAY PRODUCE FLOWS IN EXCESS OF SYSTEM CAPACITY. CONTRACTOR TO CONSIDER OVERFLOW CONTINGENCIES WHEN DEVELOPING THE SEQUENCING PLAN.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY PLUGGING AND FLOW DIVERSIONS TO ACCOMPLISH THE WORK INCLUDING TEMPORARY STRUCTURES, PIPING MATERIALS, ENVIRONMENTAL, PROTECTION FROM WASTEWATER AND HIGH LEVELS OF HYDROGEN SULFIDE GAS, AND OTHER ASSOCIATED SPECIAL EQUIPMENT. THE COST OF WHICH SHALL BE INCLUDED IN THE PAY ITEMS PRESENTED IN THE PROPOSAL. THERE WILL BE NO SEPARATE PAY ITEM ASSOCIATED WITH THESE ACTIVITIES.
- CONSTRUCTION NEAR THE WITTE MUSEUM AND WITTE MUSEUM PARKING GARAGE AREA (REACH 4 AND THE UPPER END OF REACH 3) WILL NOT BE ALLOWED DURING THE MONTH OF MARCH. CONTRACTOR SHALL SCHEDULE WORK ACCORDINGLY AND COORDINATE WITH WITTE REPRESENTATIVES AS NECESSARY.

ESTIMATED QUANTITIES				
Item No.	Pay Item No.	Description	Estimated Quantity	Unit
1	550	Trench Excavation Safety Protection (All Depths)	8,013	LF
2	848	Line A, Reach 1 (Josephine to Hill Race) MH# 101 to MH# 107 [excludes Siphon 1 from MH# 104 to MH# 105], 66" Gravity Sewer, FRPMASITMD-3262, SN 72. Complete and In-Place. Inclusive of Excavation, bedding, backfill, dewatering, and testing.	1,220	LF
3	848	Line A, Siphon 1 on Reach 1, MH# 104 to MH# 105, 2-Barrel, 54" and 54" FRPMASITMD-3262, SN 72 Inverted Siphon and 24" HDPE Air Bypass Pipe & Concrete Slab. Inclusive of Jacking, Boring, or Tunneling, Bore Pits, Steel Encasement Pipe & Casing Spacers, Excavation, bedding, backfill, dewatering, and testing.	251	LF
4	848	Line A, Reach 1 (Hill Race to Brackentridge Ave/Lions Field Park), MH# 107 to MH# 115 [excludes Segment from MH# 111 to MH# 113], 66" Gravity Sewer, FRPMASITMD-3262, SN 72. Complete and In-Place. Inclusive of Excavation, bedding, backfill, dewatering, and testing.	885	LF
5	848	Line A, In-Place Replacement on Reach-1, MH# 111 to MH# 113-66" Gravity Sewer, FRPMASITMD-3262, SN 72. Complete and In-Place. Inclusive of Excavation, bedding, backfill, and dewatering, removal/cutting & plugging and disposal of existing 60" sewer, and	401	LF
6	01540	Flow Management and Bypass Pumping on Reach 1	1	LS
7	848	Line A, Reach 2 (Lions Field Park to E. Mulberry Ave), MH# 115 to MH# 208 [excludes Siphon 2 from MH# 204 to MH# 205 and Trenchless Construction from Sta 41+94.80 to Sta 43+27.07], 66" Gravity Sewer, FRPMASITMD-3262, SN 72. Complete and In-Place. I	1,263	LF
8	848	Line A, Siphon 2 on Reach 2, MH# 204 to MH# 205, 2-Barrel, 48" and 48" FRPMASITMD-3262, SN 72, Inverted Siphon and 24" HDPE Air Bypass Pipe and Concrete Slab. Complete and In-Place. Inclusive of Jacking, Boring, or Tunneling, Bore Pits, Steel Encasement	158	LF
9	848	Line A, Trenchless Crossing at Mulberry on Reach 2, from Sta 41+94.80 to Sta 43+27.07 - 66" Gravity Sewer, FRPMASITMD-3262, SN 72. Complete and In-Place. Inclusive of Jacking, Boring, or Tunneling, Bore Pits, Steel Encasement Pipe & Casing Spacers.	133	LF
10	01540	Flow Management and Bypass Pumping on Reach 2	1	LS
11	848	Line A, Reach 3 (E. Mulberry Ave to Parfun Way), MH# 208 to MH# 305-60" Gravity Sewer, FRPMASITMD-3262, SN 72. Complete and In-Place. Inclusive of Excavation, bedding, backfill, and dewatering, and testing.	1,162	LF
12	848	Line A, Siphon 3 on Reach 3 (Trenchless Crossing at Sta 55+00 to 56+38.97), MH# 305 to MH# 306 - 60" FRPMASITMD-3262, SN 72. Complete and In-Place. Inclusive of Jacking, Boring, or Tunneling, Bore Pits, Steel Encasement Pipe & Casing Spacers, Excavation	180	LF
13	848	Line A, Reach 3 (Parfun Way to Tuleta), MH# 306 to MH# 311 - 54" Gravity Sewer, FRPMASITMD-3262, SN 72. Complete and In-Place. Inclusive of Excavation, bedding, backfill, and dewatering, and testing.	1,592	LF
14	01540	Flow Management and Bypass Pumping on Reach 3	1	LS
15	848	Line A, Reach 4 (at Tuleta and at North White Parking Lot), MH# 311 to MH# 401 and MH# 402 to MH# 403 - 54" Gravity Sewer, FRPMASITMD-3262, SN 72. Complete and In-Place. Inclusive of Excavation, bedding, backfill, and dewatering, and testing.	160	LF
16	848	Line A, Trenchless Construction at Witte on Reach 4, MH# 401 to MH# 402 - 54" Gravity Sewer, FRPMASITMD-3262, SN 72. Complete and In-Place. Inclusive of Jacking, Boring, or Tunneling, Bore Pits, Steel Encasement Pipe & Casing Spacers, Excavation, bedding	670	LF
17	848	24" Gravity Sewer Pipe, Reach 3 (at MH# 309) PVC ASTM F-679, Complete In-Place. Inclusive of excavation, bedding, backfill, dewatering and testing.	30	LF
18	848	24" Gravity Sewer Pipe, Reach 4 (at North White Parking Lot), MH# 403 to MH# 404 - PVC ASTM F-679, Complete In-Place. Inclusive of excavation, bedding, backfill, dewatering and testing.	156	LF
19	01540	Flow Management and Bypass Pumping on Reach 4	1	LS
20	848	PVC ASTM D-3034, Gravity Sewer Pipe, 12-inch Diameter (all depths), Complete In-Place. Inclusive of excavation, bedding, backfill, dewatering and testing.	75	LF
21	848	PVC ASTM D-3034, Gravity Sewer Pipe, 8-inch Diameter (all depths), Complete In-Place. Inclusive of excavation, bedding, backfill, dewatering and testing.	767	LF
22	551	Temporary Special Shoring	1	LS
23	850	Junction Structure MH# 101 (Ave B at Josephine), Inclusive of Connection of Existing 80" Sanitary Sewer Line, 86" Staboot with Cap, Fiberglass Barrier Insert. Complete and In-Place.	1	LS
24	850	Junction Structure MH# 104 (Siphon 1 Downstream Siphon Structure), Complete and In-Place.	1	LS
25	850	Junction Structure MH# 105 (Siphon 1 Upstream Siphon Structure), Complete and In-Place.	1	LS
26	850	Junction Structure MH# 111 (Ave B) Inclusive of Connection of Existing 60" and Proposed 6" Sanitary Sewer Line, Cutting and Plugging of Existing 60" Sewer.	1	LS
27	850	Junction Structure MH# 201 (Siphon 2 Downstream Siphon Structure), Inclusive of Connection of Existing 12" Sanitary Sewer Line. Complete and In-Place.	1	LS
28	850	Junction Structure MH# 205 (Siphon 2 Upstream Siphon Structure), Complete and In-Place.	1	LS
29	850	Junction Structure MH# 208 (Mulberry Junction Box) Inclusive of Connection of Existing 80" Sanitary Sewer Line, Cutting and Plugging of Existing 80" Sewer.	1	LS
30	850	Junction Structure MH# 310 (Ave B at Tuleta) Inclusive of Connection of Existing 54" Sanitary Sewer Line, Cutting and Plugging of 54" Sewer, Complete and In-Place.	1	LS

31	850	Junction Structure MH# 403 (Upstream Structure at North White Parking Lot), Inclusive of Connection of Existing 54" Sanitary Sewer Line, Cutting and Plugging of 54" Sewer.	1	LS
32	853	TEE Base Fiberglass Manhole, on 60" Pipe with 60" Riser	16	EA
33	853	TEE Base Fiberglass Manhole, on 60" Pipe with 60" Riser	5	EA
34	853	TEE Base Fiberglass Manhole, on 54" Pipe with 60" Riser	5	EA
35	853	TEE Base Fiberglass Manhole, with 54" Drop Connection, on 54" Pipe	1	EA
36	853	TEE Base MH 60" Riser Extra Depth	395	VF
37	852,853	Sanitary Sewer Manhole, 4' Dia., Complete and In-Place, Inclusive of connects to existing and proposed sewers.	7	EA
38	853	Standard 4' Manhole Extra Depth (-6')	13	VF
39	855,910	Manhole Rehabilitation - Structural High Sulfate Lining	200	VF
40	855	Reconstruction of Existing Manhole for Reroute of Sanitary Connection (Sheet C-107 MH# 166-588/018) and Lions Field Adult Center (Sheet R/A 201 MH# 166-588/46) Inclusive of Coating with Structural High Sulfate Lining per Item 910.	2	EA
41	2003	Odor Control Setup and Removal	1	LS
42	2003	Odor Control Equipment Rental	1	LS
43	2003	Odor Control Biochemical Solution	1	LS
44	858	Concrete Encasement	869	C.V.
45	862	Abandon existing siphon structure	4	EA
46	862	Abandon WW Manhole	29	EA
47	862	Remove WW Manhole	13	EA
48	862	Abandonment of Sanitary Sewer Main (8'-12") Cut and Plug with 10' of Grout, Complete and In-Place.	28	EA
49	862	Abandonment of Sanitary Sewer Main (18'-24") Cut and Plug with 10' of Grout, Complete and In-Place.	18	EA
50	862	Abandonment of Sanitary Sewer Main (30' and Larger) Cut and Plug with 10' of Grout, Complete and In-Place.	28	EA
51	854	6" Sanitary Sewer Service PVC SDR 26, ASTM D-3034, 115 psi (Relay for Lions Field Center and Golf Course), Complete and In-Place. Inclusive of coordination with sewer service customer, locating existing building service submittals/clean-out all things.c	1,460	LF
52	1103/854	Reconnection of Sanitary Sewer Service	10	EA
53	1501	Storm Water Pollution Prevention Plan (SWPPP) and Execution	1	LS
54	500	Concrete Curb	300	LF
55	502	Concrete Sidewalks	225	SY
56	503	Asphaltic Concrete, Portland Cement Concrete and Gravel Driveway	100	SY
57	504	Concrete Median	267	SY
58	511/803	Cutting and Replacing with Flexible Base and Temporary All Weather Surface to Allow For Traffic Until the Final Asphalt Concrete Paving is Complete. (Trench Repair), Complete and In-Place.	5,400	SY
59	209	Salvaging, Hauling, and Stockpiling Reclaimable Asphalt Pavement	1,360	C.V.
60	205	Hot Mix Asphaltic Pavement Type D - 3 inches pavement thickness (Edge of Pavement to Edge of Pavement Overlay). Complete and In-Place.	16,297	SY
61	804	Hydromulching	1,500	SY
62	804	Sodding	15,445	SY
63	830	Baricades, Signs and Traffic Handling	1	LS
64	540	Inlet Protection	4	EA
65	542	Temporary Sediment Control Fence (Silt Fence)	8,013	LF
66	540	Construction Exits (Install/Remove)	311	SY
67	544	Rock Filter Dams (Type 1 - 5)	100	LF
68	801	Tree Protection	1	LS
69	3000	Removal, Transportation, and Disposal	1	LS
70	3000	Asbestos Abatement Work Plan	1	LS
71	401	Storm Sewer Adjustment to Include Up to 100 Linear Feet of 42" Dia RCP Storm Pipe Joined to Existing RCP Pipe with Concrete Collars at Both Ends within The Lions Field Park. Complete and In-Place.	1	LS

REVISION DESCRIPTION

NO.	DATE	DESCRIPTION
1	MR/10-18-11	Addendum 2

APPROVED BY: [Signature]

DATE: 10-18-11

WESTON SOLUTIONS, INC.
70 NE LOOP 410, SUITE 600
SAN ANTONIO, TEXAS 78216-5842
REGISTERED ENGINEERING FIRM # 3123

SAWS OLMO'S BASIN CENTRAL WATERSHED
SEWER RELIEF LINE (C-3) REACHES 1-4

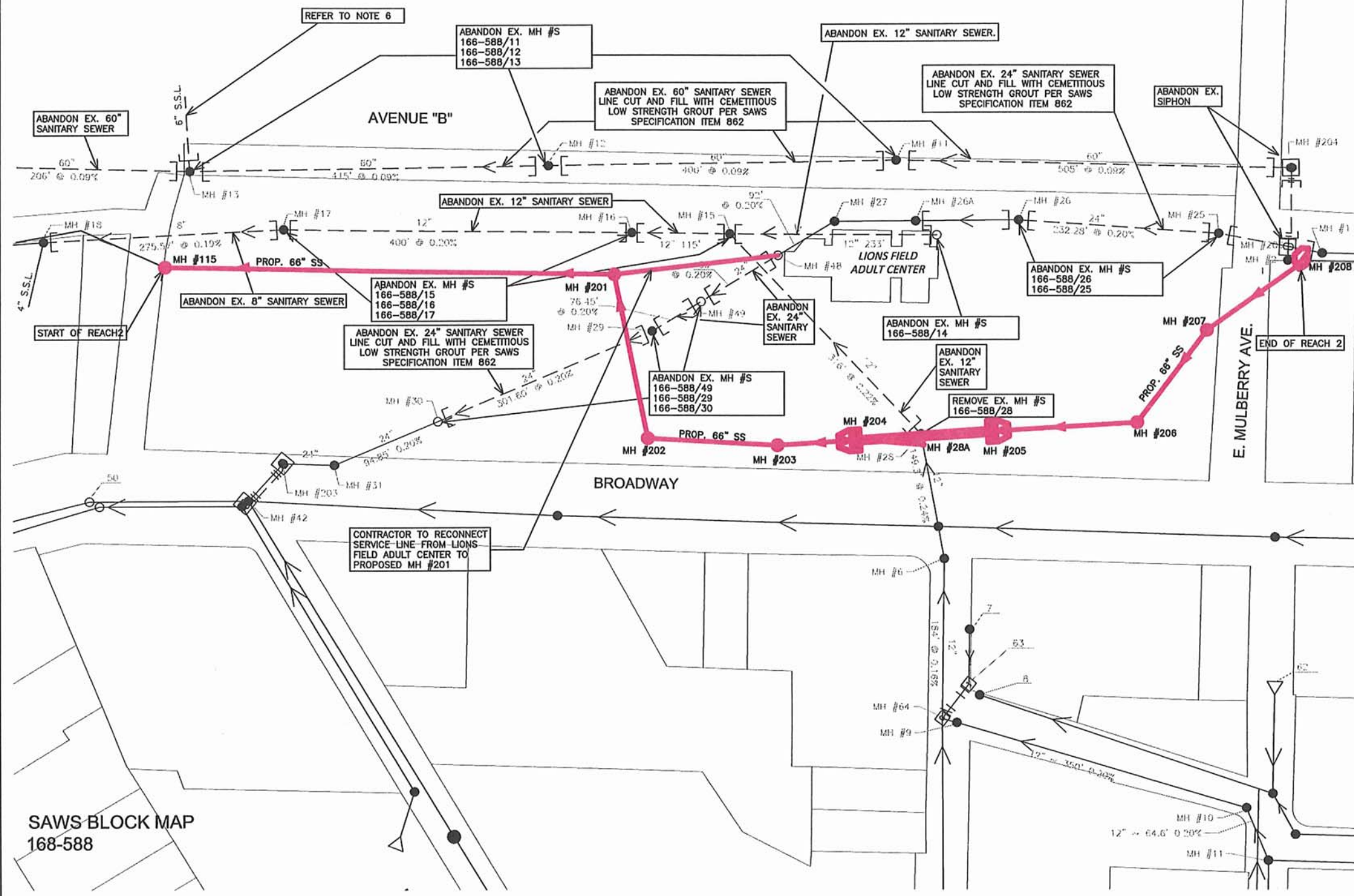
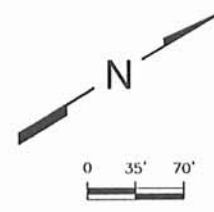
GENERAL NOTES-2

san Antonio water system

NOTES	INITIALS	DATE
DESIGNED BY	AH	10/18/11
REVIEWED BY	MRJ	10/18/11

SCALE: AS SHOWN

SHEET NO. **G-003**
3 OF 123

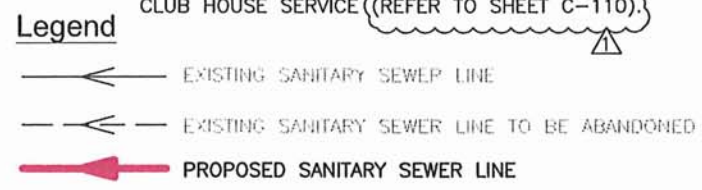


REACH-2 WASTEWATER LINE TO BE ABANDONED			
FROM MH#	TO MH #	SIZE OF PIPE	LENGTH OF PIPE (LF)
166-588/013	166-588/012	60"	415
166-588/012	166-588/011	60"	400
166-588/011	166-588/204	60"	505
166-588/204	168-588/200	60"	80
168-588/200	168-588/002	60"	30
166-588/018	166-588/017	12"	275.57
166-588/017	166-588/016	12"	400
166-588/016	166-588/015	12"	115
166-588/015	166-588/014	12"	233
166-588/015	166/588/028	12"	316
166-588/042	166-588/203	21" & 15"	59.19
166-588/203	166-588/031	24"	59.36
166-588/031	166-588/030	24"	94.85
166-588/030	166-588/029	24"	301.6
166-588/029	166-588/049	24"	76.45
166-588/049	166-588/048	24"	159
166-588/048	168-588/832	24"	119.57

TO BE ABANDONED PER SAWS SPECIFICATION ITEM NO. 862.
 * REMOVE COMPLETELY FOR INSTALLATION OF PROPOSED 66" SS LINE.

