

### The Woodlands Off-Site Sanitary Sewer Gravity Line B Solicitation Number: CO-00660 Job No.: 22-1720

### ADDENDUM 1 May 25, 2023

To Bidder of Record:

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

### **RESPONSES TO QUESTIONS**

1. Question: Is there a Geotech report for this project or can the engineer confirm that there is rock in this area.

Response: A geotechnical report has been made available on the solicitation website as part of this addendum.

2. Question: All the manholes are tee-bases, so the risers should be fiberglass, correct?

Response: To clarify, not all manholes on the project are tee-base manholes. There are some concrete manholes per SAWS spec item 852 on this project. For tee-base manholes under SAWS spec item 848, yes, fiberglass risers are required.

3. Question: Sheet C3.0 tie-in notes states that there is an existing sewer line and manholes. Can you add a bypass bid item and can you provide flows?

Response: See Changes to the Plans #1. Sheet C3.0 has been revised to remove the reference to an existing sewer main. No bypass will be required as there is no existing sewer main associated with this project. The infrastructure previously shown as "existing" will be part of a separate, future project.

4. Question: Will an experience qualifications sheet be provided and do we need to submit that with the bid?

Response: Statement of Bidder's Experience forms were not included in the specifications (or required) for this bid. Please see page SS-1, of the Supplemental Conditions, change to the Instructions to Bidders item 24 (c.) for complete details of the projects that must be submitted by the Apparent Low Bidder 24 hours after the bid opening.

5. Question: Will there be a pre-bid meeting or site visit?

Response: No. There is no scheduled pre-bid meeting or site visit.

6. Question: Are there lift station and force main plans available or is this an existing project that we can visit.

Response: The lift station and force main project is a future project that is expected to be in construction concurrently with this project. No plans are available at this time but will be available once the project is publicly advertised.

7. Question: There is a significant amount of footage of 27 inch pipe deeper than 16 feet from station 19-59 to station 38+70. Will a bid item be added for deeper elevations?

*Response: See Changes to the Specifications #1 and Changes to the Plans #1. Both the Bid Proposal and sheets C3.0 through C3.7 have been revised to include a line item for 27" sewer main at 16'-20' depths.* 

8. Question: Are watertight ring and cover manholes supposed to be concrete manholes? Response: In accordance with SAWS Item# 852 the manhole (MH) and all MH components for this line item

are to be concrete and the MH ring and cover shall be of ductile iron or Gray cast iron construction.

9. Question: Will the plan pages C6.20 through C6.29, the tree preservation plans, be released through an addendum?

Response: See Changes to the Plans #3. The tree preservation plans are provided with this addendum. The provided tree preservation plans are for a larger area and therefore include areas outside of the scope of this project. Contractors shall only preserve/remove trees within the areas relevant to this project.

- **10.** Question: Can a bid item be added for the carrier pipe for the tunnels and as per the detail on sheet C4.0, notes for annular void, it is stated not to fill the annular void inside the steel casing. Is this correct? *Response: Per SAWS spec item 856, the Jacking, Boring, or Tunneling line item is to include carrier pipe. See Changes to the Plans #2. The detail on sheet C4.0 has been revised to reference grouting between the steel casing and the carrier pipe.*
- **11.** Question: Wil 27" SDR-26 heavy wall PVC pipe be allowed as an alternate for this job? *Response: No, fiberglass pipe is required and PVC will not be allowed as an alternate.*
- 12. Question: Due to long delays on FRP manholes, will precast concrete manholes be allowed as an alternate for this job?

Response: No, FRP manholes are required and concrete manholes will not be allowed as an alternate to the tee-base manhole line item.

13. Question: Is there a Geotech Report for this project available? IF so, can it be released with an addendum?

Response: See response to Question #1.

- **14.** Question: Can the missing tree preservation plan sheets be added? *Response: See response to Question #9.*
- **15.** Question: To confirm information on sheet C4.0, we are only to grout the annular void between the casing and bore hole. We do not have to grout the annular space between the sanitary sewer pipe and the casing?

Response: Per SAWS spec item 856.5.4, for sewer pipe the annular space between casing and carrier pipe shall be pressure grouted. See Changes to the Plans #2. The detail for the bore has been revised to properly reflect this specification.

16. Question: Will a Geotech report be made available? If not, can access be granted to the site to pothole a few areas?

Response: See response to Question #1.

17. Question: To confirm information on sheet C4.0, we need to contact grout the void between the bore hole and the casing via grout ports spaced every 10 feet. For a 48" casing that is doable and can be safely done. For the 24" casing, that is not standard procedure. It is unsafe to put someone in a 24" casing to hook up to the ports to pump the grout.

Response: See Changes to the Plans #2. The notes on sheet C4.0 have been revised to remove the reference to grout ports. The method of grouting shall be left to the contractor to determine which is safest/most effective.

18. Question: Please verify manhole quantities. It seems there are 7 manholes instead of the 6 listed in the proposal. Also, there seems to be 4 vented FRP manholes instead of the 5 listed in the proposal. *Response: See Changes to the Specifications #1 and Changes to the Plans #1. Sheets have been updated to reflect the correct number of manholes.* 

### CHANGES TO THE SPECIFICATIONS

- Remove the Bid Proposal in its entirety and replace with the attached revised Bid Proposal. Line item 21 has been added. Bidders shall use the revised bid proposal when submitting a bid for this project. Failure to use the revised version may result in the bid being found non-responsive.
- 2. SC5 A Geotechnical Report has been developed for SAWS on this project and has been made available for Contractors for informational purposes only. SAWS will require the execution of a SAWS disclaimer form by the Contractor as a condition of and prior to the release of the report. To complete the disclaimer form and obtain the report, please go to the following link on the SAWS website:

https://apps.saws.org/business\_center/contractsol/Drill.cfm?id=4219&View=Yes

### CHANGES TO THE PLANS

- 1. Remove and replace sheets C3.0 and C3.2 through C3.7 with the versions included with this addendum. The callouts at the tie-in have been revised to remove the reference to an existing sewer main and quantities have been updated to reflect the revisions referenced in the answers above.
- 2. Remove and replace sheet C4.0 with the version included with this addendum. The "Installation of Pipe in Casing Open Cut or Jack & Bore" detail has been revised to properly reflect SAWS spec item 856. Note 5 has also been added to clarify how the material for the bore is to be quantified.
- 3. Insert sheets C6.20 through C6.29, the Tree Preservation Plans.
- **4.** Remove and replace sheet C1.0 with the version included with this addendum. The quantities have been revised to reflect the above mentioned changes with this addendum.

### END OF ADDENDUM

This Addendum is twenty-six (26) page(s) in its entirety.

### Attachments:

- Bid Proposal
- Sheet C1.0
- Sheet C3.0
- Sheets C3.2 C3.7
- Sheet C4.0

• Sheets C6.20 – C6.29



LJA Engineering

The Woodlands Off-Site Sanitary Sewer Gravity Line B Solicitation No. :CO-00660 Job No: 22-1720

**BID PROPOSAL** 

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

### THE SAN ANTONIO WATER SYSTEM:

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

### PLEASE SEE ATTACHED LIST OF BID ITEMS.

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 No(s). \_

### 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 <u>180</u> calendar days after the start date, as set forth in the Authorization to Proceed. The bidder understands and accepts the provisions of the contract Documents relating to liquidated damages of the project if not completed on time.

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

### Statement on President's Executive Orders

Has your firm previously performed work subject to the President's Executive Orders Numbers 11246 and 11375 or any preceding similar executive orders (Numbers 10925 and 11114)? Yes No

### **Texas Government Code Chapter 2274 Verifications**

- (1) Are you, Contractor, held or controlled by individuals who are citizens of China, Iran, North Korea, Russia or a country designated by the Governor of the State of Texas pursuant to Texas Government Code Chapter 2274? Yes No
- (2) Are you, Contractor, held or controlled by a company or other entity, including a governmental entity, that is owned or controlled by citizens of or directly controlled by the government of China, Iran, North Korea, Russia or a country designated by the Governor of the State of Texas pursuant to Texas Government Code Chapter 2274? Yes No
- (3) Are you, Contractor, headquartered in China, Iran, North Korea, Russia or a country designated by the Governor of the State of Texas pursuant to Texas Government Code Chapter 2274? Yes □ No □

Line Items									
ine No.	Item No.	Item Description	Unit	Quantity	Unit Price	Total			
1	103	Revegetation	SY	30,591					
2	104	Temporary Sedimentation & Erosion Control	LS	1					
3	550	Trench Excavation Safety Protection	LF	5,377					
4	848	60" FRP Tee Base Manhole (Vented)	EA	4					
5	848	60" FRP Tee Base Manhole	EA	6					
6	852	48" Manhole w/Watertight Ring and Cover	EA	5					
7	852	48" Vented Manhole w/Watertight Ring and Cover	EA	1					
8	852	Post Sanitary Sewer Television Inspection	LF	5,822					
9	853	12" SDR-26 Pipe (8'-12')	LF	659					
10	853	12" SDR-26 Pipe (12'-16')	LF	479					
11	856	27" FRP SN 72 Pipe (8'-12')	LF	142					
12	856	27" FRP SN 72 Pipe (12'-16')	LF	2,673					
13	856	27" FRP SN 72 Pipe (16'-20')	LF	1,424					
14	856	Extra Depth Manholes	VF	161					
15	856	24" Jacking, Boring, or Tunneling	LF	120					
16	857	48" Jacking, Boring, or Tunneling	LF	325					
17	857	24" Steel Casing	LF	120					
18	858	48" Steel Casing	LF	325					
10		Concrete Encasement, Cradles, Saddles, and Collars	CY	332					
	AL (ITEM			002					
		Mobilization							
20	100	Maximum 10% of line items 1-19	LS	1					
21	100	Intermediate Mobilization and Demobilization Preparation of Right-of-Way - This item shall include preparing the	LS	1					
		right-of-way for construction operations by removing and disposing							

easements where removal of such obstructions is not otherwise povided for in the contract documents.
 101 Maximum 5% of line items 1-19

all obstructions from the right-of-way and from designated

MOBILIZATION LUMP SUM BID SHALL BE LIMITED TO A MAXIMUM OF 10% OF THELINE ITEM "1-19" SUB-TOTAL BASE BID AMOUNT. PREPARING RIGHT-OF-WAY LUMP SUM BID SHALL BE LIMITED TO A MAXIMUM OF 5% OF THELINE ITEM "1-19" SUB-TOTAL BASE BID AMOUNT. THE LINE ITEM "1-19" SUB-TOTAL BASE BID IS DEFINED AS ALL BID ITEMS EXCLUDING ITEM 100, MOBILIZATION AND ITEM 101, PREPARATION OF 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.

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		1	1
		1	
TOTAL BID PRICE (TO INCLUDE LINE ITEMS 1-22)			

### SAWS CONSTRUCTION NOTES **COUNTER PERMIT AND GENERAL CONSTRUCTION PERMIT**

### GENERAL SECTION

- 1.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 PLANS, SPECIFICATIONS, GENERAL CONDITIONS AND WITH THE FOLLOWING AS APPLICABLE: A.CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) "DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEM", TEXAS ADMINISTRATIVE CODE (TAC)
- TITLE 30 PART 1 CHAPTER 217 AND "PUBLIC DRINKING WATER", TAC TITLE 30 PART 1 CHAPTER 290.
- B.CURRENT TXDOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND DRAINAGE."
- C.CURRENT "SAN ANTONIO WATER SYSTEM STANDARD SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION."
- D.CURRENT CITY OF SAN ANTONIO "STANDARD SPECIFICATIONS FOR CONSTRUCTION." E.CURRENT CITY OF SAN ANTONIO "UTILITY EXCAVATION CRITERIA MANUAL" (UECM).

2. THE CONTRACTOR SHALL OBTAIN SAWS STANDARD DETAILS FROM SAWS WEBSITE, HTTPS://APPS.SAWS.ORG/BUSINESS CENTER/SPECS/CONSTSPECS/ UNLESS OTHERWISE NOTED WITHIN DESIGN PLANS.

3. THE CONTRACTOR IS TO NOTIFY AND MAKE ARRANGEMENTS WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT 210-233-3500 (DURING REGULAR SAWS WORKING HOURS) AND PROVIDE NOTIFICATION PROCEDURES THE CONTRACTOR WILL USE TO NOTIFY AFFECTED HOME RESIDENTS AND/OR PROPERTY OWNERS TWO (2) WEEKS PRIOR TO EXCAVATION. OUTSIDE OF REGULAR SAWS WORKING HOURS THE SAWS EOC SHOULD BE CONTACTED AT 210-704-7297. 4.IF NECESSARY, CONTRACTOR WILL COORDINATE USE OF SAWS PREMISES AT NO ADDITIONAL COST TO SAWS. SUCH EFFORTS INCLUDE, BUT ARE NOT LIMITED TO,

OBTAINING SECURITY IDENTIFICATION BADGES REQUIRED FOR ACCESS TO SAWS FACILITIES. 5.LOCATIONS AND DEPTHS OF EXISTING UTILITIES AND SERVICE LATERALS SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIF IED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS

REQUIRED FOR CONSTRUCTION AND TO PROTECT THEM DURING CONSTRUCTION AT NO COST TO SAWS. 6.THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT. AS-BUILTS FOR SAWS INFRASTRUCTURE CAN BE OBTAINED AT WEBSITE BELOW. CONTRACTOR SHALL COORDINATE PHYSICAL LOCATES FOR SAWS INFRASTRUCTURE THROUGH THE SAWS INSPECTOR. PLEASE ALLOW UP TO 7 BUSINESS DAYS FOR LOCATES REQUESTING PIPE LOCATION MARKERS ON SAWS INFRASTRUCTURE. THE FOLLOWING CONTACT INFORMATION ARE SUPPLIED FOR VERIFICATION PURPOSES:

SAN ANTONIO WATER SYSTEM:

### REQUEST AS-BUILTS: <u>HTTPS://WWW.SAWS.ORG/SERVICE/LOCATES-SERVICE/</u>

- COSA DRAINAGE 210-206-8433
- COSA TRAFFIC SIGNAL OPERATIONS 210-207-7720 TEXAS STATEWIDE ONE CALL LOCATOR 1-800-545-6005 OR 811
- 7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING, AND STRUCTURES TO ITS ORIGINAL OR BETTER CONDITION AS A RESULT OF DAMAGES DONE BY THE PROJECT'S CONSTRUCTION.
- 8. CONTRACTOR SHALL NOT MAKE USE OF DUMPSTERS OR WASTE BINS THAT ARE INTENDED TO SERVE RESIDENTS AND/OR BUSINESSES.

9. ALL WORK IN TEXAS DEPARTMENT OF TRANSPORTATION AND BEXAR COUNTY RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH RESPECTIVE CONSTRUCTION SPECIFICATIONS AND PERMIT. 10. THE CONTRACTOR SHALL COMPLY WITH CITY OF SAN ANTONIO OR OTHER GOVERNING MUNICIPALITY'S TREE ORDINANCES WHEN EXCAVATING NEAR TREES.

11. ALL WORK WITHIN THE 100-YEAR FLOODPLAIN SHALL BE DONE IN ACCORDANCE WITH FLOODPLAIN DEVELOPMENT PERMIT 12. ANY WORK COMPLETED WITHOUT PRIOR WRITTEN AUTHORIZATION WHICH IS NOT INCLUDED IN THESE PLANS AND SPECIFICATIONS WILL NOT BE COMPENSATED BY THE SAN ANTONIO WATER SYSTEM.

13. HOLIDAY WORK: CONTRACTORS WILL NOT BE ALLOWED TO PERFORM SAWS WORK ON SAWS RECOGNIZED HOLIDAYS. 14. WEEKEND WORK: CONTRACTORS ARE REQUIRED TO SUBMIT REQUEST TO THE SAWS INSPECTION CONSTRUCTION DEPARTMENT BY 12:00PM ON THE WEDNESDAY

PRIOR TO THE WEEKEND BEING REQUESTED. REQUEST SHOULD BE SENT TO CONSTWORKREQ@SAWS.ORG. 15.ANY AND ALL SAWS UTILITY WORK INSTALLED WITHOUT WEEKEND APPROVAL WILL BE SUBJECT TO BE UNCOVERED FOR PROPER INSPECTION AT NO COST TO SAWS. 16.PRE-CON SITE VIDEO: BEFORE THE START OF ANY CONSTRUCTION. THE SITE MUST BE VIDEO RECORDED BY THE CONTRACTOR WITH ONE COPY SUBMITTED TO SAWS

INSPECTIONS. A PRE-SITE VIDEO WILL PROVIDE ACCURATE DOCUMENTATION OF THE EXISTING CONDITIONS (NSPI). 17. POWER POLE BRACING: CONTRACTORS SHOULD BE ADVISED THAT THERE ARE EXISTING OVERHEAD UTILITY POLES ALONG THE PROJECT CORRIDOR. CONTRACTORS SHOULD FURTHER BE ADVISED THAT IF THE DISTANCE FROM THE OUTSIDE FACE OF A UTILITY TRENCH TO THE FACE OF A UTILITY POLE IS LESS THAN 5 FEET, SAID UTILITY POLE IS SUBJECT TO BRACING, BASED ON A DETERMINATION MADE BY UTILITY POLE OWNER. COSTS INCURRED BY CONTRACTOR FOR BRACING OF THESE UTILITY POLES IS

SUBSIDIARY TO THAT RESPECTIVE UTILITY COMPANY'S WORK. IT IS ADVISABLE FOR THE CONTRACTOR TO REVIEW THE CONSTRUCTION DOCUMENTS AND VISIT THE CONSTRUCTION SITE TO DETERMINE POTENTIAL IMPACTS. 18.CONSTRUCTION SEQUENCING: IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO SCHEDULE SEQUENCING FOR REMOVAL AND INSTALLATION OF EXISTING AND

PROPOSED SAWS UTILITIES IN CONJUNCTION WITH GENERAL PROJECT CONSTRUCTION. SEQUENCE OF CONSTRUCTION ACTIVITIES SHALL BE CONSIDERED IN ORDER TO MINIMIZE THE EXTENT AND DURATION OF DISTURBANCES.

19. CONTRACTOR SHALL COMPLY WITH APPLICABLE REGULATIONS INCLUDING, BUT NOT LIMITED TO, THOSE OVERSEEN BY THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA). OSHA INFORMATION AND RELATED MATERIALS MAY BE OBTAINED AT HTTPS://WWW.OSHA.GOV/ OR AT THE OSHA SAN ANTONIO OFFICE LOCATED AT FOUNTAINHEAD TOWER, SUITE 605 8200 W. INTERSTATE 10 SAN ANTONIO, TX 78230 WHICH IS ALSO REACHABLE BY PHONE AT (210) 472-5040.

20. 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 AREAS IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH, AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS, SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING

### SEWER NOTES

21. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT NO SANITARY SEWER OVERFLOW (SSO) OCCURS AS A RESULT OF THEIR WORK. ALL CONTRACTOR PERSONNEL RESPONSIBLE FOR SSO PREVENTION AND CONTROL SHALL BE TRAINED ON PROPER RESPONSE. SHOULD AN SSO OCCUR, THE CONTRACTOR SHALL: A IDENTIFY THE SOURCE OF THE SSO AND NOTIFY SAWS EMERGENCY OPERATIONS CENTER

- (EOC)IMMEDIATELY AT 210-704-SAWS (210-704-7297). PROVIDE THE ADDRESS OF
- THE SPILL AND AN ESTIMATED VOLUME OR FLOW.
- B.ATTEMPT TO ELIMINATE THE SOURCE OF THE SSO. C. CONTAIN SEWAGE FROM THE SSO TO THE EXTENT OF PREVENTING A POSSIBLE
- CONTAMINATION OF WATERWAYS.
- D. CLEAN UP SPILL SITE (RETURN CONTAINED SEWAGE TO THE COLLECTION SYSTEM IF POSSIBLE)

THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

- AND PROPERLY DISPOSE OF CONTAMINATED SOIL/MATERIALS.
- E. CLEAN THE AFFECTED SEWER MAINS AND REMOVE ANY DEBRIS. F. MEET ALL POST-SSO REQUIREMENTS AS PER THE EPA CONSENT DECREE, INCLUDING LINE

CLEANING AND TELEVISING THE AFFECTED SEWER MAINS (AT SAWS DIRECTION) WITHIN 24 HOURS. SHOULD THE CONTRACTOR FAIL TO ADDRESS AN SSO IMMEDIATELY AND TO SAWS SATISFACTION, THEY WILL BE RESPONSIBLE FOR ALL COSTS INCURRED BY SAWS, INCLUDING ANY FINES FROM EPA. NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE FOR THIS WORK. ALL WORK SHALL BE DONE ACCORDING TO GUIDELINES SET BY THE TCEQ AND SAWS.

22. THE CONTRACTOR SHALL PROVIDE BYPASS PUMPING OF SEWAGE AROUND EACH SEGMENT OF PIPE TO BE REPLACED, IN ACCORDANCE WITH SAWS STANDARD SPECIFICATION ITEM NO. 865, "BYPASS PUMPING SMALL DIAMETER SANITARY SEWER MAINS" AND STANDARD SPECIFICATION ITEM NO. 864, "BYPASS PUMPING LARGE DIAMETER SANITARY SEWER MAINS" AS APPLICABLE. PAYMENT

FOR SUCH WORK WILL BE MADE UNDER THE APPROPRIATE BID ITEM ASSOCIATED WITH SANITARY SEWER BYPASS PUMPING IN ACCORDANCE WITH SAWS STANDARD SPECIFICATIONS 865 AND 864

23.PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING FORCE MAINS OF ANY SIZE MUST BE COORDINATED WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT 210-233-3500 AND/OR SAWS PRODUCTION GROUPS AT LEAST TWO WEEKS 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

24.ELEVATIONS POSTED FOR TOP OF MANHOLES ARE FOR REFERENCE ONLY: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE ALLOWANCES AND ADJUSTMENTS FOR TOP OF MANHOLES TO MATCH THE FINISHED GRADE OF THE PROJECT'S IMPROVEMENTS (NSPI).

25.MANHOLE REMOVAL: WHERE EXISTING MANHOLES ARE TO BE REPLACED BY THE CONTRACTOR, THE EXISTING MANHOLES SHALL BE REMOVED. (NSPI) 26.SMART MANHOLE COVERS: THE CONTRACTOR SHALL NOTIFY SAWS EOC AT 210-704- SAWS (210-233-7297) AND EITHER AMERICA ESPINOZA AT 210-233-2934 OR JOSE A. MARTINEZ AT 210-233-3071 A MINIMUM OF 72 HOURS, NOT COUNTING WEEKENDS OR SAWS HOLIDAYS, BEFORE WORKING ON THE PIPE OR MANHOLE, IN ORDER TO HAVE SAWS REMOVE THE SMART COVER. ANY DAMAGE DONE TO THE SMART COVER WILL BE CHARGED TO THE CONTRACTOR THROUGH A CHANGE ORDER.

27.FLOW METERS IN MANHOLES: THE CONTRACTOR SHALL NOTIFY BOBBY JOHNSON AT 210-233-3493 OR ABEL BORUNDA AT 210-233-3704 A MINIMUM OF 72 HOURS, NOT COUNTING WEEKENDS OR SAWS HOLIDAYS, BEFORE WORKING ON THE PIPE OR MANHOLE, IN ORDER TO HAVE SAWS REMOVE THE FLOW METER IN THE MANHOLE. ANY DAMAGE DONE TO THE FLOW METER WILL BE CHARGED TO THE CONTRACTOR THROUGH A CHANGE ORDER.

### ADDITIONAL MISCELLANEOUS SAWS NOTES

JANUARY 26, 2016

1.THE CONTRACTOR SHALL MAINTAIN SERVICE TO ALL EXISTING SANITARY SEWER AT ALL TIME DURING CONSTRUCTION.

2.ALL WORK IN TEXAS HIGHWAY DEPARTMENT AND BEXAR COUNTY RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH RESPECTIVE CONSTRUCTION SPECIFICATIONS AND PERMIT. 3.DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.181, CITY PUBLIC SERVICE MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES.

4.ALL MANHOLES SHALL BE CONSTRUCTED SO THAT THE TOP OF THE RING IS AT LEAST FOUR 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.