MH TO BE ABANDONED	MH TO BE REMOVED	MH TO BE REHAB/ADJUSTED
166-588/012	166/588/028	166-588/048
166-588/011	168-588/002	
166-588/204	168-588/832	
168-588/200		
166-588/017		
166-588/016		
166-588/015		
166-588/014		
166-588/030		
166-588/029		
166-588/049		
166-588-025		
REMOVE RING, COVER AND CONE SECTION. CUT AND PLUG ALL SIDES IN ACCORDANCE WITH SAWS SPECIFICATION NO. 862	TO BE REMOVED COMPLETELY FOR INSTALLATION OF PROPOSED 66" SS LINE	ADJUST MANHOLE IN ACCORDANCE WITH SAWS SPECIFICATION NO. 851

- NOTES:
- CONTRACTOR SHALL MAINTAIN EXISTING FLOWS DURING CONSTRUCTION.
 - CONTRACTOR SHALL SUBMIT FLOW MANAGEMENT AND BY-PASS PUMPING IN ACCORDANCE WITH ITEM 01540 "FLOW MANAGEMENT AND BY-PASS PUMPING" AND ITEM 01300 "SUBMITTALS" OF THE PROJECT SPECIFICATIONS.
 - LINES INDICATED AS 'ABANDON' SHALL BE CUT AND PLUGGED WITH CEMENTITIOUS LOW STRENGTH GROUT FOR 10 L.F. GROUT SHALL CONFORM TO SAWS SPECIFICATION ITEM NO. 862.
 - MANHOLES SHOWN PROPOSED FOR ABANDONMENT SHALL BE REMOVED TO MIN. OF 2 FEET BELOW GRADE IN ACCORDANCE WITH SPECIFICATION NO. 862.
 - CONTRACTOR SHALL LOCATE AND RELAY SERVICE LATERALS FROM THE LIONS FIELD BUILDING AND CONNECT SERVICES TO EX 24" SANITARY SEWER. KEEP 24" SEWER LINE IN SERVICE FROM MH #166-588/26A TO 166-588/48. CONNECT MH #166-588/48 TO PROPOSED MH #201. SUBMIT PROPOSED PLAN FOR SEWER RELOCATION.
 - CONTRACTOR SHALL RELOCATE EXISTING 6" SS GOLF COURSE SERVICE LINE AND CONNECT TO GOLF COURSE CLUB HOUSE SERVICE (REFER TO SHEET C-110).



SAWS BLOCK MAP
168-588

REHABILITATION AND ABANDONMENT PLAN FOR EXISTING SEWER SYSTEM
 SCALE: 1"=70'-0"

WESTON SOLUTIONS, INC.
 70 NE LOOP 410, SUITE 600
 WESTON SOLUTIONS, SAN ANTONIO, TEXAS 78216-6842
 TEXAS REGISTERED ENGINEERING FIRM F-3123

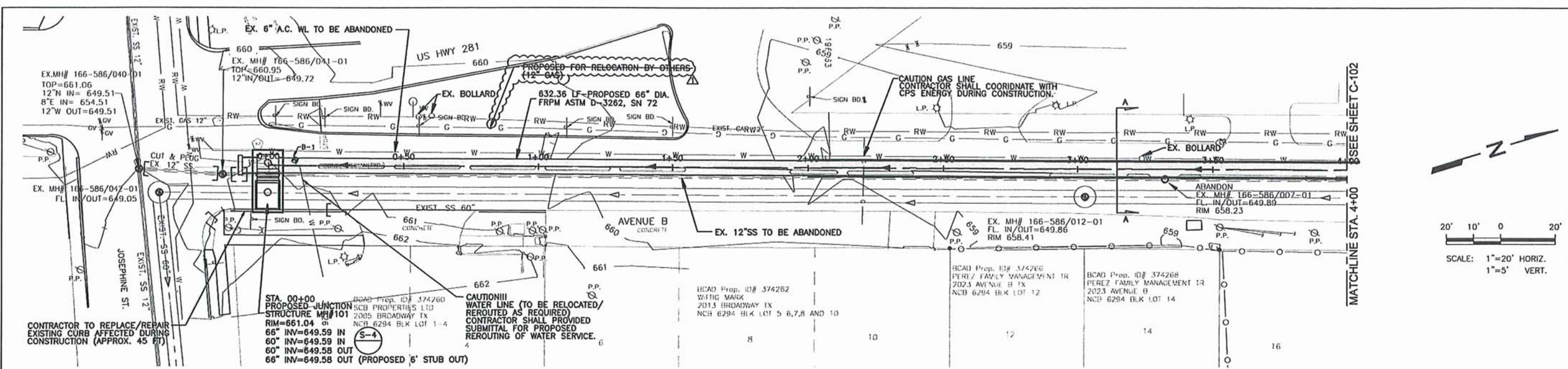
SAWS OLMO BASIN CENTRAL WATERSHED
 SEWER RELIEF LINE (C-3) REACHES 1-4
 REHABILITATION AND ABANDONMENT
 PLAN FOR EXISTING SEWER SYSTEM REACH-2

San Antonio Water System

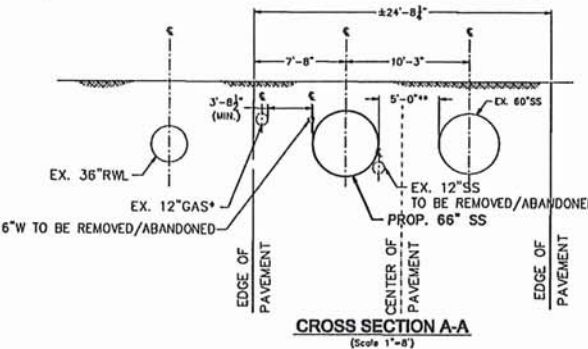
NOTES INITIALS DATE
 DESIGNED BY AH 10/18/11
 REVIEWED BY MRJ 10/18/11
 SCALE: AS SHOWN
 SHEET NO. R/A-201
 11 OF 123

REVISION DESCRIPTION
 1 MRJ/10-18-11 Addendum 2

Professional Engineer Seal: HARDEL RETES JIMENEZ, LICENSED PROFESSIONAL ENGINEER, NO. 91965, STATE OF TEXAS, EXPIRES 10/18/2011.



PLAN VIEW



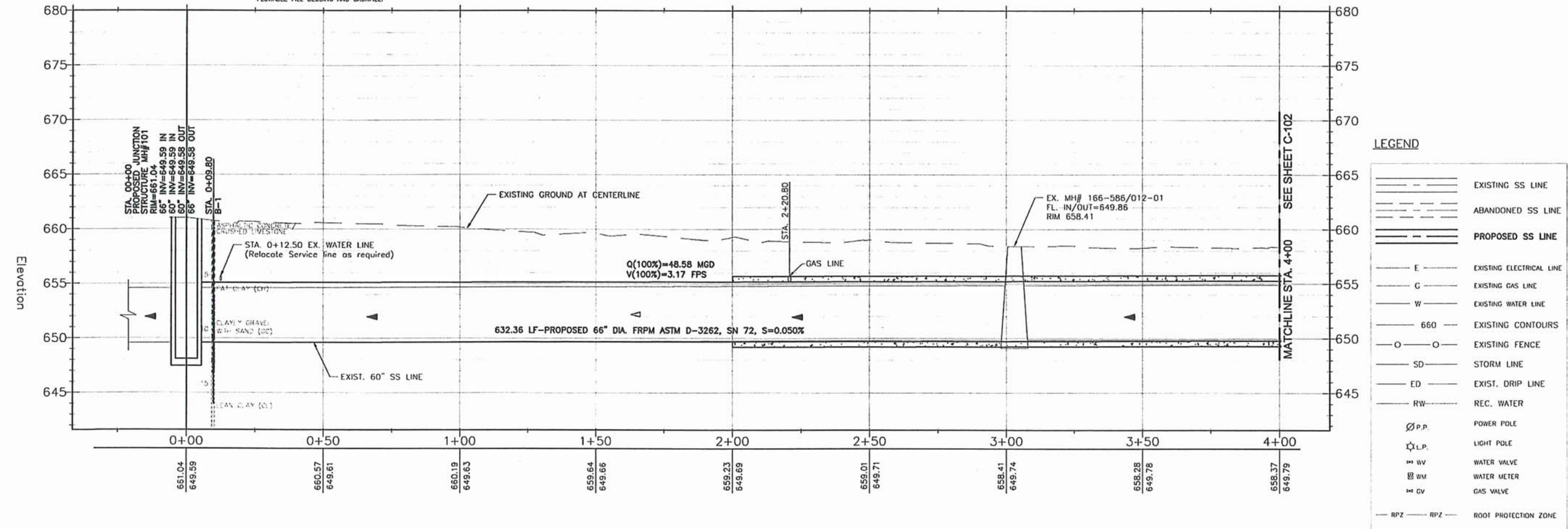
CROSS SECTION A-A
(Scale 1"=8')

STA 0+00 TO STA. 9+00
 * CONTRACTOR SHALL VERIFY LOCATION OF EX. 12" GAS LINE PRIOR TO CONSTRUCTION OF 66" SEWER.
 ** WITH ENGINEER AND OWNER APPROVAL, CONTRACTOR CAN REDUCE SEPARATION OF EXIST. AND PROP. SEWER TO PROVIDE ADDITIONAL CLEARANCE BETWEEN EX. GAS AND PROP. SEWER.

UTILITY CROSS SECTION INTENDED TO SHOW TYPICAL, APPROXIMATE UTILITY LOCATIONS AND DEPTHS RELATIVE TO THE ADJACENT UTILITIES. CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES.

- NOTES:
- TRENCH EXCAVATION SAFETY PROTECTION. CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN, GEOTECHNICAL, SAFETY, OR 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 THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OF 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 SHALL BE RESPONSIBLE FOR PROTECTING EXISTING FEATURES DURING CONSTRUCTION. ANY FEATURES DAMAGED SHALL BE REPAIRED OR REPLACED AT CONTRACTOR'S EXPENSE.
 - UTILITIES SUCH AS WATER, ELECTRIC, GAS, FIBER OPTICS, AND TELECOMMUNICATIONS MAY EXIST WITHIN THE WORK AREA. THE UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE AND FOR INFORMATION ONLY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL UTILITIES SHOWN AND NOT SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO UTILITIES CAUSED BY CONTRACTOR'S OPERATIONS.
 - AT ALL TIMES THE CONTRACTOR SHOULD CALL FOR LOCATES THROUGH THE "ONE CALL" UTILITY LOCATE SERVICE (1-800-344-8377) 48 HOURS PRIOR TO CONSTRUCTION/EXCAVATION WORK. CONTRACTORS HAVE THE RESPONSIBILITY TO PROTECT AND SUPPORT TELEPHONE COMPANY PLANT DURING CONSTRUCTION.
 - CALL THE TEXAS STATE WIDE ONE CALL LOCATOR NUMBER 1-800-344-8377, 48 HOURS BEFORE BEGINNING ANY EXCAVATION. DUE TO FEDERAL REGULATION TITLE 49, PART 192.101, OPS 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. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING CFS OVERHEAD AND UNDERGROUND ELECTRIC FACILITIES IF ADJACENT TO WORK AREA.
 - EXISTING SERVICE CONNECTIONS SHALL BE RECONNECTED TO PROPOSED MAIN OR MANHOLES. THE LOCATION & NUMBER OF SERVICES WAS NOT CONFIRMED. OTHER SERVICES NOT SHOWN MAY BE PRESENT.
 - CONTRACTOR SHALL SUBMIT A TRENCH EXCAVATION AND PIPE LINE PROTECTION PLAN PRIOR TO CONSTRUCTION.
 - USE OF FLOWABLE BACKFILL FOR PIPELINE BEDDING AND BACKFILL WILL BE NECESSARY IN SOME AREAS WHERE COMPACTION IN ACCORDANCE WITH SAWS STANDARD SPECIFICATION ITEM 804 CANNOT BE ACCOMPLISHED. CONTRACTOR SHALL IDENTIFY THESE AREAS WHERE FLOWABLE FILL IS NECESSARY. FLOWABLE FILL SHALL CONFORM TO COSA STANDARD SPECIFICATION ITEM 413 AND SPECIAL PROVISIONS TO ITEM 413. NO SEPARATE PAYMENT WILL BE MADE FOR FLOWABLE FILL BEDDING AND BACKFILL.

NOTE: CONTRACTOR SHALL PROVIDE CONCRETE ENCASEMENT FOR ALL SEWER PIPES HAVING COVER LESS THAN 3 FT TO SUBGRADE. (FROM STA 2+00 TO STA 7+50 APPX.). REFER TO DETAIL 3 ON SHEET D-1.



PROFILE VIEW

LEGEND

	EXISTING SS LINE
	ABANDONED SS LINE
	PROPOSED SS LINE
	EXISTING ELECTRICAL LINE
	EXISTING GAS LINE
	EXISTING WATER LINE
	EXISTING CONTOURS
	EXISTING FENCE
	STORM LINE
	EXIST. DRIP LINE
	REC. WATER
	POWER POLE
	LIGHT POLE
	WATER VALVE
	WATER METER
	GAS VALVE
	ROOT PROTECTION ZONE

REVISION DESCRIPTION

NO.	DATE	DESCRIPTION
1	10/18/11	ADDENDUM 2

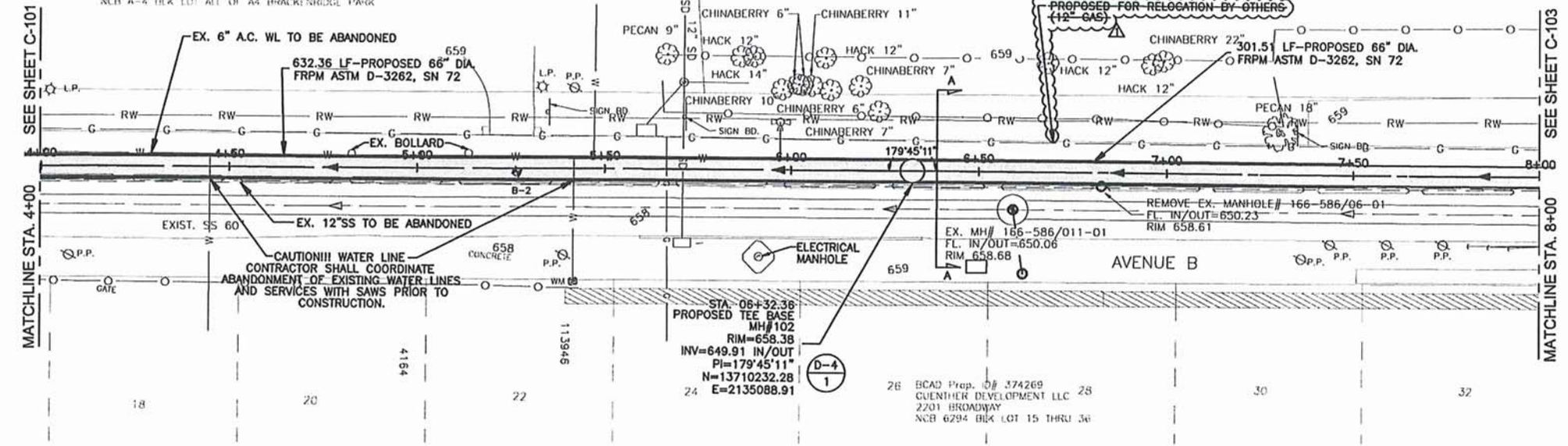
SCALE: 1"=20' HORIZ. 1"=5' VERT.

WESTON SOLUTIONS, INC. 70 NE LOOP 410, SUITE 600 SAN ANTONIO, TEXAS 78216-5842

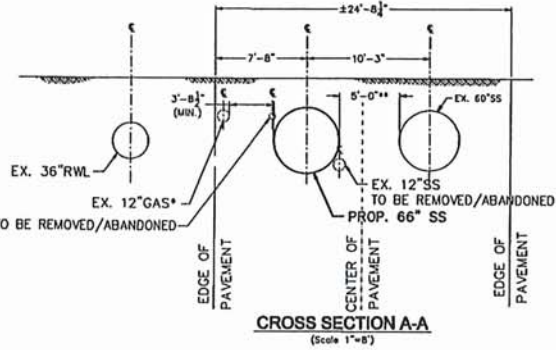
SAWS OLMO BASIN CENTRAL WATERSHED SEWER RELIEF LINE (C-3) REACHES 1-4 PLAN AND PROFILE STA 0+00 TO 4+00

DESIGNED BY: AH 10/18/11
 REVIEWED BY: MRJ 10/18/11
 SCALE: AS SHOWN

SHEET NO. C-101 14 OF 123



PLAN VIEW

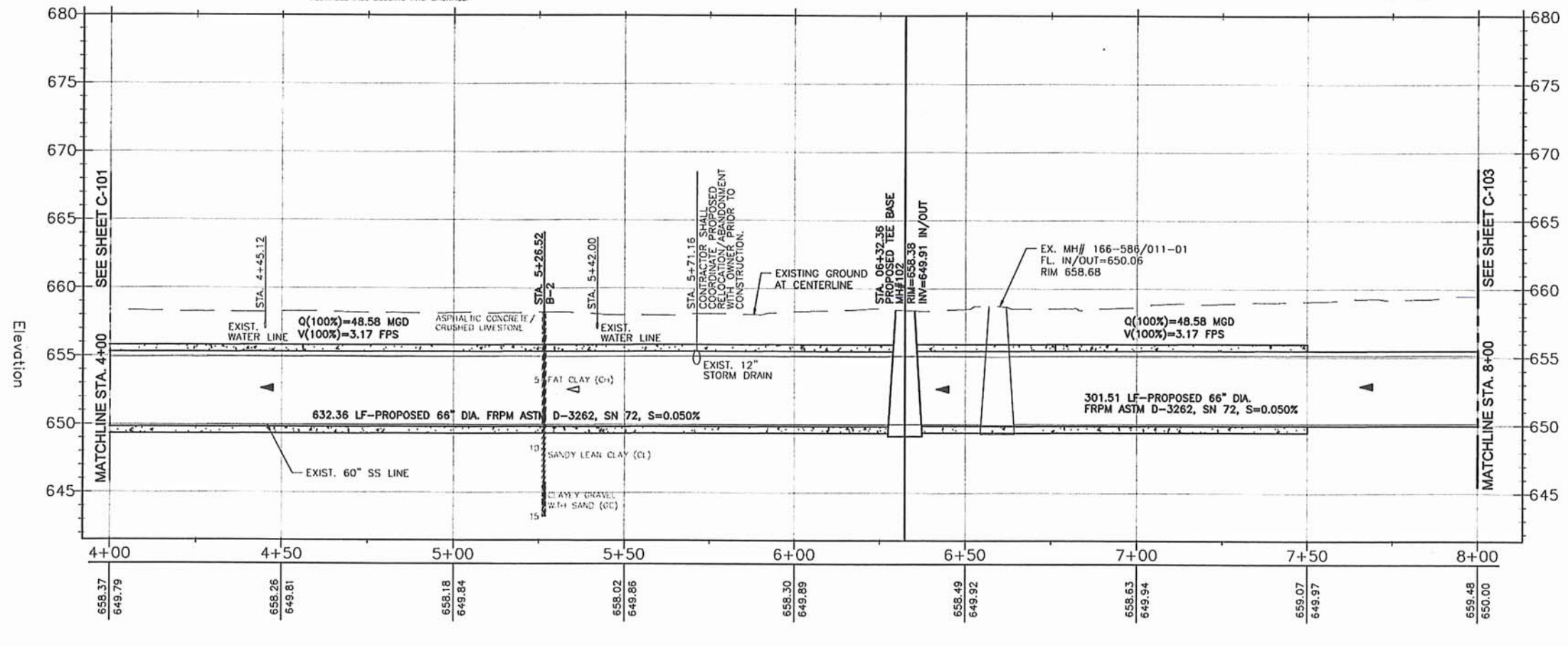


STA. 0+00 TO STA. 9+00
 * CONTRACTOR SHALL VERIFY LOCATION OF EX. 12" GAS LINE PRIOR TO CONSTRUCTION OF 66" SEWER.
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- NOTES:**
- TRENCH EXCAVATION SAFETY PROTECTION. CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL, DESIGN, GEOTECHNICAL, SAFETY, OR 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 THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OF 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.
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PROFILE VIEW

LEGEND

	EXISTING SS LINE
	ABANDONED SS LINE
	PROPOSED SS LINE
	EXISTING ELECTRICAL LINE
	EXISTING GAS LINE
	EXISTING WATER LINE
	EXISTING CONTOURS
	EXISTING FENCE
	STORM LINE
	EXIST. DRIP LINE
	REC. WATER
	POWER POLE
	LIGHT POLE
	WATER VALVE
	WATER METER
	GAS VALVE
	ROOT PROTECTION ZONE

REVISION DESCRIPTION	DATE	BY
1. MRJ 10-18-11 Addendum 2		

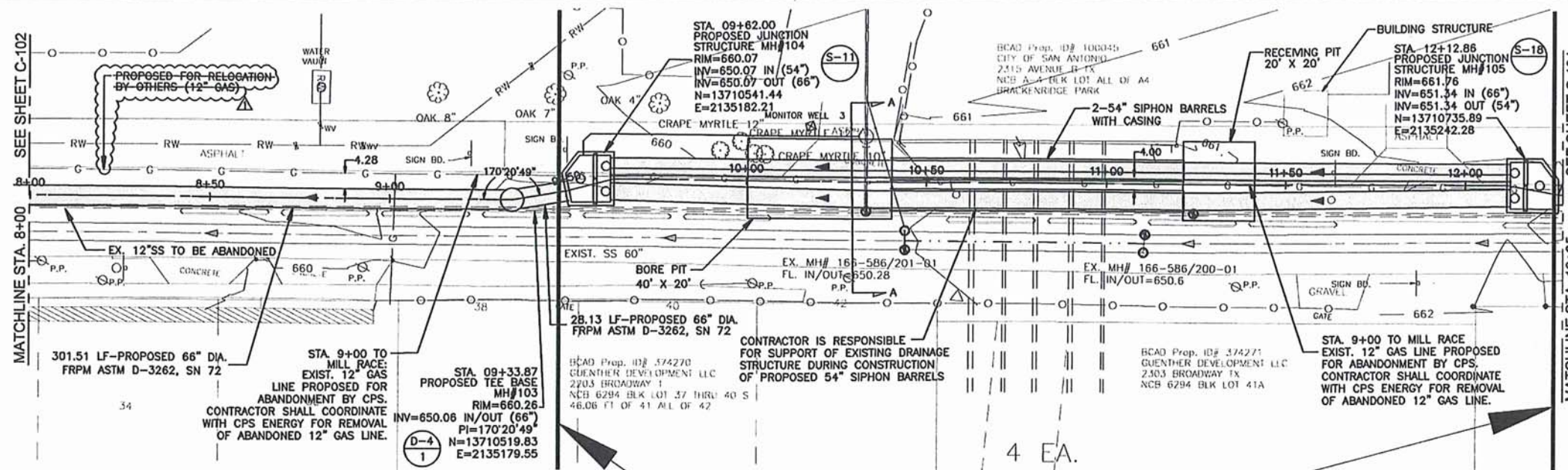
WESTON SOLUTIONS, INC.
 70 NE LOOP 410, SUITE 600
 SAN ANTONIO, TEXAS 78216-5842
 TEXAS REGISTERED ENGINEERING FIRM F-3123

San Antonio Water System
 SAWS OLMO BASIN CENTRAL WATERSHED
 SEWER RELIEF LINE (C-3) REACHES 1-4
 PLAN AND PROFILE
 STA 4+00 TO 8+00

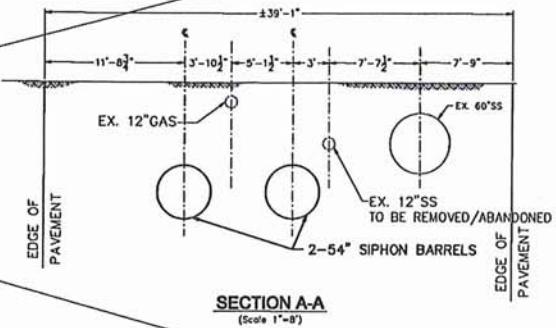
NOTES	INITIALS	DATE
DESIGNED BY	AH	10/18/11
REVIEWED BY	MRJ	10/18/11

SCALE: AS SHOWN

SHEET NO. **C-102**
15 OF 123



PLAN VIEW



SECTION A-A
(Scale 1"=8')

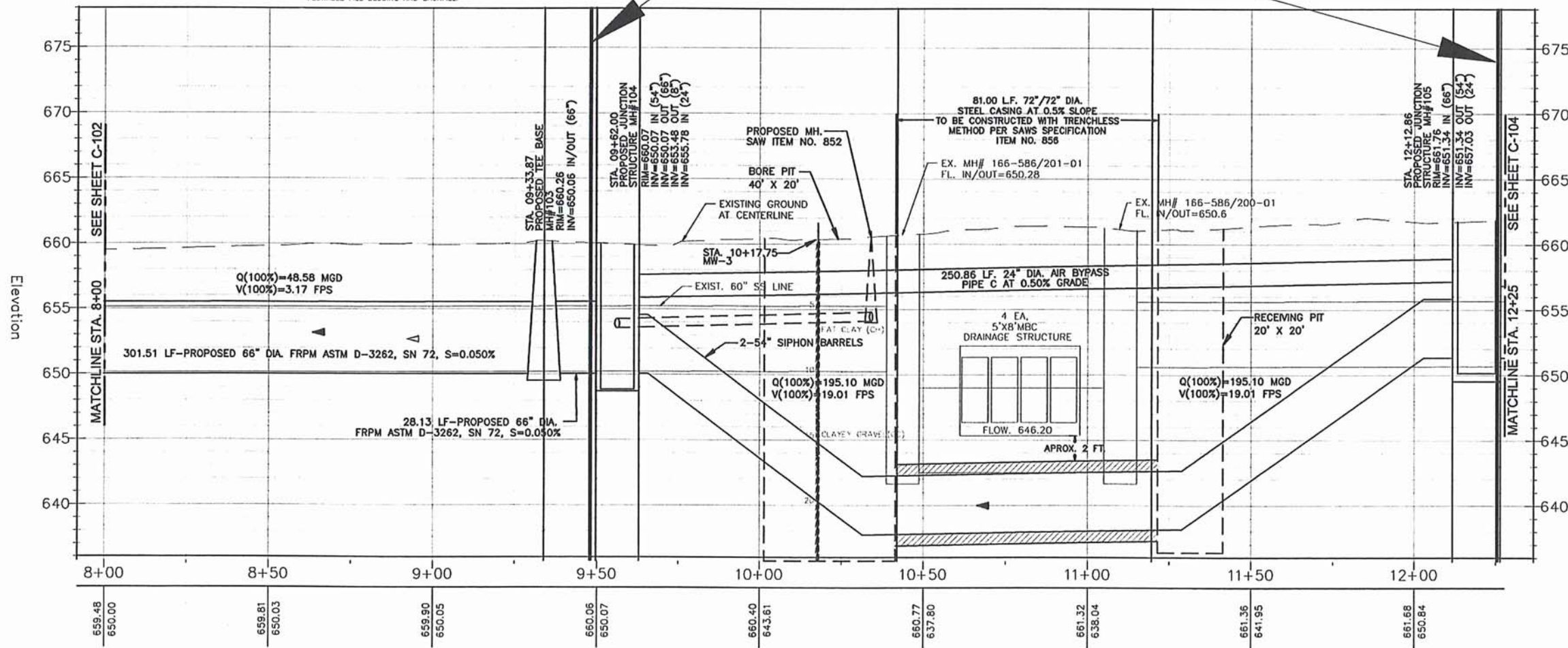
STA. 9+00 (APPROX.) TO 14+50 (APPROX.):
EX. 12" GAS TO BE ABANDONED IN-PLACE BY CPS PRIOR TO SAWS CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH CPS TO CONFIRM LIMITS OF ABANDONMENT COMPLETED. CONTRACTOR IS RESPONSIBLE FOR REMOVING ABANDONED GAS LINE AS REQUIRED FOR SEWER CONSTRUCTION (NSPI).

STA. 0+00 TO STA. 9+00
* CONTRACTOR SHALL VERIFY LOCATION OF EX. 12" GAS LINE PRIOR TO CONSTRUCTION OF 66" SEWER.
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STA. 9+62.00 TO 12+12.86 - REFER TO SHEETS:
S-2 (SIPHON PLAN & PROFILE)
S-11 (PROP. SIPHON STRUCTURE MH# 104)
S-18 (PROP. SIPHON STRUCTURE MH# 105)



PROFILE VIEW

LEGEND

	EXISTING SS LINE
	ABANDONED SS LINE
	PROPOSED SS LINE
	EXISTING ELECTRICAL LINE
	EXISTING GAS LINE
	EXISTING WATER LINE
	EXISTING CONTOURS
	EXISTING FENCE
	STORM LINE
	EXIST. DRIP LINE
	REC. WATER
	POWER POLE
	LIGHT POLE
	WATER VALVE
	WATER METER
	GAS VALVE
	ROOT PROTECTION ZONE

REVISION DESCRIPTION	DATE	BY
1. MRJ/10-18-11 Addendum 2		

10-18-11 10/18/2011

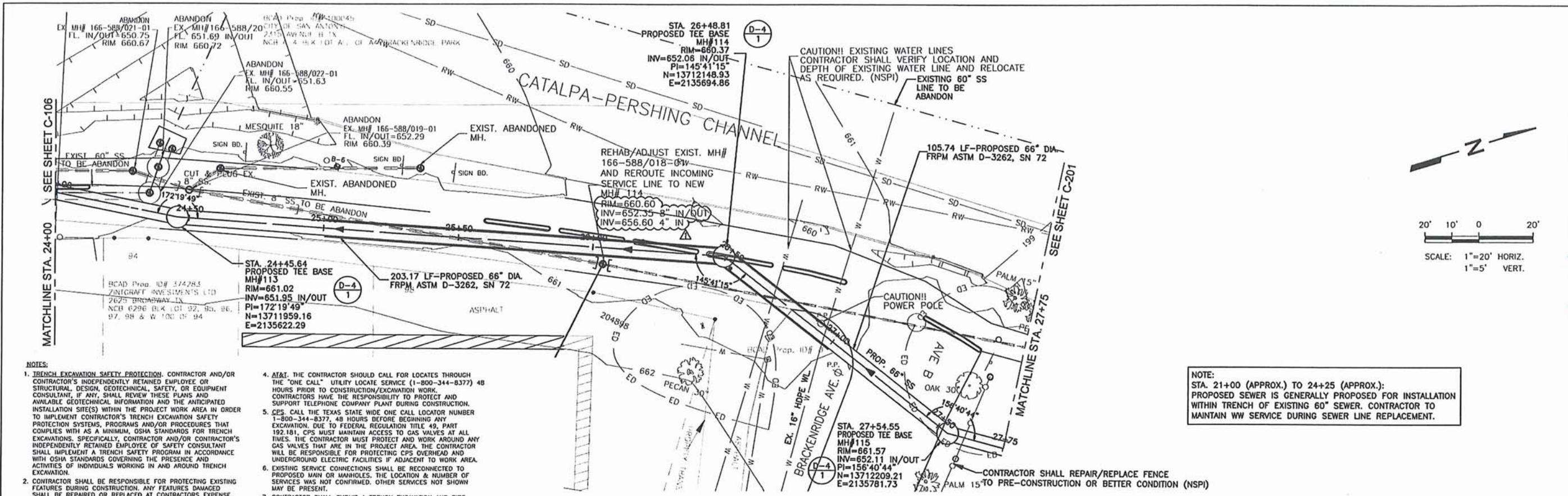
WESTON SOLUTIONS, INC.
70 NE LOOP 410, SUITE 600
SAN ANTONIO, TEXAS 78216-6842
TEXAS REGISTERED ENGINEERING FIRM F-3123

SAWS OLMO BASIN CENTRAL WATERSHED
SEWER RELIEF LINE (C-3) REACHES 1-4
PLAN AND PROFILE
STA 8+00 TO 12+25

San Antonio Water System

NOTES	INITIALS	DATE
DESIGNED BY	AH	10/18/11
REVIEWED BY	MRJ	10/18/11
SCALE:	AS SHOWN	

SHEET NO. C-103
16 OF 123

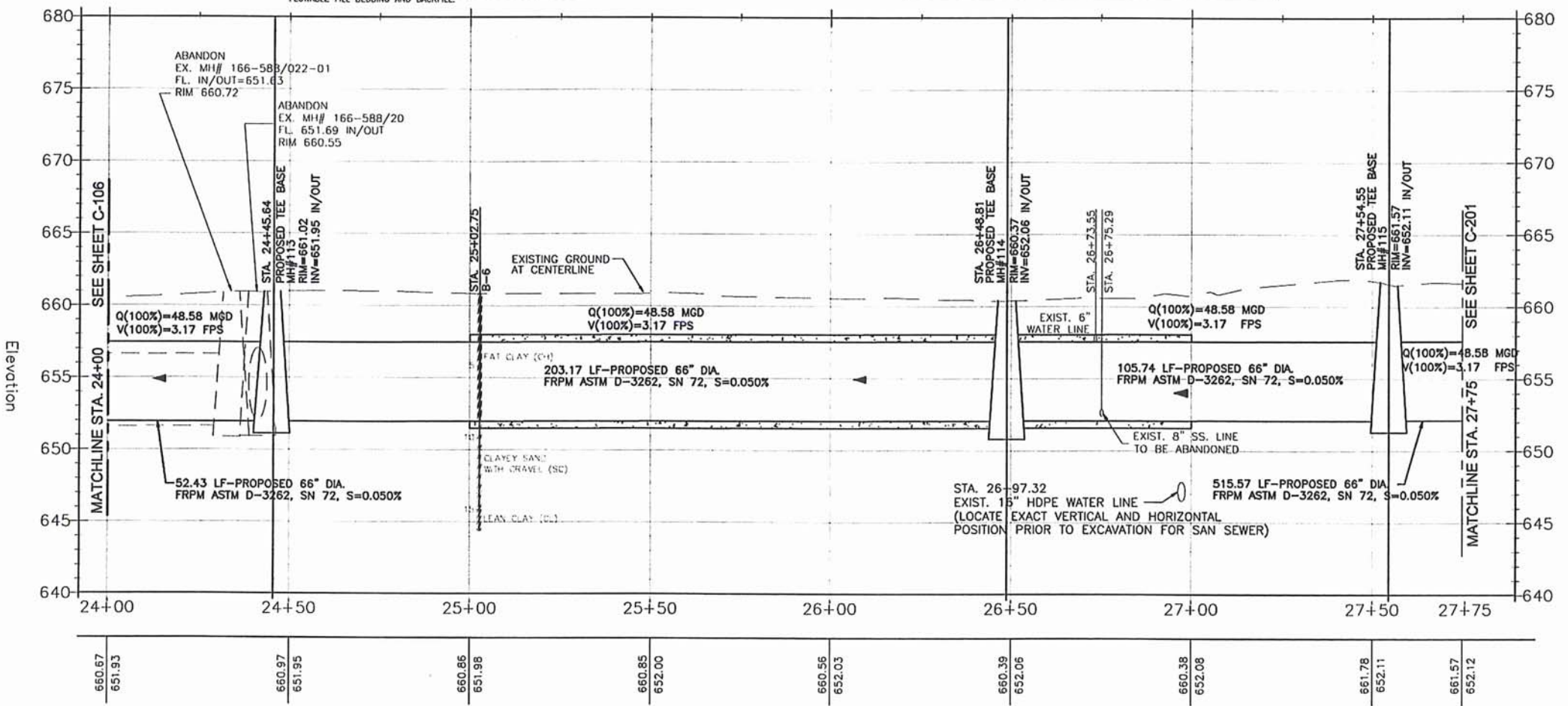


PLAN VIEW

- NOTES:**
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NOTE:
 STA. 21+00 (APPROX.) TO 24+25 (APPROX.):
 PROPOSED SEWER IS GENERALLY PROPOSED FOR INSTALLATION WITHIN TRENCH OF EXISTING 60" SEWER. CONTRACTOR TO MAINTAIN WW SERVICE DURING SEWER LINE REPLACEMENT.