5.0N ANY MANHOLES TO BE ABANDONED, THE RINGS AND COVER SHALL BE SALVAGED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, ITEM 862, AND THE HOLE BACKFILLED TO THE SATISFACTION OF THE INSPECTOR.

6.THE USE OF ASBESTOS CEMENT PIPE WILL BE PROHIBITED UNDER THIS CONTRACT. ALL DUCTILE IRON PIPE USED IN THIS SYSTEM SHALL BE CORROSION PROTECTED ON BOTH THE INTERIOR AND EXTERIOR SURFACES. ALL CORROSION PROTECTION SHALL BE APPLIED AND INSTALLED IN SUCH A MANNER AS TO MAINTAIN A CONTINUOUSLY PROTECTED SURFACE AFTER FINAL PIPE INSTALLATION

7.ALL PVC PIPE WITH OVER 14 FEET OF COVER SHALL BE EXTRA STRENGTH, MINIMUM PIPE STIFFNESS OF 115 PSI.

8.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 APPROVED BY SAW. ANY CHANGE FROM THESE METHODS MUST BE APPROVED BY SAWS. 9.WHERE REQUIRED, CONCRETE ENCASEMENT SHALL BE PLACED FOR FULL WIDTH OF THE TRENCH TO PLANE 6' ABOVE THE TOP OF THE PIPE, WITH PAY LIMITS AS SHOWN ON THE ITEM NO. DD-858-01.

10.CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL WASTE MATERIAL UPON PROJECT COMPLETION. THE CONTRACTOR SHALL NOT PERMANENTLY PLACE ANY WASTE MATERIALS IN THE 100-YEAR FLOODPLAIN WITHOUT FIRST OBTAINING AN APPROVAL FLOODPLAIN DEVELOPMENT PERMIT.

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

PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN OR AROUND TRENCH EXCAVATION.

12. STORM WATER PROTECTION:

A.THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY AND ENVIRONMENTAL PROTECTION AGENCY (EPA) REQUIRED EROSION AND SEDIMENTATION CONTROL FOR CONSTRUCTION OF SEWER FOR CONSTRUCTION OF SEWER COLLECTION SYSTEMS, DEVELOPER OR AUTHORIZED REPRESENTATIVE SHALL PROVIDE EROSION AND SEDIMENTATION CONTROLS AS NOTED ON THE PROJECTS PLAN AND PROFILE SHEETS.

B.AT A MINIMUM, THESE CONTROLS SHALL CONSIST OF ROCK BERMS AND/OR SILT FENCES CONSTRUCTED PARALLEL TO AND DOW ON GRADIENT FROM THE TRENCHES. THE ROCK BERM OR SILT FENCES SHALL BE INSTALLED IN A MANNER SUCH THAT NAY RAINFALL RUNOFF SHALL BE FILTERED. HAY BALES SHALL NOT BE USED FOR TEMPORARY EROSION AND SEDIMENTATION CONTROLS.

C.ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS MUST BE INSTALLED PRIOR TO CONSTRUCTION., SHALL BE MAINTAINED DURING CONSTRUCTION, AND SHALL BE REMOVED WHEN VEGETATION IS ESTABLISHED AND THE CONSTRUCTION AREA IS STABILIZED. ADDITIONAL PROTECTION MAY BE NECESSARY IF EXCESSIVE SOLIDS ARE BEING DISCHARGED FROM THE SITE.

14.ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE MOVED BY THE CONTRACTOR AT FINAL ACCEPTANCE OF THE PROJECT BY THE SAN ANTONIO WATER SYSTEM. 15.PLACEMENT OF SUCH CONTROLS SHALL BE IN ACCORDANCE WITH THE CONSTRUCTION PLANS. ACTUAL LOCATIONS MAY VARY SLIGHTLY FROM THE PLANS. BUT WILL BE VERIFIED BY THE ENGINEER/INSPECTOR IN THE FIELD PRIOR TO SEWER LINE CONSTRUCTION. THE CONTRACTOR AND CITY INSPECTOR SHALL INSPECT THE CONTROLS AT WEEKLY INTERVALS AND AFTER EVERY SIGNIFICANT RAINFALL TO ENSURE SIGNIFICANT DISTURBANCE TO THE STRUCTURES HAS NOT OCCURRED. SEDIMENT DEPOSITED AFTER A SIGNIFICANT RAINFALL SHALL BE REMOVED FROM THE SITE OR PLACED IN AN APPROVED DESIGNATED SOIL DISPOSAL AREA. 16.A DEFLECTION TEST SHALL BE PERFORMED ON ALL FLEXIBLE PIPE. THE TEST SHALL BE CONDUCTED AFTER INITIAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS. ITEM NO. 849

17.ALL MAINS MUST PASS AIR TESTING PER ITEM NO. 849 IN THE STANDARD SPECIFICATIONS PRIOR TO ACCEPTANCE BY THE SAN ANTONIO WATER SYSTEM. 18.ALL MUST COMPLY WITH ITEM NO. 868 OF SEWER MAIN CLEANING.

19.WATER JETTING THE BACKFILL WITHIN A STREET WILL NOT BE PERMITTED. SANITARY SEWER TRENCHES SUBJECT TO TRAFFIC SHALL CONFORM TO THE CITY OF SAN ANTONIO STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND SAWS ITEM 804. 20.SANITARY SEWER MAIN CONNECTIONS MADE DIRECTLY TO EXISTING MANHOLES WILL REQUIRE SUCCESSFUL TESTING OF THE MANHOLES IN ACCORDANCE WITH THE STANDARD

SPECIFICATIONS ITEM 849. 21.AFTER CONSTRUCTION, TESTING WILL BE DONE BY T.V. CAMERA BY THE CONTRACTOR AND OBSERVED BY THE INSPECTOR, AND WASTEWATER ENGINEERING PERSONNEL AS THE CAMERA IS RUN THROUGH THE LINES. ANY ABNORMALITIES, SUCH AS BROKEN PIPE OR MISALIGNED JOINTS, MUST NE REPLACED BY THE CONTRACTOR AT HIS EXPENSE. 22.A COPY OF ALL TESTING REPORTS SHALL BE FORWARDED TO THE SAN ANTONIO WATER SYSTEM CONSTRUCTION INSPECTION DIVISION.

23.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.

24. THE DEVELOPER DEDICATES THE SANITARY SEWER MAINS UPON COMPLETION BY THE DEVELOPER AND ACCEPTANCE BY THE SAN ANTONIO WATER SYSTEM. THE SAN ANTONIO WATER SYSTEM WILL OWN AND MAINTAIN SAID SANITARY SEWER MAINS WHICH ARE LOCATED WITHIN THIS PARTICULAR SUBDIVISION. (AS APPLICABLE) 25.WORK COMPLETED BY THE CONTRACTOR WHICH HAS NOT RECEIVED A GENERAL CONSTRUCTION PERMIT OR THE CONSENT OF THE SAN ANTONIO WATER SYSTEM CONSTRUCTION

INSPECTION DIVISION WILL BE SUBJECT TO REMOVAL AND REPLACEMENT BY AND AT THE EXPENSE OF THE CONTRACTOR. 26.CONTRACTOR SHALL ABIDE BY ALL APPLICABLE GOVERNMENTAL AND REGULATORY STANDARDS AND REQUIREMENTS AND OBTAIN ALL NECESSARY PERMITS AND APPROVAL FOR CONSTRUCTION OF THE PIPELINE FACILITIES SHOWN IN THE PLANS.

27.THE CONTRACTOR SHALL EXCAVATE THE TOP 12 INCHES OF TOPSOIL AND STOCKPILE IT SEPARATELY FROM THE GENERAL EXCAVATION. A SUITABLE VOLUME OF TOPSOIL SHALL BE EXCAVATED TO PLACE A MINIMUM OF 12 INCHES OF TOPSOIL OVER ALL EXCAVATED OR BACKFILLED AREAS. TOPSOIL IS NOT REQUIRED WHERE PAVEMENT, CONCRETE CAP, RIP-RAP OR OTHER FACILITIES ARE REQUIRED AT THE SURFACE. CONTRACTOR MAY MOUND EXCESS TRENCH EXCAVATED MATERIAL OVER PIPE UP TO 1 FOOT IN HEIGHT ABOVE NATURAL GRADE. MOUND SHALL BE COMPLETELY COVERED WITH 12 INCHES OF TOPSOIL. MOUND SHALL BE FREE OF BRUSH AND ROCK. MOUNDING IS NOT PERMITTED IN DEVELOPED PROPERTIES, ROADS, CREEKS, FLOODPLAIN, PAVED AREAS, CULTIVATED FIELDS OR OTHER AREAS DIRECTED BY SAW'S REPRESENTATIVE. RESTORE GROUND TO ORIGINAL GRADE AND PONDING OF STORM WATER RUNOFF ON ALL GROUND DISTURBED BY CONSTRUCTIONS ACTIVITIES

28.CONSTRUCTION SURVEYING IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR INCLUDING BUT NOT LIMITED TO LIMITS OF PERMANENT EASEMENT AND TEMPORARY EASEMENTS, PIPE ALIGNMENT, APPURTENANCE LOCATION AND ROAD CROSSINGS. THE CONTRACTOR SHALL VERIFY ALL CONTROL MONUMENTATION PRIOR TO BEGINNING CONSTRUCTION. 29.ALL PIPELINES 24" AND LARGER SHALL HAVE A MINIMUM COVER OF 48". PIPES SHALL HAVE A MINIMUM COVER OF 36" (UNLESS NOTED OTHERWISE). PIPES SHALL BE ROUTED AS SHOWN UNLESS MINOR REVISIONS ARE NECESSARY TO MISS EXISTING PIPES, STRUCTURES, ETC. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL FITTING AND ADAPTORS REQUIRED TO MAKE THE ROUTING CHANGES. CONTRACTOR SHALL INCLUDE COST FOR THIS IN THE BID.

30.CONTRACTOR SHALL MAKE CONNECTIONS TO EXISTING PIPE, STRUCTURES, EQUIPMENT, ETC. AS REQUIRED AND SHALL PROVIDE ALL FITTINGS, ADAPTORS AND APPURTENANCES REQUIRED TO MAKE THE CONNECTIONS, PROVIDE ALL SUPPORTS REQUIRED FOR A RIGID INSTALLATION AND TO HAVE A COMPLETE AND WORKING SYSTEM. 31.VARIOUS LOCATIONS OF THE WORK ARE SUBJECT TO FLOODING AND STANDING WATER DURING WET WEATHER PERIODS. CONTRACTOR SHALL PLAN THIS WORK FOR DRY WEATHER

PERIODS AND PROVIDE DEWATERING AND OTHER WE WEATHER PROVISIONS AS INCIDENTAL WORK. 32.CONTRACTOR SHALL COORDINATE HIS/HER PROPOSED CONSTRUCTION WITH OTHER CONTRACTORS IN THE EVENT OF THE OTHER CONTRACTORS DOING WORK IN THE SAME AREA SIMULTANEOUSLY WITH HIS/HER PROJECT. THIS INCLUDES, BUT NOT LIMITED TO, ALL CONNECTION POINTS OR OTHER SPECIAL ITEMS AS REQUIRED FOR TESTING.

33.CONTRACTOR SHALL DISPOSE OF ALL EXCESS MATERIAL, CONSTRUCTION RUBBLE AND TRASH. ALL TRASH SHALL BE PICKED-UP AND REMOVED AT THE END OF EACH DAY. THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIALS IN THE 100-YEAR FLOODPLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOODPLAIN DEVELOPMENT PERMITS AS REQUIRED FROM THE U.S. CORPS OF ENGINEERS.

34.NO BURNING OR BLASTING IS ALLOWED.

35.CONTRACTOR SHALL INSTALL PIPELINE MARKER POSTS AT ALL PROPERTY LINES. ROAD CROSSINGS. WATERWAY CROSSINGS AND HORIZONTAL PI'S AS SHOWN ON THE PLANS. 36.THE PERMANENT EASEMENTS ARE SHOWN ON THE DRAWINGS. THE CONTRACTOR MAY ACQUIRE ADDITIONAL TEMPORARY CONSTRUCTION EASEMENTS AT HIS/HER OWN COST, IF HE/SHE CHOOSES. IF THE CONTRACTOR ACQUIRES ADDITIONAL TEMPORARY EASEMENTS, HE/SHE SHALL PROVIDE COPIES OF THE WRITTEN AGREEMENT TO SAWS. THE CONTRACTOR SHALL BE COMPLETELY RESPONSIBLE FOR ANY DAMAGE AS A RESULT OF USE OF EASEMENTS.

### SUPPLEMENTARY NOTES:

1.THE CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING THE FLOODPLAIN DEVELOPMENT PERMIT.

2.ALL WORK IN THE 100 YEAR FLOODPLAIN SHALL BE ACCOMPLISHED UNDER AND APPROVED FLOODPLAIN PERMIT

3.CONTRACTOR SHALL PROTECT OR REMOVE AND REPLACE ALL TRAFFIC SIGNS (NSP).

4.CONTRACTOR SHALL PROTECT OR REMOVE AND REPLACE ALL MAILBOXES (NSP).

5.CONTRACTOR SHALL COORDINATE WITH PROPERTY OWNER IN ADVANCE OF ANY WORK IN THE OWNERS' PROPERTY.

### STORM WATER PROTECTION AND EROSION CONTROL NOTES:

1.CONTRACTOR SHALL INSTALL STORM WATER POLLUTION PREVENTION STRUCTURES INCLUDING BUT NOT LIMITED TO. SILT FENCING AND/OR ROCK BERMS IN ALL AREAS TO BE IMPACTED BY CURRENT AND ONGOING CONSTRUCTION AND MAINTAIN SUCH STRUCTURES UNTIL SUITABLE GROUND COVER/REVEGETATION IS ACCEPTED. ALL STORM WATER POLLUTION PREVENTION STRUCTURES SHALL BE CONSTRUCTED WITH IN THE COUNTY RIGHT-OF-WAY AND WATER LINE EASEMENTS. ANY FEATURES ON THE PLANS SHOWN OUTSIDE THESE AREAS ARE SHOWN FOR VISUAL CLARITY ONLY.

2. THE LOCATION OF ANY BEST MANAGEMENT PRACTICES (B.M.P.'S) SUCH AS SILT FENCING, ROCK BERMS STABILIZED CONSTRUCTION ENTRANCE/EXIT, ETC THAT MAY BE SHOWN ON THESE PLANS ARE SUBJECT TO FIELD VERIFICATION. CONTRACTOR SHALL ADJUST THE LOCATIONS OF B.M. P'S TO BEST ACCOMMODATE THE CONDITIONS AND TOPOGRAPHY ENCOUNTERED DURING CONSTRUCTION, OUESTIONS REGARDING THE PLACEMENT AND/OR CHANGES CONCERNING B.M.P.'S SHALL BE REFERRED TO THE OWNER AND THE COUNTY. THE CONTRACTOR IS TO ENSURE THAT SEDIMENTATION AND EROSION WILL BE CONTAINED WITHIN THE PROJECT WORK AREAS AND KEPT OFE ROADWAYS AND ADJACENT PROPERTIES AND OUT OF DRAINAGE CHANNELS AND WATER COURSES.

### **CPS ENERGY NOTES:**

1.CALL CPS ENERGY LOCATOR AT 978-3500 48 HOURS BEFORE BEGINNING TO EXCAVATION.

2.DUE TO FEDERAL REGULATION TITLE 49, PART 192, 181, CPS ENERGY MUST MAINTAIN ACCESS TO GAG VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.

### UNDERGROUND TELEPHONE/COMMUNICATION LINES NOTE:

1. THE EXISTENCE AND LOCATION OF UNDERGROUND CABLE AS SHOWN ON THESE PLANS HAVE BEEN TAKEN FROM THE BEST INFORMATION AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. CONTRACTOR SHALL CONTACT THE TELEPHONE/COMMUNICATION COMPANY CABLE LOCATOR 48 HOURS PRIOR TO EXCAVATION AT 1-800-545-6005. CONTRACTOR SHALL PROTECT AND (AS NECESSARY) INSTALL SHORING FOR TELEPHONE COMPANY FACILITIES DURING CONSTRUCTION

### **TREE PROTECTION NOTES:**

1.CONTRACTOR TO PROTECT ALL TREES WHEREVER POSSIBLE. DAMAGE TO TREES IDENTIFIED TO BE PROTECTED WILL BE MITIGATED AT THE CONTRACTOR'S SOLE EXPENSE. ALSO, ALL WORK IN PUBLIC RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH THE CONTROLLING ENTITIES STANDARDS, SPECIFICATIONS AND PERMIT REQUIREMENTS 2.PROTECT EXISTING TREES SIX INCH (6") DIAMETER AND LARGER. ALL TREES TO BE PRESERVED AS PART OF THE PROJECT SHALL BE PROTECTED AGAINST INJURY OR DAMAGE, INCLUDING CUTTING, SOIL COMPACTION, BREAKING OR SKINNING OF ROOTS, TRUNKS, OR BRANCHES DURING CONSTRUCTION OPERATIONS BY FENCING AS DESCRIBED BELOW. THE TREE PROTECTION SHALL BE PLACE BEFORE ANY EXCAVATION OR GRADING IS BEGUN AND MAINTAINED FOR THE DURATION OF THE CONSTRUCTION WORK. PROTECTION WILL ENCOMPASS THE ROOT PROTECTION ZONE WHICH WILL BE AT A MINIMUM ONE FOOT (1.0') RADIUS PER INCH DIAMETER OF THE TREE TRUNK AT 4.5' ABOVE GROUND. NO MATERIAL SHALL BE STORED OR CONSTRUCTION OPERATION SHALL BE CARRIED ON WITHIN THE TREE PROTECTION FENCING, UNLESS AUTHORIZED BY THE OWNER. THE PROTECTION SHALL REMAIN UNTIL ALL WORK IS COMPLETED.

3.NO CONSTRUCTION ACTIVITIES SHALL BE PERFORMED WITHIN 5' FROM THE TRUCK OF A TREE THAT IS PROTECTED. TRENCH SHORING WILL BE REQUIRED INSIDE OF A ROOT PROTECTION ZONE. THE ROOT PROTECTION ZONE IS CALCULATED AS A RADIUS FROM THE TREE TRUNK EQUAL TO ONE FOOT PER DIAMETER INCH OF THE TREE. 4.THE PROJECT IS SUBJECT TO REGULATION S ESTABLISHED BY THE CITY OF SAN ANTONIO TREE ORDINANCE.

### GAS VALVES AND OVERHEAD POWER LINE NOTES:

1.DUE TO FEDERAL REGULATION TITLE 19, PART 192,181, CPS ENERGY MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA. 2.CONTRACTOR TO EXERCISE EXTREME CAUTION WHEN WORKING UNDER "HIGH VOLTAGE TRANSMISSION LINES". A WORKING HEIGHT OF 30' FROM GROUND ELEVATION WILL BE

OBSERVED WHEN WORKING UNDER THE HIGH VOLTAGE LINE. COORDINATE ALL WORK WITH CPS ENERGY. 3.CALL CPS ENERGY LOCATOR AT 978-3500 48 HOURS BEFORE BEGINNING ANY EXCAVATIONS.

### HAULING AND STORAGE:

1.HAULING AND/OR TEMPORARY STORAGE OF EQUIPMENT AND MATERIALS MAY BE NECESSARY, INCLUDING EXCAVATED MATERIAL AND SPOILS. CONTRACTOR SHALL INCLUDE IN HIS BID PRICE ALL COSTS ASSOCIATED WITH HAULING AND OFF-SITE STORAGE OF ALL MATERIALS AND/OR EQUIPMENT. ALSO REFER TO THE PROJECT SPECIFICATIONS

### **EXISTING IMPROVEMENTS:**

1.ALL EXISTING IMPROVEMENTS WITHIN THE PROJECT AREA, WHICH ARE NOT COVERED UNDER THE UNIT PRICE BID PROPOSAL, SHALL BE PROTECTED OR REMOVED AND REPLACED TO EXISTING CONDITION OR BETTER AR NO ADDITIONAL COST TO THE OWNER.

### **TEMPORARY LIVESTOCK CONTROL:**

1.WHEN WORKING IN AN AREA WITH LIVESTOCK, THE CONSTRUCTION SHALL INSTALL AND MAINTAIN (AT CONTRACTORS EXPENSE) THE NECESSARY TEMPORARY FENCING TO KEEP THE LIVESTOCK FROM EXITING THE AREA. ANY ESCAPED LIVESTOCK WILL BE CAPTURED AND RETURNED TO THE AREA AT THE CONTRACTORS EXPENSE. **MISCELLANEOUS NOTES:** 

1.IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL, MONITOR AND MAINTAIN THE STORM WATER POLLUTION PREVENTION PLAN FOR THIS PROJECT. 2. ALL FENCING, GATES, OIL FIELD FACILITIES, SIGNS AND ANY OTHER EXISTING IMPROVEMENTS DAMAGED BY THE CONTRACTOR SHALL BE REPLACED TO ITS ORIGINAL CONDITION OR BETTER AT NO ADDITIONAL COST TO THE OWNER

3. THE CONTRACTOR AND ALL SUB-CONTRACTORS SHALL BE RESPONSIBLE FOR COORDINATING WITH SAWS, PAYING FOR AND FULFILLING ALL OTHER REQUIREMENTS FOR OBTAINING ANY AND ALL SECURITY ITEMS REQUIRED BY SAWS SUCH AS, BUT NOT LIMITED TO PHOTOS, BADGES, PARKING TAGS AND KEY NECESSARY FOR WORK RELATED TO THIS PROJECT. THE COST FOR THIS SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION AND SHALL NOT BE A SEPARATE PAY ITEM. 4.THE CONTRACTOR, BY PERSONAL EXAMINATION OF THE SITE, SHALL SATISFY HIMSELF/HERSELF WITH THE LOCAL CONDITIONS AND MAKE HIS/HER ESTIMATE OF THE DIFFICULTIES AND

UNCERTAINTIES THAT WILL ATTEND THE EXECUTION OF THE PROPOSED WORK, DERIVING INFORMATION FROM PLANS AND SPECIFICATIONS ONLY, WHILE FAILING TO EXAMINE THE SITE,

THE CONTRACT.

5.THE CONTRACTOR SHALL MAKE EVERY ATTEMPT TO AVOID DAMAGING EXISTING OIL FILED FACILITIES INCLUDING BUT NOT LIMITED TO WELLS, AIR LINES, PIPING, TANKS, HOSES AND ELECTRICAL. THE CONTRACTOR, PRIOR TO MOVING EQUIPMENT OR MATERIAL ON-SITE AND PRIOR TO BEGINNING ANY EXCAVATION, SHALL NOTIFY AN OIL FIELD MANAGEMENT REPRESENTATIVE AT (361) 701-6810 TO REQUEST ASSISTANCE IN LOCATING AND EXPOSING BURIED OIL FIELD PIPING AND CONDUITS WITHIN THE VICINITY OF THE WORK. AN OIL FILED MANAGEMENT REPRESENTATIVE SHALL BE PRESENT AT ALL TIMES WHEN WORK ASSOCIATED WITH THE OIL WELLS OR OIL WELL SERVICE LINES IS BEING PERFORMED. TRAFFIC CONTROL NOTE:

1.CONTRACTOR SHALL PREPARE AND SUBMIT A TRAFFIC CONTROL PLAN TO BEXAR COUNTRY FOR REVIEW AND APPROVAL. NECESSARY TRAFFIC CONTROL, DETOUR ROUTING AROUND WORK ACTIVITIES, MAINTENANCE OF DETOUR SIGNS AND FLAGMEN ARE THE CONTRACTOR'S RESPONSIBILITY. UNLESS DIRECTED OTHERWISE, THE CONTRACTOR SHALL MAINTAIN AT LEAST ONE OPEN TRAFFIC LANE (MINIMUM 12 FEET WIDE). CONTROLLED WITH FLAGMEN, DURING WORK HOURS. DURING ALL NON-WORKING HOURS, A MINIMUM OF TWO TRAFFIC LANES (EACH A MINIMUM 12 FEET WIDE) SHALL BE OPEN TO TRAFFIC. CONTRACTOR WILL FURNISH AND MAINTAIN ALL REQUIRED TRAFFIC CONTROL DEVISE PER TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD), TO PROPERLY WARN, GUIDE AND CONTROL TRAFFIC AT ALL TIMES THROUGHOUT CONSTRUCTION.