NOTE: CONTRACTOR SHALL PROVIDE CONCRETE ENCASEMENT FOR ALL SEWER PIPES HAVING COVER LESS THAN 3 FT TO SUBGRADE. (FROM STA 25+00 TO STA 27+00 APPX.), REFER TO DETAIL 3 ON SHEET D-1.



PROFILE VIEW

LEGEND

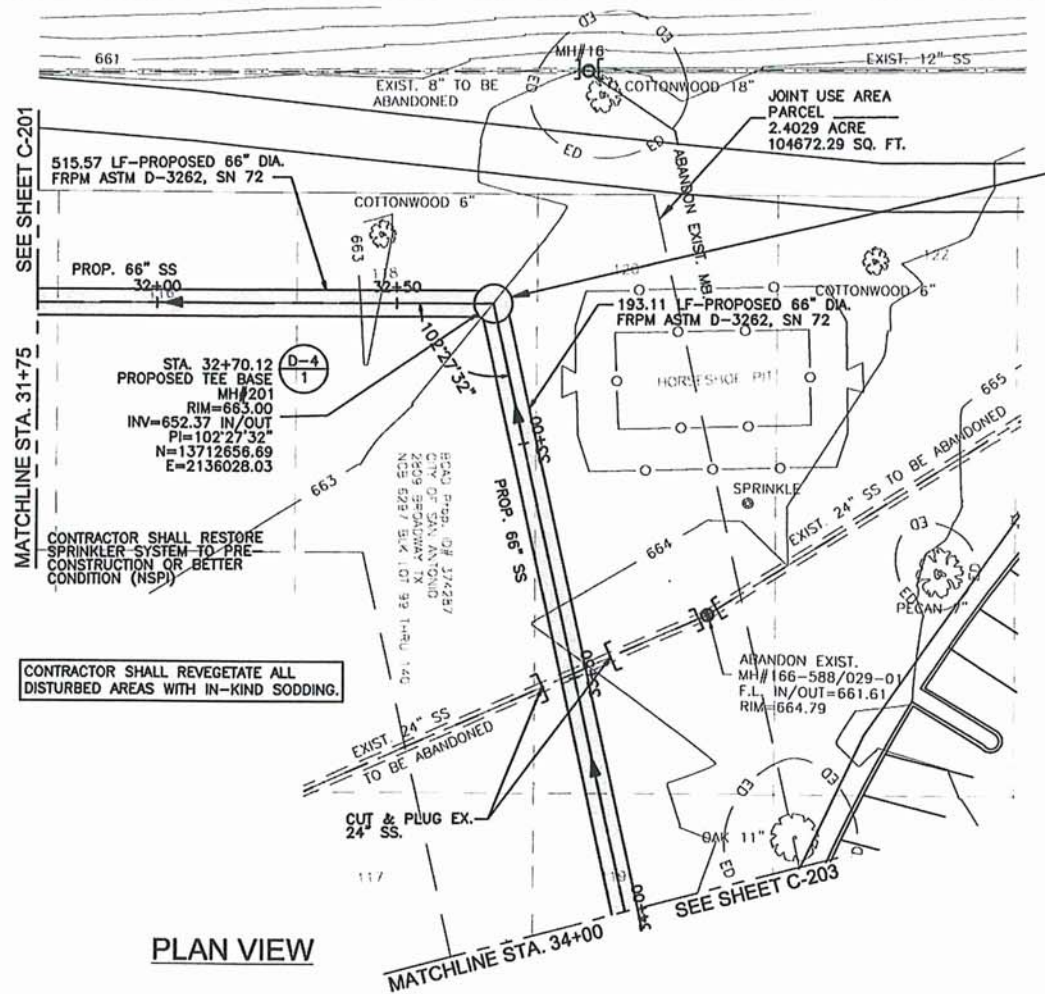
	EXISTING SS LINE
	ABANDONED SS LINE
	PROPOSED SS LINE
	EXISTING ELECTRICAL LINE
	EXISTING GAS LINE
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	EXISTING CONTOURS
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	POWER POLE
	LIGHT POLE
	WATER VALVE
	WATER METER
	GAS VALVE

REVISION DESCRIPTION	DATE	BY
1. MRJ 10-18-11 Addendum 2		

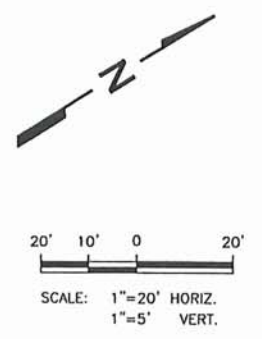
WESTON SOLUTIONS, INC.
 70 NE LOOP 410, SUITE 600
 SAN ANTONIO, TEXAS 78216-6842
 TEXAS REGISTERED ENGINEERING FIRM F-3123

San Antonio Water System
 SAWS OLMO BASIN CENTRAL WATERSHED
 SEWER RELIEF LINE (C-3) REACHES 1-4
 PLAN AND PROFILE
 STA 24+00 TO 27+75

NOTES	INITIALS	DATE
DESIGNED BY	AH	10/18/11
REVIEWED BY	MRJ	10/18/11
SCALE:	AS SHOWN	
SHEET NO.	C-107	
	20 OF 123	



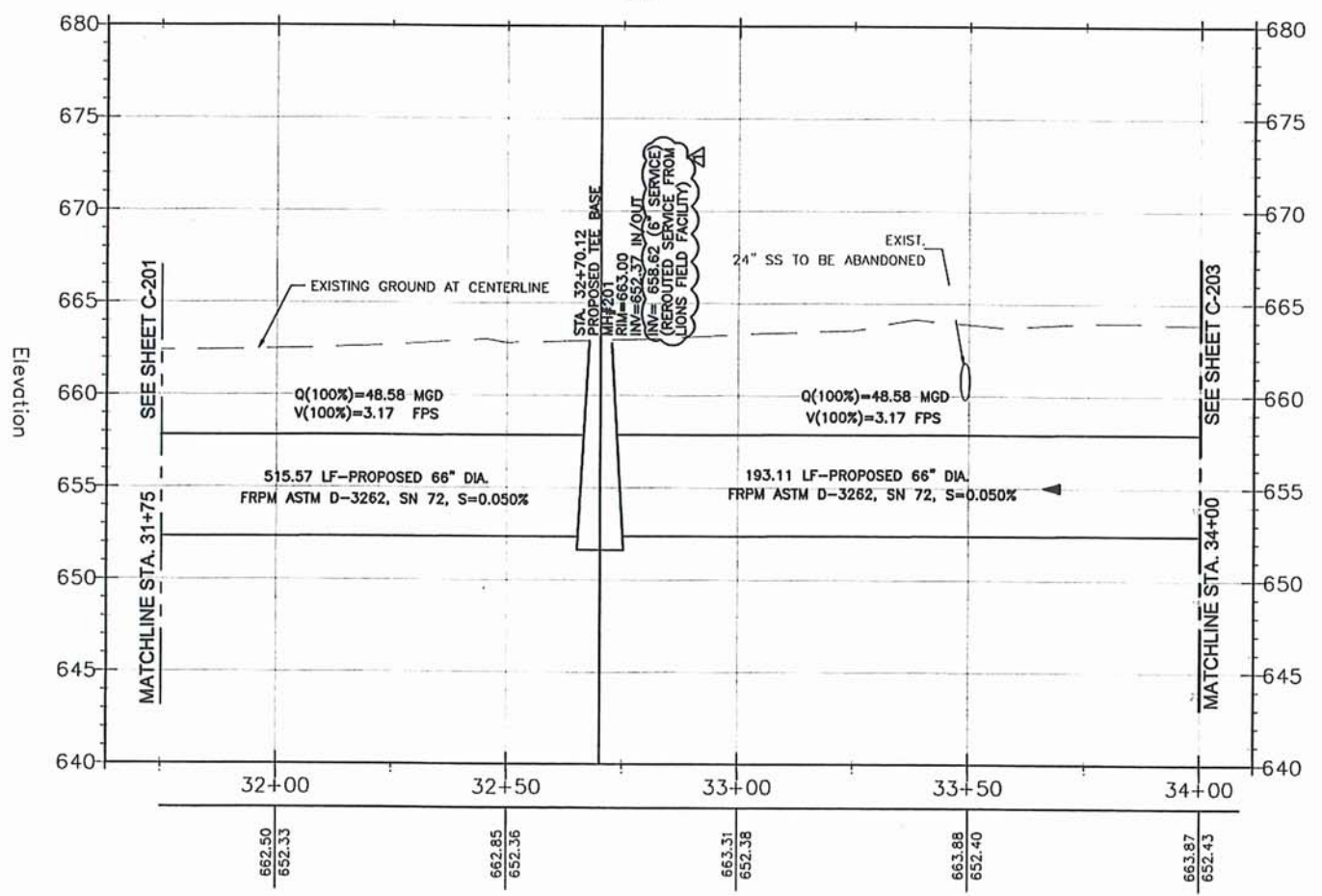
CONTRACTOR SHALL LOCATE AND RELAY SERVICE LATERAL FROM THE LIONS FILED BUILDING AND CONNECT SERVICE TO EX. 24" S.S. KEEP 24" S.S. LINE IN SERVICE FROM MH#166-588/26A TO MH#166-588/48. CONNECT MH#166-588/48 TO PROPOSED MH#201. REFER THE SHEET R/A-201 FOR DETAILS. SUBMIT PLAN FOR SEWER RELOCATION.



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 - REFER THE SHEET R/A-201 FOR PROPOSED PLAN FOR REHABILITATION AND/OR ABANDONMENT OF EXISTING SANITARY SEWER SYSTEM.
 - AT&E. THE CONTRACTOR SHOULD CALL FOR LOCATES THROUGH THE "ONE CALL" UTILITY LOCATE SERVICE (1-800-344-8377) 48 HOURS PRIOR TO CONSTRUCTION/EXCAVATION WORK. CONTRACTORS HAVE THE RESPONSIBILITY TO PROTECT AND SUPPORT TELEPHONE COMPANY PLANT DURING CONSTRUCTION.
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- CONTRACTOR SHALL RESTORE SPRINKLER SYSTEM TO PRE CONSTRUCTION OR BETTER CONDITION (NSP)
- CONTRACTOR SHALL REVEGETATE ALL DISTURBED AREAS WITH IN-KIND SODDING.

PLAN VIEW



PROFILE VIEW

LEGEND

	BIKE TRAIL
	EXISTING SS LINE
	ABANDONED SS LINE
	PROPOSED SS LINE
	EXISTING ELECTRICAL LINE
	EXISTING GAS LINE
	EXISTING WATER LINE
	EXISTING CONTOURS
	EXISTING FENCE
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	LIGHT POLE
	WATER VALVE
	WATER METER
	GAS VALVE
	ROOT PROTECTION ZONE

REVISED BY	DATE	REVISION DESCRIPTION
MRJ	10-18-11	Addendum 2

WESTON SOLUTIONS, INC.
70 NE LOOP 410, SUITE 600
SAN ANTONIO, TEXAS 78218-5842
TEXAS REGISTERED ENGINEERING FIRM F-3123

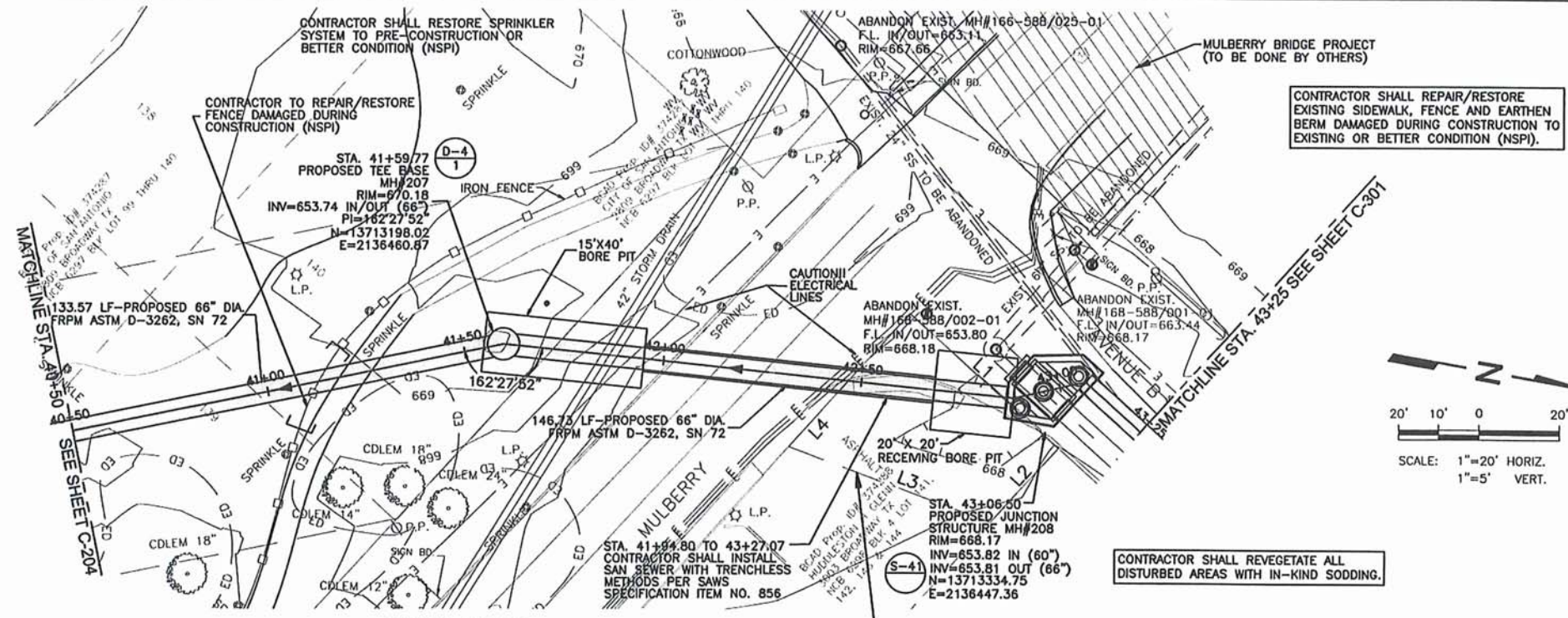
SAN ANTONIO WATER SYSTEM

SAWS OLMOS BASIN CENTRAL WATERSHED
SEWER RELIEF LINE (C-3) REACHES 1-4
PLAN AND PROFILE
STA 31+75 TO 34+00

NOTES	INITIALS	DATE
DESIGNED BY	AH	10/18/11
REVIEWED BY	MRJ	10/18/11

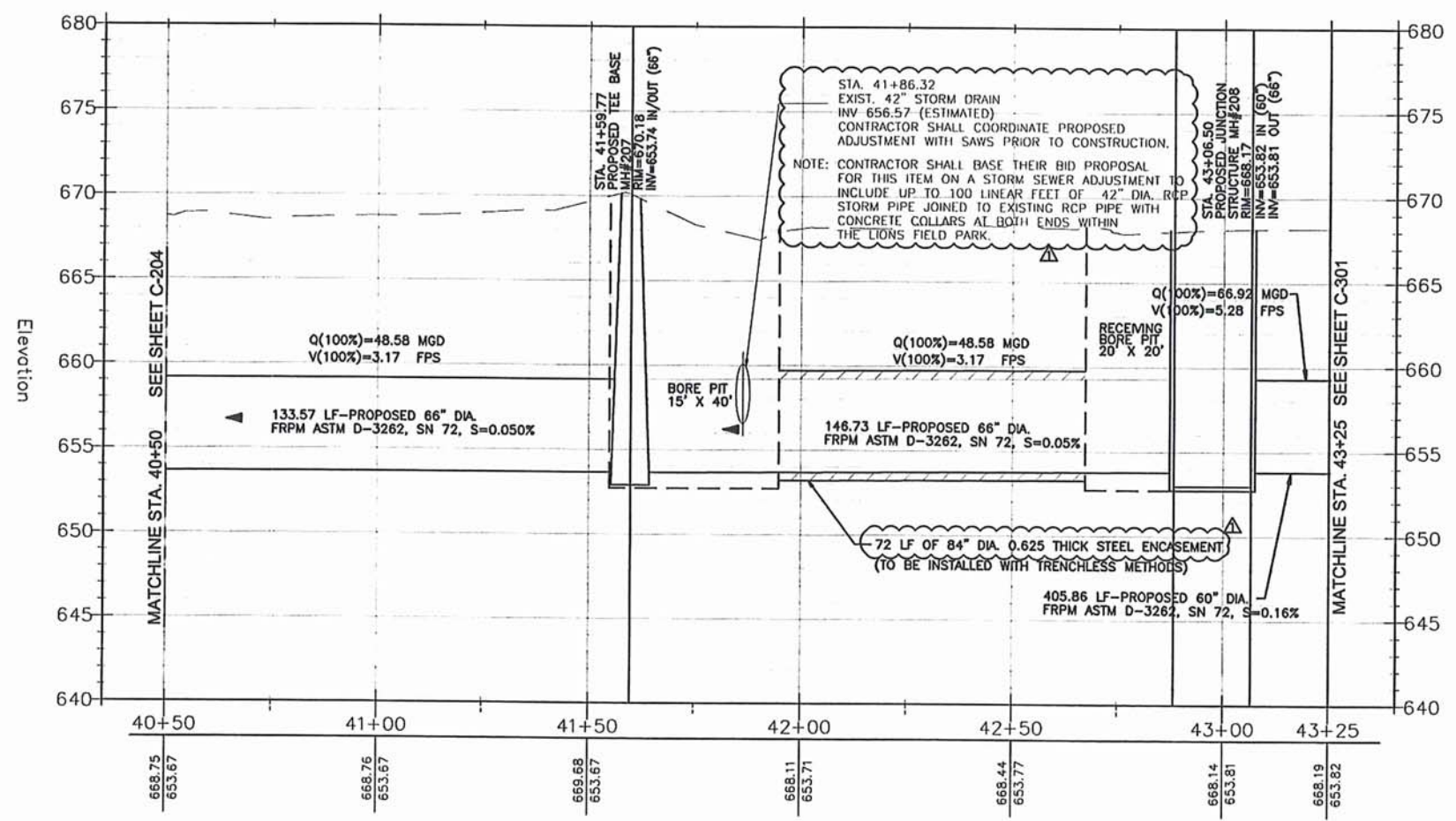
SCALE: AS SHOWN

SHEET NO. C-202
22 OF 123



PLAN VIEW

- NOTES:**
- TRENCH EXCAVATION SAFETY PROTECTION. CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL, DESIGN, GEOTECHNICAL, SAFETY, OR 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 THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OF 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 SHALL BE RESPONSIBLE FOR PROTECTING EXISTING FEATURES DURING CONSTRUCTION. ANY FEATURES DAMAGED SHALL BE REPAIRED OR REPLACED AT CONTRACTOR'S EXPENSE.
 - UTILITIES SUCH AS WATER, ELECTRIC, GAS, FIBER OPTICS, AND TELECOMMUNICATIONS MAY EXIST WITHIN THE WORK AREA. THE UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE AND FOR INFORMATION ONLY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL UTILITIES SHOWN AND NOT SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO UTILITIES CAUSED BY CONTRACTOR'S OPERATIONS.
 - REFER THE SHEET R/A-201 FOR PROPOSED PLAN FOR REHABILITATION AND/OR ABANDONMENT OF EXISTING SANITARY SEWER SYSTEM.
 - AT&T. THE CONTRACTOR SHOULD CALL FOR LOCATES THROUGH THE "ONE CALL" UTILITY LOCATE SERVICE (1-800-344-8377) 48 HOURS PRIOR TO CONSTRUCTION/EXCAVATION WORK. CONTRACTORS HAVE THE RESPONSIBILITY TO PROTECT AND SUPPORT TELEPHONE COMPANY PLANT DURING CONSTRUCTION.
 - CPS. CALL THE TEXAS STATE WIDE ONE CALL LOCATOR NUMBER 1-800-344-8377, 48 HOURS BEFORE BEGINNING ANY EXCAVATION, DUE TO FEDERAL REGULATION TITLE 49, PART 192.101, CPS 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. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING CPS OVERHEAD AND UNDERGROUND ELECTRIC FACILITIES IF ADJACENT TO WORK AREA.
 - EXISTING SERVICE CONNECTIONS SHALL BE RECONNECTED TO PROPOSED MAIN OR MANHOLES. THE LOCATION & NUMBER OF SERVICES WAS NOT CONFIRMED. OTHER SERVICES NOT SHOWN MAY BE PRESENT.
 - CONTRACTOR SHALL SUBMIT A TRENCH EXCAVATION AND PIPE LINE PROTECTION PLAN PRIOR TO CONSTRUCTION.
 - USE OF FLOWABLE BACKFILL FOR PIPELINE BEDDING AND BACKFILL WILL BE NECESSARY IN SOME AREAS WHERE COMPACTION IN ACCORDANCE WITH SAWS STANDARD SPECIFICATION ITEM 804 CANNOT BE ACCOMPLISHED. CONTRACTOR SHALL IDENTIFY THESE AREAS WHERE FLOWABLE FILL IS NECESSARY. FLOWABLE FILL SHALL CONFORM TO COSA STANDARD SPECIFICATION ITEM 413 AND SPECIAL PROVISIONS TO ITEM 413. NO SEPARATE PAYMENT WILL BE MADE FOR FLOWABLE FILL BEDDING AND BACKFILL.



PROFILE VIEW

LEGEND

	BIKE TRAIL
	EXISTING SS LINE
	ABANDONED SS LINE
	PROPOSED SS LINE
	EXISTING ELECTRICAL LINE
	EXISTING GAS LINE
	EXISTING WATER LINE
	EXISTING CONTOURS
	EXISTING FENCE
	STORM LINE
	EXIST. DRIP LINE
	REC. WATER
	POWER POLE
	LIGHT POLE
	WATER VALVE
	WATER METER
	GAS VALVE
	ROOT PROTECTION ZONE

REVISION DESCRIPTION	DATE	BY
1 MRJ10-18-11 Addendum 2		

WESTON SOLUTIONS, INC. 70 NE LOOP 410, SUITE 600 SAN ANTONIO, TEXAS 78216-5842
 TEXAS REGISTERED ENGINEERING FIRM F-3123

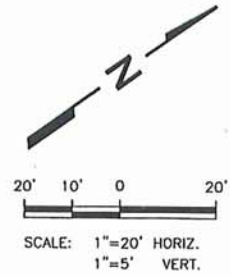
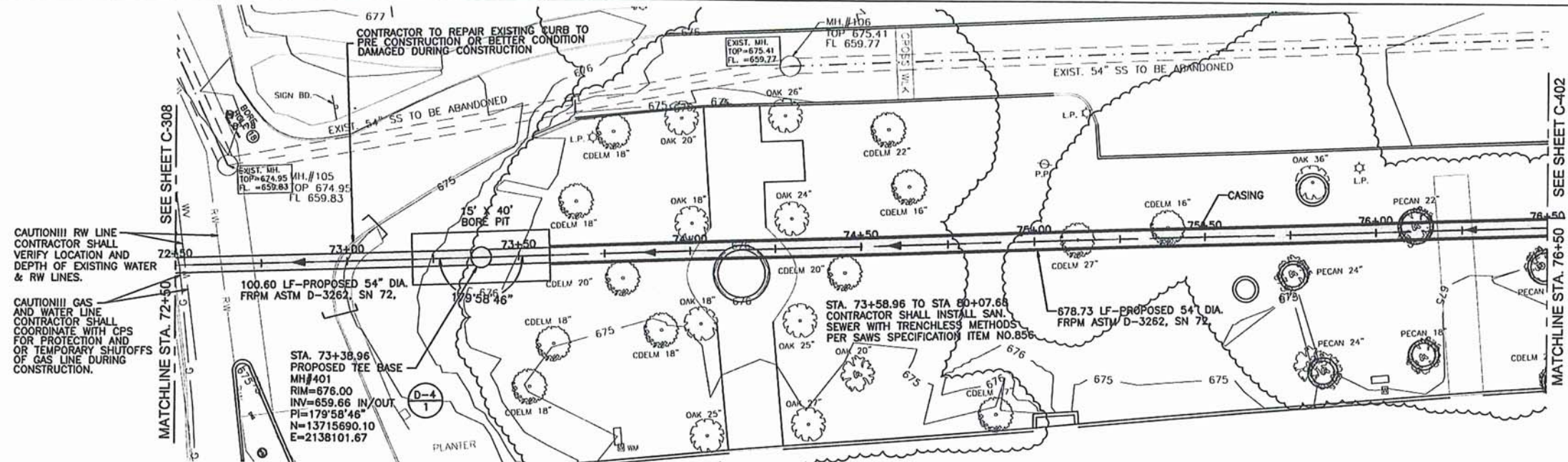
SAWS OLMOS BASIN CENTRAL WATERSHED SEWER RELIEF LINE (C-3) REACHES 1-4 PLAN AND PROFILE STA 40+50 TO 43+25

san Antonio water system

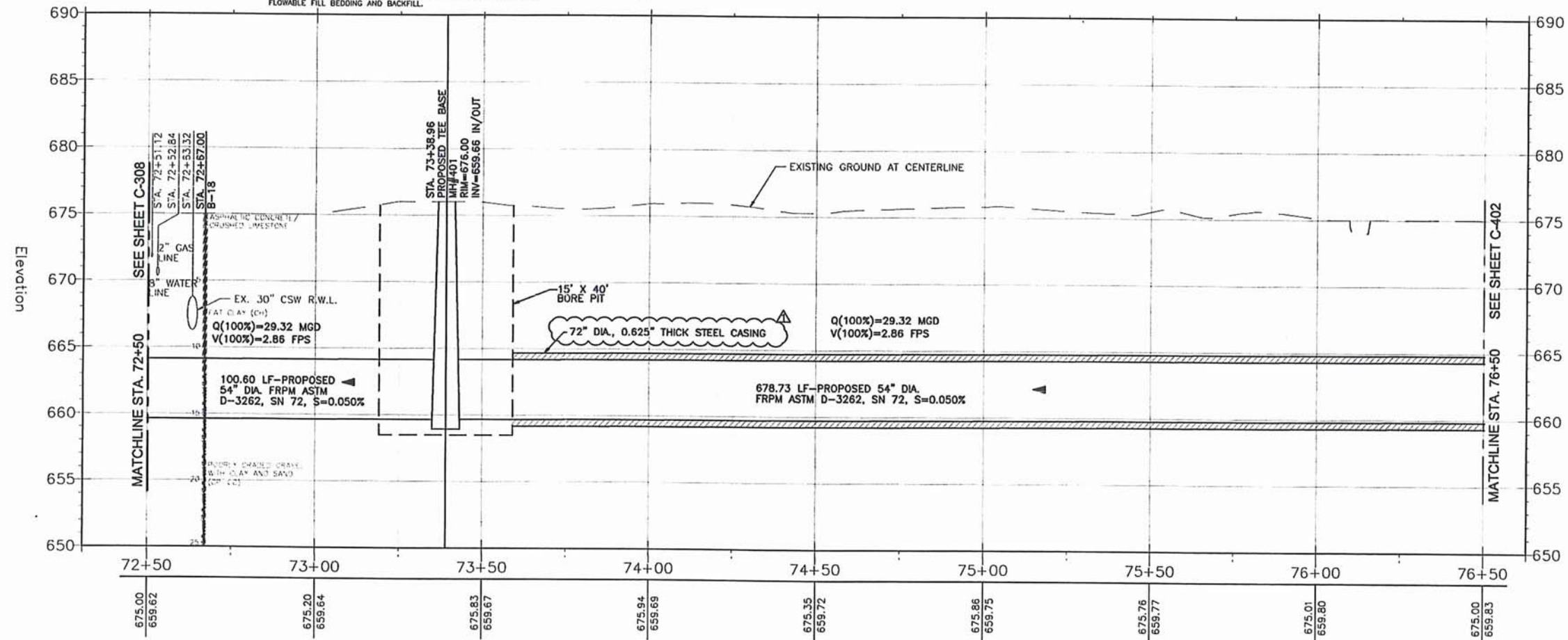
NOTES	INITIALS	DATE
DESIGNED BY AH		10/18/11
REVIEWED BY MRJ		10/18/11

SCALE: AS SHOWN

SHEET NO. **C-205**
25 OF 123



- NOTES:
- TRENCH EXCAVATION SAFETY PROTECTION: CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN, GEOTECHNICAL, SAFETY, OR 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 THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OF 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 SHALL BE RESPONSIBLE FOR PROTECTING EXISTING FEATURES DURING CONSTRUCTION, ANY FEATURES DAMAGED SHALL BE REPAIRED OR REPLACED AT CONTRACTOR'S EXPENSE.
 - UTILITIES SUCH AS WATER, ELECTRIC, GAS, FIBER OPTICS, AND TELECOMMUNICATIONS MAY EXIST WITHIN THE WORK AREA. THE UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE AND FOR INFORMATION ONLY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL UTILITIES SHOWN AND NOT SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO UTILITIES CAUSED BY CONTRACTOR'S OPERATIONS.
 - ALL THE CONTRACTOR SHOULD CALL FOR LOCATES THROUGH THE "ONE CALL" UTILITY LOCATE SERVICE (1-800-344-8377) 48 HOURS PRIOR TO CONSTRUCTION/EXCAVATION WORK. CONTRACTORS HAVE THE RESPONSIBILITY TO PROTECT AND SUPPORT TELEPHONE COMPANY PLANT DURING CONSTRUCTION.
 - CPS CALL THE TEXAS STATE WIDE ONE CALL LOCATOR NUMBER 1-800-344-8377, 48 HOURS BEFORE BEGINNING ANY EXCAVATION. DUE TO FEDERAL REGULATION TITLE 49, PART 192.181, CPS 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. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING CPS OVERHEAD AND UNDERGROUND ELECTRIC FACILITIES IF ADJACENT TO WORK AREA.
 - EXISTING SERVICE CONNECTIONS SHALL BE RECONNECTED TO PROPOSED MAIN OR MANHOLES. THE LOCATION & NUMBER OF SERVICES WAS NOT CONFIRMED. OTHER SERVICES NOT SHOWN MAY BE PRESENT.
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 - USE OF FLOWABLE BACKFILL FOR PIPELINE BEDDING AND BACKFILL WILL BE NECESSARY IN SOME AREAS WHERE COMPACTION IN ACCORDANCE WITH SAWS STANDARD SPECIFICATION ITEM 804 CANNOT BE ACCOMPLISHED. CONTRACTOR SHALL IDENTIFY THESE AREAS WHERE FLOWABLE FILL IS NECESSARY. FLOWABLE FILL SHALL CONFORM TO COSA STANDARD SPECIFICATION ITEM 413 AND SPECIAL PROVISIONS TO ITEM 413. NO SEPARATE PAYMENT WILL BE MADE FOR FLOWABLE FILL BEDDING AND BACKFILL.



LEGEND

---	EXISTING SS LINE
- - -	ABANDONED SS LINE
---	PROPOSED SS LINE
E	EXISTING ELECTRICAL LINE
G	EXISTING GAS LINE
W	EXISTING WATER LINE
---o---o---o---	EXISTING FENCE
SD	STORM LINE
ED	EXIST. DRIP LINE
RW	REC. WATER
⊙ P.P.	POWER POLE
⊙ L.P.	LIGHT POLE
⊙ WV	WATER VALVE
⊙ WM	WATER METER
⊙ GV	GAS VALVE
--- RPZ ---	ROOT PROTECTION ZONE