I. WHERE A SEWER MAIN CROSSES OVER A WATER MAIN AND THE SEPARATION DISTANCE IS LESS THAN NINE (9) FEET, ALL PORTIONS OF THE SEWER MAIN WITH NINE (9) FEET OF THE WATER LINE SHALL BE CONSTRUCTED USING 160 PSI PRESSURE RATED HDPE. II.WHERE A SEMI-RIGID OR RIGID SEWER MAIN CROSSES UNDER A WATER MAIN AND THE SEPARATION DISTANCE IS LESS THAN NINE (9) FEET BUT GREATER THAN TWO (2) FEET, THE INITIAL BACKFILL SHALL BE CEMENT STABILIZED SAND (TWO OR MORE BAGS OF CEMENT PER CUBIC YARD OF SAND) FOR ALL SECTIONS OF THE SEWER WITHIN NINE (9) FEET OF THE WATER MAIN.

III. WHERE A SEWER MAIN CROSSES UNDER A WATER MAIN AND THE SEPARATION DISTANCE IS LESS THAN TWO FEET, THE SEWER MAIN SHALL BE CONSTRUCTED OF HDPE WITH A MINIMUM PRESSURE RATING OF 160 PSI WITHIN NINE (9) FEET OF THE WATER MAIN SHALL BE PLACED NO CLOSER THAN SIX (6) INCHES BETWEEN OUTER DIAMETERS. IV.WHERE SEWER MAIN PARALLELS A WATER MAIN AND THE SEPARATION DISTANCE IS LESS THAN NINE(9) FEET, THE SEWER MAIN SHALL BE BELOW THE WATER MAIN, SHALL BE CONSTRUCTED OF HOPE WITH A MINIMUM PRESSURE RATING OS 160 PSI FIR BOTH PIPE AND OUTER DIAMETERS OF TWO FEET VERTICALLY AND FOUR (4) FEET HORIZONTALLY V.SANITARY SEWER MANHOLES SHALL NOT BE INSTALLED ANY CLOSER THAN NINE (9) FEET TO WATER MAINS.

### NOTE:

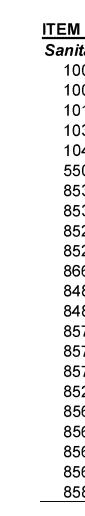
RESULTS.

# **CAUTION OVERHEAD UTILITIES**

**CAUTION UNDERGROUND UTILITIES** 

# **CONTRACTOR NOTES:**

1. HAULING AND/OR TEMPORARY STORAGE OF EQUIPMENT AND MATERIALS MAY BE NECESSARY, INCLUDING EXCAVATED MATERIAL AND SPOILS. CONTRACTOR SHALL INCLUDE IN HIS BID PRICE ALL COSTS ASSOCIATED WITH HAULING AND OFF-SITE STORAGE OF ALL MATERIALS AND/OR EQUIPMENT. ALSO REFER TO THE PROJECT SPECIFICATIONS. SPOILS MAY NOT BE PLACED WITHIN DRAINAGE R.O.W. IN GERINMO VILLAGE SUBDIVISION. 2. IN CULTIVATED AREAS, CONTRACTOR SHAL RETURN THE TOP LAYER OF BACKFILL TO ORIGINAL STATE WITHOUT ROCK OR DEBRIS.



SHALL IN NO WAY RELIEVE THE CONTRACTOR FROM HIS/HER RESPONSIBILITIES OR AFFECT THE RISK OR OBLIGATION ASSUMED BY THE CONTRACTOR FROM FULFILLING ANY CONDITION OF

### SAN ANTONIO WATER SYSTEM

### CRITERIA FOR SEWER MAIN CONSTRUCTION IN THE VICINITY OF WATER MAINS

THE CONTRACTORS SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY, COMPACTION TEST WILL BE DONE AT A LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE SAWS INSPECTOR/TEST ADMINISTRATOR, PER EACH 12-INCH LOOSE LIFT PER 400 FEET AT A MINIMUM. THE PROJECT WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THE REQUIREMENT BEING MET AND VERIFIED BY PROVING ALL NECESSARY DOCUMENTED TEST

CONTRACTOR TO EXERCISE EXTREME CAUTION WHEN WORKING UNDER "HIGH VOLTAGE TRANSMISSION LINES". A WORKING HEIGHT OF 30' FROM GROUND ELEVATION WILL B E OBSERVED WHEN WORKING UNDER THE HIGH VOLTAGE LINE. COORDINATE ALL WORK WITH THE LOCAL UTILITY PROVIDER.

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE MEASUREMENTS TAKING IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS EXACT OR COMPLETE. THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCT BANKS, LANDSCAPE IRRIGATION FACILITIES AND GAS LINES. THE CONTRACTOR MUST CONTACT 1-800-DIG-TESS AND CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION AND/OR START OF CONSTRUCTION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES (WHETHER SHOWN ON PLANS OR NOT) WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTORS SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

### HAULING, STORAGE & RETURNING TO ORIGINAL STATE:

ITEM NO.	DESCRIPTION	<u>UNIT</u>	QUANTITY
-	Sewer Improvements-WWL B		
100	Mobilization	LS	1
100	Intermediate Mobilization and Demobilization	LS	1
101	Preparing Right-of-Way	LS	1
103	Revegetation	SY	30591
104	Temporary Sedimentation & Erosion Control	LS	1
550	Trench Excavation Safety Protection	LF	5,377
853	60" FRP Tee Base Manhole (Vented)	EA	4
853	60" FRP Tee Base Manhole	EA	6
852	48" MH w/ Watertight Ring and Cover	EA	5
852	48" MH w/ Watertight Ring and Cover (Vented)	EA	1
866	Post Sanitary Sewer Television Inspection	LF	5,822
848	12" SDR-26 Pipe (8'-12')	LF	659
848	12" SDR-26 Pipe (12'-16')	LF	479
857	27" FRP SN72 Pipe For Large Diameter Gravity Sewer Line (8'-12')	LF	142
857	27" FRP SN72 Pipe For Large Diameter Gravity Sewer Line (12'-16')	LF	2,673
857	27" FRP SN72 Pipe For Large Diameter Gravity Sewer Line (16'-20')	LF	1,424
852	Extra Depth Manholes	VF	161
856	24" Jacking (Carrier Included)	LF	120
856	48" Jacking (Carrier Included)	LF	325
856	24" Steel Casing	LF	120
856	48" Steel Casing	LF	325
858	Concrete Encasement, Cradles, Sadles and Collars	CY	332

SEWER THE WOODLANDS OFF-SITE GRAVITY SEWER LINE 'B' DEVELOPER'S NAME: LUCRA TERRA, LLC DEVELOPER'S ADDRESS: 15720 BANDERA RD, STE 103 TY HELOTES STATE TEXAS PHONE # 830-837-2349 FAX # \_\_\_\_\_ WS BLOCK MAP # \_\_\_\_\_\_062606 \_\_\_\_\_ TOTAL EDU'S \_\_\_\_\_\_ TOTAL ACREAGE \_\_\_\_\_NA OTAL LINEAR FOOTAGE OF PIPE: 4,554 1,268' PLAT NO. N/A JMBER OF LOTS: 0 SAWS JOB NO.

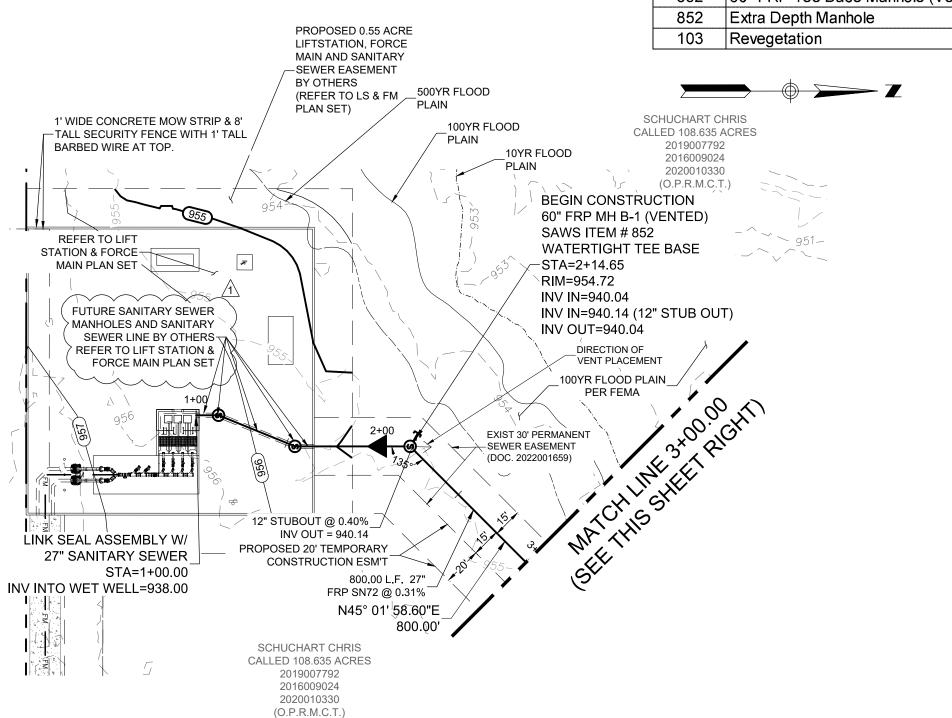
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REVISIONS	NO. DESCRIPTION BY	ANNOTATION/QUANTITIES REVISION.						
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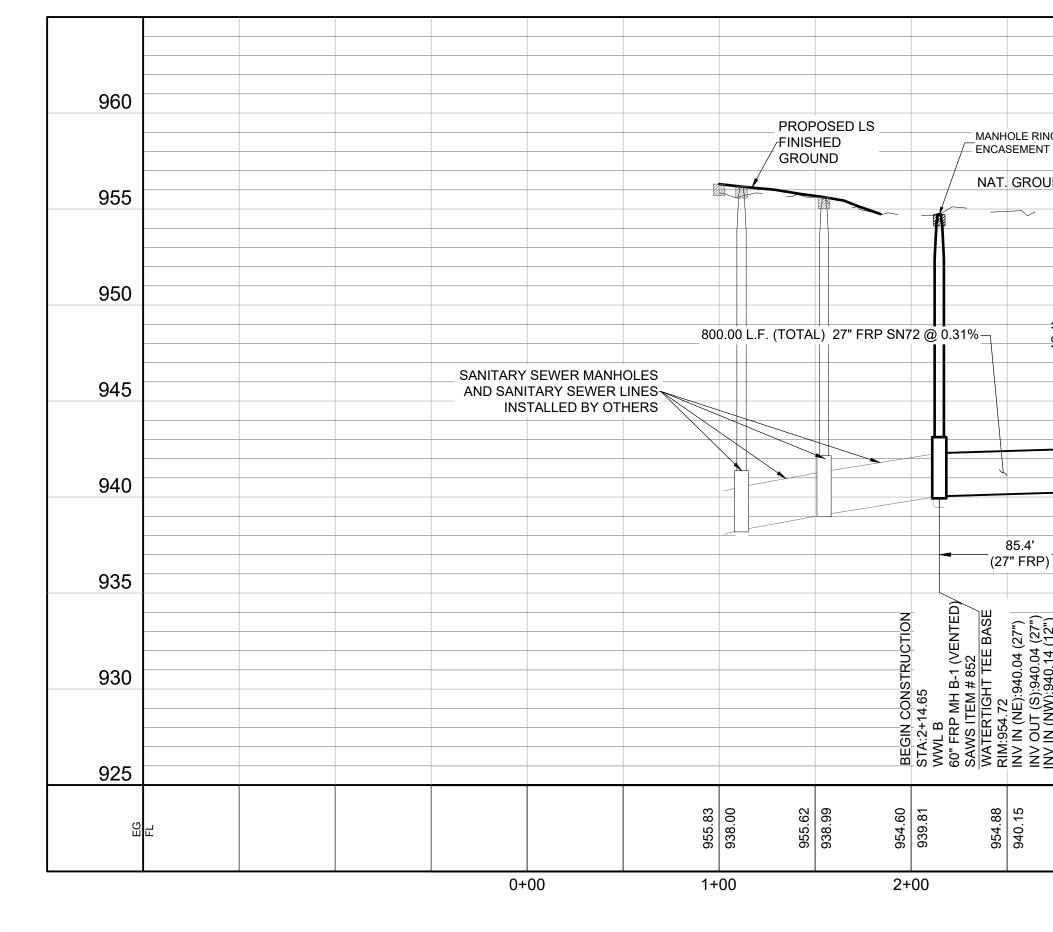
# **00% SUBMITTAL**

### **GENERAL NOTES**

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING THE COMPACTION REQUIREMENTS ON ALL TRENCH BACKFILL AND FOR PAYING FOR THE TESTS PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT LOCATION POINTS RANDOMLY SELECTED OR AS INDICATED BY SAWS' INSPECTOR/TEST ADMINISTRATOR, PER EACH 18 (FIRST LIFT FROM BOTTOM) AND 12 INCH LOOSE LIFT PER 100 LINEAR FEET, AT A PROBE DEPTH OF SIX (6) INCHES. ONE PER LIFT PER 100 FT.
- 2. THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTING AND TESTING THE SANITARY SEWER SYSTEM IN ACCORDANCE WITH 30 TAC 217 & THE DESIGN PLANS AND SAWS SPECIFICATIONS.
- 3. THE CONTRACTOR MUST PROVIDE CERTIFICATION UPON REQUEST OF THE ENGINEER THAT ALL MATERIALS FOR THE CONSTRUCTION OF THE SANITARY SEWER SYSTEM MEET TCEQ AND SAWS SPECIFICATIONS.
- 4. THE CONTRACTOR SHALL SUBMIT MANUFACTURE'S PRODUCT DATA INSTRUCTIONS, RECOMMENDATIONS, SHOP DRAWINGS, AND CERTIFICATIONS. BEFORE TESTING BEGINS AND IN ADEQUATE TIME TO OBTAIN APPROVAL THROUGH SUBMITTAL PROCESS, PREPARE, AND SUBMIT TEST PLAN FOR APPROVAL BY ENGINEER. INCLUDE TESTING PROCEDURES, METHODS, EQUIPMENT, AND TENTATIVE SCHEDULE. OBTAIN ADVANCE WRITTEN APPROVAL FOR DEVIATIONS FROM DRAWINGS AND SPECIFICATIONS. SUBMIT TEST REPORTS FOR EACH TEST ON EACH SEGMENT OF SANITARY SEWER.
- 5. ANY TESTING PERFORMED MUST HAVE SAW'S INSPECTOR AND/OR THE ENGINEER PRESENT.
- 6. THE CONTRACTOR MUST PROVIDE THE ENGINEER WITH COPIES OF TV-VIDEO INSPECTIONS WHEN COMPLETED AND COMPACTION TESTING RESULTS PRIOR TO FINAL TESTING OBSERVATION BY THE ENGINEER.
- 7. AFTER ALL SANITARY SEWER CONSTRUCTION HAS BEEN COMPLETED, FINAL STABILIZATION OF THE CONSTRUCTION AREA ON ALL UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES SHALL BE COMPLETED BY EVENLY DISTRIBUTING SEEDING AND WATERING TO THE MINIMUM OF THE NATIVE BACKGROUND VEGETATIVE COVER. REFER TO SAWS STANDARD SPECIFICATIONS FOR CONSTRUCTION ITEM NO. 103.
- 8. REFER TO SHEET C4.0 FOR WATER & WASTEWATER CROSSING DETAILS.

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. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION, SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.





SAWS CONSTRUCTION NOTES

CONTRACTOR SHALL REFERENCE THE 2021 SAWS CONSTRUCTION AND SPECIFICATIONS AT THE TIME OF THE DATED PLAN SHEET. SEE BELOW FOR REFERENCED DETAILS

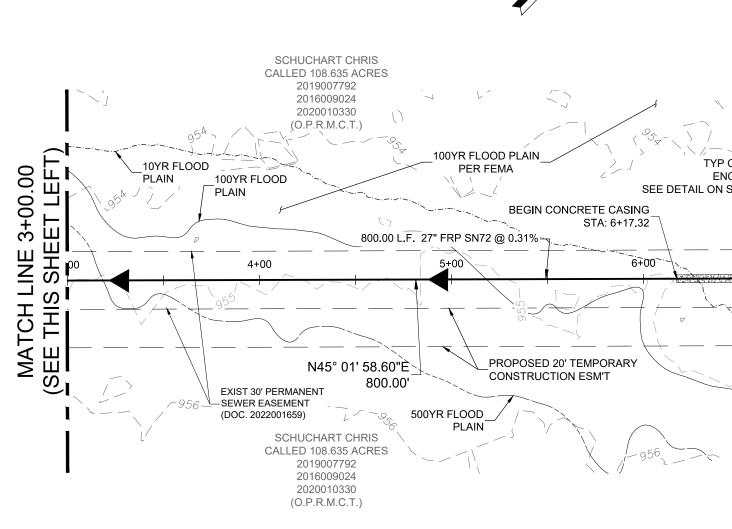
### BORE NOTES:

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 BORE CONTRACTOR SHALL EVALUATE AND AD JUST BORES AS REQUIRED IN

50

2. BORE CONTRACTOR SHALL EVALUATE AND ADJUST BORES AS REQUIRED IN EFFORTS TO PRESERVE TREES SHOWN TO BE PRESERVED.

	ESTIMATED QUANTITIES		
	DESCRIPTION	UNIT	QUANTITY
Item No.	Sanitary Sewer Improvements		
848	12", SDR-26-Ripe (12'-16') (STUBQUT)	LE	5
857	27" FRP SN72 Pipe For Large Diameter Gravity Sanitary Sewer (12'-16')	LF	486
550	Trench Excavation Safety Protection	LF	600
866	Post Sanitary Sewer Television Inspection	LF	600
858	Concrete Encasement, Cradles, Sadles and Collars	CY	21
852	60" FRP Tee Base Manhole (Vented)	EA	1
852	Extra Depth Manhole	VF	14
103	Revegetation	SY	2852



# SANITARY SEWER LINE 'B' STA. 1+00.00 TO 7+00.00

940	954.90							-	_
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	92	93	93	94(	94	95	95	96	
				MATCH LINE	3+0	00.0			
954 940	954.90 940.30			(SEE THIS	SHEET				
954	954.79						~		
940	940.46			800.00 L					
	954.85			F. (TO					
-00	940.61			TAL) 27"					
954	954.87			FRP SI					
940	940.76			N72 @ 0.3		11.7			
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040	940.92		0.0' FRP)		21 CY (SI				
954.70 941.07	954.70 941.07				EE DET				
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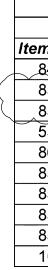
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0 25 0	50 100	PROPOSED	EXISTING		THE WOODLANDS OFF-SITE SANITARY SEWER GRAVITY LINE 'B' SANITARY SEWER LINE 'B' STA. 1+00 TO 7+00 PLAN & PROFILE
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V			 ou	GUY WIRE OVERHEAD ELECTRIC	VER O VER O EWER
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EET) 25.5) PSI)				945	Phc
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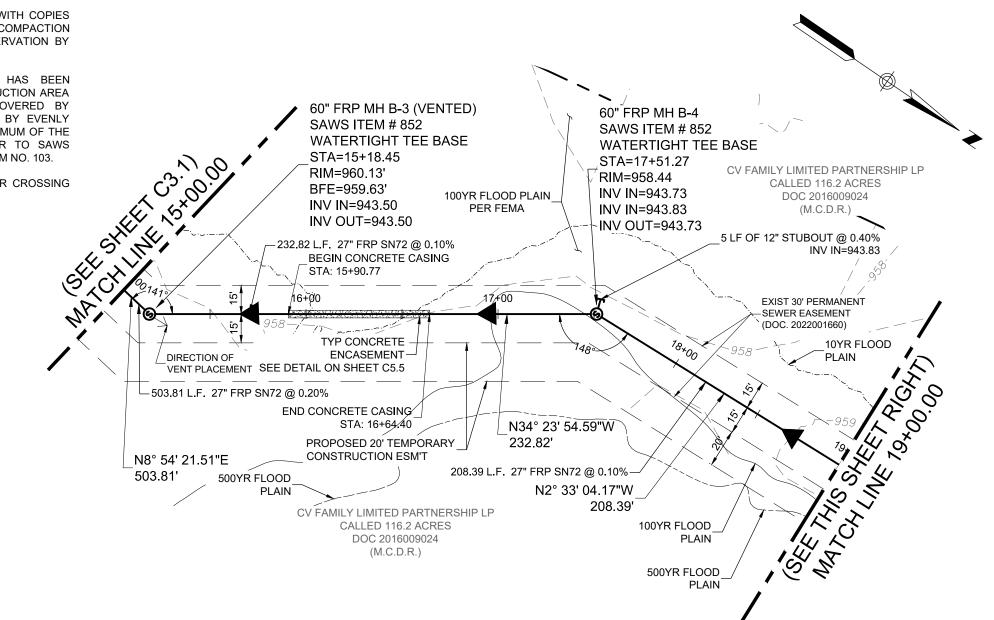


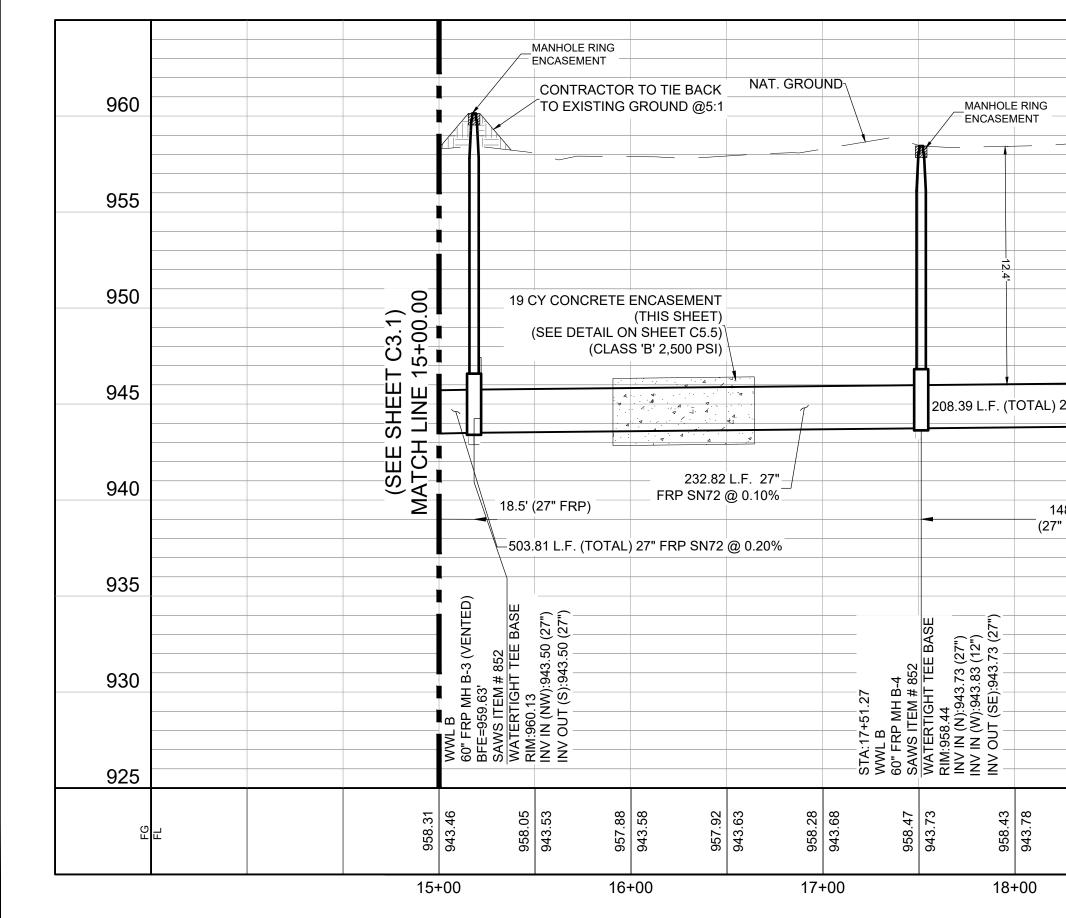
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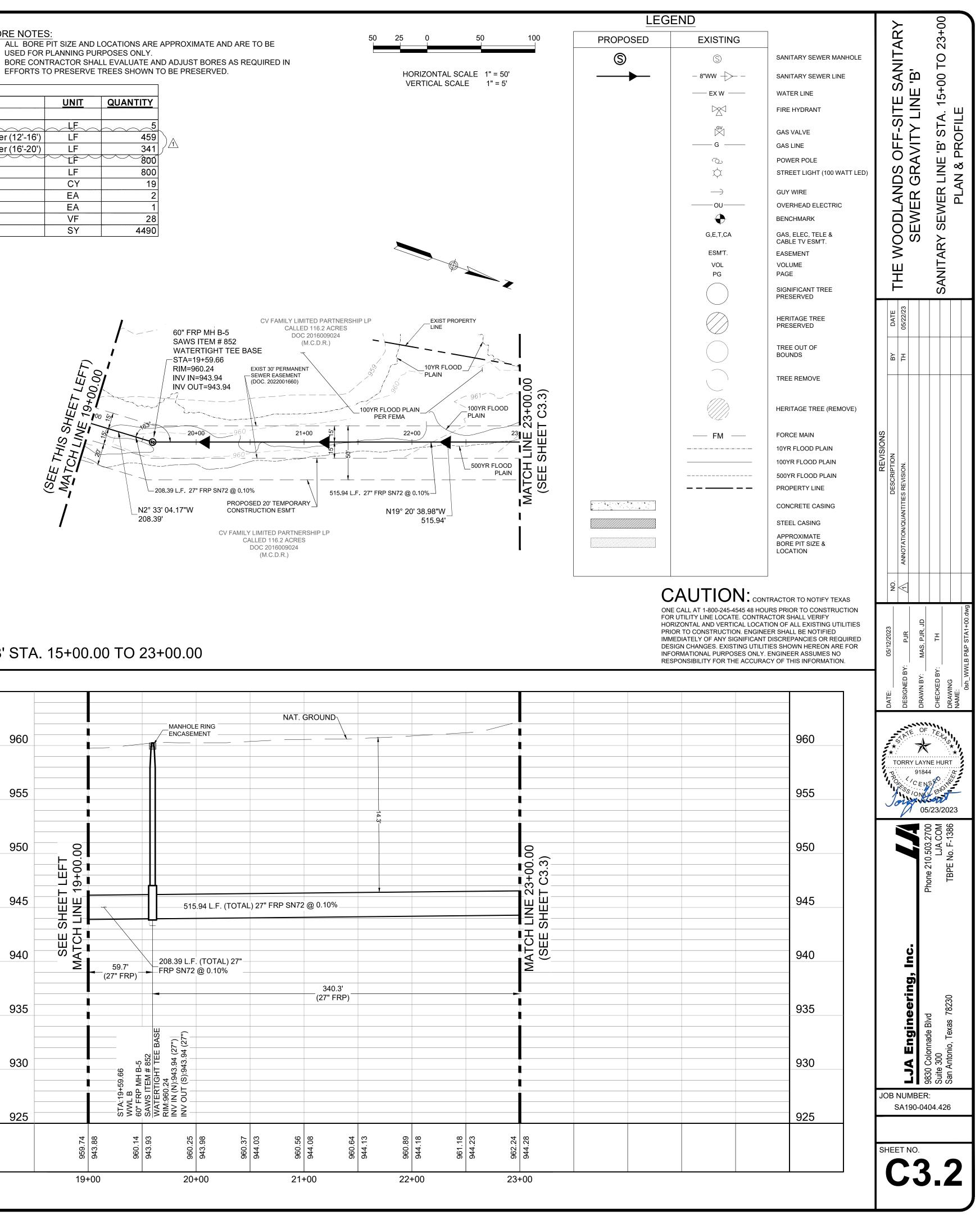
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	DESCRIPTION	<u>UNIT</u>	QUANTITY	
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857	27" FRP SN72 Pipe For Large Diameter Gravity Sanitary Sewer (12'-16')	LF	459	$\mathbf{i}$
857	27" FRP SN72 Pipe For Large Diameter Gravity Sanitary Sewer (16'-20')	LF	341	۲ <i>۲</i>
550	Trench Excavation Safety Protection	LF	800	
866	Post Sanitary Sewer Television Inspection	LF	800	
858	Concrete Encasement, Cradles, Sadles and Collars	CY	19	
852	60" FRP Tee Base Manhole	EA	2	
852	60" FRP Tee Base Manhole (Vented)	EA	1	
852	Extra Depth Manhole	VF	28	
103	Revegetation	SY	4490	



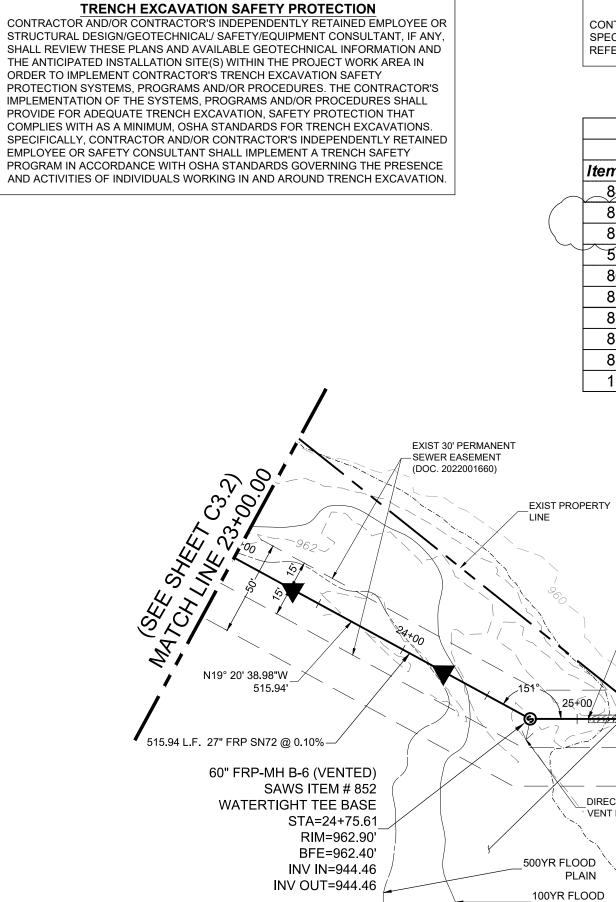
## SANITARY SEWER LINE 'B' STA. 15+00.00 TO 23+00.00

958.72		943.88 943.88				959.74 10-	943.88	960.14	943.93	92 <sup>.096</sup>	943.98 00+	960.37		0C.700 1+(		944.13		68 <sup>.096</sup> 22 <sup>-</sup>
72	83	88				74	88				98	37	03	000	80 5	13 04	2	89
				925	925			STA:19+59. WWL B 60" FRP MF	SAWS ITEN WATERTIG	RIM:960.24 INV IN (N):5 INV OUT (S								
				930	930			.66 	A # 852 SHT TEE BASE	RIM:960.24 INV IN (N):943.94 (27") INV OUT (S):943.94 (27")								
27" FRP)			<u></u>	935	935			27" FRP)		-RP SN72	@ 0.10%				340.3' (27" FRP)			
148.7'				940	940	SEE SHEE MATCH LINE		59.7'		208.39 L.F	. (TOTAL) 27 @ 0.10%	7"						
_) 27" FRP	SN72 @ 0.10	LINE 19+00.00	SHEET RIC	945	945	SHEET LEFT H LINE 19+00.00					.94 L.F. (TO	TAL)	27" FRP SN	72 (	@ 0.10%			
			RIGHT	950	950	00											14 	
				955	955													
				960	960					MANHOLI	E RING //ENT		NAT	. G				
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# BZ S % 0 0

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CV FAMILY LIMITED PARTNERSHIP LP

CALLED 116.2 ACRES

DOC 2016009024

(M.C.D.R.)

	SEWER: THE WOODLANDS OFF-SITE GRAVITY SEWER LINE 'B'
1	DEVELOPER'S NAME: LUCRA TERRA, LLC
	DEVELOPER'S ADDRESS: 15720 BANDERA RD, STE 103
	CITY HELOTES STATE TEXAS ZIP 78103
	PHONE # 830-837-2349 FAX #
	WWL'B' SAWS BLOCK MAP #06460, 062606 TOTAL EDU'S TOTAL ACREAGENA
- 1	27" 10"

PHONE # 830-83	7-2349	FAX #			
SAWS BLOCK MAP #	WWL 'B' 06460, 062606	TOTAL EDU'S	0	TOTAL ACREAGE	NA
TOTAL LINEAR FOOT	AGE OF PIPE:	27" 12" 4,554 1,268'	PLAT I	NO. <u>N/A</u>	
NUMBER OF LOTS:	0	SAWS JOB N	0	22-1720	

960         MT. GROUND           955         000000000000000000000000000000000000	930	24	944.28 962.92 944.33	963.53 944.38	961.28 V 944.43 6 V V	961.50 R 944.49 IN	960.01 944.55	960.38 944.61	960.63 944.68	960.65 944.74	961.13 944.80	961.46 944.86	961.49 944.93	961.73 944.99	962.54 945.05	962.73 945.11 945.16 963.16 945.18	963.46
960 960 955 950 955 950 950 950 950 95					STA:24+75.6 WVL B 0"FEP-MH SAVS ITEM VATERTIGH	BFE=962.40' RIM:962.90 NV IN (NW): VV OUT (S):											
960 955 950 945 945 945 945 945 945 945 955 95	935				1 1 B-6 (VENTED) # 852 IT TEE BASE	944.46 (27") 944.46 (27")											
960 955 956 956 956 956 956 956 956 956 956	940																
OCONTRACTOR TO TIE BACK TO EXISTING GROUND @5:1         NAT. GROUND           960         NAT. GROUND         NAT. GROUND           955         NAT. GROUND         NAT. GROUND	945	(SEE SAMATCH	515.94 L.F. (TOT	ΓAL) 27" FRP SN7	72 @ 0.10%		A 4 /4			A 4 4		4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	3 L.F. 27" FRP S	N72@0.13%			
960     Image: Contractor to the Back to existing GROUND @5:1     Image: Contractor to the Back to existing GROUND @5:1     Image: Contractor to the Back to existing GROUND @5:1     Image: Contractor to the Back to existing GROUND @5:1     Image: Contractor to the Back to existing GROUND @5:1     Image: Contractor to the Back to existing GROUND @5:1     Image: Contractor to the Back to existing GROUND @5:1     Image: Contractor to the Back to existing GROUND @5:1     Image: Contractor to the Back to existing GROUND @5:1     Image: Contractor to the Back to existing GROUND @5:1     Image: Contractor to the Back to existing GROUND @5:1     Image: Contractor to the Back to existing GROUND @5:1     Image: Contractor to the Back to existing GROUND @5:1     Image: Contractor to the Back to existing GROUND @5:1     Image: Contractor to existing	950	SHEET C LINE 23+00						167 CY C	(THIS E DETAIL ON SHE	S SHEET) EET C5.5)∖						703.80 L.F. (TOTAL) 27" F	FRP SN
Image: Contractor to till back     Image: Contractor to till back       Image: Contractor to till back     Image: Contractor to till back       Image: Contractor to till back     Image: Contractor to till back       Image: Contractor to till back     Image: Contractor to till back       Image: Contractor to till back     Image: Contractor to till back       Image: Contractor to till back     Image: Contractor to till back       Image: Contractor to till back     Image: Contractor to till back       Image: Contractor to till back     Image: Contractor to till back       Image: Contractor to till back     Image: Contractor to till back       Image: Contractor to till back     Image: Contractor to till back       Image: Contractor to till back     Image: Contractor to till back       Image: Contractor to till back     Image: Contractor to till back       Image: Contractor to till back     Image: Contractor to till back       Image: Contractor to till back     Image: Contractor to till back       Image: Contractor to till back     Image: Contractor to till back       Image: Contractor to till back     Image: Contractor to till back       Image: Contractor to till back     Image: Contractor to till back       Image: Contractor to	955	000															
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	965			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			RACTOR TO TIE	D @5:1								$\sim$	

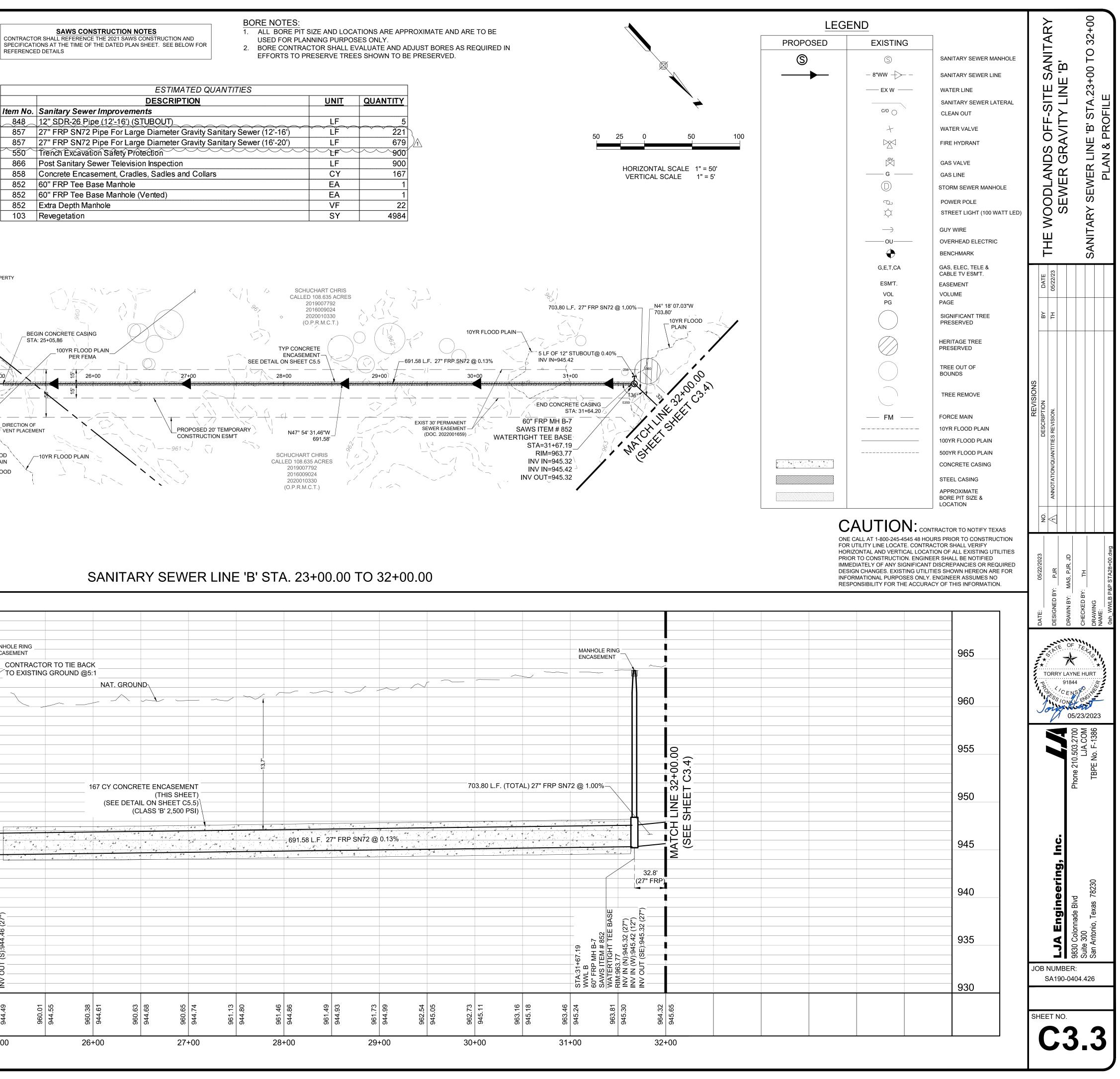
PLAIN

: msa Modif Date/ K: \S. User: Last Plot

SAWS	CONST	FRUCT	ION NC	TES	

EFFORTS TO PRESERVE TREES SHOWN TO BE PRESERVED.

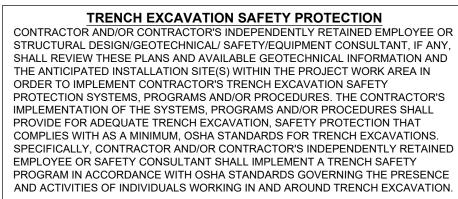
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	DESCRIPTION	UNIT	QUANTITY
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857	27" FRP SN72 Pipe For Large Diameter Gravity Sanitary Sewer (16'-20')	LF	679
550	Trench Excavation Safety Protection		
866	Post Sanitary Sewer Television Inspection	LF	900
858	Concrete Encasement, Cradles, Sadles and Collars	CY	167
852	60" FRP Tee Base Manhole	EA	1
852	60" FRP Tee Base Manhole (Vented)	EA	1
852	Extra Depth Manhole	VF	22
103	Revegetation	SY	4984

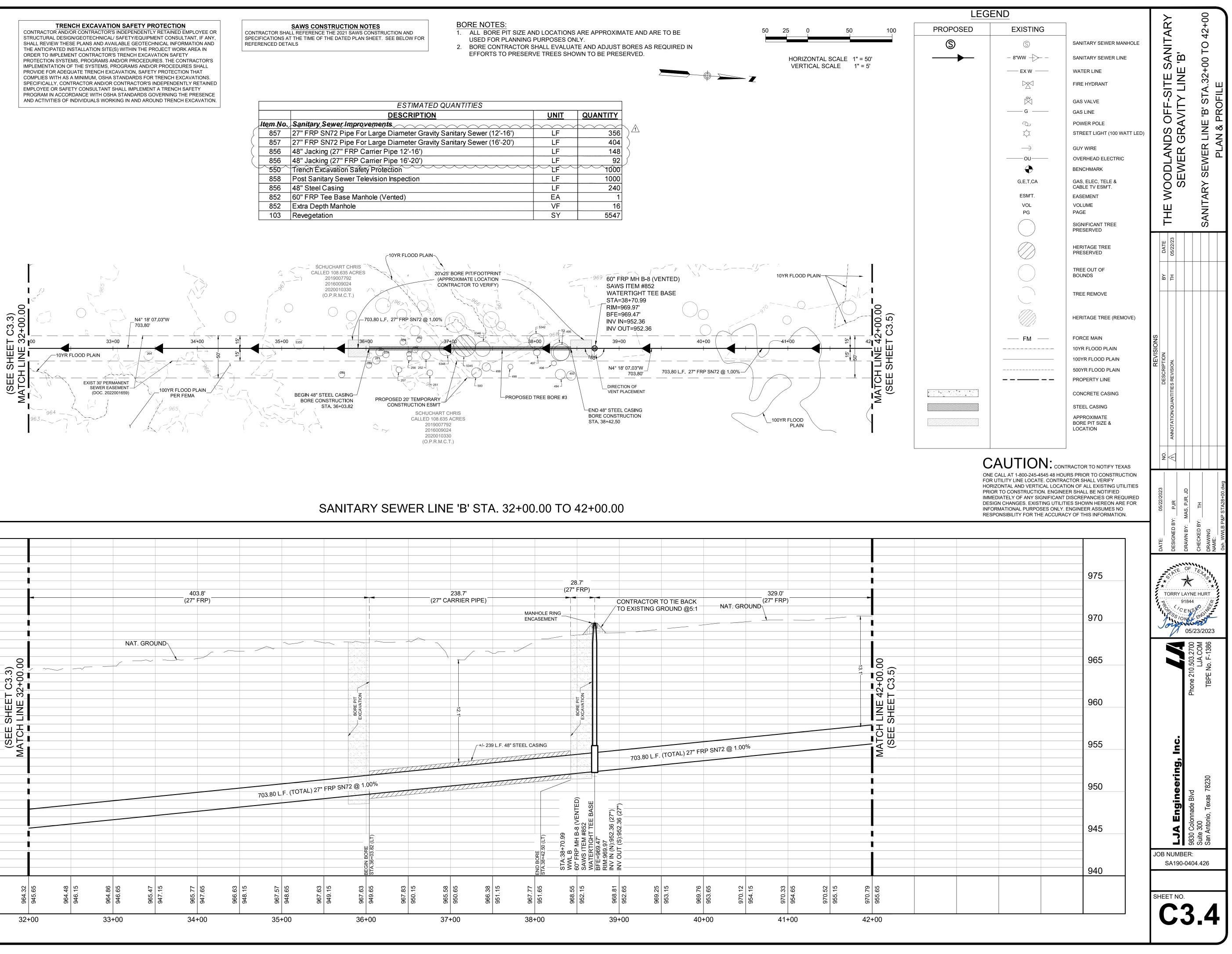


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### SEWER: THE WOODLANDS OFF-SITE GRAVITY SEWER LINE 'B'

DEVELOPER'S NAME: LUCRA	TERRA, LLC
DEVELOPER'S ADDRESS:	ANDERA RD, STE 103
CITY HELOTES	STATE <u>TEXAS</u> ZIP <u>78103</u>
PHONE # 830-837-2349	FAX #
WWL 'B' SAWS BLOCK MAP # 06460, 062606	TOTAL EDU'S TOTAL ACREAGENA
TOTAL LINEAR FOOTAGE OF PIPE:	27" 12" 4,554 1,268' PLAT NO. <u>N/A</u>
NUMBER OF LOTS:0	SAWS JOB NO. 22-1720

ഥ 비	964.32 945.65	964.48 946.15	964.86 946.65 965.47	947.15 947.15 965.77 947.65	966.63 948.15	967.57 948.65	967.63 949.15	967.63 949.65	967.83	965.58 950.65 966.38	951.15 967.77 951.65	968.55	968.81 952.65	969.25 953.15	969.76 953.65 970.12	954.15
940								BEGII STA.3			END I	– S – S – S – S – S – S – S – S – S – S	5 2 2 <u></u>			
								N BORE			END BORE STA.38+42.5	STA:38+70.99 WWL B 60" FRP MH B-8 (VENTE SAWS ITEM #852 WATERTIGHT TEE BASE BFF=969.47'	NIN () () () () () () () () () () () () ()			
								5 (LT)			) (LT)	70.99 MH B- EM #8 IGHT	 97 (S):952. (S):95			
945												8 (VE 352 TEE E	36 (27 52.36 (			
							17					NTED) 3ASE	") 27")			
950					703.80	) L.F. (TOTA	AL) 27" FRP SN72	@ 1.00%	11111111							
	Σ												703.8	30 L.F. (TOTAL) 27	7" FRP SN72 @ 1.0	
955	ATCH										39 L.F. 48" STEEL CASING					)0%
960	SHEET C3.3)									12.1		BORE P				
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			NAT. GRO													
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				403.8' (27" FRP)					(	238.7' (27" CARRIER PIPE) <sup>_</sup>				CTOR TO TIE BAC	Ж	329 (27" F ROUND
975																
975																

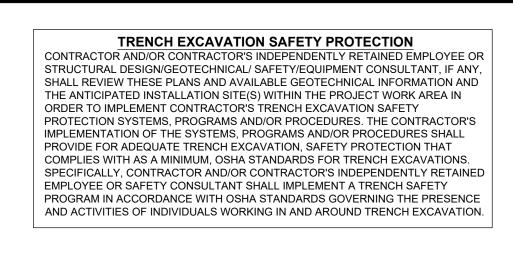
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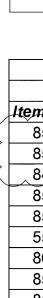
	ESTIMATED QUANTITIES		
	DESCRIPTION	UNIT	QUANTITY
Item No.	Sanitary Sewer Improvements		
857	27" FRP SN72 Pipe For Large Diameter Gravity Sanitary Sewer (12'-16')	LF	356
857	27" FRP SN72 Pipe For Large Diameter Gravity Sanitary Sewer (16'-20')	LF	404
856	48" Jacking (27" FRP Carrier Pipe 12'-16')	LF	148
856	48" Jacking (27" FRP Carrier Pipe 16'-20')	LF	92
550	Trench Excavation Safety Protection	LF	1000
858	Post Sanitary Sewer Television Inspection	LF	1000
856	48" Steel Casing	LF	240
852	60" FRP Tee Base Manhole (Vented)	EA	1
852	Extra Depth Manhole	VF	16
103	Revegetation	SY	5547