NO.	DATE	REVISION DESCRIPTION
1	MAR 10-18-11	Addendum 2

10-18-11 10/18/2011

WESTON SOLUTIONS, INC. REGISTERED ENGINEERING FIRM F-3123

WESTON SOLUTIONS, INC. REGISTERED ENGINEERING FIRM F-3123

WESTON SOLUTIONS, INC. REGISTERED ENGINEERING FIRM F-3123

WESTON SOLUTIONS, INC.
70 NE LOOP 410, SUITE 600
SAN ANTONIO, TEXAS 78216-5842

SAWS OLMO BASIN CENTRAL WATERSHED
SEWER RELIEF LINE (C-3) REACHES 1-4
PLAN AND PROFILE
STA 72+50 TO 76+50

san Antonio water system

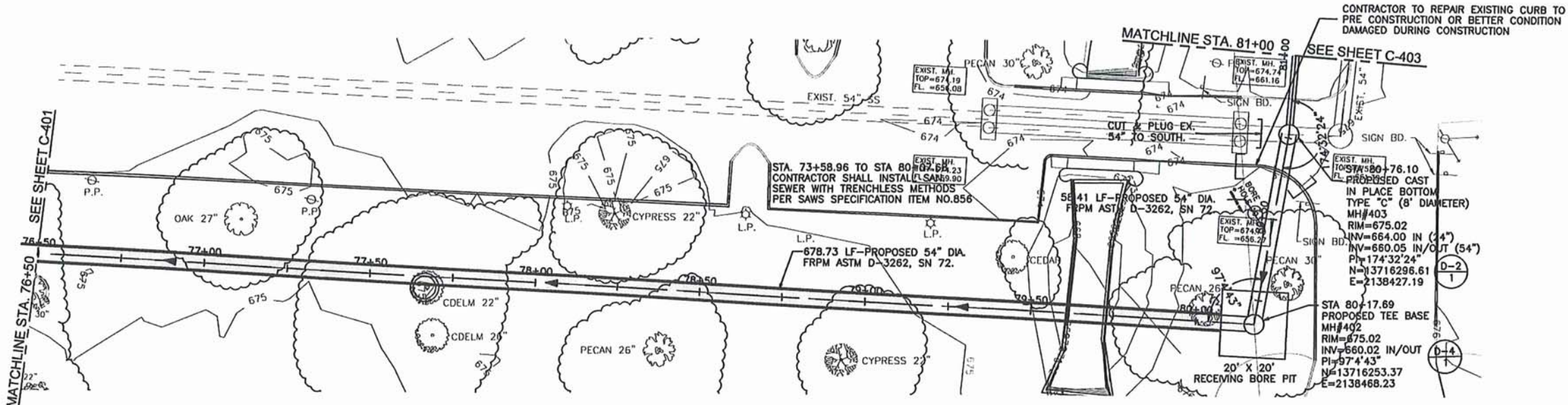
NOTES INITIALS DATE

DESIGNED BY AH 10/18/11

REVIEWED BY MRJ 10/18/11

SCALE: AS SHOWN

SHEET NO. C-401 34 OF 123



PLAN VIEW

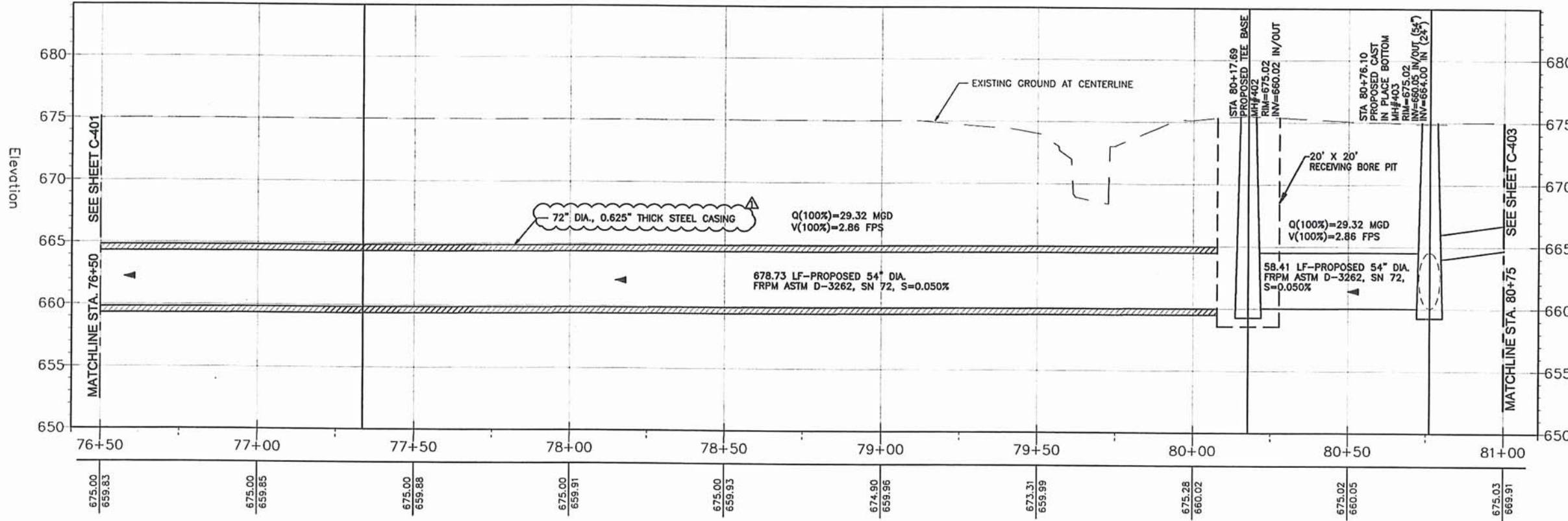
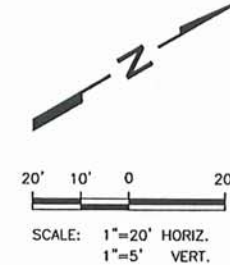
- NOTES:**
- TRENCH EXCAVATION SAFETY PROTECTION.** CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL, DESIGN, GEOTECHNICAL, SAFETY, OR EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OF 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.
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 - AT&T, THE CONTRACTOR SHOULD CALL FOR LOCATES THROUGH THE "ONE CALL" UTILITY LOCATE SERVICE (1-800-344-8377) 48 HOURS PRIOR TO CONSTRUCTION/EXCAVATION WORK. CONTRACTORS HAVE THE RESPONSIBILITY TO PROTECT AND SUPPORT TELEPHONE COMPANY PLANT DURING CONSTRUCTION.
 - CPS, CALL THE TEXAS STATE WIDE ONE CALL LOCATOR NUMBER 1-800-344-8377, 48 HOURS BEFORE BEGINNING ANY EXCAVATION. DUE TO FEDERAL REGULATION TITLE 49, PART 192.181, CPS 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. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING CPS OVERHEAD AND UNDERGROUND ELECTRIC FACILITIES IF ADJACENT TO WORK AREA.
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CONTRACTOR SHALL RESTORE SPRINKLER SYSTEM TO PRE-CONSTRUCTION OR BETTER CONDITION (NSPI)

CONTRACTOR SHALL REVEGETATE ALL DISTURBED AREAS WITH IN-KIND SODDING

LEGEND

	EXISTING SS LINE
	ABANDONED SS LINE
	PROPOSED SS LINE
	EXISTING ELECTRICAL LINE
	EXISTING GAS LINE
	EXISTING WATER LINE
	EXISTING FENCE
	STORM LINE
	EXIST. DRIP LINE
	REC. WATER
	POWER POLE
	LIGHT POLE
	WATER VALVE
	WATER METER
	GAS VALVE
	ROOT PROTECTION ZONE



PROFILE VIEW

NO.	DATE	REVISION DESCRIPTION
1	10-18-11	Addendum 2

WESTON SOLUTIONS, INC.
 70 NE LOOP 410, SUITE 600
 SAN ANTONIO, TEXAS 78216-5842
 TEXAS REGISTERED ENGINEERING FIRM F-3123

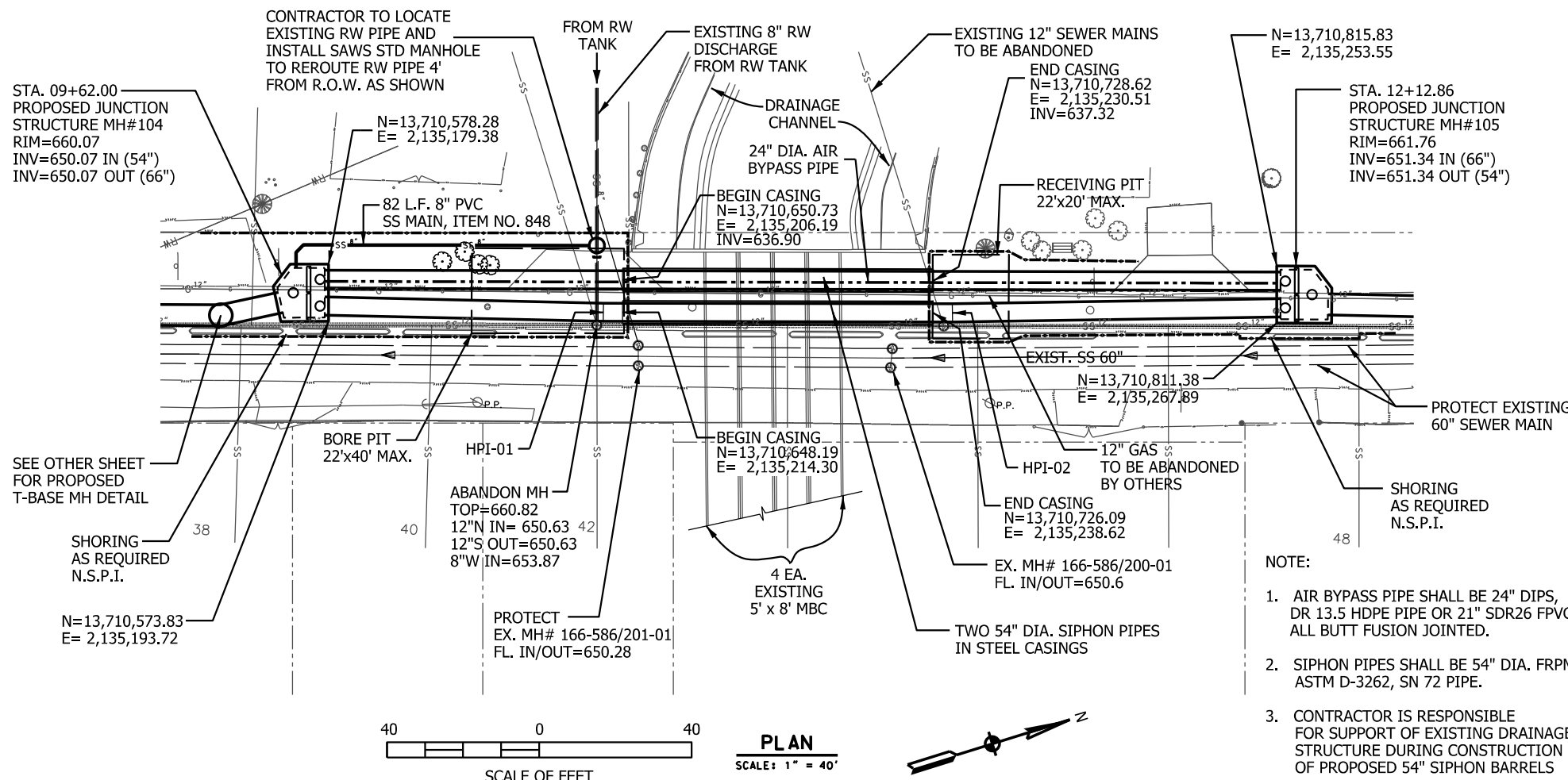
**SAWS OLMO BASIN CENTRAL WATERSHED
 SEWER RELIEF LINE (C-3) REACHES 1-4
 PLAN AND PROFILE
 STA 76+50 TO 81+00**



NOTES	INITIALS	DATE
DESIGNED BY	AH	10/18/11
REVIEWED BY	MRJ	10/18/11

SCALE: AS SHOWN

SHEET NO. **C-402**
 35 OF 123



AT&T TELEPHONE COMPANY NOTE:
 THE EXISTENCE AND LOCATION OF UNDERGROUND CABLE INDICATED ON THESE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR MUST CONTACT THE TELEPHONE COMPANY CABLE LOCATOR 48 HOURS PRIOR TO EXCAVATION AT 1-800-344-8377. CONTRACTOR HAS THE RESPONSIBILITY TO PROTECT AND SUPPORT TELEPHONE COMPANY PLANT DURING CONSTRUCTION.

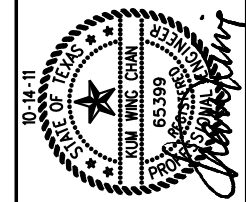
CITY PUBLIC SERVICE ENERGY NOTES:
 1. CALL CPS ENERGY LOCATOR AT 1-800-344-8377, 48 HOURS BEFORE BEGINNING ANY EXCAVATION.
 2. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.181, CPS MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.

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.

TIME WARNER CABLE NOTE:
 CONTRACTOR SHALL CONTACT THE ONE-CALL LOCATOR 48 HOURS PRIOR TO EXCAVATION AT 1-800-344-8377. CONTRACTOR IS RESPONSIBLE FOR PROTECTING AND SUPPORTING CABLE TV PLANT DURING CONSTRUCTION.

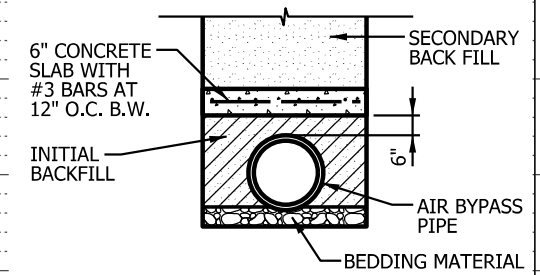
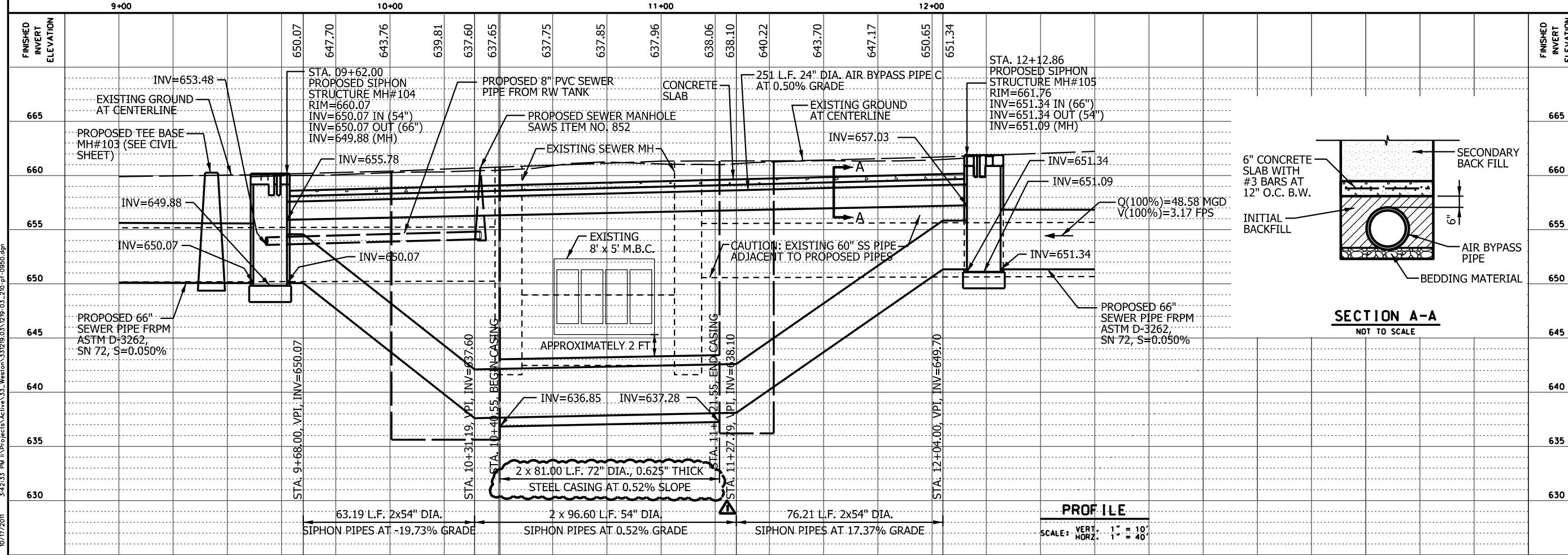
- NOTE:**
- AIR BYPASS PIPE SHALL BE 24" DIPS, DR 13.5 HDPE PIPE OR 21" SDR26 FPVC, ALL BUTT FUSION JOINTED.
 - SIPHON PIPES SHALL BE 54" DIA. FRPM, ASTM D-3262, SN 72 PIPE.
 - CONTRACTOR IS RESPONSIBLE FOR SUPPORT OF EXISTING DRAINAGE STRUCTURE DURING CONSTRUCTION OF PROPOSED 54" SIPHON BARRELS

K. M. NG & ASSOCIATES, INC.
 CONSULTING ENGINEERS
 SAN ANTONIO, TEXAS 78201
 TEXAS REGISTERED ENGINEERING FIRM F-442



WESTON SOLUTIONS, INC.
 70 NE LOOP 410, SUITE 600
 SAN ANTONIO, TEXAS 78216-5842
 TEXAS REGISTERED ENGINEERING FIRM F-3123

SAWS OLMO'S BASIN CENTRAL WATERSHED
 SEWER RELIEF LINE (C-3) REACHES 1 - 4
 SIPHON PLAN & PROFILE
 STA. 9+62.00 TO STA. 12+12.86



San Antonio Water System

NOTES INITIALS DATE

DESIGNED BY KWC

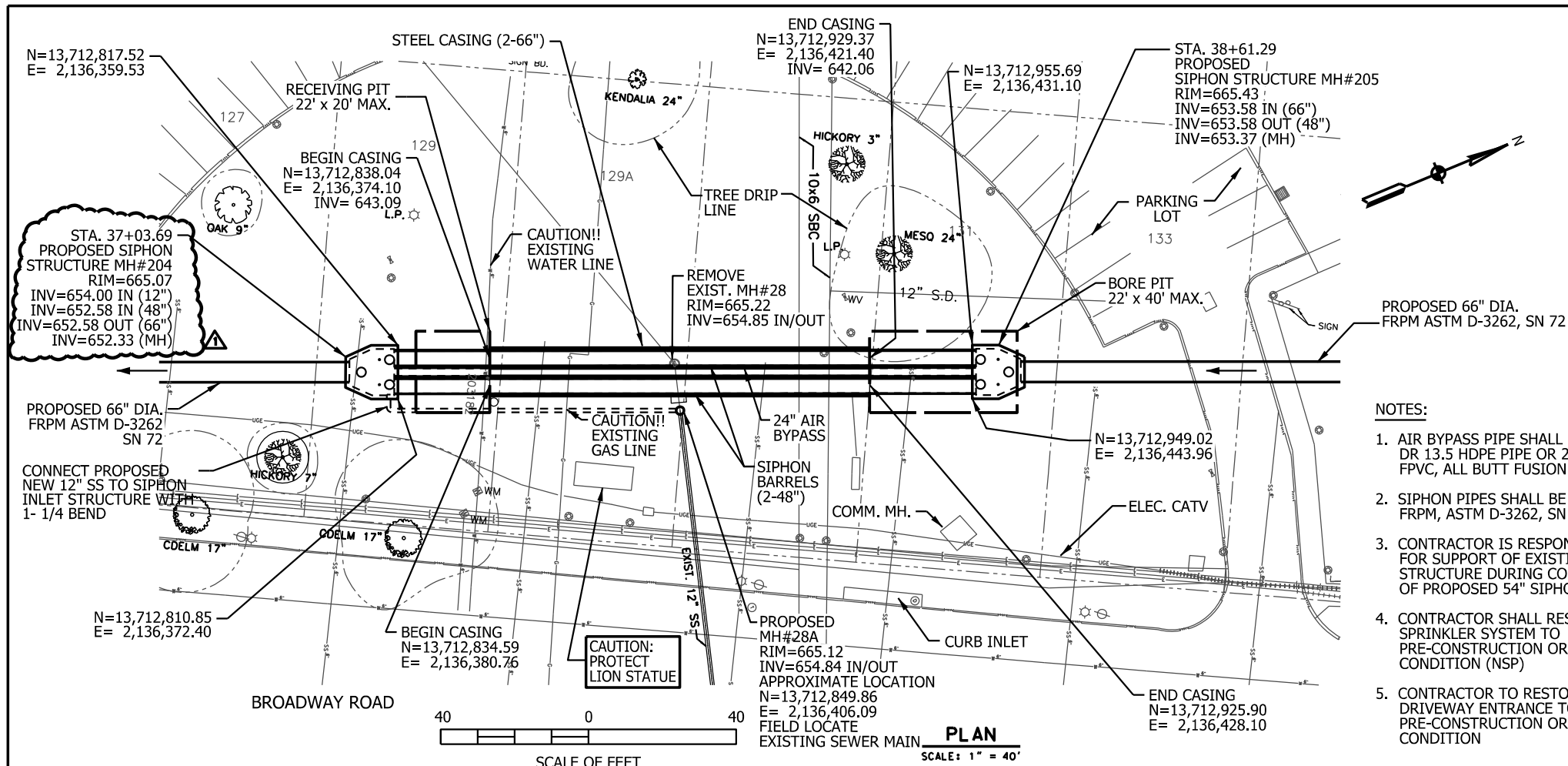
REVIEWED BY KMN

SCALE: AS SHOWN

SHEET NO. S-2

41 OF 123

10/17/2011 3:42:33 PM I:\Projects\Active\33_Webster\331219_03\1219-03_210-pl-0950.dwg ybl/oc