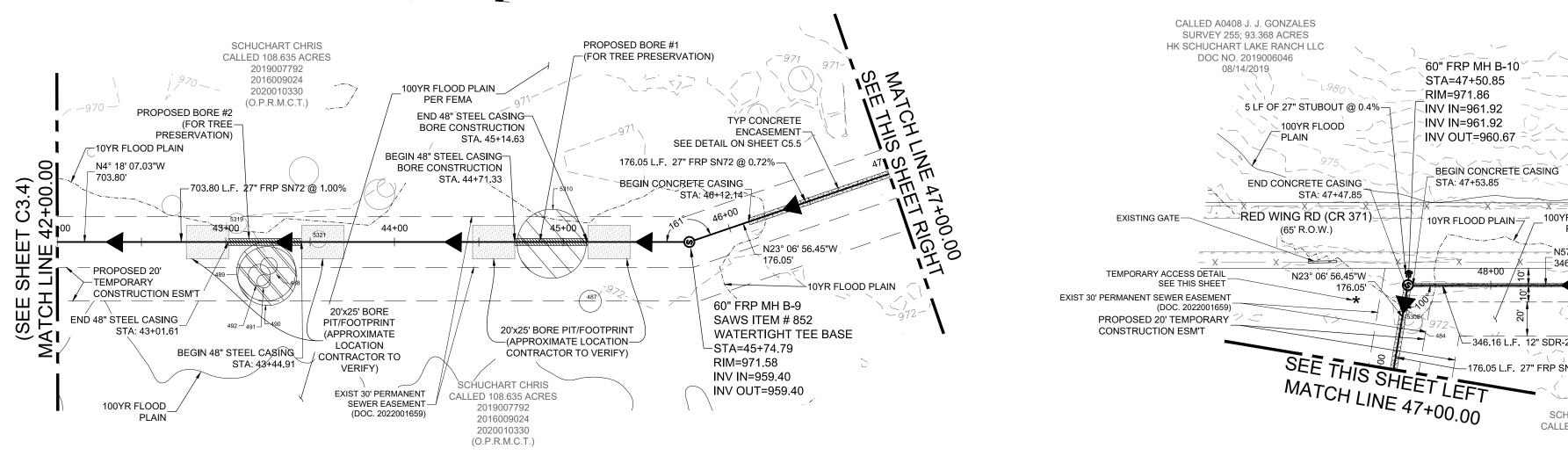
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### **GENERAL NOTES**

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- THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTING AND TESTING THE SANITARY SEWER SYSTEM IN ACCORDANCE WITH 30 TAC 217 & THE DESIGN PLANS AND SAWS SPECIFICATIONS.
- THE CONTRACTOR MUST PROVIDE CERTIFICATION UPON REQUEST OF THE ENGINEER THAT ALL MATERIALS FOR THE CONSTRUCTION OF THE SANITARY SEWER SYSTEM MEET TCEQ AND SAWS SPECIFICATIONS.
- THE CONTRACTOR SHALL SUBMIT MANUFACTURE'S PRODUCT DATA INSTRUCTIONS, RECOMMENDATIONS, SHOP DRAWINGS, AND CERTIFICATIONS. BEFORE TESTING BEGINS AND IN ADEQUATE TIME TO OBTAIN APPROVAL THROUGH SUBMITTAL PROCESS, PREPARE, AND SUBMIT TEST PLAN FOR APPROVAL BY ENGINEER. INCLUDE TESTING PROCEDURES, METHODS, EQUIPMENT, AND TENTATIVE SCHEDULE. OBTAIN ADVANCE WRITTEN APPROVAL FOR DEVIATIONS FROM DRAWINGS AND SPECIFICATIONS. SUBMIT TEST REPORTS FOR EACH TEST ON EACH SEGMENT OF SANITARY SEWER.
- 5. ANY TESTING PERFORMED MUST HAVE SAW'S INSPECTOR AND/OR THE ENGINEER PRESENT.
- 6. THE CONTRACTOR MUST PROVIDE THE ENGINEER WITH COPIES OF TV-VIDEO INSPECTIONS WHEN COMPLETED AND COMPACTION TESTING RESULTS PRIOR TO FINAL TESTING OBSERVATION BY THE ENGINEER.
- 7. AFTER ALL SANITARY SEWER CONSTRUCTION HAS BEEN COMPLETED, FINAL STABILIZATION OF THE CONSTRUCTION AREA ON ALL UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES SHALL BE COMPLETED BY EVENLY DISTRIBUTING SEEDING AND WATERING TO THE MINIMUM OF THE NATIVE BACKGROUND VEGETATIVE COVER. REFER TO SAWS STANDARD SPECIFICATIONS FOR CONSTRUCTION ITEM NO. 103.
- 8. REFER TO SHEET C4.0 FOR WATER & WASTEWATER CROSSING DETAILS.







SEWER: THE WOODLANDS OFF-SITE	E GRAVITY SEWER LINE 'B'
DEVELOPER'S NAME: LUCRA TERF	RA, LLC
DEVELOPER'S ADDRESS:15720 BAND	ERA RD, STE 103
CITY HELOTES	STATE TEXAS ZIP 78103
	AX #
WWL 'B' SAWS BLOCK MAP #06460, 062606	TOTAL EDU'S TOTAL ACREAGENA
TOTAL LINEAR FOOTAGE OF PIPE: 4,55	12" 4 1,268' PLAT NO. <u>N/A</u>
NUMBER OF LOTS: 0	SAWS JOB NO

		43.2' (CARRIER PIPE)							
0.75		1.7	127.8	ARRIER PIPE) 61.2'	125.2'			50.8'	
975	(27"	FRP)	(27" FRP)	(27" FRP)	(27" FRP)	975	975	(27" FRP)	MANHOLE RING
970						970	970		14 CY CONCRE
965					35 CY CONCRETE ENCASEMENT (CLASS 'B' 2,500 PSI)	965	965		(SEE DETA) (Cl 346.16 L.F. (TC ∇ SDR-26 PVC (
	■ C3 (1) C3	STEEL CASING				RIGHT			
960	L H L F. 48"	703.80 L.F. (TOTAI	1.00%		6.05 L.F. (TOTAL) 27"		960 L		35 CY CONCI ENCASEMEN
955	S) MAT		+/- 41 L.F. 48" STEEL CASING		FRP SN72 @ 0.72% H	H     955       Ш     —       Ш     —       О     —	955 C		(CLASS 'B' 2, 176.05 L.F. (TC FRP SN72 @ (
950		END BORE STA.43+01.61 (LT) BEGIN BORE STA.43+44.91 (LT		BASE BASE	(27")	950	950		2 (27") 67 (27")
945				STA:45+74.79 WWL B 60" FRP MH B-9 SAWS ITEM # 852 WATERTIGHT TEE BASE RIM:971.58	OUT (S):959.40	945	945	A:47+50.85 VL B	60" FRP MH B-10 RIM:971.86 INV IN (NE):961.92 (12") INV IN (NW):961.92 (27") INV OUT (SE):960.67 (27")
940						940	940		
е Е	955.65	956.15 970.88 956.65 971.09 971.09	971.15 957.65 971.33 958.15	971.52 958.65 971.37 959.15	971.80 959.58 971.59 959.94 971.61 971.61			971.61 960.30 971.79	961.07 972.12 962.18

K: \S User: Last Plot

### SAWS CONSTRUCTION NOTES

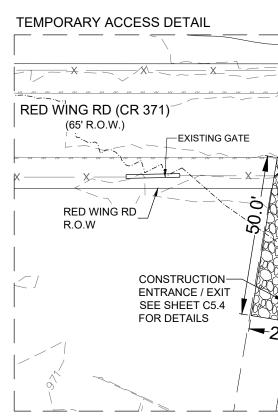
CONTRACTOR SHALL REFERENCE THE 2021 SAWS CONSTRUCTION AND SPECIFICATIONS AT THE TIME OF THE DATED PLAN SHEET. SEE BELOW FOR REFERENCED DETAILS

### BORE NOTES:

1. ALL BORE PIT SIZE AND LOCATIONS ARE APPROXIMATE AND ARE TO BE USED FOR PLANNING PURPOSES ONLY. 2. BORE CONTRACTOR SHALL EVALUATE AND ADJUST BORES AS REQUIRED IN

EFFORTS TO PRESERVE TREES SHOWN TO BE PRESERVED.

	DESCRIPTION	<u>UNIT</u>	QUANTITY
m No.	Sanitary Sewer Improvements		
857	27" FRP SN72 Pipe For Large Diameter Gravity Sanitary Sewer (8'-12')	LF	142
857	27" FRP SN72 Pipe For Large Diameter Gravity Sanitary Sewer (12'-16')	LF	324
848	12" SDR-26 Pipe (8'-12')	L L L	149
850	60" Watertight Ring and Cover Sewer Manhole	EA	1
856	48" Jacking (27" FRP Carrier Pipe (12'-16')	LF	85
550	Trench Excavation Safety Protection	LF	700
866	Post Sanitary Sewer Television Inspection	LF	700
856	48" Steel Casing	LF	85
858	Concrete Encasement, Cradles, Sadles and Collars	CY	49
852	60" FRP Manhole with Tee Base	EA	1
852	Extra Depth Manhole	VF	18
103	Revegetation	SY	3656



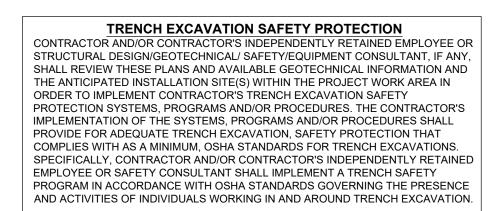
## SANITARY SEWER LINE 'B' STA. 42+00.00 TO 49+00.00

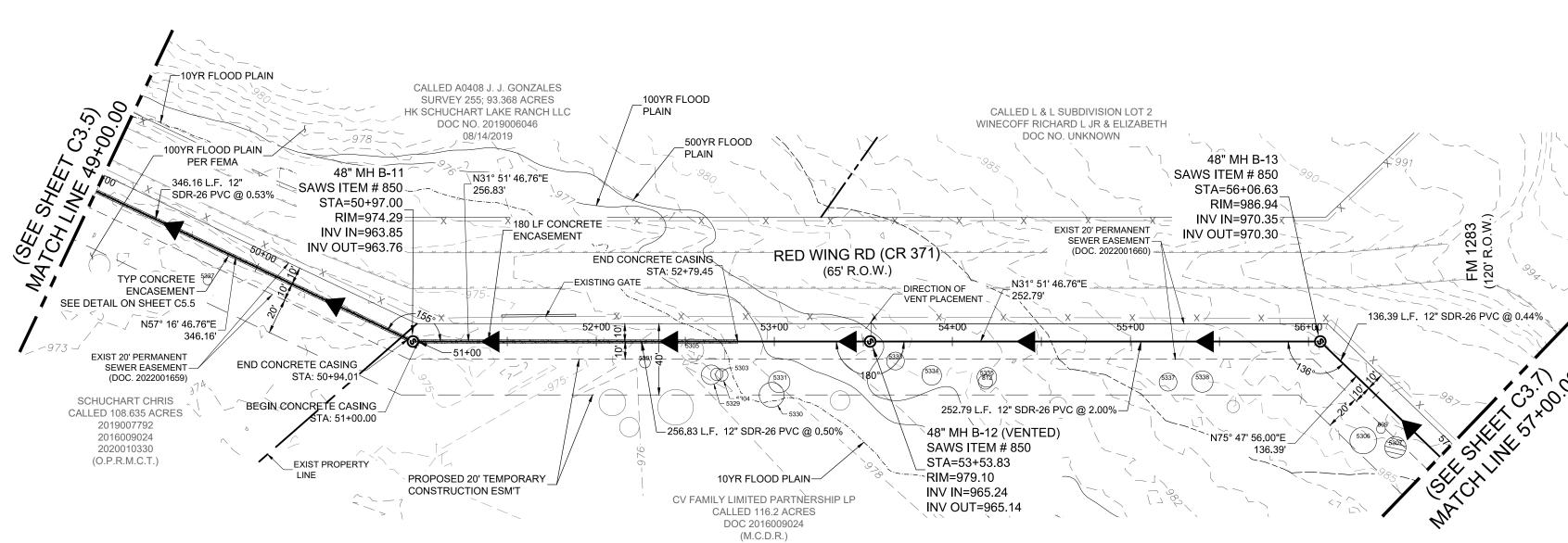
		LEG	END		Γ	≻		00
25 0	50 100	PROPOSED	EXISTING			SANITARY		SEWER LINE 'B' STA.42+00 TO 49+00 PLAN & PROFILE
		S	Ś	SANITARY SEWER MANHOLE		Ľ,	5	ТО
HORIZONTAL S			- 8"WW	SANITARY SEWER LINE		SA SA	'n	00+
504	ALE: 1" = 30'		EX W	WATER LINE SANITARY SEWER LATERAL		Ш	LINE L	42-
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	×		+			WOODLANDS OFF-SI	GRAVII Y	E 'B' STA.4 PROFILE
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26 PVC @ 0.53%	SEE SEE		yv	BORE PIT SIZE & LOCATION		ANN		
N72 @ 0.72%	MA S)		xx	EXISTING FENCE PROPERTY LINE		S		
HUCHART CHRIS ED 108.635 ACRES 2019007792 2016009024 2020010330 (O.P.R.M.C.T.)		ON FO HO PR IMI DE INF	IOR TO CONSTRUCTION. ENGINE	URS PRIOR TO CONSTRUCTION ACTOR SHALL VERIFY TION OF ALL EXISTING UTILITIES EER SHALL BE NOTIFIED DISCREPANCIES OR REQUIRED TIES SHOWN HEREON ARE FOR ENGINEER ASSUMES NO	TE: 05/22/2023	VED BY:	DRAWN BY: MAS, PJR, JD	CHECKED BY: TH DRAWING NAME: ANN DEPOSITION OF ALL
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# **00% SUBMITTAL**

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- 8. REFER TO SHEET C4.0 FOR WATER & WASTEWATER CROSSING DETAILS.





### SEWER:

THE WOODLANDS OFF-SITE GRAVITY SEWER LINE 'B'
DEVELOPER'S NAME: LUCRA TERRA, LLC
DEVELOPER'S ADDRESS:
CITY HELOTES STATE TEXAS ZIP 78103
PHONE # 830-837-2349 FAX #
WWL 'B' SAWS BLOCK MAP # 06460, 062606 TOTAL EDU'S 0 TOTAL ACREAGE NA
27"         12"           TOTAL LINEAR FOOTAGE OF PIPE:         4,554         1,268'         PLAT NO.         N/A
NUMBER OF LOTS:0 SAWS JOB NO22-1720

970 965 960 955 955			972.47	962.71	962.98	963.24	963.51	963.87
965 960 955					8 0	4 0	- <del>4</del>	
965 960							STA:50+ WWL B 48" MH E	SAWS IT RIM:974.
965				(S (C	HIS SHEET) EE DETAIL ON LASS 'B' 2,500	SHEET C5.5) PSI)	STA:50+97.00 WWL B WWL B 48" MH B-11	FEM # 850- 29
965				18		E ENCASEMEN	3% 	
				4,	346.10	6 L.F. (TOTAL) 1 -26 PVC @ 0.53	2"	
970			(SEE SHEE MATCH LINE		У 9			
			SHEET C3.5) LINE 49+00.00		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			
975			0			MANH	OLE RING	
980					19 (12"	7.0' PVC)		
985								

K:\SA190 Lucra Terra, LLC\0404 Woodlands Offsite Sewer\426 Site Development Plans\DWG-Sheets\Line B Sheet Set and Files\0sh\_WMLB P&P STA28+( User: msantos Last Modified: May. 23, 23 - 10:59 Plot Date/Time: May. 23, 23 - 12:58:05 SAWS CONSTRUCTION NOTES CONTRACTOR SHALL REFERENCE THE 2021 SAWS CONSTRUCTION AND SPECIFICATIONS AT THE TIME OF THE DATED PLAN SHEET. SEE BELOW FOR

REFERENCED DETAILS

BORE NOTES:

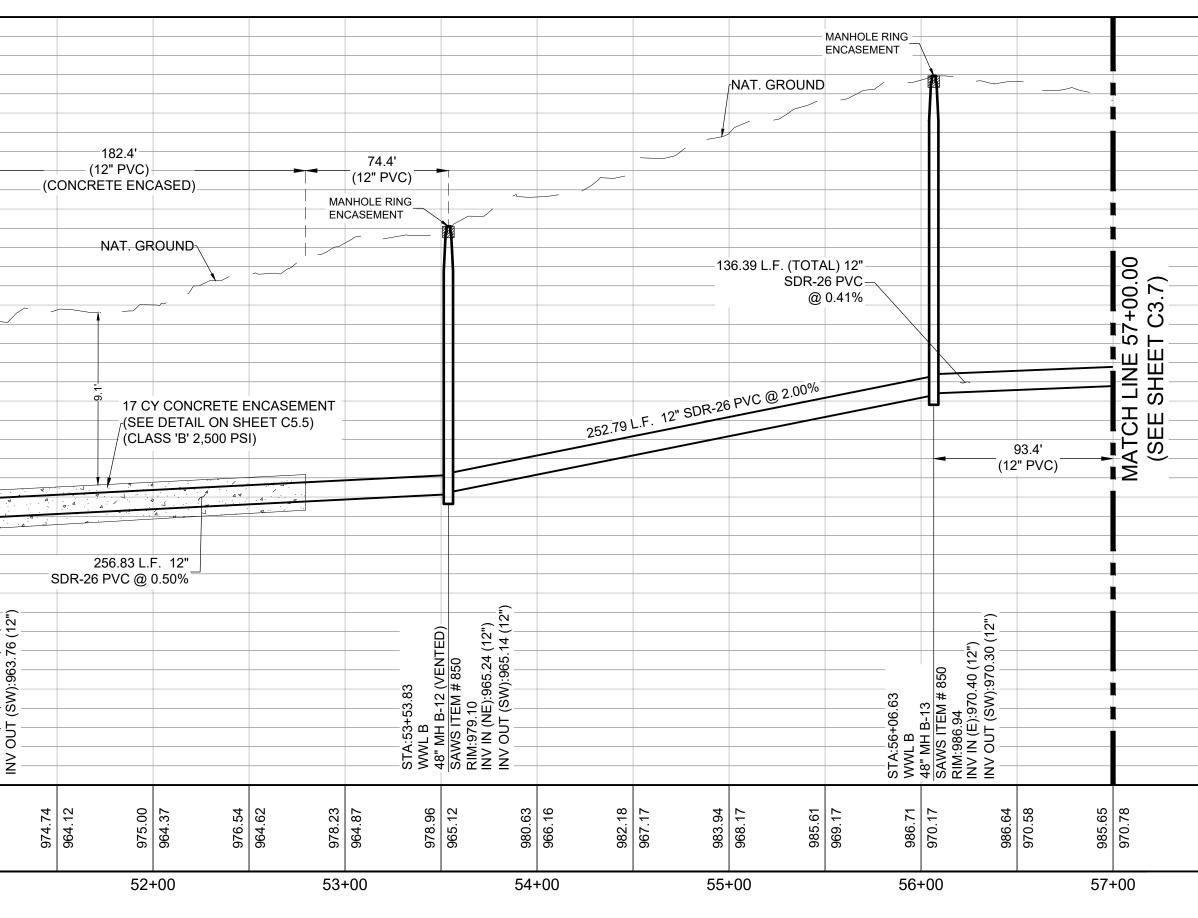
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50 2

EFFORTS TO PRESERVE TREES SHOWN TO BE PRESERVED.

	DESCRIPTION	UNIT	QUANTITY
Item No.	Sanitary Sewer Improvements		
848	12" SDR-26 Pipe (8'-12')	LF	400
848	12" SDR-26 Pipe (12'-16')	LF	400
850	48" MH w/ Watertight Ring & Cover	ĚA	2
850	48" MH w/ Watertight Ring & Cover (Vented)	EA	
550	Trench Excavation Safety Protection	LF	800
866	Post Sanitary Sewer Television Inspection	LF	800
858	Concrete Encasement, Cradles, Sadles and Collars	CY	35
852	Extra Depth Manhole	VF	26
103	Revegetation	SY	3840

# SANITARY SEWER LINE 'B' STA. 49+00.00 TO 57+00.00



	LEGI	END		×	0 Q
	PROPOSED	EXISTING		THE WOODLANDS OFF-SITE SANITARY SEWER GRAVITY LINE 'B'	SANITARY SEWER LINE 'B' STA. 49+00 TO 57+00 PLAN & PROFILE
	S	Ś	SANITARY SEWER MANHOLE		DT 0
		- 8"WW	SANITARY SEWER LINE	SITE SAN LINE 'B'	00+
25 0 50 100		—— EX W ——	SANITARY SEWER LATERAL	L L Z	. 49 Е
		c\o O	CLEAN OUT		'B' STA. PROFILE
HORIZONTAL SCALE 1" = 50' VERTICAL SCALE 1" = 5'		+	WATER VALVE FIRE HYDRANT		'B' S PRC
		SV.		IDS OFF-S GRAVITY	NE   & F
		G <sup>V</sup> G	GAS VALVE GAS LINE		r LII Lan
		$\bigcirc$	STORM SEWER MANHOLE	SEWER	WER PL
		Ϋ́ Υ	POWER POLE		SE
		$\rightarrow$	STREET LIGHT (100 WATT LED)	<pre>&gt; </pre>	λRΥ
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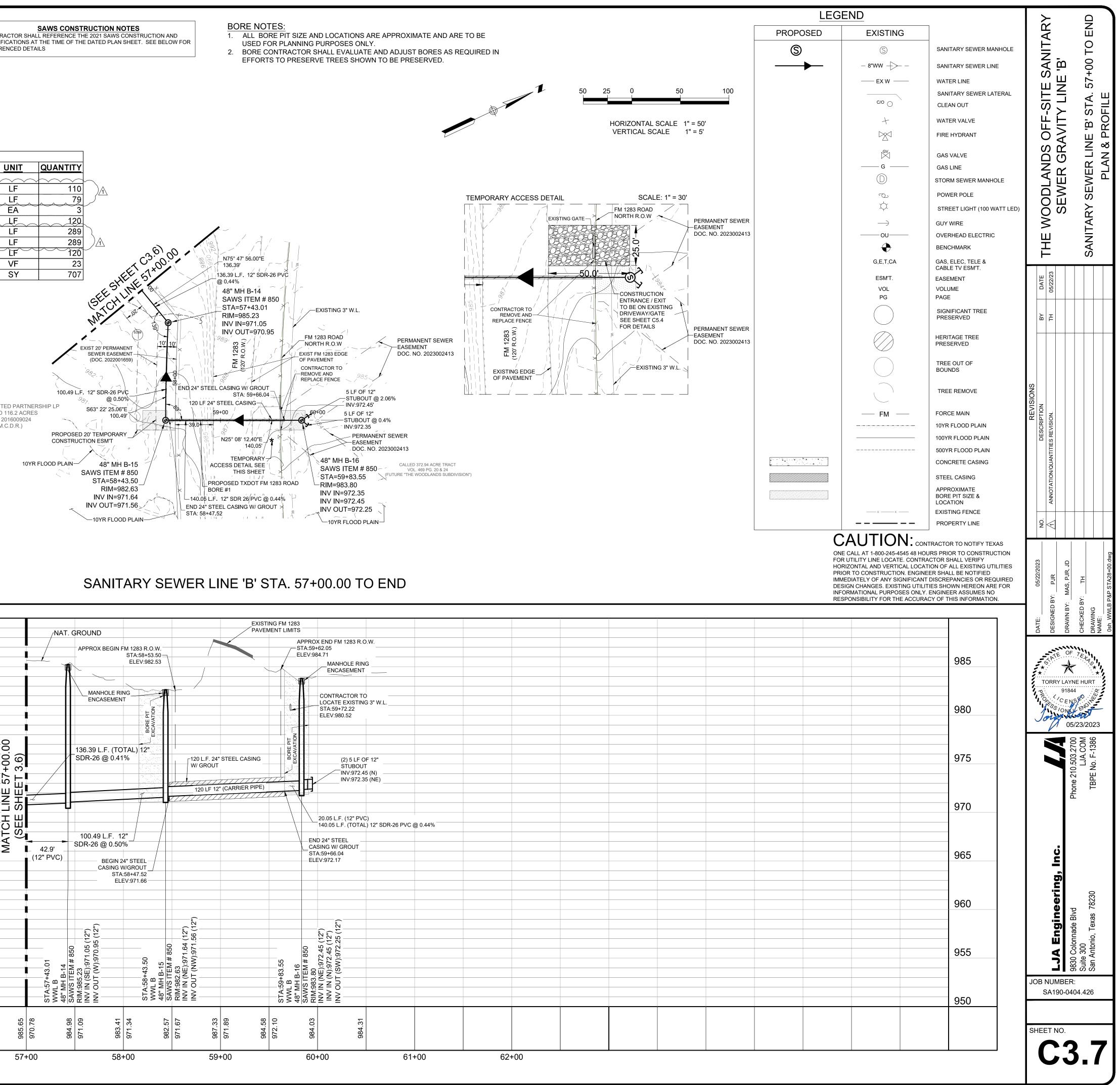
	ESTIMATED QUANTITIES									
	DESCRIPTION									
Item No.,	Sanitary Sewer Improvements									
848	12" SDR-26 Pipe (8'-12')									
<u>, 8</u> 48	12" SDR-26 Pipe (12'-16')									
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852	Extra Depth Manhole									
103	Revegetation									
	848 848 850 856 550 866 856 856 852	DESCRIPTIONItem No.Sanitary Sewer Improvements84812" SDR-26 Pipe (8'-12')84812" SDR-26 Pipe (12'-16')85048" MH w/ Watertight Ring & Cover85624" Jacking (12" SDR-26 Carrier Pipe 8'-16')550Trench Excavation Safety Protection866Post Sanitary Sewer Television Inspection85624" Steel Casing852Extra Depth Manhole								

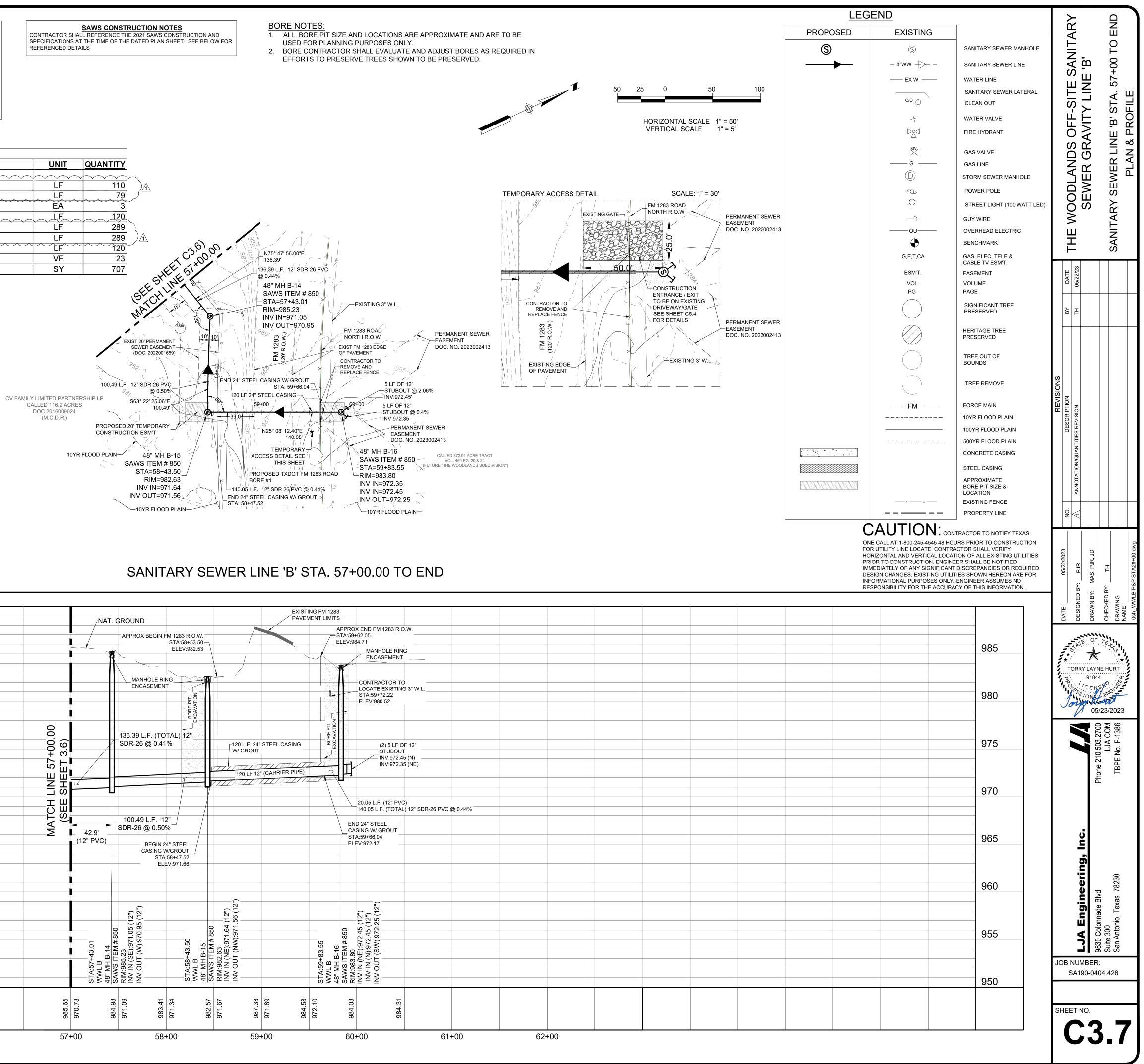
### SEWER:

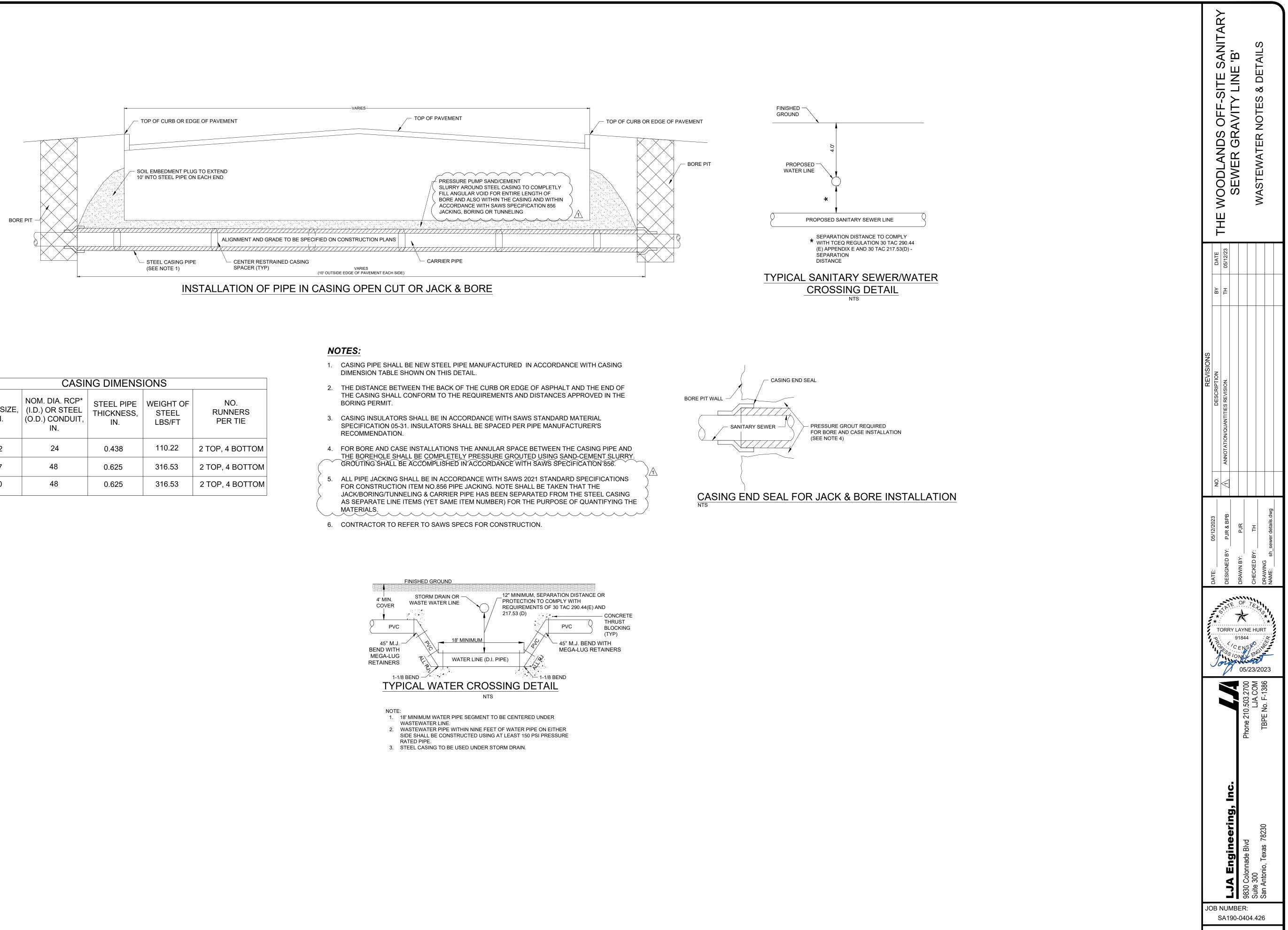
THE WOODLANDS OFF-SITE GRAVITY SEWER LINE 'B'
DEVELOPER'S NAME: LUCRA TERRA, LLC
DEVELOPER'S ADDRESS:15720 BANDERA RD, STE 103
CITY HELOTES STATE TEXAS ZIP 78103
PHONE # 830-837-2349 FAX #
WWL 'B' SAWS BLOCK MAP #06460, 062606 TOTAL EDU'S TOTAL ACREAGENA
27"         12"           TOTAL LINEAR FOOTAGE OF PIPE:         4,554         1,268'         PLAT NO.         N/A
NUMBER OF LOTS:0 SAWS JOB NO22-1720

985					
905					
980					
_					
975					
_					
970					
965					
960					
300					
955					
950					
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Ш Ш Ц					
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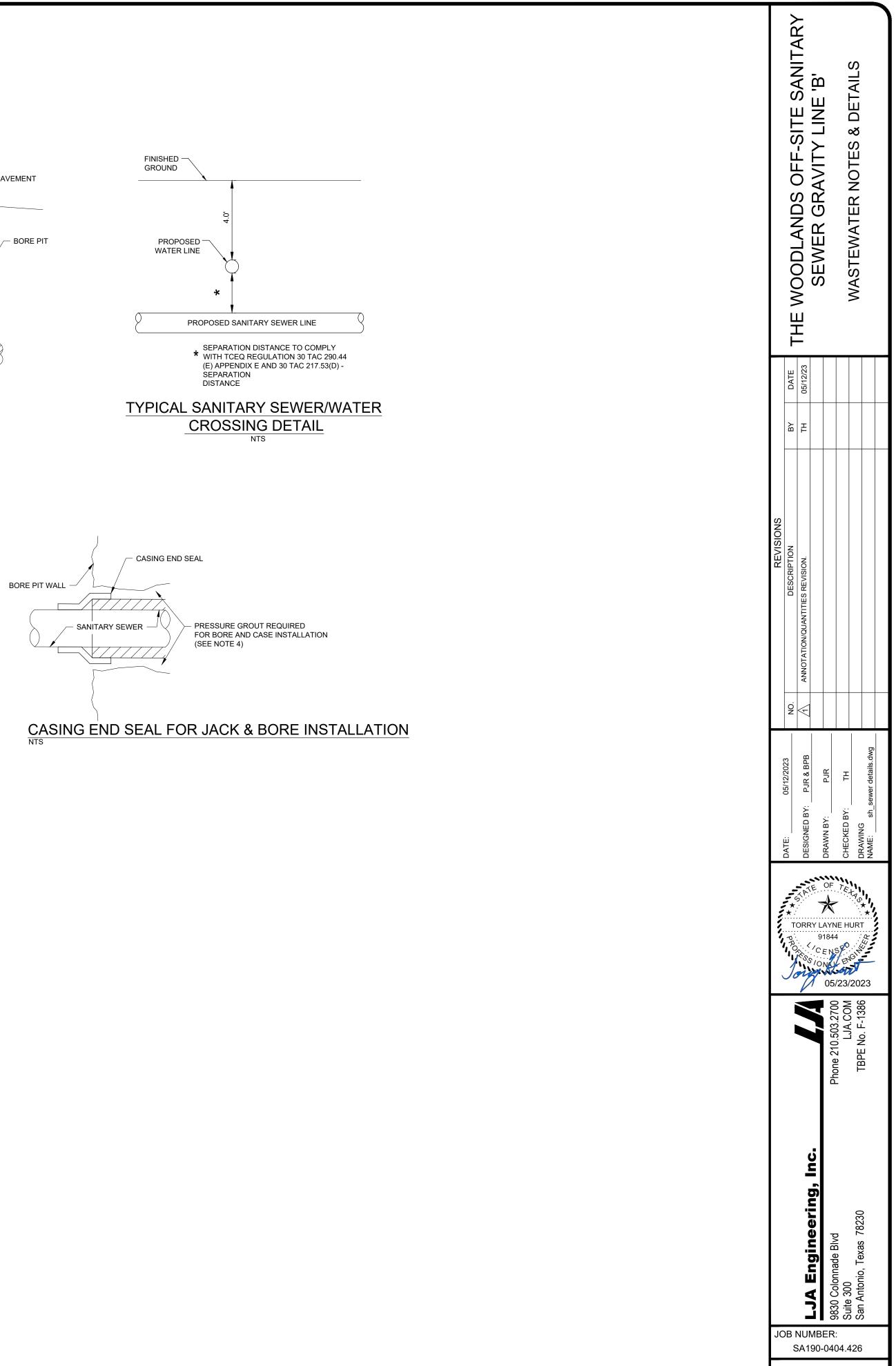
K: \S User Last Plot



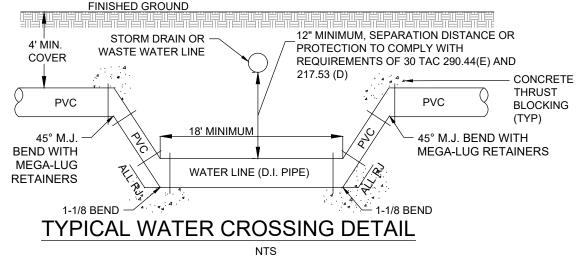


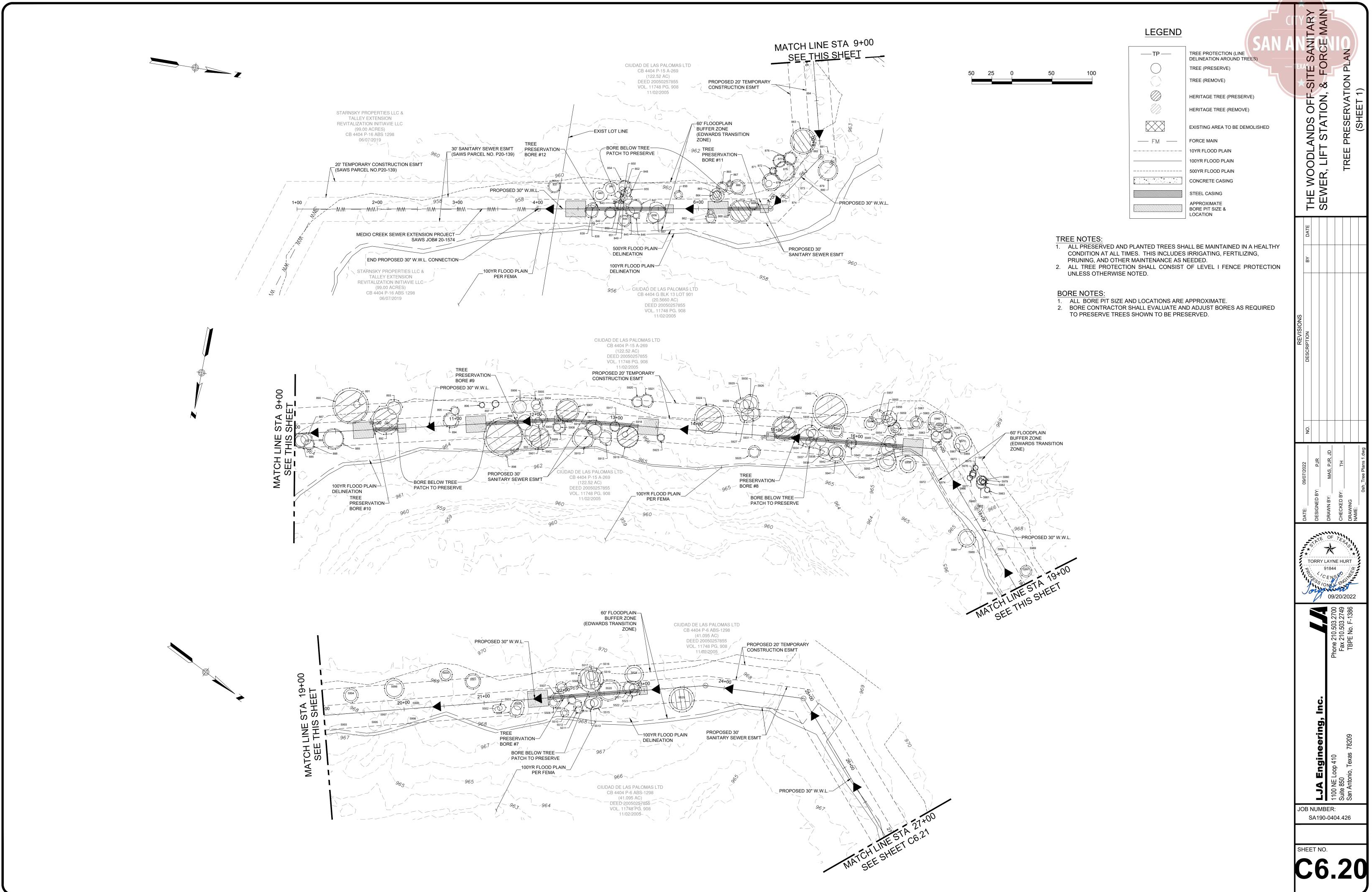


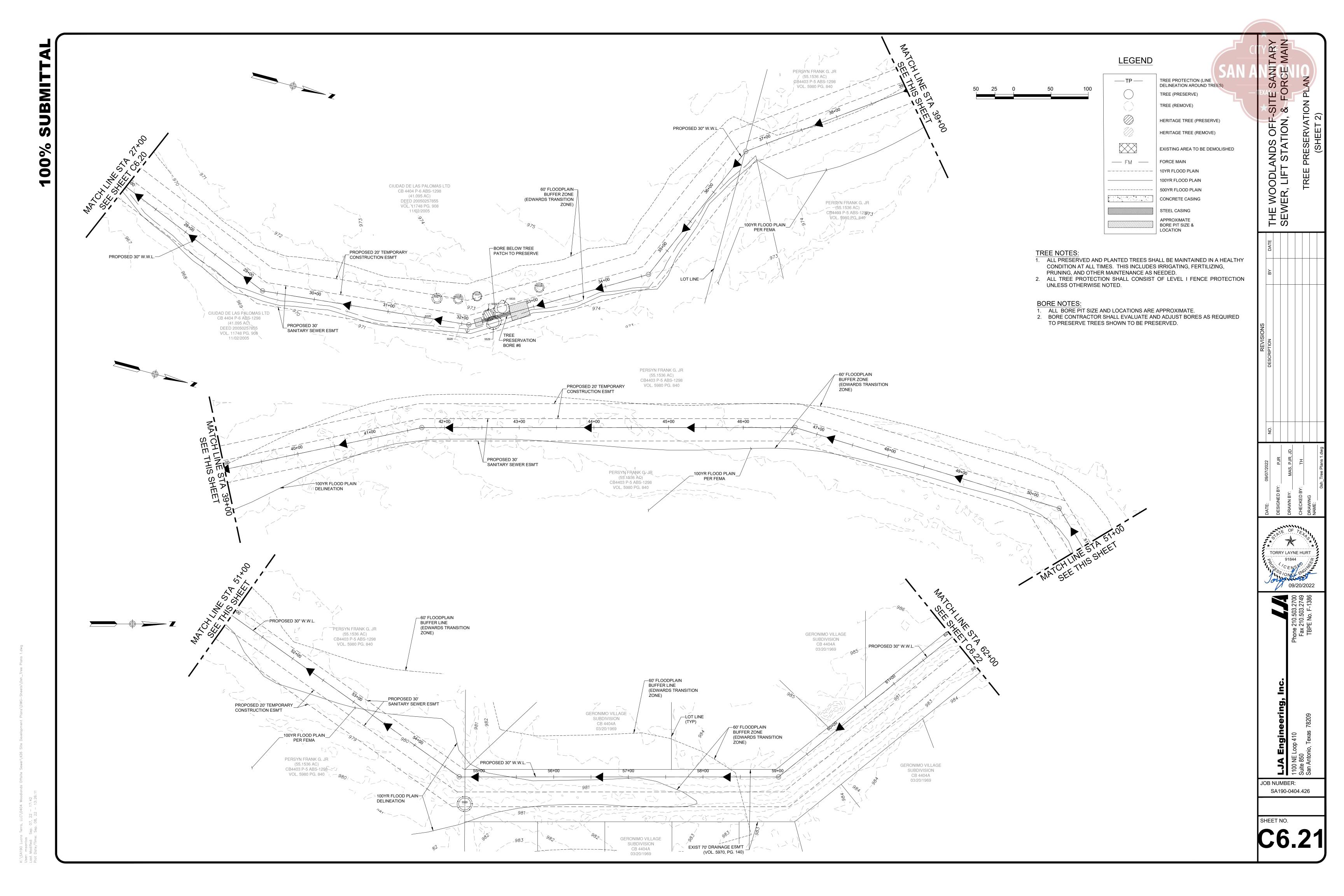
CASING DIMENSIONS												
MAIN SIZE, IN.	NOM. DIA. RCP* (I.D.) OR STEEL (O.D.) CONDUIT, IN.	STEEL PIPE THICKNESS, IN.	WEIGHT OF STEEL LBS/FT	NO. RUNNEF PER TI								
12	24	0.438	110.22	2 TOP, 4 BC								
27	48	0.625	316.53	2 TOP, 4 BC								
30	48	0.625	316.53	2 TOP, 4 BC								