- NOTES:**
- AIR BYPASS PIPE SHALL BE 24" DIPS, DR 13.5 HDPE PIPE OR 21" SDR26 FPVC, ALL BUTT FUSION JOINTED.
 - SIPHON PIPES SHALL BE 54" DIA. FRPM, ASTM D-3262, SN 72 PIPE.
 - CONTRACTOR IS RESPONSIBLE FOR SUPPORT OF EXISTING DRAINAGE STRUCTURE DURING CONSTRUCTION OF PROPOSED 54" SIPHON BARRELS
 - CONTRACTOR SHALL RESTORE SPRINKLER SYSTEM TO PRE-CONSTRUCTION OR BETTER CONDITION (NSP)
 - CONTRACTOR TO RESTORE DRIVEWAY ENTRANCE TO PRE-CONSTRUCTION OR BETTER CONDITION

AT&T TELEPHONE COMPANY NOTE:
 THE EXISTENCE AND LOCATION OF UNDERGROUND CABLE INDICATED ON THESE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR MUST CONTACT THE TELEPHONE COMPANY CABLE LOCATOR 48 HOURS PRIOR TO EXCAVATION AT 1-800-344-8377, CONTRACTOR HAS THE RESPONSIBILITY TO PROTECT AND SUPPORT TELEPHONE COMPANY PLANT DURING CONSTRUCTION.

CITY PUBLIC SERVICE ENERGY NOTES:

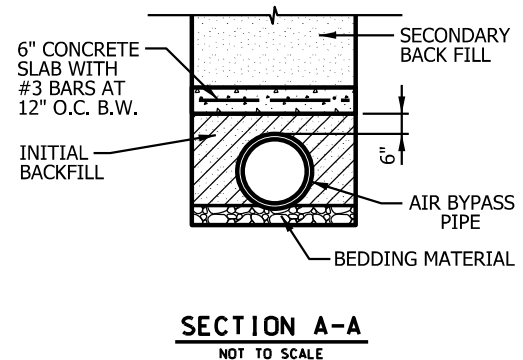
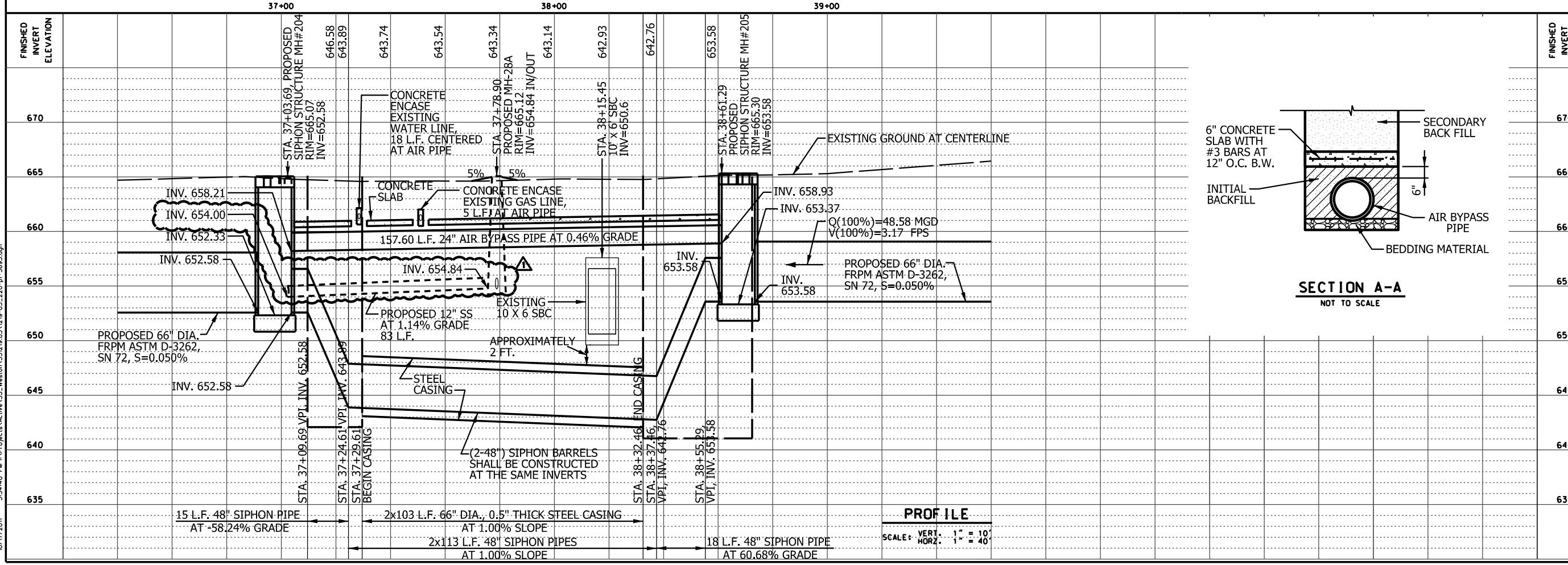
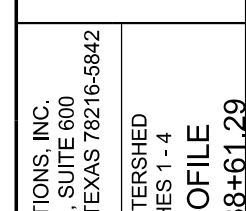
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TIME WARNER CABLE NOTE:
 CONTRACTOR SHALL CONTACT THE ONE-CALL LOCATOR 48 HOURS PRIOR TO EXCAVATION AT 1-800-344-8377. CONTRACTOR IS RESPONSIBLE FOR PROTECTING AND SUPPORTING CABLE TV PLANT DURING CONSTRUCTION.

K. M. NG & ASSOCIATES, INC.
 CONSULTING ENGINEERS
 SAN ANTONIO, TEXAS 78201
 TEXAS REGISTERED ENGINEERING FIRM F-442

REV. NO.	DATE	REVISION DESCRIPTION
1	KWC10-18-11	Addendum 2



WESTON SOLUTIONS, INC.
 70 NE LOOP 410, SUITE 600
 SAN ANTONIO, TEXAS 78216-5842
 TEXAS REGISTERED ENGINEERING FIRM F-3123

SAWS OLMOS BASIN CENTRAL WATERSHED
 SEWER RELIEF LINE (C-3) REACHES 1 - 4
 SIPHON PLAN AND PROFILE
 STA. 37+03.69 TO STA. 38+61.29

San Antonio Water System

NOTES INITIALS DATE

DESIGNED BY KWC

REVIEWED BY KMN

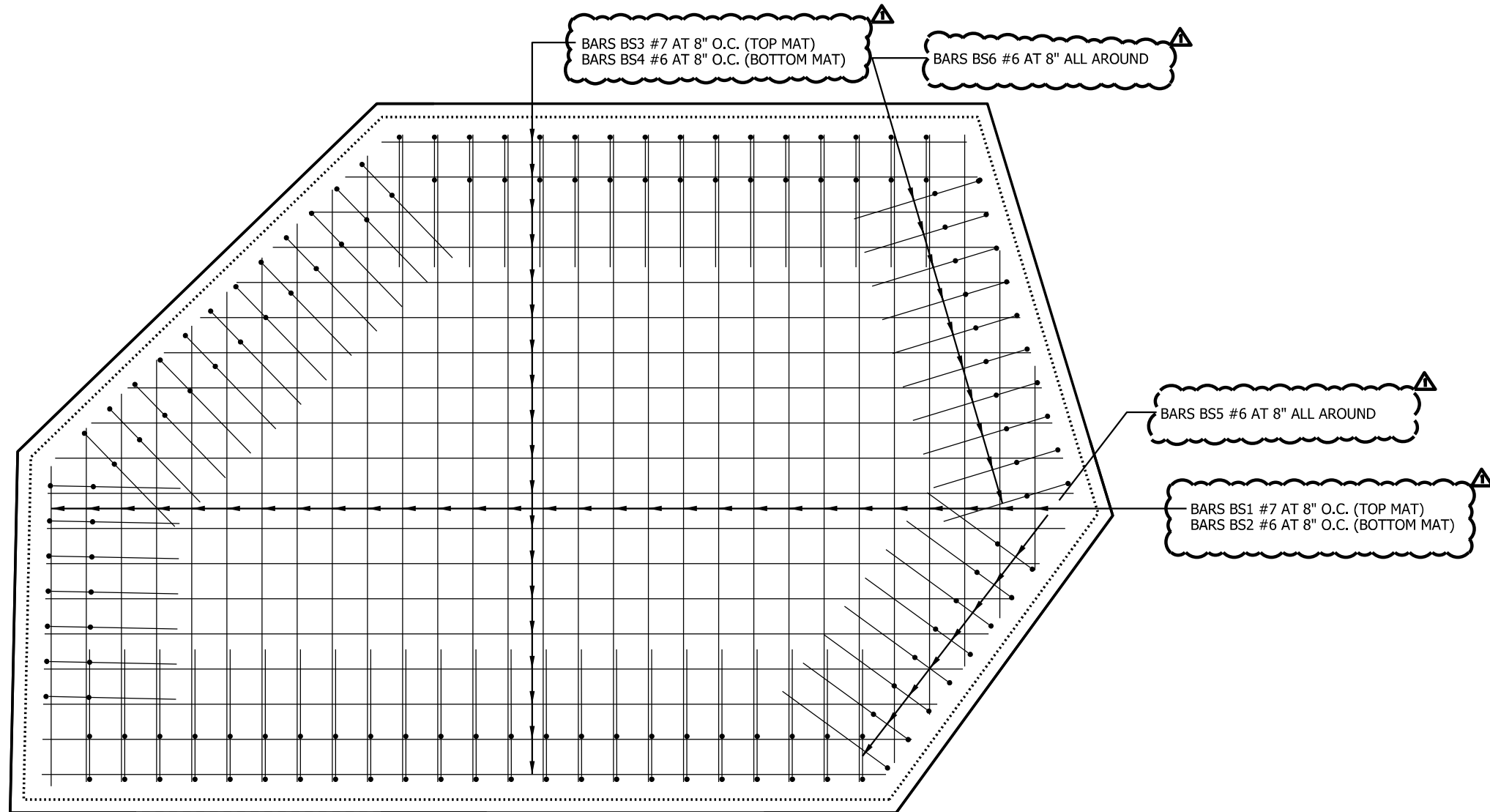
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SHEET NO. S-3

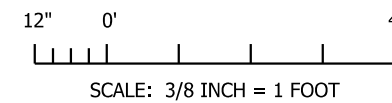
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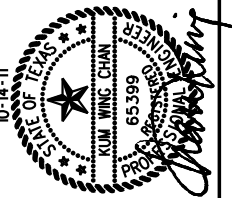
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1 BASE SLAB REINFORCING LAYOUT SCALE: 3/8" = 1'-0"



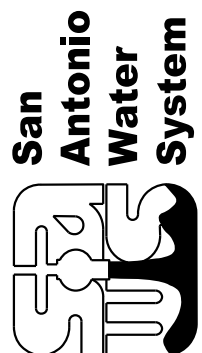
K. M. NG & ASSOCIATES, INC.
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 SAN ANTONIO, TEXAS 78201
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WESTON SOLUTIONS, INC.
 70 NE LOOP 410, SUITE 600
 SAN ANTONIO, TEXAS 78216-5842
 TEXAS REGISTERED ENGINEERING FIRM F-3123

SAWS OLMO BASIN CENTRAL WATERSHED
 SEWER RELIEF LINE (C-3) REACHES 1 - 4

MH-310 - REINFORCING DETAIL III

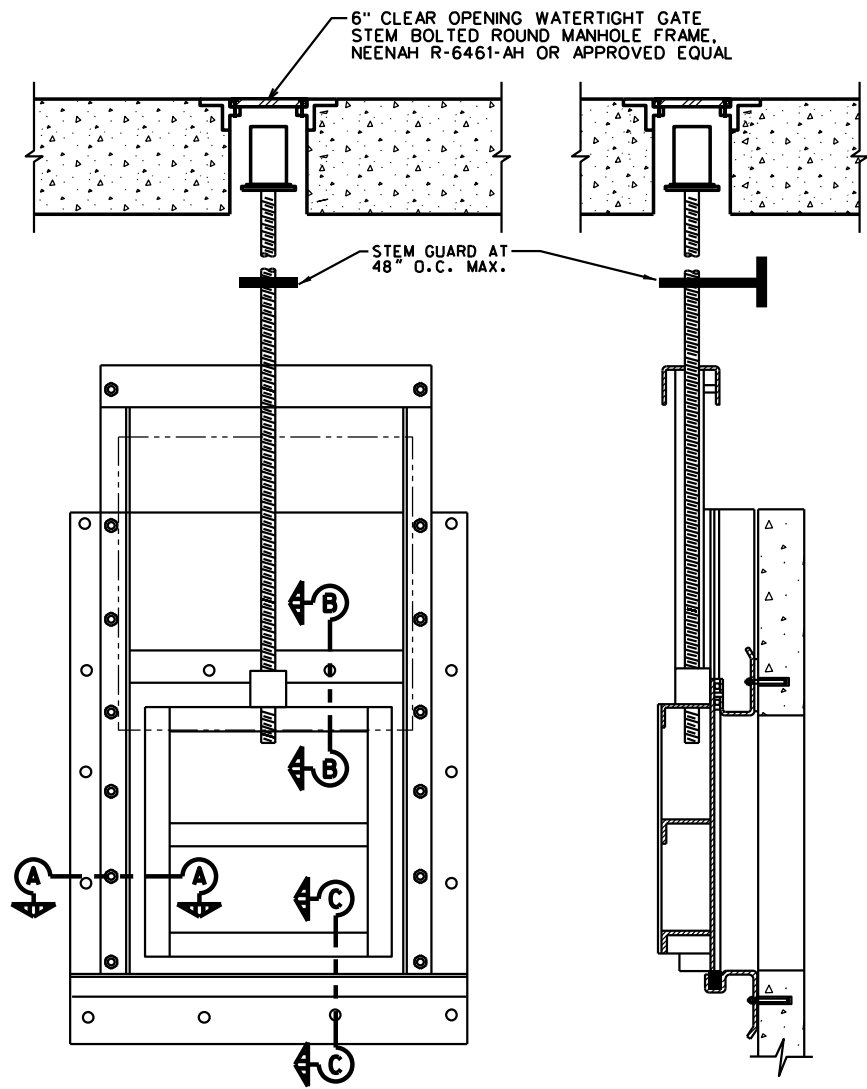


NOTES	INITIALS	DATE
DESIGNED BY	KWC	
REVIEWED BY	KMN	

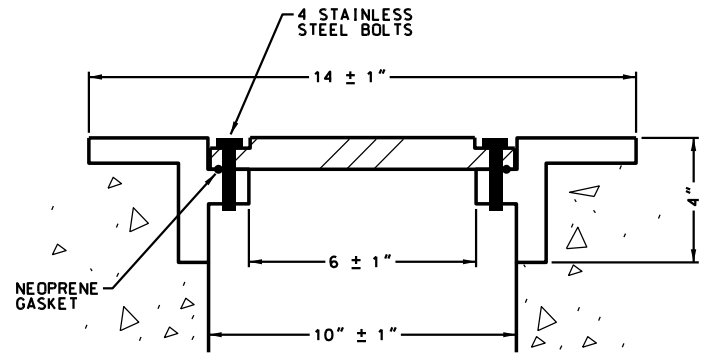
SCALE: AS SHOWN

SHEET NO. S-50
 89 OF 123

REV. NO.	BY	DATE	REVISION DESCRIPTION
1	KWC	10-18-11	Addendum 2



1 WALL-MOUNTED WITH NON-RISING STEM NOT TO SCALE

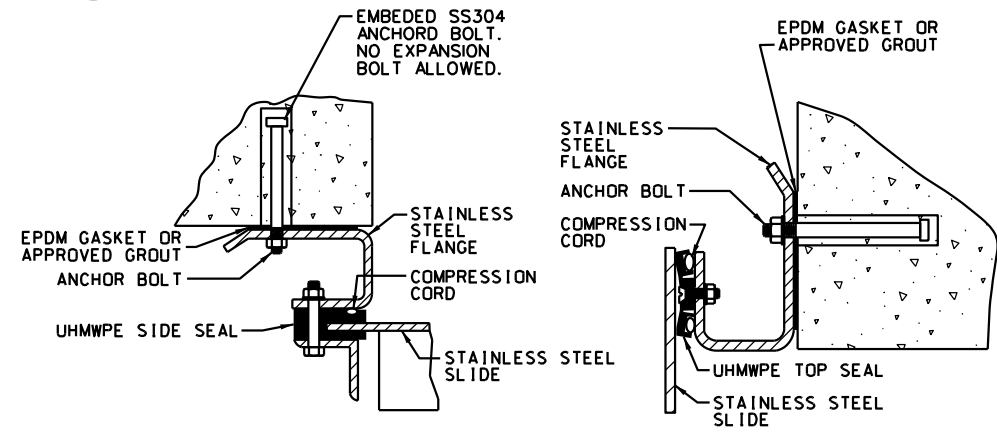


FRAME AND COVER SHALL BE AIRTIGHT UP TO 10 PSI AIR PRESSURE. HEAVY DUTY AND RATED FOR HS-20 TRAFFIC LOADS.
1 GATE SHAFT COVER NOT TO SCALE