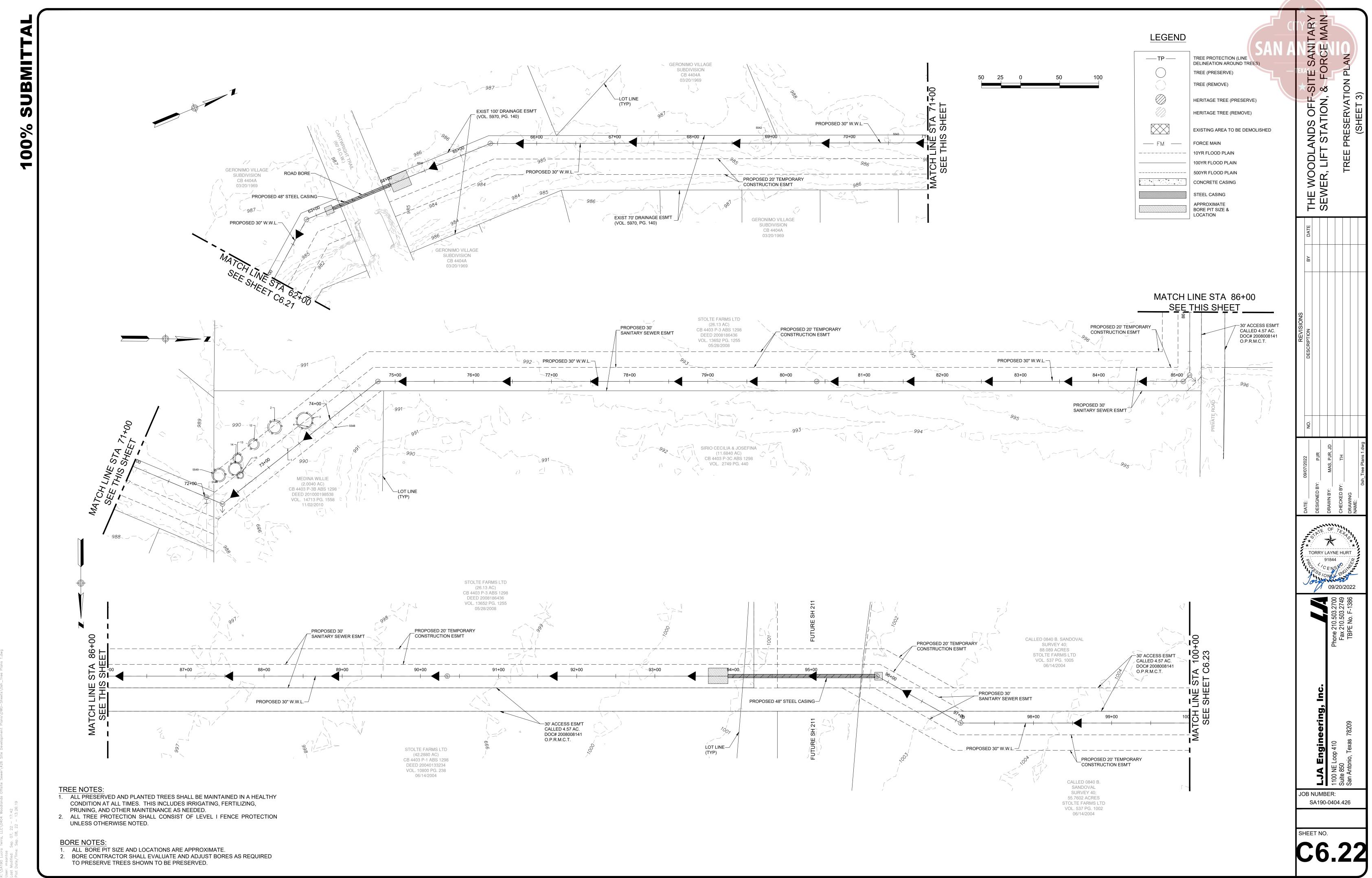


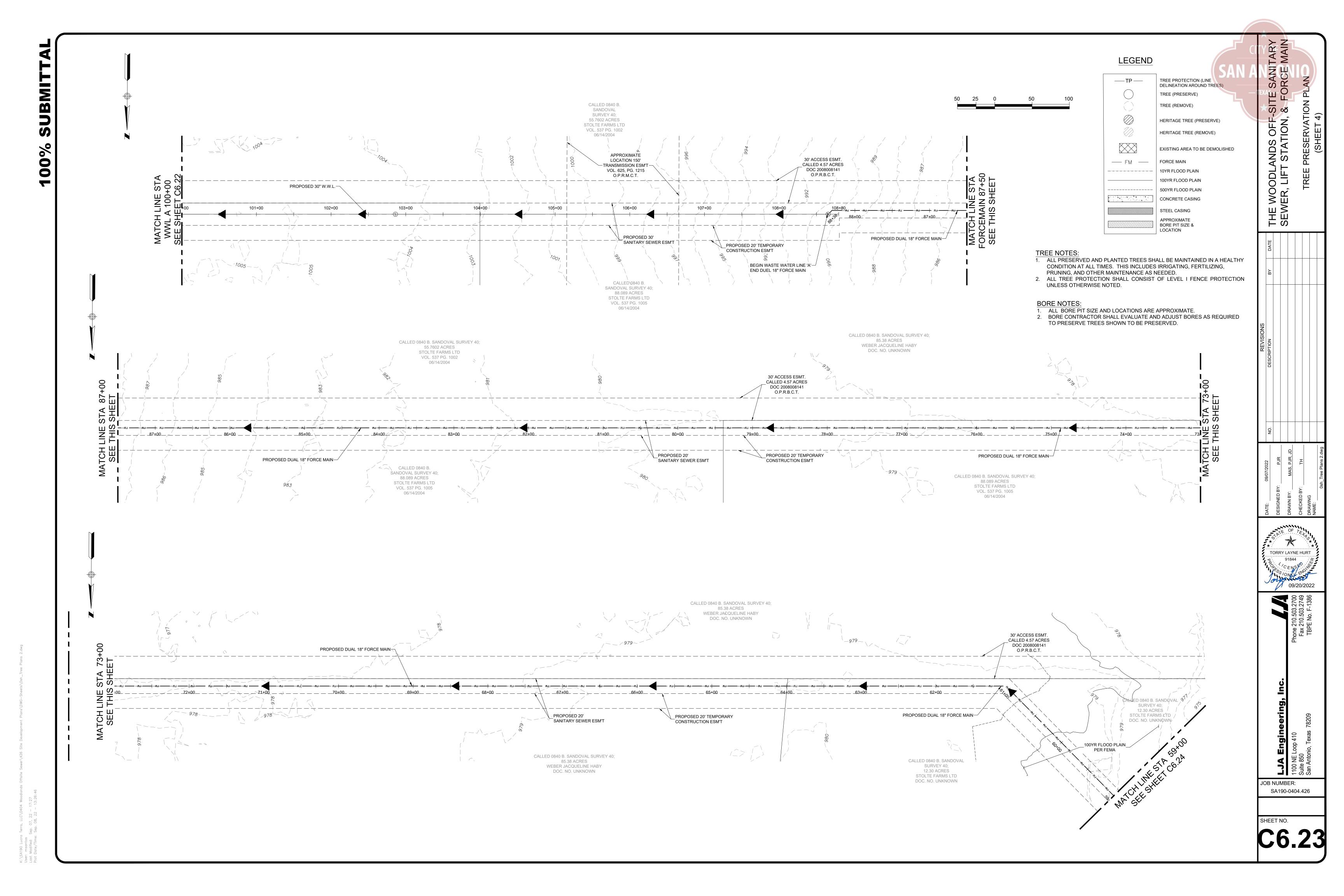
SHEET NO.