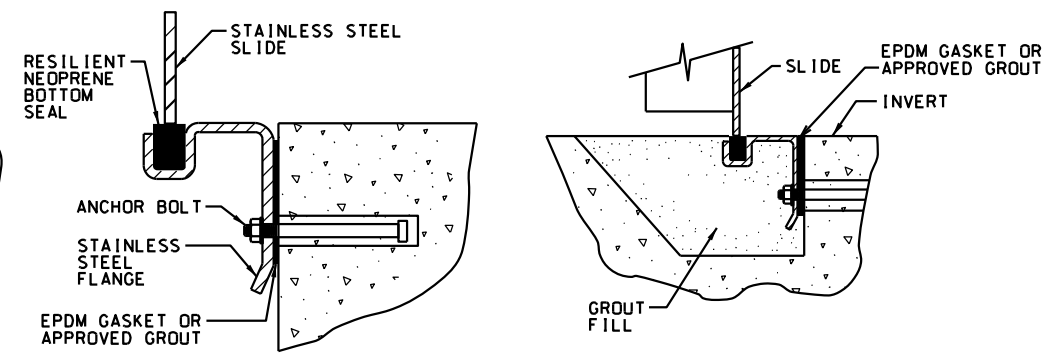
MATERIALS	
PART	MATERIAL
FRAME, YOKE, STEM GUIDES, SLIDE & STEM EXTENSION	STAINLESS STEEL ASTM A-276 TYPE 316L
SIDE SEALS & STEM GUIDE LINER	ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE (UHMWPE) ASTM D-1248
COMPRESSION CORD	NITRILE ASTM D-2000 M6BG 708, A14, B14, E014, E034
BOTTOM SEAL	NEOPRENE ASTM D-2000 GRADE 2 BC-510
THREADED STEM	STAINLESS STEEL ASTM A-276 TYPE 316
FASTENERS	ASTM F593 AND F594 GR2 FOR TYPE 316
PEDESTAL, HANDWHEEL & CRANK	TENZALDY ALUMINUM
GASKET (BETWEEN FRAME AND WALL)	EPDM ASTM 1056
STEM COVER	ALUMINUM W/PLASTIC WINDOW
LIFT NUT	MANGANESE BRONZE ASTM B584 ALLOY 432

ALL STAINLESS STEEL SHALL BE TYPE 316

SLIDING GATE AND STOP LOG SCHEDULE					
STRUCTURE IDENTIFICATION	MH-104	MH-105	MH-111	MH-204	MH-205
GATE TYPE	STOP LOGS	STOP LOGS	STOP LOGS	SLIDE GATE	SLIDE GATE
QUANTITY	2	2	1	2	2
MINIMUM OPEN SIZE WIDTH X HEIGHT	75" X 36"	75" X 48"	90" X 66"	54" X 60"	54" X 60"
OPERATING FLOOR ELEVATION	649.88	651.09	650.15	652.33	653.33
GATE INVERT ELEVATION	649.88	651.09	650.15	652.33	653.33
HEAD (SEATING & UNSEATING)	20 FT	20 FT	20 FT	20 FT	20 FT
MOUNTING	WALL/YOKE	WALL/YOKE	WALL/YOKE	WALL/YOKE	WALL/YOKE



SECTION A-A **SECTION B-B**



WALL MOUNTED **FLUSH-BOTTOM FRAME**

SECTION C-C

2 SLIDING GATE SEAL AND MOUNTING DETAILS NOT TO SCALE

10-14-11
 REV. BY DATE
 1 KWC 10-18-11 Addendum 2
 REVISION DESCRIPTION
 WESTON SOLUTIONS, INC.
 KIM WING CHAN
 65339
 REGISTERED PROFESSIONAL ENGINEER
 STATE OF TEXAS

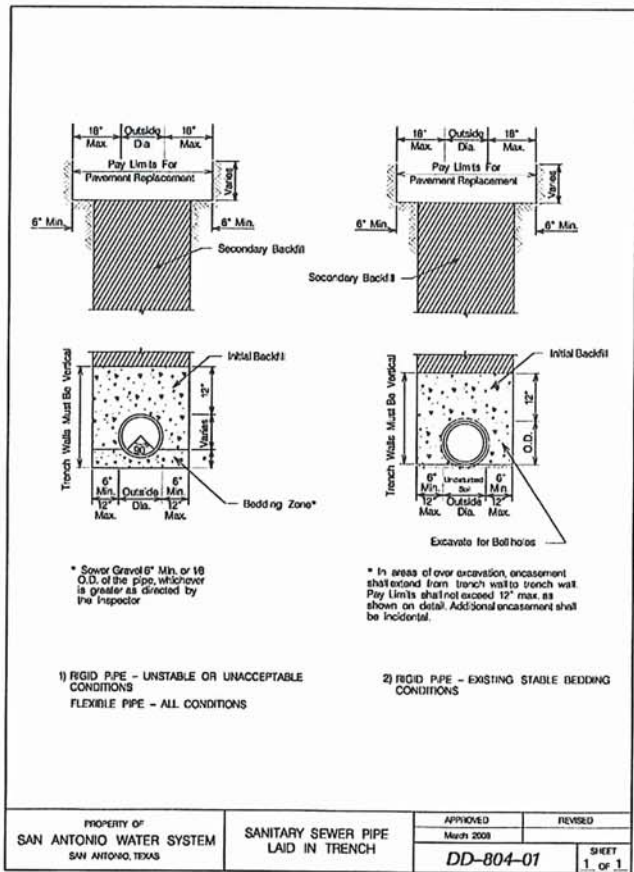
WESTON SOLUTIONS, INC.
 70 NE LOOP 410, SUITE 600
 SAN ANTONIO, TEXAS 78216-5842
 TEXAS REGISTERED ENGINEERING FIRM F-3123
 SAWS OLMOS BASIN CENTRAL WATERSHED
 SEWER RELIEF LINE (C-3) REACHES 1 - 4
 SLIDING GATE DETAILS

San Antonio Water System

NOTES	INITIALS	DATE
DESIGNED BY	KWC	
REVIEWED BY	KMN	
SCALE:	AS SHOWN	
SHEET NO.	S-55	
	94 OF 123	

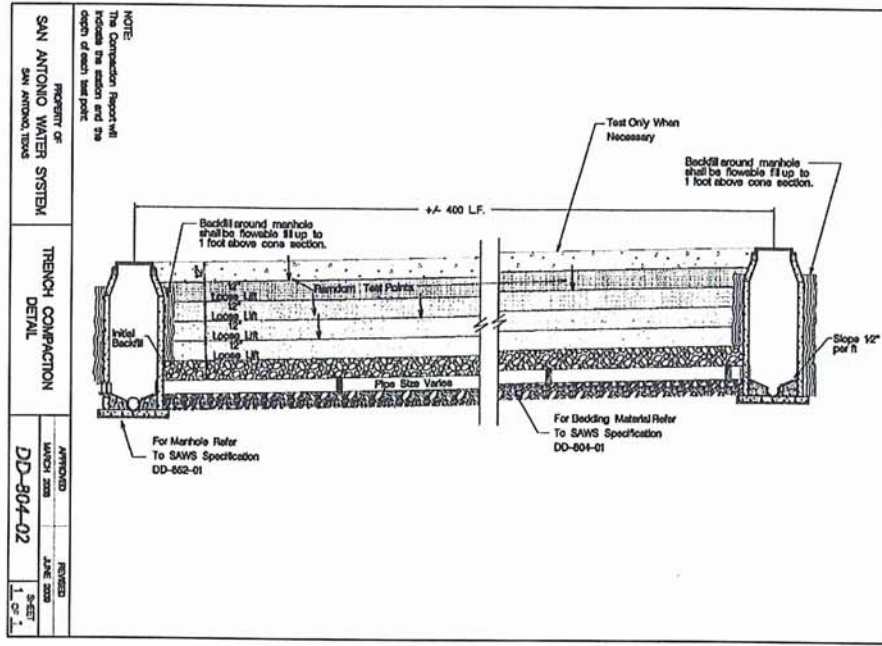
K. M. NG & ASSOCIATES, INC.
 CONSULTING ENGINEERS
 SAN ANTONIO, TEXAS 78201
 TEXAS REGISTERED ENGINEERING FIRM F-442

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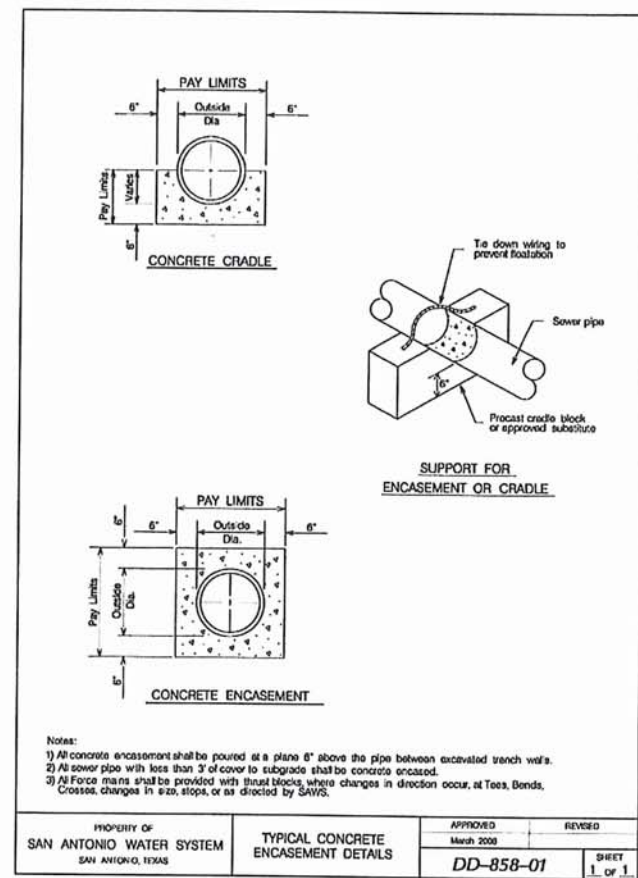


D-1 SANITARY SEWER PIPE LAID IN TRENCH

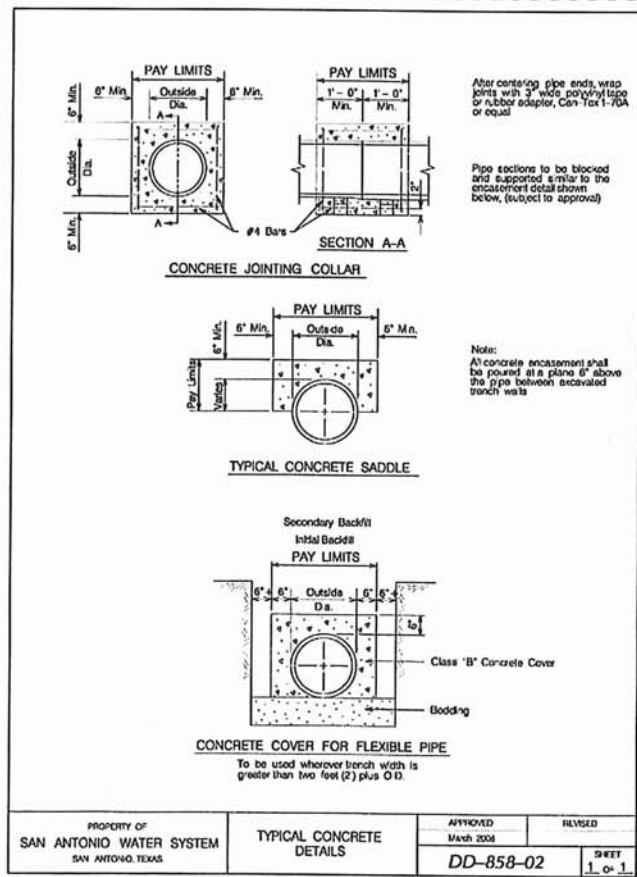
NOTE: TRENCHES IN PAVED STREETS SHALL BE COVERED WITH A TEMPORARY ALL WEATHER SURFACE TO ALLOW FOR VEHICULAR TRAFFIC UNTIL THE FINAL PAVING IS COMPLETE. INCLUSIVE OF PROVIDING, MAINTAINING, AND REMOVING THE TEMPORARY TRENCH REPAIR PAVEMENT. REFER ALSO TO SAWS STANDARD SPECIFICATION ITEM NO. 804, PARAGRAPH 804.4.2.d.



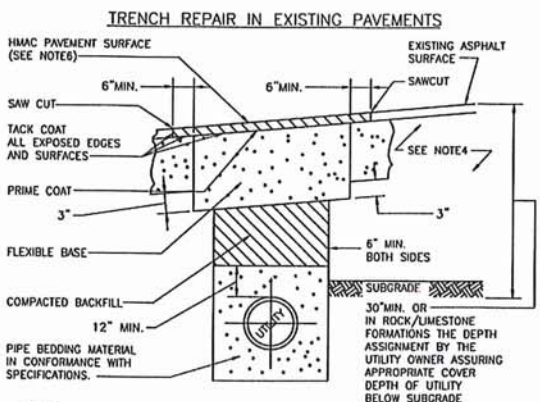
D-1 TRENCH COMPACTION DETAILS



D-1 TYPICAL CONCRETE ENCASEMENT DETAILS



D-1 TYPICAL CONCRETE DETAILS



- NOTES:
- THE EXISTING PAVING SURFACE SHALL BE SAW CUT IN A STRAIGHT LINE A MINIMUM OF 12" WIDER THAN UNDISTURBED SIDES OF THE TRENCH SYMMETRICAL ABOUT THE CENTER LINE OF THE EXCAVATION.
 - ANY CONCRETE PAVING SHALL BE SAW CUT 6" WIDER THAN UNDISTURBED SIDES OF EXCAVATION.
 - IF EXCAVATION AREA IS OPEN FOR TEMPORARY PUBLIC USE, THE SURFACE SHALL BE MAINTAINED LEVEL WITH ADJACENT RIDING SURFACE WITH COLD MIX AC OR TEMPORARY HMAc.
 - ROAD BASE SHALL BE REPLACED IN KIND WITH BASE THICKNESS EQUAL TO EXISTING BASE THICKNESS PLUS 3", BUT IN NO CASE LESS THAN 12".
 - DAMAGED PAVEMENT OUTSIDE THE TRENCH CUT SHALL BE REMOVED AND REPLACED WITH A BASE THICKNESS OF 10" OR A THICKNESS MATCHING EXISTING, WHICHEVER IS GREATER.
 - REPLACEMENT AC SURFACE LAYER SHALL BE OF THE TYPE AND THICKNESS BASED ON FUNCTIONAL CLASSIFICATION.
 - a) MIN. 2" HMAc TYPE "D" FOR TRENCH REPAIR IN LOCAL/RESIDENTIAL STREETS.
 - b) MIN. 3" HMAc TYPE "C" FOR TRENCH REPAIR IN COLLECTOR/ARTERIAL STREETS.
 - CLASS "J" PC CONCRETE OR CONTROLLED LOW STRENGTH MATERIAL (CLSM) MAY BE SUBSTITUTED IN THESE REPAIRS FOR THE FLEXIBLE BASE AND COMPACTED BACKFILL. PC CONCRETE GREATER THAN A 2 SACK MIX WILL NOT BE ALLOWED.

* ON REACHES 1 TO 4 (AVENUE B AND TULETA), REPAIR HMAc SHALL BE MIN. 3" THICKNESS, TYPE "C" MODIFIED OR TYPE "D"

D-1 TRENCH REPAIRS IN EXISTING FLEXIBLE PAVEMENTS

WESTON SOLUTIONS, INC.
70 NE LOOP 410, SUITE 600
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REGISTERED ENGINEERING FIRM F-3123

san Antonio water system

SAWS OLMOS BASIN CENTRAL WATERSHED
SEWER RELIEF LINE (C-3) REACHES 1 - 4
SANITARY SEWER MISCELLANEOUS DETAILS

REVISION DESCRIPTION	DATE
1 MRJ 10-18-11 Addendum 2	

APPROVED: March 2008
REVISION: DD-858-01
SHEET 1 of 1

NOTES: 1) All concrete encasement shall be poured at a plane 6" above the pipe between excavated trench walls. 2) All cover pipe with less than 3' of cover to subgrade shall be concrete encased. 3) All force mains shall be provided with thrust blocks where changes in direction occur, at Tees, Bends, Crosses, changes in size, stops, or as directed by SAWS.

DESIGNED BY: AH 10/18/11
REVIEWED BY: MRJ 10/18/11
SCALE: AS SHOWN
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