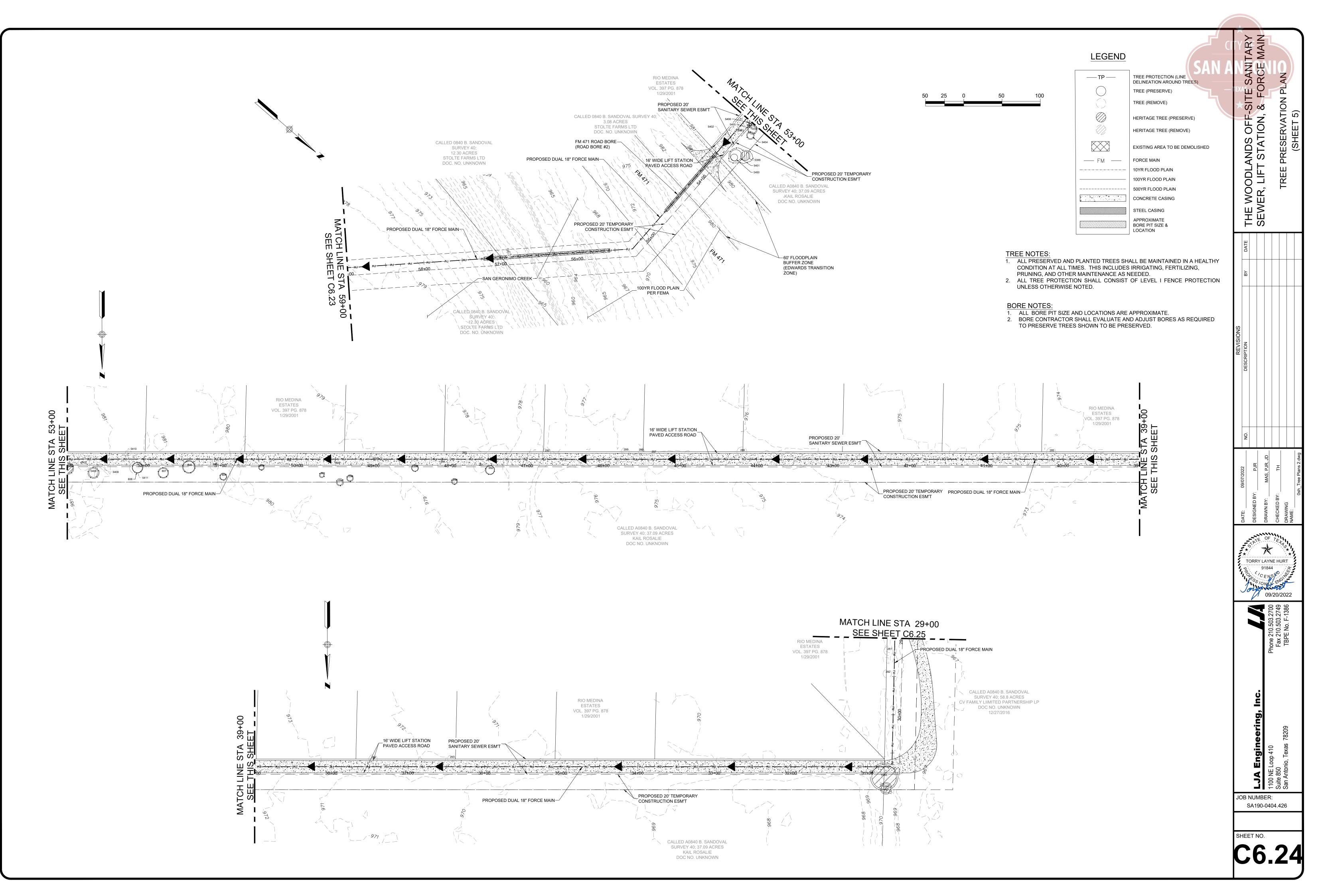




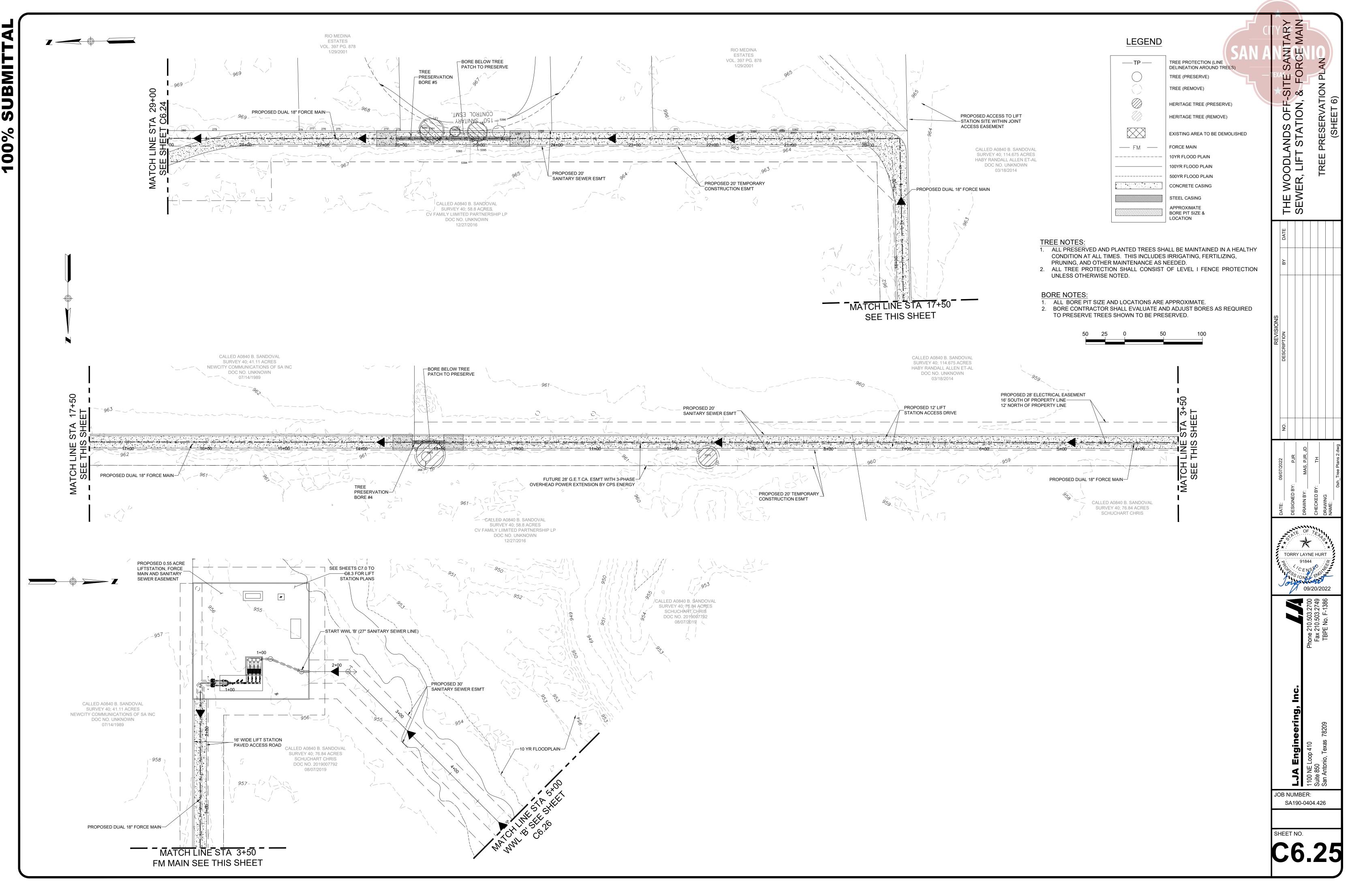




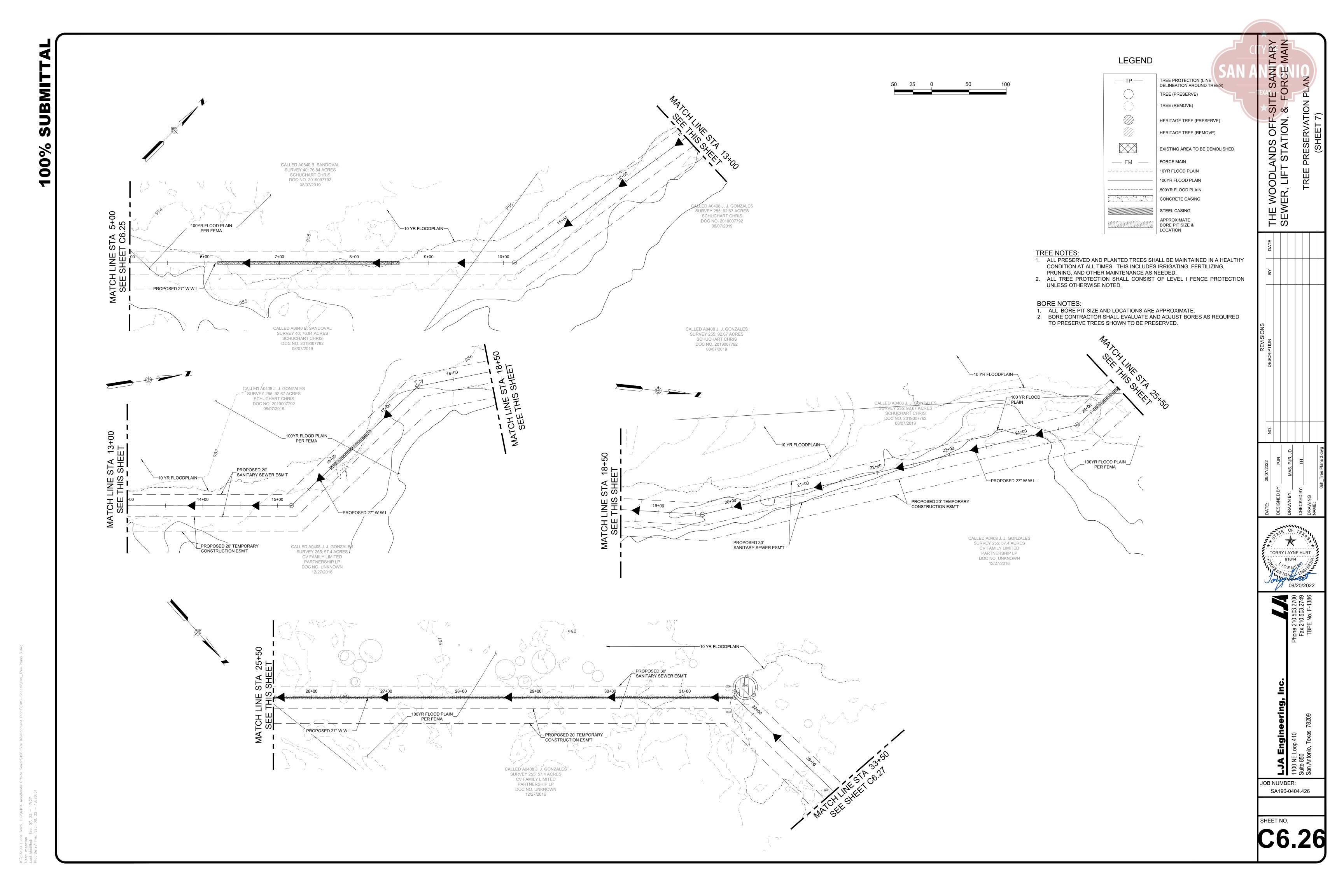


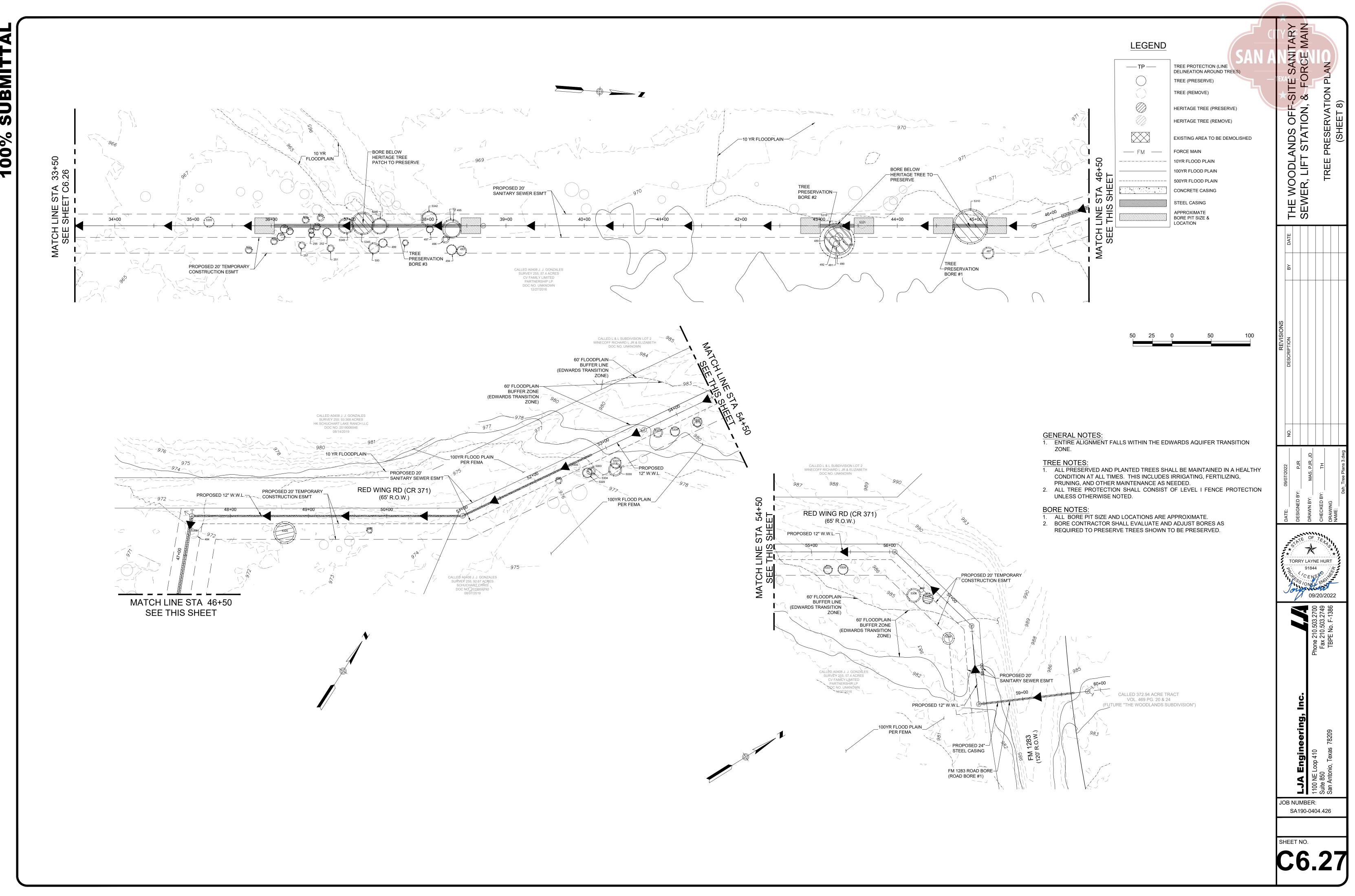


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K: \S User Last Plot





SUBMIT 100%

K: \S User: Last Plot

# 4 SUBMITT 100%

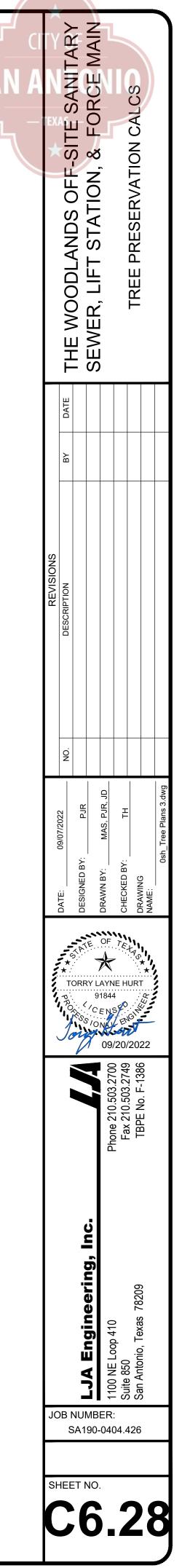
UPLAND TREES

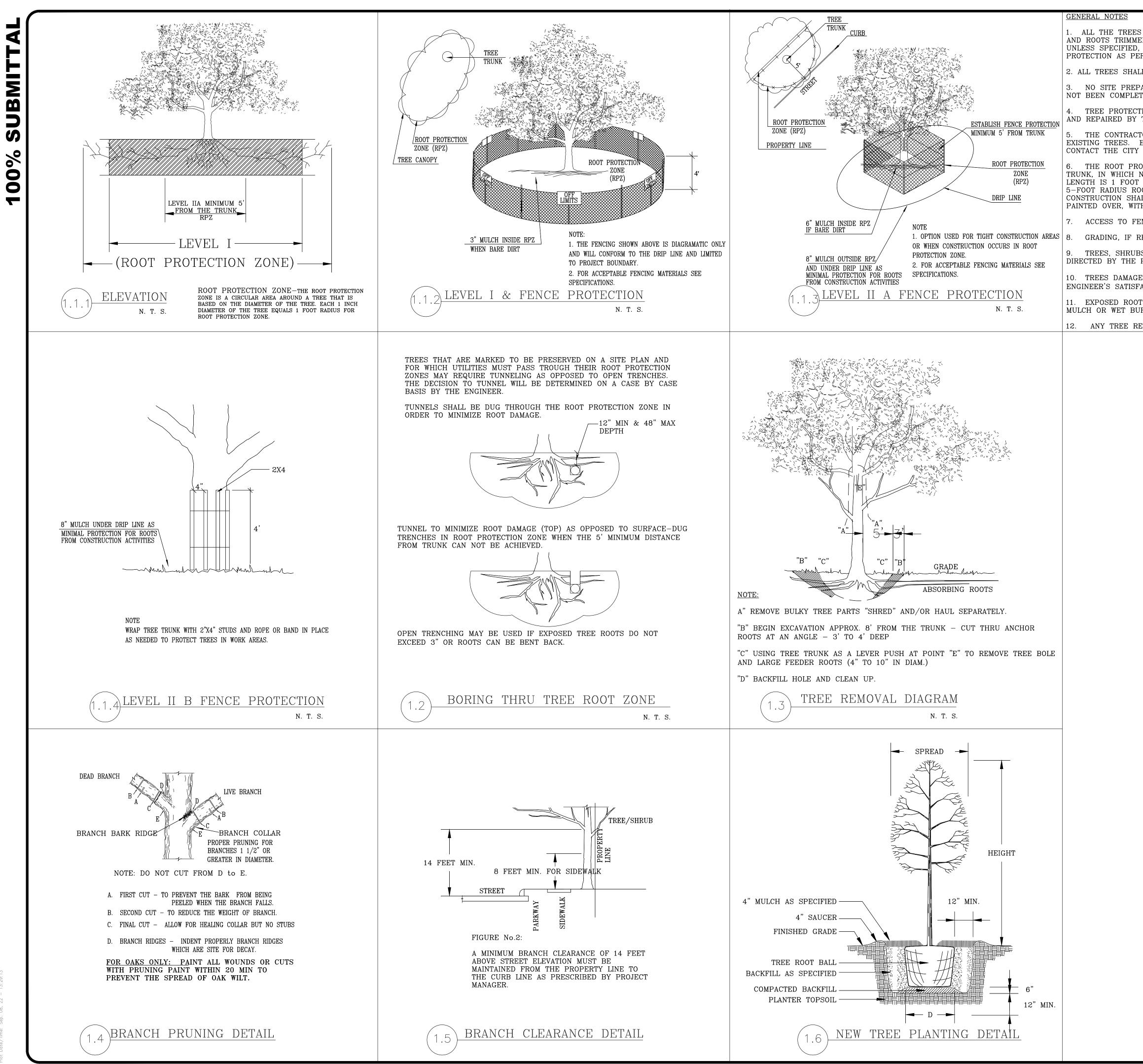
									ige 3:1		ige 1:1	Additional	Tree Car Cover Sh
		Understory Species* 5.0" - 11.5"					ignificant Tree** 10.0" - 23.5"		" + GE TREES	HERITAC	FD AT 100%	Inches Preserved for Mitigation ***	Value
Tag #	5pecies	Removed	Preserved	Removed	Preserved	Removed	Preserved		1	+	ED AT 100% Preserved		
1 2	15 HACKBERRY 15 HACKBERRY					0	15						
3 4	19 HACKBERRY 10 HACKBERRY					0	19						
12 13	11 HACKBERRY 10 HACKBERRY						11 10						
14 15	15 ELM 7 OAK				15 7								
268 270	12 HUISACHE 13 HACKBERRY					0	12						
271 273	13 HACKBERRY 10 HACKBERRY					0							
274 275	11 HACKBERRY 15 HACKBERRY					0							
276 277	23 HACKBERRY 12 HACKBERRY					0			[				
278 279	14 HACKBERRY 16 HACKBERRY					0							
280 281	17 HACKBERRY 12 HACKBERRY	-				0							
282 283	11 HACKBERRY 10 HACKBERRY	_				0							
284 285	11 HACKBERRY 12 MESQUITE					0							
286 287	13 HACKBERRY 10 MESQUITE					0							
288 289	12 HACKBERRY 10 HACKBERRY					0							
290	11 HACKBERRY					0					-		
291 292	16 MESQUITE 11 HACKBERRY					0	11						
293 294	20 MESQUITE 6 PERSIMMON					0							
295 296	6 PERSIMMON 8 PERSIMMON						6 8						
297 298	17 MESQUITE 7 PERSIMMON	++				0	7	ļ					
299 300	7 PERSIMON 5 PERSIMMON					0	7	<u> </u>					
801 802	5 PERSIMMON 16 HACKBERRY	<u> </u>				0	5						
803 804	6 PERSIMMON 11 MESQUITE					0	6						
805 806	8 PERSIMMON 15 MESQUITE						8 15						
807 808	12 MESQUITE 13 HACKBERRY						12 13						
809 865	5 PERSIMMON 10 LIVE OAK		5		10								
866 867	15 LIVE OAK 5 LIVE OAK				15 5								
870 871	18 LIVE OAK 5 TEXAS PERSIMMON		5		18								
872 875	5 TEXAS PERSIMMON 15 LIVE OAK	<u> </u>	5	0									
876 877	23 LIVE OAK 14 ELM				23 14								
878 883	14 LIVE OAK 28 LIVE OAK				14				28				
884 890	8 TEXAS PERSIMMON 40 LIVE OAK	0							40				
891 5306	8 LIVE OAK				8				40				
5307 5337	6 PERSIMMON 9 ELM				9		6						
5338 5374	12 CEDAR 13 MESQUITE				9		12	<u> </u>					
5375	35 MESQUITE						13				35		
5376 5377	11 MESQUITE 13 HACKBERRY					0							
5378 5379	10 HACKBERRY 17 HACKBERRY					0							
5380 5381	15 HACKBERRY 20 MESQUITE	-				0							
5382 5383	18 HACKBERRY 12 HACKBERRY					0							
5384 5385	16 HACKBERRY 11 HACKBERRY					0							
5386 5387	10 HACKBERRY 10 HACKBERRY					0							
5388 5389	32 HACKBERRY 12 HACKBERRY						12				32		
5390 5391	12 HACKBERRY 20 MESQUITE						12 20						
5392 5393	11 MESQUITE 10 HACKBERRY					0	11						
5394 5395	10 MESQUITE 13 MESQUITE					0	13						
5396 5397	11 HACKBERRY 18 MESQUITE					0	11						
5398 5399	19 MESQUITE 12 PERSIMMON					0					12		
5400 5401	5 PERSIMMON 10 MESQUITE		5	<del></del>			10						
5402 5403	11 MESQUITE 8 PERSIMMON (DEAD)					0							
5404 5405	8 PERSIMMON 5 PERSIMMON		8 5										
5406 5407	5 PERSIMMON 13 HACKBERRY		5			0							
5408 5409	10 HACKBERRY 10 MESQUITE					0	10						
5410 5411	6 PERSIMMON 16 HACKBERRY	0				0							
5920 5921	12 LIVE OAK 14 LIVE OAK				12 14								
5926 5928	16 LIVE OAK 17 LIVE OAK				16 17								
5929 5930	16 LIVE OAK	<b> </b>			16 17								
5931 5945	14 LIVE OAK 38 LIVE OAK	1			14				38				
5536 5542	19 HACKBERRYK 12 HACKBERRY					0							
5543 5544	21 HACKBERRY 11 HACKBERRY	++				0		-					
5549	15 HACKBERRY	<b> </b>					15	1					
(h+				~		-		-					
ibtotal In		0	38	0	261	0	310	0	106	0	79	0	0
OTAL INC	HES e Value Calculation of Trees	38 to Remaín	3 0		261	13	10	1	.06	I	<b>79</b>	I	I
	ecies: Condalia, Redbud, Tx. niper, Huisache, Mesquite, A								Heritage Tr	ees			
	ion Trees: Unprotected-sized	trees to be use	ed for mitig	ation calcu									
	Tre	Percent			ne Requiremen	its of							
Pre	servation by Category:	Preserved			ree Ordinance?								
nderston	y Species	100%	'es										
		1											
gnificant	Trees	100% 1	'es										
	reests'l)	100% 1	'es				1						
eritage Ti													

				Significant Tree		Significant Tree**		Heritage 3:1 24" + HERITAGE TREES		Heritage 1:1 24" + S HERITAGE TREES		Additional	Tree Canopy Cover Shade Value	
Tag #	Species	5.0*	ry Species* - 11.S" Preserved	6'	' - 23.5"		nt Tree** - 23.5" Preserved	24 HERITAC PRESERVI	" + GE TREES ED AT 100%	HERITAG	E TREES	Inches Preserved for Mitigation *** Preserved	Value	
812 837 838	8 ELM 13 LIVE OAK 14 LIVE OAK			ved	8 13 14				ed	vea				
839 840 841	6 LIVE OAK 11 LIVE OAK 12 LIVE OAK				6 11 12									
842 843 844	12 LIVE OAK 11 LIVE OAK 12 LIVE OAK				12 11 12									
845 846 847 848	10 LIVE OAK 7 LIVE OAK 16 LIVE OAK 10 LIVE OAK				10 7 16 10									
849 850 851	9 LIVE OAK 6 LIVE OAK 6 LIVE OAK				9 6 6									
852 853 854	8 LIVE OAK 8 LIVE OAK 13 LIVE OAK				8 8 13									
855 856 857	8 LIVE OAK 5 TEXAS PERSIMMON 18 ELM		5		8									
858 861 862	13 LIVE OAK 5 TEXAS PERSIMMON 5 TEXAS PERSIMMON		5		13									
863 864 868 869	4 TEXAS PERSIMMON 6 TEXAS PERSIMMON 25 LIVE OAK 6 TEXAS PERSIMMON		4 6 6						25					
873 874 879	17 LIVE OAK 8 LIVE OAK 20 LIVE OAK			17 8 20										
880 881 882	21 LIVE OAK 18 LIVE OAK 13 HACKBERRY			18	21	13								
885 886 887	14 LIVE OAK 16 LIVE OAK 13 LIVE OAK				14 16 13									
888 889 892	12 LIVE OAK 23 LIVE OAK 30 LIVE OAK				12 23				30					
893 894 895 896	16 LIVE OAK 16 LIVE OAK 9 LIVE OAK 6 PERSIMMON		6		16 16 9									
897 898 899	8 PERSIMMON 44 LIVE OAK 19 LIVE OAK		8		19				44					
900 5333 5334	20 LIVE OAK 10 ELM 10 HACKBERRY				20 10		10							
5335 5339 5901	11 MESQUITE 11 MESQUITE 24 LIVE OAK				11		11		24					
5902 5903 5904	9 LIVE OAK 8 LIVE OAK 11 LIVE OAK 12 LIVE OAK				9 8 11									
5905 5906 5907 5908	16 LIVE OAK 16 LIVE OAK 26 LIVE OAK 9 LIVE OAK				12 16 9				26					
5909 5910 5911	14 LIVE OAK 23 LIVE OAK 17 LIVE OAK				14 23 17									
5912 5913 5917	18 LIVE OAK 14 LIVE OAK 11 LIVE OAK				18 14 11									
5918 5919 5923	7 LIVE OAK 26 LIVE OAK 8 LIVE OAK				7				26					
5924 5925 5927	31 LIVE OAK 12 ELM 7 LIVE OAK				12 7				31					
5930 5931 5932 5933	17 LIVE OAK 14 LIVE OAK 27 LIVE OAK 16 LIVE OAK				17 14 16				27					
5934 5935 5936	17 LIVE OAK 12 LIVE OAK 13 LIVE OAK				16 17 12 13									
5937 5938 5939	12 LIVE OAK 12 LIVE OAK 11 LIVE OAK				12 12 11									
5940 5941 5942	16 LIVE OAK 17 LIVE OAK 13 LIVE OAK				16 16 13									
5943 5944 5946	11 ELM 13 LIVE OAK 11 LIVE OAK				11 13 11									
5947 5948 5949	12 ELM 15 LIVE OAK 10 LIVE OAK				12 15 10		· · · · · · · · · · · · · · · · · · ·		·····					
5952 5953 5954 5955	10 LIVE OAK 10 LIVE OAK 10 LIVE OAK 9 LIVE OAK				10 10 10 9									
5956 5957 5959	9 LIVE OAK 14 LIVE OAK 8 LIVE OAK				9 14 8									
5960 5961 5962	8 LIVE OAK 12 LIVE OAK 18 LIVE OAK				8 12 18									
5963 5964 5965	7 LIVE OAK 11 LIVE OAK 7 LIVE OAK				7 11 7									
5966 5967 5968	13 LIVE OAK 13 LIVE OAK 11 LIVE OAK			13	13 11									
5969 5970 5971 5972	7 LIVE OAK 17 LIVE OAK 12 LIVE OAK 15 LIVE OAK			12	7 11									
5973 5974 5975	15 LIVE OAK 15 LIVE OAK 9 LIVE OAK 7 LIVE OAK			15 15 9	7									
5976 5977 5979	7 LIVE OAK 6 LIVE OAK 9 LIVE OAK				7 6 9									
5980 5981 5982	11 LIVE OAK 11 LIVE OAK 6 LIVE OAK				11 11 6									
5983 5984 5985	6 LIVE OAK 11 LIVE OAK 10 LIVE OAK			11 10	6									
5986 5988 5989	6 LIVE OAK 12 LIVE OAK 21 LIVE OAK			6 12 21										
5990 5991 5992 5993	13 LIVE OAK 11 ELM 7 LIVE OAK 7 TEXAS PERSIMMON	7		13 7	11									
5994 5995 5996	14 LIVE OAK 16 LIVE OAK 20 LIVE OAK	,		16	14 20									
5997 5998 5999	9 TEXAS PERSIMMON 13 ELM 10 MESQUITE	9		13 10										
6000 5501 5502	11 MESQUITE 16 MESQUITE 6 LIVE OAK				6		11 16							
5503 5504 5505	6 LIVE OAK 12 LIVE OAK 10 LIVE OAK				6 12 10									
5506 5507 5508 5509	9 LIVE OAK 10 LIVE OAK 10 LIVE OAK 9 LIVE OAK				9 10 10 9									
5509 5510 5511 5512	9 LIVE OAK 6 LIVE OAK 8 LIVE OAK 8 LIVE OAK				9 6 8 8									
5512 5513 5514 5515	8 LIVE OAK 11 LIVE OAK 10 LIVE OAK 13 LIVE OAK				8 11 10 13									
5515 5516 5517 5518	24 LIVE OAK 12 LIVE OAK 6 LIVE OAK				13 12 6				24					
5519 5520 5521	11 LIVE OAK 23 LIVE OAK 13 LIVE OAK				11 23 13									
5522 5523 5524	11 LIVE OAK 9 LIVE OAK 18 LIVE OAK				11 9 18									
5525 5526 5527 5528	26 LIVE OAK 13 HACKBERRY 10 HACKBERRY 9 TEXAS PERSIMMON			13			10		26					
5528 5529 5530 5531	9 TEXAS PERSIMMON 15 CEDAR 13 TEXAS PERSIMMON 11 HACKBERRY	9				15	1 4				13			
5531 5532 5533 5534	11 HACKBERRY 10 HACKBERRY 13 HACKBERRY 10 HACKBERRY			0	13		11 10 10							
5534 Subtotal I		25	45	259	1395	28	10 89	0	283	0	13	0	0	
TOTAL ING	CHES de Value Calculation of Trees t	·····	70 0		1654	1:	17	2	83	1	13			
Small sp	pecies: Condalia, Redbud, Tx. uniper, Huisache, Mesquite, A	Mountain L rizona Ash,	aurel, Tx. Pei Hackberry pi	rotected at					Heritage Tr	ees				
	Tre eservation by Category: ry Species	e Preservat Preservec 64%	ion Calculatic Ves		ree Ordinance	?								
gnifican oritogo 1	t Trees Trees (3:1)	84% 100%	Yes Yes											

		Understory Species* 5.0" - 11.5"		Significant Tree 6" - 23.5"		Signific	ion and C ant Tree** ' - 23.5"	Herita 24 HERITAC	snade C ige 3:1 " + SE TREES ED AT 100%	Herita 24 HERITAG	ge 1:1 " + SE TREES ED AT 100%	Additional Inches Preserved for Mitigation ***	Tree Canopy Cover Shade Value
Tag #	Species	Removed	Preserved	Removed	Preserved	Removed	Preserved	Removed	Preserved	Removed	Preserved	Preserved	
251	7 ELM	<b>_</b>		ļ	7	ļ	ļ						
252	10 ELM				10	ļ	ļ						
253	6 ELM			L	6	ļ	ļ	ļ					
254	7 ELM			ļ	7	L	L	ļ					
255	6 ELM				6	ļ	ļ	ļ					
256	6 ELM				6								
257	7 ELM				7								
258	7 ELM				7								
259	8 ELM				8								
260	10 ELM				10								
261	9 ELM				9								
262	7 ELM				7								
263	7 ELM				7								
264	11 MESQUITE		1	1		11		1					
266	7 ELM	1	[	7		Ī	1	1					
267	13 MESQUITE	1	1	<u> </u>	l	13	1	1					
484	12 MESQUITE	1	1	t		12	1	1					
487	13 MESQUITE	1					13						
488	10 OAK	1	1	l	10	1		l					
489	35 OAK	+	<u> </u>	<u> </u>	10	t	<u> </u>	t	26		<u> </u>		
489		+	<b> </b>	<b> </b>		<u> </u>			35				
	35 OAK	1			0			-	35				
491	8 OAK	+			8		<u> </u>						
492	13 OAK				13	<u> </u>		<u> </u>					
493	11 HACKBERRY	+	<u> </u>	<u> </u>		<b> </b>	11	<u> </u>					
494	12 ELM		ļ		12		ļ						
495	19 HACKBERRY			L		L	19						
496	6 ELM				6								
497	8 ELM		ļ	ļ	8			ļ					
498	6 ELM				6								
499	10 ELM				10		]						
500	12 MESQUITE				12								
5301	6 PLATEAU LIVE OAK				6								
5303	7 PLATEAU LIVE OAK				7		ļ						
5304 5305	7 PLATEAU LIVE OAK			12	7		<b> </b>						
5305	13 CEDAR ELM 11 MESQUITE	<u> </u>		13 11									
5310	44 LIVE OAK	<u> </u>		11		<u> </u>	<u> </u>		44				
5319	12 MESQUITE	1	1	1		12	1	1					
5321	10 MESQUITE					10		1					
5325	12 MESQUITE						12						
5327	10 MESQUITE		ļ	ļ		ļ	10						
5329 5330	11 ELM 14 ELM		<u> </u>	<b>_</b>	11			<u> </u>				ļ	
5331	12 HACKBERRY				14		12						
5341	22 HACKBERRY						22						
5342	16 HACKBERRY						16						
5345	16 ELM				16		[						
5346	10 ELM				10	ļ	ļ						
5348	17 MESQUITE	+	<b> </b>	<u> </u>		<b></b>	17	+	ļ				
5355 5359	7 ELM 9 ELM	+	<u> </u>	7 9			<u> </u>	<u> </u>					
5360	11 MESQUITE	1	<u> </u>	, <u>,</u>			11	-					
5950	18 LIVE OAK	1			18	1							
5951	16 LIVE OAK				16								
5958	15 LIVE OAK				15	ļ		<u> </u>					
5987	17 LIVE OAK	. <u> </u>	<b> </b>	<b> </b>	17	ļ		<b> </b>					
5535	16 MESQUITE	+	<u> </u>	<u> </u>		<b> </b>	16	<u> </u>					
ubtotal l	nches	0	0	47	319	58	159	0	114	0	0	0	0
		†	† Ť	+				¥		<u> </u>	t		, v
OTAL INC	HES	1	0	1	366	2	17	1	14	1	l 0		
	le Value Calculation of Trees t		0										
~~~~~	ecies: Condalia, Redbud, Tx.		-h	rsimmon, H	awthorn, Poss	umhaw - thes	se are mitigate	ed at 1:1 for	Heritage Tri	es			
* Ashe Ju	niper, Huisache, Mesquite, A	izona Ash,	Hackberry p	rotected at	10" dbh and m	itigated at 1:	1 for heritage	trees					
	ion Trees: Unprotected-sized												
×			ion Calculati								-		
		1					1						
		Percent Preserved			he Requiremer ree Ordinance								
	servation by Category	1 ieseived	1	and city I	CE Grundlice:		1						
Pre	eservation by Category:		4				1						
	eservation by Category: y Species	100%	Yes				1						
		100%	Yes										
		100%	Yes										
nderstor	y Species	100% 82%	Yes										
nderstor	y Species						-						
	y Species												
Inderstor ignifican	y Species						-						
nderstor gnifican	y Species t Trees	82%	Yes				-						

### FLOODPLAIN TREES





K:\SA190 Lucra Terra, LLC\0404 Woodlands Offsite Sewer\426 Site Development Plans\DWG-Sheets\0sh\_Tr User: msantos Last Modified: Sep. 07, 22 - 17:27 Plot Date/Time: Sep. 08, 22 - 13:29:13

ALL THE TREES WITH A DIAMETER GREATER THAN 3 INCHES AFFECTED BY CONSTRUCTION SHALL HAVE THE LIMBS AD ROOTS TRIMMED AND PRUNED ACCORDING TO ITEM No. 802. TREE PRUNING, SOIL AMENDING AND PERTILIZATION, NUESS SPECIFIED, TREES SHALL RECEIVE LEVEL 1 PROTECTION AS PER TIEM No. 802. TREES TO RECEIVE LEVEL 2 A ROTECTION AS PER TIEM NO. 802 ARE IDENTIFIED ON THE PROTECTION PLAN. ALL TREES SHALL REMAIN UNLESS NOTED ON THE PLANS. NO SITE PREPARATION WORK SHALL BEGIN IN AREAS WHERE TREE PRESERVATION AND TREATMENT MEASURES HAVE OT BEEN COMPLETED AND APPROVED. THEE PROTECTION FENCING SHALL BE REQUIRED. TREE PROTECTION FENCING SHALL BE INSTALLED, MAINTAINED ND REPARED BY THE CONTRACTOR SHALL ACTIVITY OF TREES SHALL PROCEED WITH CAUTION. THE CONTRACTOR SHALL AND CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN THREE INCHES IN DIAMETER WHEN EXCAVATING NEAR KISTING TREES. EXCAVATION IN THE VICINITY OF TREES SHALL PROCEED WITH CAUTION. THE CONTRACTOR SHALL ONTACT THE CITY INSPECTOR. THE CONTRACTOR SHALL AND CUTTING ROOTS LARGER THAN THREE INCHES IN DIAMETER WHEN EXCAVATING NEAR KISTING TREES. EXCAVATION IN THE VICINITY OF TREES SHALL PROCEED WITH CAUTION. THE CONTRACTOR SHALL ONTACT THE CITY INSPECTOR. THE ROOT PROTECTION ZONE IS THAT AREA SURROUNDING A TREE, AS MEASURED BY A RADIUS FROM THE TREE KUNK, IN WHICH NO EQUIPMENT, VEHICLES OR MATERIALS MAY OPERATE OR BE STORED. THE REQUIRED RADIUS ONTH IS I FOOT PROTECTION ZONE IS THAT AREA SURROUNDING A TREE, AS MEASURED BY A RADIUS FROM THE TREE KUNK, IN WHICH NO EQUIPMENT, VEHICLES OR MATERIALS MAY OPERATE OR BE STORED. THE REQUIRED RADIUS ONTH IS I FOOT PROTECTION ZONE IS THAT AREA SURROUNDING A TREE, AS MEASURED BY A RADIUS FROM THE TREE KUNK, IN WHICH NO EQUIPMENT, VEHICLES OR MATERIALS MAY OPERATE OR BE STORED. THE REQUIRED RADIUS ONTH IS I FOOT PROTECTION ZONE IS THAT AREA IN COMPLET WHEN THE STORED THE REQUIRED RADIUS SURTH IS I FOOT PROTECTION ZONE AREAS OR MATERIALS MAY OPERATE OR BE STORED. THE REQUIRED RADIUS FOOT RADIUS ROOT PROTECTION ZONE AREAS ONE MATERIALS MAY OPERATE		WOODI ANDS OFF-SITE SANI	SEWFR LIFT STATION & FOR		TREE PRESERVATION NOTES & DETAILS		
	REVISIONS	NO. DESCRIPTION					
		DATE: 09/07/2022	DESIGNED BY: PJR	DF MAXN BY: MAS, PJR, JD	TETAS	NAME: 0sh_Tree Plans 3.dwg	
		PROX 20	-JA Engineering, Inc.	Phone 210.503.2700	Suite 850 Fax 210.503.2749 20 20 20 20 20 20 20 20 20 20 20 20 20		
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